# Motori principali per SINAMICS S120

## Motori principale SIMOTICS M-1PH8

Manuale di progettazione · 05/2012

SIMOTICS

SIEMENS

# Azionamenti principali per SINAMICS S120

# Motore principale SIMOTICS M-1PH8

Manuale di progettazione


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## Avvertenze di legge

### Concetto di segnaletica di avvertimento

Questo manuale contiene delle norme di sicurezza che devono essere rispettate per salvaguardare l'incolumità personale e per evitare danni materiali. Le indicazioni da rispettare per garantire la sicurezza personale sono evidenziate da un simbolo a forma di triangolo mentre quelle per evitare danni materiali non sono precedute dal triangolo. Gli avvisi di pericolo sono rappresentati come segue e segnalano in ordine descrescente i diversi livelli di rischio.

| ⚠ PERICOLO |
| --- |
| questo simbolo indica che la mancata osservanza delle opportune misure di sicurezza **provoca** la morte o gravi lesioni fisiche. |

| ⚠ AVVERTENZA |
| --- |
| il simbolo indica che la mancata osservanza delle relative misure di sicurezza **può causare** la morte o gravi lesioni fisiche. |

| ⚠ CAUTELA |
| --- |
| indica che la mancata osservanza delle relative misure di sicurezza può causare lesioni fisiche non gravi. |

| ATTENZIONE |
| --- |
| indica che la mancata osservanza delle relative misure di sicurezza può causare danni materiali. |

Nel caso in cui ci siano più livelli di rischio l'avviso di pericolo segnala sempre quello più elevato. Se in un avviso di pericolo si richiama l'attenzione con il triangolo sul rischio di lesioni alle persone, può anche essere contemporaneamente segnalato il rischio di possibili danni materiali.

### Personale qualificato

Il prodotto/sistema oggetto di questa documentazione può essere adoperato solo da **personale qualificato** per il rispettivo compito assegnato nel rispetto della documentazione relativa al compito, specialmente delle avvertenze di sicurezza e delle precauzioni in essa contenute. Il personale qualificato, in virtù della sua formazione ed esperienza, è in grado di riconoscere i rischi legati all'impiego di questi prodotti/sistemi e di evitare possibili pericoli.

### Uso conforme alle prescrizioni di prodotti Siemens

Si prega di tener presente quanto segue:

| ⚠ AVVERTENZA |
| --- |
| I prodotti Siemens devono essere utilizzati solo per i casi d’impiego previsti nel catalogo e nella rispettiva documentazione tecnica. Qualora vengano impiegati prodotti o componenti di terzi, questi devono essere consigliati oppure approvati da Siemens. Il funzionamento corretto e sicuro dei prodotti presuppone un trasporto, un magazzinaggio, un’installazione, un montaggio, una messa in servizio, un utilizzo e una manutenzione appropriati e a regola d’arte. Devono essere rispettate le condizioni ambientali consentite. Devono essere osservate le avvertenze contenute nella rispettiva documentazione. |

### Marchio di prodotto

Tutti i nomi di prodotto contrassegnati con ® sono marchi registrati della Siemens AG. Gli altri nomi di prodotto citati in questo manuale possono essere dei marchi il cui utilizzo da parte di terzi per i propri scopi può violare i diritti dei proprietari.

### Esclusione di responsabilità

Abbiamo controllato che il contenuto di questa documentazione corrisponda all'hardware e al software descritti. Non potendo comunque escludere eventuali differenze, non possiamo garantire una concordanza perfetta. Il contenuto di questa documentazione viene tuttavia verificato periodicamente e le eventuali correzioni o modifiche vengono inserite nelle successive edizioni.

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# Prefazione

## Documentazione sui motori

La documentazione sui motori è suddivisa nelle seguenti categorie:

- Documentazione generale, ad es. Cataloghi
- Documentazione per il costruttore/per il service, ad es. Istruzioni operative e Manuali di progettazione

## Ulteriori informazioni

Il link indicato permette di accedere a informazioni sui seguenti temi:

- Ordinazione della documentazione / elenco delle pubblicazioni
- Altri link per il download dei documenti
- Uso della documentazione online (ricerca e consultazione di manuali e informazioni)

http://www.siemens.com/motioncontrol/docu

Per domande relative alla documentazione tecnica (ad es. suggerimenti, correzioni) si prega di inviare una e-mail al seguente indirizzo:

docu.motioncontrol@siemens.com

## My Documentation Manager

Il seguente link fornisce informazioni su come organizzare la documentazione in base ai contenuti Siemens e integrarla nella propria documentazione della macchina:

http://www.siemens.com/mdm

## Training

Questo link fornisce informazioni relative a SITRAIN, il programma di formazione di Siemens per i prodotti, i sistemi e le soluzioni della tecnica di automazione:

http://siemens.com/sitrain

## Indirizzi Internet per la tecnica di azionamento

Sito Internet per i motori: http://www.siemens.com/motors

Indirizzo Internet per i prodotti: http://www.siemens.com/motioncontrol

Indirizzo Internet per SINAMICS: http://www.siemens.com/sinamics

## Destinatari

La presente documentazione si rivolge a pianificatori, progettisti e addetti alla messa in servizio.

## Vantaggi

Il Manuale di progettazione è di supporto nella scelta dei motori, nel calcolo dei componenti dell'azionamento, nella scelta degli accessori necessari e delle opzioni di potenza della rete e del motore.

## Configurazione standard

L'insieme delle funzionalità descritte nella presente documentazione può discostarsi dalle funzionalità presenti nel sistema fornito.

- Il sistema di azionamento può contenere altre funzioni oltre a quelle descritte nella presente documentazione. Ciò non costituisce però obbligo di implementazione di tali funzioni in caso di nuove forniture o di assistenza tecnica.
- Nella documentazione possono essere descritte funzioni che non sono disponibili in una determinata variante del sistema di azionamento. Le funzionalità dell'azionamento fornito si possono ricavare unicamente dalla documentazione per l'ordinazione.
- Eventuali integrazioni o le modifiche apportate dal costruttore della macchina vengono documentate dello stesso.

Analogamente, per motivi di chiarezza, anche la presente documentazione non contiene tutte le informazioni dettagliate per tutti i tipi di prodotto. La documentazione non può altresì tenere conto di tutti i casi possibili di installazione, funzionamento e manutenzione.

## Supporto tecnico

Per i numeri telefonici dell'assistenza tecnica specifica dei vari paesi, vedere in Internet:

http://www.siemens.com/automation/service&support

## Dichiarazioni di conformità CE

La dichiarazione di conformità CE per la direttiva EMC è disponibile in Internet all'indirizzo

http://support.automation.siemens.com

Immettere come criterio di ricerca il numero **15257461** oppure rivolgersi alla filiale Siemens più vicina.

## Avvertenze di pericolo

**⚠PERICOLO**

La messa in servizio non è consentita fino a quando non è stato accertato che la macchina sulla quale devono essere installati i componenti descritti nel presente manuale è conforme alle disposizioni della direttiva macchine CE.

La messa in servizio delle apparecchiature SINAMICS e dei motori può essere eseguita solo da personale adeguatamente qualificato.

Il personale qualificato dovrà osservare la documentazione tecnica del cliente relativa al prodotto, nonché conoscere a fondo e rispettare le relative indicazioni di pericolo e di avvertimento.

Quando un'apparecchiatura elettrica o un motore sono in funzione, i circuiti elettrici sono sottoposti a tensioni pericolose. Tutti i lavori sull'impianto elettrico devono avvenire in assenza di tensione.

Durante il funzionamento dell'impianto sono possibili movimenti pericolosi degli assi.

Il collegamento di apparecchi SINAMICS con motori alla rete di alimentazione tramite dispositivi di protezione (RCD) per le dispersioni di corrente (FI) è ammesso solo se la compatibilità delle apparecchiature con il dispositivo di protezione FI è comprovata secondo la norma EN 61800-5-1.

I motori sono omologati congiuntamente al sistema di azionamento per operare su reti TN e TT con **centro stella messo a terra**, nonché su reti IT.

Nel funzionamento su reti IT la comparsa di un primo errore tra una parte attiva e la terra deve essere segnalata da un dispositivo di monitoraggio. La norma IEC 60364-4-41 raccomanda di eliminare al più presto il primo errore.

Nelle reti con **conduttore esterno messo a terra** occorre inserire un trasformatore di isolamento con centro stella messo a terra (lato secondario) tra rete e sistema di azionamento, in modo da evitare sollecitazioni non ammesse dell'isolamento del motore. Dal momento che prevalgono le reti TT con conduttore di linea messo a terra, è necessario impiegare un trasformatore di isolamento.

**⚠AVVERTENZA**

Per un funzionamento ottimale e sicuro di queste apparecchiature e dei motori è essenziale che il trasporto sia corretto e che l'immagazzinaggio, l'installazione e il montaggio siano stati eseguiti con la cura necessaria.

Per l'esecuzione di varianti speciali per le apparecchiature e i motori è necessario fare riferimento alle indicazioni riportate nei cataloghi e nelle offerte.

Oltre alle indicazioni di pericolo e di avvertimento contenute nella documentazione tecnica del cliente fornita, vanno tenute presenti anche le normative nazionali, locali e le prescrizioni relative all'impianto.

**⚠ CAUTELA**

La temperatura sulla superficie esterna dei motori può superare +100 °C.

Per questo motivo non devono trovarsi nelle immediate vicinanze del motore, o essere fissati allo stesso, componenti termosensibili quali p. es. cavi o componenti elettronici.

Si deve fare assolutamente evitare che in fase di montaggio i cavi di collegamento
– vengano danneggiati
– siano tirati
– si possano impigliare in parti in rotazione.

**ATTENZIONE**

Il collegamento dei motori a un convertitore va eseguito sulla base delle istruzioni operative. Non è consentito il collegamento diretto dei motori alla rete in corrente alternata perchè questo potrebbe distruggere i motori.

Le apparecchiature SINAMICS e i motori, durante la prova individuale, vengono sottoposti ad una prova dielettrica. Non è consentito effettuare sul motore un test aggiuntivo ad alta tensione; questo test potrebbe infatti distruggere componenti elettronici come i sensori di temperatura o gli encoder.

**ATTENZIONE**

I motori con interfaccia DRIVE-CLiQ possiedono una targhetta elettronica che riporta i dati specifici del motore e dell'encoder. Per questo motivo i moduli encoder con interfaccia DRIVE-CLiQ o i Sensor Module montati possono funzionare solo sul motore d'origine e non devono essere montati su altri motori o sostituiti con Sensor Module di altri motori.

L'interfaccia DRIVE-CLiQ è a diretto contatto con componenti sensibili alle cariche elettrostatiche (ESD). I collegamenti non devono venire a contatto con le mani o con utensili che siano caricati elettrostaticamente.

**Nota**

Le apparecchiature SINAMICS con motori in condizioni adeguate di esercizio e in ambienti operativi asciutti soddisfano la Direttiva Bassa Tensione.

Le apparecchiature SINAMICS con motori soddisfano la Direttiva EMC per le configurazioni indicate nella relativa dichiarazione di conformità CE.

## Avvertenze ESD e campi elettromagnetici

**⚠ CAUTELA**

**E**lecrostatic **S**ensitive **D**evices (ESD) sono componenti singoli, circuiti integrati o schede che possono essere danneggiati da campi o scariche elettrostatiche.

Manipolazione - prescrizioni per i componenti ESD:

Lavorando con componenti elettronici è indispensabile provvedere ad una buona messa a terra della persona, della stazione di lavoro e dell'imballaggio!

I componenti elettronici devono essere manipolati solo in aree ESD con pavimentazione dotata di ottima conducibilità se il personale
– indossa l'apposito bracciale ESD messo a terra e
– porta scarpe ESD o gli appositi nastri ESD per la messa a terra delle scarpe.

Il contatto con componenti elettronici va comunque evitato se non strettamente indispensabile.

I componenti elettronici non devono venire a contatto con elementi in plastica e indumenti con parti in plastica.

Le schede elettroniche possono essere depositate solo su ripiani dotati di ottima conducibilità (tavoli con rivestimento ESD, gommapiuma ESD con ottima conducibilità, buste ESD per l'imballo, contenitori ESD per il trasporto).

Le schede elettroniche non devono essere collocate nelle vicinanze di videoterminali, monitor o televisori. Distanza dallo schermo > 10 cm).

Sulle schede elettroniche si possono eseguire misure se
– l'apparecchio di misura è messo a terra (p. es. tramite apposito conduttore di terra) oppure
– prima della misura, nel caso di apparecchi di misura non messi a terra, il puntale di misura viene messo per breve tempo a terra
(p. es. toccando una parte non verniciata della custodia dell'apparecchiatura di comando).

**⚠ PERICOLO**

I campi elettrici, magnetici ed elettromagnetici che si manifestano in condizioni di esercizio nelle immediate vicinanze del prodotto possono essere pericolosi per portatori di pacemaker, impianti o simili.

Gli addetti alla macchina o all'impianto e le persone che vengono a trovarsi in prossimità del prodotto devono rispettare le norme e le direttive pertinenti! Nello spazio economico europeo si tratta in particolare della direttiva CEM 2004/40/CE, norme EN 12198-1 ... 12198-3, mentre nella Repubblica Federale Tedesca vigono le norme antinfortunistiche dell'associazione professionale BGV 11 con il relativo regolamento BGR 11 "Campi elettromagnetici".

Inoltre si deve effettuare un'analisi dei rischi di ogni posto di lavoro, stilare e applicare le misure cautelari per ridurre i pericoli e i rischi per le persone, nonché definire e rispettare le aree a rischio di esplosione e quelle pericolose.

## Avvertenza sui prodotti di terze parti

**Nota**

Questo stampato contiene raccomandazioni su prodotti di terze parti. Si tratta di prodotti di altri fornitori, di cui conosciamo l'idoneità di massima. Naturalmente si possono utilizzare prodotti di ulteriori fornitori con caratteristiche analoghe. Le nostre indicazioni devono essere intese come informazione e non come prescrizione. Siemens non si assume alcuna responsabilità per la qualità dei prodotti di terze parti.

## Compatibilità ambientale

- Aspetti ambientali nello sviluppo

  Nella scelta dei componenti di fornitori esterni la compatibilità ambientale è stata un criterio essenziale.

  Particolare importanza è stata attribuita alla riduzione del volume, della massa e della varietà di tipi di parti metalliche e in plastica.

  Può essere esclusa una compromissione dell'impregnazione della vernice (test)

- Aspetti ambientali nella produzione

  Il trasporto dei componenti di fornitori esterni e dei prodotti avviene prevalentemente in imballi riutilizzabili. Non è necessario prevedere trasporti per merci pericolose.

  Il materiale di imballaggio è costituito principalmente da cartonaggi conformi alla direttiva sugli imballaggi 94/62/CE.

  Il consumo energetico nella fase di produzione è stato ottimizzato.

  La produzione è esente da emissioni.

- Aspetti ambientali nello smaltimento

  Lo smaltimento dei motori deve avvenire nel rispetto delle prescrizioni nazionali e locali relative al normale processo di materiali oppure restituendoli al costruttore.

  Durante lo smaltimento occorre osservare quanto segue:

  Trattare l'olio secondo la normativa sugli olii esausti (ad es. olio per trasmissione per accoppiamento riduttori)

  Non miscelare con solvente, detergenti a freddo o residui di vernice

  Separare i componenti per il riciclaggio in base a:

  – rottami elettronici (ad es. elettronica del trasduttore, moduli sensori)
  – rottame ferroso
  – alluminio
  – metalli verniciati (ruote di ingranaggi, avvolgimenti di motori)

## Rischi residui di Power Drive System

Nell'ambito della valutazione dei rischi della macchina, da eseguire conformemente alla direttiva macchine CE, il costruttore della macchina deve considerare almeno i seguenti rischi residui derivanti dai componenti per il controllo e l'azionamento di un Power Drive System (PDS).

1. Movimenti indesiderati di parti della macchina motorizzate durante la messa in servizio, il funzionamento, la manutenzione e la riparazione, dovuti ad esempio a
   - Errori hardware e/o software nei sensori, nel controllo, negli attuatori e nella tecnica di collegamento
   - Tempi di reazione del controllo e dell'azionamento
   - Funzionamento e/o condizioni ambientali esterni alla specifica
   - Errori durante la parametrizzazione, la programmazione, il cablaggio e il montaggio
   - Utilizzo di apparecchiature radio / telefoni cellulari nelle immediate vicinanze del controllo
   - Influenze esterne / danneggiamenti.
2. Temperature eccezionali nonché emissioni di luce, rumori, particelle e gas, dovuti ad esempio a
   - Guasto a componenti
   - Errore software
   - Funzionamento e/o condizioni ambientali esterni alla specifica
   - Influenze esterne / danneggiamenti.
3. Tensioni di contatto pericolose, ad esempio dovute a
   - Guasto a componenti
   - Influenza in caso di cariche elettrostatiche
   - Induzione di tensioni con motori in movimento
   - Funzionamento e/o condizioni ambientali esterni alla specifica
   - Condensa / imbrattamenti conduttivi
   - Influenze esterne / danneggiamenti
4. Campi elettrici, magnetici ed elettromagnetici in condizioni di esercizio che ad es. possono essere pericolosi per portatori di pacemaker, impianti od oggetti metallici in caso di distanza insufficiente.
5. Rilascio di sostanze ed emissioni dannose per l'ambiente in caso di utilizzo non appropriato e/o smaltimento non corretto dei componenti.

Per ulteriori informazioni sui rischi residui derivanti dai componenti del PDS, consultare la Documentazione tecnica per l'utente ai capitoli relativi.

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# Descrizione del motore

# 1

## 1.1 Caratteristiche

### Panoramica

La serie di motori SIMOTICS M-1PH8, di seguito definita genericamente 1PH8, è una nuova generazione di motori, concepita per l'impiego universale in impianti e macchinari con applicazioni Motion Control. Basati sul principio del sistema modulare flessibile i motori sono disponibili sia nella variante asincrona sia nella variante sincrona compatta, a scelta con ventilazione forzata o con raffreddamento ad acqua.

Rispetto alla libera scelta di performance tra regolazione vettoriale e servoregolazione con il sistema di azionamento SINAMICS S120, con la nuova serie di motori SIMOTICS M-1PH8 è possibile scegliere facilmente tra la versione asincrona o quella sincrona.

Grazie a questa flessibile collaborazione di convertitore e motore è ora possibile far fronte in modo più semplice a

- cicli di carico estremi,
- tempi di risposta brevi,
- elevata precisione per quanto concerne numero di giri, coppia e posizionamento

.

Questi motori sono stati progettati principalmente per il funzionamento con il sistema di azionamento SINAMICS S120. In base alle esigenze di regolazione, per questi motori sono disponibili opportuni sistemi di encoder per il rilevamento del n. di giri del motore e della posizione indiretta.

Per le macchine utensili sono a disposizione anche sistemi di encoder per il funzionamento dell'asse C.

I motori 1PH8 sono fornibili con due diversi tipi di raffreddamento:

- Ventilazione forzata
- Raffreddamento ad acqua

AH 80 ... AH 160 Ventilazione forzata



AH 80 ... AH 160 Raffreddamento ad acqua



AH 180 ... AH 280 Raffreddamento ad acqua



AH 180 ... AH 225
Ventilazione forzata



AH 280
Ventilazione forzata



## Vantaggi

- Ampio spettro di potenza con ingombri ridotti
- Ampi campi di regolazione del numero di giri
- Elevata flessibilità grazie alla libera scelta tra
  - versione asincrona o versione sincrona
  - ventilazione forzata o raffreddamento ad acqua
  - albero pieno o albero cavo
  - diversi concetti di cuscinetti
  - diversi tipi di encoder per regolazione della velocità e posizionamento preciso
- caratteristiche di prestazione eccellenti
  - velocità massime fino a 20.000 1/min
  - eccezionale regolarità di rotazione fino a 10 µm
  - eccezionale grado di vibrazione
  - elevata dinamica (brevi tempi di rampa)
- bassa emissione di rumore
- tecnica di collegamento semplice e flessibile
- messa in servizio con la targhetta elettronica dei dati e all'interfaccia DRIVE-CLiQ

## Campo d'impiego

I motori in corrente trifase della serie 1PH8 vengono impiegati come azionamenti industriali per macchine utensili e macchine di produzione.

**Nota**

Nell'esecuzione standard i motori non sono adatti né per l'impiego in ambienti che presentano salinità o sostanze aggressive, né per l'installazione all'aperto.

Sulla base di una tecnologia accessibile i motori 1PH8 possono essere impiegati in combinazione con il sistema di azionamento SINAMICS S120 in numerose applicazioni:

- Macchine utensili compatte
- Centri di lavorazione complessi e torni
- Fresatrici completamente incapsulate
- Mandrini di fresatura con sollecitazioni elevate
- Contromandrini o utensili motorizzati per torni
- Utensili ad azionamento diretto con raffreddamento interno
- Azionamenti principali in presse ed estrusori, applicazioni di converting
- Assi rotanti nell'industria della carta e della stampa
- Impiego in impianti con gru (sala macchine)
- Troncatrici trasversali, azionamenti per aspi o avvolgitori.
- Macchine speciali

## 1.2 Caratteristiche tecniche

Le caratteristiche tecniche secondo le tabelle seguenti descrivono la versione base della serie di motori 1PH8 e valgono per le versioni asincrona e sincrona.

In base alla progettazione elettrica e meccanica la versione base può essere adattata al task di azionamento attraverso opzioni (vedere Opzioni, dati di scelta e di ordinazione).

Tabella 1- 1 Ventilazione forzata

| | | |
|---|---|---|
| Isolamento dell'avvolgimento statorico<br>secondo EN 60034–1 (IEC 60034–1) | Per una temperatura ambiente fino a 40 °C<br>AH 80 ... AH 280 Classe termica 180 (H) | |
| Raffreddamento<br>secondo EN 60034-6 (IEC 60034-6) | Ventilazione forzata<br>AH 80 ... AH 225: Ventilatore montato assialmente lato NDE<br>AH 280: Ventilatore montato radialmente lato NDE | |
| Sorveglianza della temperatura | Sensore di temperatura KTY 84 nell'avvolgimento statorico<br>AH 180 ... AH 280: KTY 84 supplementare come riserva | |
| Tensione di alimentazione del ventilatore<br>(vedere capitolo Dati tecnici) | AH 80:<br>AH 100 ... AH 160:<br>AH 180 ... AH 225:<br>AH 280: | 1 AC 230 V 50/60 Hz, 1 AC 265 V 60 Hz<br>3 AC 400 V, 50/60 Hz, 3 AC 480 V 60 Hz<br>1 AC 200 V ... 277 V, 50/60 Hz (ventilatore EC)<br>3 AC 400 V, 50/60 Hz, 3 AC 480 V 60 Hz |
| Forma costruttiva<br>secondo EN 60034-7 (IEC 60034-7) | AH 80:<br>AH 100 ... AH 280: | IM B3, IM B5<br>IM B3, IM B5, IM B35 |
| Grado di protezione<br>secondo EN 60034-5 (IEC 60034-5) | AH 80 ... AH 280:<br>AH 180 ... AH 280: | IP55<br>IP23 |
| Estremità dell'albero lato DE<br>secondo DIN 748-3 (IEC 60034-5) | Albero liscio o chiavetta<br>con chiavetta ed equilibratura con chiavetta piena o mezza chiavetta | |
| Precisione di albero e flangia<br>secondo DIN 42955 (IEC 60072-1)[1)] | AH 80 ... AH 160:<br>AH 180 ... AH 280: | Tolleranza R (ridotta)<br>Tolleranza N (normale) |
| Gradi di vibrazione<br>secondo Siemens / EN 60034-14 (IEC 60034-14) | AH 80 ... AH 160:<br>AH 180 ... AH 280: | Livello R/A<br>Livello A |
| Livello di pressione acustica<br>secondo DIN EN ISO 1680,<br>tolleranza max. +3 dB, ventilatore esterno 50 Hz | AH 80 ... AH 132: | 70 dB con frequenza impulsi nominale 4 kHz e regime di giri fino a 5000 $min^{-1}$ |
| | AH 160: | 73 dB con frequenza impulsi nominale 4 kHz e regime di giri a 5000 $min^{-1}$ |
| | AH 180 e AH 225: | 73 dB con frequenza impulsi nominale 2 kHz e regime di giri:<br>ventilazione forzata (IP55)<br>• AH180 fino a 5000 $min^{-1}$<br>• AH225 fino a 3500 $min^{-1}$<br>Ventilazione passante (IP23)<br>• AH180 fino a 3000 $min^{-1}$<br>• AH225 fino a 2000 $min^{-1}$ |
| | AH 280 | 74 dB con frequenza impulsi nominale 2 kHz e regime di giri: fino a 3300 $min^{-1}$<br>Ventilazione forzata (IP55)<br>• AH280 fino a 3300 $min^{-1}$<br>Ventilazione passante (IP23)<br>• AH280 fino a 2800 $min^{-1}$ |

| | |
|---|---|
| Esecuzione dei cuscinetti e velocità massima | (vedere capitolo "Caratteristiche meccaniche dei motori") |
| Sistemi di encoder, integrati<br>senza<br>interfaccia DRIVE-CLiQ | • Encoder assoluto EnDat 2048 S/R (encoder AM2048 S/R)<br>• Encoder incrementale sen/cos 1 Vpp 2048 S/R con tracce C e D (encoder IC2048S/R)<br>• Encoder incrementale sen/cos 1 Vpp 512 S/R senza tracce C e D (encoder IN512S/R)<br>• Encoder incrementale sen/cos 1 Vpp 256 S/R senza tracce C e D (encoder IN256S/R)<br>• Encoder incrementale HTL 1024 S/R (encoder HTL1024 S/R)<br>• Encoder incrementale HTL 2048 S/R (encoder HTL2048 S/R) |
| Sistemi di encoder, integrati<br>con<br>interfaccia DRIVE-CLiQ | • Encoder assoluto 22 bit singleturn + 12 bit multiturn (encoder AM22DQ)<br>• Encoder incrementale 22 bit con posizione di commutazione (encoder IC22DQ)<br>• Encoder incrementale 20 bit senza posizione di commutazione (encoder IC20DQ)<br>• Encoder incrementale 19 bit senza posizione di commutazione (encoder IC19DQ) |
| Collegamento | Connettore per segnale o interfaccia DRIVE-CLiQ<br>(controconnettore non compreso nella fornitura)<br>AH 80 ... AH 132: Morsettiera NDE in alto/connettore di potenza<br>AH 160 ... AH 225: Morsettiera NDE in alto<br>AH 280: Morsettiera NDE a destra |
| Targhetta dei dati tecnici | 1 pezzo fissato al motore<br>1 pezzo sciolto allegato alla morsettiera |
| Verniciatura | Verniciatura normale antracite RAL 7016 |
| Opzioni | Vedere le opzioni e i dati di scelta e di ordinazione |
| Omologazioni, secondo | cURus |

1) Concentricità dell'estremità dell'albero, coassialità della ruota di centratura e planarità della flangia di fissaggio all'asse dell'estremità dell'albero.
AH = altezza asse
S/R = Signal/Revolution
DE = Drive End (lato azionamento del motore; lato A del motore)
NDE = Non-Drive End (lato ventilatore del motore; lato B del motore)

Tabella 1- 2 Raffreddamento ad acqua

| | | |
|---|---|---|
| Isolamento dell'avvolgimento statorico<br>secondo EN 60034–1 (IEC 60034–1) | Per una temperatura d'ingresso del refrigerante fino a +30 °C<br>AH 80 ... AH 280: Classe termica 180 (H)[2)] | |
| Raffreddamento<br>secondo EN 60034-6 (IEC 60034-6) | Acqua di raffreddamento<br>max. pressione dell'acqua di raffreddamento in ingresso: 6 bar<br>Quantità di acqua di raffreddamento/filetto di raccordo sul lato NDE<br>(per ulteriori dati vedere capitolo "Caratteristiche meccaniche dei motori") | |
| Sorveglianza della temperatura | Sensore di temperatura KTY 84 nell'avvolgimento statorico<br>AH 180 ... AH 280: KTY 84 supplementare come riserva | |
| Forma costruttiva<br>secondo EN 60034-7 (IEC 60034-7) | AH 80:<br>AH 100 ... AH 280: | IM B3, IM B5<br>IM B3, IM B5, IM B35 |
| Grado di protezione<br>secondo EN 60034-5 (IEC 60034-5) | AH 80 ... AH 160:<br>AH 180 ... AH 280 | IP65<br>IP55 |
| Estremità dell'albero lato DE<br>secondo DIN 748-3 (IEC 60034-5) | Albero liscio o chiavetta<br>con chiavetta ed equilibratura con chiavetta piena o mezza chiavetta | |
| Precisione di albero e flangia<br>secondo DIN 42955 (IEC 60072-1)[1)] | AH 80 ... AH 160:<br>AH 180 ... AH 280 | Tolleranza R (ridotta)<br>Tolleranza N (normale) |
| Gradi di vibrazione<br>secondo Siemens / EN 60034-14 (IEC 60034-14) | AH 80 ... AH 160:<br>AH 180 ... AH 280 | Livello R/A<br>Livello A |
| Livello di pressione sonora<br>secondo DIN EN ISO 1680, max.<br>Tolleranza +3 dB | AH 80 ... AH 132: | 68 dB con frequenza impulsi nominale 4 kHz e regime di giri fino a 5000 $min^{-1}$ |
| | AH 160: | 69 dB con frequenza impulsi nominale 4 kHz e regime di giri fino a 5000 $min^{-1}$ |
| | AH 180 e AH 225: | 70 dB con frequenza impulsi nominale 2 o 4 kHz e regimi di giri:<br>• AH 180 fino a 5000 $min^{-1}$<br>• AH 225 fino a 4500 $min^{-1}$ |
| | AH 280: | 72 dB con frequenza impulsi nominale 2 kHz e regime di giri fino a 3300 $min^{-1}$ |
| | (per ulteriori dati vedere capitolo "Caratteristiche meccaniche dei motori") | |
| Esecuzione dei cuscinetti e velocità massima | (vedere capitolo "Caratteristiche meccaniche dei motori") | |
| Sistemi di encoder, integrati<br>senza<br>interfaccia DRIVE-CLiQ | • Encoder assoluto EnDat 2048 S/R (encoder AM2048 S/R)<br>• Encoder incrementale sen/cos 1 Vpp 2048 S/R con tracce C e D (encoder IC2048S/R)<br>• Encoder incrementale sen/cos 1 Vpp 512 S/R senza tracce C e D (encoder IN512S/R)<br>• Encoder incrementale sen/cos 1 Vpp 256 S/R senza tracce C e D (encoder IN256S/R)<br>• Encoder incrementale HTL 1024 S/R (encoder HTL1024 S/R)<br>• Encoder incrementale HTL 2048 S/R (encoder HTL2048 S/R) | |

| | |
|---|---|
| Sistemi di encoder, integrati con interfaccia DRIVE-CLiQ | • Encoder assoluto 22 bit singleturn + 12 bit multiturn (encoder AM22DQ)<br>• Encoder incrementale 22 bit con posizione di commutazione (encoder IC22DQ)<br>• Encoder incrementale 20 bit senza posizione di commutazione (encoder N20DQ)<br>• Encoder incrementale 19 bit senza posizione di commutazione (encoder N19DQ) |
| Collegamento | Connettore per segnale o interfaccia DRIVE-CLiQ (controconnettore non compreso nella fornitura)<br>AH 80 ... AH 132: Morsettiera NDE in alto/connettore di potenza<br>AH 160 ... AH 280: Morsettiera NDE in alto |
| Targhetta dei dati tecnici | 1 pezzo fissato al motore<br>1 pezzo sciolto allegato alla morsettiera |
| Verniciatura | Verniciatura normale antracite RAL 7016 |
| Opzioni | Vedere le opzioni e i dati di scelta e di ordinazione |
| Omologazioni, secondo | cURus |

1) Concentricità dell'estremità dell'albero, coassialità della ruota di centratura e planarità della flangia di fissaggio all'asse dell'estremità dell'albero.
AH = altezza asse
S/R = Signal/Revolution
DE = Driving End (lato azionamento del motore; lato A del motore)
NDE = Non Driving End (lato ventilatore del motore; lato B del motore)

2) In base alla loro costruzione i seguenti motori sono eseguiti in classe termica155 (F):
1PH8107-1□F2
1PH8138-2□F2
1PH8138-2□G2
1PH8107-1□M2
1PH8164
1PH8166
1PH8168

## 1.3 Dati per la scelta e l'ordinazione

Le integrazioni al numero di ordinazione secondo le tabelle seguenti descrivono la logica di ordinazione della serie di motori 1PH8 e valgono per i motori asincroni e sincroni.

Le integrazioni al numero di ordinazione possono essere ricavate anche dai Cataloghi PM 21N o NC 61. Corrispondono agli effettivi dati tecnici per la scelta e l'ordinazione di questo catalogo.

In forma di integrazione a PM 21N e NC 61 in questo manuale di progettazione sono integrati i dati tecnici per la scelta e per l'ordinazione nel capitolo "Dati tecnici e curve caratteristiche".

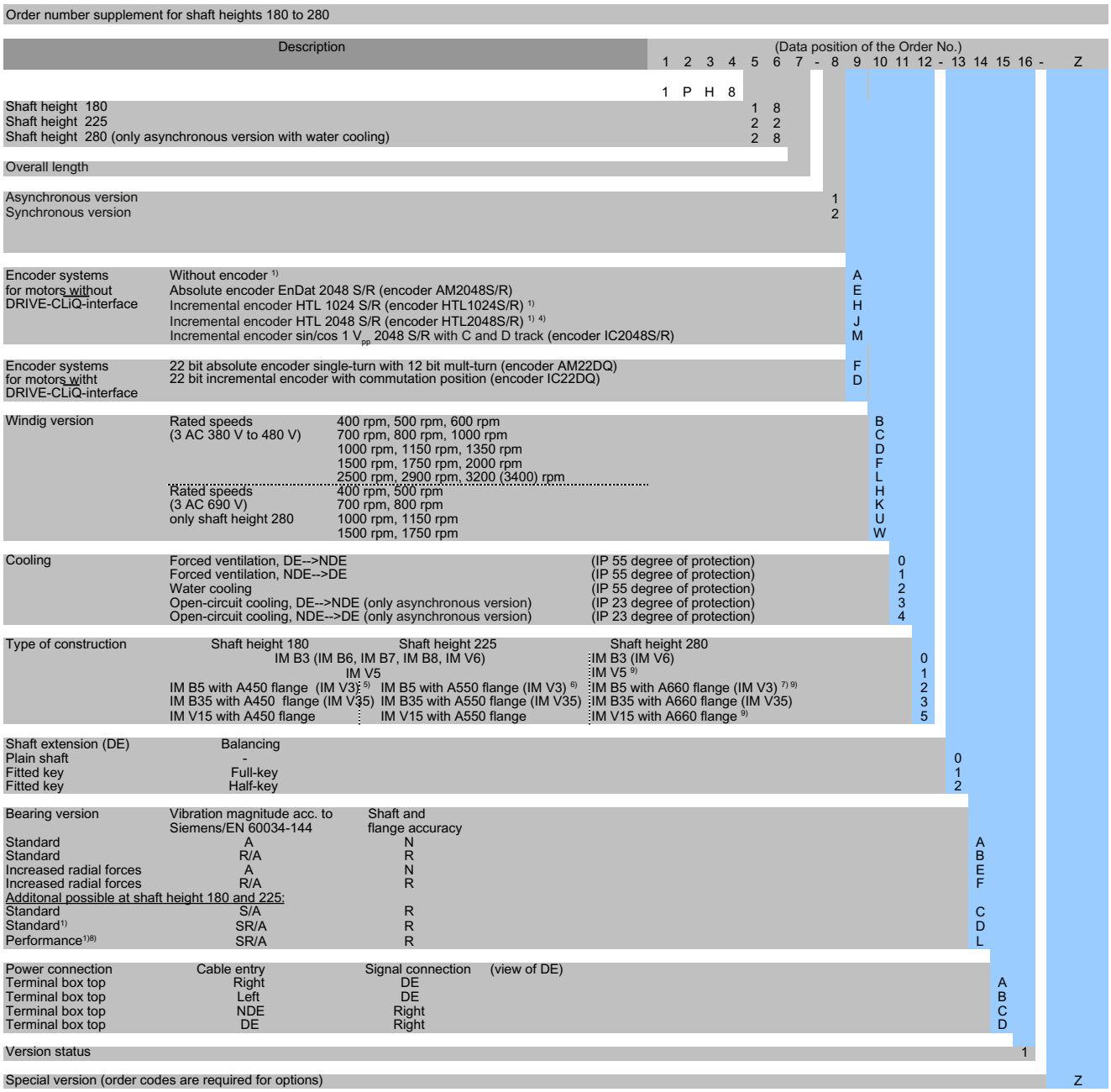
Sulla base della progettazione elettrica e meccanica è possibile ampliare le integrazioni al numero di ordinazione con le opzioni accessori.

**Order number supplement for shaft heights 80 to 160**

| Description | (Data position of the Order No.) 1 2 3 4 5 6 7 - 8 9 10 11 12 - 13 14 15 16 - Z |
|---|---|
| | 1 P H 8 |
| Shaft height 80 | 0 8 |
| Shaft height 100 | 1 0 |
| Shaft height 132 | 1 3 |
| Shaft height 160 | 1 6 |
| **Overall length** | |
| Asynchronous version | 1 |
| Synchronous version (only shaft height 132 and 160) | 2 |
| **Encoder systems for motors without DRIVE-CLiQ-interface** | |
| Without encoder [1] | A |
| Absolute encoder EnDat 2048 S/R with EnDat interface (encoder AM2048S/R) [2] | E |
| Incremental encoder HTL 1024 S/R (encoder HTL1024S/R) [1] [3] | H |
| Incremental encoder HTL 2048 S/R (encoder HTL2048S/R) [1] [4] | J |
| Incremental encoder sin/cos 1 $V_{pp}$ 2048 S/R with C and D track (encoder IC2048S/R) [2] | M |
| Incremental encoder sin/cos 1 $V_{pp}$ 512 S/R without C and D track (encoder IN512S/R) [1] [5] | T |
| Incremental encoder sin/cos 1 $V_{pp}$ 256 S/R without C and D track (encoder IN256S/R) [1] [10] | L |
| **Encoder systems for motors with DRIVE-CLiQ-interface** | |
| 22 bit absolute encoder single-turn with 12 bit mult-turn (encoder AM22DQ) [2] [12] | F |
| 22 bit incremental encoder with commutation position (encoder IC22DQ) [2] [12] | D |
| 20 bit incremental encoder without commutation position (encoder IN20DQ) [1] [5] [12] | U |
| 19 bit incremental encoder without commutation position (encoder IN19DQ) [1] [10] [12] | V |
| **Windig version** | |
| Rated speeds (3 AC 380 V to 480 V): 400 rpm, 500 rpm, 600 rpm | B |
| 1000 rpm, 1150 rpm, 1350 rpm | D |
| 1500 rpm, 1750 rpm, 2000 rpm | F |
| 2000 rpm, 2300 rpm, 2650 rpm | G |
| 2500 rpm, 2800 rpm, 3000 rpm | L |
| 3000 rpm, 3300 rpm, 3600 rpm | M |
| 4500 rpm, 5000 rpm, 5500 rpm | N |
| Star-delta connection [1] (3 AC 380 V to 480 V): 1500/4000 rpm, 2000/5000 rpm, 2500/6000 rpm | S |
| **Cooling** | |
| Forced ventilation DE -> NDE (IP 55 degree of protection) | 0 |
| Forced ventilation NDE -> DE (IP 55 degree of protection) | 1 |
| Water cooling (IP 65 degree of protection) | 2 |
| **Type of construction** | |
| IM B3 (IM V5, IM V6) | 0 |
| IM B5 (IM V1, IM V3) [14] | 2 |
| IM B35 ( IM V15, IM V35) [6] | 3 |
| **Shaft extension (DE)** Balancing | |
| Plain shaft - | 0 |
| Fitted key [11] Full-key | 1 |
| Fitted key [11] Half-key | 2 |
| Plain hollow shaft [1] [10] - | 3 |
| **Bearing version** Vibration magnitude acc. to Siemens/EN 60034-14 / Shaft and flange accuracy | |
| Standard R/A R | B |
| Standard S/A R | C |
| Standard [1] SR/A R | D |
| Performance [7] SPECIAL/B SPEZIAL | L |
| High Performance [13] SPECIAL/B SPEZIAL | M |
| Advanced Lifetime [8] S/A R | Q |
| **Power connection** Cable entry / Signal connection (view of DE) | |
| Terminal box top Right DE | A |
| Terminal box top Left DE | B |
| Terminal box top NDE Left | C |
| Power connector top [9] [12] Right DE | E |
| Power connector top [9] [12] Left DE | F |
| Power connector top [9] [12] NDE Left | G |
| Power connector top [9] [12] DE Left | H |
| **Version status** | 1 |
| **Special version (order codes are required for options)** | Z |

1) Only possible with 8th data position "1" (asynchronous variant)
2) Limited to $n_{max}$ = 12.000 rpm
3) Limited to $n_{max}$ = 9.000 rpm
4) Limited to $n_{max}$ = 4.600 rpm
5) Limited to $n_{max}$ = 15.000 rpm
6) Only possible with shaft heights 100, 132 and 160
7) Only possible with 8th data position "1" (asynchronous variant)
   Shaft height 80: limited to $n_{max}$ = 15.000 rpm
   Shaft height 100: limited to $n_{max}$ = 12.000 rpm
   Shaft height 132: limited to $n_{max}$ = 10.000 rpm
   Shaft height 160: limited to $n_{max}$ = 9.000 $min^{-1}$; not possible with 12th data position "2" (IM B5)
8) Limited to $n_{max}$ = 5.000 rpm, shaft height 132: $n_{max}$ = 4.500 rpm, shaft height 160: $n_{max}$ = 4.000 rpm
9) For shaft height 100: power connector only possible up to a max. static current of $I_0$ = 36 A
   For shaft height 132: power connector only possible up to a max. static current of $I_0$ = 85 A
   For shaft height 160: power connector not possible
10) Only possible with 14th data position: "L", "M" and 9th data position: "L", "V"
11) Not possible with 14th data position: "M"
12) Not possible for motors to star-delta connection (10th data position: "S")
13) Only possible with 8th data position "1" (asynchronous variant)
    Shaft height 80: limited to $n_{max}$ = 20.000 rpm
    Shaft height 100: limited to $n_{max}$ = 18.000 rpm
    Shaft height 132: limited to $n_{max}$ = 15.000 rpm
    Shaft height 160: limited to $n_{max}$ = 10.000 rpm; not possible with 12th data position: "2" (IM B5)
14) Not possible for shaft height 160 and 14th data position: "L", "M"

Figura 1-1 Integrazione al numero di ordinazione per AH 80 ... AH 160




1) Only possible with 8th data position "1" (asynchronous variant)

4) Limited to $n_{max}$ = 4.600 rpm
5) Limited to $n_{max}$ = 3.000 rpm, only possible with 14th data position "L" (Performance)
6) Limited to $n_{max}$ = 2.500 rpm, only possible with 14th data position "L" (Performance)
7) Limited to $n_{max}$ = 2.000 rpm
8) Only possible with shaft height 180: Limited to $n_{max}$ = 7.500 rpm not possible with 12th data position "2" (IM B5) and 11th data position “3“ and “4“ (open-circuit cooling)
Only possible with shaft height 225: Limited to $n_{max}$ = 6.000 rpm, not possible with 12th data position "2" (IM B5) and 11th data position “3“ and “4“ (open-circuit cooling)
9) Only possible with 14th data position "A" or "B" (Standard-storage)

Figura 1-2 Integrazione al numero di ordinazione per AH 180 ... AH 280

**Order number supplement for shaft heights 280**

| Description | | | (Data position of the Order No.) 1 2 3 4 5 6 7 - 8 9 10 11 12 - 13 14 15 16 - Z |
|---|---|---|---|
| | | | 1 P H 8 |
| Shaft height 280 (Forced ventilation with Open-circuit cooling) | | | 2 8 |
| Overall length | | | |
| Asynchronous version | | | 1 |
| Encoder systems for motors without DRIVE-CLiQ-interface | Without encoder | | A |
| | Absolute encoder EnDat 2048 S/R (encoder AM2048S/R) | | E |
| | Incremental encoder HTL 1024 S/R (encoder HTL1024S/R) | | H |
| | Incremental encoder HTL 2048 S/R (encoder HTL2048S/R) | | J |
| | Incremental encoder sin/cos 1 $V_{pp}$ 2048 S/R with C and D track (encoder IC2048S/R) | | M |
| Encoder systems for motors with DRIVE-CLiQ-interface | 22 bit absolute encoder single-turn with 12 bit mult-turn (encoder AM22DQ) | | F |
| | 22 bit incremental encoder with commutation position (encoder IC22DQ) | | D |
| Externally mounted encoder systems | Incremental encoder HTL 1024 S/R POG 10 (Baumer-Huebner), prepared for attachment[1] | | K |
| Windig version | | Shaft height 280 | |
| | Rated speeds (3 AC 380 V to 480 V) | 400 rpm, 500 rpm, 600 rpm | B |
| | | – | Q |
| | | 700 rpm, 800 rpm, 1000 rpm | C |
| | | 1000 rpm, 1150 rpm, 1350 rpm | D |
| | | 1500 rpm, 1750 rpm, 2000 rpm | F |
| | Rated speeds (3 AC 690 V) | 400 rpm, 500 rpm | H |
| | | 700 rpm, 800 rpm | K |
| | | 1000 rpm, 1150 rpm | U |
| | | – | V |
| | | 1500 rpm, 1750 rpm | W |
| Cooling | Forced ventilation | (IP 55 degree of protection) | 1 |
| | Forced ventilation | (Open-circuit cooling IP 23 degree of protection) | 4 |
| Type of construction | Shaft height 280 | | |
| | IM B3 (IM V6) | | 0 |
| | IM V5[4] | | 1 |
| | IM B5 with A660 flange (IM V3)[4] | | 2 |
| | IM B35 with A660 flange (IM V35) | | 3 |
| | IM V15 with A660 flange[4] | | 5 |
| Shaft extension (DE) | Balancing | | |
| Plain shaft | – | | 0 |
| Fitted key | Full-key | | 1 |
| Fitted key | Half-key | | 2 |
| Bearing version | Vibration magnitude acc. to Siemens/EN 60034-14 | Shaft and flange accuracy | |
| Standard | A | N | A |
| Standard | R/A | R | B |
| Erhöhte Radialkräfte | A | N | E |
| Erhöhte Radialkräfte | R/A | R | F |

| Power connection | Cable entry | Signal connection | External fan (view of DE) | 15 | 16 - Z |
|---|---|---|---|---|---|
| Terminal box NDE right | Bottom | DE | | U | |
| | | | NDE on top, air inlet of NDE, air flow direction NDE-->DE | | – |
| | | | NDE on the left, air inlet of NDE, air flow direction NDE-->DE | | G00 |
| Terminal box NDE left | Bottom | DE | | V | |
| | | | NDE on top, air inlet of NDE, air flow direction NDE-->DE | | – |
| | | | NDE on the right, air inlet of NDE, air flow direction NDE-->DE | | G02 |
| Terminal box NDE top | Right | DE | | W | |
| | | | NDE on the left, air inlet of NDE, air flow direction NDE-->DE | | G00 |
| | | | NDE on the right, air inlet of NDE, air flow direction NDE-->DE | | G02 |
| Terminal box DE top[2] | Right | NDE | | X | |
| | | | NDE on top, air inlet of NDE, air flow direction NDE-->DE[2][3] | | – |
| | | | NDE on the left, air inlet of NDE, air flow direction NDE-->DE[2] | | G00 |
| | | | NDE on the right, air inlet of NDE, air flow direction NDE-->DE[2] | | G02 |
| Version status | | | | 1 | |
| Special version (order codes are required for options) | | | | | Z |

1) When placing an order, please also select the options H56 or G80
2) Only possible with 12th data position: "0" (IM B3) and "1" (IM V5)
3) Only possible for assignments with terminal box 1XB7712-P...
4) Only possible with 14th data position: "A" and "B" (Standard bearing)

Figura 1-3 Codice di ordinazione per AH 280

**Order number supplement for shaft heights 80 to 160 + holding brake DE**

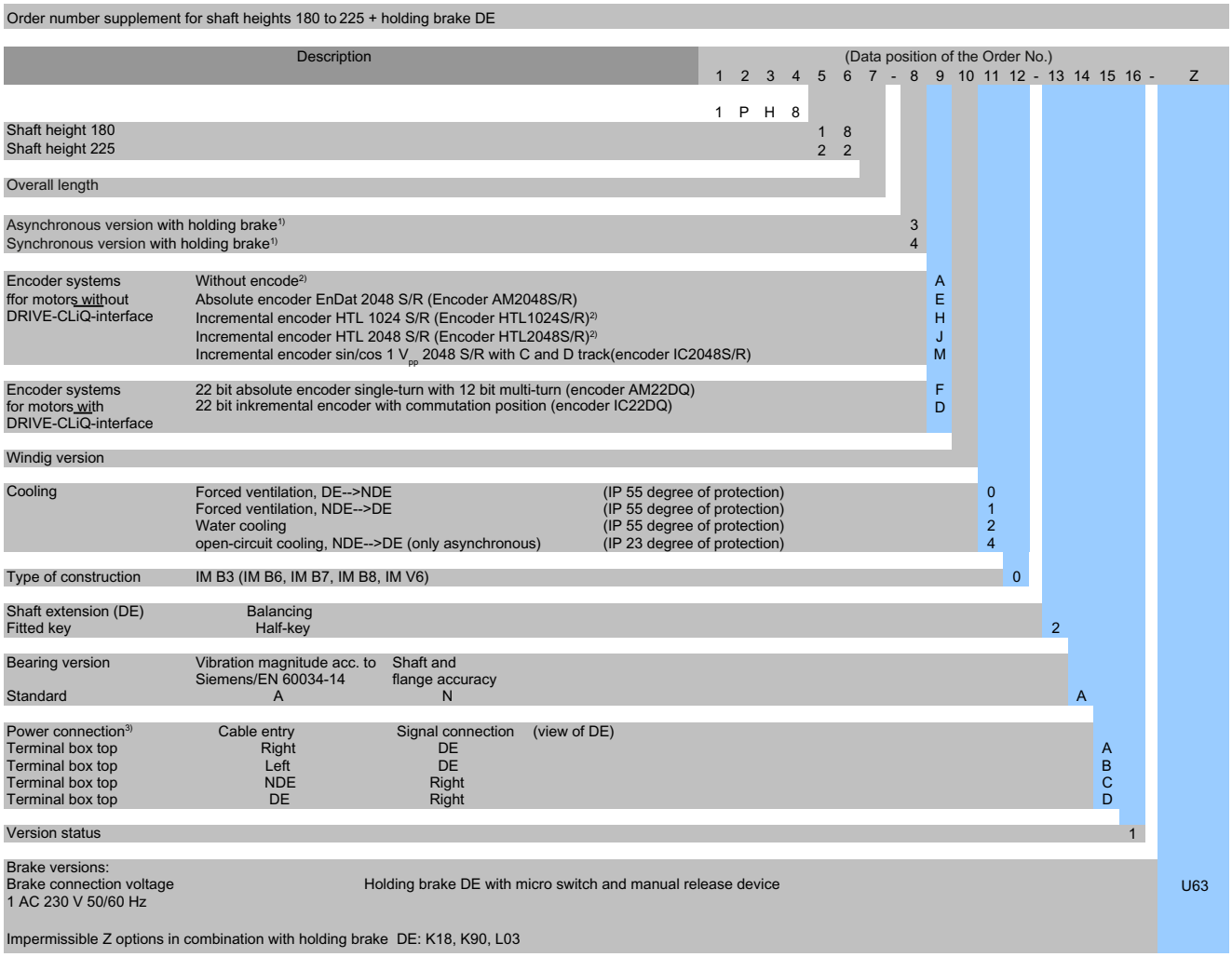
| Description | (Data position of the Order No.) 1 | 2 | 3 | 4 | 5 | 6 | 7 | - | 8 | 9 | 10 | 11 | 12 | - | 13 | 14 | 15 | 16 | - | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | P | H | 8 | | | | | | | | | | | | | | | | |
| Shaft height 80 | | | | | 0 | 8 | | | | | | | | | | | | | | |
| Shaft height 100 | | | | | 1 | 0 | | | | | | | | | | | | | | |
| Shaft height 132 | | | | | 1 | 3 | | | | | | | | | | | | | | |
| Shaft height 160 | | | | | 1 | 6 | | | | | | | | | | | | | | |
| Overall length | | | | | | | | | | | | | | | | | | | | |
| Asynchronous version with holding brake[1] | | | | | | | | | 3 | | | | | | | | | | | |
| Synchronous version (only shaft height 132 and 160)[1] | | | | | | | | | 4 | | | | | | | | | | | |
| Encoder systems for motors without DRIVE-CLiQ-interface: Without encoder[2] | | | | | | | | | | A | | | | | | | | | | |
| Absolute encoder EnDat 2048 S/R with EnDat interface (encoder AM2048S/R) | | | | | | | | | | E | | | | | | | | | | |
| Incremental encoder HTL 1024 S/R (encoder HTL1024S/R)[2] | | | | | | | | | | H | | | | | | | | | | |
| Incremental encoder HTL 2048 S/R (encoder HTL2048S/R)[2] | | | | | | | | | | J | | | | | | | | | | |
| Incremental encoder sin/cos 1 $V_{pp}$ 2048 S/R with C and D track (encoder IC2048S/R) | | | | | | | | | | M | | | | | | | | | | |
| Encoder systems for motors with DRIVE-CLiQ-interface: 22 bit absolute encoder single-turn with 12 bit mult-turn (encoder AM22DQ)[3] | | | | | | | | | | F | | | | | | | | | | |
| 22 bit incremental encoder with commutation position (encoder IC22DQ)[3] | | | | | | | | | | D | | | | | | | | | | |
| Windig version | | | | | | | | | | | | | | | | | | | | |
| Cooling: Forced ventilation DE -> NDE (IP 55 degree of protection) | | | | | | | | | | | | 0 | | | | | | | | |
| Forced ventilationNDE -> DE (IP 55 degree of protection) | | | | | | | | | | | | 1 | | | | | | | | |
| Water cooling (IP 55 degree of protection)[4] | | | | | | | | | | | | 2 | | | | | | | | |
| Type of construction: IM B5 (IM V1, IM V3)[5] | | | | | | | | | | | | | 2 | | | | | | | |
| IM B35 ( IM V15, IM V35) | | | | | | | | | | | | | 3 | | | | | | | |
| Shaft extension (DE) Balancing: Plain shaft - | | | | | | | | | | | | | | | 0 | | | | | |
| Fitted key Half-key | | | | | | | | | | | | | | | 2 | | | | | |
| Bearing version: Vibration magnitude acc. to Siemens/EN 60034-14 / Shaft and flange accuracy | | | | | | | | | | | | | | | | | | | | |
| Standard: A / N | | | | | | | | | | | | | | | | A | | | | |
| Advanced Lifetime: A / N | | | | | | | | | | | | | | | | P | | | | |
| Power connection[6] Cable entry / Signal connection (view of DE) | | | | | | | | | | | | | | | | | | | | |
| Terminal box top: Right / DE | | | | | | | | | | | | | | | | | A | | | |
| Terminal box top: Left / DE | | | | | | | | | | | | | | | | | B | | | |
| Terminal box top: NDE / Left | | | | | | | | | | | | | | | | | C | | | |
| Power connector top[3][7]: Right / DE | | | | | | | | | | | | | | | | | E | | | |
| Power connector top[3][7]: Left / DE | | | | | | | | | | | | | | | | | F | | | |
| Power connector top[3][7]: NDE / Left | | | | | | | | | | | | | | | | | G | | | |
| Power connector top[3][7]: DE / Left | | | | | | | | | | | | | | | | | H | | | |
| Version status | | | | | | | | | | | | | | | | | | 1 | | |

| Brake design: | | |
|---|---|---|
| Brake input voltage 1 AC 230 V 50/60 Hz | Holding brake DE | U60 |
| | Holding brake DE with micro switch | U61 |
| | Holding brake DE with manual release device | U62 |
| | Holding brake DE with micro switch and manual release device | U63 |
| Brake input voltage DC 24 V | Holding brake DE | U65 |
| | Holding brake DE with micro switch | U66 |
| | Holding brake DE with manual release device | U67 |
| | Holding brake DE with micro switch and manual release device | U68 |

Impermissible Z options in combination with holding brake DE: K18, V91

1) In addition, the holding brake version must be ordered with a U option
   Shaft height 80: limited to $n_{max}$ = 5.000 rpm
   Shaft height 100: limited to $n_{max}$ = 5.000 rpm
   Shaft height 132: limited to $n_{max}$ = 4.500 rpm
   Shaft height 160: limited to $n_{max}$ = 4.000 rpm
2) Only possible with 8th data position "1" (asynchronous variant)
3) Not possible for motors to star-delta connection (10th data position: "S")
   Note: Only possible as from SINUMERIK V 4.4
4) On account of the holding brake, the degree of protection is limited to IP 55
5) Not possible for shaft height 160
6) The holding brake can only be connected via the brake terminal box (above)
7) Power connector for motor only (not for holding brake):
   For shaft height 100: power connector only possible up to a max. static current of $I_0$= 36 A
   For shaft height 132: power connector only possible up to a max. static current of $I_0$ = 85 A
   For shaft height 160: power connector not possible

Figura 1-4 Codice di ordinazione per AH80 ... 160 + freno di stazionamento




1) In addition, the holding brake version must be ordered with a U option
Shaft height 180: limited to $n_{max}$ = 3.500 rpm
Shaft height 225: limited to $n_{max}$ = 3.100 rpm
2) Only possible with 8th data position "1" (asynchronous variant)
3) The holding brake can only be connected via the brake terminal box (above)

Figura 1-5 Codice di ordinazione per AH 180 e 225 + freno di stazionamento

## Vedere anche

Caratteristiche tecniche (Pagina 18)

## 1.4 Indicazioni sulla targhetta dei dati tecnici (targhetta identificativa)

La targhetta dei dati tecnici (targhetta identificativa) riporta i dati tecnici validi per il motore fornito.

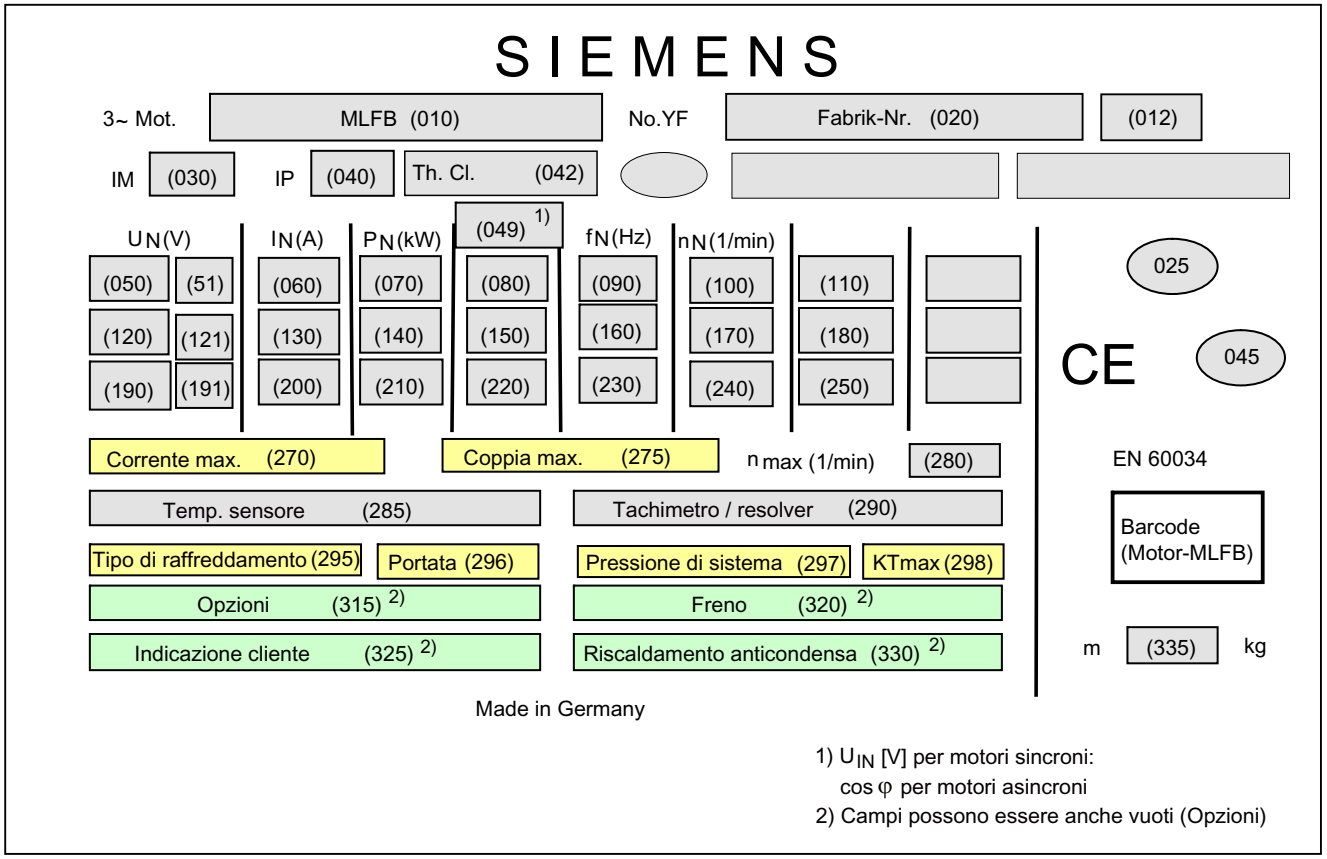



Figura 1-6 Schema di principio della targhetta dei dati

Tabella 1- 3 Elementi sulla targhetta dei dati

| N. | Descrizione | N. | Descrizione |
|---|---|---|---|
| 010 | MLFB | 180 | Modo operativo (2) |
| 012 | Numero progressivo | 185 | Numero di codice 2 |
| 020 | Num. di serie | 190 | Tensione nominale $U_N$ (3) |
| 025 | Marchio UL | 191 | Tipo di circuito 3 |
| 030 | Forma costruttiva | 200 | Corrente nominale $I_N$ (3) |
| 040 | Grado di protezione | 210 | Potenza nominale $P_N$ (3) |
| 042 | Classe d'isolamento | 220 | cos φ (3) |
| 045 | Contrassegno di equilibratura | 230 | Frequenza nominale $f_N$ (3) |
| 049 | per motori sincroni: tensione indotta con numero di giri nominale $U_{IN}$ | 240 | Velocità nominale $n_N$ (3) |
| | per motori asincroni: cos φ | 250 | Modo operativo (3) |
| 050 | Tensione nominale $U_N$ (1) | 255 | Numero di codice 3 |
| 051 | Tipo di circuito 1 | 270 | Corrente massima $I_{max}$ 1) |
| 060 | Corrente nominale $I_N$ (1) | 275 | Coppia massima $M_{max}$ 1) |
| 070 | Potenza nominale $P_N$ (1) | 280 | Velocità massima $n_{max}$ |
| 080 | cos φ (1) | 285 | Sensore di temperatura |
| 090 | Frequenza nominale $f_N$ (1) | 290 | Contagiri o resolver |
| 100 | Velocità nominale $n_N$ (1) | 295 | Tipo di raffreddamento |
| 110 | Modo operativo (1) | 296 | Portata l/min ($m^3/s$) 1) |
| 115 | Numero di codice 1 | 297 | Pressione di sistema |
| 120 | Tensione nominale $U_N$ (2) | 298 | Temperatura massima del mezzo refrigerante |
| 121 | Tipo di circuito 2 | 315 | Opzioni (I) |
| 130 | Corrente nominale $I_N$ (2) | 320 | Opzioni (II) |
| 140 | Potenza nominale $P_N$ (2) | 325 | Indicazione opzionale del cliente |
| 150 | cos φ (2) | 330 | Dispositivo di riscaldamento anticondensa |
| 160 | Frequenza nominale $f_N$ (2) | 335 | Peso |
| 170 | Velocità nominale $n_N$ (2) | | |

1) Dato attualmente non riportato sulla targhetta dei dati tecnici

# 1.5 Opzioni

## Codici e descrizione opzione

| Order code | Description of option<br><br>When ordering a motor with options, -Z should be added to the order number.<br>The order code should also be specified for each additional required option.<br>Order codes must not be repeated in plain text in the order. | For use with motors | | |
|---|---|---|---|---|
| | | Shaft height 80 up to 160 | Shaft height 180 up to 280 | 280 only for Forced ventilation (11th data position "1" or "4") |
| A12 | Additional PTC thermistor chain for alarm and tripping<br>(only possible for version with terminal box) | ✓ | ✓ | ✓ |
| A25 | Additional KTY84 temperature sensor as reserve connected to signal terminal strip<br>(only possible for version with terminal box) | ✓ | Standard | Standard |
| B02 | Test certifikate for ordered motor | ✓ | Standard | Standard |
| G00 | External fan NDE left (possible if 15th data position is "U", "W" or "X") | – | – | ✓ |
| G02 | External fan NDE right (possible if 15th data position is "V", "W" or "X") | – | – | ✓ |
| G14 | With air filter (possible if 11th data position is "1" or "4") | only for sh 132 and sh 160 | ✓ | ✓ |
| G80 | Mounting of a POG 10 incremental encoder supplied by customer (possible if 9th data position is K) | – | – | ✓ |
| H56 | Mounting of the POG 10 D 1024 incremental encoder (encoder HTL1024S/R)<br>(possible if 9th data position is K) | – | – | ✓ |
| K08 | Encoder connector mounted opposite (not possible if 15th data position is "X") | – | ✓ | ✓ |
| K09 | Terminal box or power connector NDE right | only for sh 100 [1] up to sh 160 | – | – |
| | Terminal box NDE right, cable entry DE,<br>signal connection top (possible if 15th data position is "A") | – | ✓ | – |
| K10 | Terminal box or power connector NDE left | only for sh 100 [1] up to sh 160 | – | – |
| | Terminal box NDE left, cable entry DE,<br>signal connection top (possible if 15th data position is "A") | – | ✓ | – |
| K16 | Second shaft extension (AH 280 d x l: 95 mm x 170 mm) (possible if 9th data position is "A" or "G" and 12th data position is "0" or "3") | – | – | ✓ |
| K18 | Radial shaft sealing ring DE [2] | ✓ | ✓ | – |
| K40 | Regreasing system, DE and NDE | – | only for sh 180 and sh 225 | Standard |
| K45 | 230 V AC standstill heating | – | – | ✓ |
| K69 | Tube connection prepared NDE on the right (only possible with forced ventilation, not for G00 or G02) | – | – | ✓ |
| K70 | Tube connection prepared NDE on the left (only possible with forced ventilation, not for G00 or G02) | – | – | ✓ |
| K71 | Tube connection prepared NDE on the top (only possible with forced ventilation, not for G00 or G02) | – | – | ✓ |
| K80 | Axial pipe connection NDE (only possible with forced ventilation) | ✓ | only for sh 180 and sh 225 | option K69, K70, K71 |
| K83 | Rotation of terminal box by +90 degrees (possible in combination with options K09 or K10 or 15th data position is "U", "V" or "W") | – | ✓ | ✓ |
| K84 | Rotation of terminal box by -90 degrees (possible in combination with options K09 or K10 or 15th data position is "U", "V", "W" or "X") | – | ✓ | ✓ |
| K85 | Rotation of terminal box by +180 degrees (possible in combination with options K09 or K10 or 15th data position is "U", "V", "W" or "X") | – | ✓ | ✓ |
| K90 | Version with flange size A400 (possible if 12th data position "2", "3" and "5") | – | only for sh 180 | – |
| L00 | Replace terminal box (standard) with the next largest terminal box<br>Note dimension implications, see CAD CREATOR. | – | ✓ | ✓ |
| L12 | Condensate draining hole | – | Standard for water cooling | only for 11th data position "1" |
| L27 | NDE bearing in insulated version | – | Standard for sh 225/280 | Standard |
| L72 | Shaft made of special purpose steel | – | – | ✓ |
| L74 | Fan in IP65 degree of protection [3] | ✓ | – | – |

1) Not possible with 12th data position "2" (IM B5 type of construction).

2) Only appropriate if oil spray or oil vapor is occasionally deposited on the sealing ring.
Radial shaft sealing ring is not possible with: 14th data position "E", "F" and "L".

3) Regardless of the degree of protection, at high levels of atmospheric pollution, the fan must be cleaned.

4) Not possible for 1PH822 and 1XB7712-P03 terminal box.

| | |
|---|---|
| ✓ | Option possible |
| – | not possible |

Codici e descrizione opzione (continuazione)

| Order code | Description of option<br>When ordering a motor with options, -Z should be added to the order number.<br>The order code should also be specified for each additional required option.<br>Order codes must not be repeated in plain text in the order. | For use with motors | | |
|---|---|---|---|---|
| | | Shaft height 80 up to 160 | Shaft height 180 up to 280 | 280 only for Forced ventilation (11th data position "1" or "4") |
| M83 | Additional thread for a setting screw on motor feet (possible if 12th data position is "0" or "3") | – | – | ✓ |
| P00 | Undrilled cable entry plate | – | ✓ | not for 1XB7820-P00 |
| P01 | Cable entry plate 3 x M63 x 1.5 | – | not for 1XB7700-P02 1XB7712-P03 | only for 1XB7712-P03 |
| P02 | Cable entry plate 3 x M75 x 1.5 | – | only for 1XB7712-P03 | only for 1XB7712-P01 1XB7712-P03 |
| P03 | Cable entry plate 4 x M75 x 1.5 | – | – | only for 1XB7712-P01 |
| P04 | Cable entry plate 4 x M63 x 1.5 | – | only for 1XB7712-P03 | only for 1XB7712-P01 1XB7712-P03 |
| U60 | Holding brake 230 V | ✓ | – | – |
| U61 | Holding brake 230 V with micro switch | ✓ | – | – |
| U62 | Holding brake 230 V with Handlüfthebel | ✓ | – | – |
| U63 | Holding brake 230 V with micro switch and manual lifting lever | ✓ | only for AH 180 and AH 225 | – |
| U65 | Holding brake DC 24 V | ✓ | – | – |
| U66 | Holding brake DC 24 V with micro switch | ✓ | – | – |
| U67 | Holding brake DC 24 V with manual lifting lever | ✓ | – | – |
| U68 | Holding brake DC 24 V with micro switch and manual lifting lever | ✓ | – | – |
| V90 | 1PH7-compatible shaft extension (d × l: 42 mm × 110 mm (1.65 in × 4.33 in))<br>(Note reduced radial forces) | only for AH 132 | – | – |
| V91 | 1FT6-compatible shaft extension (d x l: 48 mm x 82 mm) (1.89 in x 3.23 in)) | only for AH 132 | – | – |
| V92 | 1PH7184-/1PL6184-compatible shaft extension (d x l: 60 mm x 140 mm) (2.36 in x 5.51 in)) | – | only for1PH8184 | – |
| Y84 | Customer data on the rating plate (max. 30 characters) | ✓ | ✓ | ✓ |
| – | Paint finish (Anthracite RAL 7016) | Standard | Standard | Standard |
| X01 | Paint finish: Jet black RAL 9005 | ✓ | ✓ | ✓ |
| X02 | Paint finish: Cream white RAL 9001 | ✓ | ✓ | ✓ |
| X03 | Paint finish: Reseda green RAL 6011 | ✓ | ✓ | ✓ |
| X04 | Paint finish: Pebble gray RAL 7032 | ✓ | ✓ | ✓ |
| X05 | Paint finish: Sky blue RAL 5015 | ✓ | ✓ | ✓ |
| X06 | Paint finish: Light ivory RAL 1015 | ✓ | ✓ | ✓ |
| X08 | Paint finish: White aluminum RAL 9006 | ✓ | ✓ | ✓ |
| K24 | Primer | Pale green | Red brown | Red brown |
| K23 | Special paint finish worldwide: Primer and paint finish in anthracite RAL 7016 | ✓ | ✓ | ✓ |
| K23 + X.. | Special paint finish worldwide: Primer and paint finish can be selected from X01 to X08 | ✓ | ✓ | ✓ |

| | |
|---|---|
| ✓ | Option possible |
| – | not possible |

## Vedere anche

Dati per la scelta e l'ordinazione (Pagina 21)

# Progettazione

# 2

## 2.1 Software di progettazione

### 2.1.1 Tool di progettazione SIZER for SIEMENS Drives

#### Panoramica

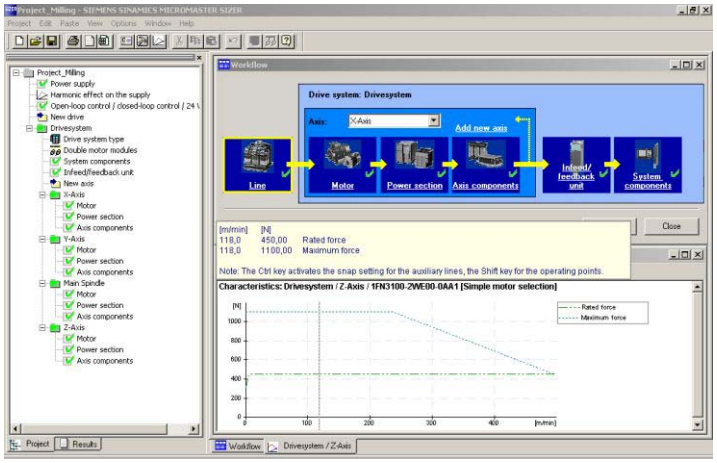



Figura 2-1 SIZER for SIEMENS Drives

Per facilitare la progettazione della famiglia di azionamenti SINAMICS viene messo a disposizione il tool di progettazione SIZER for SIEMENS Drives. Questo tool fornisce un supporto per il dimensionamento tecnico dei componenti hardware e firmware necessari per un compito di azionamento. SIZER for SIEMENS Drives comprende la progettazione del sistema di azionamento completo e consente la gestione non solo di semplici azionamenti singoli ma anche di quelli complessi multiasse.

SIZER for SIEMENS Drives supporta tutte le fasi della progettazione in un workflow:

- Progettazione dell'alimentazione da rete
- Dimensionamento dei motori e dei riduttori, compreso il calcolo degli elementi meccanici di trasmissione
- Progettazione dei componenti dell'azionamento
- Elencazione degli accessori necessari
- Scelta delle opzioni di performance lato rete e lato motore

Nella realizzazione di SIZER for SIEMENS Drives è stata data particolare rilevanza alla semplicità di utilizzo e alla funzionalità complessiva orientata ai compiti relativi agli azionamenti. Una guida utente completa facilita l'approccio al tool. Informazioni di stato visualizzano in ogni momento lo stato d'avanzamento della progettazione.

La superficie operativa di SIZER for SIEMENS Drives è realizzata in tedesco, inglese, francese e italiano. La guida in linea è disponibile anche in giapponese, ma con superficie operativa in inglese. La configurazione dell'azionamento viene memorizzata in un progetto. Le funzioni ed i componenti utilizzati sono rappresentati in una struttura ad albero in base alla loro correlazione. La rappresentazione d'insieme del progetto consente la progettazione di sistemi d'azionamento nonché la copiatura/l'immissione/la modifica di azionamenti già progettati.

Risultati della progettazione sono:

- Lista dei componenti necessari (Export in Excel)
- Dati tecnici del sistema
- Caratteristica
- Descrizione delle ripercussioni in rete
- Informazioni sulla costruzione dei componenti del controllo e dell'azionamento
- Considerazioni energetiche dei sistemi di azionamento progettati

Questi risultati sono visualizzati in un albero dei risultati e possono essere utilizzati anche a scopo di documentazione. Quale supporto per l'utente è disponibile un online-help tecnologico, che fornisce le seguenti informazioni:

- dati tecnici dettagliati
- informazioni sui sistemi d'azionamento e sui relativi componenti
- criteri decisionali per la scelta dei componenti.

Tabella 2- 1 Numero di ordinazione per SIZER for SIEMENS Drives

| Tool di progettazione | Numero di ordinazione (MLFB) dei DVD |
|---|---|
| SIZER for SIEMENS Drives<br>tedesco/inglese | 6SL3070-0AA00-0AG0 |

## Requisiti minimi del sistema

- PC o PG con Pentium™ III 800 MHz (preferibilmente > 1 GHz)
- 512 Mbyte RAM (preferibilmente 1 GB)
- Almeno 4,1 GB di memoria libera su disco rigido
- 100 MB di memoria libera aggiuntiva sull'unità di sistema di Windows
- Risoluzione schermo 1024×768 pixel (preferibilmente1280 x 1024 pixel)
- Windows™ 7 Professional (32/64 Bit), 7 Enterprise (32/64 Bit) 7 Ultimate (32/64 Bit), 7 Home (32/64 Bit), Vista Business, XP Professional SP2, XP Home SP2, XP 64 Bit SP2
- Microsoft Internet Explorer 5.5 SP2

## 2.1.2 Software di azionamento/di messa in servizio STARTER

Il tool di messa in servizio STARTER offre

- Messa in servizio
- Ottimizzazione
- la diagnosi

Tabella 2- 2 Numero di ordinazione per STARTER

| Tool di messa in servizio | Numero di ordinazione (MLFB) dei DVD |
|---|---|
| STARTER<br>tedesco, inglese, francese, italiano, spagnolo | 6SL3072-0AA00-0AG0 |

### Requisiti minimi del sistema

- Hardware
  - PG o PC con Pentium III min. 800 MHz (preferibilmente > 1 GHz)
  - Memoria di lavoro 512 MB (preferibilmente 1 GB)
  - Risoluzione schermo 1024 × 768 pixel, 16 bit profondità colore
  - Memoria libera sul disco rigido: min. 2 Gbyte;
- Software
  - Microsoft Windows 2000 SP4
  - Microsoft Windows Server 2003 SP1 e SP2 (PCS7)
  - Microsoft Windows XP Professional SP2 e SP3
  - Microsoft Windows VISTA Business SP1 1)
  - Microsoft Windows VISTA Ultimate SP1 1)
  - Microsoft Internet Explorer V6.0 o successivo

1) DCC non utilizzabile.
Con questo sistema operativo STARTER può essere utilizzato solo senza l'opzione DCC.

### 2.1.3 Tool di messa in servizio SinuCom

Il software di messa in servizio SinuCom, di facile utilizzo, permette di effettuare la messa in servizio di controllori SINUMERIK in combinazione con gli azionamenti SINAMICS S120 e SIMODRIVE 611 digital.

Tabella 2- 3 Numero di ordinazione per SinuCom

| Tool di messa in servizio | Numero di ordinazione (MLFB) dei DVD |
|---|---|
| SinuCom<br>tedesco, inglese, francese, italiano, spagnolo | 6FC5862-2YC00-0YA0 |

## 2.2 Procedura di progettazione

### Motion Control

I motori 1PH8 sono ottimizzati per svolgere compiti di movimentazione. Essi eseguono movimenti lineari o rotanti nell'ambito di un ciclo di lavoro predefinito. Tutte le movimentazioni devono essere eseguite in modo ottimale dal punto di vista temporale.

I motori 1PH8 devono pertanto soddisfare le seguenti esigenze:

- elevata dinamica, cioè tempi di risposta brevi
- sovraccaricabilità, cioè elevata riserva di accelerazione
- ampio campo di regolazione, cioè elevata risoluzione per posizionamenti precisi.

La seguente tabella "Procedura di progettazione" vale per motori sincroni e asincroni.

## Procedura generale per la realizzazione di un progetto

La base della progettazione è costituita dalla descrizione funzionale della macchina. La definizione dei componenti è legata alle performance richieste e viene di solito eseguita nelle seguenti fasi:

Tabella 2- 4 Procedura di progettazione

| Passo | Descrizione delle attività di progettazione | |
|---|---|---|
| 1. | Chiarimenti sul tipo di azionamento | Vedere il capitolo successivo. |
| 2. | Definizione delle condizioni al contorno e integrazione nell'automazione | |
| 3. | Definizione del carico, calcolo della coppia max. di carico e definizione del motore | |
| 4. | Definizione del SINAMICS Motor Module | Vedere il catalogo |
| 5. | Ripetizione delle fasi 3 e 4 per altri assi | |
| 6. | Calcolo della potenza del circuito intermedio necessaria e definizione del SINAMICS Line Module | |
| 7. | Definizione delle opzioni di potenza lato rete (interruttore principale, fusibili, filtri di rete ecc.) | |
| 8. | Definizione delle performance di regolazione necessarie e scelta della Control Unit, definizione del cablaggio dei componenti | |
| 9. | Definizione di ulteriori componenti del sistema (ad es. resistenze di frenatura) | |
| 10. | Calcolo del fabbisogno di corrente per l'alimentazione a 24 V DC dei componenti e definizione degli alimentatori (apparecchi SITOP, Control Supply Module) | |
| 11. | Definizione dei componenti per la tecnica di collegamento | |
| 12. | Struttura dei componenti del gruppo di azionamento | |
| 13. | Calcolo delle sezioni necessarie dei cavi per il collegamento della rete e dei motori | |
| 14. | Osservare gli spazi liberi da rispettare nel montaggio del sistema | |

## Chiarimenti sul tipo di azionamento

La scelta del motore avviene sulla base della coppia necessaria che è definita dal tipo di impiego come p.es. azionamenti di nastri trasportatori, di piattaforme di sollevamento, per banchi prova, per centrifughe, per acciaierie e cartiere, di avanzamento o per mandrini. Si devono inoltre tenere in considerazione i riduttori per la trasmissione del movimento o per adattare la velocità del motore e la sua coppia alle caratteristiche del carico.

Per il calcolo della coppia che il motore deve fornire devono essere noti, oltre alla coppia di carico che è definita dal tipo di applicazione, anche i seguenti dati meccanici:

- Masse movimentate
- Diametro della ruota motrice
- passo della vite, rapporto di trasmissione
- Indicazioni sulle resistenze d'attrito
- Rendimento meccanico

- Corse di movimentazione
- Velocità massima
- Accelerazione e decelerazione massima
- Tempo di clock.

Fondamentalmente occorre decidere se si devono utilizzare motori sincroni o asincroni.

I motori sincroni sono da preferirsi in caso di spazi di installazione ridotti e momento d'inerzia del rotore contenuto e quindi dinamica elevata (tipo di regolazione "Servo").

Con i motori asincroni si raggiungono elevate velocità massime nell'area di deflussaggio del campo. I motori asincroni sono disponibili anche per potenza più elevata.

Nella progettazione occorre tener presente tra l'altro:

- Le temperature ambiente e l'altitudine di installazione dei motori e dei componenti dell'azionamento.
- Deflusso del calore dei motori tramite ventilazione forzata o raffreddamento ad acqua.

La base per la definizione dei motori sono le curve caratteristiche limite, specifiche per tipo di motore.

Queste descrivono l'andamento della coppia o della potenza riferito alla velocità e tengono conto dei limiti del motore sulla base della tensione del circuito intermedio del Power Module o del Motor Module. La tensione del circuito intermedio è a sua volta dipendente dalla tensione di rete e, nel caso di azionamenti a coppia, dal tipo di Line Module.

Ulteriori condizioni marginali dipendono dall'integrazione dell'azionamento in un ambiente di automazione come SINUMERIK o SIMOTION.

La definizione del motore avviene sulla base del carico che viene fornito dall'applicazione. Per i vari tipi di carico si devono utilizzare diverse curve caratteristiche.

Sono definiti i seguenti tipi di funzionamento:

- Ciclo di carico con durata di inserzione costante.
- Ciclo di carico con durata di inserzione intermittente.
- Ciclo di carico qualsiasi.

Lo scopo è quello di trovare punti di lavoro caratteristici per la coppia e la velocità sulla base dei quali si possa definire il motore in base al carico.

## 2.2.1 Determinazione del ciclo di carico

### Cicli di carico con durata di inserzione costante

In caso di cicli di carico con durata di inserzione costante sono presenti requisiti specifici per l'andamento della coppia quale funzione della velocità, ad es.:

M = costante, M ~ $n^2$, M ~ n oppure P = costante.

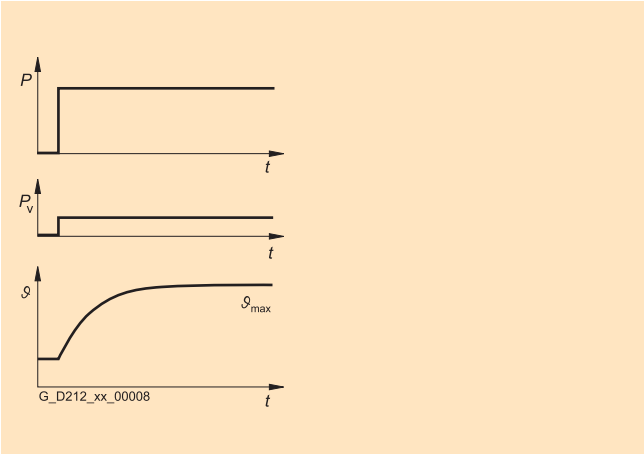



Figura 2-2 Modo operativo S1 (funzionamento continuo)

Questi azionamenti lavorano tipicamente su un punto di lavoro stazionario. Per questi si deve eseguire un dimensionamento del carico base. La coppia del carico base deve trovarsi al di sotto della curva caratteristica S1. La definizione del sovraccarico (ad es. all'avviamento) avviene sulla base di periodi molto brevi. Va calcolata la corrente di sovraccarico riferita alla coppia di sovraccarico richiesta. La coppia di picco deve essere inferiore alla curva caratteristica limite di tensione.

## Cicli di carico con durata di inserzione intermittente

Oltre al funzionamento continuo (S1), per i cicli di carico con durata di inserzione intermittente sono definiti dei modi operativi intermittenti standardizzati (S6) . Si tratta di un funzionamento che riunisce una serie di cicli dello stesso tipo, ognuno dei quali comprende un tempo a carico costante e un periodo di inattività. Non si verifica alcuna pausa.

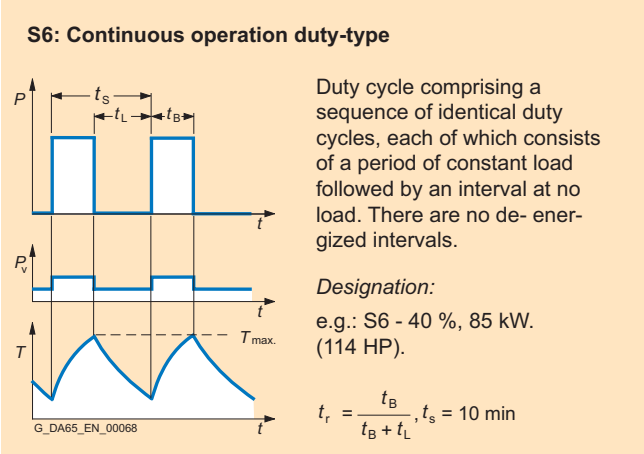



Figura 2-3 Modo operativo S6 (funzionamento continuo con carico intermittente)

Si devono impostare di solito grandezze definite (fattori di sovraccarico) per la durata relativa di inserzione:

- S6 – 60%
- S6 – 40%
- S6 – 25%

I fattori di sovraccarico per i modi operativi intermittenti corrispondenti (S6) possono essere ricavati sulla base della curva caratteristica S1 (funzionamento continuo) dal capitolo 4.

**Nota**

**Modo operativo S3**

I fattori di sovraccarico per il funzionamento continuo con carico intermittente (S6) possono essere utilizzati per i motori 1PH8 con ventilazione forzata o raffreddamento ad acqua anche per i modi operativi intermittenti S3 (S3-60%, S3-40% o S3-25%).

## Ciclo di carico qualsiasi

Un ciclo di carico definisce l'andamento della velocità e della coppia di un motore nel tempo.

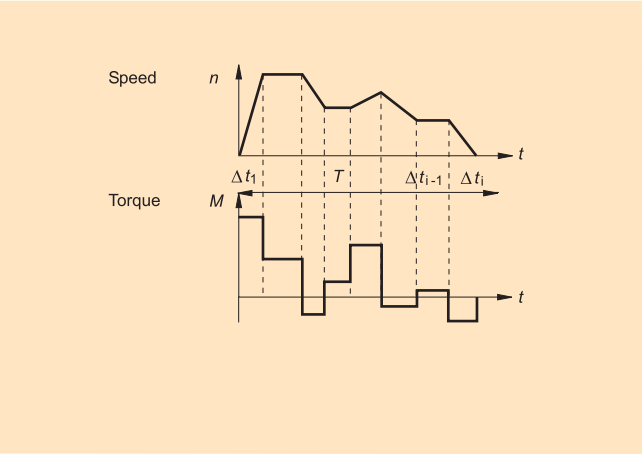



Figura 2-4 Esempio di un ciclo di carico

Per ogni intervallo di tempo si imposta una coppia di carico. Oltre alla coppia di carico, per i processi di accelerazione si devono prendere in considerazione il momento d'inerzia medio del carico e il momento d'inerzia medio del motore. Eventualmente occorre prevedere una coppia d'attrito nella direzione contraria al movimento.

Con montaggio del riduttore:
Per il calcolo della coppia di carico o della coppia di accelerazione che deve essere fornita dal motore, occorre tener conto del rapporto di riduzione e del rendimento del riduttore. Un elevato rapporto di riduzione è molto vantaggioso sulla precisione del posizionamento riferita alla risoluzione dell'encoder. Con determinate risoluzioni dell'encoder motore si raggiunge una elevata risoluzione della posizione da rilevare sulla macchina utilizzando rapporti di riduzione crescenti.

**Nota**

Per i cicli di carico nel settore ad indebolimento di campo è necessaria una progettazione tramite il tool di progettazione SIZER.

Dopo aver definito il caso di applicazione e le relative specifiche, si calcola la coppia massima del motore stesso. In generale questa si ricava durante la fase di accelerazione. Qui si sommano la coppia di carico e la coppia necessaria per accelerare il motore.

Al termine avviene una verifica della coppia massima del motore con le curve caratteristiche limite del motore.

Nella definizione del motore si devono considerare i seguenti criteri:

- Mantenimento dei limiti dinamici cioè tutti i punti coppia-velocità del carico devono trovarsi al di sotto delle curve caratteristiche limite rilevanti.
- I limiti termici devono essere rispettati, ossia la coppia motore effettiva alla velocità media del motore calcolata sulla base del ciclo di carico deve trovarsi al di sotto della curva caratteristica S1 (funzionamento continuo). Il valore effettivo della corrente del motore in un ciclo di carico deve essere inferiore alla corrente nominale.
- Nel campo di deflussaggio la coppia motore ammessa è limitata dalla curva caratteristica del limite di tensione (limite di inversione di coppia).

**Nota**

**Frequenze impulsi nominali**

I dati nominali del motore valgono solo per 4 kHz (Motor Module Booksize o Blocksize) o 2 kHz (Motor Module Chassis). Il funzionamento dei motori con frequenze impulsi < 2 kHz non è consentito!

## Caratteristica delle curve caratteristiche per motori asincroni

Nelle curve caratteristiche del motore (vedere capitolo 4) sono descritti il diagramma potenza-velocità P = f(n) e il diagramma coppia-velocità M = f(n) per il funzionamento con il sistema del convertitore SINAMICS.

A seconda della versione del motore, la curva caratteristica S1 (funzionamento continuo) è a disposizione dallo stato con motore fermo al punto di misurazione con la coppia termica massima possibile oppure viene mostrata con la coppia costante. La potenza cresce corrispondentemente alla coppia disponibile con il numero di giri.

Segue un settore a potenza costante caratterizzato da un indebolimento del campo (settore ad indebolimento di campo). Il settore ad indebolimento di campo viene limitato dal limite di tensione.

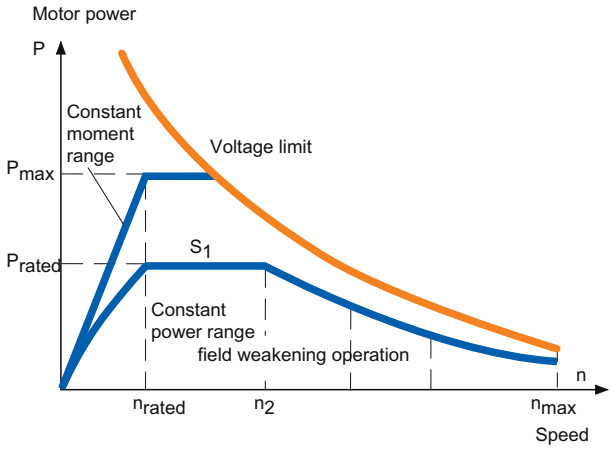



Figura 2-5 Diagramma tipico numero di giri-potenza per motori asincroni 1PH8

Al fine di garantire un funzionamento sicuro in caso di oscillazioni di tensione della rete e dei parametri del motore, a seconda del tipo di tensione di collegamento del Motor Module (invertitore) e dell'alimentazione del modulo per ogni punto di lavoro deve essere mantenuto un margine del 10% rispetto al limite di tensione.

Per le curve caratteristiche per la tensione di collegamento "ALM 400 V" vengono mostrati per la progettazione di applicazioni mandrino principale su macchine utensili fino a due punti aggiuntivi per misurazione ausiliaria, che consentono una progettazione per un funzionamento ampliato ad indebolimento di campo. Il settore di potenza costante inizia in questo caso nel punto di misurazione ausiliaria e finisce nel relativo punto $n_2$. Il resto della curva caratteristica corrisponde alla curva caratteristica S1 disegnata.

I motori asincroni dispongono di una notevole capacità di sovraccarico nel campo della potenza costante. L'andamento principale della capacità di sovraccarico massima consentita è mostrata nelle curve caratteristiche come limite e corrisponde al valore $P_{max}$.

## Caratteristica delle curve caratteristiche per motori sincroni

Per i motori sincroni la curva caratteristica S1 (funzionamento continuo) presenta un comportamento simile a quello dei motori asincroni fino al punto di misurazione. La curva caratteristica S1 rappresenta la coppia continua massima prodotta termicamente. La potenza S1 aumenta con il numero di giri in base alla coppia disponibile fino a raggiungere all'incirca il numero di giri nominale.

Segue un settore a potenza ridotta caratterizzato da un aumento delle perdite nel ferro e per attrito e da un incremento della controtensione con l'aumento del numero di giri a causa del campo costante del rotore sincrono.

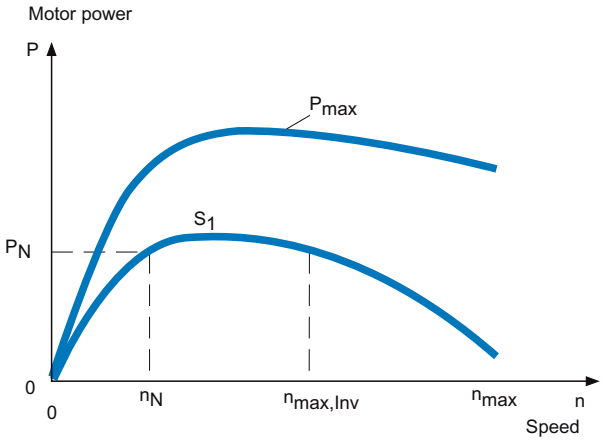



Figura 2-6 Diagramma tipico numero di giri-potenza per motori a corrente trifase sincroni 1PH8

Analogamente ai motori asincroni, nei fogli dati per la tensione di collegamento "ALM 400 V" vengono mostrati per la progettazione di applicazioni mandrino principale su macchine utensili dei punti aggiuntivi per misurazione ausiliaria, che consentono una progettazione per un regime di giri ampliato.

L'andamento principale della capacità di sovraccarico massima consentita è mostrata nelle curve caratteristiche come limite e corrisponde al valore $P_{max}$.

**Nota**

**Limitazione della tensione**

A partire dal numero di giri $n_{max,Inv}$ è possibile un funzionamento con solo un SINAMICS Voltage Protection Module (VPM). I Voltage Protection Module sono disponibili fino ad una corrente nominale di 200 A.

Informazioni più dettagliate possono essere ricavate nei manuali di progettazione di SINAMICS S120.

# Caratteristiche meccaniche dei motori 3

## 3.1 Raffreddamento

La seguente tabella mostra una panoramica delle varianti di raffreddamento disponibili.

Tabella 3- 1 Varianti di raffreddamento dei motori 1PH8

| Altezza d'asse | Tipo di motore | Ventilazione forzata | Raffreddamento ad acqua |
|---|---|---|---|
| 80 | Asincrono | ✓ | ✓ |
| 100 | Asincrono | ✓ | ✓ |
| 132 | Asincrono e Sincrono | ✓ | ✓ |
| 160 | Asincrono e Sincrono | ✓ | ✓ |
| 180 | Asincrono e Sincrono | ✓ | ✓ |
| 225 | Asincrono e Sincrono | ✓ | ✓ |
| 280 | Asincrono | ✓ | ✓ |

### 3.1.1 Ventilazione forzata

Quando si esegue il montaggio del motore a ventilazione forzata deve essere garantita una sua adeguata ventilazione. Questo è particolarmente importante quando il motore viene incapsulato. Non deve infatti essere riaspirata l'aria riscaldata che esce dal motore. L'aria di raffreddamento deve potere entrare ed uscire liberamente. È importante evitare una riduzione della quantità di aria fredda causata da restringimenti degli appositi canali.

Tutti i dati si riferiscono ad una temperatura ambiente di 40 °C ed un'altitudine di installazione fino a 1000 m s.l.m.

| ⚠ CAUTELA |
|---|
| La superficie del motore può presentare temperature superiori a 100 °C. |

## Temperatura ambiente/del refrigerante

Funzionamento: T = -15 °C ... +40 °C (senza limitazione)
In condizioni diverse (temperatura ambiente > 40 °C o altitudine di installazione > 1000 m s.l.m.) è necessario definire la coppia/le potenze basandosi sulla tabella seguente. La temperatura ambiente e l'altitudine di installazione si arrotondano a 5 °C e 500 m.

Tabella 3- 2 Fattori per la riduzione della coppia/della potenza secondo EN 60034-6

| Altitudine d'installazione s.l.m. | Temperatura ambiente in °C | | | |
|---|---|---|---|---|
| | 40 | 45 | 50 | 55[1)] |
| 1000 | 1,00 | 0,96 | 0,92 | 0,87 |
| 1500 | 0,97 | 0,93 | 0,89 | 0,84 |
| 2000 | 0,94 | 0,90 | 0,86 | 0,82 |
| 2500 | 0,90 | 0,86 | 0,83 | 0,78 |
| 3000 | 0,86 | 0,82 | 0,79 | 0,75 |
| 3500 | 0,82 | 0,79 | 0,75 | 0,71 |
| 4000 | 0,77 | 0,74 | 0,71 | 0,67 |

1) ammesso solo con direzione dell'aria "NDE ⇒ DE"

**Nota**

Per temperature ambiente > 55 °C contattare la più vicina rappresentanza Siemens.

Nell'esecuzione standard i motori non sono adatti né per l'impiego in ambienti che presentano salinità o sostanze aggressive, né per l'installazione all'aperto.

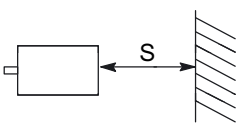
## Montaggio della ventola e distanza minima da altre apparecchiature installate

Tabella 3- 3 Montaggio della ventola

| Altezza asse [mm] | Montaggio della ventola |
|---|---|
| 80 ... 225 | assialmente lato NDE, ruotabile di 180° |
| 280 | radialmente lato B, può essere ordinata diversamente dal tipo di montaggio |

È necessario mantenere la distanza minima dalle altre apparecchiature installate dal cliente e dall'apertura di deflusso dell'aria, nonché la distanza minima S fra le aperture di ingresso e di uscita dell'aria e i componenti adiacenti.

Tabella 3- 4 Distanze minime

| Altezza asse [mm] | Distanza minima dai componenti del cliente [mm] | Distanza minima S [mm] | |
|---|---|---|---|
| 80 | 30 | 30 |  |
| 100 | 30 | 30 | |
| 132 | 60 | 60 | |
| 160 | 80 | 80 | |
| 180/225 | 100 | 300 | |
| 280 | 170 | 120 | |

## Dati di ventilazione e livello di pressione acustica

Tabella 3- 5 Dati di ventilazione e livello di pressione acustica

| Altezza asse [mm] | Direzione del flusso d'aria | Grado di protezione | Quantità d'aria, min [m³/s] | Fuoriuscita aria | Livello di pressione acustica $L_{pA}$ (1 m) Motore + funzionamento del ventilatore esterno 50 Hz carico nominale, tolleranza +3 dB [dB] | Caduta di pressione (Δp) [Pa] |
|---|---|---|---|---|---|---|
| 80 | NDE → DE | IP55 | 0,02 | assiale | 70[1)] | 95 |
| | DE → NDE | | | | | |
| 100 | NDE → DE | IP55 | 0,04 | | | 110 |
| | DE → NDE | | | | | |
| 132 | NDE → DE | IP55 | 0,09 | | | 140 |
| | DE → NDE | | | | | |
| 160 | NDE → DE | IP55 | 0,16 | | 73[1)] | 200 |
| | DE → NDE | | | | | |
| 180 | NDE → DE | IP23 | 0,21 | | 73[2)] | 450 |
| | DE → NDE | IP55 | 0,17 | | | 550 |
| 225 | NDE → DE | IP23 | 0,33 | | | 600 |
| | DE → NDE | IP55 | 0,31 | | | 650 |
| 280 | NDE → DE | IP23 | 0,52 | radiale | 74[2)] | 600 |
| | DE → NDE | IP55 | 0,42 | | | 600 |

1) con frequenza impulsi nominale 4 kHz e regime di giri fino a 5000 $min^{-1}$

2) con frequenza impulsi nominale 2 kHz e regime di giri

- Ventilazione forzata (IP55)
  - AH180 fino a 5000 $min^{-1}$
  - AH225 fino a 3500 $min^{-1}$
  - AH280 fino a 3300 $min^{-1}$
- Ventilazione passante (IP23)
  - AH180 fino a 3000 $min^{-1}$
  - AH225 fino a 2000 $min^{-1}$
  - AH280 fino a 2800 $min^{-1}$

**Nota**

**Aria dell'ambiente**

Qualora l'aria dell'ambiente sia inquinata da polveri o sostanze simili, è consigliabile scegliere la direzione dell'aria NDE → DE.

Come opzione i motori a partire da AH132 con direzione dell'aria NDE → DE possono essere ordinati con filtro per l'aria (opzione G14).

## Pulizia dei passaggi dell'aria di raffreddamento

Nei motori raffreddati ad aria le vie di passaggio dell'aria di raffreddamento proveniente dall'ambiente devono essere pulite periodicamente, in base alla concentrazione di inquinanti presenti nel luogo di installazione, utilizzando ad es. aria compressa asciutta e senza oli.

## Motori con attacco in condotta

I motori 1PH8 nell'esecuzione ventilazione forzata possono essere realizzati anche con attacco in condotta anziché con ventilatore esterno standard. In questa esecuzione il ventilatore esterno manca e viene sostituito con un pezzo stampato per l'attacco in condotta.

Il diametro dell'attacco in condotta si basa sulla norma DIN EN 1506 o DIN EN 13180, secondo la quale i tubi e i pezzi stampati della tecnica di ventilazione e climatizzazione vengono utilizzati come merce comune.

**Nota**

**Quantità di aria minima e caduta di pressione**

I tubi e i ventilatori esterni devono essere montati e collegati nella forma costruttiva opportuna. Per la progettazione e il dimensionamento occorre tenere conto della quantità di aria minima necessaria e della caduta di pressione sul motore.

Tabella 3- 6 Diametro, quantità di aria minima e caduta di pressione

| Altezza asse [mm] | Diametro [mm] | Grado di protezione | Quantità di aria minima [$m^3/s$] | Caduta di pressione [Pa] |
|---|---|---|---|---|
| 80 | 150 | IP55 | 0,02 | 95 |
| 100 | 160 | IP55 | 0,04 | 110 |
| 132 | 224 | IP55 | 0,09 | 140 |
| 160 | 280 | IP55 | 0,16 | 200 |
| 180 | 300 | IP23 | 0,21 | 450 |
| | | IP55 | 0,17 | 550 |
| 225 | 350 | IP23 | 0,33 | 600 |
| | | IP55 | 0,31 | 650 |
| 280 | Necessario adattatore | IP23 | 0,52 | 600 |
| | | IP55 | 0,42 | 600 |

## Vedere anche

Dati per il collegamento del ventilatore esterno (Pagina 983)

## 3.1.2 Raffreddamento ad acqua

**⚠ AVVERTENZA**

Gli interventi di installazione e manutenzione sul circuito di raffreddamento devono essere eseguiti solo in assenza di tensione sull'impianto.

La posa del circuito di raffreddamento, l'installazione e la messa in servizio devono essere eseguite esclusivamente da personale qualificato.

### 3.1.2.1 Circuito di raffreddamento

I processi elettrochimici che si svolgono in un sistema di raffreddamento devono essere ridotti al minimo scegliendo i materiali più adatti allo scopo. Per questo motivo andrebbero evitate, o almeno ridotte allo stretto indispensabile, le installazioni miste, cioè la combinazione di diversi materiali, come rame, ottone, ferro, zinco o plastiche alogene (tubi flessibili e guarnizioni in PVC).

In linea di massima si distinguono 3 diversi circuiti di raffreddamento:

- circuito di raffreddamento chiuso
- circuito di raffreddamento semiaperto
- circuito di raffreddamento aperto

Tabella 3- 7 Descrizione dei diversi circuiti di raffreddamento

| Definizione | Descrizione |
|---|---|
| Circuito di raffreddamento chiuso | Il vaso di compensazione della pressione è chiuso (per impedire la penetrazione di ossigeno) e possiede una valvola di sovrapressione. Il refrigerante scorre solo nei motori e nei convertitori, oltre che nei componenti necessari per la dispersione del calore. |
| Circuito di raffreddamento semiaperto | L'ossigeno può penetrare nel refrigerante solo attraverso il vaso di espansione, per il resto è uguale al circuito di raffreddamento chiuso. |
| Circuito di raffreddamento aperto (Tower System) | Il raffreddamento del refrigerante avviene in una "tower". Qui avviene un contatto significativo con l'ossigeno. |

**Nota**

**Circuiti di raffreddamento**

Per i motori sono ammessi solo circuiti di raffreddamento chiusi e semiaperti. I sistemi di convertitori devono essere collegati a monte dei motori nel circuito di raffreddamento.

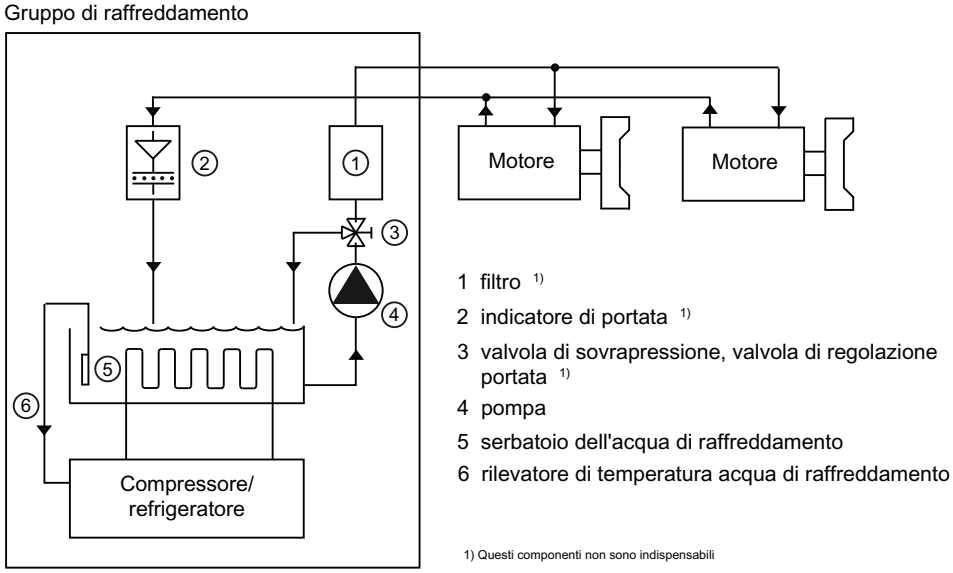



Figura 3-1 Esempio di circuito di raffreddamento semiaperto

## Compensazione del potenziale

Nel sistema di raffreddamento tutti i componenti (motore, scambiatore di calore, sistema di tubazioni, pompa, vaso di compensazione, ecc.) devono disporre di una compensazione del potenziale. Questa deve essere realizzata con una barra o una treccia di rame con sezioni adeguate.

**Nota**

In nessun caso le tubazioni dell'acqua devono toccare le parti che conducono tensione. Deve essere sempre rispettata una distanza di isolamento > 13 mm! Le tubazioni devono essere fissate meccanicamente in modo sicuro e controllate per verificarne la tenuta.

## Materiali utilizzati nel circuito di raffreddamento del motore

I materiali utilizzati nel circuito di raffreddamento devono essere compatibili con i materiali del motore.

Tabella 3- 8 Materiali utilizzati nel circuito di raffreddamento del motore 1PH8

| Altezza d'asse | Scudo del cuscinetto | Tubi nello statore (denominazione) |
|---|---|---|
| 80 | Ghisa grigia (EN-GJL-200) | Acciaio legato |
| 100 | Ghisa grigia (EN-GJL-200) | Acciaio legato |
| 132 | Ghisa grigia (EN-GJL-200) | Acciaio legato |
| 160 | Ghisa grigia (EN-GJL-200) | Acciaio legato |
| 180 | - | Acciaio inox (V4A) |
| 225 | - | Acciaio inox (V4A) |
| 280 | - | Acciaio inox (V4A) |

## Materiali e componenti nel circuito di raffreddamento

Nella seguente tabella sono elencati i materiali e i componenti presenti o non ammessi in un circuito di raffreddamento.

Tabella 3- 9 Materiali e componenti di un circuito di raffreddamento

| Materiale | Impiego per | Descrizione |
|---|---|---|
| Zinco | Tubazione, raccordo | Utilizzo non ammesso. |
| Ottone | Tubazione, raccordo | Utilizzabile nei circuiti chiusi con inibitore. |
| Rame | Tubazione, raccordo | Utilizzabile solo nei circuiti chiusi con inibitore, con punti di sezionamento (ad es. tubi di raccordo degli apparecchi) tra radiatore e componente in rame. |
| Acciaio normale (ad es. St37) | Tubazione | Permesso nei circuiti chiusi e semiaperti con inibitori o Antifrogen N; controllare la formazione di ossido, si raccomanda una finestra di ispezione. |
| Acciaio colato, ghisa grigia | Tubazioni, motori | Circuiti chiusi e impiego di filtri e di filtri di lavaggio a controcorrente. Nei radiatori in acciaio legato, separatori Fe. |
| Acciaio ad alta lega gruppo 1 (V2A) | Tubazione, raccordo | Può essere impiegato per acque potabili e acque chiare con contenuto di cloruro < 250 ppm, conformemente alla definizione fornita nel capitolo "Definizione del refrigerante". |
| Acciaio ad alta lega gruppo 2 (V4A) | Tubazione, raccordo | Può essere impiegato per acque potabili e acque chiare con contenuto di cloruro < 500 ppm, conformemente alla definizione fornita nel capitolo "Definizione del refrigerante". |
| ABS **A**cril-nitrile-**b**utadiene-**s**tirolo | Tubazione, raccordo | Adatto per la definizione fornita nel capitolo "Definizione del refrigerante". Adatto per miscele con inibitore e/o biocidi, nonché Antifrogen N. |
| Impianti realizzati con materiali diversi (installazioni miste) | Tubazione, raccordo | Utilizzo non ammesso. |
| PVC | Tubazione, raccordo, tubi flessibili | Utilizzo non ammesso. |
| Tubi flessibili | | Ridurre al minimo l'impiego di tubi flessibili (per il collegamento degli apparecchi). Non devono essere impiegati per il collegamento principale dell'intero sistema. Raccomandazione: tubi flessibili EPDM con resistenza elettrica $>10^9$ Ω (ad es. Semperflex FKD; ditta Semperit o DEMITTEL; in PE/EPDM, ditta Telle) |
| Guarnizioni | Tubazione, raccordo | Consigliato l'uso di Viton, AFM34, EPDM. |
| Collegamenti con tubi flessibili | Raccordo di tubo o tubo flessibile | Fissaggio con morsetti serracavo secondo DIN2817, ad es. della ditta Telle. |

Per una durata ottimale dei radiatori del motore (carcassa), rispettare la raccomandazione seguente:

- Installare un circuito di raffreddamento chiuso con gruppo di raffreddamento in acciaio legato che disperda il calore tramite uno scambiatore di calore acqua-acqua.
- Tutti gli altri componenti come le tubazioni del circuito di raffreddamento e i giunti devono essere realizzati in ABS, acciaio legato o acciaio da costruzione generico.

### Produttori dei gruppi di raffreddamento

| | |
|---|---|
| BKW Kälte-Wärme-Versorgungstechnik GmbH | http://www.bkw-kuema.de |
| DELTATHERM Hirmer GmbH | http://www.deltatherm.de |
| Glen Dimplex Deutschland GmbH | http://www.riedel-cooling.com |
| Helmut Schimpke und Team Industriekühlanlagen GmbH + Co. KG | http://www.schimpke.org |
| Hydac System GmbH | http://www.hydac.com |
| Hyfra Industriekühlanlagen GmbH | http://www.hyfra.de |
| KKT Kraus Kälte- und Klimatechnik GmbH | http://www.kkt-kraus.de |
| Pfannenberg GmbH | http://www.pfannenberg.com |
| Rittal GmbH & Co. KG | http://www.rittal.de |

**Nota**

Naturalmente si possono utilizzare anche prodotti equivalenti di altri fornitori. Le ditte menzionate sopra non sono in alcun modo imposte, ma solo consigliate. Siemens non si assume alcuna responsabilità per la qualità dei prodotti di terze parti.

## 3.1.2.2 Progettazione del circuito di raffreddamento

### Pressione

La pressione di esercizio deve essere determinata in funzione dei rapporti del flusso di mandata e di ritorno del circuito di raffreddamento. La quantità di refrigerante necessaria per unità di tempo deve essere impostata in base ai dati tecnici degli apparecchi e dei motori.

La pressione massima ammessa nel radiatore rispetto all'ambiente e quindi nel circuito di raffreddamento non deve superare 0,6 MPa (6 bar). Se viene utilizzata una pompa che raggiunge una pressione più elevata, sul lato impianto occorre prendere adeguati provvedimenti (valvola di sicurezza p ≤ 0,6 MPa, regolazione della pressione o simili) che impediscano il superamento della pressione massima.

La differenza di pressione tra il refrigerante nel circuito di mandata e di ritorno deve essere quanto più piccola possibile, affinché le pompe possano essere utilizzate con caratteristica piatta.

Per evitare intasamenti e corrosione si raccomanda di prevedere inoltre un filtro di lavaggio a controcorrente nel circuito di raffreddamento. Questo permette di eliminare eventuali materiali accumulatisi durante il funzionamento.

## Caduta di pressione nel motore

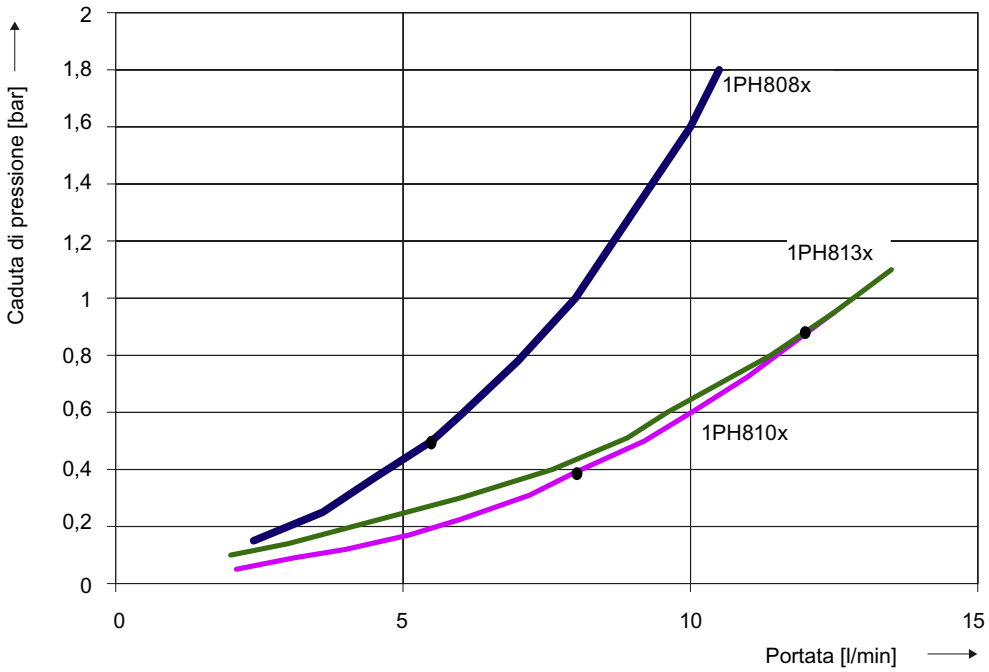



Figura 3-2 Caduta di pressione nel sistema dei condotti di raffreddamento altezza asse 80 ... 132

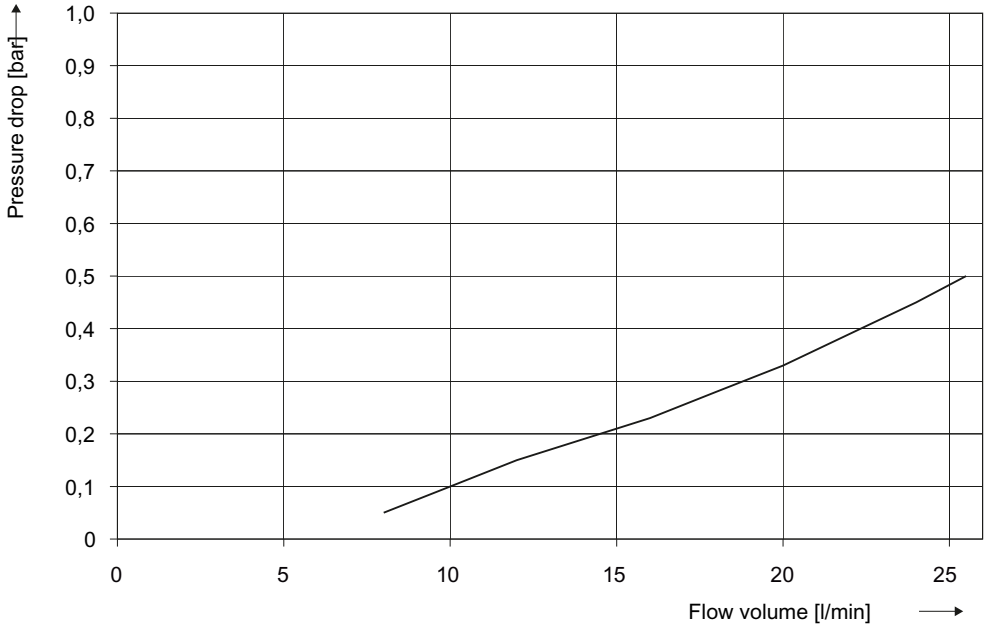



Figura 3-3 Caduta di pressione nel sistema dei condotti di raffreddamento altezza asse 160

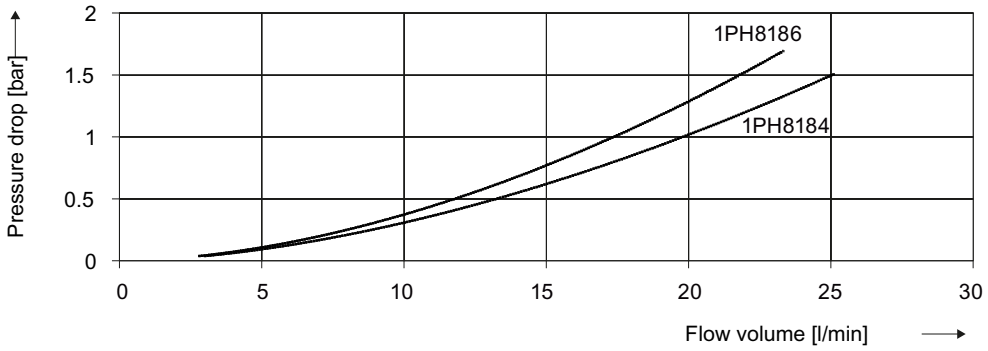



Figura 3-4 Caduta di pressione nel sistema dei condotti di raffreddamento altezza asse 180

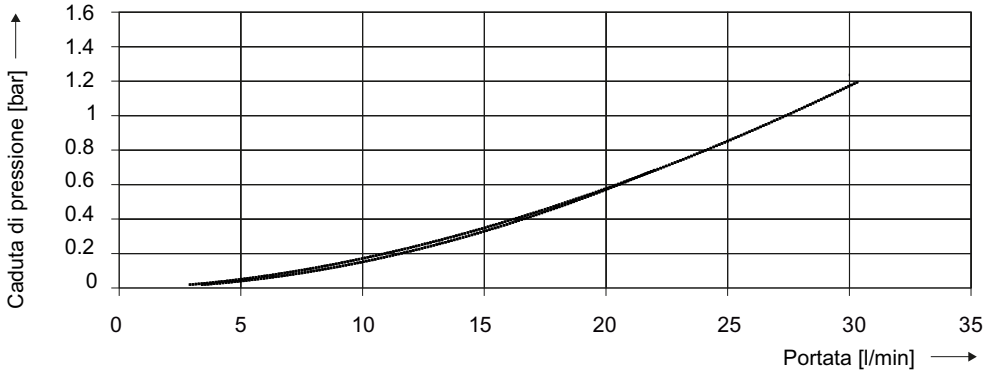



Figura 3-5 Caduta di pressione nel sistema dei condotti di raffreddamento altezza asse 225

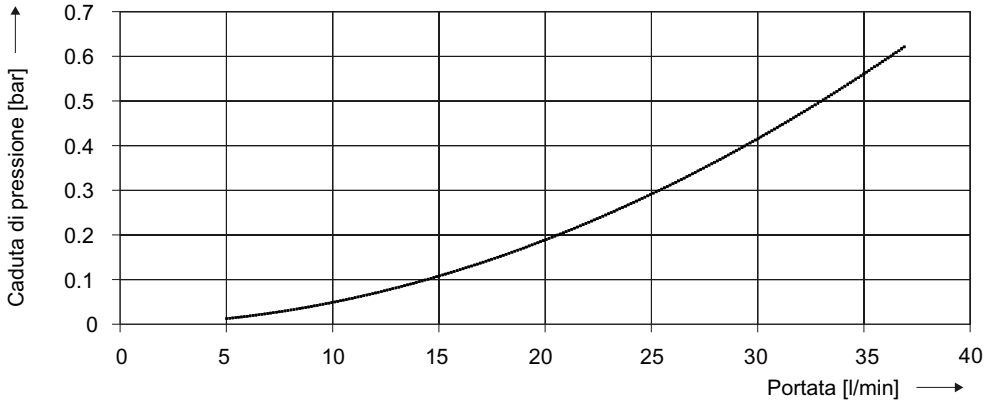



Figura 3-6 Caduta di pressione nel sistema dei condotti di raffreddamento altezza asse 280

**Nota**

Per garantire un raffreddamento sufficiente, vanno osservate le portate minime definite al punto "Dati di raffreddamento e livello di pressione acustica".

## Compensazione della pressione

Quando nel circuito di raffreddamento sono collegati diversi componenti, può essere necessaria una compensazione della pressione.

**Nota**

All'uscita del refrigerante del motore o dei componenti interessati devono essere installate delle valvole a farfalla.

## Come evitare la cavitazione

Il calo di pressione su un convertitore o motore non deve superare 0,2 MPa (2 bar) nel funzionamento continuo. In caso contrario il flusso volumetrico elevato può provocare danni da cavitazione e abrasione.

## Collegamento in serie di motori

Il collegamento in serie di motori può essere consigliato solo a determinate condizioni per i seguenti motivi:

- i flussi volumetrici necessari dei motori si trovano nello stesso ordine di grandezza (< fattore 2)
- il riscaldamento del refrigerante può provocare un derating nel secondo o nel terzo motore nel caso in cui venga superata la temperatura di ingresso massima del refrigerante.

## Temperatura d'ingresso dell'acqua di raffreddamento

**Nota**

La temperatura di ingresso dell'acqua di raffreddamento deve essere scelta in modo che non si formi alcuna condensa sulla superficie del motore: $T_{raffreddamento} > T_{ambiente} - 5$ K.

Temperature dell'acqua di raffreddamento inferiori alla temperatura ambiente tendono a provocare una maggiore quantità di condensa. La differenza tra la temperatura di ingresso dell'acqua di raffreddamento e la temperatura ambiente dovrebbe essere pertanto pari a max. 5 K (Kelvin). In caso di arresto prolungato del motore è necessario interrompere l'afflusso di acqua di raffreddamento.

I motori sono dimensionati per il funzionamento con una temperatura di ingresso massima dell'acqua di raffreddamento di +30 °C nel rispetto di tutti i dati del motore. Con altre temperature di ingresso dell'acqua di raffreddamento la coppia permanente varia (vedere la tabella "Fattori di derating").

Tabella 3- 10 Fattori di derating

| Altitudine di installazione s.l.m. [m] | Temperatura in ingresso del liquido di raffreddamento | | | |
|---|---|---|---|---|
| | ≤ 30 °C | 35 °C | 40 °C | 45 °C |
| 1000 | 1,00 | 0,95 | 0,90 | 0,84 |
| 1500 | 0,97 | 0,92 | 0,87 | 0,81 |
| 2000 | 0,93 | 0,88 | 0,84 | 0,78 |
| 2500 | 0,91 | 0,86 | 0,82 | 0,76 |
| 3000 | 0,89 | 0,85 | 0,80 | 0,75 |
| 3500 | 0,87 | 0,83 | 0,78 | 0,73 |
| 4000 | 0,85 | 0,81 | 0,77 | 0,71 |

## Dati di raffreddamento e livello di pressione acustica

I valori forniti si riferiscono al funzionamento con numero di giri nominale con coppia nominale. La temperatura del refrigerante deve essere ≤ 30 °C.

Tabella 3- 11 Dati di raffreddamento e livello di pressione acustica

| Altezza d'asse | Portata liquido min [l/min] | Caduta di pressione [bar] | Livello di pressione acustica $L_{pA}$ (1 m) Motore carico nominale, tolleranza +3 dB [dB] | Filetto di raccordo sul lato NDE [pollici] |
|---|---|---|---|---|
| 80 | 6 | 0,6 | 68 1) | G 1/8 |
| 100 | 8 | 0,4 | | G 1/4 |
| 132 | 12 | 0,9 | | G 3/8 |
| 160 | 15 | 0,2 | 69 1) | G1/2 |
| 180 (1PH8184) | 15 | 0,6 | 70 2) | G 3/8 |
| 180 (1PH8186) | 15 | 0,7 | | G3/8 |
| 225 (1PH822.-1) (asincrono) | 20 | 0,6 | | G 3/8 |
| 225 (1PH822.-2) (sincrono) | 25 | 0,9 | 70 3) | G 3/8 |
| 280 | 35 | 0,6 | 72 3) | G 1/2 |

1) con frequenza impulsi nominale 4 kHz e regime di giri fino a 5000 $min^{-1}$

2) con frequenza impulsi nominale 2 kHz o 4 kHz e regimi di giri con
AH 180 fino a 5000 $min^{-1}$
AH 225 fino a 4500 $min^{-1}$

3) con frequenza impulsi nominale 2 kHz e regimi di giri con
AH 225 fino a 4500 $min^{-1}$
AH 280 fino a 3300 $min^{-1}$

## Potenza dissipata da dissipare

I valori per la potenza dissipata da dissipare sono forniti in base al punto di misurazione nel capitolo 4 nelle "Tabelle tecniche".

## Specifica dell'acqua

- Qualità dell'acqua di raffreddamento

  I valori indicati per l'acqua di raffreddamento devono rispondere ai requisiti previsti per un circuito chiuso. Nell'acqua di raffreddamento non si incontreranno contemporaneamente tutte le concentrazioni indicate.

  Per un funzionamento senza guasti è possibile impiegare un filtro. L'unità del filtro non deve essere inferiore a 100 µm.

- Temperatura d'ingresso dell'acqua di raffreddamento

La massima temperatura d'ingresso dell'acqua di raffreddamento è di 30 °C.

- Specifiche dell'acqua di raffreddamento

Tabella 3- 12 Specifiche dell'acqua di raffreddamento (AH 80 ... 160)

| Componenti | Qualità dell'acqua come refrigerante per motori con tubi in acciaio inox + ghisa grigia o camicia in acciaio |
|---|---|
| Valore pH | 6 ... 9 |
| Durezza totale | < 170 ppm |
| Conducibilità elettrica | < 500 µS/cm |
| Ioni cloruro | < 40 ppm, eventualmente da raggiungere con l'aggiunta di acqua deionizzata. |
| Ioni solfato | < 50 ppm |
| Ioni nitrato | < 50 ppm |
| Sostanze in soluzione | < 340 ppm |
| Grandezza massima delle particelle | < 100 µm |
| Pressione di esercizio | < max. 6 bar |
| Caduta di pressione con V(N) | < 1 bar |
| Temperatura d'ingresso | < 30 °C |
| Temperatura minima dell'acqua di raffreddamento | $T_{acqua\ di\ raffreddamento} > T_{ambiente}$ -5 K |
| Protezione antigelo/anticorrosione | 20…30 % |
| Inibitore NALCO 00GE056 | 0,2…0,25 % |

Tabella 3- 13 Specifiche dell'acqua di raffreddamento (AH 180 ... 280)

| Componenti | Qualità dell'acqua come refrigerante per motori e tubi in acciaio inox |
|---|---|
| Valore pH | 6 ... 9 |
| Durezza totale | < 170 ppm |
| Conducibilità elettrica | < 2000 µS/cm |
| Ioni cloruro | < 250 ppm, eventualmente da raggiungere con l'aggiunta di acqua deionizzata. |
| Ioni solfato | < 240 ppm |
| Ioni nitrato | < 50 ppm |
| Sostanze in soluzione | < 340 ppm |
| Grandezza massima delle particelle | < 100 µm |
| Pressione di esercizio | < max. 6 bar |
| Caduta di pressione con V(N) | < 1 bar |
| Temperatura d'ingresso | < 30 °C |
| Temperatura minima dell'acqua di raffreddamento | $T_{acqua\ di\ raffreddamento} > T_{ambiente}$ -5 K |
| Protezione antigelo/anticorrosione | 20…30 % |
| Inibitore NALCO 00GE056 | 0,2…0,25 % |

**Nota**

**Acqua deionizzata (per le tabelle Specifiche dell'acqua di raffreddamento)**

Si consiglia di utilizzare acqua deionizzata con conducibilità ridotta (5 ... 10 µS/cm) (chiedere eventualmente i valori all'ente fornitore). Conformemente alla direttiva 98/83/CE, l'acqua potabile può contenere una quantità di cloruro massima di 2500 ppm!

Per l'analisi dell'acqua disponibile sul lato impianto, i produttori possono servirsi di additivi chimici.

**Nota**

**Inibitore (per le tabelle Specifiche dell'acqua di raffreddamento)**

L'inibitore è superfluo se è garantita una percentuale di Antifrogen N > 20 %.

Se la percentuale di antigelo è > 30 %, è necessario un derating

## Biocida

I circuiti di raffreddamento chiusi con acqua dolce sono un ambiente favorevole per la proliferazione di microbi. Nei sistemi con acqua potabile addizionata di cloro, il pericolo di corrosione causato dalla presenza dai microbi è praticamente eliminato.

Antifrogen N ha un'azione biocida a partire dalla concentrazione minima >20 %. Con l'aggiunta di Antifrogen N in percentuale >20 % i batteri non sono in grado di sopravvivere.

La scelta del biocida adeguato avviene in funzione del tipo di microbi. Nella pratica si osserva la presenza dei seguenti microbi:

- batteri che producono mucillagine
- batteri corrosivi
- batteri ferro-ossidanti

Si raccomanda di eseguire un'analisi dell'acqua almeno una volta all'anno per determinare la presenza e la quantità di colonie batteriche. I biocidi adatti possono essere richiesti ad es. al produttore Nalco. Per la dosatura e la compatibilità con un inibitore eventualmente presente occorre rispettare le raccomandazioni del produttore.

**Nota**

Gli inibitori non devono essere mischiati con i biocidi e Antifrogen N.

Sul mercato sono disponibili altri produttori di additivi chimici. Possono essere utilizzati anche prodotti equivalenti di altri fornitori. L'idoneità deve essere eventualmente accertata tramite test.

## Altri refrigeranti (non a base di acqua)

Se vengono utilizzati altri liquidi refrigeranti (ad es. olio), può rendersi necessaria una riduzione della potenza per non superare la soglia termica del motore. La riduzione di potenza può essere calcolata sulla base dei seguenti dati a una temperatura di 30 °C:

| | | |
|---|---|---|
| Densità | ρ | [kg/m³] |
| Capacità calorifica specifica | $c_\rho$ | [J/(kg•K)] |
| Conduttività termica | λ | [W/(K•m)] |
| Viscosità cinematica | v | [m²/s] |
| Portata | V | [l/min] |

In questo caso rivolgersi al produttore (Siemens Service Center).

**Nota**

In caso di miscela acqua-olio con una percentuale superiore al 10 % è necessario un derating.

### Produttori di additivi chimici

| | |
|---|---|
| Tyforop Chemie GmbH | http://www.tyfo.de |
| Clariant Produkte Deutschland GmbH | http://www.antifrogen.de |
| Cimcool Industrial Products | http://www.cimcool.net |
| FUCHS PETROLUB AG | http://www.fuchs-oil.com |
| Hebro chemie GmbH | http://www.hebro-chemie.de |
| HOUGHTON Deutschland GmbH | http://www.houghton.com |
| Nalco Deutschland GmbH | http://www.nalco.com |
| Schweitzer-Chemie GmbH | http://www.schweitzer-chemie.de |

**Nota**

Naturalmente si possono utilizzare anche prodotti equivalenti di altri fornitori. Le ditte menzionate sopra non sono in alcun modo imposte, ma solo consigliate. Siemens non si assume alcuna responsabilità per la qualità dei prodotti di terze parti.

### Manutenzione e riparazione

Almeno una volta all'anno si raccomanda di verificare il livello dell'acqua di raffreddamento e di controllare eventuali variazioni del colore o fenomeni di intorbidimento. A cadenza annuale occorre inoltre verificare che l'acqua di raffreddamento sia conforme alle specifiche ammesse.

In caso di perdita dell'acqua di raffreddamento in circuiti chiusi o semiaperti, questa va corretta con una miscela precedentemente preparata di acqua deionizzata e inibitore o Antifrogen N.

## 3.1.2.3 Allacciamento del refrigerante 1PH8

Il collegamento del motore al circuito di raffreddamento avviene tramite due filettature interne sul lato posteriore del motore. La scelta dell'allacciamento di ingresso e uscita è libera.

Allacciamento del refrigerante: vedere la tabella "Dati di raffreddamento e livello di pressione acustica"

Il collegamento degli apparecchi deve essere eseguito con tubi flessibili per evitare un accoppiamento rigido (vedere la tabella "Materiali e componenti di un circuito di raffreddamento").

### Messa in servizio

Se necessario, prima di collegare i motori e i convertitori al circuito di raffreddamento si può eseguire un lavaggio delle tubazioni allo scopo di evitare l'accumulo di sporcizia nei motori e nei convertitori.

Dopo il montaggio dell'apparecchio nell'impianto, è necessario attivare il circuito di raffreddamento prima di applicare tensione.

# 3.2 Grado di protezione secondo EN 60034-5

## Indicazione del grado di protezione

L'indicazione del grado di protezione secondo EN 60034-5 (IEC 60034-5) è riportata con le due lettere IP seguite da due cifre (ad es. IP64).

IP = International Protection
1ª cifra = protezione contro corpi estranei
2ª cifra = protezione contro l'acqua

Per l'attribuzione del motore a una classe del grado di protezione specifica, si esegue un processo di verifica standardizzato e di breve durata. Questo processo può variare sensibilmente a seconda delle condizioni ambientali effettive del luogo di installazione.

Quando si sceglie il grado di protezione del motore occorre prestare attenzione a un'adeguata tenuta dell'albero motore.

**Nota**

A seconda delle condizioni ambientali come la struttura chimica delle polveri o i refrigeranti utilizzati nel luogo dell'installazione, la valutazione dell'adeguatezza del motore è possibile in modo condizionato, solo in base al grado di protezione (ad es. polveri a conduzione elettrica oppure vapori o liquidi aggressivi del refrigerante).

In questi casi il motore deve essere protetto in modo supplementare dal lato della macchina attraverso le precauzioni opportune:

**Nota**

Ristagni di liquido e/o getti d'olio devono essere evitati (o non consentiti) anche per le esecuzioni con anello di tenuta radiale sull'albero.

## Gradi di protezione

I gradi di protezione disponibili con la serie di motori 1PH8 possono essere ricavati dalla seguente tabella.

Tabella 3- 14 Descrizione dei gradi di protezione

| Motore | Grado di protezione | 1. Numero identificativo | | 2. Numero identificativo |
|---|---|---|---|---|
| | | Protezione contro i contatti | Protezione da corpi estranei | |
| Ventilazione forzata (ventilazione di passaggio) | IP23 | Protezione contro contatti con le dita | Protezione contro corpi estranei rigidi di grandezza media superiore a 12 mm ∅ | Protezione contro spruzzi d'acqua con inclinazione max. di 60° |
| Ventilazione forzata (raffreddamento delle superfici) | IP55 | Protezione completa contro contatti | Protezione contro il deposito dannoso di polvere | Spruzzi d'acqua da ogni direzione |
| Raffreddamento ad acqua | IP65 | Protezione completa contro contatti | Protezione contro la penetrazione della polvere | Spruzzi d'acqua da ogni direzione |

**Nota**

Se il motore è installato in un ambiente umido, i cavi di potenza e di segnale devono essere disposti come nella figura seguente.

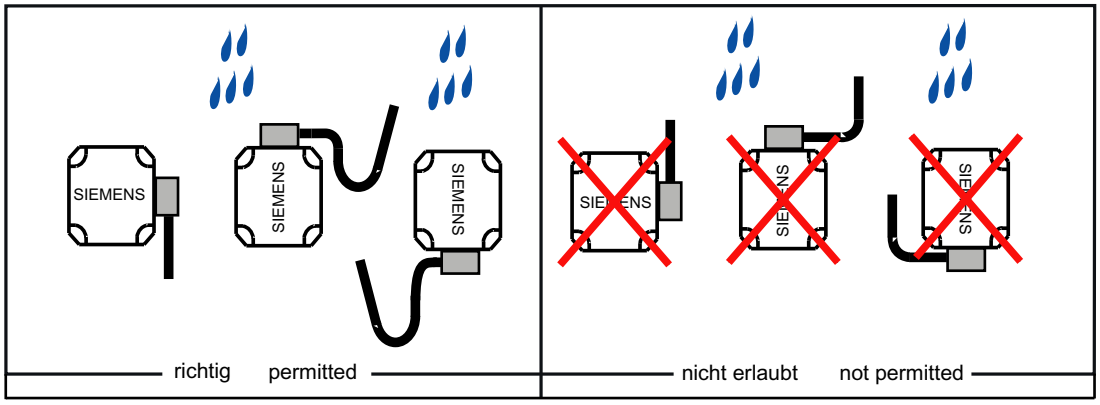


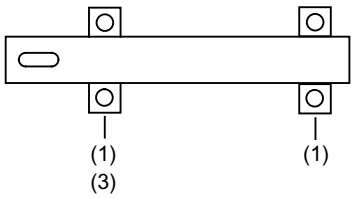
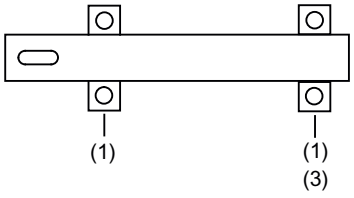
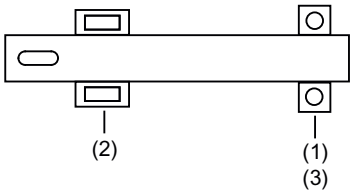

Figura 3-7 Schema di posa dei cavi in ambienti umidi

# 3.3 Esecuzione dei cuscinetti e durata utile dei cuscinetti

## 3.3.1 Tipi di azionamento ed esecuzione dei cuscinetti

I motori della serie costruttiva 1PH8 sono adatti per azionamenti a giunto e a cinghia. La tabella seguente riepiloga le possibili esecuzioni per i cuscinetti e le diverse applicazioni.

Tabella 3- 15 Tipi di trasmissione e relativa esecuzione dei cuscinetti

| Tipo di applicazione | Tipo di cuscinetto | |
|---|---|---|
| | AH 80 ... 160 | AH 180 ... 280 |
| • Giunti di trasmissione<br>• Riduttori epicicloidali per forze radiali ridotte |  |  |
| • Trasmissione tramite cinghie con forza radiale normale<br>• Trasmissione a pignone con dentatura diritta<br>• Trasmissione tramite cinghie con forza radiale elevata | | AH 180 ... 280<br>  |

1) Cuscinetto a sfere

2) Cuscinetto a rulli

3) Cuscinetto fisso

## Esecuzione dei cuscinetti, giri massimi e scadenze di sostituzione dei cuscinetti

Tabella 3- 16 Esecuzione dei cuscinetti, giri massimi e scadenze di sostituzione dei cuscinetti

| Altezza d'asse | Tipo di cuscinetto | Num. di giri max. $n_{max}$ [1/min] | N. di giri medio in esercizio $n_m$ [1/min] | Durata media del cuscinetto $D_{10h}$ [h] | Scadenza consigliata sostituzione cuscinetti: $t_{LW}$ [h] | |
|---|---|---|---|---|---|---|
| | | | | | Durata media della lubrificazione | Lubrificazione successiva |
| 80 | Standard | 10000 | ≤ 8000 | 20000 | 20000 | - |
| | Performance | 15000 | ≤ 11500 | 12000 | 12000 | - |
| | High Performance | 20000 | ≤ 13000 | 12000 | 12000 | - |
| | Advanced Lifetime | 5000 | ≤ 3500 | 40000 | 40000 | - |
| 100 | Standard | 9000 | ≤ 7000 | 20000 | 20000 | - |
| | Performance | 12000 | ≤ 10500 | 12000 | 12000 | - |
| | High Performance | 18000 | ≤ 11500 | 12000 | 12000 | - |
| | Advanced Lifetime | 5000 | ≤ 3000 | 40000 | 40000 | - |
| 132 | Standard | 8000 | ≤ 6500 | 20000 | 20000 | - |
| | Performance | 10000 | ≤ 8500 | 12000 | 12000 | - |
| | High Performance | 15000 | ≤ 10000 | 12000 | 12000 | - |
| | Advanced Lifetime | 4500 | ≤ 2500 | 40000 | 40000 | - |
| 160 | Standard | 6500 | ≤ 5400 | 20000 | 20000 | - |
| | Performance | 9000 | ≤ 7000 | 12000 | 12000 | - |
| | High Performance | 10000 | ≤ 8000 | 12000 | 12000 | - |
| | Advanced Lifetime | 4000 | ≤ 2300 | 40000 | 40000 | - |
| 180 | Standard | 5000 (3000)[2] | ≤ 2000 | 40000 (24000)[1] | 20000 | 40000 (24000)[1] |
| | Forze radiali maggiorate | 5000 (3000)[2] | ≤2000 | 20000 (12000)[1] | 12000 | 20000 (12000)[1] |
| | Performance | 7500 | ≤5000 | 20000 | 12000 | 20000 |
| 225 | Standard | 4500 (2500)[2] | ≤1800 | 40000 (24000)[1] | 20000 | 40000 (24000)[1] |
| | Forze radiali maggiorate | 4500 (2500)[2] | ≤1800 | 20000 (12000)[1] | 12000 | 20000 (12000)[1] |
| | Performance | 6000 | ≤4000 | 20000 | 12000 | 20000 |
| 280 | Standard | 3300 (2000)[2] | ≤1500 | 40000 (24000)[1] | 20000 | 40000 (24000)[1] |
| | Forze radiali maggiorate | 3300 (2000)[2] | ≤1500 | 20000 (12000)[1] | 12000 | 20000 (12000)[1] |

1) con disposizione verticale

2) con forma costruttiva IM V3, B5

$$n_m = \frac{n_1 t_1 + n_2 t_2 + \ldots n_i t_i}{100}$$

**Nota**

I numeri di giri massimi del motore possono essere ridotti con integrazione di un encoder sulla base delle caratteristiche o limitazioni meccaniche nella preparazione del segnale.

I numeri di giri massimi ridotti sono rappresentati nella tabella 5-5 ("Tipi di encoder per motori con DRIVE-CLiQ") nel capitolo 5.2.4.

### Vedere anche

Assegnazione dell'encoder in funzione del numero di giri massimo consentito (Pagina 941)

## 3.3.2 Durata utile dei cuscinetti

La durata dei cuscinetti viene limitata dall'affaticamento dei materiali (vita media per limite di fatica) oppure dalla inadeguatezza della lubrificazione (durata della lubrificazione a grasso). La vita media per limite di fatica (vita media dei cuscinetti $L_{10h}$) dipende principalmente dal carico meccanico. La relazione viene rappresentata nei diagrammi forza radiale/forza assiale. I valori sono rilevati secondo DIN/ISO 281.

La durata di utilizzo del lubrificante dipende principalmente dalla dimensione del cuscinetto, dai giri, dalla temperatura e dall'entità delle vibrazioni e degli scossoni.

Con condizioni di funzionamento particolarmente favorevoli (numeri di giri ridotti o medi, temperature dei cuscinetti basse, forza radiale o sollecitazione da vibrazioni ridotta) la durata di utilizzo del lubrificante può prolungarsi.

In caso di condizioni di funzionamento sfavorevoli e di montaggio verticale si deve invece prevedere una riduzione della durata della lubrificazione a grasso.

### Durata media della lubrificazione (senza lubrificazione successiva)

La durata media della lubrificazione a grasso $L_{10h}$ viene calcolata in funzione della durata dei cuscinetti.

### Intervallo per la sostituzione dei cuscinetti ($t_{LW}$)

Le dipendenze illustrate in precedenza determinano i seguenti intervalli di sostituzione consigliati dei cuscinetti per un determinato punto di esercizio come:

- Trasmissione a giunto o cinghie
- Temperatura del refrigerante fino a max. +40 °C (ventilazione forzata)
- Temperatura di ingresso dell'acqua di raffreddamento fino a max. +30 °C (raffreddamento ad acqua)
- Rispetto delle forze radiali ed assiali consentite (vedere capitolo "Forze radiali e assiali")

- Rispetto dei giri max. consentiti (vedere capitolo " Dati tecnici e curve caratteristiche")
- l'intervallo per la sostituzione dei cuscinetti si riduce in caso di condizioni d'esercizio gravose come ad es.
  - Velocità media > come specificata nella tabella 3-14
  - In presenza di vibrazioni e urti non nella norma
  - Frequenti inversioni di marcia

**Nota**

Durante il rinnovo dei cuscinetti del motore è consigliabile cambiare anche l'encoder con cuscinetti separati.

**Nota**

A causa degli elevati carichi assiali sui cuscinetti con disposizione verticale è possibile che la durata di vita del cuscinetto quasi si dimezzi. Sulla base dei pesi del rotore ciò coinvolge le altezze dell'asse 180 ... 280.

## Lubrificazione successiva

Per motori con possibilità di lubrificazione successiva la durata media dei cuscinetti può essere allungata e/o possono essere compensati fattori esterni sfavorevoli come influenze di montaggio, numero di giri, dimensione del cuscinetto e carico meccanico (vedere tabella "Intervalli di sostituzione consigliati dei cuscinetti").

In funzione della taglia costruttiva devono essere tenute in considerazione eventuali limitazioni come ad esempio montaggio verticale / posizione dell'albero.

Per le altezze d'albero 180 e 225 la lubrificazione successiva tramite nipplo è prevista come opzione, sigla ridotta K40.

## Successivi intervalli di lubrificazione

Gli intervalli di lubrificazione successivi sono indicati:

- sulla targhetta della lubrificazione del motore
- nella tabella "Intervalli di lubrificazione successivi"

**Nota**

In caso di intervalli molto ampi tra fornitura e messa in servizio (ad es. superiori a 1 intervallo di rilubrificazione), i cuscinetti devono essere lubrificati. Durante la lubrificazione successiva deve essere fatto ruotare l'albero per distribuire correttamente il grasso sul cuscinetto (per ulteriori istruzioni consultare le Istruzioni operative).

I dati forniti nella seguente tabella valgono per le stesse condizioni come quelle descritte negli intervalli di sostituzione dei cuscinetti:

Tabella 3- 17 Successivi intervalli di lubrificazione

| Altezza d'asse | Tipo di cuscinetto | Successivo intervallo di lubrificazione in ore di funzinamento[4] [h] | Quantità di grasso per ciascuna lubrificazione successiva[1] [g] | Deposito di grasso[2] [g] | Numero di intervalli di lubrificazione successiva possibili[3] |
|---|---|---|---|---|---|
| 180 | Standard | 7000 | 15 | 80 | 5 |
| | Forze radiali maggiorate | 4000 | 20 | 80 | 4 |
| | Performance | 4000 | 15 | 80 | 5 |
| 225 | Standard | 7000 | 30 | 180 | 6 |
| | Forze radiali maggiorate | 4000 | 40 | 180 | 4 |
| | Performance | 4000 | 30 | 180 | 6 |
| 280 | Standard | 7000 | 40 | 400 | 10 |
| | Forze radiali maggiorate | 4000 | 50 | 400 | 8 |

1) Quantità di grasso per la lubrificazione successiva per condizioni normali (temperatura ambiente fino a 40°C, disposizione orizzontale.)

2) Capacità di assorbimento del deposito di grasso rispettando la corretta quantità di grasso per ogni intervallo di lubrificazione.

3) Numero calcolato degli intervalli di lubrificazione; l'indicazione della durata media del cuscinetto avviene secondo punti di vista statistici attraverso la definizione $L_{10h}$.

4) I successivi intervalli di lubrificazione vanno dimezzati con disposizione verticale.

**Nota**

Fattori che influiscono sfavorevolmente, quali influssi di montaggio, velocità o carichi meccanici elevati, potrebbero richiedere un adattamento degli intervalli di rilubrificazione. Per questi casi sono necessari una valutazione ed un calcolo appropriati, e la progettazione deve avvenire osservando le condizioni marginali con il relativo costruttore del motore..

A causa degli elevati carichi assiali sui cuscinetti con disposizione verticale è possibile che la durata di vita del cuscinetto quasi si dimezzi. Sulla base dei pesi del rotore ciò coinvolge le altezze dell'asse 180 ... 280.

Per l'altezza AH 280, con osservazione delle condizioni marginali, è necessaria una verifica presso il relativo costruttore del motore.

# 3.4 Cuscinetto NDE in esecuzione isolata (opzione L27)

## Considerevoli circolazioni di corrente supplementari

Rispetto ad un'alimentazione puramente sinusoidale, la tensione di uscita impulsiva di un convertitore di frequenza comporta ulteriori circolazioni di corrente nel motore. Le circolazioni di corrente più rilevanti sono:

- Correnti circolari
- Correnti EDM
- Correnti verso terra del rotore

## Fattori di influenza sulle circolazioni di corrente

Le circolazioni di corrente di una determinata entità provocano la fusione delle sedi di rotazione e dei corpi dei rulli nonchè un consumo dei lubrificanti. In questo caso si riduce la durata media dei cuscinetti. I principali fattori di influenza sono:

- numero di giri del motore e relativo tempo di funzionamento
- frequenza degli impulsi del convertitore di frequenza
- collegamento di terra tra motore e carico abbinato

## Possibile applicazione dell'opzione L27

Il carico dovuto alle circolazioni di corrente aumenta notevolmente a < 500 giri/min. L'opzione L27 è sempre necessaria quando il motore funziona per lunghi periodi nel campo di giri da 0 ... 500 giri/min. Senza opzione L27 la durata globale di funzionamento nel campo di giri da 0 ... 500 giri/min può essere al max. di 800 h (con un intervallo di sostituzione dei cuscinetti ($t_{LW}$) di 20.000 h).

Tabella 3- 18 Provvedimenti per il funzionamento nel campo di giri < 500 giri/min

| Altezza d'asse | Intervalli per la sostituzione dei cuscinetti ($t_{LW}$) con lubrificazione [h] 1) | Opzioni necessarie | Osservazioni |
|---|---|---|---|
| 80 - 160 | 20000 | - | In base all'esperienza sul campo non sono noti pericoli dovuti alle circolazioni di corrente |
| 180 | | L27 | Cuscinetto isolato lato NDE |
| 225 | | _ | Cuscinetto generalmente isolato lato NDE |
| 280 | | _ | Cuscinetto generalmente isolato lato NDE |

1) La definizione è contenuta nella tabella "Intervalli di sostituzione consigliati dei cuscinetti"

## Messa a terra del motore

Per evitare la circolazione di correnti del rotore verso terra, bisogna prevedere una buona messa a terra della carcassa del motore, ad esempio utilizzando cavi motore schermati. Lo schermo del cavo motore deve essere collegato ad entrambi i lati con un'ampia superficie di contatto.

In determinate applicazioni la messa a terra del motore $Z_{hg}$ può essere più sfavorevole di quella del carico collegato $Z_{rg}$ , es. con cavi motore molto lunghi e disposizioni "isolate" del motore. In questo caso le correnti di fuga capacitive del motore fluiscono dalla carcassa del motore stesso attraverso l'albero fino al carico collegato e da qui verso terra.

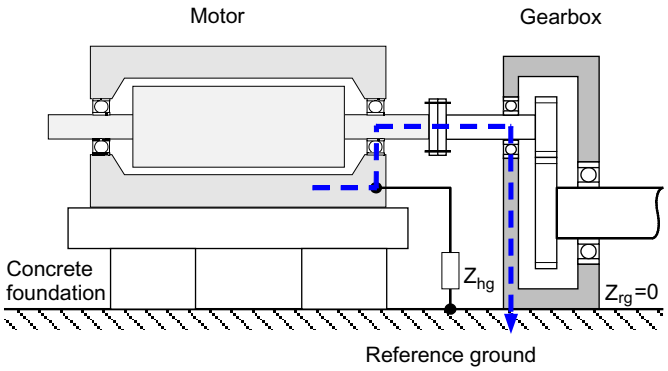



Figura 3-8 Circolazione di corrente dovuta al collegamento di messa a terra (= corrente del rotore verso terra)

La corrente del rotore verso terra deve essere evitata utilizzando un giunto isolante dal punto di vista elettrico. Se per motivi meccanici questo giunto non può essere utilizzato, occorre allora collegare la carcassa del motore con il carico utilizzando un'ampia superficie di contatto. La corrente di fuga capacitiva in questo caso fluisce attraverso la carcassa del motore fino al carico e non attraverso il cuscinetto. Il collegamento tra la carcassa del motore ed il carico è efficace solo se presenta un'impedenza molto bassa per le correnti di fuga ad alta frequenza. Utilizzare quindi più collegamenti e con ampie superfici di contatto, es. trecciole di terra, piastre metalliche.

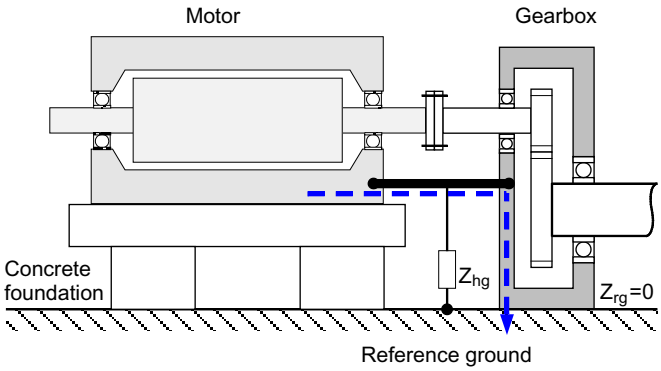



Figura 3-9 Collegamento tra la carcassa del motore ed il carico per evitare le correnti del rotore verso terra.

# 3.5 Forze radiali e forze assiali

## 3.5.1 Forza radiale

Per garantire una marcia ottimale, non deve mai essere superata la forza radiale.

Ad altezze d'asse diverse è necessario non utilizzare forze inferiori alla forza minima. Questa può essere desunta dai diagrammi delle forze radiali. I diagrammi indicano la forza radiale $F_R$

- per diverse velocità di esercizio
- a seconda della durata dei cuscinetti

I diagrammi e le tabelle relativi alle forze sono validi per estremità dell'albero normali su DE. Per diametri di albero inferiori è possibile trasmettere solo forze radiali ridotte o nulle.

Per valori delle forze diverse da quelle riportate nei diagrammi, contattare la più vicina rappresentanza Siemens.

**⚠ CAUTELA**

Se si utilizzano elementi di trasmissione della forza che hanno come conseguenza una sollecitazione radiale sull'estremità dell'albero, occorre fare attenzione a non superare i valori limite massimi indicati nei diagrammi delle forze radiali.

Solo per cuscinetti con elevata forza radiale (altezza d'asse 180 ... 280):
Nelle applicazioni dove i carichi radiali sono molto contenuti, l'albero del motore dovrà essere caricato almeno con il valore minimo di forza radiale indicato nei diagrammi. Infatti, forze radiali ridotte potrebbero provocare un rotolamento indefinito del cuscinetto con la conseguenza di una maggiore usura del cuscinetto.

Nelle applicazioni in cui i carichi radiali sono inferiori alle forze radiali minime indicate (ad es. trasmissione con giunto), non devono essere impiegati i cuscinetti per forza radiale elevata. Per queste applicazioni deve essere ordinato il motore con cuscinetti standard.

**ATTENZIONE**

**Forze rotanti**

I cuscinetti dei motori sono progettati per il funzionamento con forze radiali. Le forze rotanti generate dal processo o dall'equilibratura > Q 2,5 potrebbero causare la rottura della sede del cuscinetto, per questo devono essere evitate. Queste possono manifestarsi anche con trasmissione con giunto.

**⚠ CAUTELA**

Durante l'utilizzo di elementi di rinforzo della forza/momento (ad esempio riduttori, freni) è necessario garantire che le forze maggiori non siano caricate sul motore.

**Nota**

È necessario eseguire un dimensionamento accurato delle forze radiali dell'estremità dell'albero secondo le direttive fornite dal produttore delle cinghie. La tensione delle cinghie deve poi essere impostata con gli appositi dispositivi di misurazione.

### Calcolo della forza radiale totale $F_R$ per la trasmissione con cinghie

Se il produttore delle cinghie non specifica il dimensionamento delle forze radiali, lo si può determinare in base alla seguente formula:

$F_R$ [N] = c • $F_U$ $\qquad$ $F_U$ [N] = 2 • $10^7$ • $P$ / (n • D)

Tabella 3- 19 Spiegazione dei simboli della formula

| Simbolo della formula | Unità | Descrizione |
|---|---|---|
| c | -- | Fattore di pretensionamento; il fattore di pretensionamento è un valore ricavato dall'esperienza dichiarato dal costruttore della cinghia. Si possono definire questi valori:<br>per cinghie trapezoidali: c = 1,5 ... 2,5<br>per cinghie in plastica speciali (cinghie piane) per ogni tipo di carico e tipo di cinghia c = 2,0 ... 2,5 |
| $F_U$ | N | Forza periferica |
| P | kW | Prestazioni di emissione del motore |
| n | 1/min | Velocità motore |
| D | mm | Diametro della puleggia |

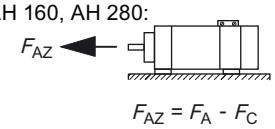
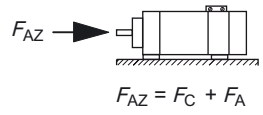
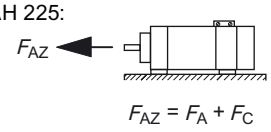
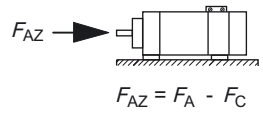
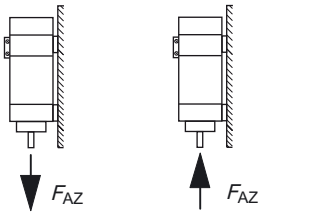
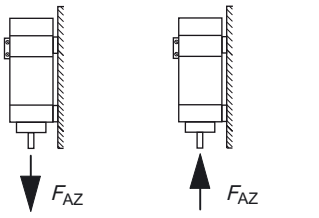
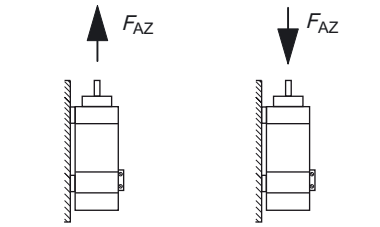
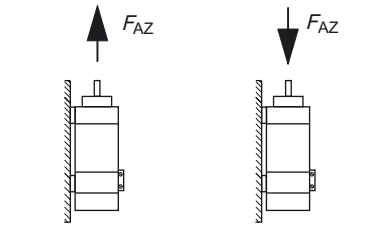
## 3.5.2 Forza assiale

La forza assiale che agisce sul cuscinetto fisso è costituita dalla forza assiale esterna (ad esempio riduttore con dentatura elicoidale, forze di lavorazione attraverso l'utensile), da una forza di incidenza del cuscinetto e da un'eventuale forza peso del rotore per il montaggio verticale del motore. Pertanto si ottiene una forza assiale massima in funzione della direzione.

In caso di impiego p. es. di ingranaggi a denti obliqui come elemento di azionamento, oltre alla forza radiale sul cuscinetto del motore agisce anche una forza assiale. In presenza di forze assiali può essere superata la taratura della molla del cuscinetto. Questo fenomeno va evitato perché ridurrebbe la durata di vita del cuscinetto e dell'encoder.

La forza assiale consentita in condizioni adeguate di esercizio $F_{AZ}$ viene determinata in base alla posizione di montaggio del motore (vedere tabella).

Tabella 3- 20 Calcolo della forza assiale ammessa:

| Disposizione orizzontale | Estremità d'albero verso il basso | Estremità d'albero verso l'alto |
|---|---|---|
| AH 80 - AH 160, AH 280:<br>  <br>$F_{AZ} = F_A - F_C$<br>  <br>$F_{AZ} = F_C + F_A$<br>AH 180, AH 225:<br>  <br>$F_{AZ} = F_A + F_C$<br>  <br>$F_{AZ} = F_A - F_C$ | AH 80 - AH 160, AH 280:<br>  <br>$F_{AZ} = F_A - F_L - F_C$<br>$F_{AZ} = F_L + F_C + F_A$<br>AH 180, AH 225:<br>  <br>$F_{AZ} = F_A + F_C - F_L$<br>$F_{AZ} = F_A - F_C + F_L$ | AH 80 - AH 160, AH 280:<br>  <br>$F_{AZ} = F_A + F_L - F_C$<br>$F_{AZ} = F_C - F_L + F_A$<br>AH 180, AH 225:<br>  <br>$F_{AZ} = F_A + F_C + F_L$<br>$F_{AZ} = F_A - F_L - F_C$ |

| | |
|---|---|
| $F_{AZ}$ | Forza assiale consentita in condizioni di esercizio adeguate |
| $F_A$ | Forza assiale consentita in funzione del numero di giri medio presente $n_m$ senza considerazione della forza di regolazione della molla e della forza-peso del rotore |
| $F_C$ | Forza elastica |
| $F_L$ | Forza-peso del rotore |

## 3.5.3 Diagramma delle forze radiali e assiali

### Forze radiali consentite per l'altezza AH 80

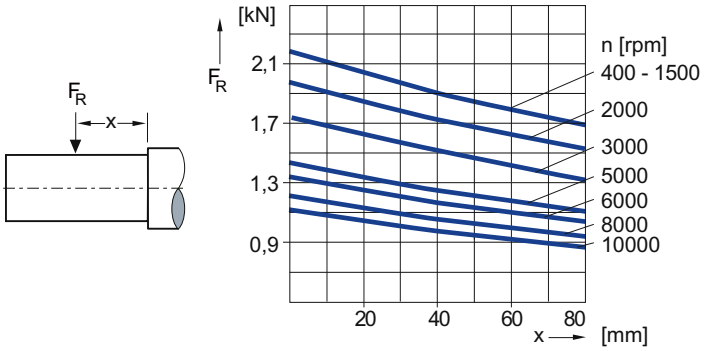



Figura 3-10 AH 80, Standard, durata di vita del cuscinetto 20000 h

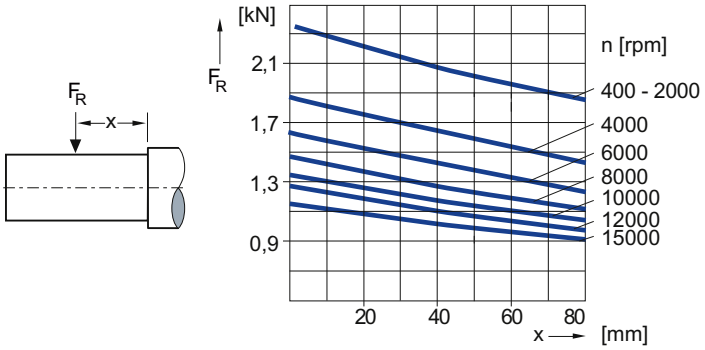



Figura 3-11 AH 80, Performance, High Performance, durata di vita del cuscinetto 12000 h

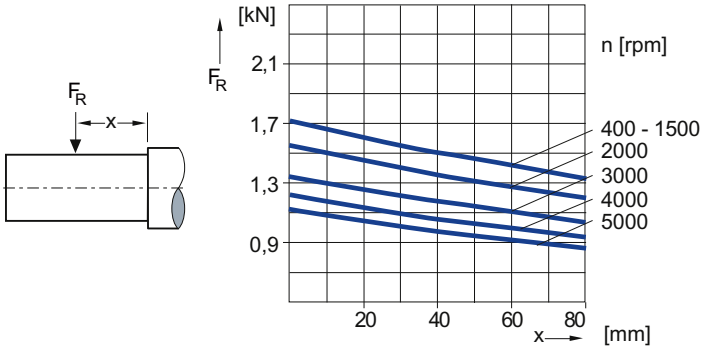



Figura 3-12 AH 80, Advanced Lifetime, durata di vita del cuscinetto 40000 h

## Forze radiali consentite per l'altezza AH 100

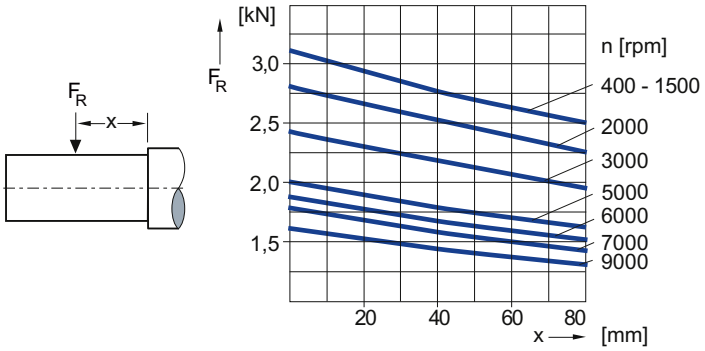



Figura 3-13 AH 100, Standard, durata di vita del cuscinetto 20000 h

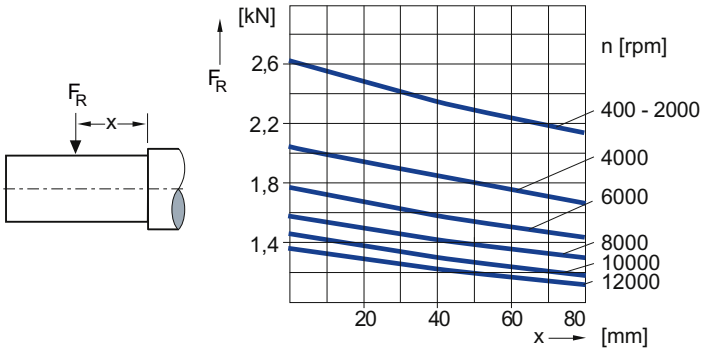



Figura 3-14 AH 100, Performance, durata di vita del cuscinetto 12000 h

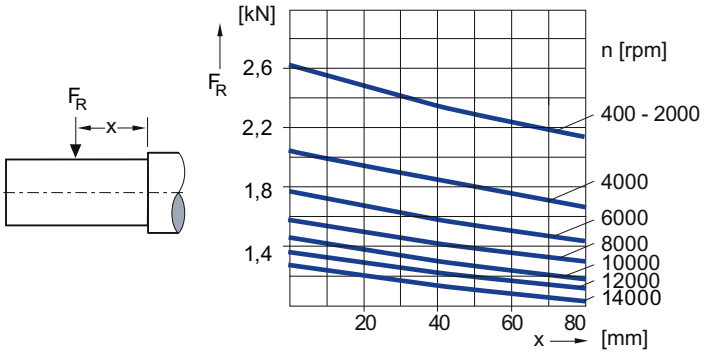



Figura 3-15 AH 100, High Performance, durata di vita del cuscinetto 12000 h

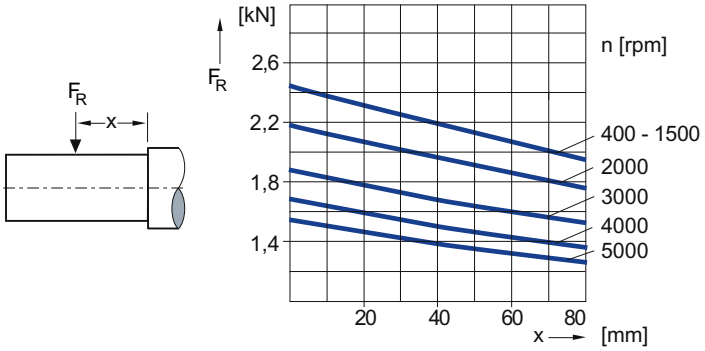



Figura 3-16 AH 100, Advanced Lifetime, durata di vita del cuscinetto 40000 h

## Forze radiali consentite per l'altezza AH 132

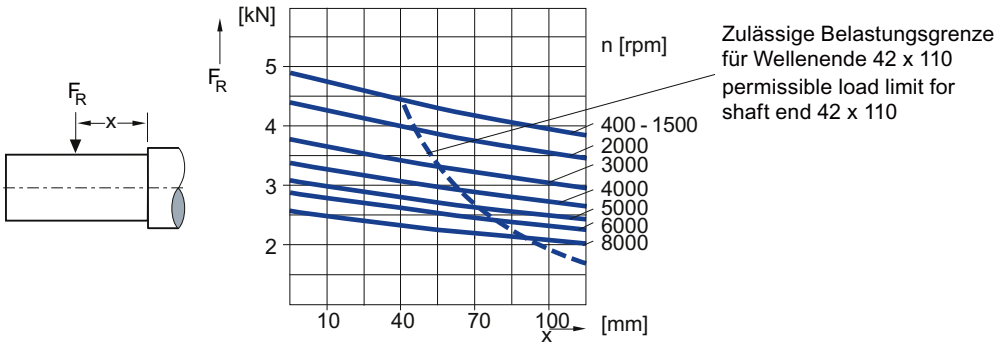



Figura 3-17 AH 132, Standard, durata di vita del cuscinetto 20000 h

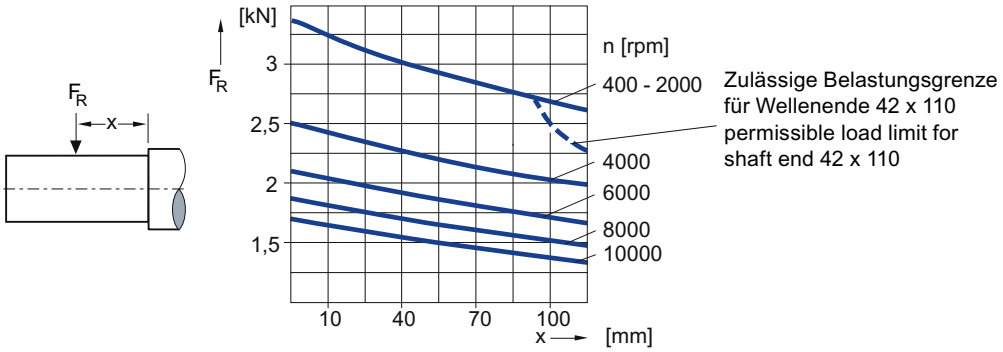



Figura 3-18 AH 132, Performance, durata di vita del cuscinetto 12000 h

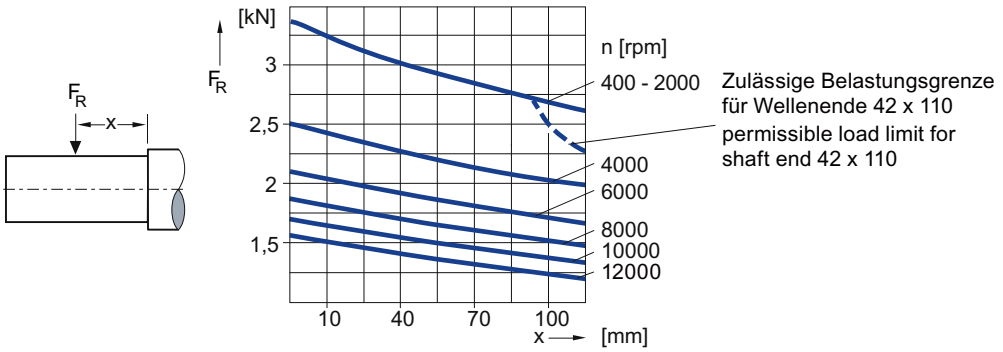



Figura 3-19 AH 132, High Performance, durata di vita del cuscinetto 12000 h

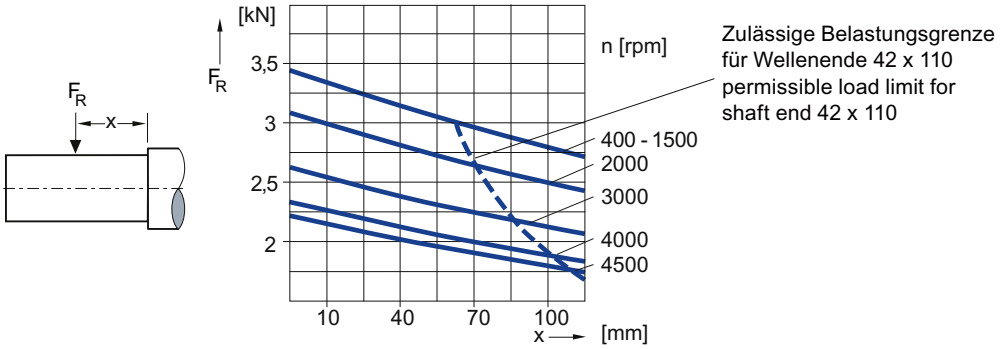



Figura 3-20 AH 132, Advanced Lifetime, durata di vita del cuscinetto 40000 h

## Forze radiali consentite per l'altezza AH 160

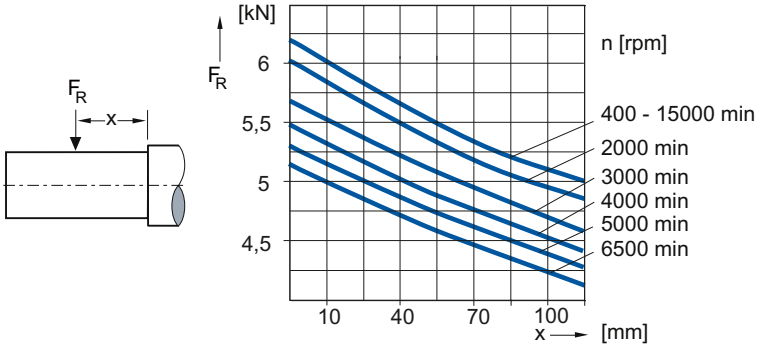



Figura 3-21 AH 160, Standard, durata di vita del cuscinetto 20000 h

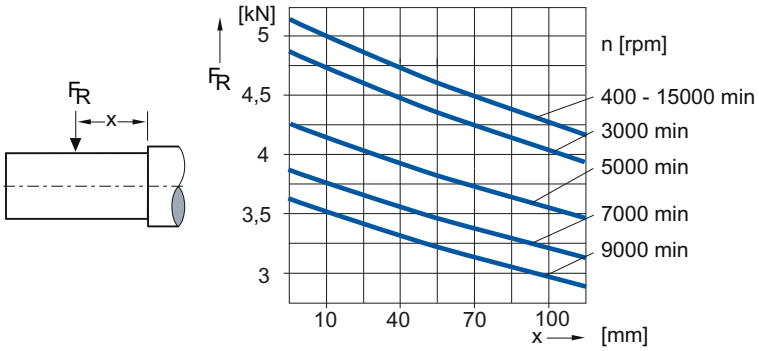



Figura 3-22 AH 160, Performance, durata di vita del cuscinetto 12000 h

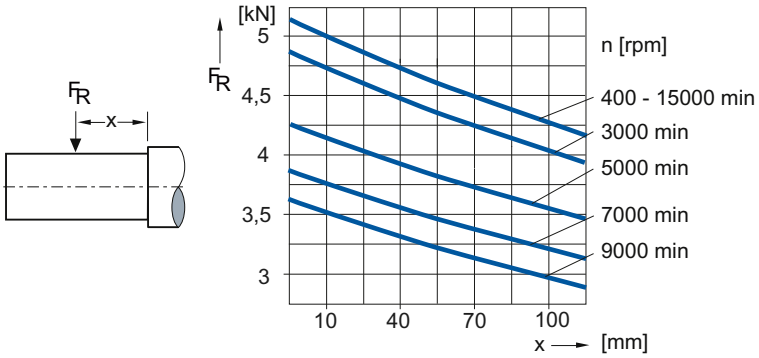



Figura 3-23 AH 160, High Performance, durata di vita del cuscinetto 12000 h

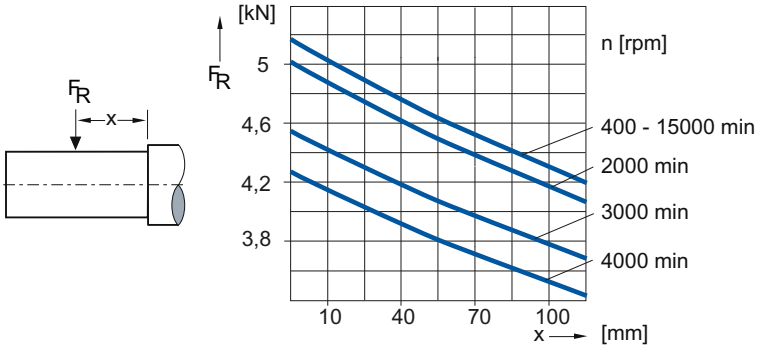



Figura 3-24 AH 160, Advanced Lifetime, durata di vita del cuscinetto 40000 h

## Forze radiali consentite per l'altezza AH 180

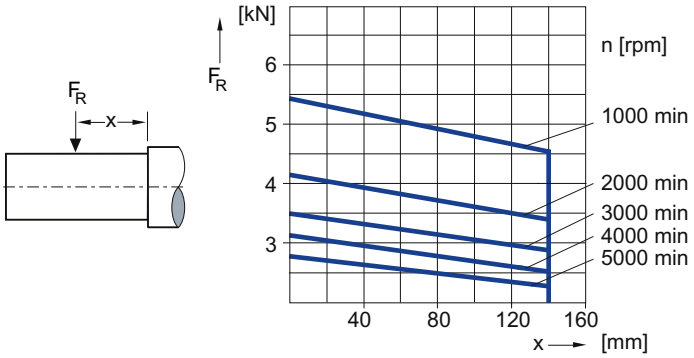



Figura 3-25 AH 180, Standard, durata di vita del cuscinetto 20000 h

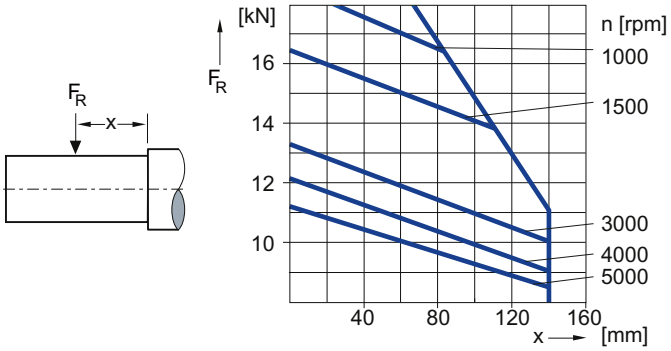



Figura 3-26 AH 180, elevata forza radiale,durata di vita del cuscinetto 12000 h
Forza radiale minima: 4 kN

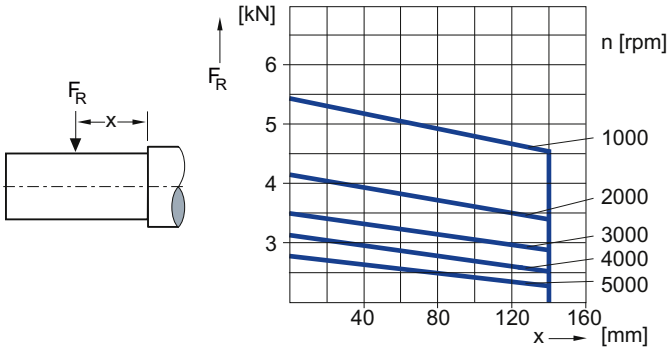



Figura 3-27 AH 180, Performance, durata di vita del cuscinetto 12000 h

**Nota**

**Cuscinetto con forza radiale elevata**

Se i cuscinetti a rullo qui installati si utilizzano senza carico, gli stessi possono subire danni.

Fare attenzione alle forze radiali minime indicate!

## Forze radiali consentite per l'altezza AH 225

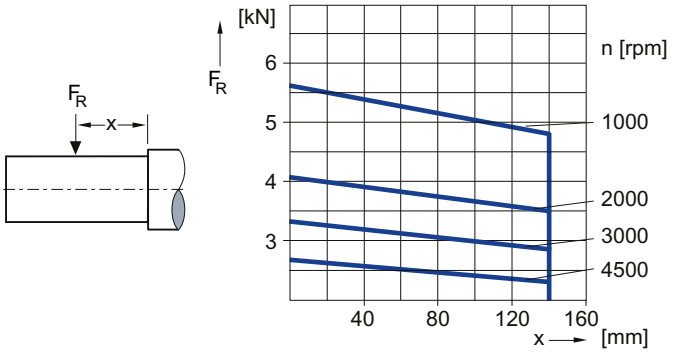



Figura 3-28 AH 225, Standard, durata di vita del cuscinetto 20000 h

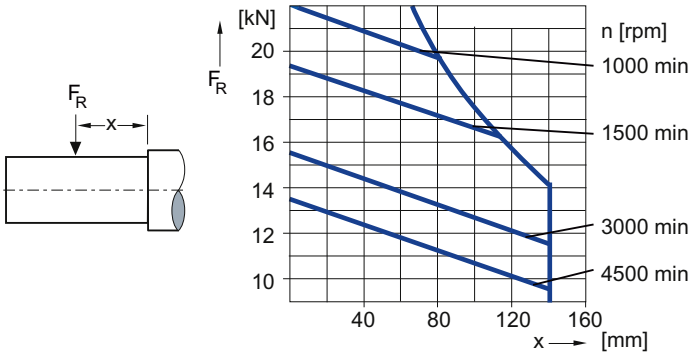



Figura 3-29 AH 225, elevata forza radiale,durata di vita del cuscinetto 12000 h
Forza radiale minima: 5 kN

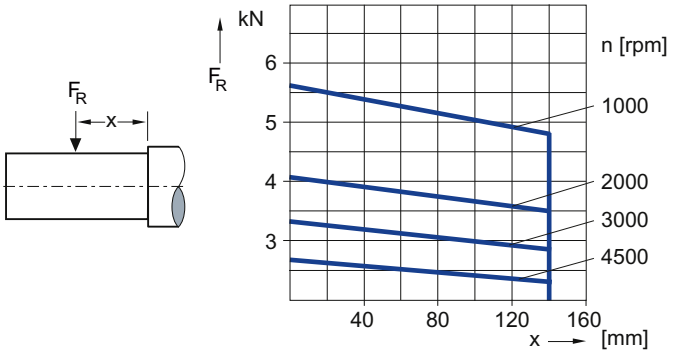



Figura 3-30 AH 225, Performance, durata di vita del cuscinetto 12000 h

**Nota**

**Cuscinetto con forza radiale elevata**

Se i cuscinetti a rullo qui installati si utilizzano senza carico, gli stessi possono subire danni.

Fare attenzione alle forze radiali minime indicate!

## Forze radiali consentite per l'altezza AH 280

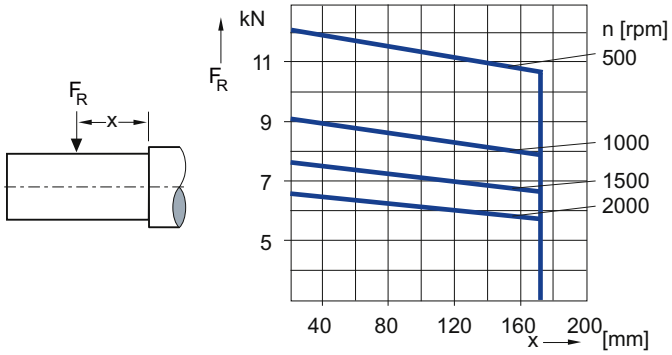



Figura 3-31 AH 280, Standard, durata di vita del cuscinetto 20000 h

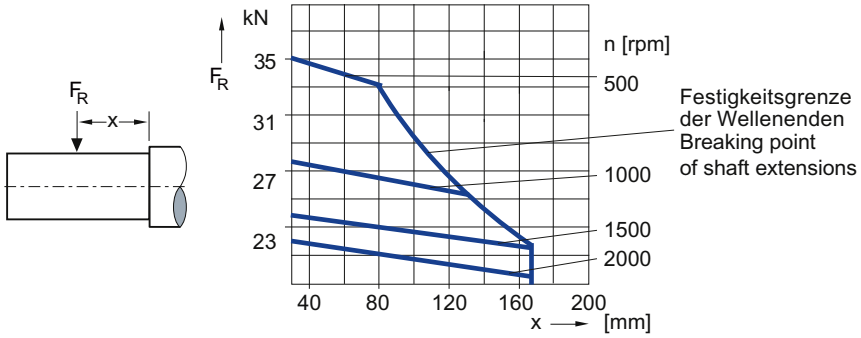



Figura 3-32 AH 280, elevata forza radiale,durata di vita del cuscinetto 12000 h
Forza radiale minima: 9 kN

**Nota**

**Cuscinetto con forza radiale elevata**

Se i cuscinetti a rullo qui installati si utilizzano senza carico, gli stessi possono subire danni.

Fare attenzione alle forze radiali minime indicate!

## Forze assiali

I cuscinetti a sfera possono accettare sia forze assiali che forze radiali.

Le forze assiali max. $F_A$ in funzione della forza radiale sono rappresentate nei seguenti diagrammi delle forze.

Vengono indicate le forze ammesse sui cuscinetti senza considerare la forza di precarico delle molle, il peso del rotore con montaggio verticale e la direzione della forza.

**Nota**

Le forze assiali consentite sull'estremità dell'albero $F_{A\ con}$ sono dipendenti dall'applicazione (montaggio, direzione delle forze) e devono essere calcolate.

## Forze dovute al peso del rotore ed alla precarica delle molle

Tabella 3- 21 Forza-peso e forza di regolazione della molla del rotore

| Tipo di motore | Forza-peso $F_L$ [N] | Forza di regolazione della molla $F_C$ [N] +/- 25 % |
|---|---|---|
| 1PH8083 | 90 | 450 |
| 1PH8087 | 115 | |
| 1PH8101 | 120 | 550 |
| 1PH8103 | 150 | |
| 1PH8105 | 195 | |
| 1PH8107 | 220 | |
| 1PH8131 | 270 | 900 |
| 1PH8133 | 330 | |
| 1PH8135 | 390 | |
| 1PH8137 | 445 | |
| 1PH8138 | | |
| 1PH8163 | 600 | 1200 |
| 1PH8164 | | |
| 1PH8165 | 715 | |
| 1PH8166 | | |
| 1PH8167 | 655 | |
| 1PH8168 | | |
| 1PH8184 | 900 | 880 |
| 1PH8184 (forma costruttiva IM V5, V15) | | 2300 |
| 1PH8186 | 1150 | 880 |
| 1PH8186 (forma costruttiva IM V5, V15) | | 2300 |

| Tipo di motore | Forza-peso $F_L$ [N] | Forza di regolazione della molla $F_C$ [N] +/- 25 % |
|---|---|---|
| 1PH8224 | 1710 | 880 |
| 1PH8226 | 2160 | |
| 1PH8228 | 2570 | |
| 1PH8284 | 3300 | 1100 |
| 1PH8286 | 4000 | |
| 1PH8288 | 4700 | |

## Forze assiali consentite per l'altezza dell'asse 80

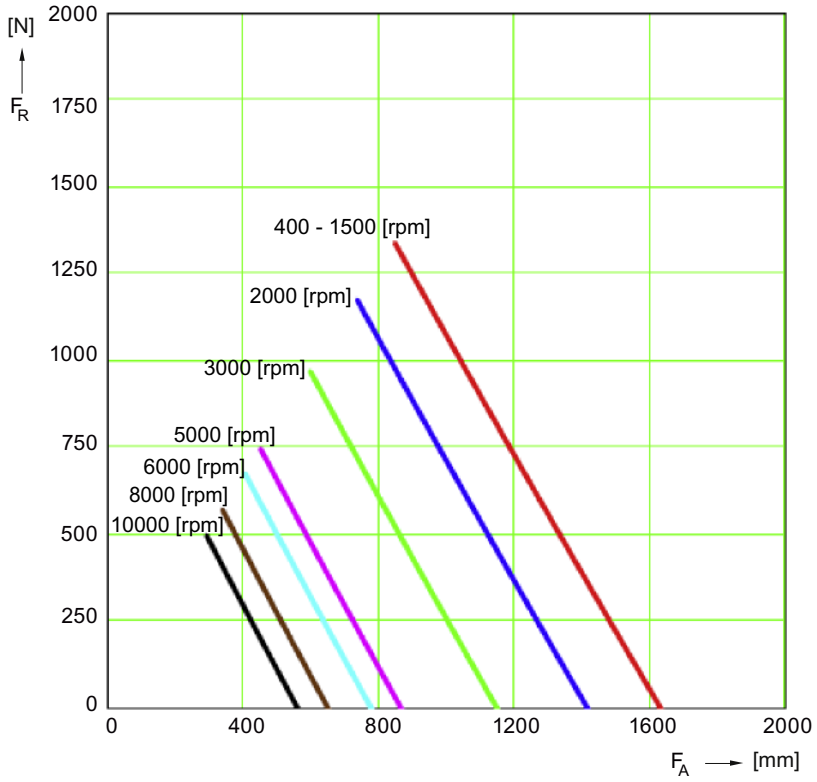



Figura 3-33 AH 80, Standard, durata di vita del cuscinetto 20000 h

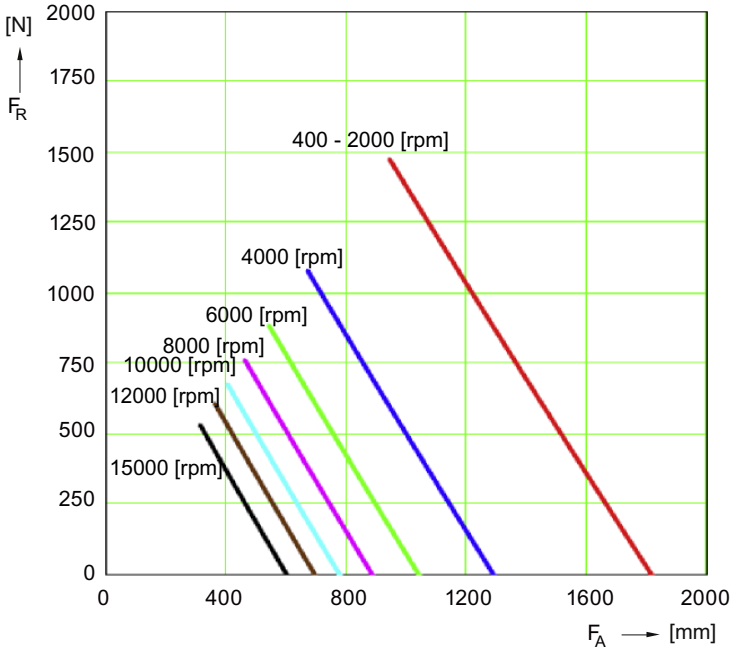



Figura 3-34 AH 80, Performance, High Performance, durata di vita del cuscinetto 12000 h

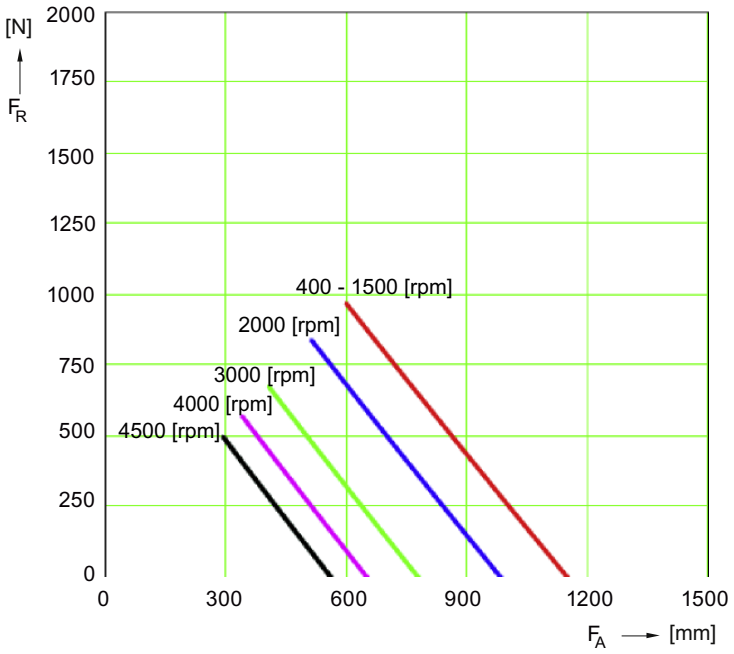



Figura 3-35 AH 80, Advanced Lifetime, durata di vita del cuscinetto 40000 h

## Forze assiali consentite per l'altezza dell'asse 100

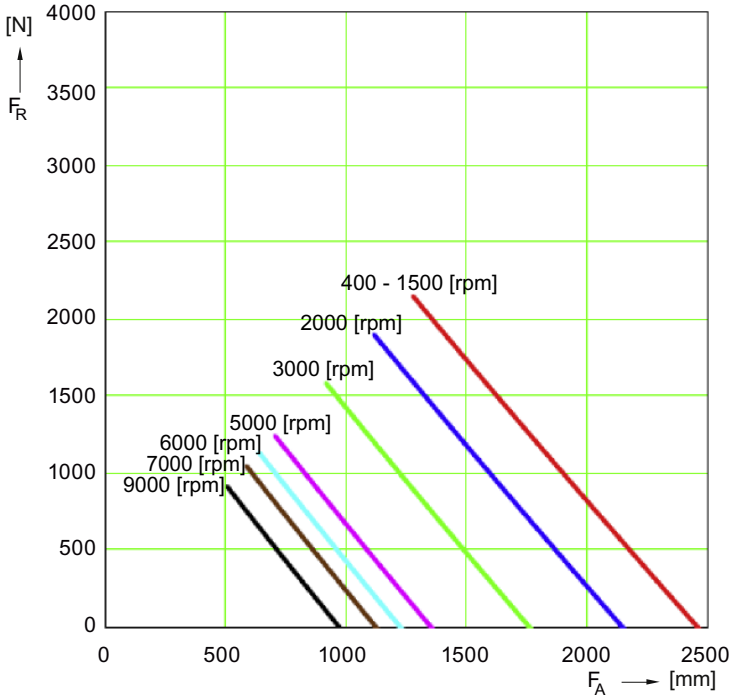



Figura 3-36 AH 100, Standard, durata di vita del cuscinetto 20000 h

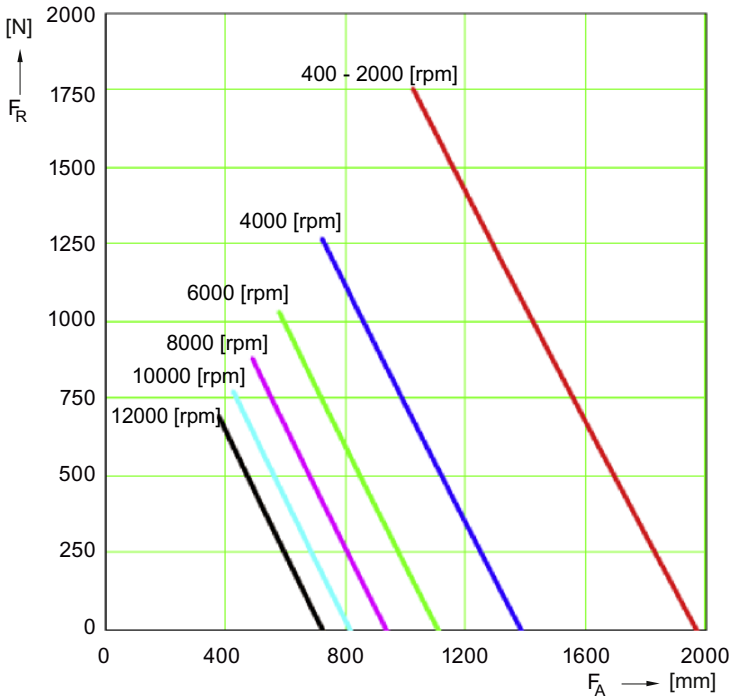



Figura 3-37 AH 100, Performance, durata di vita del cuscinetto 12000 h

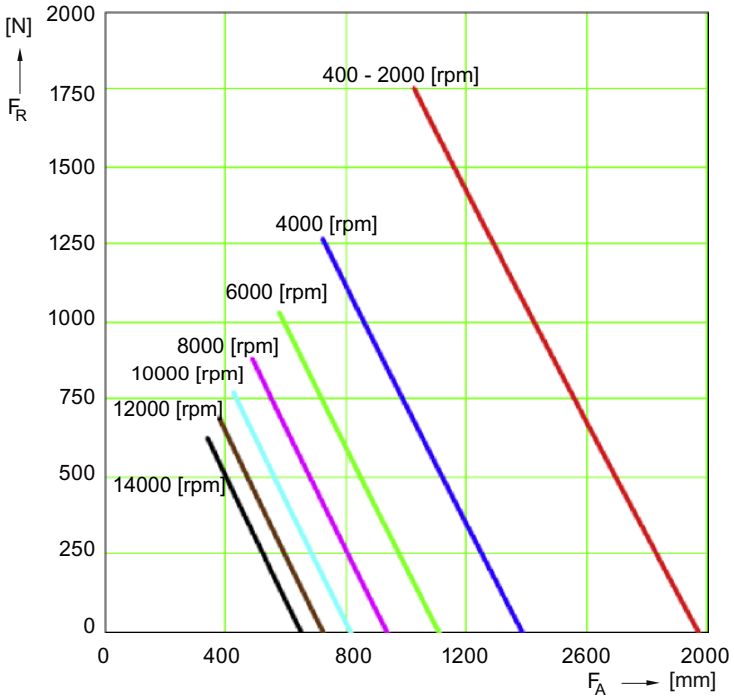



Figura 3-38 AH 100, High Performance, durata di vita del cuscinetto 12000 h

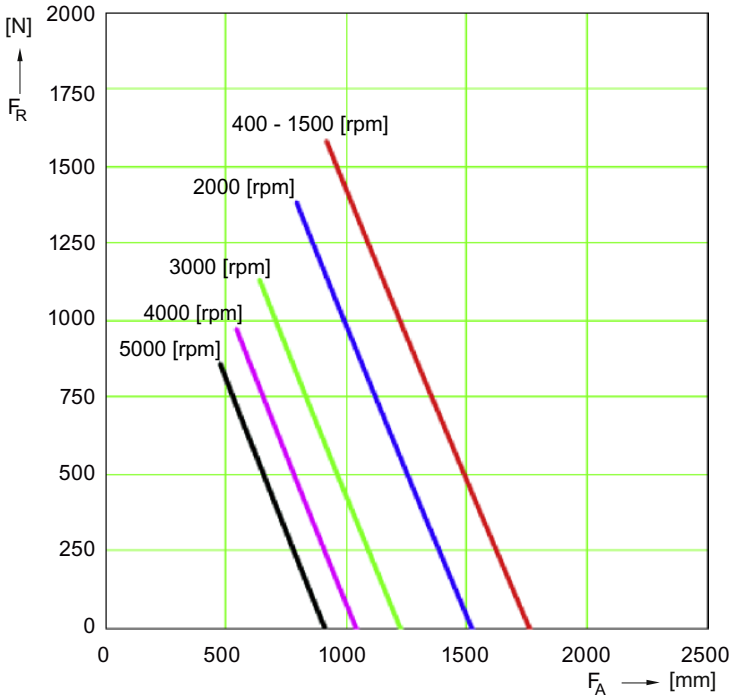



Figura 3-39 AH 100, Advanced Lifetime, durata di vita del cuscinetto 40000 h

## Forze assiali consentite per l'altezza AH 132

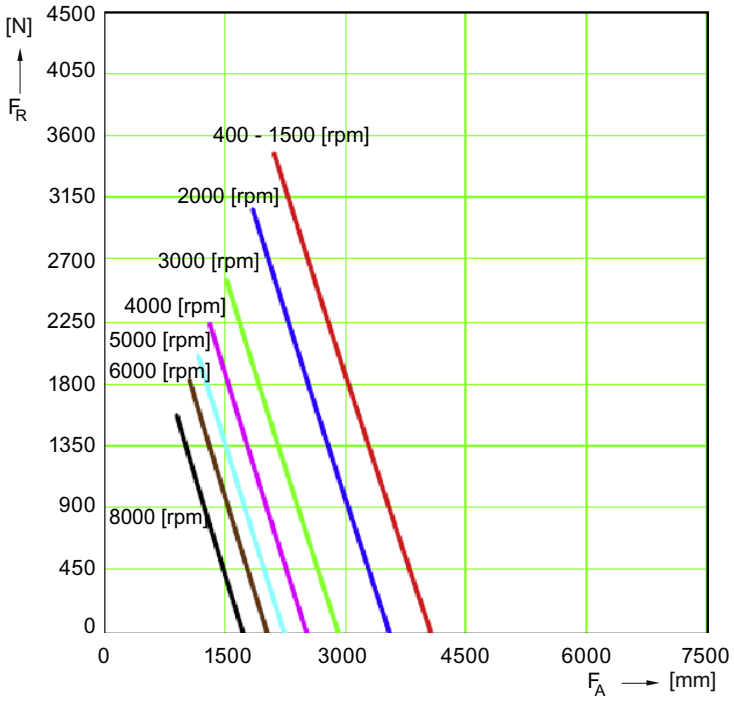



Figura 3-40 AH 132, Standard, durata di vita del cuscinetto 20000 h

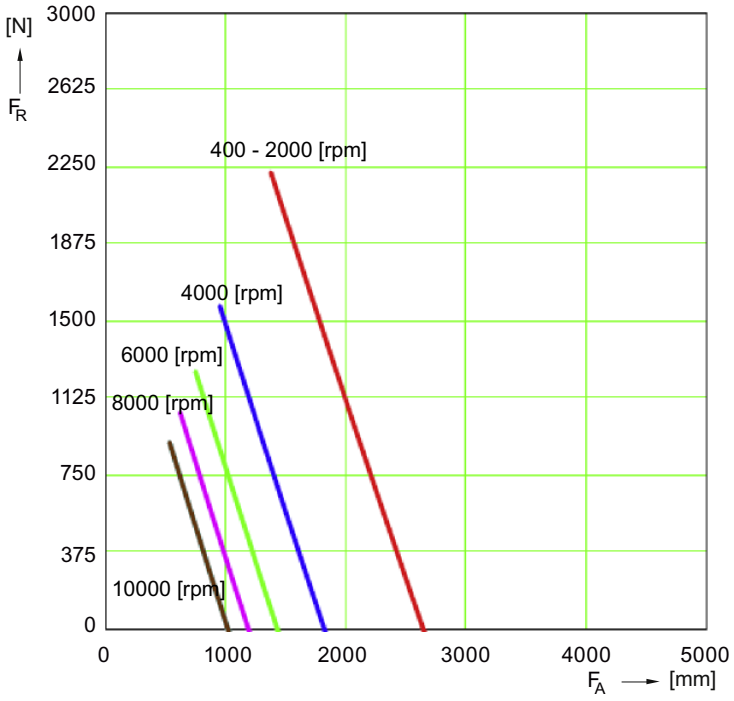



Figura 3-41 AH 132, Performance, durata di vita del cuscinetto 12000 h

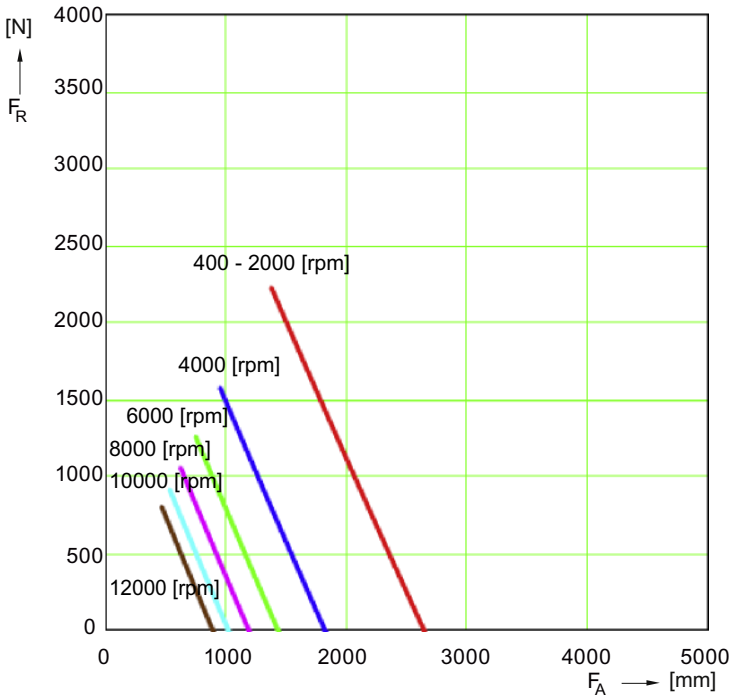



Figura 3-42 AH 132, High Performance, durata di vita del cuscinetto 12000 h

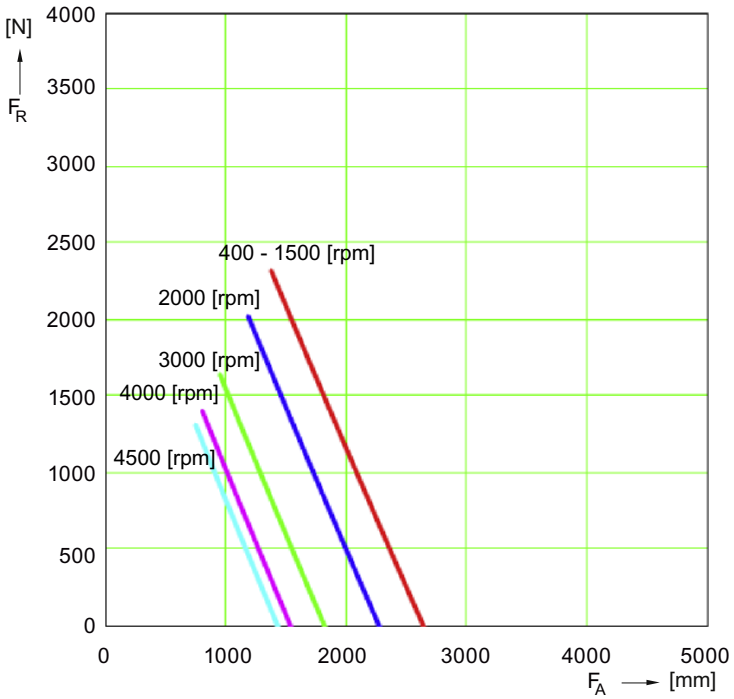



Figura 3-43 AH 132, Advanced Lifetime, durata di vita del cuscinetto 40000 h

## Forze assiali consentite per l'altezza AH 160

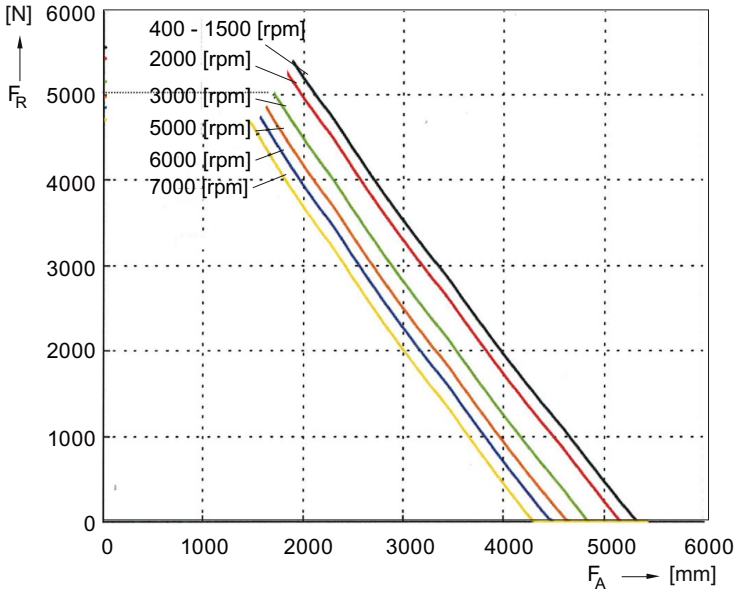



Figura 3-44 AH 160, Standard, durata di vita del cuscinetto 20000 h

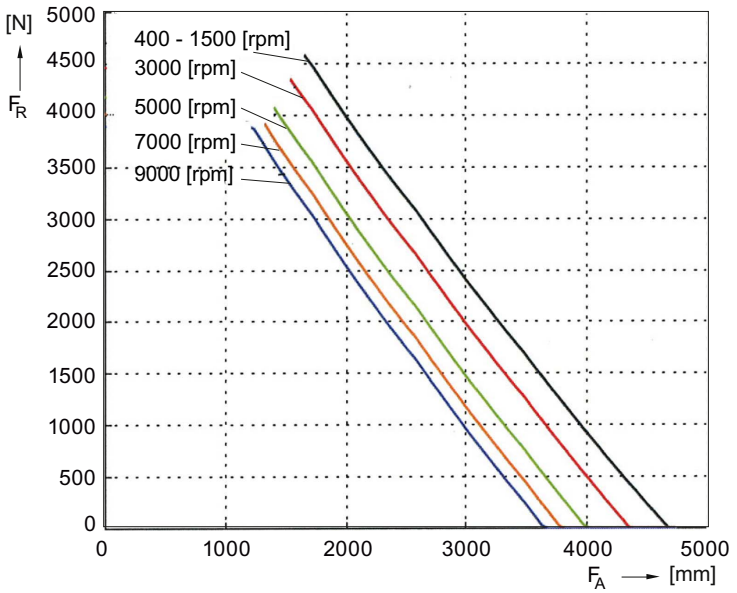



Figura 3-45 AH 160, Performance, durata di vita del cuscinetto 12000 h

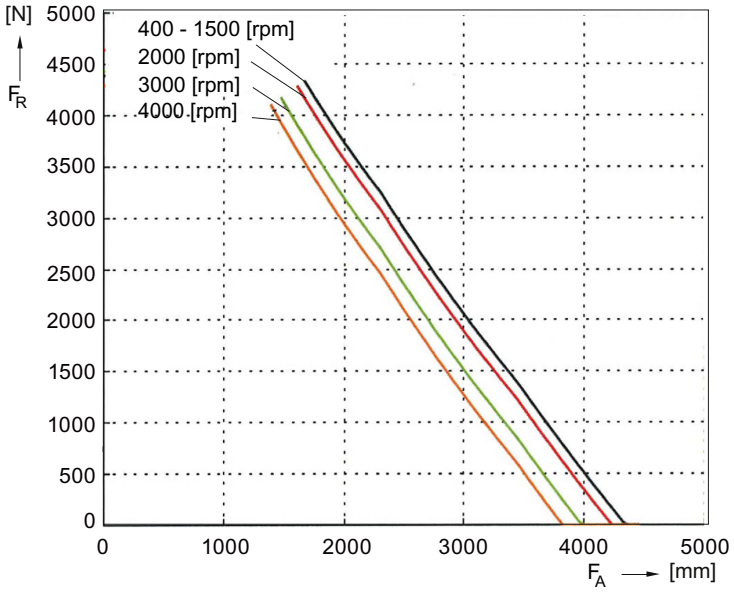



Figura 3-46 AH 160, Advanced Lifetime, durata di vita del cuscinetto 40000 h

## Forze assiali consentite per l'altezza AH 180

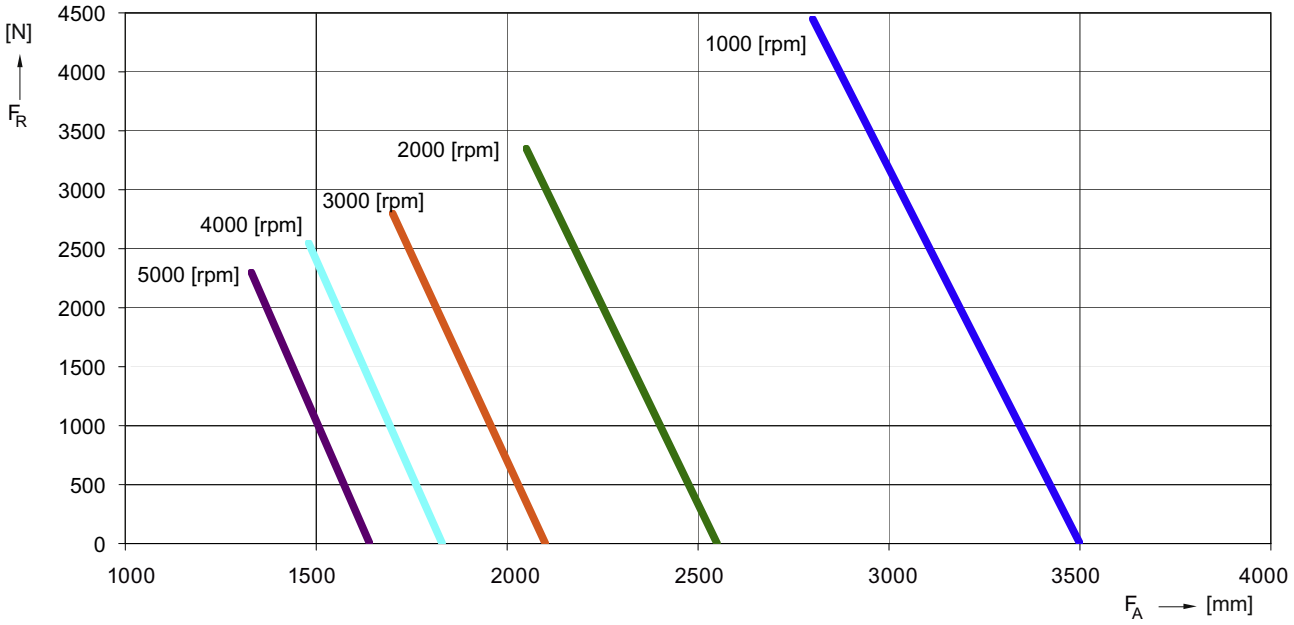



Figura 3-47 AH 180, Standard/Performance, durata di vita del cuscinetto 20000/12000 h

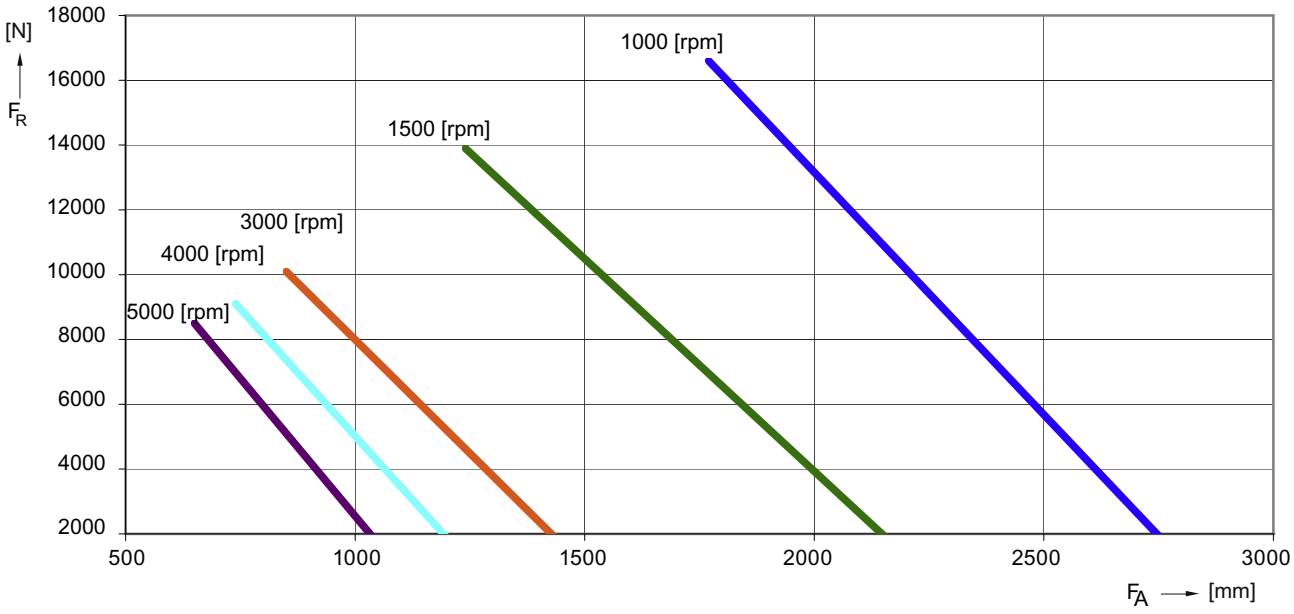



Figura 3-48 AH 180, elevata forza trasversale,durata di vita del cuscinetto 12000 h

## Forze assiali consentite per l'altezza AH 225

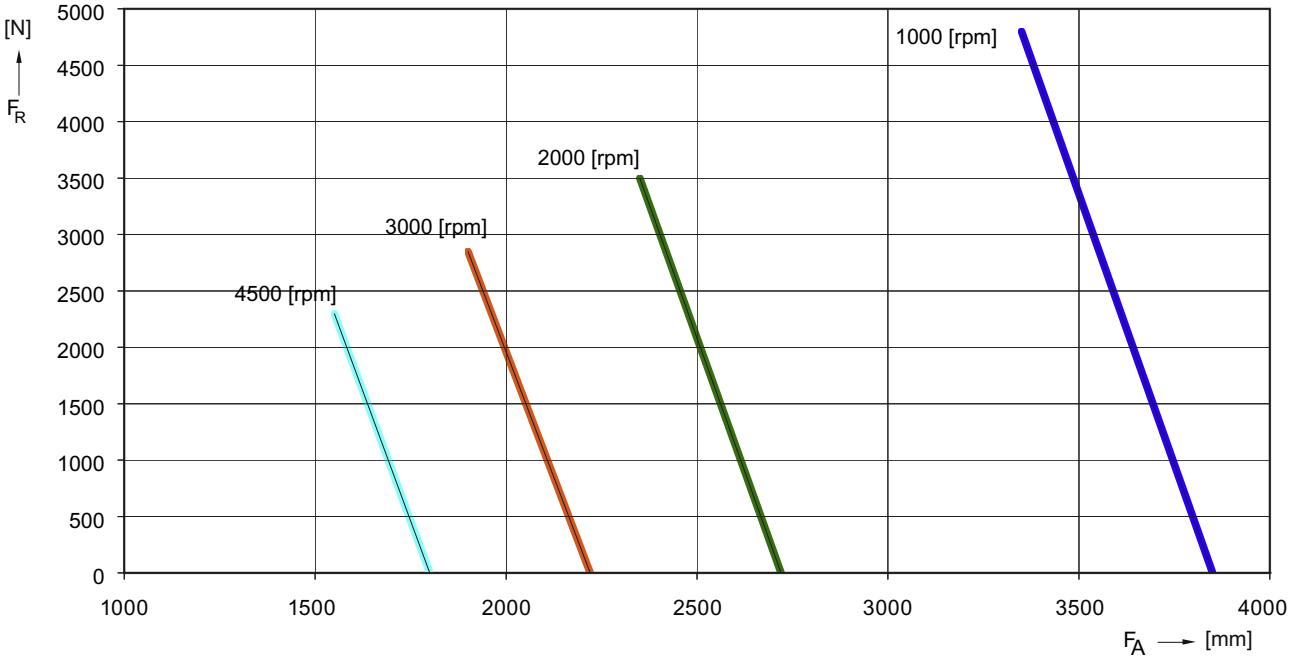



Figura 3-49 AH 225, Standard/Performance, durata di vita del cuscinetto 20000/12000 h

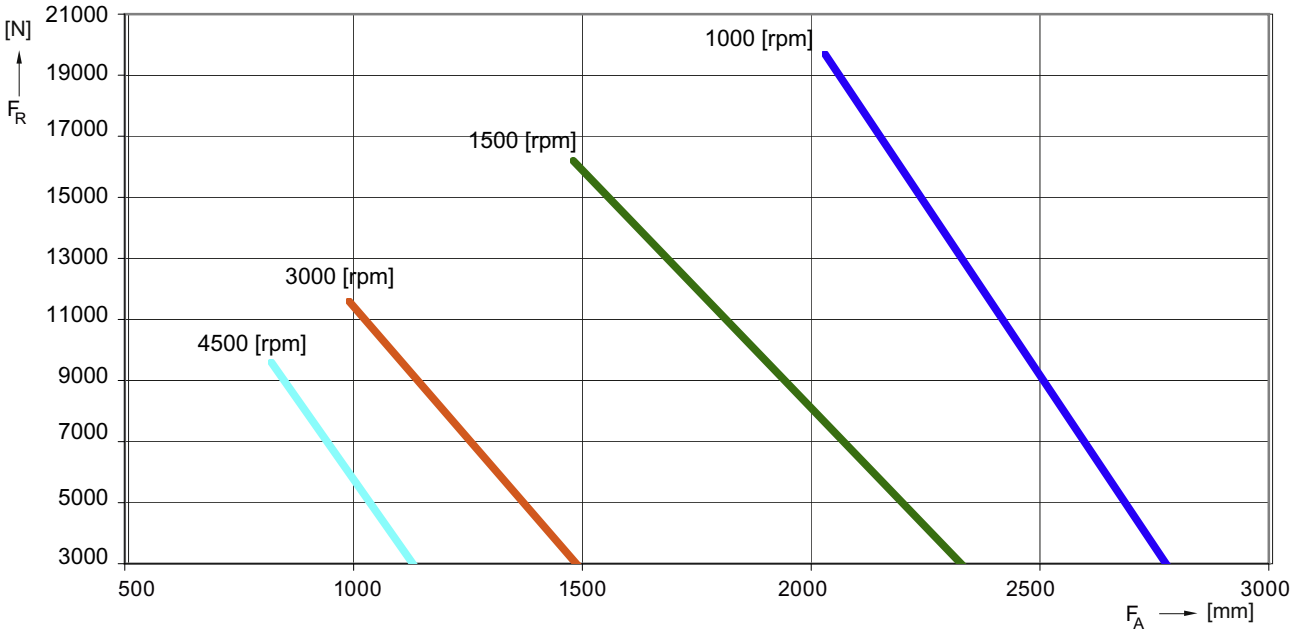



Figura 3-50 AH 225, elevata forza trasversale,durata di vita del cuscinetto 12000 h

### Forze assiali consentite per l'altezza AH 280

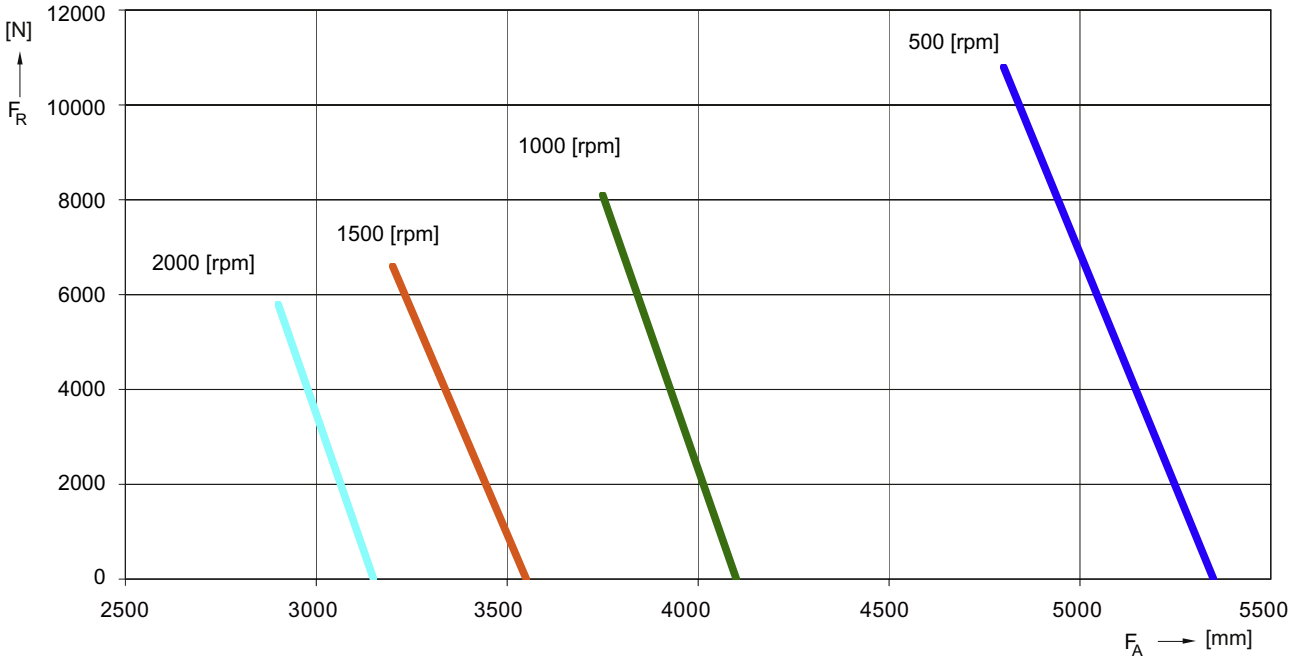



Figura 3-51 AH 280, Standard, durata di vita del cuscinetto 20000 h

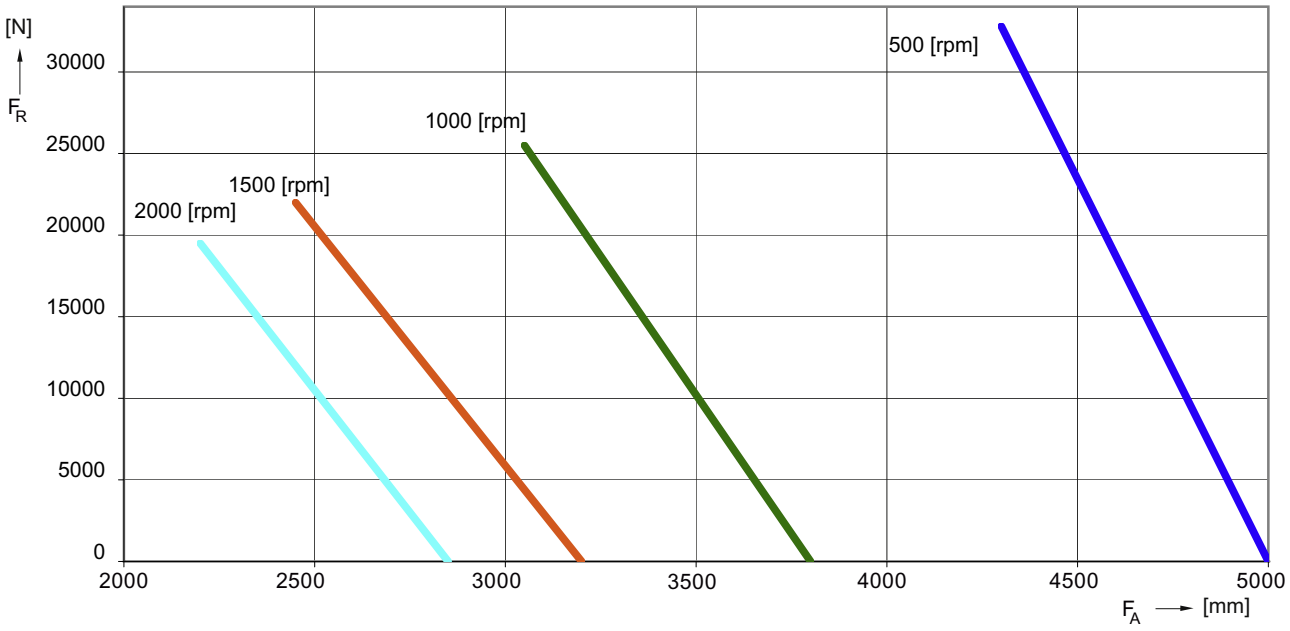



Figura 3-52 AH 280, elevata forza trasversale,durata di vita del cuscinetto 12000 h

## 3.6 Estremità dell'albero

L'estremità dell'albero sul lato DE è realizzata in modo cilindrico secondo DIN 748 parte 3 (IEC 60072-1).

# 3.7 Concentricità, coassialità e planarità

La precisione dell'albero e della flangia è verificata secondo DIN 42955, IEC 60072. Dati diversi dai valori qui indicati sono riportati nei disegni quotati.

Tabella 3- 22 Tolleranza di concentricità dell'albero rispetto all'asse della custodia (riferita alle estremità d'albero cilindriche)

| Altezza d'asse | Tolleranza livello N | Tolleranza livello R | Tolleranza SPECIALE |
|---|---|---|---|
| 80 | 0,05 | 0,025 | 0,01 |
| 100 | 0,05 | 0,025 | 0,01 |
| 132 | 0,05 | 0,025 | 0,01 |
| 160 | 0,06 | 0,03 | 0,01 |
| 180 | 0,06 | 0,03 | - |
| 225 | 0,06 | 0,03 | - |
| 280 | 0,07 | 0,035 | - |

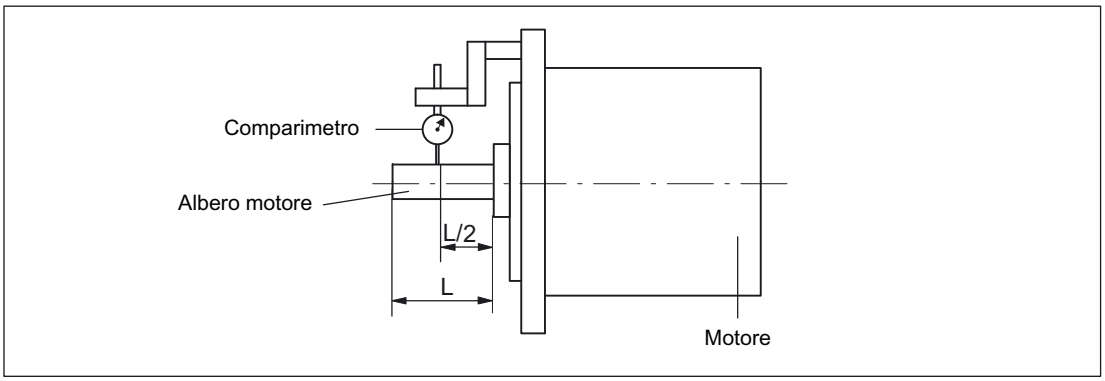



Figura 3-53 Controllo concentricità

Tabella 3- 23 Tolleranza della coassialità e della planarità della superficie della flangia rispetto all'asse d'albero (riferita al diametro di centraggio della flangia di fissaggio)

| Altezza d'asse | Tolleranza livello N | Tolleranza livello R | Tolleranza SPECIALE |
|---|---|---|---|
| 80 | 0,1 | 0,05 | 0,03 |
| 100 | 0,1 | 0,05 | 0,04 |
| 132 | 0,125 | 0,063 | 0,04 |
| 160 | 0,125 | 0,063 | 0,04 |
| 180 | 0,125 | 0,063 | - |
| 225 | 0,125 | 0,063 | - |
| 280 | 0,16 | 0,08 | - |

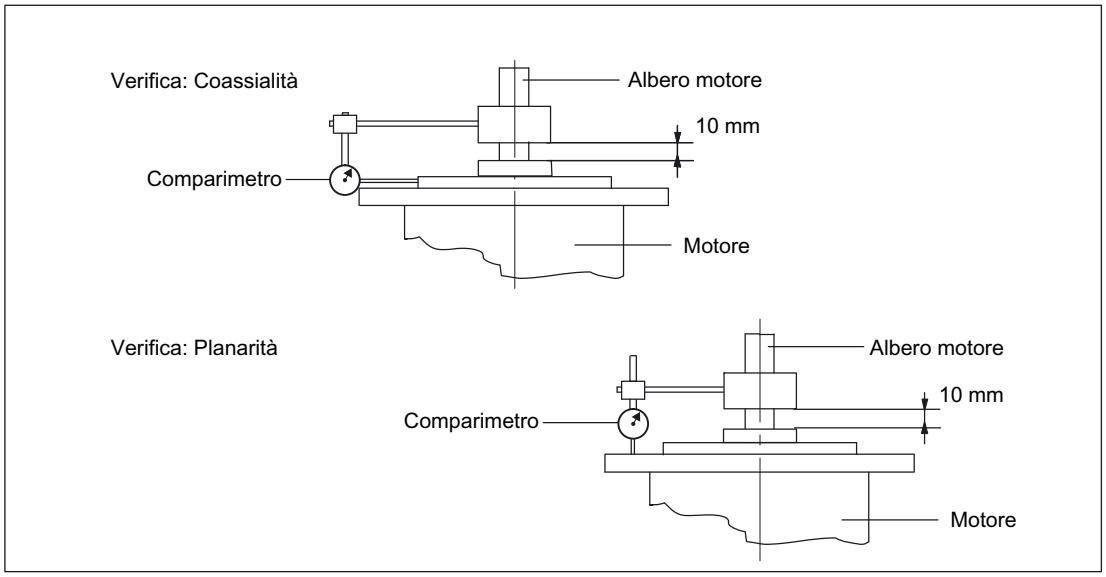



Figura 3-54 Controllo coassialità ed planarità

## 3.8 Processo di equilibratura

### Requisiti del processo di equilibratura di apparati trascinati, in particolare delle pulegge

Il comportamento alle oscillazioni dei motori con pulegge e accoppiamenti integrati, oltre che dalla qualità di equilibratura del motore viene determinato in larga misura dallo stato di equilibratura del componente costruttivo.

Se il motore e il componente costruttivo vengono equilibrati separatamente prima del montaggio, il processo di equilibratura delle pulegge o dell'accoppiamento deve essere adattato al tipo di equilibratura del motore.

Nel caso dei motori asincroni è necessario fare una distinzione tra i seguenti tipi di equilibratura:

- Equilibratura con mezza chiavetta (codice all'estremità dell'albero "H")
- Equilibratura con chiavetta intera (codice all'estremità dell'albero "F")
- estremità d'albero liscia

Il tipo di equilibratura è codificato nel numero di ordinazione.

**Nota**

Per le equilibrature con mezza chiavetta e per elementi di azionamento più corti eliminare eventualmente la parte della chiavetta sporgente dall'elemento di azionamento e oltre il contorno dell'albero. Questo viene particolarmente raccomandato con numero di giri sopra 1000 $min^{-1}$ e per requisiti di qualità di equilibratura.

Normalmente si consiglia l'impiego di motori con albero liscio in caso di elevate esigenze per le vibrazioni complessive del sistema. Per i motori equilibrati con chiavetta intera si consiglia l'uso di pulegge con due cave per chiavette poste una di fronte all'altra ma con una sola chiavetta nell'estremità d'albero.

Tabella 3- 24 Requisiti del processo di equilibratura in funzione del tipo di equilibratura del motore

| Mezzo di supporto di equilibratura/ Fase del processo | Motore equilibrato con mezza chiavetta | Motore equilibrato con chiavetta intera | Motore con estremità d'albero liscia |
|---|---|---|---|
| Contralbero per equilibratura del componente costruttivo | • Contralbero con cava per chiavetta<br>• Cava per chiavetta con dimensioni uguali all'estremità d'albero del motore<br>• Contralbero equilibrato con mezza chiavetta | • Contralbero con cava per chiavetta<br>• Design della scanalatura selezionabile liberamente, eccetto la larghezza (come motore)<br>• Contralbero equilibrato con chiavetta intera | • Contralbero senza cava per chiavetta<br>• Eseguire eventuale contralbero conico |
| | • Qualità di equilibratura del contralbero ≤ 10% della qualità di equilibratura del componente costruttivo richiesta | | |
| Fissaggio del componente costruttivo al contralbero per equilibratura | • Fissaggio con chiavetta<br>• Design della chiavetta, dimensione e materiale come nell'estremità d'albero del motore | • Fissaggio con chiavetta<br>• Design chiavetta, dimensione e materiale utilizzati uguali a quelli dell'equilibratura del contralbero con chiavetta intera | • Eseguire il fissaggio lasciando meno gioco possibile, ad es. minore accoppiamento stabile sull'albero conico |
| Posizione del componente costruttivo sul contralbero per equilibratura | • Scegliere la posizione tra il componente costruttivo e la chiavetta del contralbero come nel caso di montaggio sul motore | • Nessun requisito specifico | |
| Equilibratura del componente costruttivo | • È consigliata l'equilibratura in due livelli, ovvero su entrambi i lati del componente costruttivo, perpendicolarmente all'asse di rotazione | | |

## Requisiti particolari

In caso di requisiti particolari sulla silenziosità di rotazione della macchina, è consigliata l'equilibratura completa del motore con gli elementi di trasmissione. In questo caso deve essere eseguita l'equilibratura in due livelli dell'elemento di trasmissione.

## 3.9 Grado di vibrazione

I motori 1PH8 presentano normalmente un grado di vibrazione di livello A secondo EN 60034-14 (IEC 600-34-14). I valori indicati si riferiscono solo al motore. Le vibrazioni del sistema dovute all'installazione possono causare un aumento di questi valori per il motore.

**Nota**

In base ai seguenti diagrammi dei valori limite dei gradi di vibrazione (immagine 3-47 o immagine 3-48) i motori, nel campo di giri indicato, rispettano i valori limite secondo le versioni R, S, SR o SPECIALE. All'interno del campo di giri nominale i gradi di vibrazione A o B vengono inoltre rispettati secondo EN 60034-14 (IEC 600-34-14).

Il corretto livello di esecuzione avviene sulla base della definizione del numero di ordinazione, come indicato nel capitolo 1.

In generale non è possibile realizzare un'elevata forza radiale in contemporanea a velocità e qualità vibratoria elevate perché le diverse posizioni dei processi necessitano di cuscinetti differenti.

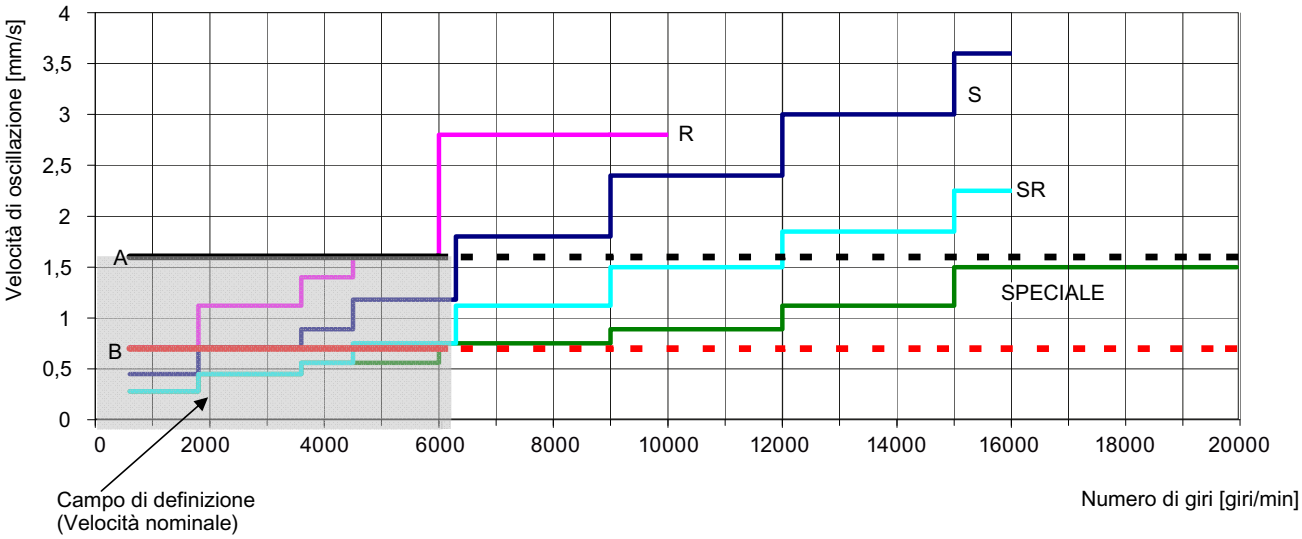



Figura 3-55 Valori limite del grado di vibrazione per AH 80 ... 132

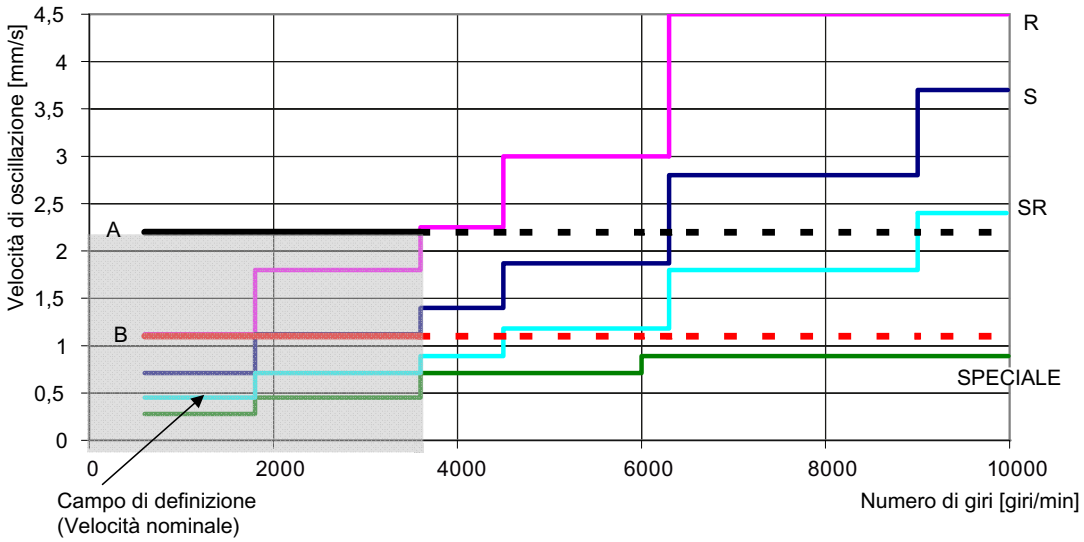



Figura 3-56 Valori limite del grado di vibrazione per AH 160 ... AH 280

## 3.10 Verniciatura

I motori della serie 1PH8 sono forniti con la seguente verniciatura:

- AH 80 ... 160: Verniciatura standard antracite RAL 7016
- AH 180 ... 280: Verniciatura standard antracite RAL 7016

Altri colori: vedere la tabella "Caratteristiche tecniche, Opzioni".

**Nota**

**Impiego in regioni subtropicali**

In caso di impiego nelle regioni subtropicali o in caso di trasporto via mare, i motori vanno ordinati provvisti di verniciatura "world wide" per prevenire la corrosione.

# Dati tecnici e curve caratteristiche

# 4

## 4.1 Motori asincroni

### 4.1.1 Dati tecnici

Nelle tabelle sono descritti i dati tecnici di ciascuna versione del motore attraverso tre punti di misurazione.

Questi tre punti di misurazione corrispondono anche ai dati che sono stampati sulla targhetta dei dati del motore, nonché ai dati che sono elencati nei Cataloghi PM 21, NC 61 o D31 per la scelta e l'ordinazione.

#### 4.1.1.1 Spiegazione delle abbreviazioni_asincrono

Tabella 4- 1 Spiegazione delle abbreviazioni

| Abbreviazione | Unità | Descrizione |
|---|---|---|
| $P_N$ | kW | Potenza nominale |
| $M_N$ | Nm | Coppia nominale |
| $I_N$ | A | Corrente nominale |
| $U_N$ | V | Tensione nominale |
| $f_N$ | Hz | Frequenza nominale |
| $n_N$ | 1/min (giri/min) | N. di giri nominale |
| cos Φ | - | Fattore di potenza |
| η | - | Rendimento (punto di misurazione funzionamento sinusoidale o vibrazione di base 1° ordine) |
| J | $kgm^2$ | Momento d'inerzia |
| $T_{th}$ | min | Costante di tempo termica |
| $I_\mu$ | A | Corrente di magnetizzazione |
| P_raffr | kW | Potenza dissipata da dissipare con raffreddamento ad acqua |
| m | kg | Peso |
| $n_{max1}$ | 1/min (giri/min) | Numero di giri massimo consentito con cuscinetto "Standard o per numero di giri elevato" |
| $n_{max2}$ | 1/min (giri/min) | Numero di giri massimo consentito con cuscinetto "Performance" |
| $n_{max3}$ | 1/min (giri/min) | Numero di giri massimo consentito con cuscinetto "High Performance" |
| $n_{max, fr}$ | 1/min (giri/min) | Numero di giri massimo consentito con cuscinetto "Advanced Lifetime" o freno di arresto integrato |
| $n_2$ | 1/min (giri/min) | Numero di giri operativo massimo con indebolimento di campo (limita il campo con potenza costante) |
| $M_{max}$ | Nm | Coppia massima consentita per un breve intervallo per processi dinamici |
| $I_{max}$ | A | Corrente massima consentita per un breve intervallo con $M_{max}$ |
| $M_0$ | Nm | Coppia (S1) con numero di giri zero |
| $I_0$ | A | Corrente (S1) con $M_0$ |

### 4.1.1.2 Altezza dell'asse 80 - Ventilazione forzata

Tabella 4- 2 1PH8 Altezza d'asse 80 Ventilazione forzata (dati di base)

| Tipo di motore | Tensione di collegamento | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8083-1□F□□ | SLM/BLM 400 V | 2,8 | 18 | 7,5 | 346 | 53,3 | 1500 | 0,80 | 0,809 | 0,0064 | 10 | 3,8 | 32 |
| Collegamento a stella | ALM 400 V | 3,3 | 18 | 7,5 | 398 | 61,7 | 1750 | 0,80 | 0,831 | | | 3,8 | |
| | SLM/BLM/ALM 480 V | 3,7 | 18 | 7,6 | 447 | 70,0 | 2000 | 0,79 | 0,850 | | | 3,7 | |
| 1PH8083-1□G□□ | SLM/BLM 400 V | 3,7 | 18 | 11,6 | 293 | 70,2 | 2000 | 0,79 | 0,832 | | | 5,7 | |
| Collegamento a stella | ALM 400 V | 4,1 | 17 | 11,3 | 332 | 80,0 | 2300 | 0,78 | 0,852 | | | 5,7 | |
| | SLM/BLM/ALM 480 V | 4,6 | 17 | 11,2 | 376 | 91,6 | 2650 | 0,78 | 0,862 | | | 5,7 | |
| 1PH8083-1□M□□ | SLM/BLM 400 V | 4,1 | 13 | 13,6 | 298 | 102,6 | 3000 | 0,74 | 0,869 | | | 7,3 | |
| Collegamento a stella | ALM 400 V | 4,5 | 13 | 13,5 | 327 | 112,6 | 3300 | 0,74 | 0,875 | | | 7,3 | |
| | SLM/BLM/ALM 480 V | 4,9 | 13 | 14,0 | 355 | 122,6 | 3600 | 0,74 | 0,881 | | | 7,3 | |
| 1PH8083-1□N□□ | SLM/BLM 400 V | 4,8 | 10 | 17,0 | 300 | 152,3 | 4500 | 0,70 | 0,860 | | | 9,5 | |
| Collegamento a stella | ALM 400 V | 5,3 | 10 | 17,0 | 335 | 168,9 | 5000 | 0,69 | 0,870 | | | 9,7 | |
| | SLM/BLM/ALM 480 V | 5,5 | 10 | 16,5 | 350 | 185,7 | 5500 | 0,71 | 0,870 | | | 9,0 | |
| 1PH8087-1□F□□ | SLM/BLM 400 V | 3,7 | 24 | 10,0 | 336 | 53,2 | 1500 | 0,81 | 0,817 | 0,0089 | 10 | 4,9 | 39 |
| Collegamento a stella | ALM 400 V | 4,3 | 23 | 10,0 | 396 | 61,3 | 1750 | 0,78 | 0,838 | | | 5,3 | |
| | SLM/BLM/ALM 480 V | 4,9 | 23 | 10,0 | 435 | 69,9 | 2000 | 0,80 | 0,864 | | | 4,9 | |
| 1PH8087-1□G□□ | SLM/BLM 400 V | 4,9 | 23 | 14,1 | 320 | 69,8 | 2000 | 0,78 | 0,853 | | | 7,3 | |
| Collegamento a stella | ALM 400 V | 5,4 | 22 | 13,7 | 353 | 79,8 | 2300 | 0,79 | 0,859 | | | 6,8 | |
| | SLM/BLM/ALM 480 V | 6,0 | 22 | 13,6 | 390 | 91,6 | 2650 | 0,79 | 0,884 | | | 6,5 | |
| 1PH8087-1□M□□ | SLM/BLM 400 V | 4,8 | 15 | 17,3 | 284 | 102,2 | 3000 | 0,72 | 0,871 | | | 9,6 | |
| Collegamento a stella | ALM 400 V | 5,2 | 15 | 17,1 | 303 | 112,3 | 3300 | 0,73 | 0,878 | | | 9,2 | |
| | SLM/BLM/ALM 480 V | 5,7 | 15 | 17,1 | 329 | 122,4 | 3600 | 0,73 | 0,878 | | | 9,2 | |
| 1PH8087-1□N□□ | SLM/BLM 400 V | 5,8 | 12 | 19,5 | 315 | 152,1 | 4500 | 0,70 | 0,871 | | | 11,0 | |
| Collegamento a stella | ALM 400 V | 6,5 | 12 | 19,5 | 335 | 169,0 | 5000 | 0,73 | 0,878 | | | 10,4 | |
| | SLM/BLM/ALM 480 V | 6,9 | 12 | 19,0 | 370 | 185,6 | 5500 | 0,71 | 0,878 | | | 10,5 | |

### 4.1.1.3 Altezza dell'asse 100 - Ventilazione forzata

Tabella 4- 3 1PH8 Altezza d'asse 100 Ventilazione forzata (dati di base)

| Tipo di motore | Tensione di collegamento | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8101-1□F□□ | SLM/BLM 400 V | 3,7 | 24 | 12,5 | 265 | 52,4 | 1500 | 0,80 | 0,835 | 0,0138 | 20 | 6,0 | 42 |
| Collegamento a stella | ALM 400 V | 4,3 | 23 | 12,5 | 304 | 60,8 | 1750 | 0,80 | 0,852 | | | 6,0 | |
| | SLM/BLM/ALM 480 V | 4,7 | 22 | 12,5 | 343 | 69,0 | 2000 | 0,79 | 0,871 | | | 6,0 | |
| 1PH8101-1□S□□ | SLM/BLM 400 V | 3,7 | 24 | 13,2 | 253 | 52,4 | 1500 | 0,80 | 0,830 | | | 6,3 | |
| Collegamento a stella | ALM 400 V | 4,9 | 23 | 13,2 | 328 | 69,1 | 2000 | 0,80 | 0,870 | | | 6,3 | |
| | SLM/BLM/ALM 480 V | 6,2 | 24 | 13,2 | 404 | 85,9 | 2500 | 0,80 | 0,890 | | | 6,2 | |
| 1PH8101-1□S□□ | SLM/BLM 400 V | 3,7 | 9 | 13,5 | 289 | 134,6 | 4000 | 0,69 | 0,890 | | | 7,8 | |
| Collegamento Δ | ALM 400 V | 4,9 | 9 | 13,5 | 360 | 168,0 | 5000 | 0,70 | 0,900 | | | 7,8 | |
| | SLM/BLM/ALM 480 V | 6,2 | 10 | 13,0 | 460 | 201,3 | 6000 | 0,68 | 0,910 | | | 8,5 | |

| Tipo di motore | Tensione di collegamento | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8103-1□D□□ | SLM/BLM 400 V | 3,7 | 35 | 10,0 | 333 | 35,8 | 1000 | 0,82 | 0,814 | 0,0172 | 20 | 4,6 | 51 |
| Collegamento a stella | ALM 400 V | 4,3 | 36 | 10,0 | 380 | 40,7 | 1150 | 0,81 | 0,824 | | | 4,8 | |
| | SLM/BLM/ALM 480 V | 4,7 | 33 | 9,7 | 423 | 47,3 | 1350 | 0,82 | 0,848 | | | 4,4 | |
| 1PH8103-1□F□□ | SLM/BLM 400 V | 5,5 | 35 | 13,5 | 368 | 52,4 | 1500 | 0,80 | 0,852 | | | 6,5 | |
| Collegamento a stella | ALM 400 V | 6,3 | 34 | 13,1 | 412 | 60,8 | 1750 | 0,81 | 0,859 | | | 6,0 | |
| | SLM/BLM/ALM 480 V | 7,0 | 33 | 12,7 | 460 | 69,1 | 2000 | 0,81 | 0,894 | | | 5,8 | |
| 1PH8103-1□G□□ | SLM/BLM 400 V | 7,0 | 33 | 17,5 | 345 | 69,0 | 2000 | 0,79 | 0,877 | | | 8,7 | |
| Collegamento a stella | ALM 400 V | 7,5 | 31 | 17,0 | 382 | 78,9 | 2300 | 0,79 | 0,891 | | | 8,1 | |
| | SLM/BLM/ALM 480 V | 8,0 | 29 | 16,0 | 434 | 90,4 | 2650 | 0,78 | 0,913 | | | 8,1 | |
| 1PH8103-1□M□□ | SLM/BLM 400 V | 8,4 | 27 | 25,7 | 297 | 102,1 | 3000 | 0,78 | 0,900 | | | 12,2 | |
| Collegamento a stella | ALM 400 V | 9,3 | 27 | 25,7 | 326 | 112,1 | 3300 | 0,78 | 0,900 | | | 12,2 | |
| | SLM/BLM/ALM 480 V | 10,0 | 27 | 25,4 | 355 | 122,1 | 3600 | 0,77 | 0,910 | | | 12,3 | |
| 1PH8105-1□F□□ | SLM/BLM 400 V | 7,0 | 45 | 17,5 | 348 | 51,9 | 1500 | 0,79 | 0,867 | 0,0252 | 20 | 8,8 | 65 |
| Collegamento a stella | ALM 400 V | 8,0 | 44 | 17,5 | 400 | 60,2 | 1750 | 0,78 | 0,878 | | | 8,8 | |
| | SLM/BLM/ALM 480 V | 9,0 | 43 | 17,0 | 453 | 68,5 | 2000 | 0,78 | 0,911 | | | 8,7 | |
| 1PH8105-1□S□□ | SLM/BLM 400 V | 7,5 | 18 | 24,0 | 308 | 134,6 | 4000 | 0,73 | 0,907 | | | 12,7 | |
| Collegamento Δ | ALM 400 V | 9,3 | 18 | 24,0 | 398 | 167,9 | 5000 | 0,71 | 0,914 | | | 13,2 | |
| | SLM/BLM/ALM 480 V | 11,2 | 18 | 22,0 | 460 | 201,3 | 6000 | 0,73 | 0,932 | | | 12,7 | |
| 1PH8105-1□S□□ | SLM/BLM 400 V | 7,5 | 48 | 23,0 | 285 | 52,1 | 1500 | 0,79 | 0.864 | | | 11,5 | |
| Collegamento a stella | ALM 400 V | 10,0 | 48 | 23,0 | 366 | 68,9 | 2000 | 0,80 | 0,891 | | | 10,9 | |
| | SLM/BLM/ALM 480 V | 12,5 | 48 | 23,0 | 451 | 85,5 | 2500 | 0,80 | 0,922 | | | 10,9 | |
| 1PH8107-1□D□□ | SLM/BLM 400 V | 6,3 | 60 | 17,5 | 307 | 35,5 | 1000 | 0,82 | 0,834 | 0,0289 | 20 | 8,2 | 73 |
| Collegamento a stella | ALM 400 V | 7,2 | 60 | 17,5 | 348 | 40,6 | 1150 | 0,82 | 0,852 | | | 8,2 | |
| | SLM/BLM/ALM 480 V | 8,0 | 57 | 17,0 | 400 | 47,1 | 1350 | 0,80 | 0,867 | | | 8,2 | |
| 1PH8107-1□F□□ | SLM/BLM 400 V | 9,0 | 57 | 23,5 | 330 | 52,2 | 1500 | 0,81 | 0,869 | | | 10,8 | |
| Collegamento a stella | ALM 400 V | 10,0 | 55 | 22,0 | 380 | 60,4 | 1750 | 0,80 | 0,878 | | | 10,9 | |
| | SLM/BLM/ALM 480 V | 11,0 | 53 | 21,5 | 428 | 68,6 | 2000 | 0,79 | 0,901 | | | 10,8 | |
| 1PH8107-1□G□□ | SLM/BLM 400 V | 10,5 | 50 | 26,0 | 355 | 68,6 | 2000 | 0,78 | 0,897 | | | 12,9 | |
| Collegamento a stella | ALM 400 V | 12,0 | 50 | 26,0 | 406 | 78,6 | 2300 | 0,78 | 0,909 | | | 13,0 | |
| | SLM/BLM/ALM 480 V | 13,0 | 47 | 24,0 | 460 | 90,0 | 2650 | 0,77 | 0,932 | | | 12,8 | |
| 1PH8107-1□M□□ | SLM/BLM 400 V | 12,0 | 38 | 38,0 | 294 | 101,6 | 3000 | 0,76 | 0,900 | | | 19,2 | |
| Collegamento a stella | ALM 400 V | 13,0 | 38 | 38,0 | 314 | 111,7 | 3300 | 0,78 | 0,900 | | | 12,2 | |
| | SLM/BLM/ALM 480 V | 14,0 | 37 | 37,5 | 350 | 121,6 | 3600 | 0,77 | 0,910 | | | 12,3 | |
| 1PH8107-1□S□□ | SLM/BLM 400 V | 8,5 | 20 | 28,0 | 323 | 134,4 | 4000 | 0,68 | 0,898 | | | 16,4 | |
| Collegamento Δ | ALM 400 V | 11,0 | 21 | 28,0 | 410 | 167,8 | 5000 | 0,68 | 0,909 | | | 16,7 | |
| | SLM/BLM/ALM 480 V | 14,0 | 22 | 27,0 | 460 | 201,3 | 6000 | 0,73 | 0,931 | | | 15,5 | |
| 1PH8107-1□S□□ | SLM/BLM 400 V | 8,5 | 54 | 27,0 | 275 | 52,0 | 1500 | 0,80 | 0,861 | | | 13,1 | |
| Collegamento a stella | ALM 400 V | 11,0 | 53 | 26,7 | 368 | 68,6 | 2000 | 0,76 | 0,894 | | | 14,2 | |
| | SLM/BLM/ALM 480 V | 14,0 | 53 | 26,5 | 454 | 85,2 | 2500 | 0,77 | 0,923 | | | 14,1 | |

### 4.1.1.4 Altezza dell'asse 132 - Ventilazione forzata

Tabella 4- 4 1PH8 Altezza d'asse 132 Ventilazione forzata (dati di base)

| Tipo di motore | Tensione di collegamento | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8131-1□F□□ | SLM/BLM 400 V | 11,0 | 70 | 24 | 360 | 51,4 | 1500 | 0,84 | 0,899 | 0,059 | 30 | 10,4 | 89 |
| Collegamento a stella | ALM 400 V | 13,0 | 71 | 24 | 416 | 59,8 | 1750 | 0,84 | 0,914 | | | 10,3 | |
| | SLM/BLM/ALM 480 V | 15,0 | 72 | 24 | 460 | 68,2 | 2000 | 0,86 | 0,931 | | | 9,2 | |
| 1PH8131-1□S□□ | SLM/BLM 400 V | 11,0 | 28 | 40 | 285 | 134,1 | 4000 | 0,75 | 0,893 | | | 18,1 | |
| Collegamento Δ | ALM 400 V | 14,6 | 28 | 40 | 360 | 167,5 | 5000 | 0,78 | 0,897 | | | 18,5 | |
| | SLM/BLM/ALM 480 V | 18,0 | 29 | 35 | 453 | 200,8 | 6000 | 0,75 | 0,908 | | | 20,2 | |
| 1PH8131-1□S□□ | SLM/BLM 400 V | 11,0 | 70 | 39 | 227 | 51,5 | 1500 | 0,85 | 0,884 | | | 15,1 | |
| Collegamento a stella | ALM 400 V | 14,6 | 70 | 39 | 302 | 68,2 | 2000 | 0,84 | 0,908 | | | 15,9 | |
| | SLM/BLM/ALM 480 V | 18,0 | 69 | 38 | 372 | 84,8 | 2500 | 0,84 | 0,922 | | | 15,6 | |
| 1PH8133-1□D□□ | SLM/BLM 400 V | 12,0 | 115 | 30 | 319 | 35,0 | 1000 | 0,88 | 0,871 | 0.076 | 30 | 10,1 | 106 |
| Collegamento a stella | ALM 400 V | 13,5 | 112 | 29 | 361 | 40,0 | 1150 | 0,87 | 0,884 | | | 10,7 | |
| | SLM/BLM/ALM 480 V | 15,0 | 106 | 28 | 417 | 46,5 | 1350 | 0,86 | 0,904 | | | 10,7 | |
| 1PH8133-1□F□□ | SLM/BLM 400 V | 15,0 | 96 | 34 | 342 | 51,3 | 1500 | 0,85 | 0,899 | | | 14,2 | |
| Collegamento a stella | ALM 400 V | 17,5 | 96 | 34 | 392 | 59,7 | 1750 | 0,85 | 0,913 | | | 13,6 | |
| | SLM/BLM/ALM 480 V | 20,0 | 96 | 34 | 445 | 68,2 | 2000 | 0,85 | 0,933 | | | 13,5 | |
| 1PH8133-1□G□□ | SLM/BLM 400 V | 20,0 | 96 | 45 | 350 | 68,1 | 2000 | 0,85 | 0,919 | | | 18,1 | |
| Collegamento a stella | ALM 400 V | 22,5 | 93 | 44 | 400 | 78,1 | 2300 | 0,84 | 0,933 | | | 18,1 | |
| | SLM/BLM/ALM 480 V | 24,0 | 86 | 41 | 456 | 89,6 | 2650 | 0,83 | 0,949 | | | 18,1 | |
| 1PH8135-1□F□□ | SLM/BLM 400 V | 18,5 | 118 | 43 | 330 | 51,3 | 1500 | 0,85 | 0,898 | 0,094 | 30 | 18,1 | 125 |
| Collegamento a stella | ALM 400 V | 21,5 | 117 | 43 | 383 | 59,6 | 1750 | 0,84 | 0,909 | | | 18,3 | |
| | SLM/BLM/ALM 480 V | 24,0 | 115 | 43 | 434 | 67,9 | 2000 | 0,84 | 0,929 | | | 18,1 | |
| 1PH8135-1□S□□ | SLM/BLM 400 V | 18,5 | 44 | 51 | 364 | 134,0 | 4000 | 0,76 | 0,912 | | | 23,3 | |
| Collegamento Δ | ALM 400 V | 24,5 | 47 | 52 | 425 | 167,5 | 5000 | 0,81 | 0,939 | | | 22,8 | |
| | SLM/BLM/ALM 480 V | 30,5 | 49 | 50 | 460 | 201,0 | 6000 | 0,86 | 0,941 | | | 20,0 | |
| 1PH8135-1□S□□ | SLM/BLM 400 V | 18,5 | 118 | 51 | 283 | 51,3 | 1500 | 0,85 | 0,901 | | | 21,1 | |
| Collegamento a stella | ALM 400 V | 24,5 | 117 | 51 | 372 | 68,0 | 2000 | 0,85 | 0,917 | | | 20,9 | |
| | SLM/BLM/ALM 480 V | 30,5 | 117 | 50 | 460 | 84,6 | 2500 | 0,85 | 0,949 | | | 20,8 | |
| 1PH8137-1□D□□ | SLM/BLM 400 V | 17,0 | 162 | 43 | 307 | 34,8 | 1000 | 0,88 | 0,881 | 0,109 | 30 | 15,1 | 141 |
| Collegamento a stella | ALM 400 V | 19,5 | 162 | 43 | 350 | 39,8 | 1150 | 0,87 | 0,891 | | | 16,1 | |
| | SLM/BLM/ALM 480 V | 22,0 | 156 | 42 | 404 | 46,4 | 1350 | 0,86 | 0,902 | | | 15,9 | |
| 1PH8137-1□F□□ | SLM/BLM 400 V | 22,0 | 140 | 56 | 308 | 51,3 | 1500 | 0,84 | 0,904 | | | 24,2 | |
| Collegamento a stella | ALM 400 V | 25,0 | 136 | 56 | 353 | 59,6 | 1750 | 0,84 | 0,907 | | | 23,1 | |
| | SLM/BLM/ALM 480 V | 28,0 | 134 | 55 | 401 | 67,9 | 2000 | 0,84 | 0,931 | | | 23,1 | |
| 1PH8137-1□G□□ | SLM/BLM 400 V | 28,0 | 134 | 60 | 350 | 68,1 | 2000 | 0,87 | 0,924 | | | 21,5 | |
| Collegamento a stella | ALM 400 V | 29,0 | 120 | 56 | 400 | 77,9 | 2300 | 0,86 | 0,929 | | | 21,9 | |
| | SLM/BLM/ALM 480 V | 30,0 | 108 | 52 | 460 | 89,4 | 2650 | 0,83 | 0,941 | | | 22,4 | |
| 1PH8137-1□S□□ | SLM/BLM 400 V | 22,0 | 53 | 55 | 383 | 134,0 | 4000 | 0,76 | 0,907 | | | 27,6 | |
| Collegamento Δ | ALM 400 V | 27,5 | 53 | 56 | 425 | 167,5 | 5000 | 0,83 | 0,919 | | | 22,5 | |
| | SLM/BLM/ALM 480 V | 33,0 | 53 | 55 | 460 | 201,0 | 6000 | 0,87 | 0,942 | | | 20,0 | |
| 1PH8137-1□S□□ | SLM/BLM 400 V | 22,0 | 140 | 56 | 308 | 51,3 | 1500 | 0,84 | 0,902 | | | 24,2 | |
| Collegamento a stella | ALM 400 V | 29,0 | 138 | 56 | 398 | 68,0 | 2000 | 0,85 | 0,931 | | | 22,7 | |
| | SLM/BLM/ALM 480 V | 36,0 | 138 | 56 | 460 | 84,9 | 2500 | 0,89 | 0,951 | | | 17,4 | |

### 4.1.1.5 Altezza d'asse 160 - Ventilazione forzata

Tabella 4- 5 1PH8 Altezza d'asse 160 Ventilazione forzata (dati di base)

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8163-1□B□□ | SLM/BLM 400 V | 9,5 | 227 | 30 | 260 | 14,3 | 400 | 0,91 | 0,828 | 0,216 | 35 | 8,1 | 196 |
| Collegamento a stella | ALM 400 V | 12 | 229 | 30 | 325 | 17,6 | 500 | 0,90 | 0,819 | | | 8,9 | |
| | SLM/BLM/ALM 480 V | 14,5 | 231 | 30 | 370 | 21,0 | 600 | 0,90 | 0,851 | | | 8,1 | |
| 1PH8163-1□D□□ | SLM/BLM 400 V | 22 | 210 | 55 | 300 | 34,2 | 1000 | 0,89 | 0,909 | | | 17,3 | |
| Collegamento a stella | ALM 400 V | 25 | 208 | 55 | 343 | 39,2 | 1150 | 0,88 | 0,915 | | | 17,5 | |
| | SLM/BLM/ALM 480 V | 28 | 198 | 52 | 400 | 45,8 | 1350 | 0,88 | 0,924 | | | 17,7 | |
| 1PH8163-1□F□□ | SLM/BLM 400 V | 30 | 191 | 71 | 319 | 50,8 | 1500 | 0,87 | 0,923 | | | 25,6 | |
| Collegamento a stella | ALM 400 V | 34 | 186 | 70 | 366 | 59,2 | 1750 | 0,87 | 0,926 | | | 24,6 | |
| | SLM/BLM/ALM 480 V | 37 | 177 | 68 | 416 | 67,4 | 2000 | 0,86 | 0,932 | | | 24,6 | |
| 1PH8163-1□G□□ | SLM/BLM 400 V | 36 | 172 | 83 | 324 | 67,5 | 2000 | 0,88 | 0,929 | | | 28,1 | |
| Collegamento a stella | ALM 400 V | 38 | 158 | 78 | 370 | 77,4 | 2300 | 0,87 | 0,935 | | | 28,2 | |
| | SLM/BLM/ALM 480 V | 40 | 144 | 76 | 390 | 89,2 | 2650 | 0,89 | 0,936 | | | 23,1 | |
| 1PH8165-1□B□ | SLM/BLM 400 V | 13 | 310 | 36 | 300 | 14,1 | 400 | 0,86 | 0,826 | 0,232 | 35 | 14,9 | 230 |
| Collegamento a stella | ALM 400 V | 16 | 306 | 36 | 365 | 17,5 | 500 | 0,85 | 0,830 | | | 14,8 | |
| | SLM/BLM/ALM 480 V | 19 | 302 | 35 | 420 | 20,8 | 600 | 0,88 | 0,850 | | | 12,0 | |
| 1PH8165-1□D□□ | SLM/BLM 400 V | 28 | 267 | 71 | 292 | 34,2 | 1000 | 0,89 | 0,914 | | | 22,2 | |
| Collegamento a stella | ALM 400 V | 31 | 257 | 69 | 333 | 39,2 | 1150 | 0,89 | 0,921 | | | 20,9 | |
| | SLM/BLM/ALM 480 V | 34 | 241 | 66 | 387 | 45,8 | 1350 | 0,86 | 0,928 | | | 22,5 | |
| 1PH8165-1□F□□ | SLM/BLM 400 V | 37 | 236 | 78 | 350 | 50,8 | 1500 | 0,88 | 0,926 | | | 27,0 | |
| Collegamento a stella | ALM 400 V | 41 | 224 | 76 | 400 | 59,1 | 1750 | 0,88 | 0,934 | | | 25,8 | |
| | SLM/BLM/ALM 480 V | 45 | 215 | 75 | 440 | 67,5 | 2000 | 0,89 | 0,936 | | | 23,6 | |
| 1PH8165-1□G□□ | SLM/BLM 400 V | 41 | 196 | 88 | 350 | 67,4 | 2000 | 0,87 | 0,927 | | | 32,4 | |
| Collegamento a stella | ALM 400 V | 44 | 183 | 85 | 394 | 77,4 | 2300 | 0,86 | 0,932 | | | 31,0 | |
| | SLM/BLM/ALM 480 V | 50 | 180 | 85 | 440 | 89,0 | 2650 | 0,87 | 0,932 | | | 28,9 | |

### 4.1.1.6 Altezza d'asse 180 - Ventilazione forzata

Tabella 4- 6 1PH8 Altezza d'asse 180 Grado di protezione IP55 Ventilazione forzata (dati di base)

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8184-1□B□□ | SLM/BLM 400 V | 16,3 | 389 | 49 | 271 | 14,1 | 400 | 0,85 | 0,834 | 0,489 | 22 | 23 | 350 |
| Collegamento a stella | ALM 400 V | 20,5 | 392 | 49 | 335 | 17,4 | 500 | 0,84 | 0,861 | | | 23 | |
| | SLM/BLM/ALM 480 V | 25 | 398 | 49 | 410 | 20,7 | 600 | 0,81 | 0,882 | | | 26 | |
| 1PH8184-1□C□□ | SLM/BLM 400 V | 27 | 368 | 65 | 320 | 24,0 | 700 | 0,84 | 0,889 | 0,489 | 22 | 30 | 350 |
| Collegamento a stella | ALM 400 V | 31 | 370 | 65 | 365 | 27,4 | 800 | 0,84 | 0,901 | | | 30 | |
| | SLM/BLM/ALM 480 V | 39 | 372 | 65 | 460 | 34,0 | 1000 | 0,82 | 0,917 | | | 32 | |
| 1PH8184-1□D□□ | SLM/BLM 400 V | 39 | 372 | 87 | 340 | 34,0 | 1000 | 0,83 | 0,920 | 0,489 | 22 | 42 | 350 |
| Collegamento a stella | ALM 400 V | 44 | 365 | 86 | 390 | 39,0 | 1150 | 0,82 | 0,928 | | | 42 | |
| | SLM/BLM/ALM 480 V | 50 | 354 | 84 | 450 | 45,7 | 1350 | 0,82 | 0,936 | | | 41 | |
| 1PH8184-1□F□□ | SLM/BLM 400 V | 51 | 325 | 116 | 335 | 50,6 | 1500 | 0,80 | 0,940 | 0,489 | 22 | 63 | 350 |
| Collegamento a stella | ALM 400 V | 60 | 327 | 120 | 390 | 58,9 | 1750 | 0,79 | 0,944 | | | 64 | |
| | SLM/BLM/ALM 480 V | 68 | 325 | 118 | 450 | 67,2 | 2000 | 0,78 | 0,947 | | | 65 | |
| 1PH8184-1□L□□ | SLM/BLM 400 V | 78 | 298 | 166 | 340 | 84,0 | 2500 | 0,84 | 0,952 | 0,489 | 22 | 75 | 350 |
| | ALM 400 V | 81 | 267 | 152 | 395 | 97,3 | 2900 | 0,82 | 0,952 | | | 76 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 65 | 183 | 120 | 460 | 113,7 | 3400 | 0,72 | 0,944 | | | 77 | |
| 1PH8186-1□B□□ | SLM/BLM 400 V | 21,2 | 506 | 65 | 268 | 13,9 | 400 | 0,83 | 0,850 | 0,652 | 25 | 34 | 422 |
| Collegamento a stella | ALM 400 V | 26,5 | 506 | 65 | 335 | 17,2 | 500 | 0,80 | 0,875 | | | 36 | |
| | SLM/BLM/ALM 480 V | 32 | 509 | 66 | 400 | 20,6 | 600 | 0,79 | 0,892 | | | 37 | |
| 1PH8186-1□C□□ | SLM/BLM 400 V | 35 | 478 | 83 | 330 | 23,9 | 700 | 0,81 | 0,909 | 0,652 | 25 | 44 | 422 |
| Collegamento a stella | ALM 400 V | 40 | 478 | 83 | 360 | 27,3 | 800 | 0,84 | 0,916 | | | 41 | |
| | SLM/BLM/ALM 480 V | 50 | 478 | 83 | 450 | 33,9 | 1000 | 0,83 | 0,929 | | | 42 | |
| 1PH8186-1□D□□ | SLM/BLM 400 V | 51 | 487 | 112 | 340 | 34,0 | 1000 | 0,83 | 0,926 | 0,652 | 25 | 56 | 422 |
| Collegamento a stella | ALM 400 V | 58 | 482 | 112 | 390 | 38,9 | 1150 | 0,82 | 0,933 | | | 57 | |
| | SLM/BLM/ALM 480 V | 67 | 474 | 112 | 450 | 45,6 | 1350 | 0,82 | 0,939 | | | 55 | |
| 1PH8186-1□F□□ | SLM/BLM 400 V | 74 | 471 | 166 | 330 | 50,6 | 1500 | 0,83 | 0,945 | 0,652 | 25 | 82 | 422 |
| Collegamento a stella | ALM 400 V | 85 | 464 | 164 | 385 | 58,9 | 1750 | 0,82 | 0,949 | | | 83 | |
| | SLM/BLM/ALM 480 V | 94 | 449 | 160 | 445 | 67,2 | 2000 | 0,80 | 0,952 | | | 86 | |
| 1PH8186-1□L□□ | SLM/BLM 400 V | 106 | 405 | 230 | 335 | 83,9 | 2500 | 0,84 | 0,955 | 0,652 | 25 | 107 | 422 |
| | ALM 400 V | 101 | 333 | 198 | 385 | 97,2 | 2900 | 0,80 | 0,954 | | | 106 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 81 | 228 | 158 | 455 | 113,7 | 3400 | 0,69 | 0,943 | | | 109 | |

### 4.1.1.7 Altezza d'asse 180 - Ventilazione forzata (ventilazione passante)

Tabella 4- 7 1PH8 Altezza d'asse 180 Grado di protezione IP23 Ventilazione forzata, ventilazione passante (dati di base)

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8184-1□B□□ | SLM/BLM 400 V | 24,5 | 585 | 67 | 300 | 14,3 | 400 | 0,88 | 0,801 | 0,489 | 26 | 25 | 350 |
| Collegamento a stella | ALM 400 V | 30 | 573 | 65 | 370 | 17,6 | 500 | 0,86 | 0,840 | | | 27 | |
| | SLM/BLM/ALM 480 V | 36 | 573 | 64 | 440 | 20,9 | 600 | 0,85 | 0,863 | | | 28 | |
| 1PH8184-1□C□□ | SLM/BLM 400 V | 40 | 546 | 94 | 320 | 24,5 | 700 | 0,90 | 0,852 | 0,489 | 26 | 27 | 350 |
| Collegamento a stella | ALM 400 V | 45 | 537 | 91 | 365 | 27,8 | 800 | 0,90 | 0,872 | | | 28 | |
| | SLM/BLM/ALM 480 V | 57 | 544 | 90 | 460 | 34,4 | 1000 | 0,89 | 0,896 | | | 30 | |
| 1PH8184-1□D□□ | SLM/BLM 400 V | 57 | 544 | 120 | 340 | 34,4 | 1000 | 0,89 | 0,899 | 0,489 | 26 | 39 | 350 |
| Collegamento a stella | ALM 400 V | 65 | 540 | 120 | 390 | 39,4 | 1150 | 0,88 | 0,911 | | | 39 | |
| | SLM/BLM/ALM 480 V | 74 | 523 | 118 | 450 | 46,0 | 1350 | 0,88 | 0,922 | | | 39 | |
| 1PH8184-1□F□□ | SLM/BLM 400 V | 76 | 484 | 162 | 335 | 50,9 | 1500 | 0,87 | 0,931 | 0,489 | 26 | 61 | 350 |
| Collegamento a stella | ALM 400 V | 89 | 486 | 162 | 390 | 59,3 | 1750 | 0,87 | 0,937 | | | 61 | |
| | SLM/BLM/ALM 480 V | 98 | 468 | 156 | 450 | 67,5 | 2000 | 0,85 | 0,943 | | | 63 | |
| 1PH8184-1□L□□ | SLM/BLM 400 V | 100 | 382 | 205 | 340 | 84,2 | 2500 | 0,87 | 0,949 | 0,489 | 26 | 74 | 350 |
| | ALM 400 V | 113 | 372 | 200 | 395 | 97,5 | 2900 | 0,87 | 0,952 | | | 75 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 113 | 317 | 176 | 460 | 114,1 | 3400 | 0,85 | 0,953 | | | 75 | |
| 1PH8186-1□B□□ | SLM/BLM 400 V | 31,5 | 752 | 88 | 290 | 14,2 | 400 | 0,87 | 0,822 | 0,652 | 29 | 37 | 422 |
| Collegamento a stella | ALM 400 V | 40 | 764 | 88 | 355 | 17,5 | 500 | 0,87 | 0,850 | | | 38 | |
| | SLM/BLM/ALM 480 V | 48 | 764 | 88 | 430 | 20,8 | 600 | 0,84 | 0,874 | | | 41 | |
| 1PH8186-1□C□□ | SLM/BLM 400 V | 52 | 709 | 116 | 330 | 24,3 | 700 | 0,89 | 0,885 | 0,652 | 29 | 41 | 422 |
| Collegamento a stella | ALM 400 V | 60 | 716 | 120 | 360 | 27,7 | 800 | 0,90 | 0,891 | | | 38 | |
| | SLM/BLM/ALM 480 V | 74 | 707 | 116 | 450 | 34,3 | 1000 | 0,89 | 0,912 | | | 39 | |
| 1PH8186-1□D□□ | SLM/BLM 400 V | 74 | 707 | 156 | 340 | 34,3 | 1000 | 0,89 | 0,908 | 0,652 | 29 | 53 | 422 |
| Collegamento a stella | ALM 400 V | 85 | 706 | 154 | 390 | 39,3 | 1150 | 0,89 | 0,918 | | | 54 | |
| | SLM/BLM/ALM 480 V | 98 | 693 | 152 | 450 | 45,9 | 1350 | 0,89 | 0,928 | | | 53 | |
| 1PH8186-1□F□□ | SLM/BLM 400 V | 108 | 688 | 225 | 330 | 50,9 | 1500 | 0,89 | 0,936 | 0,652 | 29 | 79 | 422 |
| Collegamento a stella | ALM 400 V | 125 | 682 | 225 | 385 | 59,2 | 1750 | 0,88 | 0,942 | | | 80 | |
| | SLM/BLM/ALM 480 V | 135 | 645 | 210 | 445 | 67,5 | 2000 | 0,87 | 0,948 | | | 83 | |
| 1PH8186-1□L□□ | SLM/BLM 400 V | 130 | 497 | 270 | 335 | 84,1 | 2500 | 0,87 | 0,954 | 0,652 | 29 | 105 | 422 |
| | ALM 400 V | 150 | 494 | 270 | 385 | 97,4 | 2900 | 0,87 | 0,955 | | | 105 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 130 | 365 | 210 | 455 | 113,9 | 3400 | 0,82 | 0,954 | | | 108 | |

### 4.1.1.8 Altezza d'asse 225 - Ventilazione forzata

Tabella 4- 8 1PH8 Altezza d'asse 225 Grado di protezione IP55 Ventilazione forzata (dati di base)

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8224-1□B□□ | SLM/BLM 400 V | 30,4 | 726 | 86 | 268 | 13,9 | 400 | 0,87 | 0,872 | 1,48 | 49 | 34 | 610 |
| Collegamento a stella | ALM 400 V | 38 | 726 | 85 | 335 | 17,2 | 500 | 0,86 | 0,896 | | | 36 | |
| | SLM/BLM/ALM 480 V | 45 | 716 | 83 | 405 | 20,5 | 600 | 0,85 | 0,912 | | | 37 | |
| 1PH8224-1□C□□ | SLM/BLM 400 V | 55 | 750 | 136 | 310 | 23,8 | 700 | 0,82 | 0,925 | 1,48 | 49 | 67 | 610 |
| Collegamento a stella | ALM 400 V | 57 | 681 | 126 | 350 | 27,1 | 800 | 0,80 | 0,934 | | | 67 | |
| | SLM/BLM/ALM 480 V | 71 | 678 | 126 | 425 | 33,8 | 1000 | 0,81 | 0,943 | | | 64 | |
| 1PH8224-1□D□□ | SLM/BLM 400 V | 71 | 678 | 158 | 335 | 33,8 | 1000 | 0,82 | 0,942 | 1,48 | 49 | 77 | 610 |
| Collegamento a stella | ALM 400 V | 81 | 673 | 156 | 385 | 38,8 | 1150 | 0,82 | 0,946 | | | 78 | |
| | SLM/BLM/ALM 480 V | 92 | 651 | 154 | 450 | 45,5 | 1350 | 0,81 | 0,951 | | | 78 | |
| 1PH8224-1□F□□ | SLM/BLM 400 V | 95 | 605 | 200 | 340 | 50,5 | 1500 | 0,85 | 0,953 | 1,48 | 49 | 87 | 610 |
| Collegamento a stella | ALM 400 V | 110 | 600 | 198 | 395 | 58,9 | 1750 | 0,85 | 0,956 | | | 87 | |
| | SLM/BLM/ALM 480 V | 124 | 592 | 196 | 460 | 67,2 | 2000 | 0,83 | 0,957 | | | 90 | |
| 1PH8224-1□L□□ | SLM/BLM 400 V | 142 | 542 | 295 | 340 | 83,9 | 2500 | 0,86 | 0,958 | 1,48 | 49 | 113 | 610 |
| | ALM 400 V | 149 | 491 | 270 | 395 | 97,2 | 2900 | 0,85 | 0,957 | | | 115 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 85 | 239 | 168 | 460 | 113,6 | 3400 | 0,68 | 0,934 | | | 115 | |
| 1PH8226-1□B□□ | SLM/BLM 400 V | 39,2 | 936 | 112 | 264 | 13,9 | 400 | 0,87 | 0,887 | 1,93 | 52 | 46 | 740 |
| Collegamento a stella | ALM 400 V | 49 | 936 | 110 | 330 | 17,2 | 500 | 0,86 | 0,908 | | | 48 | |
| | SLM/BLM/ALM 480 V | 59 | 939 | 110 | 395 | 20,5 | 600 | 0,85 | 0,921 | | | 49 | |
| 1PH8226-1□C□□ | SLM/BLM 400 V | 68 | 928 | 162 | 310 | 23,8 | 700 | 0,84 | 0,932 | 1,93 | 52 | 76 | 740 |
| Collegamento a stella | ALM 400 V | 73 | 872 | 154 | 350 | 27,1 | 800 | 0,83 | 0,940 | | | 75 | |
| | SLM/BLM/ALM 480 V | 92 | 879 | 156 | 440 | 33,8 | 1000 | 0,82 | 0,948 | | | 77 | |
| 1PH8226-1□D□□ | SLM/BLM 400 V | 92 | 879 | 194 | 340 | 33,8 | 1000 | 0,85 | 0,944 | 1,93 | 52 | 86 | 740 |
| Collegamento a stella | ALM 400 V | 105 | 872 | 192 | 390 | 38,8 | 1150 | 0,85 | 0,949 | | | 86 | |
| | SLM/BLM/ALM 480 V | 120 | 849 | 188 | 460 | 45,5 | 1350 | 0,84 | 0,954 | | | 88 | |
| 1PH8226-1□F□□ | SLM/BLM 400 V | 130 | 828 | 270 | 340 | 50,5 | 1500 | 0,85 | 0,957 | 1,93 | 52 | 119 | 740 |
| Collegamento a stella | ALM 400 V | 135 | 737 | 250 | 395 | 58,8 | 1750 | 0,83 | 0,960 | | | 119 | |
| | SLM/BLM/ALM 480 V | 153 | 731 | 245 | 450 | 67,1 | 2000 | 0,83 | 0,961 | | | 119 | |
| 1PH8226-1□L□□ | SLM/BLM 400 V | 168 | 642 | 350 | 335 | 83,8 | 2500 | 0,86 | 0,961 | 1,93 | 52 | 151 | 740 |
| | ALM 400 V | 185 | 609 | 335 | 390 | 97,1 | 2900 | 0,85 | 0,960 | | | 152 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 90 | 253 | 205 | 460 | 113,5 | 3400 | 0,60 | 0,926 | | | 156 | |
| 1PH8228-1□B□□ | SLM/BLM 400 V | 48 | 1146 | 132 | 272 | 13,8 | 400 | 0,86 | 0,896 | 2,33 | 55 | 58 | 870 |
| Collegamento a stella | ALM 400 V | 60 | 1146 | 132 | 340 | 17,2 | 500 | 0,85 | 0,914 | | | 59 | |
| | SLM/BLM/ALM 480 V | 72 | 1146 | 130 | 410 | 20,5 | 600 | 0,84 | 0,927 | | | 62 | |
| 1PH8228-1□C□□ | SLM/BLM 400 V | 82 | 1119 | 188 | 315 | 23,8 | 700 | 0,86 | 0,933 | 2,33 | 55 | 80 | 870 |
| Collegamento a stella | ALM 400 V | 92 | 1098 | 182 | 360 | 27,2 | 800 | 0,86 | 0,941 | | | 80 | |
| | SLM/BLM/ALM 480 V | 115 | 1098 | 182 | 450 | 33,8 | 1000 | 0,85 | 0,949 | | | 82 | |
| 1PH8228-1□D□□ | SLM/BLM 400 V | 113 | 1079 | 235 | 340 | 33,9 | 1000 | 0,87 | 0,948 | 2,33 | 55 | 97 | 870 |
| Collegamento a stella | ALM 400 V | 129 | 1071 | 235 | 390 | 38,8 | 1150 | 0,86 | 0,953 | | | 97 | |
| | SLM/BLM/ALM 480 V | 147 | 1040 | 225 | 460 | 45,5 | 1350 | 0,86 | 0,957 | | | 99 | |

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8228-1□F□□ | SLM/BLM 400 V | 160 | 1019 | 340 | 340 | 50,4 | 1500 | 0,83 | 0,959 | 2,33 | 55 | 170 | 870 |
| Collegamento a stella | ALM 400 V | 179 | 977 | 330 | 395 | 58,7 | 1750 | 0,82 | 0,961 | | | 170 | |
| | SLM/BLM/ALM 480 V | 196 | 936 | 325 | 450 | 67,1 | 2000 | 0,81 | 0,962 | | | 169 | |
| 1PH8228-1□L□□ | SLM/BLM 400 V | 205 | 783 | 420 | 340 | 83,8 | 2500 | 0,86 | 0,963 | 2,33 | 55 | 181 | 870 |
| | ALM 400 V | 215 | 708 | 390 | 395 | 97,1 | 2900 | 0,84 | 0,961 | | | 183 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 95 | 267 | 225 | 460 | 113,5 | 3400 | 0,57 | 0,922 | | | 183 | |

### 4.1.1.9 Altezza d'asse 225 - Ventilazione forzata (ventilazione passante)

Tabella 4- 9 1PH8 Altezza d'asse 225 Grado di protezione IP23 Ventilazione forzata, ventilazione passante (dati di base)

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8224-1□B□□ | SLM/BLM 400 V | 45 | 1074 | 114 | 300 | 14,1 | 400 | 0,89 | 0,849 | 1,48 | 21 | 39 | 610 |
| Collegamento a stella | ALM 400 V | 55 | 1051 | 112 | 370 | 17,4 | 500 | 0,88 | 0,878 | | | 41 | |
| | SLM/BLM/ALM 480 V | 67 | 1066 | 118 | 410 | 20,9 | 600 | 0,90 | 0,883 | | | 35 | |
| 1PH8224-1□C□□ | SLM/BLM 400 V | 80 | 1091 | 188 | 310 | 24,1 | 700 | 0,88 | 0,904 | 1,48 | 21 | 63 | 610 |
| Collegamento a stella | ALM 400 V | 90 | 1074 | 184 | 350 | 27,4 | 800 | 0,88 | 0,914 | | | 63 | |
| | SLM/BLM/ALM 480 V | 105 | 1003 | 174 | 425 | 34,1 | 1000 | 0,88 | 0,929 | | | 61 | |
| 1PH8224-1□D□□ | SLM/BLM 400 V | 105 | 1003 | 220 | 335 | 34,1 | 1000 | 0,88 | 0,926 | 1,48 | 21 | 73 | 610 |
| Collegamento a stella | ALM 400 V | 120 | 997 | 220 | 385 | 39,1 | 1150 | 0,88 | 0,934 | | | 74 | |
| | SLM/BLM/ALM 480 V | 137 | 969 | 215 | 450 | 45,7 | 1350 | 0,87 | 0,941 | | | 75 | |
| 1PH8224-1□F□□ | SLM/BLM 400 V | 142 | 904 | 290 | 340 | 50,8 | 1500 | 0,89 | 0,942 | 1,48 | 21 | 84 | 610 |
| Collegamento a stella | ALM 400 V | 165 | 900 | 285 | 395 | 59,2 | 1750 | 0,89 | 0,946 | | | 84 | |
| | SLM/BLM/ALM 480 V | 178 | 850 | 265 | 460 | 67,4 | 2000 | 0,88 | 0,952 | | | 88 | |
| 1PH8224-1□L□□ | SLM/BLM 400 V | 178 | 680 | 355 | 340 | 84,1 | 2500 | 0,89 | 0,954 | 1,48 | 21 | 112 | 610 |
| | ALM 400 V | 205 | 675 | 355 | 395 | 97,4 | 2900 | 0,89 | 0,955 | | | 113 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 205 | 576 | 310 | 460 | 114,0 | 3400 | 0,87 | 0,954 | | | 113 | |
| 1PH8226-1□B□□ | SLM/BLM 400 V | 57 | 1361 | 144 | 305 | 13,9 | 400 | 0,86 | 0,875 | 1,93 | 23 | 61 | 740 |
| Collegamento a stella | ALM 400 V | 72 | 1375 | 144 | 375 | 17,3 | 500 | 0,86 | 0,895 | | | 60 | |
| | SLM/BLM/ALM 480 V | 87 | 1385 | 152 | 410 | 20,8 | 600 | 0,90 | 0,899 | | | 49 | |
| 1PH8226-1□C□□ | SLM/BLM 400 V | 106 | 1446 | 240 | 310 | 24,2 | 700 | 0,90 | 0,907 | 1,93 | 23 | 71 | 740 |
| Collegamento a stella | ALM 400 V | 118 | 1409 | 235 | 350 | 27,5 | 800 | 0,90 | 0,918 | | | 71 | |
| | SLM/BLM/ALM 480 V | 146 | 1394 | 230 | 440 | 34,1 | 1000 | 0,89 | 0,932 | | | 74 | |
| 1PH8226-1□D□□ | SLM/BLM 400 V | 135 | 1289 | 275 | 340 | 34,1 | 1000 | 0,90 | 0,929 | 1,93 | 23 | 82 | 740 |
| Collegamento a stella | ALM 400 V | 155 | 1287 | 270 | 390 | 39,1 | 1150 | 0,90 | 0,936 | | | 83 | |
| | SLM/BLM/ALM 480 V | 172 | 1217 | 255 | 460 | 45,7 | 1350 | 0,89 | 0,945 | | | | |
| 1PH8226-1□F□□ | SLM/BLM 400 V | 175 | 1114 | 350 | 340 | 50,7 | 1500 | 0,89 | 0,950 | 1,93 | 23 | 117 | 740 |
| Collegamento a stella | ALM 400 V | 200 | 1091 | 350 | 390 | 59,0 | 1750 | 0,89 | 0,954 | | | 114 | |
| | SLM/BLM/ALM 480 V | 220 | 1051 | 335 | 450 | 67,3 | 2000 | 0,88 | 0,957 | | | | |
| 1PH8226-1□L□□ | SLM/BLM 400 V | 235 | 898 | 475 | 335 | 84,0 | 2500 | 0,89 | 0,957 | 1,93 | 23 | 149 | 740 |
| | ALM 400 V | 270 | 889 | 470 | 390 | 97,3 | 2900 | 0,89 | 0,958 | | | 150 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 270 | 758 | 405 | 460 | 113,9 | 3400 | 0,87 | 0,957 | | | 153 | |
| 1PH8228-1□B□□ | SLM/BLM 400 V | 72 | 1719 | 176 | 305 | 14,0 | 400 | 0,88 | 0,878 | 2,33 | 25 | 69 | 870 |
| Collegamento a stella | ALM 400 V | 90 | 1719 | 174 | 380 | 17,3 | 500 | 0,87 | 0,899 | | | 73 | |
| | SLM/BLM/ALM 480 V | 108 | 1719 | 188 | 410 | 20,8 | 600 | 0,90 | 0,902 | | | 57 | |

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8228-1□C□□ | SLM/BLM 400 V | 120 | 1637 | 265 | 315 | 24,1 | 700 | 0,91 | 0,91 | 2,33 | 25 | 75 | 870 |
| Collegamento a stella | ALM 400 V | 135 | 1612 | 260 | 360 | 27,4 | 800 | 0,91 | 0,922 | | | 77 | |
| | SLM/BLM/ALM 480 V | 165 | 1576 | 250 | 450 | 34,1 | 1000 | 0,90 | 0,936 | | | 79 | |
| 1PH8228-1□D□□ | SLM/BLM 400 V | 165 | 1576 | 330 | 340 | 34,1 | 1000 | 0,91 | 0,933 | 2,33 | 25 | 93 | 870 |
| Collegamento a stella | ALM 400 V | 190 | 1578 | 330 | 390 | 39,1 | 1150 | 0,91 | 0,940 | | | 94 | |
| | SLM/BLM/ALM 480 V | 218 | 1542 | 320 | 460 | 45,7 | 1350 | 0,90 | 0,947 | | | 96 | |
| 1PH8228-1□F□□ | SLM/BLM 400 V | 230 | 1464 | 465 | 340 | 50,6 | 1500 | 0,88 | 0,953 | 2,33 | 25 | 166 | 870 |
| Collegamento a stella | ALM 400 V | 265 | 1446 | 460 | 390 | 59,0 | 1750 | 0,89 | 0,956 | | | 162 | |
| | SLM/BLM/ALM 480 V | 288 | 1375 | 440 | 450 | 67,3 | 2000 | 0,88 | 0,959 | | | 166 | |
| 1PH8228-1□L□□ | SLM/BLM 400 V | 265 | 1012 | 530 | 340 | 83,9 | 2500 | 0,89 | 0,960 | 2,33 | 25 | 180 | 870 |
| | ALM 400 V | 300 | 988 | 510 | 395 | 97,3 | 2900 | 0,89 | 0,960 | | | 182 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 300 | 843 | 450 | 460 | 113,8 | 3400 | 0,87 | 0,958 | | | 181 | |

### 4.1.1.10 Altezza d'asse 280 - Ventilazione forzata

Tabella 4- 10 1PH8 Altezza d'asse 280 Grado di protezione IP55 Ventilazione forzata (dati di base)

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8224-1□B1□ | SLM/BLM 400 V | 63 | 1504 | 154 | 325 | 13,6 | 400 | 0,79 | 0,924 | 4,20 | 47 | 86 | 1200 |
| Collegamento Δ | ALM 400 V | 80 | 1529 | 154 | 395 | 17,0 | 500 | 0,81 | 0,935 | | | 81 | |
| | SLM/BLM/ALM 480 V | 95 | 1519 | 154 | 460 | 20,3 | 600 | 0,82 | 0,943 | | | 77 | |
| 1PH8284-1□C1□ | SLM/BLM 400 V | 110 | 1501 | 240 | 330 | 23,7 | 700 | 0,85 | 0,947 | 4,20 | 47 | 106 | 1200 |
| Collegamento Δ | ALM 400 V | 125 | 1492 | 235 | 400 | 27,0 | 800 | 0,81 | 0,952 | | | 124 | |
| | SLM/BLM/ALM 480 V | 150 | 1433 | 230 | 455 | 33,7 | 1000 | 0,86 | 0,957 | | | 101 | |
| 1PH8284-1□D1□ | SLM/BLM 400 V | 150 | 1433 | 315 | 335 | 33,7 | 1000 | 0,85 | 0,958 | 4,20 | 47 | 143 | 1200 |
| Collegamento Δ | ALM 400 V | 170 | 1414 | 310 | 400 | 38,6 | 1150 | 0,82 | 0,960 | | | 157 | |
| | SLM/BLM/ALM 480 V | 200 | 1416 | 315 | 460 | 45,3 | 1350 | 0,83 | 0,962 | | | 151 | |
| 1PH8284-1□F1□ | SLM/BLM 400 V | 196 | 1248 | 390 | 345 | 50,4 | 1500 | 0,87 | 0,963 | 4,20 | 47 | 162 | 1200 |
| Collegamento Δ | ALM 400 V | 225 | 1228 | 390 | 400 | 58,7 | 1750 | 0,86 | 96,4 | | | 162 | |
| | SLM/BLM/ALM 480 V | 255 | 1218 | 390 | 455 | 67,0 | 2000 | 0,86 | 0,965 | | | 162 | |
| 1PH8284-1□H1□ | BLM 690 V | 61 | 1456 | 82 | 555 | 13,7 | 400 | 0,84 | 0,920 | 4,20 | 47 | 39 | 1200 |
| Collegamento a stella | ALM 690 V | 77 | 1471 | 82 | 690 | 17,0 | 500 | 0,84 | 0,932 | | | 39 | |
| 1PH8284-1□K1□ | BLM 690 V | 100 | 1364 | 118 | 605 | 23,7 | 700 | 0,85 | 0,945 | 4,20 | 47 | 53 | 1200 |
| Collegamento a stella | ALM 690 V | 115 | 1373 | 120 | 690 | 27,0 | 800 | 0,85 | 0,950 | | | 53 | |
| 1PH8284-1□U1□ | BLM 690 V | 143 | 1366 | 176 | 600 | 33,6 | 1000 | 0,82 | 0,956 | 4,20 | 47 | 89 | 1200 |
| Collegamento a stella | ALM 690 V | 164 | 1362 | 174 | 690 | 38,6 | 1150 | 0,82 | 0,959 | | | 90 | |
| 1PH8284-1□W1□ | BLM 690 V | 186 | 1184 | 220 | 590 | 50,3 | 1500 | 0,86 | 0,962 | 4,20 | 47 | 92 | 1200 |
| Collegamento a stella | ALM 690 V | 217 | 1184 | 220 | 690 | 58,7 | 1750 | 0,86 | 0,963 | | | 93 | |
| 1PH8286-1□B1□ | SLM/BLM 400 V | 80 | 1910 | 186 | 325 | 13,6 | 400 | 0,82 | 0,928 | 5,20 | 50 | 98 | 1400 |
| Collegamento Δ | ALM 400 V | 100 | 1909 | 188 | 400 | 17,0 | 500 | 0,82 | 0,939 | | | 96 | |
| | SLM/BLM/ALM 480 V | 120 | 1916 | 188 | 460 | 20,3 | 600 | 0,85 | 0,945 | | | 88 | |

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8286-1□C1□ Collegamento Δ | SLM/BLM 400 V | 138 | 1883 | 295 | 325 | 23,7 | 700 | 0,87 | 0,949 | 5,20 | 50 | 121 | 1400 |
| | ALM 400 V | 155 | 1850 | 285 | 385 | 27,0 | 800 | 0,85 | 0,955 | | | 133 | |
| | SLM/BLM/ALM 480 V | 185 | 1767 | 280 | 460 | 33,7 | 1000 | 0,86 | 0,960 | | | 122 | |
| 1PH8286-1□D1□ Collegamento Δ | SLM/BLM 400 V | 182 | 1738 | 410 | 330 | 33,6 | 1000 | 0,81 | 0,960 | 5,20 | 50 | 215 | 1400 |
| | ALM 400 V | 210 | 1745 | 410 | 380 | 38,6 | 1150 | 0,81 | 0,962 | | | 217 | |
| | SLM/BLM/ALM 480 V | 245 | 1733 | 410 | 445 | 45,3 | 1350 | 0,81 | 0,963 | | | 217 | |
| 1PH8286-1□F1□ Collegamento Δ | SLM/BLM 400 V | 250 | 1592 | 490 | 345 | 50,4 | 1500 | 0,89 | 0,965 | 5,20 | 50 | 182 | 1400 |
| | ALM 400 V | 270 | 1474 | 460 | 400 | 58,7 | 1750 | 0,88 | 0,966 | | | 183 | |
| | SLM/BLM/ALM 480 V | 310 | 1481 | 460 | 455 | 67,0 | 2000 | 0,88 | 0,967 | | | 182 | |
| 1PH8286-1□H1□ Collegamento a stella | BLM 690 V | 77 | 1838 | 100 | 555 | 13,7 | 400 | 0,87 | 0,921 | 5,20 | 50 | 43 | 1400 |
| | ALM 690 V | 96 | 1834 | 100 | 690 | 17,0 | 500 | 0,86 | 0,934 | | | 43 | |
| 1PH8286-1□K1□ Collegamento a stella | BLM 690 V | 127 | 1733 | 158 | 605 | 23,6 | 700 | 0,81 | 0,951 | 5,20 | 50 | 83 | 1400 |
| | ALM 690 V | 145 | 1731 | 158 | 690 | 26,9 | 800 | 0,81 | 0,954 | | | 83 | |
| 1PH8286-1□U1□ Collegamento a stella | BLM 690 V | 176 | 1681 | 230 | 570 | 33,6 | 1000 | 0,81 | 0,959 | 5,20 | 50 | 124 | 1400 |
| | ALM 690 V | 203 | 1686 | 230 | 655 | 38,6 | 1150 | 0,81 | 0,961 | | | 124 | |
| 1PH8286-1□W1□ Collegamento a stella | BLM 690 V | 224 | 1426 | 260 | 590 | 50,3 | 1500 | 0,88 | 0,965 | 5,20 | 50 | 104 | 1400 |
| | ALM 690 V | 261 | 1424 | 260 | 690 | 58,7 | 1750 | 0,87 | 0,966 | | | 105 | |
| 1PH8288-1□B1□ Collegamento Δ | SLM/BLM 400 V | 103 | 2459 | 245 | 325 | 13,6 | 400 | 0,80 | 0,931 | 6,30 | 53 | 136 | 1650 |
| | ALM 400 V | 130 | 2481 | 245 | 395 | 17,0 | 500 | 0,82 | 0,941 | | | 127 | |
| | SLM/BLM/ALM 480 V | 155 | 2474 | 245 | 460 | 20,3 | 600 | 0,84 | 0,948 | | | 121 | |
| 1PH8288-1□C1□ Collegamento Δ | SLM/BLM 400 V | 166 | 2265 | 365 | 325 | 23,6 | 700 | 0,85 | 0,953 | 6,30 | 53 | 171 | 1650 |
| | ALM 400 V | 190 | 2268 | 365 | 370 | 27,0 | 800 | 0,85 | 0,957 | | | 171 | |
| | SLM/BLM/ALM 480 V | 230 | 2197 | 355 | 460 | 33,6 | 1000 | 0,84 | 0,962 | | | 172 | |
| 1PH8288-1□D1□ Collegamento Δ | SLM/BLM 400 V | 226 | 2158 | 495 | 335 | 33,6 | 1000 | 0,82 | 0,962 | 6,30 | 53 | 252 | 1650 |
| | ALM 400 V | 260 | 2160 | 495 | 385 | 38,6 | 1150 | 0,82 | 0,964 | | | 253 | |
| | SLM/BLM/ALM 480 V | 305 | 2158 | 495 | 450 | 45,3 | 1350 | 0,82 | 0,965 | | | 251 | |
| 1PH8288-1□F1□ Collegamento Δ | SLM/BLM 400 V | 320 | 2037 | 620 | 345 | 50,4 | 1500 | 0,89 | 0,966 | 6,30 | 53 | 233 | 1650 |
| | ALM 400 V | 340 | 1856 | 580 | 400 | 58,7 | 1750 | 0,88 | 0,967 | | | 233 | |
| | SLM/BLM/ALM 480 V | 385 | 1838 | 570 | 455 | 67,0 | 2000 | 0,88 | 0,967 | | | 232 | |
| 1PH8288-1□H1□ Collegamento a stella | BLM 690 V | 100 | 2388 | 130 | 555 | 13,7 | 400 | 0,87 | 0,924 | 6,30 | 53 | 55 | 1650 |
| | ALM 690 V | 125 | 2388 | 128 | 690 | 17,0 | 500 | 0,87 | 0,937 | | | 56 | |
| 1PH8288-1□K1□ Collegamento a stella | BLM 690 V | 162 | 2210 | 186 | 605 | 23,7 | 700 | 0,88 | 0,949 | 6,30 | 53 | 75 | 1650 |
| | ALM 690 V | 185 | 2208 | 184 | 690 | 27,0 | 800 | 0,88 | 0,953 | | | 76 | |
| 1PH8288-1□U1□ Collegamento a stella | BLM 690 V | 218 | 2082 | 275 | 580 | 33,6 | 1000 | 0,82 | 0,961 | 6,30 | 53 | 145 | 1650 |
| | ALM 690 V | 251 | 2084 | 275 | 665 | 38,6 | 1150 | 0,82 | 0,963 | | | 145 | |
| 1PH8288-1□W1□ Collegamento a stella | BLM 690 V | 282 | 1795 | 325 | 590 | 50,3 | 1500 | 0,88 | 0,966 | 6,30 | 53 | 133 | 1650 |
| | ALM 690 V | 329 | 1795 | 325 | 690 | 58,7 | 1750 | 0,87 | 0,967 | | | 134 | |

### 4.1.1.11 Altezza d'asse 280 - Ventilazione forzata (ventilazione passante)

Tabella 4- 11 1PH8 Altezza d'asse 280 Grado di protezione IP23 Ventilazione forzata, ventilazione passante (dati di base)

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8284-1□C4□ Collegamento Δ | SLM/BLM 400 V | 171 | 2333 | 355 | 330 | 23,9 | 700 | 0,91 | 0,930 | 4,20 | 18 | 101 | 1200 |
| | ALM 400 V | 195 | 2328 | 335 | 400 | 27,2 | 800 | 0,89 | 0,942 | | | 117 | |
| | SLM/BLM/ALM 480 V | 235 | 2244 | 345 | 455 | 33,9 | 1000 | 0,91 | 0,946 | | | 97 | |
| 1PH8284-1□D4□ Collegamento Δ | SLM/BLM 400 V | 243 | 2321 | 490 | 335 | 33,9 | 1000 | 0,90 | 0,947 | 4,20 | 18 | 137 | 1200 |
| | ALM 400 V | 280 | 2325 | 475 | 400 | 38,9 | 1150 | 0,89 | 0,953 | | | 150 | |
| | SLM/BLM/ALM 480 V | 325 | 2299 | 475 | 460 | 45,5 | 1350 | 0,90 | 0,957 | | | 146 | |
| 1PH8284-1□F4□ Collegamento Δ | SLM/BLM 400 V | 319 | 2031 | 620 | 345 | 50,6 | 1500 | 0,91 | 0,957 | 4,20 | 18 | 157 | 1200 |
| | ALM 400 V | 370 | 2019 | 610 | 400 | 58,9 | 1750 | 0,91 | 0,960 | | | 158 | |
| | SLM/BLM/ALM 480 V | 415 | 1981 | 600 | 455 | 67,3 | 2000 | 0,91 | 0,962 | | | 157 | |
| 1PH8284-1□K4□ Collegamento a stella | BLM 690 V | 162 | 2210 | 184 | 605 | 23,9 | 700 | 0,91 | 0,927 | 4,20 | 18 | 50 | 1200 |
| | ALM 690 V | 185 | 2208 | 182 | 690 | 27,2 | 800 | 0,91 | 0,934 | | | 51 | |
| 1PH8284-1□U4□ Collegamento a stella | BLM 690 V | 236 | 2254 | 265 | 600 | 33,9 | 1000 | 0,90 | 0,947 | 4,20 | 18 | 85 | 1200 |
| | ALM 690 V | 272 | 2255 | 270 | 690 | 38,9 | 1150 | 0,89 | 0,951 | | | 86 | |
| 1PH8284-1□W4□ Collegamento a stella | BLM 690 V | 307 | 1955 | 345 | 590 | 50,6 | 1500 | 0,91 | 0,956 | 4,20 | 18 | 89 | 1200 |
| | ALM 690 V | 359 | 1959 | 345 | 690 | 58,9 | 1750 | 0,91 | 0,959 | | | 91 | |
| 1PH8286-1□C4□ Collegamento Δ | SLM/BLM 400 V | 219 | 2988 | 455 | 325 | 23,9 | 700 | 0,92 | 0,931 | 5,20 | 20 | 115 | 1400 |
| | ALM 400 V | 250 | 2984 | 435 | 385 | 27,2 | 800 | 0,91 | 0,942 | | | 126 | |
| | SLM/BLM/ALM 480 V | 310 | 2961 | 450 | 460 | 33,9 | 1000 | 0,91 | 0,948 | | | 117 | |
| 1PH8286-1□D4□ Collegamento Δ | SLM/BLM 400 V | 309 | 2951 | 630 | 330 | 33,8 | 1000 | 0,90 | 0,952 | 5,20 | 20 | 207 | 1400 |
| | ALM 400 V | 355 | 2944 | 630 | 380 | 38,8 | 1150 | 0,89 | 0,956 | | | 209 | |
| | SLM/BLM/ALM 480 V | 410 | 2901 | 620 | 445 | 45,5 | 1350 | 0,89 | 0,960 | | | 210 | |
| 1PH8286-1□F4□ Collegamento Δ | SLM/BLM 400 V | 382 | 2432 | 730 | 345 | 50,6 | 1500 | 0,92 | 0,959 | 5,20 | 20 | 177 | 1400 |
| | ALM 400 V | 445 | 2429 | 730 | 400 | 58,9 | 1750 | 0,92 | 0,962 | | | 178 | |
| | SLM/BLM/ALM 480 V | 500 | 2387 | 720 | 455 | 67,2 | 2000 | 0,92 | 0,963 | | | 178 | |
| 1PH8286-1□K4□ Collegamento a stella | BLM 690 V | 210 | 2865 | 235 | 605 | 23,8 | 700 | 0,90 | 0,938 | 5,20 | 20 | 79 | 1400 |
| | ALM 690 V | 240 | 2865 | 235 | 690 | 27,2 | 800 | 0,90 | 0,944 | | | 79 | |
| 1PH8286-1□U4□ Collegamento a stella | BLM 690 V | 299 | 2855 | 355 | 570 | 33,8 | 1000 | 0,89 | 0,952 | 5,20 | 20 | 119 | 1400 |
| | ALM 690 V | 344 | 2860 | 355 | 655 | 38,8 | 1150 | 0,89 | 0,956 | | | 119 | |
| 1PH8286-1□W4□ Collegamento a stella | BLM 690 V | 370 | 2356 | 410 | 590 | 50,6 | 1500 | 0,92 | 0,958 | 5,20 | 20 | 101 | 1400 |
| | ALM 690 V | 432 | 2356 | 410 | 410 | 58,9 | 1750 | 0,92 | 0,961 | | | 102 | |
| 1PH8288-1□C4□ Collegamento Δ | SLM/BLM 400 V | 272 | 3711 | 570 | 325 | 23,9 | 700 | 0,91 | 0,939 | 6,30 | 22 | 161 | 1650 |
| | ALM 400 V | 310 | 3701 | 560 | 370 | 27,2 | 800 | 0,91 | 0,945 | | | 164 | |
| | SLM/BLM/ALM 480 V | 385 | 3677 | 560 | 460 | 33,9 | 1000 | 0,91 | 0,953 | | | 164 | |

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8288-1□D4□ Collegamento Δ | SLM/BLM 400 V | 379 | 3619 | 760 | 335 | 33,8 | 1000 | 0,90 | 0,955 | 6,30 | 22 | 242 | 1650 |
| | ALM 400 V | 435 | 3607 | 760 | 385 | 38,8 | 1150 | 0,90 | 0,958 | | | 244 | |
| | SLM/BLM/ALM 480 V | 505 | 3573 | 750 | 450 | 45,5 | 1350 | 0,90 | 0,962 | | | 243 | |
| 1PH8288-1□F4□ Collegamento Δ | SLM/BLM 400 V | 480 | 3056 | 910 | 345 | 50,6 | 1500 | 0,92 | 0,961 | 6,30 | 22 | 229 | 1650 |
| | ALM 400 V | 560 | 3055 | 910 | 400 | 58,9 | 1750 | 0,92 | 0,963 | | | 228 | |
| | SLM/BLM/ALM 480 V | 630 | 3009 | 900 | 455 | 67,2 | 2000 | 0,92 | 0,965 | | | 230 | |
| 1PH8288-1□K4□ Collegamento a stella | BLM 690 V | 263 | 3588 | 295 | 605 | 23,9 | 700 | 0,92 | 0,929 | 6,30 | 22 | 71 | 1650 |
| | ALM 690 V | 300 | 3581 | 290 | 690 | 27,3 | 800 | 0,92 | 0,936 | | | 72 | |
| 1PH8288-1□U4□ Collegamento a stella | BLM 690 V | 367 | 3505 | 425 | 425 | 33,8 | 1000 | 0,90 | 0,954 | 6,30 | 22 | 140 | 1650 |
| | ALM 690 V | 422 | 3504 | 425 | 665 | 38,8 | 1150 | 0,90 | 0,958 | | | 140 | |
| 1PH8288-1□W4□ Collegamento a stella | BLM 690 V | 465 | 2961 | 520 | 590 | 50,5 | 1500 | 0,92 | 0,960 | 6,30 | 22 | 130 | 1650 |
| | ALM 690 V | 543 | 2964 | 510 | 690 | 58,9 | 1750 | 0,92 | 0,963 | | | 131 | |

### 4.1.1.12 Fattori di sovraccarico per modi operativi intermittenti (S6) e funzionamento breve (S2)

I fattori di sovraccarico per i modi operativi intermittenti (S6) nonché per il funzionamento breve (S2) sono forniti in base alla curva caratteristica S1 (funzionamento continuo) di ciascun motore.

Tabella 4- 12 Fattori di sovraccarico S6/S2 motore asincrono ventilazione forzata (IP55)

| Tipo di motore | Fattori di sovraccarico | | | |
|---|---|---|---|---|
| | S6 - 60 % | S6 - 40 % | S6 - 25 % | S2 - 30 min |
| 1PH808□-1□□0/1 | 1,20 | 1,50 | 1,90 | 1,20 |
| 1PH810□-1□□0/1 | 1,20 | 1,50 | 1,90 | 1,20 |
| 1PH813□-1□□0/1 | 1,20 | 1,50 | 1,90 | 1,20 |
| 1PH816□-1□□0/1 | 1,20 | 1,50 | 1,90 | 1,20 |
| 1PH8184-1□□0/1 | 1,23 | 1,47 | 1,74 | 1,16 |
| 1PH8186-1□□0/1 | 1,25 | 1,49 | 1,79 | 1,20 |
| 1PH8224-1□□0/1 | 1,23 | 1,47 | 1,70 | 1,48 |
| 1PH8226-1□□0/1 | 1,23 | 1,47 | 1,70 | 1,51 |
| 1PH8228-1□□0/1 | 1,23 | 1,47 | 1,70 | 1,54 |
| 1PH8284-1□□0/1 | 1,23 | 1,47 | 1,76 | 1,46 |
| 1PH8286-1□□0/1 | 1,23 | 1,47 | 1,76 | 1,49 |
| 1PH8288-1□□0/1 | 1,23 | 1,47 | 1,76 | 1,52 |

Tabella 4- 13 Fattori di sovraccarico S6/S2 motore asincrono ventilazione forzata, ventilazione passante (IP23)

| Tipo di motore | Fattori di sovraccarico | | | |
|---|---|---|---|---|
| | S6 - 60 % | S6 - 40 % | S6 - 25 % | S2 - 30 min |
| 1PH8184-1□□3/4 | 1,23 | 1,47 | 1,74 | 1,21 |
| 1PH8186-1□□3/4 | 1,25 | 1,49 | 1,79 | 1,25 |
| 1PH8224-1□□3/4 | 1,23 | 1,47 | 1,70 | 1,15 |
| 1PH8226-1□□3/4 | 1,23 | 1,47 | 1,70 | 1,17 |
| 1PH8228-1□□3/4 | 1,23 | 1,47 | 1,70 | 1,20 |
| 1PH8284 -1□□4 | 1,23 | 1,47 | 1,76 | 1,11 |
| 1PH8286 -1□□4 | 1,23 | 1,47 | 1,76 | 1,14 |
| 1PH8288 -1□□4 | 1,23 | 1,47 | 1,76 | 1,16 |

### 4.1.1.13 Altezza dell'asse 80 - Raffreddamento ad acqua

Tabella 4- 14 1PH8 Altezza d'asse 80 Raffreddamento ad acqua (dati di base)

| Tipo di motore | Tensione di collegamento | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | P_raffr [kW] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8083-1□F2□ Collegamento a stella | SLM/BLM 400 V | 3,5 | 22 | 8,9 | 357 | 54,5 | 1500 | 0,84 | 0,784 | 0,0064 | 8 | 3,6 | 0,7 | 36 |
| | ALM 400 V | 4,0 | 22 | 8,7 | 416 | 62,4 | 1750 | 0,82 | 0,808 | | | 4,0 | 0,7 | |
| | SLM/BLM/ALM 480 V | 4,6 | 22 | 8,7 | 457 | 71,0 | 2000 | 0,83 | 0,839 | | | 3,8 | 0,7 | |
| 1PH8083-1□G2□ Collegamento a stella | SLM/BLM 400 V | 4,3 | 21 | 12,0 | 322 | 70,4 | 2000 | 0,80 | 0,833 | | | 5,9 | 0,7 | |
| | ALM 400 V | 4,9 | 20 | 12,0 | 362 | 80,5 | 2300 | 0,80 | 0,846 | | | 5,8 | 0,7 | |
| | SLM/BLM/ALM 480 V | 5,6 | 20 | 12,0 | 425 | 91,8 | 2650 | 0,76 | 0,862 | | | 6,5 | 0,7 | |
| 1PH8083-1□N2□ Collegamento a stella | SLM/BLM 400 V | 6,7 | 14 | 18,0 | 347 | 152,9 | 4500 | 0,76 | 0,877 | | | 9,2 | 0,7 | |
| | ALM 400 V | 7,5 | 14 | 18,0 | 383 | 169,6 | 5000 | 0,76 | 0,891 | | | 9,2 | 0,7 | |
| | SLM/BLM/ALM 480 V | 8,2 | 14 | 18,0 | 460 | 185,7 | 5500 | 0,67 | 0,909 | | | 11,7 | 0,7 | |
| 1PH8087-1□F2□ Collegamento a stella | SLM/BLM 400 V | 4,6 | 29 | 13,7 | 316 | 53,3 | 1500 | 0,78 | 0,814 | 0,0089 | 8 | 7,2 | 1,2 | 44 |
| | ALM 400 V | 5,4 | 29 | 13,7 | 358 | 61,8 | 1750 | 0,80 | 0,831 | | | 6,8 | 1,2 | |
| | SLM/BLM/ALM 480 V | 6,1 | 29 | 13,7 | 402 | 70,0 | 2650 | 0,79 | 0,868 | | | 6,8 | 1,2 | |
| 1PH8087-1□G2□ Collegamento a stella | SLM/BLM 400 V | 6,1 | 29 | 17,5 | 312 | 70,3 | 2000 | 0,80 | 0,843 | | | 8,4 | 1,2 | |
| | ALM 400 V | 7,0 | 29 | 17,7 | 355 | 80,3 | 2300 | 0,79 | 0,860 | | | 8,6 | 1,2 | |
| | SLM/BLM/ALM 480 V | 8,1 | 29 | 17,8 | 415 | 91,8 | 2650 | 0,77 | 0,871 | | | 9,3 | 1,2 | |
| 1PH8087-1□N2□ Collegamento a stella | SLM/BLM 400 V | 8,5 | 18 | 24,0 | 345 | 152,5 | 4500 | 0,74 | 0,891 | | | 12,4 | 1,2 | |
| | ALM 400 V | 9,5 | 18 | 24,0 | 380 | 169,3 | 5000 | 0,75 | 0,894 | | | 12,3 | 1,2 | |
| | SLM/BLM/ALM 480 V | 10,5 | 18 | 24,0 | 420 | 186,0 | 5500 | 0,74 | 0,898 | | | 12,4 | 1,2 | |

### 4.1.1.14 Altezza dell'asse 100 - Raffreddamento ad acqua

Tabella 4- 15 1PH8 Altezza d'asse 100 Raffreddamento ad acqua (dati di base)

| Tipo di motore | Tensione di collegamento | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | P_raffr [kW] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8101-1□F2□ Collegamento a stella | SLM/BLM 400 V | 5,0 | 32 | 12,8 | 357 | 53,1 | 1500 | 0,81 | 0,813 | 0,0138 | 10 | 6,0 | 1,3 | 51 |
| | ALM 400 V | 5,8 | 32 | 12,8 | 400 | 61,7 | 1750 | 0,83 | 0,834 | | | 5,4 | 1,3 | |
| | SLM/BLM/ALM 480 V | 6,6 | 32 | 12,5 | 450 | 69,9 | 2000 | 0,82 | 0,858 | | | 4,4 | 1,3 | |
| 1PH8101-1□G2□ Collegamento a stella | SLM/BLM 400 V | 6,4 | 31 | 16,8 | 335 | 69,8 | 2000 | 0,81 | 0,857 | | | 7,6 | 1,3 | |
| | ALM 400 V | 7,3 | 30 | 16,8 | 382 | 79,7 | 2300 | 0,80 | 0,874 | | | 7,8 | 1,3 | |
| | SLM/BLM/ALM 480 V | 8,4 | 30 | 16,8 | 435 | 91,4 | 2650 | 0,80 | 0,888 | | | 7,7 | 1,3 | |
| 1PH8103-1□F2□ Collegamento a stella | SLM/BLM 400 V | 7,1 | 45 | 19,7 | 317 | 53,0 | 1500 | 0,82 | 0,827 | 0,0172 | 10 | 8,6 | 1,8 | 60 |
| | ALM 400 V | 8,2 | 45 | 19,7 | 364 | 61,4 | 1750 | 0,82 | 0,851 | | | 8,6 | 1,8 | |
| | SLM/BLM/ALM 480 V | 9,4 | 45 | 19,7 | 411 | 69,7 | 2000 | 0,82 | 0,869 | | | 8,5 | 1,8 | |
| 1PH8103-1□G2□ Collegamento a stella | SLM/BLM 400 V | 9,5 | 45 | 23,8 | 343 | 69,8 | 2000 | 0,82 | 0,857 | | | 10,3 | 1,8 | |
| | ALM 400 V | 10,9 | 45 | 23,8 | 390 | 79,8 | 2300 | 0,82 | 0,883 | | | 10,3 | 1,8 | |
| | SLM/BLM/ALM 480 V | 12,5 | 45 | 23,5 | 454 | 91,2 | 2650 | 0,79 | 0,904 | | | 11,3 | 1,8 | |
| 1PH8103-1□M2□ Collegamento a stella | SLM/BLM 400 V | 10,6 | 34 | 30,0 | 309 | 102,4 | 3000 | 0,80 | 0,900 | | | 13,0 | 1,8 | |
| | ALM 400 V | 11,7 | 34 | 30,0 | 340 | 112,4 | 3300 | 0,80 | 0,900 | | | 13,2 | 1,8 | |
| | SLM/BLM/ALM 480 V | 12,7 | 34 | 29,7 | 368 | 122,5 | 3600 | 0,80 | 0,910 | | | 13,0 | 1,8 | |
| 1PH8105-1□F2□ Collegamento a stella | SLM/BLM 400 V | 11,0 | 70 | 28,5 | 340 | 52,8 | 1500 | 0,81 | 0,843 | 0,0252 | 10 | 13,3 | 2,7 | 74 |
| | ALM 400 V | 12,5 | 68 | 28,5 | 380 | 61,2 | 1750 | 0,81 | 0,862 | | | 12,1 | 2,7 | |
| | SLM/BLM/ALM 480 V | 14,0 | 67 | 27,5 | 426 | 69,5 | 2000 | 0,82 | 0,894 | | | 11,7 | 2,7 | |
| 1PH8105-1□G2□ Collegamento a stella | SLM/BLM 400 V | 13,0 | 62 | 34,5 | 326 | 69,3 | 2000 | 0,81 | 0,879 | | | 15,6 | 2,7 | |
| | ALM 400 V | 15,0 | 62 | 34,0 | 370 | 79,3 | 2300 | 0,81 | 0,891 | | | 15,1 | 2,7 | |
| | SLM/BLM/ALM 480 V | 17,0 | 61 | 33,5 | 424 | 90,9 | 2650 | 0,81 | 0,911 | | | 15,3 | 2,7 | |
| 1PH8105-1□M2□ Collegamento a stella | SLM/BLM 400 V | 16,8 | 53 | 45,0 | 324 | 102,3 | 3000 | 0,80 | 0,900 | | | 20,3 | 2,7 | |
| | ALM 400 V | 18,5 | 54 | 45,0 | 355 | 112,4 | 3300 | 0,80 | 0,910 | | | 20,2 | 2,7 | |
| | SLM/BLM/ALM 480 V | 20,0 | 53 | 45,0 | 375 | 122,5 | 3600 | 0,81 | 0,920 | | | 18,6 | 2,7 | |
| 1PH8107-1□F2□ Collegamento a stella | SLM/BLM 400 V | 14,0 | 89 | 43,7 | 277 | 53,3 | 1500 | 0,83 | 0,829 | 0,0289 | 10 | 17,8 | 3,0 | 83 |
| | ALM 400 V | 15,5 | 85 | 42,0 | 314 | 61,4 | 1750 | 0,83 | 0,847 | | | 17,5 | 3,0 | |
| | SLM/BLM/ALM 480 V | 18,0 | 86 | 42,6 | 363 | 69,7 | 2000 | 0,81 | 0,873 | | | 19,1 | 3,0 | |
| 1PH8107-1□M2□ Collegamento a stella | SLM/BLM 400 V | 18,0 | 57 | 60,0 | 264 | 102,2 | 3000 | 0,80 | 0,900 | | | 26,0 | 3,0 | |
| | ALM 400 V | 20,0 | 58 | 60,0 | 290 | 112,2 | 3300 | 0,80 | 0,900 | | | 26,1 | 3,0 | |
| | SLM/BLM/ALM 480 V | 21,0 | 56 | 59,0 | 315 | 122,1 | 3600 | 0,79 | 0,910 | | | 26,1 | 3,0 | |

### 4.1.1.15 Altezza dell'asse 132 - Raffreddamento ad acqua

Tabella 4- 16 1PH8 Altezza d'asse 132 Raffreddamento ad acqua (dati di base)

| Tipo di motore | Tensione di collegamento | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | P_raffr [kW] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8131-1□F2□ Collegamento a stella | SLM/BLM 400 V | 15,0 | 96 | 30 | 380 | 52,3 | 1500 | 0,89 | 0,883 | 0,0590 | 12 | 9,2 | 2,6 | 105 |
| | ALM 400 V | 17,0 | 93 | 30 | 425 | 60,7 | 1750 | 0,89 | 0,897 | | | 8,2 | 2,6 | |
| | SLM/BLM/ALM 480 V | 18,5 | 88 | 30 | 460 | 68,7 | 2000 | 0,90 | 0,912 | | | 7,2 | 2,6 | |
| 1PH8131-1□G2□ Collegamento a stella | SLM/BLM 400 V | 18,0 | 86 | 40 | 352 | 69,1 | 2000 | 0,85 | 0,908 | | | 15,5 | 2,6 | |
| | ALM 400 V | 20,0 | 83 | 39 | 400 | 78,5 | 2300 | 0,85 | 0,920 | | | 15,4 | 2,6 | |
| | SLM/BLM/ALM 480 V | 23,0 | 83 | 39 | 458 | 90,1 | 2650 | 0,85 | 0,938 | | | 15,4 | 2,6 | |
| 1PH8133-1□F2□ Collegamento a stella | SLM/BLM 400 V | 17,0 | 108 | 38 | 345 | 51,5 | 1500 | 0,86 | 0,883 | 0,0760 | 12 | 14,2 | 2,8 | 123 |
| | ALM 400 V | 19,5 | 106 | 38 | 403 | 59,8 | 1750 | 0,85 | 0,913 | | | 14,9 | 2,8 | |
| | SLM/BLM/ALM 480 V | 22,5 | 107 | 38 | 452 | 68,2 | 2000 | 0,86 | 0,938 | | | 14,4 | 2,8 | |
| 1PH8133-1□G2□ Collegamento a stella | SLM/BLM 400 V | 22,0 | 105 | 52 | 336 | 68,2 | 2000 | 0,84 | 0,909 | | | 22,2 | 2,8 | |
| | ALM 400 V | 25,0 | 104 | 52 | 373 | 78,3 | 2300 | 0,86 | 0,923 | | | 19,4 | 2,8 | |
| | SLM/BLM/ALM 480 V | 28,0 | 101 | 50 | 427 | 89,9 | 2650 | 0,85 | 0,933 | | | 19,5 | 2,8 | |
| 1PH8135-1□F2□ Collegamento a stella | SLM/BLM 400 V | 22,0 | 140 | 51 | 342 | 51,5 | 1500 | 0,85 | 0,901 | 0,0940 | 12 | 20,3 | 3,3 | 141 |
| | ALM 400 V | 25,5 | 139 | 51 | 395 | 59,8 | 1750 | 0,85 | 0,914 | | | 20,1 | 3,3 | |
| | SLM/BLM/ALM 480 V | 29,0 | 138 | 52 | 448 | 68,2 | 2000 | 0,85 | 0,931 | | | 19,9 | 3,3 | |
| 1PH8135-1□G2□ Collegamento a stella | SLM/BLM 400 V | 29,0 | 138 | 64 | 348 | 68,3 | 2000 | 0,86 | 0,924 | | | 23,9 | 3,3 | |
| | ALM 400 V | 31,0 | 129 | 61 | 397 | 78,1 | 2300 | 0.85 | 0,933 | | | 24,1 | 3,3 | |
| | SLM/BLM/ALM 480 V | 32,0 | 115 | 58 | 448 | 89,6 | 2650 | 0,84 | 0,942 | | | 23,0 | 3,3 | |
| 1PH8137-1□F2□ Collegamento a stella | SLM/BLM 400 V | 27,0 | 172 | 67 | 315 | 51,6 | 1500 | 0,86 | 0,900 | 0,1090 | 12 | 25,3 | 3,8 | 157 |
| | ALM 400 V | 31,5 | 172 | 67 | 365 | 59,9 | 1750 | 0,86 | 0,911 | | | 24,8 | 3,8 | |
| | SLM/BLM/ALM 480 V | 36,0 | 172 | 67 | 415 | 68,3 | 2000 | 0,86 | 0,928 | | | 25,4 | 3,8 | |
| 1PH8138-1□F2□ Collegamento a stella | SLM/BLM 400 V | 30,0 | 191 | 80 | 289 | 51,9 | 1500 | 0,88 | 0,882 | | | 27,1 | 4,2 | 160 |
| | ALM 400 V | 33,0 | 180 | 77 | 332 | 60,0 | 1750 | 0,87 | 0,898 | | | 27,1 | 4,2 | |
| | SLM/BLM/ALM 480 V | 37,0 | 177 | 76 | 380 | 68,4 | 2000 | 0,86 | 0,920 | | | 28,4 | 4,2 | |

### 4.1.1.16 Altezza d'asse 160 - Raffreddamento ad acqua

Tabella 4- 17 1PH8 AH 160 Raffreddamento ad acqua (dati di base)

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | P_raffr [kW] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8163-1□F2□ | SLM/BLM 400 V | 37 | 236 | 84 | 328 | 51,1 | 1500 | 0,88 | 0,916 | 0,216 | 14 | 27,4 | 3,8 | 229 |
| | ALM 400 V | 43 | 235 | 84 | 380 | 59,4 | 1750 | 0,88 | 0,924 | | | 27,3 | 4,1 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 49 | 234 | 84 | 430 | 67,7 | 2000 | 0,88 | 0,925 | | | 26,9 | 3,6 | |
| 1PH8163-1□G2□ | SLM/BLM 400 V | 42 | 201 | 93 | 335 | 67,6 | 2000 | 0,88 | 0,937 | | | 30,8 | 4,0 | |
| | ALM 400 V | 48 | 199 | 93 | 382 | 77,6 | 2300 | 0,88 | 0,939 | | | 30,2 | 4,2 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 55 | 198 | 90 | 450 | 89,2 | 2650 | 0,86 | 0,940 | | | 33,6 | 4,1 | |
| 1PH8165-1□F2□ | SLM/BLM 400 V | 46 | 293 | 104 | 330 | 50,9 | 1500 | 0,87 | 0,930 | 0,232 | 14 | 37,2 | 4,6 | 264 |
| | ALM 400 V | 53 | 289 | 104 | 374 | 59,3 | 1750 | 0,88 | 0,935 | | | 33,8 | 4,8 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 60 | 287 | 103 | 426 | 67,6 | 2000 | 0,88 | 0,940 | | | 34,0 | 4,8 | |
| 1PH8165-1□G2□ | SLM/BLM 400 V | 53 | 253 | 110 | 352 | 67,6 | 2000 | 0,89 | 0,938 | | | 32,1 | 4,7 | |
| | ALM 400 V | 60 | 249 | 107 | 410 | 77,6 | 2300 | 0,88 | 0,946 | | | 33,7 | 4,9 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 65 | 234 | 100 | 460 | 89,2 | 2650 | 0,89 | 0,948 | | | 31,9 | 4,8 | |
| 1PH8166-1□F2□ | SLM/BLM 400 V | 52 | 331 | 116 | 332 | 51,2 | 1500 | 0,88 | 0,936 | 0,232 | | 36,7 | 5,5 | 269 |
| | ALM 400 V | 61 | 333 | 116 | 381 | 59,5 | 1750 | 0,89 | 0,940 | | | 35,2 | 5,7 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 68 | 325 | 116 | 426 | 67,9 | 2000 | 0,89 | 0,941 | | | 32,8 | 5,8 | |
| 1PH8166-1□G2□ | SLM/BLM 400 V | 64 | 306 | 125 | 376 | 67,8 | 2000 | 0,88 | 0,937 | | | 39,3 | 5,9 | |
| | ALM 400 V | 72 | 299 | 124 | 420 | 77,8 | 2300 | 0,89 | 0,946 | | | 35,5 | 5,9 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 83 | 299 | 125 | 460 | 89,6 | 2650 | 0,90 | 0,948 | | | 35,7 | 5,9 | |

### 4.1.1.17 Altezza dell'asse 180 - Raffreddamento ad acqua

Tabella 4- 18 1PH8 Altezza dell'asse 180 Raffreddamento ad acqua (Dati di base)

| Tipo di motore | Tensione di collegamento | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | P_raffr [kW] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8184-1□B2□ | SLM/BLM 400 V | 17,0 | 406 | 50 | 271 | 14,0 | 400 | 0,87 | 0,831 | 0,489 | 25 | 28 | 4,1 | 340 |
| | ALM 400 V | 23,0 | 439 | 54 | 335 | 17,4 | 500 | 0,86 | 0,850 | | | 27 | 5,4 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 29,0 | 462 | 55 | 405 | 20,8 | 600 | 0,86 | 0,869 | | | 28 | 5,5 | |
| 1PH8184-1□C2□ | SLM/BLM 400 V | 33,0 | 450 | 77 | 320 | 24,2 | 700 | 0,89 | 0,872 | | | 33 | 6,1 | |
| | ALM 400 V | 38,0 | 454 | 77 | 365 | 27,5 | 800 | 0,88 | 0,885 | | | 33 | 6,2 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 48,0 | 458 | 77 | 460 | 34,1 | 1000 | 0,86 | 0,905 | | | 34 | 6,8 | |
| 1PH8184-1□D2□ | SLM/BLM 400 V | 47,0 | 449 | 114 | 300 | 34,2 | 1000 | 0,88 | 0,904 | | | 45 | 6,9 | |
| | ALM 400 V | 54,0 | 448 | 112 | 350 | 39,2 | 1150 | 0,87 | 0,915 | | | 46 | 6,6 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 64,0 | 453 | 112 | 410 | 45,8 | 1350 | 0,87 | 0,924 | | | 46 | 7,3 | |
| 1PH8184-1□F2□ | SLM/BLM 400 V | 70,0 | 446 | 150 | 335 | 51,9 | 1500 | 0,87 | 0,928 | | | 66 | 7,3 | |
| | ALM 400 V | 82,0 | 447 | 150 | 390 | 59,3 | 1750 | 0,87 | 0,933 | | | 65 | 8,0 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 95,0 | 454 | 152 | 450 | 67,3 | 2000 | 0,85 | 0,938 | | | 68 | 8,6 | |
| 1PH8184-1□L2□ | SLM/BLM 400 V | 95,0 | 363 | 198 | 340 | 85,2 | 2500 | 0,87 | 0,945 | | | 75 | 7,6 | |
| | ALM 400 V | 102 | 336 | 182 | 395 | 97,5 | 2900 | 0,87 | 0,945 | | | 77 | 8,3 | |
| Collegamento a stella | SLM/BLM/ALM 480 V | 100 | 281 | 158 | 460 | 114,0 | 3400 | 0,84 | 0,944 | | | 76 | 8,4 | |

| Tipo di motore | Tensione di collegamento | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | P_raffr [kW] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8186-1□B2□ Collegamento a stella | SLM/BLM 400 V | 23,0 | 549 | 68 | 268 | 13,9 | 400 | 0,86 | 0,845 | 0,652 | 28 | 42 | 5,6 | 410 |
| | ALM 400 V | 30,0 | 573 | 70 | 335 | 17,3 | 500 | 0,85 | 0,868 | | | 43 | 5,5 | |
| | SLM/BLM/ALM 480 V | 38,0 | 605 | 73 | 405 | 20,6 | 600 | 0,84 | 0,883 | | | 44 | 6,3 | |
| 1PH8186-1□C2□ Collegamento a stella | SLM/BLM 400 V | 43,0 | 587 | 97 | 330 | 23,9 | 700 | 0,86 | 0,898 | | | 49 | 6,7 | |
| | ALM 400 V | 49,0 | 585 | 99 | 360 | 27,4 | 800 | 0,88 | 0,904 | | | 44 | 6,9 | |
| | SLM/BLM/ALM 480 V | 61,0 | 583 | 98 | 450 | 34,0 | 1000 | 0,87 | 0,920 | | | 44 | 7,2 | |
| 1PH8186-1□D2□ Collegamento a stella | SLM/BLM 400 V | 64,0 | 611 | 148 | 320 | 34,0 | 1000 | 0,85 | 0,920 | | | 78 | 7,7 | |
| | ALM 400 V | 74,0 | 615 | 148 | 370 | 38,9 | 1150 | 0,84 | 0,927 | | | 80 | 7,9 | |
| | SLM/BLM/ALM 480 V | 86,0 | 608 | 148 | 420 | 45,7 | 1350 | 0,86 | 0,933 | | | 73 | 8,4 | |
| 1PH8186-1□F2□ Collegamento a stella | SLM/BLM 400 V | 93,0 | 592 | 198 | 330 | 51,0 | 1500 | 0,88 | 0,935 | | | 85 | 9,0 | |
| | ALM 400 V | 111 | 606 | 200 | 385 | 59,3 | 1750 | 0,89 | 0,939 | | | 85 | 9,9 | |
| | SLM/BLM/ALM 480 V | 126 | 602 | 200 | 445 | 67,3 | 2000 | 0,87 | 0,943 | | | 89 | 10,6 | |
| 1PH8186-1□L2□ Collegamento a stella | SLM/BLM 400 V | 120 | 458 | 250 | 335 | 83,9 | 2500 | 0,88 | 0,948 | | | 109 | 9,4 | |
| | ALM 400 V | 135 | 445 | 245 | 385 | 97,3 | 2900 | 0,87 | 0,948 | | | 108 | 10,3 | |
| | SLM/BLM/ALM 480 V | 121 | 340 | 200 | 455 | 113,5 | 3400 | 0,81 | 0,942 | | | 110 | 10,4 | |

### 4.1.1.18 Altezza dell'asse 225 - Raffreddamento ad acqua

Tabella 4- 19 1PH8 Altezza d'asse 225 Raffreddamento ad acqua (dati di base)

| Tipo di motore | Tensione di collegamento | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | P_raffr [kW] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8224-1□B2□ Collegamento a stella | SLM/BLM 400 V | 36,0 | 859 | 100 | 268 | 14,0 | 400 | 0.91 | 0,858 | 1,452 | 30 | 37 | 6,1 | 610 |
| | ALM 400 V | 46,0 | 879 | 100 | 335 | 17,3 | 500 | 0,90 | 0,883 | | | 38 | 6,5 | |
| | SLM/BLM/ALM 480 V | 53,0 | 844 | 94 | 410 | 20,6 | 600 | 0,87 | 0,908 | | | 40 | 5,9 | |
| 1PH8224-1□C2□ Collegamento a stella | SLM/BLM 400 V | 61,0 | 832 | 128 | 340 | 24,0 | 700 | 0,89 | 0,914 | | | 48 | 6,3 | |
| | ALM 400 V | 70,0 | 836 | 130 | 380 | 27,3 | 800 | 0,89 | 0,920 | | | 46 | 6,7 | |
| | SLM/BLM/ALM 480 V | 87,0 | 831 | 132 | 460 | 34,0 | 600 | 0,89 | 0,931 | | | 44 | 7,2 | |
| 1PH8224-1□D2□ Collegamento a stella | SLM/BLM 400 V | 89,0 | 850 | 188 | 335 | 33,9 | 1000 | 0,87 | 0,937 | | | 79 | 6,7 | |
| | ALM 400 V | 101 | 839 | 186 | 385 | 38,9 | 1150 | 0,86 | 0,944 | | | 79 | 6,8 | |
| | SLM/BLM/ALM 480 V | 115 | 813 | 180 | 450 | 45,5 | 1350 | 0,86 | 0,950 | | | 79 | 6,9 | |
| 1PH8224-1□F2□ Collegamento a stella | SLM/BLM 400 V | 119 | 758 | 240 | 340 | 50,6 | 1500 | 0,89 | 0,951 | | | 87 | 7,0 | 615 |
| | ALM 400 V | 138 | 753 | 240 | 395 | 58,9 | 1750 | 0,88 | 0,954 | | | 87 | 7,6 | |
| | SLM/BLM/ALM 480 V | 155 | 740 | 235 | 460 | 67,2 | 2000 | 0,86 | 0,958 | | | 90 | 7,8 | |
| 1PH8224-1□L2□ Collegamento a stella | SLM/BLM 400 V | 153 | 584 | 310 | 340 | 83,8 | 2500 | 0,87 | 0,961 | | | 113 | 7,2 | |
| | ALM 400 V | 164 | 540 | 285 | 395 | 97,1 | 2900 | 0,88 | 0,961 | | | 114 | 7,7 | |
| | SLM/BLM/ALM 480 V | 164 | 461 | 255 | 460 | 114,0 | 3400 | 0,84 | 0,959 | | | 113 | 8,1 | |

| Tipo di motore | Tensione di collegamento | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | P_raffr [kW] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8226-1□B2□ Collegamento a stella | SLM/BLM 400 V | 47,0 | 1122 | 130 | 264 | 14,0 | 400 | 0,90 | 0,875 | 1,895 | 32 | 49 | 7,1 | 740 |
| | ALM 400 V | 59,0 | 1127 | 128 | 330 | 17,3 | 500 | 0,90 | 0,899 | | | 50 | 7,2 | |
| | SLM/BLM/ALM 480 V | 70,0 | 1114 | 122 | 410 | 20,5 | 600 | 0,88 | 0,919 | | | 55 | 6,8 | |
| 1PH8226-1□C2□ Collegamento a stella | SLM/BLM 400 V | 81,0 | 1105 | 184 | 310 | 23,9 | 700 | 0,88 | 0,928 | | | 79 | 7,0 | |
| | ALM 400 V | 93,0 | 1110 | 186 | 350 | 27,2 | 800 | 0,88 | 0,934 | | | 77 | 7,4 | |
| | SLM/BLM/ALM 480 V | 116 | 1108 | 184 | 440 | 33,9 | 1000 | 0,88 | 0,944 | | | 79 | 7,8 | |
| 1PH8226-1□D2□ Collegamento a stella | SLM/BLM 400 V | 115 | 1098 | 235 | 340 | 33,9 | 1000 | 0,89 | 0,938 | | | 87 | 8,6 | 745 |
| | ALM 400 V | 131 | 1088 | 230 | 390 | 38,9 | 1150 | 0,89 | 0,945 | | | 87 | 8,6 | |
| | SLM/BLM/ALM 480 V | 150 | 1061 | 225 | 460 | 45,5 | 1350 | 0,88 | 0,951 | | | 88 | 8,8 | |
| 1PH8226-1□F2□ Collegamento a stella | SLM/BLM 400 V | 145 | 923 | 295 | 340 | 50,5 | 1500 | 0,87 | 0,957 | | | 119 | 7,5 | |
| | ALM 400 V | 169 | 922 | 295 | 390 | 58,8 | 1750 | 0,88 | 0,895 | | | 116 | 8,3 | |
| | SLM/BLM/ALM 480 V | 191 | 912 | 290 | 450 | 67,1 | 2000 | 0,88 | 0,961 | | | 118 | 8,9 | |
| 1PH8226-1□L2□ Collegamento a stella | SLM/BLM 400 V | 185 | 707 | 380 | 335 | 83,8 | 2500 | 0,87 | 0,963 | | | 151 | 8,2 | |
| | ALM 400 V | 204 | 672 | 360 | 390 | 97,1 | 2900 | 0,87 | 0,960 | | | 152 | 9,3 | |
| | SLM/BLM/ALM 480 V | 199 | 559 | 310 | 460 | 114,0 | 3400 | 0,84 | 0,958 | | | 153 | 10,0 | |
| 1PH8228-1□B2□ Collegamento a stella | SLM/BLM 400 V | 58,0 | 1385 | 154 | 272 | 13,9 | 400 | 0,90 | 0,886 | 2,354 | 34 | 62 | 7,9 | 870 |
| | ALM 400 V | 72,0 | 1375 | 150 | 340 | 17,2 | 500 | 0,90 | 0,908 | | | 63 | 7,9 | |
| | SLM/BLM/ALM 480 V | 85,0 | 1353 | 148 | 410 | 20,5 | 600 | 0,88 | 0,923 | | | 64 | 7,9 | |
| 1PH8228-1□C2□ Collegamento a stella | SLM/BLM 400 V | 96,0 | 1310 | 210 | 315 | 23,9 | 700 | 0,90 | 0,930 | | | 82 | 8,1 | |
| | ALM 400 V | 110 | 1313 | 210 | 360 | 27,2 | 800 | 0,90 | 0,937 | | | 82 | 8,3 | |
| | SLM/BLM/ALM 480 V | 138 | 1318 | 210 | 450 | 33,9 | 1000 | 0,89 | 0,946 | | | 83 | 8,9 | |
| 1PH8228-1□D2□ Collegamento a stella | SLM/BLM 400 V | 141 | 1346 | 280 | 340 | 33,9 | 1000 | 0,91 | 0,943 | | | 98 | 9,6 | 875 |
| | ALM 400 V | 161 | 1337 | 280 | 390 | 38,9 | 1150 | 0,90 | 0,948 | | | 98 | 10,0 | |
| | SLM/BLM/ALM 480 V | 184 | 1302 | 270 | 460 | 45,5 | 1350 | 0,90 | 0,954 | | | 99 | 10,2 | |
| 1PH8228-1□F2□ Collegamento a stella | SLM/BLM 400 V | 192 | 1222 | 390 | 340 | 50,5 | 1500 | 0,87 | 0,959 | | | 169 | 9,4 | |
| | ALM 400 V | 221 | 1206 | 390 | 390 | 58,8 | 1750 | 0,87 | 0,961 | | | 165 | 10,3 | |
| | SLM/BLM/ALM 480 V | 245 | 1170 | 380 | 450 | 67,1 | 2000 | 0,86 | 0,963 | | | 169 | 10,9 | |
| 1PH8228-1□L2□ Collegamento a stella | SLM/BLM 400 V | 226 | 863 | 455 | 340 | 83,7 | 2500 | 0,87 | 0,964 | | | 181 | 9,8 | |
| | ALM 400 V | 237 | 780 | 415 | 395 | 97,0 | 2900 | 0,87 | 0,963 | | | 182 | 10,5 | |
| | SLM/BLM/ALM 480 V | 237 | 666 | 370 | 460 | 114,0 | 3400 | 0,84 | 0,959 | | | 180 | 11,7 | |

### 4.1.1.19 Altezza dell'asse 280 - Raffreddamento ad acqua

Tabella 4- 20 1PH8 Altezza dell'asse 280 Raffreddamento ad acqua (Dati di base)

| Tipo di motore | Tensione di collegamento | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | P_raffr [kW] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8284-1□B2□ Collegamento ΔB | SLM/BLM 400 V | 71,0 | 1695 | 170 | 295 | 13,8 | 400 | 0,89 | 0,914 | 4,2 | 30 | 70 | 7,0 | 1280 |
| | ALM 400 V | 89,0 | 1700 | 172 | 365 | 17,1 | 500 | 0,88 | 0,929 | | | 69 | 7,0 | |
| | SLM/BLM/ALM 480 V | 107 | 1703 | 170 | 440 | 20,4 | 600 | 0,88 | 0,939 | | | 71 | 7,0 | |
| 1PH8284-1□C2□ Collegamento Δ | SLM/BLM 400 V | 123 | 1678 | 260 | 330 | 23,7 | 700 | 0,87 | 0,945 | | | 108 | 7,0 | |
| | ALM 400 V | 141 | 1683 | 260 | 375 | 27,0 | 800 | 0,88 | 0,950 | | | 108 | 8,0 | |
| | SLM/BLM/ALM 480 V | 176 | 1681 | 265 | 455 | 33,7 | 1000 | 0,88 | 0,956 | | | 102 | 8,0 | |
| 1PH8284-1□D2□ Collegamento Δ | SLM/BLM 400 V | 172 | 1643 | 350 | 335 | 33,7 | 1000 | 0,88 | 0,957 | | | 144 | 8,0 | |
| | ALM 400 V | 198 | 1644 | 355 | 385 | 38,7 | 1150 | 0,87 | 0,960 | | | 144 | 9,0 | |
| | SLM/BLM/ALM 480 V | 232 | 1641 | 355 | 450 | 45,4 | 1350 | 0,87 | 0,963 | | | 143 | 9,0 | |
| 1PH8284-1□F2□ Collegamento Δ | SLM/BLM 400 V | 227 | 1445 | 445 | 343 | 50,4 | 1500 | 0,89 | 0,964 | | | 161 | 9,0 | |
| | ALM 400 V | 265 | 1446 | 445 | 400 | 58,7 | 1750 | 0,89 | 0,966 | | | 161 | 10,0 | |
| | SLM/BLM/ALM 480 V | 303 | 1447 | 445 | 455 | 67,0 | 2000 | 0,89 | 0,967 | | | 160 | 11,0 | |
| 1PH8284-1□H2□ Collegamento a stella | BLM 690 V | 68,0 | 1624 | 89 | 555 | 13,7 | 400 | 0,87 | 0,917 | 4,2 | 30 | 41 | 6,0 | 1280 |
| | ALM 690 V | 85,0 | 1624 | 89 | 690 | 17,0 | 500 | 0,86 | 0,931 | | | 41 | 6,0 | |
| 1PH8284-1□K2□ Collegamento a stella | BLM 690 V | 119 | 1624 | 136 | 605 | 23,7 | 700 | 0,88 | 0,942 | | | 54 | 8,0 | |
| | ALM 690 V | 137 | 1635 | 138 | 690 | 27,0 | 800 | 0,88 | 0,947 | | | 54 | 8,0 | |
| 1PH8284-1□U2□ Collegamento a stella | BLM 690 V | 167 | 1595 | 196 | 600 | 33,8 | 1000 | 0,86 | 0,956 | | | 89 | 8,0 | |
| | ALM 690 V | 192 | 1594 | 198 | 690 | 38,6 | 1150 | 0,85 | 0,959 | | | 90 | 8,0 | |
| 1PH8284-1□W2□ Collegamento a stella | BLM 690 V | 220 | 1401 | 250 | 590 | 50,4 | 1500 | 0,89 | 0,963 | | | 92 | 9,0 | |
| | ALM 690 V | 257 | 1401 | 250 | 690 | 58,7 | 1750 | 0,89 | 0,965 | | | 92 | 10,0 | |
| 1PH8286-1□B2□ Collegamento Δ | SLM/BLM 400 V | 89,0 | 2125 | 210 | 300 | 13,7 | 400 | 0,89 | 0,916 | 5,2 | 33 | 83 | 9,0 | 1490 |
| | ALM 400 V | 111 | 2120 | 205 | 375 | 17,0 | 500 | 0,89 | 0,931 | | | 84 | 9,0 | |
| | SLM/BLM/ALM 480 V | 133 | 2117 | 205 | 445 | 20,4 | 600 | 0,89 | 0,940 | | | 83 | 9,0 | |
| 1PH8286-1□C2□ Collegamento Δ | SLM/BLM 400 V | 153 | 2087 | 320 | 325 | 23,7 | 700 | 0,89 | 0,948 | | | 123 | 9,0 | |
| | ALM 400 V | 175 | 2089 | 320 | 375 | 27,0 | 800 | 0,88 | 0,953 | | | 126 | 9,0 | |
| | SLM/BLM/ALM 480 V | 219 | 2091 | 325 | 455 | 33,7 | 1000 | 0,89 | 0,958 | | | 120 | 10,0 | |
| 1PH8286-1□D2□ Collegamento Δ | SLM/BLM 400 V | 214 | 2044 | 460 | 330 | 33,6 | 1000 | 0,85 | 0,960 | | | 215 | 9,0 | |
| | ALM 400 V | 246 | 2043 | 455 | 380 | 38,6 | 1150 | 0,85 | 0,962 | | | 216 | 10,0 | |
| | SLM/BLM/ALM 480 V | 289 | 2044 | 460 | 445 | 45,3 | 1350 | 0,85 | 0,964 | | | 216 | 11,0 | |
| 1PH8286-1□F2□ Collegamento Δ | SLM/BLM 400 V | 281 | 1789 | 540 | 343 | 50,4 | 1500 | 0,90 | 0,966 | | | 181 | 11,0 | |
| | ALM 400 V | 328 | 1790 | 540 | 400 | 58,7 | 1750 | 0,90 | 0,967 | | | 182 | 12,0 | |
| | SLM/BLM/ALM 480 V | 375 | 1791 | 550 | 455 | 67,0 | 2000 | 0,90 | 0,968 | | | 180 | 13,0 | |

| Tipo di motore | Tensione di collegamento | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | cos Φ | η | J [kgm²] | $T_{th}$ [min] | $I_\mu$ [A] | P_raffr [kW] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8286-1□H2□ Collegamento a stella | BLM 690 V | 85,0 | 2029 | 108 | 555 | 13,7 | 400 | 0,89 | 0,917 | 5,2 | 33 | 45 | 8,0 | 1490 |
| | ALM 690 V | 106 | 2025 | 108 | 690 | 17,0 | 500 | 0,88 | 0,931 | | | 45 | 8,0 | |
| 1PH8286-1□K2□ Collegamento a stella | BLM 690 V | 148 | 2019 | 174 | 605 | 23,6 | 700 | 0,85 | 0,950 | | | 84 | 8,0 | |
| | ALM 690 V | 170 | 2029 | 176 | 690 | 27,0 | 800 | 0,85 | 0,954 | | | 84 | 8,0 | |
| 1PH8286-1□U2□ Collegamento a stella | BLM 690 V | 208 | 1986 | 260 | 570 | 33,6 | 1000 | 0,85 | 0,959 | | | 123 | 9,0 | |
| | ALM 690 V | 239 | 1985 | 260 | 655 | 38,6 | 1150 | 0,85 | 0,962 | | | 123 | 10,0 | |
| 1PH8286-1□W2□ Collegamento a stella | BLM 690 V | 273 | 1738 | 310 | 590 | 50,4 | 1500 | 0,90 | 0,965 | | | 104 | 11,0 | |
| | ALM 690 V | 318 | 1735 | 305 | 690 | 58,7 | 1750 | 0,90 | 0,967 | | | 104 | 12,0 | |
| 1PH8288-1□B2□ Collegamento Δ | SLM/BLM 400 V | 109 | 2602 | 260 | 295 | 13,7 | 400 | 0,89 | 0,925 | 6,3 | 35 | 110 | 9,0 | 1750 |
| | ALM 400 V | 136 | 2598 | 260 | 365 | 17,0 | 500 | 0,88 | 0,938 | | | 109 | 9,0 | |
| | SLM/BLM/ALM 480 V | 164 | 2610 | 260 | 440 | 20,3 | 600 | 0,88 | 0,946 | | | 111 | 10,0 | |
| 1PH8288-1□C2□ Collegamento Δ | SLM/BLM 400 V | 188 | 2565 | 400 | 324 | 23,4 | 700 | 0,88 | 0,952 | | | 172 | 10,0 | |
| | ALM 400 V | 215 | 2567 | 405 | 370 | 27,0 | 800 | 0,87 | 0,956 | | | 172 | 10,0 | |
| | SLM/BLM/ALM 480 V | 269 | 2569 | 405 | 460 | 33,6 | 1000 | 0,87 | 0,961 | | | 171 | 11,0 | |
| 1PH8288-1□D2□ Collegamento Δ | SLM/BLM 400 V | 264 | 2521 | 550 | 335 | 33,6 | 1000 | 0,86 | 0,962 | | | 251 | 11,0 | |
| | ALM 400 V | 304 | 2525 | 550 | 385 | 38,6 | 1150 | 0,86 | 0,964 | | | 251 | 12,0 | |
| | SLM/BLM/ALM 480 V | 357 | 2525 | 550 | 450 | 45,3 | 1350 | 0,86 | 0,966 | | | 249 | 13,0 | |
| 1PH8288-1□F2□ Collegamento Δ | SLM/BLM 400 V | 345 | 2197 | 660 | 345 | 50,3 | 1500 | 0,90 | 0,967 | | | 234 | 13,0 | |
| | ALM 400 V | 403 | 2199 | 670 | 400 | 58,7 | 1750 | 0,90 | 0,968 | | | 232 | 14,0 | |
| | SLM/BLM/ALM 480 V | 460 | 2197 | 670 | 455 | 67,0 | 2000 | 0,90 | 0,969 | | | 230 | 16,0 | |
| 1PH8288-1□H2□ Collegamento a stella | BLM 690 V | 105 | 2507 | 134 | 555 | 13,7 | 400 | 0,88 | 0,923 | 6,3 | 35 | 58 | 9,0 | 1750 |
| | ALM 690 V | 131 | 2502 | 134 | 690 | 17,0 | 500 | 0,88 | 0,936 | | | 58 | 9,0 | |
| 1PH8288-1□K2□ Collegamento a stella | BLM 690 V | 182 | 2483 | 205 | 605 | 23,7 | 700 | 0,90 | 0,946 | | | 77 | 11,0 | |
| | ALM 690 V | 209 | 2495 | 205 | 690 | 27,0 | 800 | 0,90 | 0,951 | | | 77 | 12,0 | |
| 1PH8288-1□U2□ Collegamento a stella | BLM 690 V | 256 | 2445 | 310 | 580 | 33,6 | 1000 | 0,86 | 0,961 | | | 145 | 11,0 | |
| | ALM 690 V | 295 | 2450 | 310 | 665 | 38,6 | 1150 | 0,86 | 0,963 | | | 144 | 12,0 | |
| 1PH8288-1□W2□ Collegamento a stella | BLM 690 V | 335 | 2133 | 375 | 590 | 50,3 | 1500 | 0,90 | 0,966 | | | 132 | 13,0 | |
| | ALM 690 V | 391 | 2134 | 375 | 690 | 58,7 | 1750 | 0,90 | 0,968 | | | 133 | 14,0 | |

### 4.1.1.20 Fattori di sovraccarico per modi operativi intermittenti (S6) e funzionamento breve (S2)

I fattori di sovraccarico per i modi operativi intermittenti (S6) nonché per il funzionamento breve (S2) sono forniti in base alla curva caratteristica S1 (funzionamento continuo) di ciascun motore.

Tabella 4- 21 Fattori di sovraccarico S6/S2 motore asincrono raffreddamento ad acqua

| Tipo di motore | Fattori di sovraccarico | | | |
|---|---|---|---|---|
| | S6 - 60 % | S6 - 40 % | S6 - 25 % | S2 - 30 min |
| 1PH808□-1□□2 | 1,20 | 1,40 | 1,70 | 1,00 |
| 1PH810□-1□□2 | 1,20 | 1,40 | 1,70 | 1,00 |
| 1PH813□-1□□2 | 1,20 | 1,40 | 1,70 | 1,00 |
| 1PH816□-1□□2 | 1,20 | 1,47 | 1,70 | 1,00 |
| 1PH8184-1□□2 | 1,23 | 1,47 | 1,70 | 1,20 |
| 1PH8186-1□□2 | 1,23 | 1,47 | 1,70 | 1,23 |
| 1PH8224-1□□2 | 1,23 | 1,47 | 1,70 | 1,26 |
| 1PH8226-1□□2 | 1,23 | 1,47 | 1,70 | 1,28 |
| 1PH8228-1□□2 | 1,23 | 1,47 | 1,70 | 1,30 |
| 1PH8284 -1□□2 | 1,23 | 1,47 | 1,70 | 1,26 |
| 1PH8286 -1□□2 | 1,23 | 1,47 | 1,70 | 1,29 |
| 1PH8288 -1□□2 | 1,23 | 1,47 | 1,70 | 1,31 |

## 4.1.2 Curve caratteristiche ventilazione forzata

### 4.1.2.1 Altezza dell'asse 80 - Ventilazione forzata

Tabella 4- 22 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8083-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 2,8 | 18 | 7,5 | 10000 | 12000 | - | 5000 | 4700 | 34 | 18 | 21 | 8 |

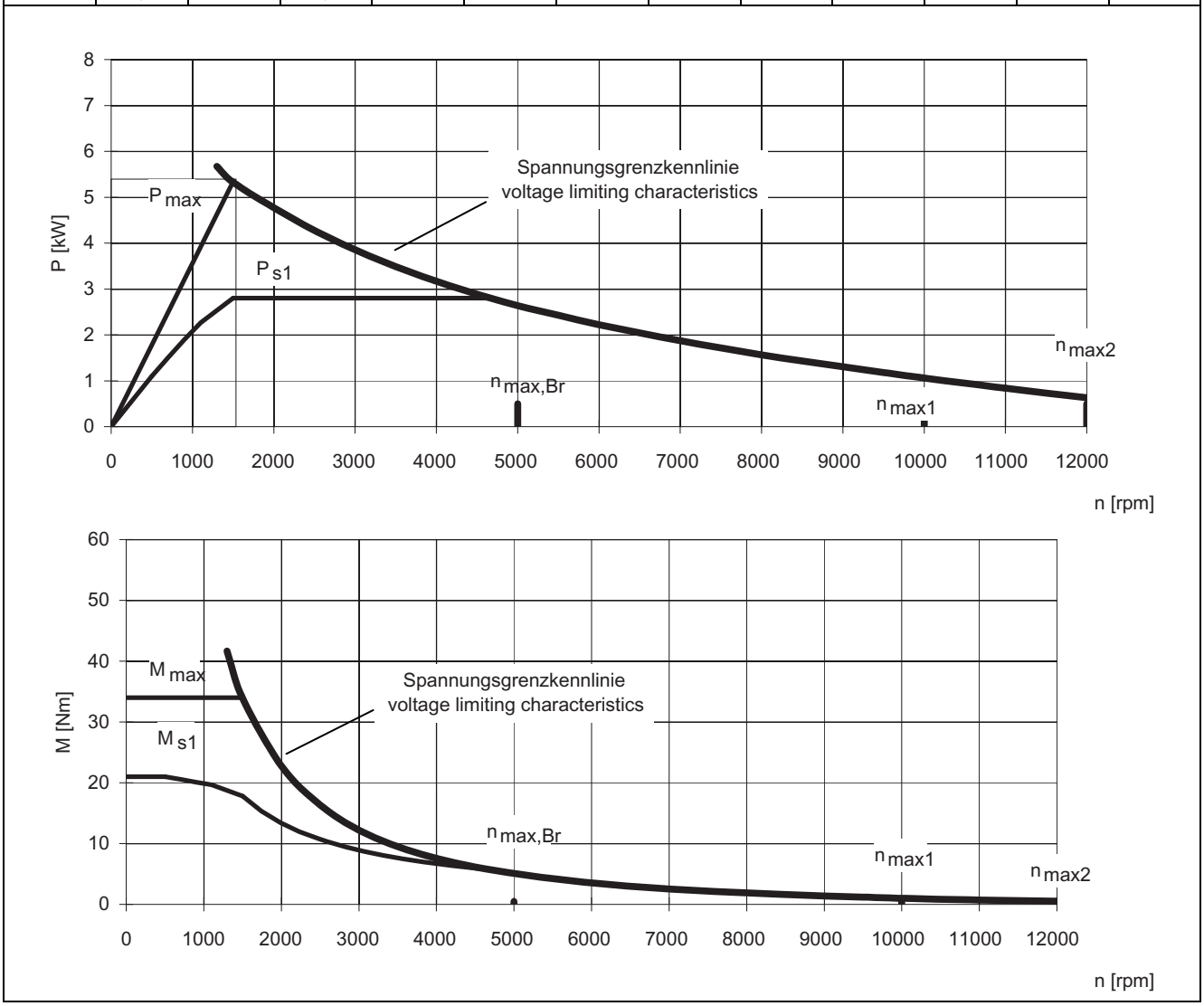
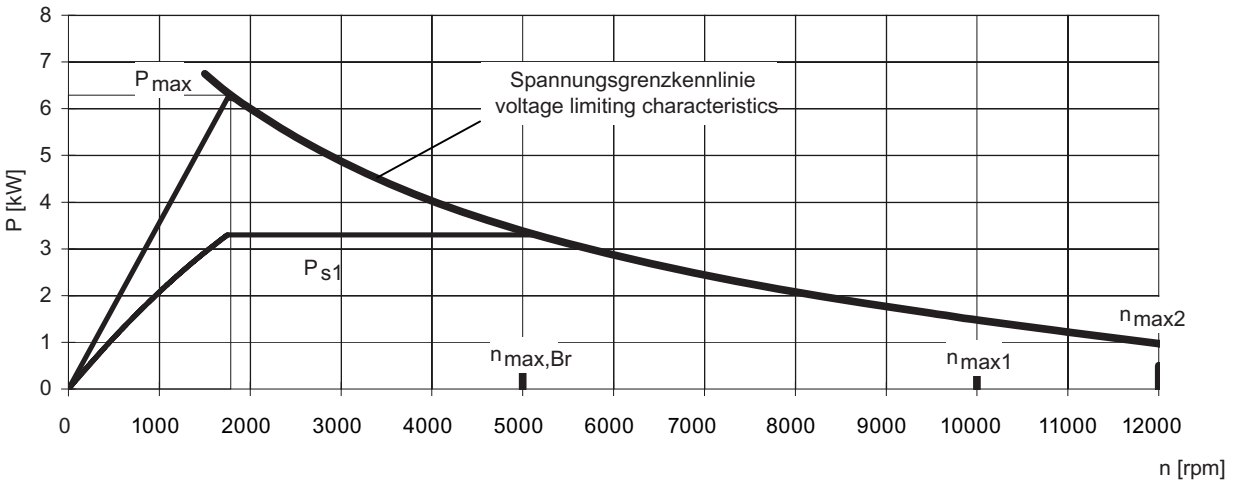


Tabella 4- 23 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8083-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 3,3 | 18 | 7,5 | 10000 | 12000 | - | 5000 | 5200 | 34 | 18 | 21 | 8 |
| 1500 | 2,8 | 18 | 7,5 | 10000 | | | | 6200 | | | | |



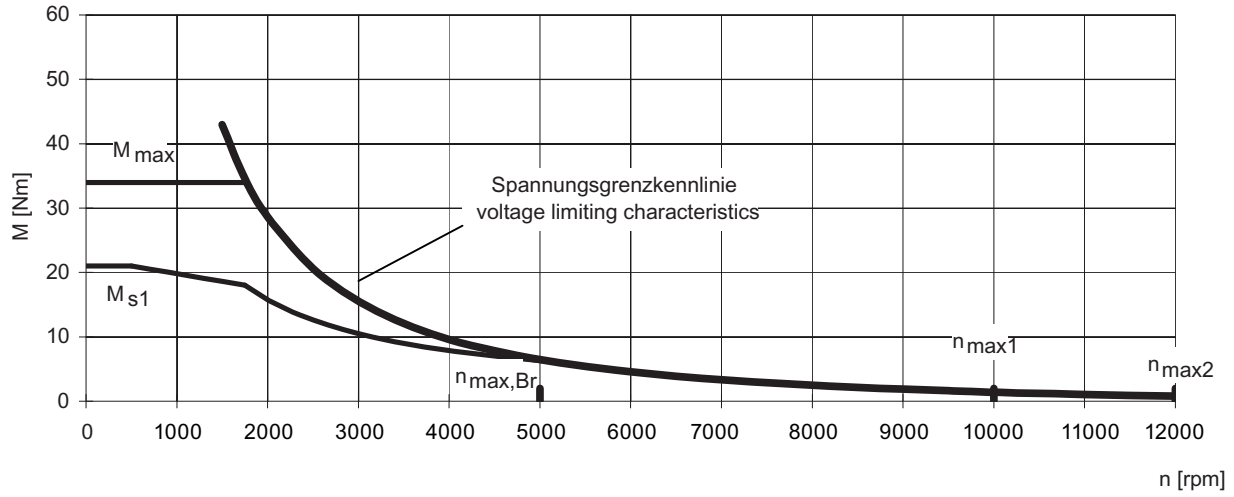
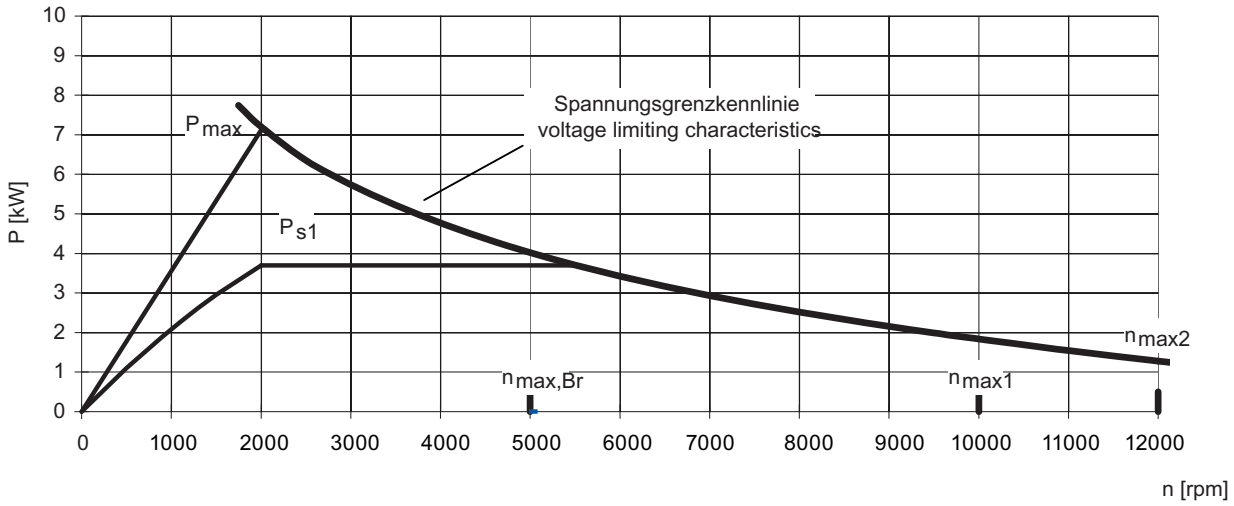



Tabella 4- 24 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8083-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 3,7 | 18 | 7,6 | 10000 | 12000 | - | 5000 | 5550 | 34 | 18 | 21 | 8 |



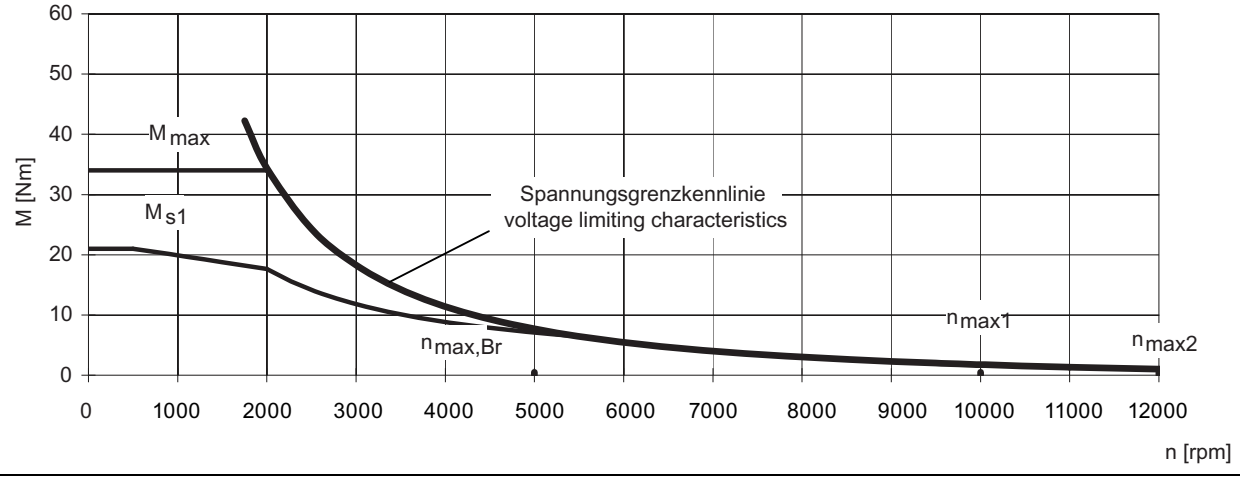
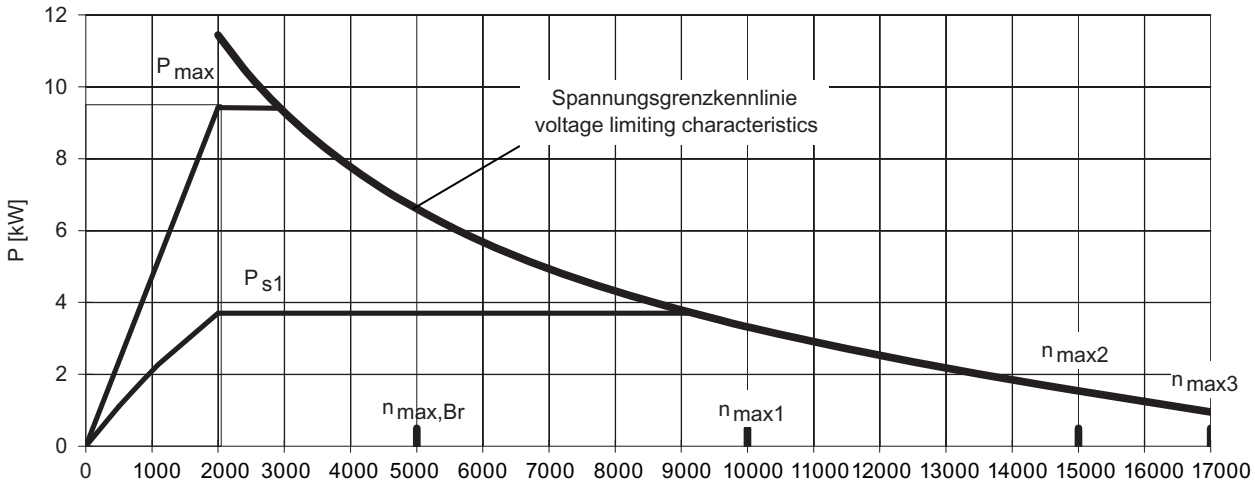



Tabella 4- 25 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8083-□□G□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 3,7 | 18 | 11,6 | 10000 | 15000 | 17000 | 5000 | 9200 | 45 | 24 | 21 | 12 |



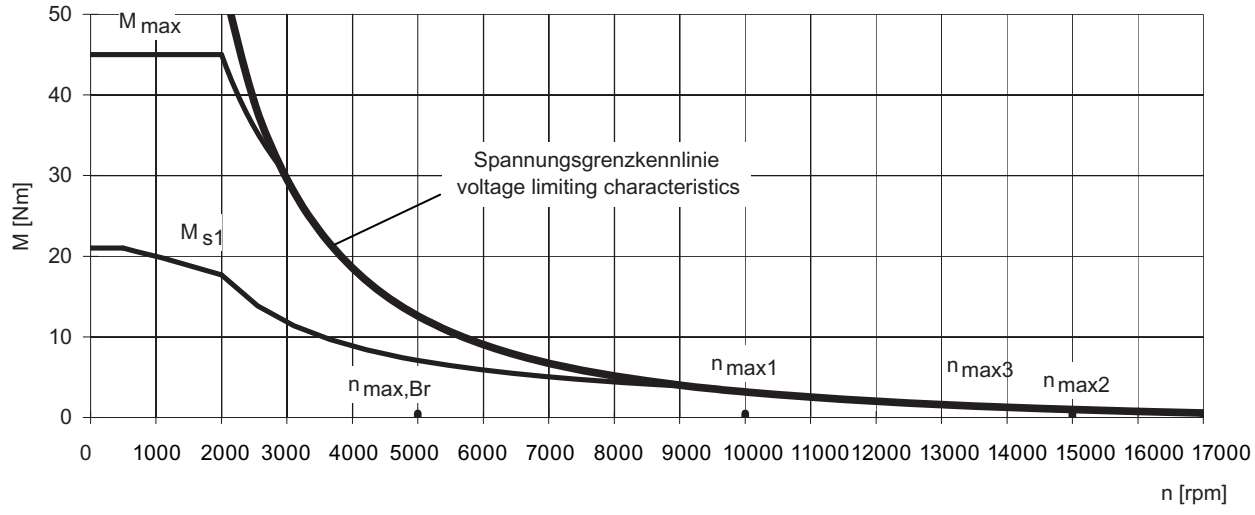



Tabella 4- 26 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8083-□□G□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 4,1 | 17 | 11,3 | 10000 | 15000 | 17000 | 5000 | 10550 | 45 | 24 | 21 | 12 |
| 2000 | 3,7 | 18 | 11,6 | | | | | 11350 | | | | |

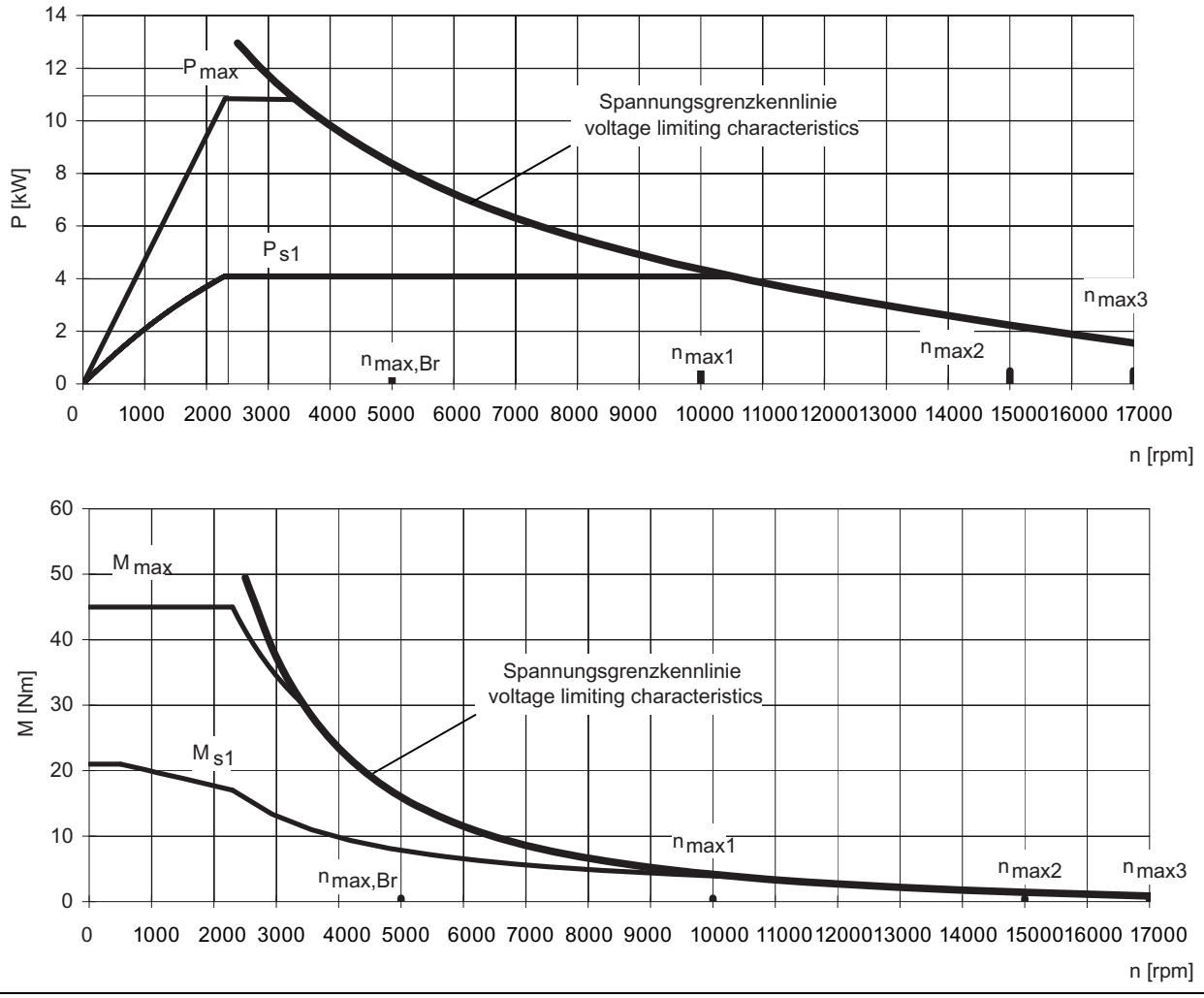
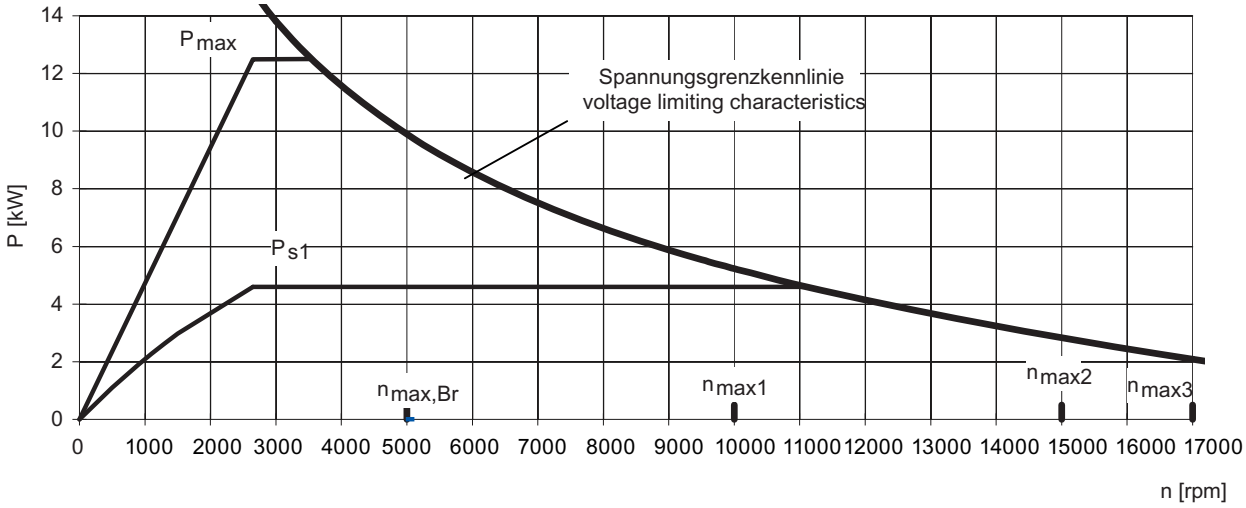


Tabella 4- 27 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8083-□□G□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 4,6 | 17 | 11,2 | 10000 | 15000 | 17000 | 5000 | 11150 | 45 | 24 | 21 | 12 |



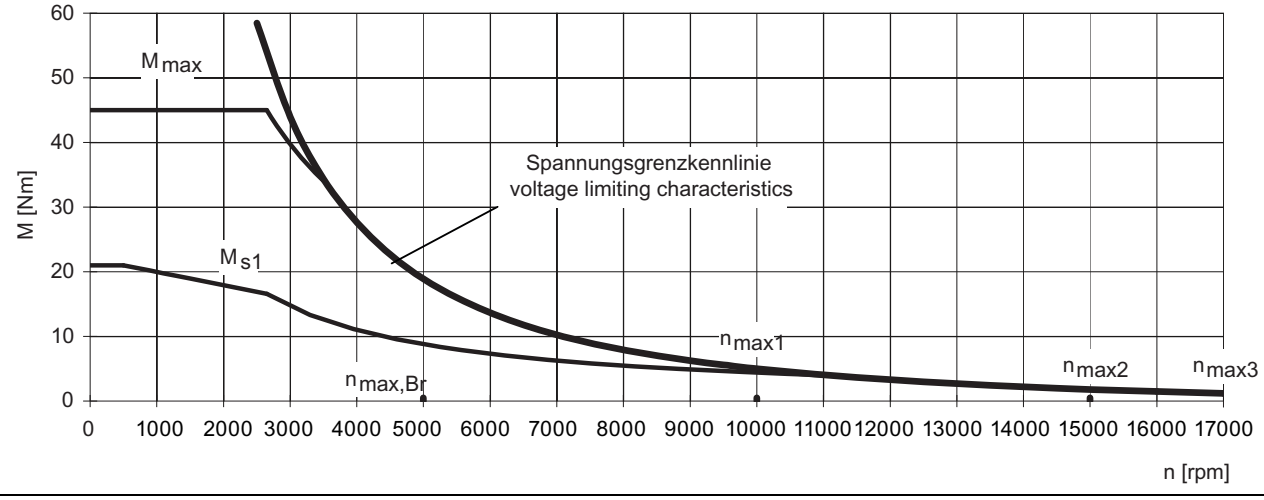



Tabella 4- 28 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8083-□□M□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3000 | 4,1 | 13 | 13,6 | 10000 | 15000 | 20000 | 5000 | 14650 | 45 | 36 | 21 | 17 |

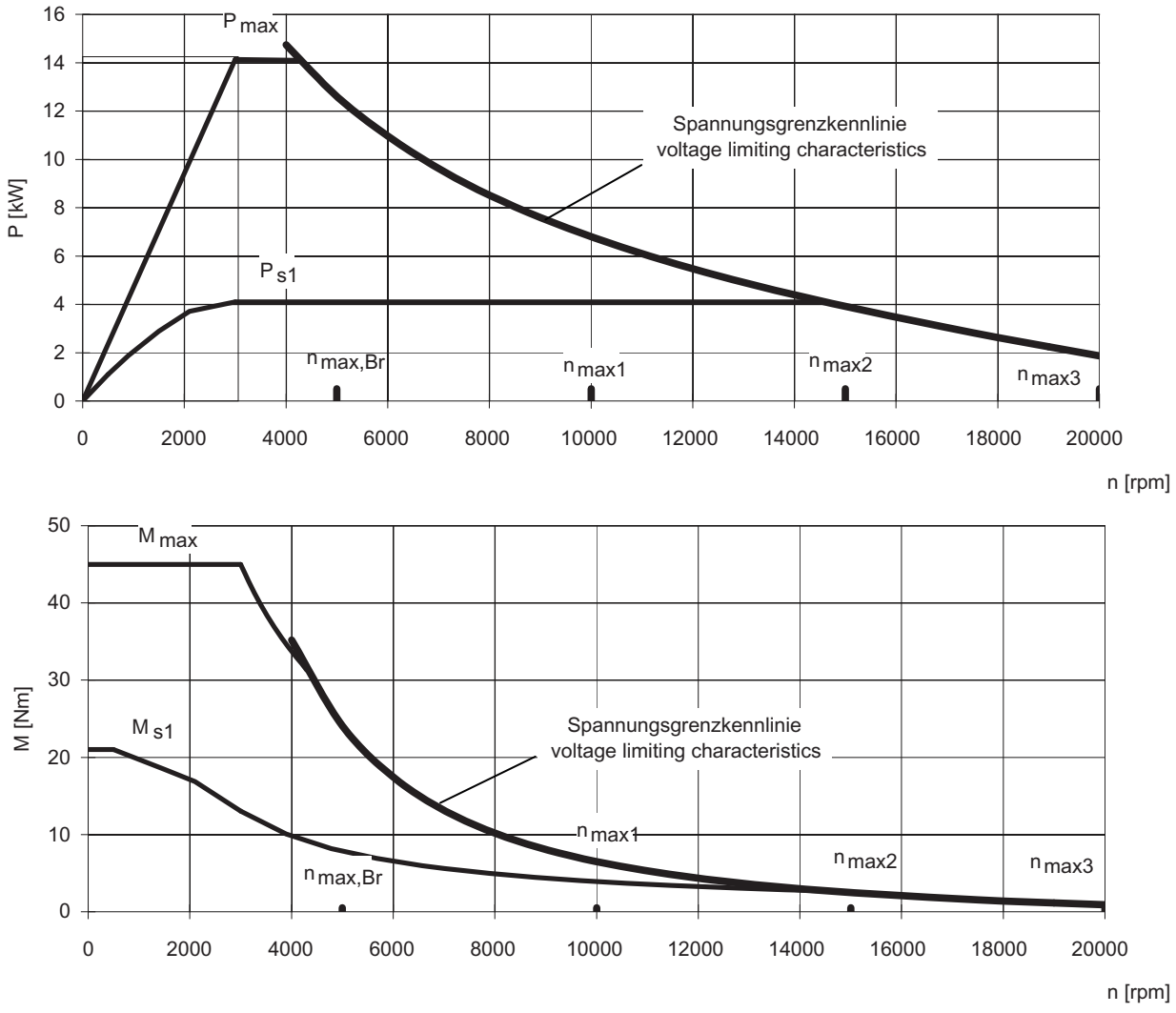
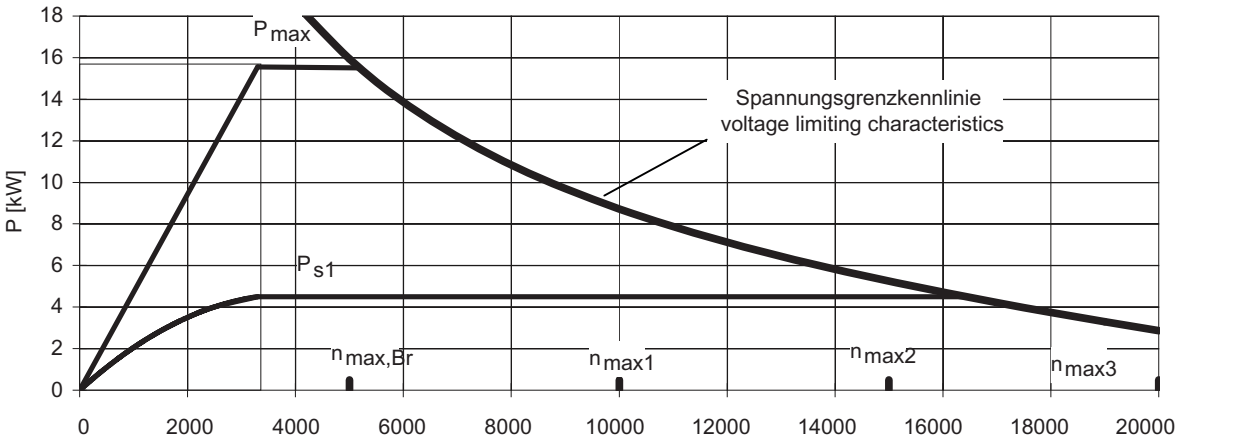


Tabella 4- 29 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8083-□□M□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3300 | 4,5 | 13 | 13,5 | 10000 | 15000 | 20000 | 5000 | 16500 | 45 | 36 | 21 | 17 |
| 3000 | 4,1 | 13 | 13,6 | | | | | 17300 | | | | |



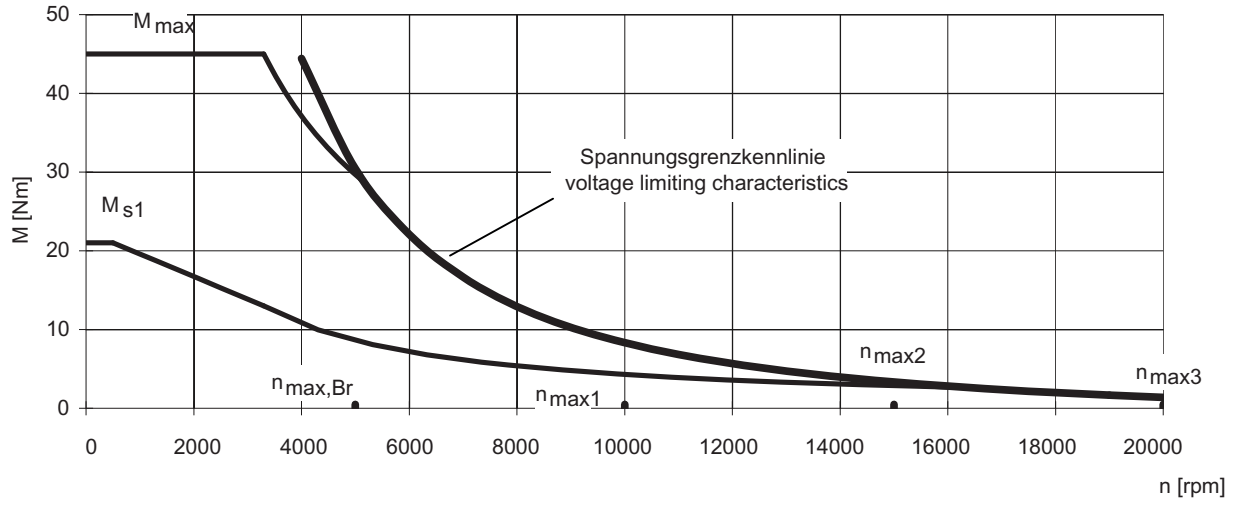
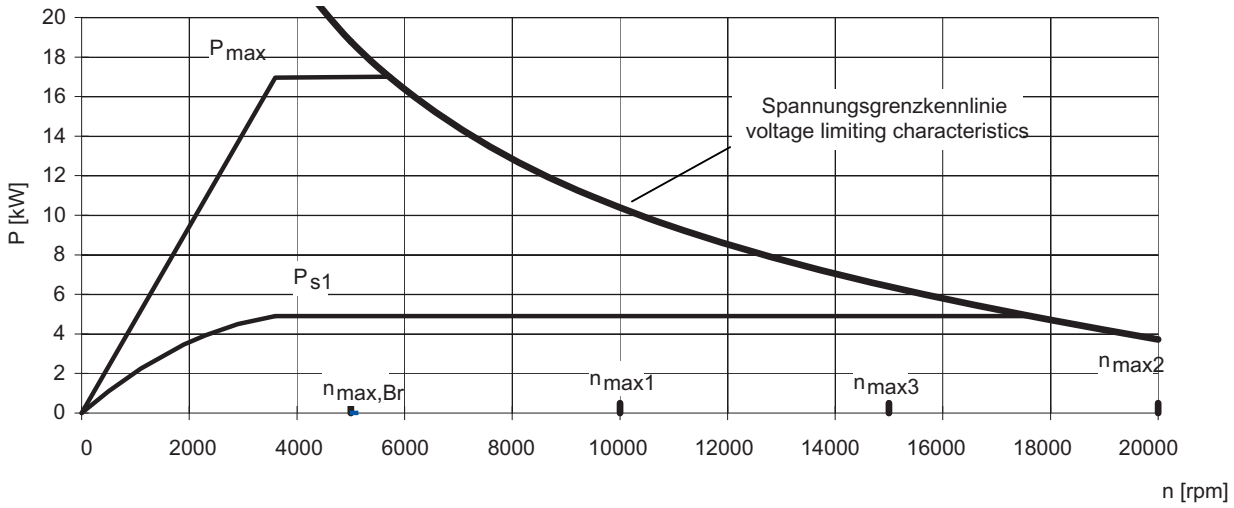



Tabella 4- 30 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8083-□□M□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3600 | 4,9 | 13 | 14,0 | 10000 | 15000 | 20000 | 5000 | 17650 | 45 | 36 | 21 | 17 |



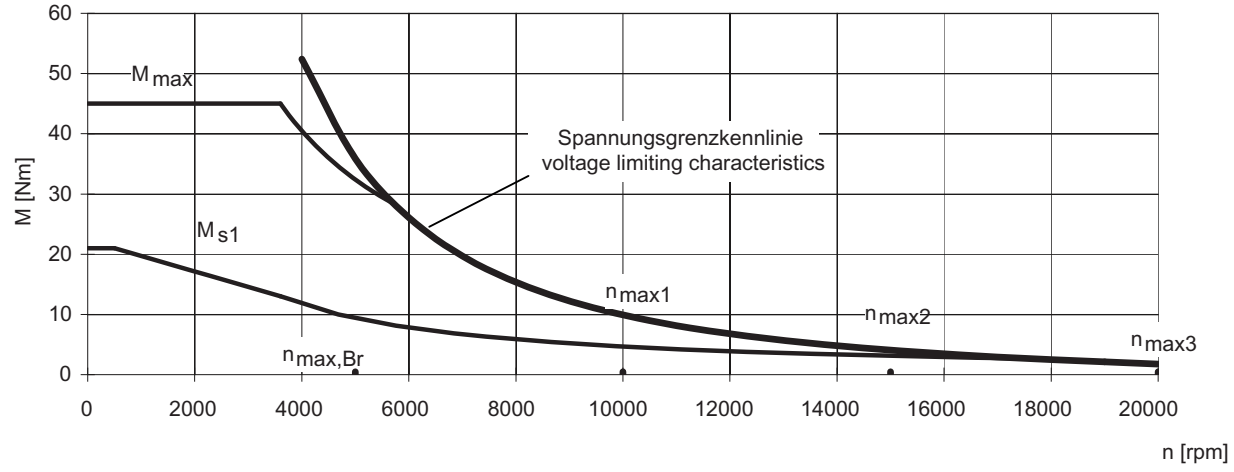
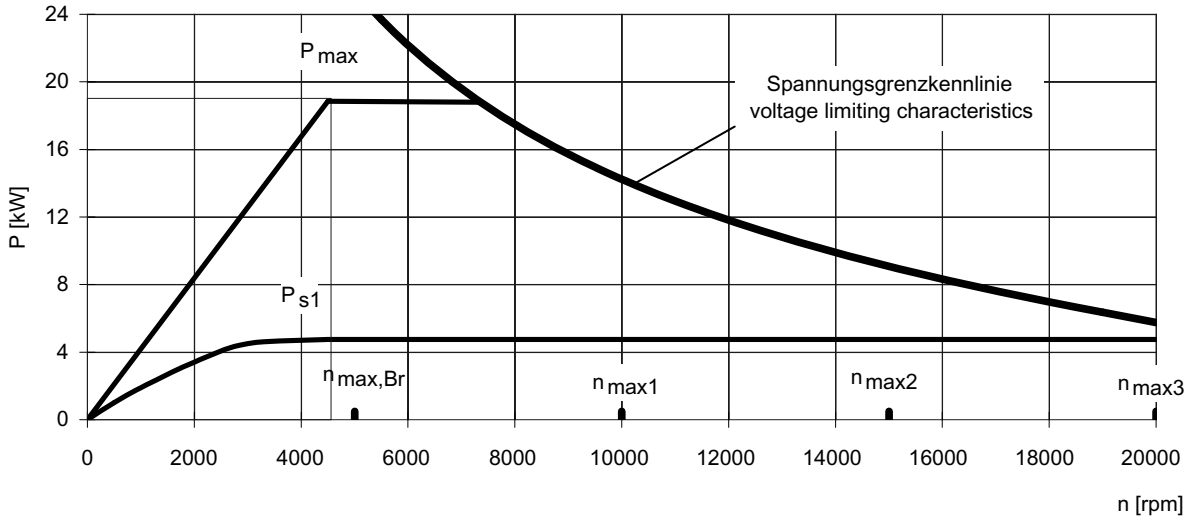



Tabella 4- 31 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8083-□□N□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4500 | 4,8 | 10 | 17,0 | 10000 | 15000 | 20000 | 5000 | 20000 | 40 | 41 | 19 | 23 |



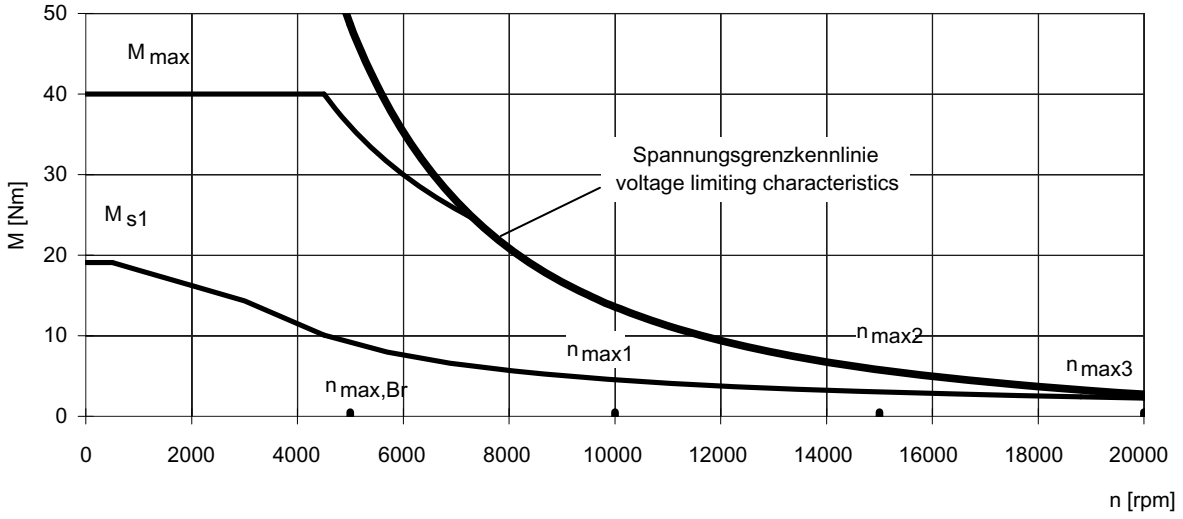



Tabella 4- 32 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8083-□□N□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5000 | 5,3 | 10 | 17,0 | 10000 | 15000 | 20000 | 5000 | 20000 | 40 | 41 | 19 | 23 |
| 4500 | 4,8 | 10 | 17,0 | | | | | 20000 | | | | |

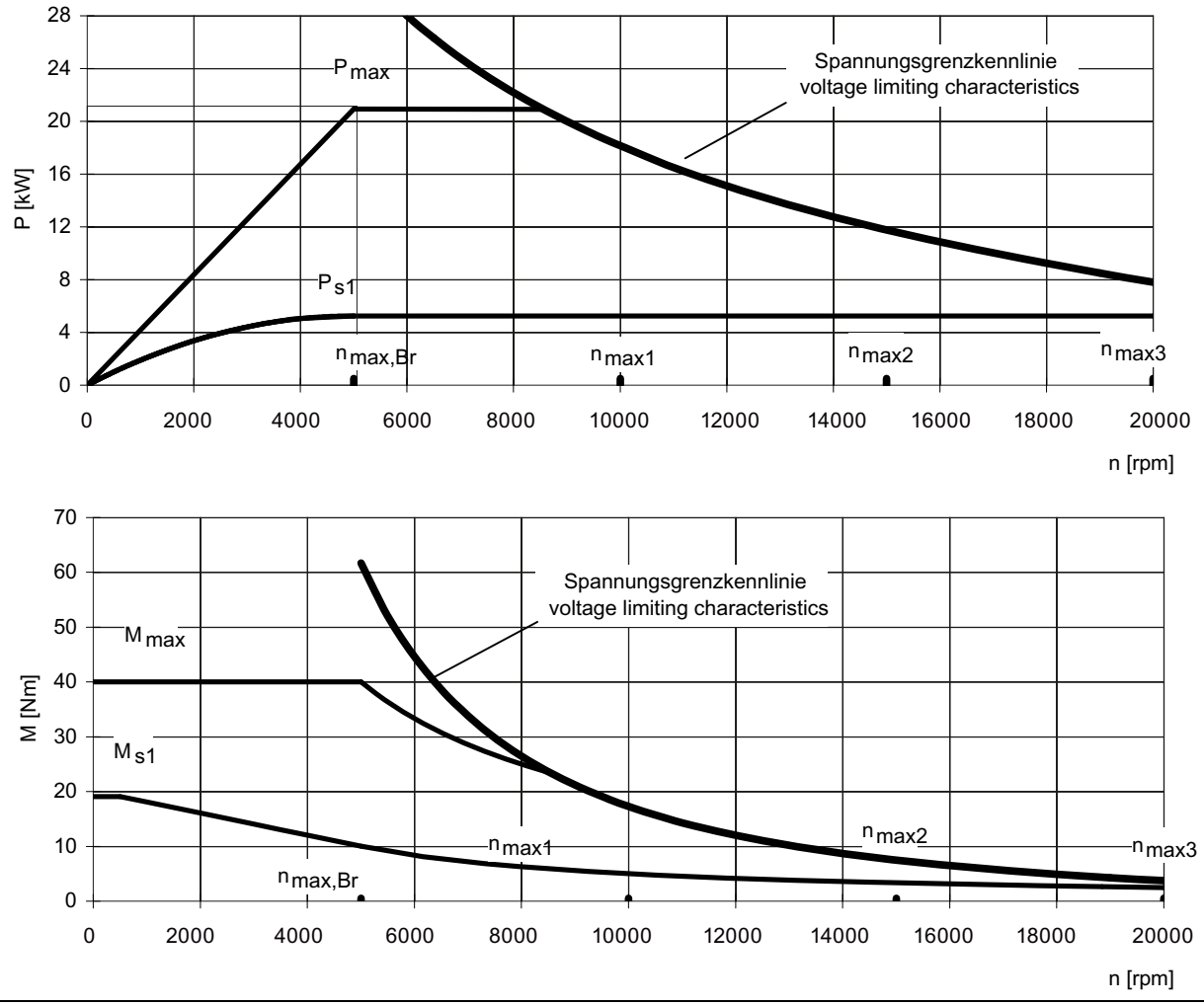


Tabella 4- 33 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8083-□□N□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5500 | 5,5 | 10 | 16,5 | 10000 | 15000 | 20000 | 5000 | 20000 | 40 | 41 | 19 | 23 |

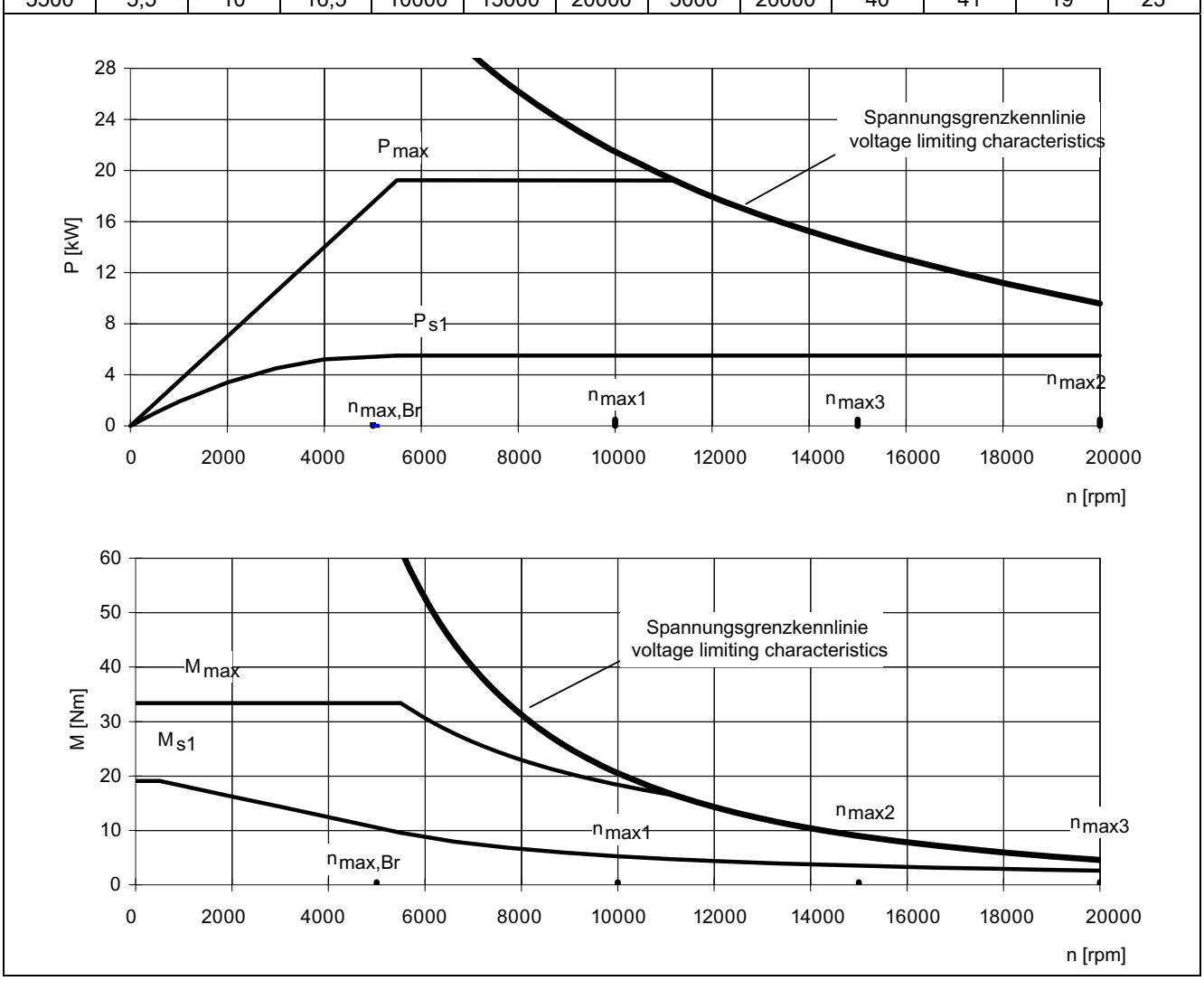
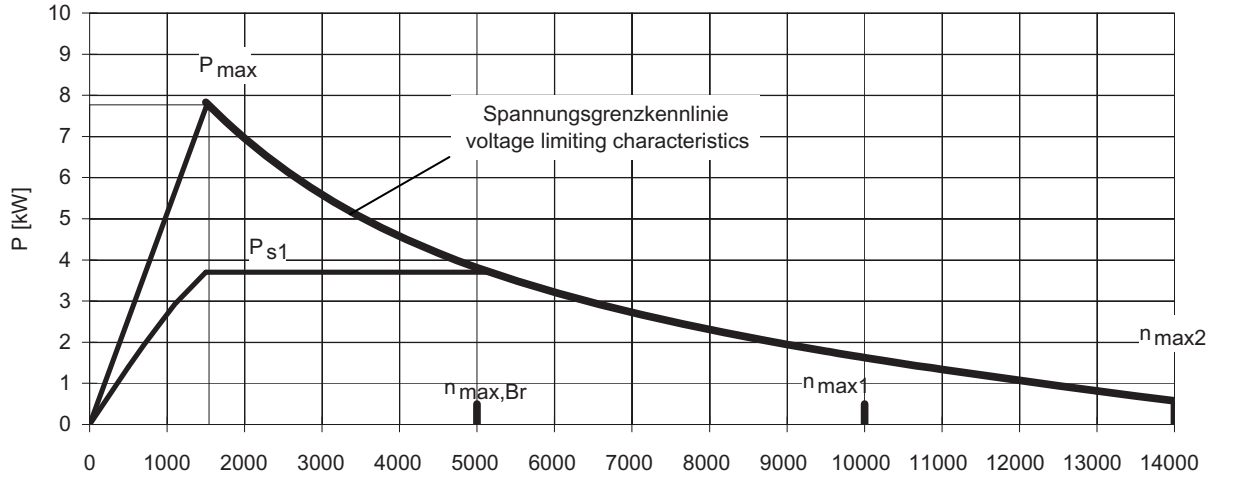


Tabella 4- 34 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8087-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 3,7 | 24 | 10,0 | 10000 | 14000 | - | 5000 | 5200 | 49 | 20 | 27 | 11 |



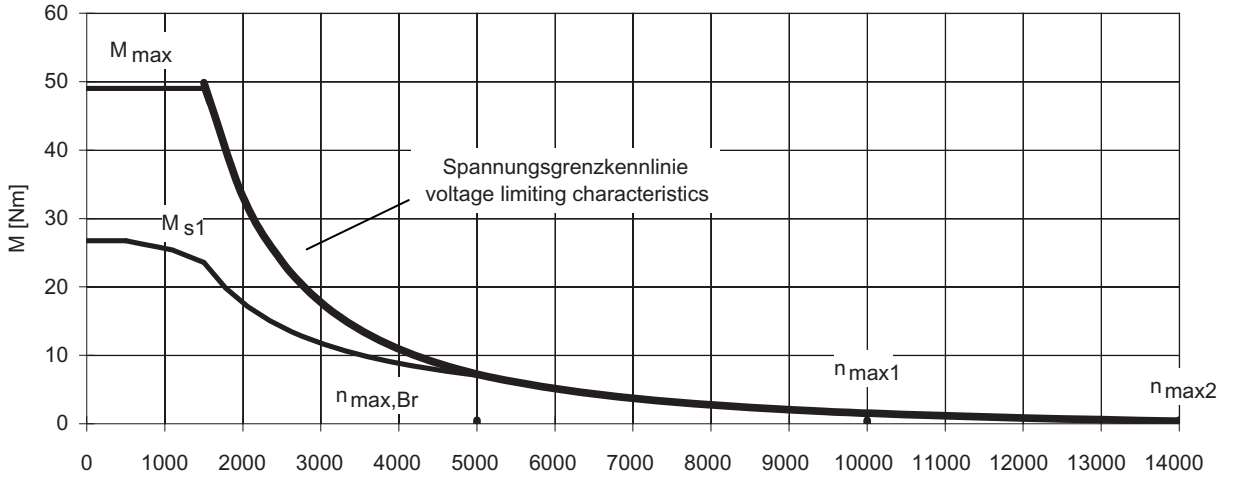



Tabella 4- 35 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8087-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 4,3 | 23 | 10,0 | 10000 | 14000 | - | 5000 | 5850 | 49 | 20 | 27 | 11 |
| 1500 | 3,7 | 24 | 10,0 | | | | | 6750 | | | | |

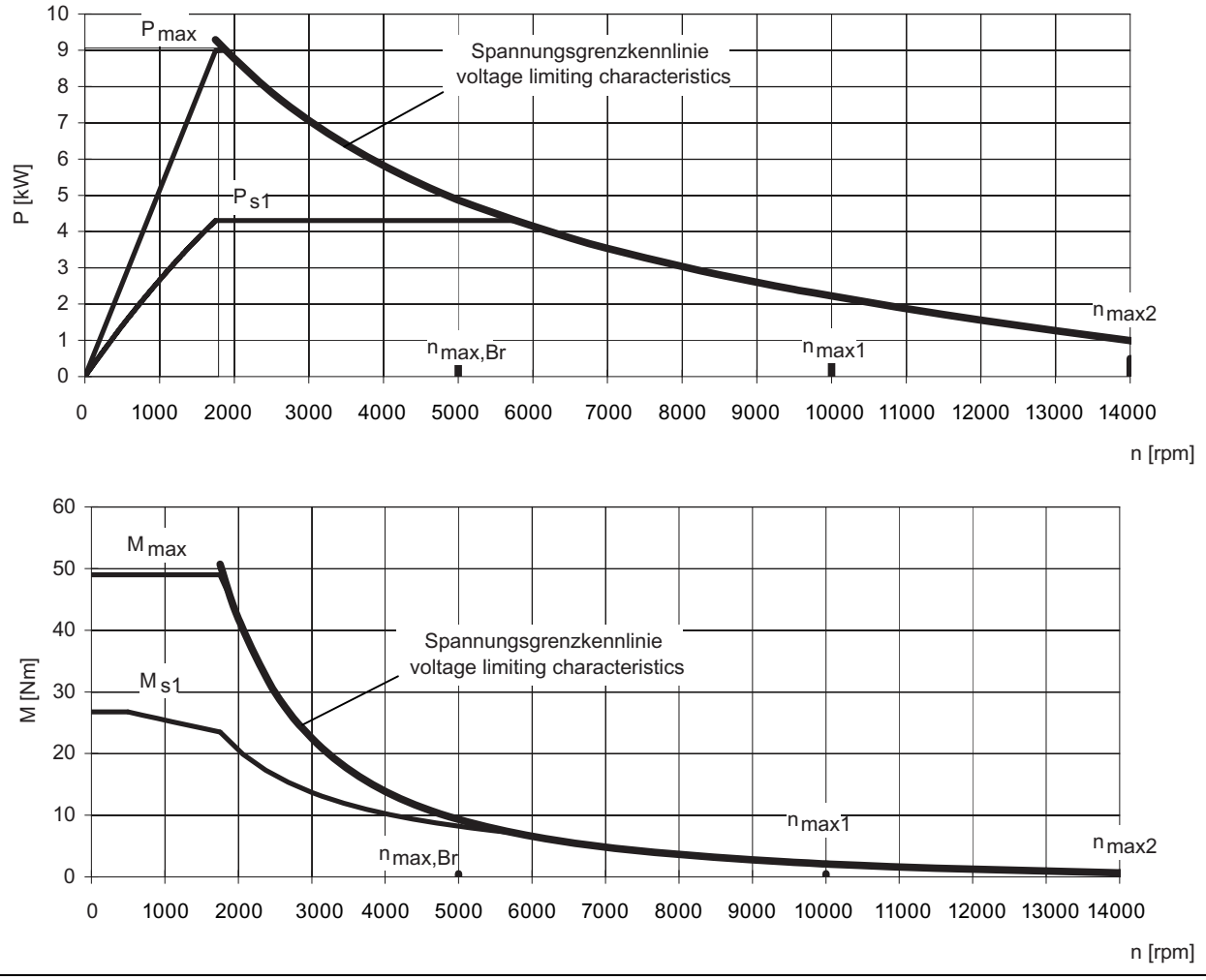
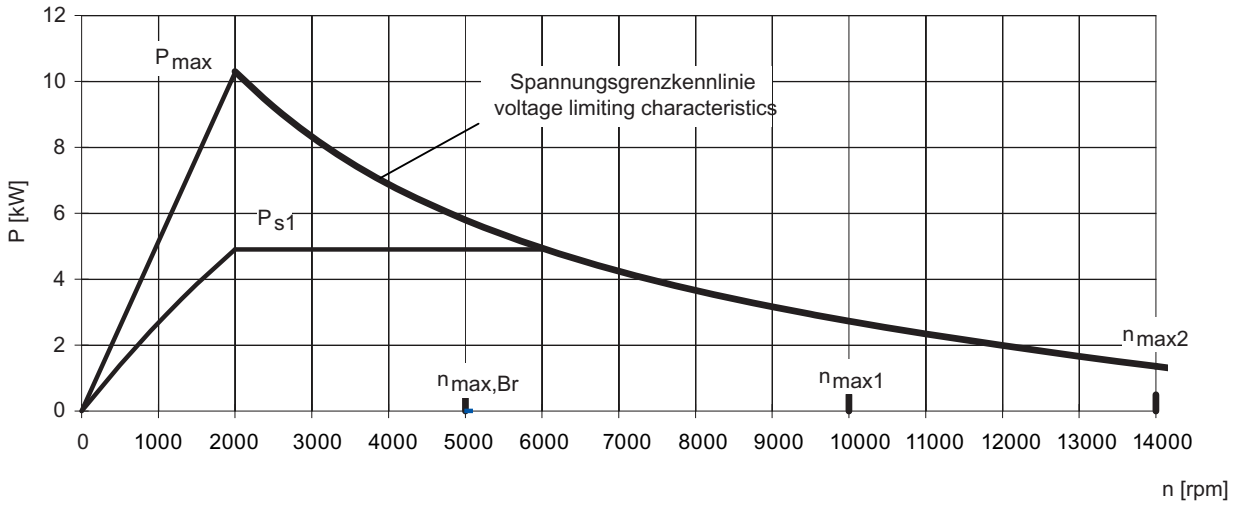


Tabella 4- 36 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8087-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 4,9 | 23 | 10,0 | 10000 | 14000 | - | 5000 | 6100 | 49 | 20 | 27 | 11 |



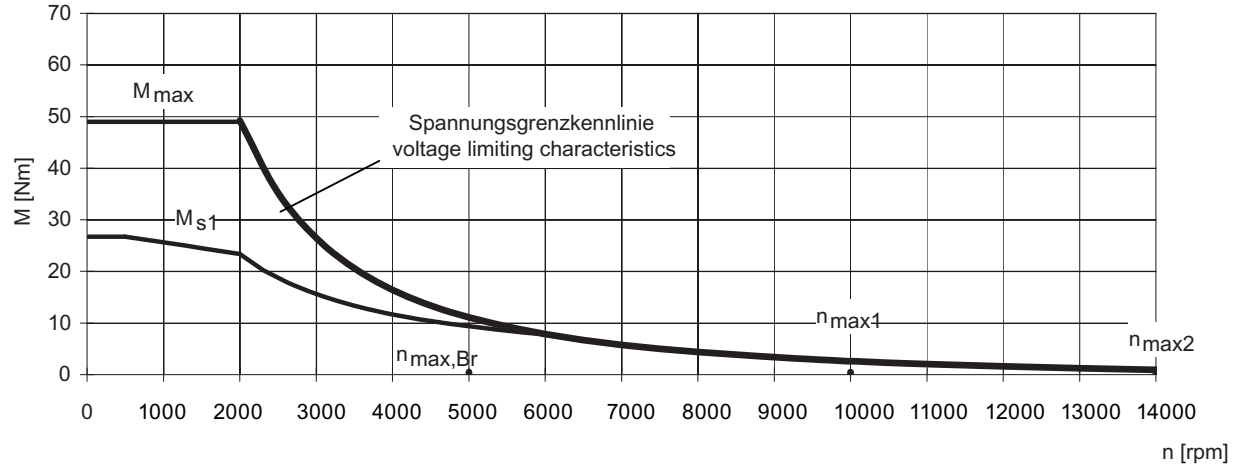
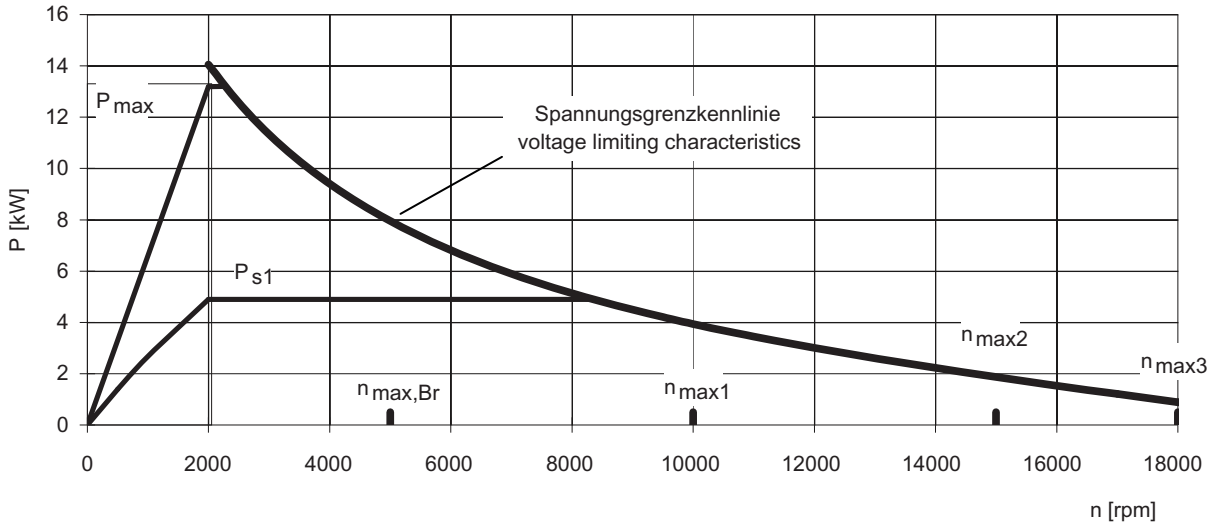



Tabella 4- 37 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8087-□□G□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 4,9 | 23 | 14,1 | 10000 | 15000 | 18000 | 5000 | 8400 | 63 | 31 | 27 | 15 |



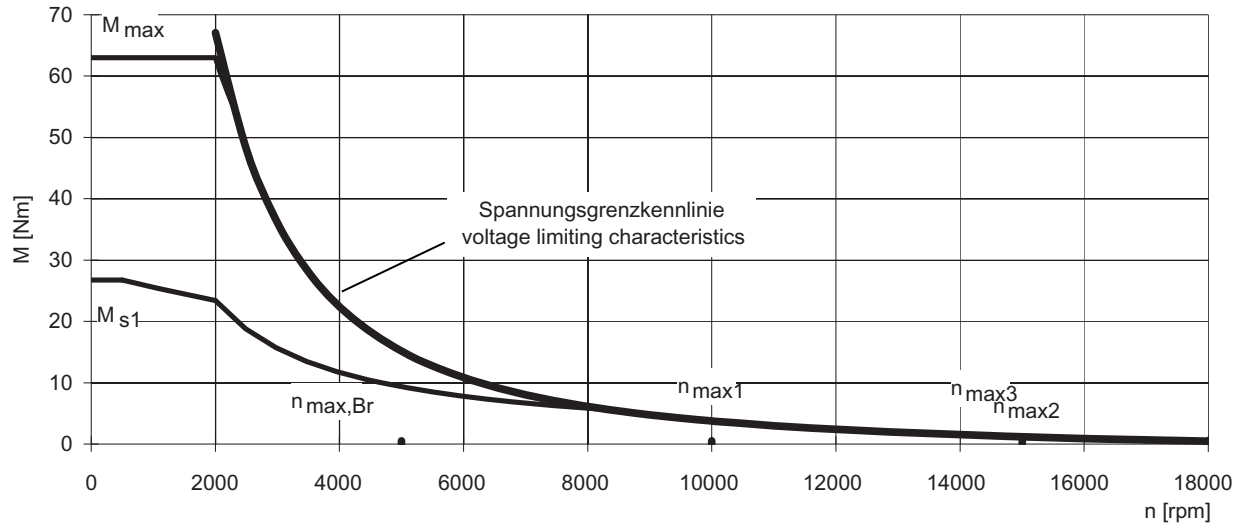
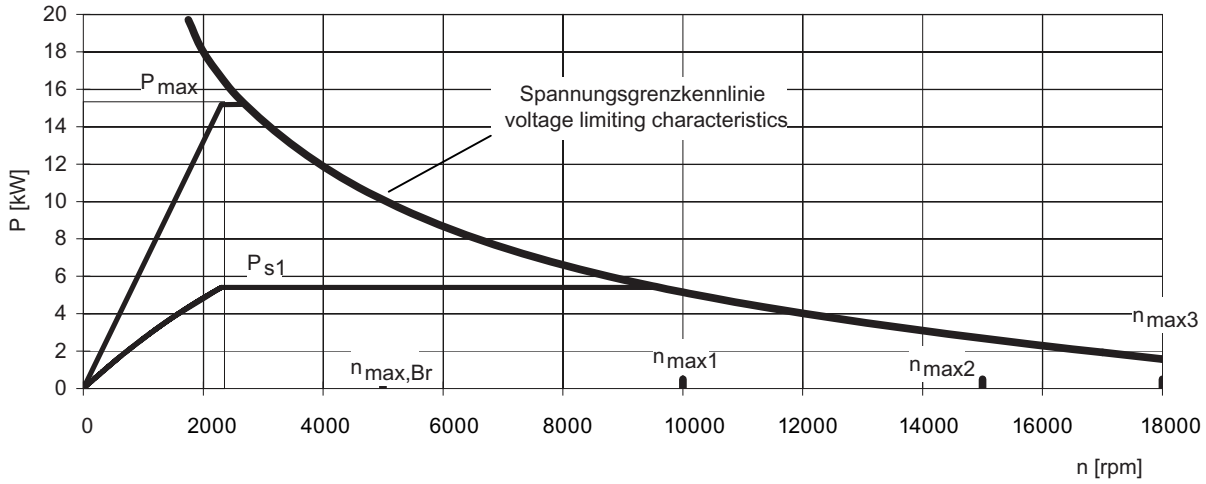



Tabella 4- 38 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8087-□□G□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 5,4 | 22 | 13,7 | 10000 | 15000 | 18000 | 5000 | 9650 | 63 | 31 | 27 | 15 |
| 2000 | 4,9 | 23 | 14,1 | | | | | 10450 | | | | |



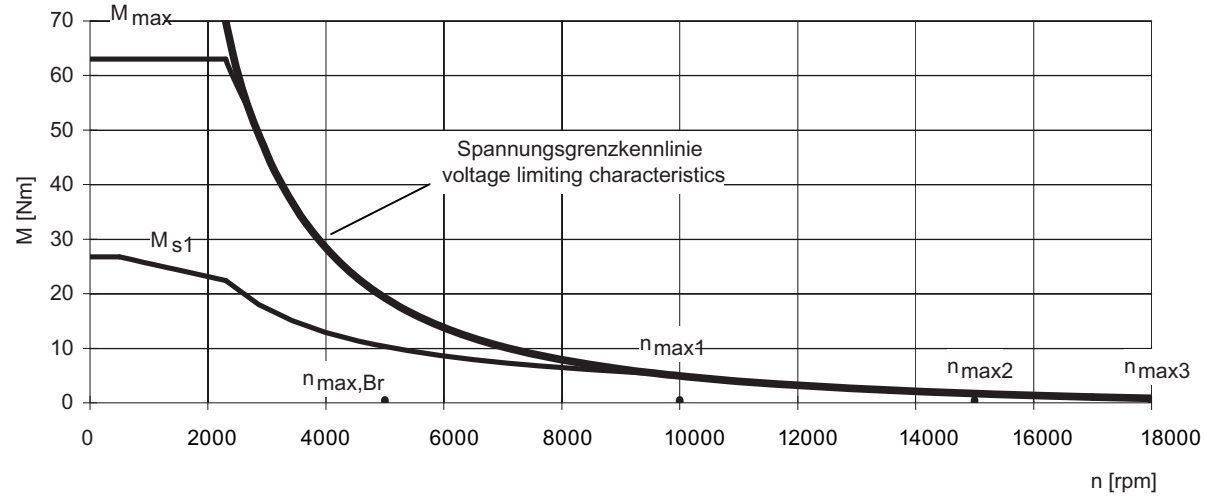
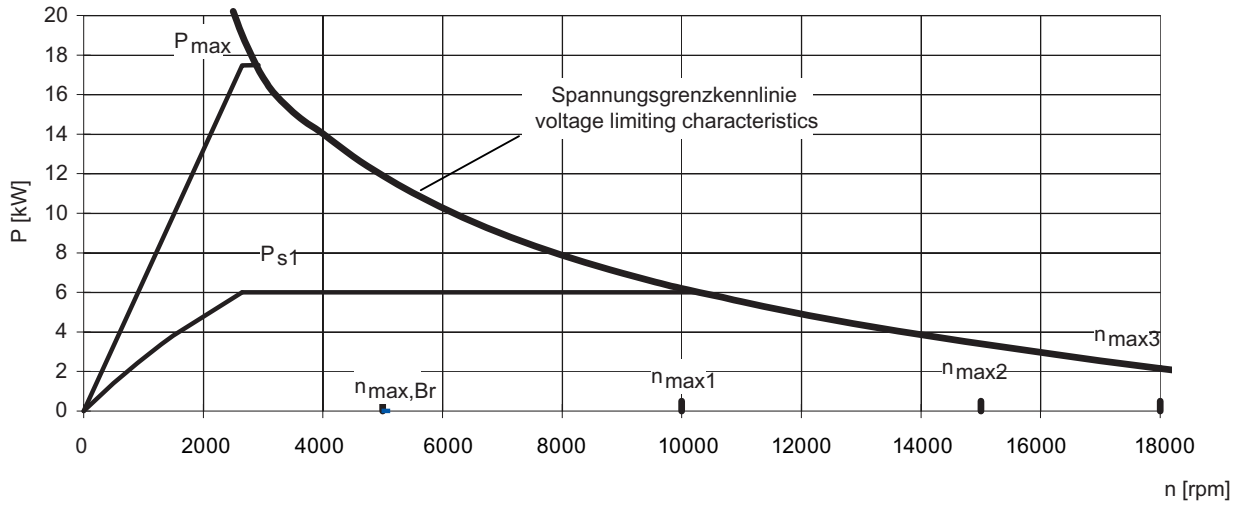



Tabella 4- 39 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8087-□□G□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 6,0 | 22 | 13,6 | 10000 | 15000 | 18000 | 5000 | 10300 | 63 | 31 | 27 | 15 |



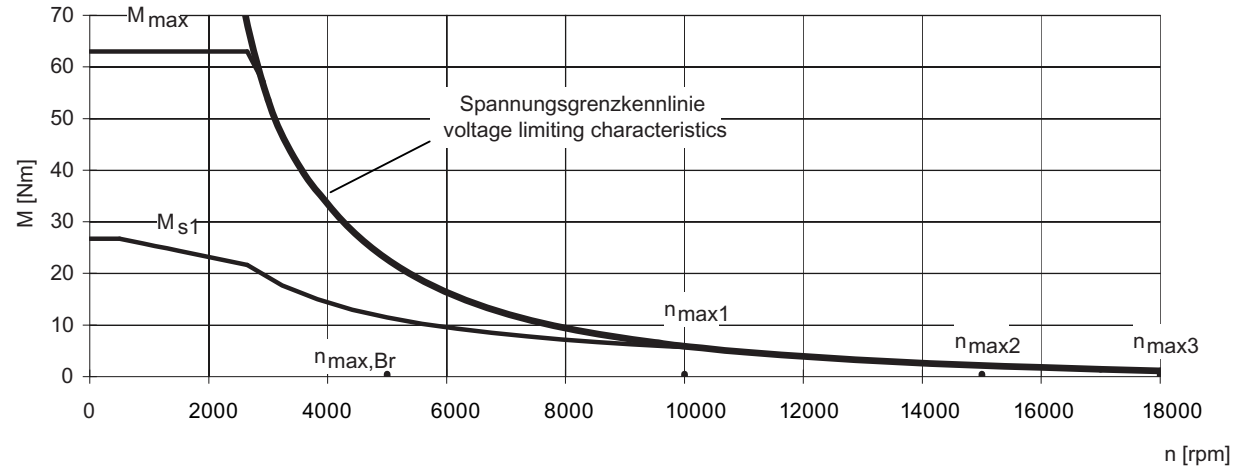
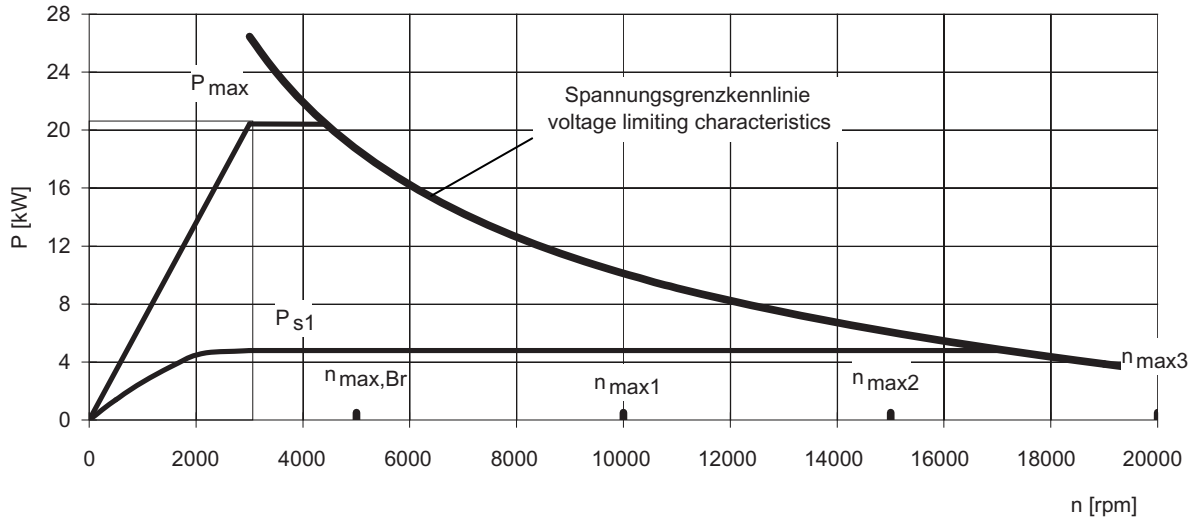



Tabella 4- 40 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8087-□□M□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3000 | 4,8 | 15 | 17,3 | 10000 | 15000 | 20000 | 5000 | 172000 | 65 | 46 | 27 | 23 |



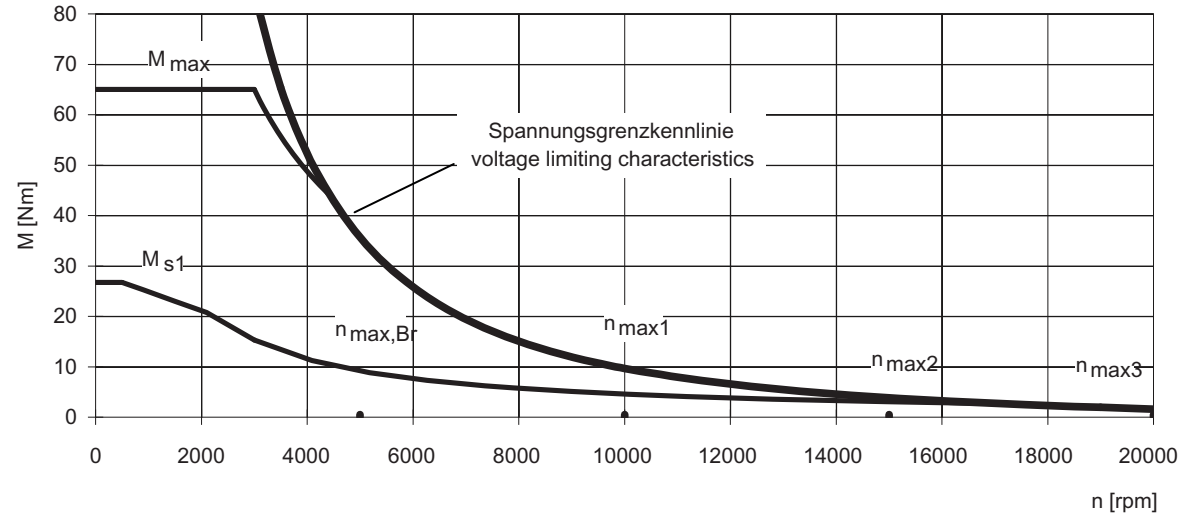
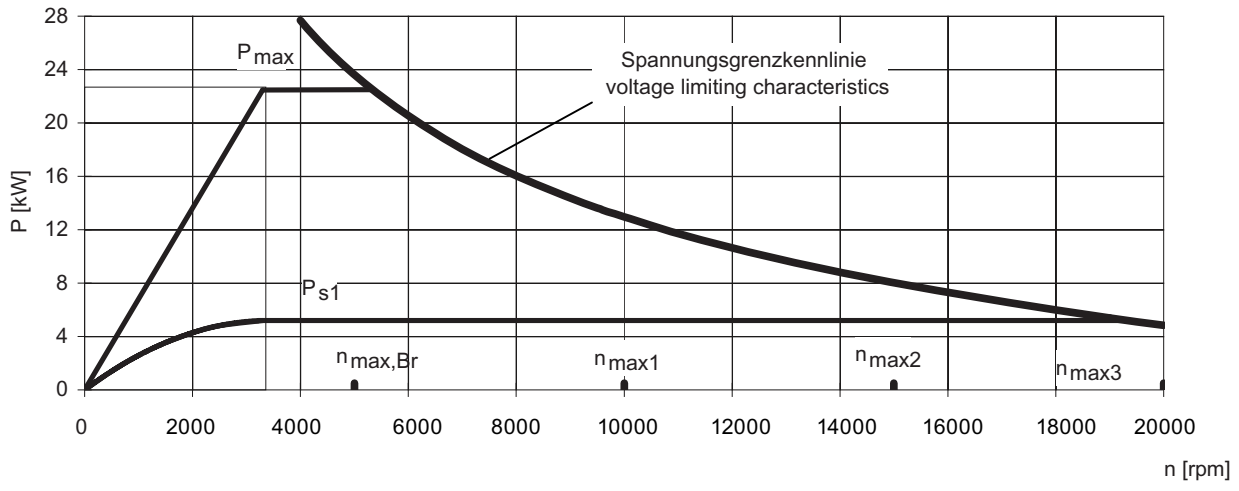



Tabella 4- 41 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8087-□□M□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3300 | 5,2 | 15 | 17,1 | 10000 | 15000 | 20000 | 5000 | 19400 | 65 | 46 | 27 | 23 |
| 3000 | 4,8 | 15 | 17,3 | | | | | 20050 | | | | |



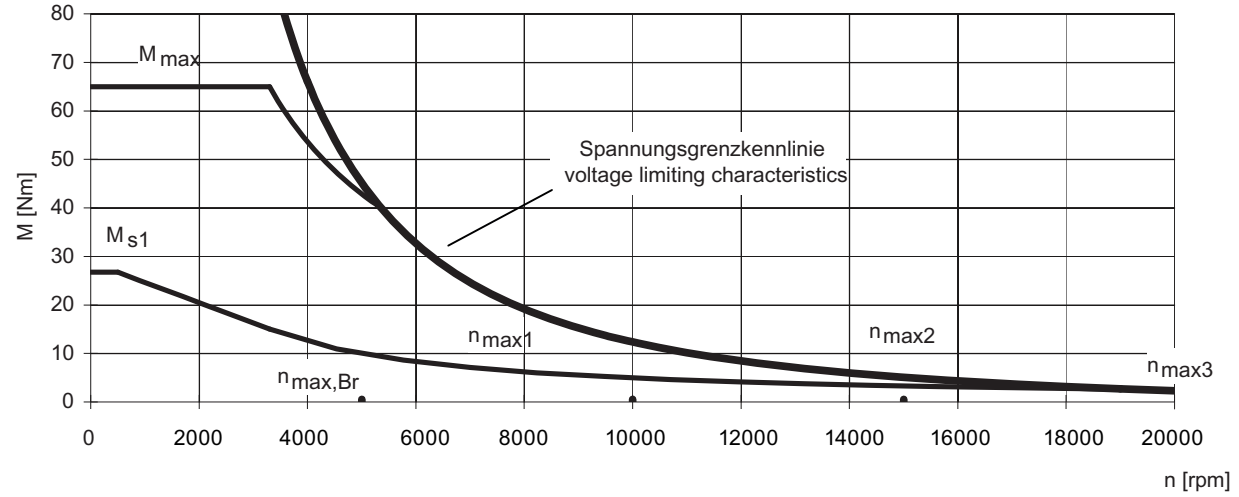
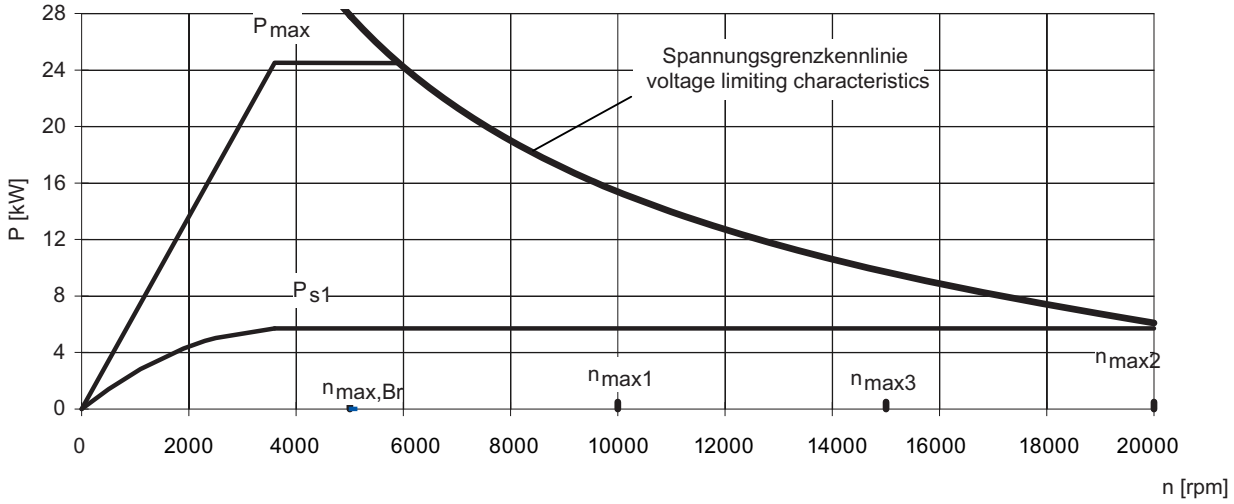



Tabella 4- 42 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8087-□□M□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3600 | 5,7 | 15 | 17,1 | 10000 | 15000 | 20000 | 5000 | 20050 | 65 | 46 | 27 | 23 |



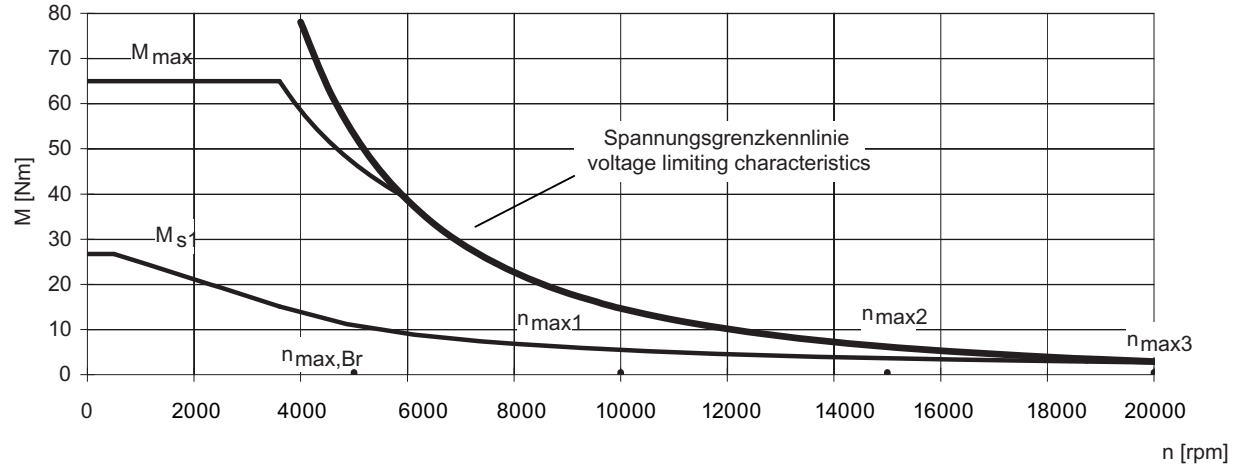
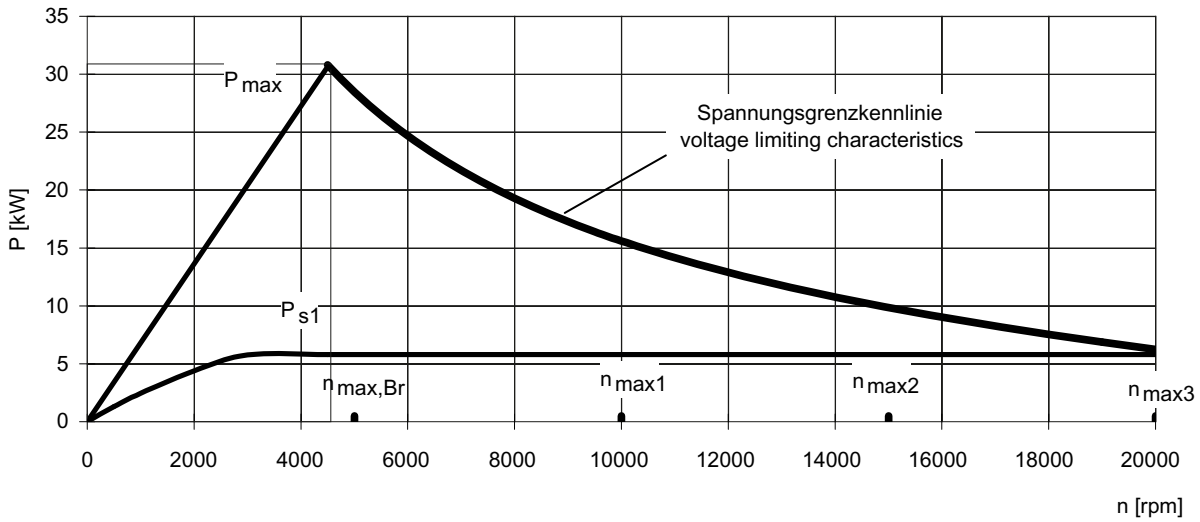



Tabella 4- 43 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8087-□□N□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4500 | 5,8 | 12 | 19,5 | 10000 | 15000 | 20000 | 5000 | 20000 | 65 | 66 | 25 | 28 |



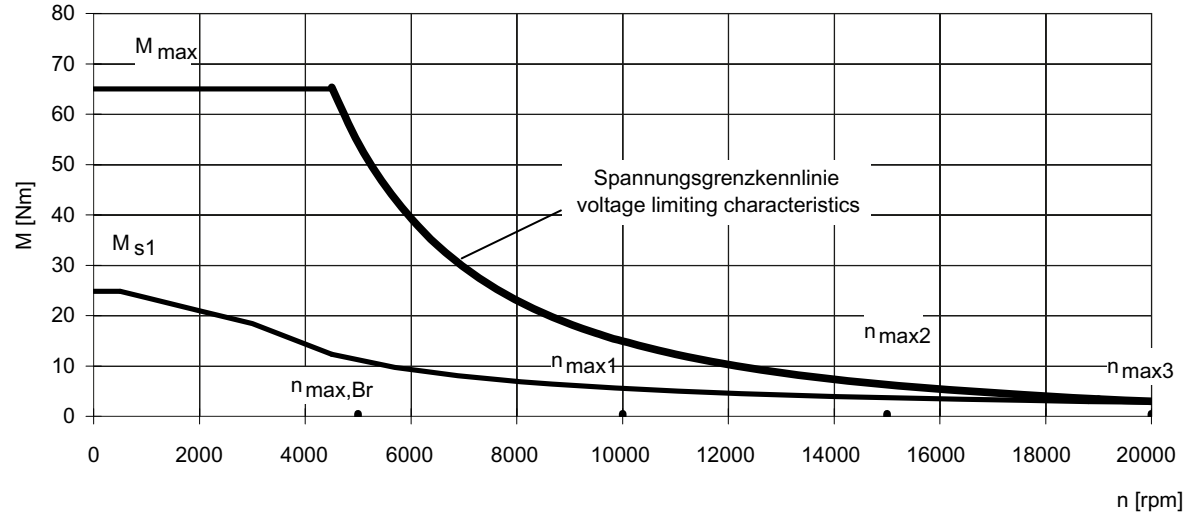



Tabella 4- 44 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8087-□□N□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5000 | 6,5 | 12 | 19,5 | 10000 | 15000 | 20000 | 5000 | 20000 | 65 | 66 | 25 | 28 |
| 4500 | 5,8 | 12 | 19,5 | | | | | 20000 | | | | |

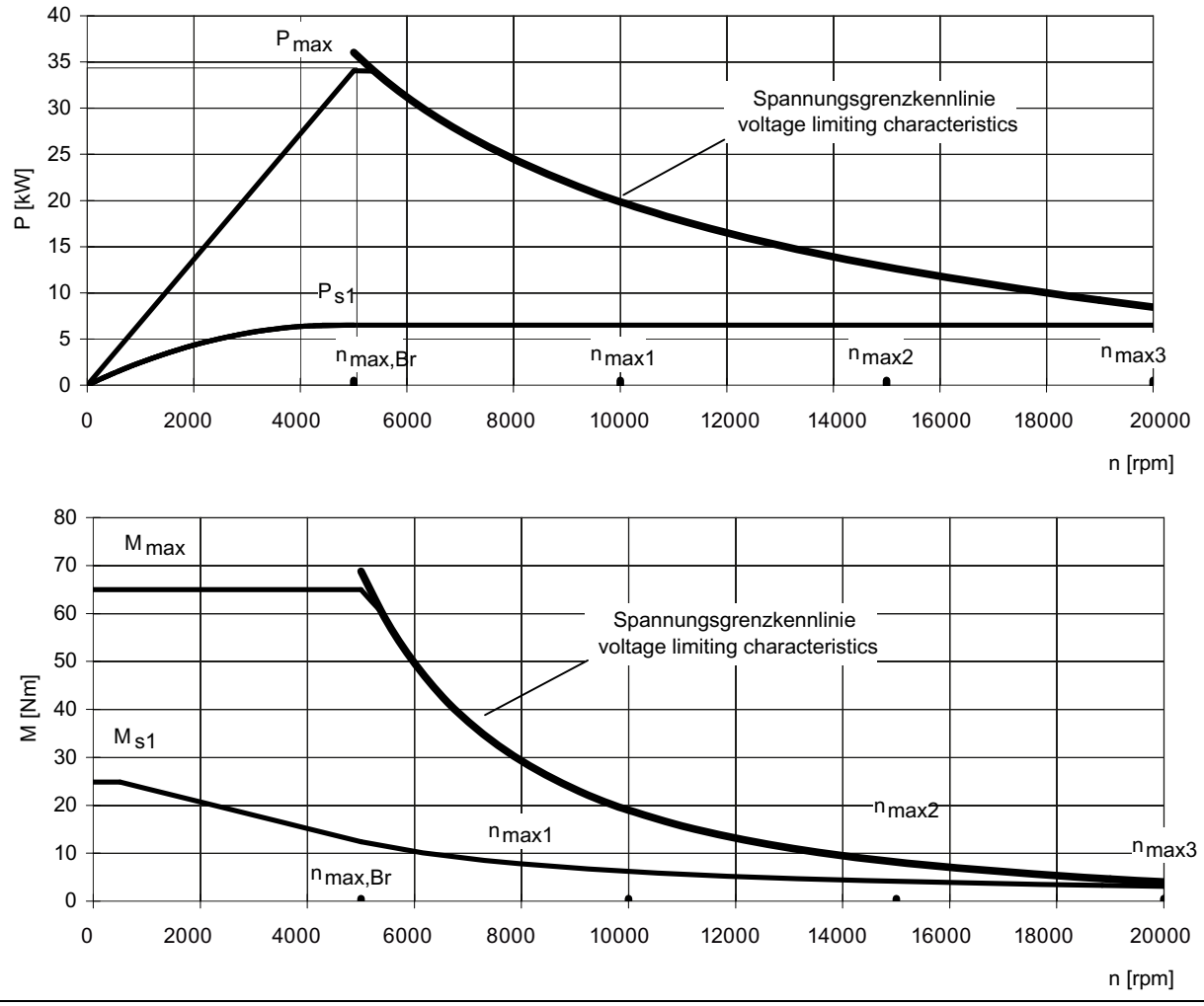
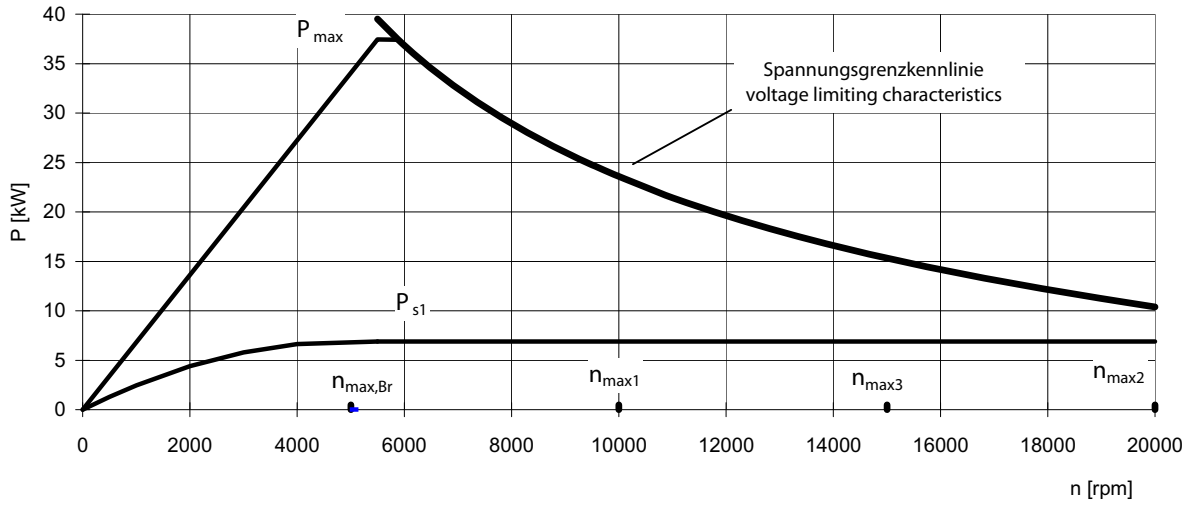
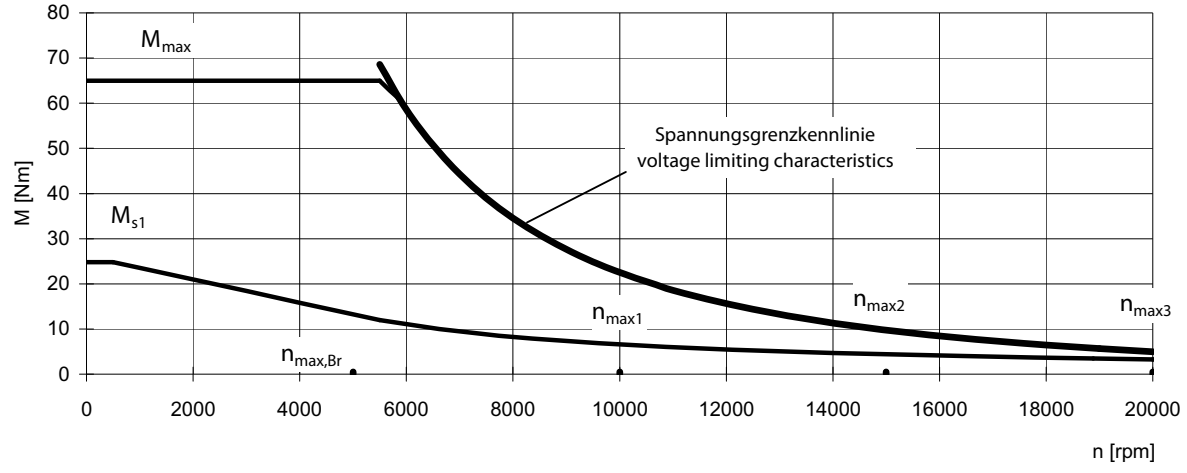


Tabella 4- 45 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8087-□□N□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5500 | 6,9 | 12 | 19,0 | 10000 | 15000 | 20000 | 5000 | 20000 | 65 | 66 | 25 | 28 |




* siehe Projektierungsanleitung

### 4.1.2.2 Altezza dell'asse 100 - Ventilazione forzata

Tabella 4- 46 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8101-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 3,7 | 24 | 12,5 | 9000 | 12000 | - | 5000 | 5000 | 60 | 32 | 29 | 14 |

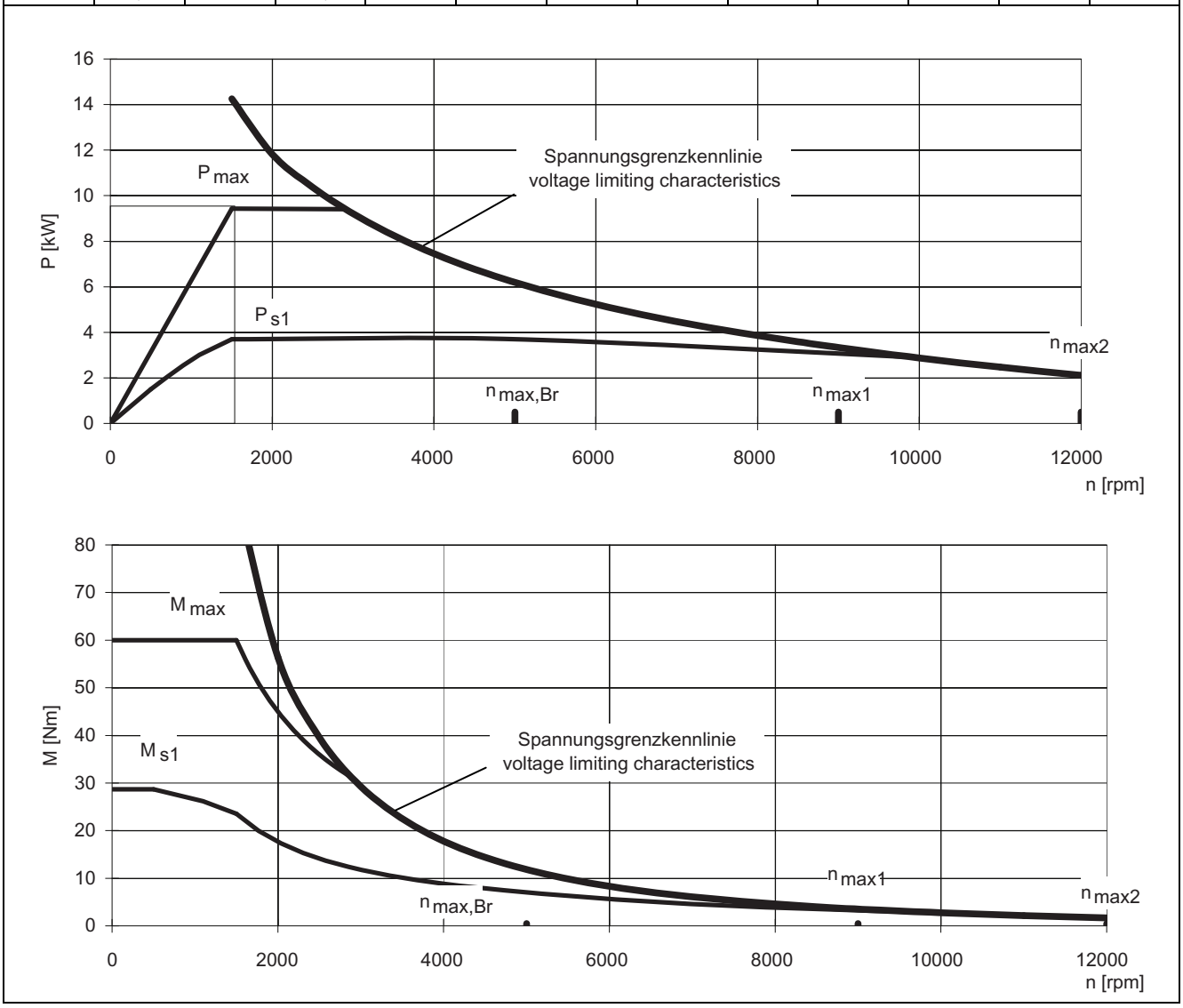
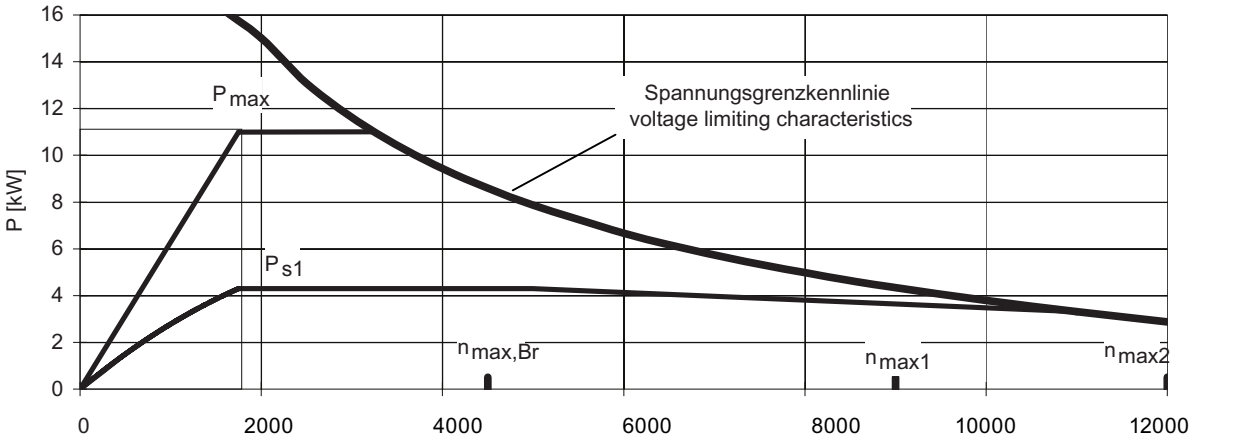


Tabella 4- 47 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8101-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 4,3 | 23 | 12,5 | 9000 | 12000 | - | 4500 | 5000 | 60 | 32 | 29 | 14 |
| 1500 | 3,7 | 24 | 12,5 | | | | | 8350 | | | | |



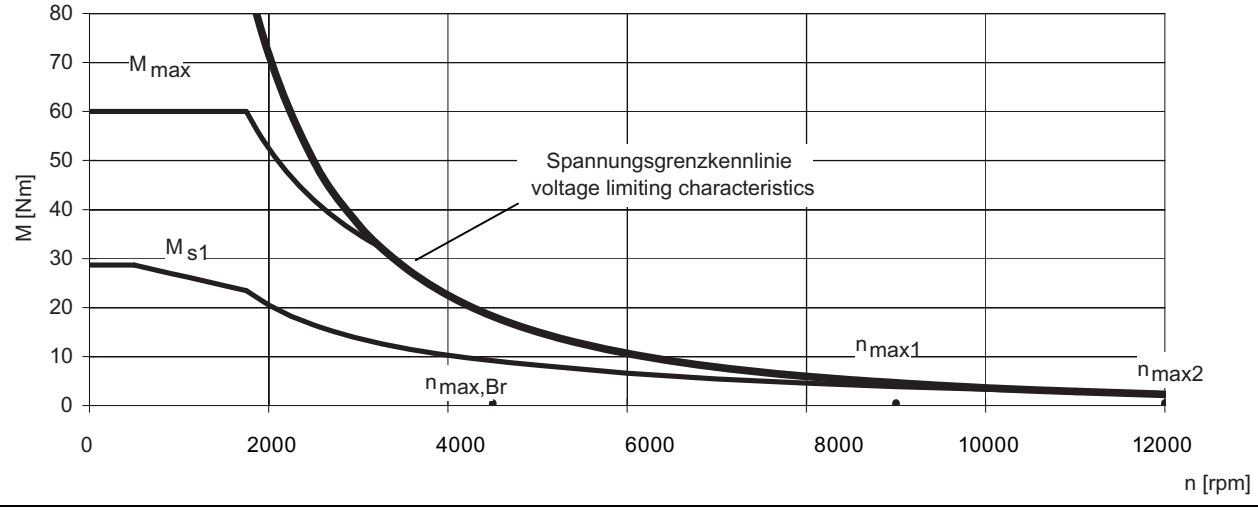
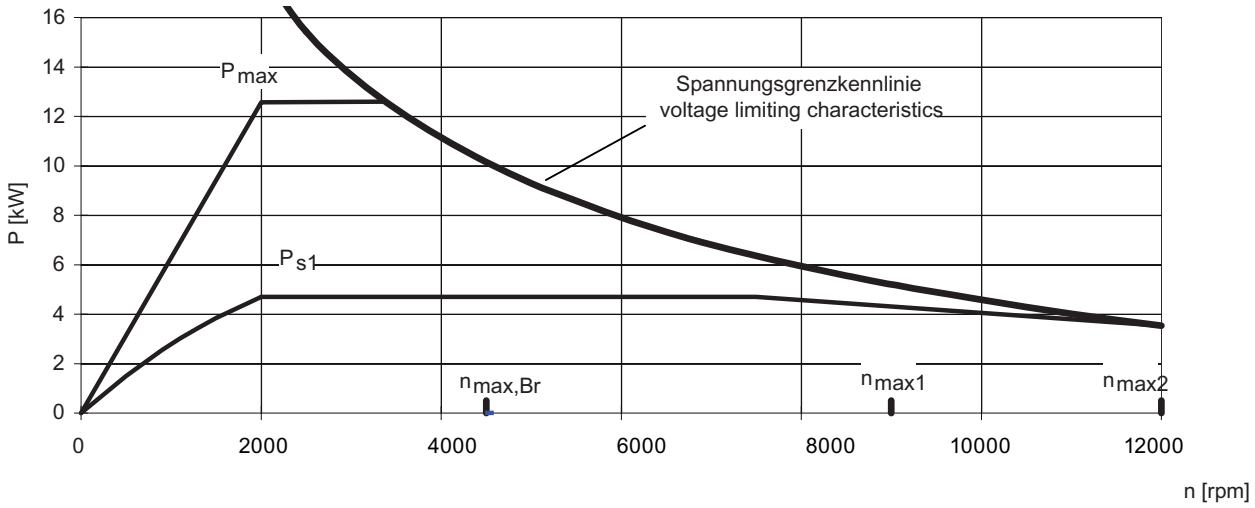



Tabella 4- 48 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8101-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 4,7 | 22 | 12,5 | 9000 | 12000 | - | 4500 | 7500 | 60 | 32 | 29 | 14 |



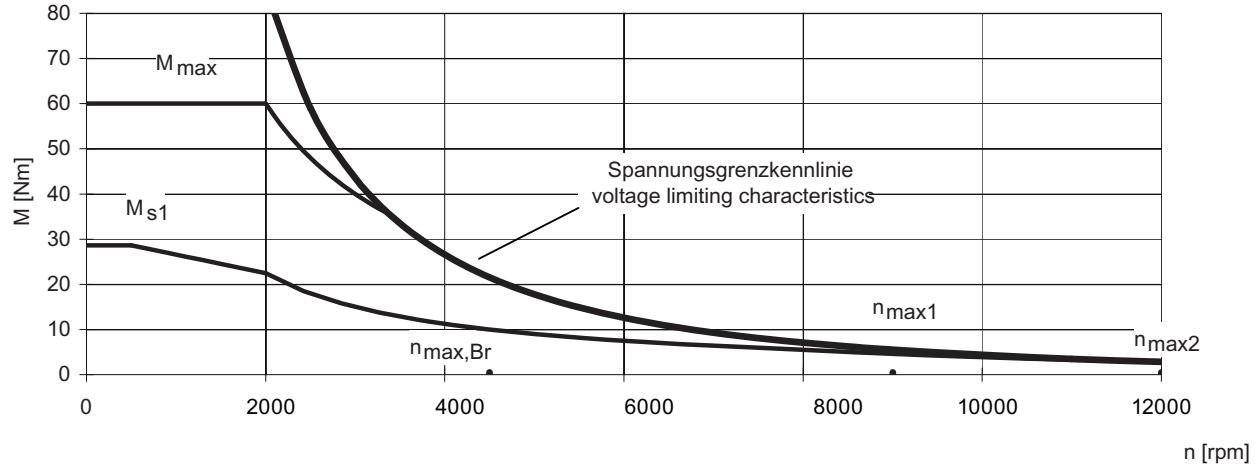



Tabella 4- 49 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8101-□□S□□, collegamento Δ

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4000 | 3,7 | 9 | 13,5 | 9000 | 12000 | 18000 | 5000 | 10500 | 30 | 45 | 19 | 20 |

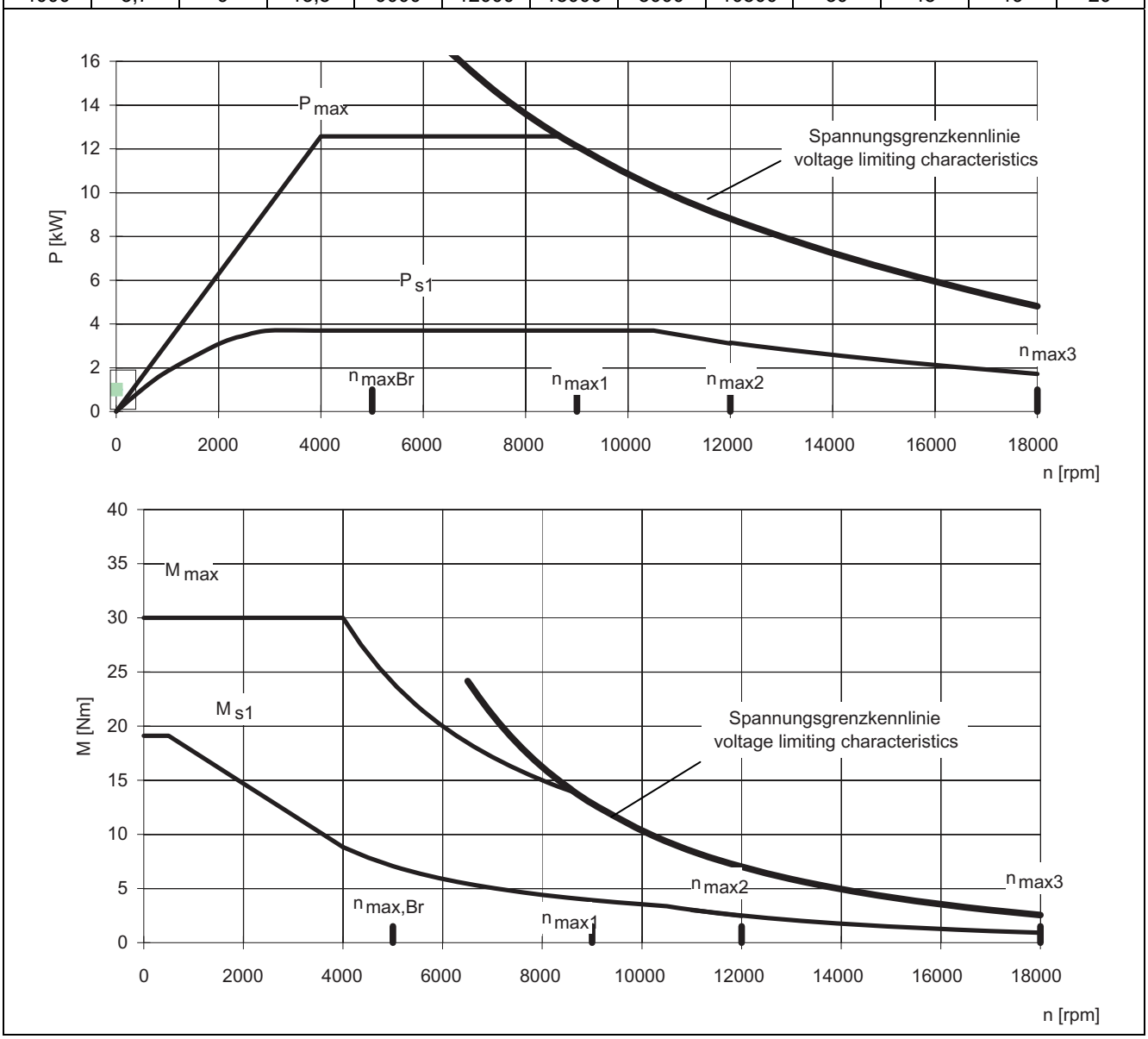


Tabella 4- 50 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8101-□□S□□, collegamento Δ

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5000 | 4,9 | 9 | 13,5 | 9000 | 12000 | 18000 | 5000 | 10000 | 30 | 45 | 19 | 20 |
| 4000 | 3,7 | 9 | 13,5 | | | | | 13000 | | | | |

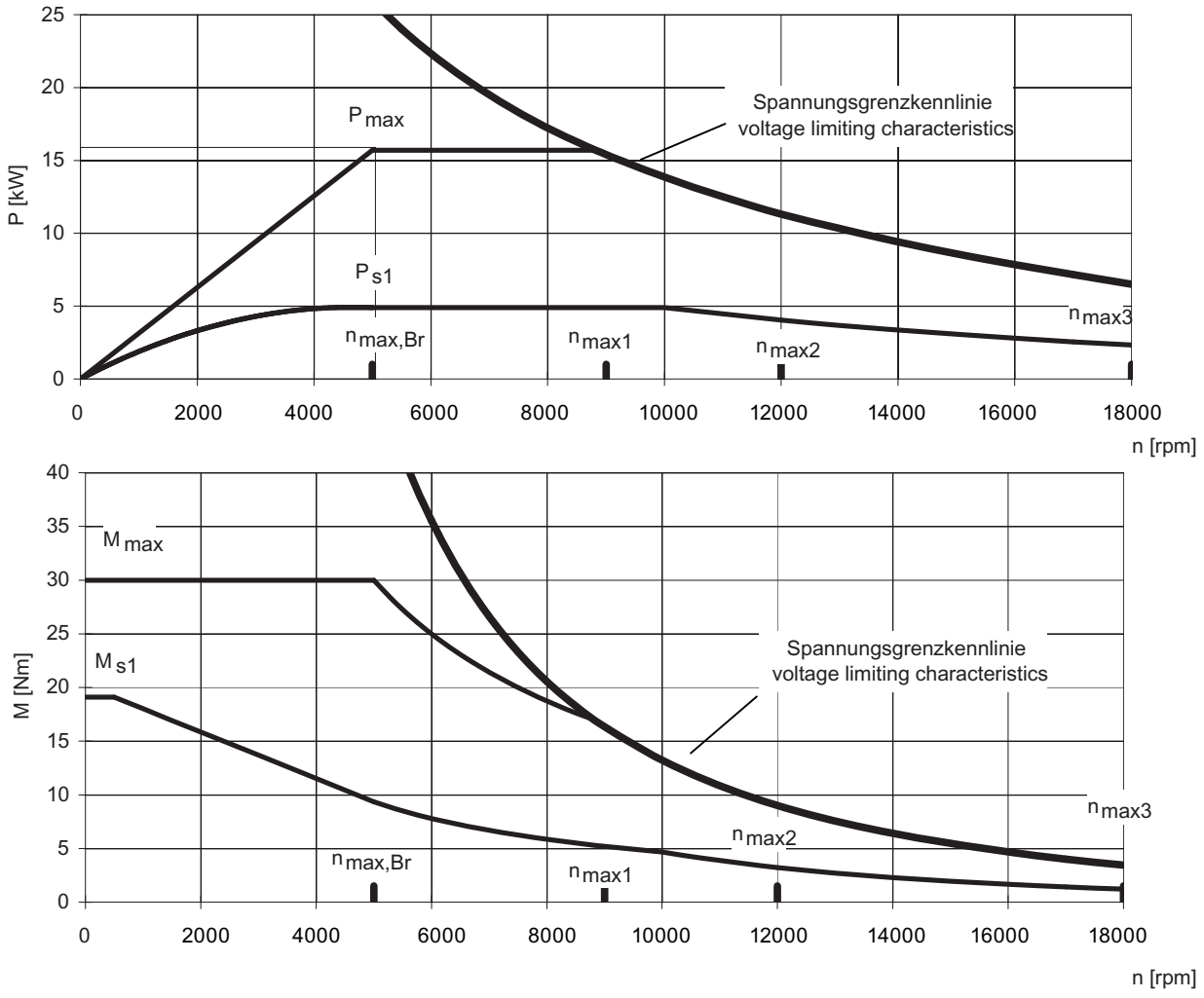
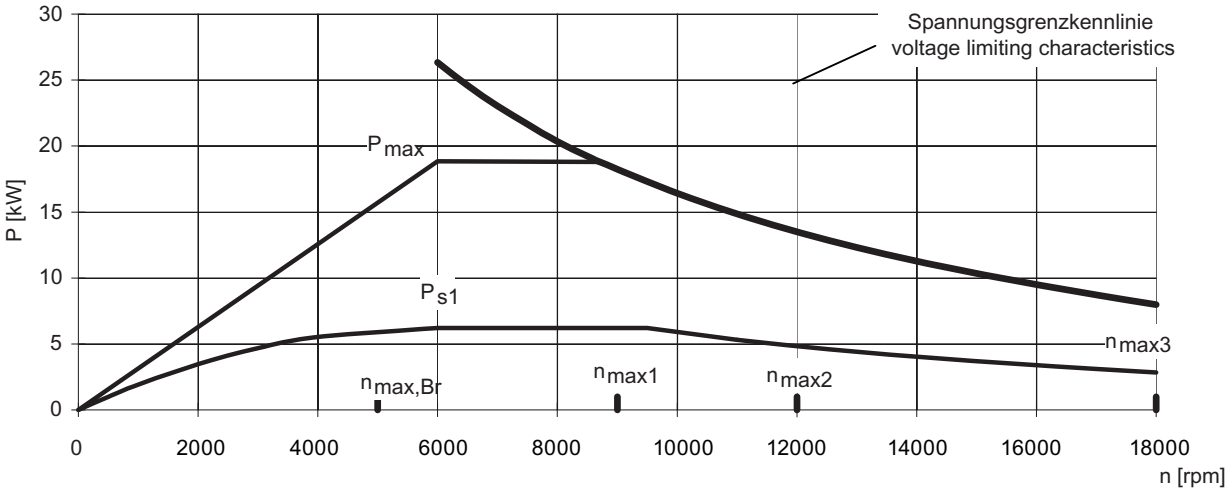


Tabella 4- 51 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8101-□□S□□, collegamento Δ

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6000 | 6,2 | 10 | 13,0 | 9000 | 12000 | 18000 | 5000 | 9500 | 30 | 45 | 19 | 20 |



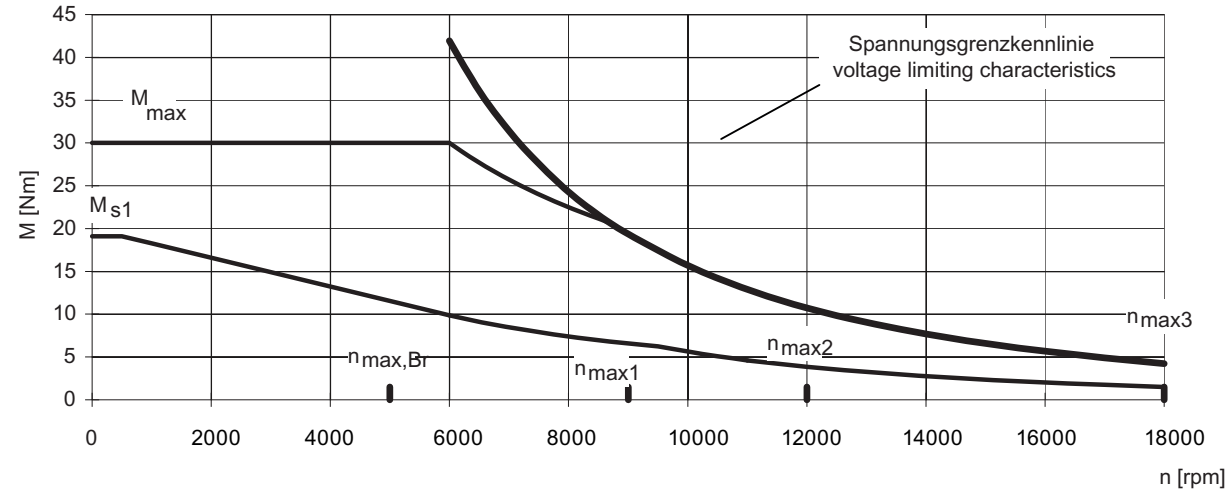



Tabella 4- 52 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8101-□□S□□, collegamento a stella

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 3,7 | 24 | 13,2 | 9000 | 12000 | - | 5000 | 9100 | 60 | 34 | 29 | 15 |

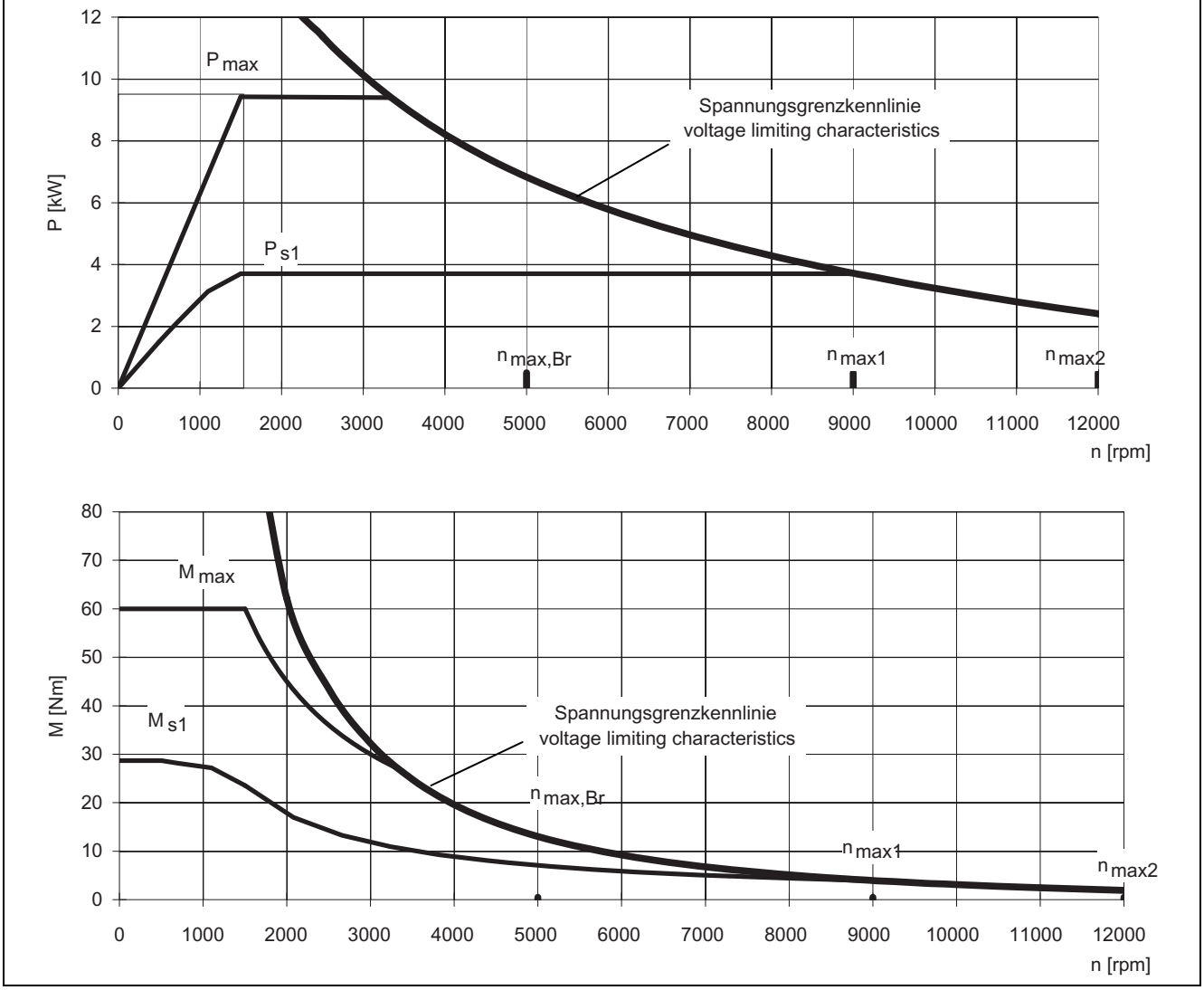


Tabella 4- 53 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8101-□□S□□, collegamento a stella

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 4,9 | 23 | 13,2 | 9000 | 12000 | - | 5000 | 8950 | 60 | 34 | 29 | 15 |
| 1500 | 3,7 | 24 | 13,2 | | | | | 11100 | | | | |

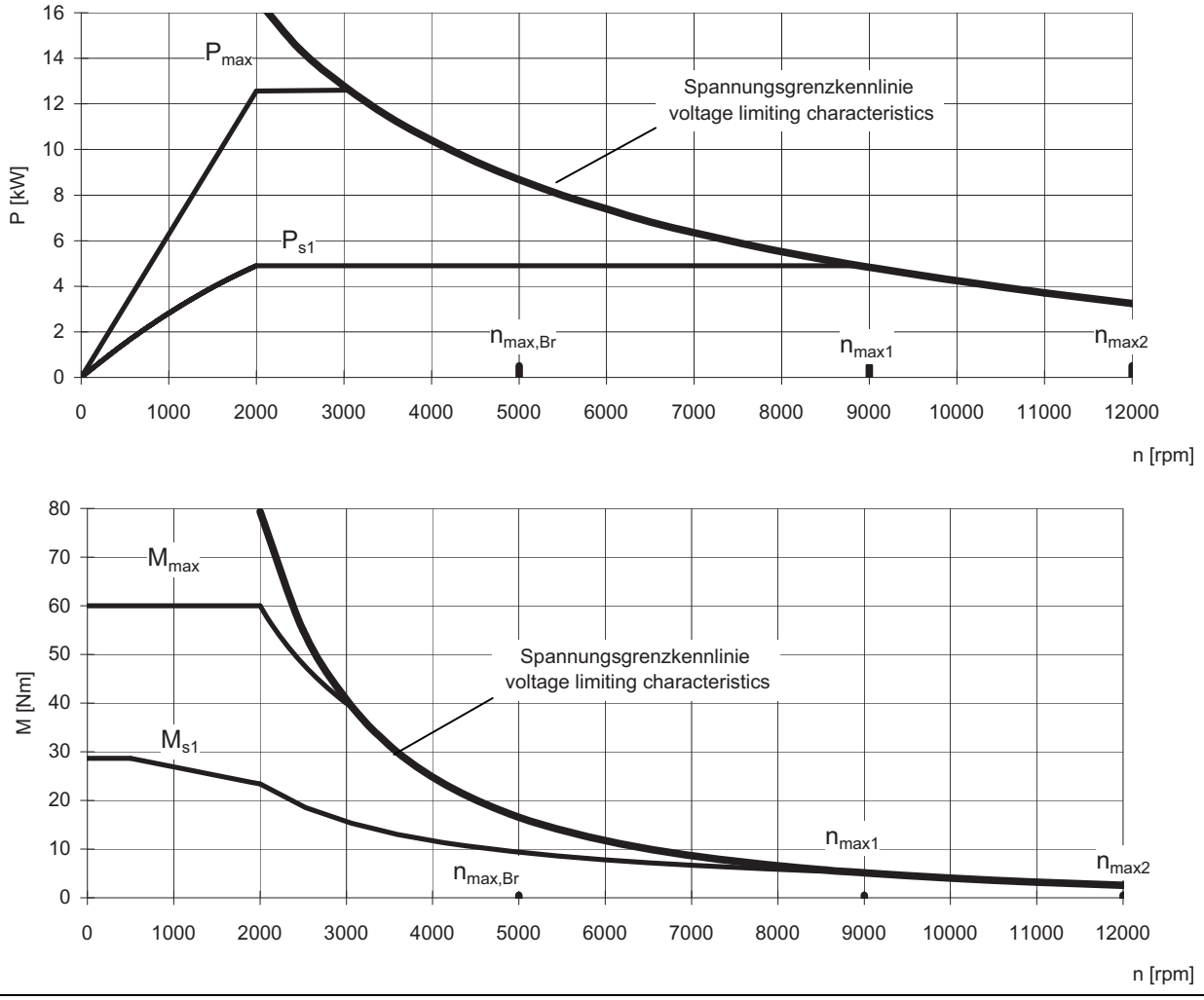
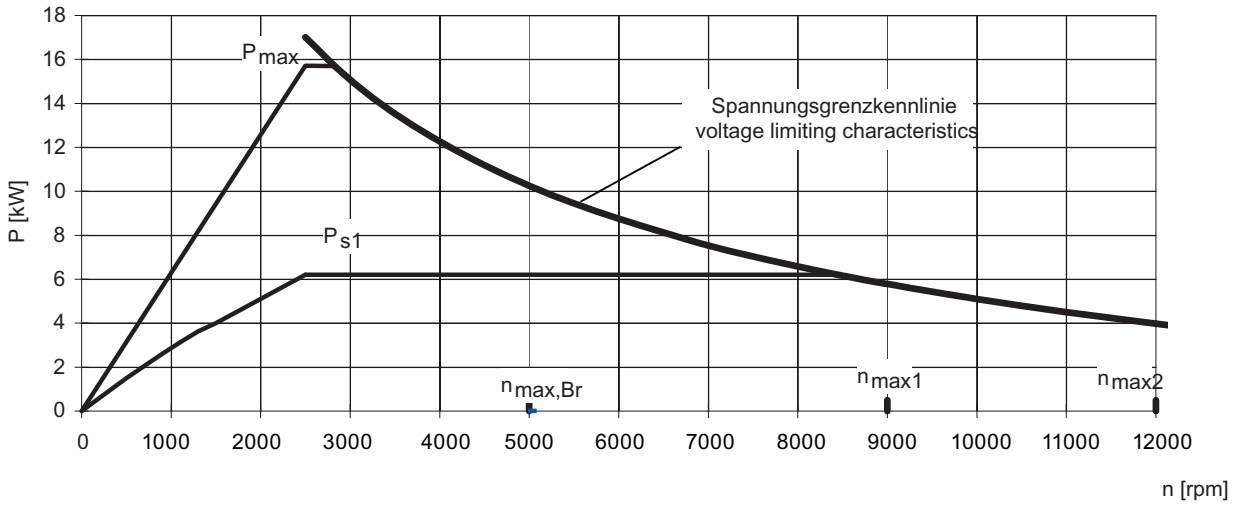


Tabella 4- 54 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8101-□□S□□, collegamento a stella

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 6,2 | 24 | 13,2 | 9000 | 12000 | - | 5000 | 8500 | 60 | 34 | 29 | 15 |



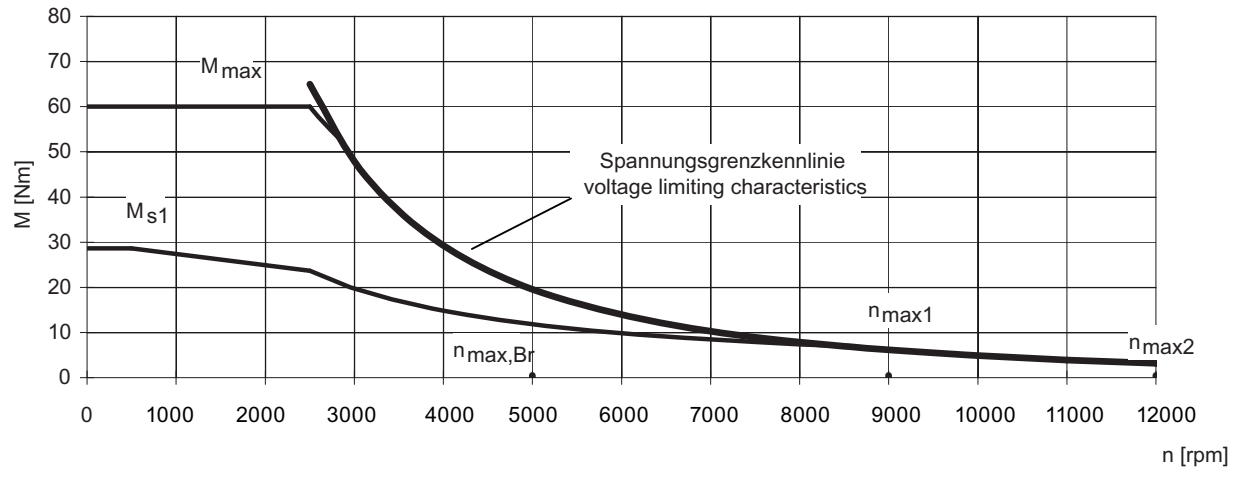
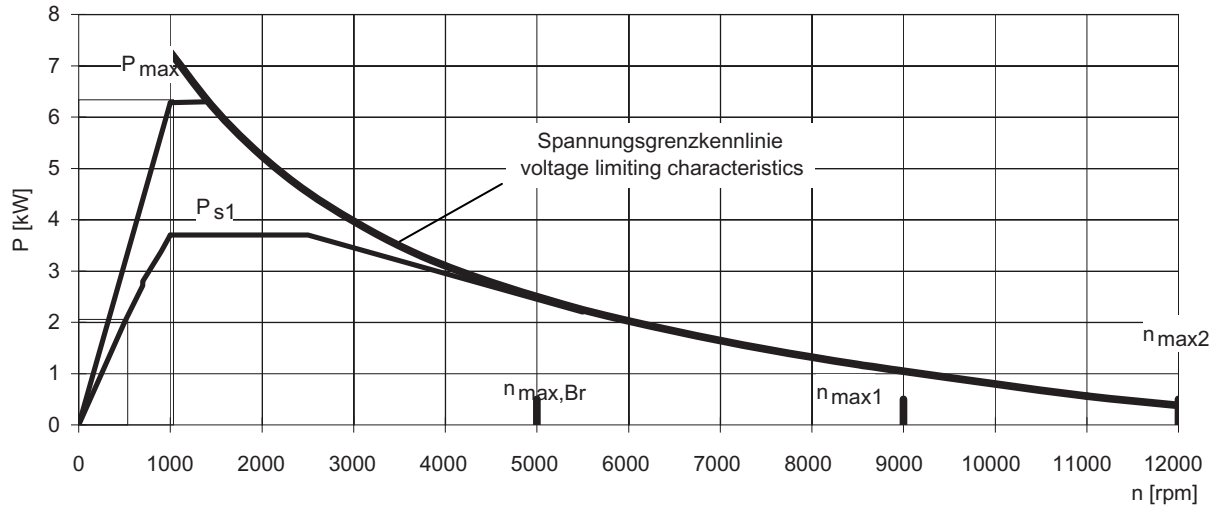



Tabella 4- 55 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8103-□□D□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 3,7 | 35 | 10,0 | 9000 | 12000 | - | 5000 | 2550 | 60 | 17 | 38 | 11 |



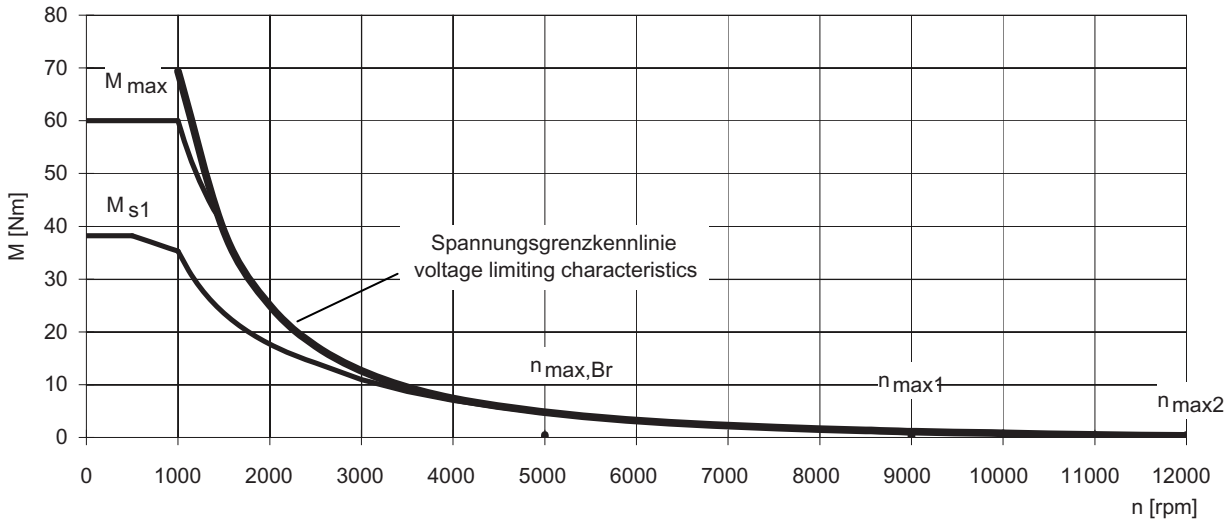



Tabella 4- 56 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8103-□□D□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 4,3 | 36 | 10,0 | 9000 | 12000 | - | 5000 | 2450 | 60 | 17 | 38 | 11 |
| 1000 | 3,7 | 35 | 10,0 | | | | | 3800 | | | | |

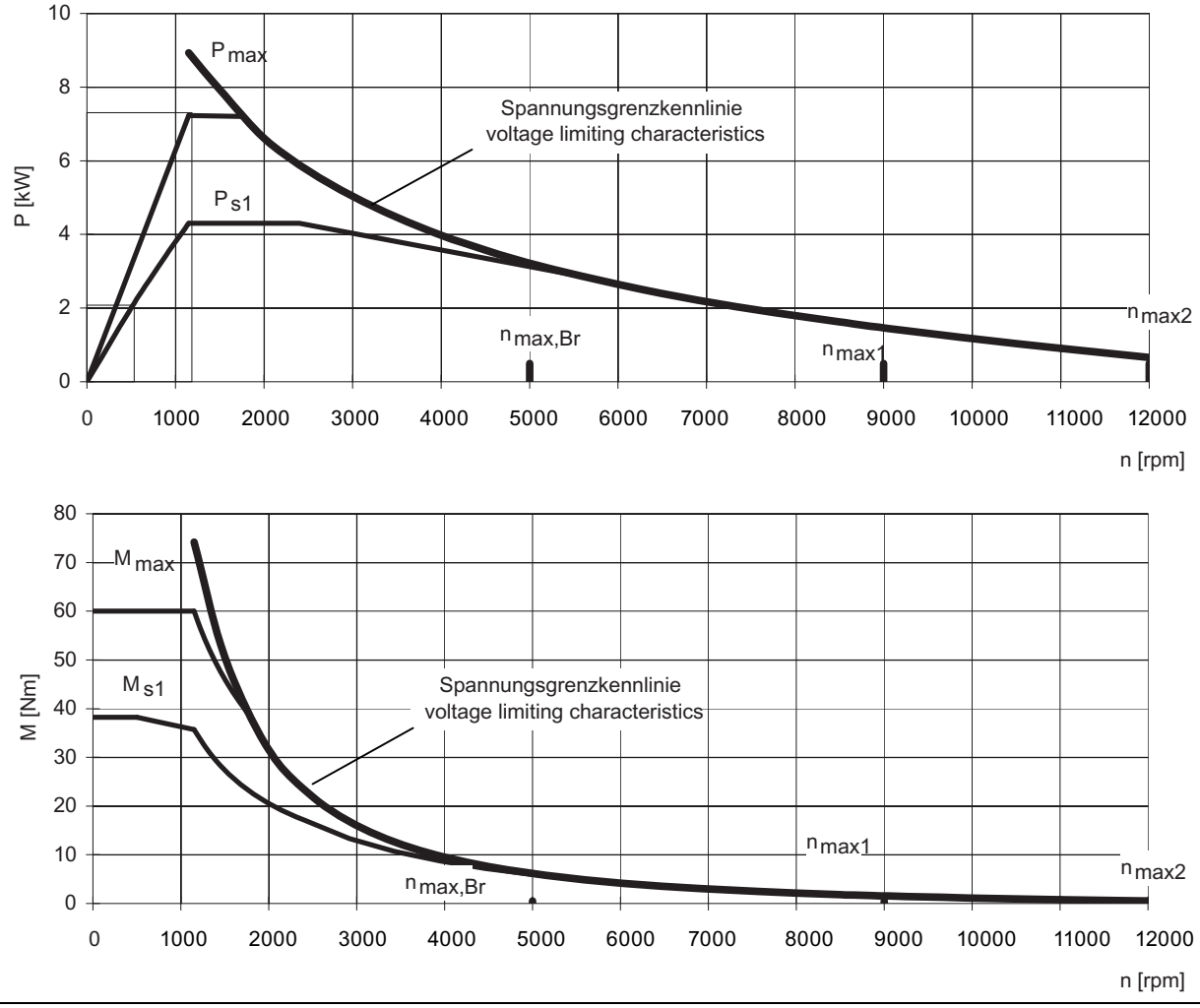
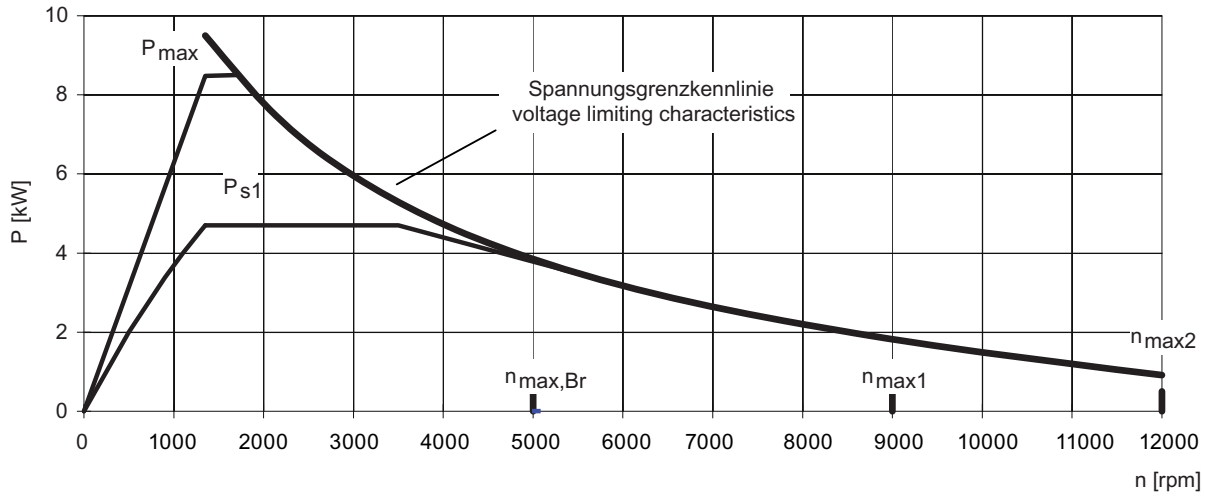


Tabella 4- 57 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8103-□□D□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 4,7 | 33 | 9,7 | 9000 | 12000 | - | 5000 | 3500 | 60 | 17 | 38 | 11 |



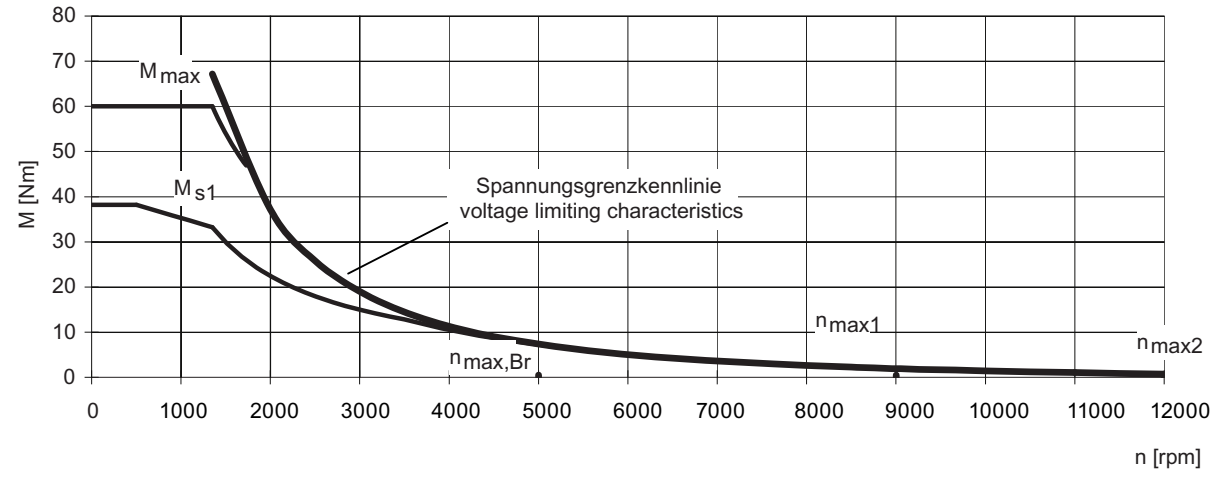
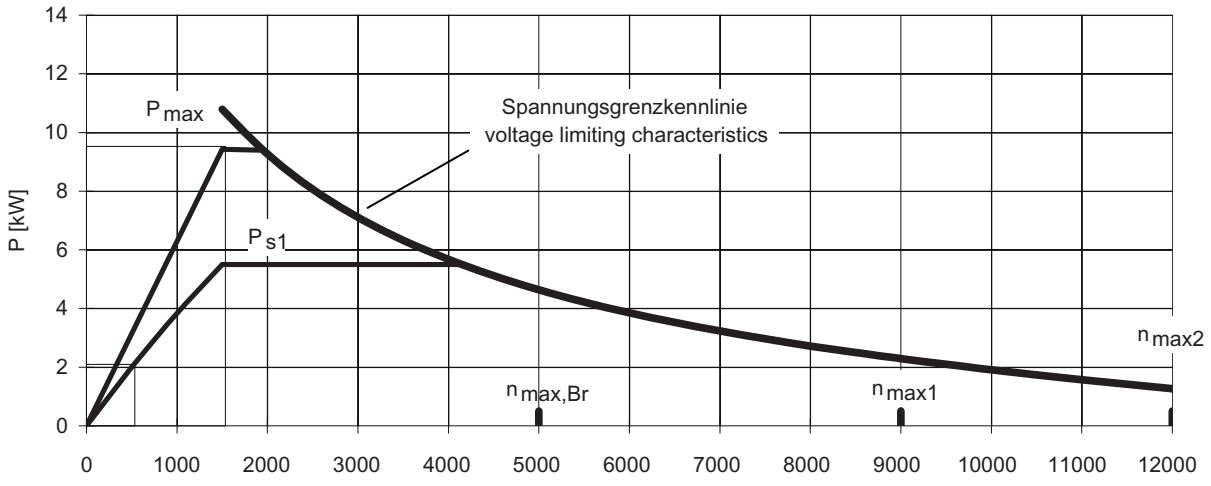



Tabella 4- 58 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8103-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 5,5 | 35 | 13,5 | 9000 | 12000 | - | 5000 | 4200 | 60 | 23 | 38 | 14 |



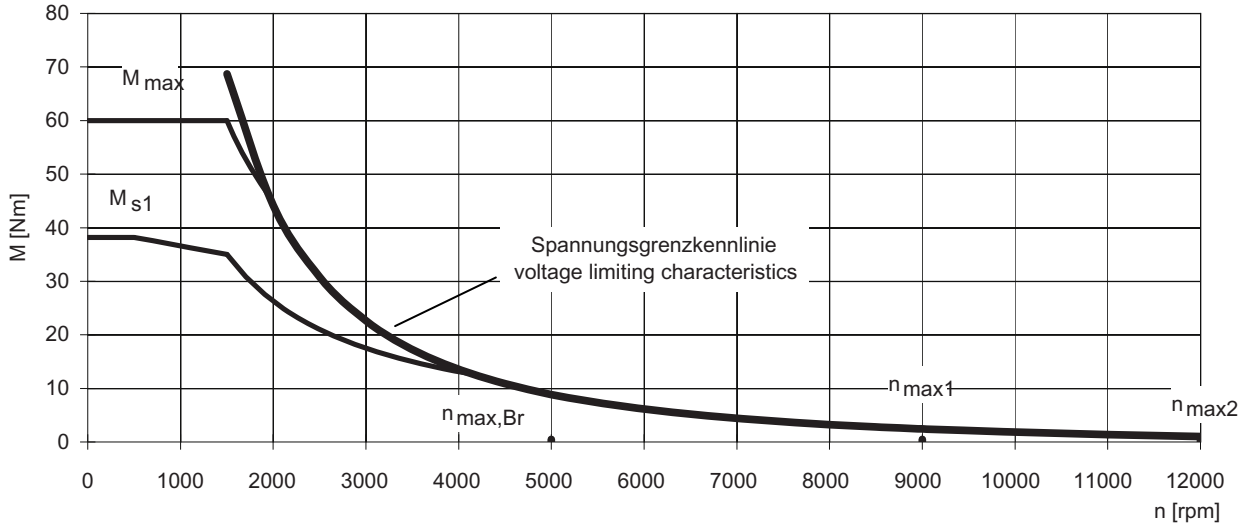
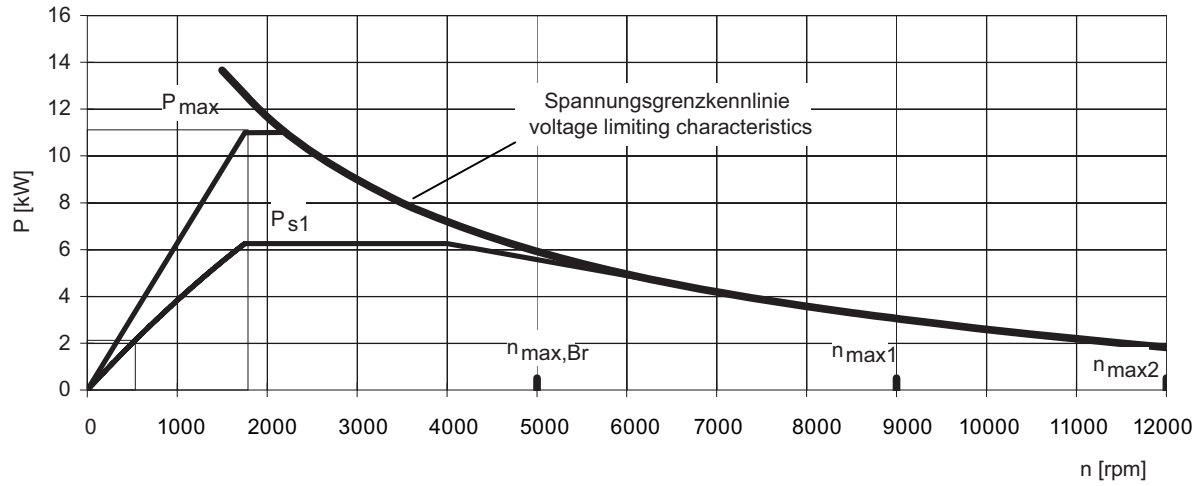



Tabella 4- 59 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8103-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 6,3 | 34 | 13,1 | 9000 | 12000 | - | 5000 | 4000 | 60 | 23 | 38 | 14 |
| 1500 | 5,5 | 35 | 13,5 | | | | | 5200 | | | | |



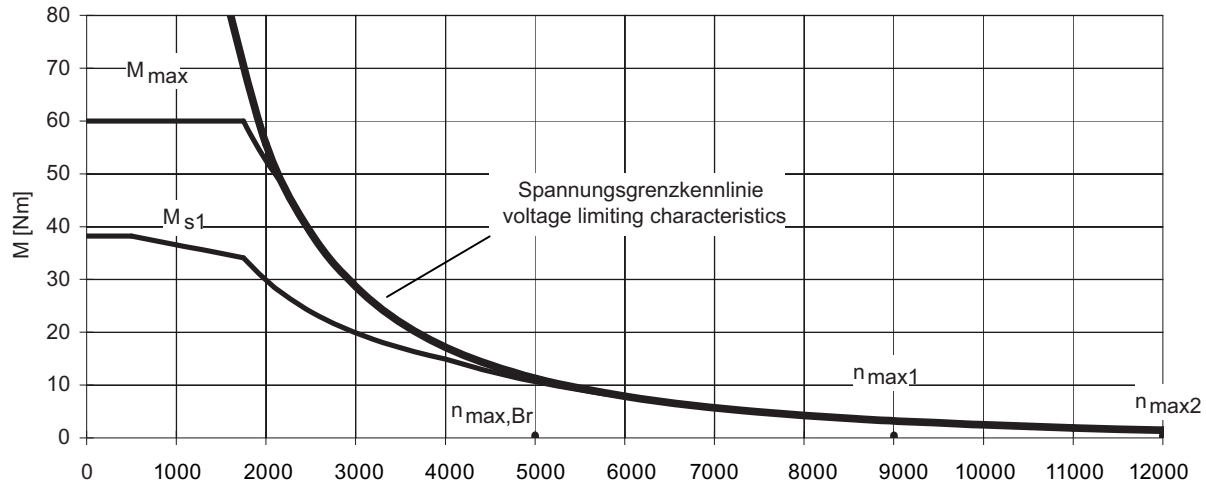



Tabella 4- 60 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8103-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 7,0 | 33 | 12,7 | 9000 | 12000 | - | 5000 | 4100 | 60 | 23 | 38 | 14 |

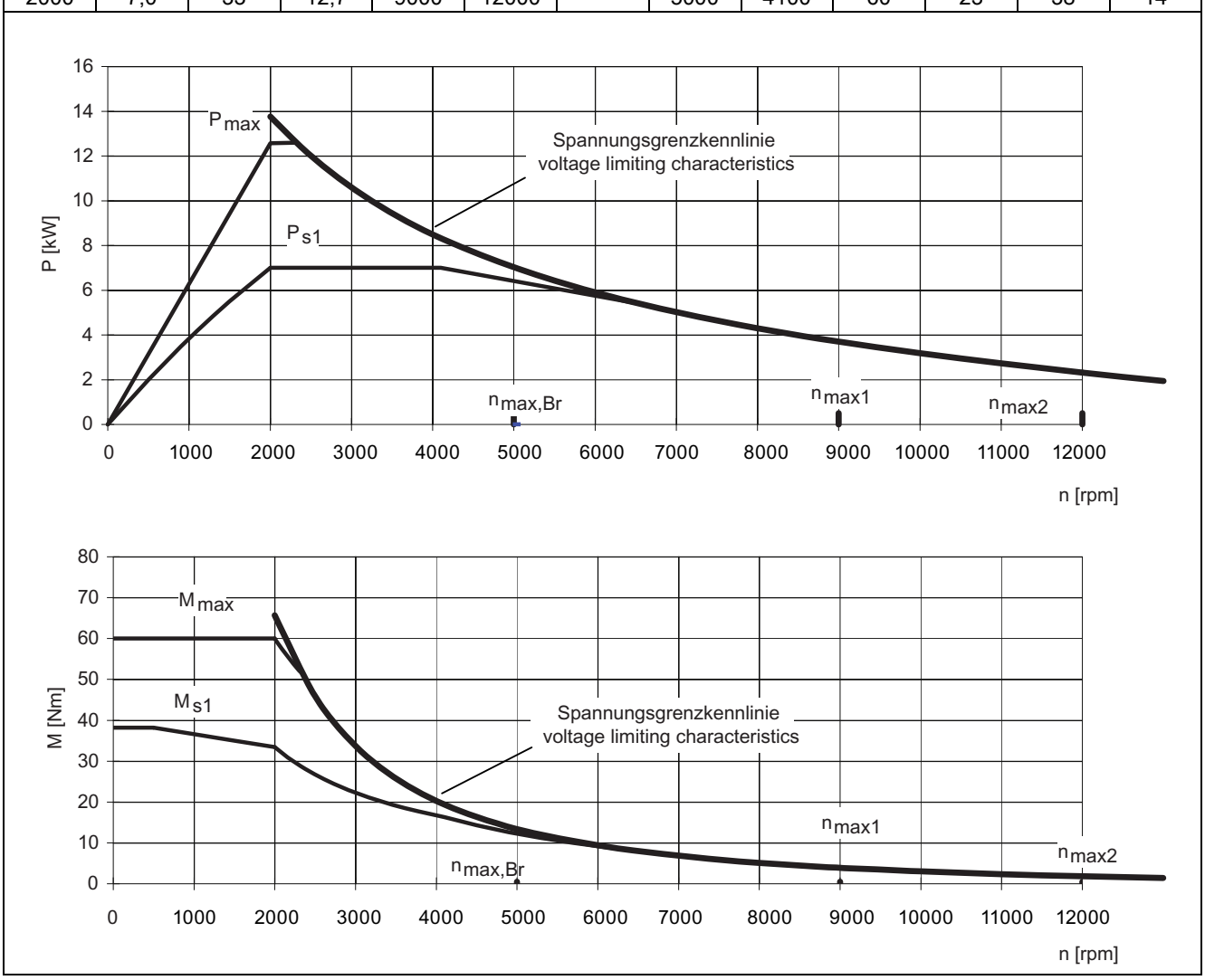
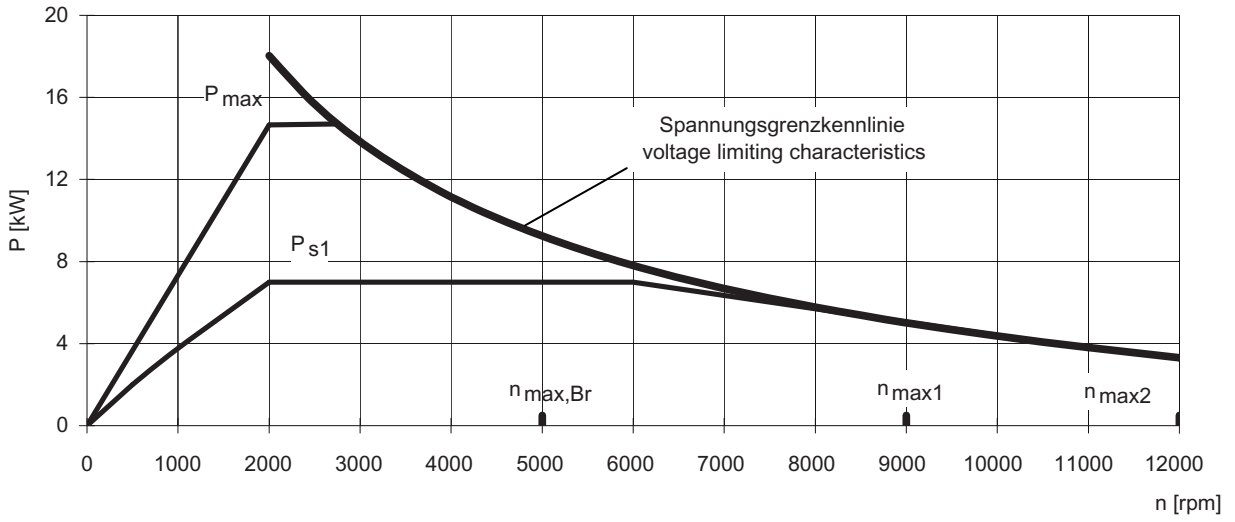


Tabella 4- 61 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8103-□□G□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 7,0 | 33 | 17,5 | 9000 | 12000 | - | 5000 | 6000 | 70 | 38 | 38 | 19 |



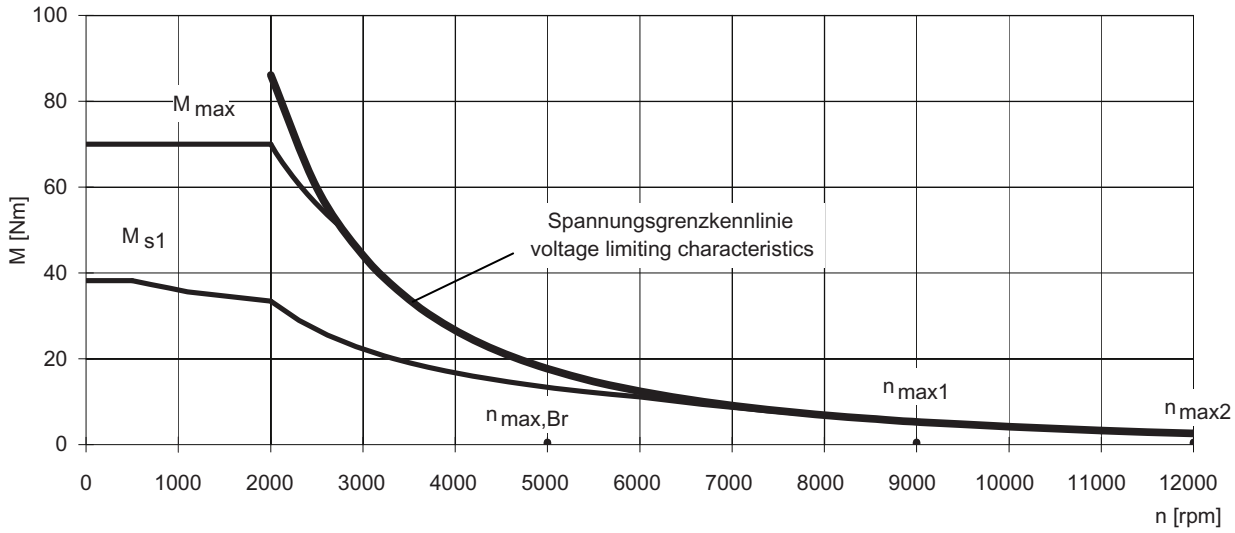
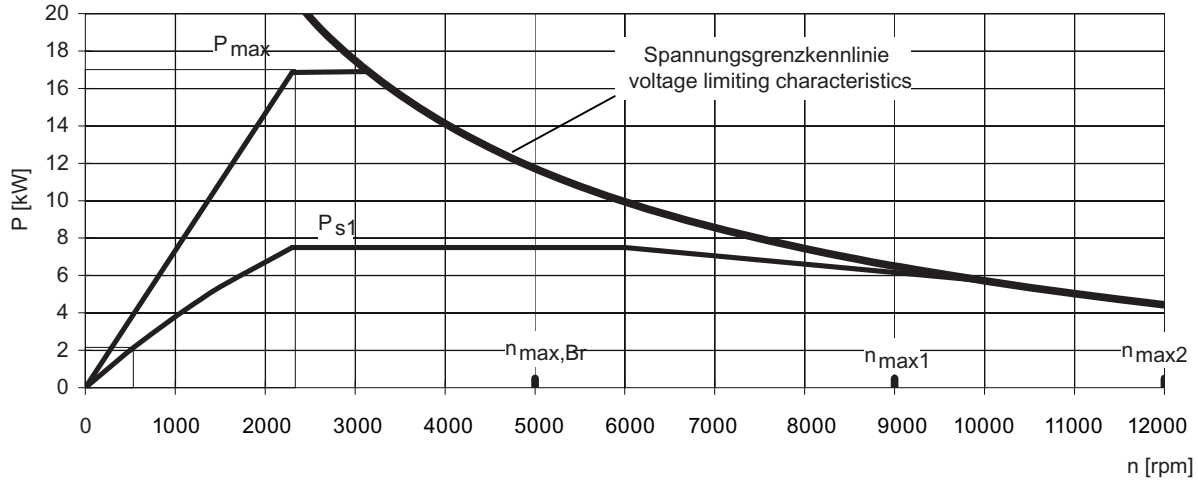



Tabella 4- 62 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8103-□□G□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 7,5 | 31 | 17,0 | 9000 | 12000 | - | 5000 | 6000 | 70 | 38 | 38 | 19 |
| 2000 | 7,0 | 33 | 17,5 | | | | | 7200 | | | | |



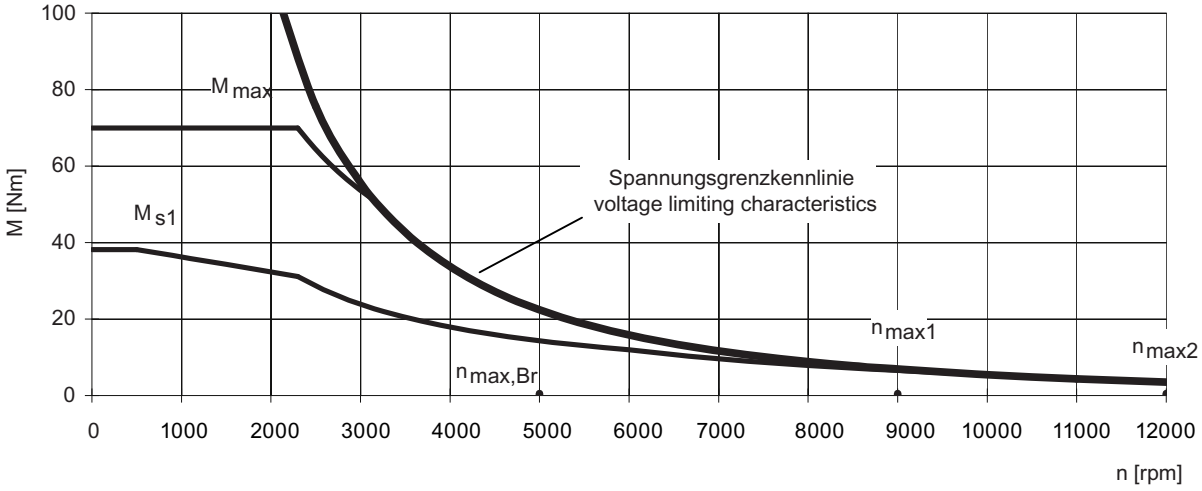
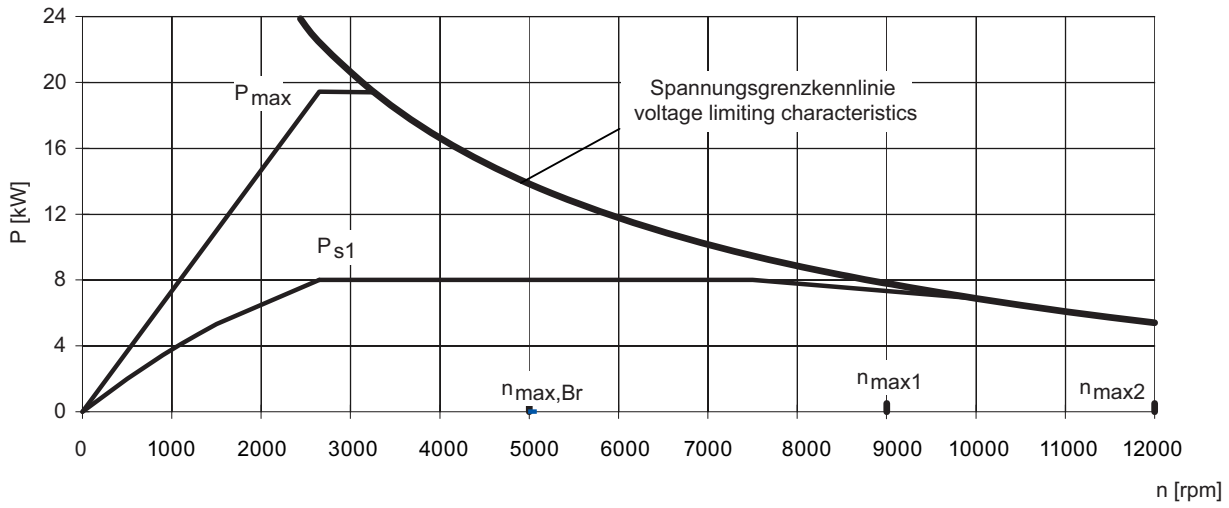



Tabella 4- 63 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8103-□□G□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 8,0 | 29 | 16,0 | 9000 | 12000 | - | 5000 | 7500 | 70 | 38 | 38 | 19 |



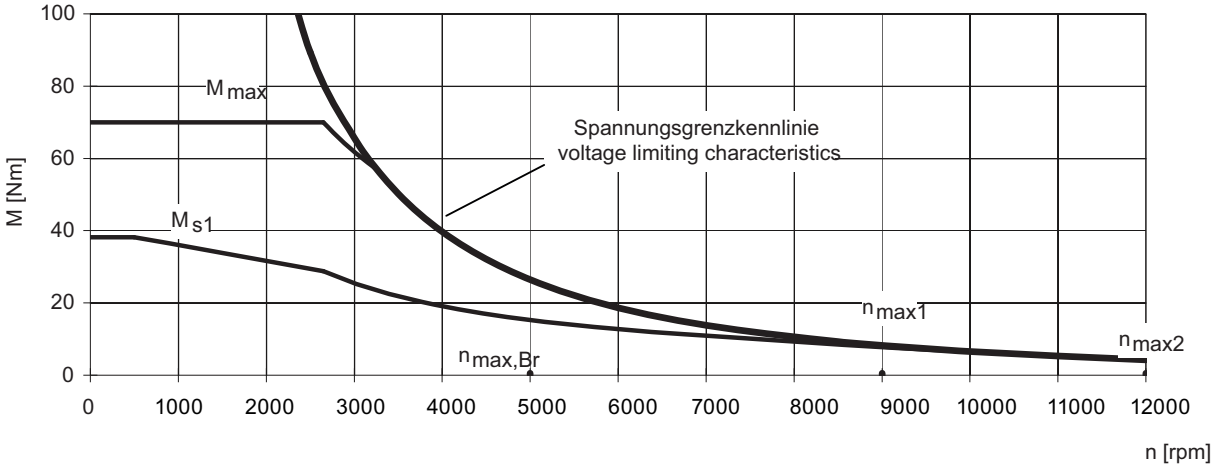



Tabella 4- 64 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8103-□□M□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3000 | 8,4 | 27 | 25,7 | 9000 | 12000 | 18000 | 5000 | 14250 | 100 | 93 | 38 | 31 |

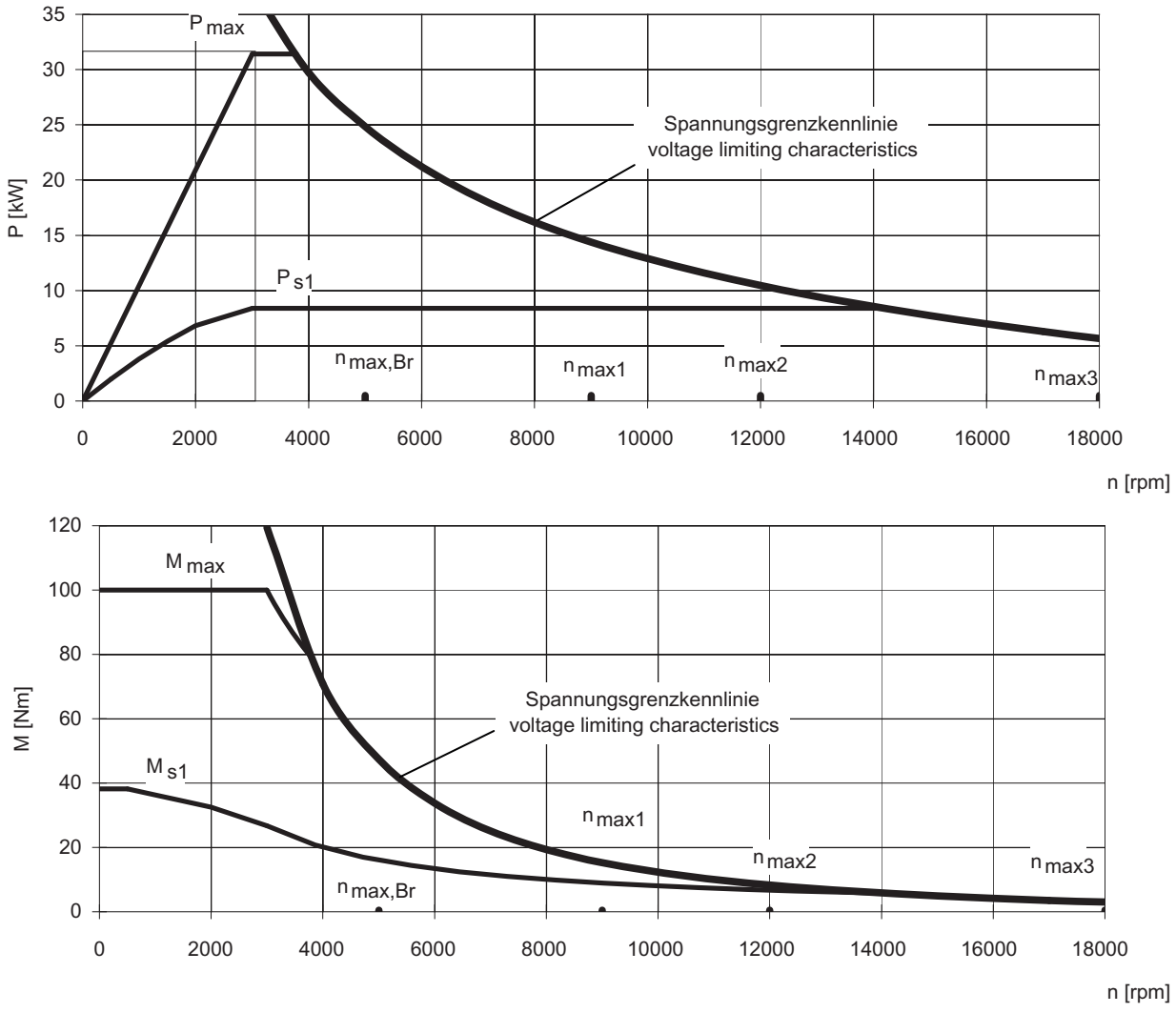
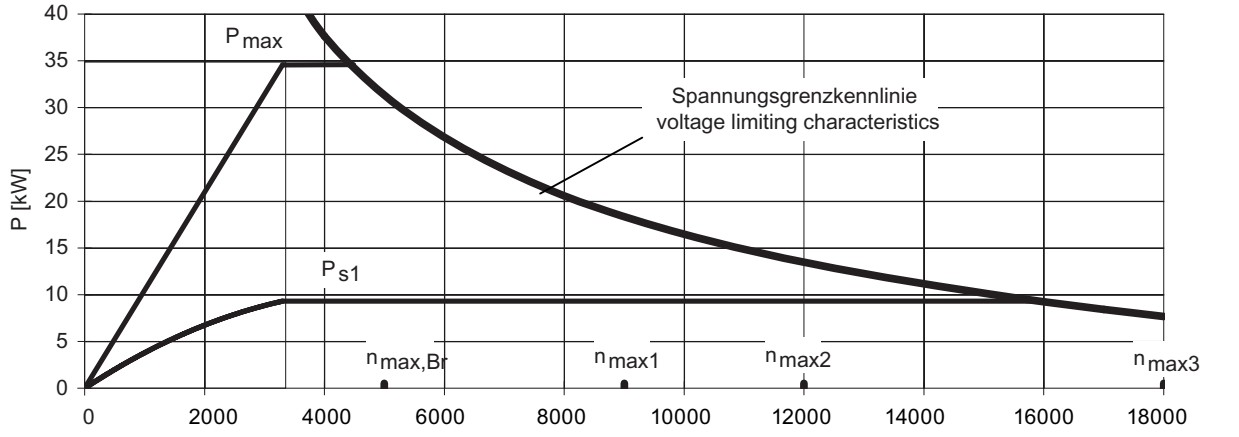


Tabella 4- 65 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8103-□□M□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3300 | 9,3 | 27 | 25,7 | 9000 | 12000 | 18000 | 5000 | 16000 | 100 | 93 | 38 | 31 |
| 3000 | 8,4 | 27 | 25,7 | | | | | 17100 | | | | |



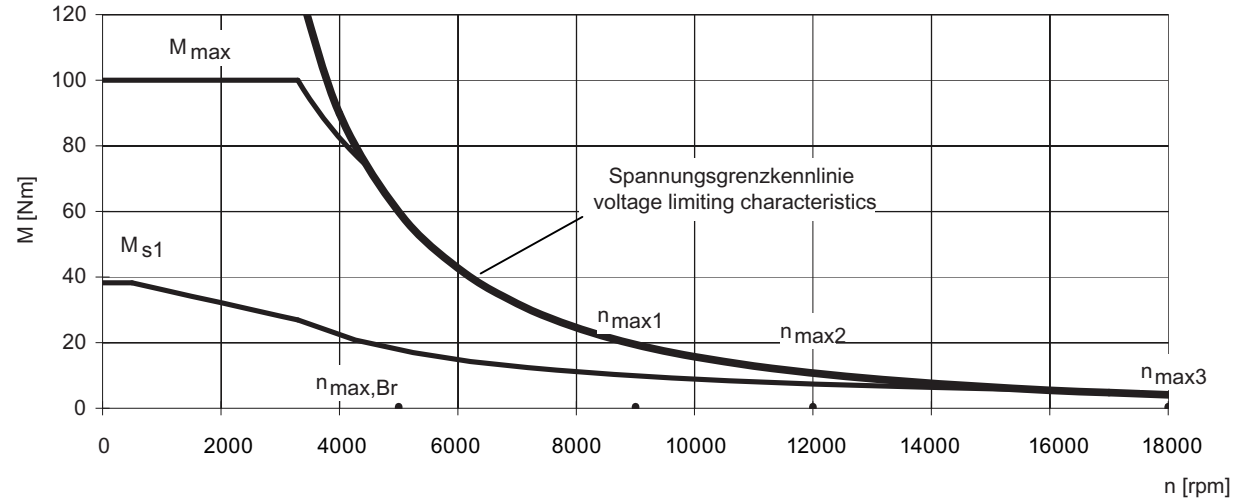
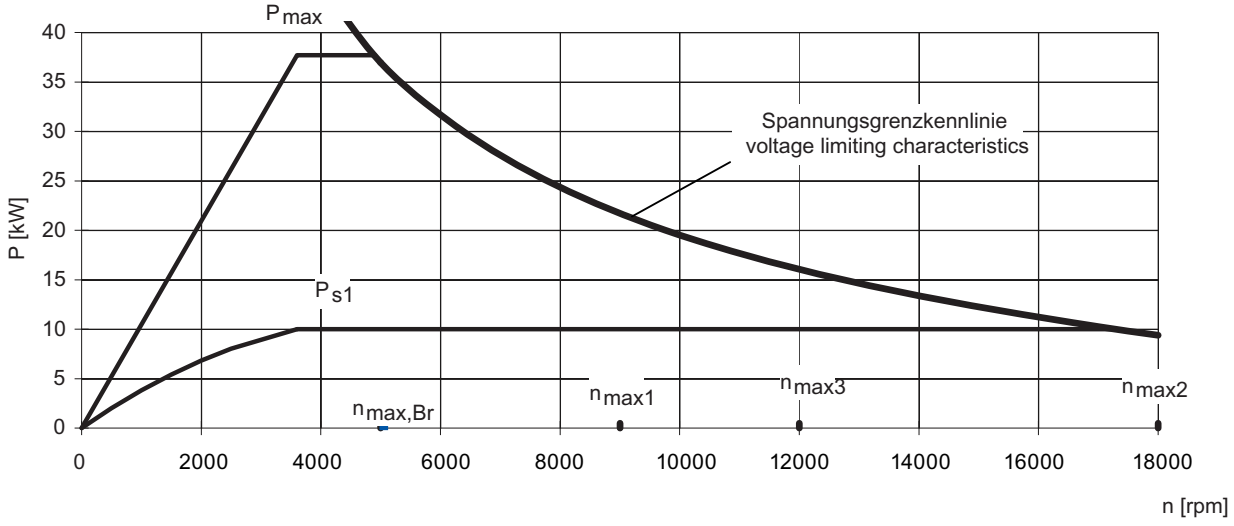



Tabella 4- 66 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8103-□□M□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3600 | 10,0 | 27 | 25,4 | 9000 | 12000 | 18000 | 5000 | 17650 | 100 | 93 | 38 | 31 |



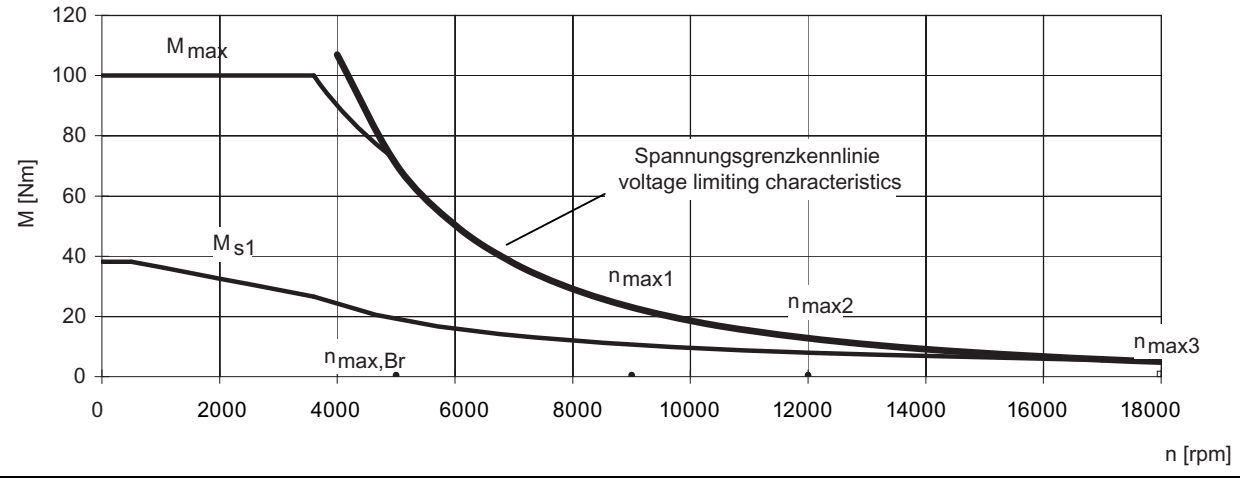



Tabella 4- 67 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8105-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 7,0 | 45 | 17,5 | 9000 | 12000 | - | 5000 | 5250 | 95 | 38 | 52 | 20 |

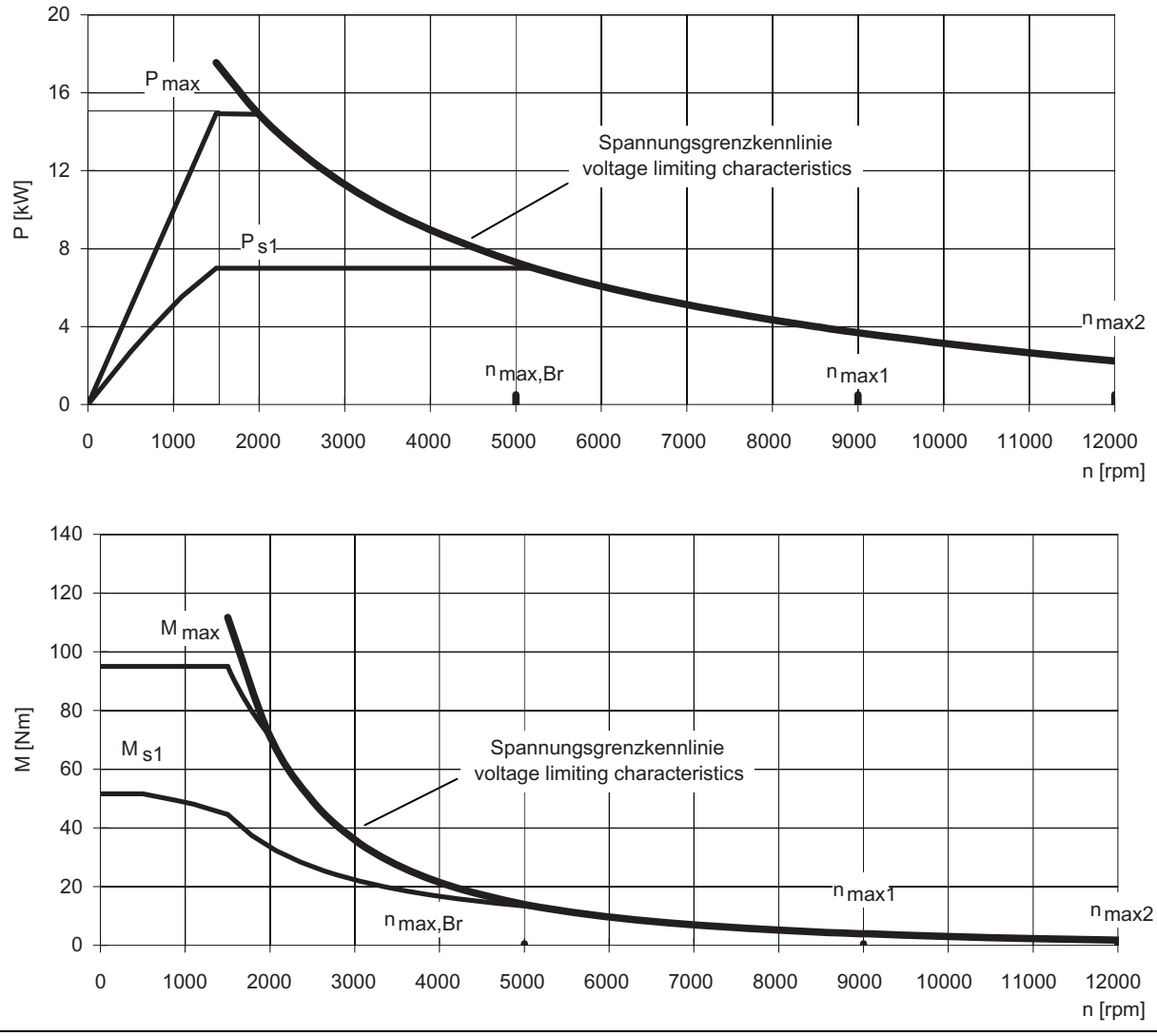
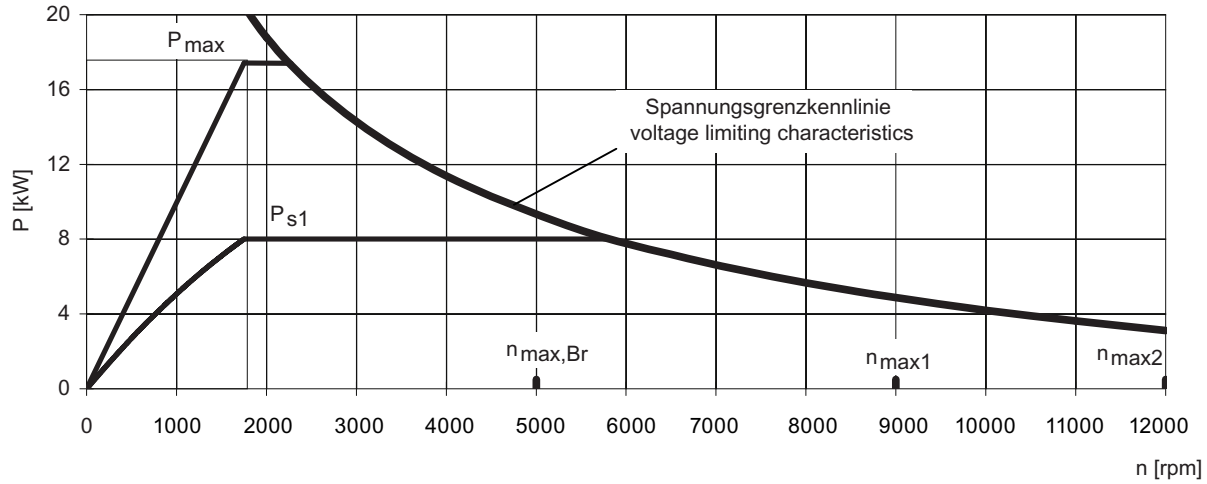


Tabella 4- 68 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8105-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 8,0 | 44 | 17,5 | 9000 | 12000 | - | 5000 | 5900 | 95 | 38 | 52 | 20 |
| 1500 | 7,0 | 45 | 17,5 | | | | | 6700 | | | | |



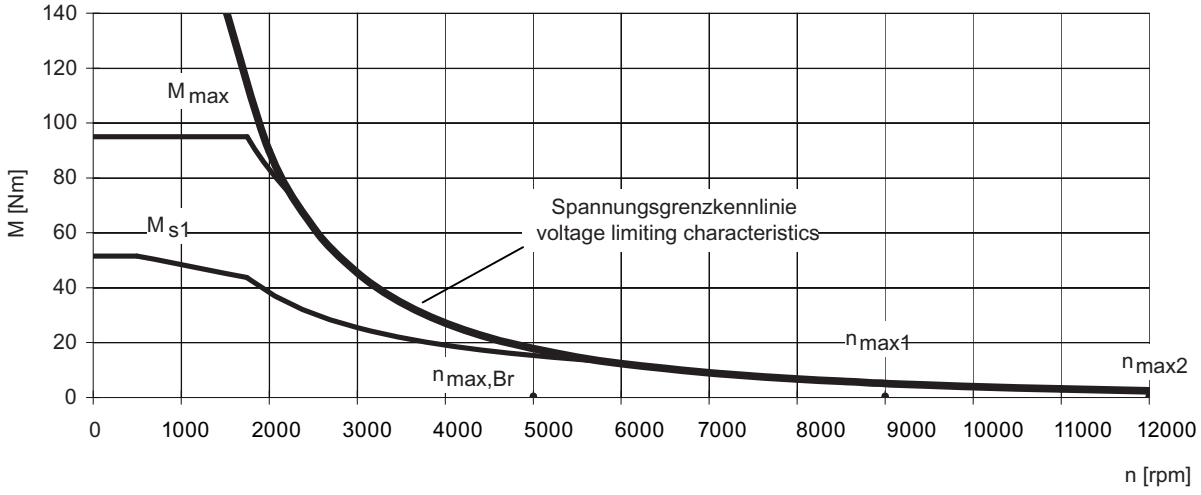
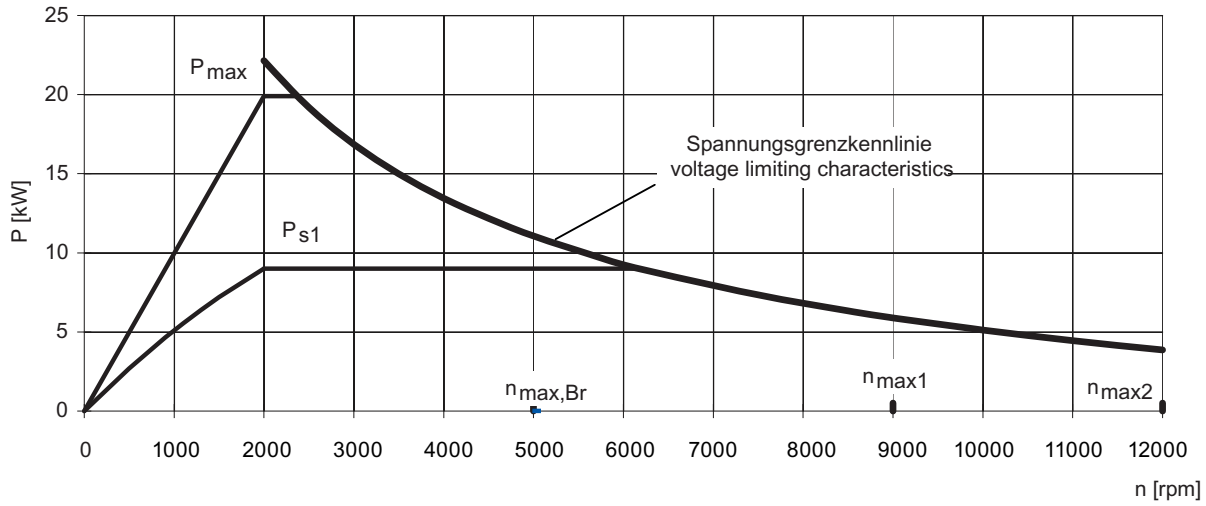



Tabella 4- 69 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8105-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 9,0 | 43 | 17,0 | 9000 | 12000 | - | 5000 | 6181 | 95 | 38 | 52 | 20 |



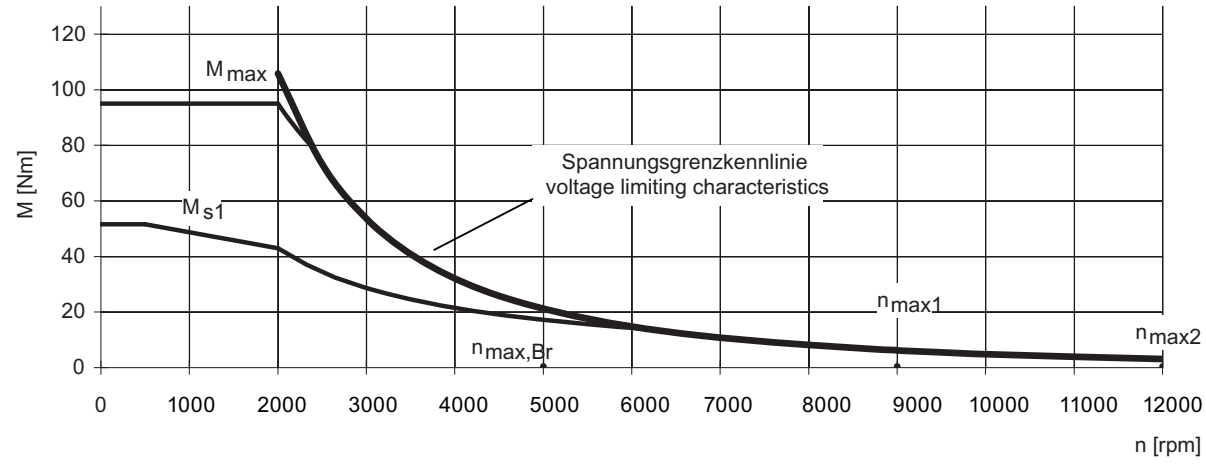
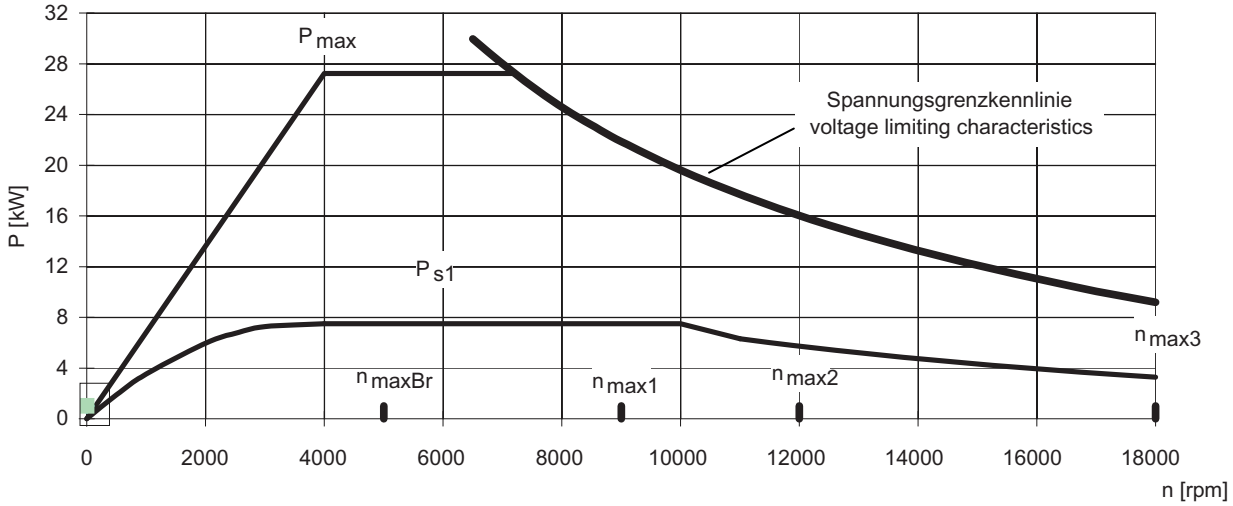



Tabella 4- 70 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8105-□□S□□, Collegamento Δ

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4000 | 7,5 | 18 | 24 | 9000 | 12000 | 18000 | 5000 | 10000 | 65 | 86 | 36 | 35 |



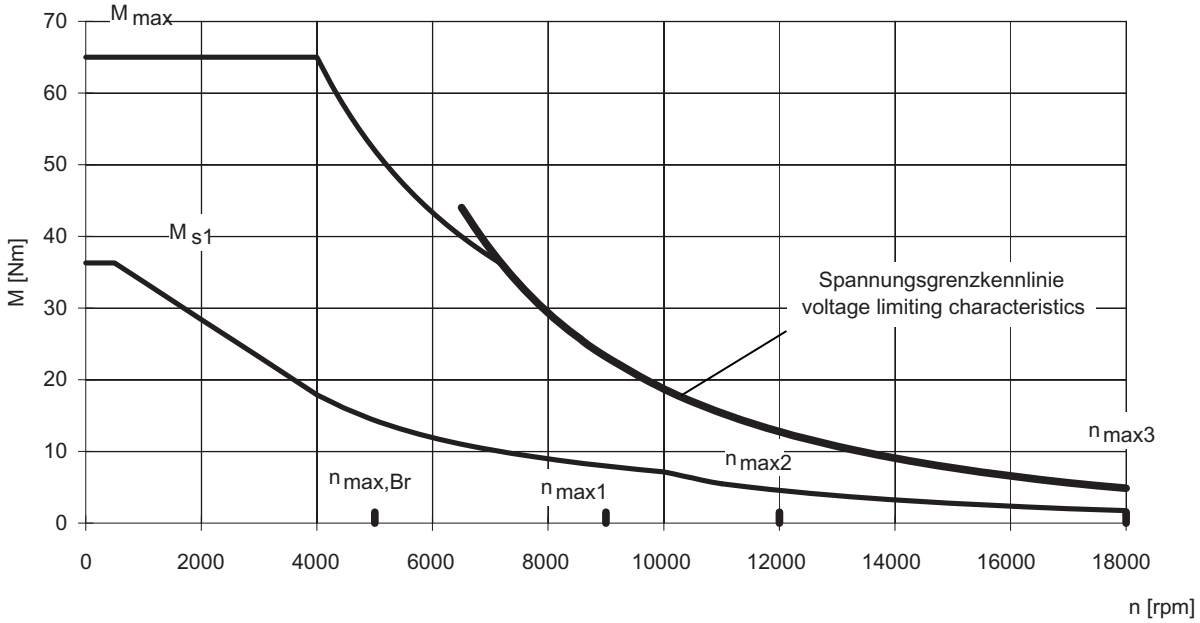
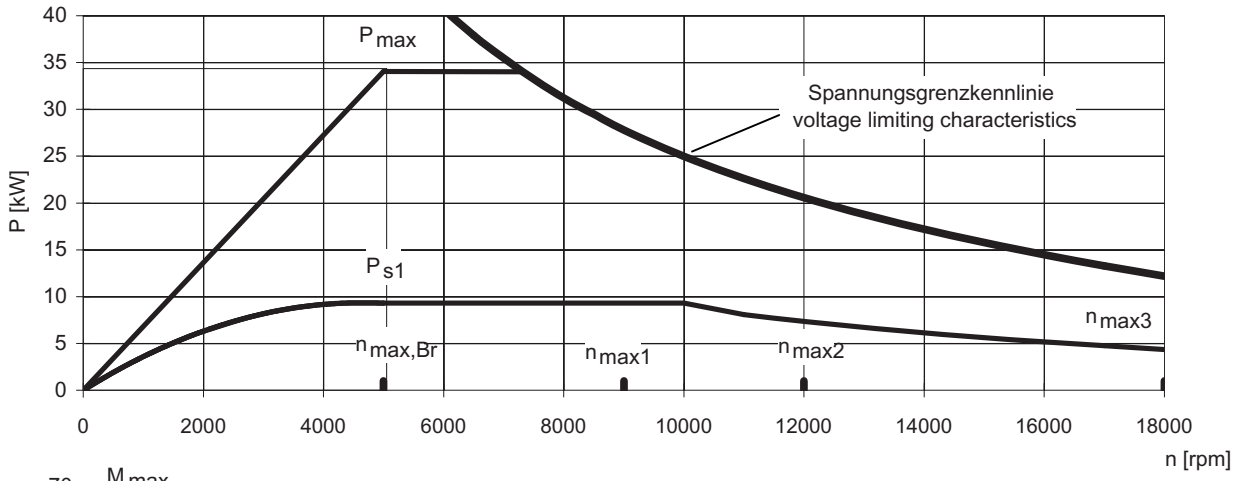



Tabella 4- 71 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8105-□□S□□, Collegamento Δ

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5000 | 9,3 | 18 | 24 | 9000 | 12000 | 18000 | 5000 | 10000 | 65 | 86 | 36 | 34 |
| 4000 | 7,5 | 18 | 24 | | | | | 11500 | | | | |



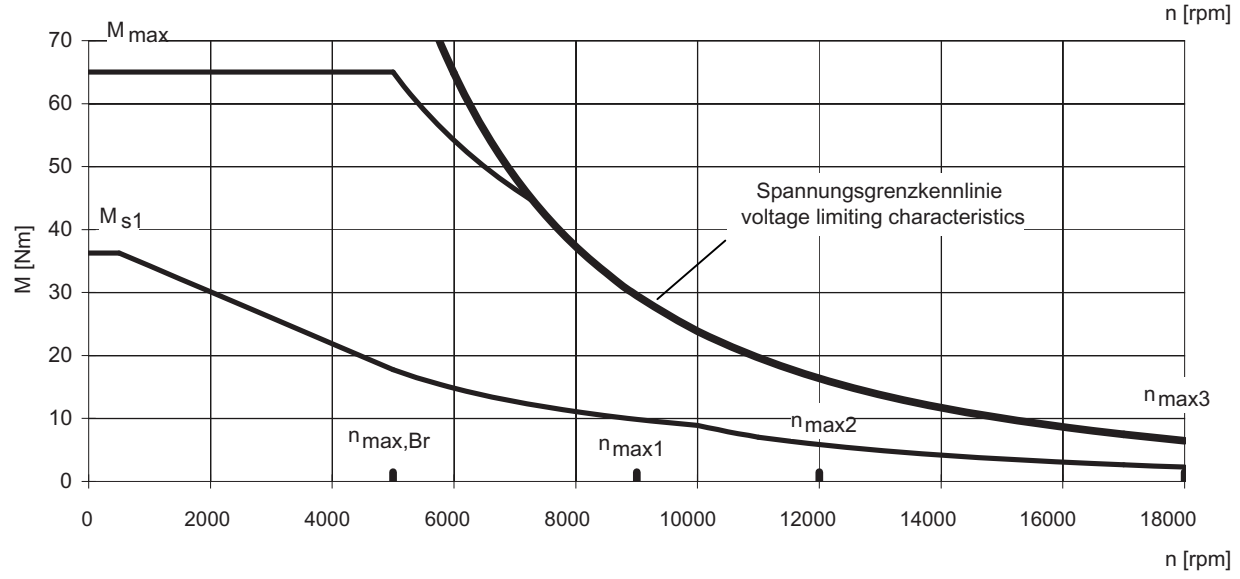
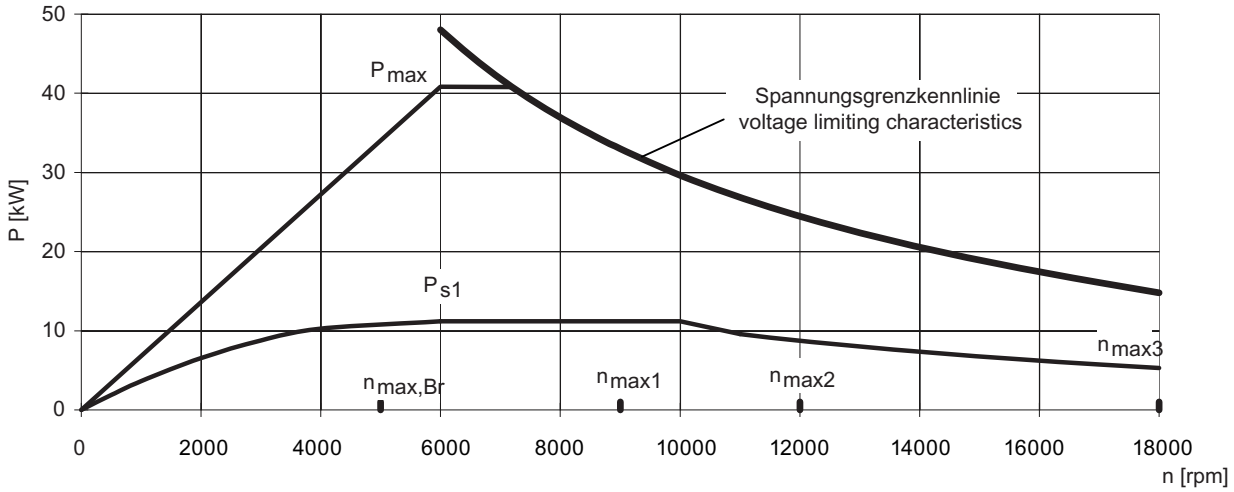



Tabella 4- 72 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8105-□□S□□, Collegamento Δ

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6000 | 11,2 | 18 | 22 | 9000 | 12000 | 18000 | 5000 | 10000 | 65 | 86 | 36 | 35 |



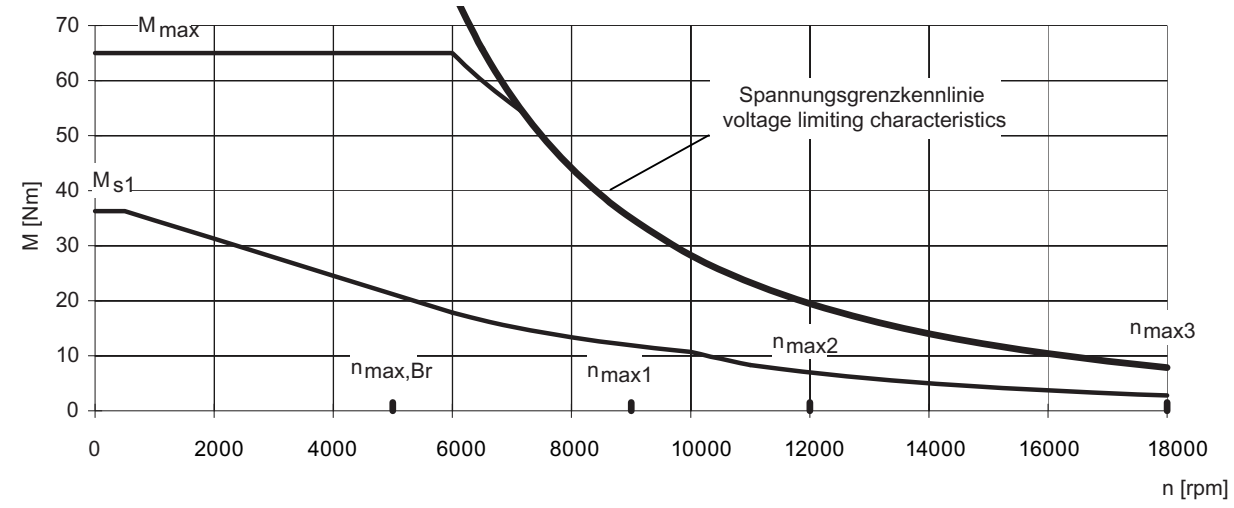
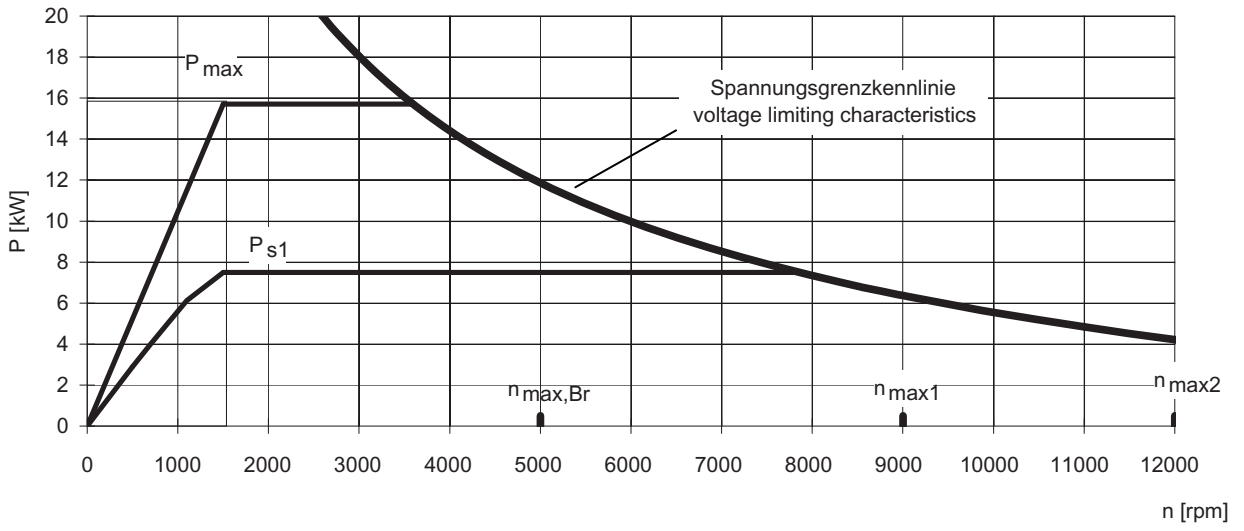



Tabella 4- 73 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8105-□□S□□, Collegamento a stella

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 7,5 | 48 | 23,0 | 9000 | 12000 | - | 5000 | 7900 | 100 | 46 | 55 | 25 |



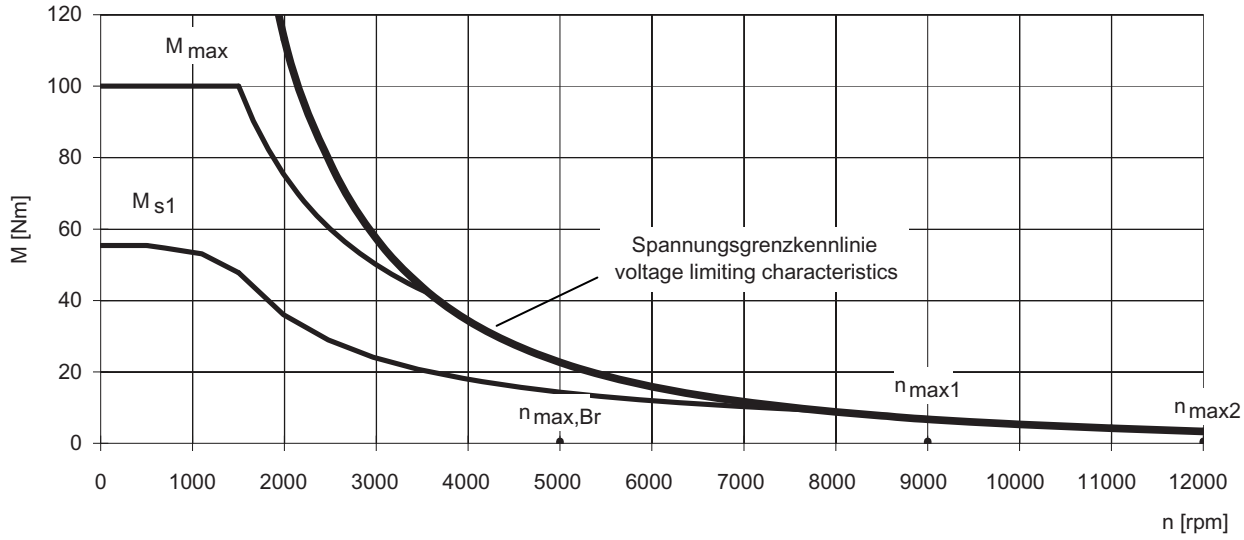



Tabella 4- 74 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8105-□□S□□, Collegamento a stella

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 10,0 | 48 | 23,0 | 9000 | 12000 | - | 5000 | 7650 | 100 | 46 | 55 | 25 |
| 1500 | 7,5 | 48 | 23,0 | | | | | 9800 | | | | |

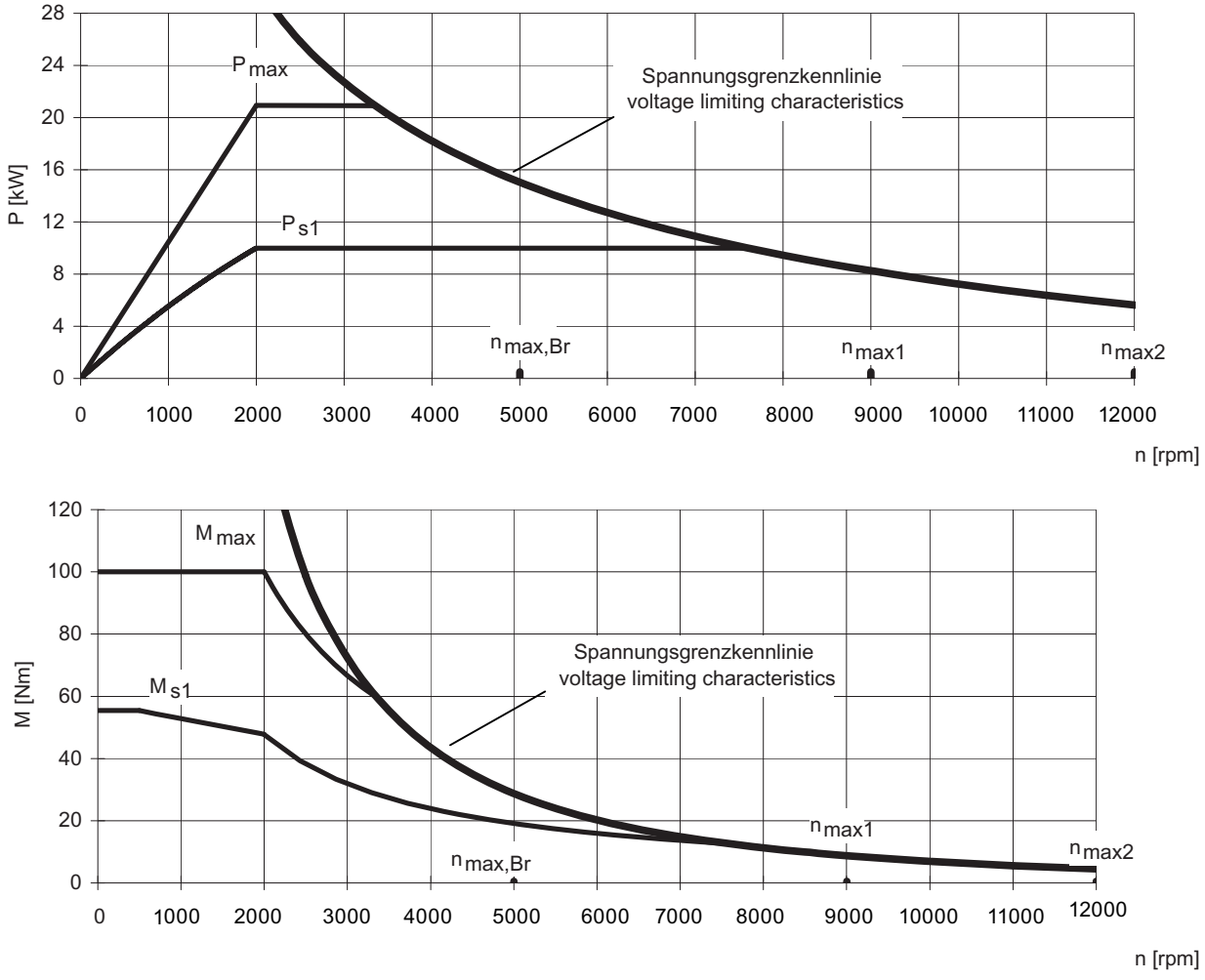
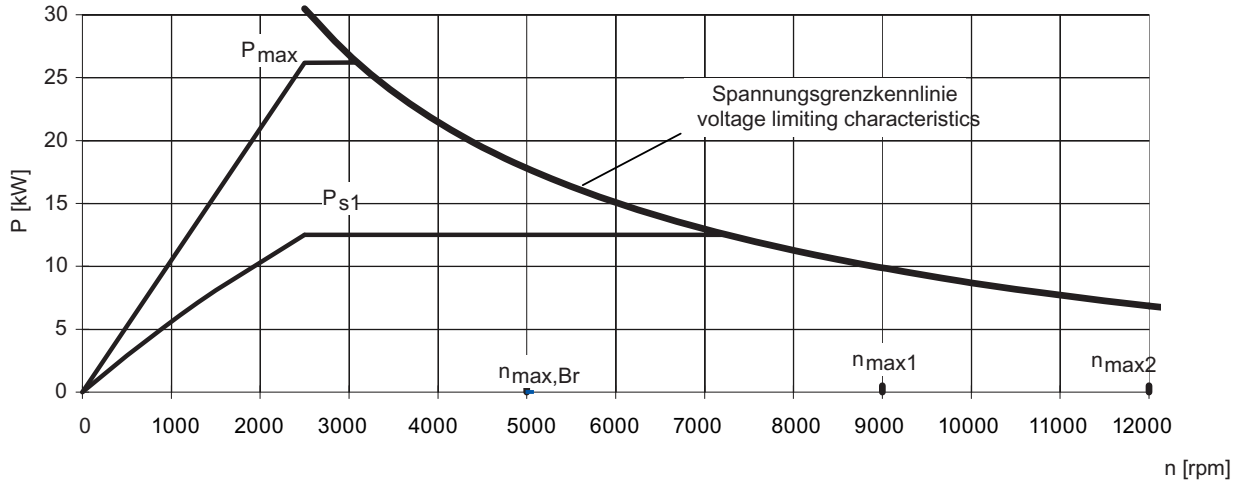


Tabella 4- 75 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8105-□□S□□, Collegamento a stella

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 12,5 | 48 | 23,0 | 9000 | 12000 | - | 5000 | 7300 | 100 | 46 | 55 | 25 |



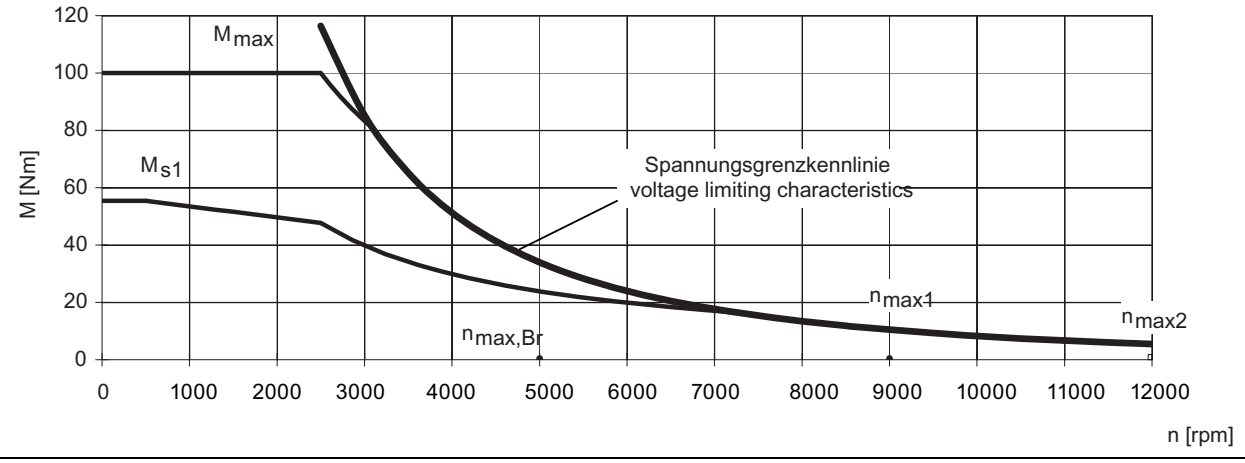
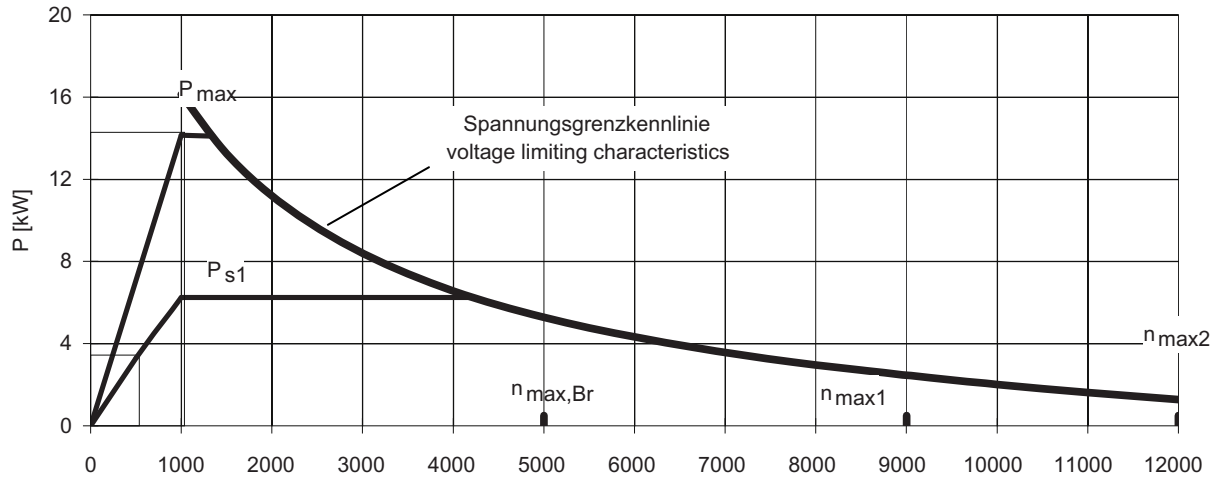



Tabella 4- 76 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8107-□□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 6,3 | 60 | 17,5 | 9000 | 12000 | - | 5000 | 4300 | 135 | 40 | 63 | 25 |



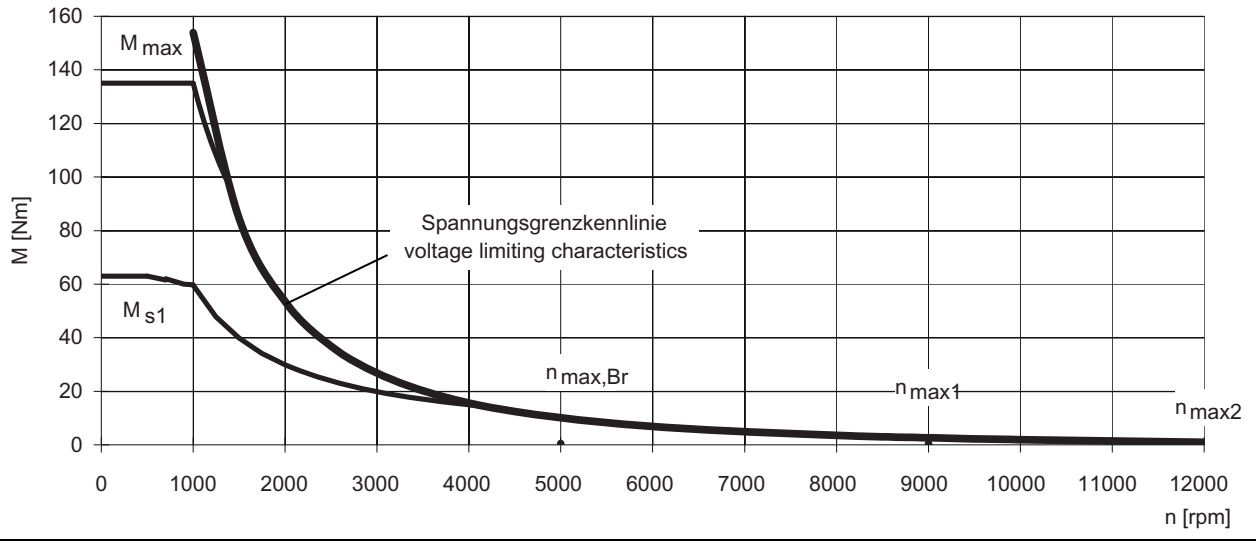
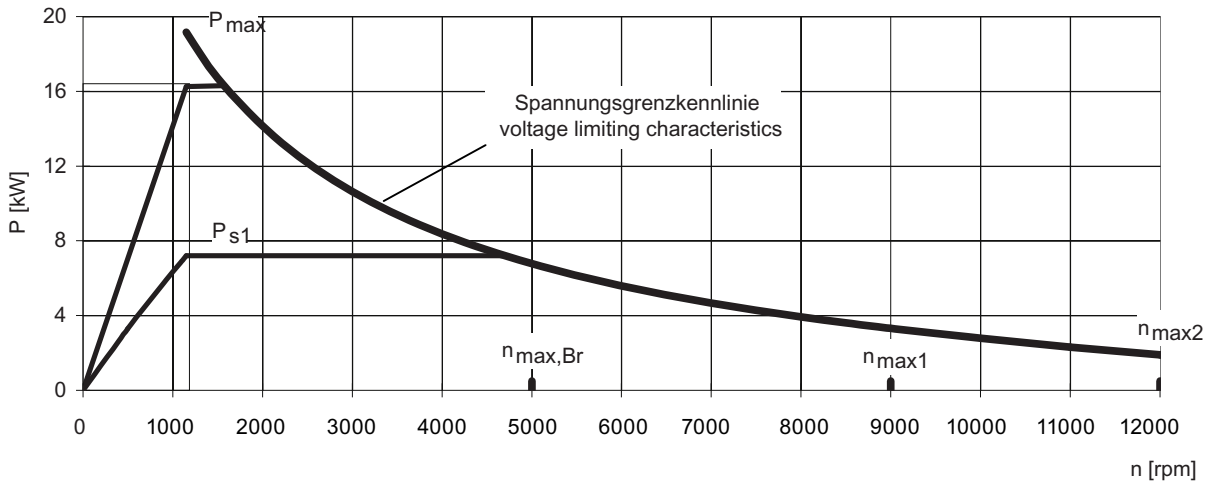



Tabella 4- 77 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8107-□□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 7,2 | 60 | 17,5 | 9000 | 12000 | - | 5000 | 4750 | 135 | 40 | 63 | 25 |
| 1000 | 6,3 | 60 | 17,5 | | | | | 5450 | | | | |



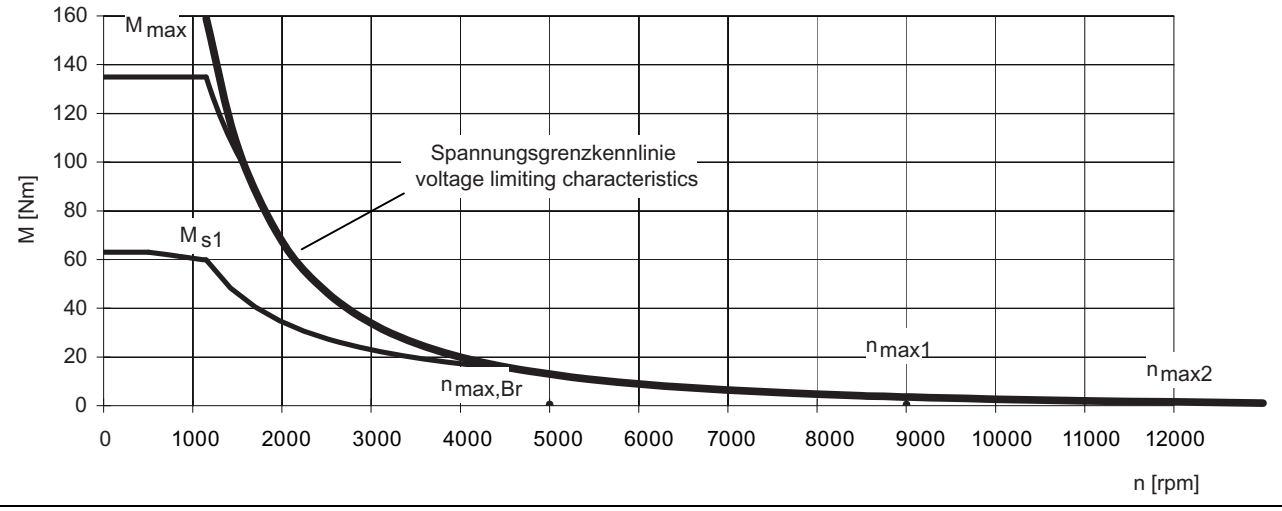
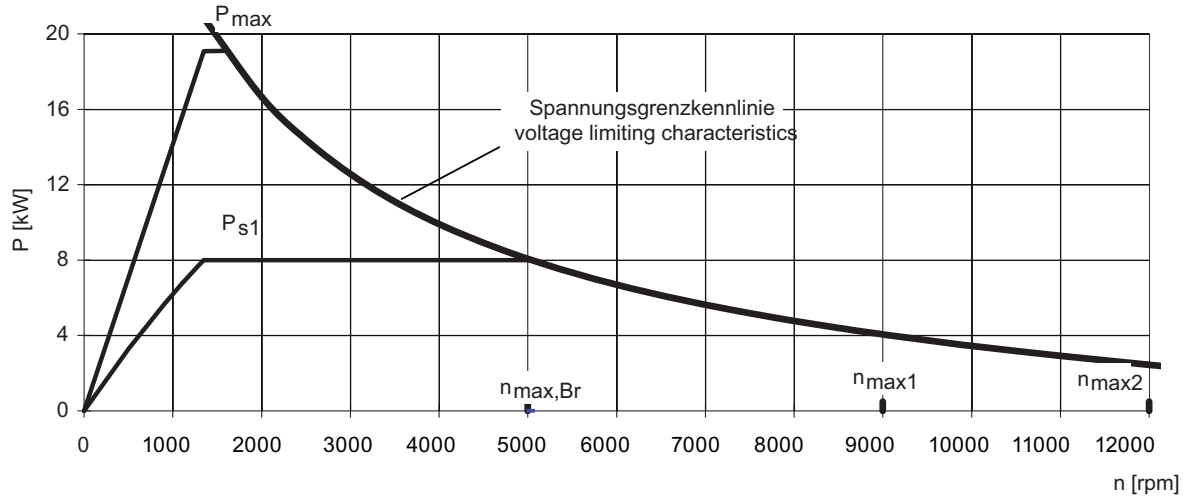



Tabella 4- 78 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8107-□□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 8,0 | 57 | 17,0 | 9000 | 12000 | - | 5000 | 5045 | 135 | 40 | 63 | 25 |



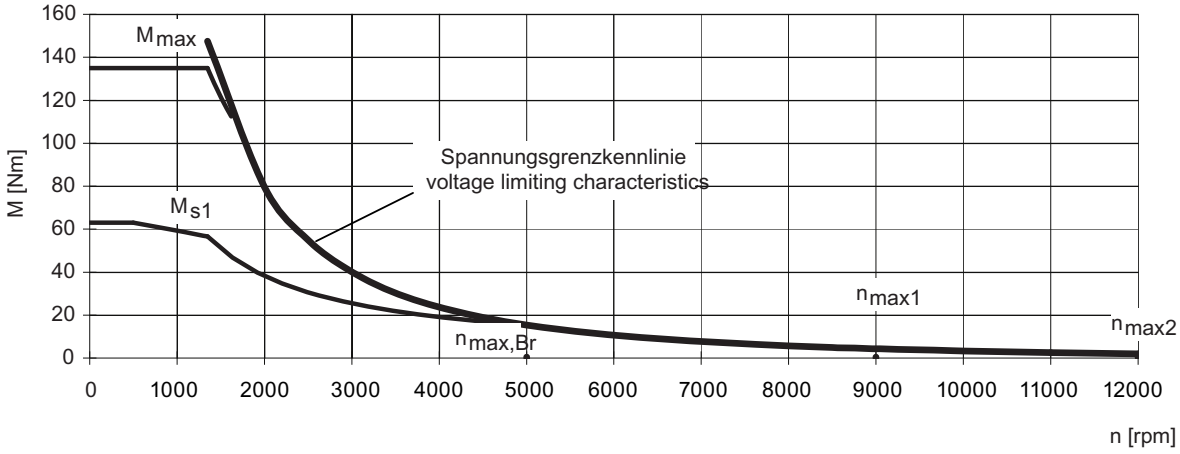



Tabella 4- 79 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8107-□□F□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 9,0 | 57 | 23,5 | 9000 | 12000 | - | 5000 | 4500 | 135 | 54 | 63 | 25 |

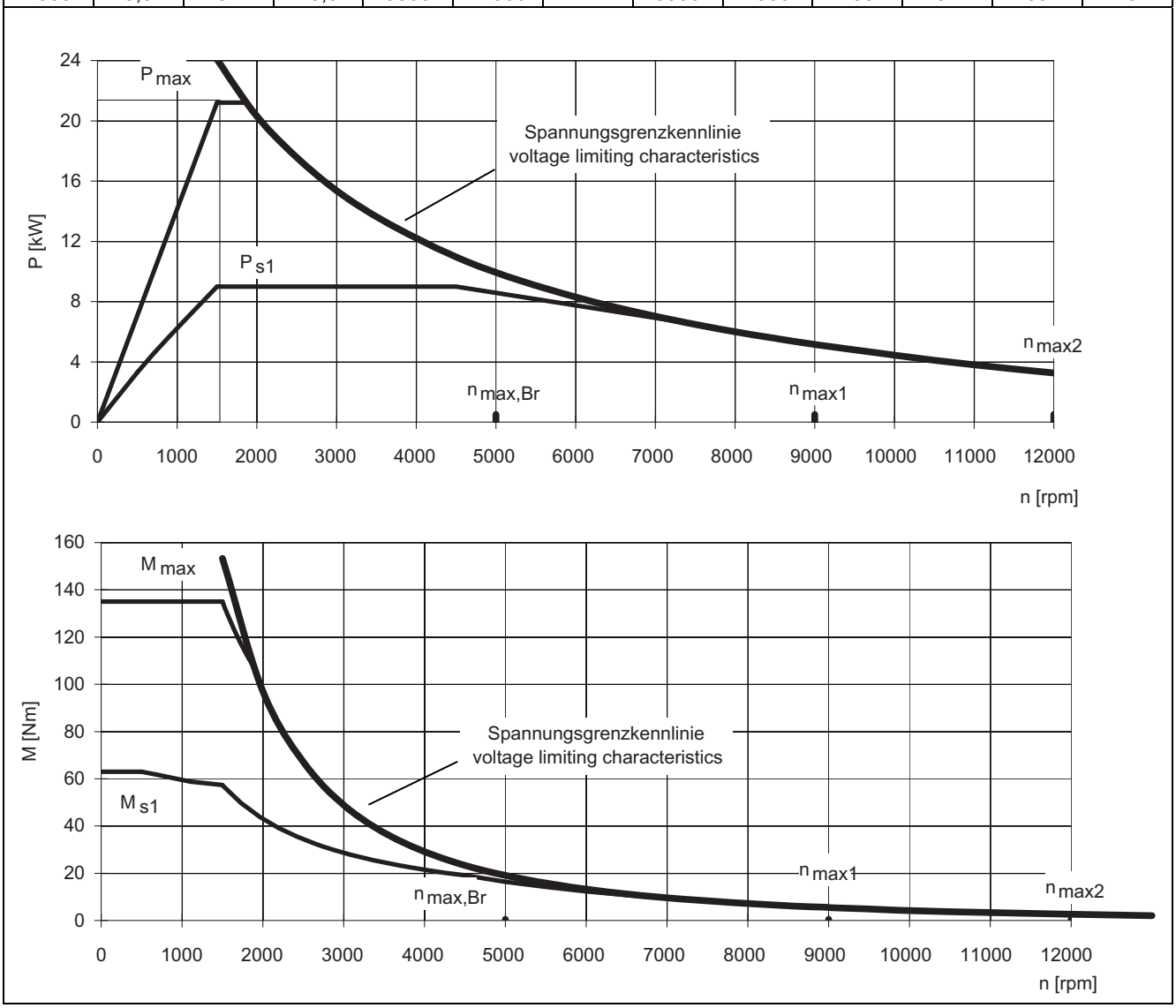
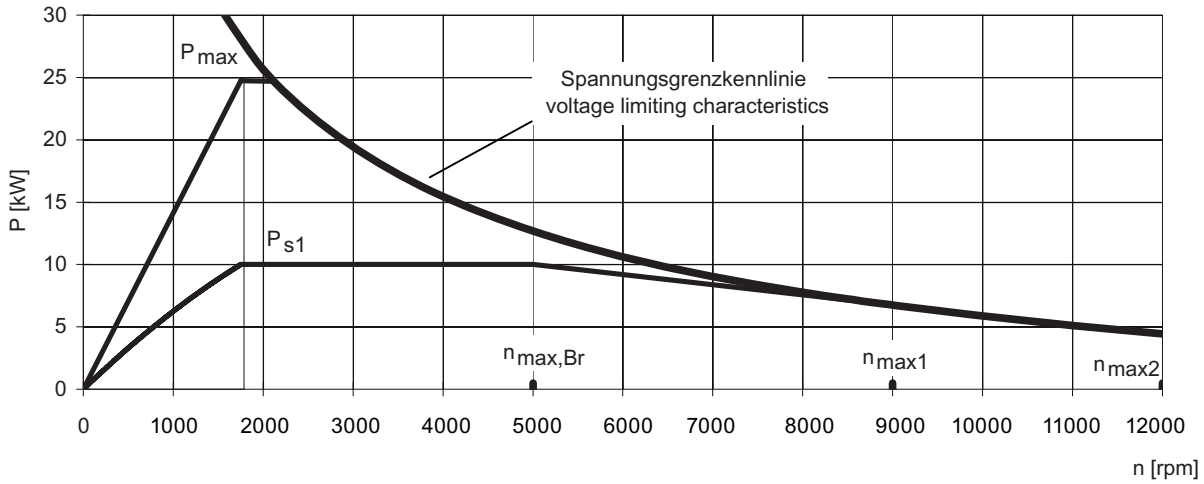


Tabella 4- 80 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8107-□□F□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 10,0 | 55 | 22,0 | 9000 | 12000 | - | 5000 | 5000 | 135 | 54 | 63 | 25 |
| 1500 | 9,0 | 57 | 23,5 | | | | | 6250 | | | | |



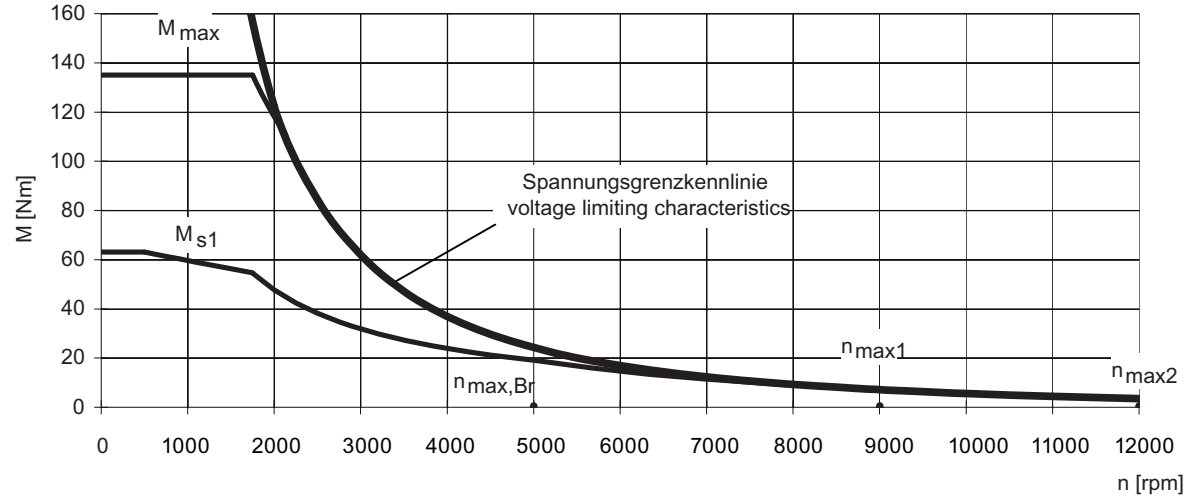
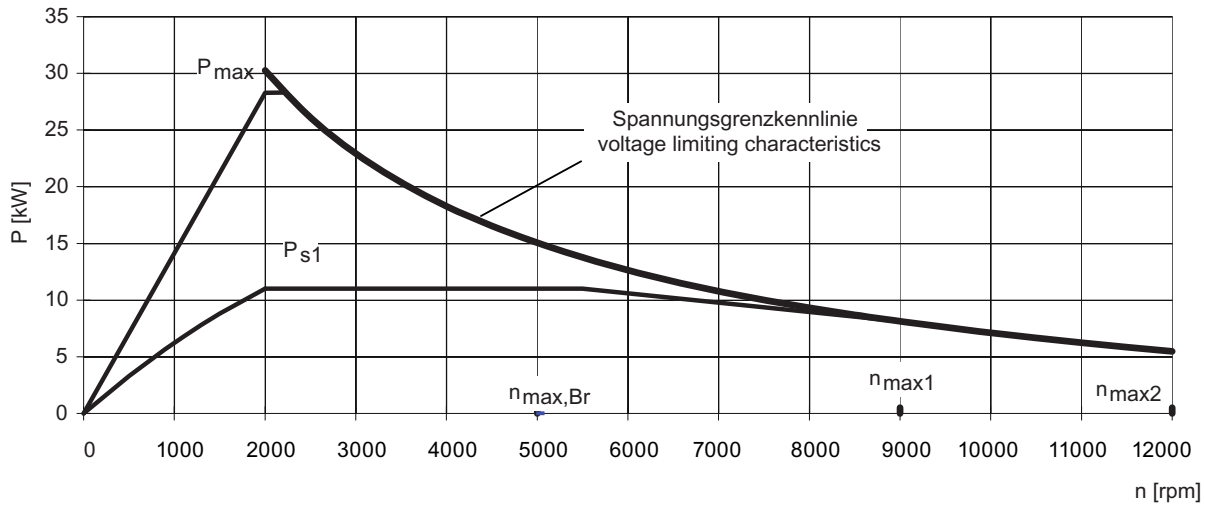



Tabella 4- 81 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8107-□□F□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 11,0 | 53 | 21,5 | 9000 | 12000 | - | 5000 | 5500 | 135 | 54 | 63 | 25 |



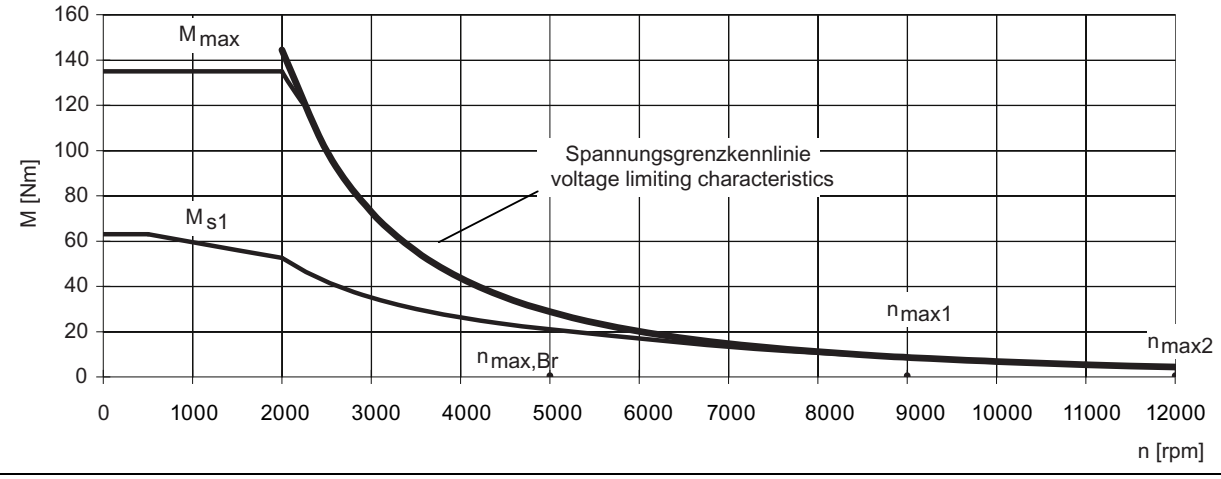
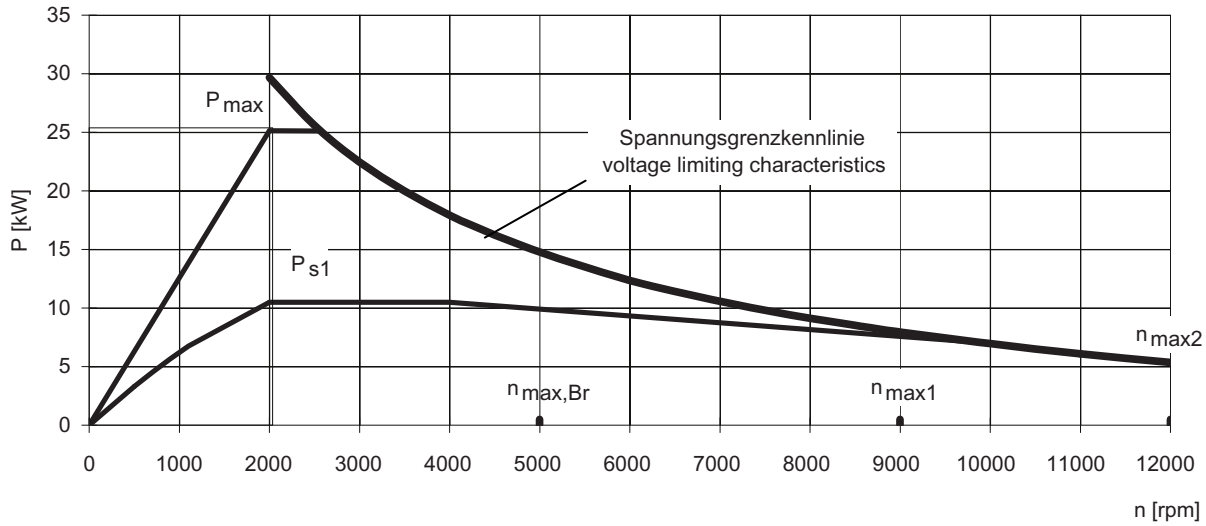



Tabella 4- 82 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8107-□□G□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 10,5 | 50 | 26,0 | 9000 | 12000 | - | 5000 | 4600 | 120 | 60 | 63 | 29 |



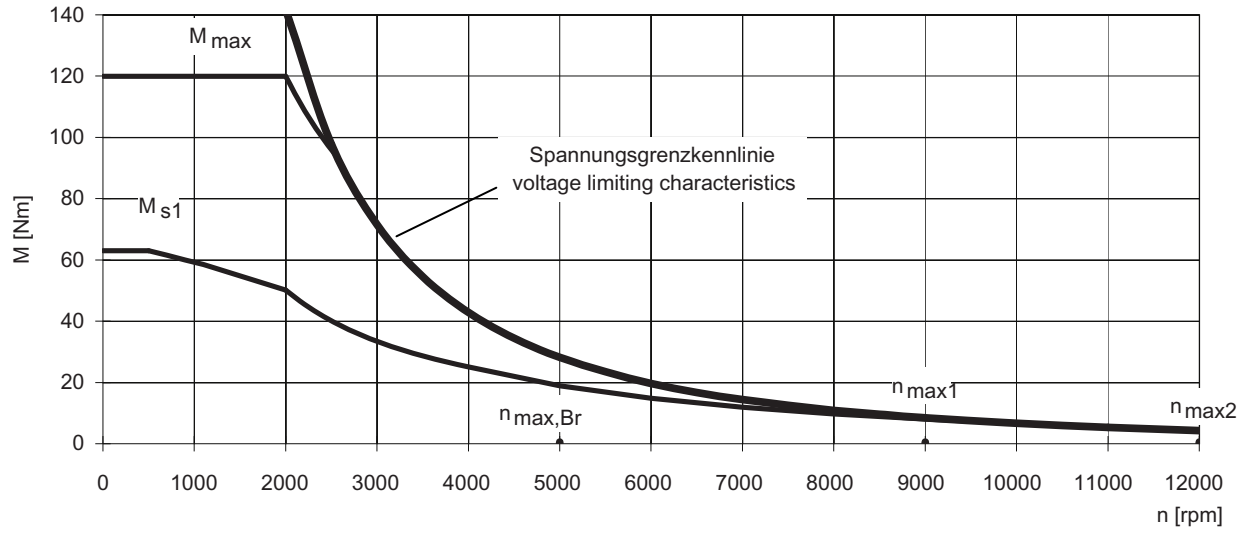
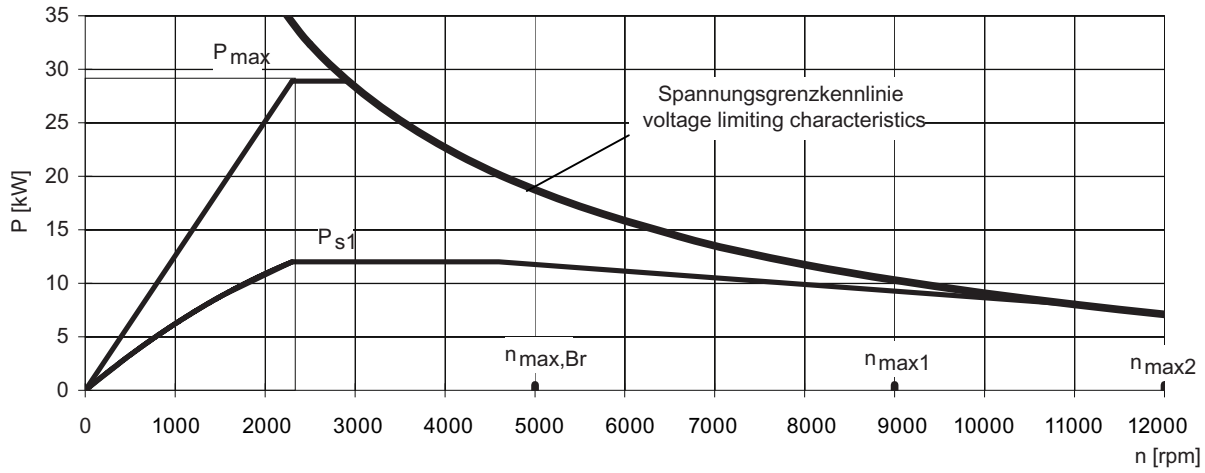



Tabella 4- 83 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8107-□□G□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 12,0 | 50 | 26,0 | 9000 | 12000 | - | 5000 | 4600 | 120 | 60 | 63 | 29 |
| 2000 | 10,5 | 50 | 26,0 | | | | | 7500 | | | | |



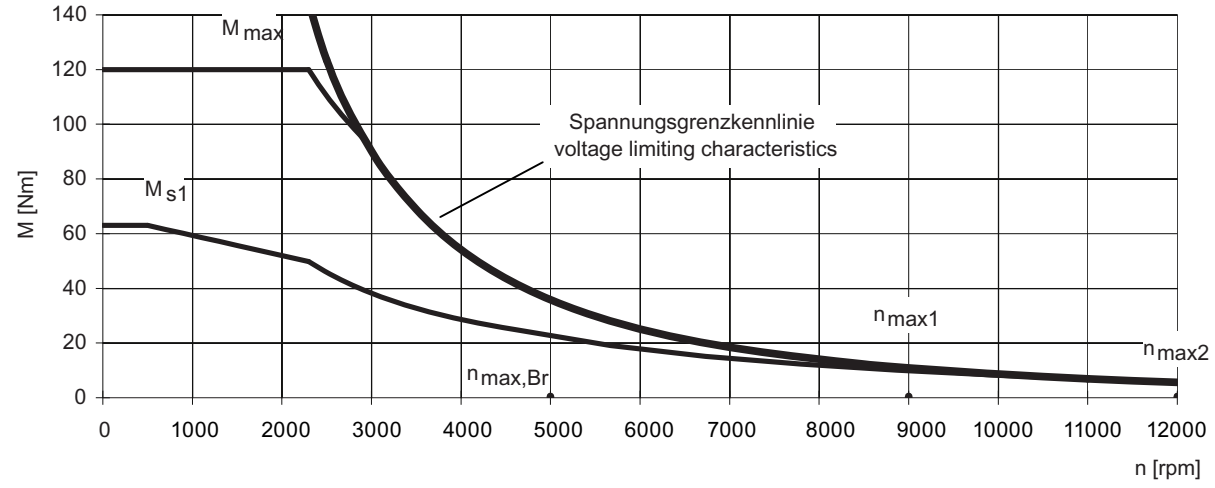
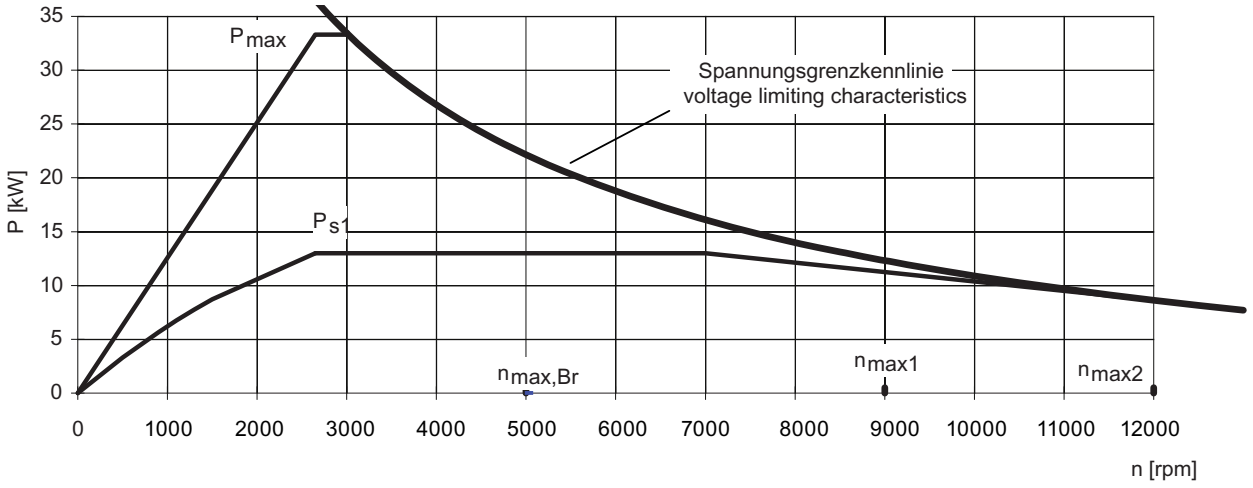



Tabella 4- 84 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8107-□□G□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 13,0 | 47 | 24,0 | 9000 | 12000 | - | 5000 | 7000 | 120 | 60 | 63 | 29 |



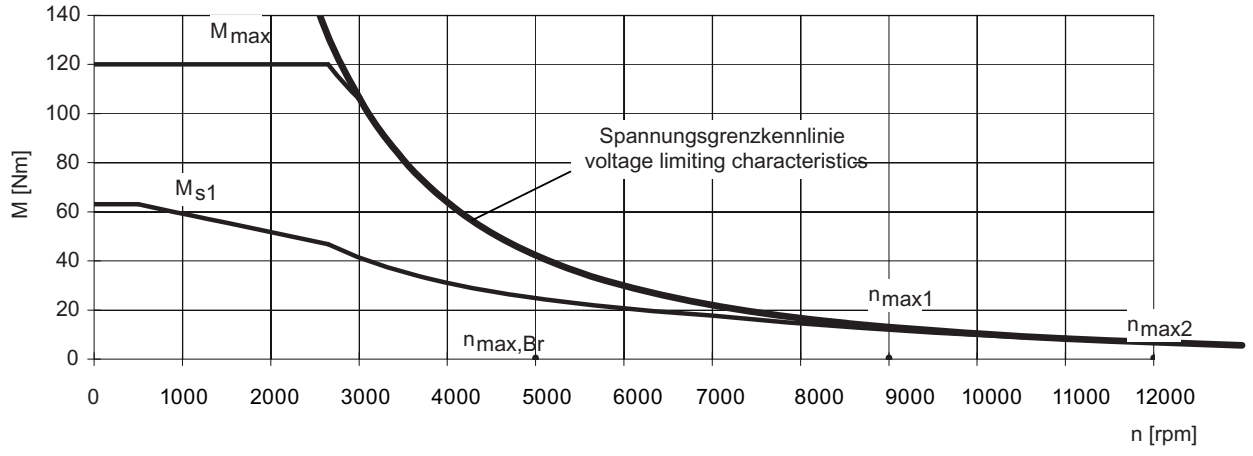



Tabella 4- 85 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8107-□□M□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3000 | 12,0 | 38 | 38,0 | 9000 | 12000 | 18000 | 5000 | 16500 | 170 | 166 | 59 | 48 |

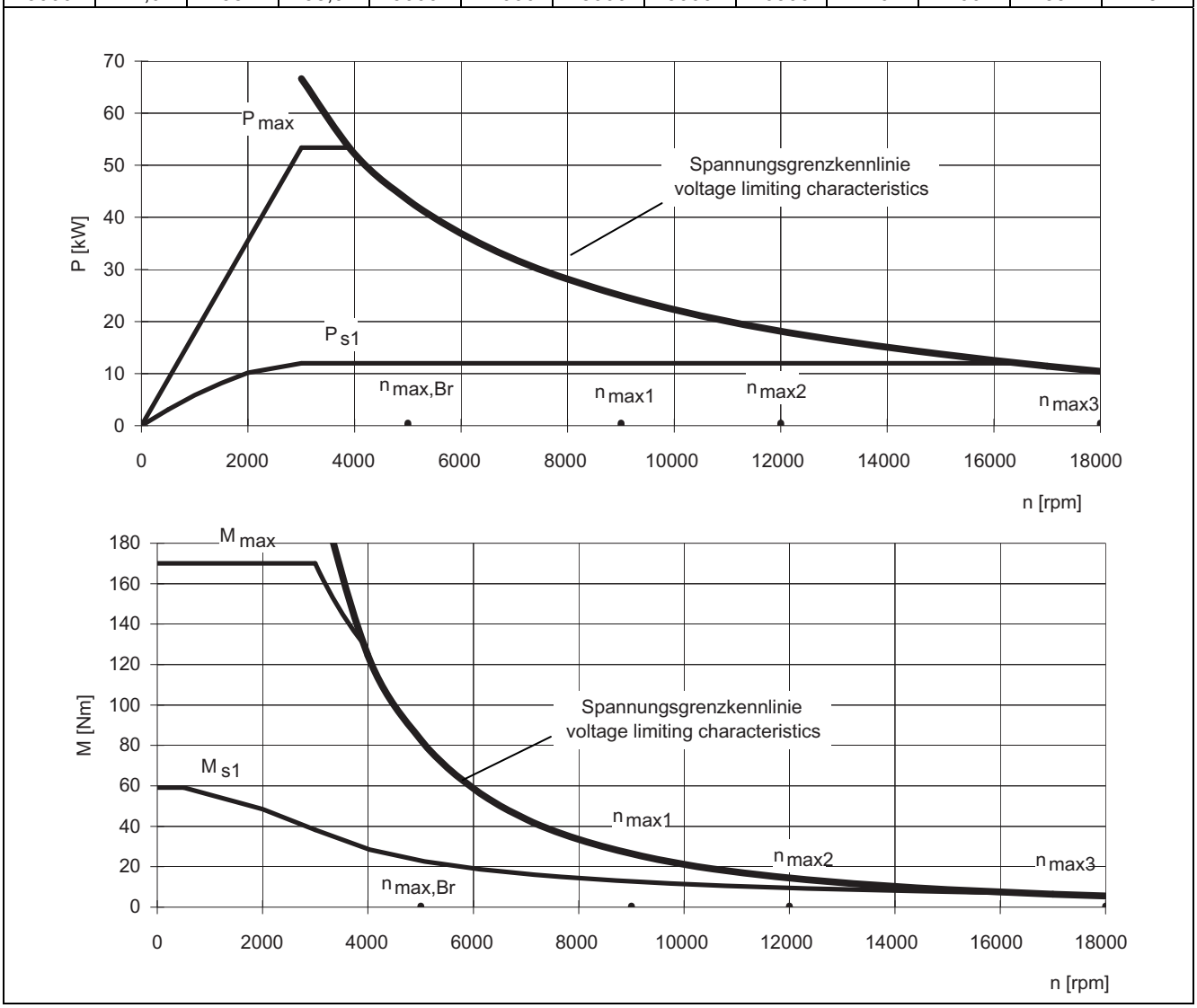


Tabella 4- 86 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8107-□□M□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3300 | 13,0 | 38 | 38,0 | 9000 | 12000 | 18000 | 5000 | 18000 | 170 | 166 | 59 | 48 |
| 3000 | 12,0 | 8 | 38,0 | | | | | 18000 | | | | |

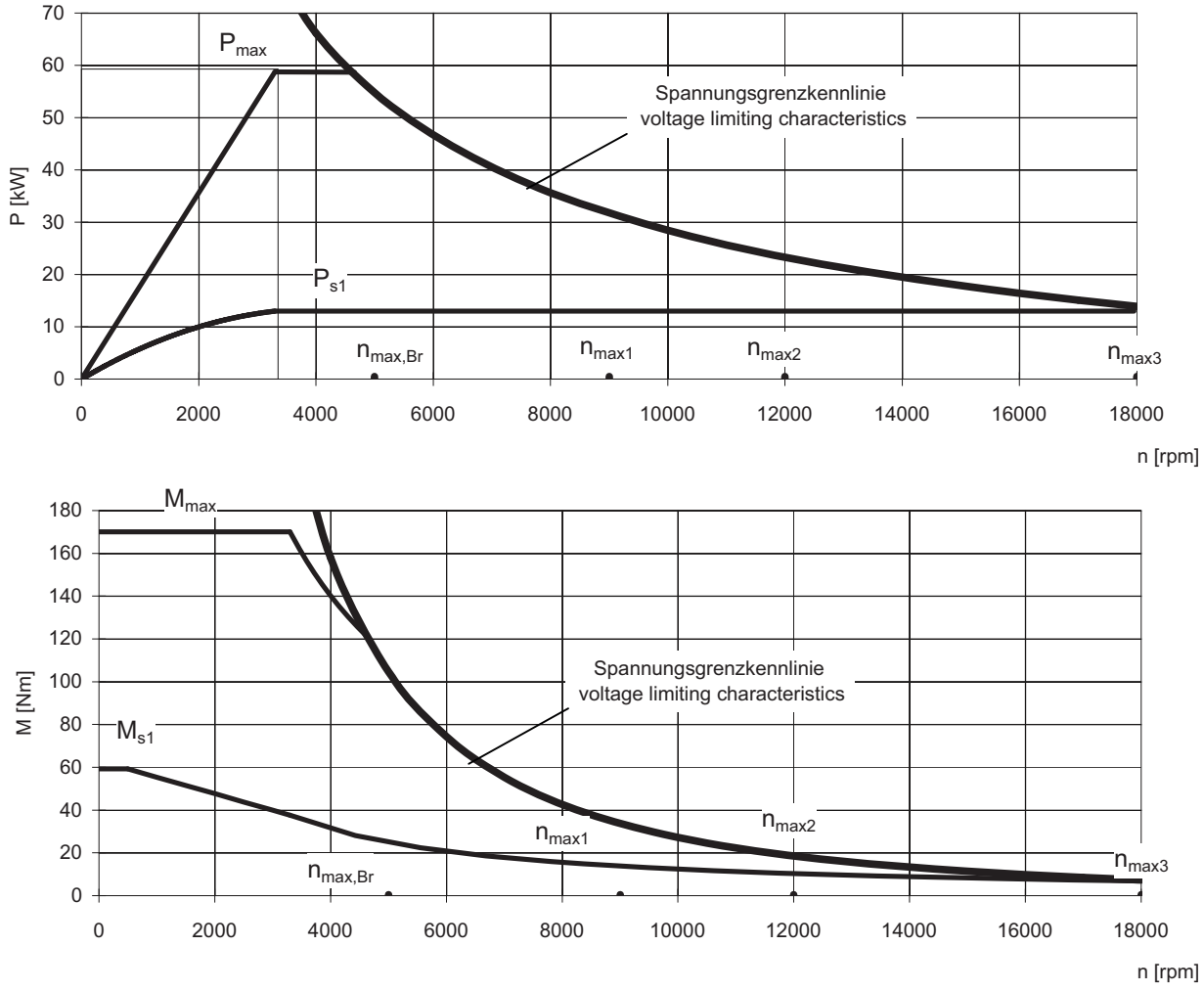
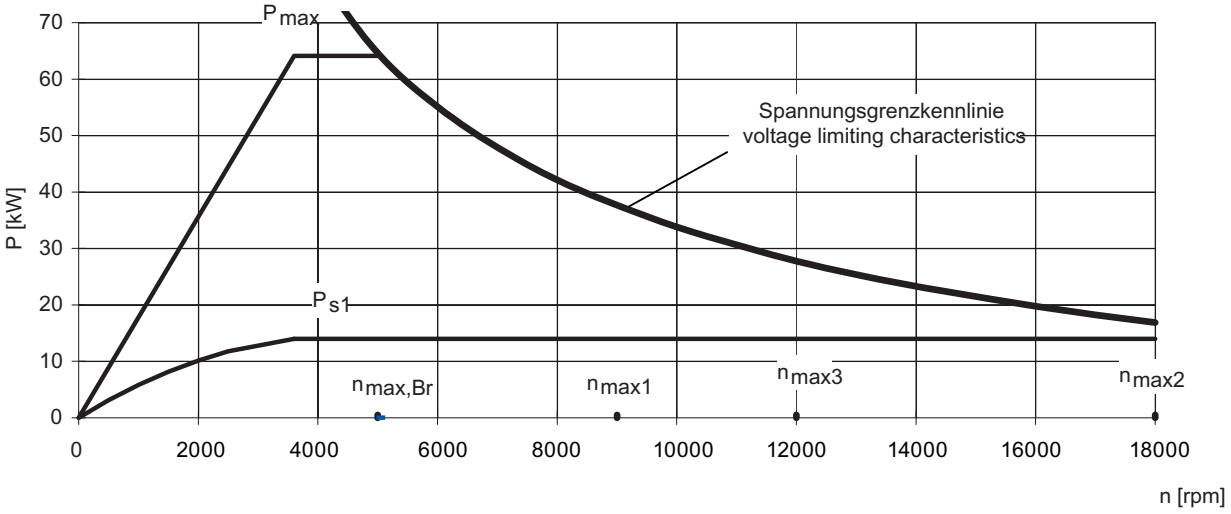


Tabella 4- 87 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8107-□□M□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3600 | 14,0 | 37 | 37,5 | 9000 | 12000 | 18000 | 5000 | 18000 | 170 | 166 | 59 | 48 |



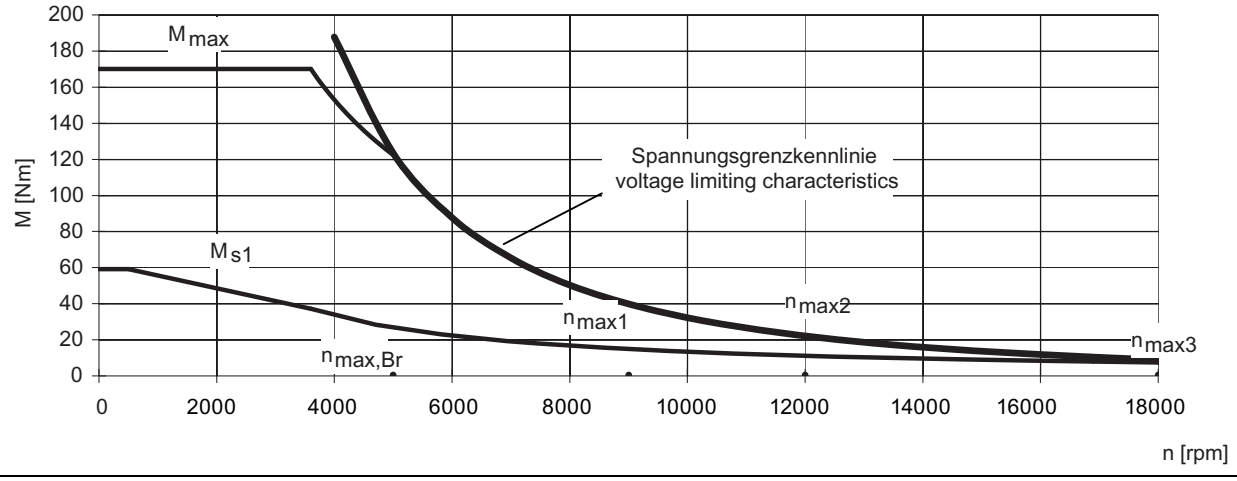
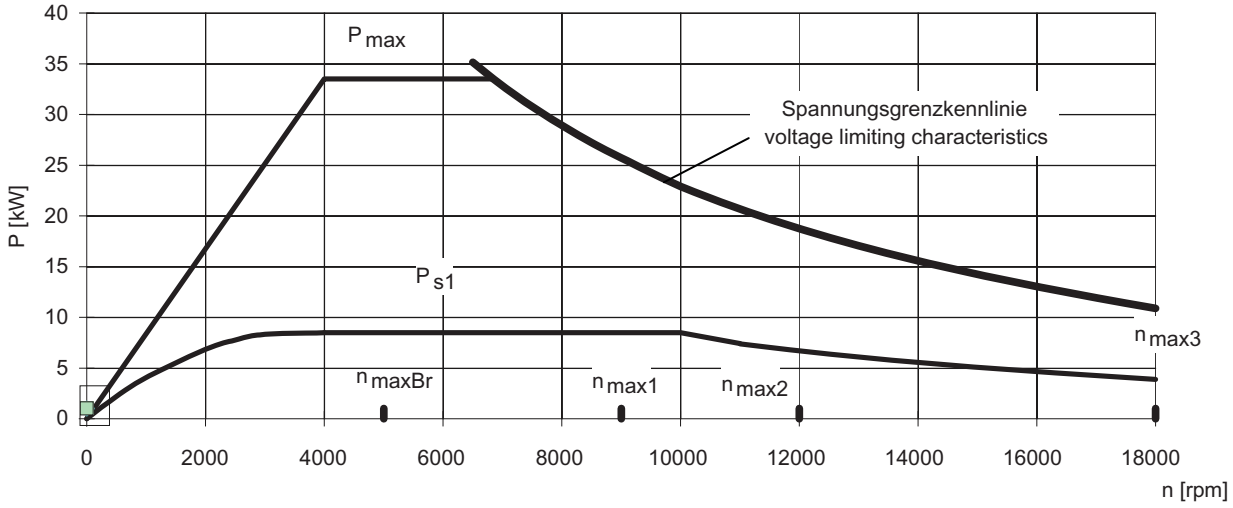



Tabella 4- 88 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8107-□□S□□, Collegamento Δ

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4000 | 8,5 | 20 | 28,0 | 9000 | 12000 | 18000 | 5000 | 10000 | 80 | 100 | 42 | 40 |



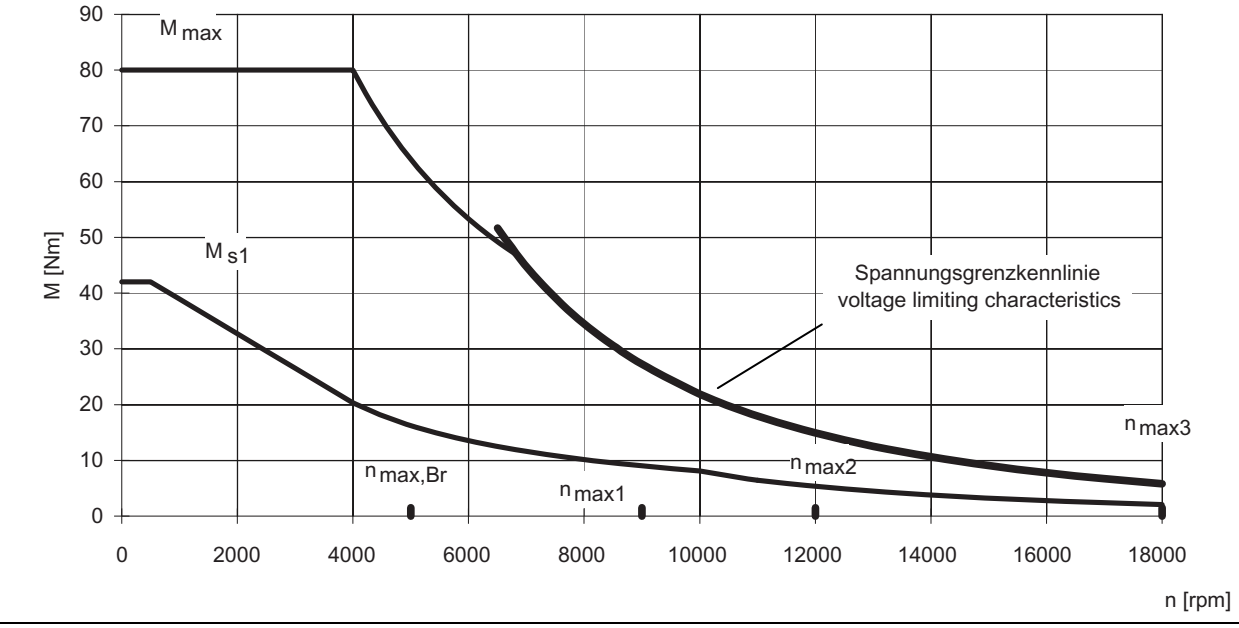
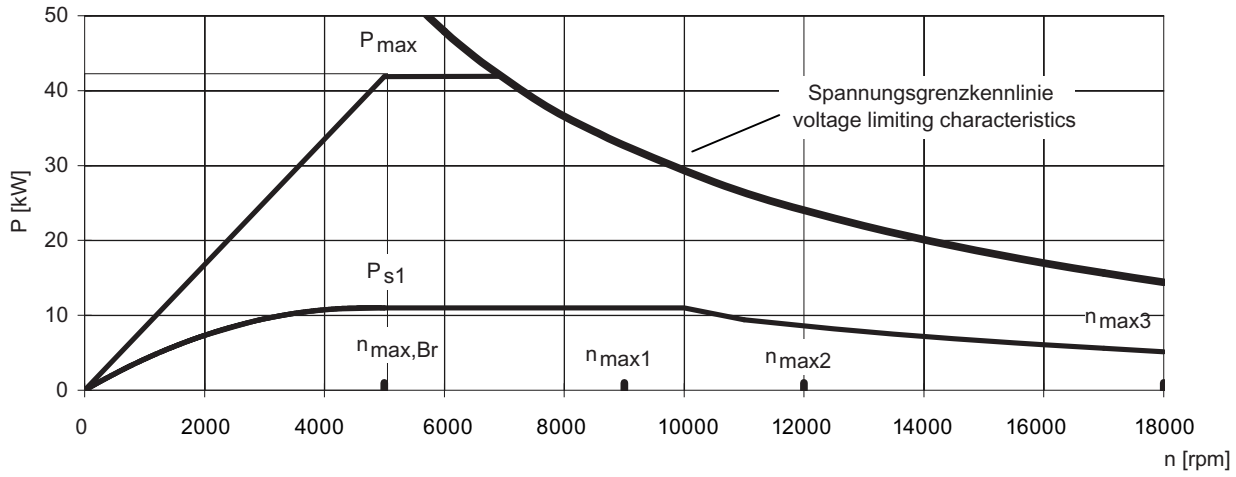



Tabella 4- 89 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8107-□□S□□, Collegamento Δ

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5000 | 11,0 | 21 | 28,0 | 9000 | 12000 | 18000 | 5000 | 10000 | 80 | 100 | 42 | 40 |
| 4000 | 8,5 | 20 | 28,0 | | | | | 12000 | | | | |



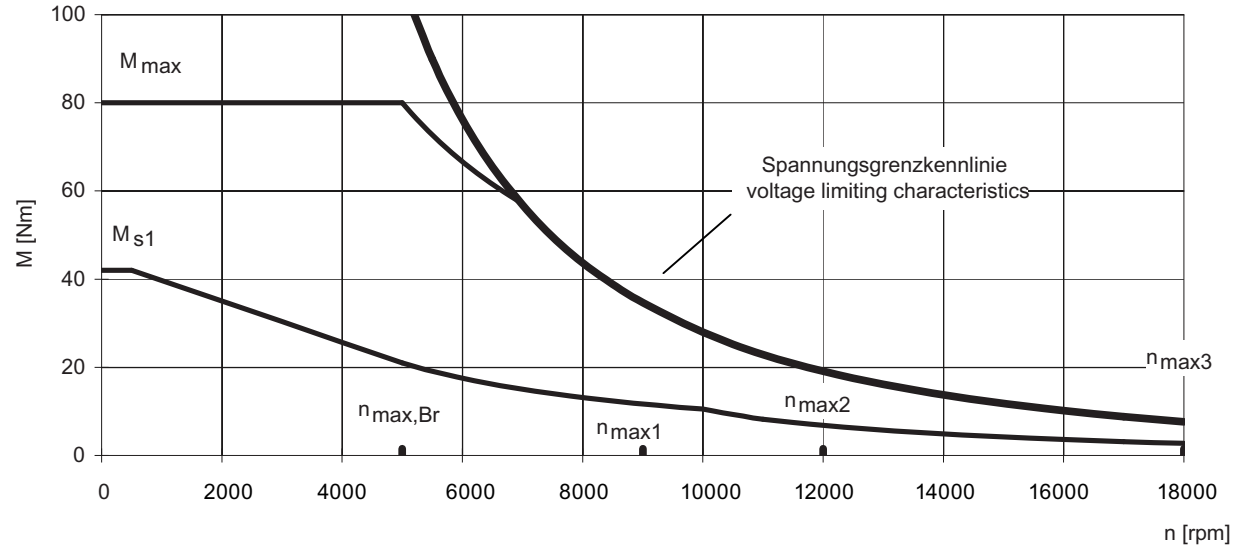



Tabella 4- 90 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8107-□□S□□, Collegamento Δ

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6000 | 14,0 | 22 | 27 | 9000 | 12000 | 18000 | 5000 | 10000 | 80 | 100 | 42 | 40 |

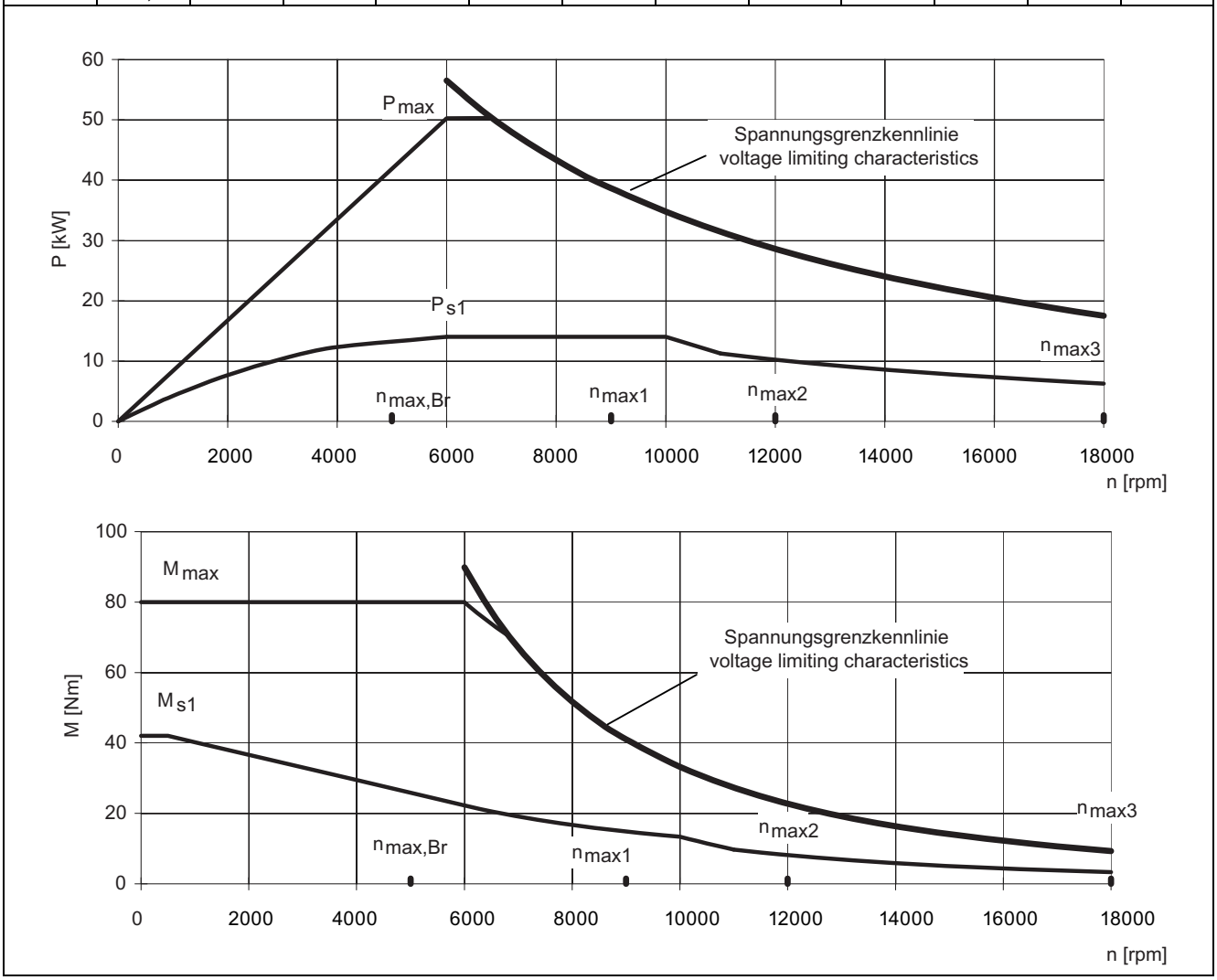


Tabella 4- 91 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8107-□□S□□, collegamento a stella

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 8,5 | 54 | 27,0 | 9000 | 12000 | - | 5000 | 8550 | 135 | 66 | 63 | 30 |

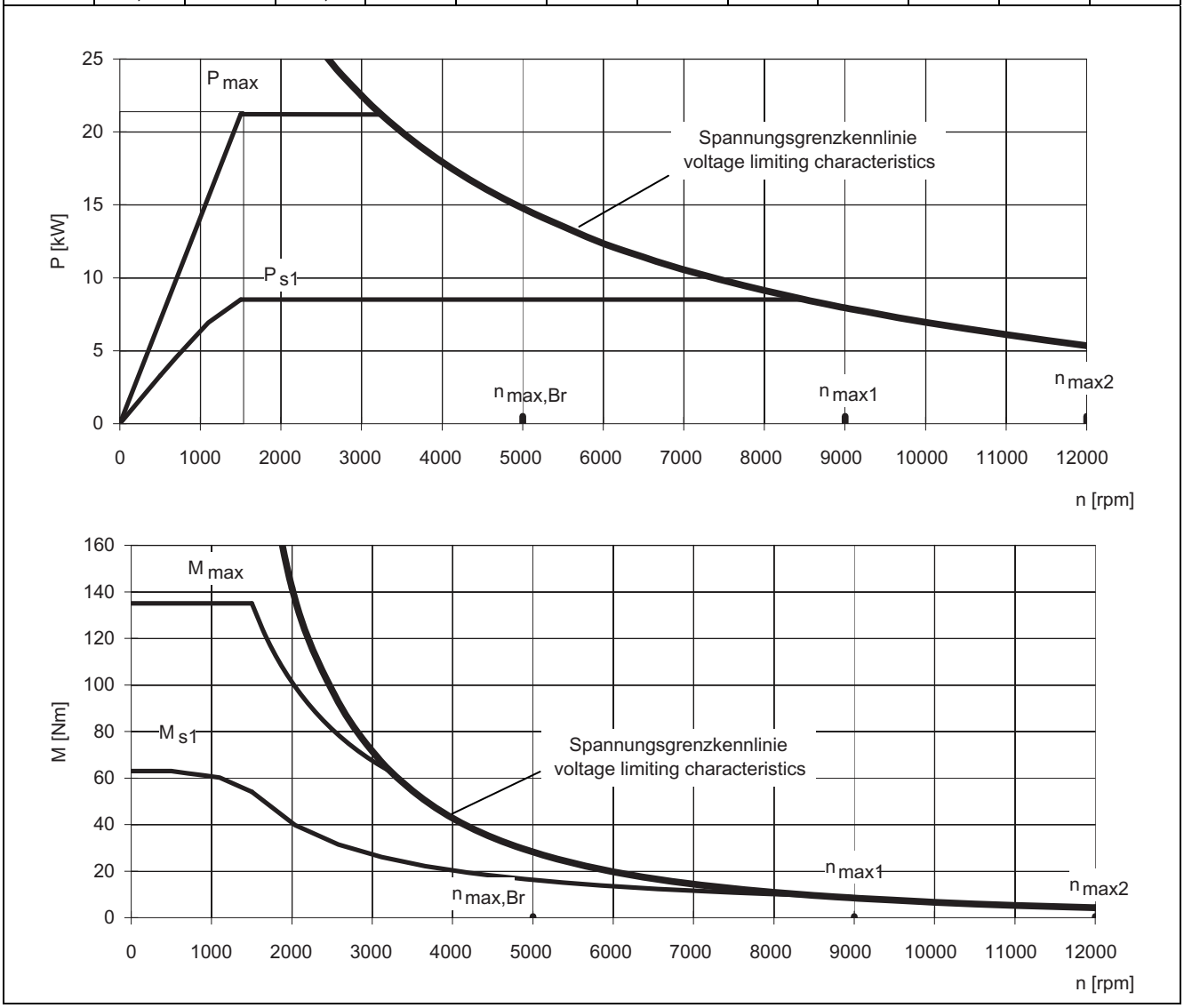


Tabella 4- 92 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8107-□□S□□, collegamento a stella

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 11,0 | 53 | 26,7 | 9000 | 12000 | - | 5000 | 8550 | 135 | 66 | 63 | 30 |
| 1500 | 8,5 | 54 | 27,0 | | | | | 10600 | | | | |

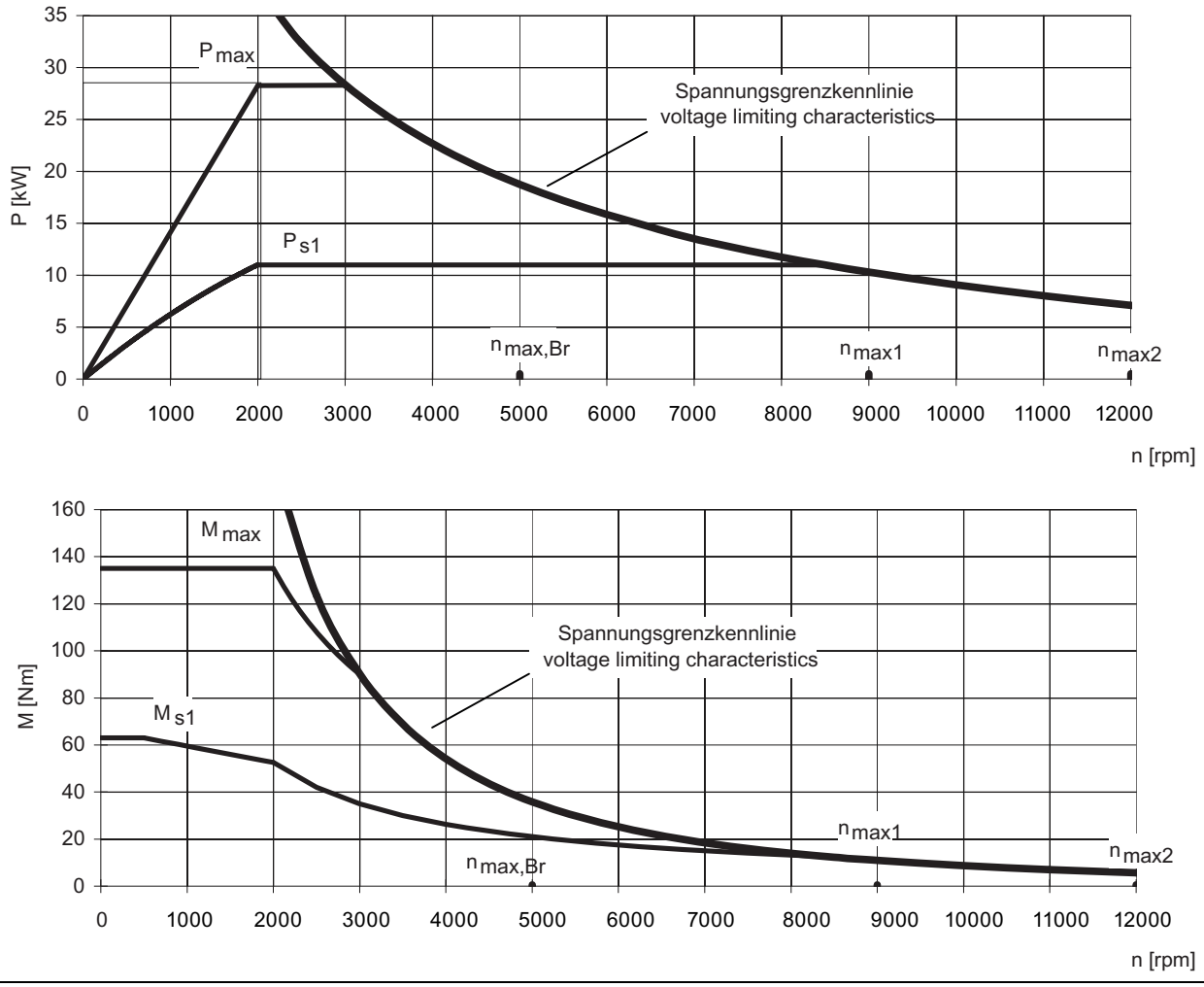
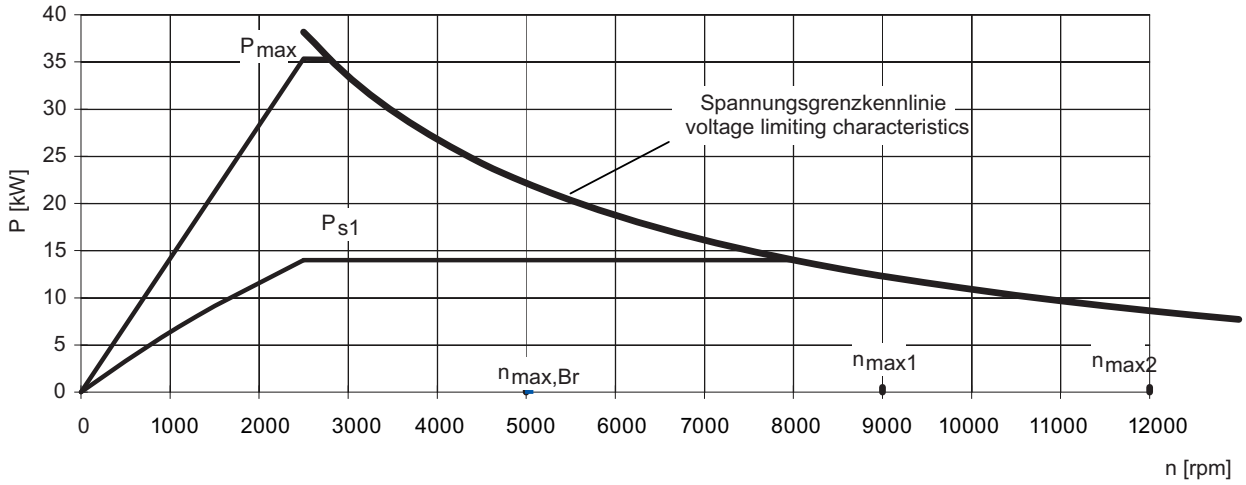
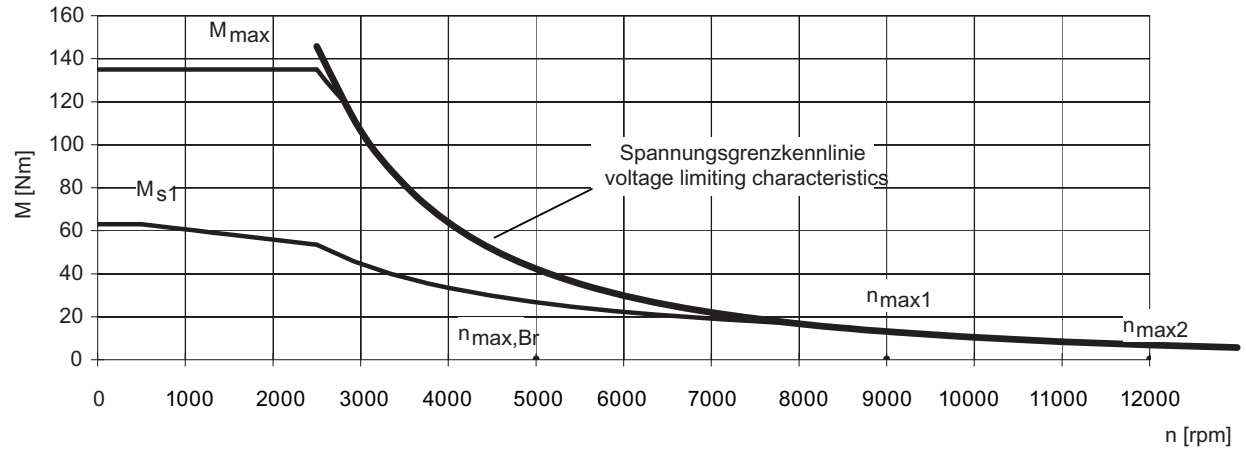


Tabella 4- 93 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8107-□□S□□, collegamento a stella

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 14,0 | 53 | 26,5 | 9000 | 12000 | - | 5000 | 8050 | 135 | 66 | 63 | 30 |



### 4.1.2.3 Altezza dell'asse 132 - Ventilazione forzata

Tabella 4- 94 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8131-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 11,0 | 70 | 24 | 8000 | 10000 | 11000 | 4500 | 4800 | 140 | 48 | 96 | 30 |

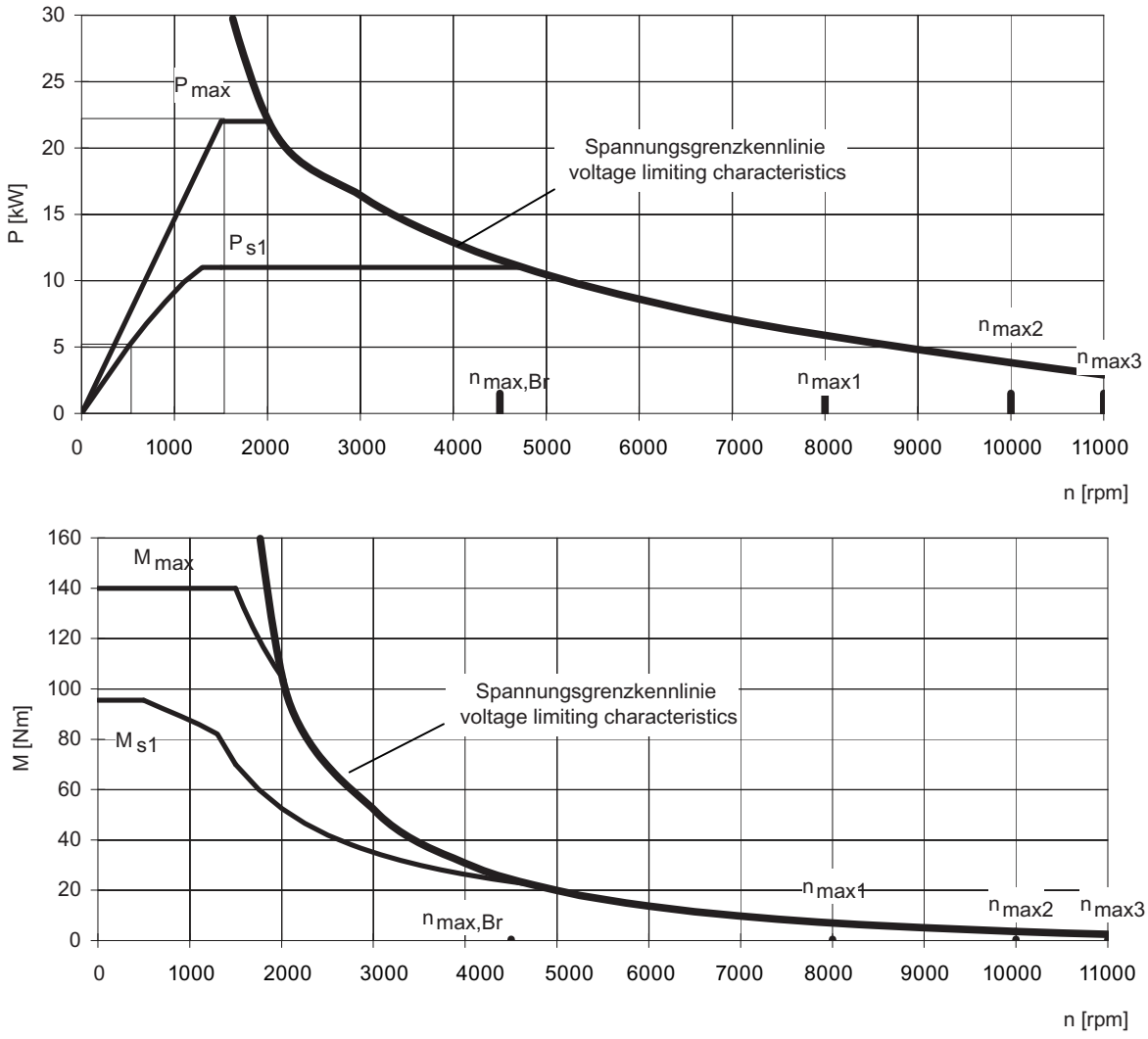
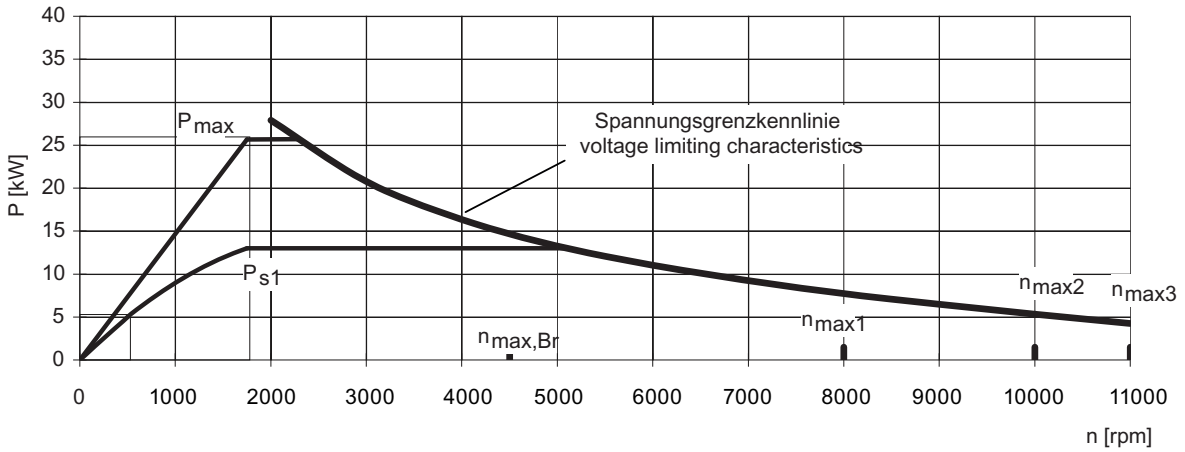


Tabella 4- 95 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8131-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 13,0 | 71 | 24 | 8000 | 10000 | 11000 | 4500 | 5150 | 140 | 48 | 96 | 30 |
| 1500 | 11,0 | 70 | 24 | | | | | 6050 | | | | |



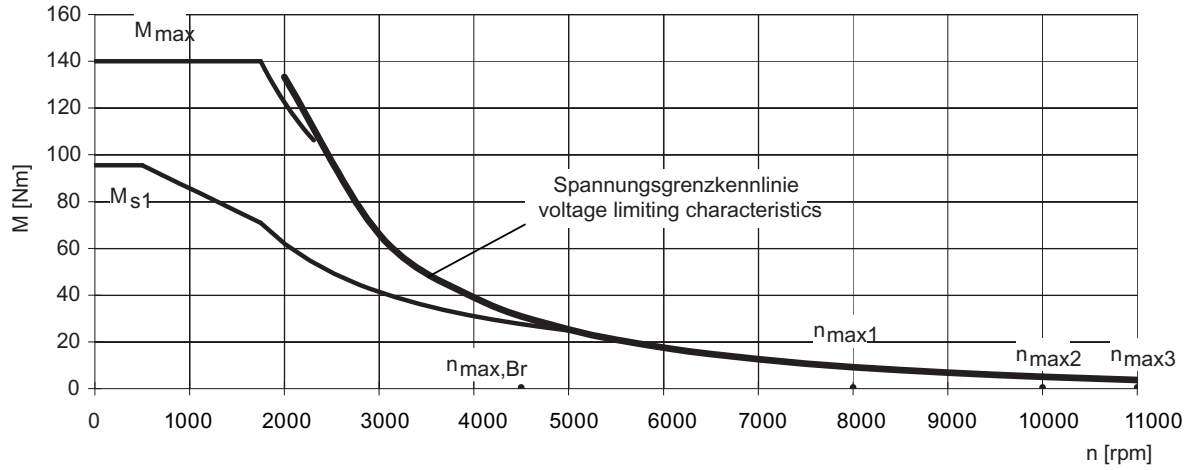
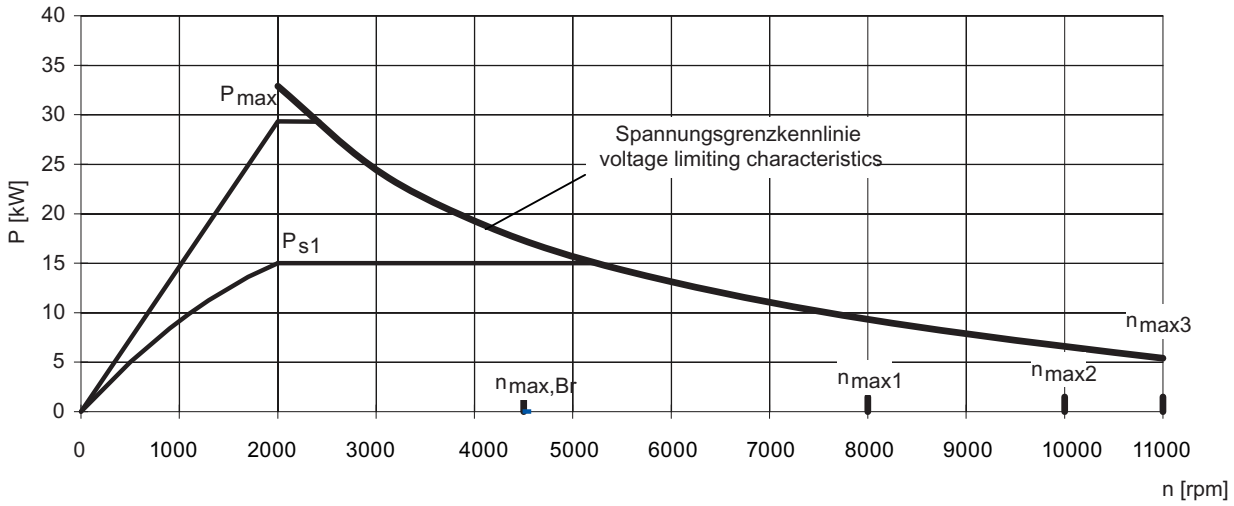



Tabella 4- 96 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8131-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 15,0 | 72 | 24 | 8000 | 10000 | 11000 | 4500 | 5300 | 140 | 48 | 96 | 30 |



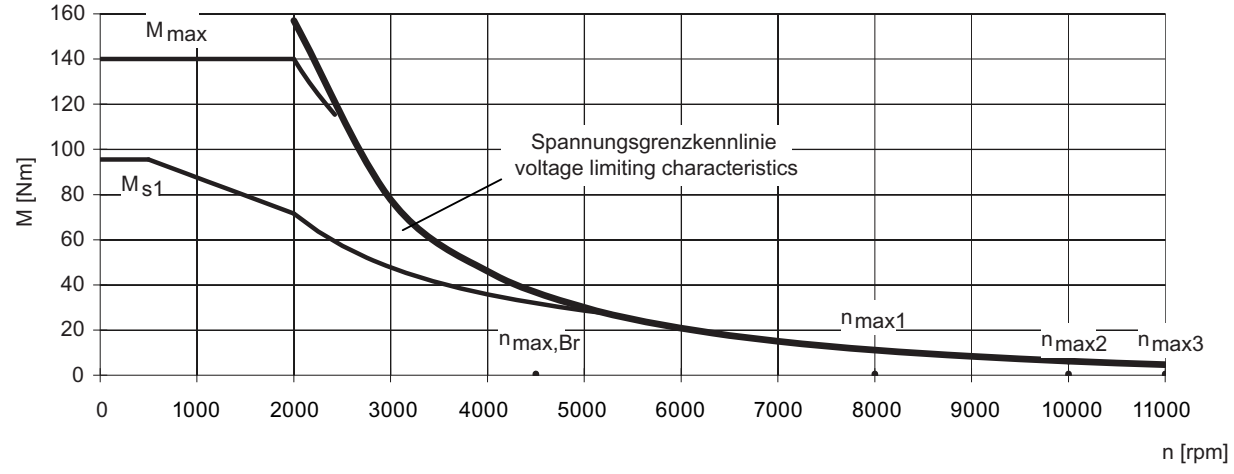
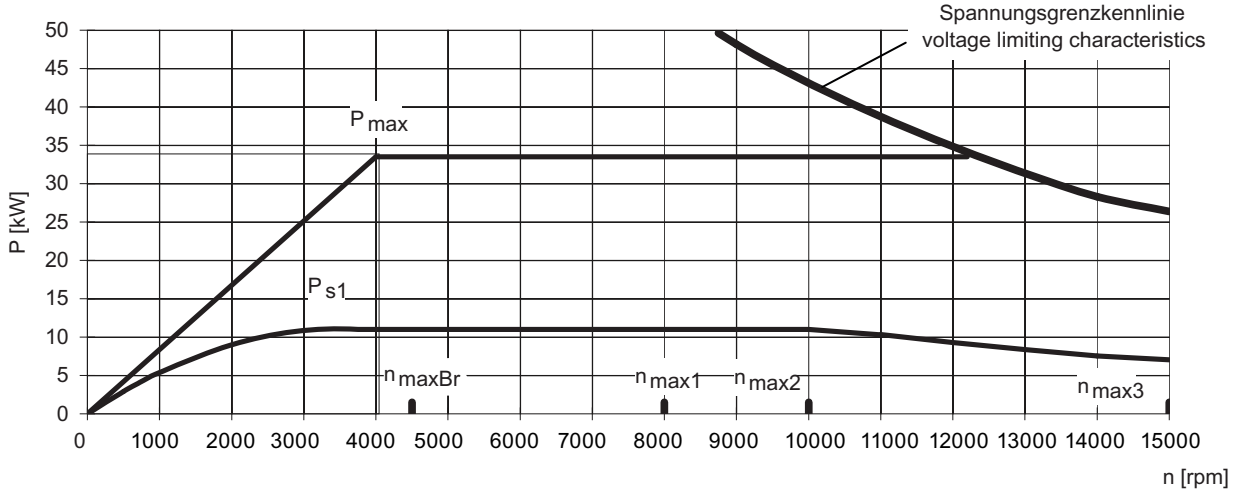



Tabella 4- 97 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8131-□□S□□, Collegamento Δ

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4000 | 11,0 | 26 | 40 | 8000 | 10000 | 15000 | 4500 | 10000 | 80 | 114 | 55 | 56 |



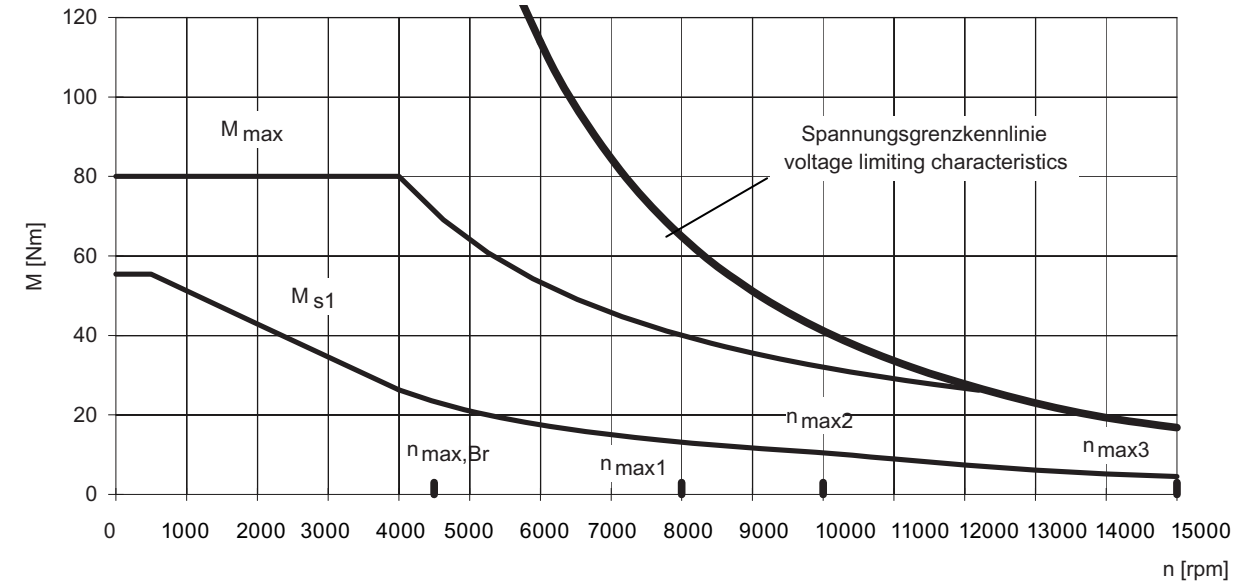
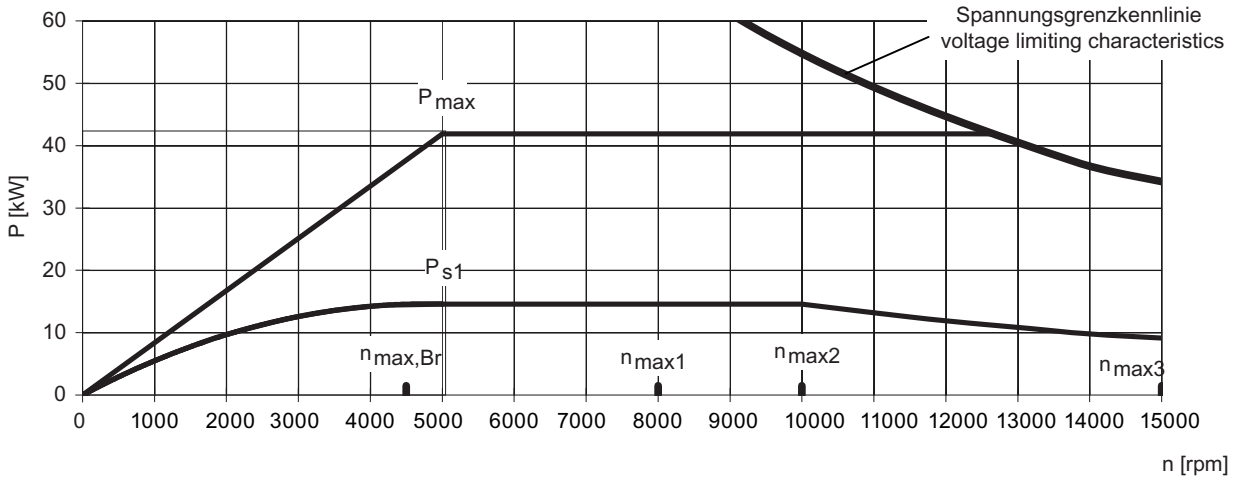



Tabella 4- 98 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8131-□□S□□, Collegamento Δ

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5000 | 14,6 | 28 | 40 | 8000 | 10000 | 15000 | 4500 | 10000 | 80 | 114 | 55 | 56 |
| 4000 | 11,0 | 28 | 40 | | | | | 13000 | | | | |



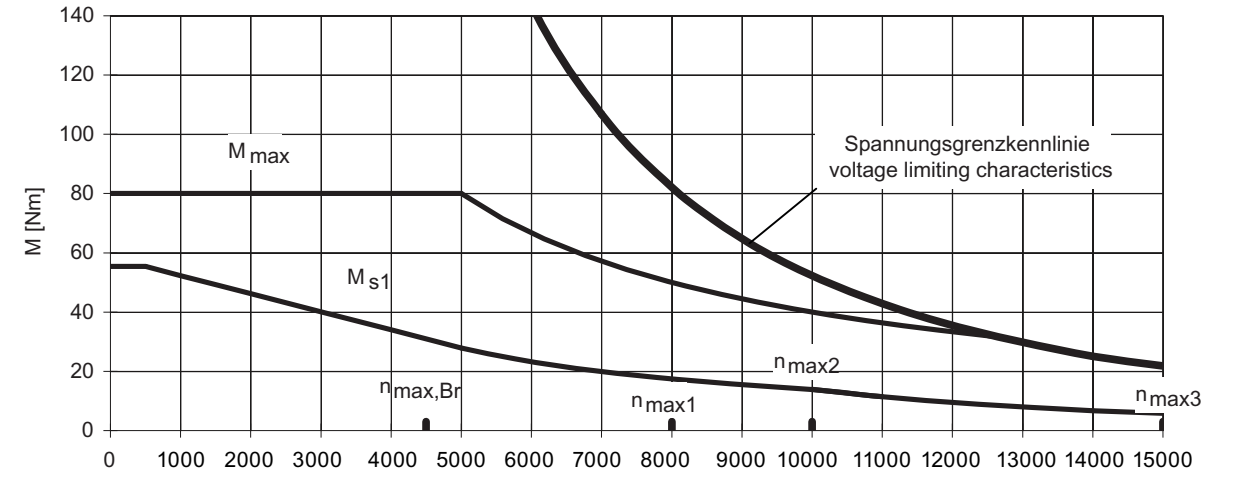



Tabella 4- 99 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8131-□□S□□, Collegamento Δ

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6000 | 18,0 | 29 | 35 | 8000 | 10000 | 15000 | 4500 | 10000 | 80 | 114 | 55 | 56 |

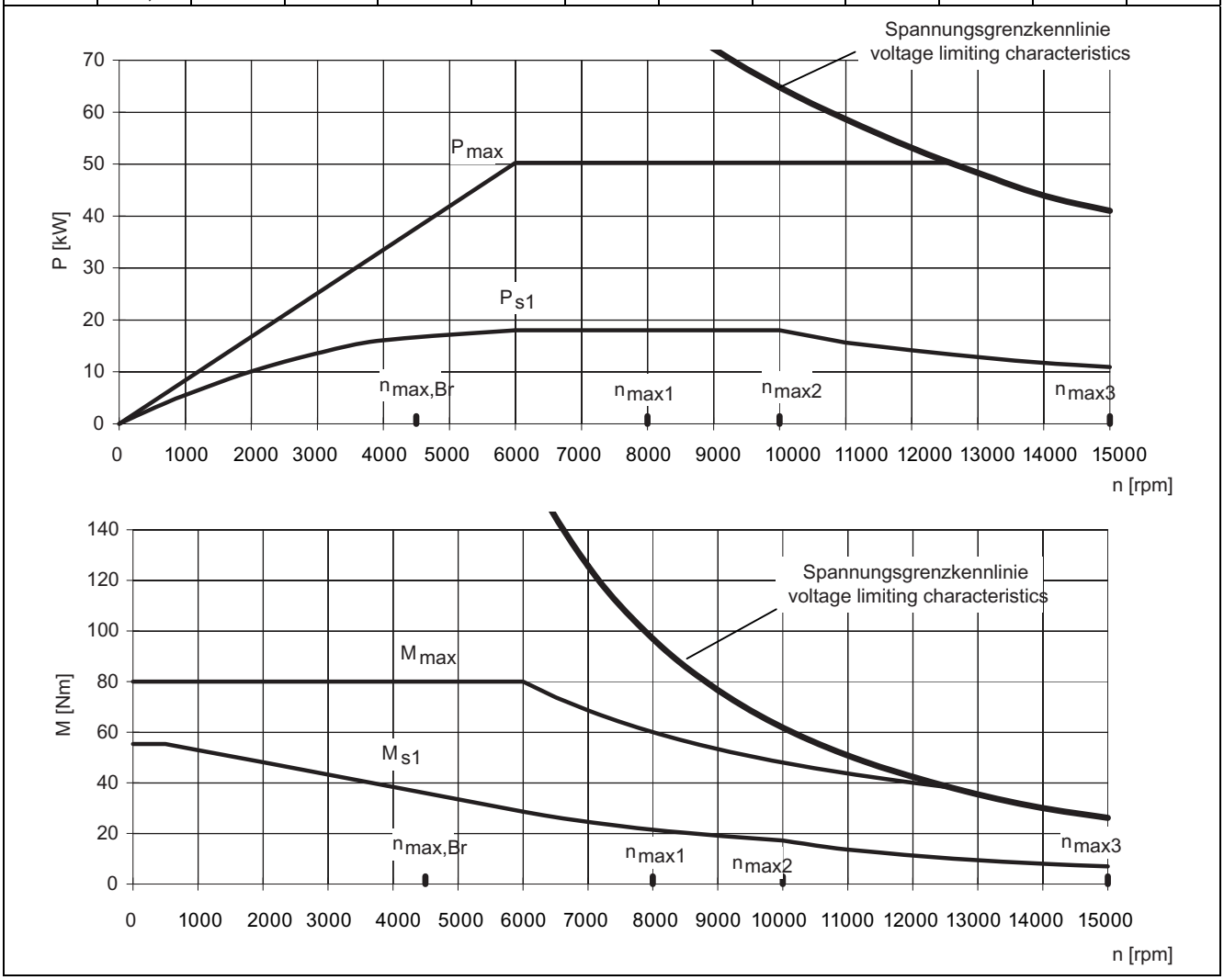
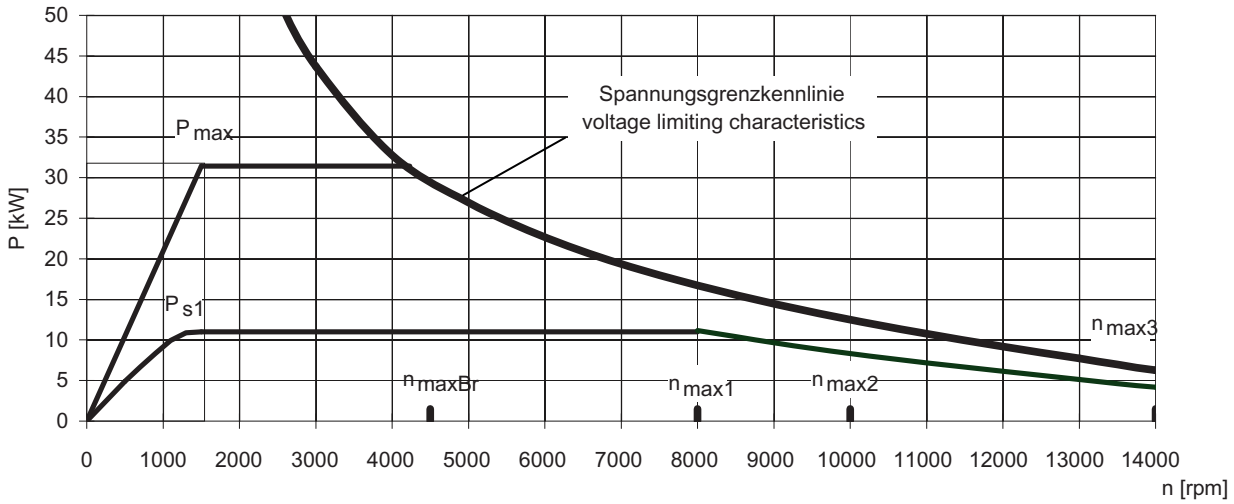


Tabella 4- 100 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8131-□□S□□, Collegamento a stella

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 11,0 | 70 | 39 | 8000 | 10000 | 14000 | 4500 | 8000 | 200 | 111 | 94 | 47 |



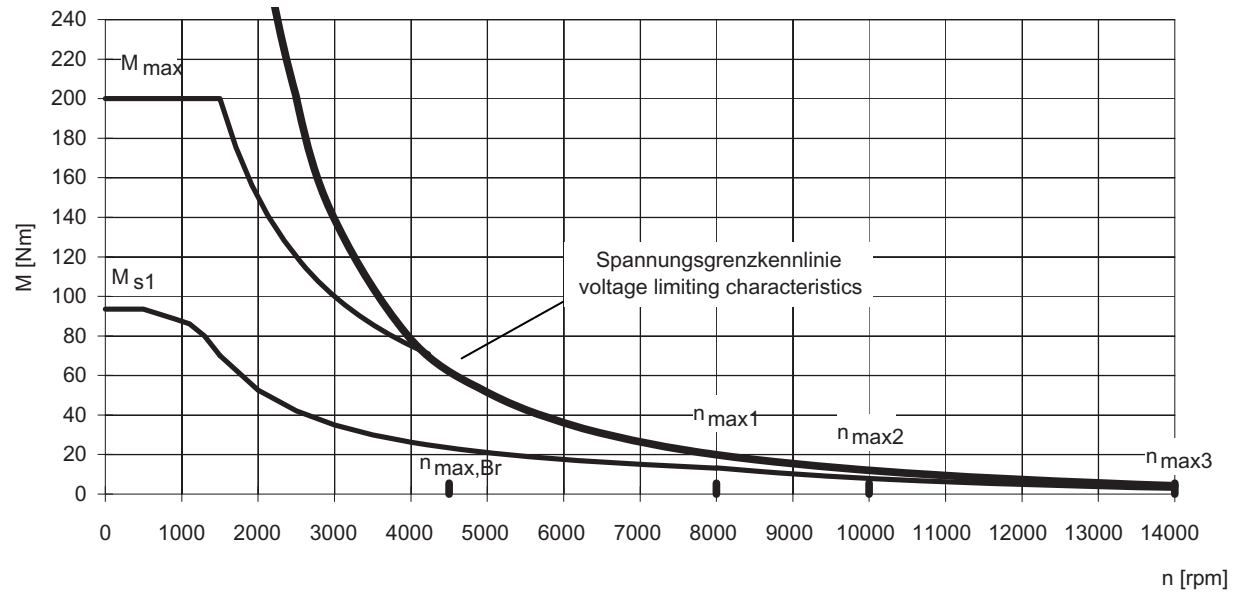
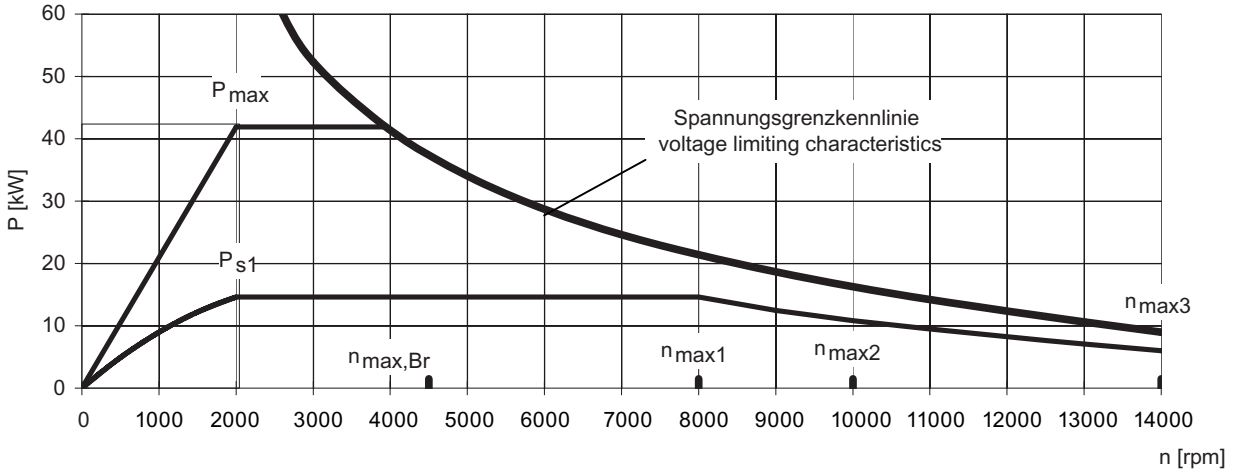



Tabella 4- 101 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8131-□□S□□, Collegamento a stella

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 14,6 | 70 | 39 | 8000 | 10000 | 14000 | 4500 | 8000 | 200 | 111 | 94 | 47 |
| 1500 | 11,0 | 70 | 39 | | | | | 10000 | | | | |



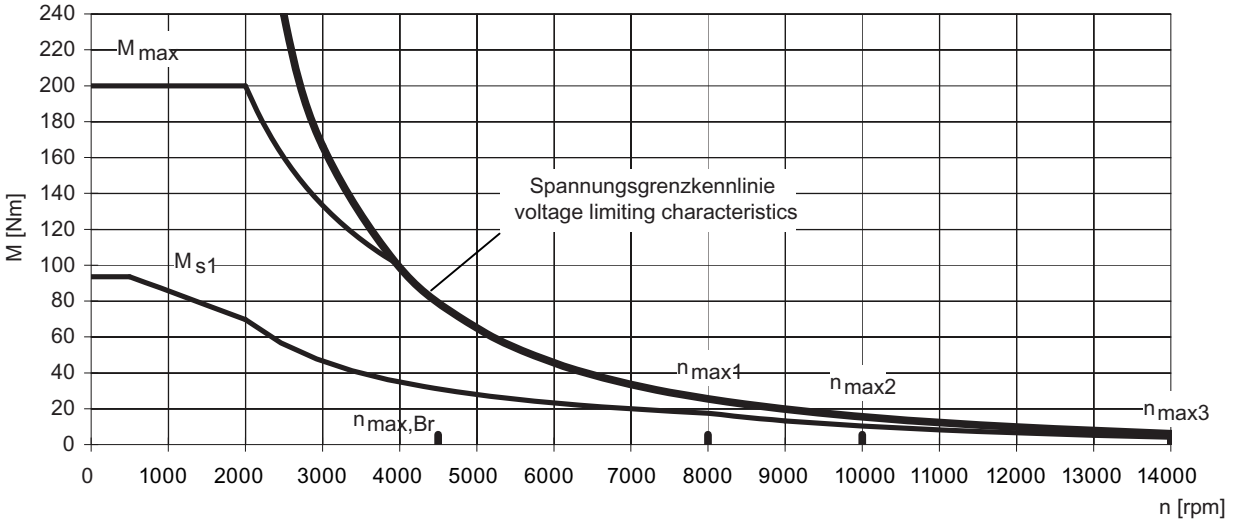
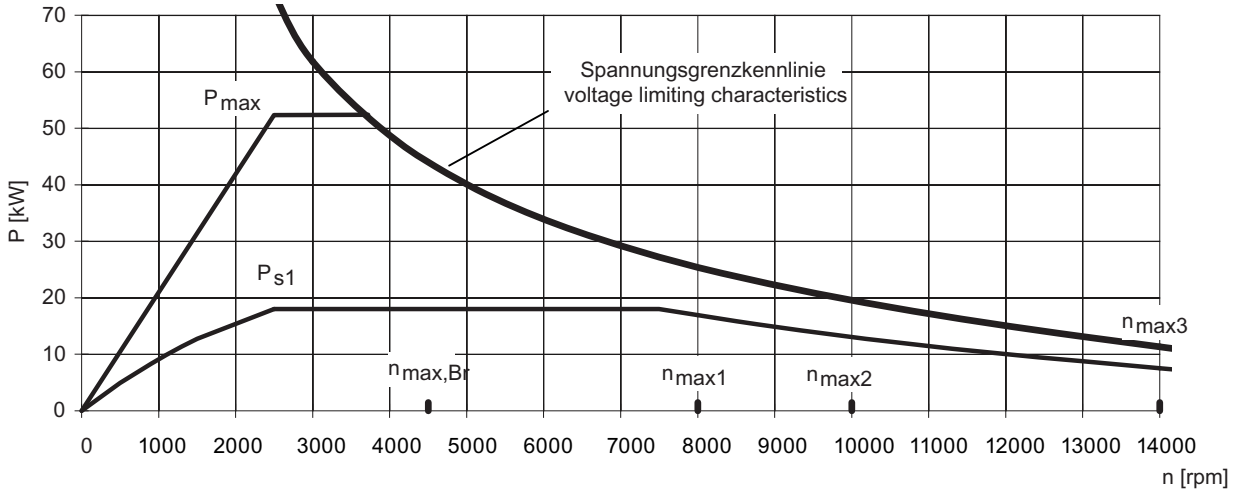



Tabella 4- 102 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8131-□□S□□, Collegamento a stella

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 18,0 | 69 | 38 | 8000 | 10000 | 14000 | 4500 | 7500 | 200 | 111 | 94 | 47 |



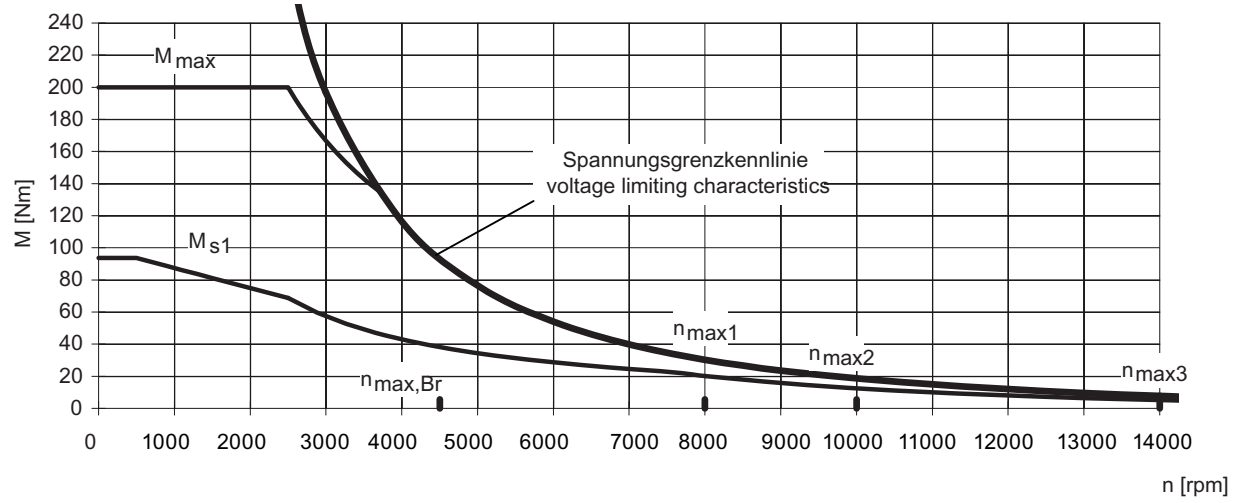
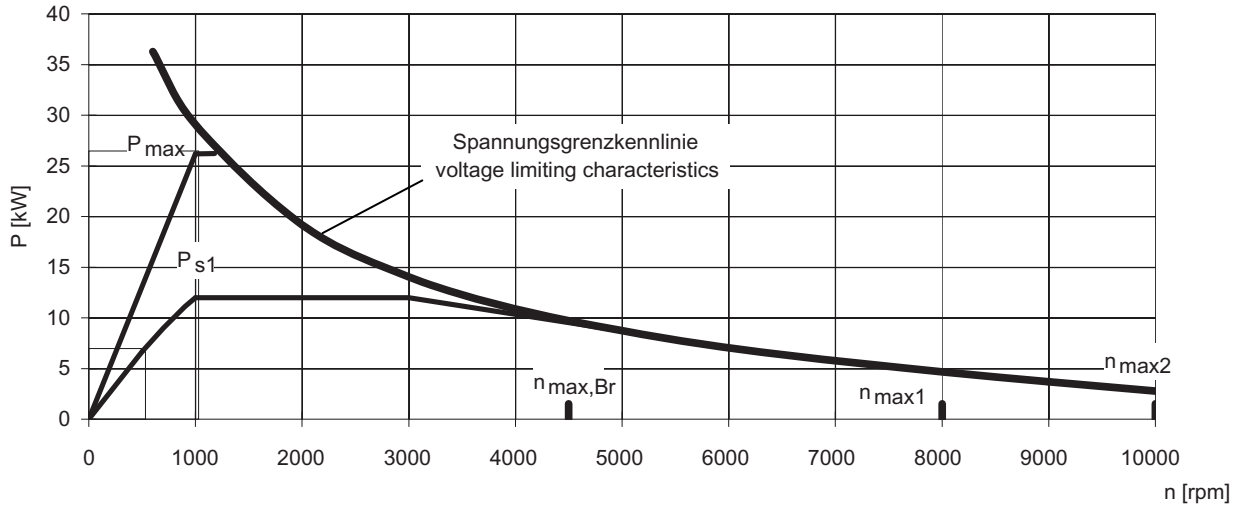



Tabella 4- 103 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8133-□□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 12,0 | 115 | 30 | 8000 | 10000 | - | 4500 | 3000 | 250 | 65 | 128 | 32 |



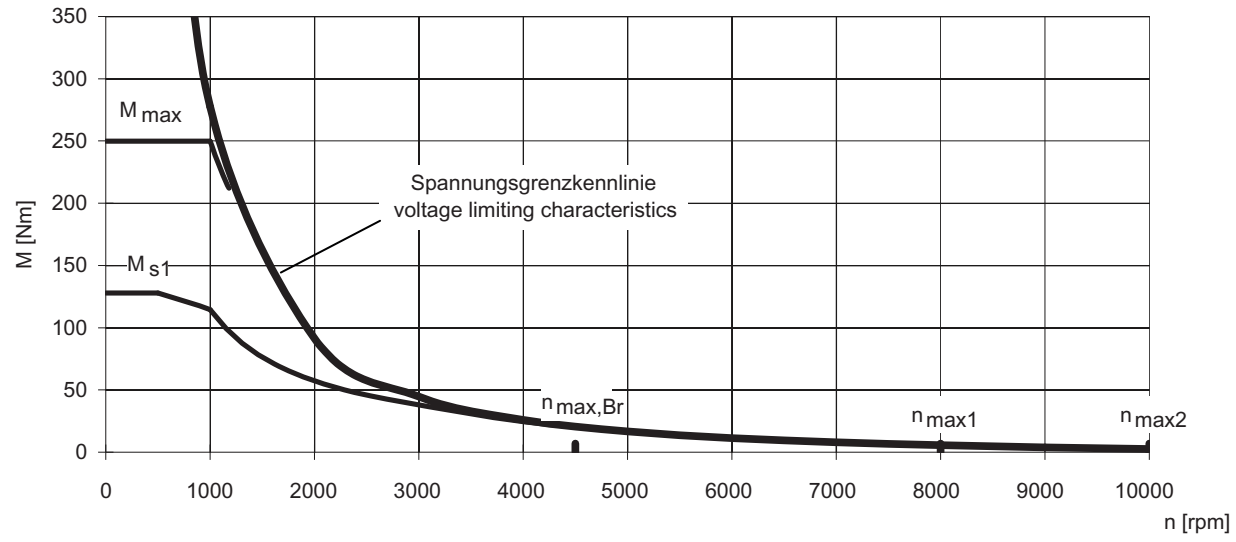
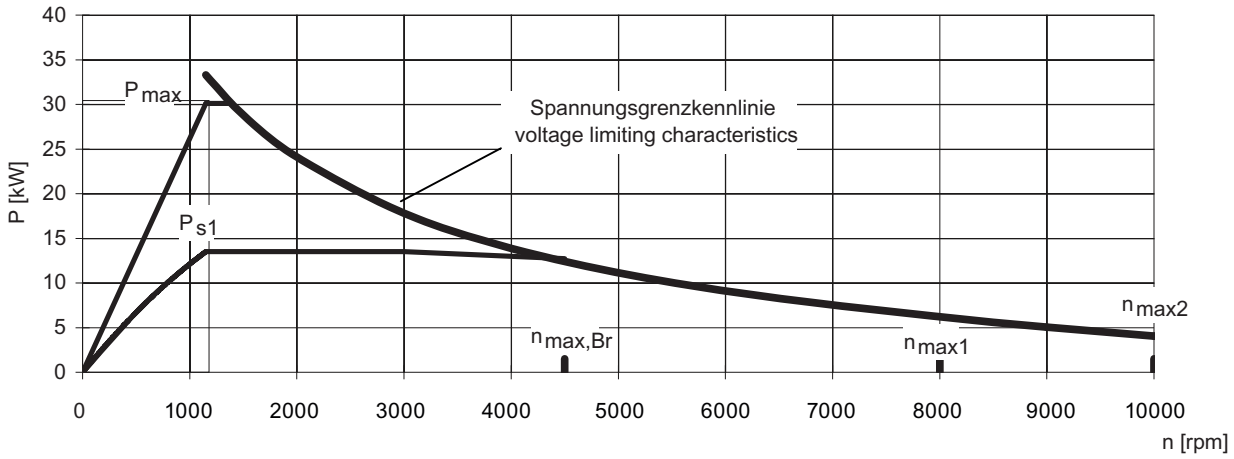



Tabella 4- 104 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8133-□□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 13,5 | 112 | 29 | 8000 | 10000 | - | 4500 | 3000 | 250 | 65 | 128 | 32 |
| 1000 | 12,0 | 115 | 30 | | | | | 4600 | | | | |



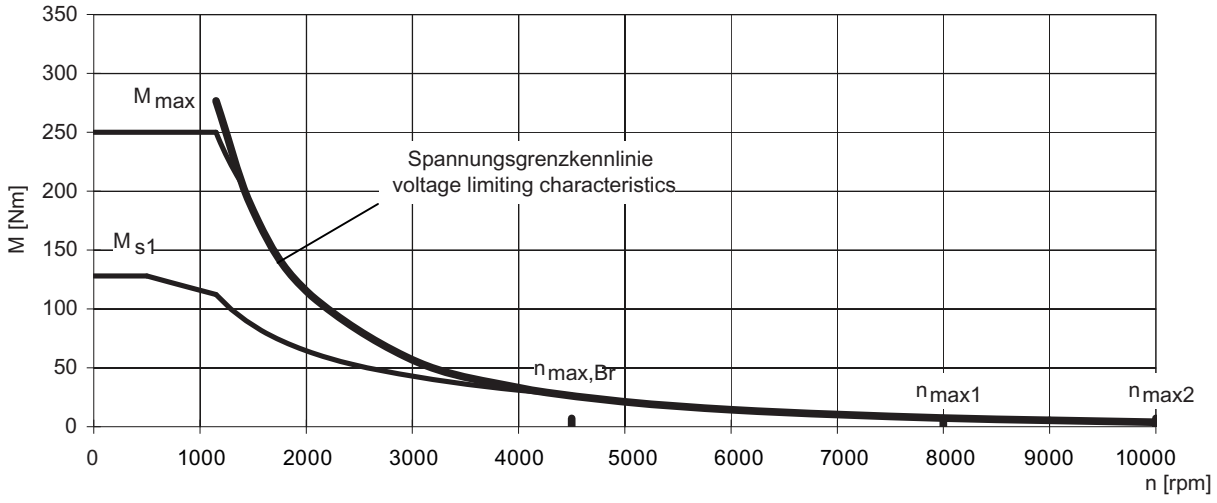



Tabella 4- 105 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8133-□□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 15,0 | 106 | 28 | 8000 | 10000 | - | 4500 | 3500 | 250 | 65 | 128 | 32 |

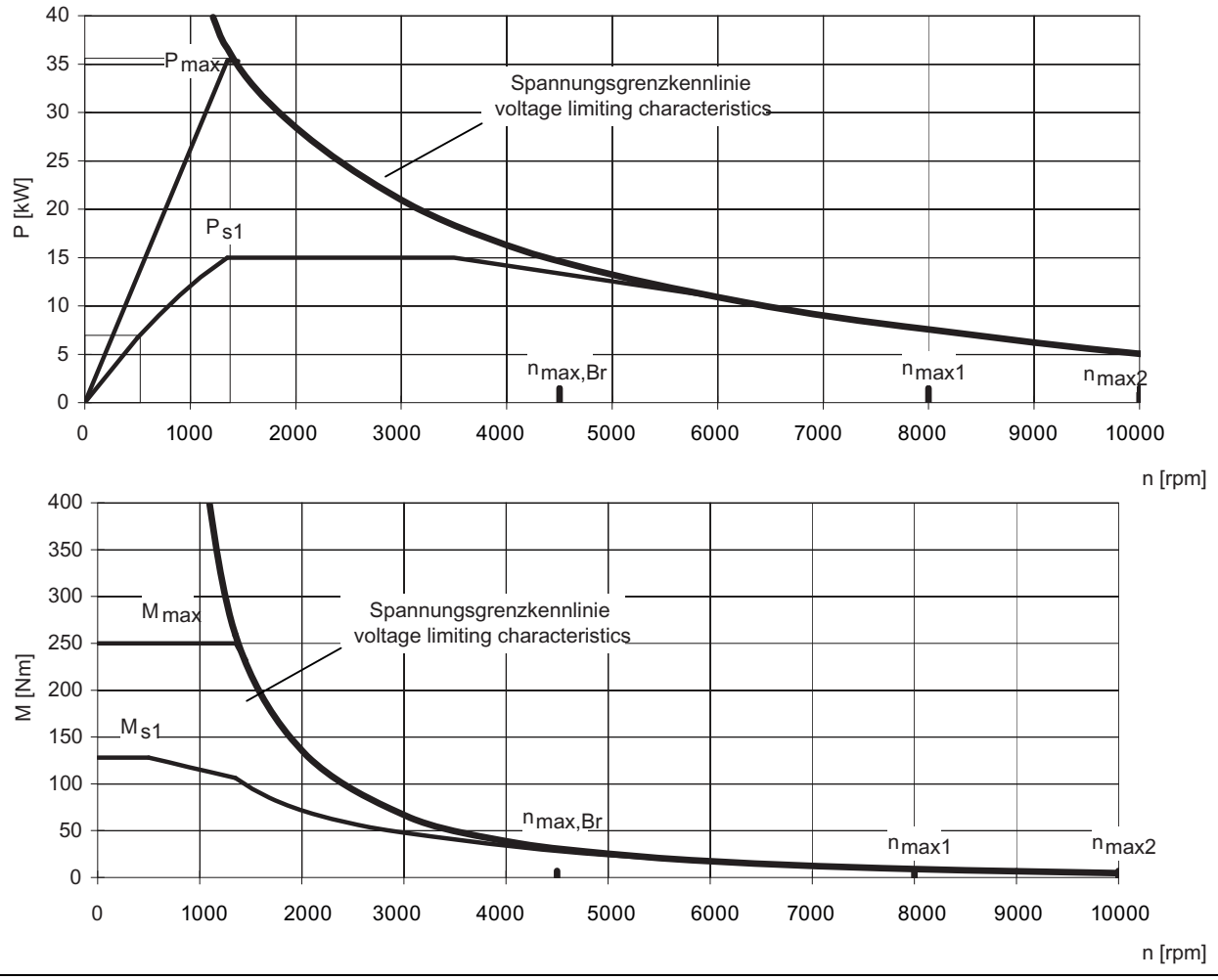
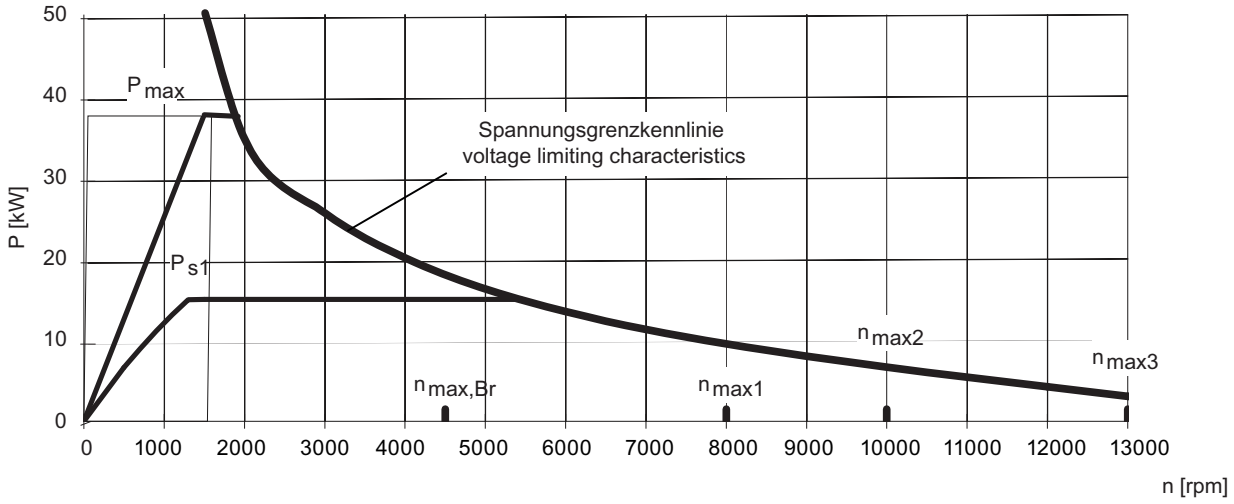


Tabella 4- 106 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8133-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 15,0 | 96 | 34 | 8000 | 10000 | 13000 | 4500 | 5500 | 240 | 85 | 126 | 42 |



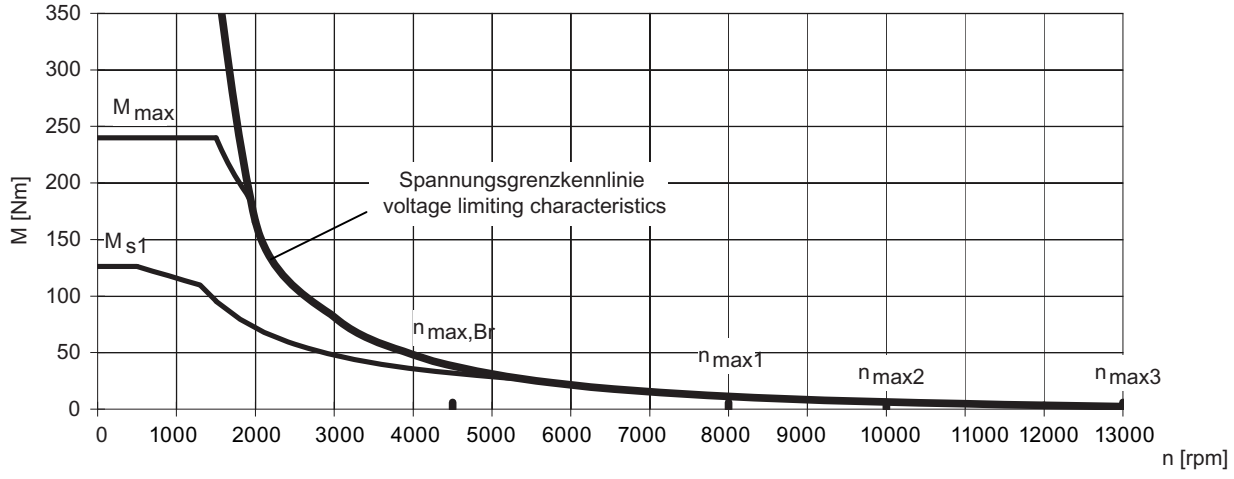
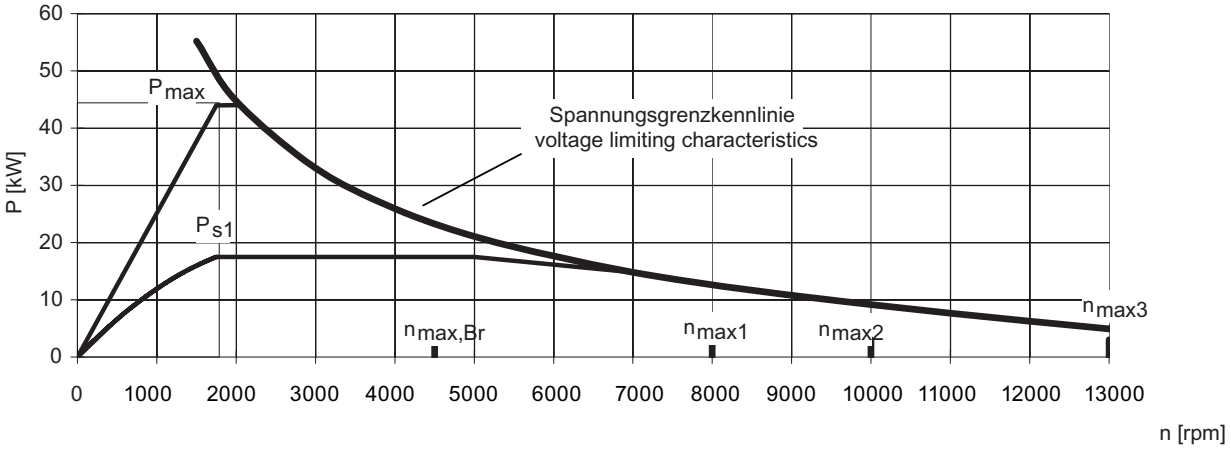



Tabella 4- 107 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8133-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 17,5 | 96 | 34 | 8000 | 10000 | 13000 | 4500 | 5000 | 240 | 85 | 126 | 42 |
| 1500 | 15,0 | 96 | 34 | | | | | 6900 | | | | |



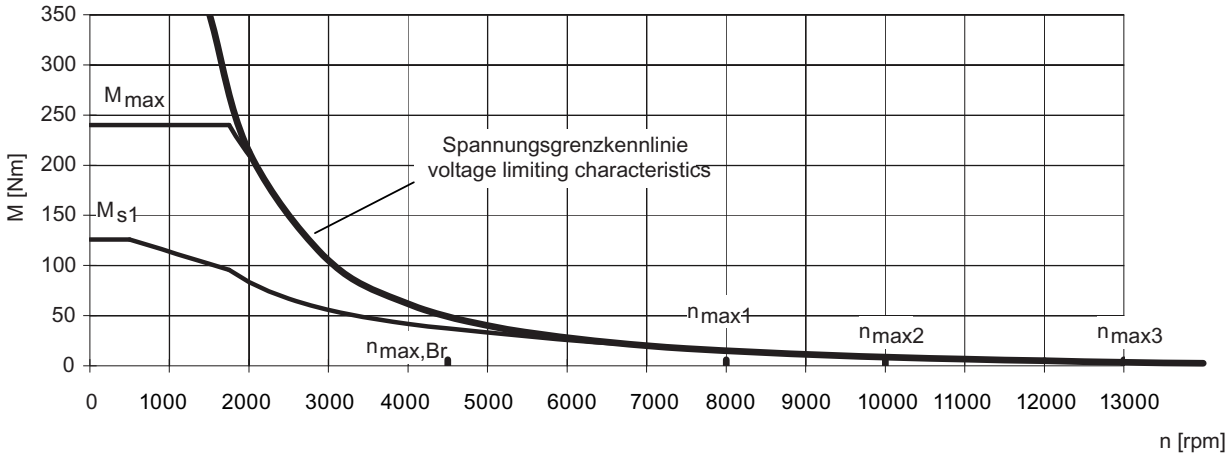
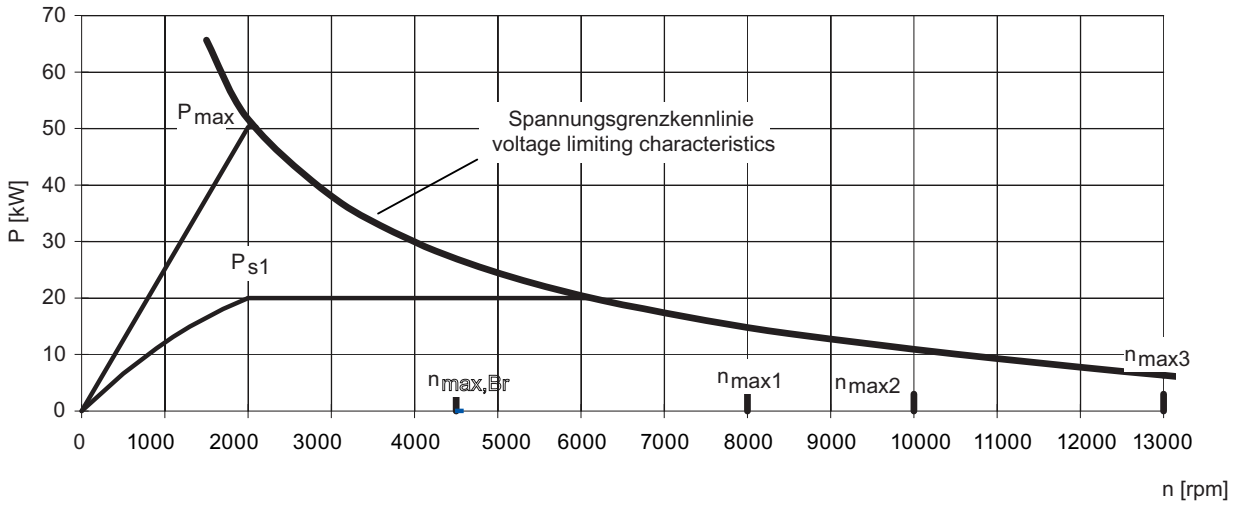



Tabella 4- 108 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8133-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 20,0 | 96 | 34 | 8000 | 10000 | 13000 | 4500 | 6200 | 240 | 85 | 126 | 42 |



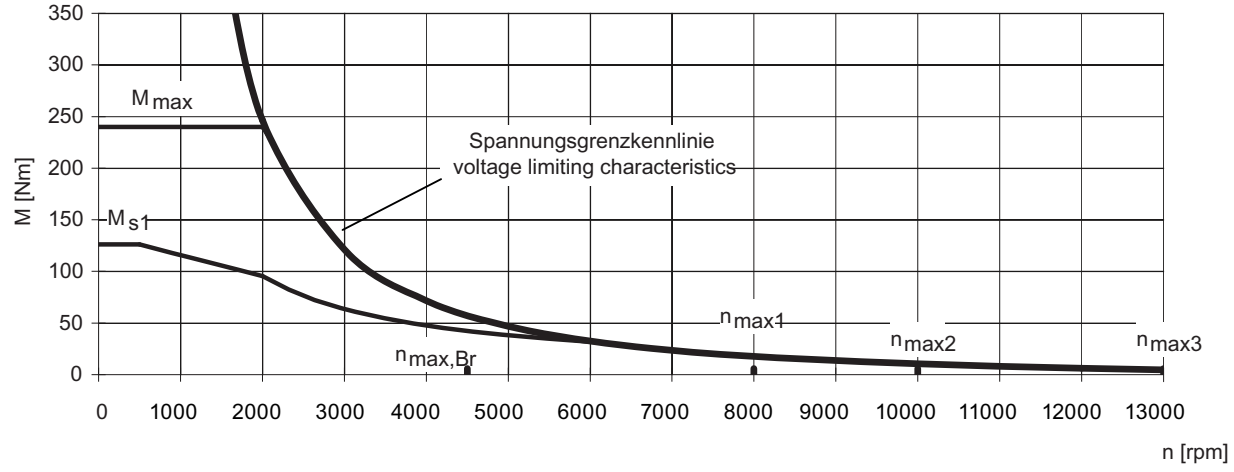
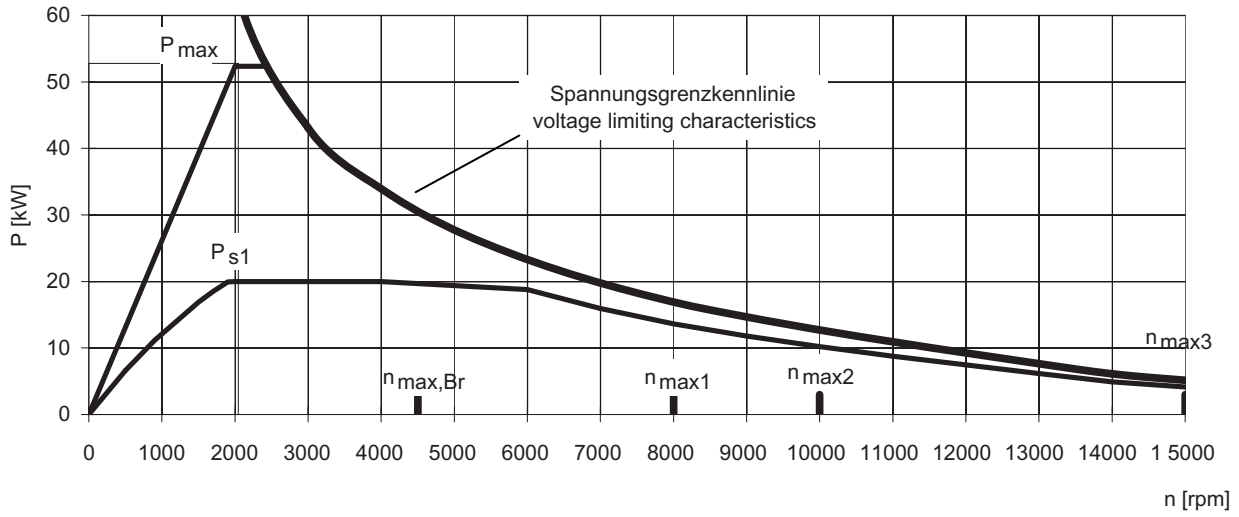



Tabella 4- 109 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8133-□□G□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 20,0 | 96 | 45 | 8000 | 10000 | 15000 | 4500 | 4000 | 250 | 117 | 126 | 54 |



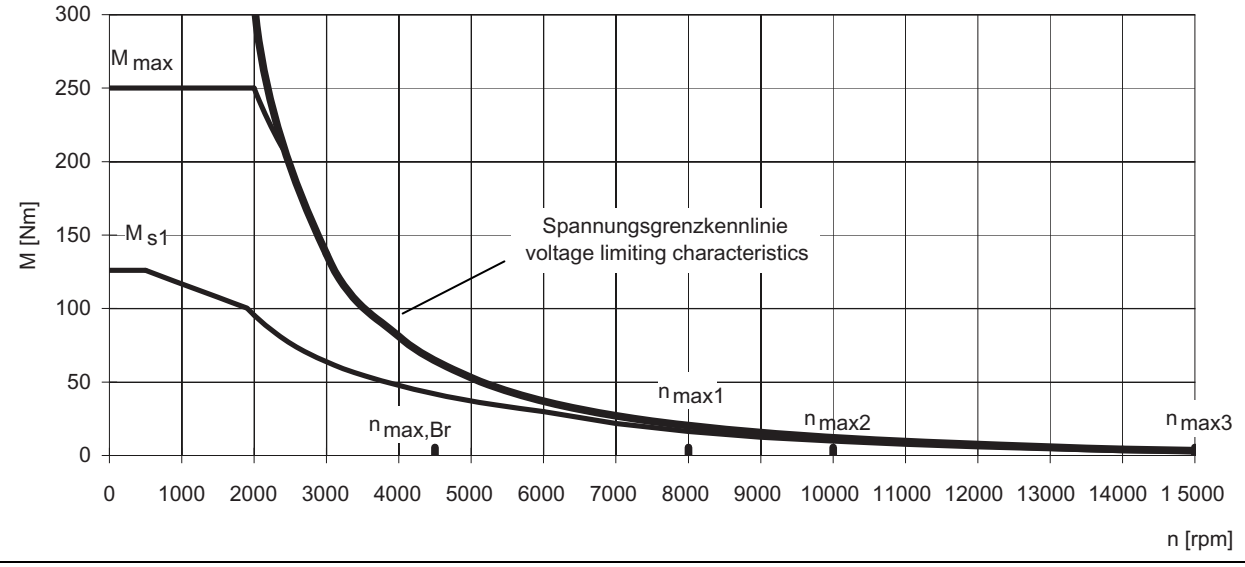



Tabella 4- 110 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8133-□□G□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 22,5 | 93 | 44 | 8000 | 10000 | 15000 | 4500 | 5000 | 250 | 117 | 126 | 54 |
| 2000 | 20,0 | 96 | 45 | | | | | 6500 | | | | |

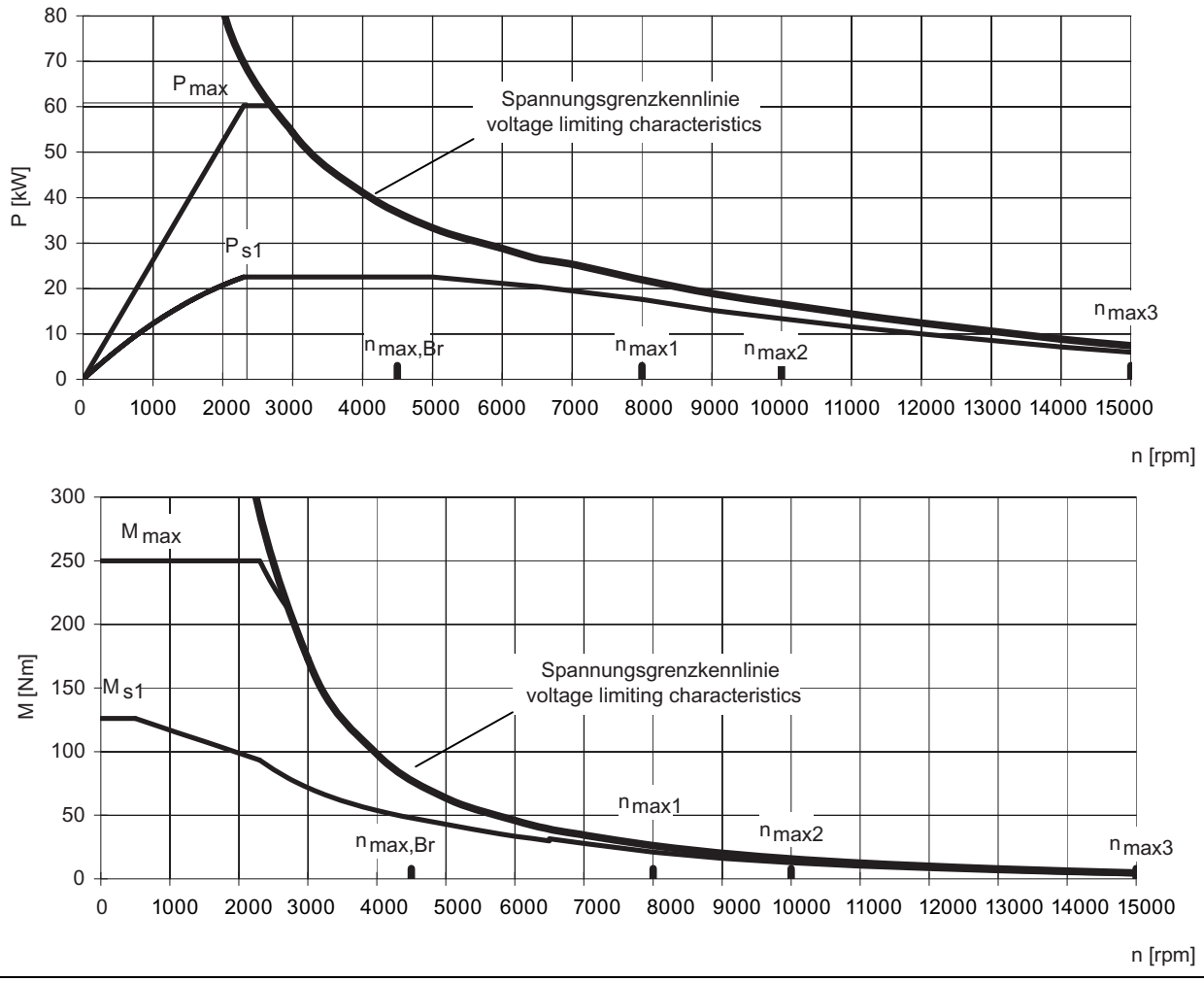
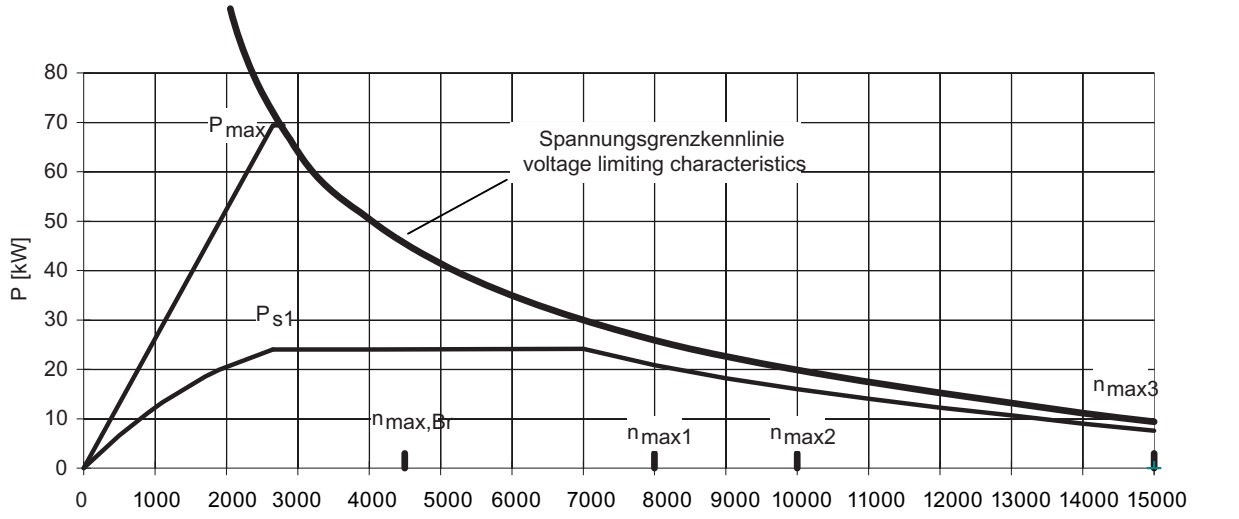


Tabella 4- 111 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8133-□□G□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 24,0 | 86 | 41 | 8000 | 10000 | 15000 | 4500 | 7000 | 250 | 117 | 126 | 54 |



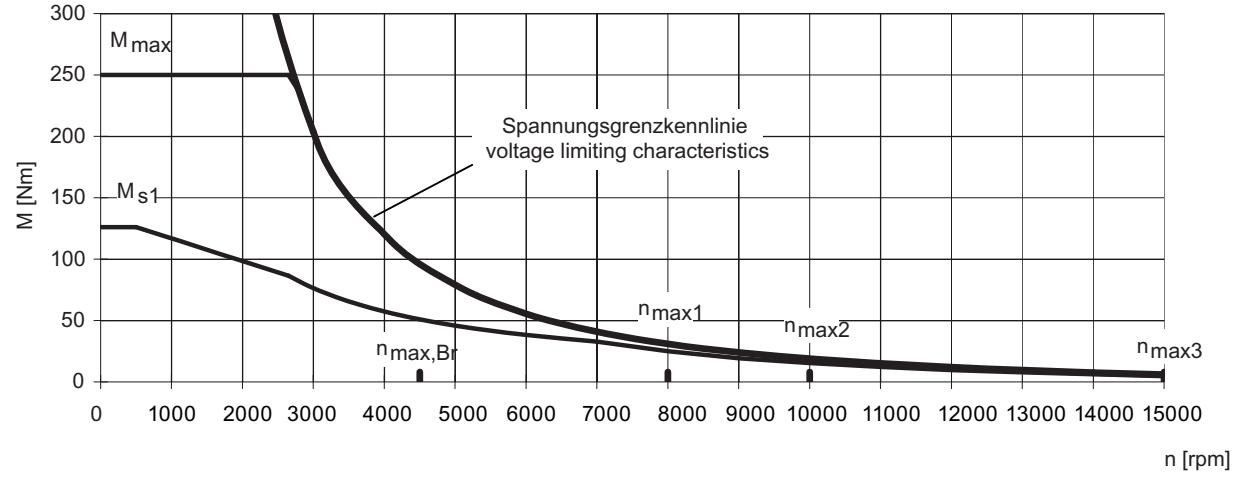
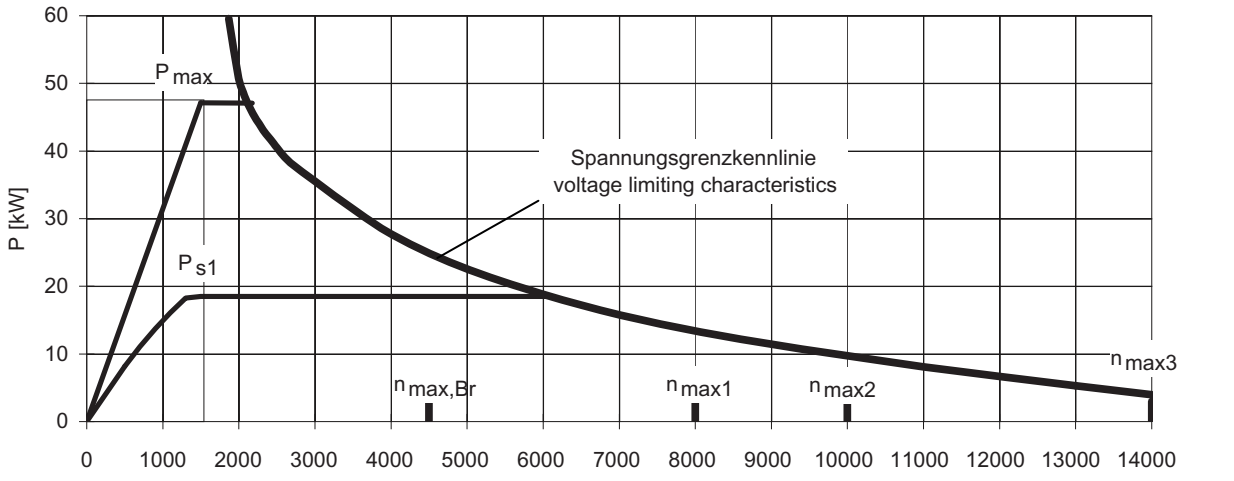



Tabella 4- 112 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8135-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 18,5 | 118 | 43 | 8000 | 10000 | 14000 | 4500 | 6150 | 300 | 112 | 157 | 53 |



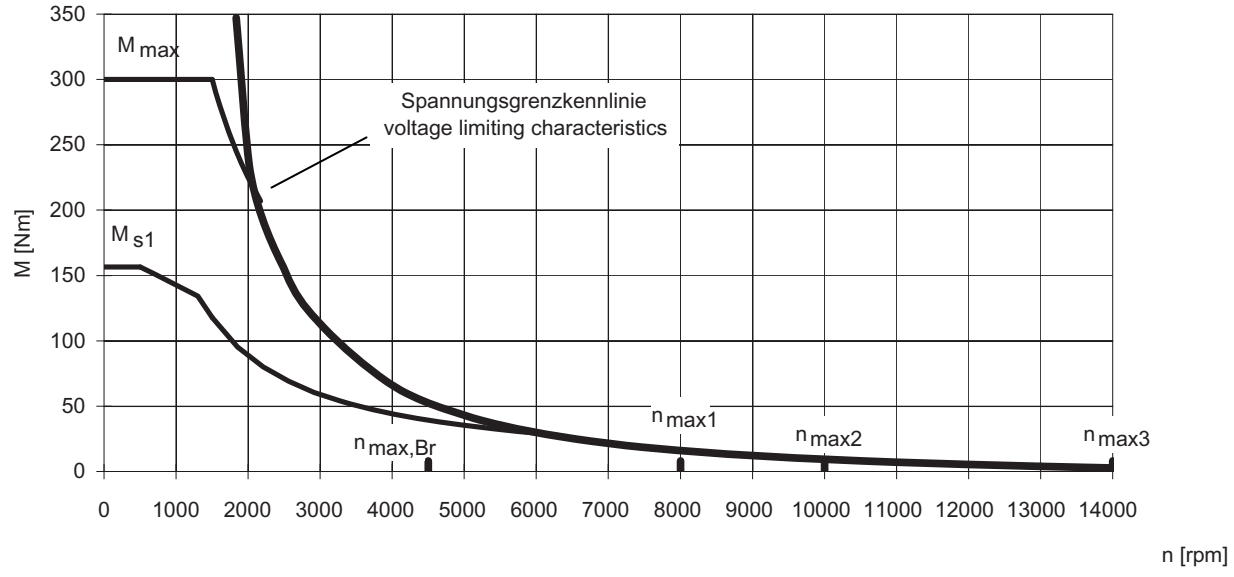
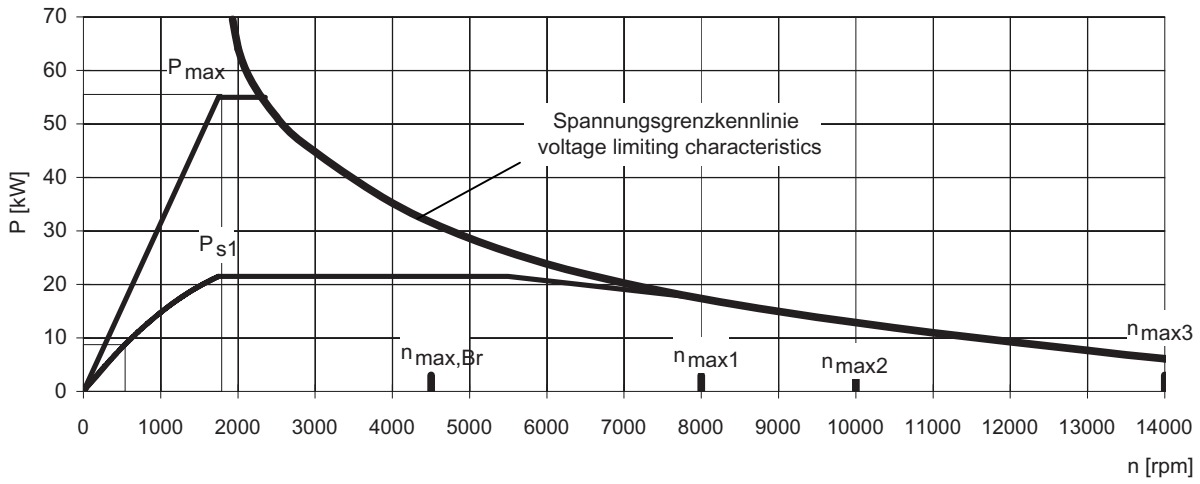



Tabella 4- 113 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8135-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 21,5 | 117 | 43 | 8000 | 10000 | 14000 | 4500 | 5500 | 300 | 112 | 157 | 53 |
| 1500 | 18,5 | 118 | 43 | | | | | 7500 | | | | |



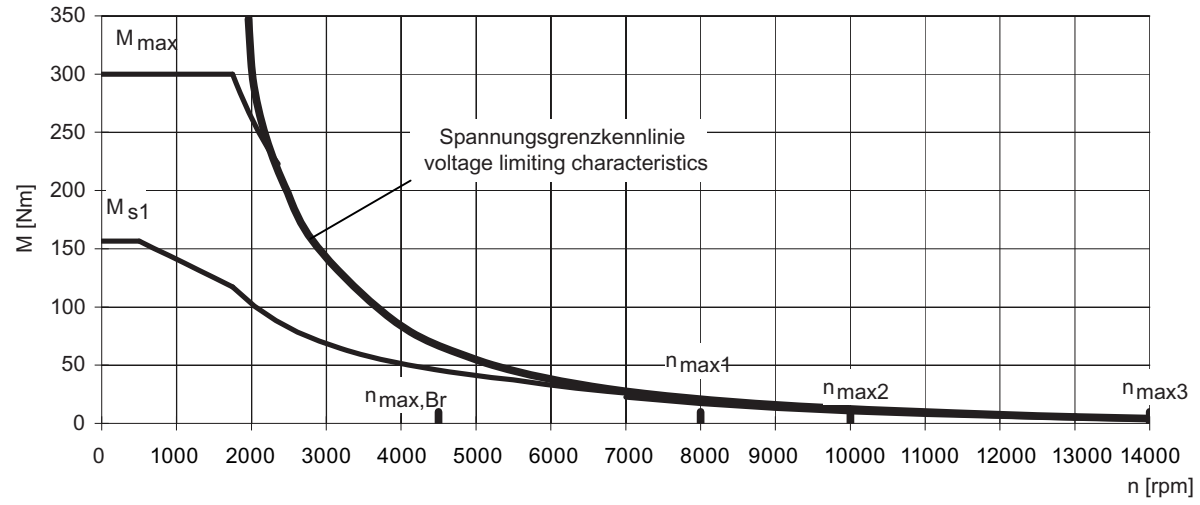
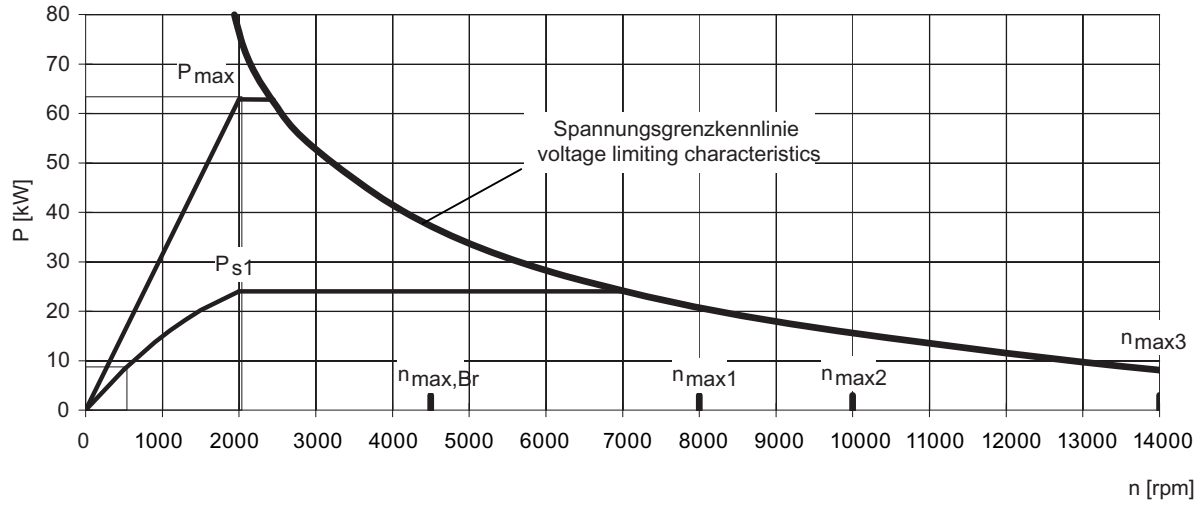



Tabella 4- 114 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8135-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 24,0 | 115 | 43 | 8000 | 10000 | 14000 | 4500 | 7100 | 300 | 112 | 157 | 53 |



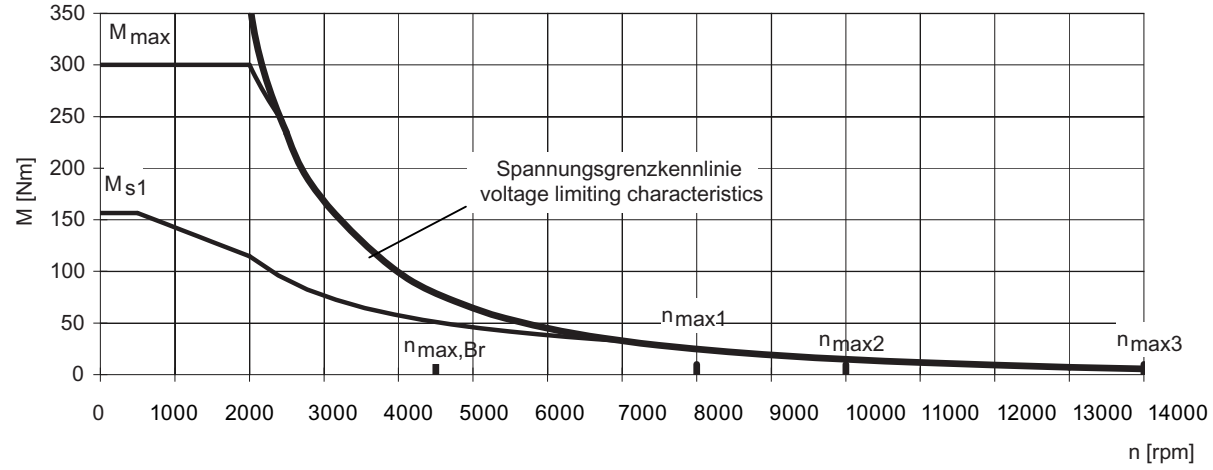



Tabella 4- 115 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8135-□□S□□, Collegamento Δ

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4000 | 18,5 | 44 | 51 | 8000 | 10000 | 15000 | 4500 | 10500 | 131 | 145 | 94 | 78 |

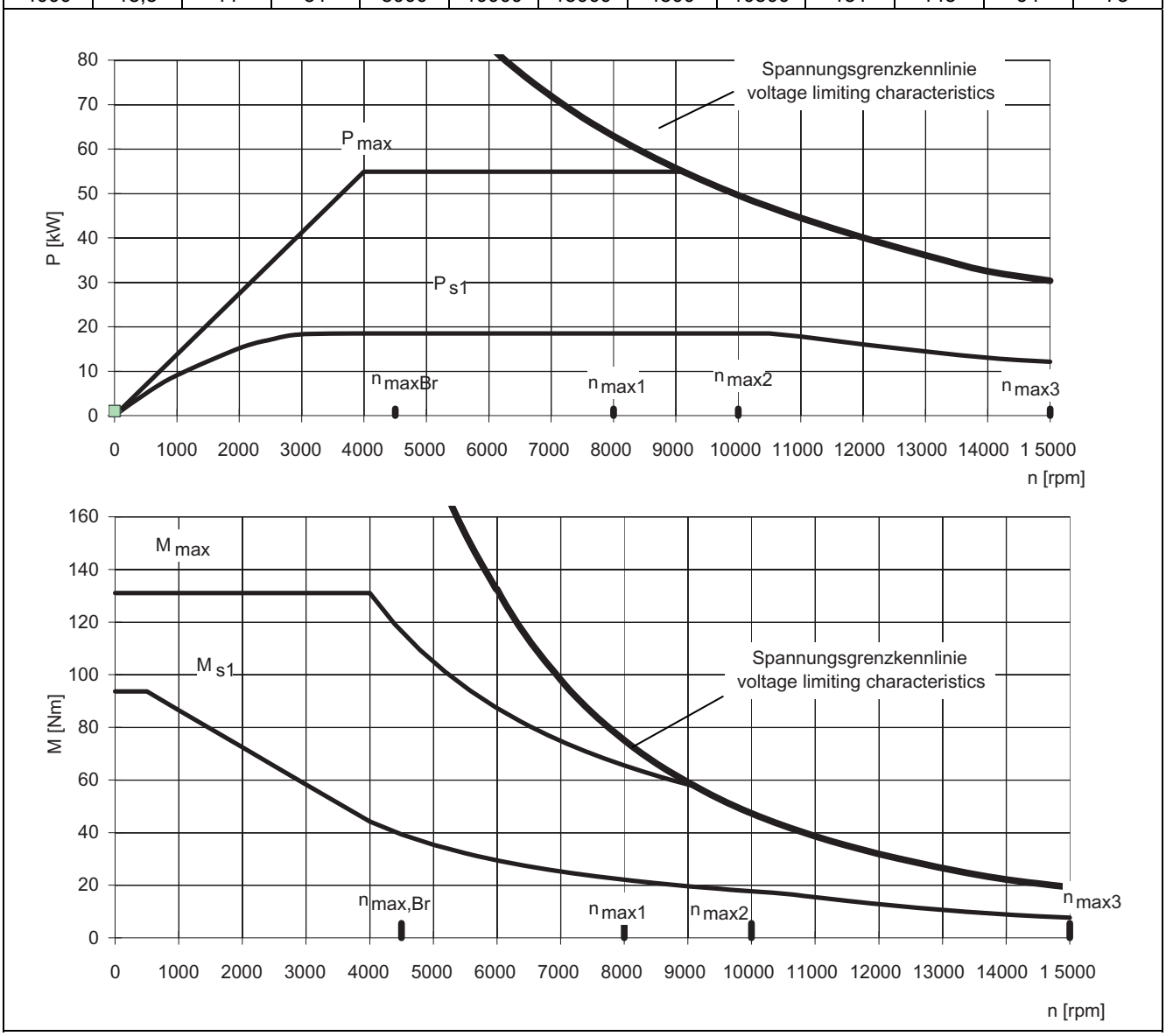


Tabella 4- 116 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8135-□□S□□, Collegamento Δ

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5000 | 24,5 | 47 | 52 | 8000 | 10000 | 15000 | 4500 | 10000 | 131 | 145 | 94 | 78 |
| 4000 | 18,5 | 44 | 51 | | | | | 13000 | | | | |

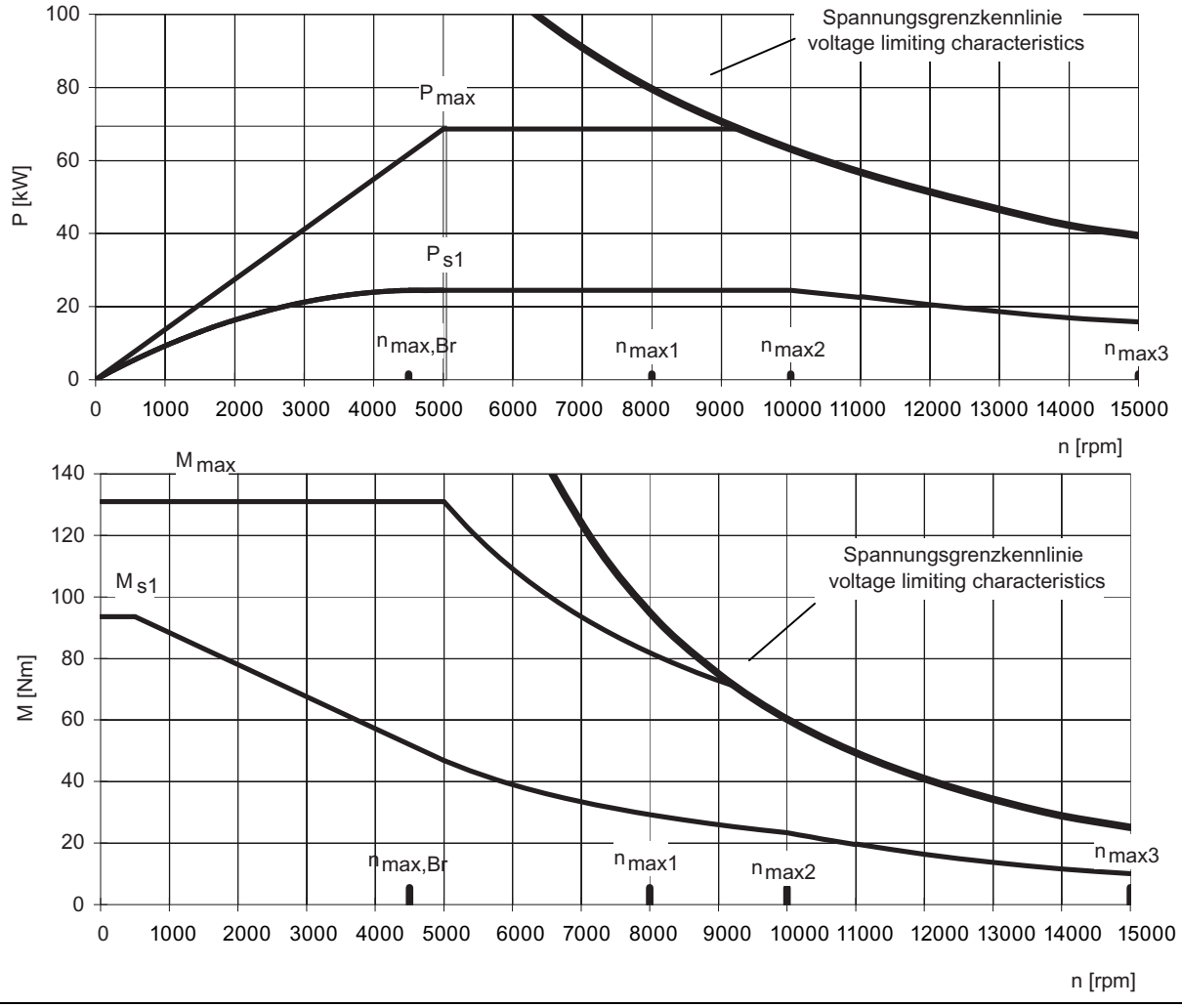


Tabella 4- 117 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8135-□□S□□, Collegamento Δ

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6000 | 30,5 | 49 | 50 | 8000 | 10000 | 15000 | 4500 | 9500 | 131 | 145 | 94 | 78 |

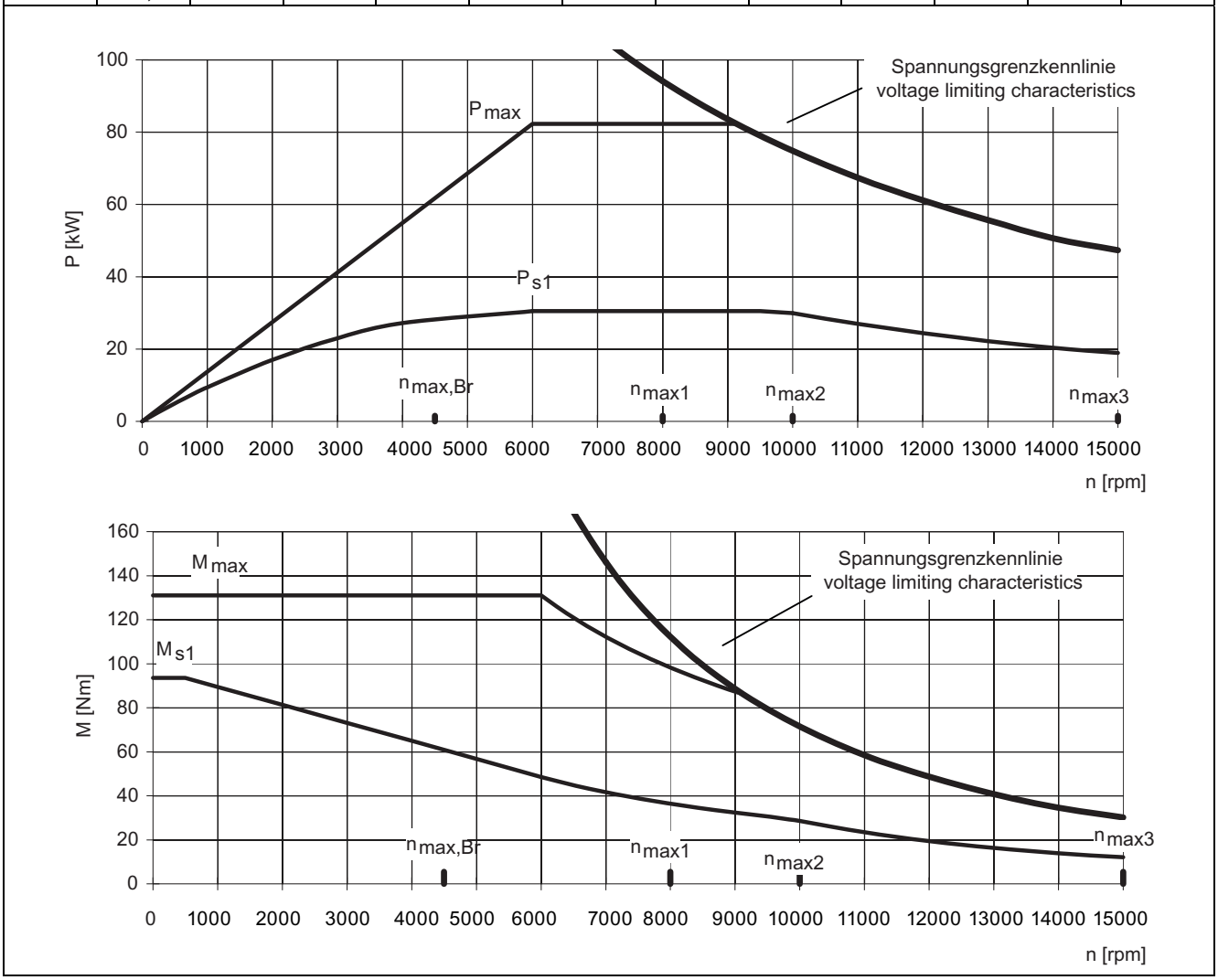


Tabella 4- 118 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8135-□□S□□, collegamento a stella

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 18,5 | 118 | 51 | 8000 | 10000 | 15000 | 4500 | 6500 | 300 | 132 | 157 | 62 |

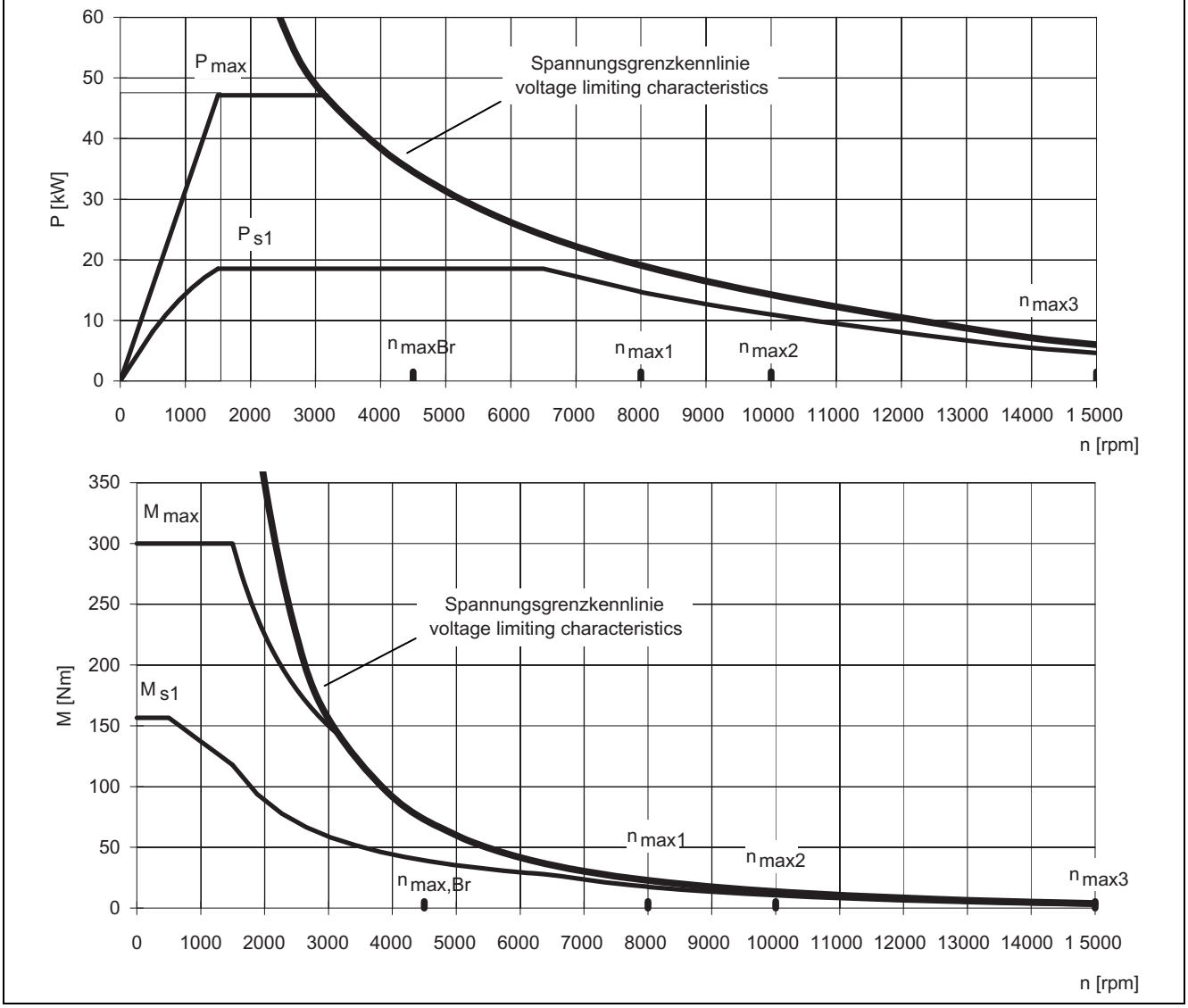
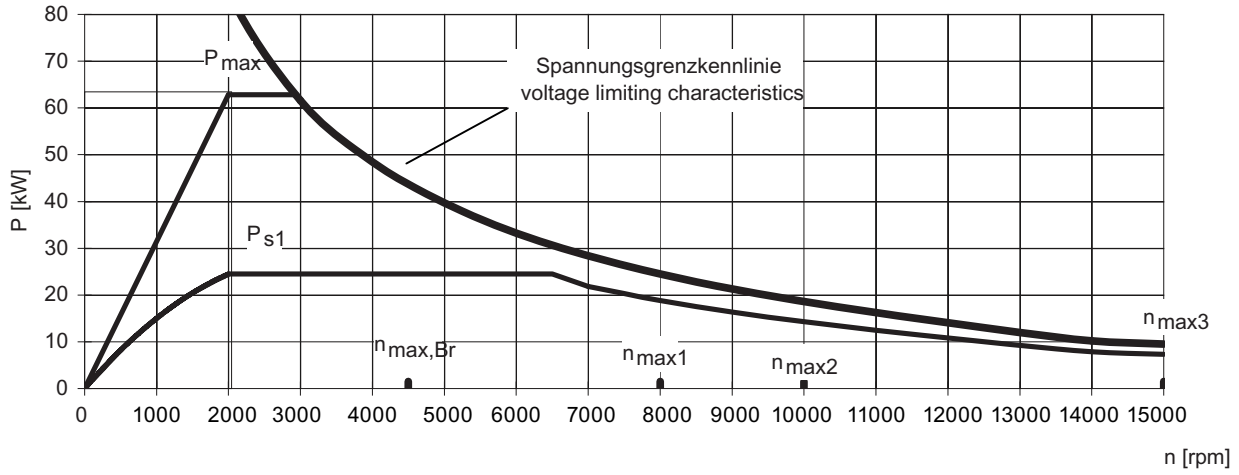


Tabella 4- 119 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8135-□□S□□, collegamento a stella

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 24,5 | 117 | 51 | 8000 | 10000 | 15000 | 4500 | 6500 | 300 | 132 | 157 | 62 |
| 1500 | 18,5 | 118 | 51 | | | | | 8000 | | | | |



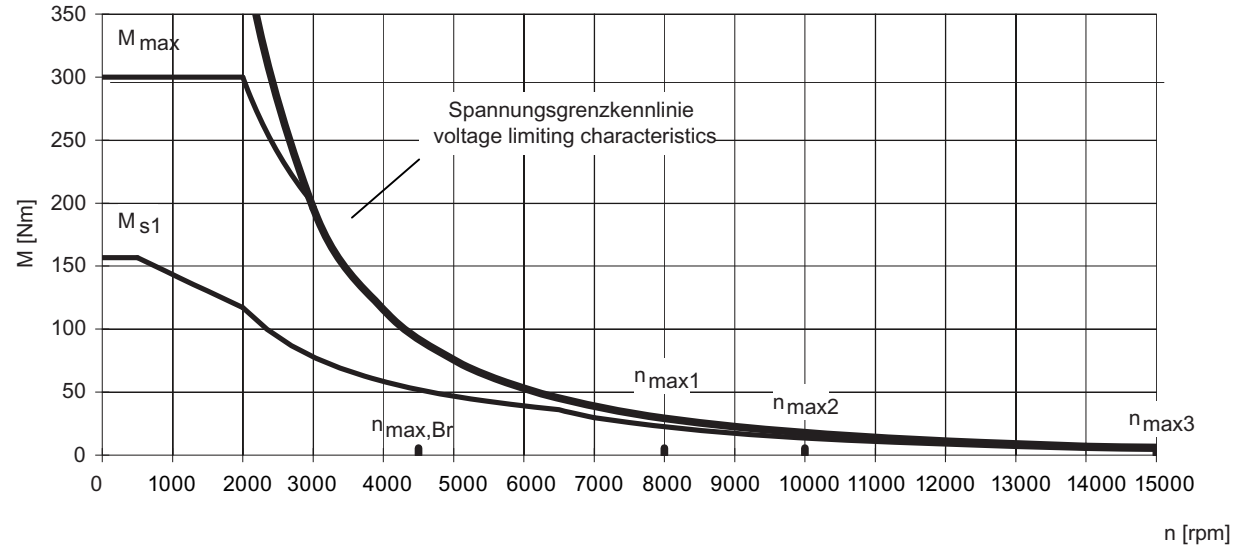
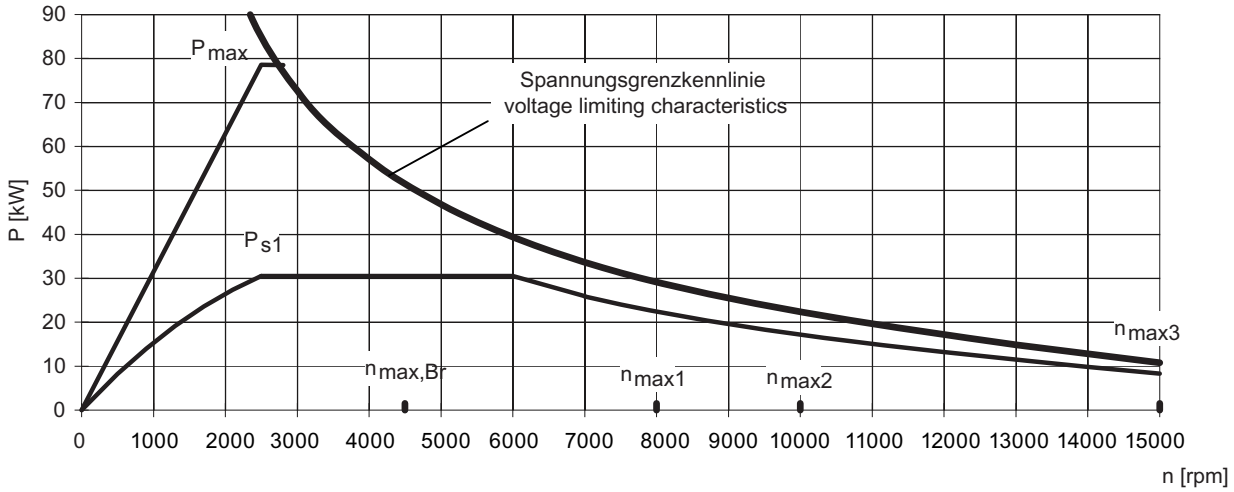



Tabella 4- 120 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8135-□□S□□, collegamento a stella

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 30,5 | 117 | 50 | 8000 | 10000 | 15000 | 4500 | 6000 | 300 | 132 | 157 | 62 |



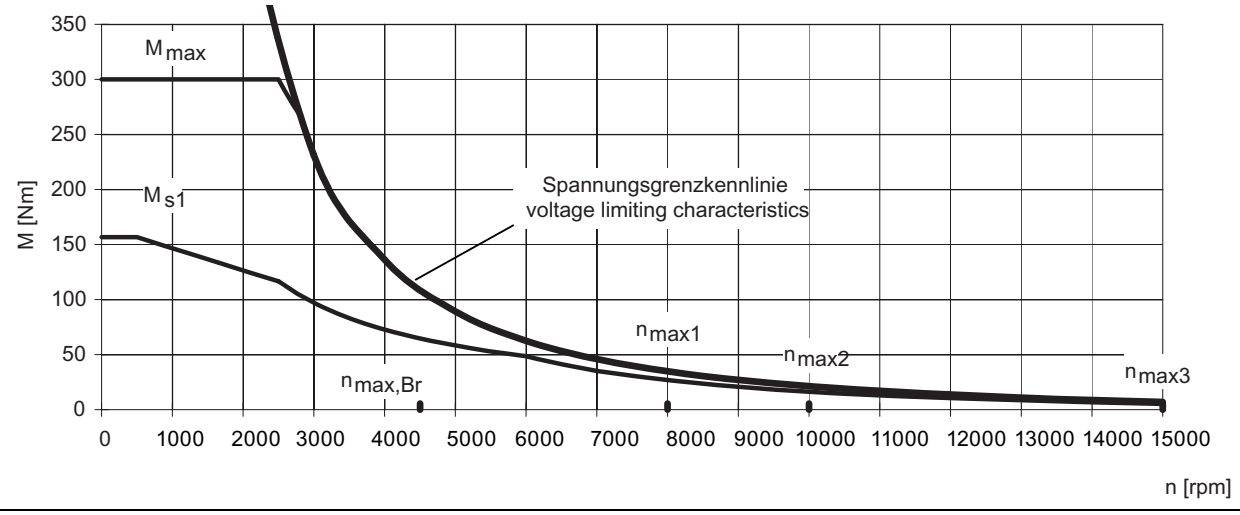



Tabella 4- 121 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8137-□□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 17,0 | 162 | 43 | 8000 | 10000 | 12000 | 4500 | 4300 | 405 | 108 | 183 | 47 |

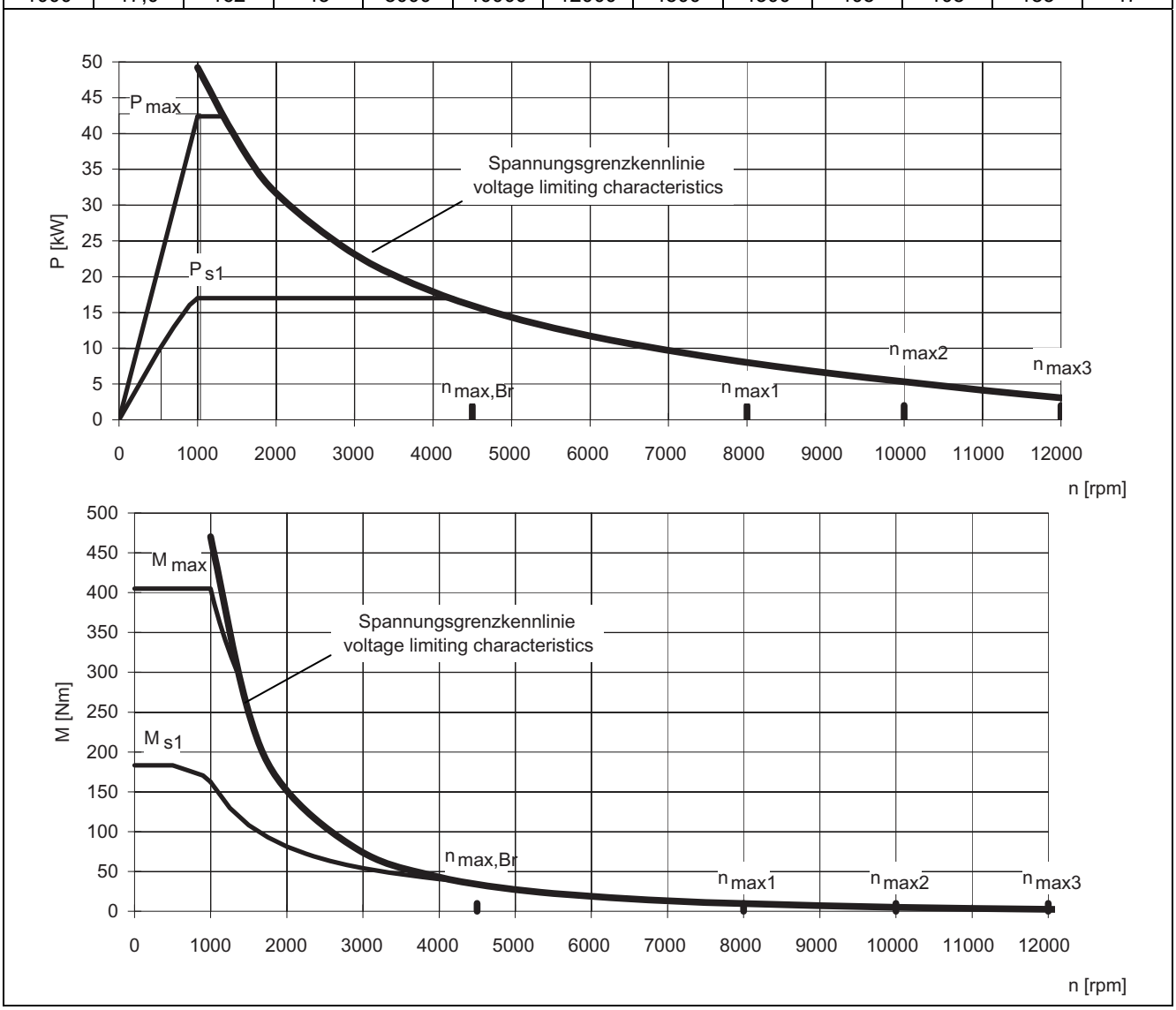


Tabella 4- 122 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8137-□□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 19,5 | 162 | 43 | 8000 | 10000 | 12000 | 4500 | 4000 | 405 | 108 | 183 | 47 |
| 1000 | 17,0 | 162 | 43 | | | | | 5400 | | | | |

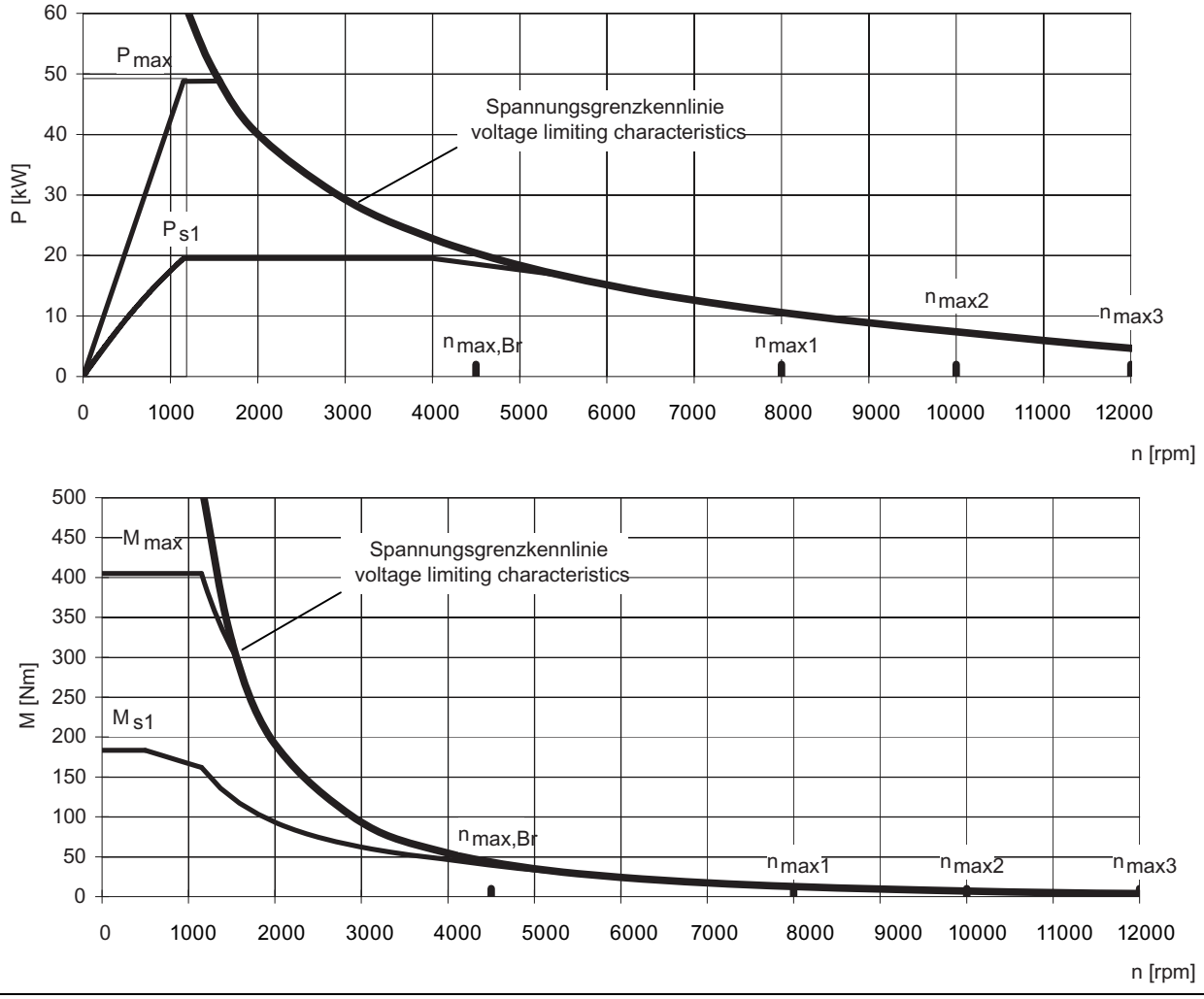
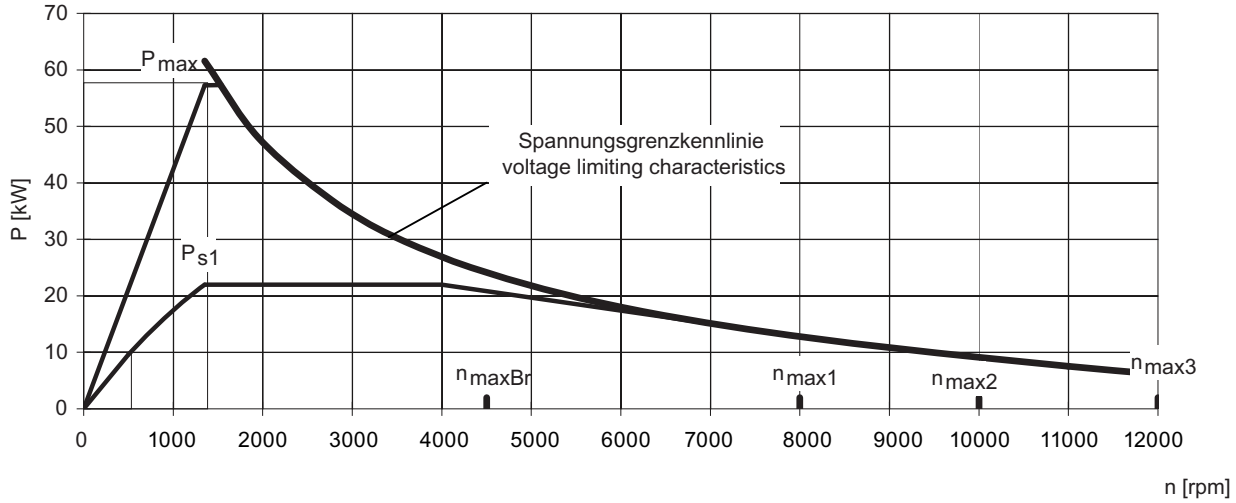


Tabella 4- 123 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8137-□□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 22,0 | 156 | 42 | 8000 | 10000 | 12000 | 4500 | 4000 | 405 | 108 | 183 | 47 |



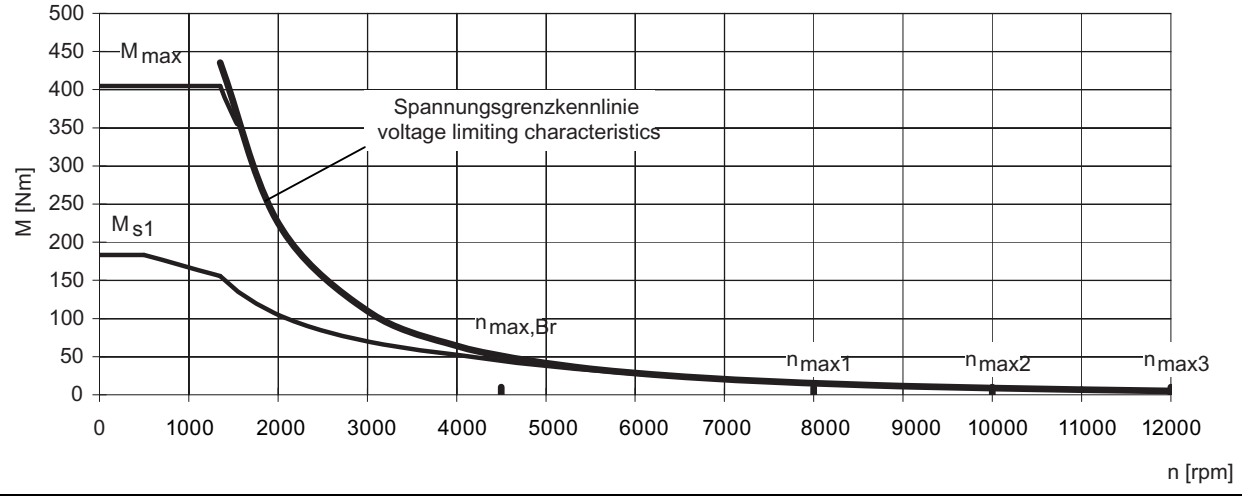
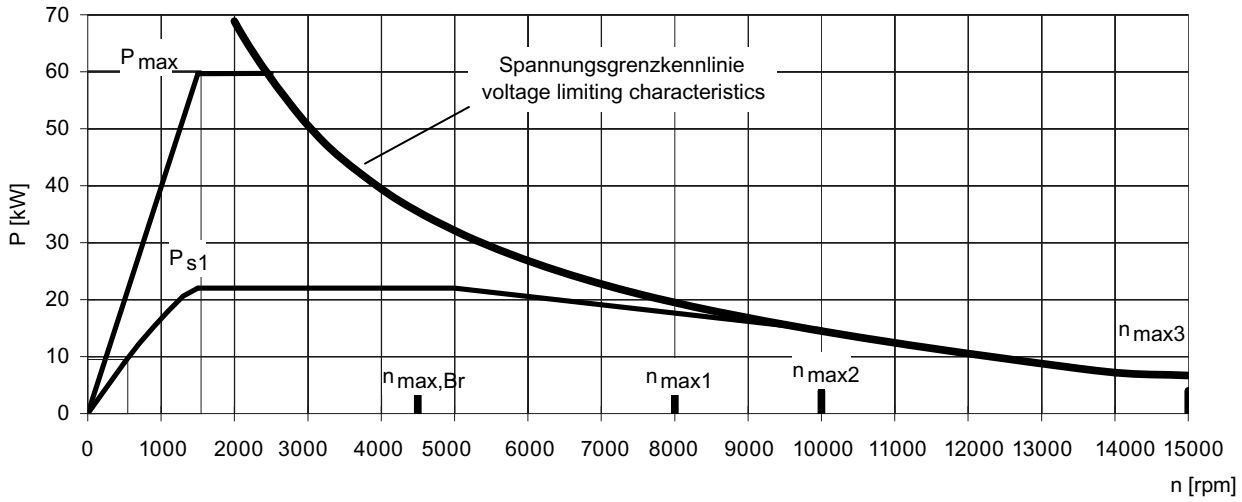



Tabella 4- 124 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8137-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 22,0 | 140 | 56 | 8000 | 10000 | 15000 | 4500 | 4300 | 380 | 151 | 172 | 68 |



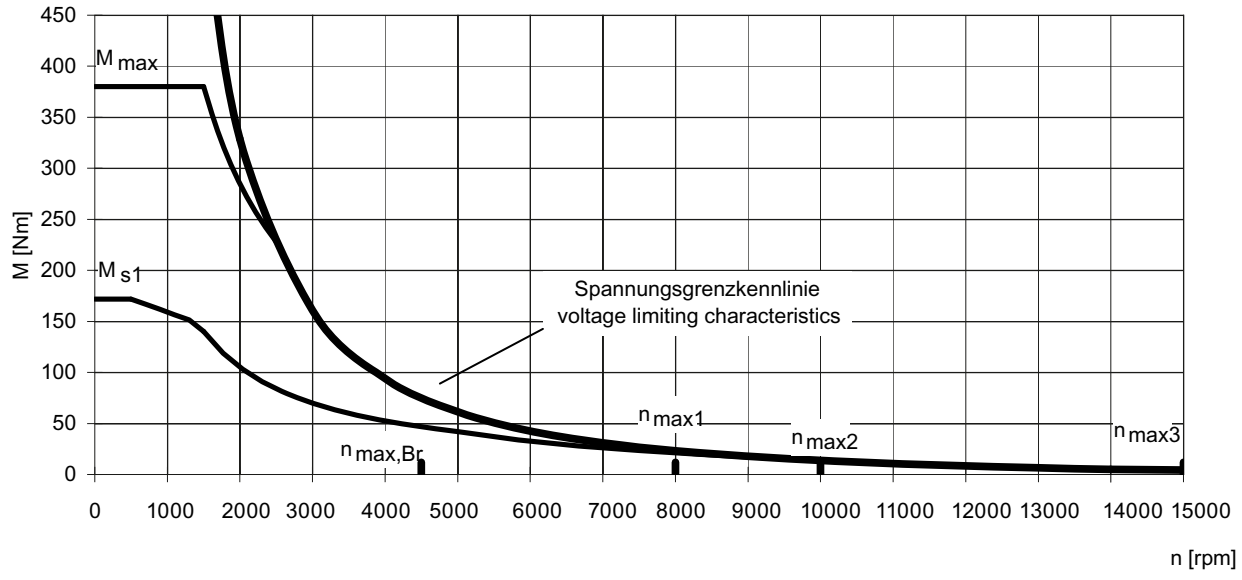
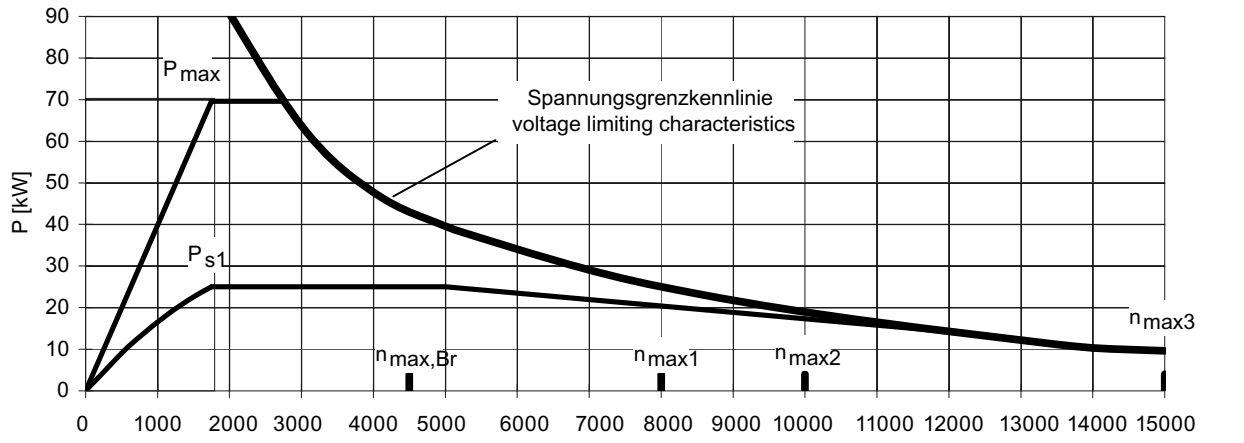



Tabella 4- 125 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8137-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 25,0 | 136 | 56 | 8000 | 10000 | 15000 | 4500 | 5000 | 380 | 151 | 172 | 68 |
| 1500 | 22,0 | 140 | 56 | | | | | 7000 | | | | |



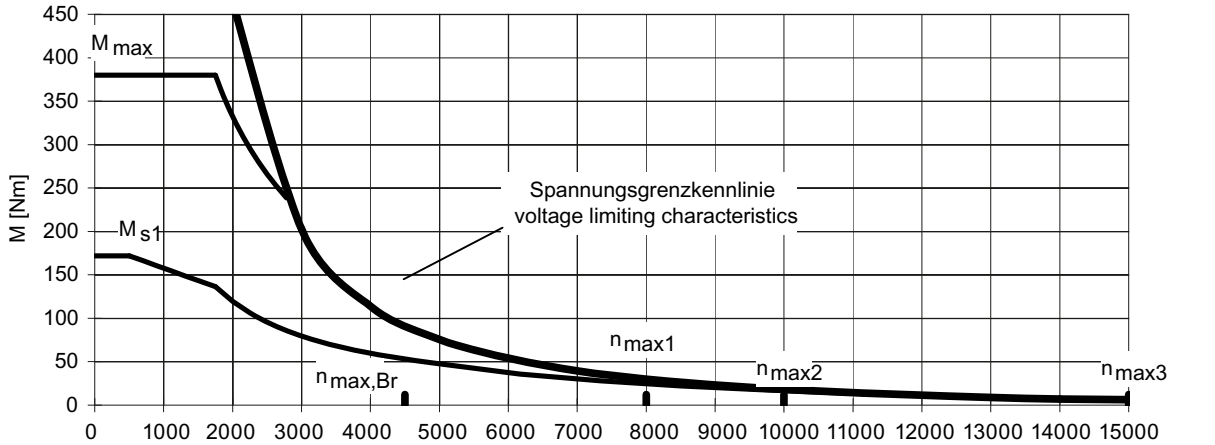



Tabella 4- 126 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8137-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 28,0 | 134 | 55 | 8000 | 10000 | 15000 | 4500 | 4000 | 380 | 151 | 172 | 68 |

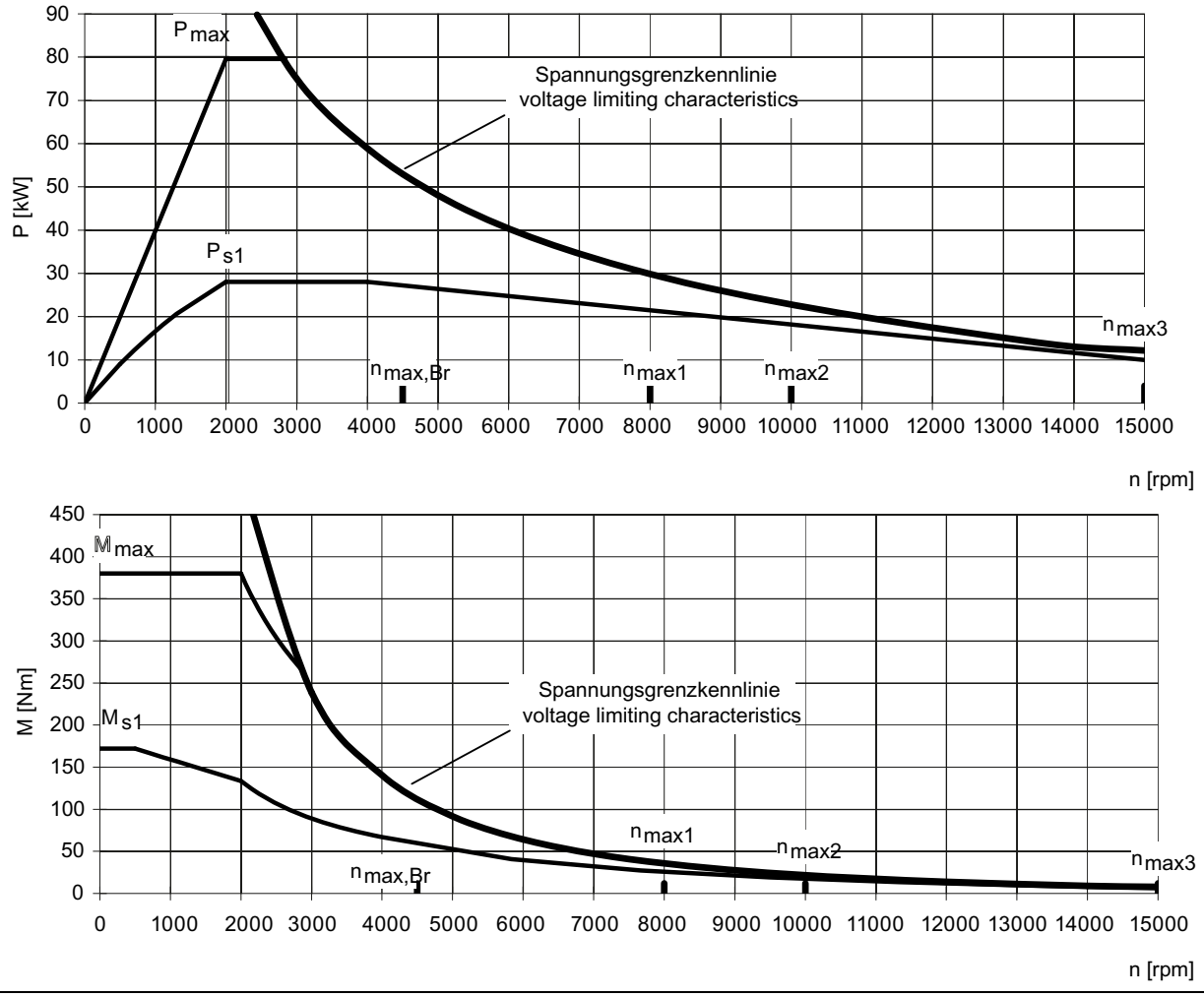
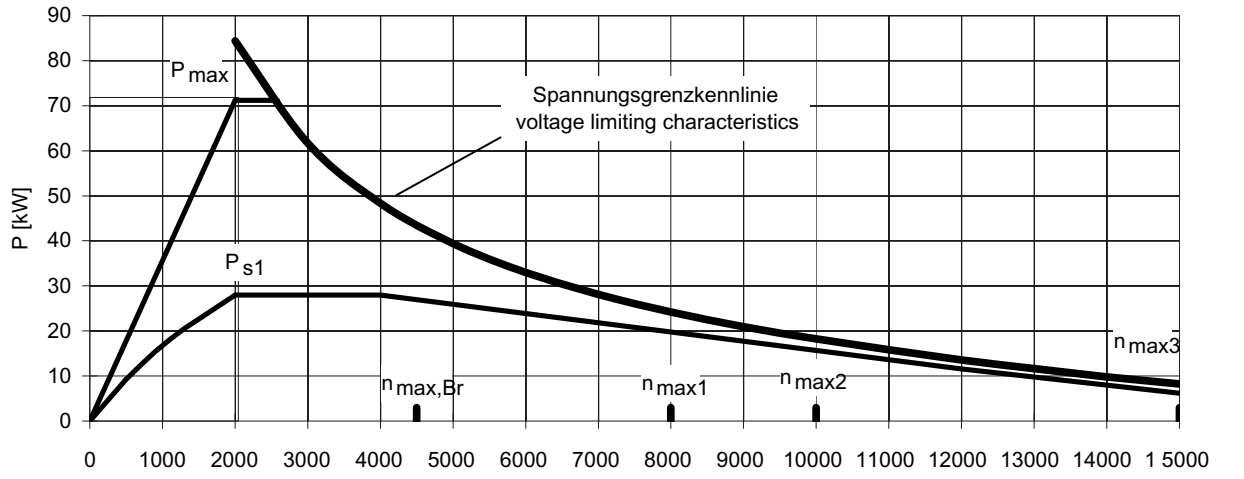


Tabella 4- 127 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8137-□□G□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 28,0 | 134 | 60 | 8000 | 10000 | 15000 | 4500 | 4000 | 340 | 152 | 176 | 73 |



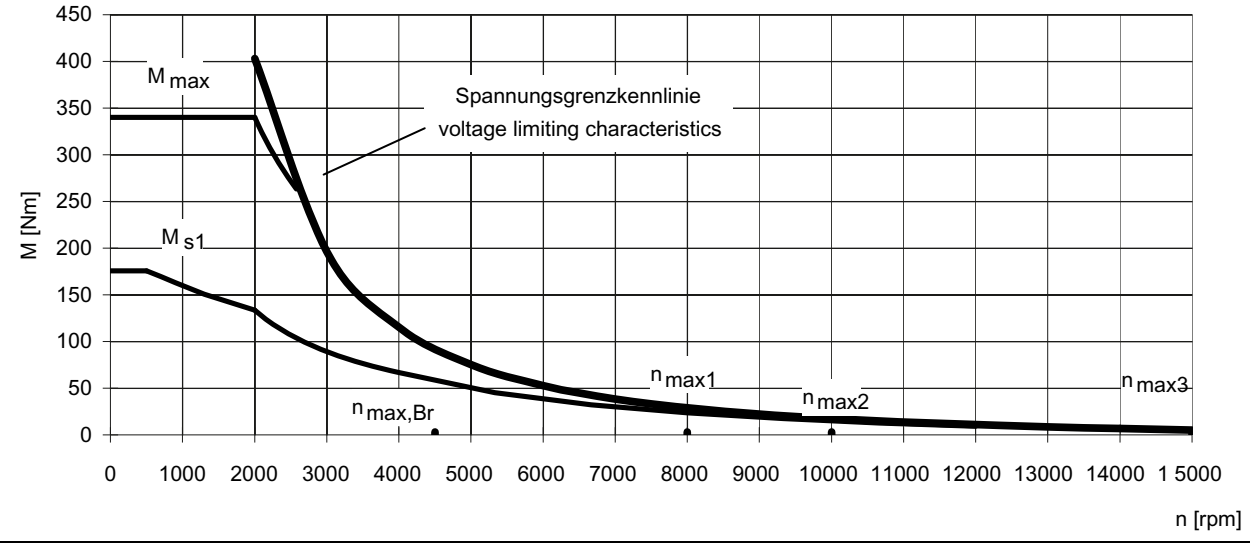



Tabella 4- 128 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8137-□□G□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 29,0 | 120 | 56 | 8000 | 10000 | 15000 | 4500 | 5000 | 340 | 152 | 176 | 73 |
| 2000 | 28,0 | 134 | 60 | | | | | 5500 | | | | |

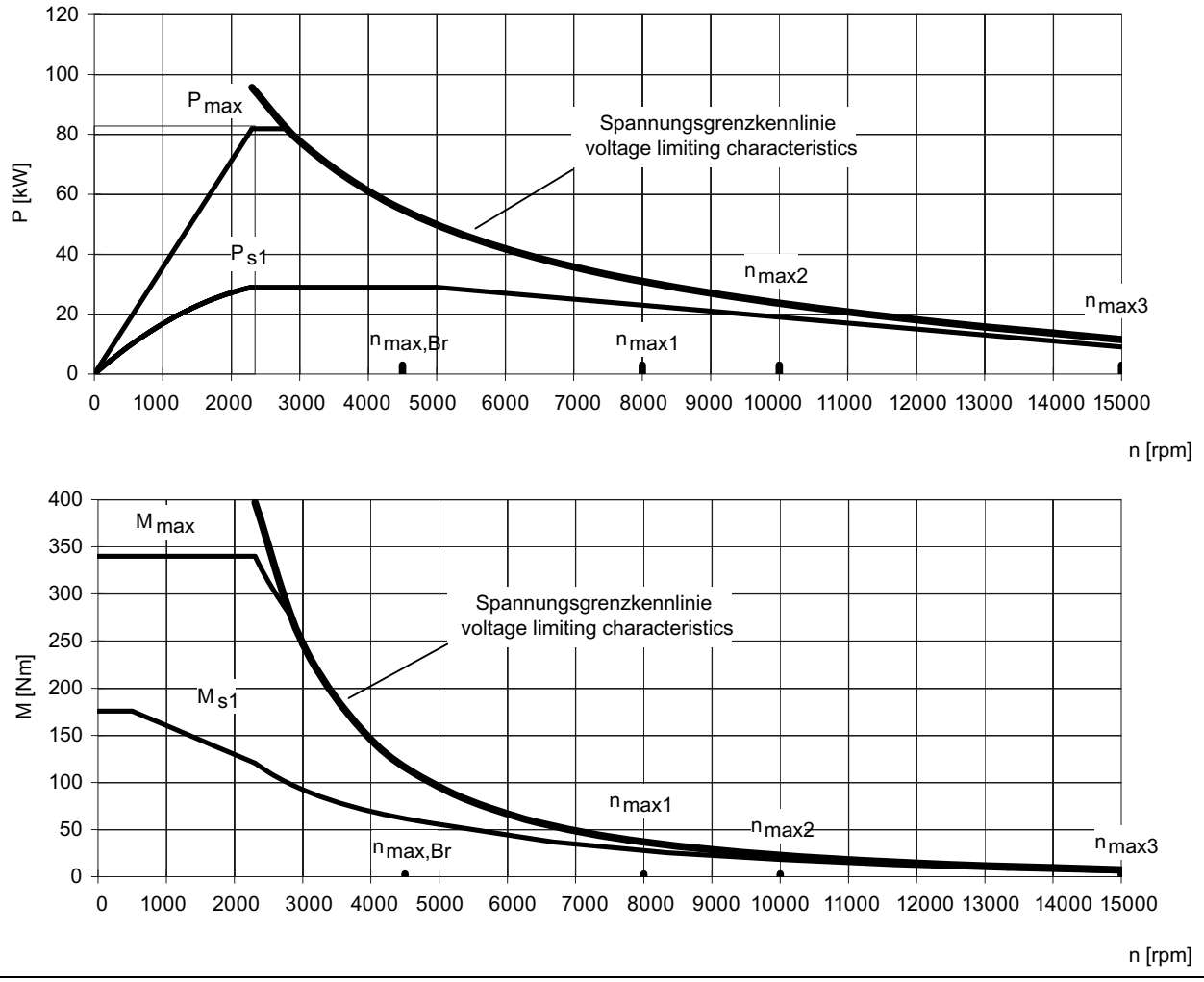
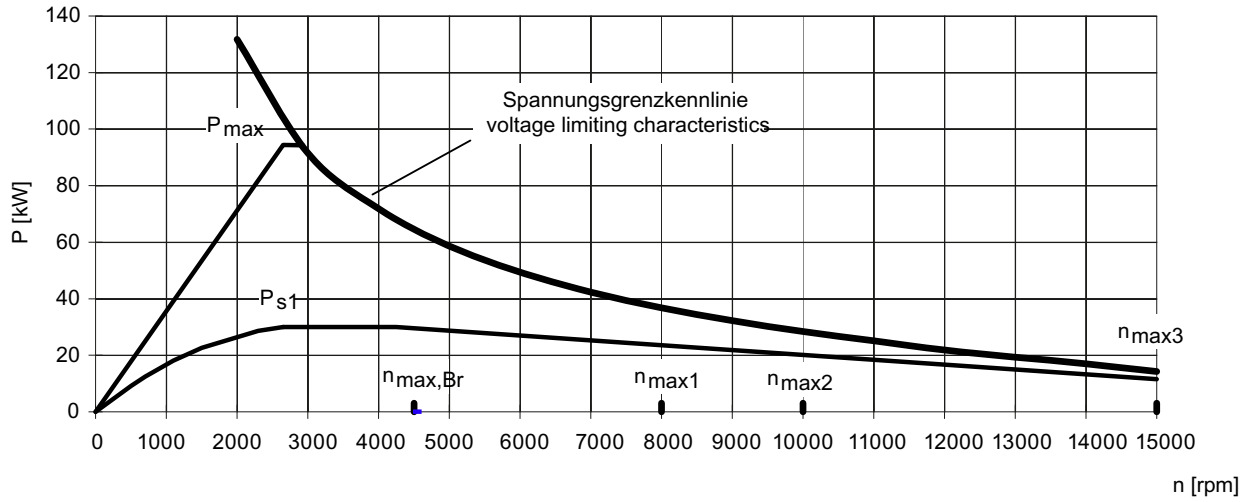


Tabella 4- 129 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8137-□□G□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 30,0 | 108 | 52 | 8000 | 10000 | 15000 | 4500 | 4250 | 340 | 152 | 176 | 73 |



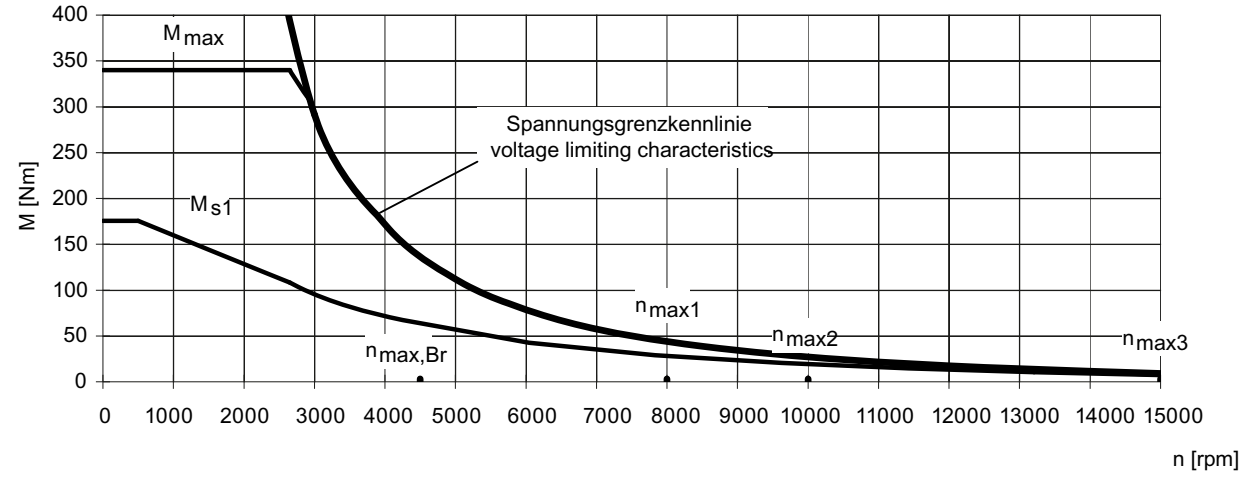



Tabella 4- 130 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8137-□□S□□, Collegamento Δ

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4000 | 22,0 | 53 | 55 | 8000 | 10000 | 15000 | 4500 | 6500 | 160 | 160 | 105 | 87 |

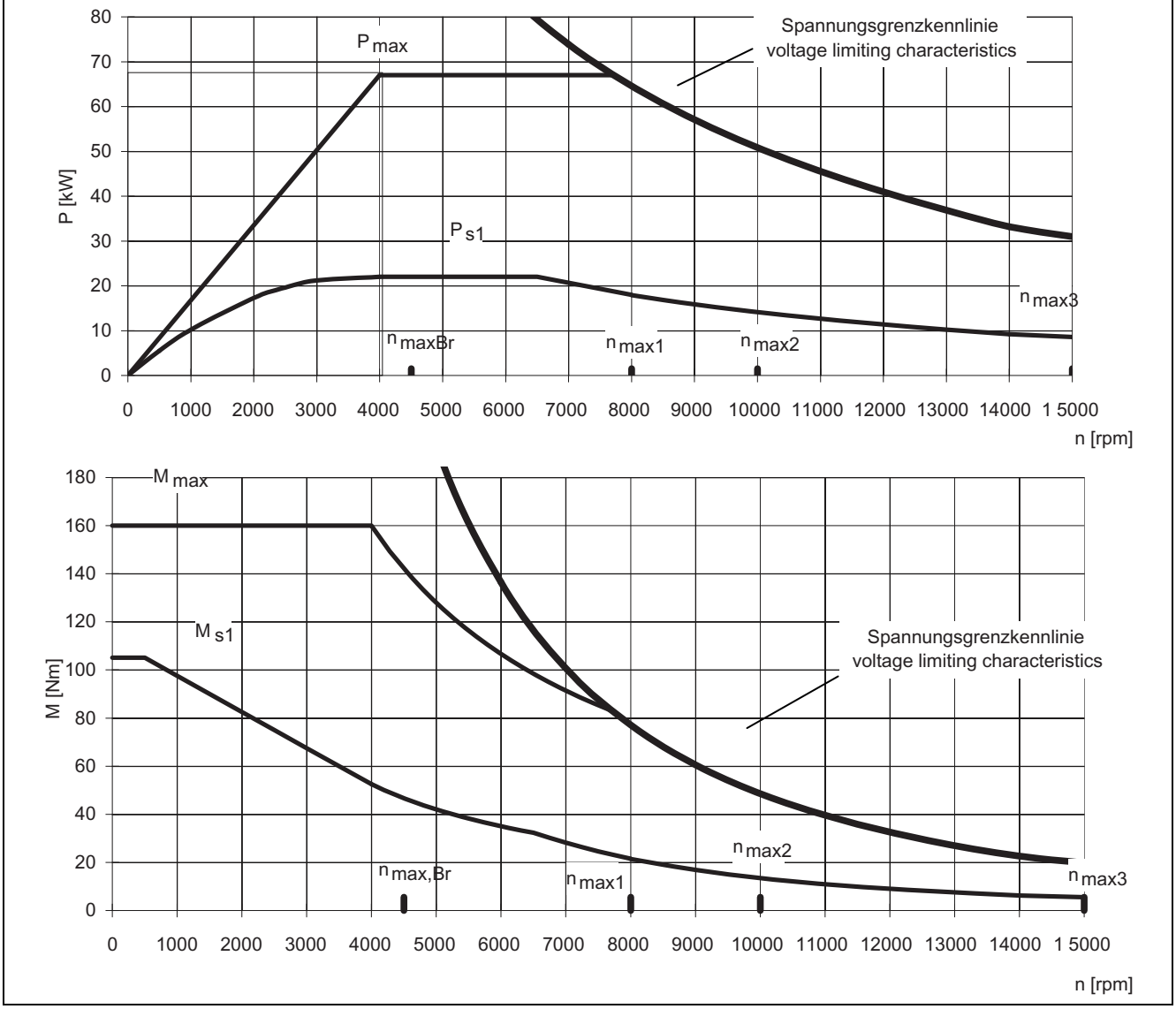
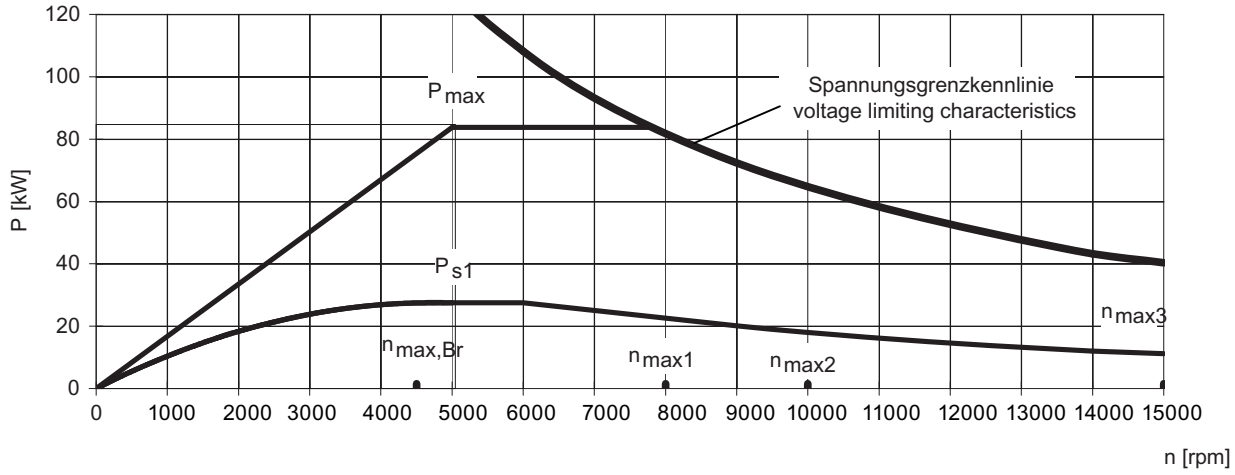


Tabella 4- 131 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8137-□□S□□, Collegamento Δ

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5000 | 27,5 | 53 | 56 | 8000 | 10000 | 15000 | 4500 | 6000 | 160 | 160 | 105 | 87 |
| 4000 | 22,0 | 53 | 55 | | | | | 8000 | | | | |



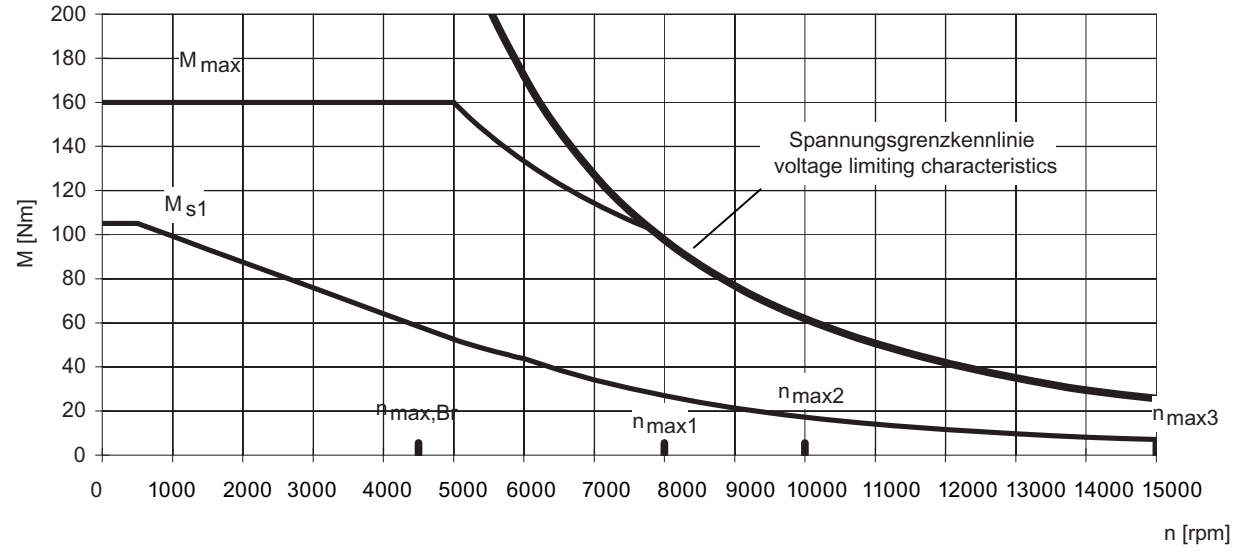
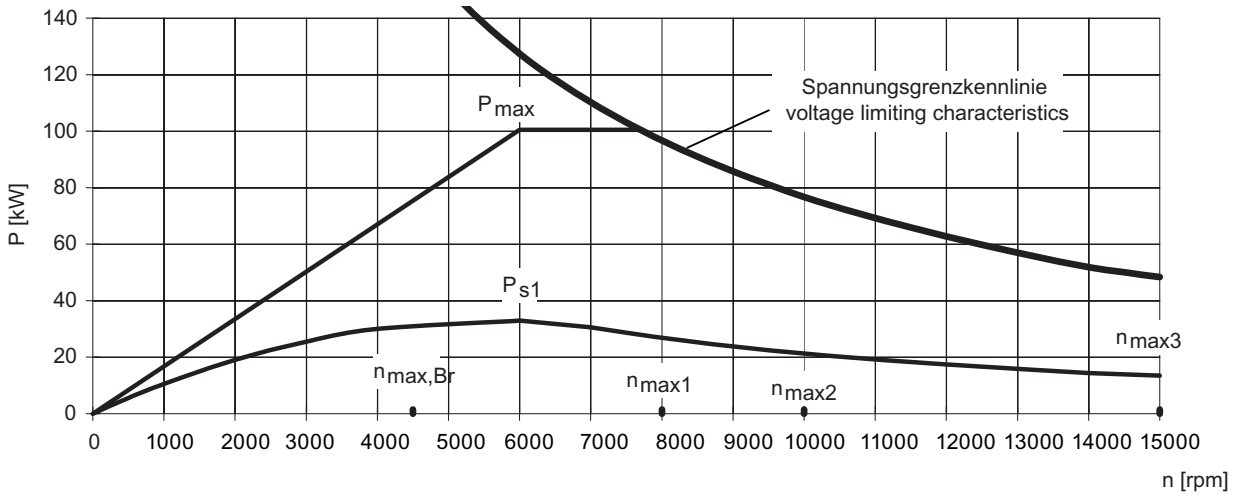



Tabella 4- 132 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8137-□□S□□, Collegamento Δ

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6000 | 33,0 | 53 | 55 | 8000 | 10000 | 15000 | 4500 | 6000 | 160 | 160 | 105 | 87 |



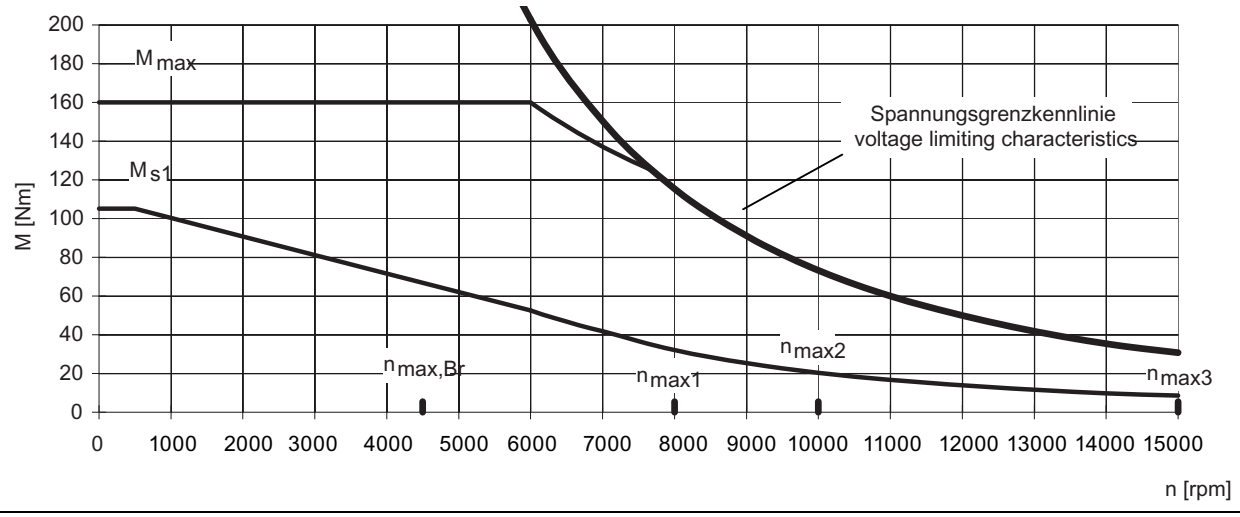



Tabella 4- 133 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8137-□□S□□, collegamento a stella

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 22,0 | 140 | 56 | 8000 | 10000 | 15000 | 4500 | 4500 | 320 | 130 | 185 | 68 |

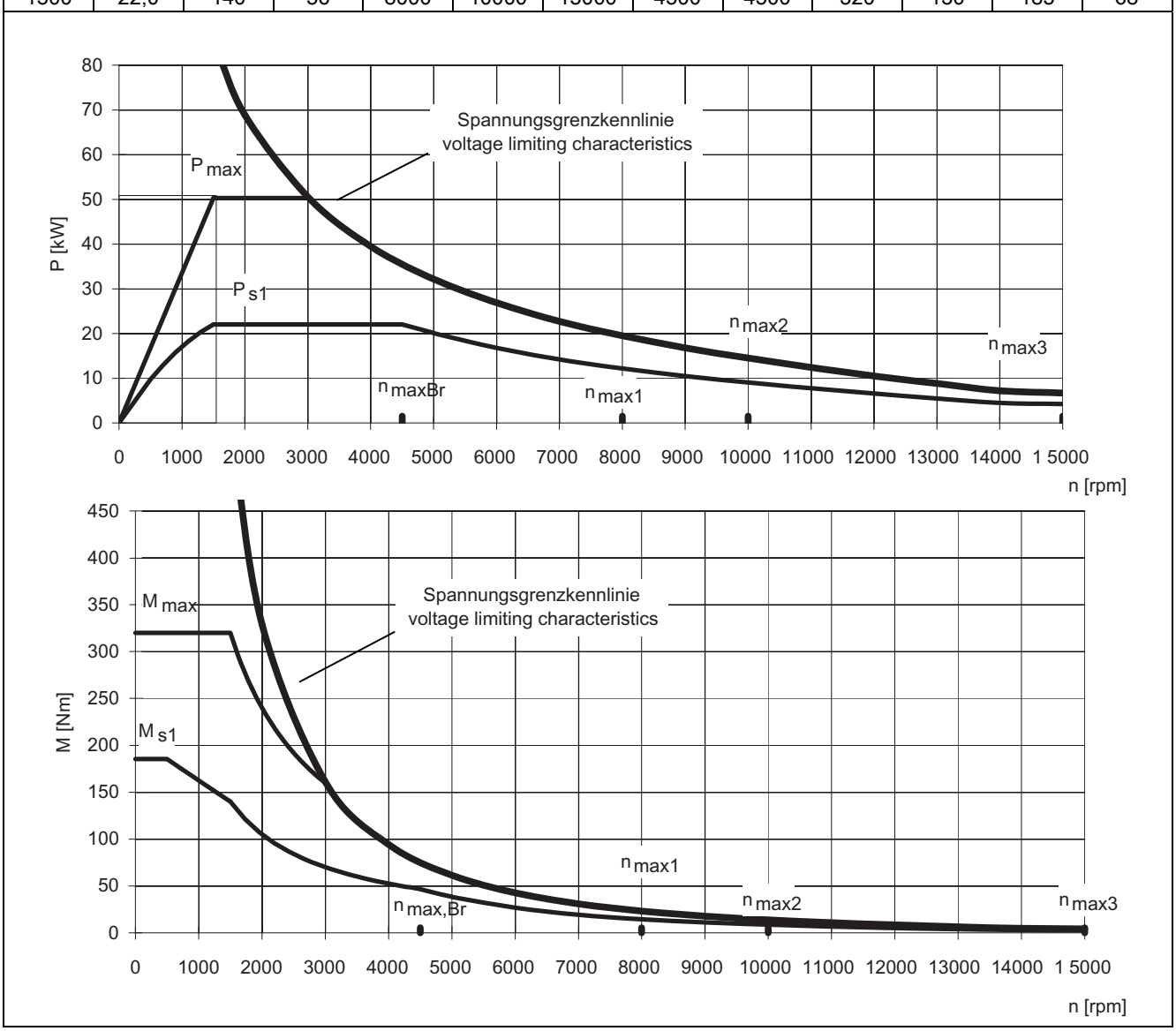
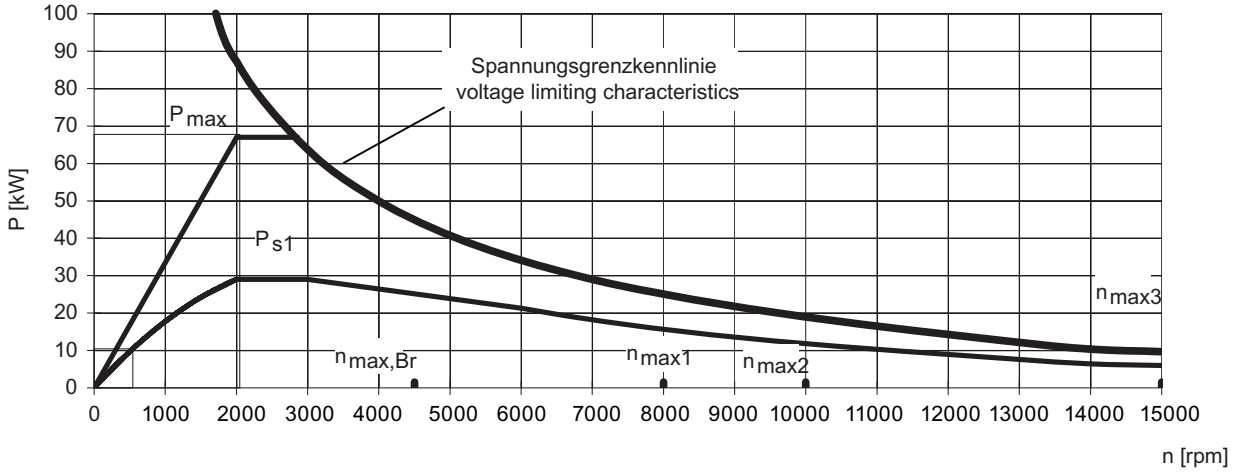


Tabella 4- 134 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8137-□□S□□, collegamento a stella

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 29,0 | 138 | 56 | 8000 | 10000 | 15000 | 4500 | 3000 | 320 | 130 | 185 | 68 |
| 1500 | 22,0 | 140 | 56 | | | | | 5700 | | | | |



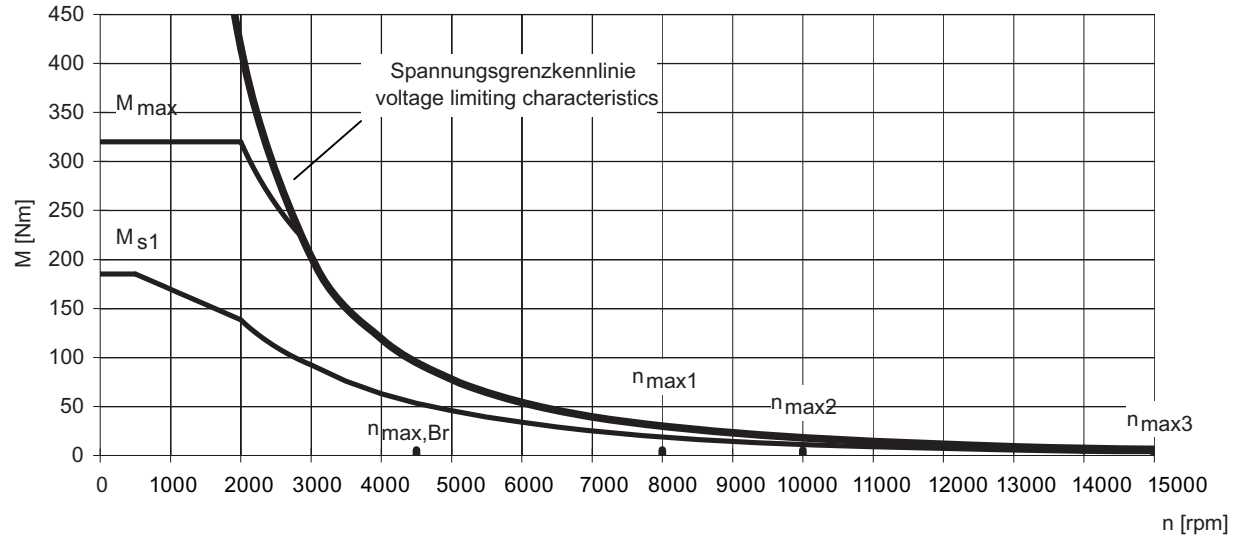
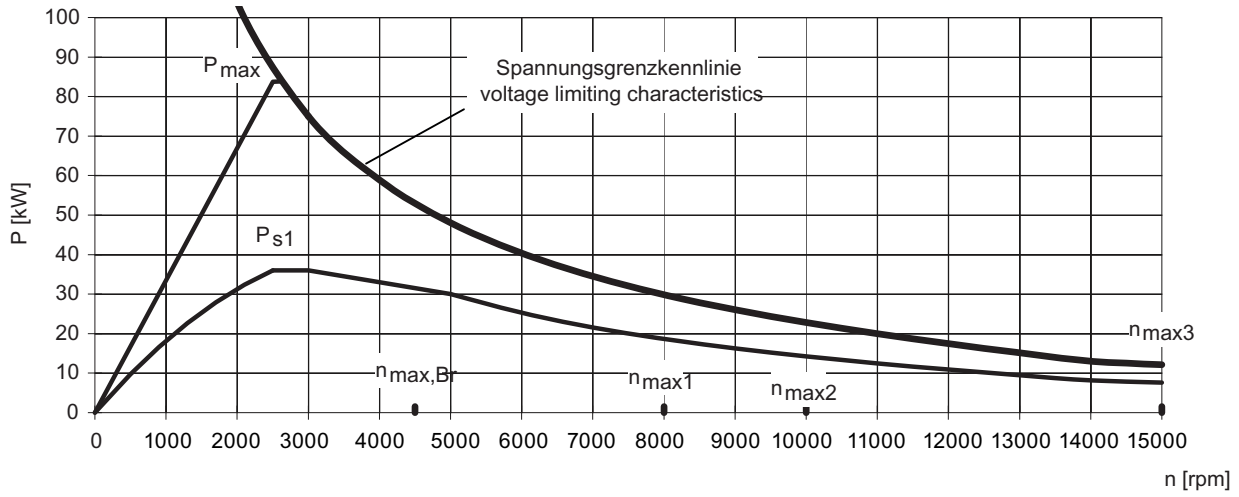
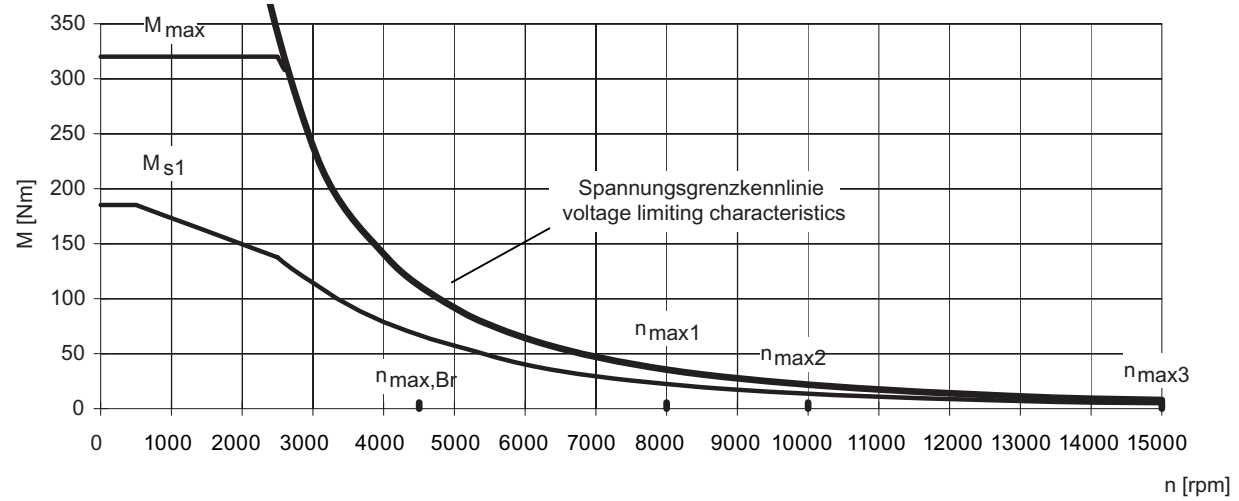



Tabella 4- 135 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8137-□□S□□, collegamento a stella

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 36,0 | 138 | 50 | 8000 | 10000 | 15000 | 4500 | 3000 | 320 | 130 | 185 | 68 |



### 4.1.2.4 Altezza d'asse 160 - Ventilazione forzata

Tabella 4- 136 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8163-□□B□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 9,5 | 227 | 30,0 | 6500 | - | - | 4000 | 2150 | 570 | 70 | 239 | 30 |

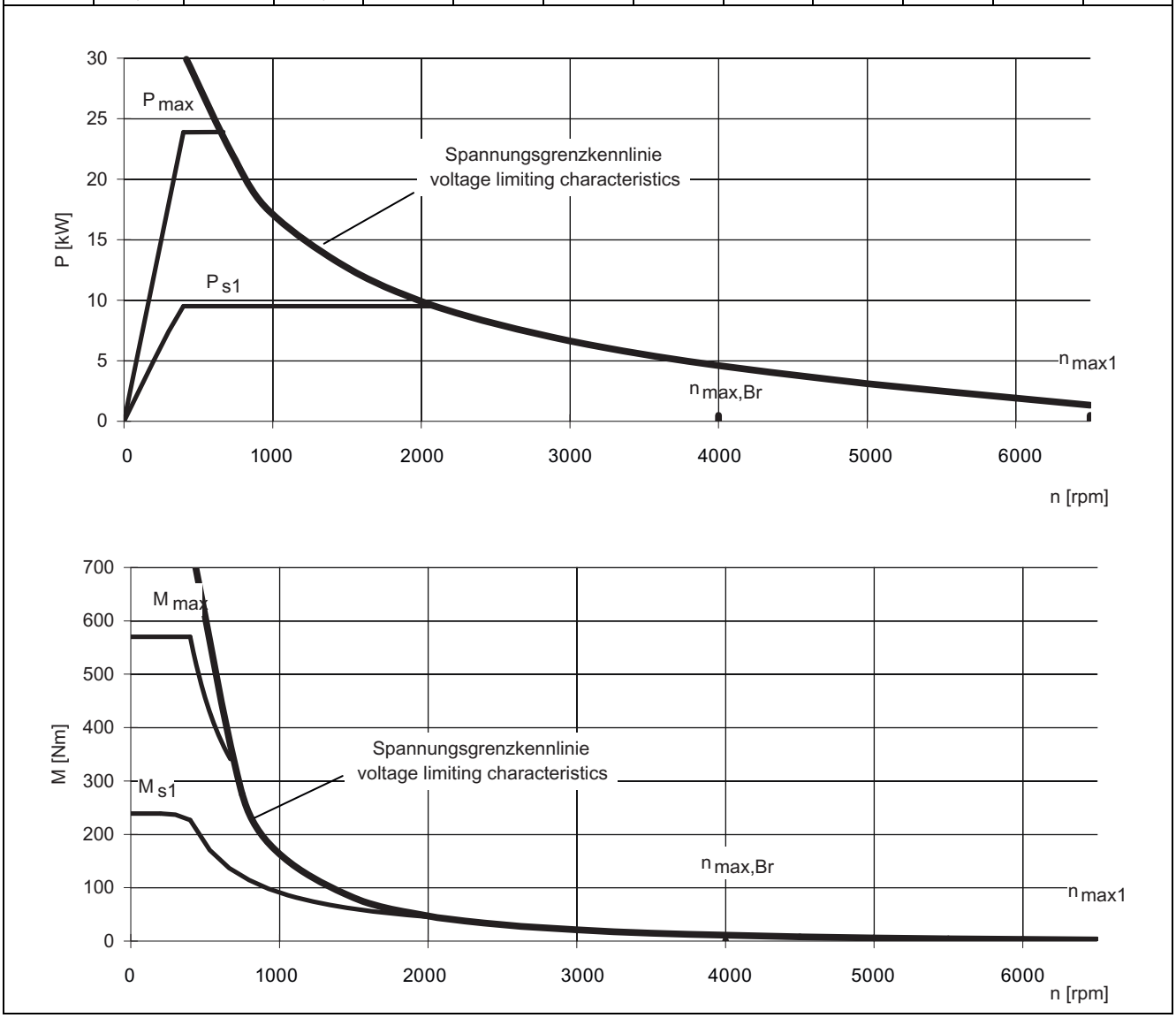


Tabella 4- 137 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8163-□□B□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 12,0 | 229 | 30,0 | 6500 | - | - | 4000 | 2200 | 570 | 70 | 239 | 30 |
| 400 | 9,5 | 227 | 30,0 | | | | | 2750 | | | | |

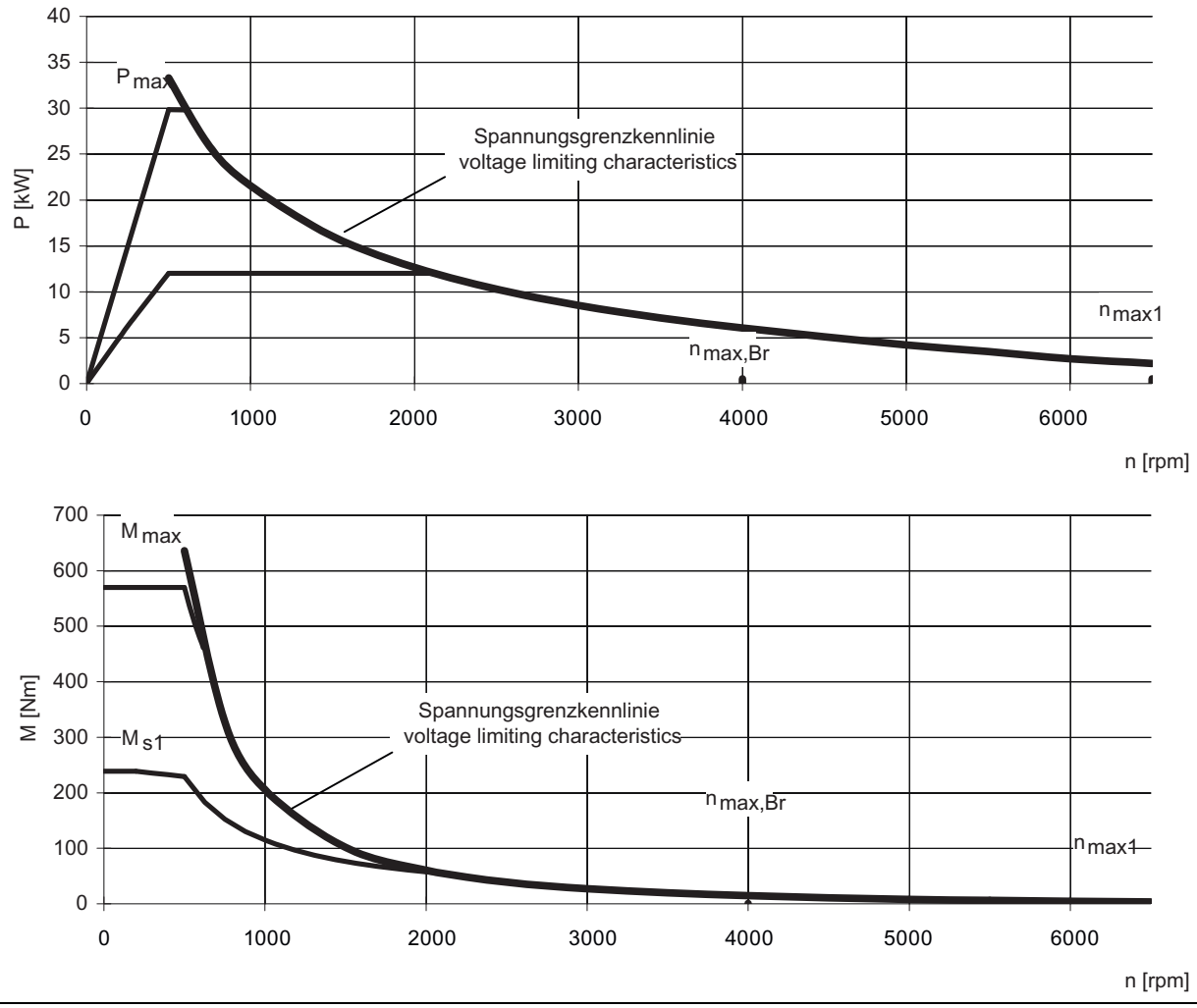


Tabella 4- 138 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8163-□□B□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 14,5 | 231 | 30,0 | 6500 | - | - | 4000 | 2150 | 570 | 70 | 239 | 30 |

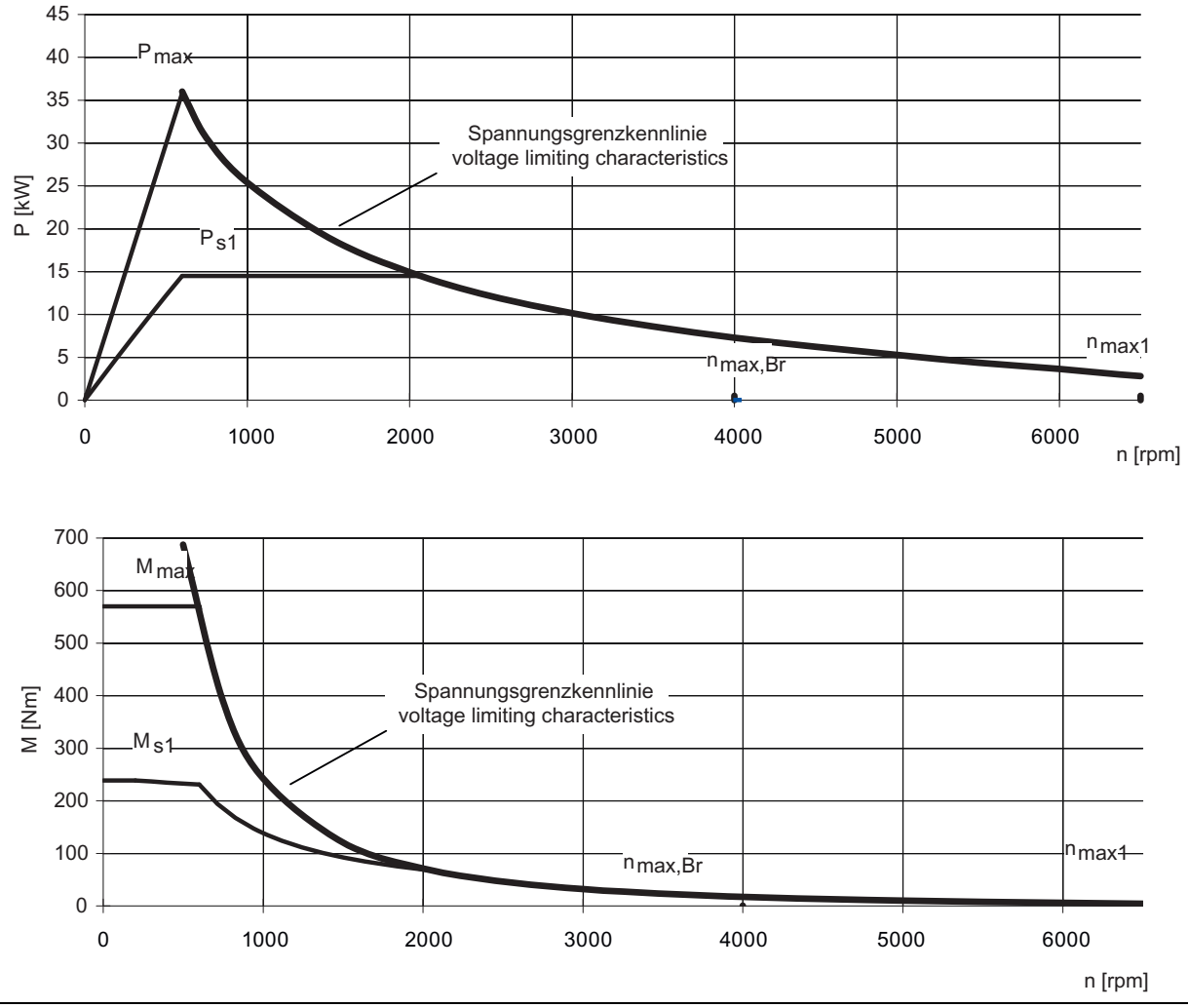
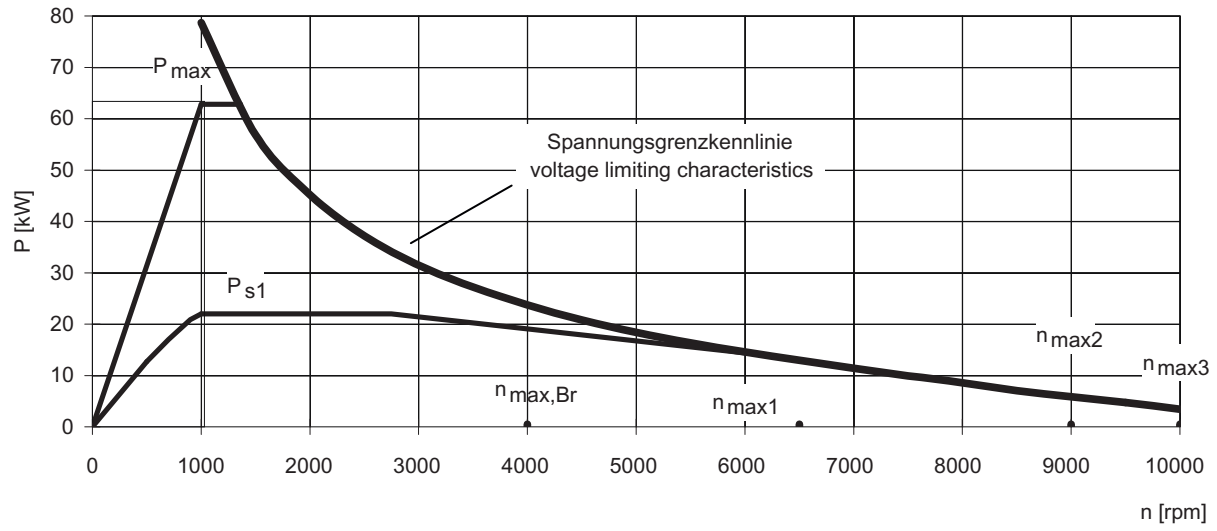


Tabella 4- 139 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8163-□□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 22,0 | 210 | 55,0 | 6500 | 9000 | 10000 | 4000 | 2800 | 600 | 151 | 243 | 60 |



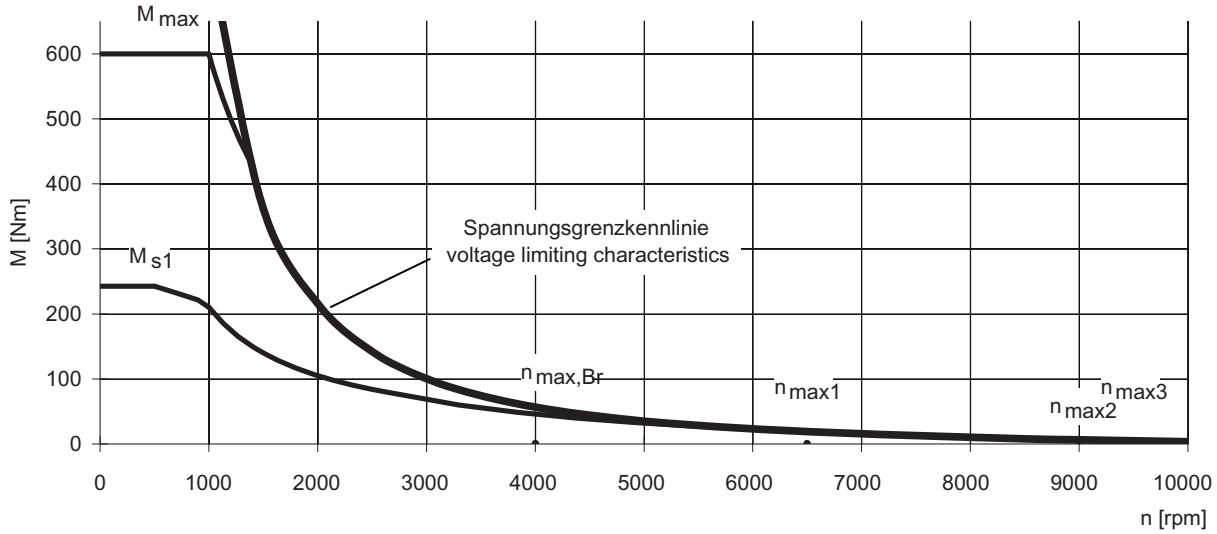



Tabella 4- 140 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8163-□□D□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 25,0 | 208 | 55,0 | 6500 | 9000 | 10000 | 4000 | 3550 | 600 | 151 | 243 | 60 |
| 1000 | 22,0 | 210 | 55,0 | | | | | 5050 | | | | |

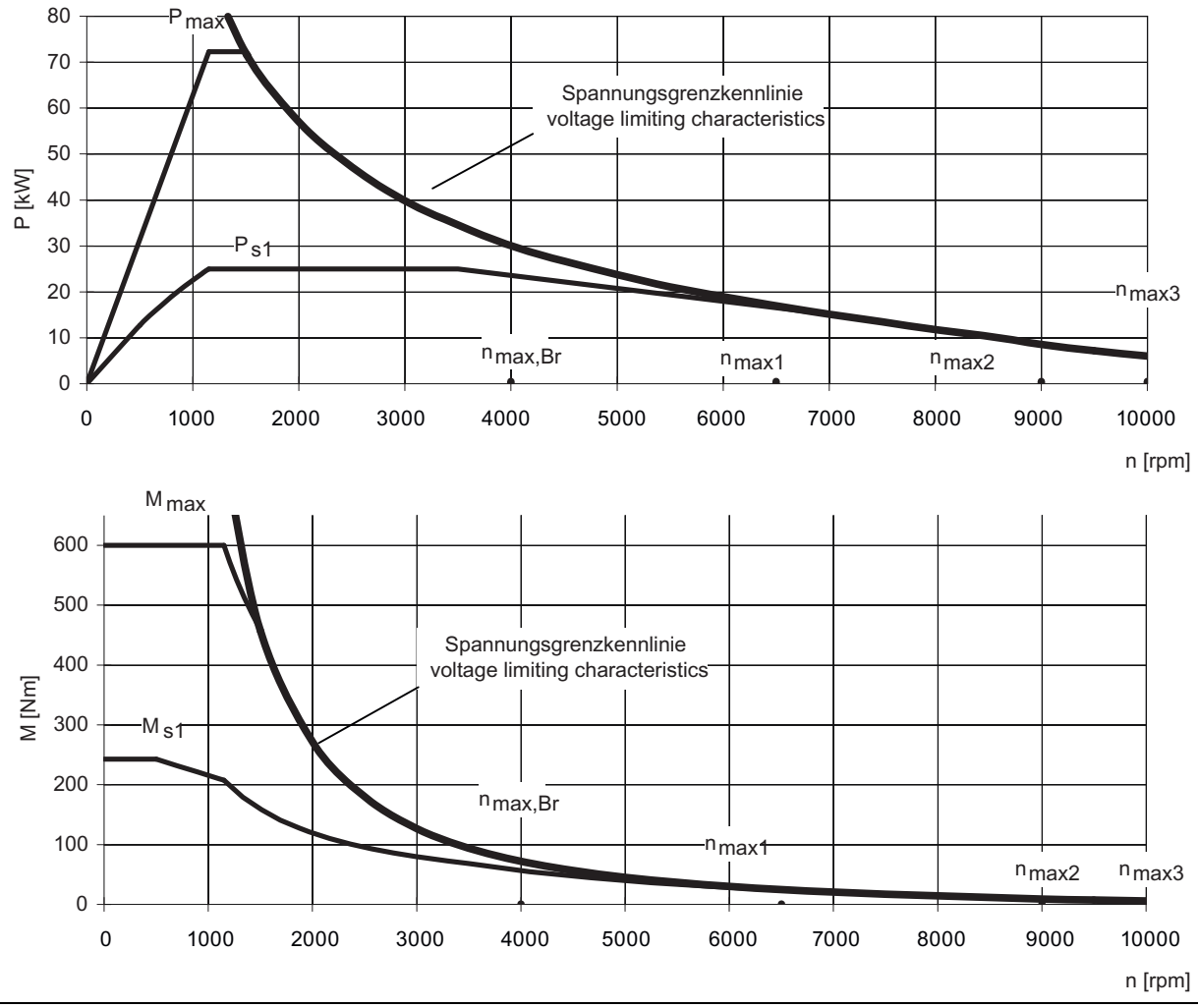
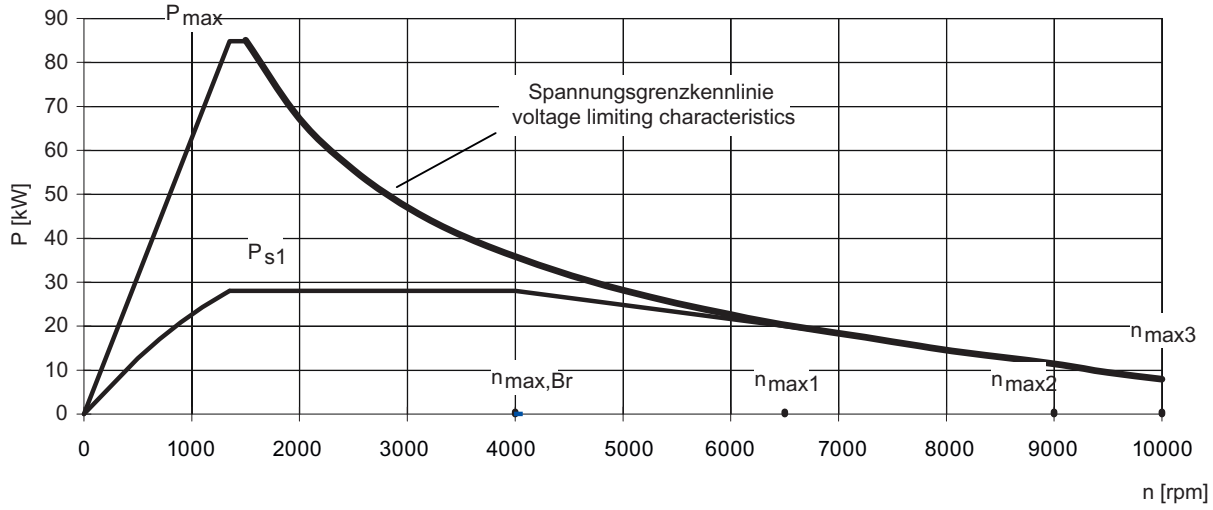


Tabella 4- 141 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8163-□□D□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 28,0 | 198 | 52,0 | 6500 | 9000 | 10000 | 4000 | 4000 | 600 | 151 | 243 | 60 |



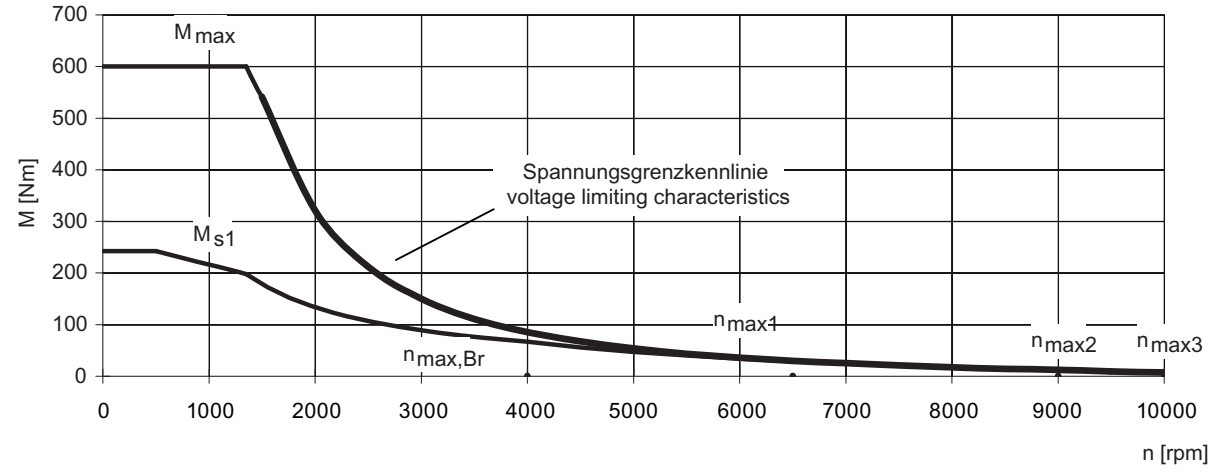
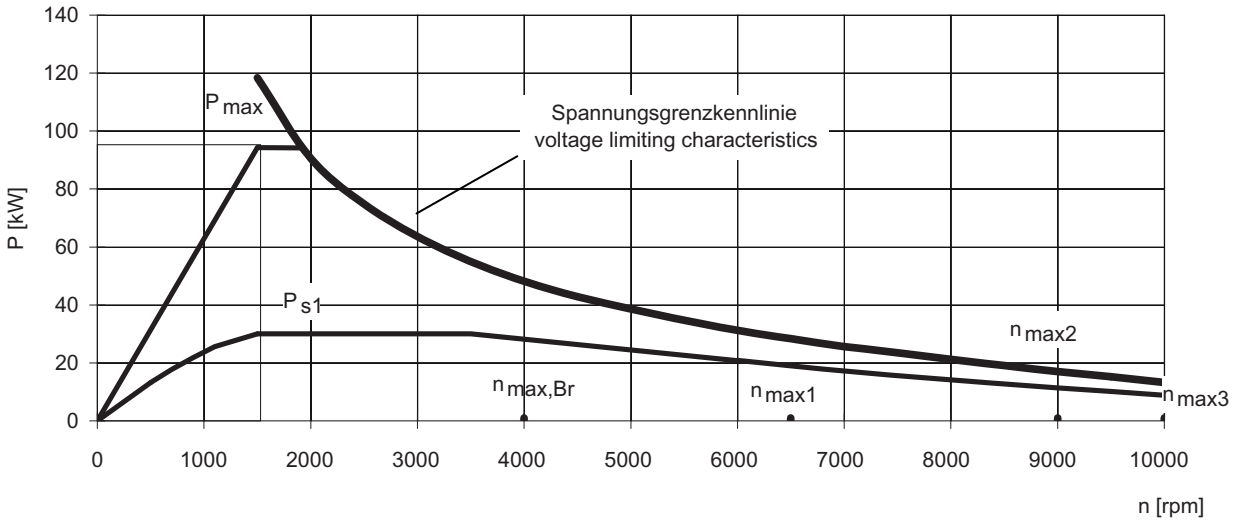



Tabella 4- 142 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8163-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 30,0 | 191 | 71,0 | 6500 | 9000 | 10000 | 4000 | 3050 | 600 | 217 | 252 | 87 |



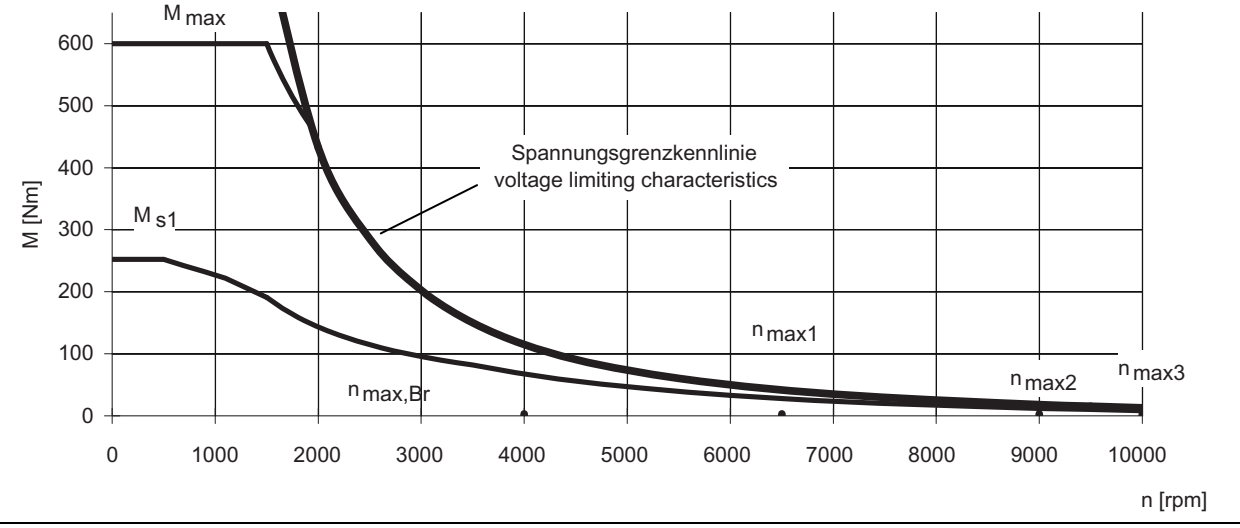



Tabella 4- 143 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8163-□□F□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 34,0 | 186 | 70,0 | 6500 | 9000 | 10000 | 4500 | 3050 | 600 | 217 | 252 | 87 |
| 1500 | 30,0 | 191 | 71,0 | | | | | 5000 | | | | |

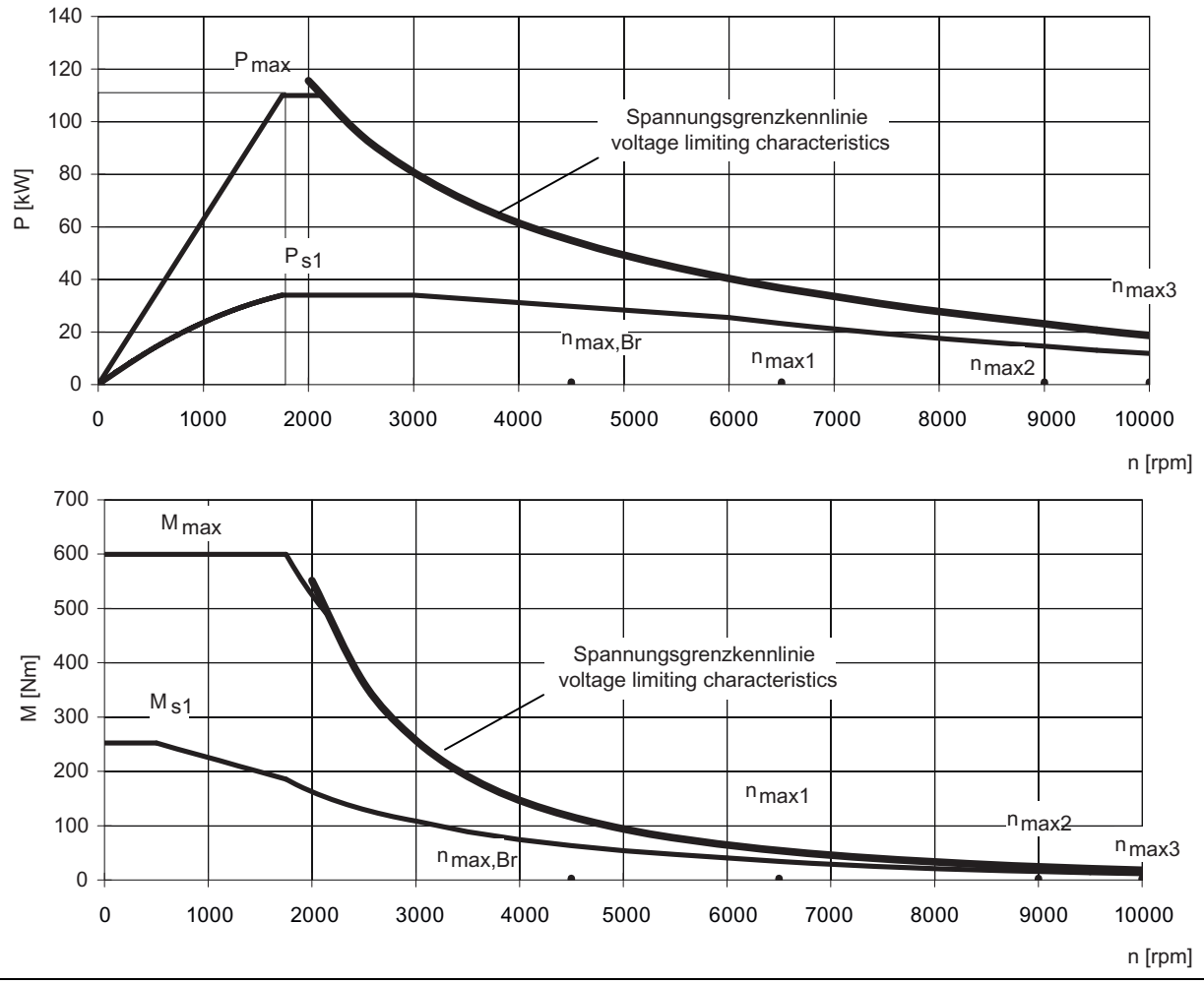
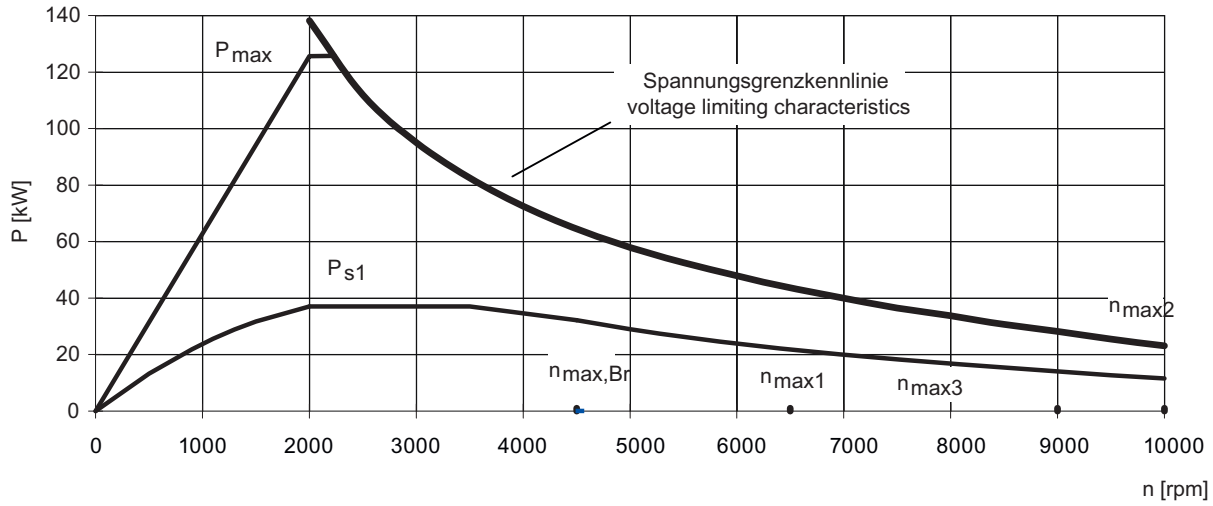


Tabella 4- 144 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8163-□□F□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 37,0 | 177 | 68,0 | 6500 | 9000 | 10000 | 4500 | 3550 | 600 | 217 | 252 | 87 |



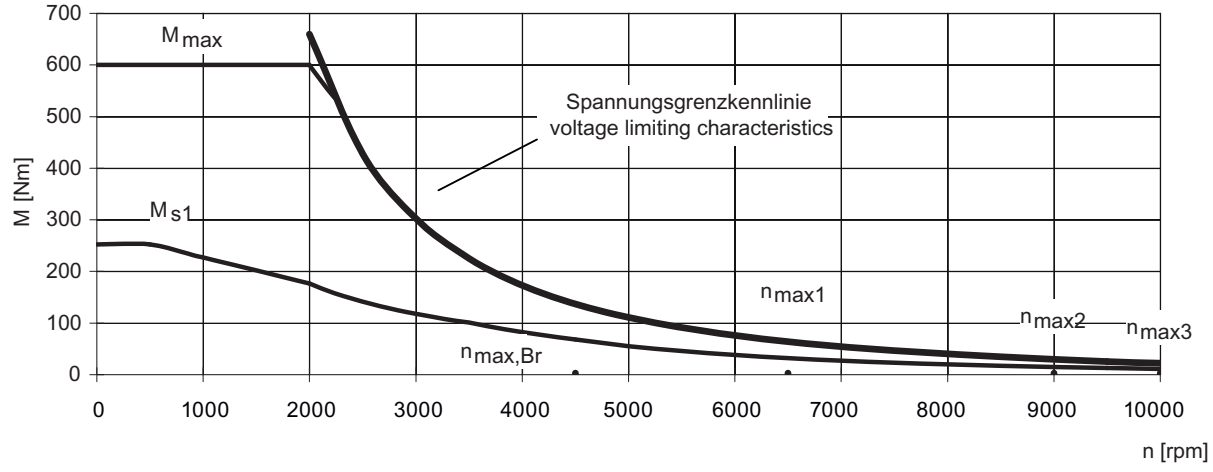



Tabella 4- 145 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8163-□□G□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 36,0 | 172 | 83,0 | 6500 | 9000 | 10000 | 4000 | 3000 | 570 | 272 | 254 | 111 |

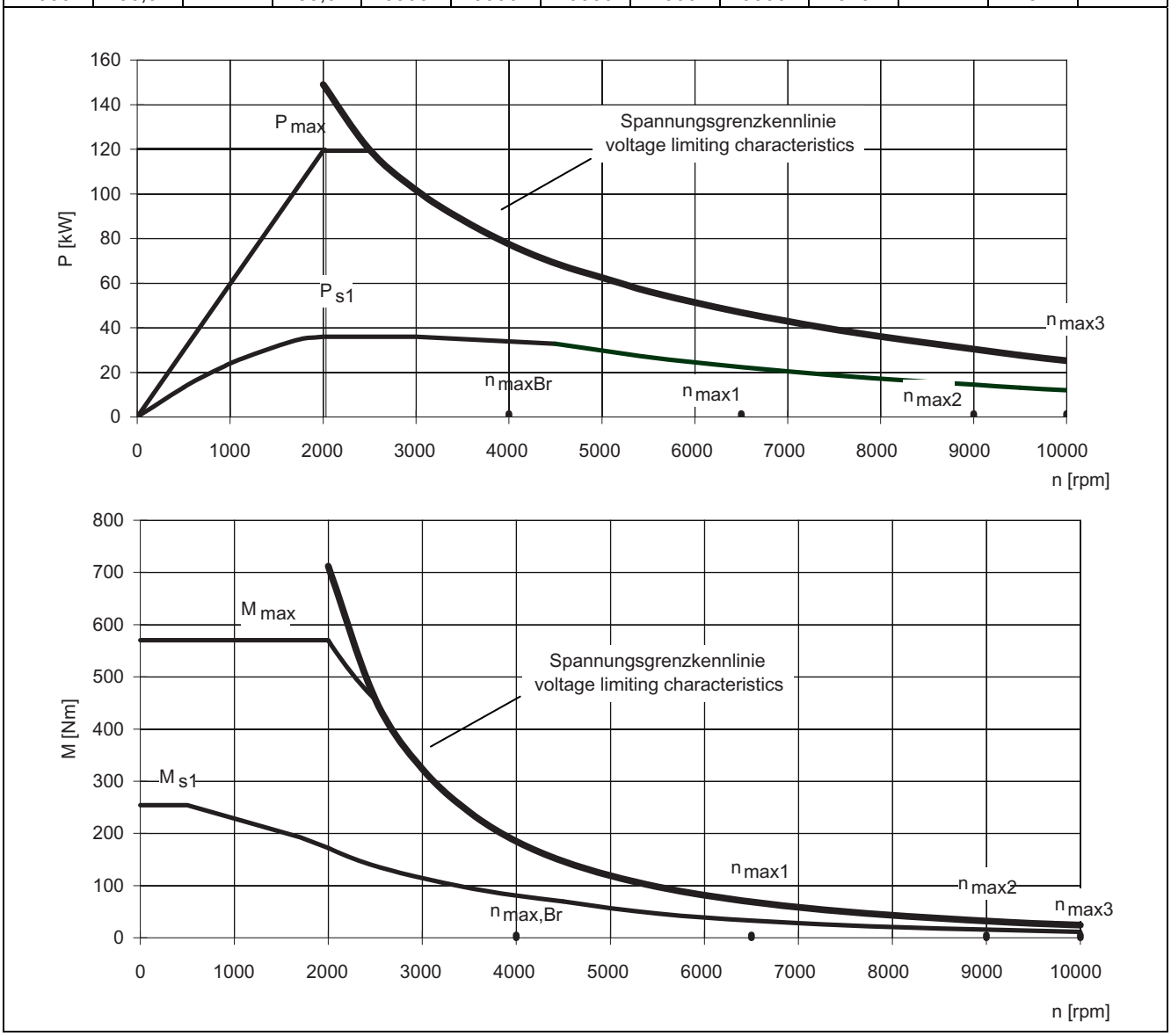
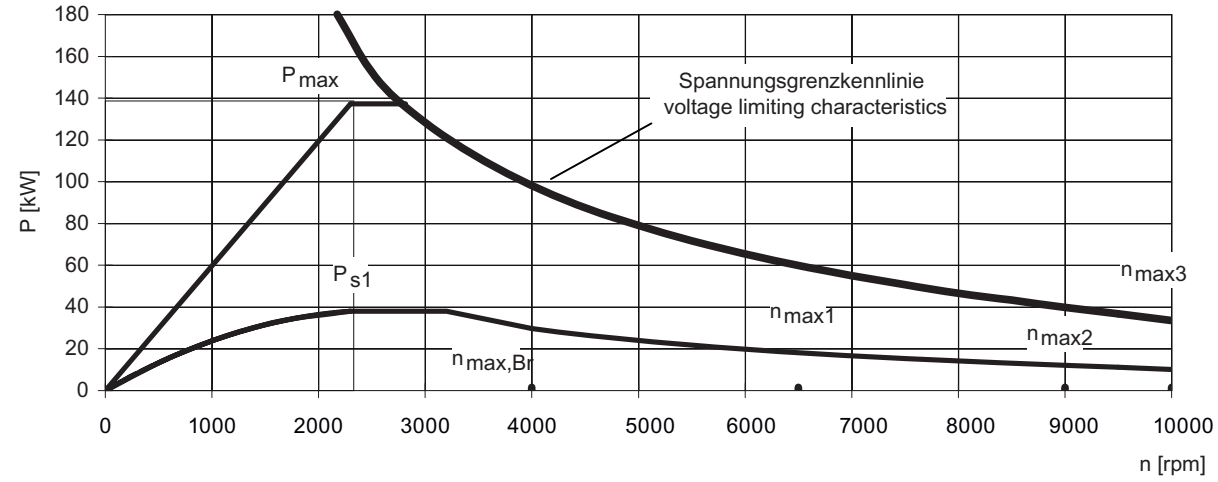


Tabella 4- 146 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8163-□□G□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 38,0 | 158 | 78,0 | 6500 | 9000 | 10000 | 4000 | 3200 | 570 | 272 | 245 | 111 |
| 2000 | 36,0 | 172 | 83,0 | | | | | 3500 | | | | |



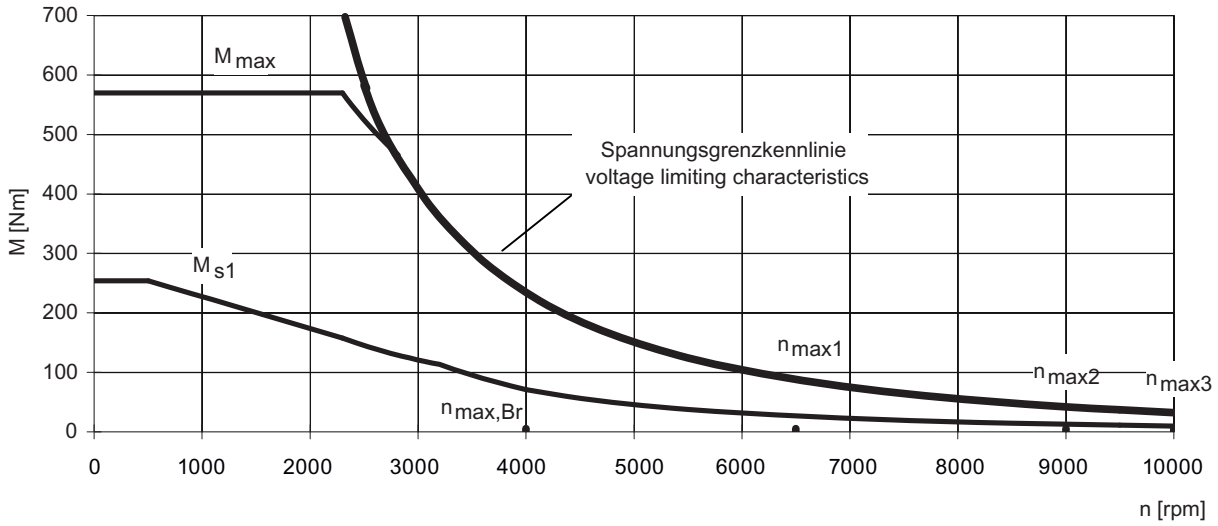
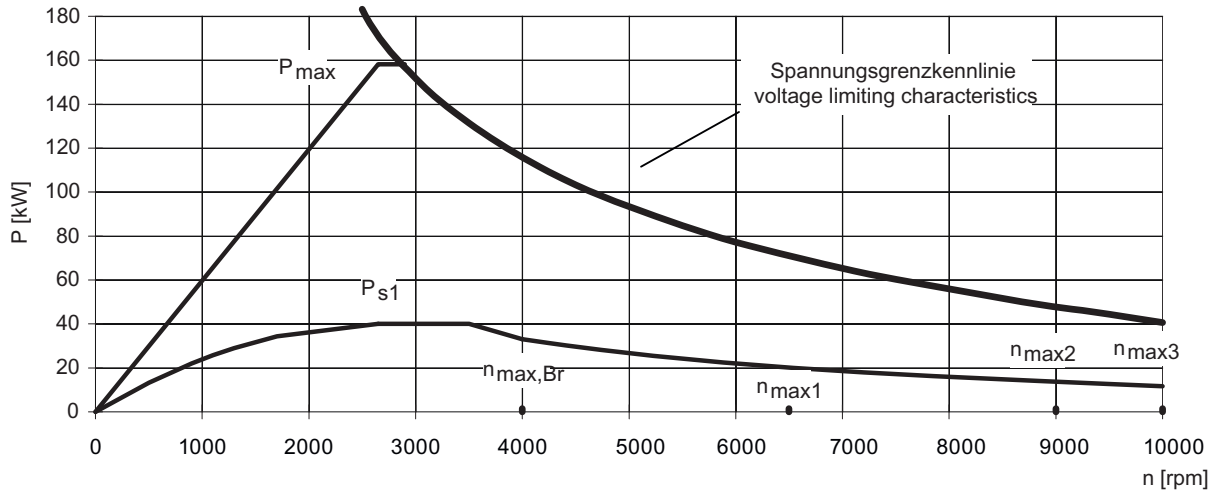



Tabella 4- 147 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8163-□□G□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 40,0 | 144 | 76,0 | 6500 | 9000 | 10000 | 4000 | 3500 | 570 | 272 | 254 | 111 |



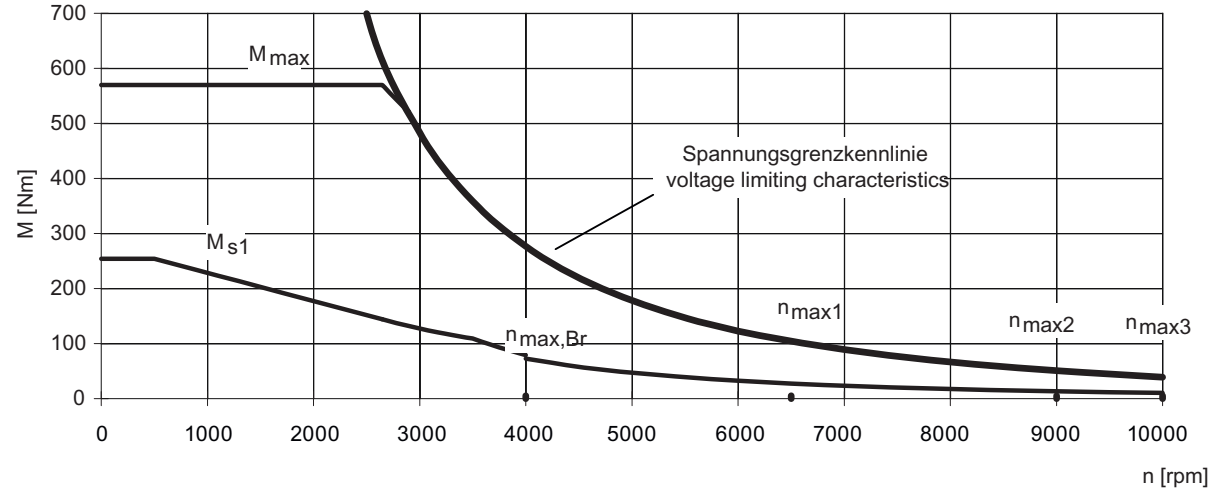
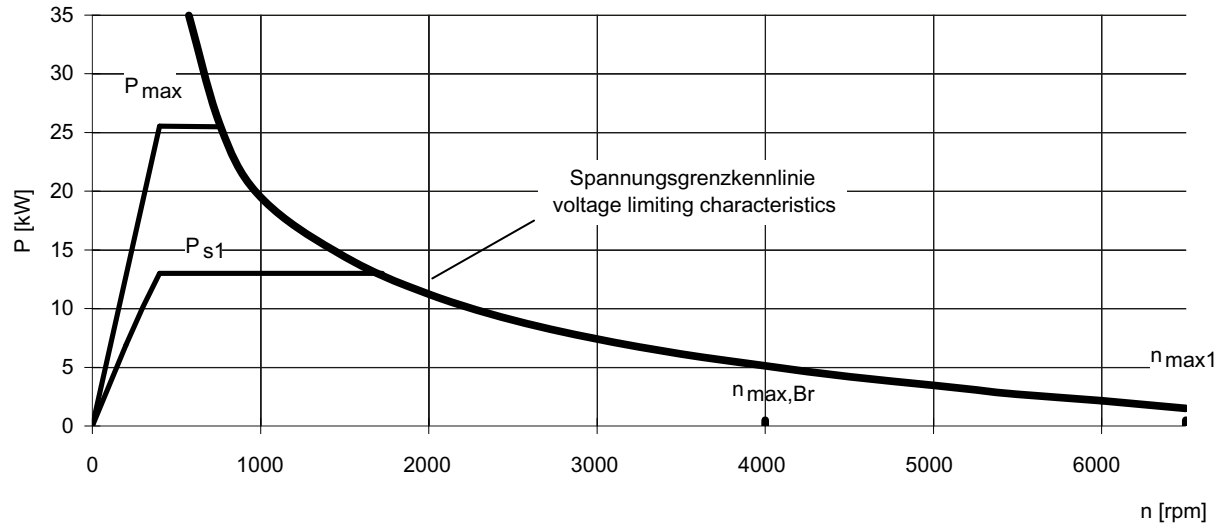



Tabella 4- 148 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8165-□□B□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 13,0 | 310 | 36,0 | 6500 | - | - | 4000 | 1750 | 610 | 75 | 329 | 37 |



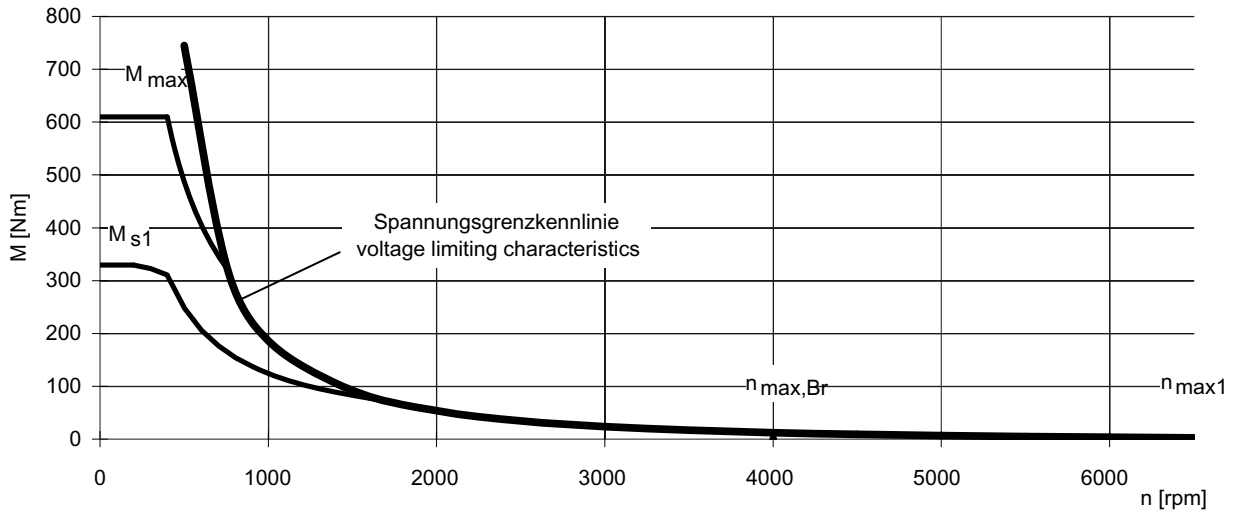
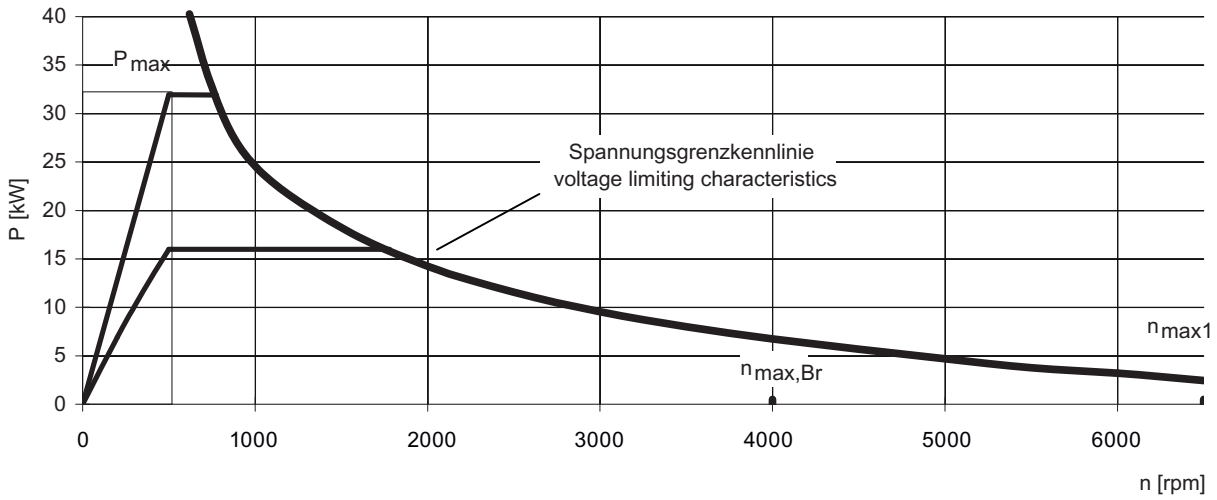



Tabella 4- 149 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8165-□□B□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 16,0 | 306 | 36,0 | 6500 | - | - | 4000 | 1850 | 610 | 75 | 329 | 37 |
| 400 | 13,0 | 310 | 36,0 | | | | | 2300 | | | | |



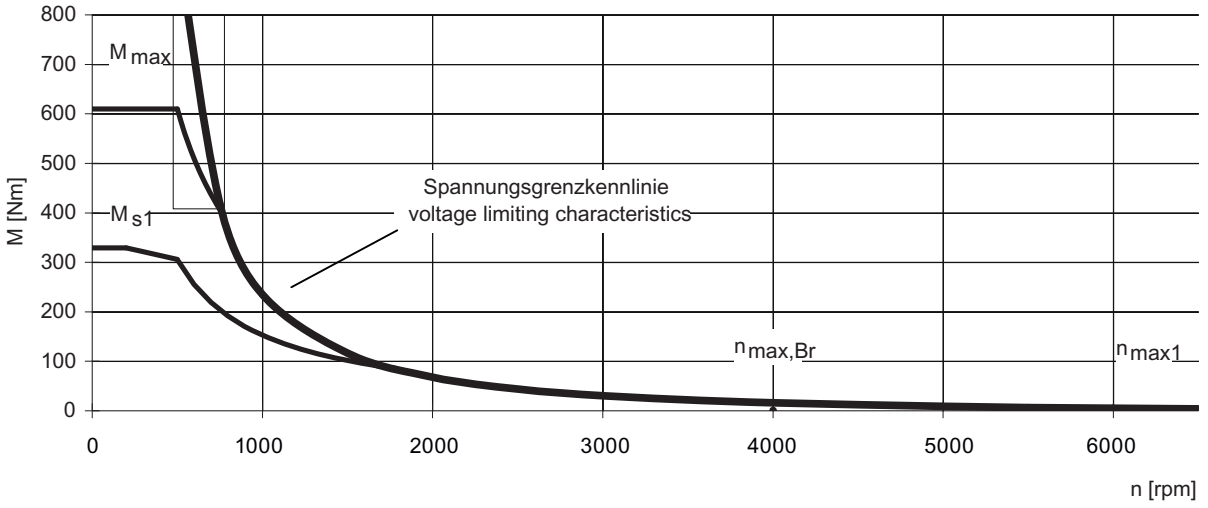



Tabella 4- 150 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8165-□□B□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 19,0 | 302 | 35,0 | 6500 | - | - | 4000 | 1800 | 610 | 75 | 329 | 37 |

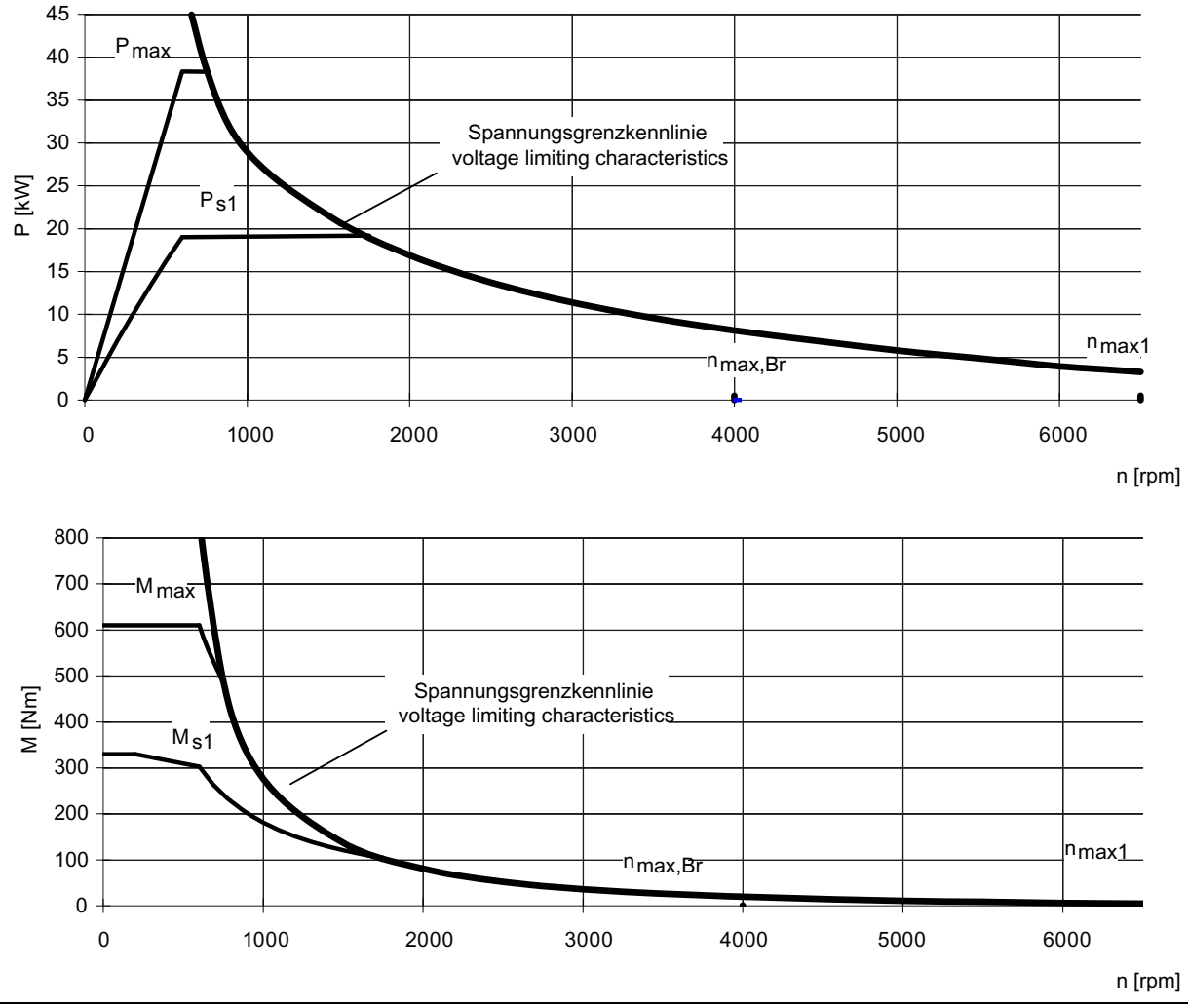
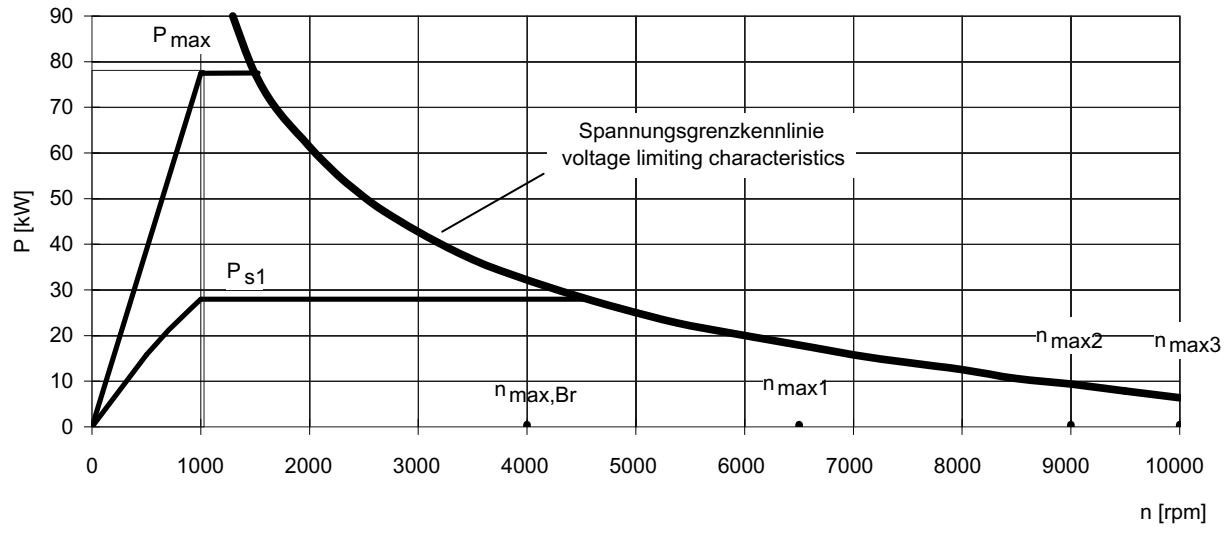


Tabella 4- 151 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8165-□□D□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 28,0 | 267 | 71,0 | 6500 | 9000 | 10000 | 4000 | 4600 | 740 | 192 | 302 | 77 |



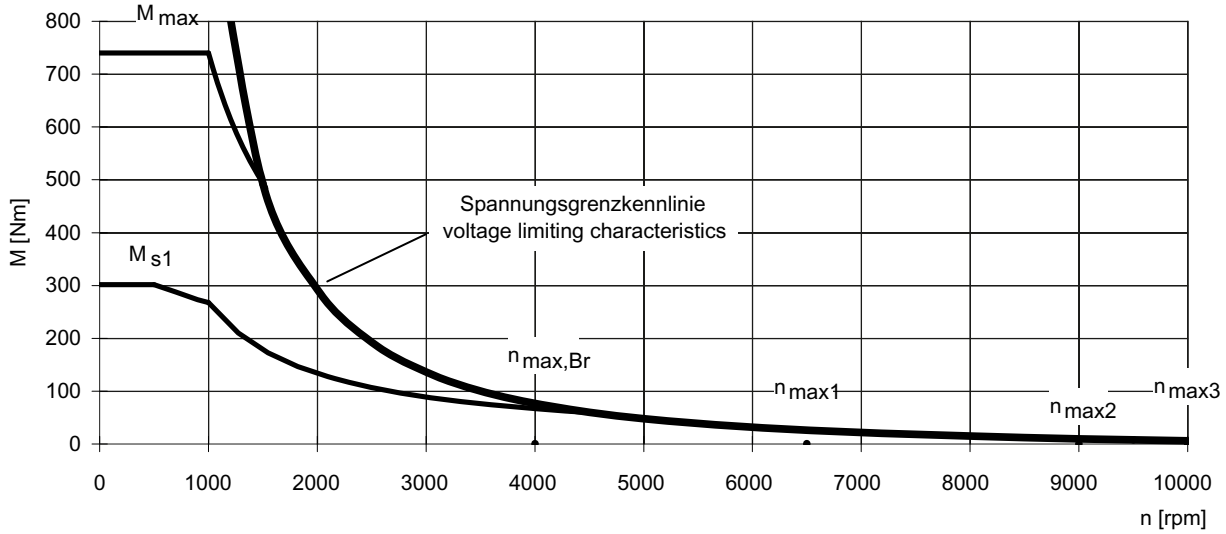
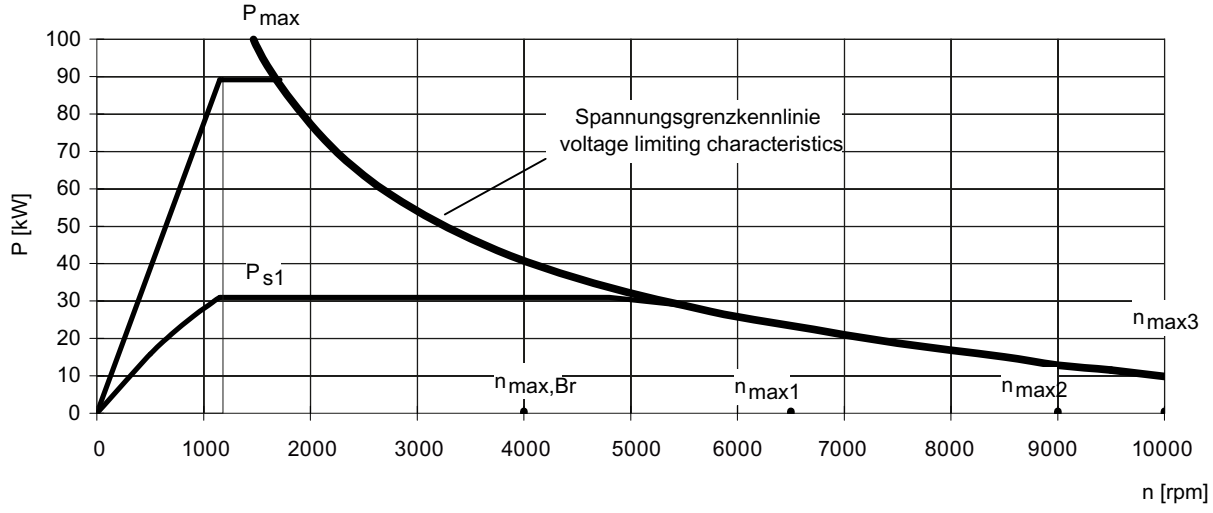



Tabella 4- 152 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8165-□□D□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 31,0 | 257 | 69,0 | 6500 | 9000 | 10000 | 4000 | 4850 | 740 | 192 | 302 | 77 |
| 1000 | 28,0 | 267 | 71,0 | | | | | 5550 | | | | |



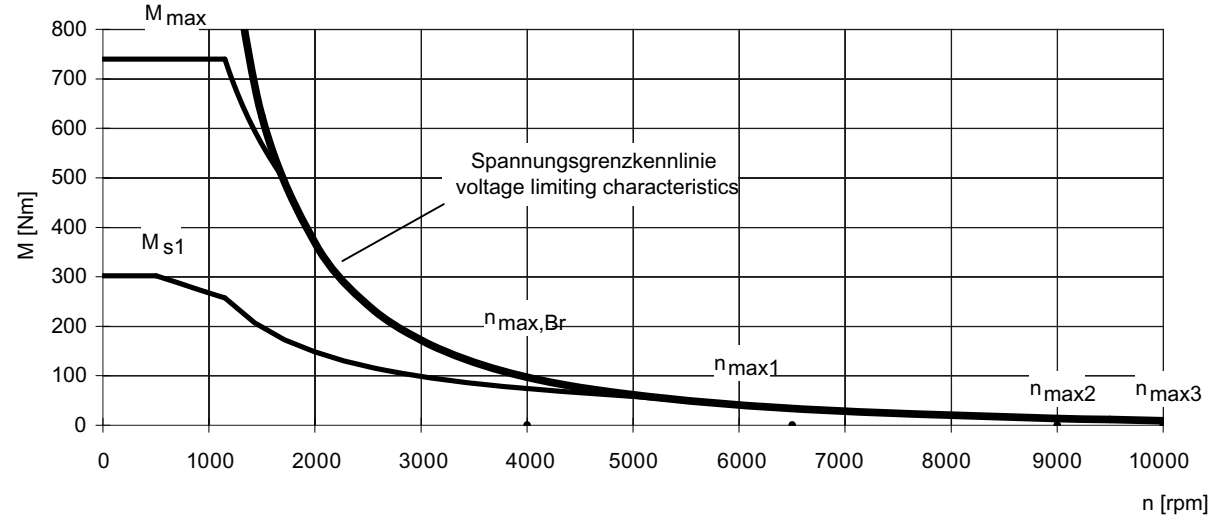
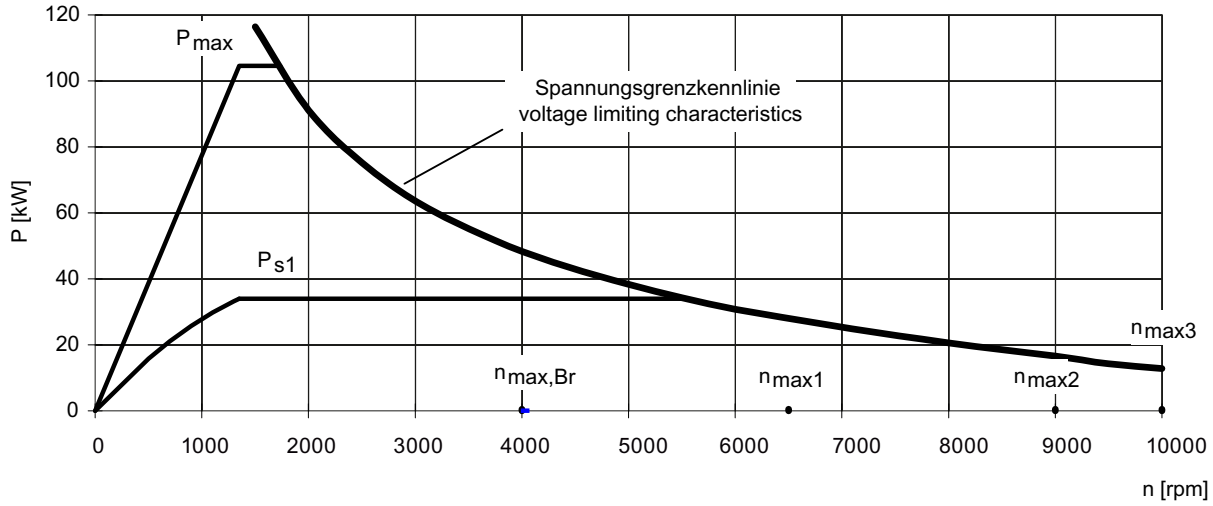



Tabella 4- 153 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8165-□□D□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 34,0 | 241 | 66,0 | 6500 | 9000 | 10000 | 4000 | 5600 | 740 | 192 | 302 | 77 |



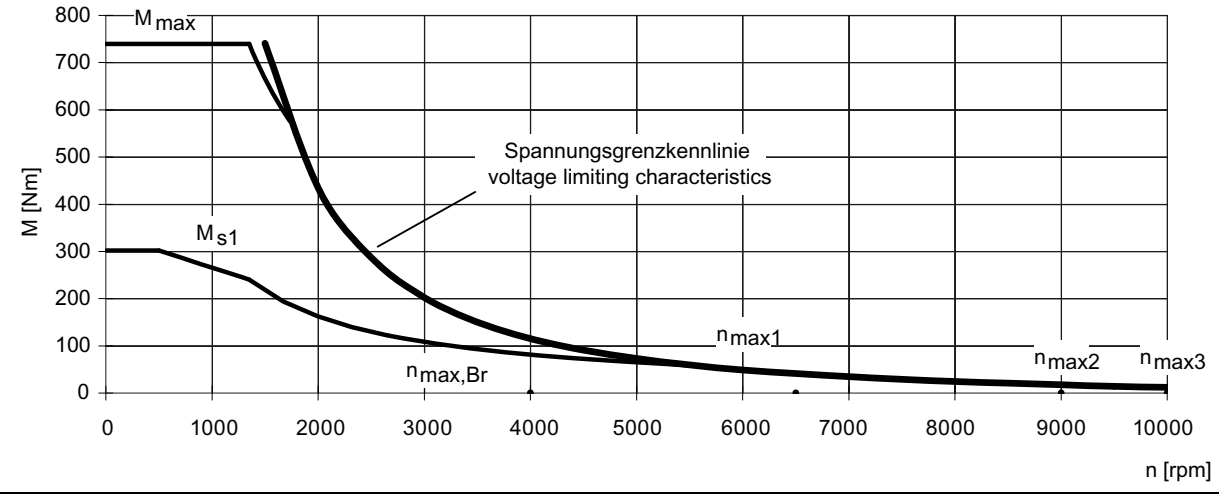



Tabella 4- 154 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8165-□□F□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 37,0 | 236 | 78,0 | 6500 | 9000 | 10000 | 4000 | 2800 | 630 | 206 | 304 | 95 |

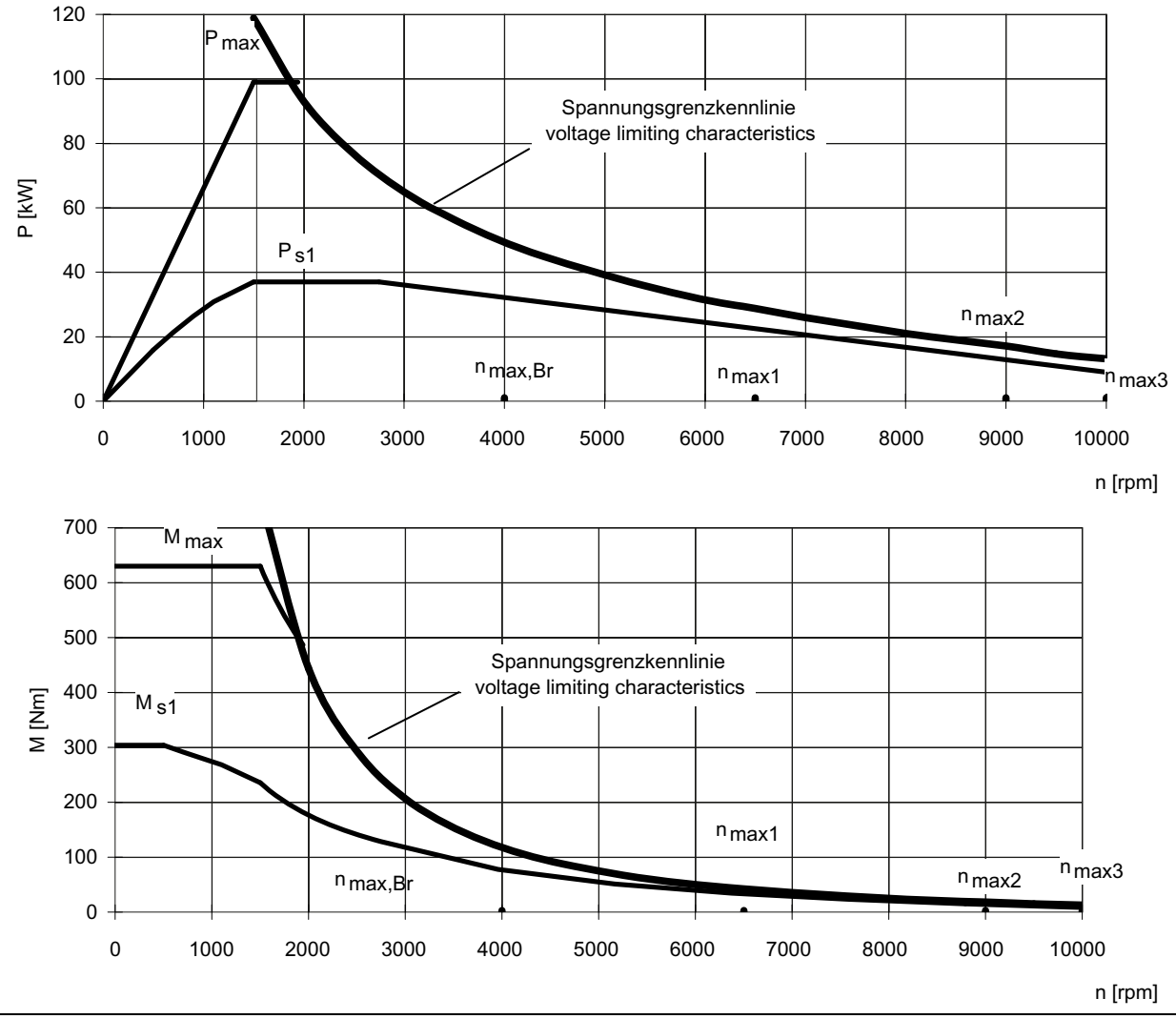
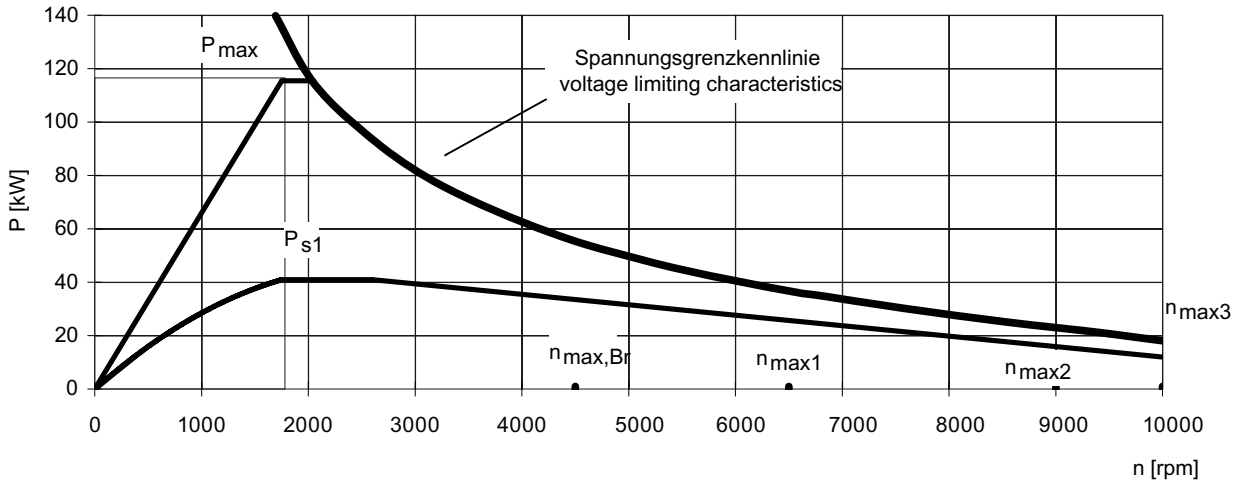


Tabella 4- 155 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8165-□□F□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 41,0 | 224 | 76,0 | 6500 | 9000 | 10000 | 4500 | 2650 | 630 | 206 | 304 | 95 |
| 1500 | 37,0 | 236 | 78,0 | | | | | 4550 | | | | |



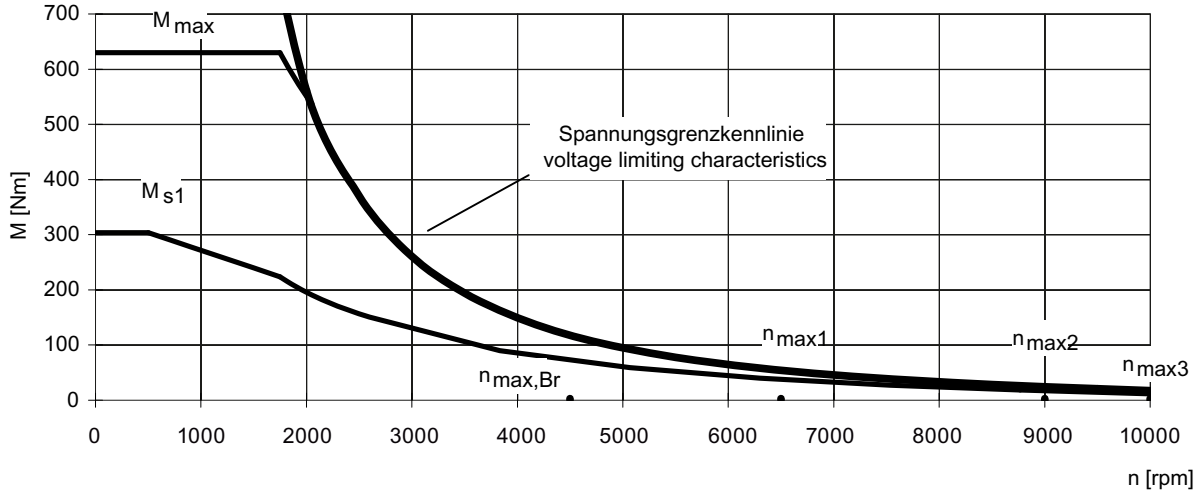
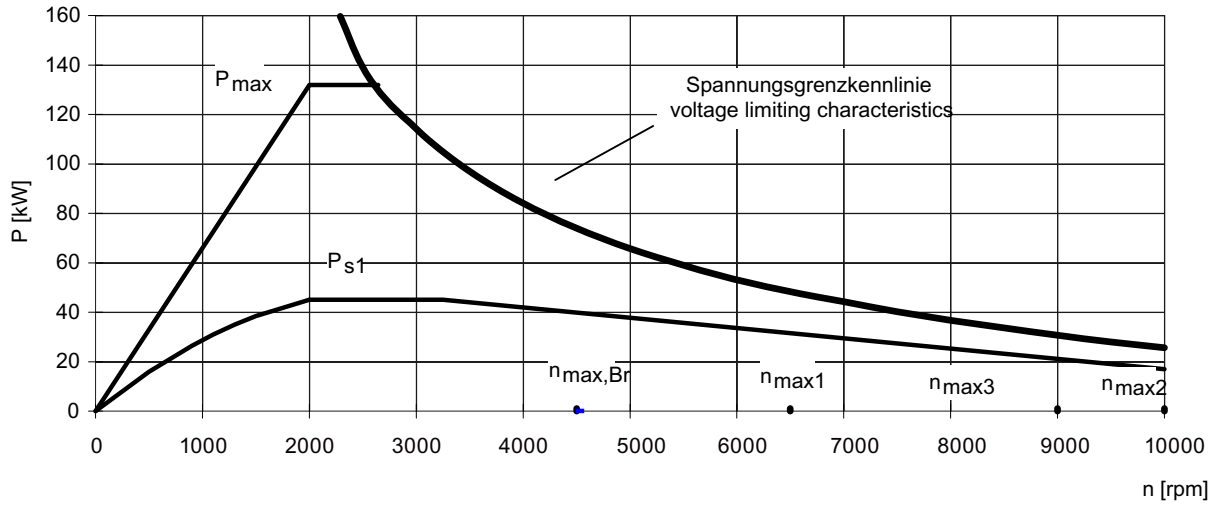



Tabella 4- 156 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8165-□□F□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 45,0 | 215 | 75,0 | 6500 | 9000 | 10000 | 4500 | 3300 | 630 | 206 | 304 | 95 |



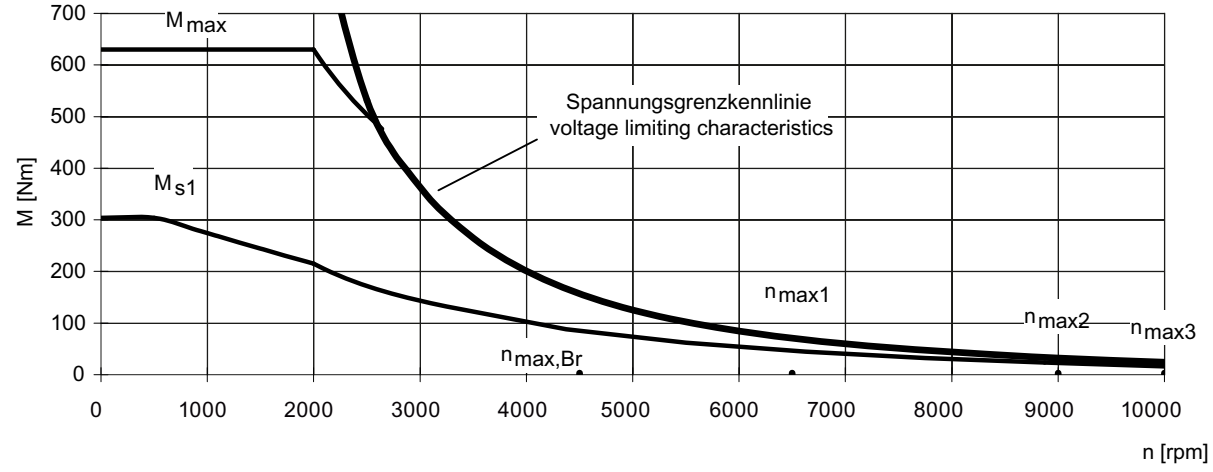
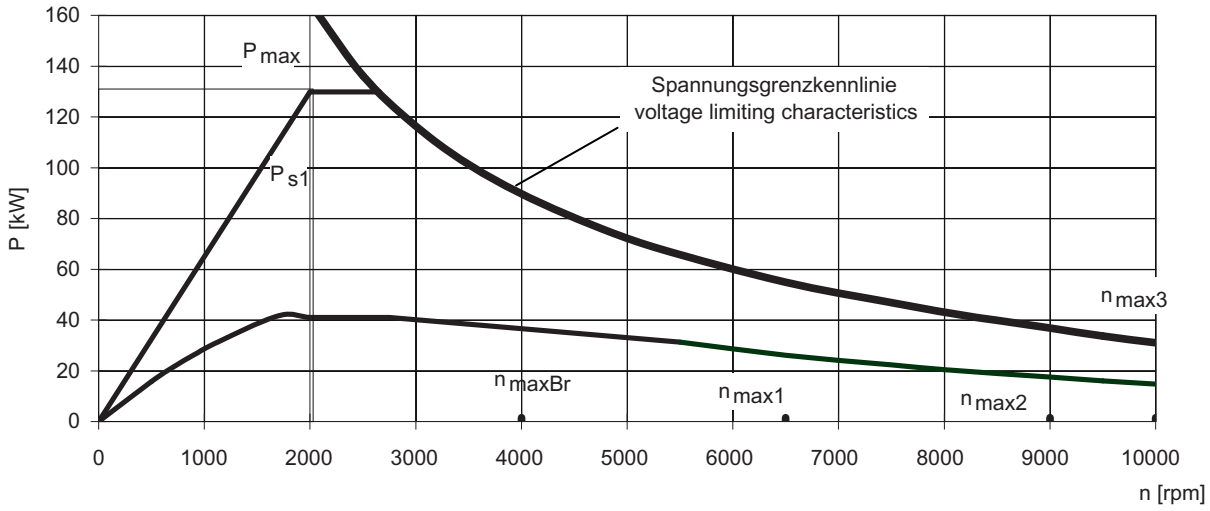



Tabella 4- 157 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8165-□□G□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 41,0 | 196 | 88,0 | 6500 | 9000 | 10000 | 4000 | 2750 | 620 | 278 | 302 | 122 |



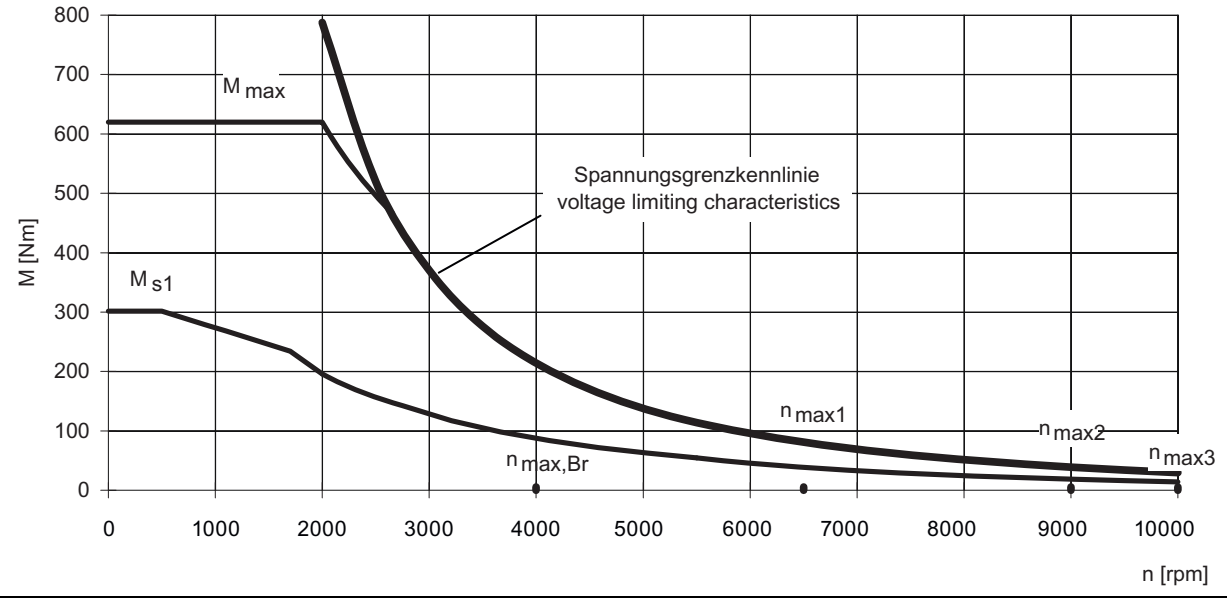
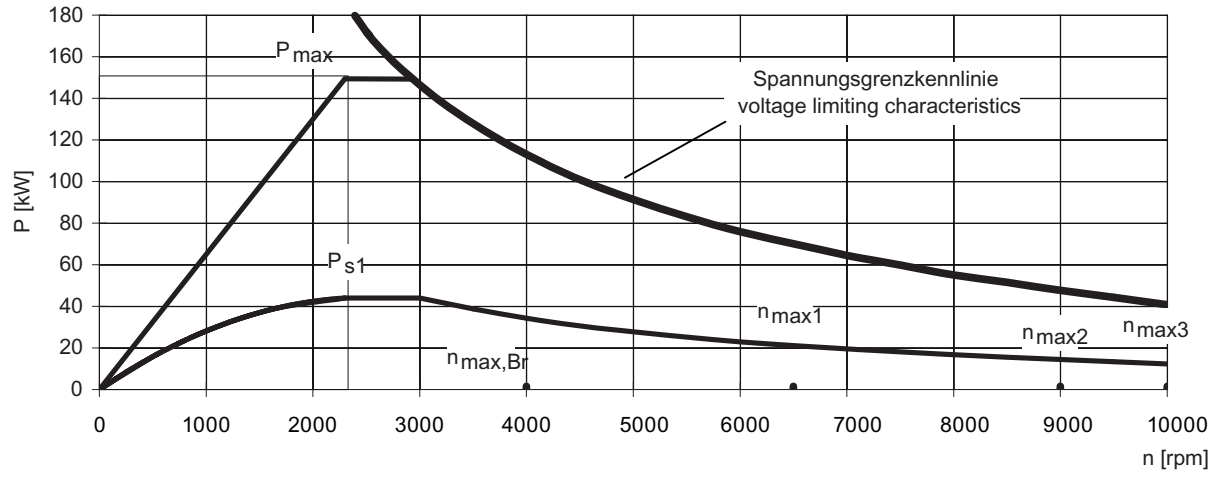



Tabella 4- 158 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8165-□□G□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 44,0 | 183 | 85,0 | 6500 | 9000 | 10000 | 4000 | 3000 | 620 | 278 | 302 | 122 |
| 2000 | 41,0 | 196 | 88,0 | | | | | 3200 | | | | |



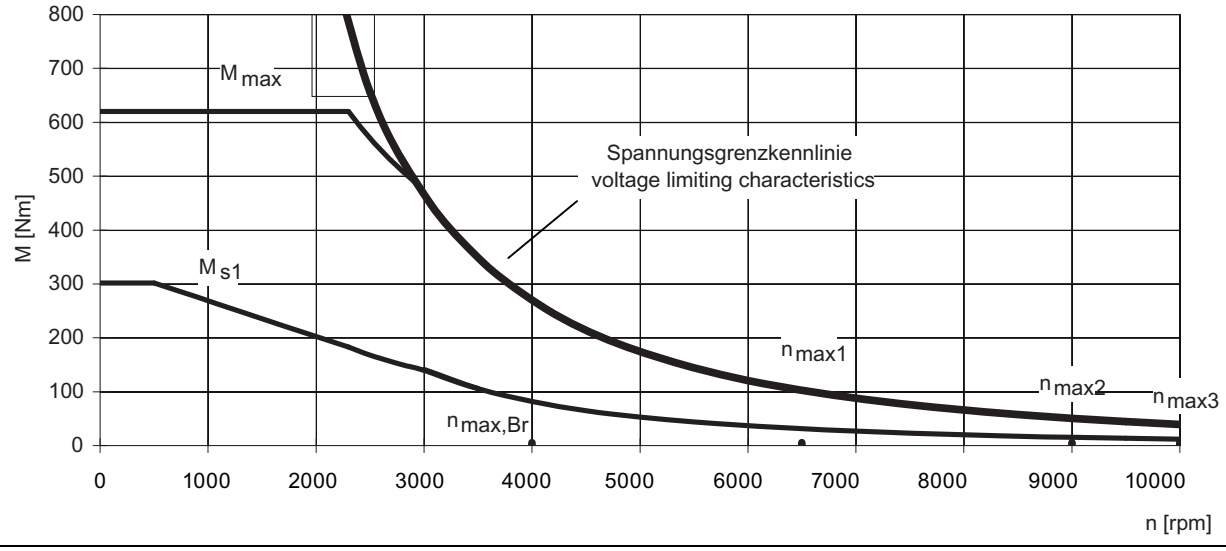
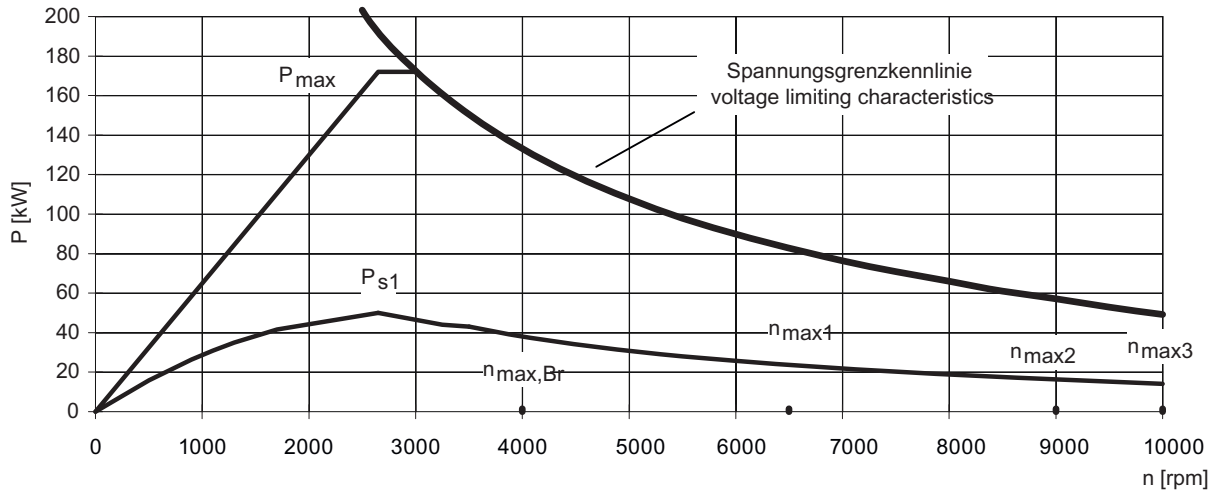
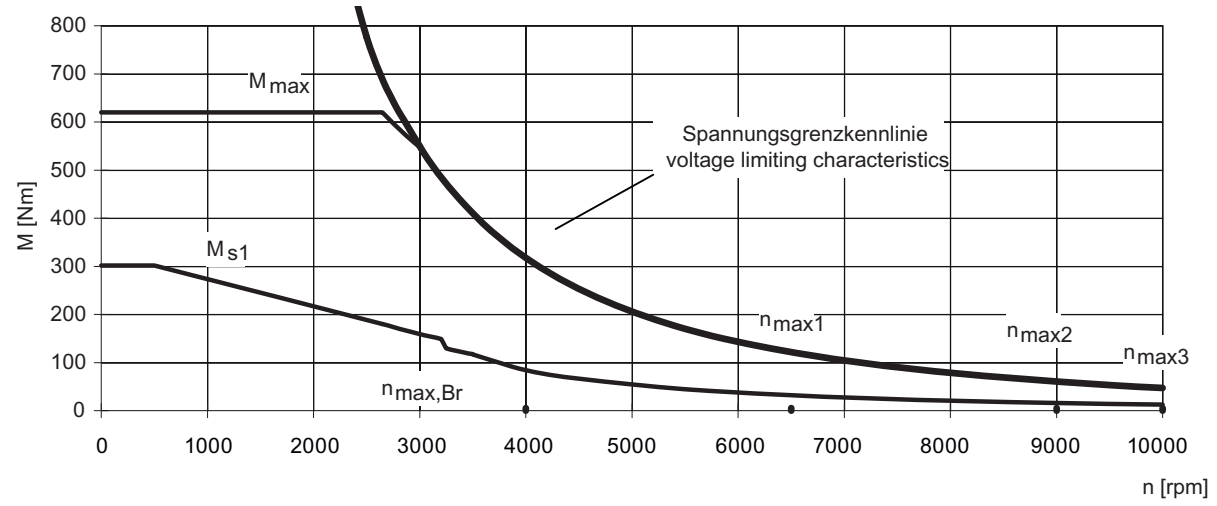



Tabella 4- 159 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8165-□□G□□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 50,0 | 180 | 85,0 | 6500 | 9000 | 10000 | 4000 | 3250 | 620 | 278 | 302 | 122 |

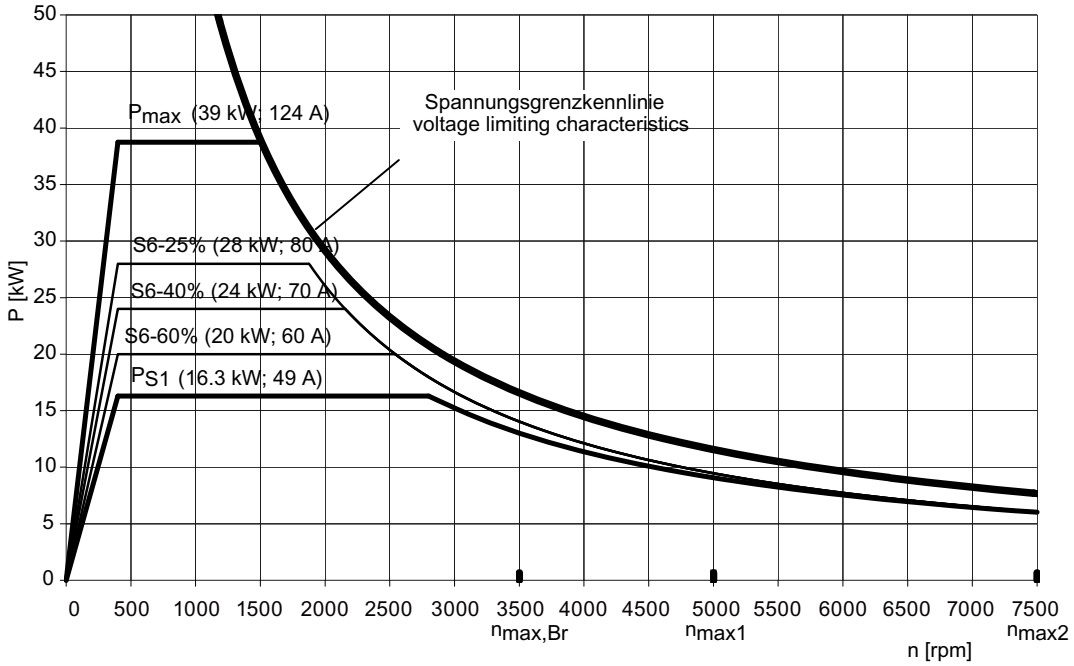


### 4.1.2.5 Altezza d'asse 180 - Ventilazione forzata

Tabella 4- 160 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-□□B□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 16,3 | 389 | 49 | 5000 | 7500 | - | 3500 | 2800 | 925 | 124 | 389 | 49 |



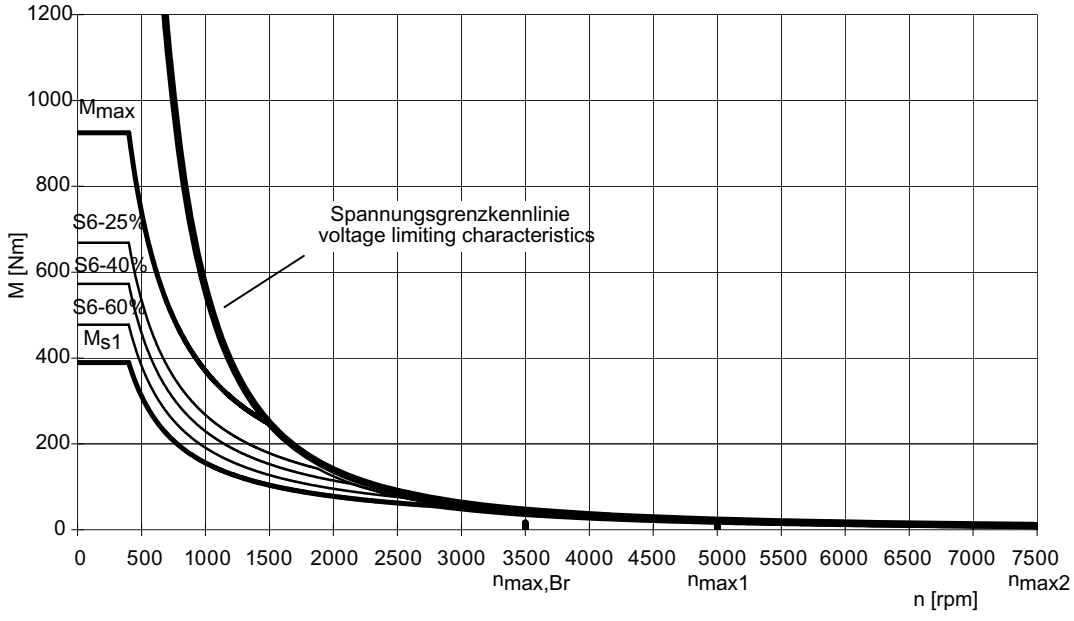
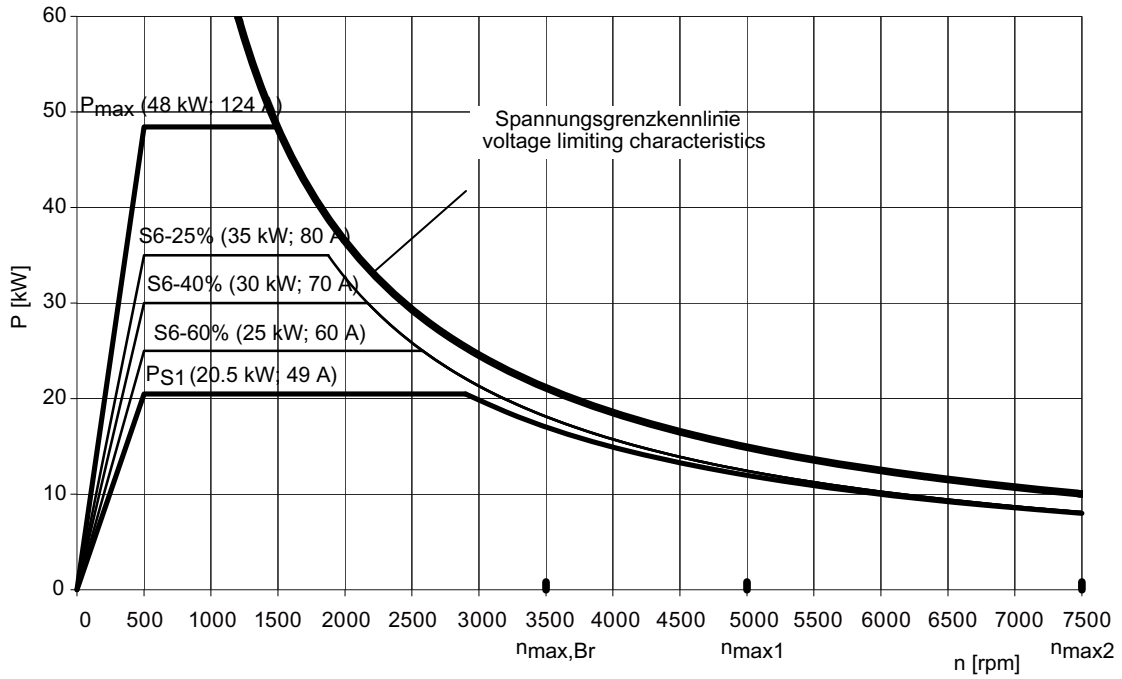



Tabella 4- 161 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-□□B□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 20,5 | 392 | 49 | 5000 | 7500 | - | 3500 | 2900 | 925 | 124 | 392 | 49 |
| 400 | 16,3 | 389 | 49 | | | | | 3700 | | | | |



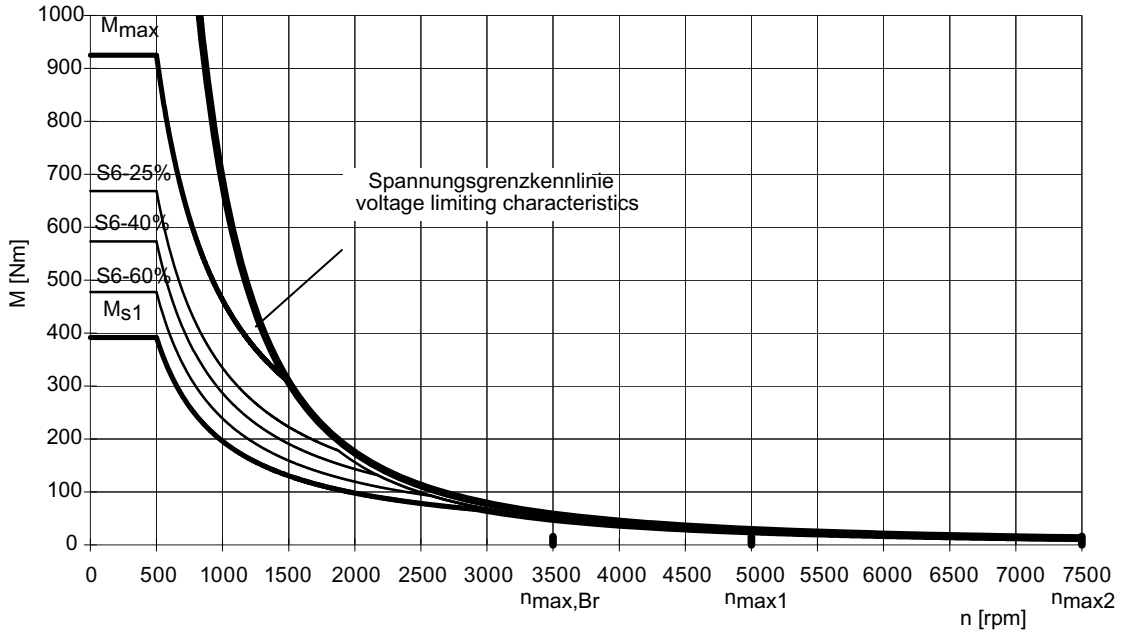
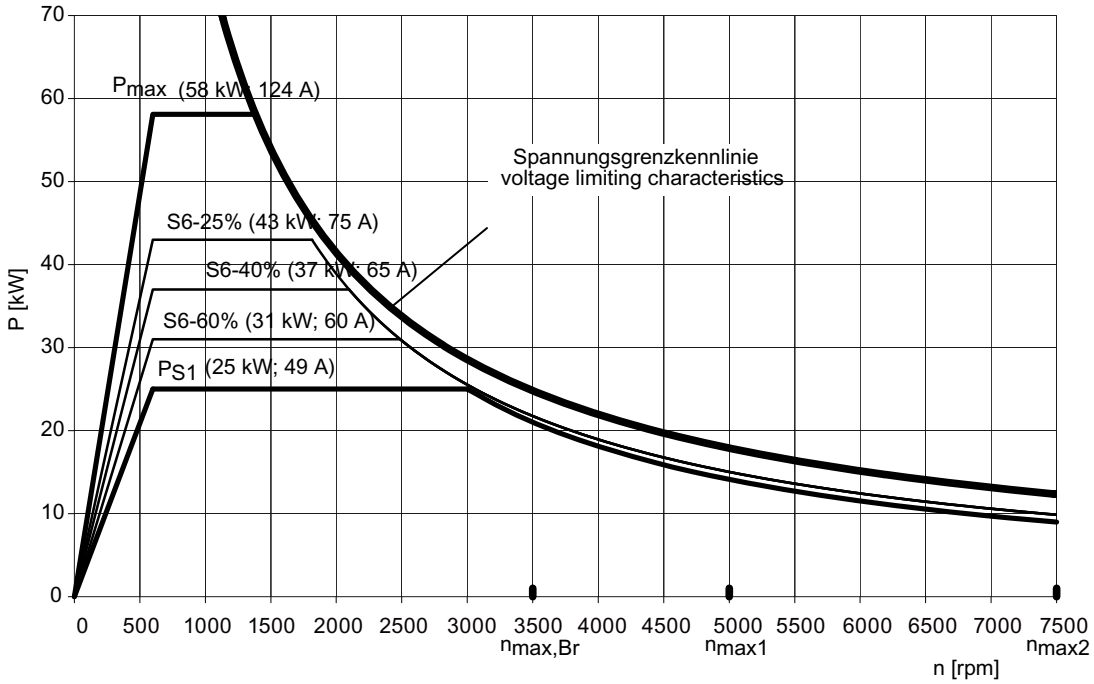



Tabella 4- 162 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-□□B□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 25 | 398 | 49 | 5000 | 7500 | - | 3500 | 3000 | 925 | 124 | 398 | 49 |



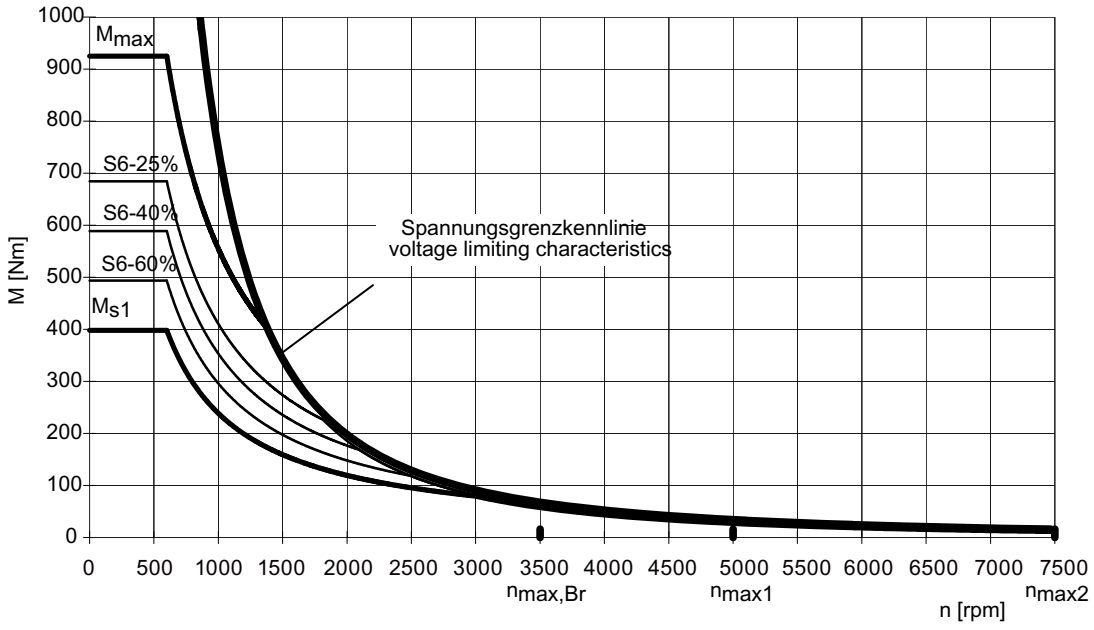
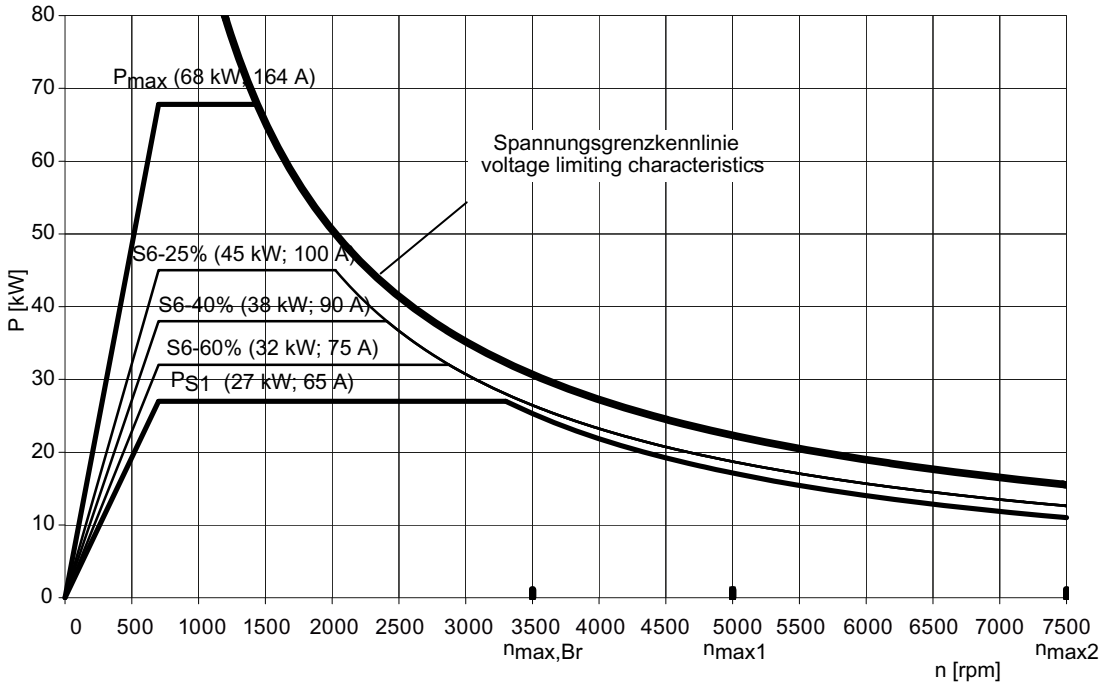



Tabella 4- 163 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-□□C□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 27 | 368 | 65 | 5000 | 7500 | - | 3500 | 3300 | 925 | 164 | 368 | 65 |



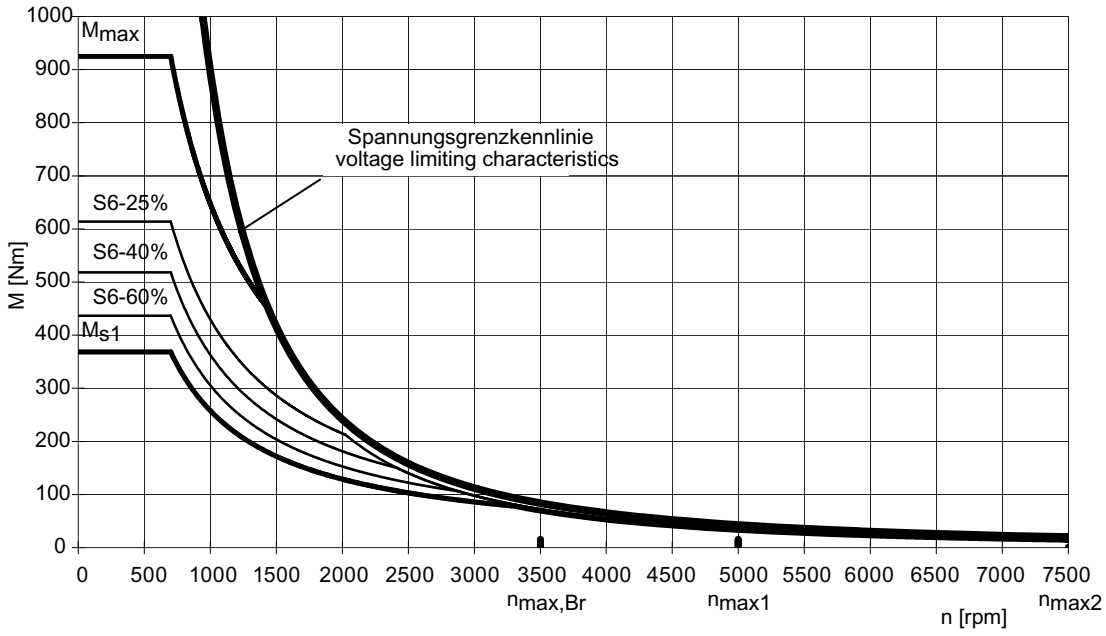
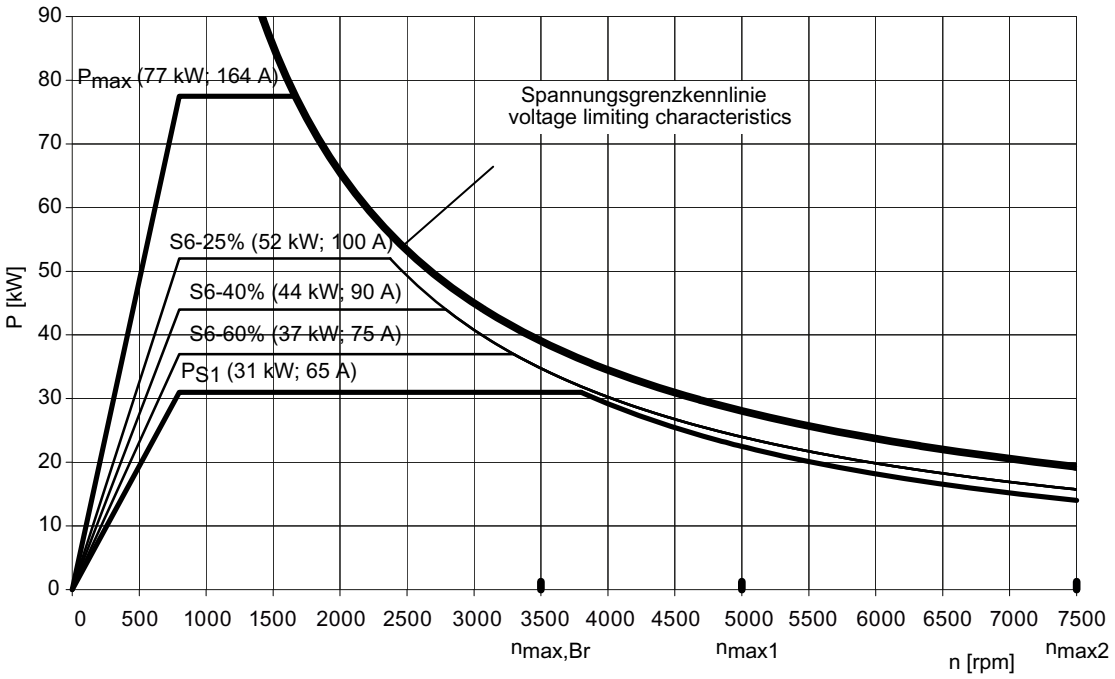



Tabella 4- 164 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-□□C□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 31 | 370 | 65 | 5000 | 7500 | - | 3500 | 3800 | 925 | 164 | 370 | 65 |
| 700 | 27 | 368 | 65 | | | | | 4300 | | | | |



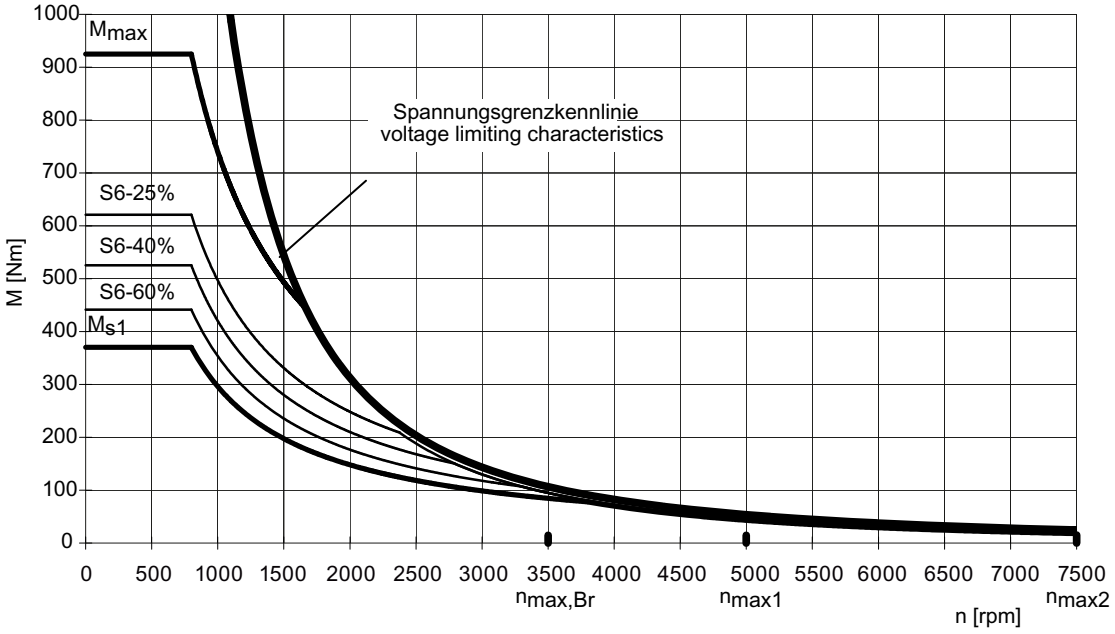
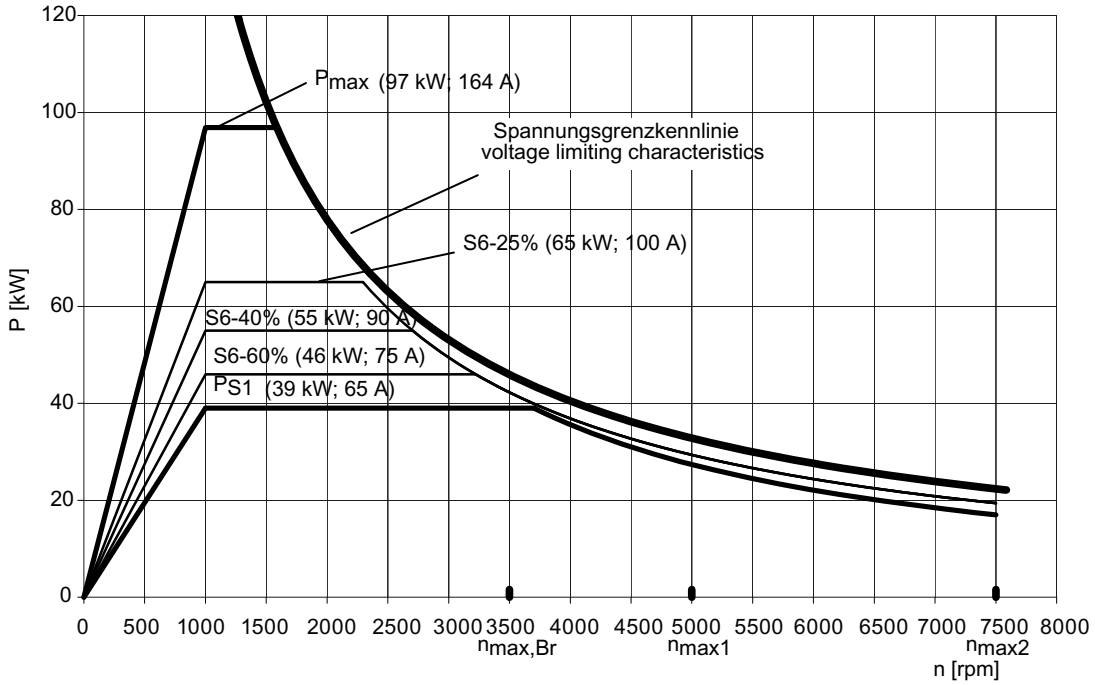



Tabella 4- 165 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-□□C□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 39 | 372 | 65 | 5000 | 7500 | - | 3500 | 3700 | 925 | 164 | 372 | 65 |



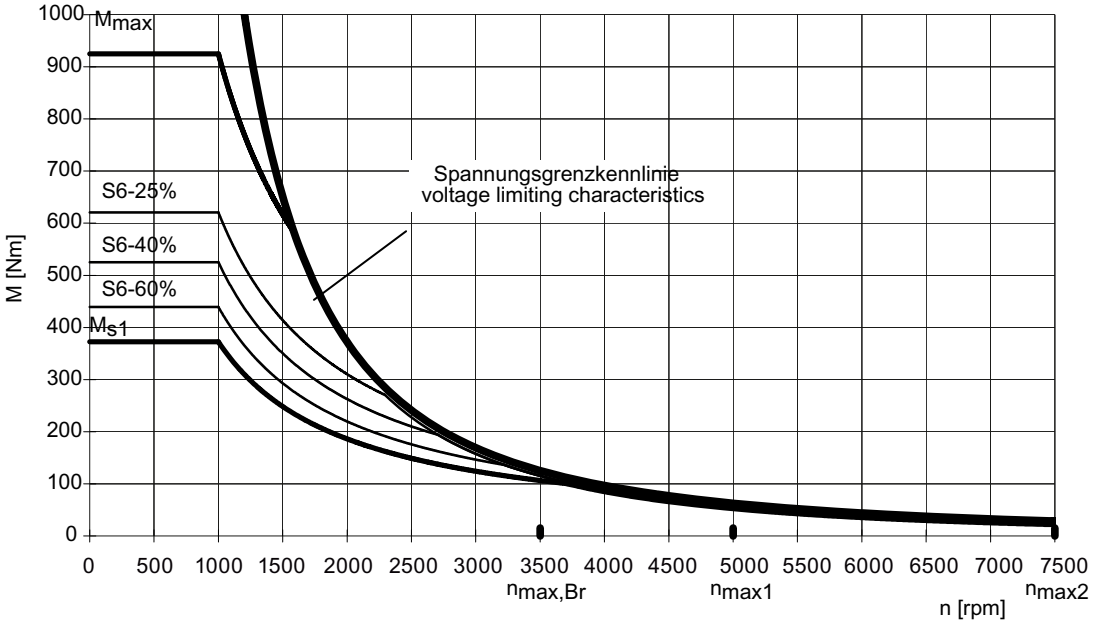
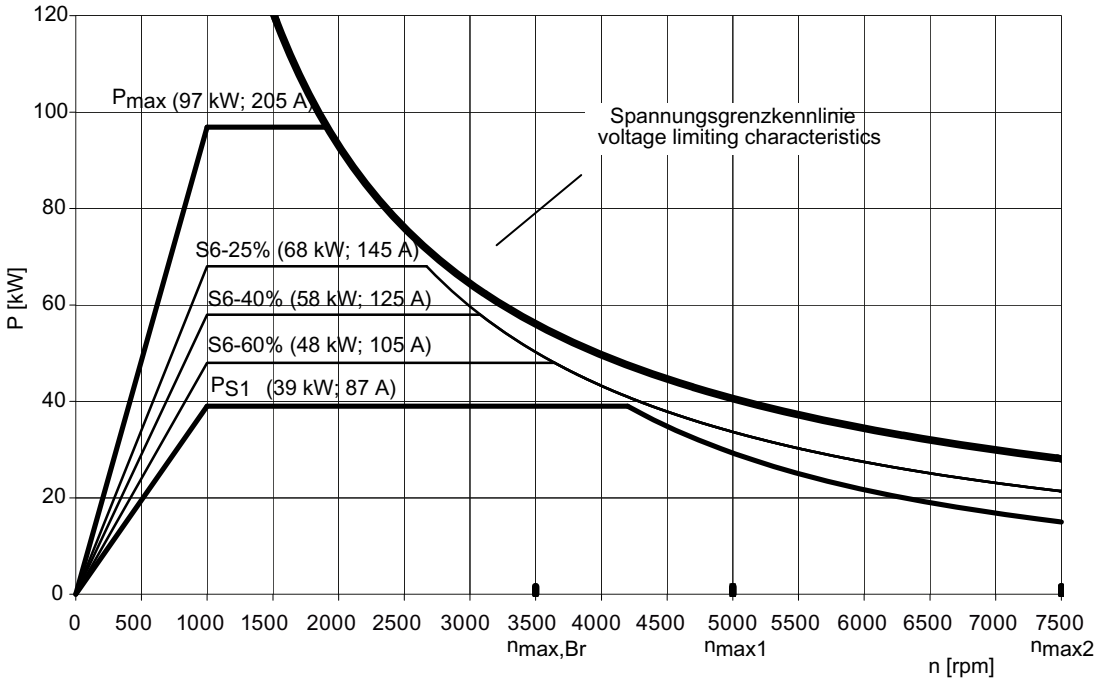



Tabella 4- 166 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-□□D□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 39 | 372 | 87 | 5000 | 7500 | - | 3500 | 4200 | 925 | 205 | 372 | 87 |



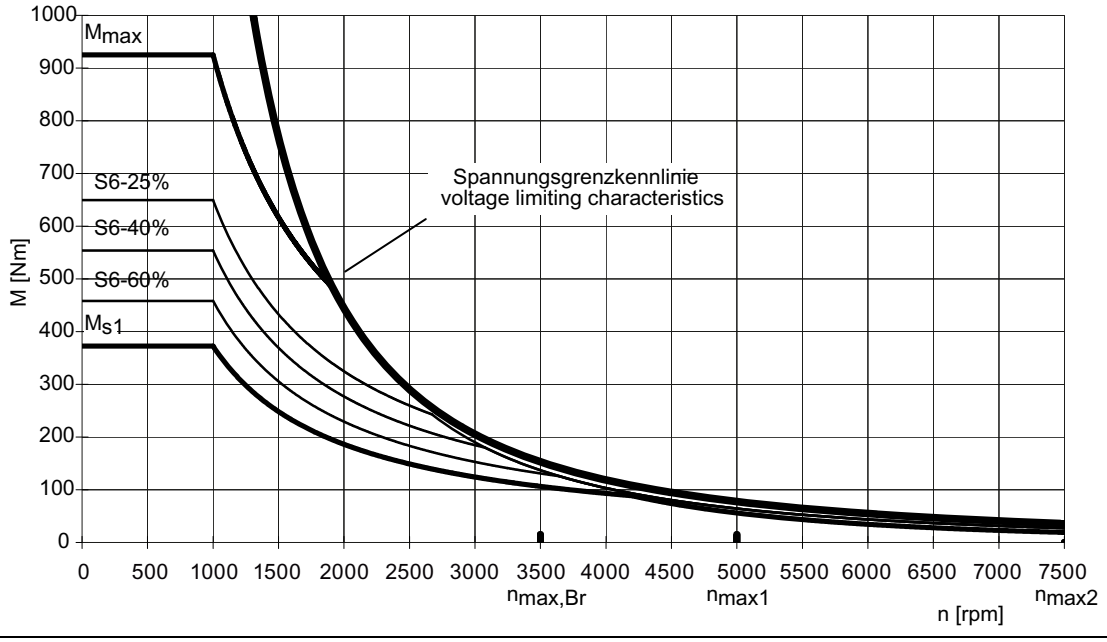
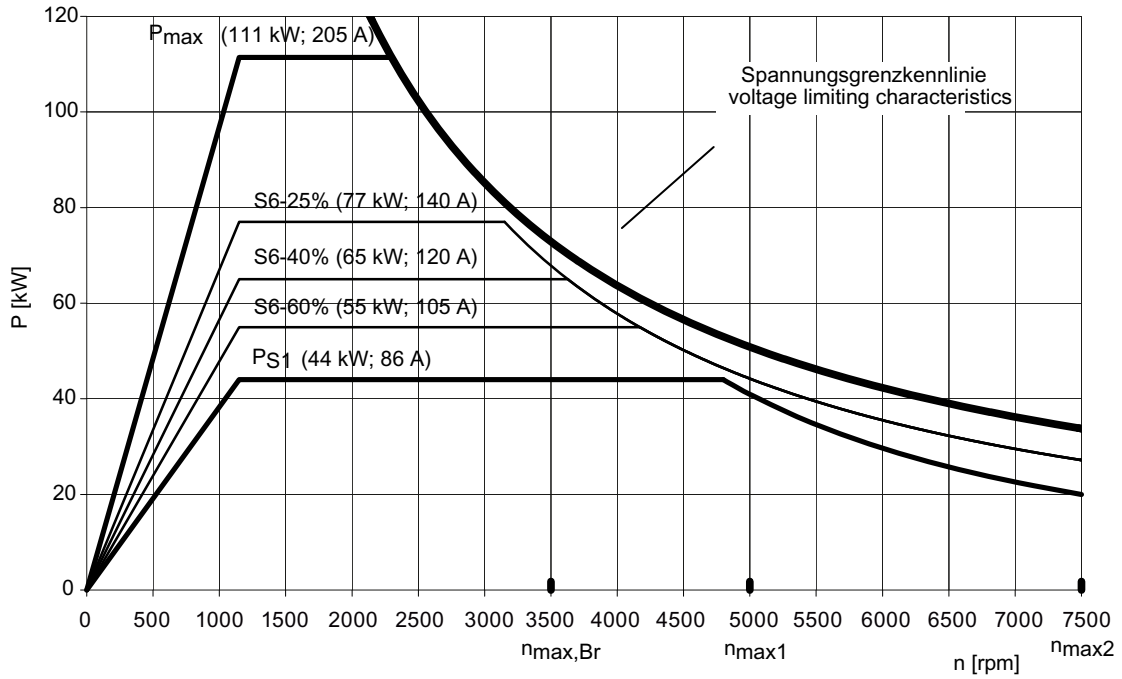



Tabella 4- 167 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-□□D□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 44 | 365 | 86 | 5000 | 7500 | - | 3500 | 4800 | 925 | 205 | 365 | 86 |
| 1000 | 39 | 372 | 87 | | | | | 5100 | | | | |



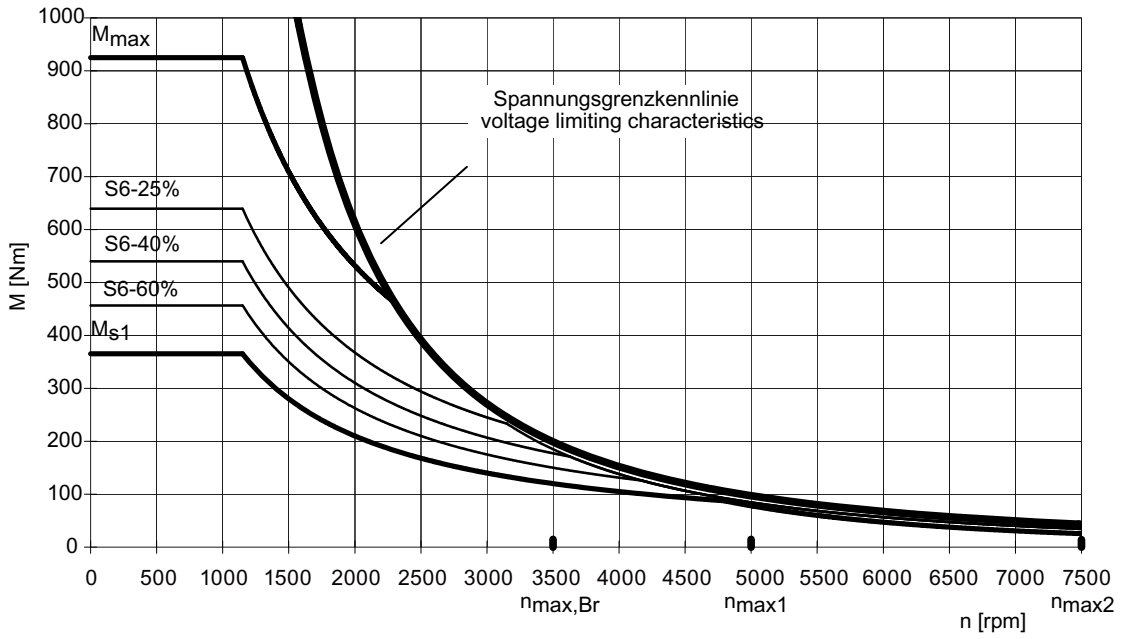
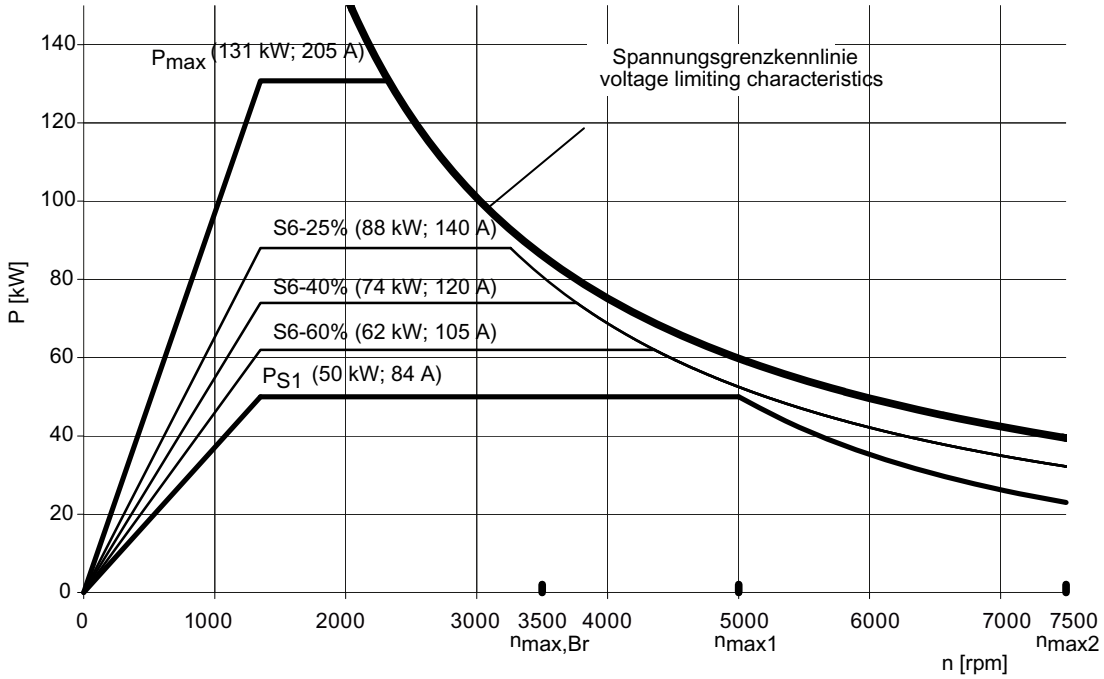



Tabella 4- 168 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-□□D□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 50 | 354 | 84 | 5000 | 7500 | - | 3500 | 5000 | 925 | 205 | 354 | 84 |



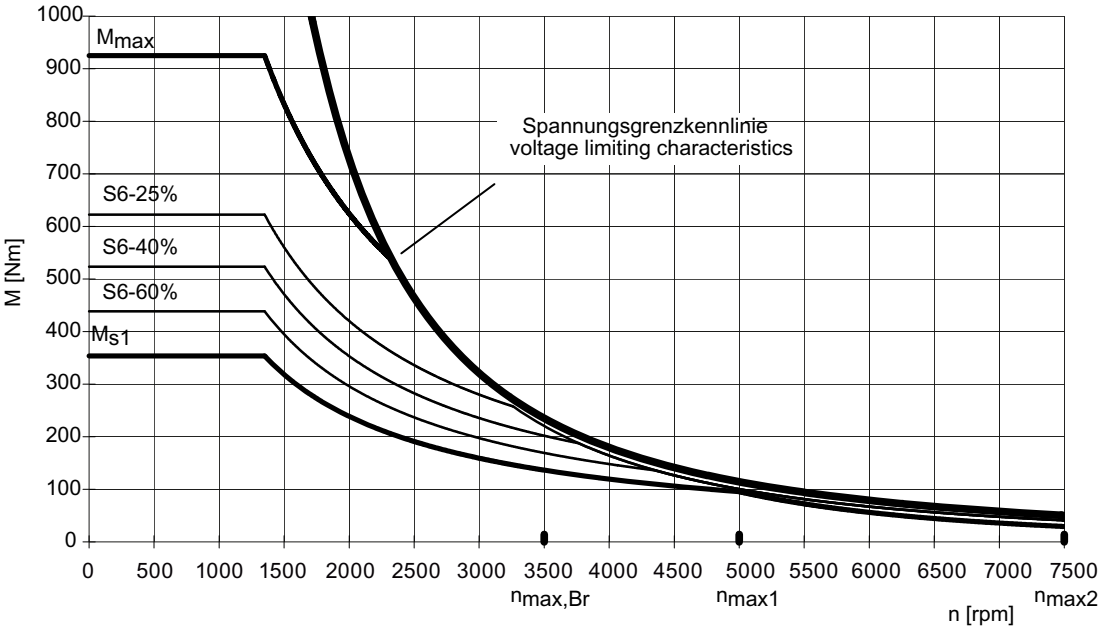
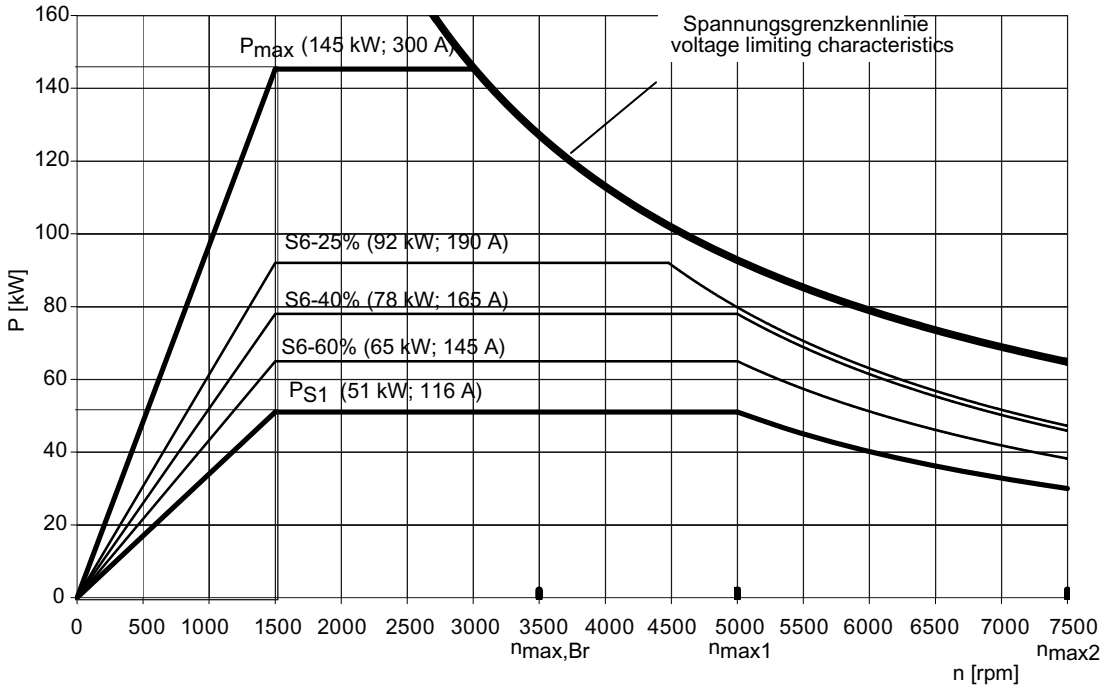



Tabella 4- 169 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-□□F□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 51 | 325 | 116 | 5000 | 7500 | - | 3500 | 5000 | 925 | 300 | 325 | 116 |



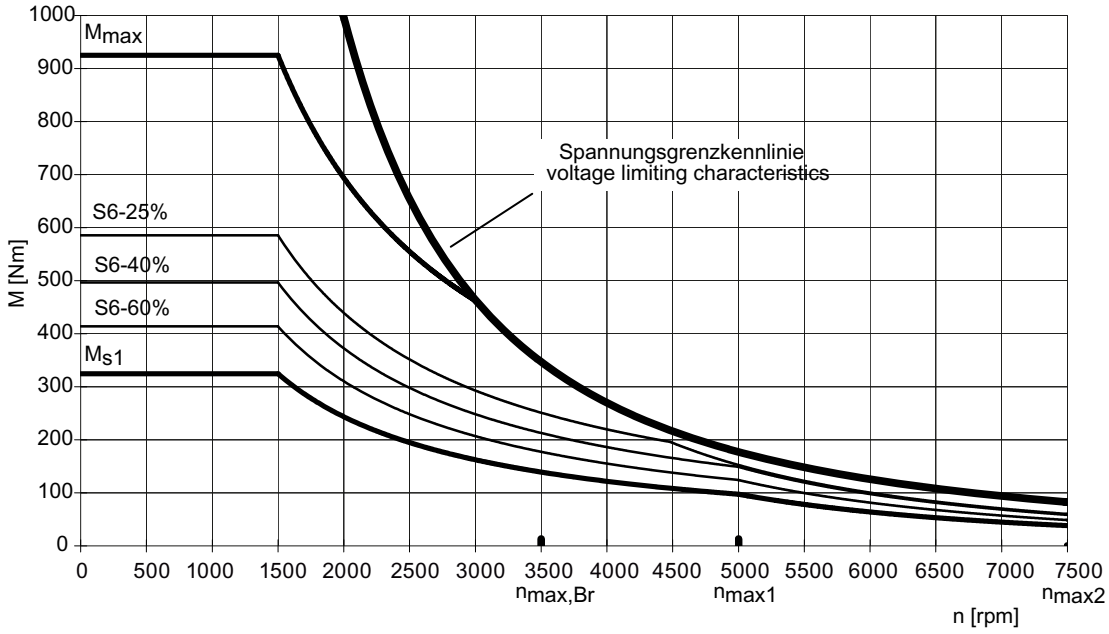
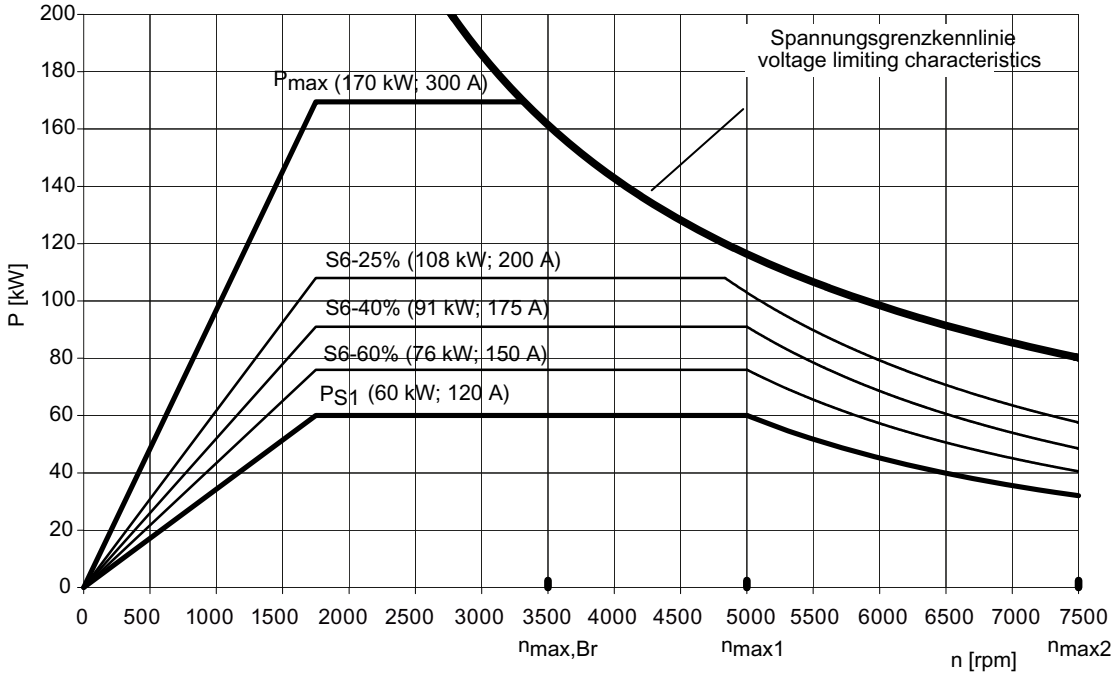



Tabella 4- 170 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-□□F□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 60 | 327 | 120 | 5000 | 7500 | - | 3500 | 5000 | 925 | 300 | 327 | 120 |
| 1500 | 51 | 325 | 116 | | | | | 5600 | | | | |



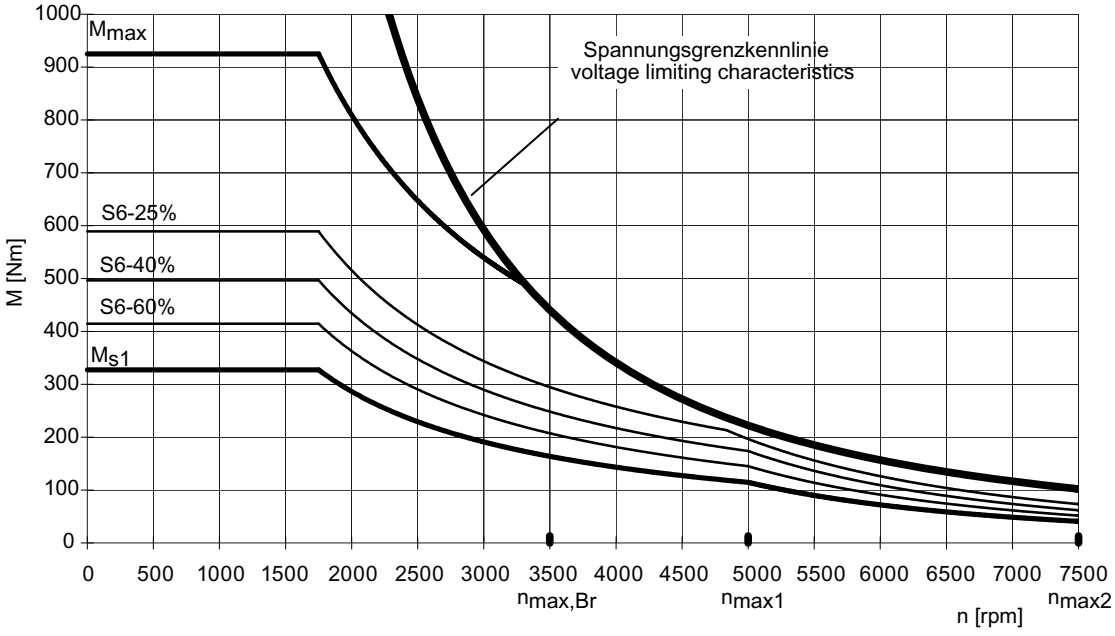
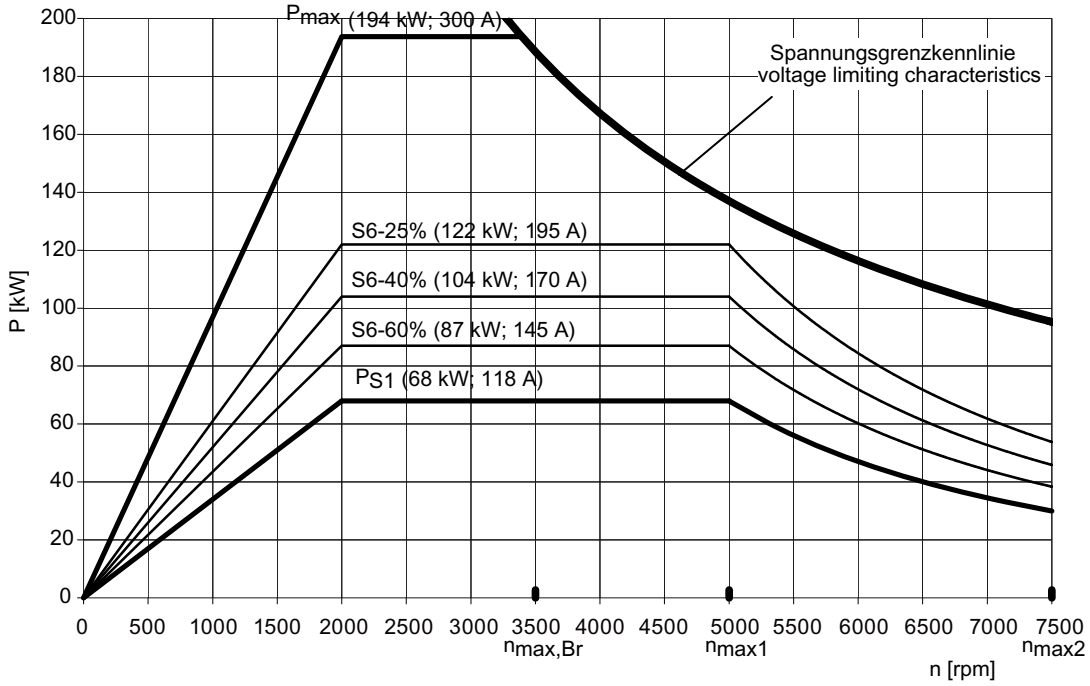



Tabella 4- 171 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-□□F□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 68 | 325 | 118 | 5000 | 7500 | - | 3500 | 5000 | 925 | 300 | 325 | 118 |



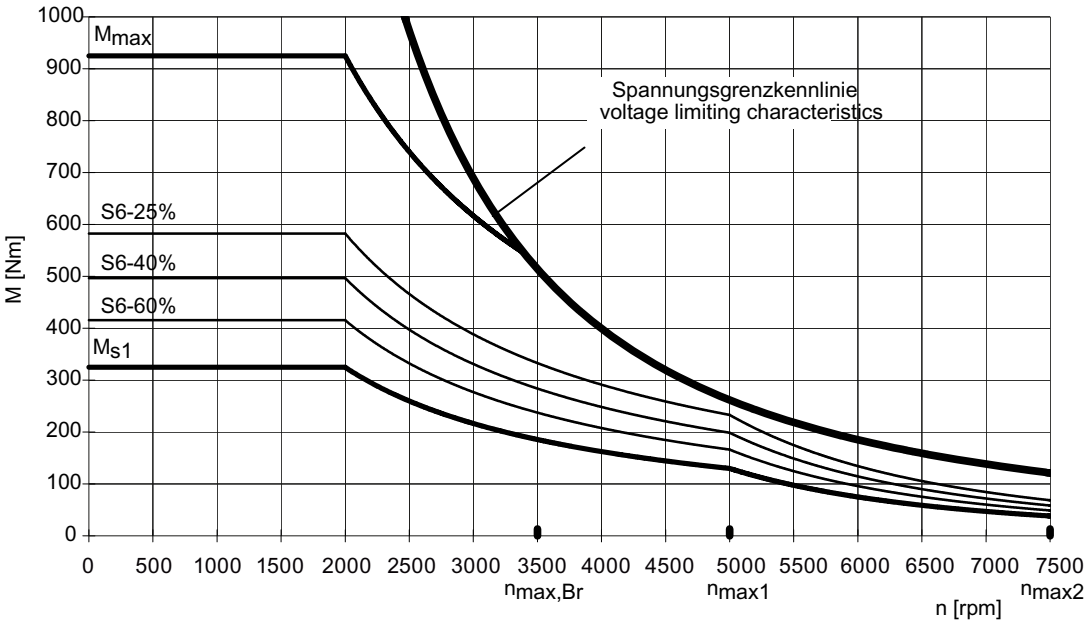
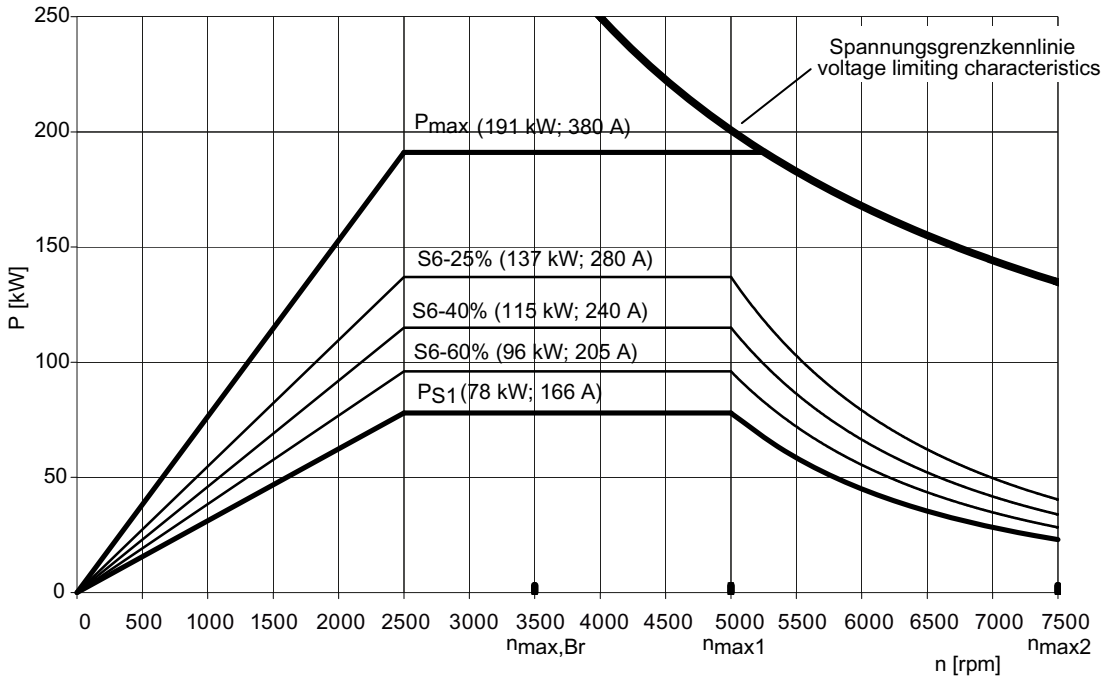



Tabella 4- 172 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-□□L□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 78 | 298 | 166 | 5000 | 7500 | - | 3500 | 5000 | 730 | 380 | 298 | 166 |



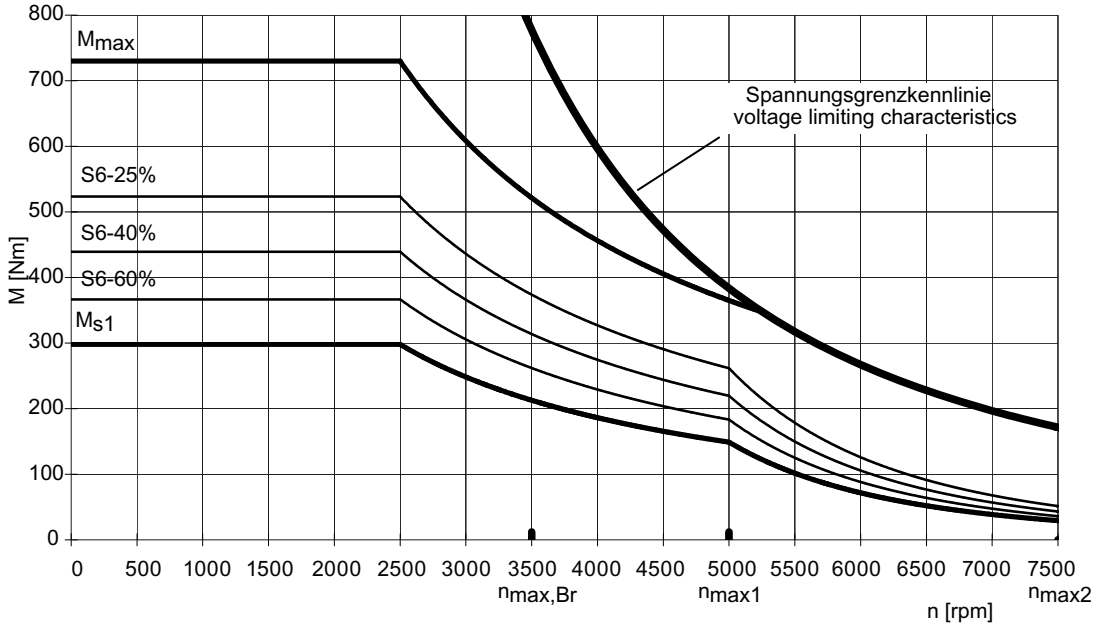
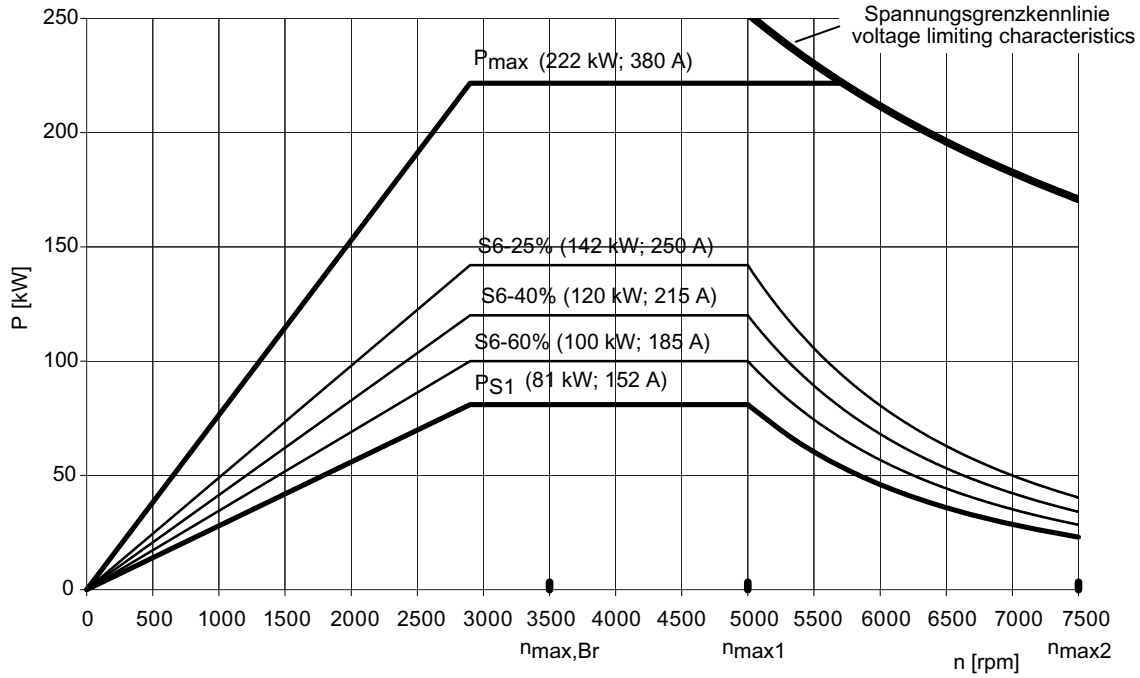



Tabella 4- 173 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-□□L□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 81 | 267 | 152 | 5000 | 7500 | - | 3500 | 5000 | 730 | 380 | 267 | 152 |
| 2500 | 78 | 298 | 166 | | | | | 5100 | | | | |



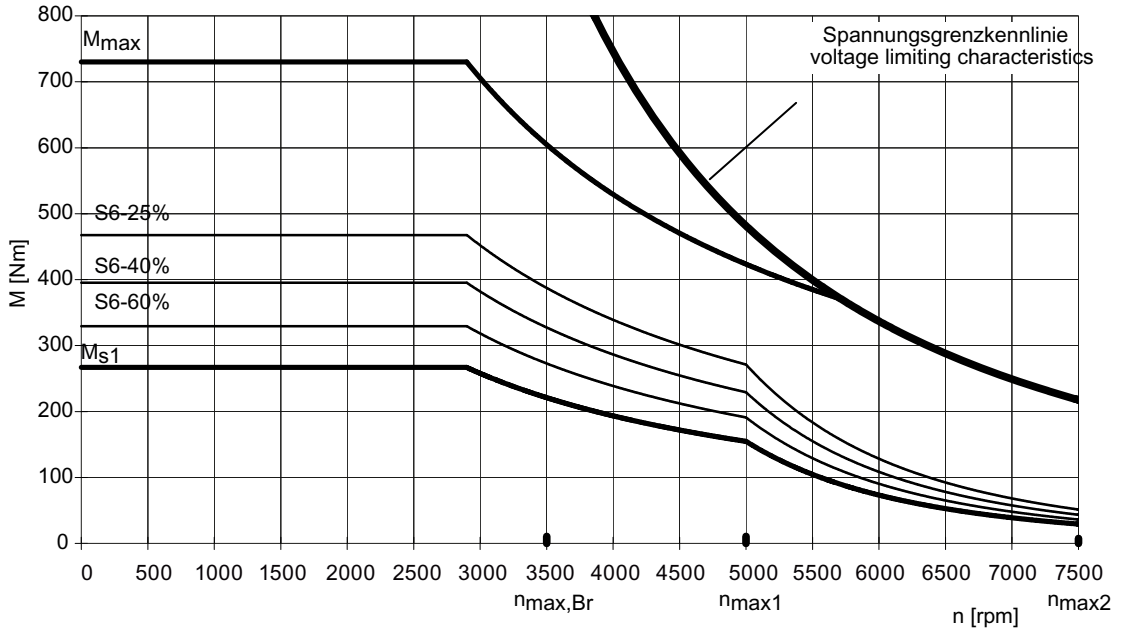
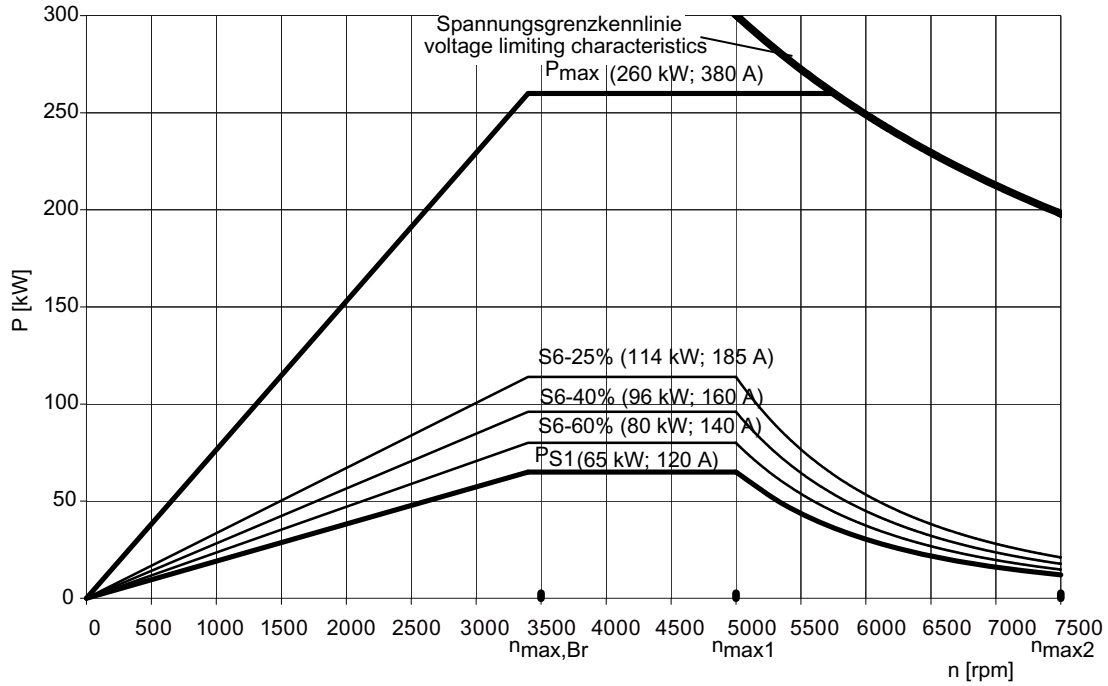



Tabella 4- 174 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-□□L□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3400 | 65 | 183 | 120 | 5000 | 7500 | - | 3500 | 5000 | 730 | 380 | 183 | 120 |



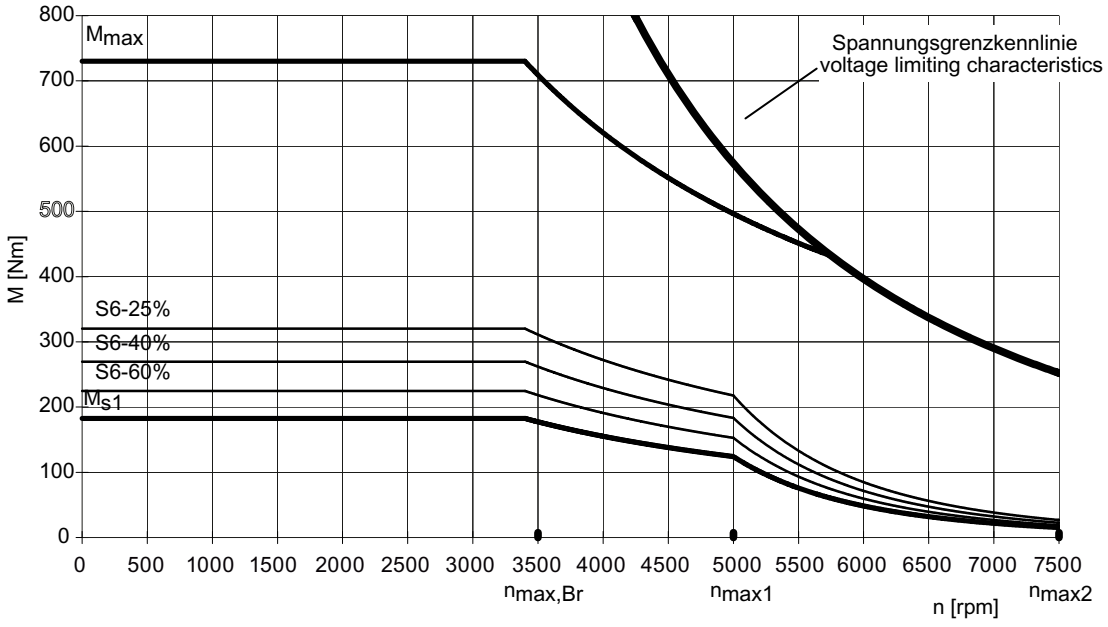
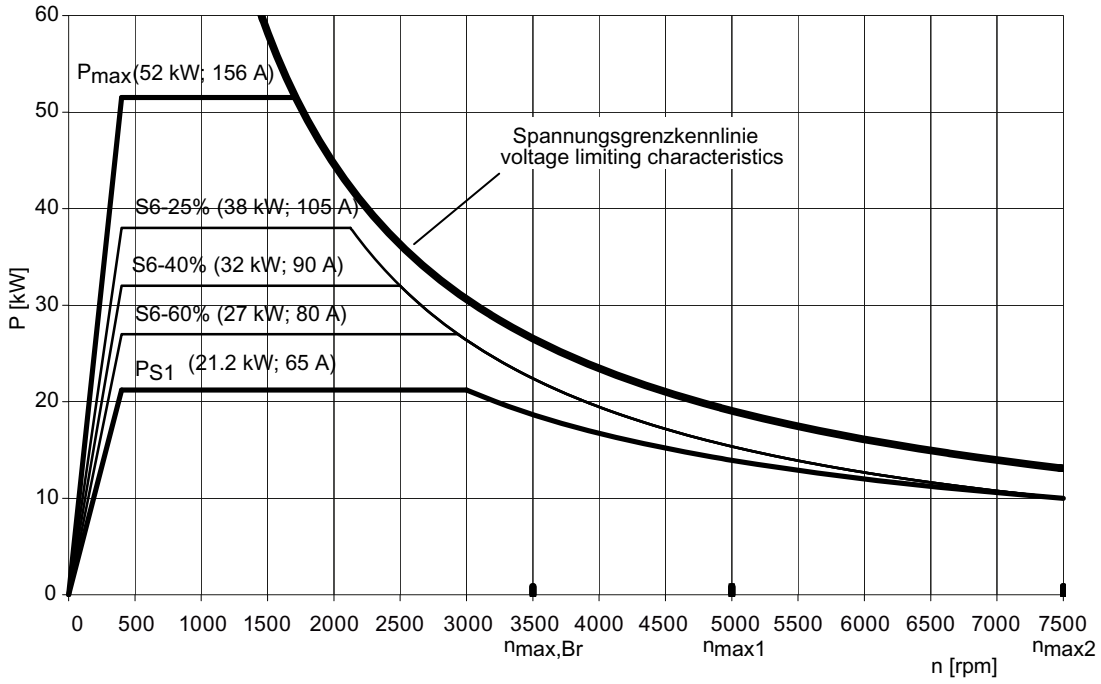



Tabella 4- 175 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-□□B□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 21,2 | 506 | 65 | 5000 | 7500 | - | 3500 | 3000 | 1230 | 156 | 506 | 65 |



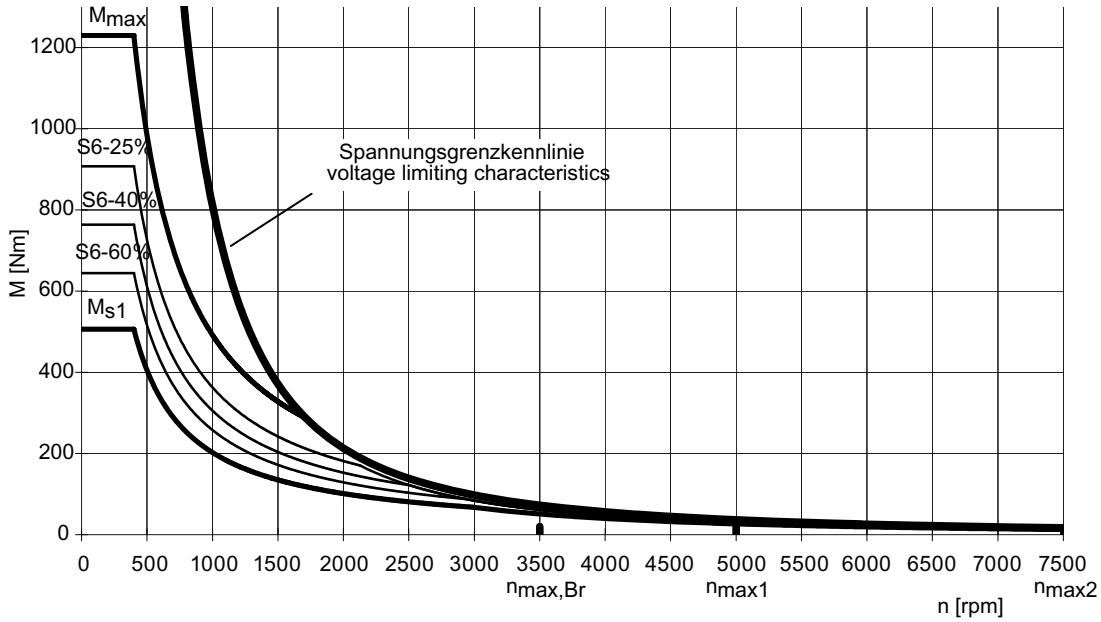
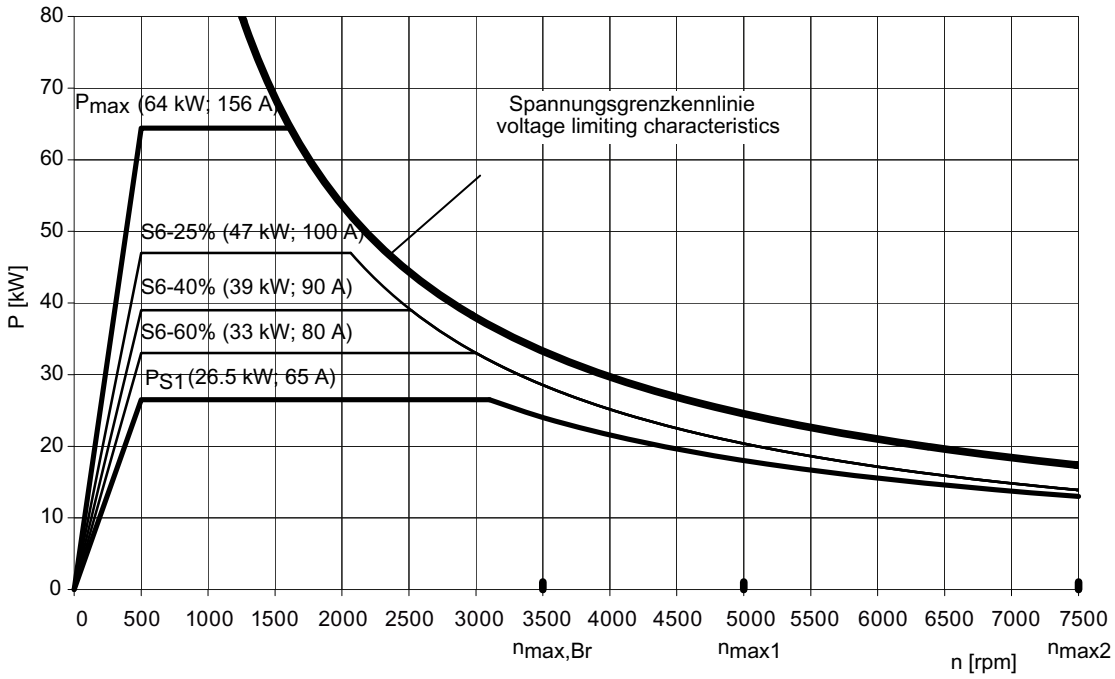



Tabella 4- 176 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8186-□□B□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 26,5 | 506 | 65 | 5000 | 7500 | - | 3500 | 3100 | 1230 | 156 | 506 | 65 |
| 400 | 21,2 | 506 | 65 | | | | | 4100 | | | | |



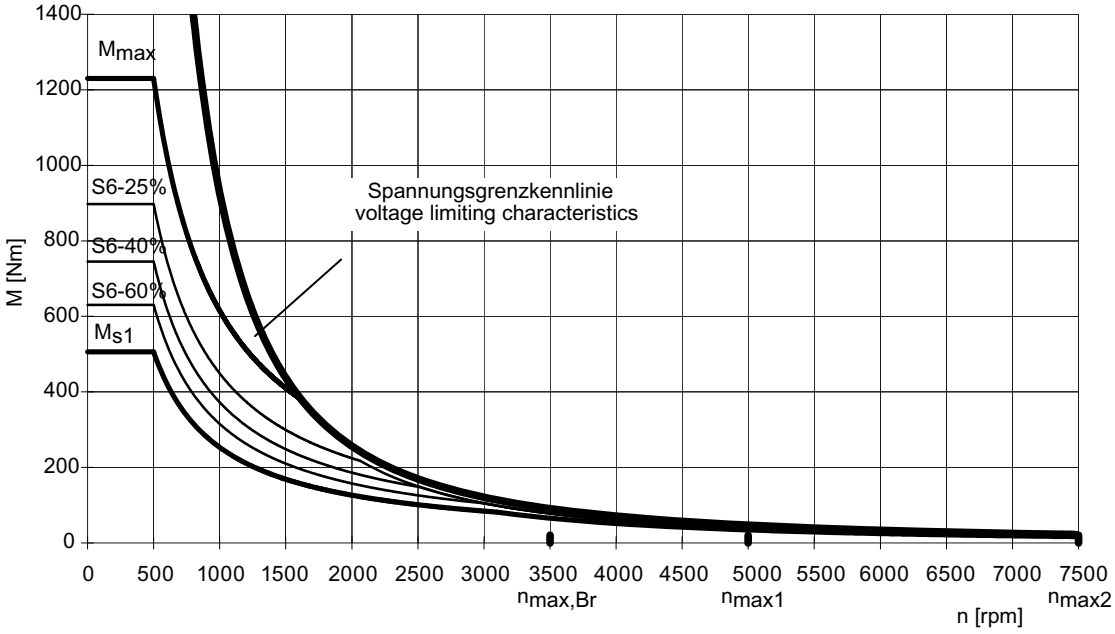
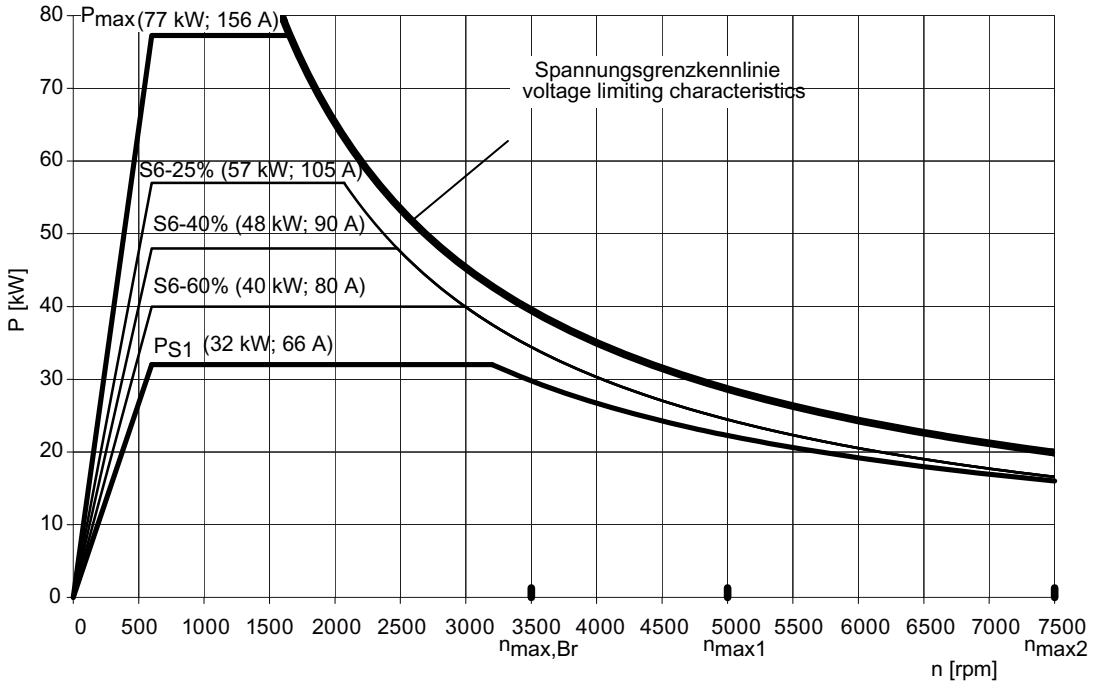



Tabella 4- 177 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-□□B□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 32 | 509 | 66 | 5000 | 7500 | - | 3500 | 3200 | 1230 | 156 | 509 | 66 |



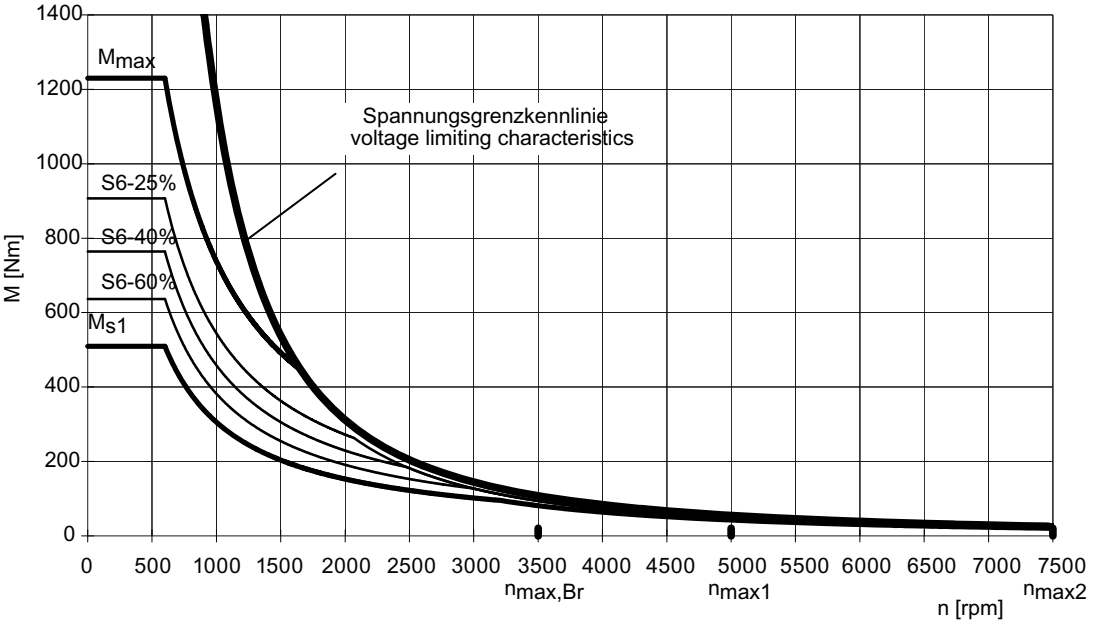
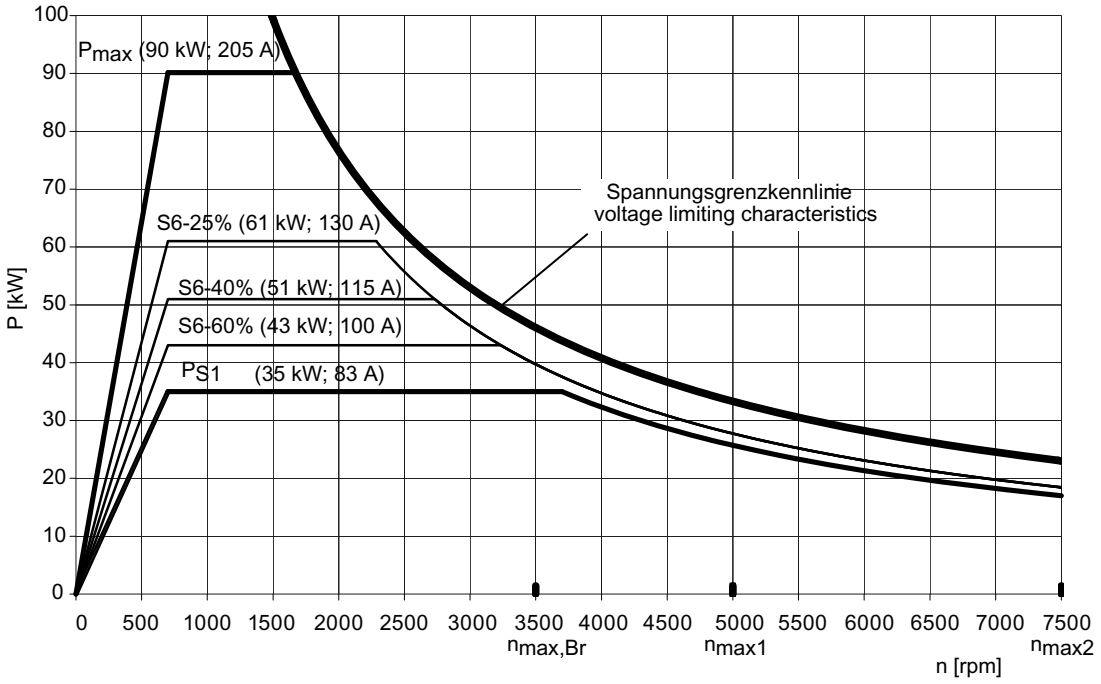



Tabella 4- 178 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-□□C□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 35 | 478 | 83 | 5000 | 7500 | - | 3500 | 3700 | 1230 | 205 | 478 | 83 |



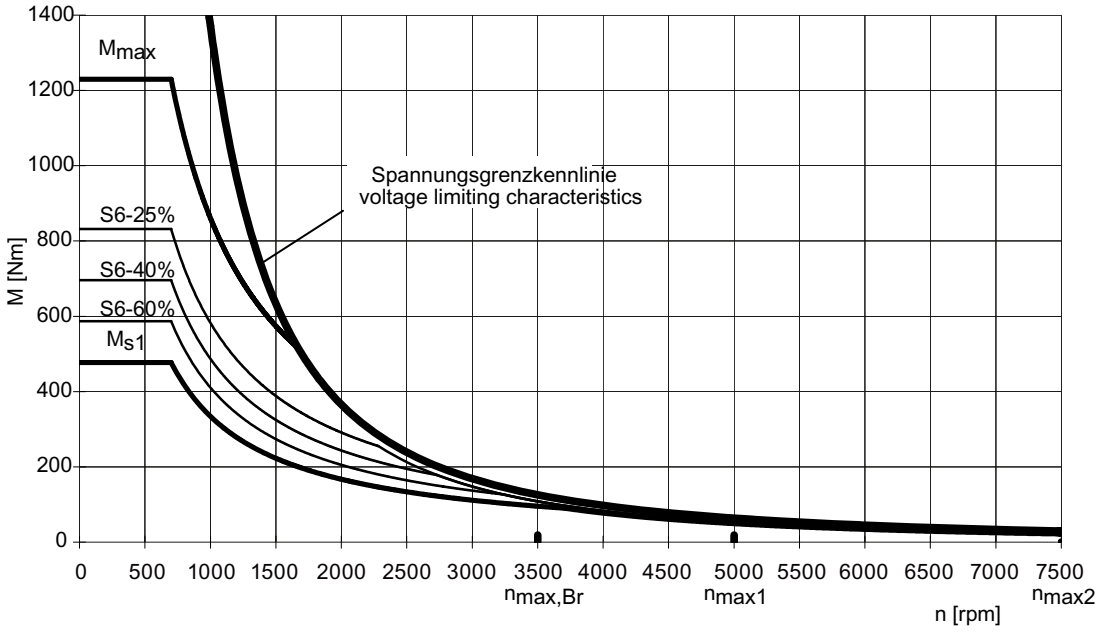
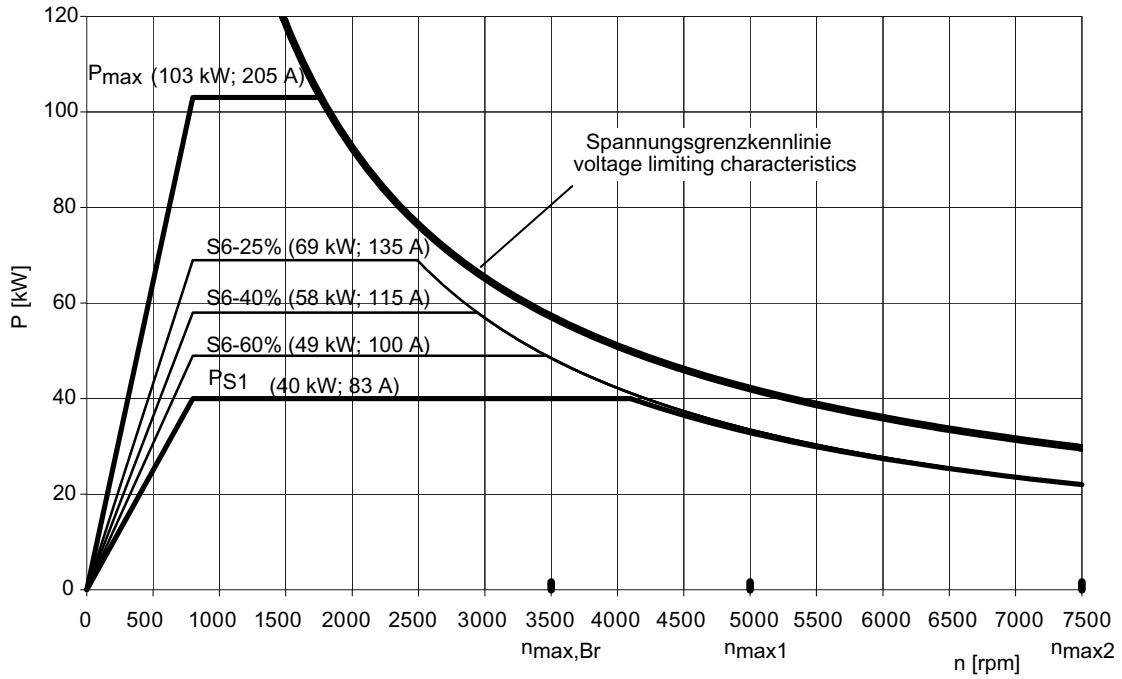



Tabella 4- 179 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8186-□□C□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 40 | 478 | 83 | 5000 | 7500 | - | 3500 | 4100 | 1230 | 205 | 478 | 83 |
| 700 | 35 | 478 | 83 | | | | | 4700 | | | | |



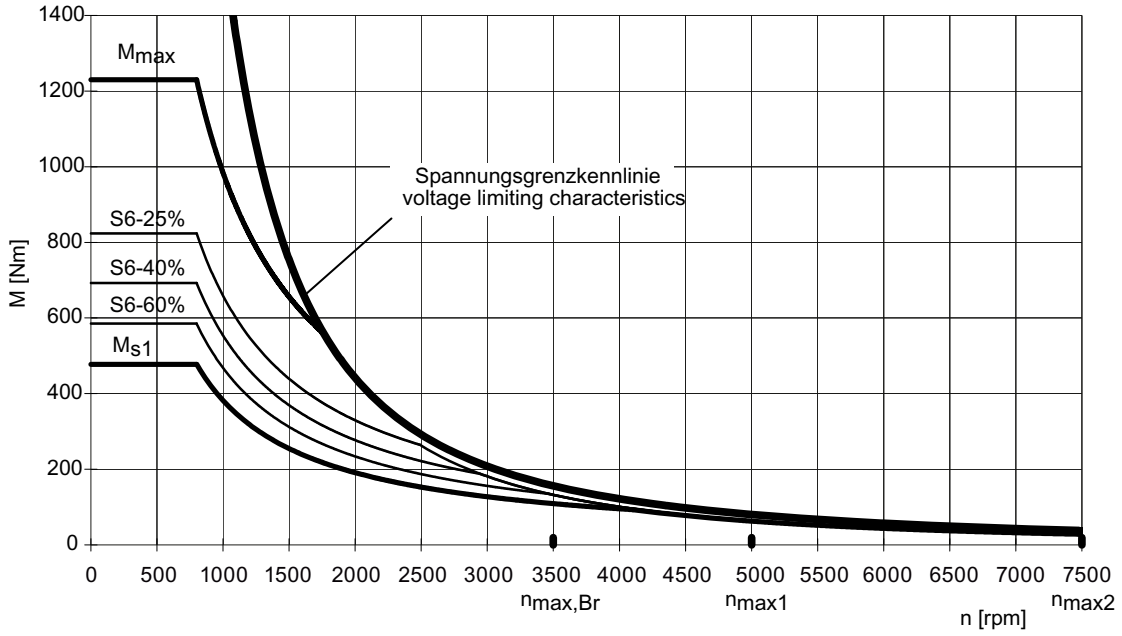
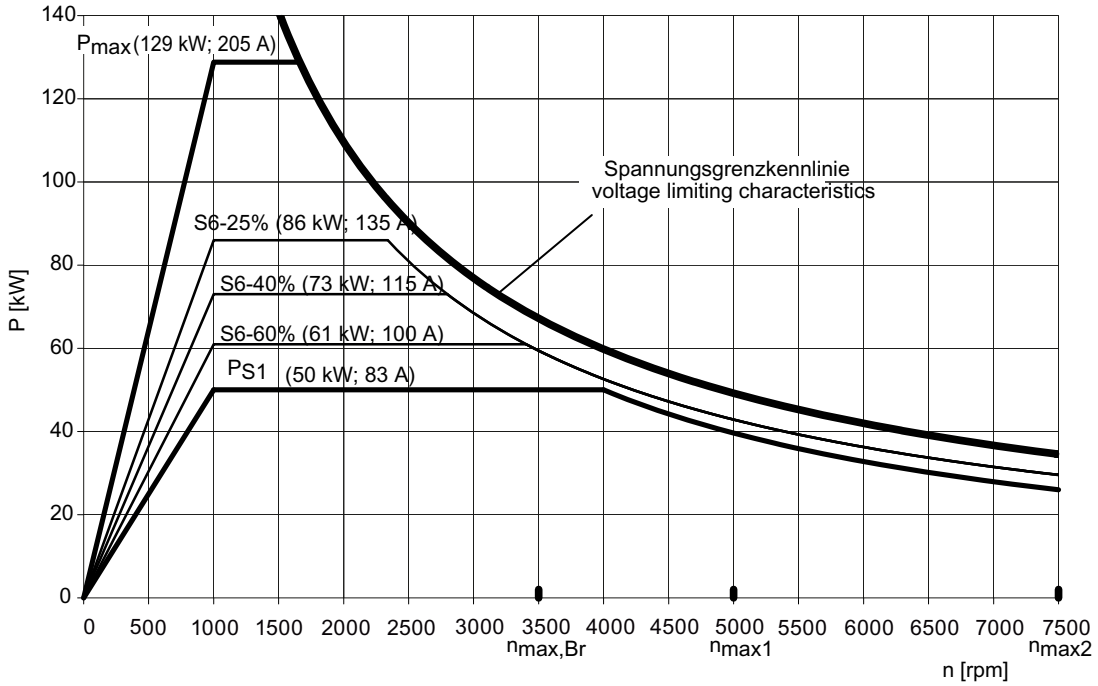



Tabella 4- 180 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-□□C□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 50 | 478 | 83 | 5000 | 7500 | - | 3500 | 4000 | 1230 | 205 | 478 | 83 |



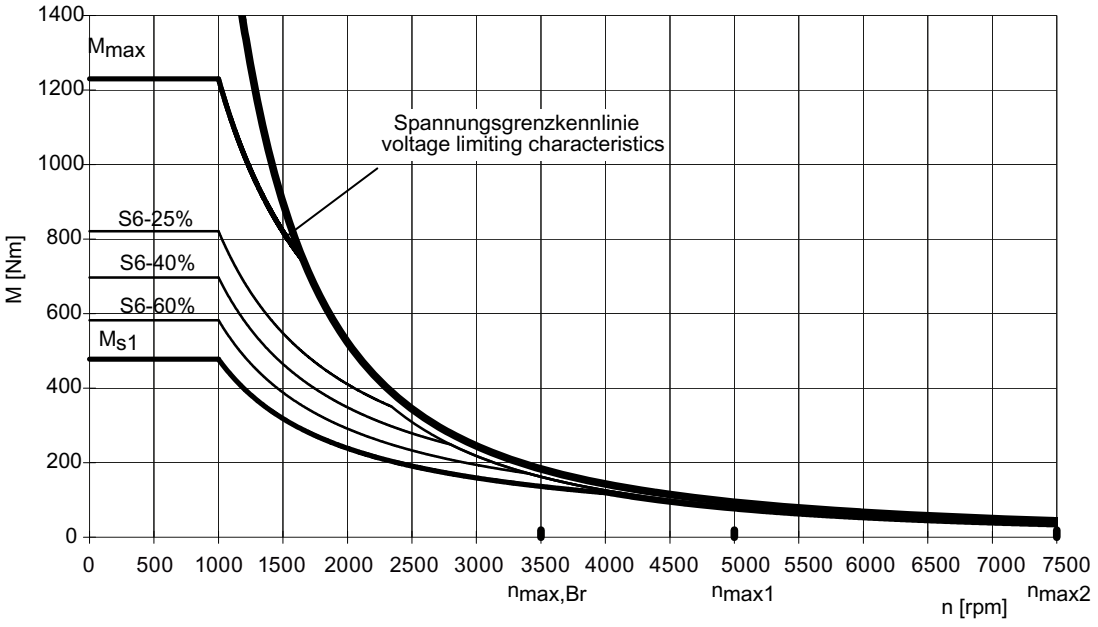
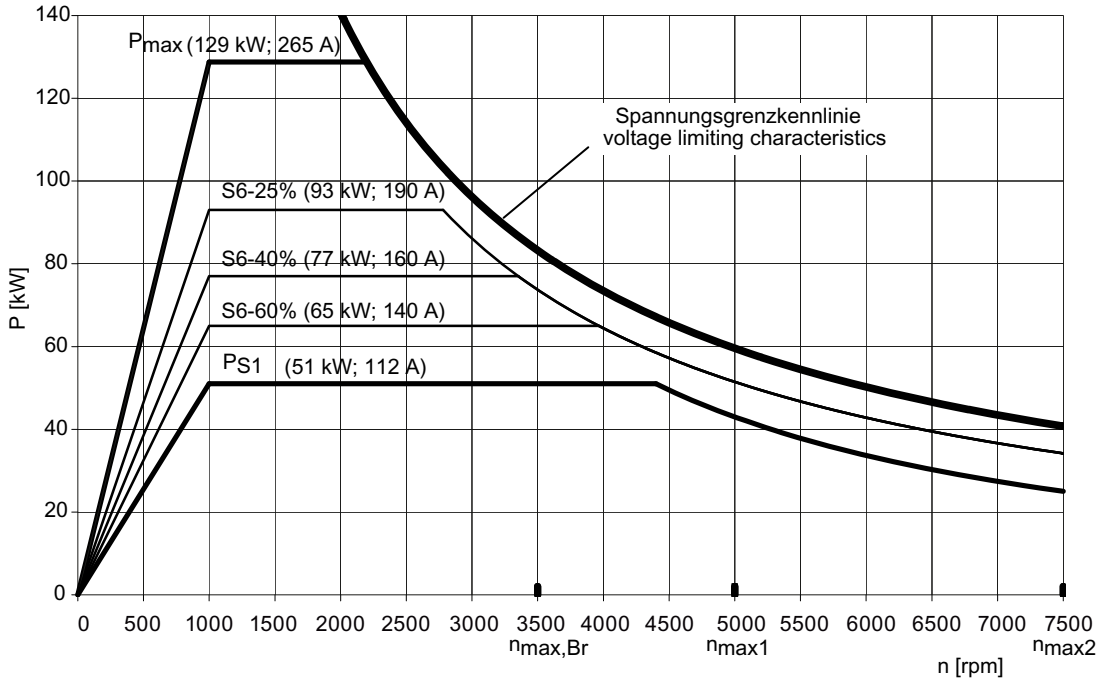



Tabella 4- 181 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-□□D□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 51 | 487 | 112 | 5000 | 7500 | - | 3500 | 4400 | 1230 | 265 | 487 | 112 |



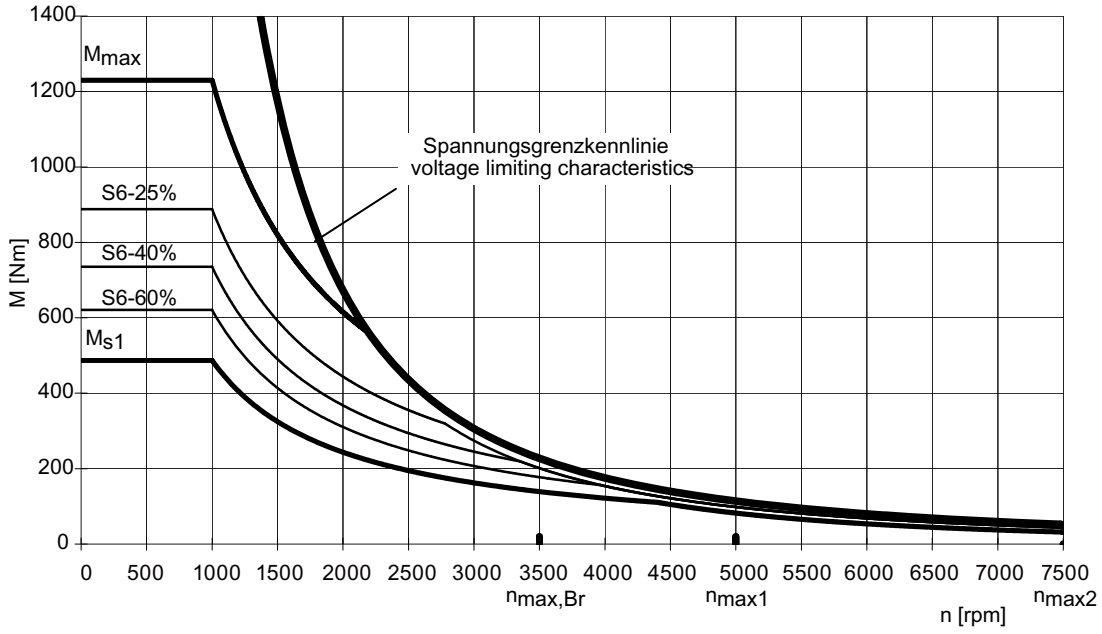
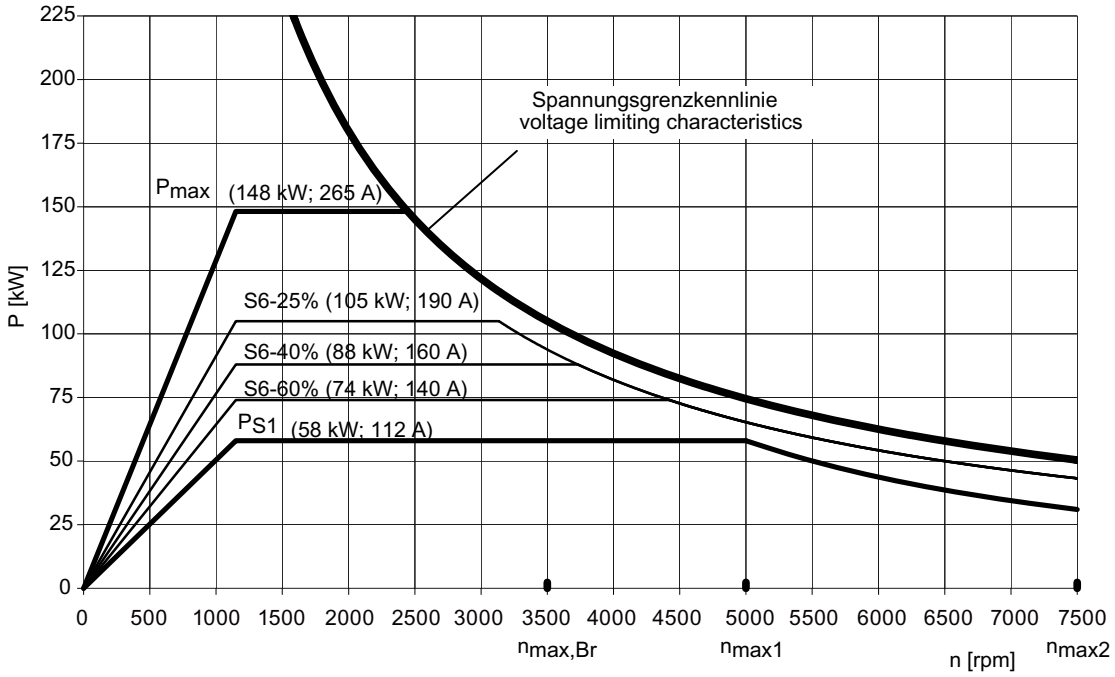



Tabella 4- 182 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8186-□□D□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 58 | 482 | 112 | 5000 | 7500 | - | 3500 | 5000 | 1230 | 265 | 482 | 112 |
| 1000 | 51 | 487 | 112 | | | | | 5400 | | | | |



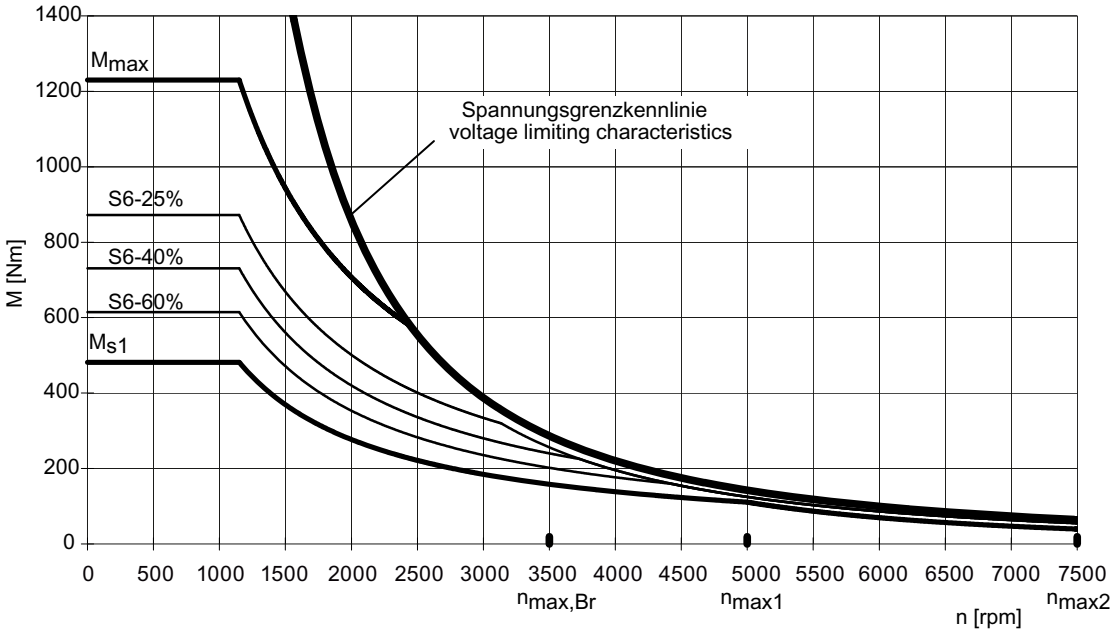
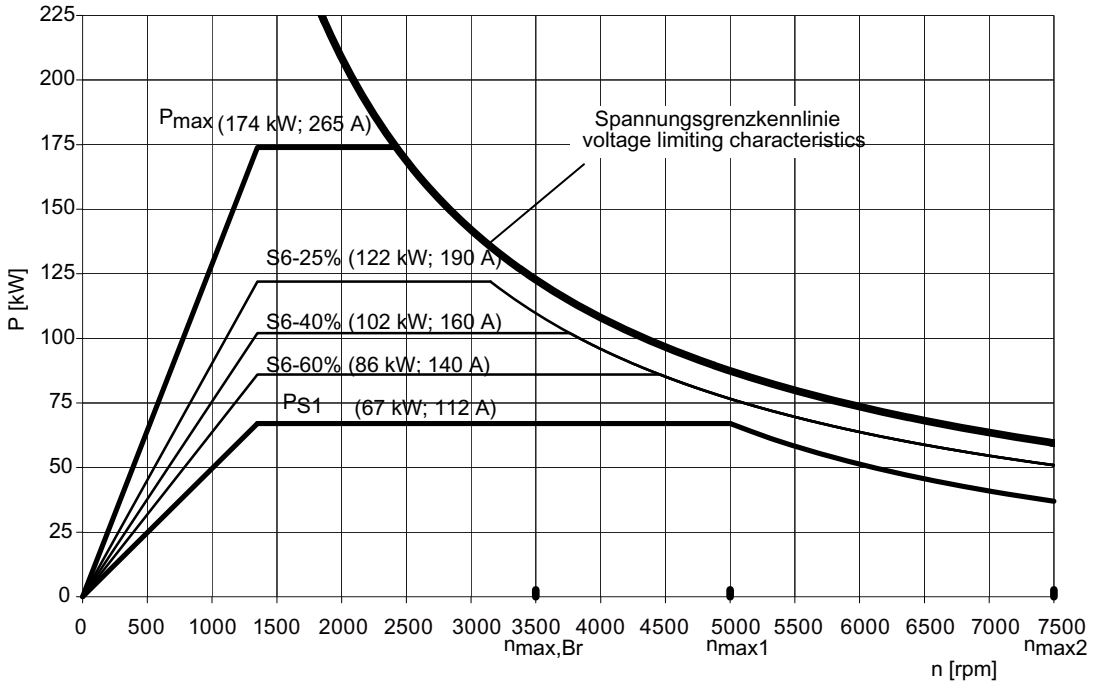



Tabella 4- 183 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-□□D□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 67 | 474 | 112 | 5000 | 7500 | - | 3500 | 5000 | 1230 | 265 | 474 | 112 |



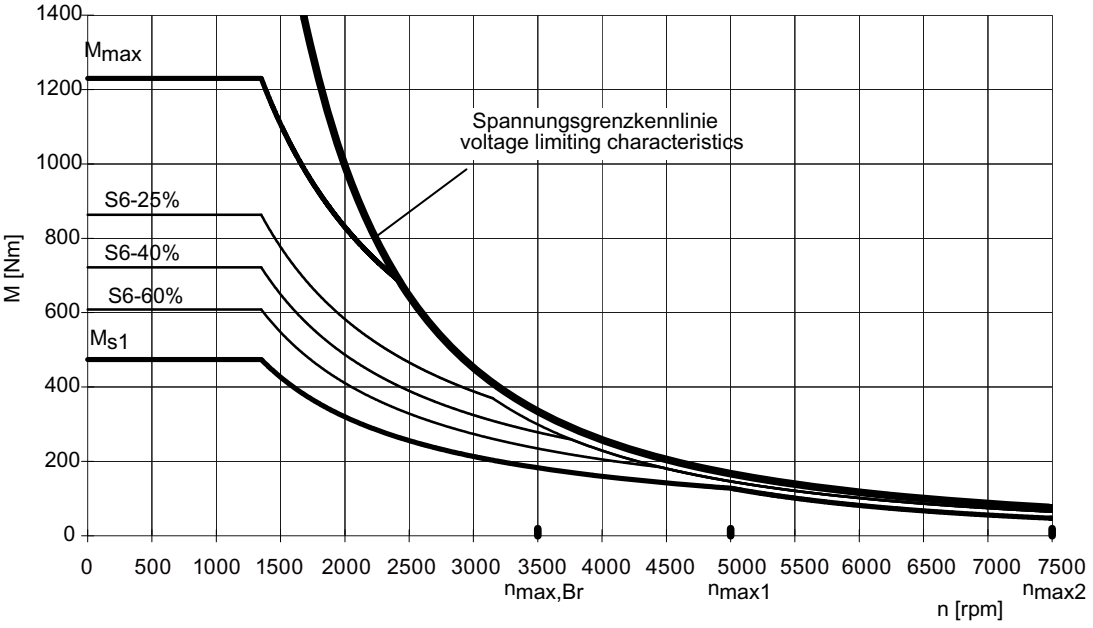
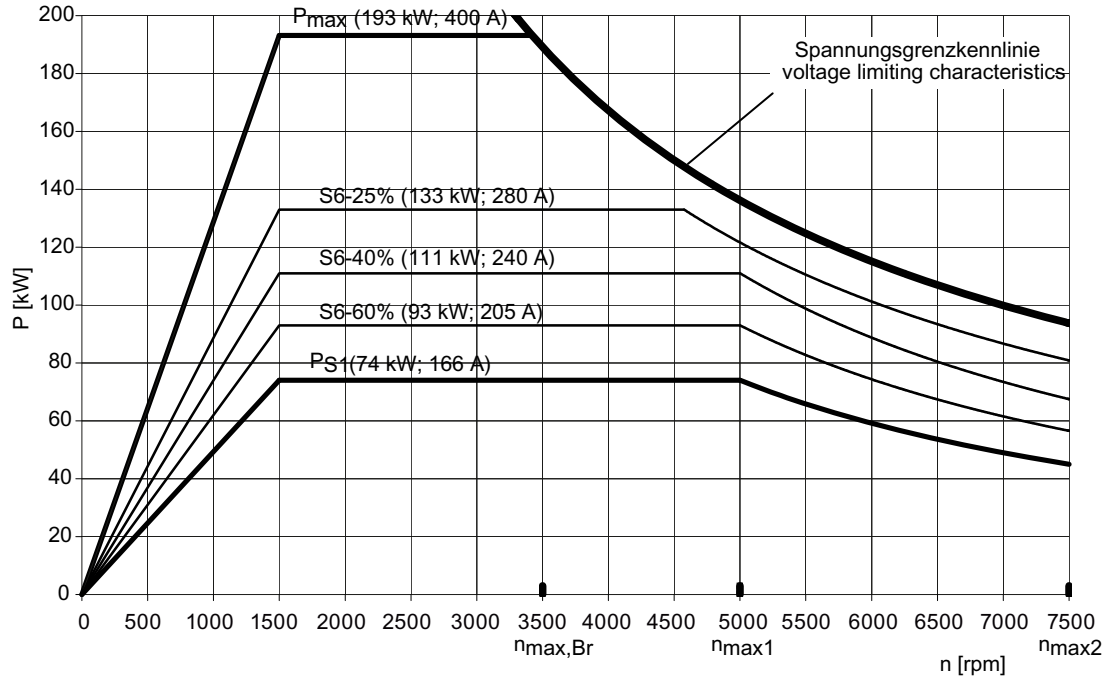



Tabella 4- 184 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-□□F□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 74 | 471 | 166 | 5000 | 7500 | - | 3500 | 5000 | 1230 | 400 | 471 | 166 |



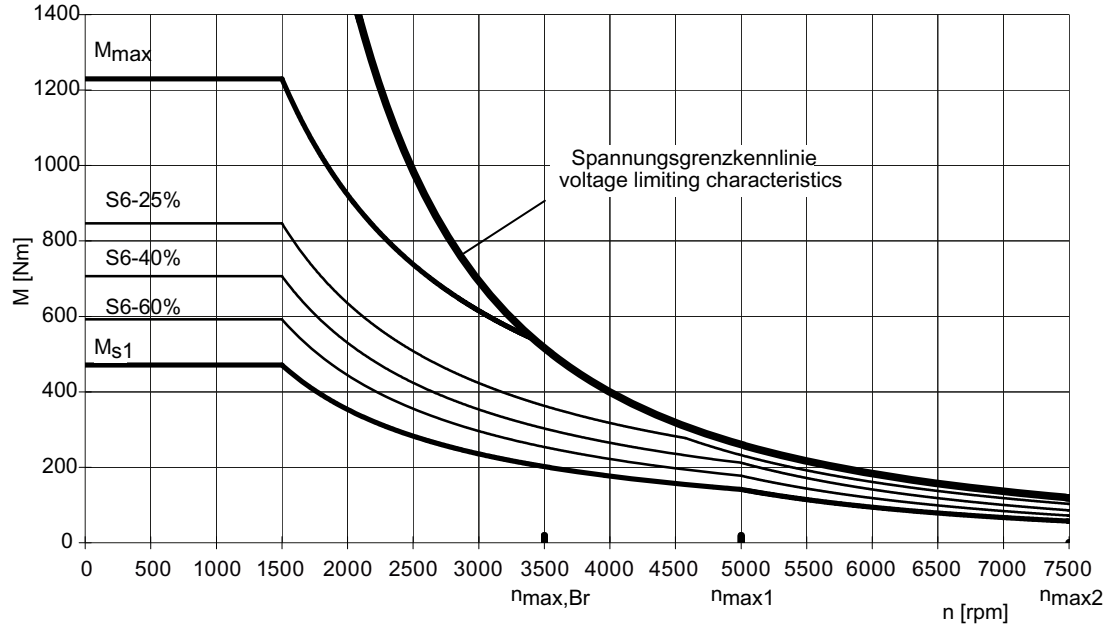
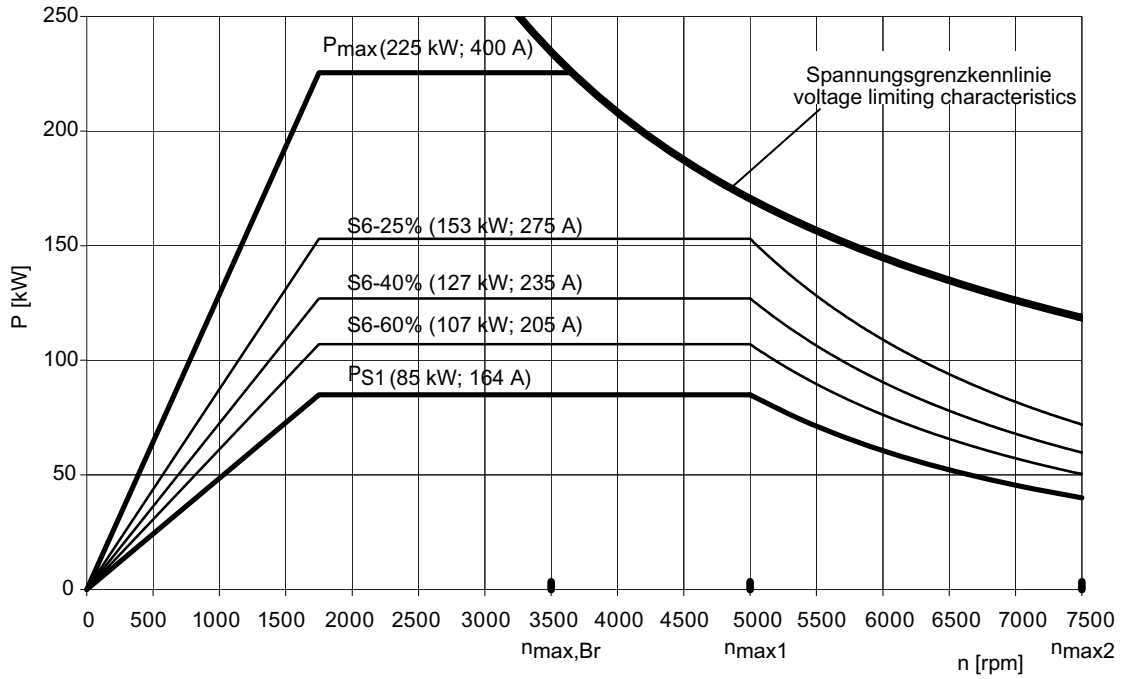



Tabella 4- 185 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8186-□□F□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 85 | 464 | 164 | 5000 | 7500 | - | 3500 | 5000 | 1230 | 400 | 464 | 164 |
| 1500 | 74 | 471 | 166 | | | | | 5400 | | | | |



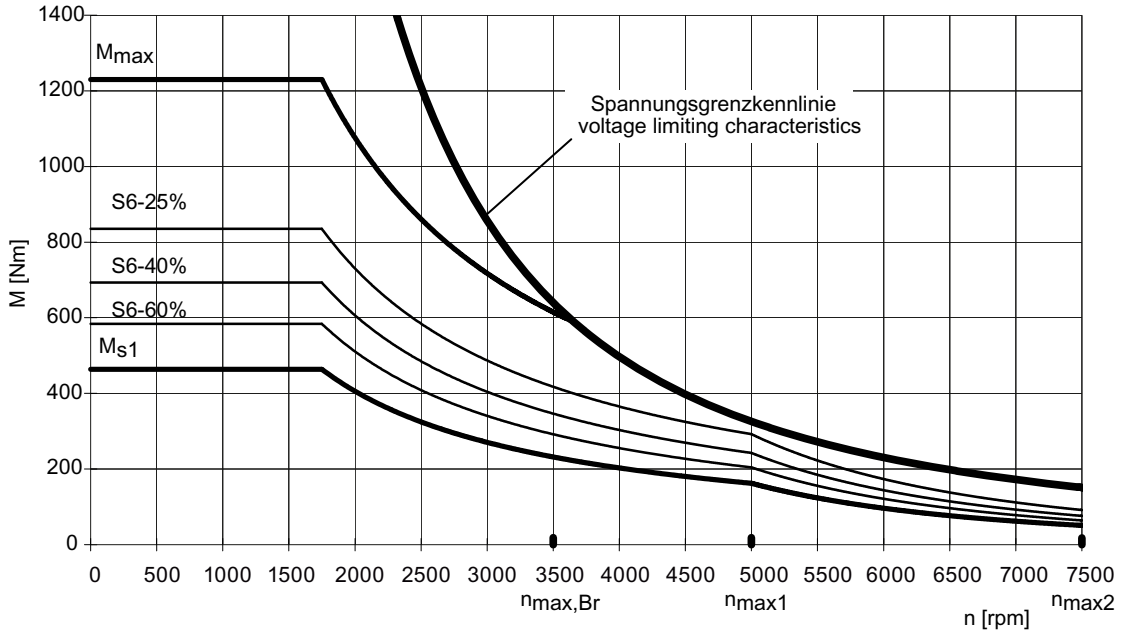
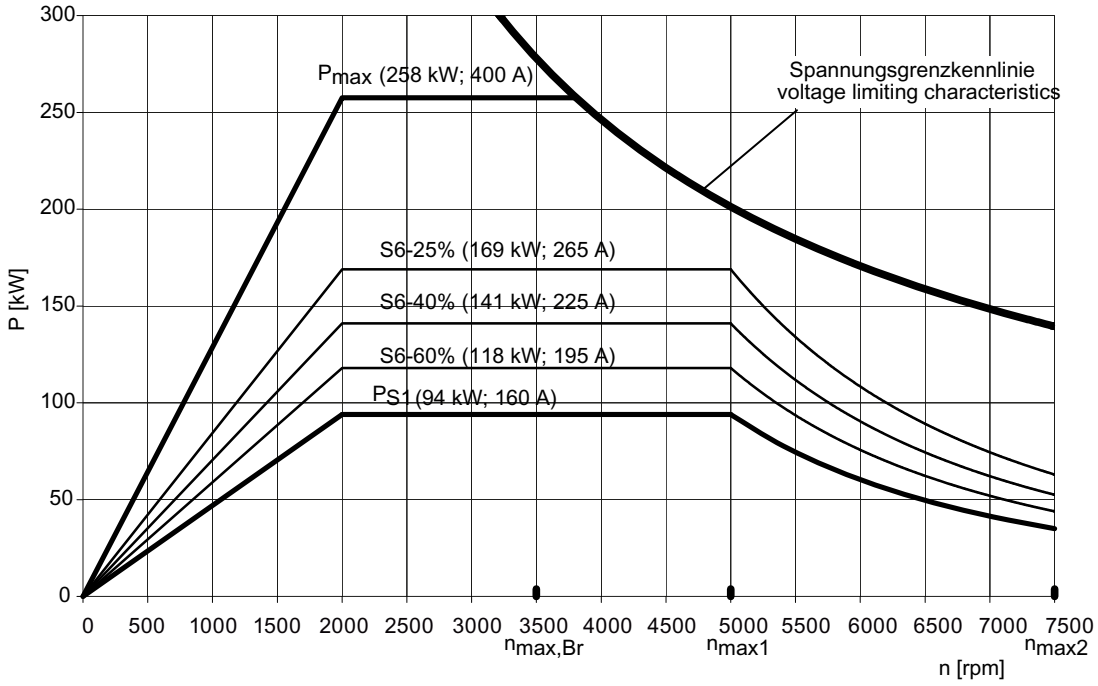



Tabella 4- 186 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-□□F□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 94 | 449 | 160 | 5000 | 7500 | - | 3500 | 5000 | 1230 | 400 | 449 | 160 |



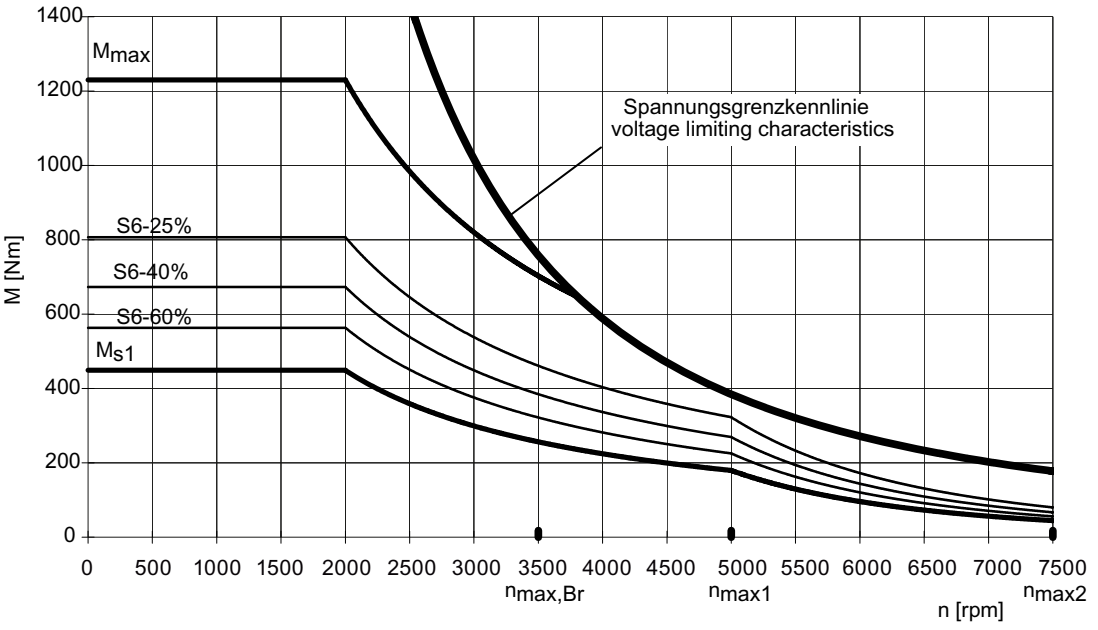
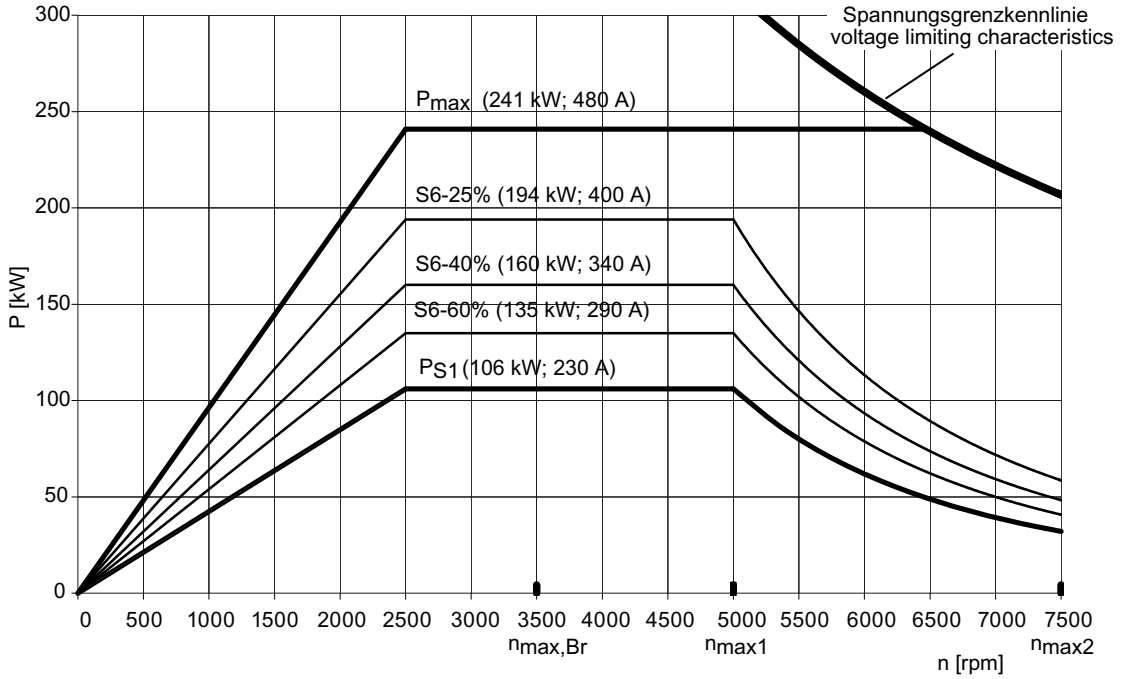



Tabella 4- 187 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-□□L□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 106 | 405 | 230 | 5000 | 7500 | - | 3500 | 5000 | 920 | 480 | 405 | 230 |



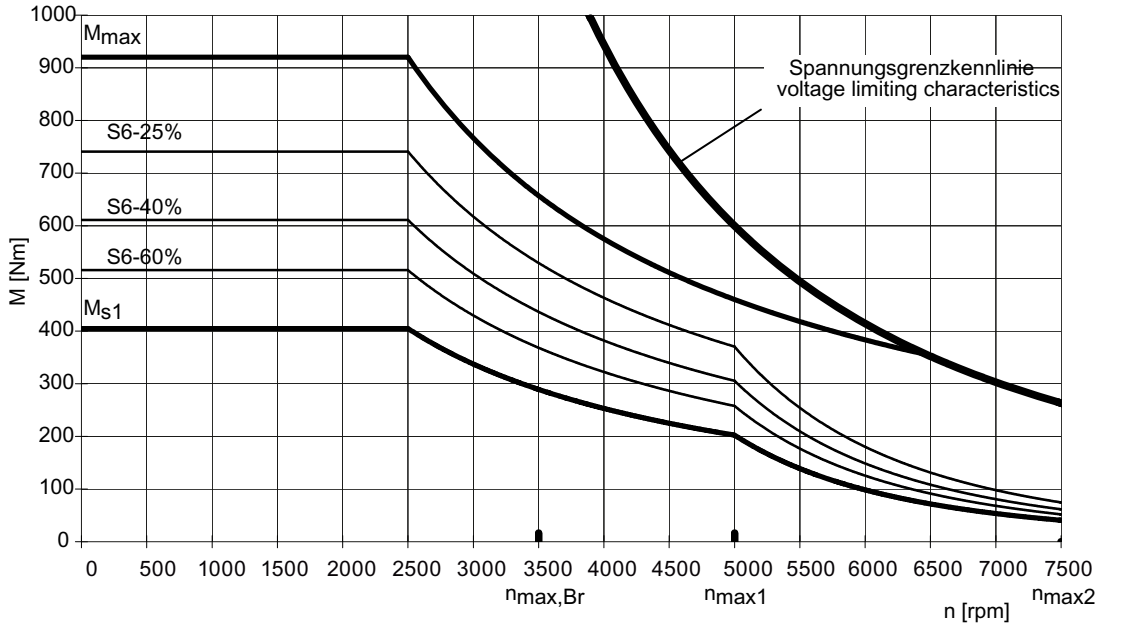



Tabella 4- 188 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8186-□□L□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 101 | 333 | 198 | 5000 | 75000 | - | 3500 | 5000 | 920 | 480 | 333 | 198 |
| - | - | - | - | | | | | - | | | | |

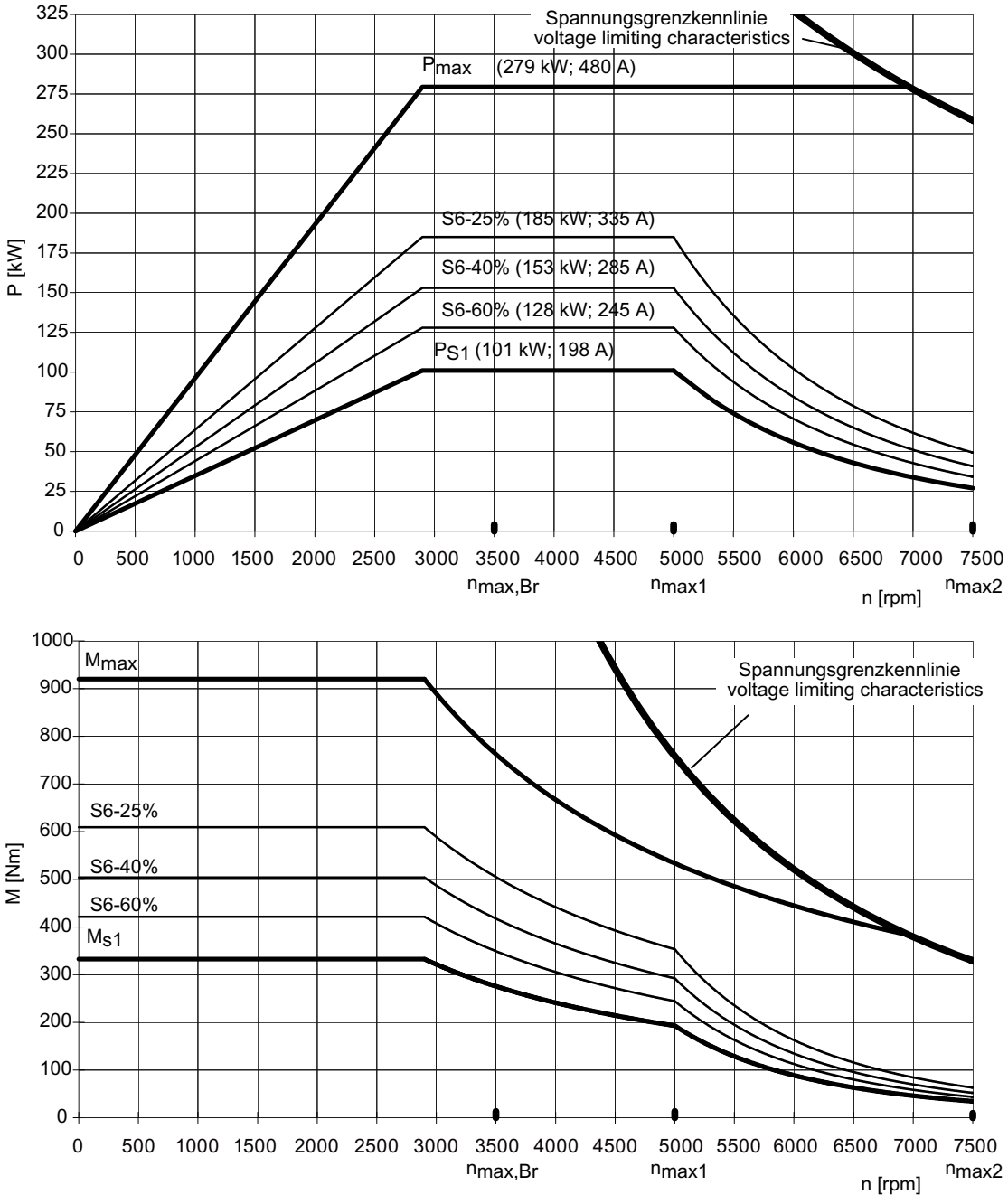
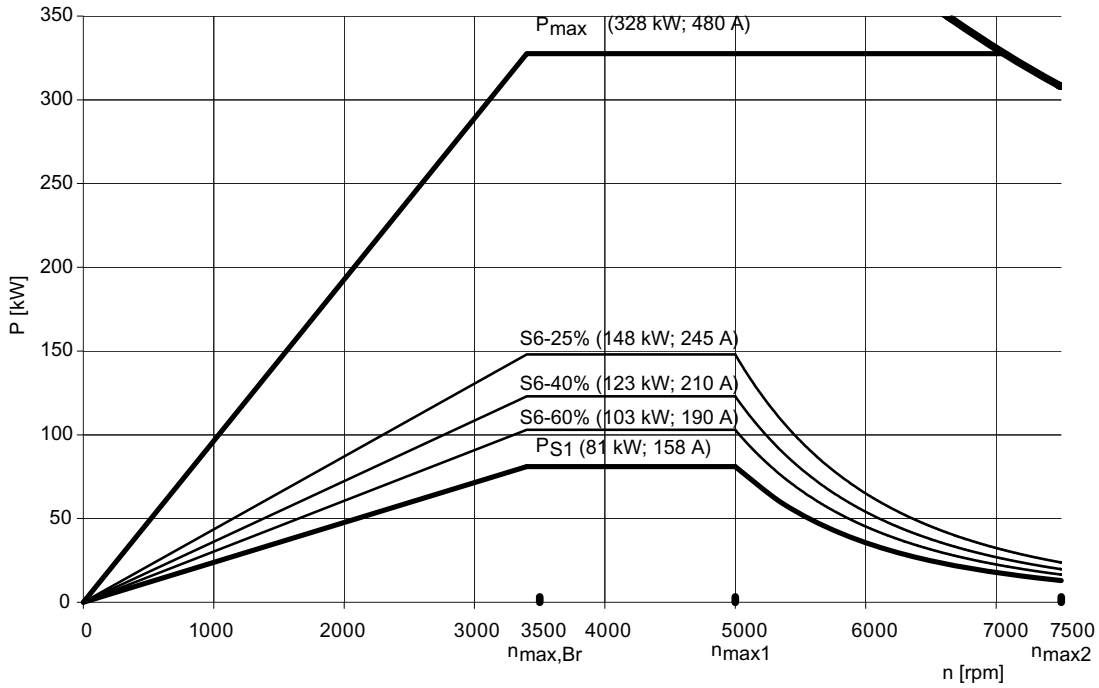
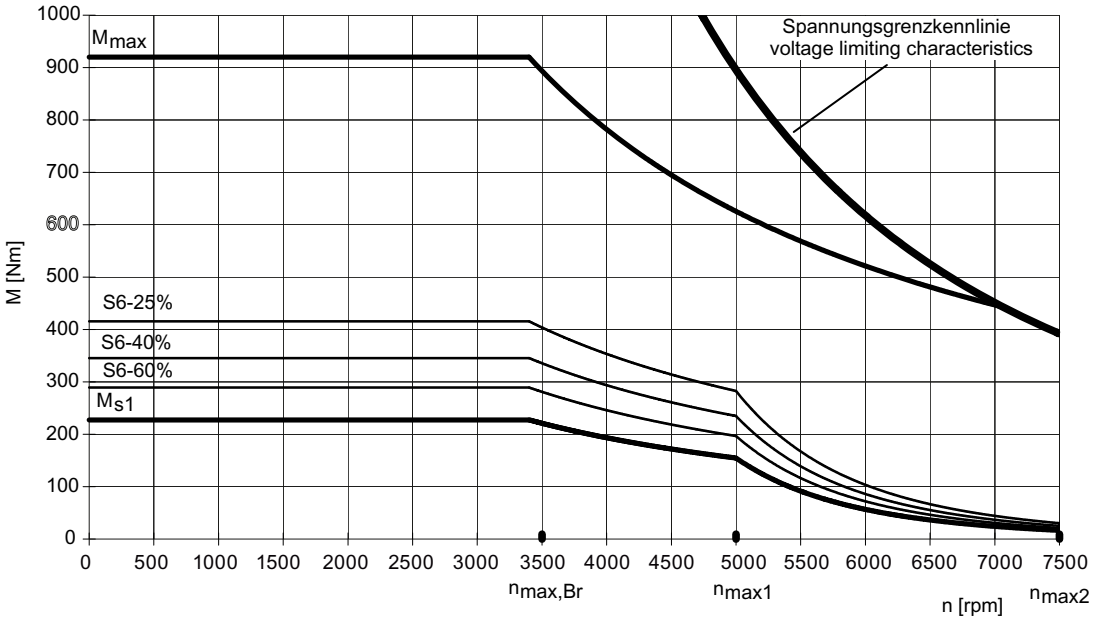


Tabella 4- 189 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-□□L□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3400 | 81 | 228 | 158 | 5000 | 7500 | - | 3500 | 5000 | 920 | 480 | 228 | 158 |

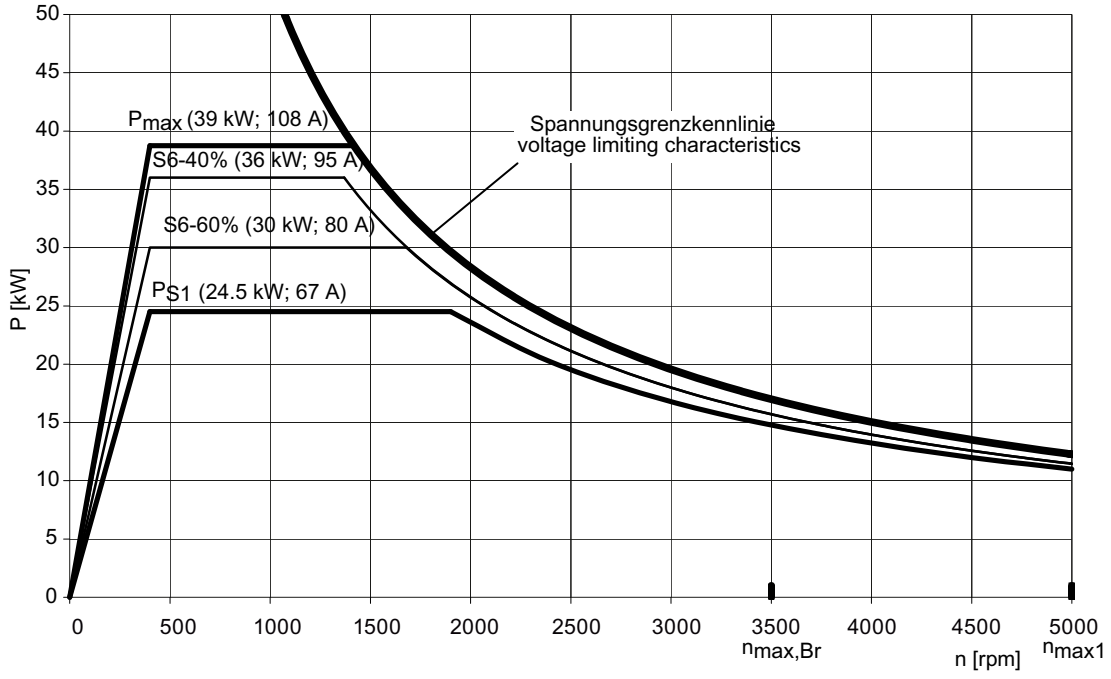


### 4.1.2.6 Altezza d'asse 180 - Ventilazione forzata (ventilazione passante)

Tabella 4- 190 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-□□B□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 24,5 | 585 | 67 | 5000 | - | - | 3500 | 1900 | 925 | 108 | 585 | 67 |



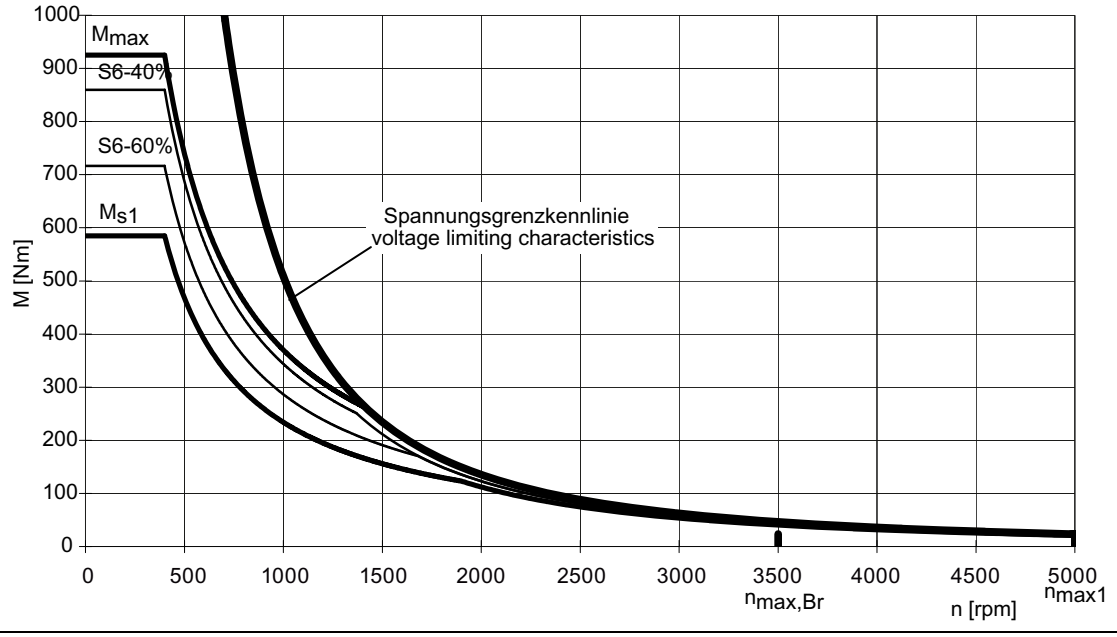
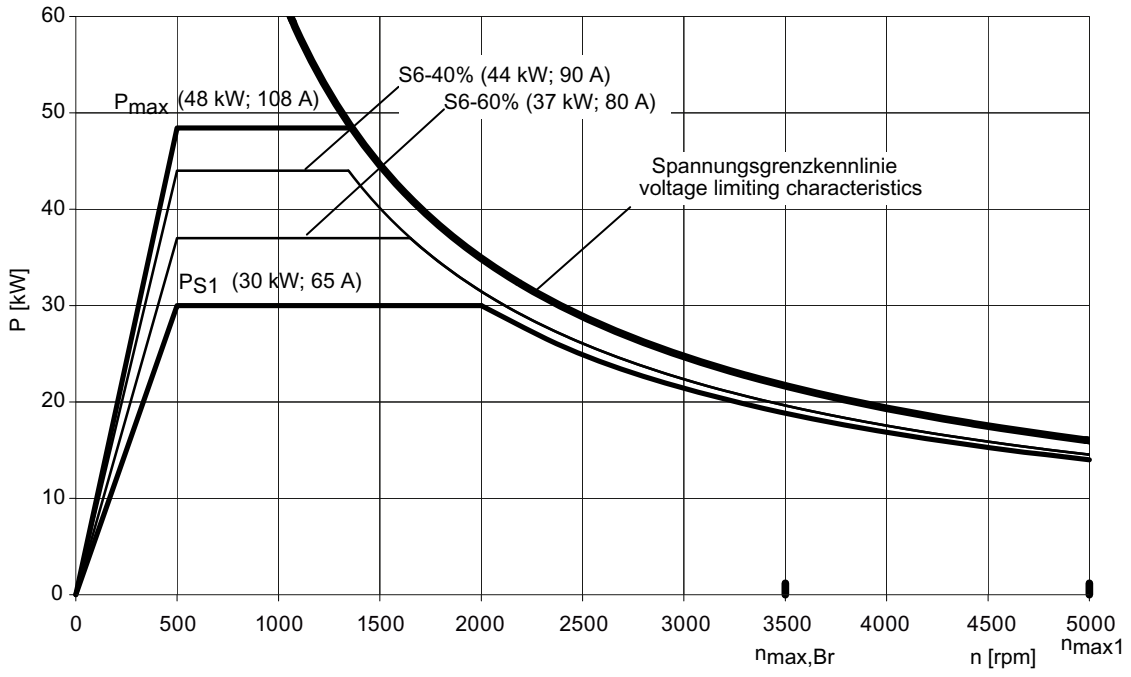



Tabella 4- 191 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-□□B□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 30 | 573 | 65 | 5000 | - | - | 3500 | 2000 | 925 | 108 | 573 | 65 |
| 400 | 24,5 | 585 | 67 | | | | | 2600 | | | | |



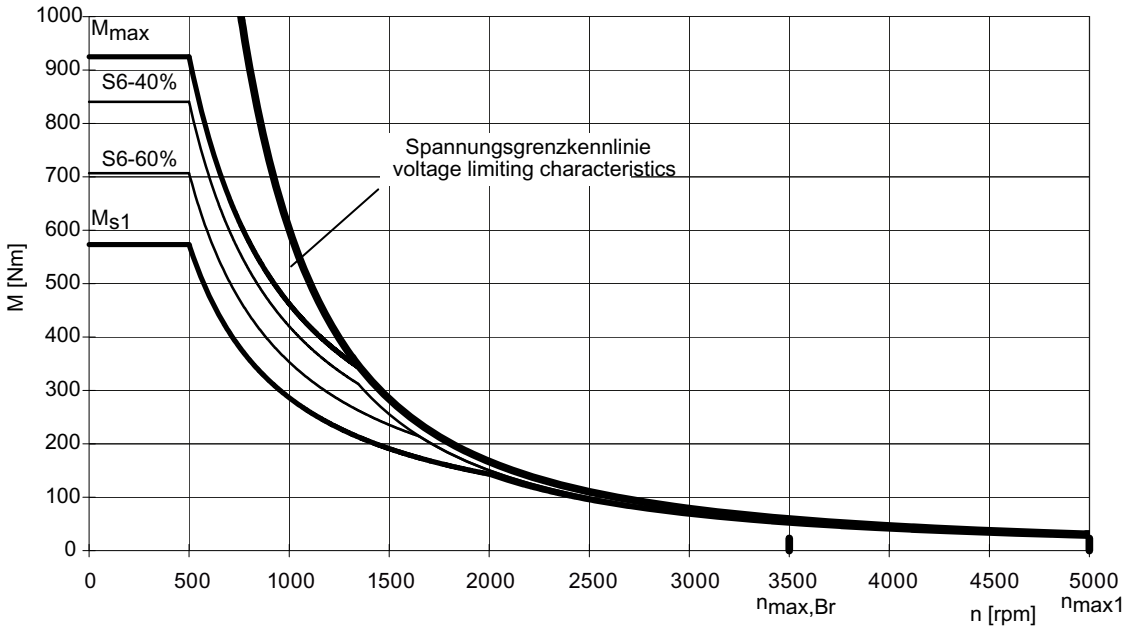
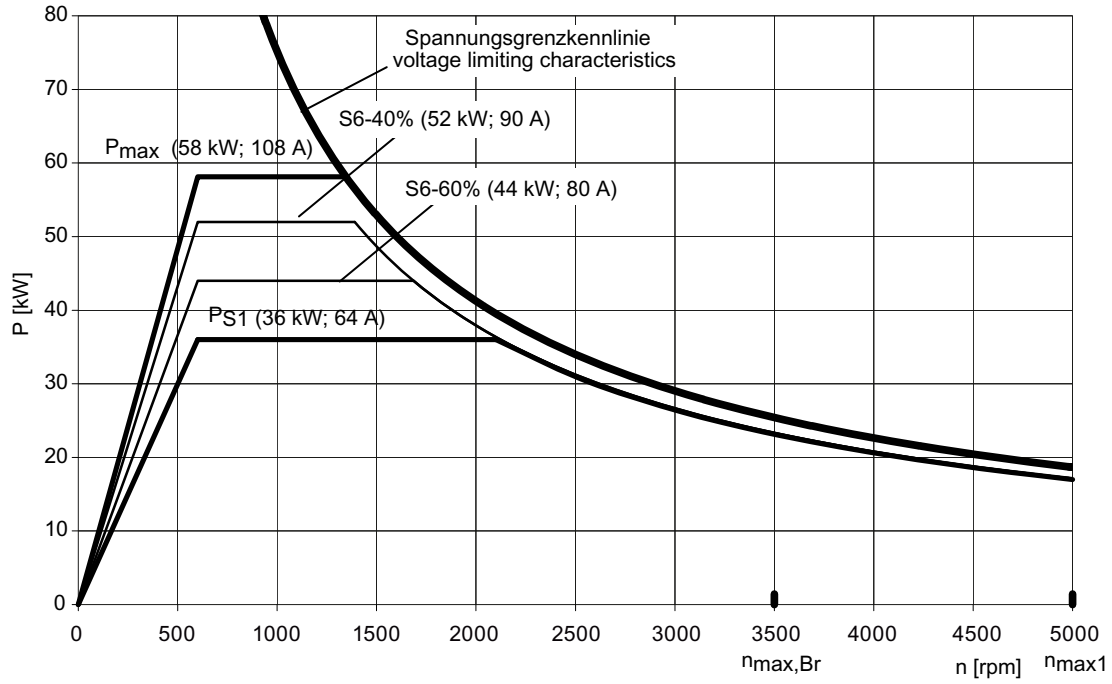



Tabella 4- 192 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-□□B□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 36 | 573 | 64 | 5000 | - | - | 3500 | 2100 | 925 | 108 | 573 | 64 |



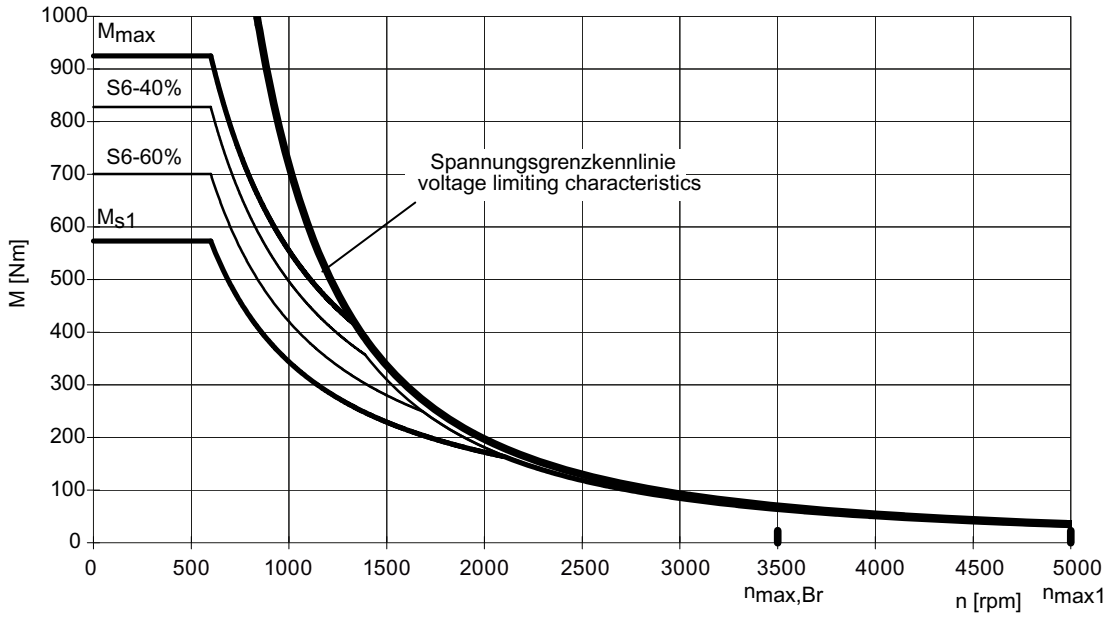
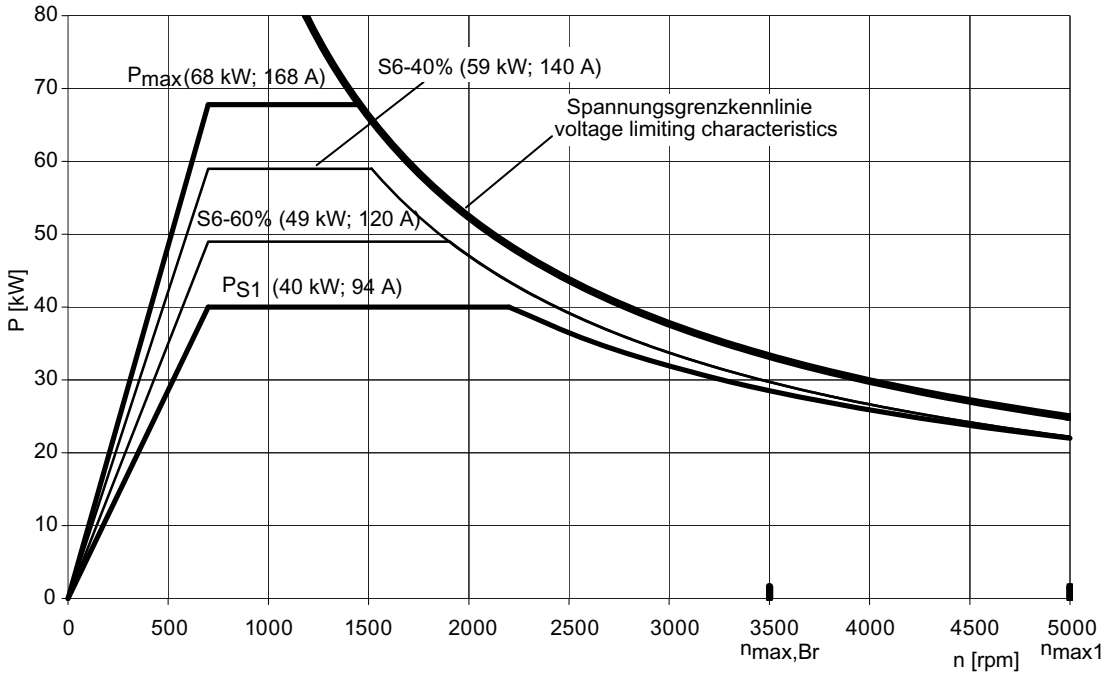



Tabella 4- 193 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-□□C□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 40 | 546 | 94 | 5000 | - | - | 3500 | 2200 | 925 | 168 | 546 | 94 |



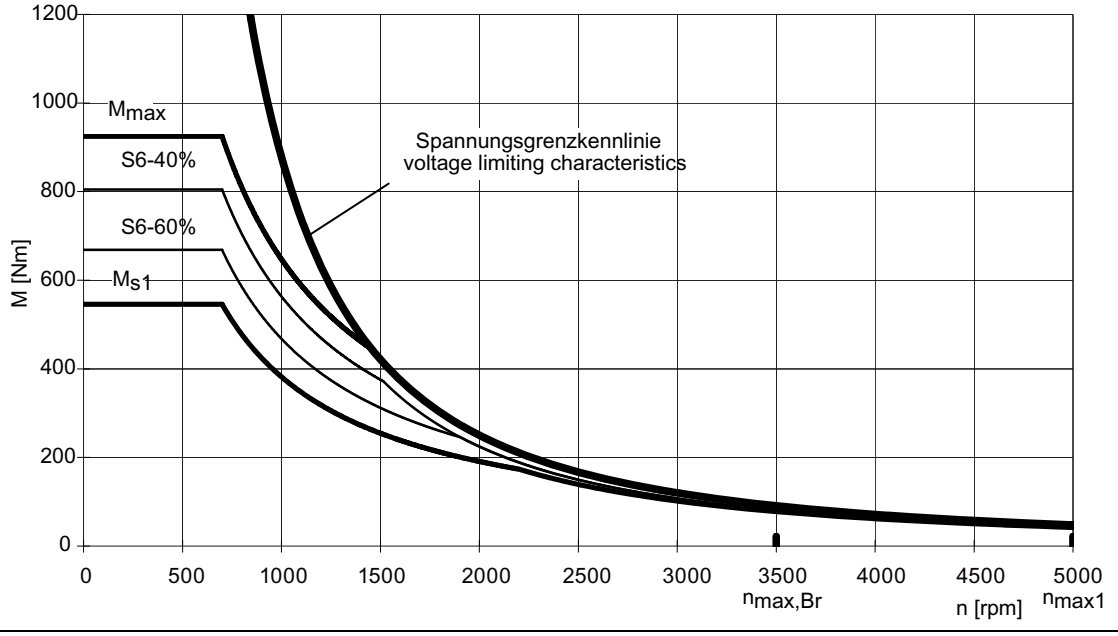
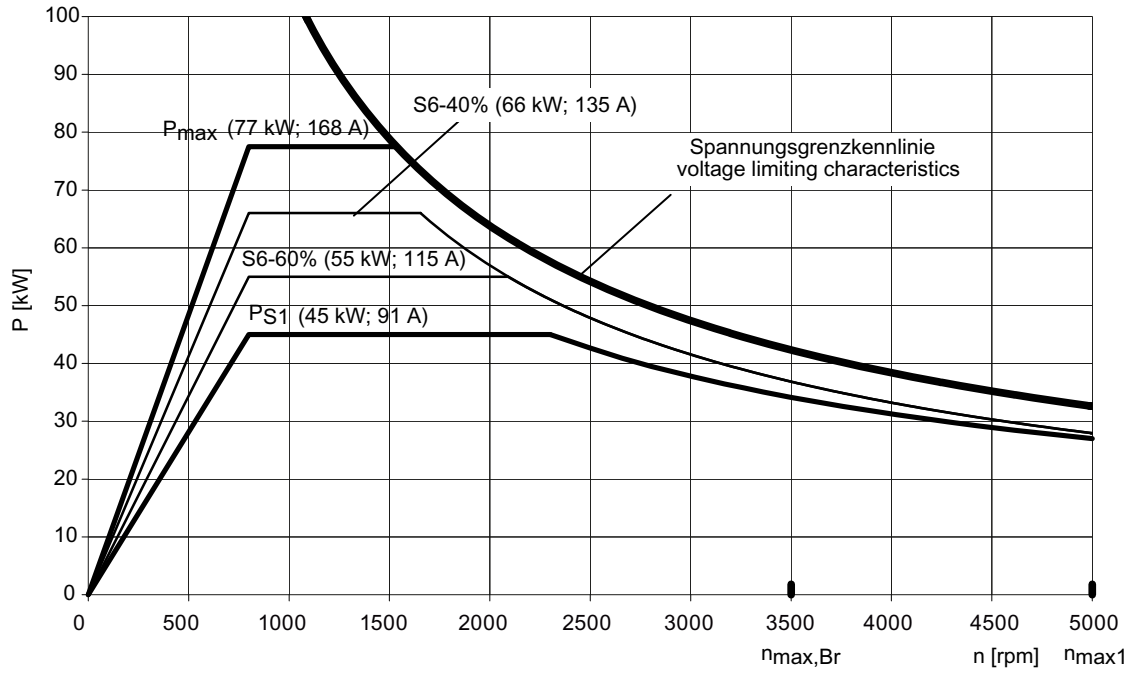



Tabella 4- 194 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-□□C□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 45 | 537 | 91 | 5000 | - | - | 3500 | 2300 | 925 | 168 | 537 | 91 |
| 700 | 40 | 546 | 94 | | | | | 2800 | | | | |



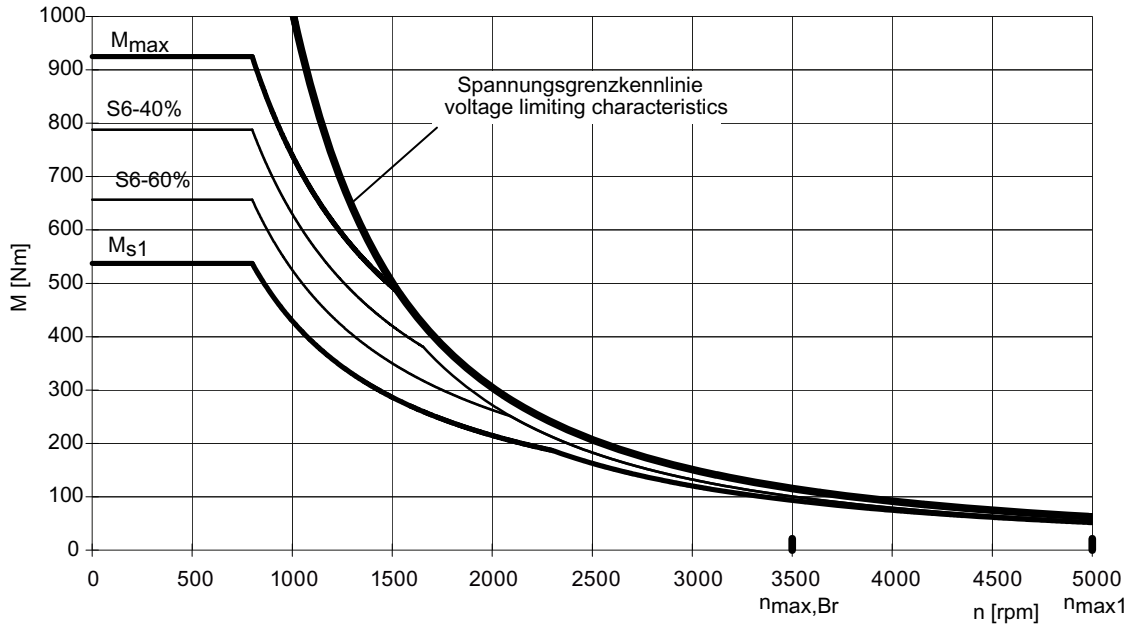
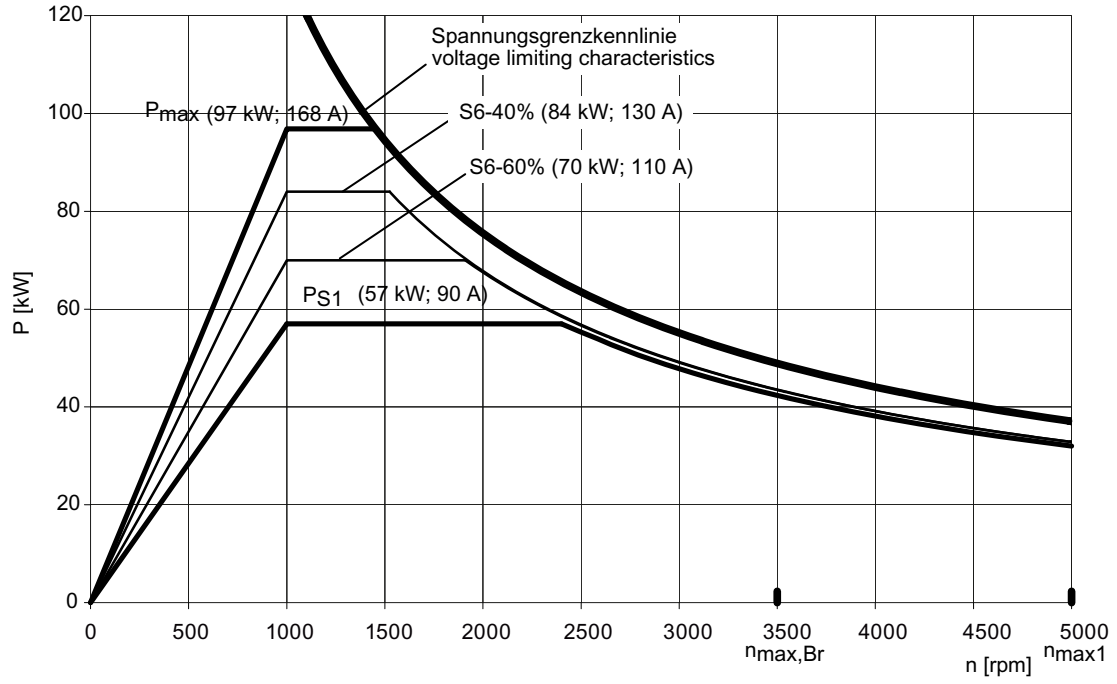



Tabella 4- 195 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-□□C□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 57 | 544 | 90 | 5000 | - | - | 3500 | 2400 | 925 | 168 | 544 | 90 |



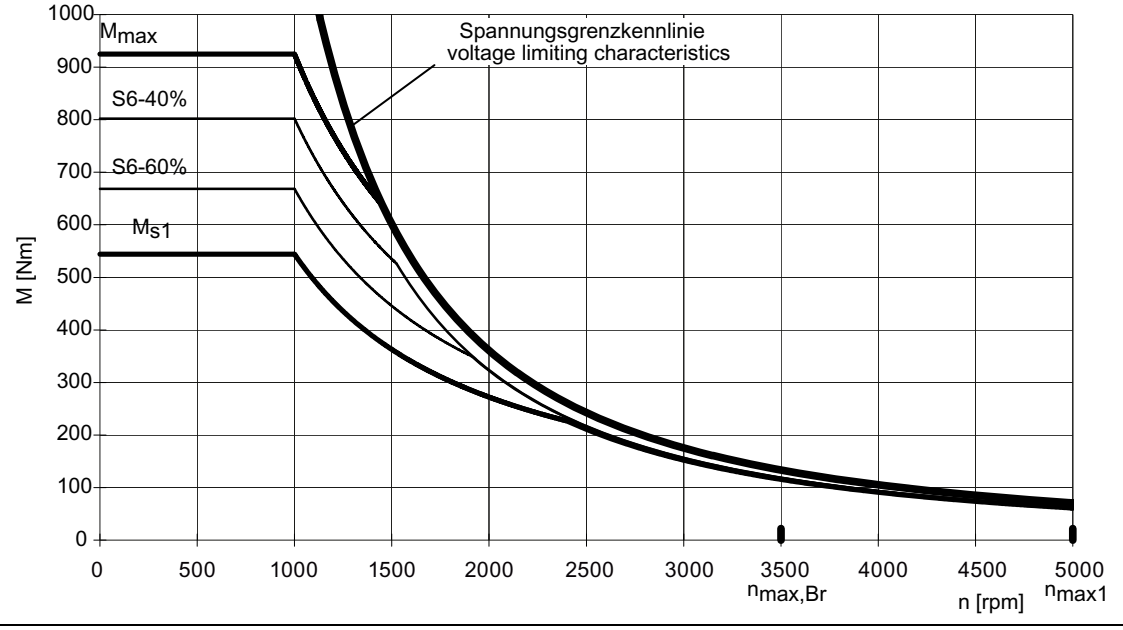
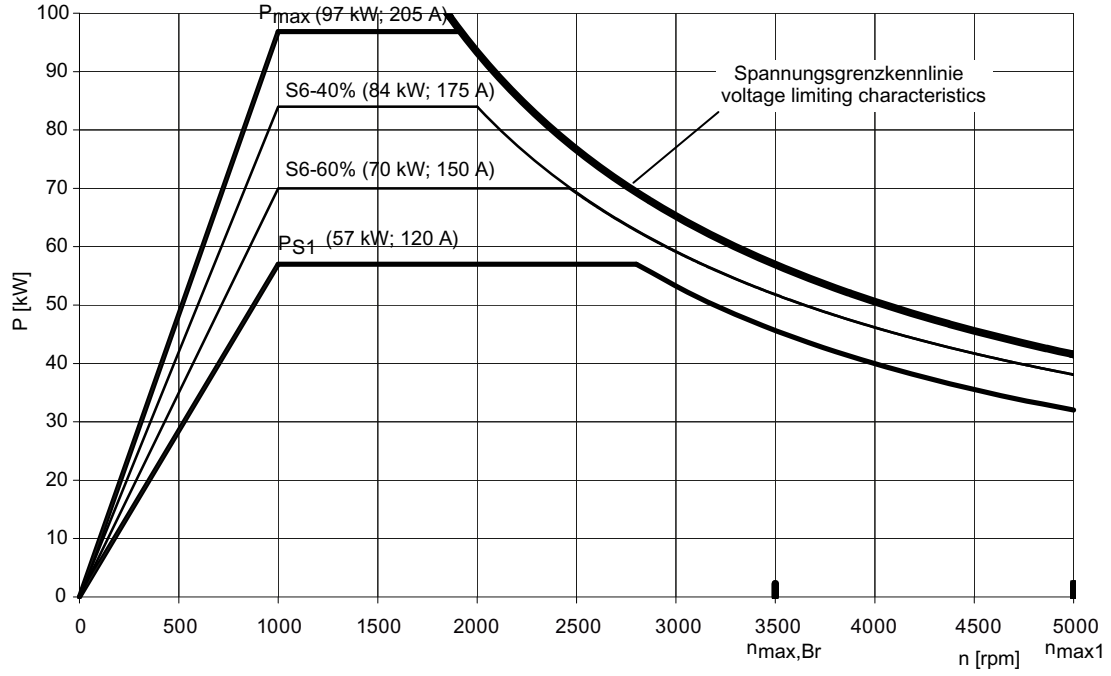



Tabella 4- 196 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-□□D□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 57 | 544 | 120 | 5000 | - | - | 3500 | 2800 | 925 | 205 | 544 | 120 |



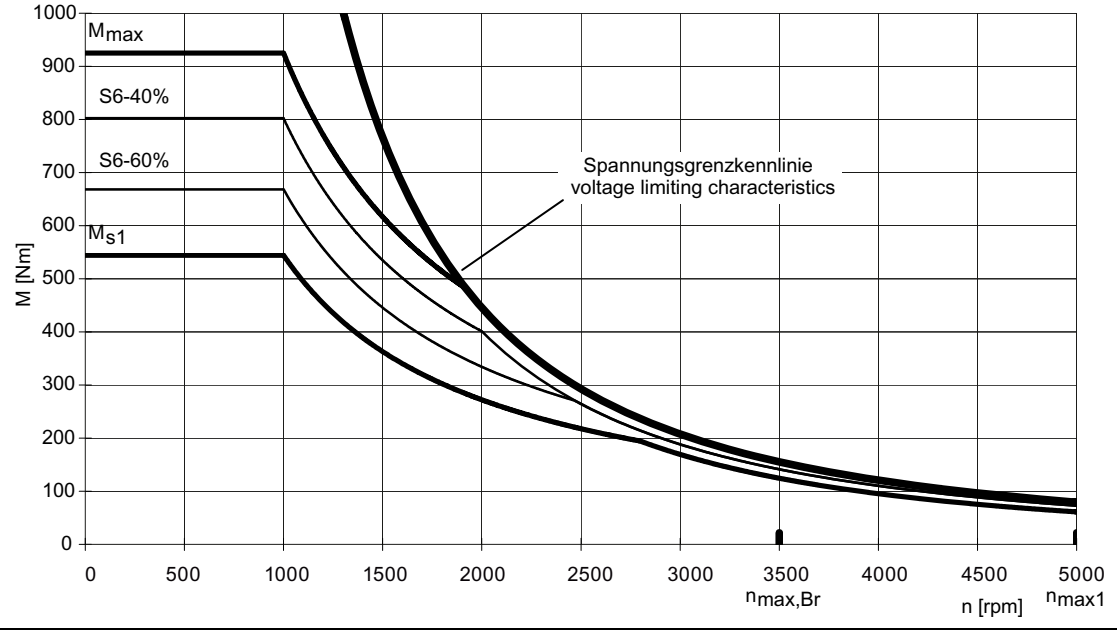
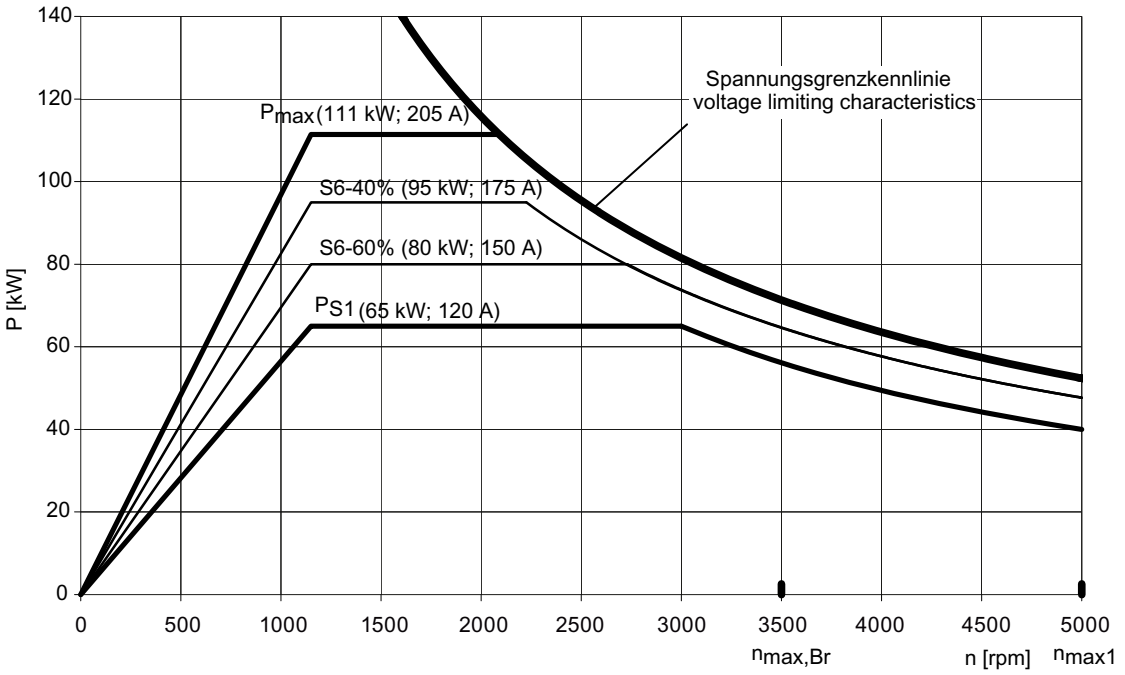



Tabella 4- 197 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-□□D□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 65 | 540 | 120 | 5000 | - | - | 3500 | 3000 | 925 | 205 | 540 | 120 |
| 1000 | 57 | 544 | 120 | | | | | 3400 | | | | |



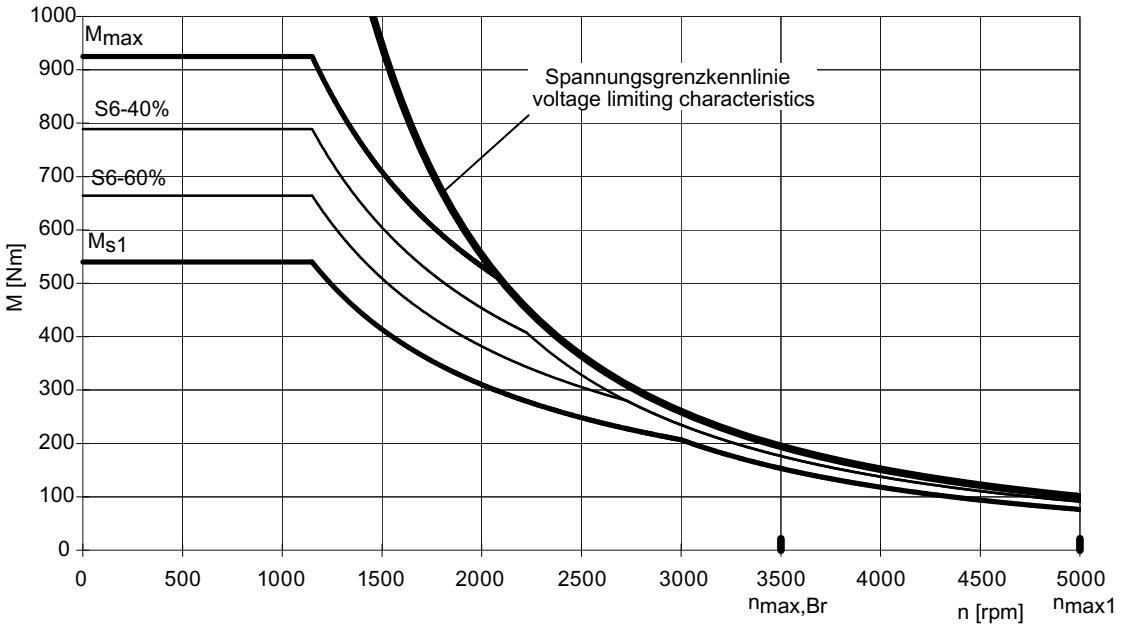
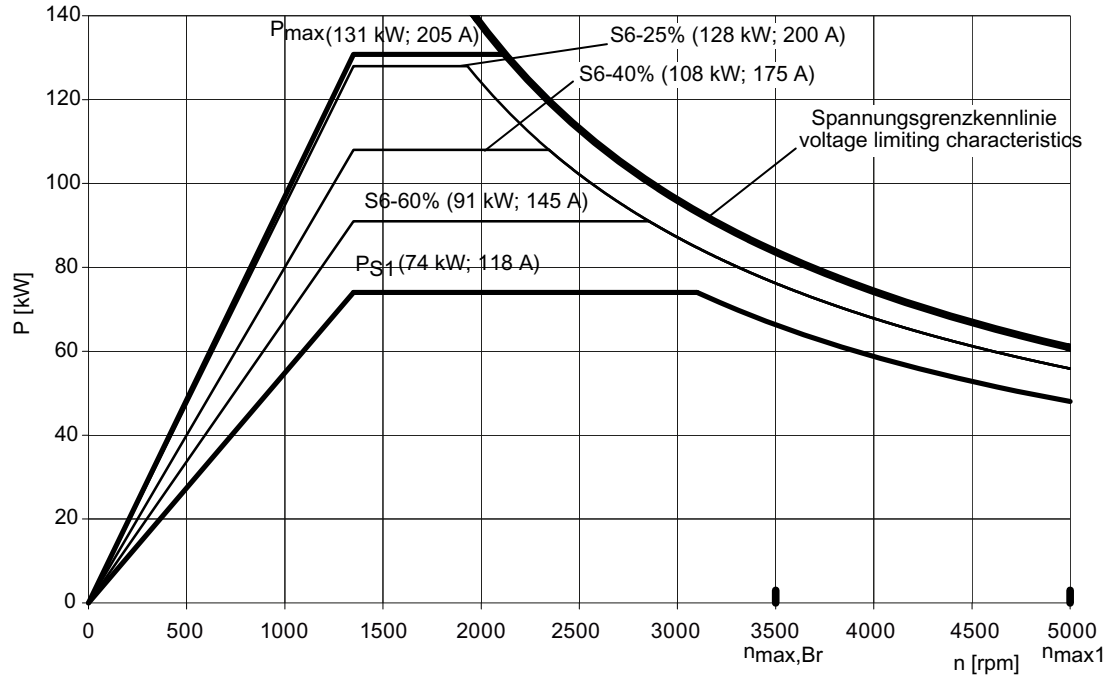



Tabella 4- 198 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-□□D□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 74 | 523 | 118 | 5000 | - | - | 3500 | 3100 | 925 | 205 | 523 | 118 |



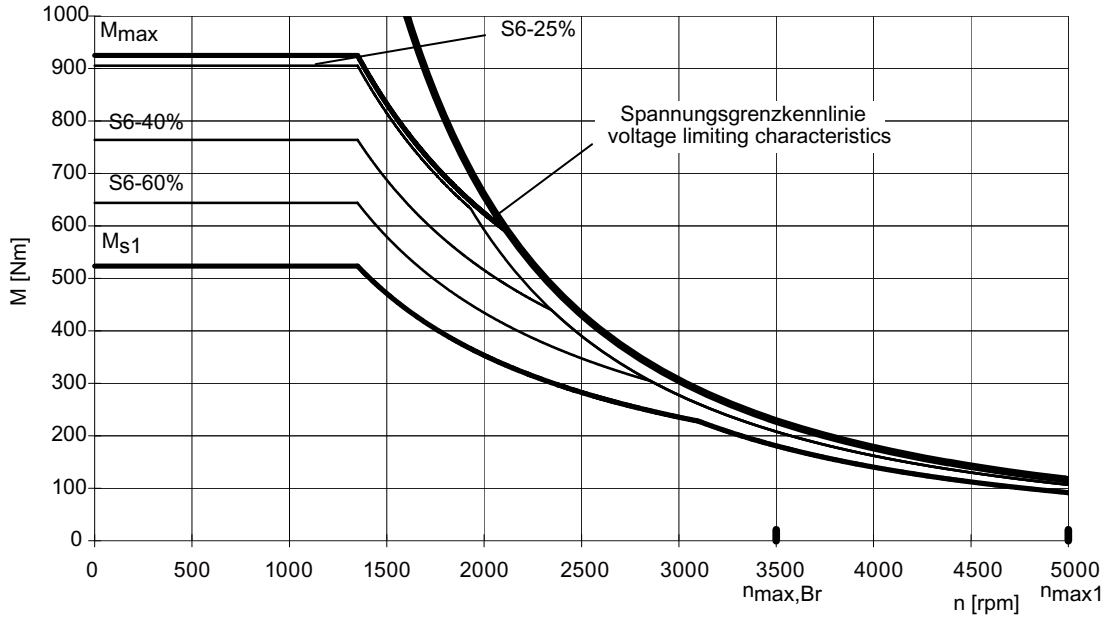
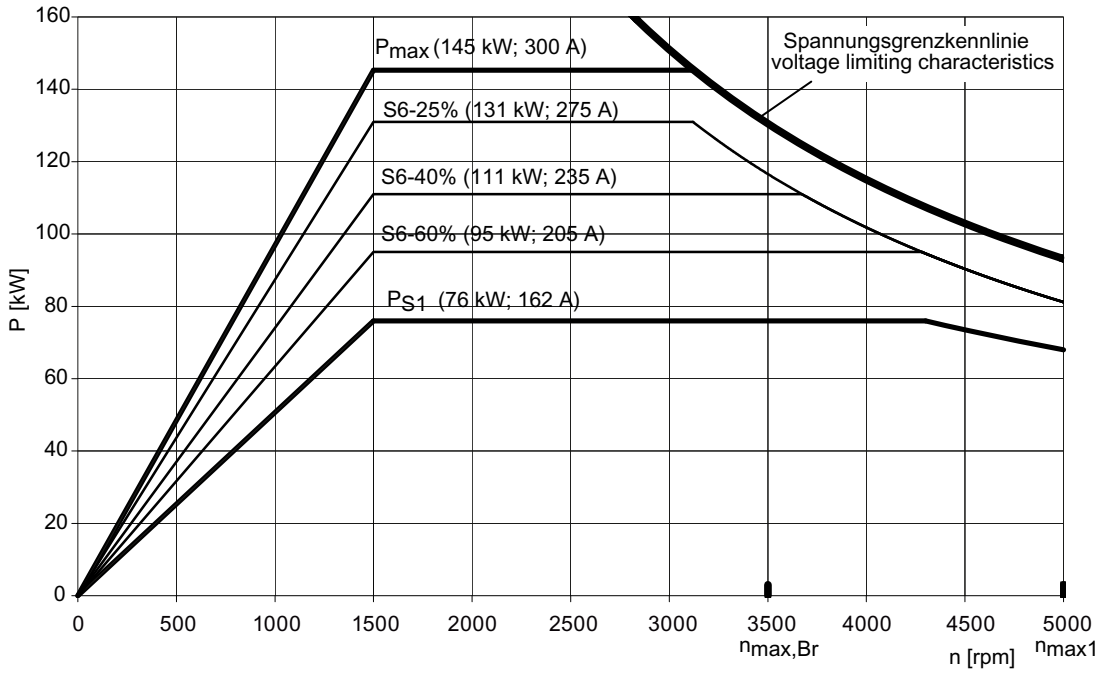



Tabella 4- 199 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-□□F□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 76 | 484 | 162 | 5000 | - | - | 3500 | 4300 | 925 | 300 | 484 | 162 |



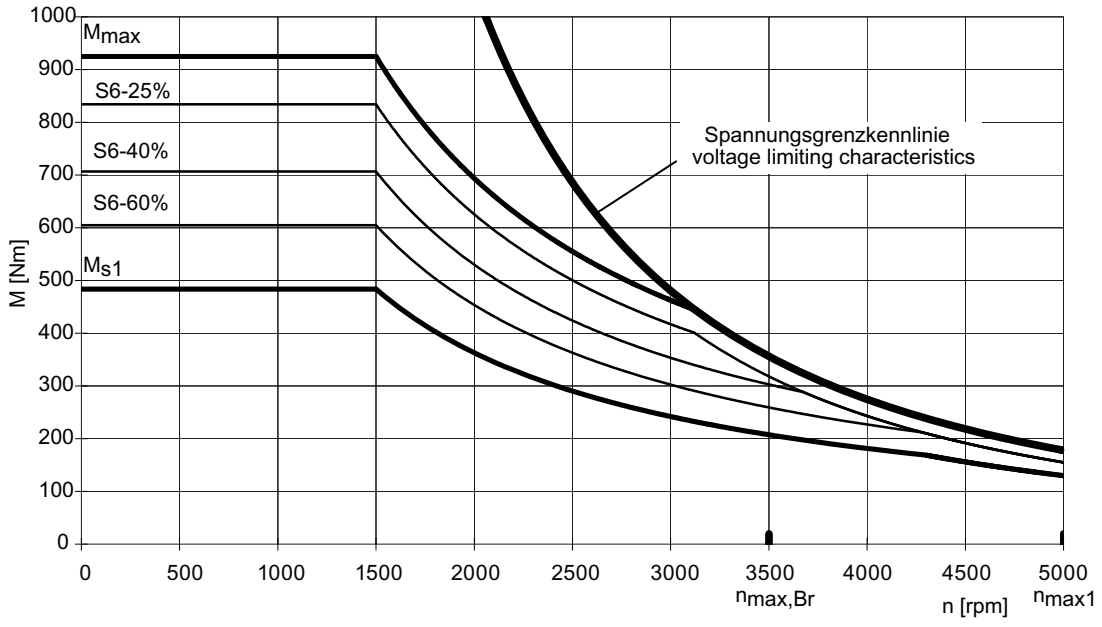
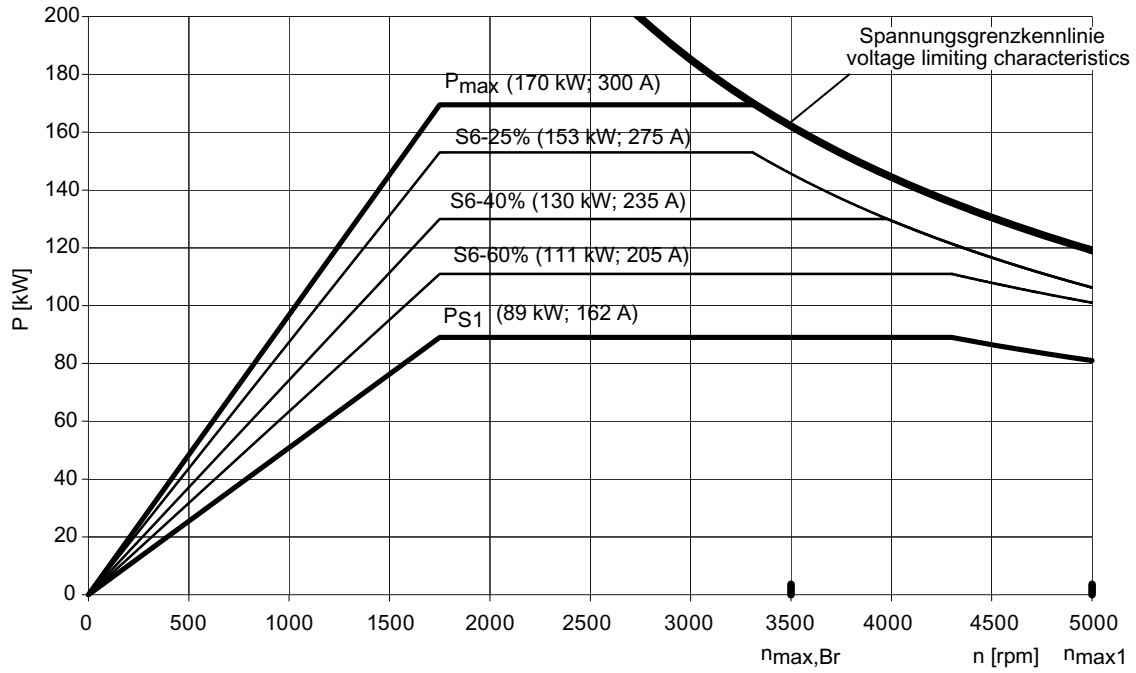



Tabella 4- 200 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-□□F□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 89 | 486 | 162 | 5000 | - | - | 3500 | 4300 | 925 | 300 | 486 | 162 |
| 1500 | 76 | 484 | 162 | | | | | 5000 | | | | |



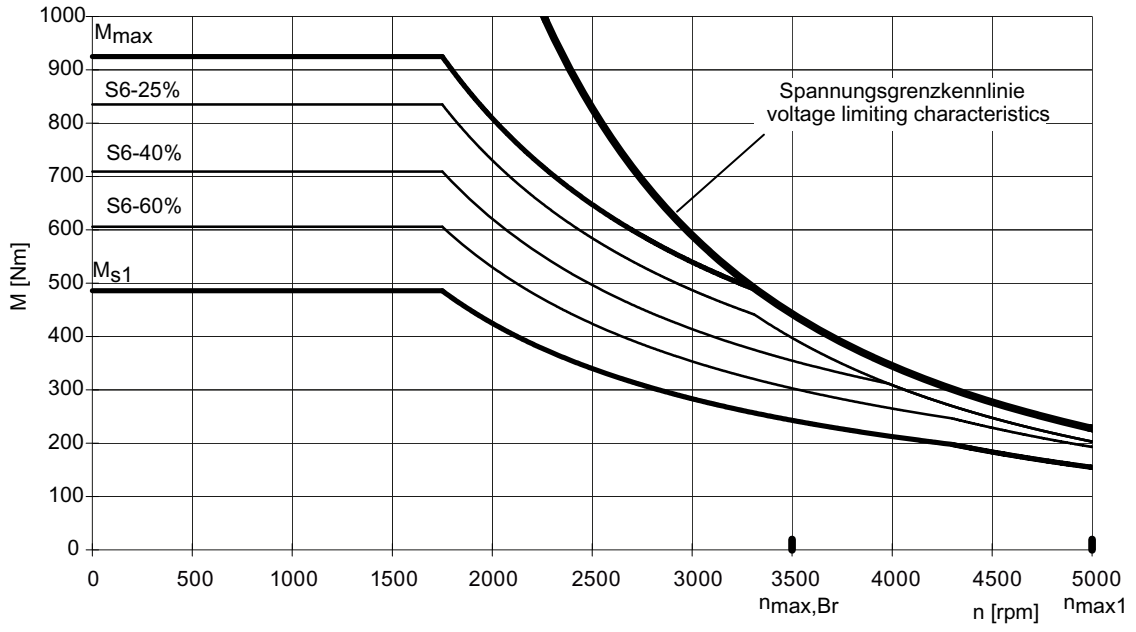



Tabella 4- 201 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-□□F□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 98 | 468 | 156 | 5000 | - | - | 3500 | 4300 | 925 | 300 | 468 | 156 |

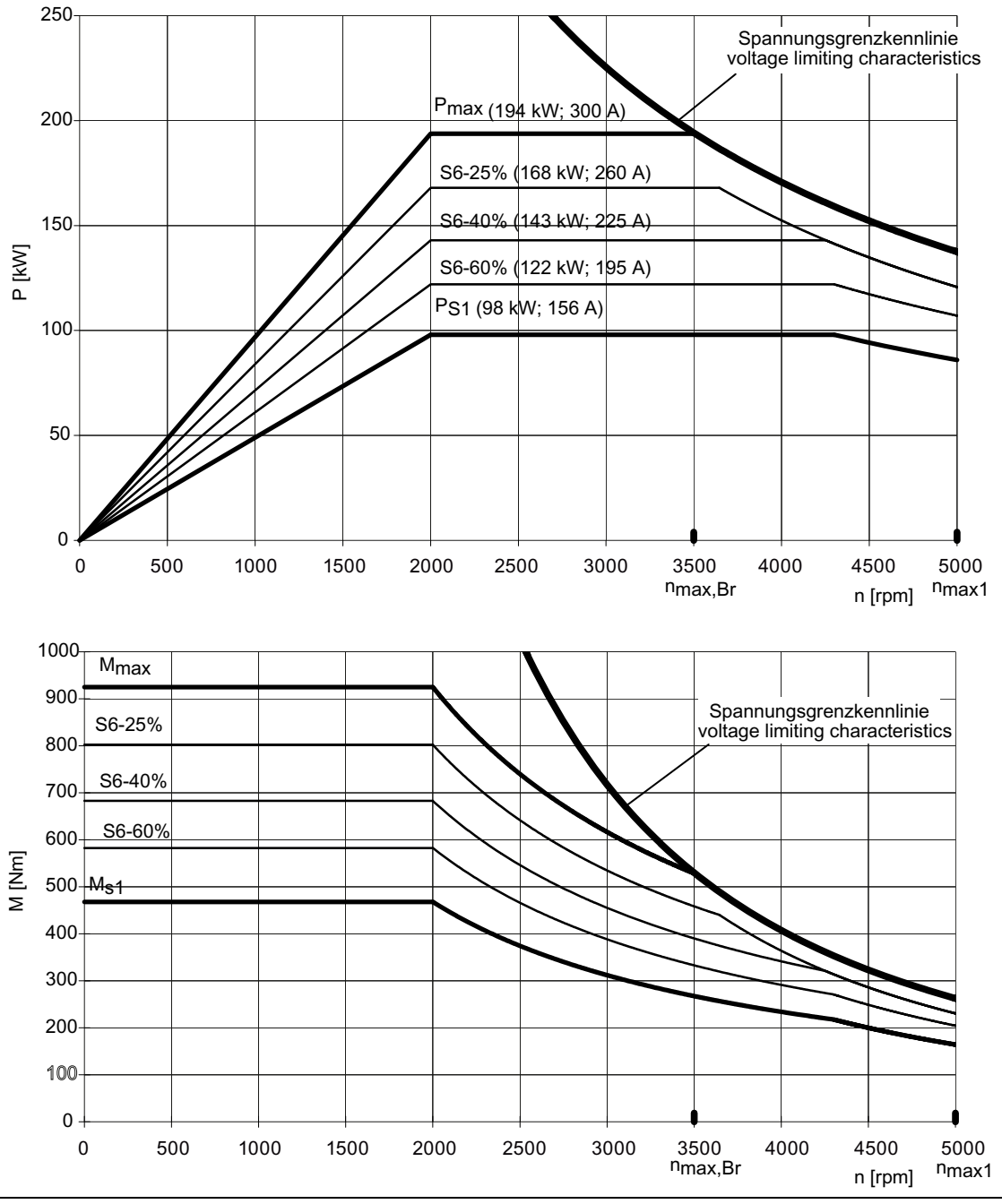
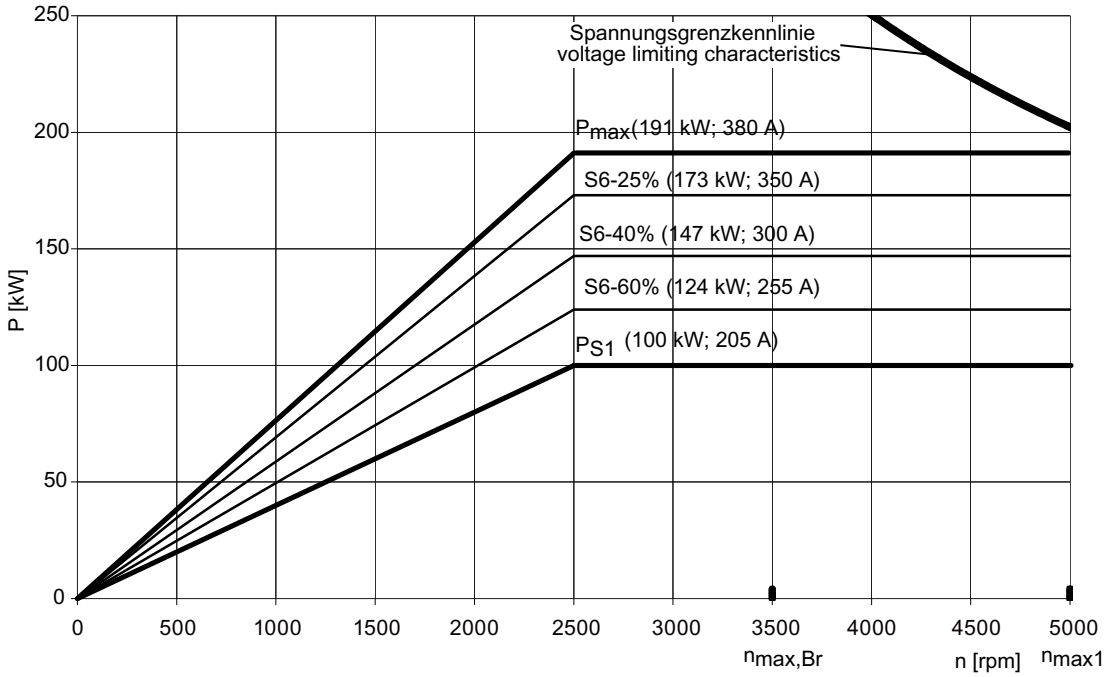


Tabella 4- 202 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-□□L□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 100 | 382 | 205 | 5000 | - | - | 3500 | 5000 | 730 | 380 | 382 | 205 |



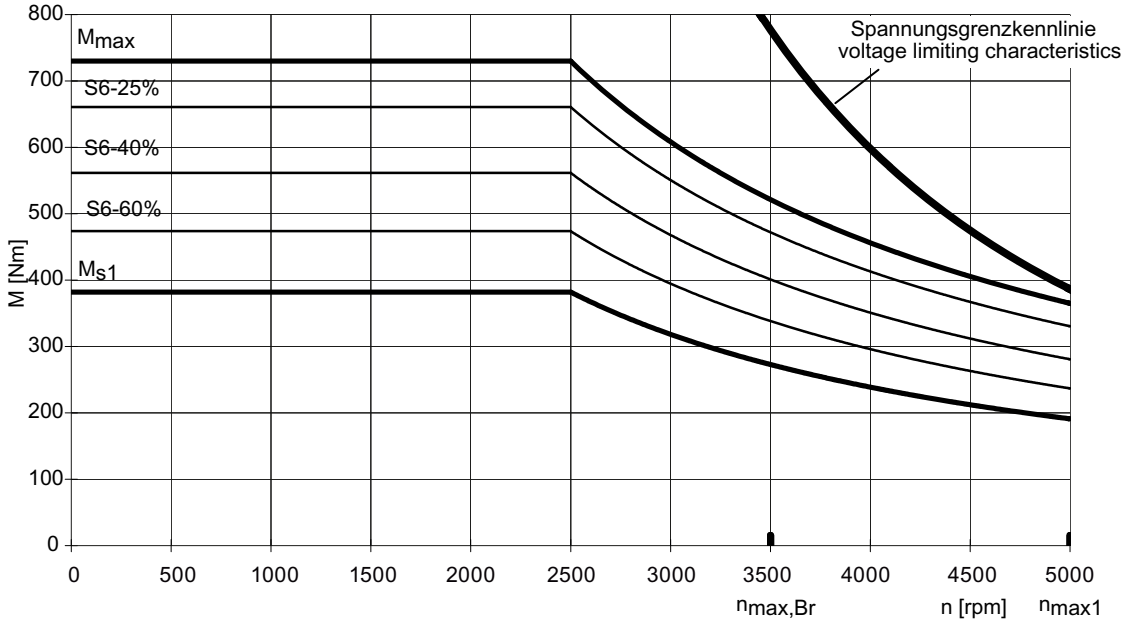
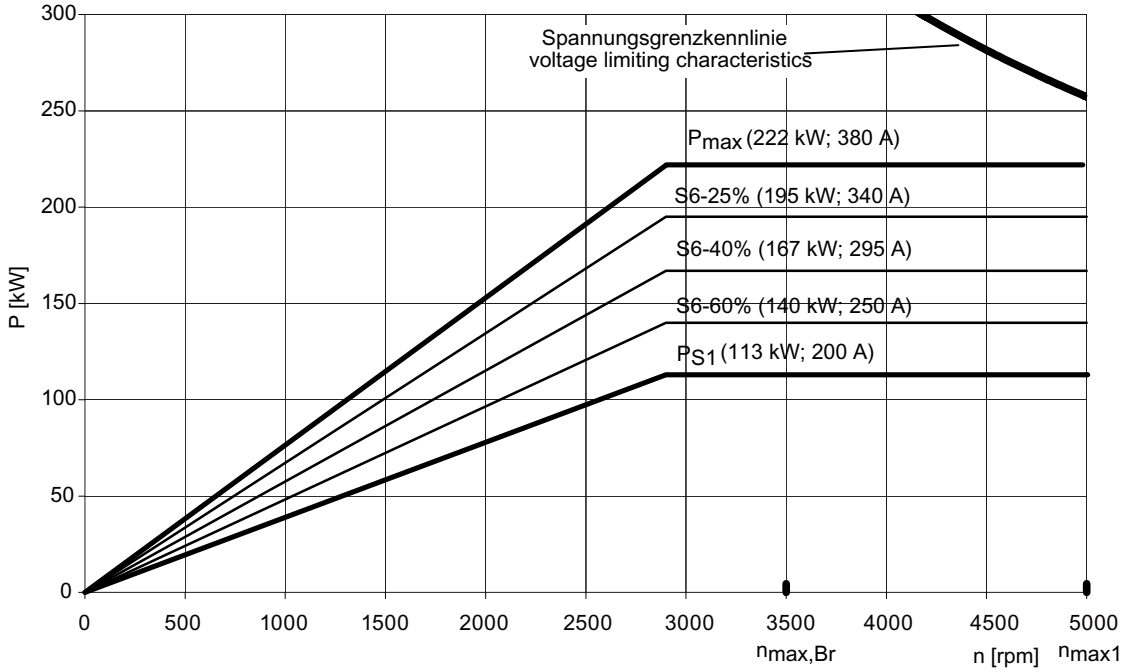



Tabella 4- 203 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-□□L□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 113 | 372 | 200 | 5000 | - | - | 3500 | 5000 | 730 | 380 | 372 | 200 |
| 2500 | 100 | 382 | 205 | | | | | 5000 | | | | |



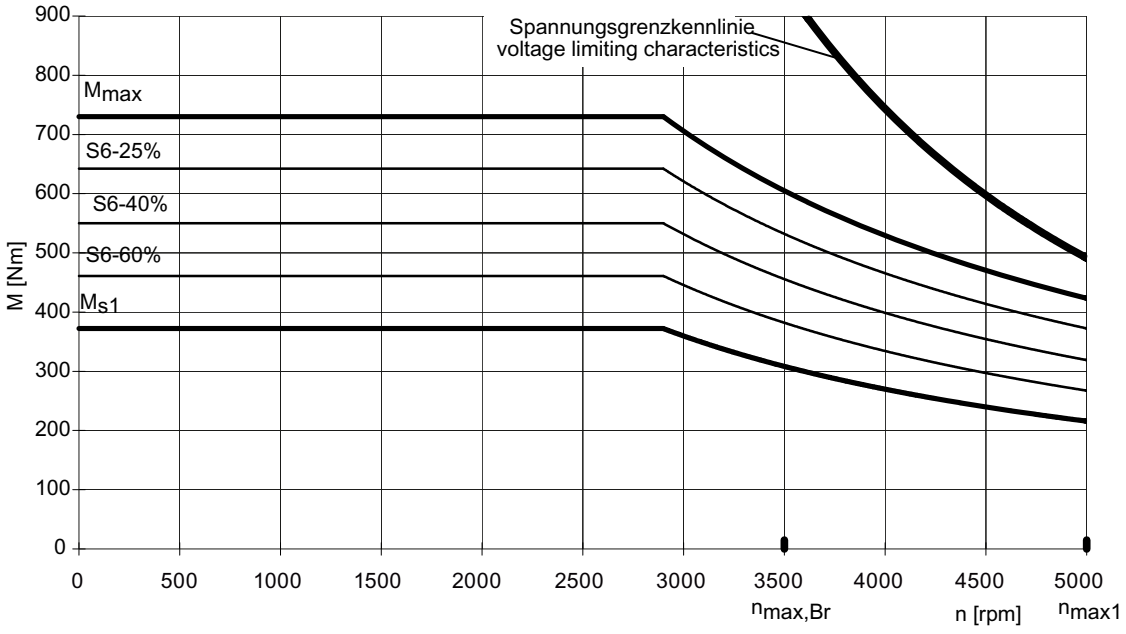
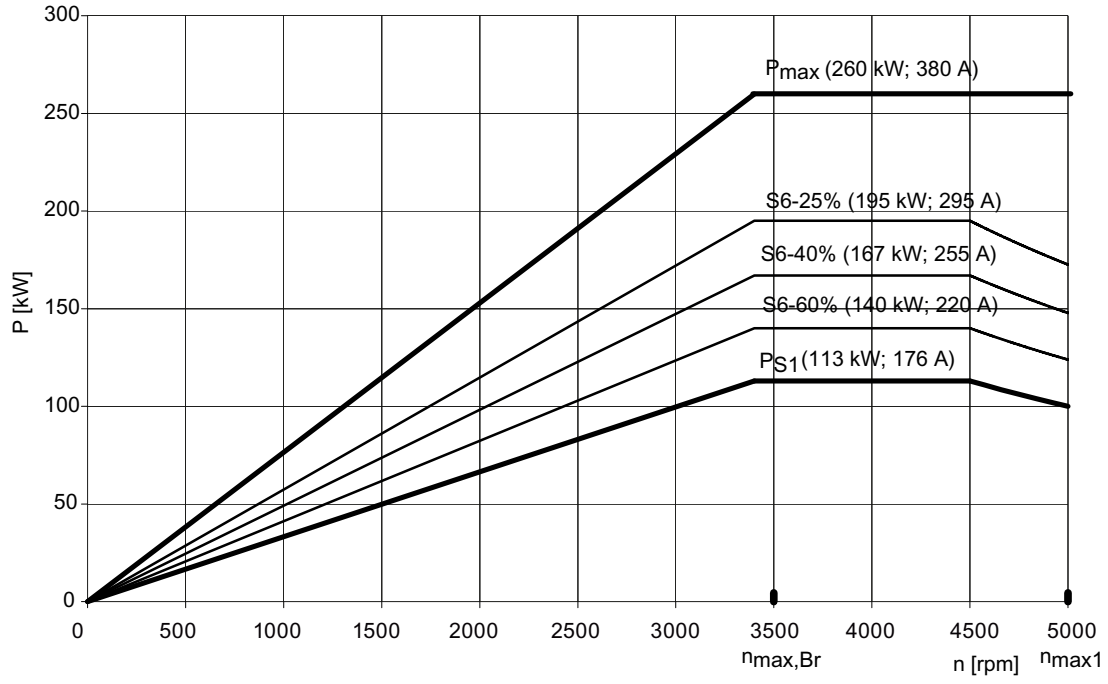



Tabella 4- 204 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-□□L□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3400 | 113 | 317 | 176 | 5000 | - | - | 3500 | 4500 | 730 | 380 | 317 | 176 |



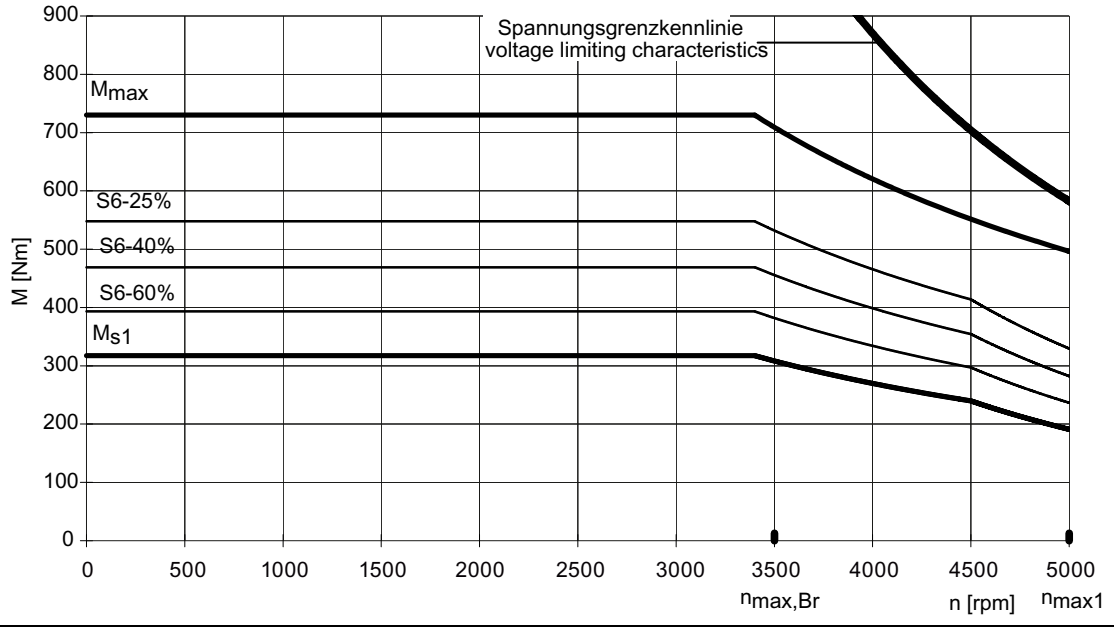
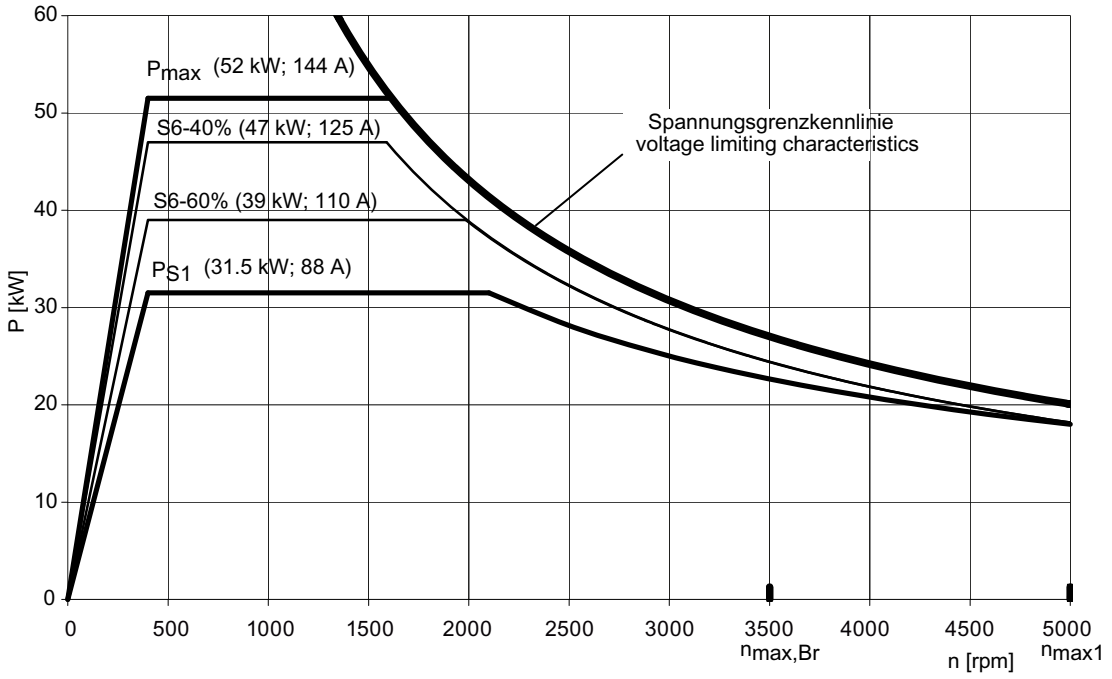



Tabella 4- 205 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-□□B□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 31,5 | 752 | 88 | 5000 | - | - | 3500 | 2100 | 1230 | 144 | 752 | 88 |



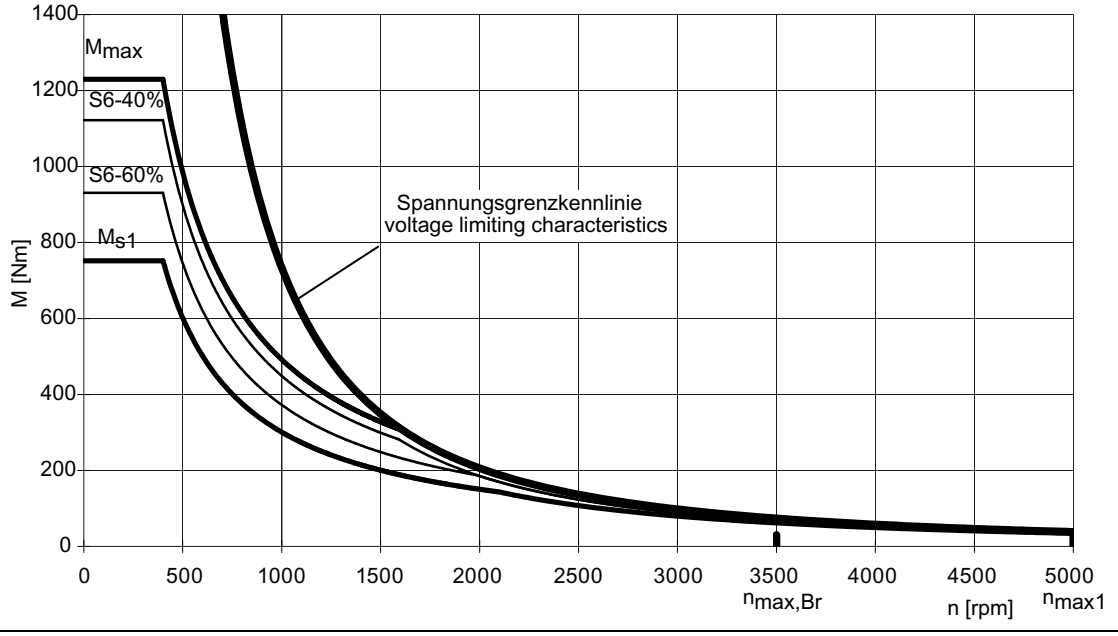
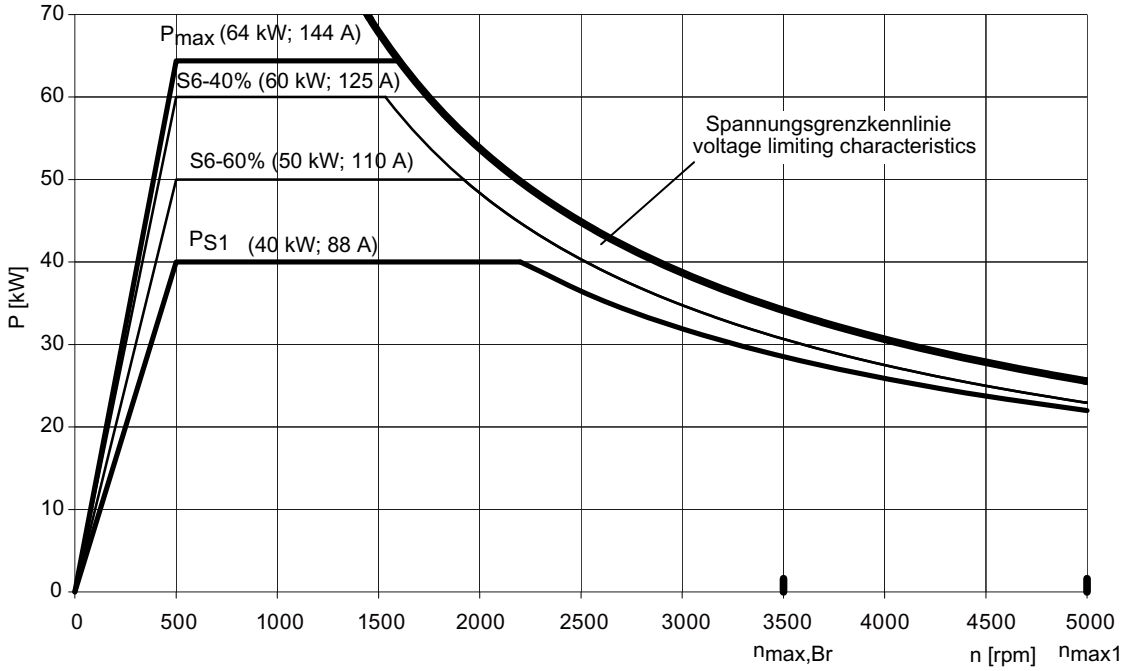



Tabella 4- 206 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8186-□□B□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 40 | 764 | 88 | 5000 | - | - | 3500 | 2200 | 1230 | 144 | 764 | 88 |
| 400 | 31,5 | 752 | 88 | | | | | 3100 | | | | |



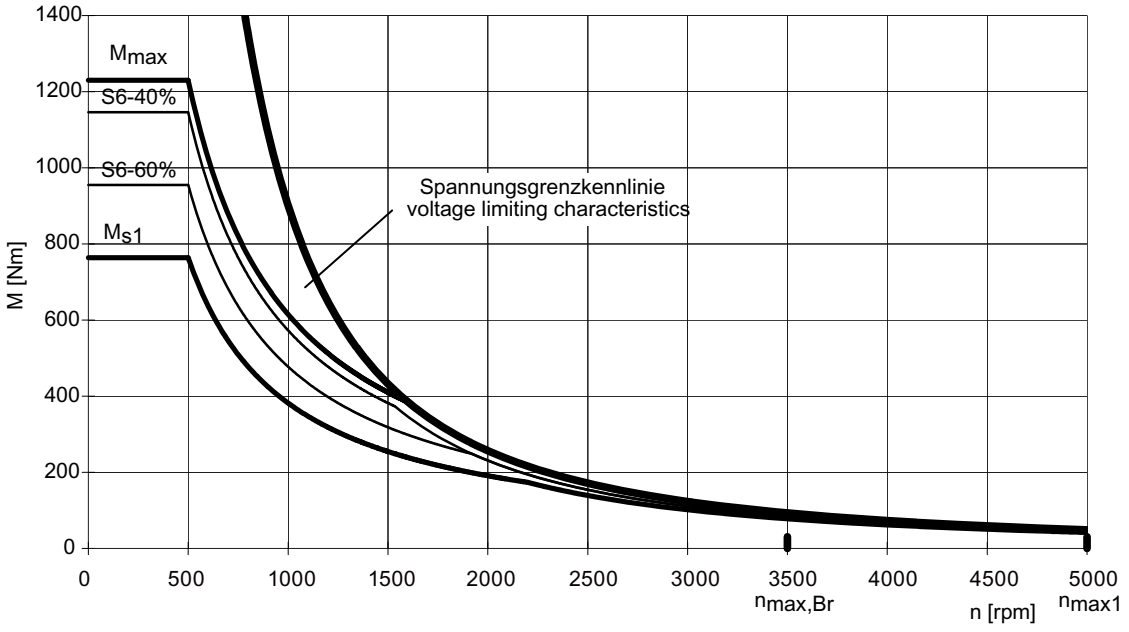
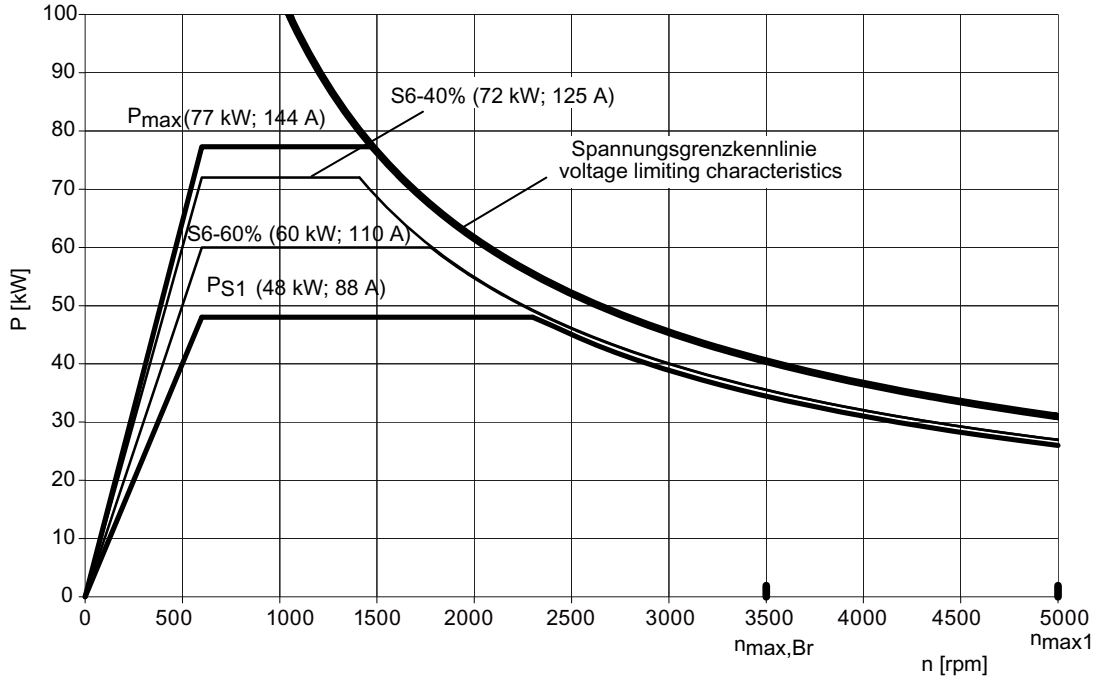



Tabella 4- 207 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-□□B□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 48 | 764 | 88 | 5000 | - | - | 3500 | 2300 | 1230 | 144 | 764 | 88 |



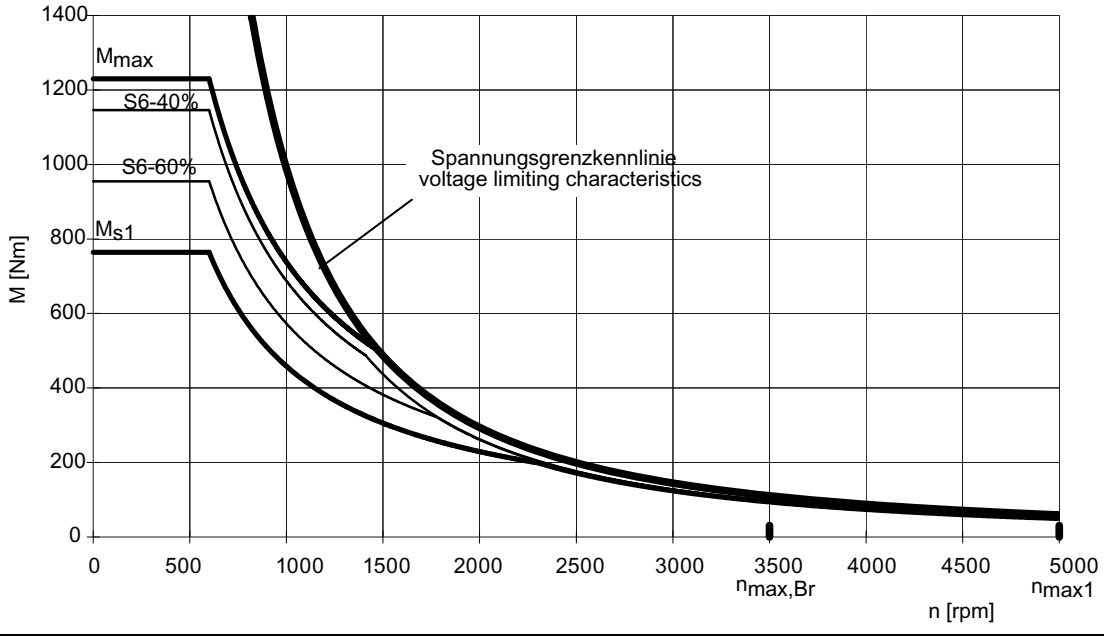
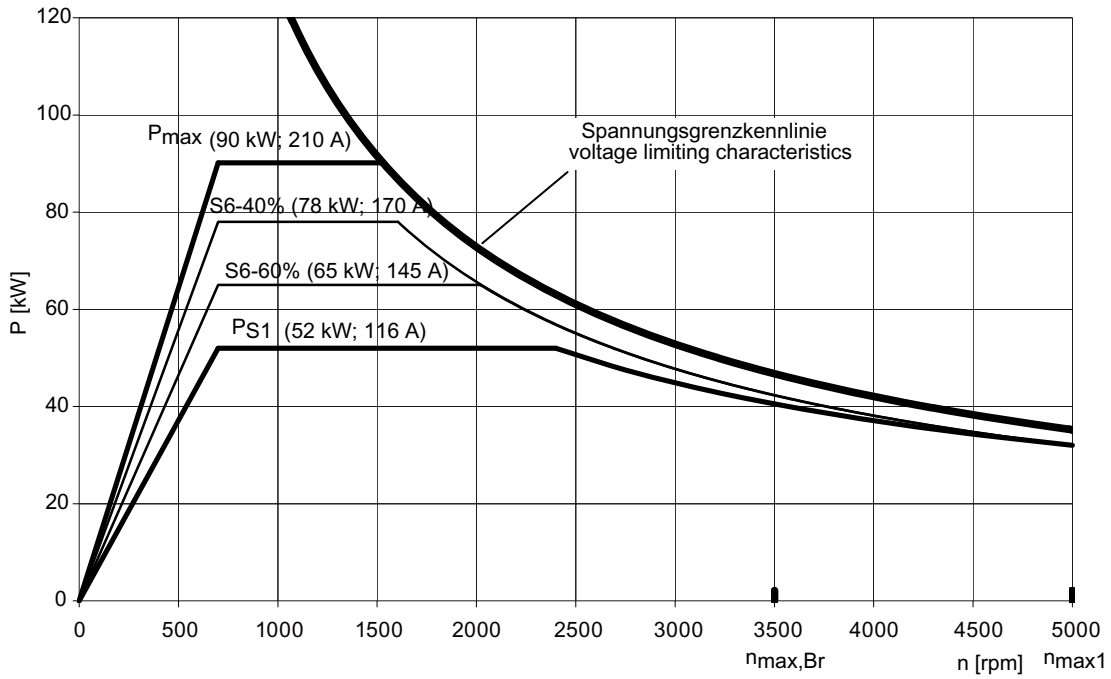



Tabella 4- 208 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-□□C□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 52 | 709 | 116 | 5000 | - | - | 3500 | 2400 | 1230 | 210 | 709 | 116 |



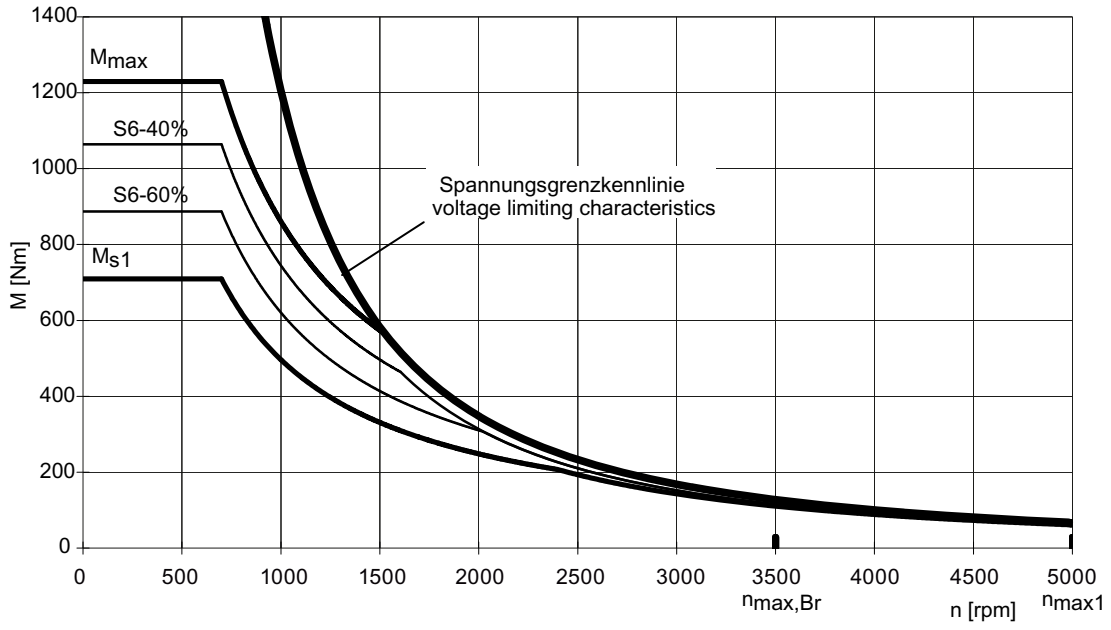
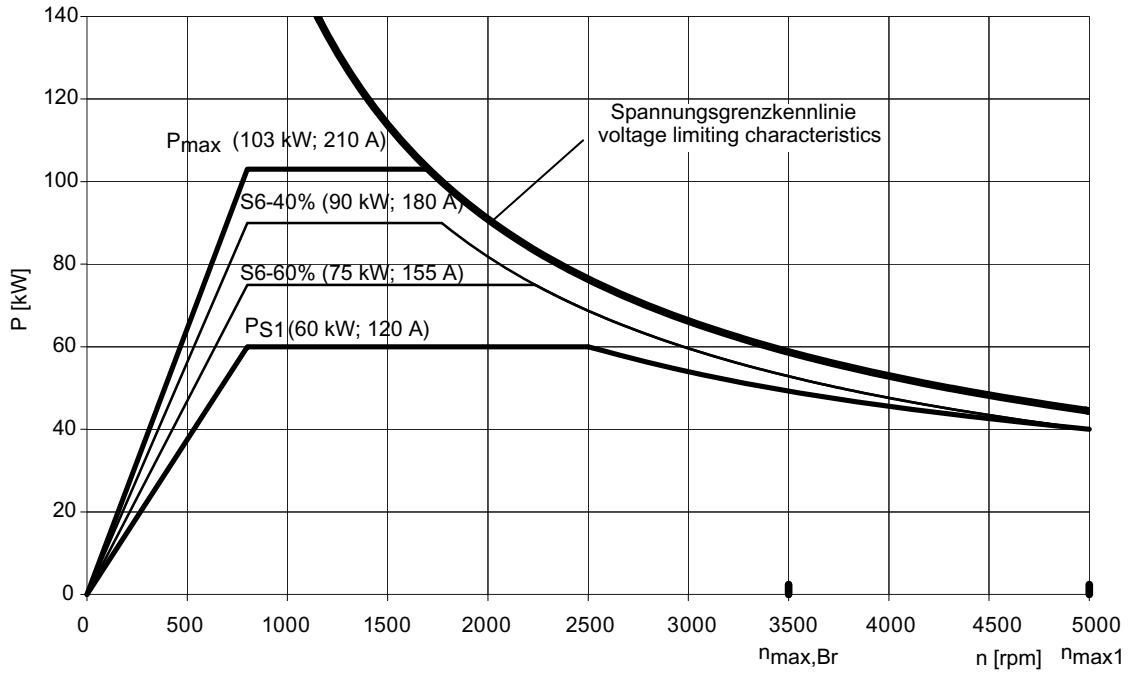



Tabella 4- 209 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8186-□□C□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 60 | 716 | 120 | 5000 | - | - | 3500 | 2500 | 1230 | 210 | 716 | 120 |
| 700 | 52 | 709 | 116 | | | | | 3200 | | | | |



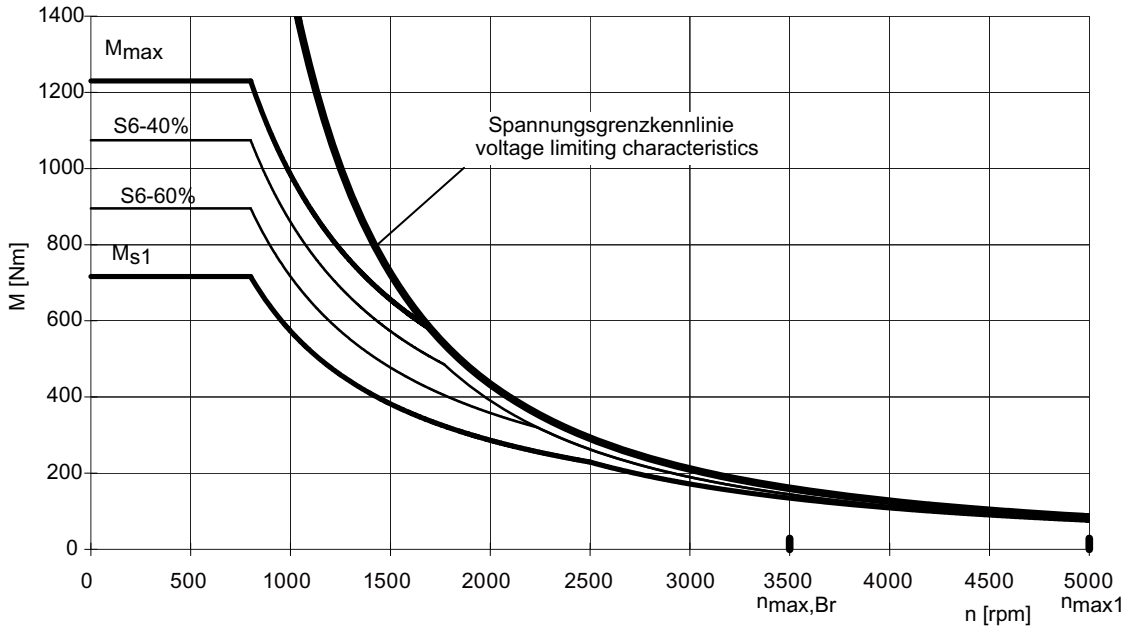
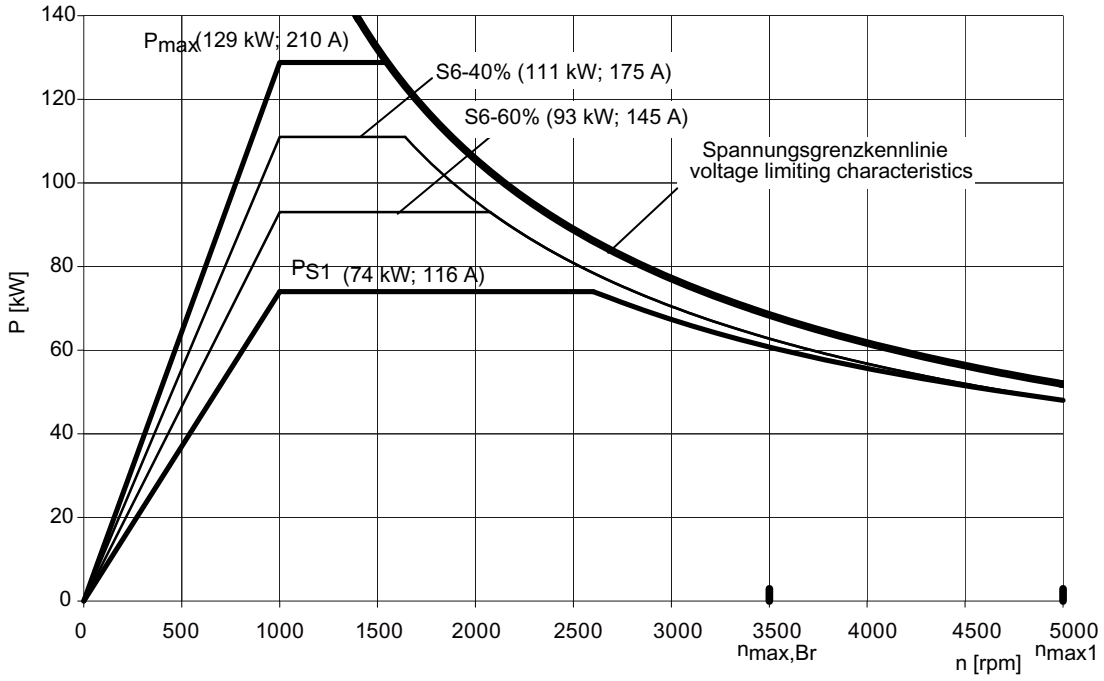



Tabella 4- 210 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-□□C□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 74 | 707 | 116 | 5000 | - | - | 3500 | 2600 | 1230 | 210 | 707 | 116 |



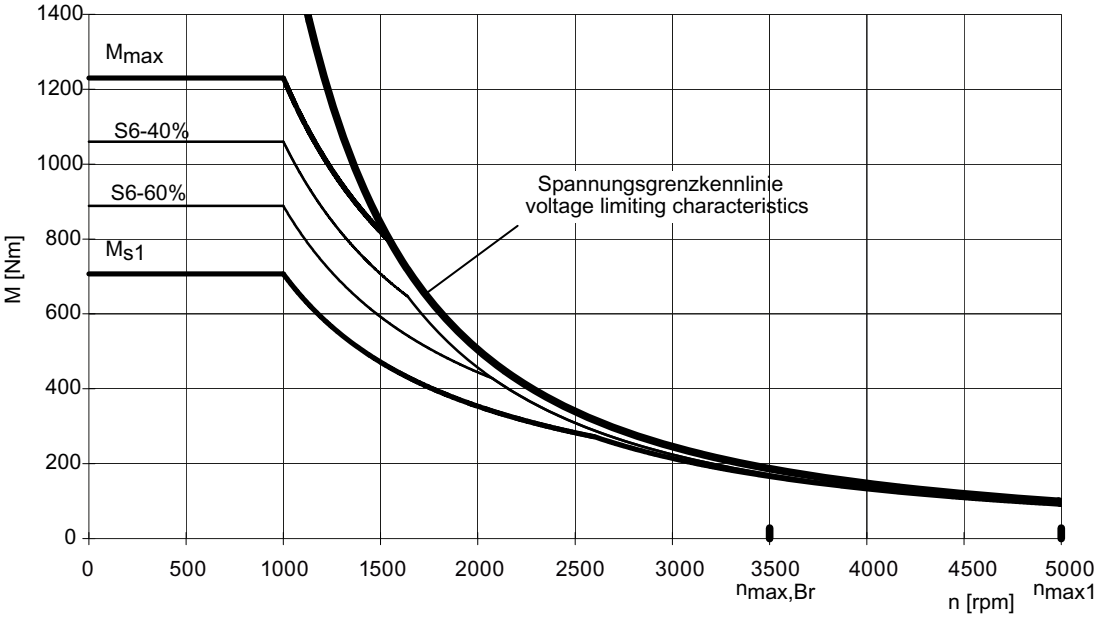
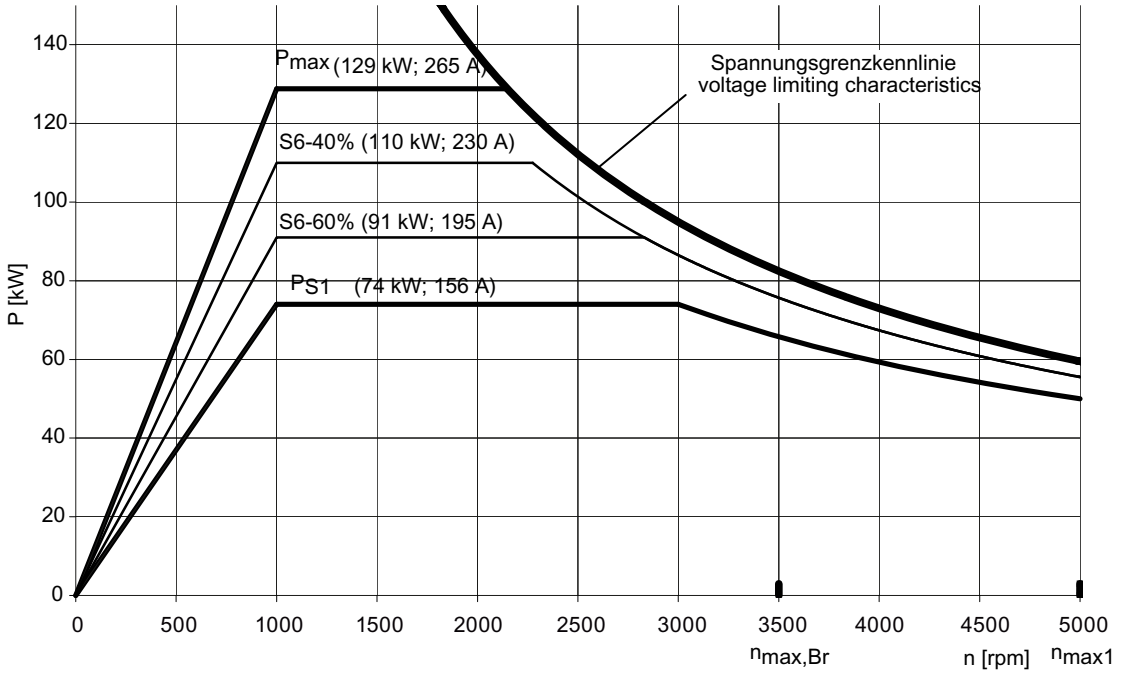



Tabella 4- 211 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-□□D□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 74 | 707 | 156 | 5000 | - | - | 3500 | 3000 | 1230 | 265 | 707 | 156 |



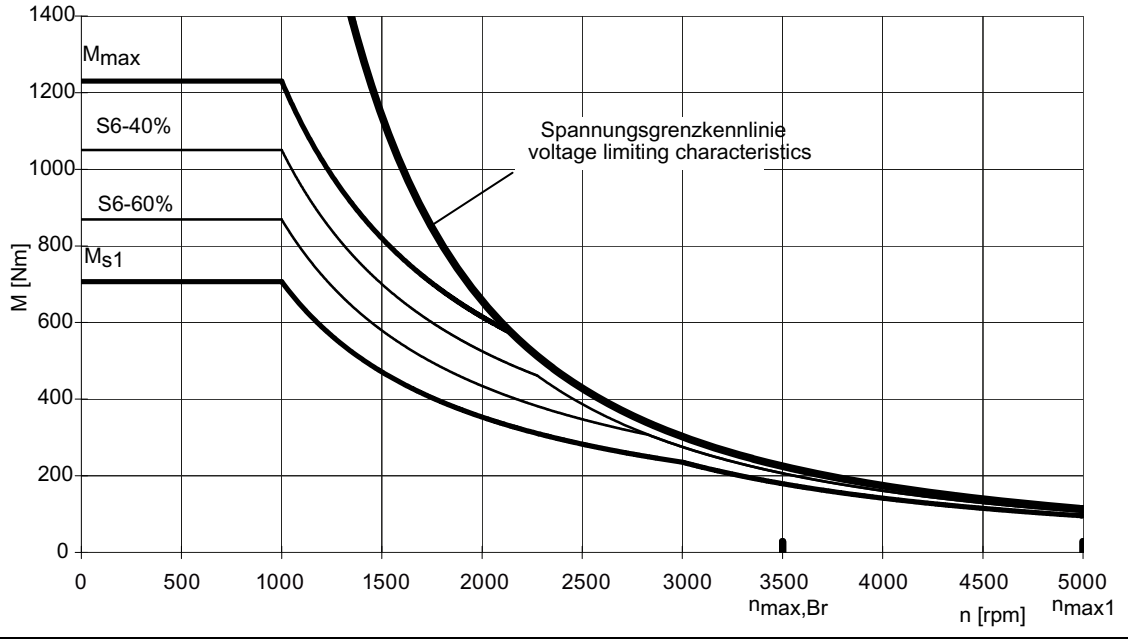
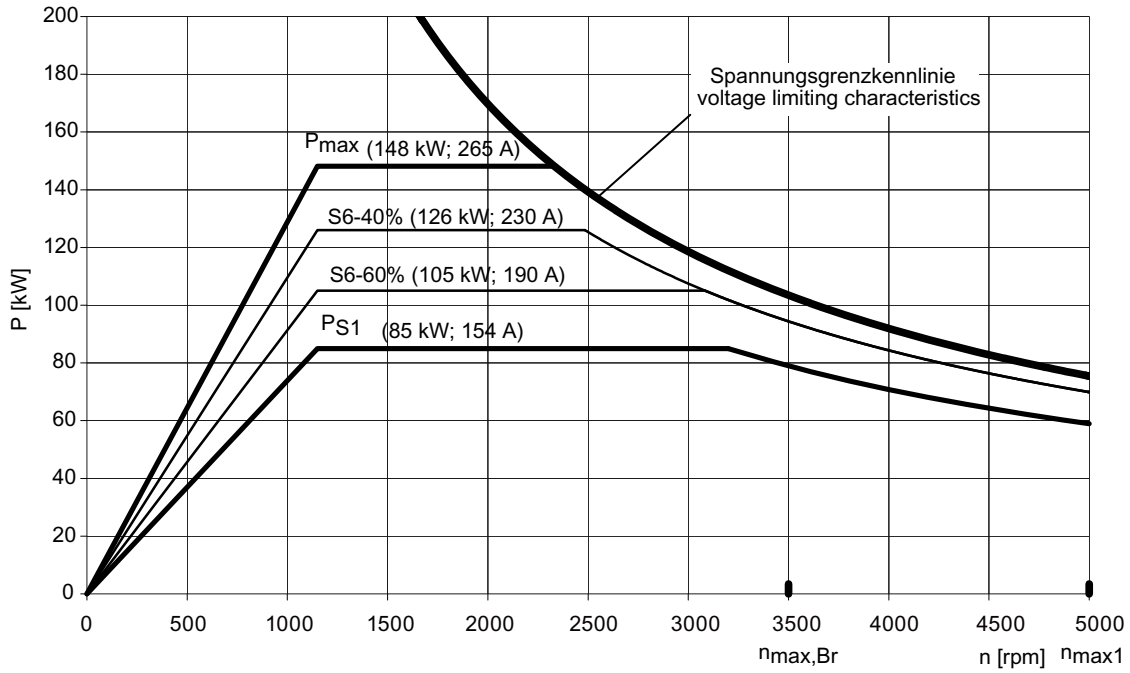



Tabella 4- 212 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8186-□□D□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 85 | 706 | 154 | 5000 | - | - | 3500 | 3200 | 1230 | 265 | 706 | 154 |
| 1000 | 74 | 707 | 156 | | | | | 3800 | | | | |



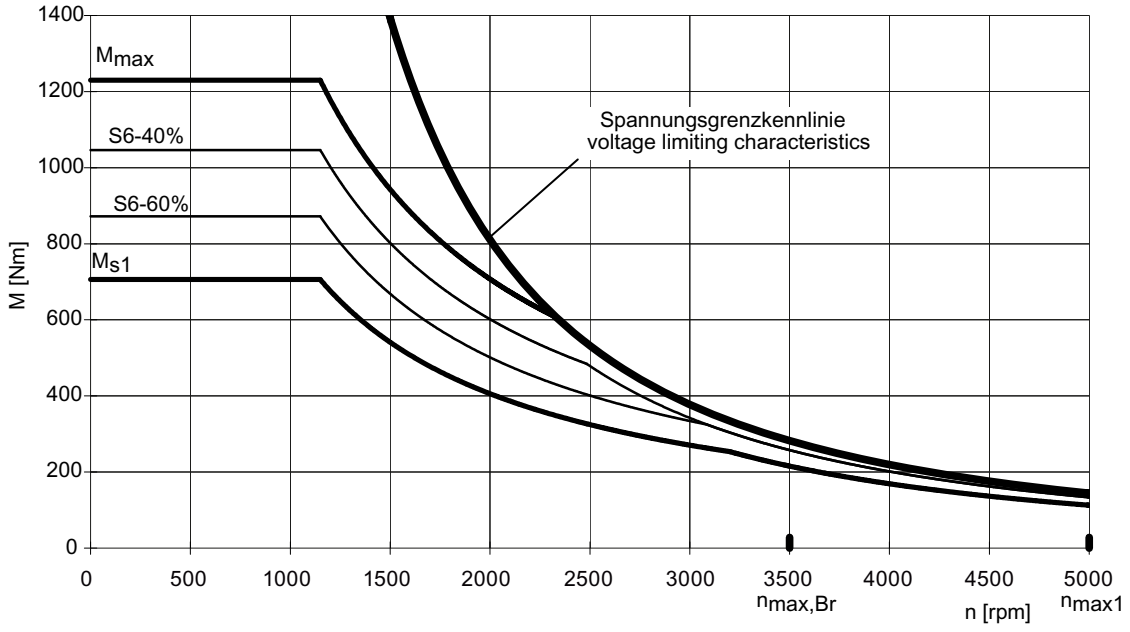
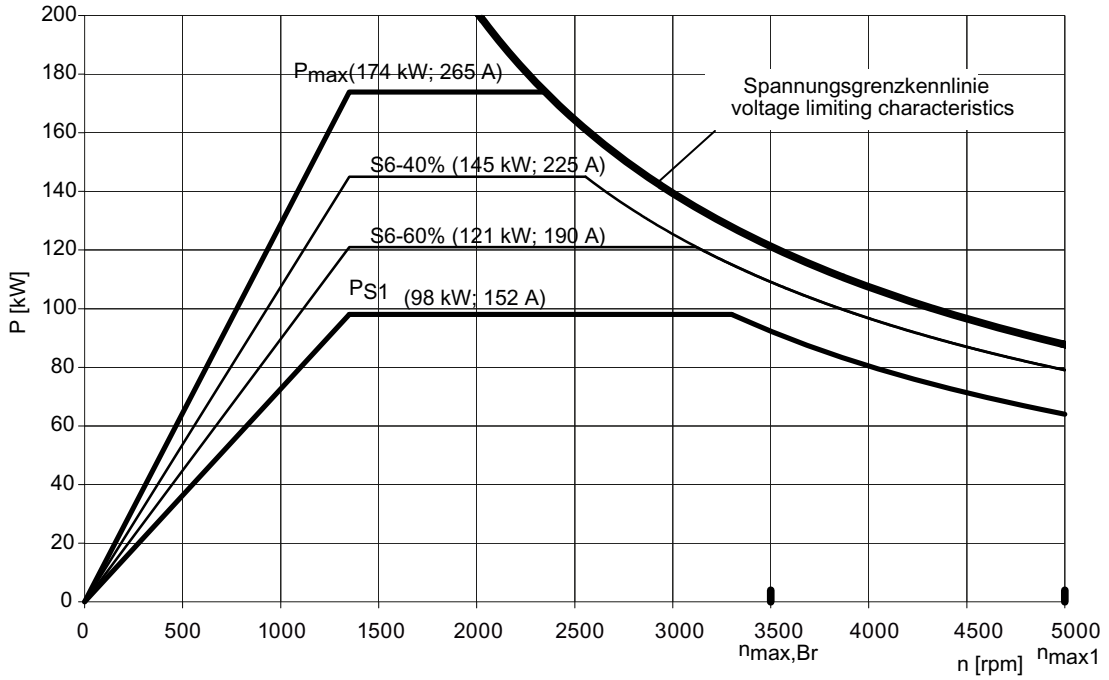



Tabella 4- 213 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-□□D□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 98 | 693 | 152 | 5000 | - | - | 3500 | 3300 | 1230 | 265 | 693 | 152 |



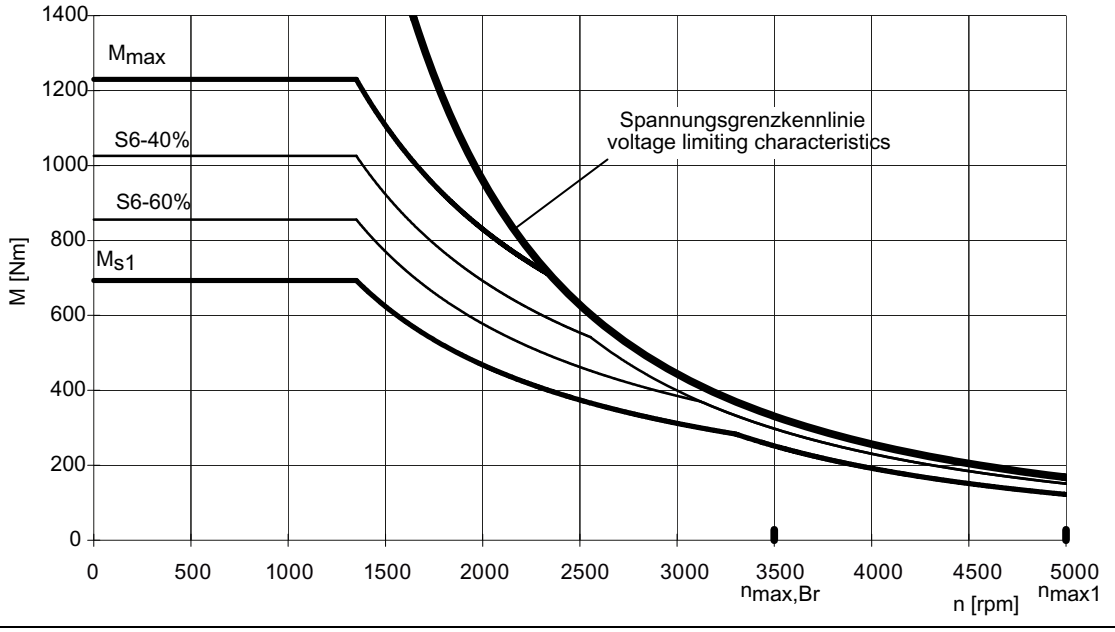
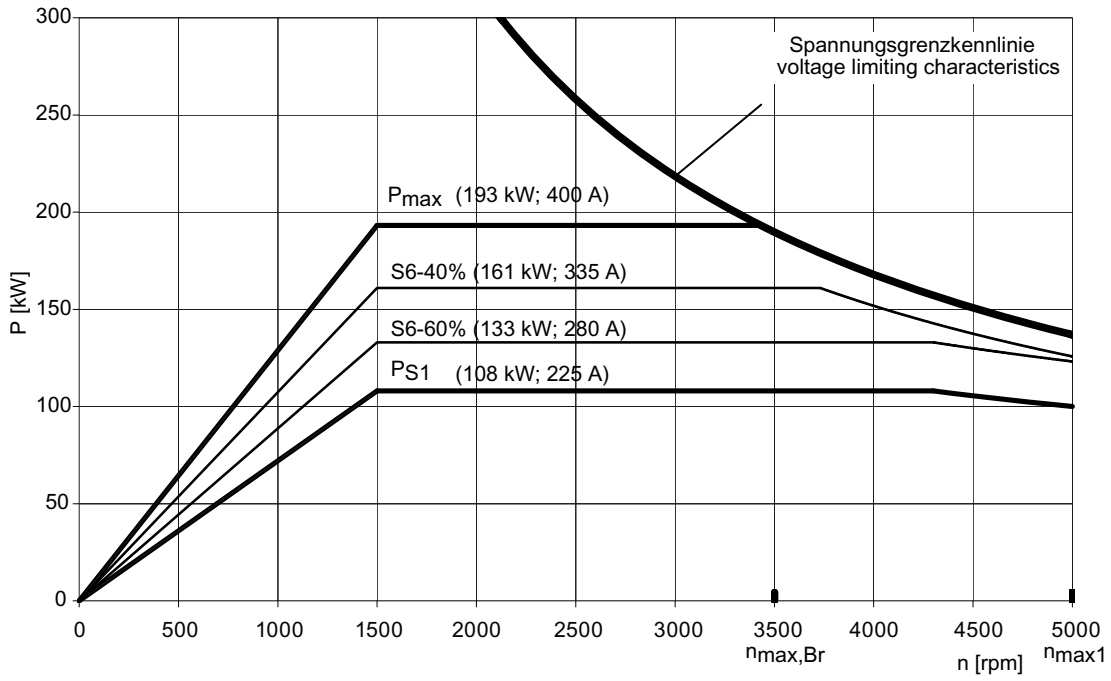



Tabella 4- 214 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-□□F□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 108 | 688 | 225 | 5000 | - | - | 3500 | 4300 | 1230 | 400 | 688 | 225 |



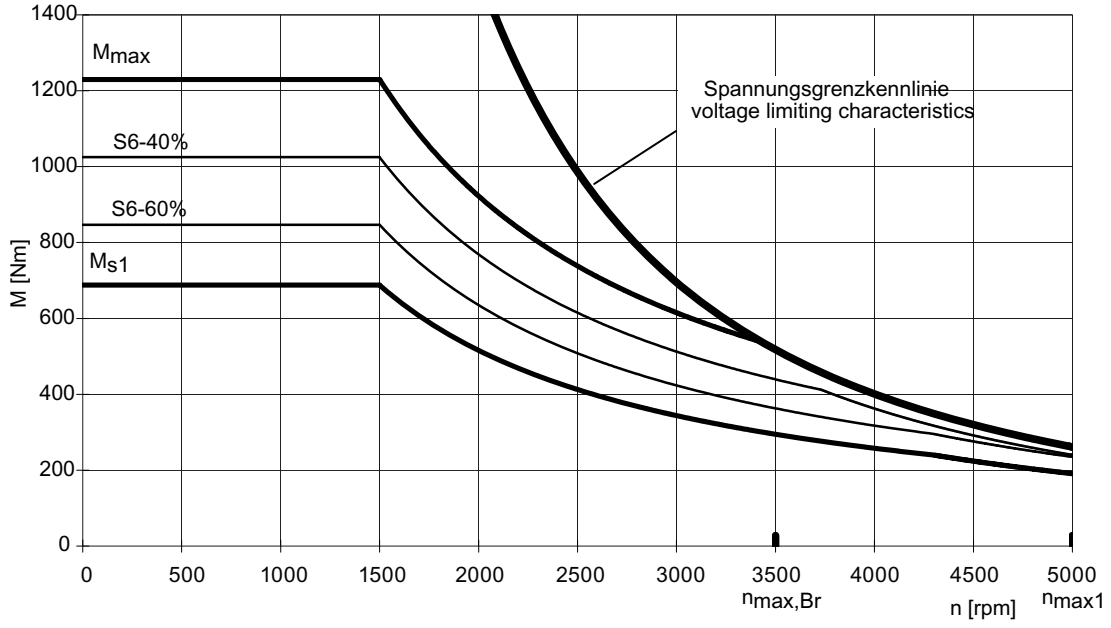
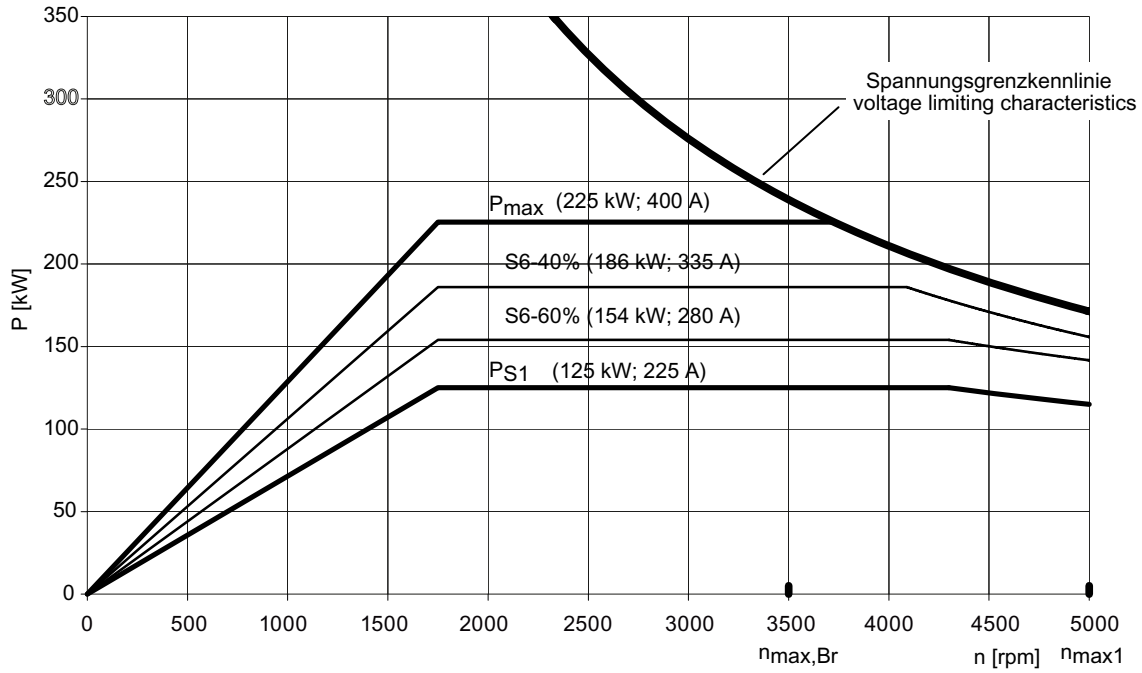



Tabella 4- 215 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8186-□□F□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 125 | 682 | 225 | 5000 | - | - | 3500 | 4300 | 1230 | 400 | 682 | 225 |
| 1500 | 108 | 688 | 225 | | | | | 5000 | | | | |



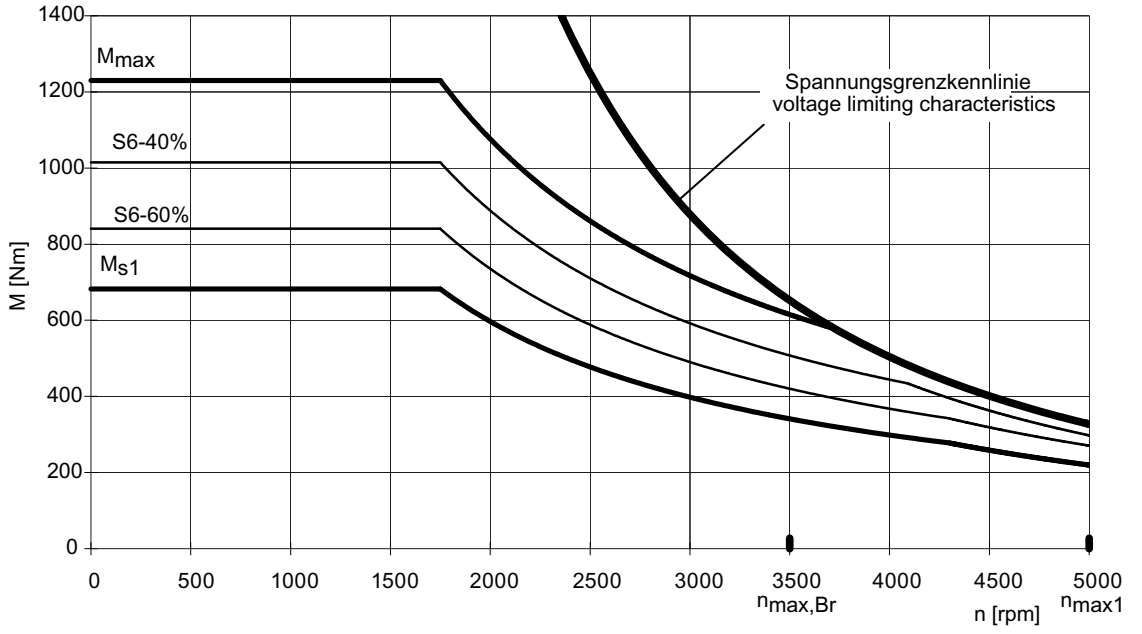
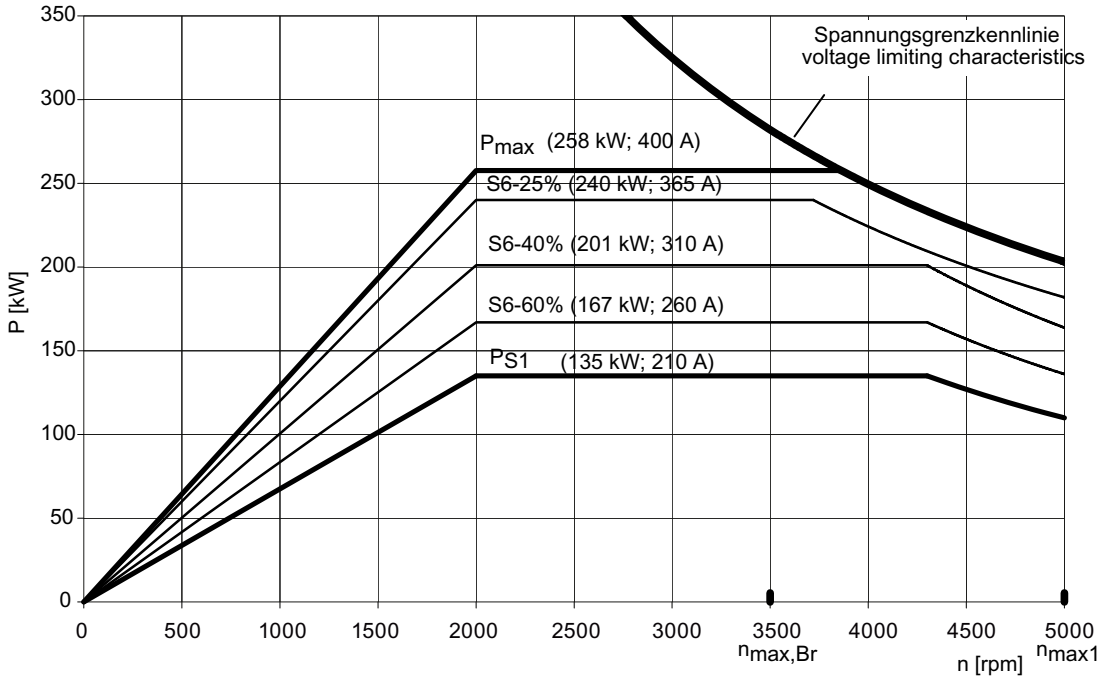



Tabella 4- 216 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-□□F□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 135 | 645 | 210 | 5000 | - | - | 3500 | 4300 | 1230 | 400 | 645 | 210 |



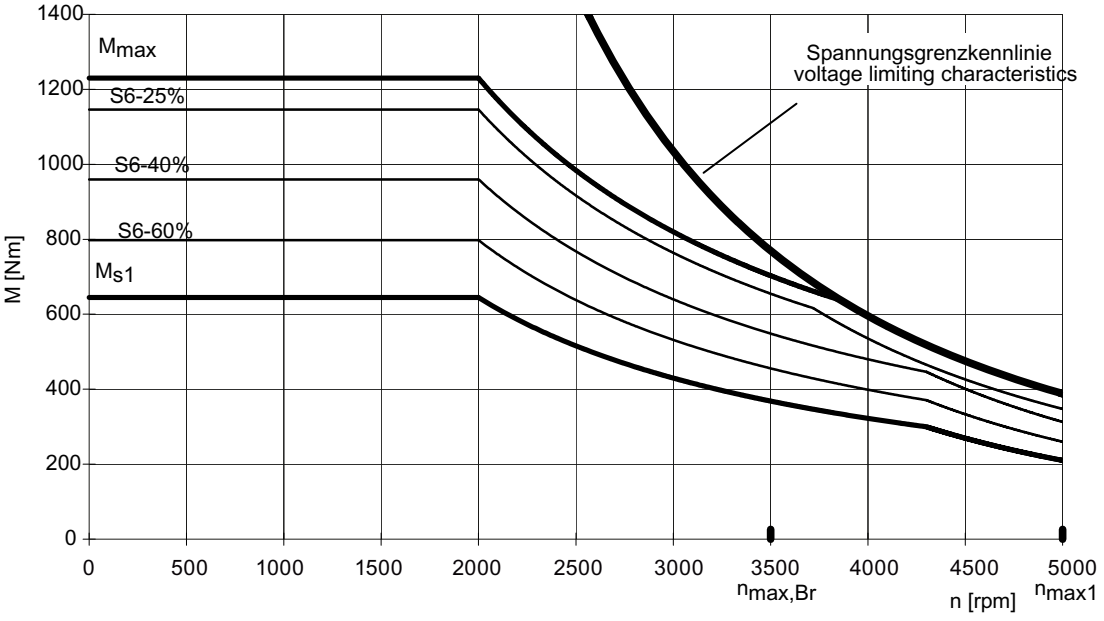
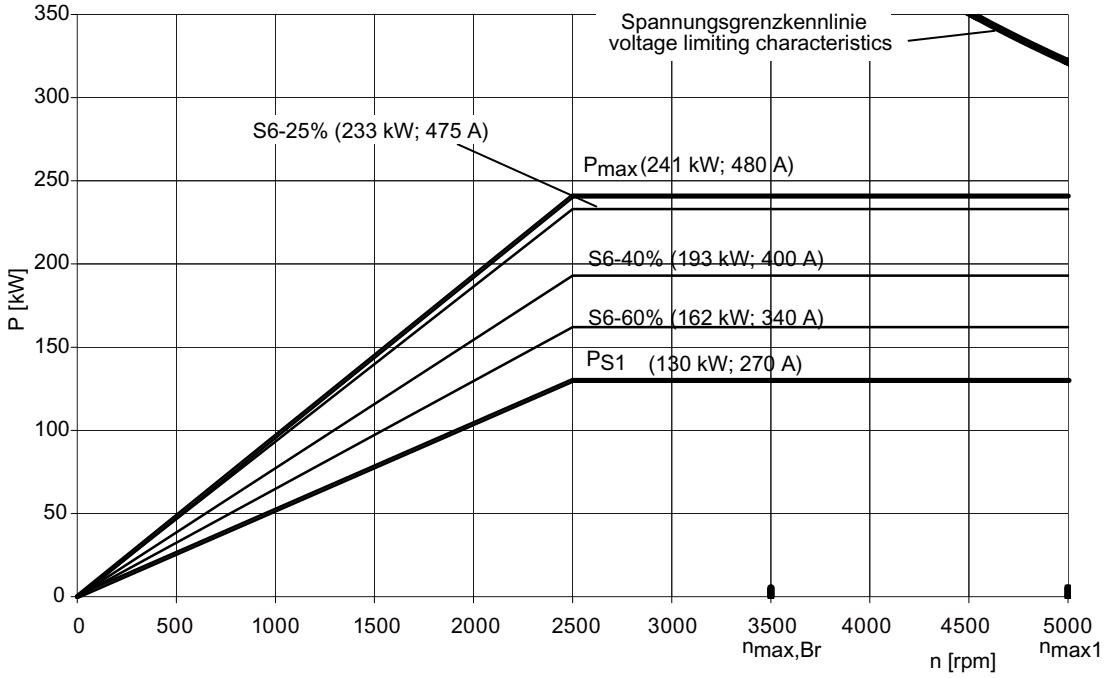



Tabella 4- 217 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-□□L□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 130 | 497 | 270 | 5000 | - | - | 3500 | 5000 | 920 | 480 | 497 | 270 |



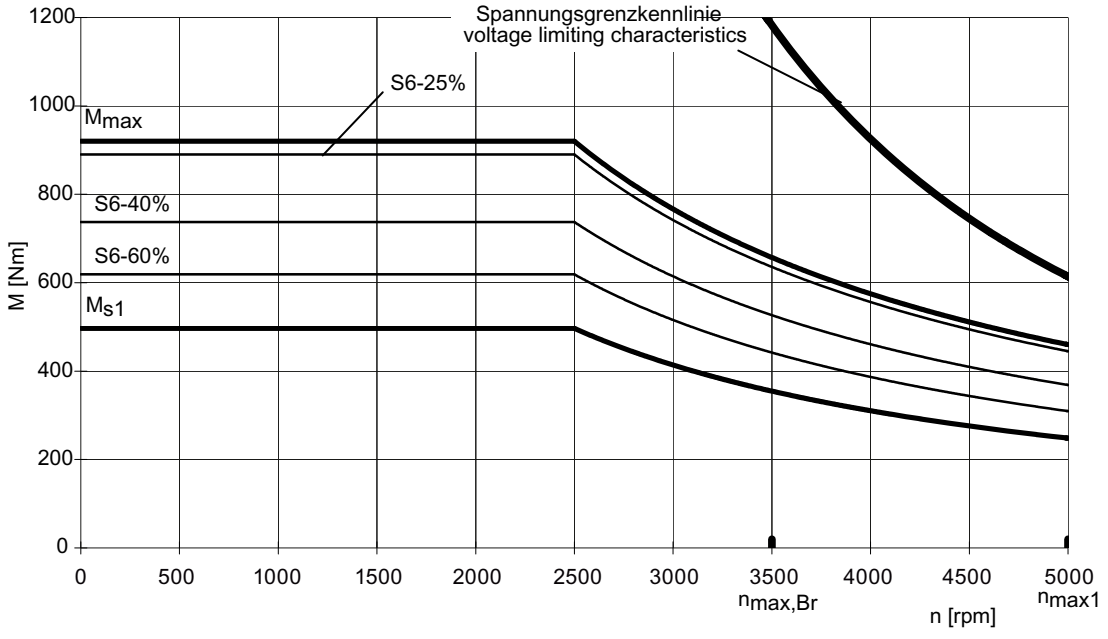
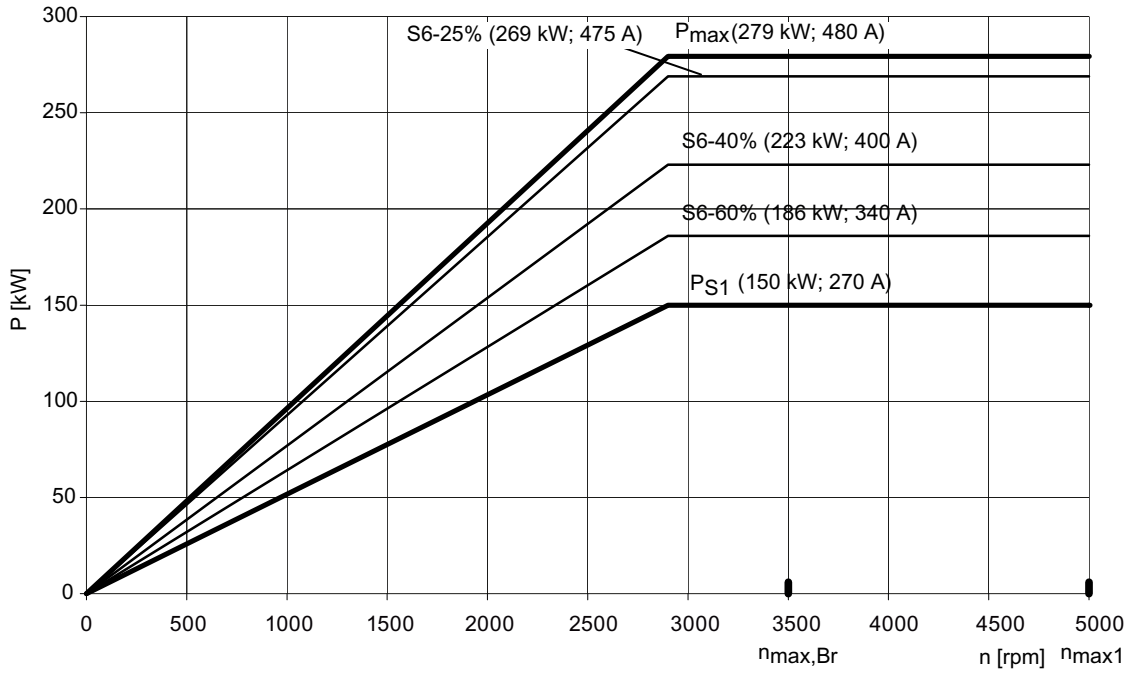



Tabella 4- 218 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8186-□□L□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 150 | 494 | 270 | 5000 | - | - | 3500 | 5000 | 920 | 480 | 494 | 270 |
| 2500 | 130 | 497 | 270 | | | | | 5000 | | | | |



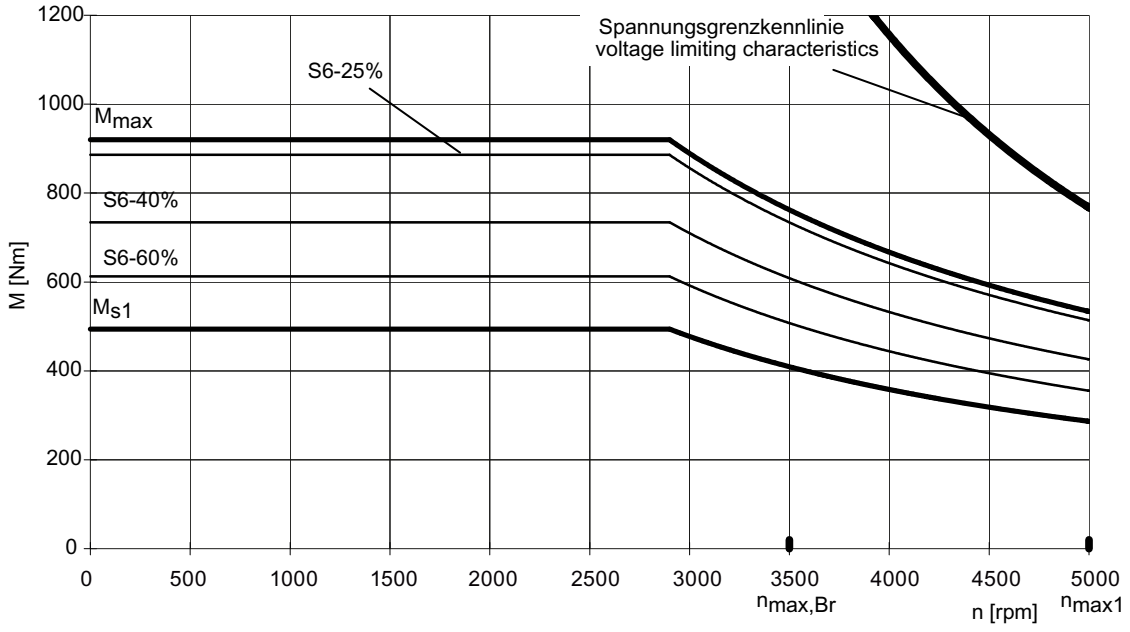
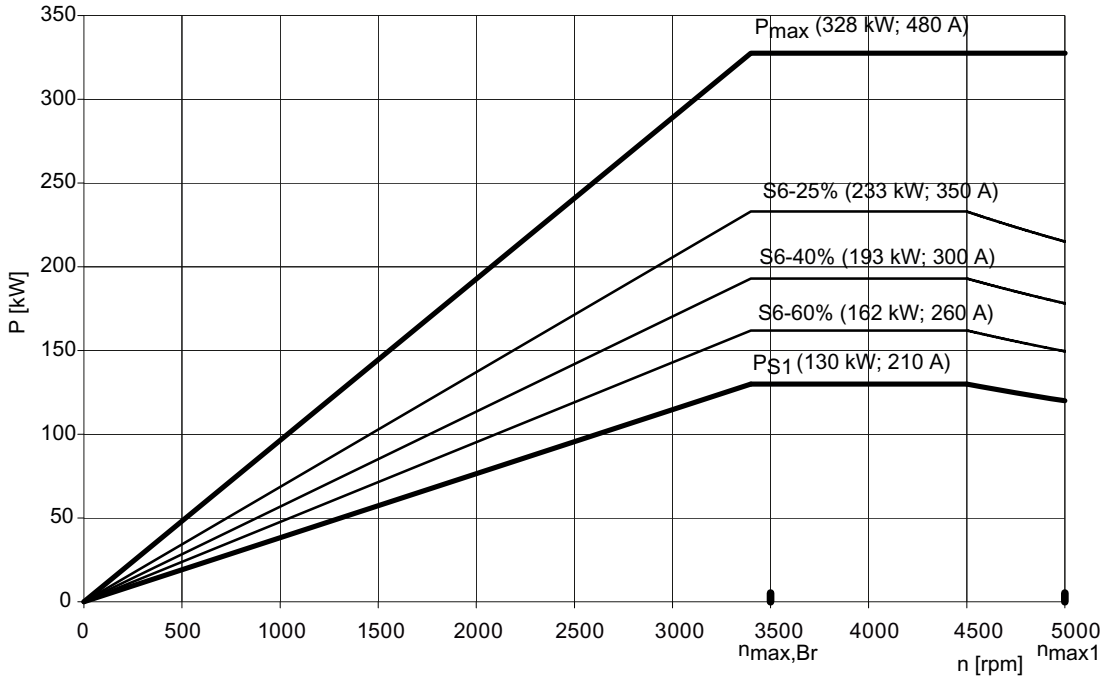
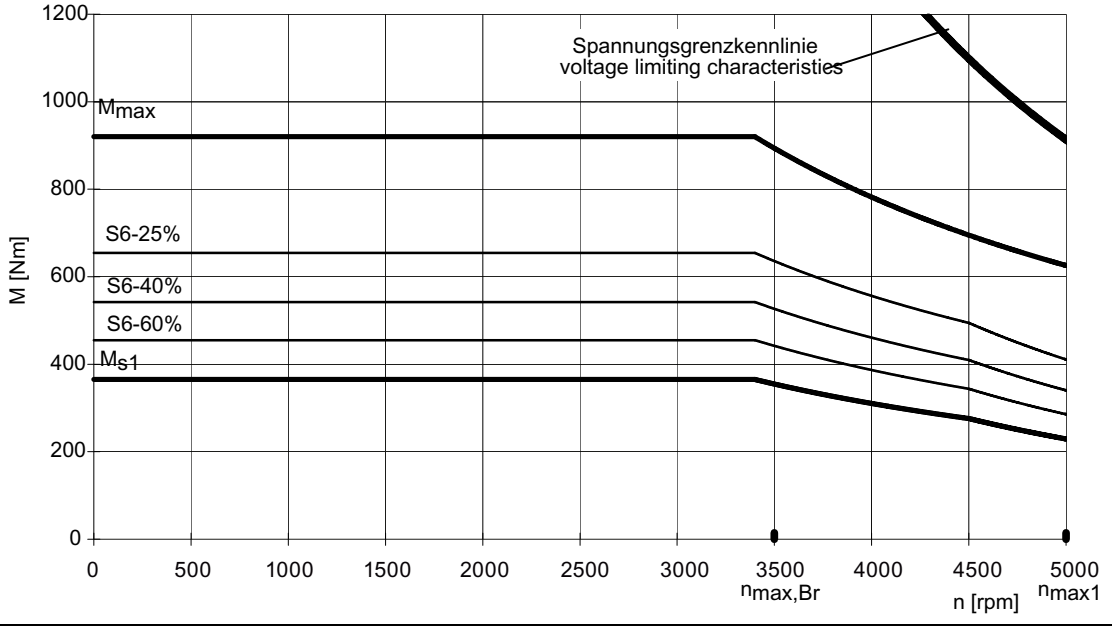



Tabella 4- 219 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-□□L□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3400 | 130 | 365 | 210 | 5000 | - | - | 3500 | 4500 | 920 | 480 | 365 | 210 |

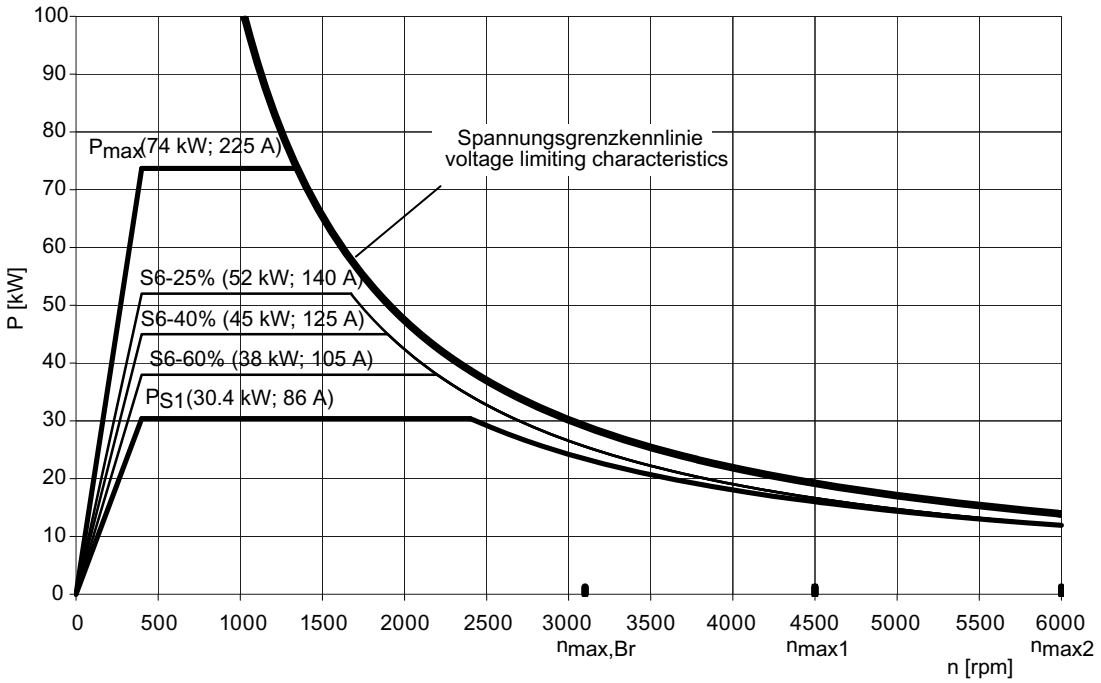


### 4.1.2.7 Altezza d'asse 225 - Ventilazione forzata

Tabella 4- 220 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-□□B□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 30,4 | 726 | 86 | 4500 | 6000 | - | 3100 | 2400 | 1760 | 225 | 726 | 86 |



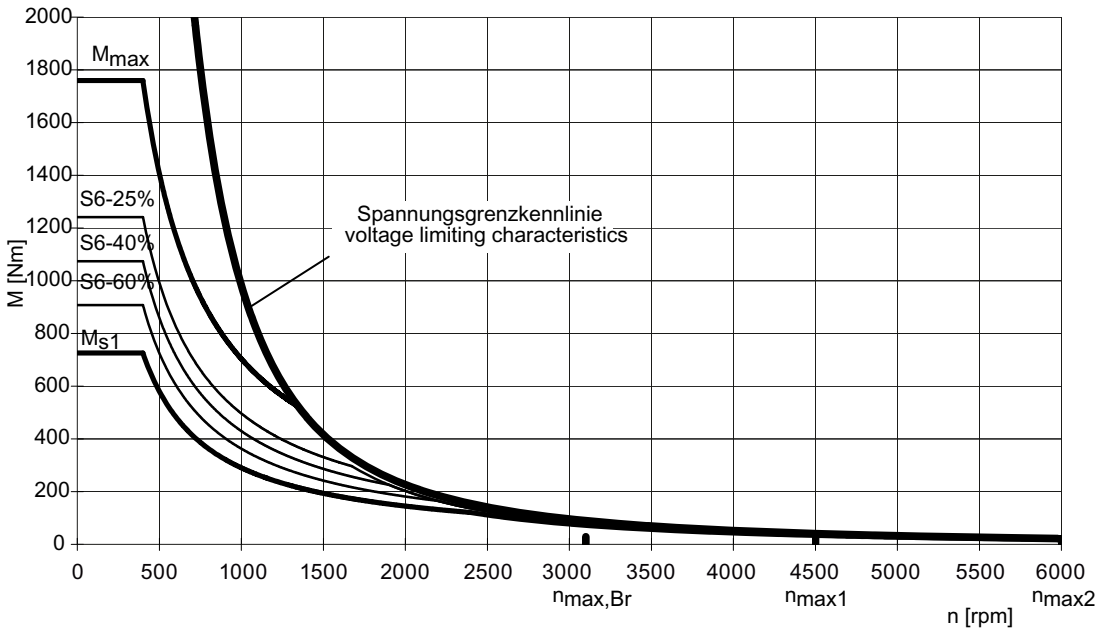
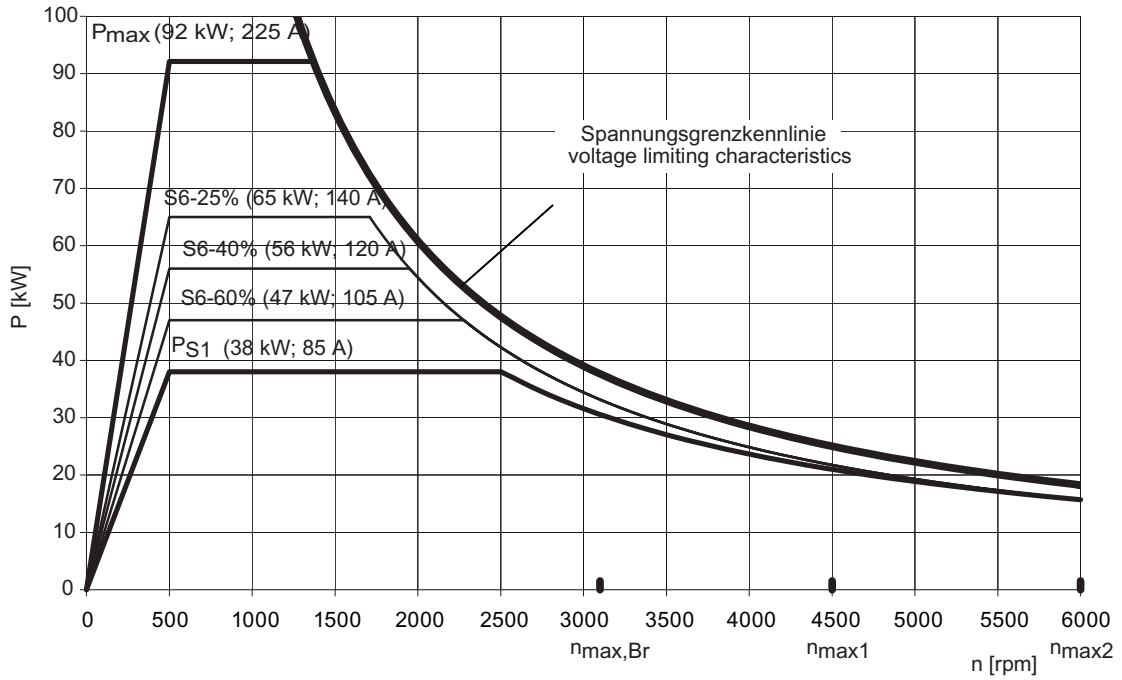



Tabella 4- 221 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-□□B□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 38 | 726 | 85 | 4500 | 6000 | - | 3100 | 2500 | 1760 | 225 | 726 | 85 |
| 400 | 30 | 726 | 86 | | | | | 3100 | | | | |



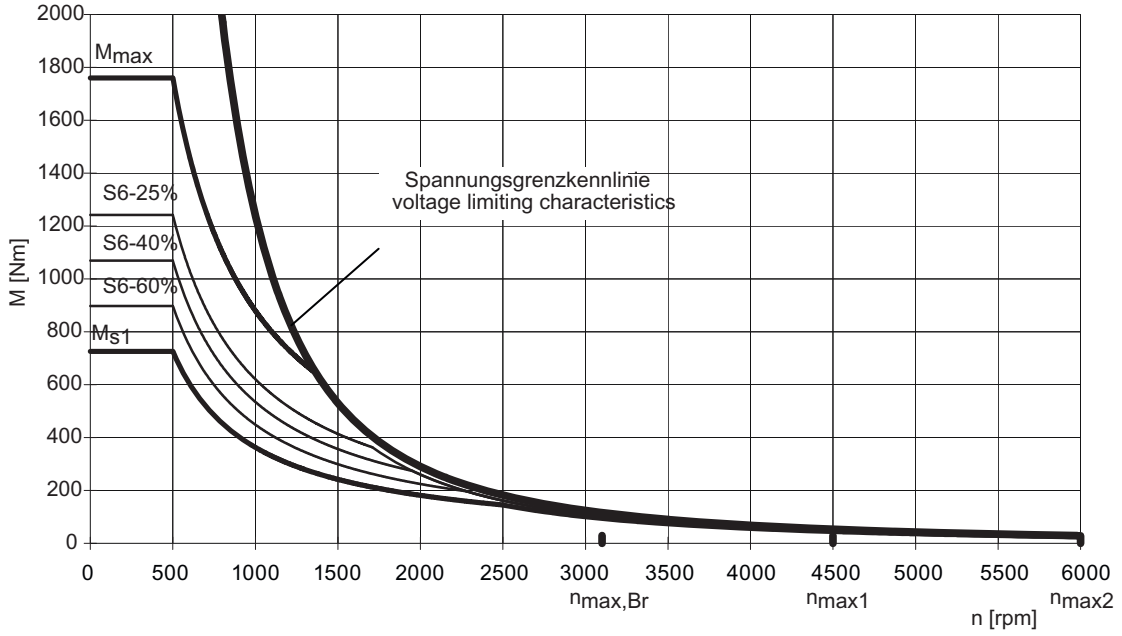
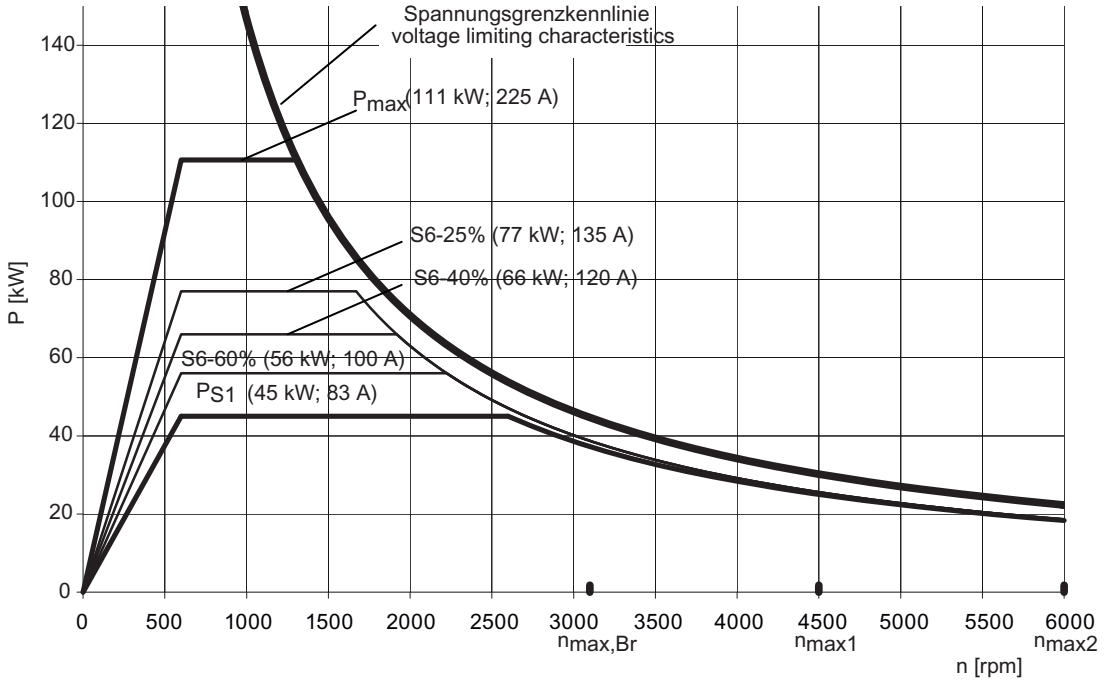



Tabella 4- 222 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-□□B□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 45 | 716 | 83 | 4500 | 6000 | - | 3100 | 2600 | 1760 | 225 | 716 | 83 |



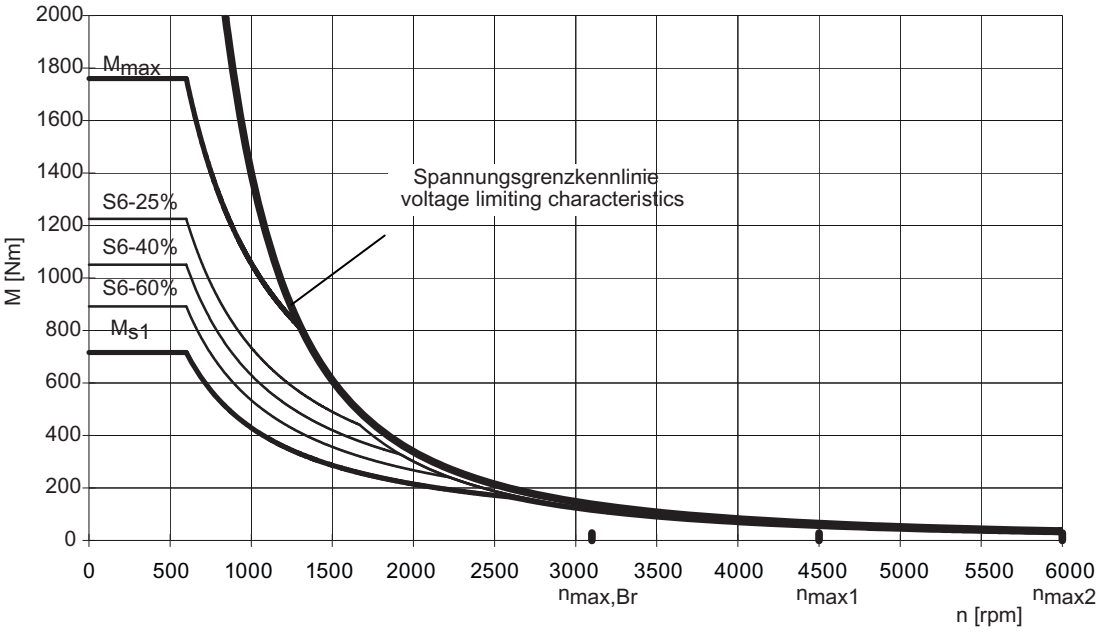
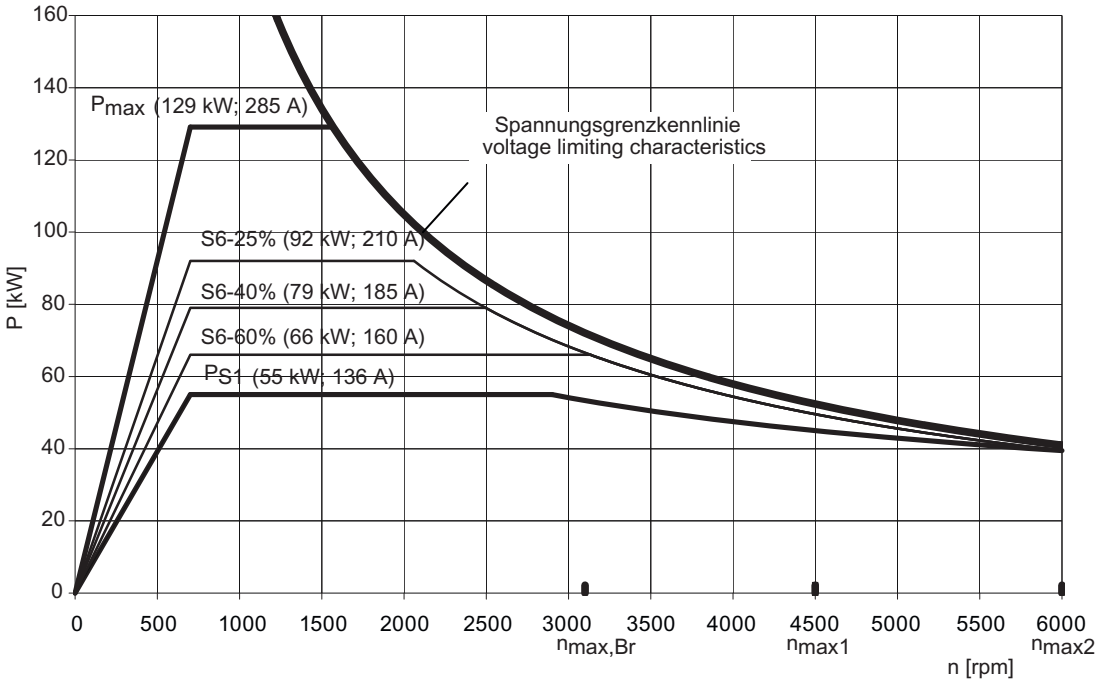



Tabella 4- 223 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-□□C□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 55 | 750 | 136 | 4500 | 6000 | - | 3100 | 2900 | 1760 | 285 | 750 | 136 |



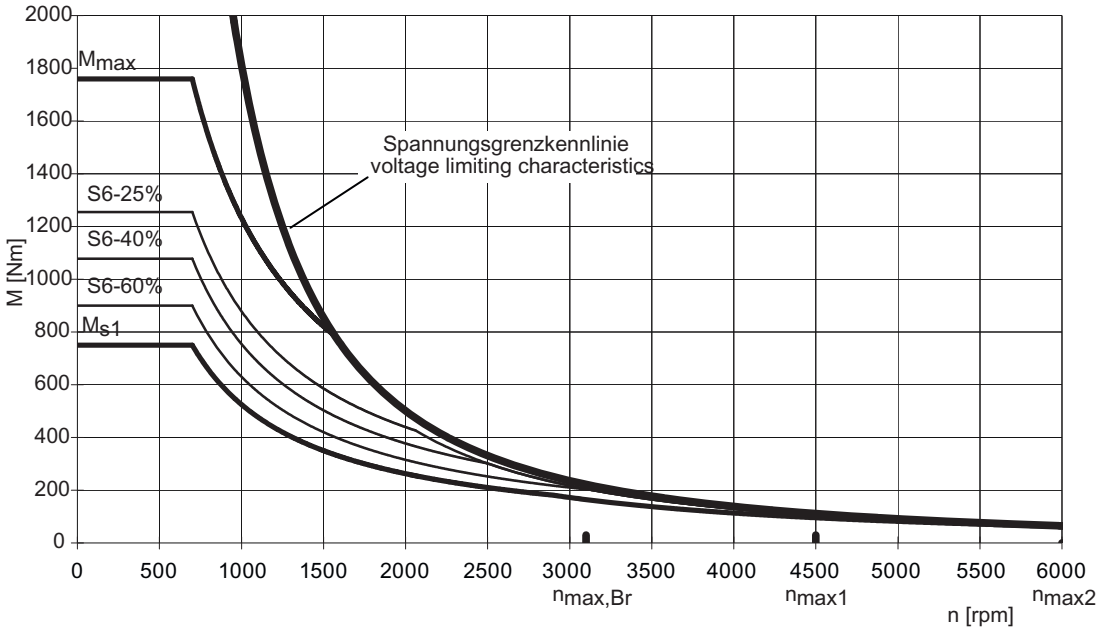
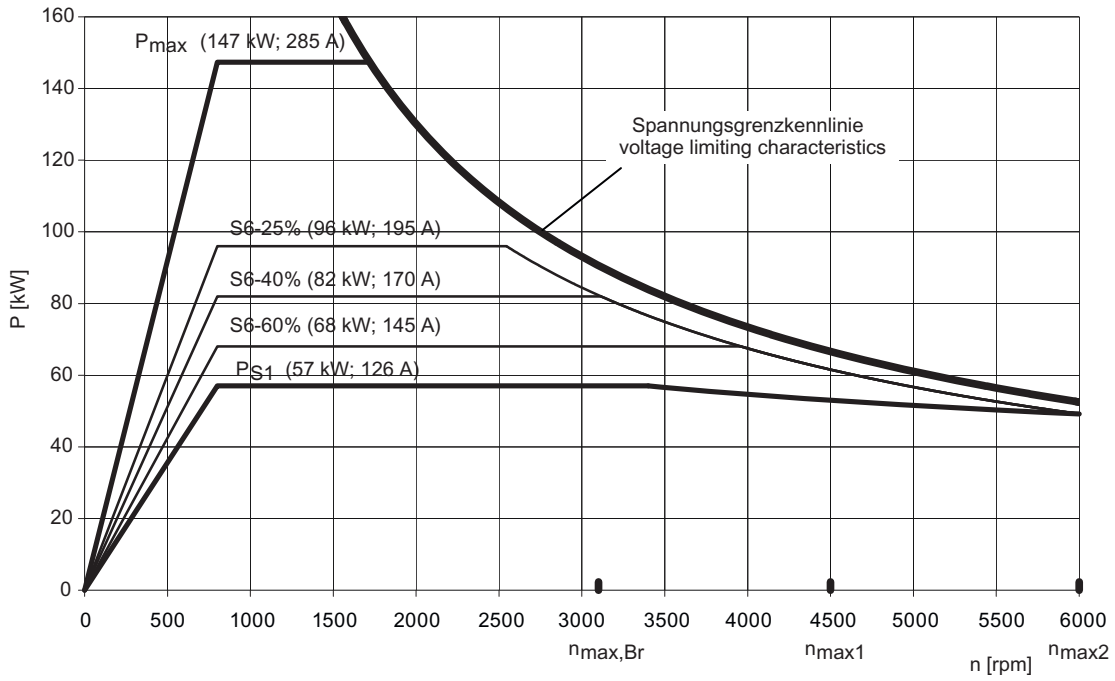



Tabella 4- 224 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-□□C□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 57 | 681 | 126 | 4500 | 6000 | - | 3100 | 3400 | 1760 | 285 | 681 | 126 |
| 700 | 55 | 750 | 136 | | | | | 3900 | | | | |



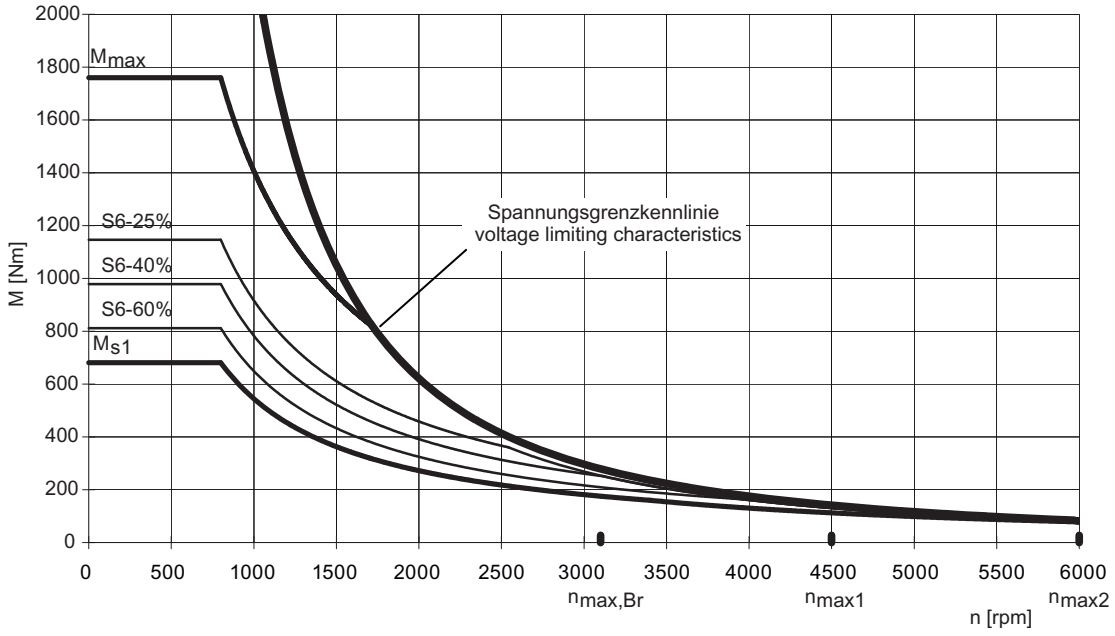
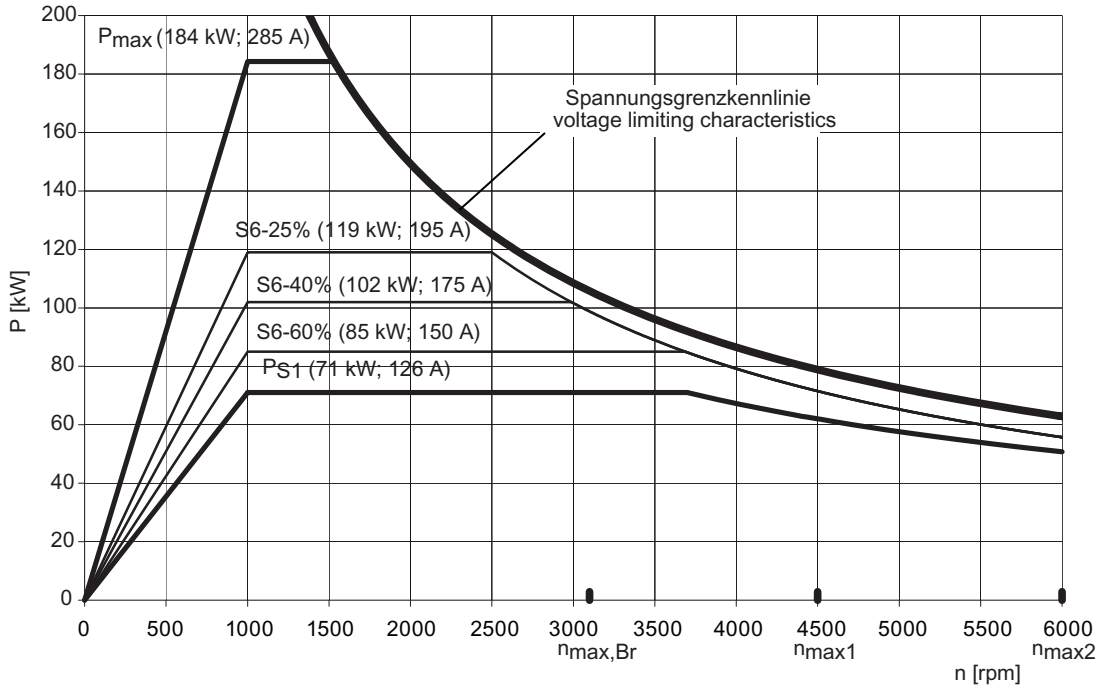



Tabella 4- 225 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-□□C□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 71 | 678 | 126 | 4500 | 6000 | - | 3100 | 3700 | 1760 | 185 | 678 | 126 |



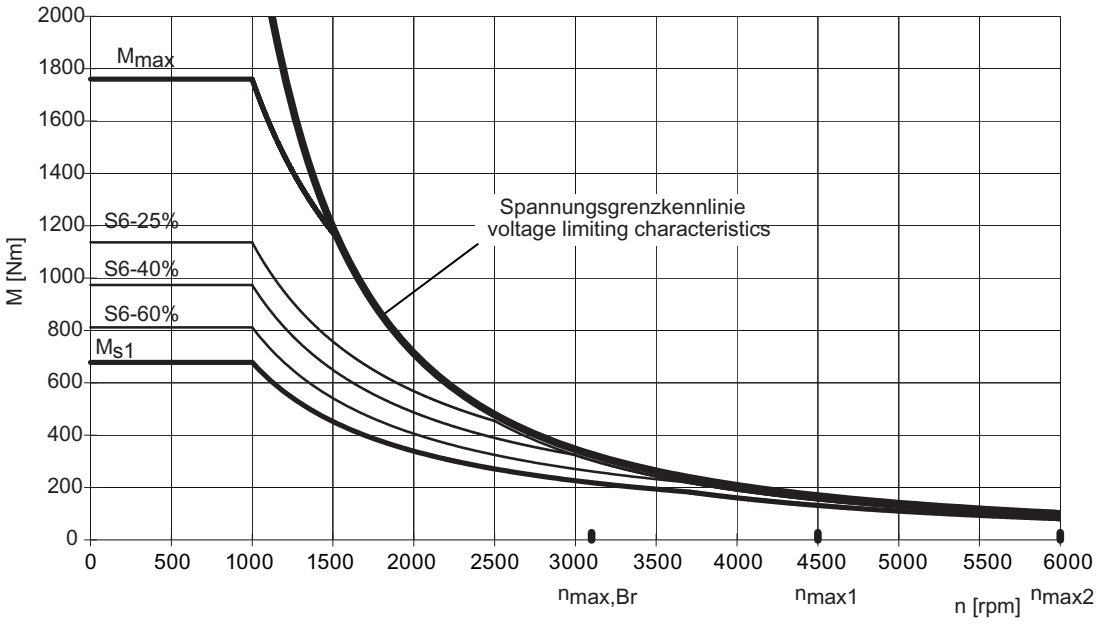
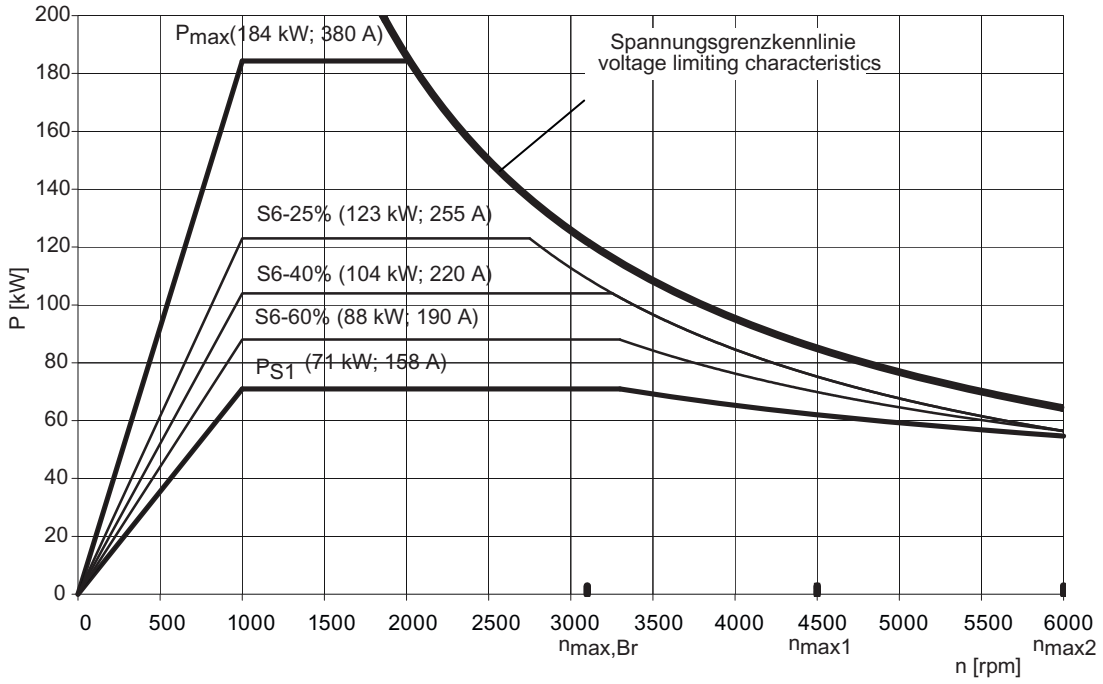



Tabella 4- 226 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-□□D□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 71 | 678 | 158 | 4500 | 6000 | - | 3100 | 3300 | 1760 | 380 | 678 | 158 |



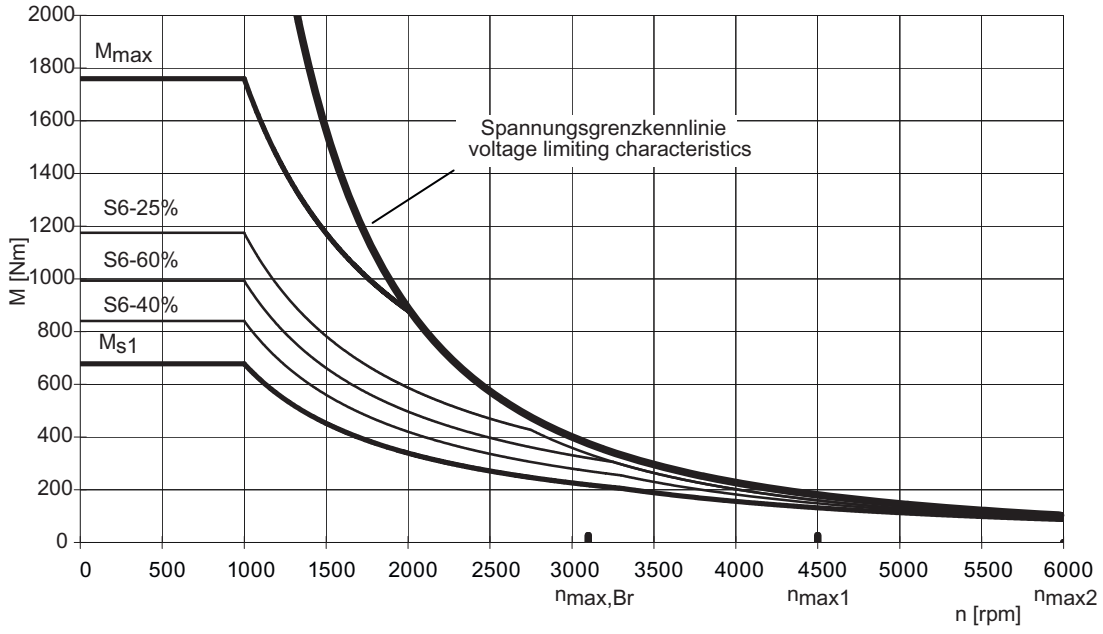
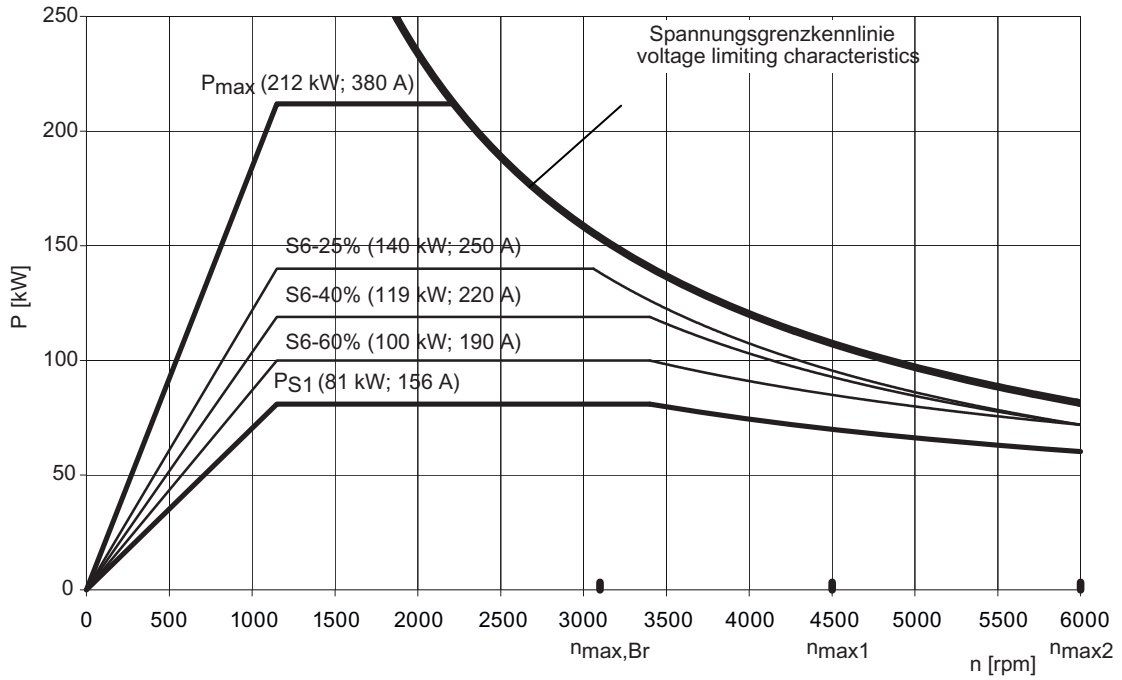



Tabella 4- 227 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-□□D□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 81 | 673 | 156 | 4500 | 6000 | - | 3100 | 3400 | 1760 | 380 | 673 | 156 |
| 1000 | 71 | 678 | 158 | | | | | 4400 | | | | |



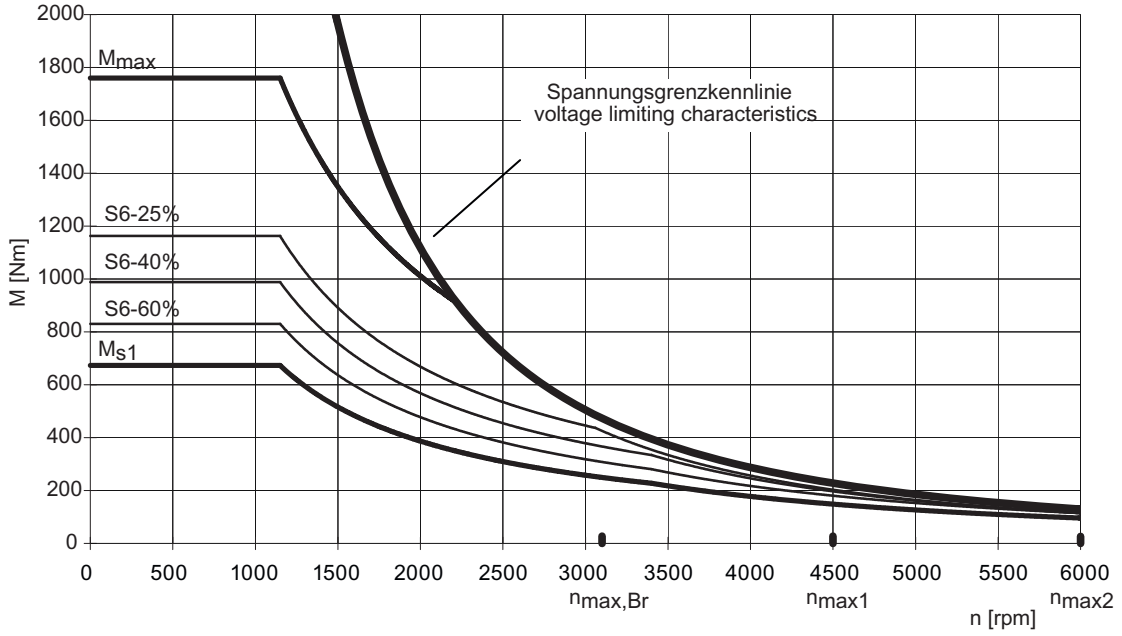
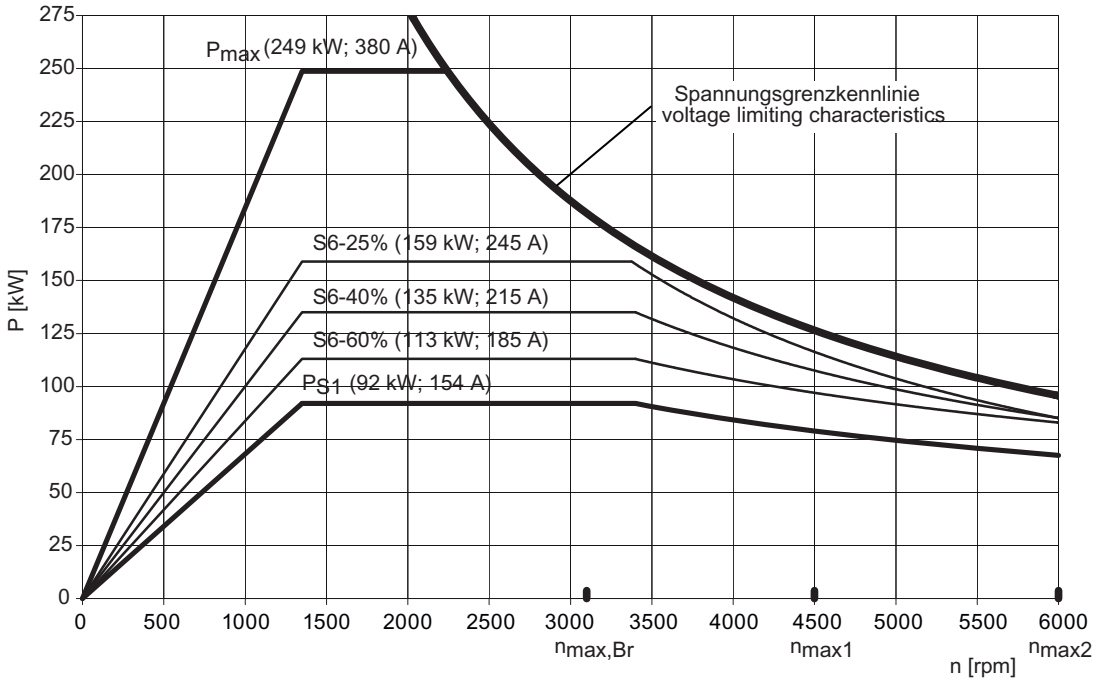



Tabella 4- 228 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-□□D□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 92 | 651 | 154 | 4500 | 6000 | - | 3100 | 3400 | 1760 | 380 | 651 | 154 |



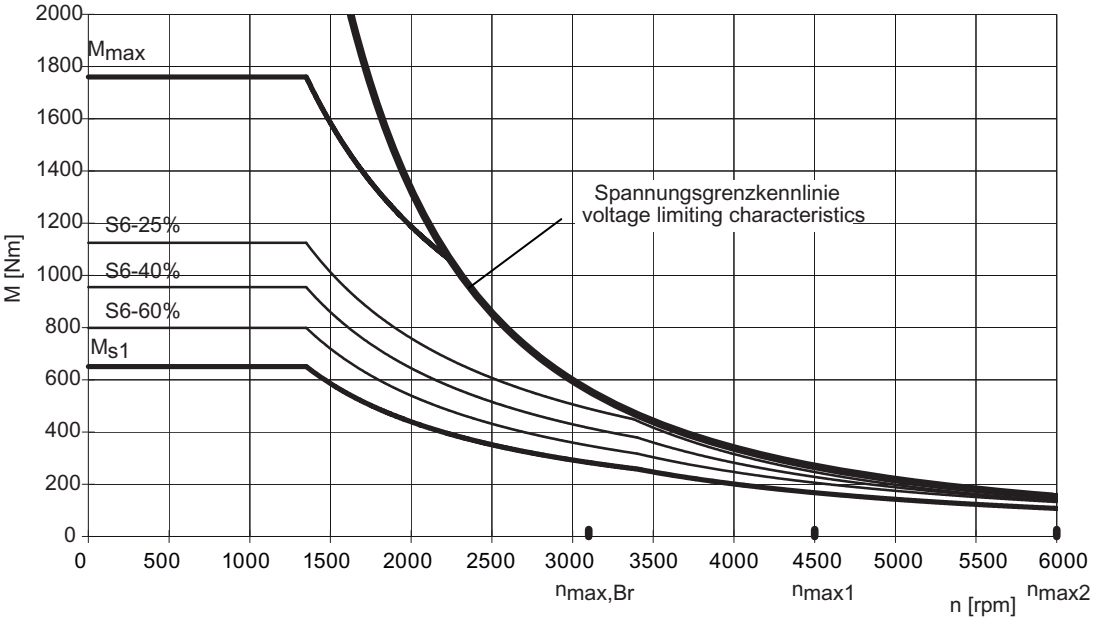
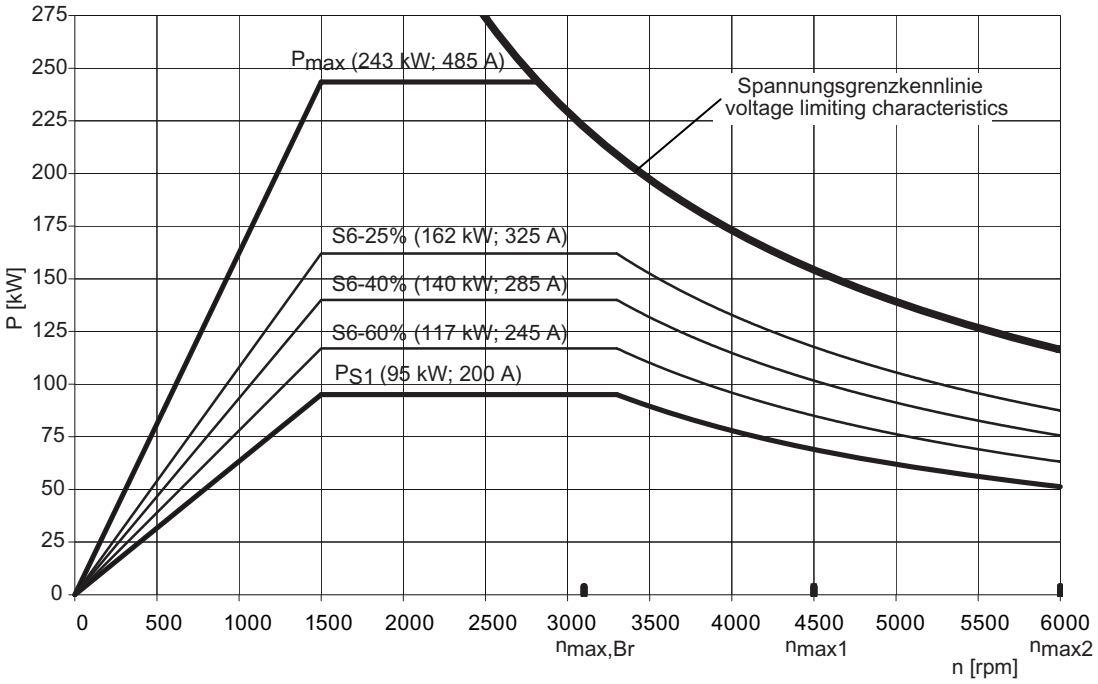



Tabella 4- 229 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-□□F□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 95 | 605 | 200 | 4500 | 6000 | - | 3100 | 3300 | 1550 | 485 | 605 | 200 |



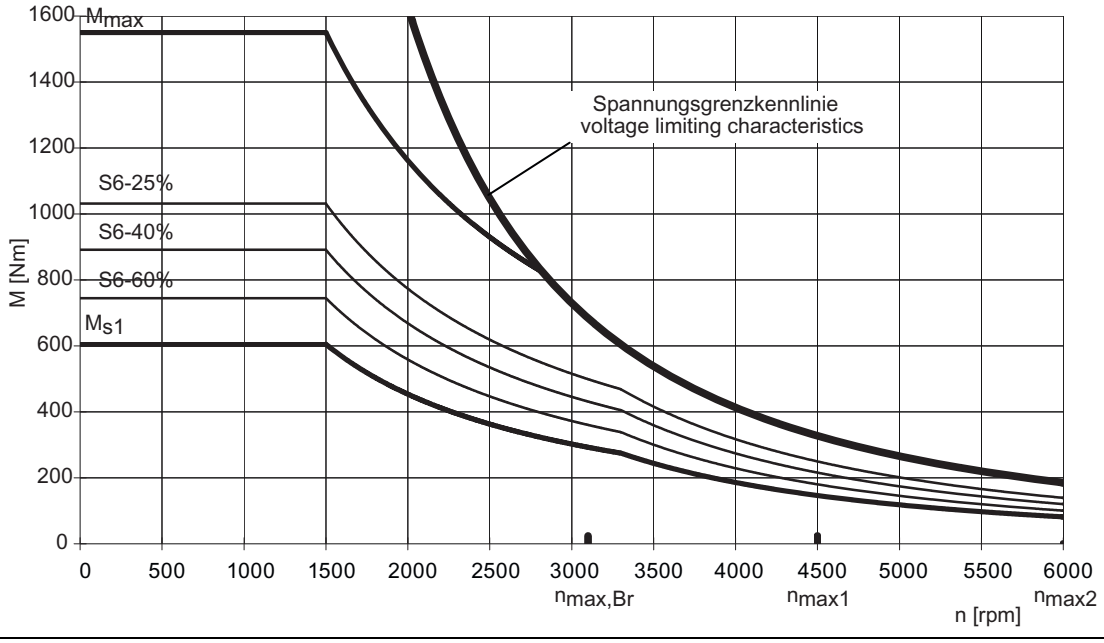
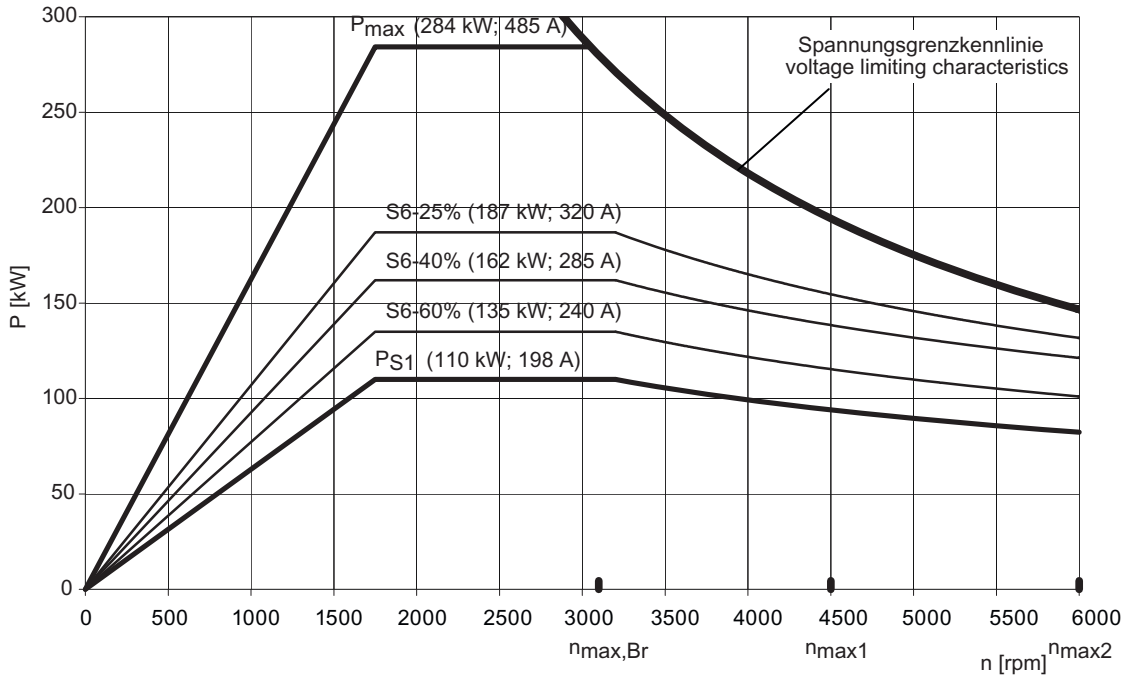



Tabella 4- 230 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-□□F□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 110 | 600 | 198 | 4500 | 6000 | - | 3100 | 3200 | 1550 | 485 | 600 | 198 |
| 1500 | 95 | 605 | 200 | | | | | 4400 | | | | |



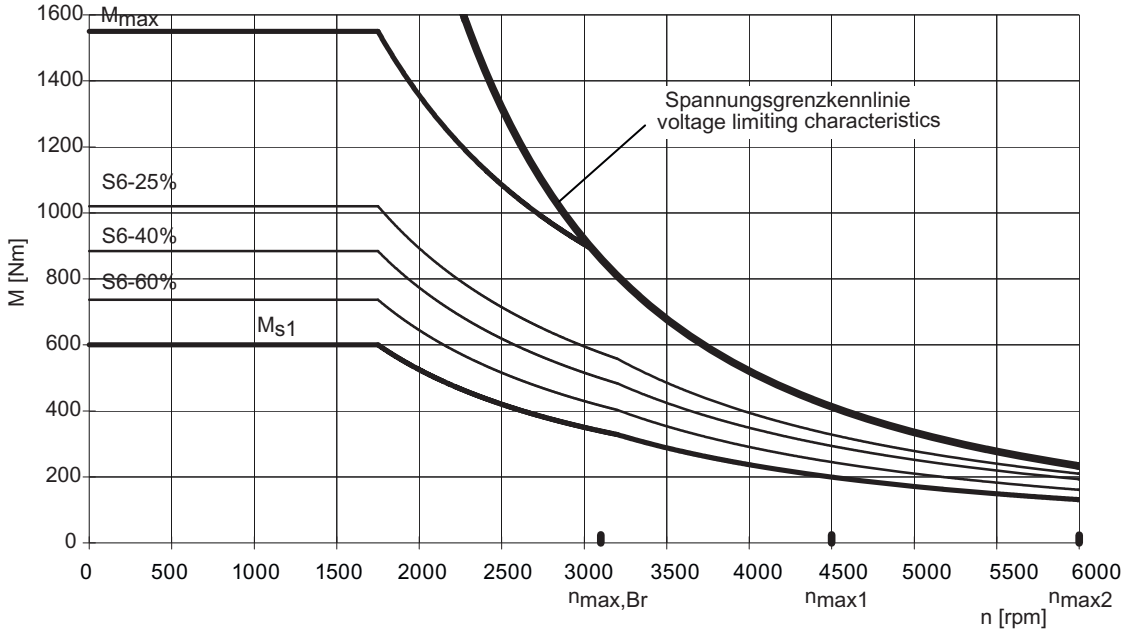
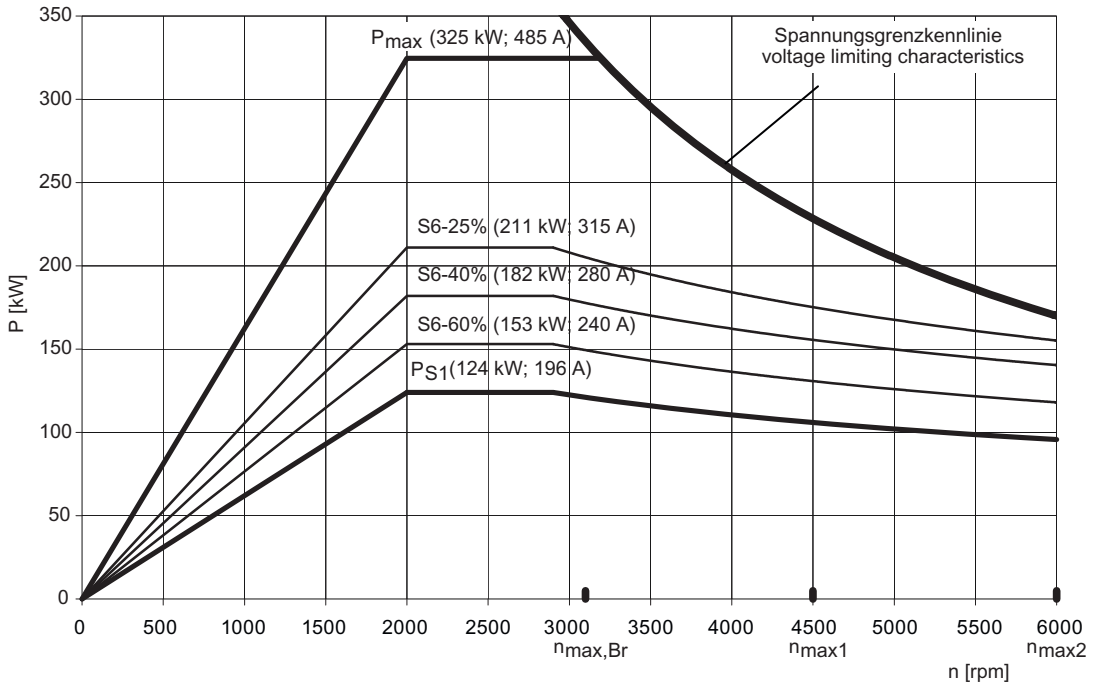



Tabella 4- 231 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-□□F□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 124 | 592 | 196 | 4500 | 6000 | - | 3100 | 2900 | 1550 | 485 | 592 | 196 |



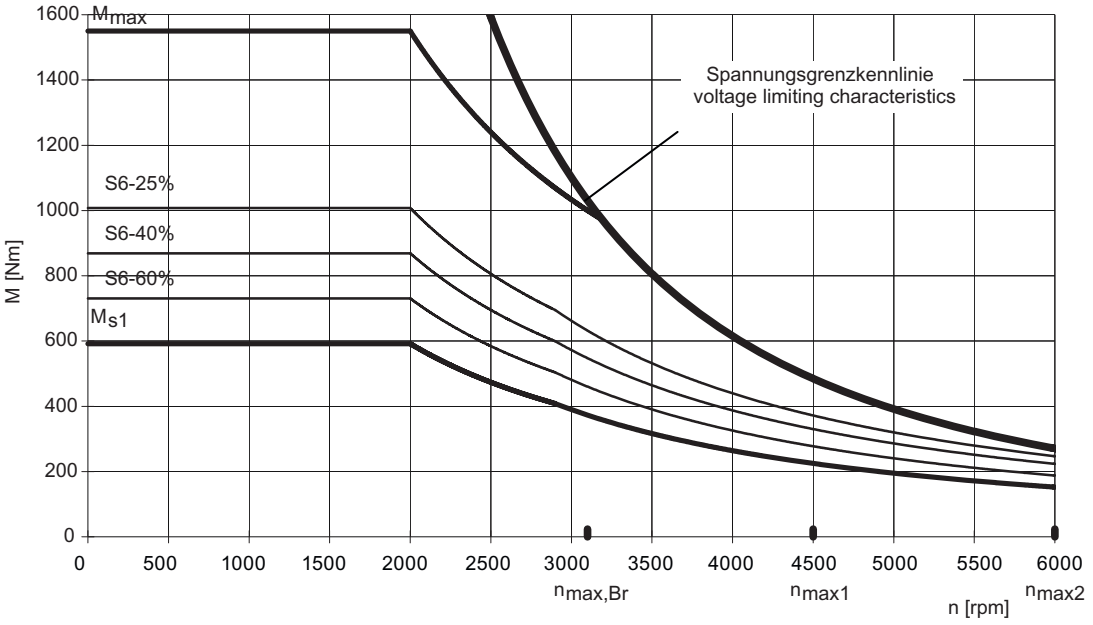
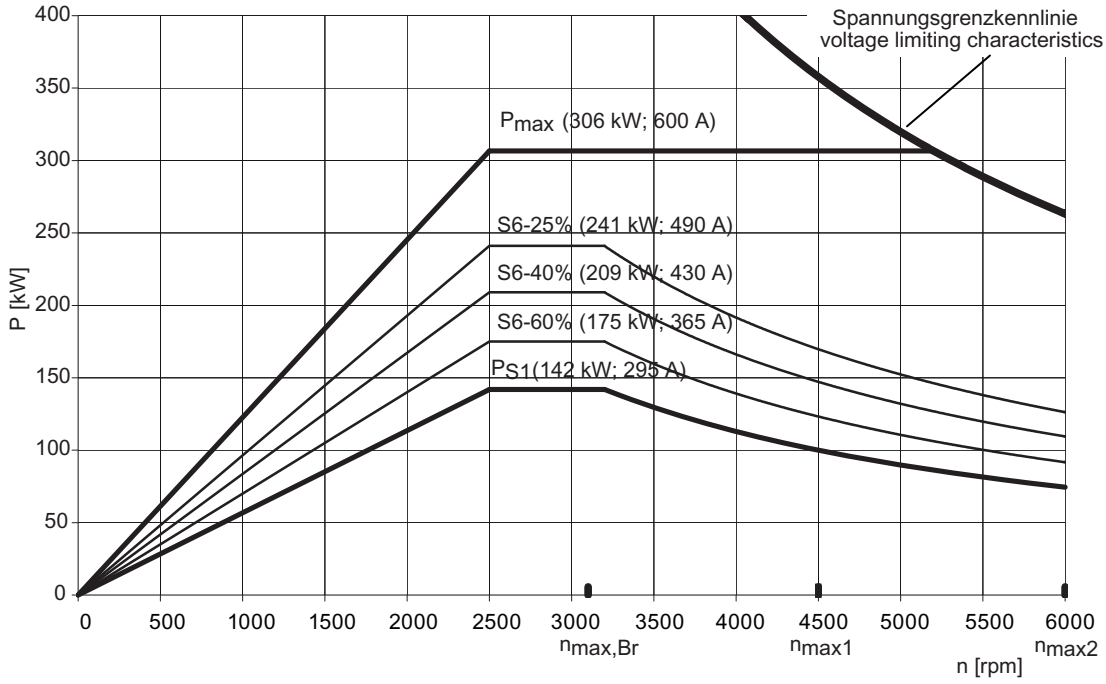



Tabella 4- 232 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-□□L□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 142 | 542 | 295 | 4500 | 6000 | - | 3100 | 3200 | 1170 | 600 | 542 | 295 |



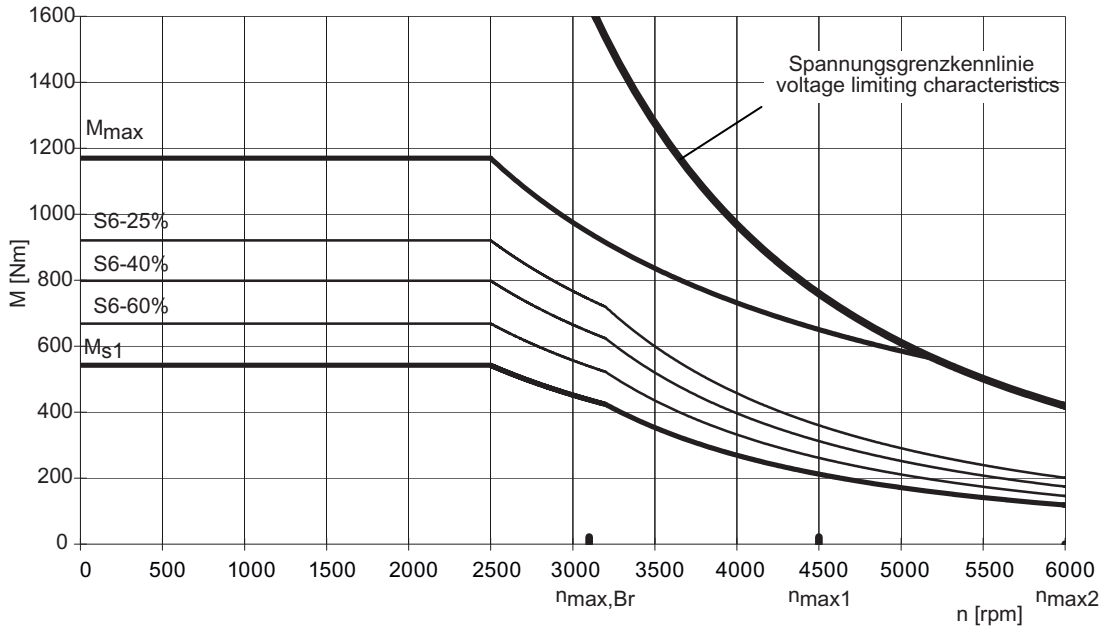
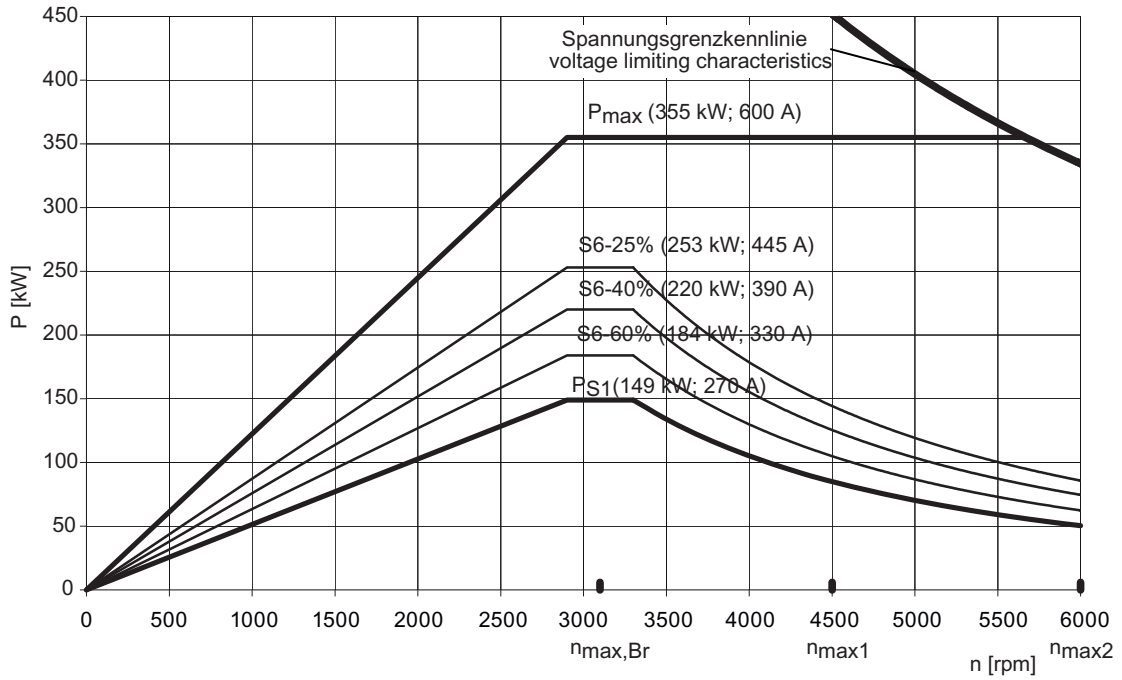



Tabella 4- 233 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-□□L□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 149 | 491 | 270 | 4500 | 6000 | - | 3100 | 3300 | 1170 | 600 | 491 | 270 |
| 2500 | 142 | 542 | 295 | | | | | 3400 | | | | |



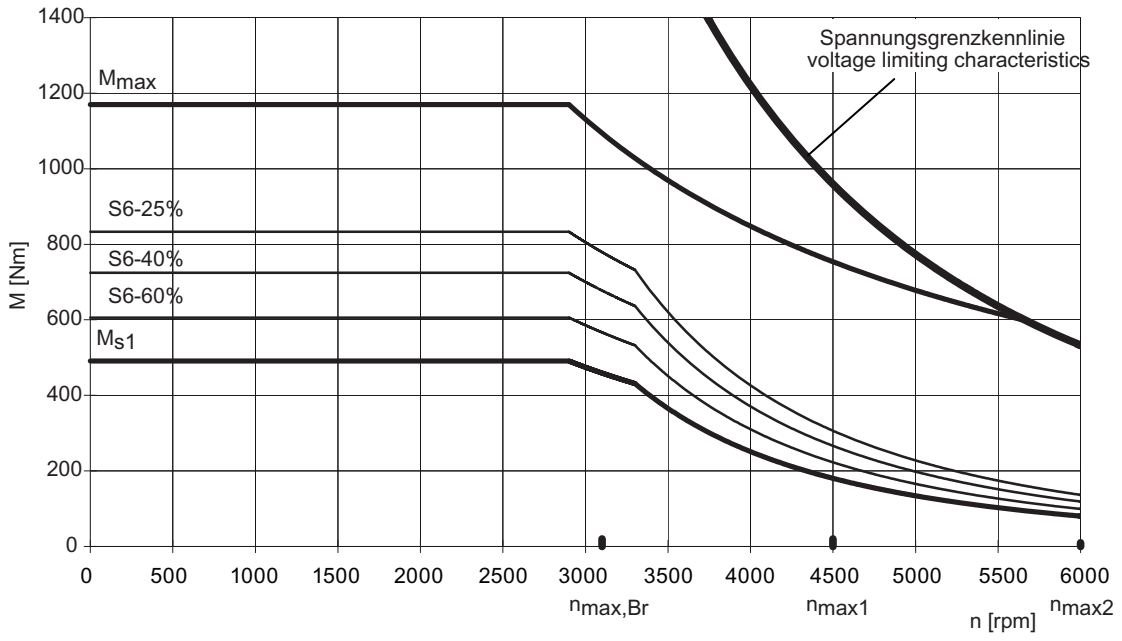
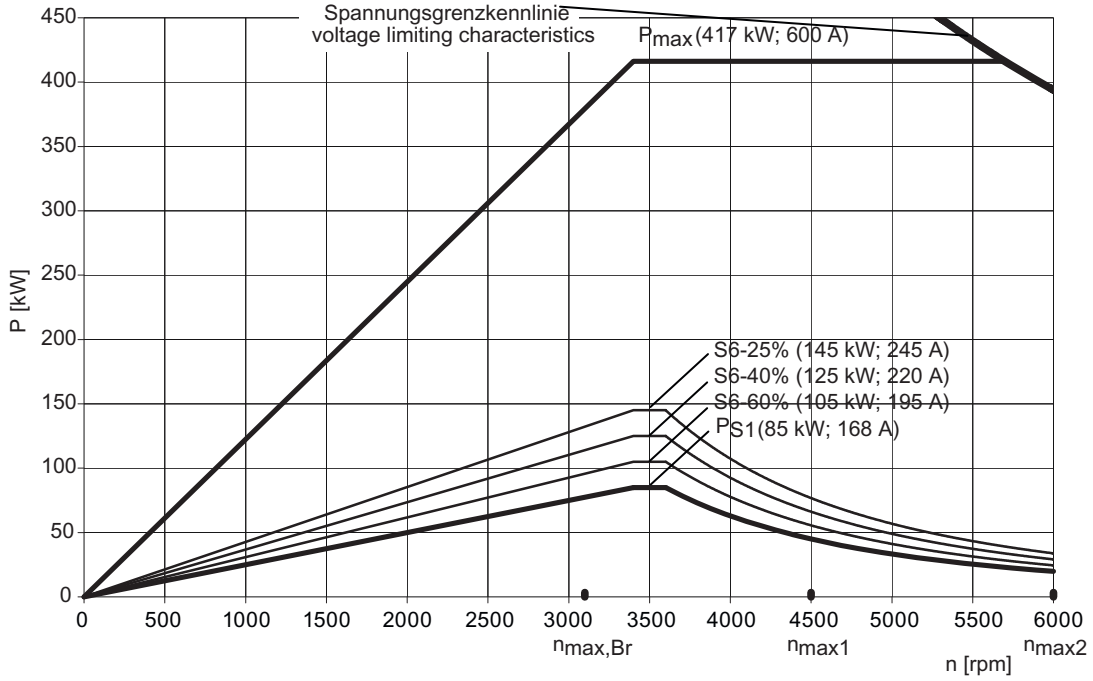



Tabella 4- 234 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-□□L□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3400 | 85 | 239 | 168 | 4500 | 6000 | - | 3100 | 3600 | 1170 | 600 | 239 | 168 |



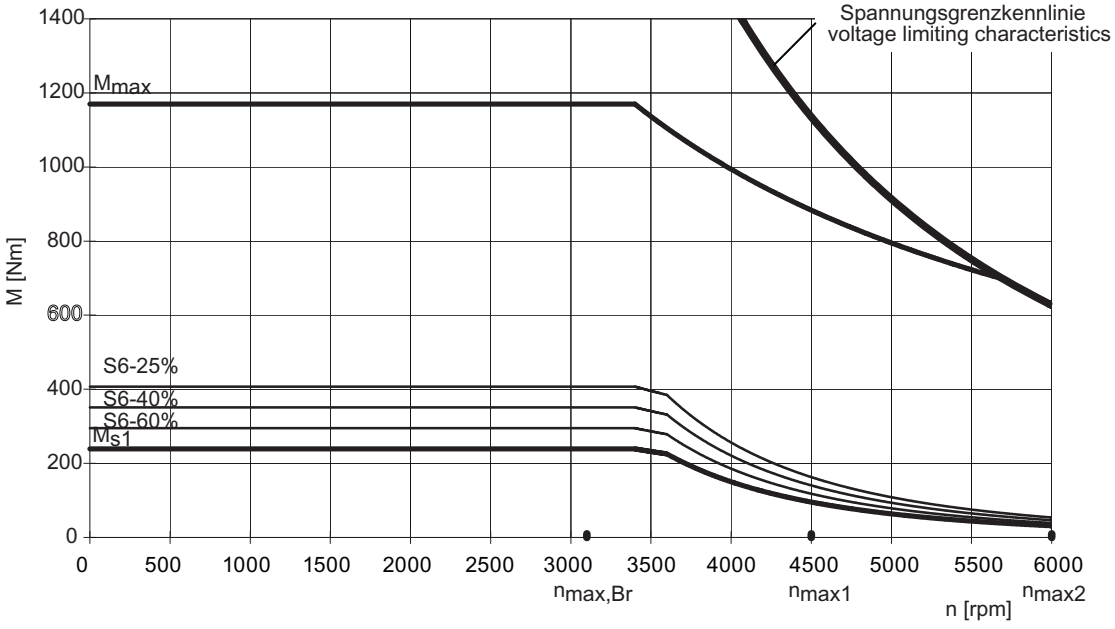
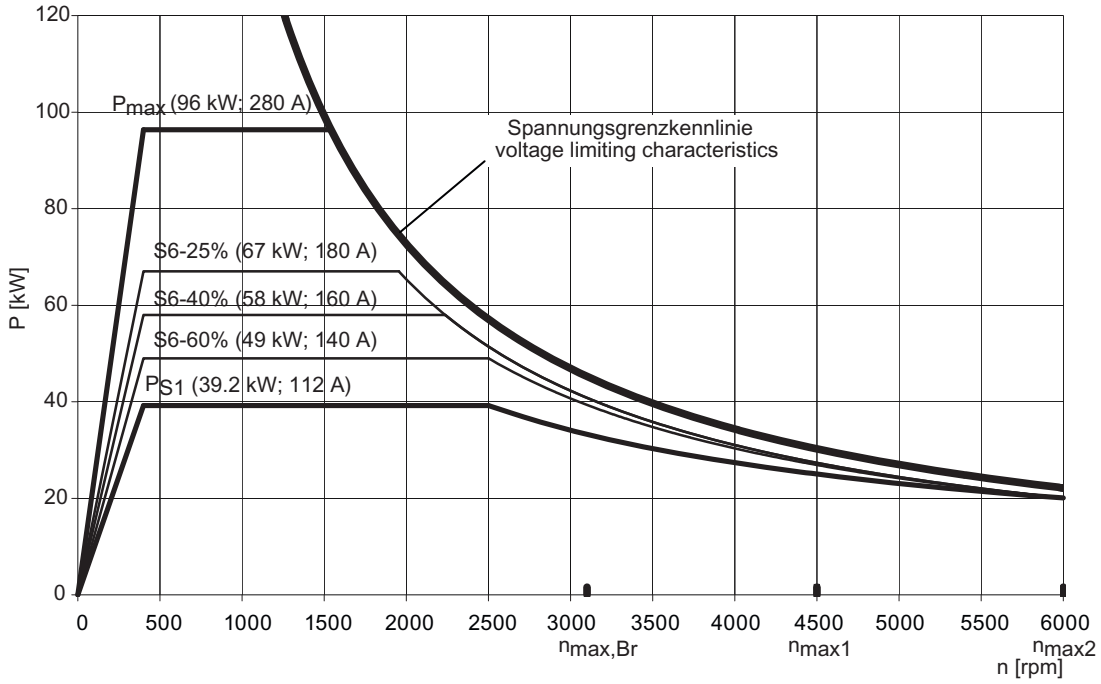



Tabella 4- 235 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-□□B□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 39,2 | 936 | 112 | 4500 | 6000 | - | 3100 | 2500 | 2300 | 280 | 936 | 112 |



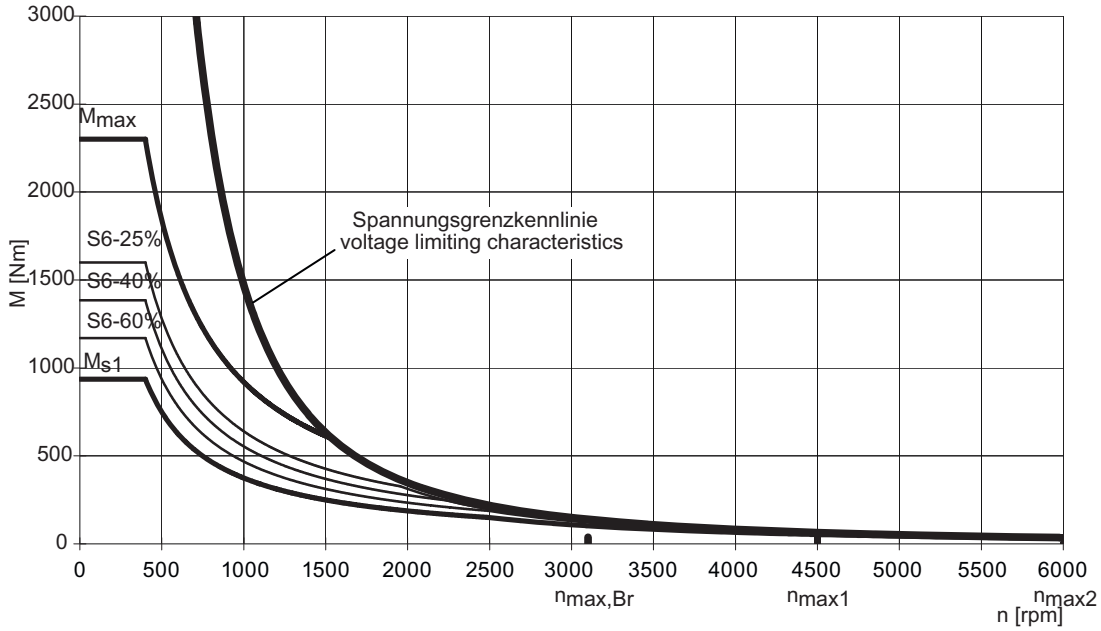
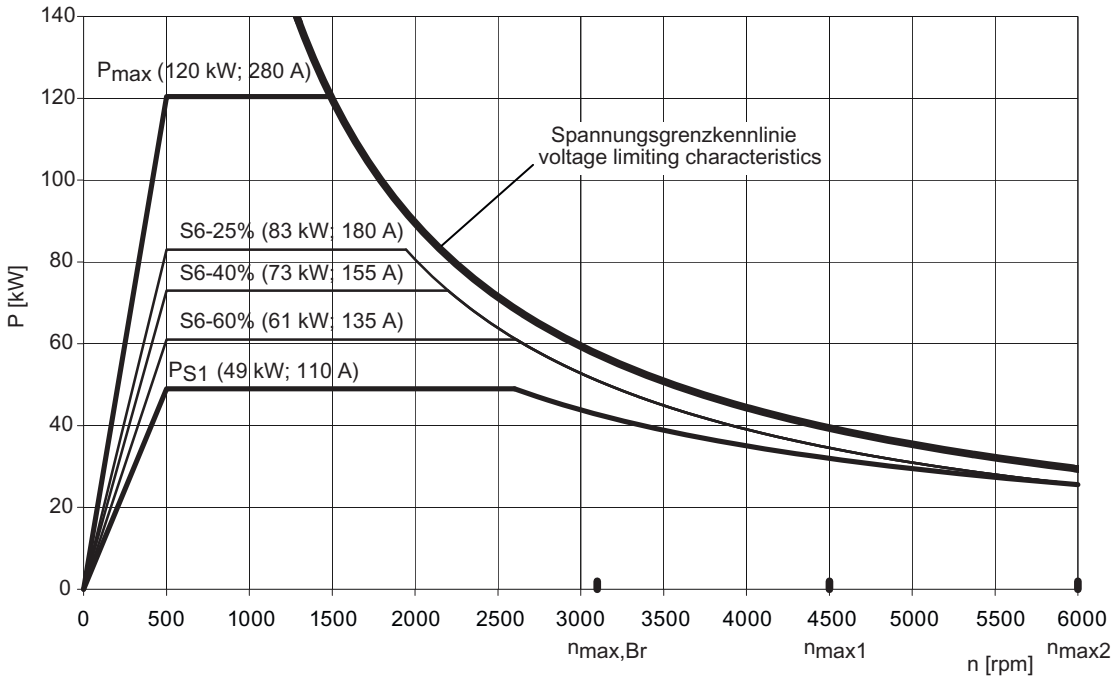



Tabella 4- 236 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-□□B□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 49 | 936 | 110 | 4500 | 6000 | - | 3100 | 2600 | 2300 | 280 | 936 | 110 |
| 400 | 39 | 936 | 112 | | | | | 3500 | | | | |



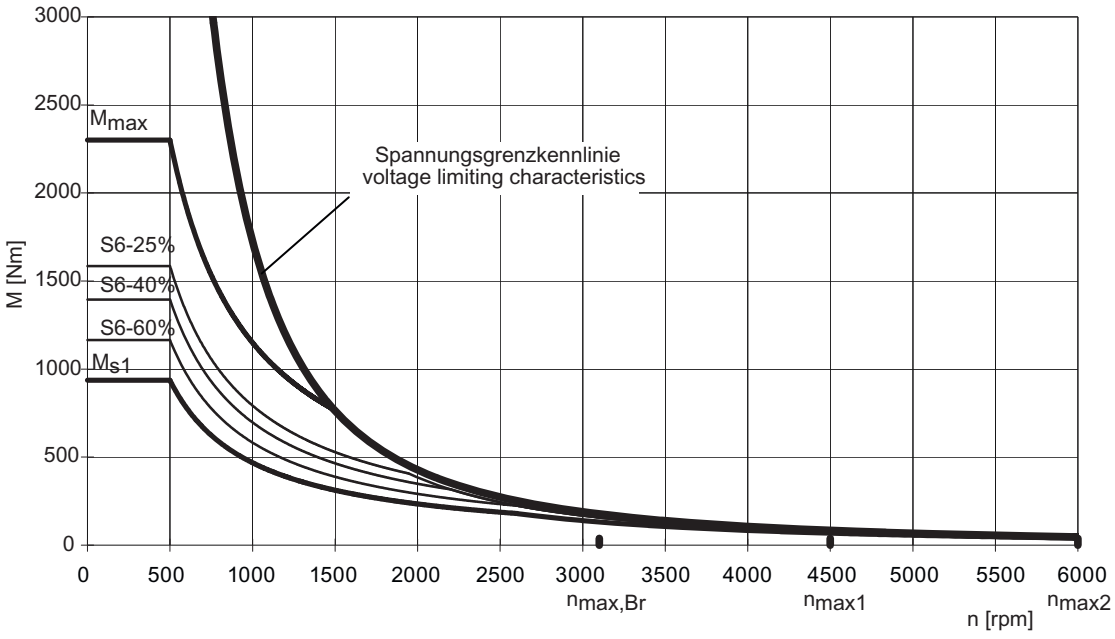
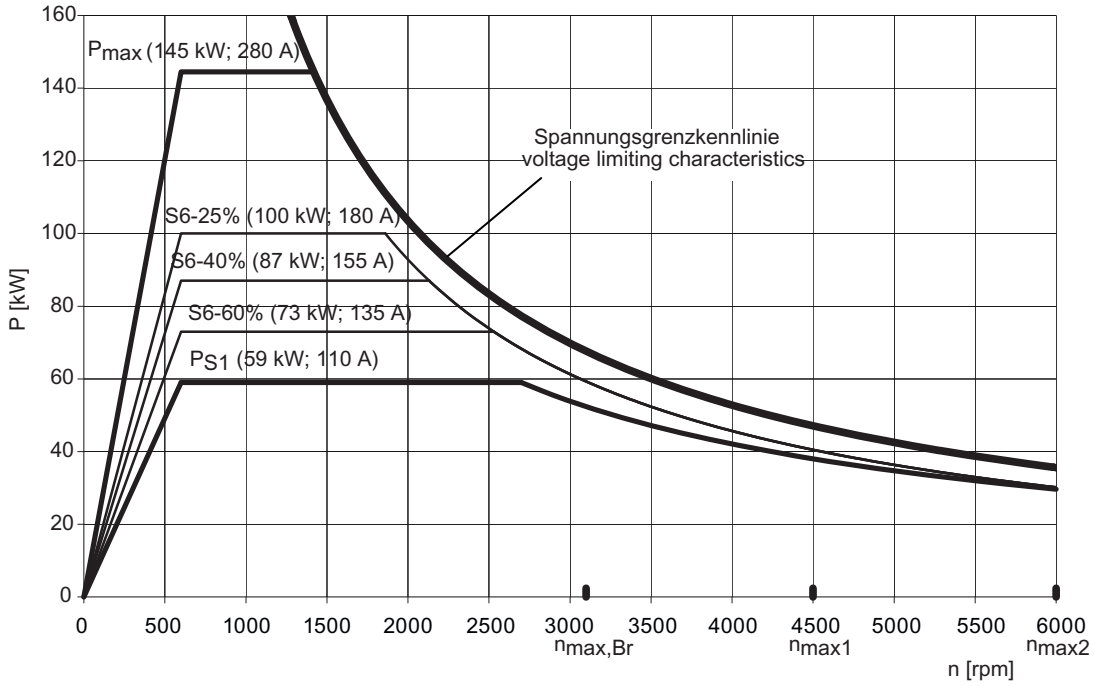



Tabella 4- 237 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-□□B□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 59 | 939 | 110 | 4500 | 6000 | - | 3100 | 2700 | 2300 | 280 | 939 | 110 |



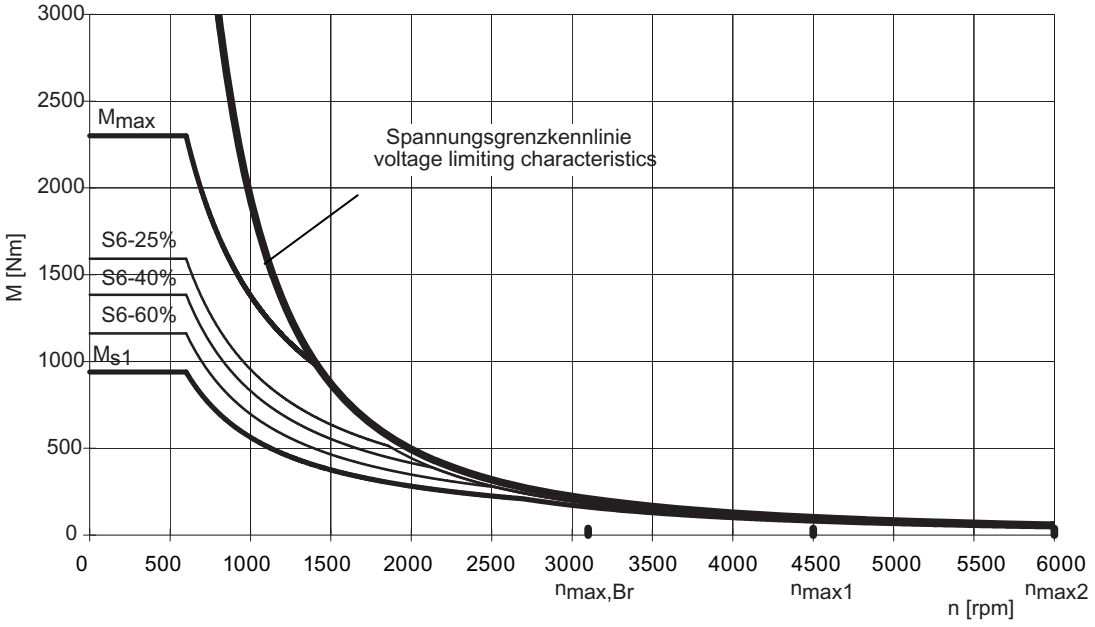
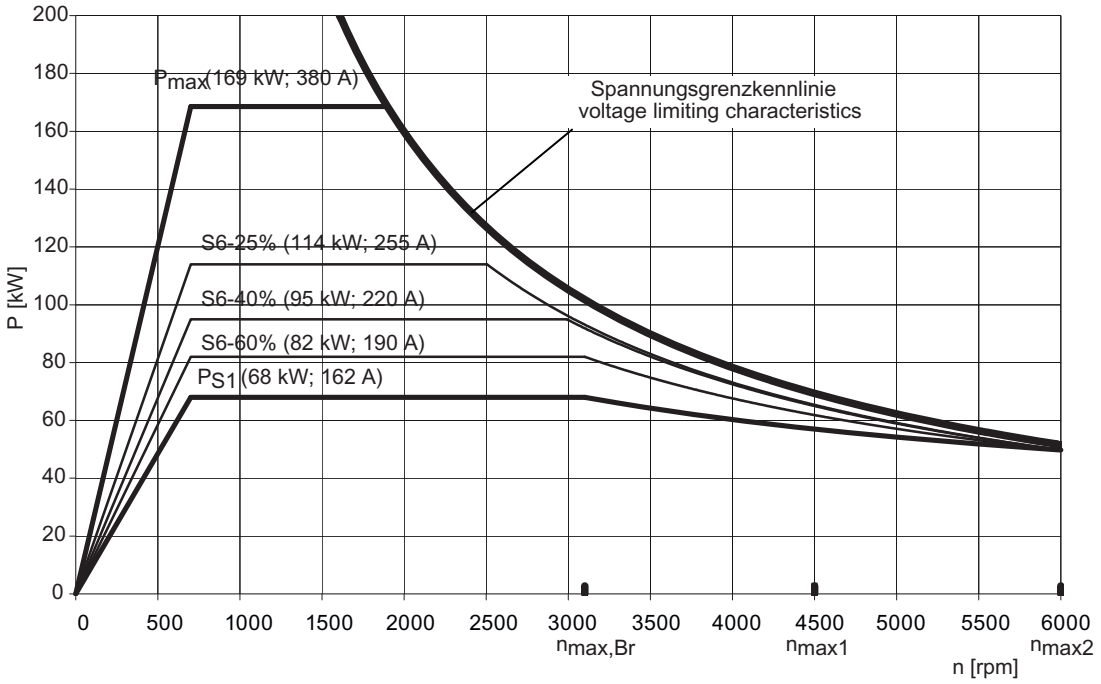



Tabella 4- 238 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-□□C□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 68 | 928 | 162 | 4500 | 6000 | - | 3100 | 3100 | 2300 | 380 | 928 | 162 |



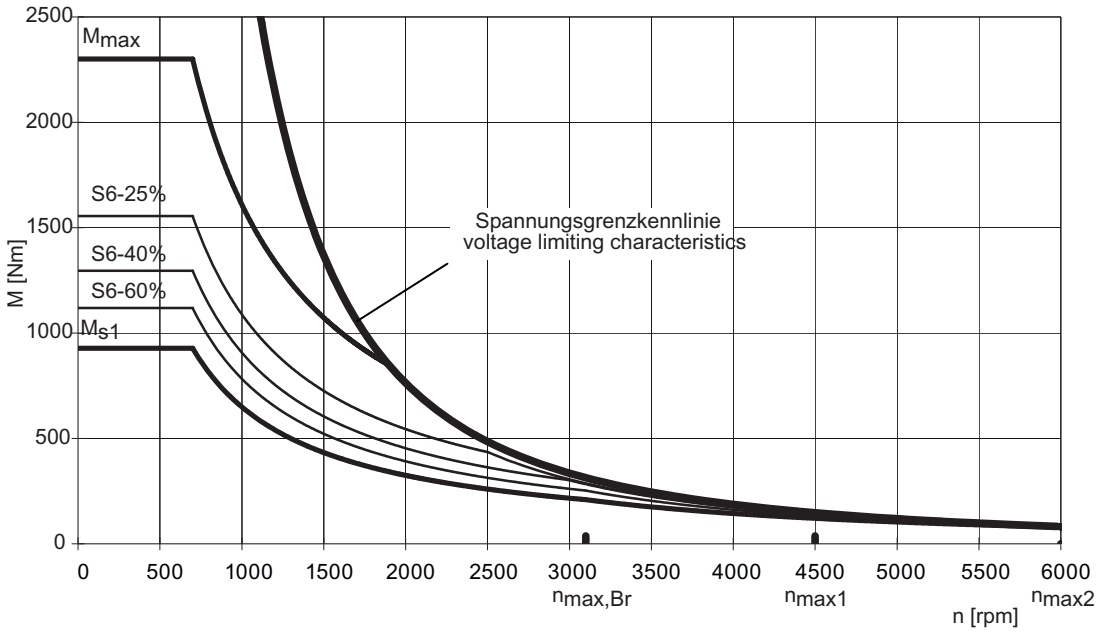
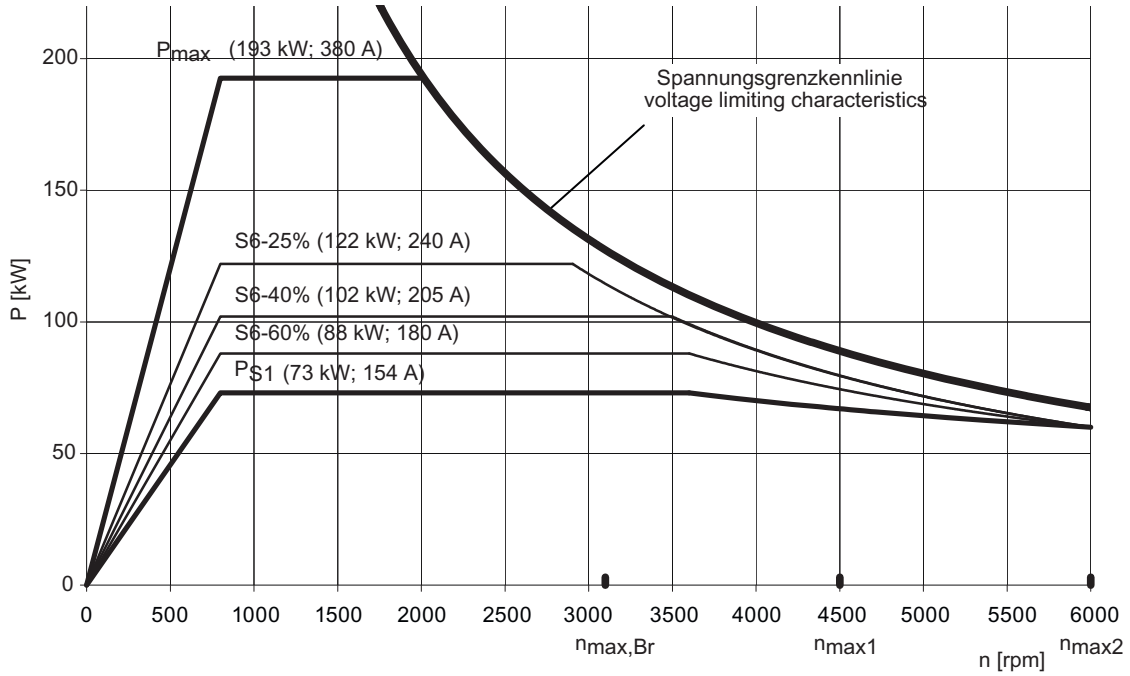



Tabella 4- 239 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-□□C□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 73 | 872 | 154 | 4500 | 6000 | - | 3100 | 3600 | 2300 | 380 | 872 | 154 |
| 700 | 68 | 928 | 162 | | | | | 4300 | | | | |



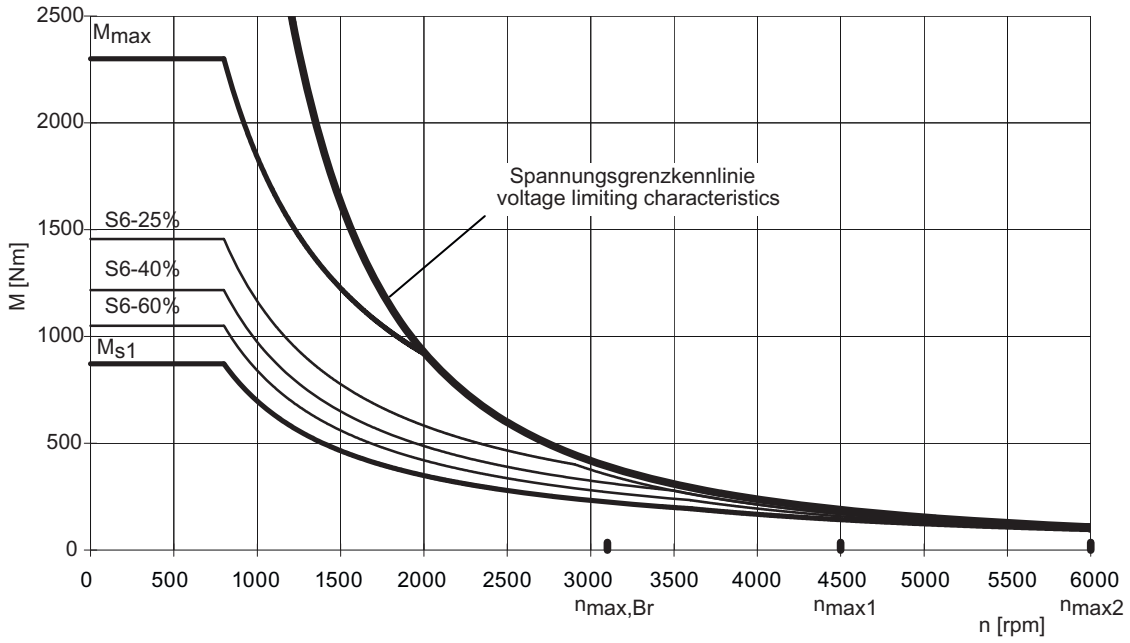
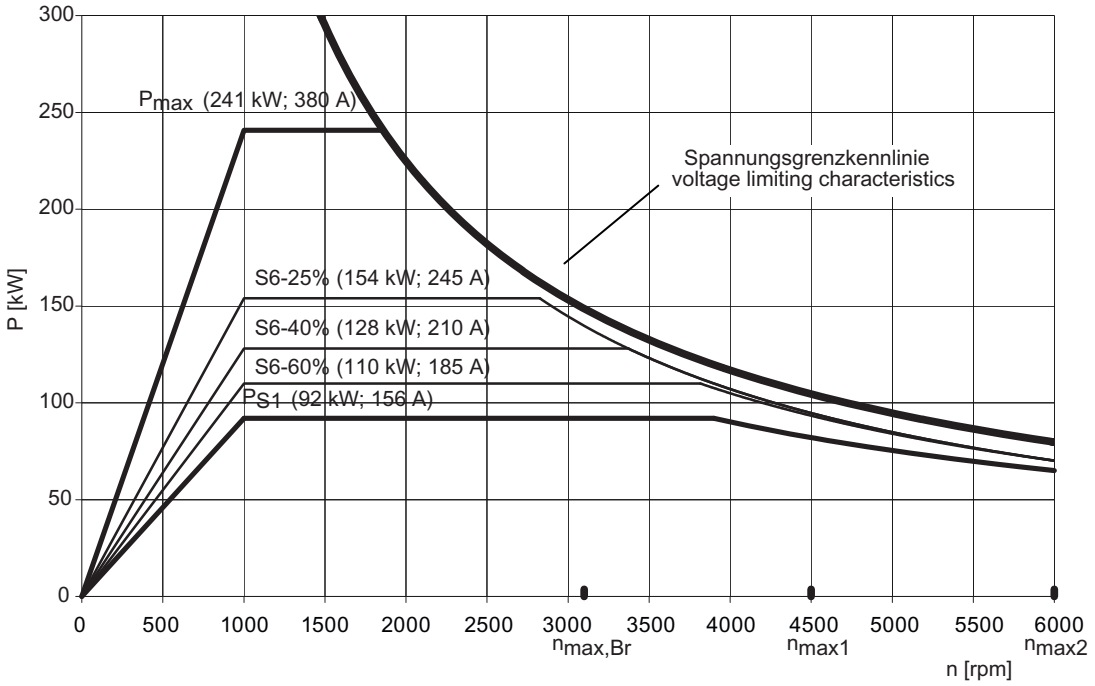



Tabella 4- 240 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-□□C□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 92 | 879 | 156 | 4500 | 6000 | - | 3100 | 3900 | 2300 | 380 | 879 | 156 |



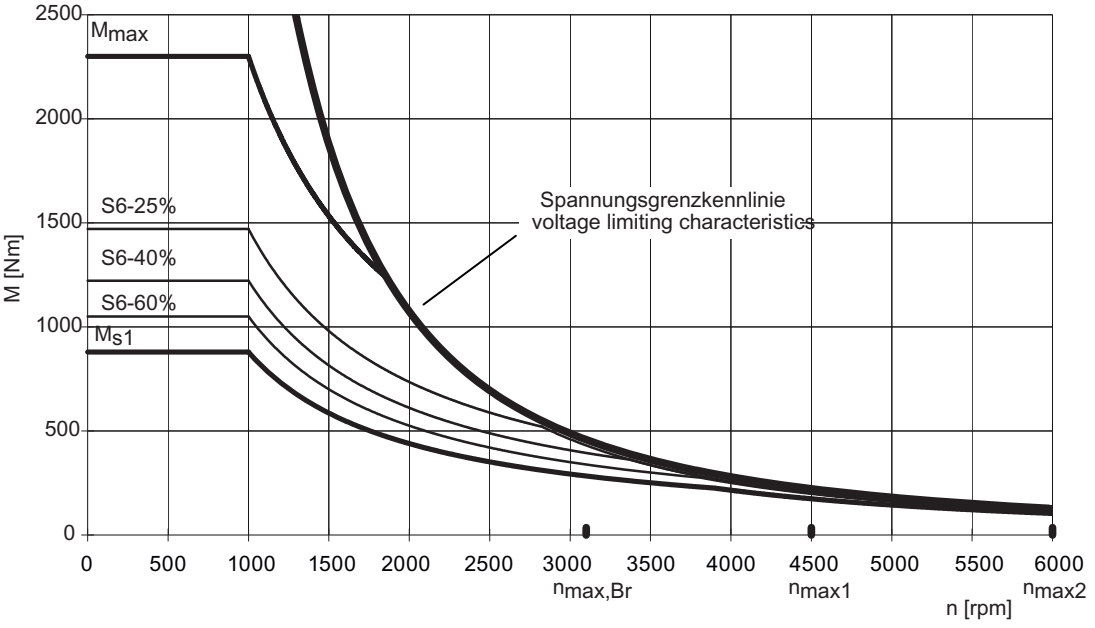
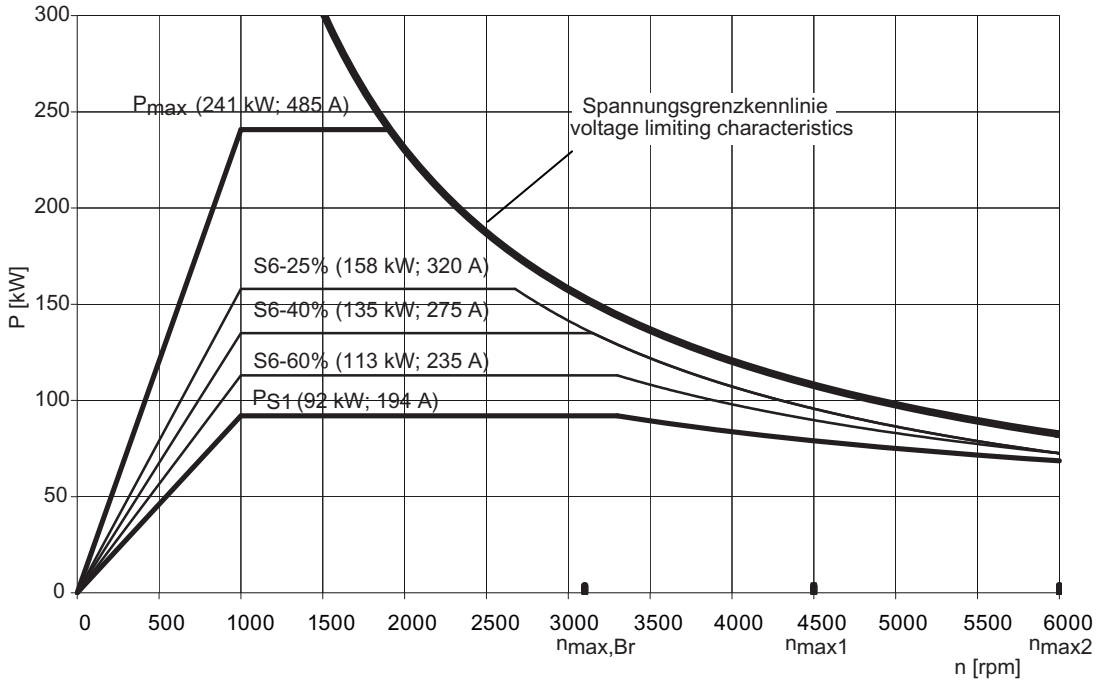



Tabella 4- 241 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-□□D□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 92 | 879 | 194 | 4500 | 6000 | - | 3100 | 3300 | 2300 | 485 | 879 | 194 |



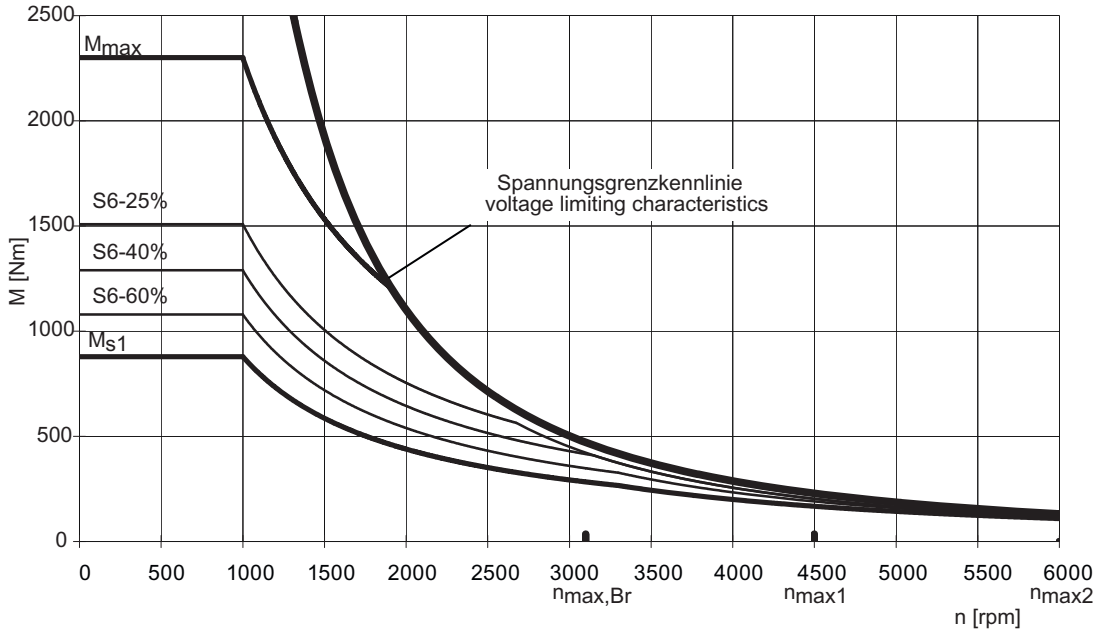
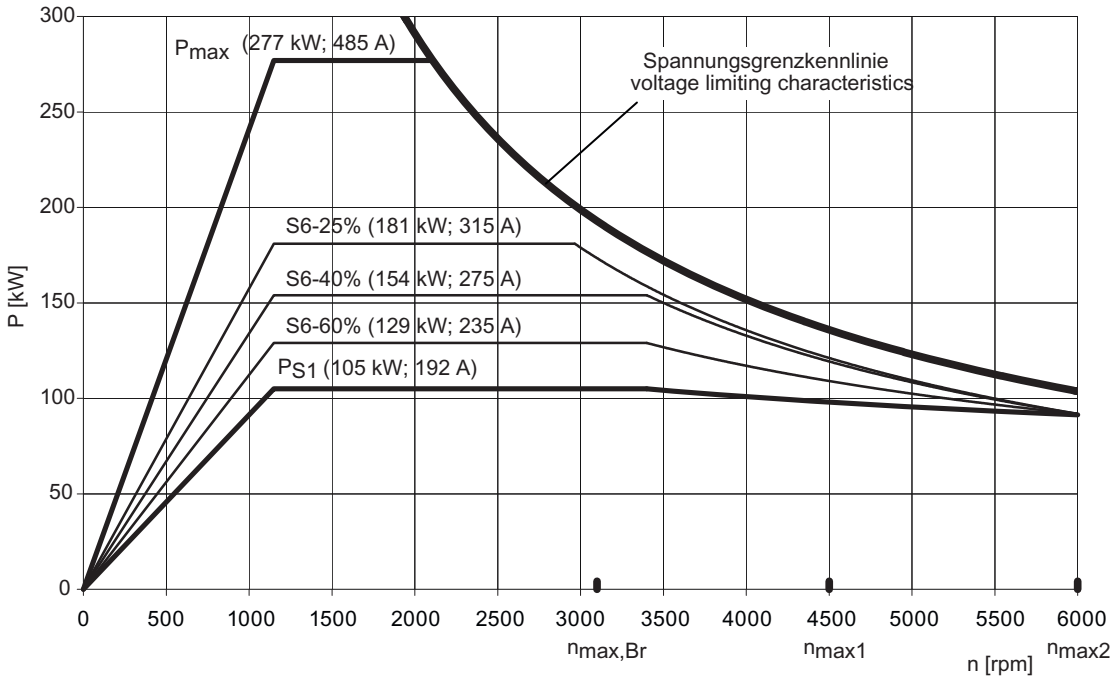



Tabella 4- 242 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-□□D□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 105 | 872 | 192 | 4500 | 6000 | - | 3100 | 3400 | 2300 | 485 | 872 | 192 |
| 1000 | 92 | 879 | 194 | | | | | 5800 | | | | |



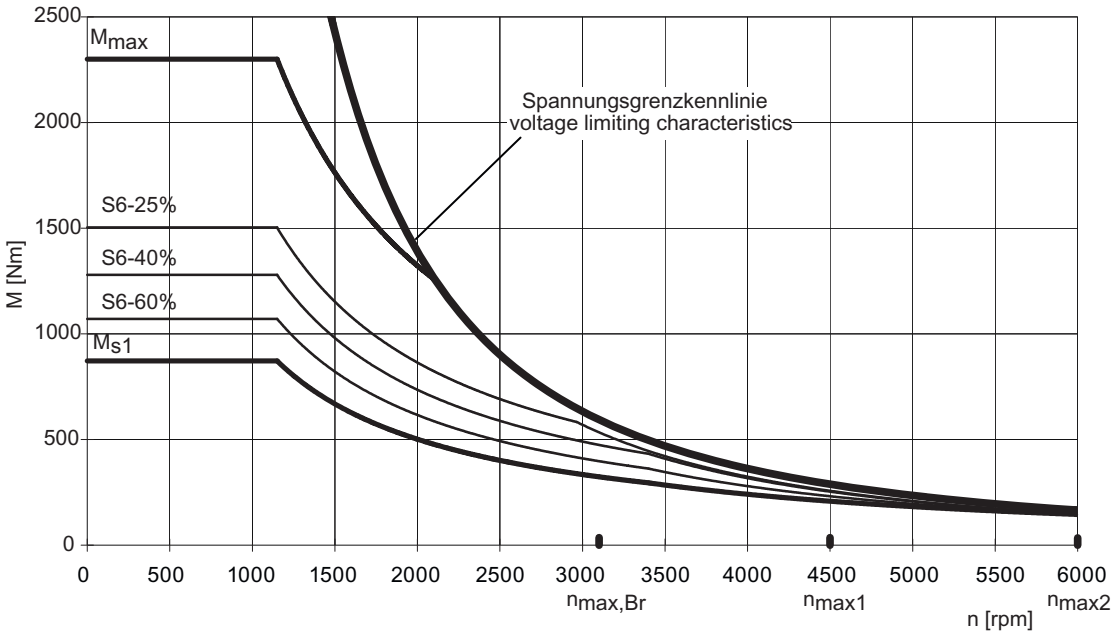
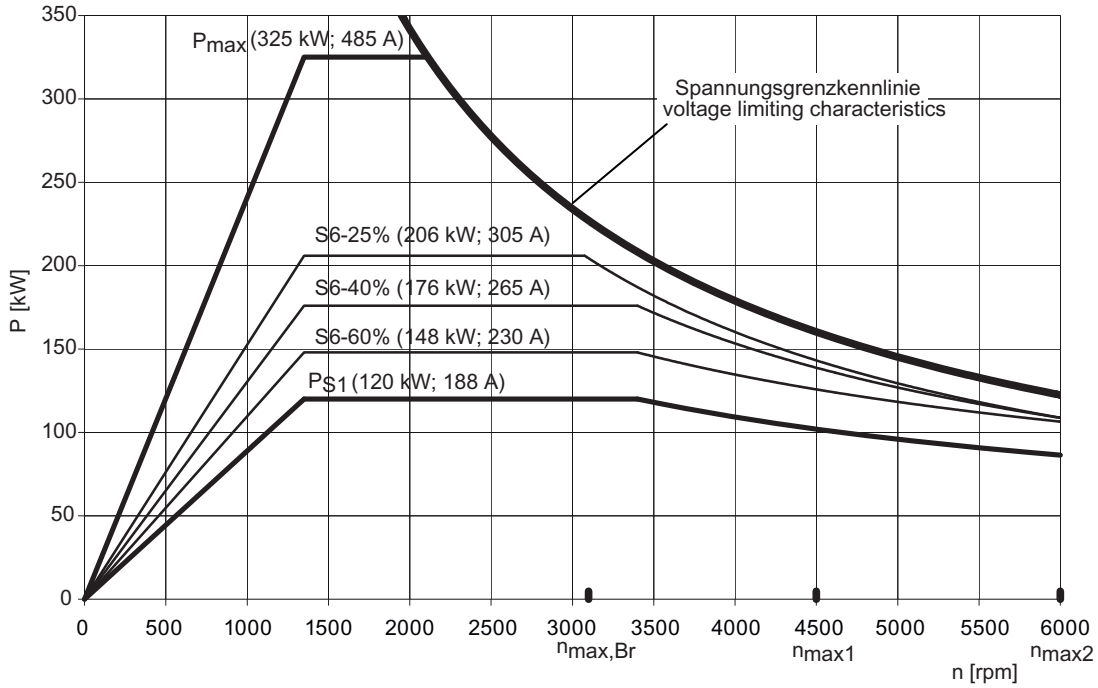



Tabella 4- 243 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-□□D□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 120 | 849 | 188 | 4500 | 6000 | - | 3100 | 3400 | 2300 | 485 | 849 | 188 |



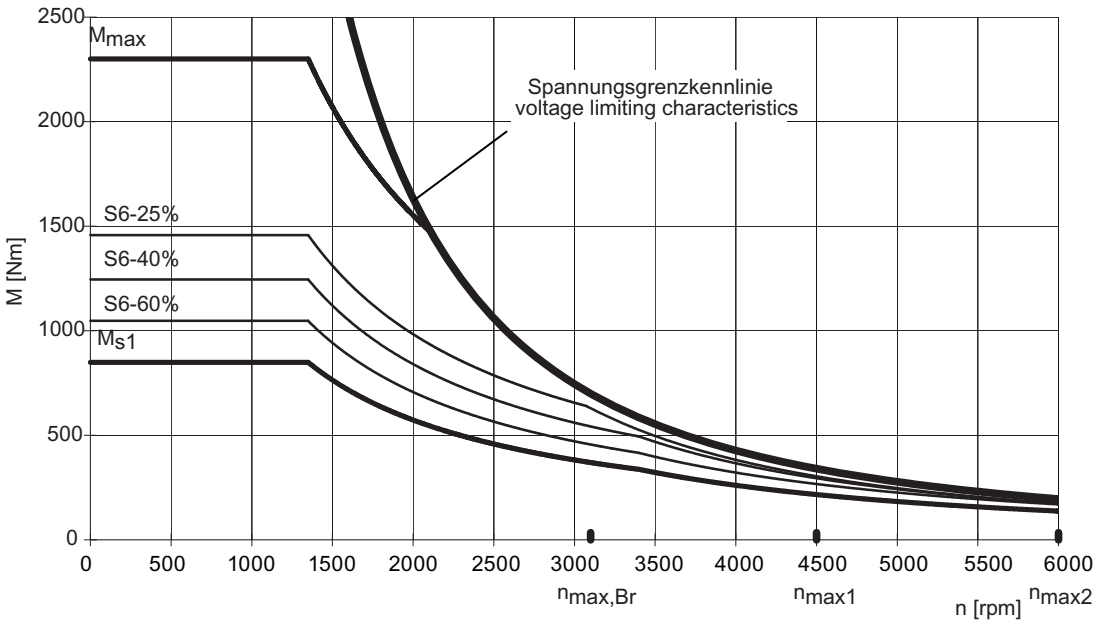
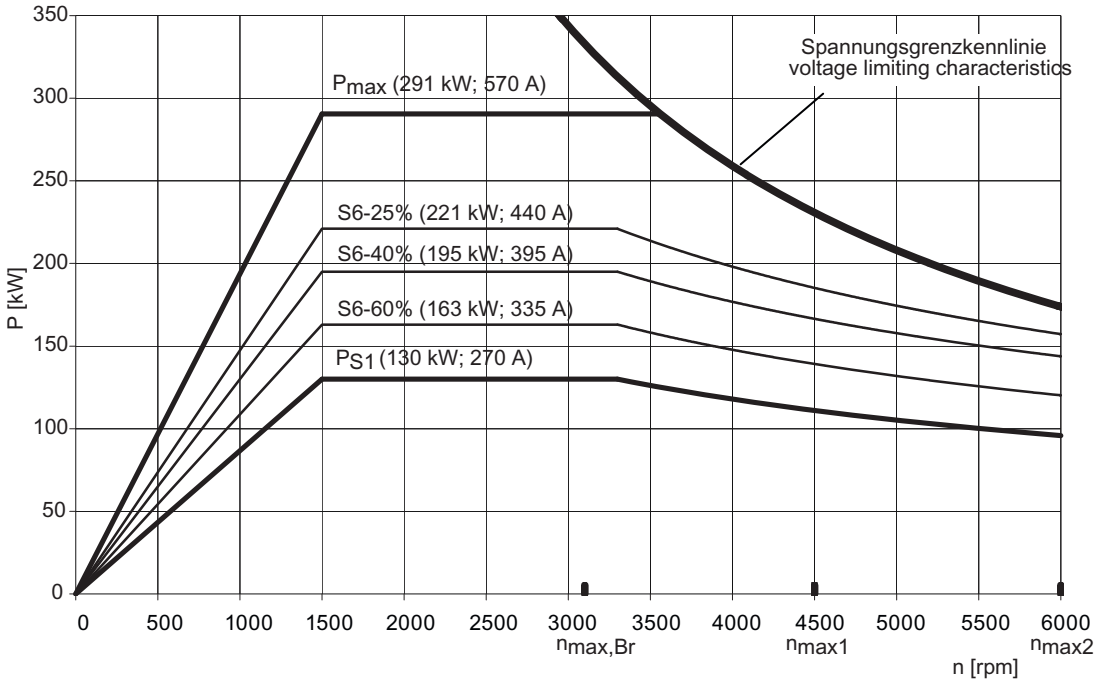



Tabella 4- 244 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-□□F□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 130 | 828 | 270 | 4500 | 6000 | - | 3100 | 3300 | 1850 | 570 | 828 | 270 |



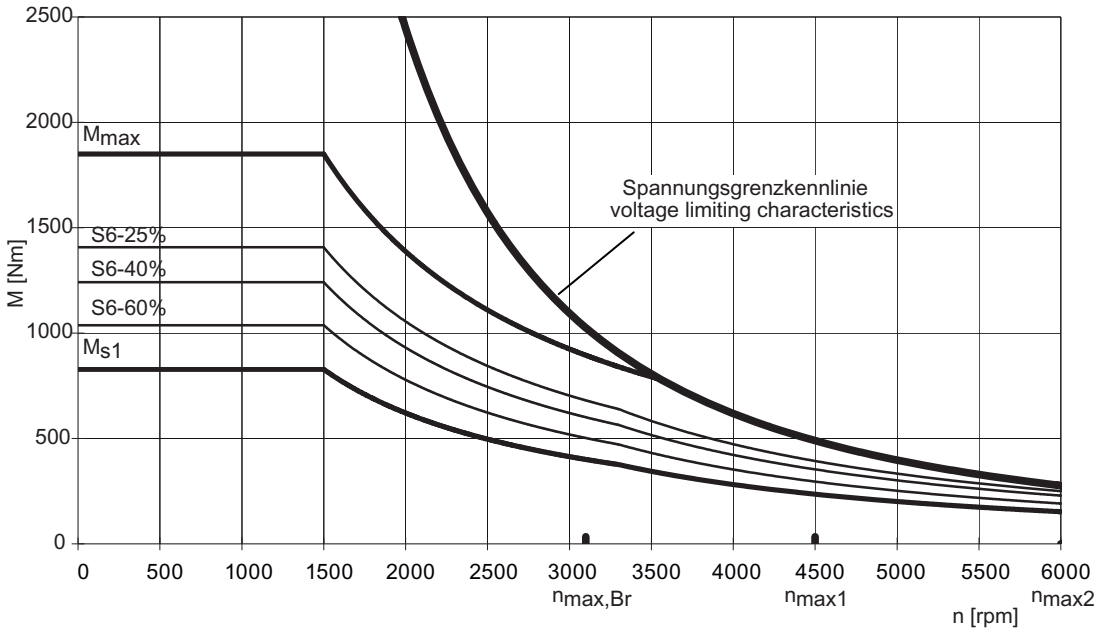
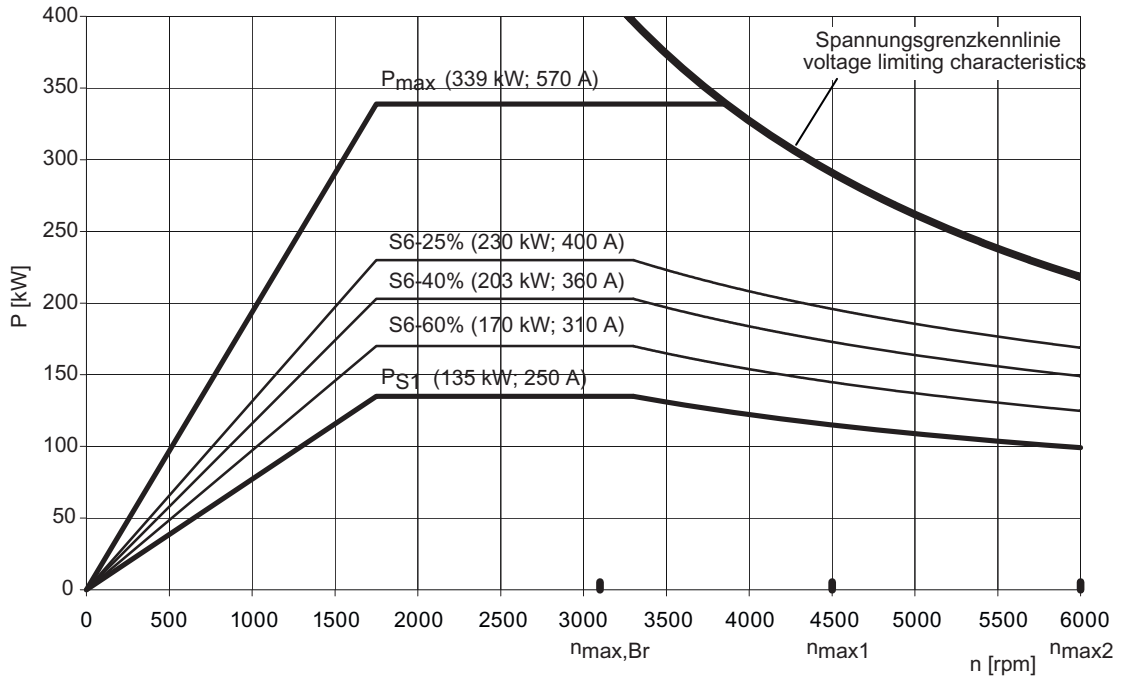



Tabella 4- 245 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-□□F□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 135 | 737 | 250 | 4500 | 6000 | - | 3100 | 3300 | 1850 | 570 | 737 | 250 |
| 1500 | 130 | 828 | 270 | | | | | 3500 | | | | |



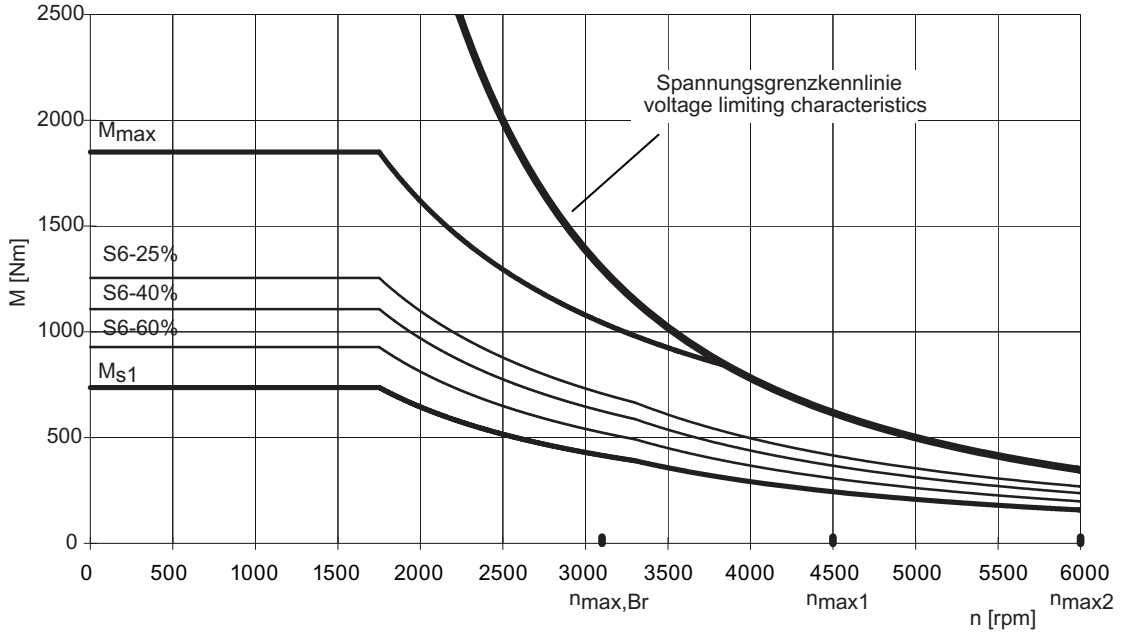
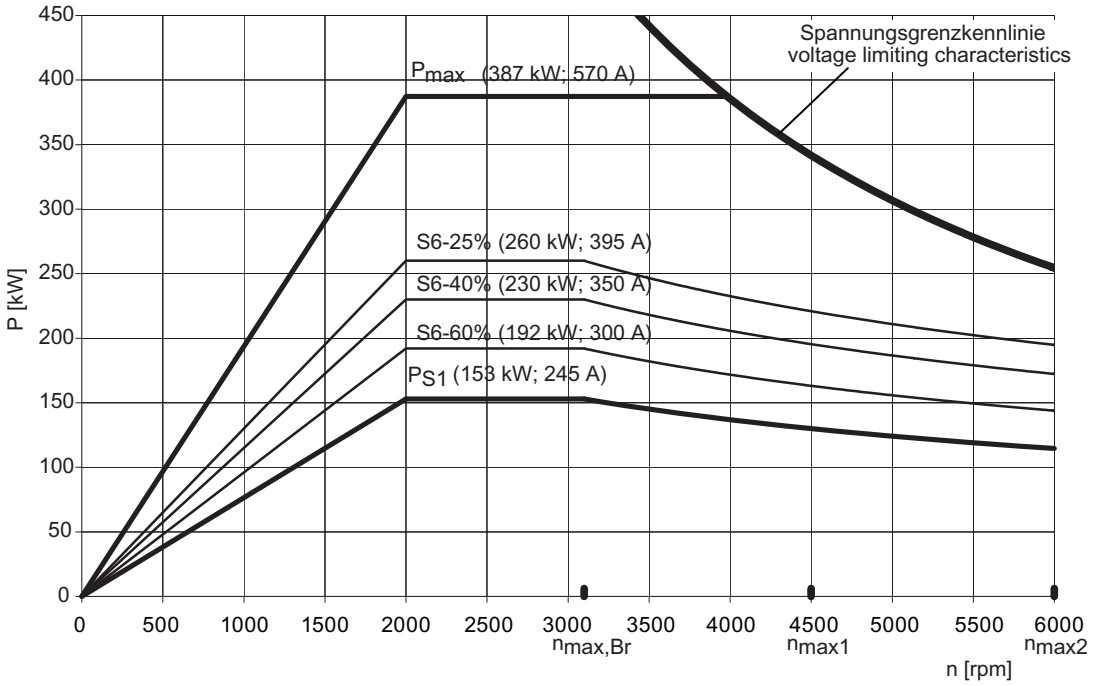



Tabella 4- 246 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-□□F□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 153 | 731 | 245 | 4500 | 6000 | - | 3100 | 3100 | 1850 | 570 | 731 | 245 |



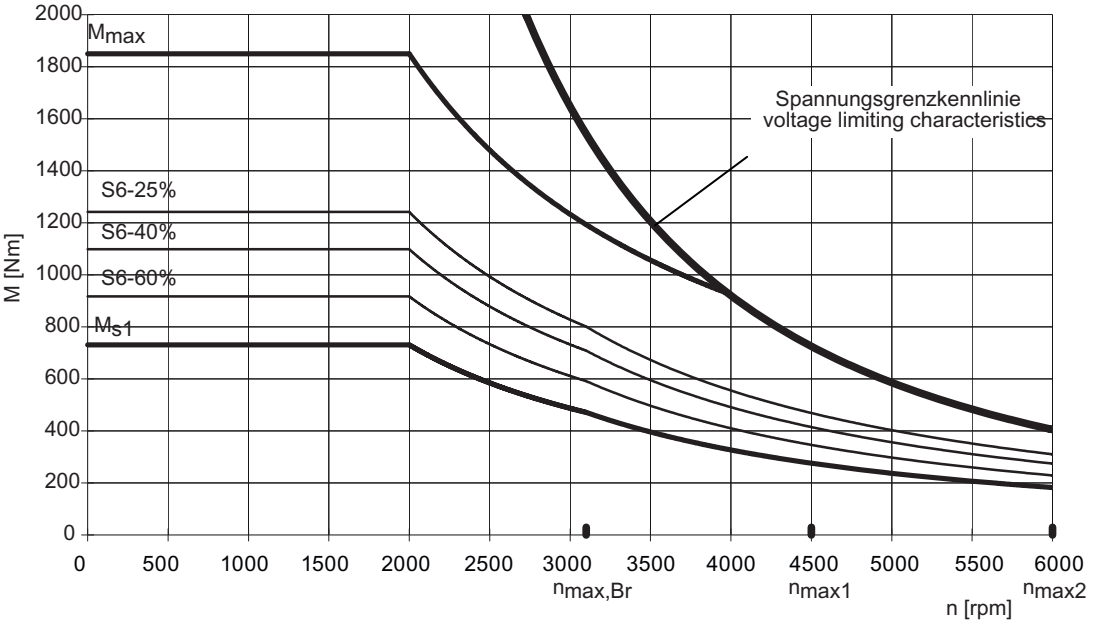
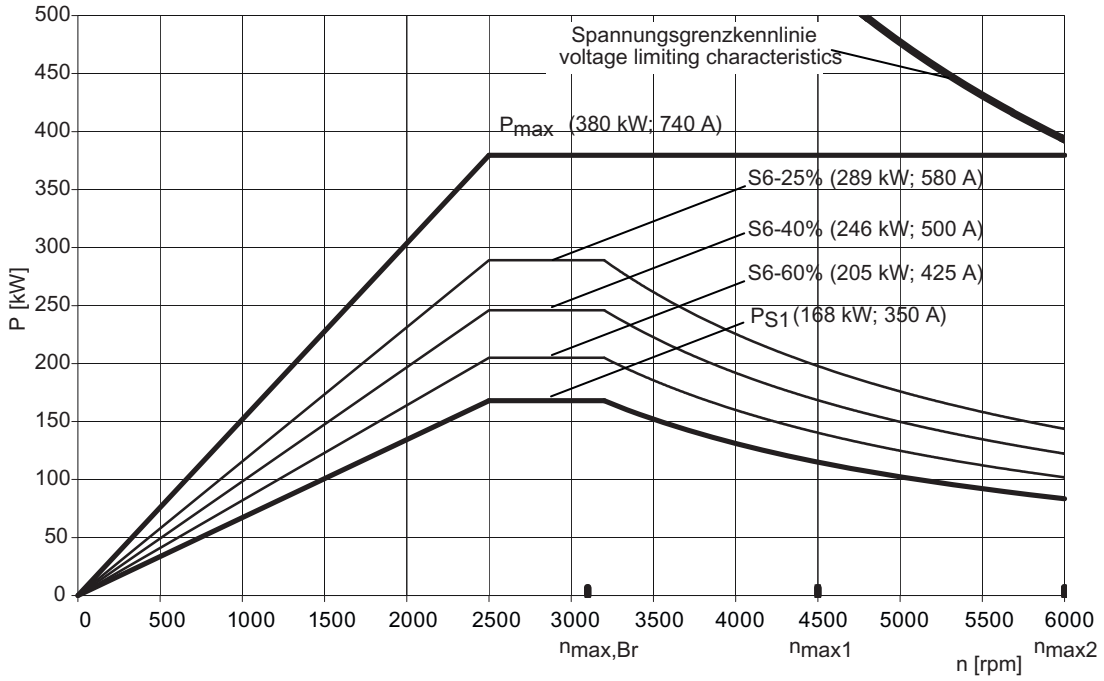



Tabella 4- 247 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-□□L□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 168 | 642 | 350 | 4500 | 6000 | - | 3100 | 3200 | 1450 | 740 | 642 | 350 |



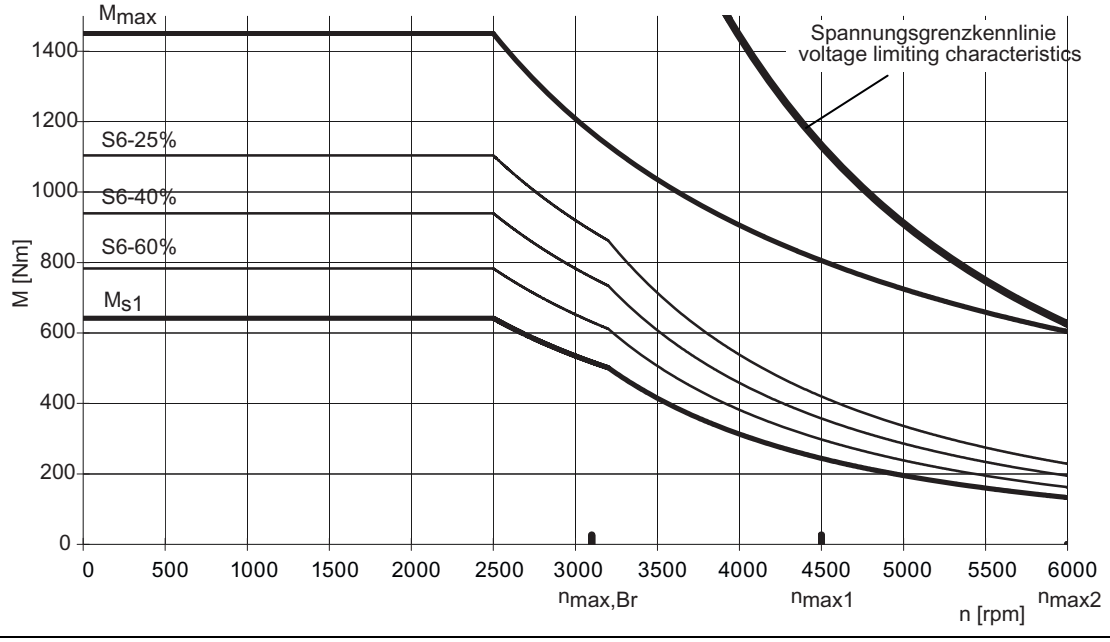
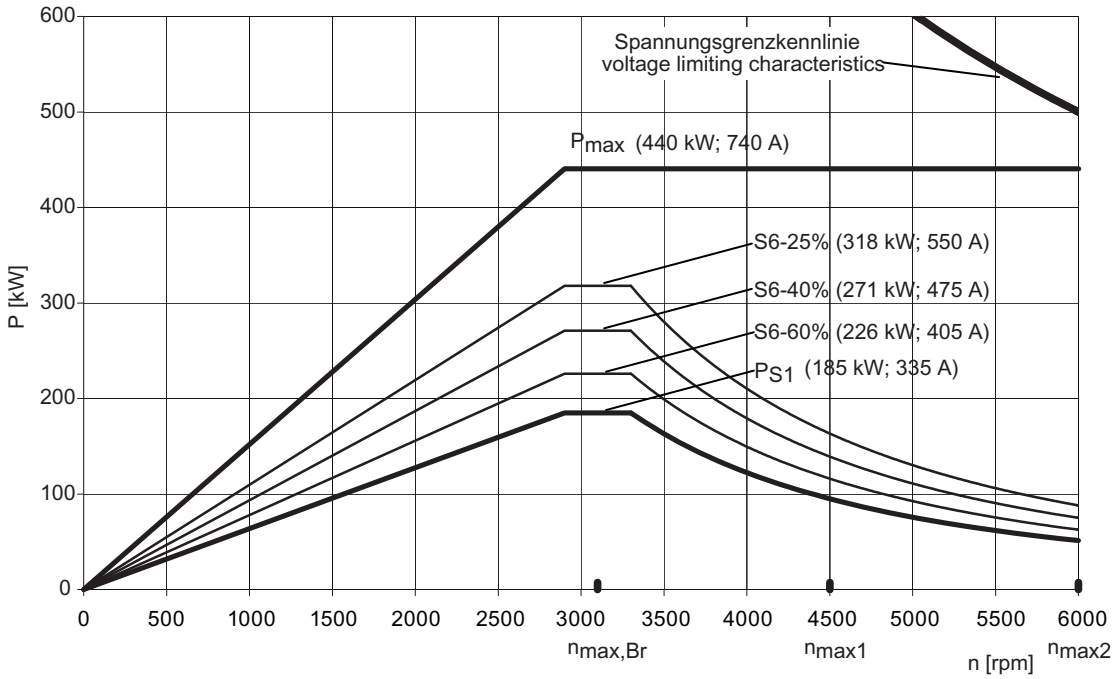



Tabella 4- 248 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-□□L□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 185 | 609 | 335 | 4500 | 6000 | - | 3100 | 3300 | 1450 | 740 | 609 | 335 |
| 2500 | 168 | 642 | 350 | | | | | 3500 | | | | |



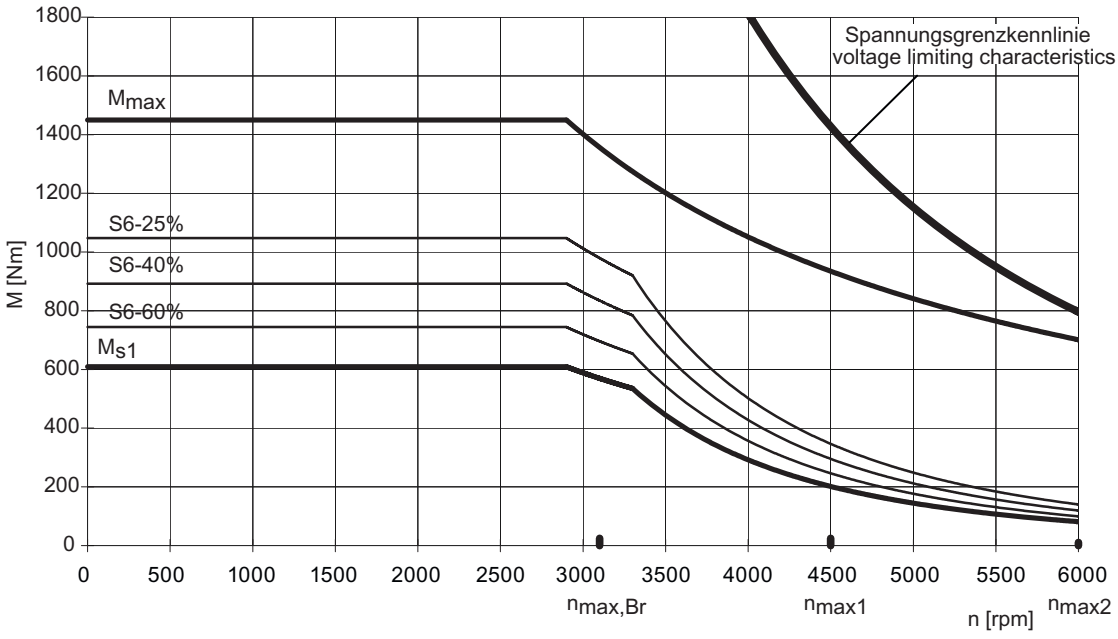
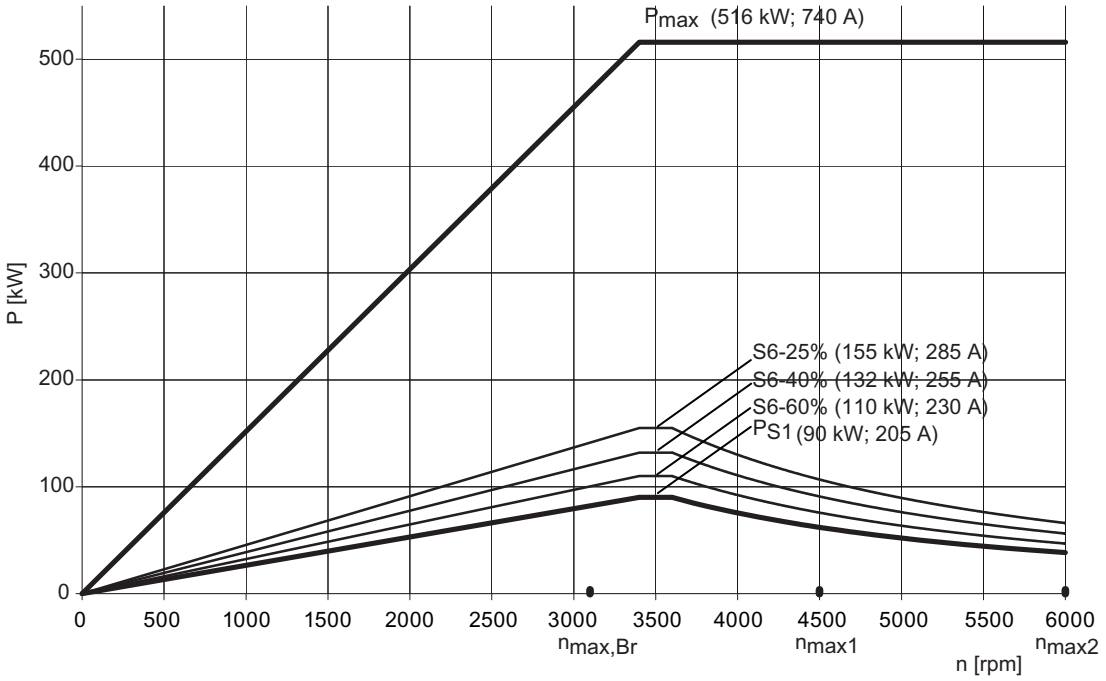



Tabella 4- 249 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-□□L□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3400 | 90 | 253 | 205 | 4500 | 6000 | - | 3100 | 3600 | 1450 | 740 | 253 | 205 |



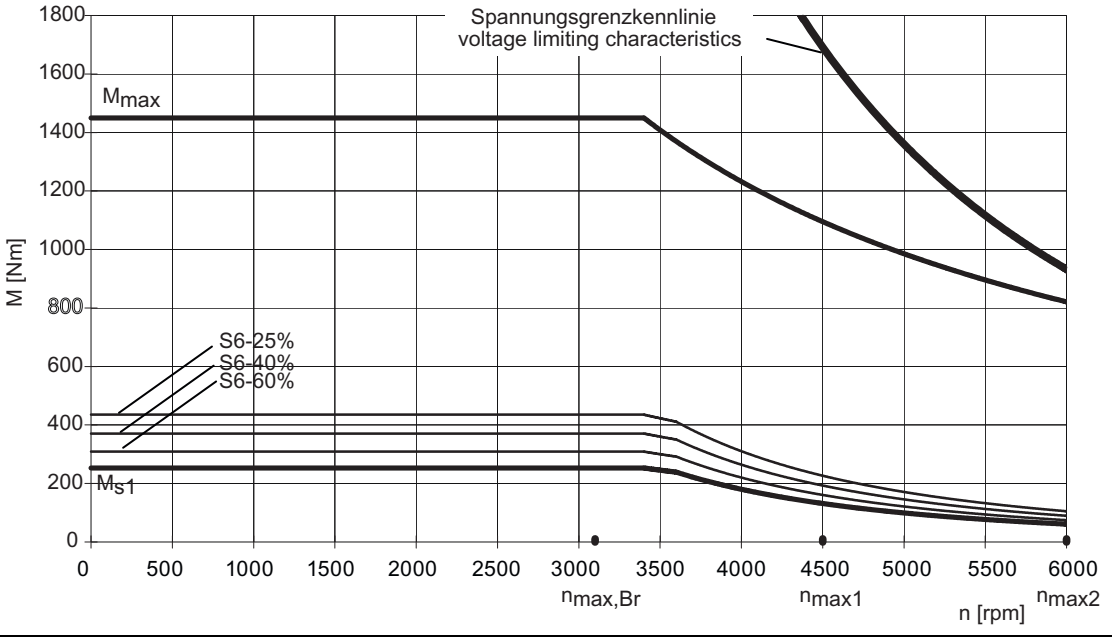
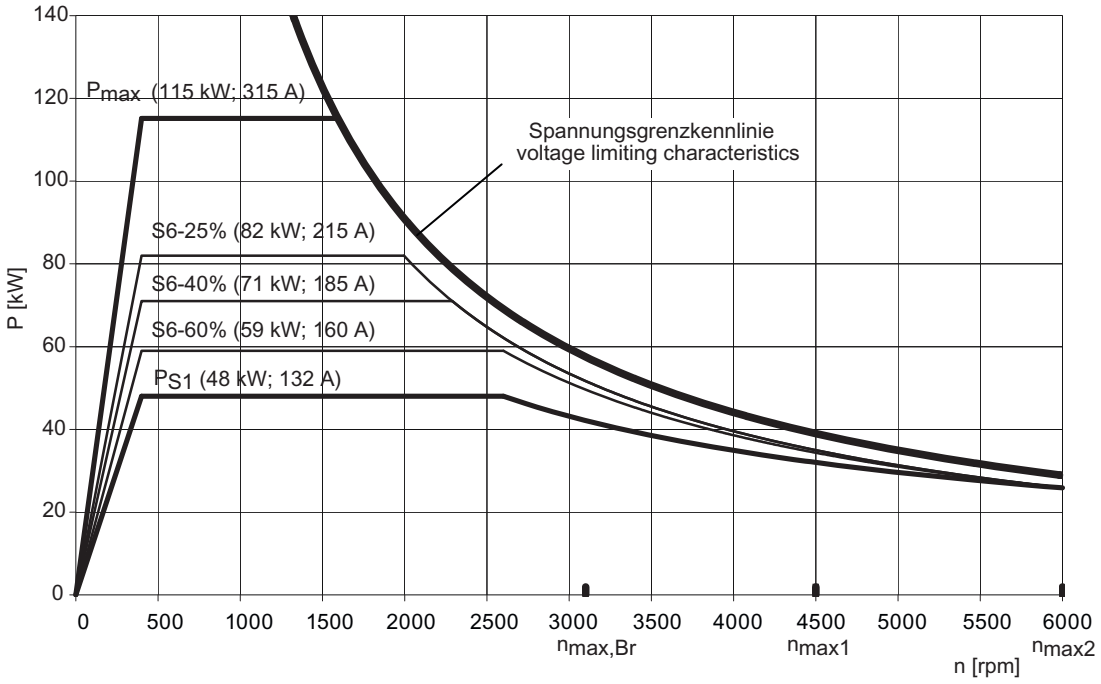



Tabella 4- 250 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-□□B□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 48 | 1146 | 132 | 4500 | 6000 | - | 3100 | 2600 | 2750 | 315 | 1146 | 132 |



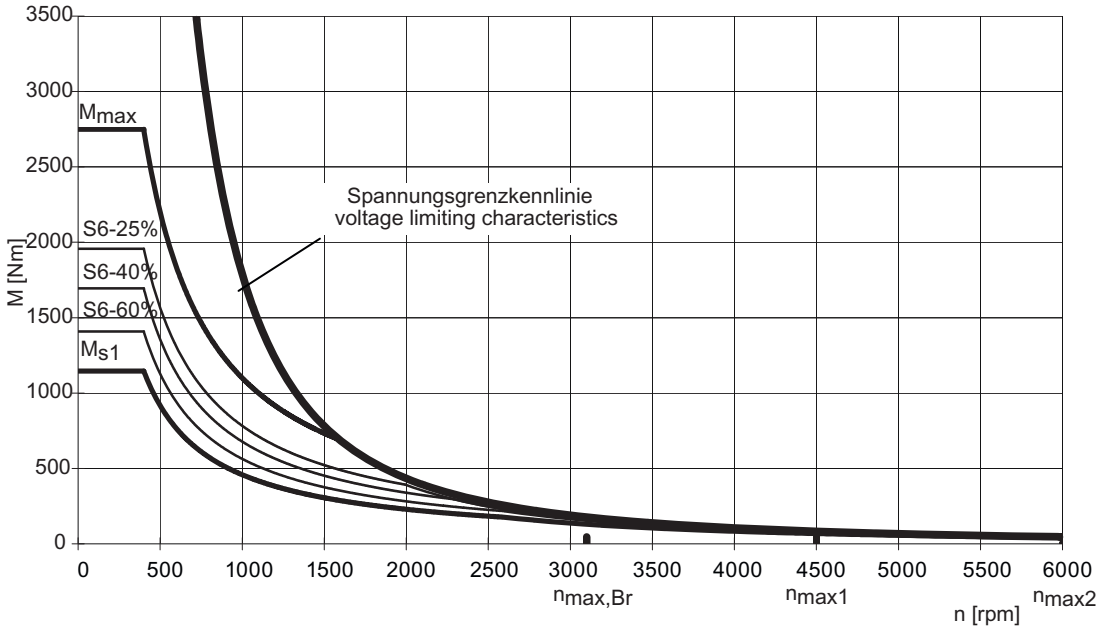
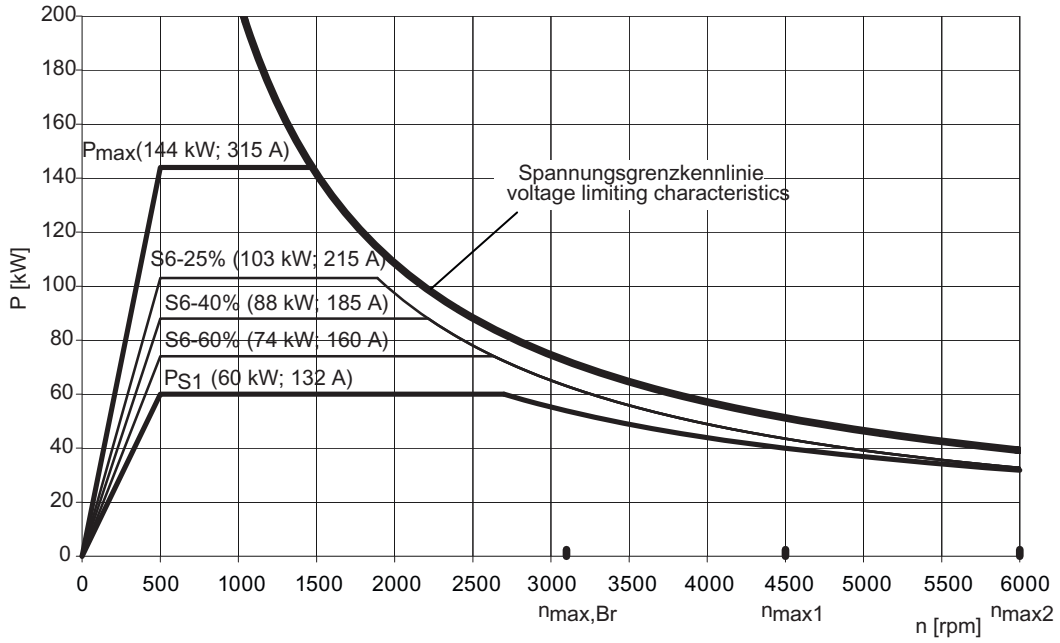



Tabella 4- 251 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-□□B□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 60 | 1146 | 132 | 4500 | 6000 | - | 3100 | 2700 | 2750 | 315 | 1146 | 132 |
| 400 | 48 | 1146 | 132 | | | | | 3600 | | | | |



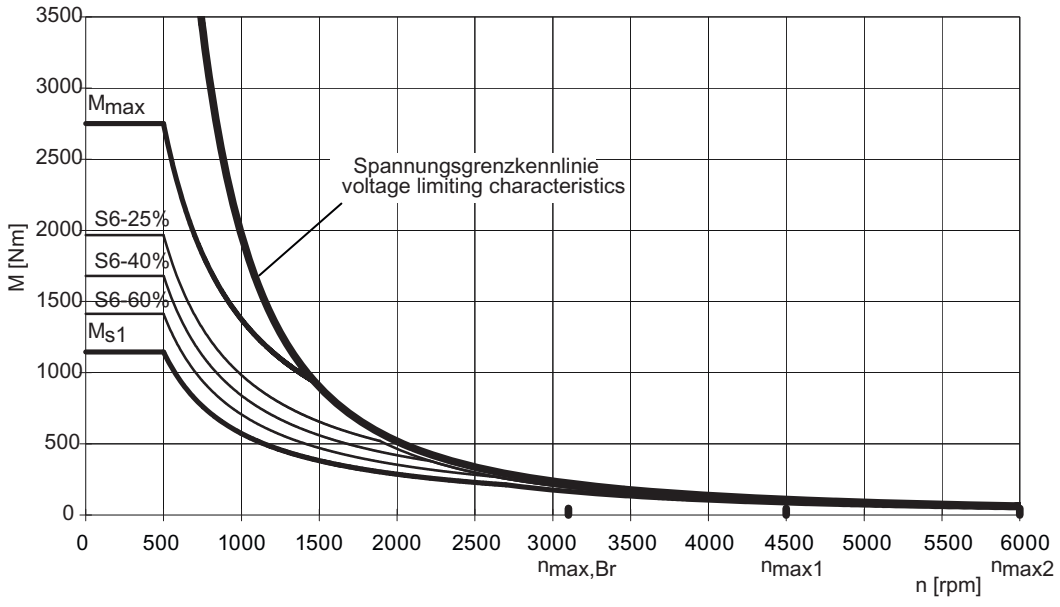
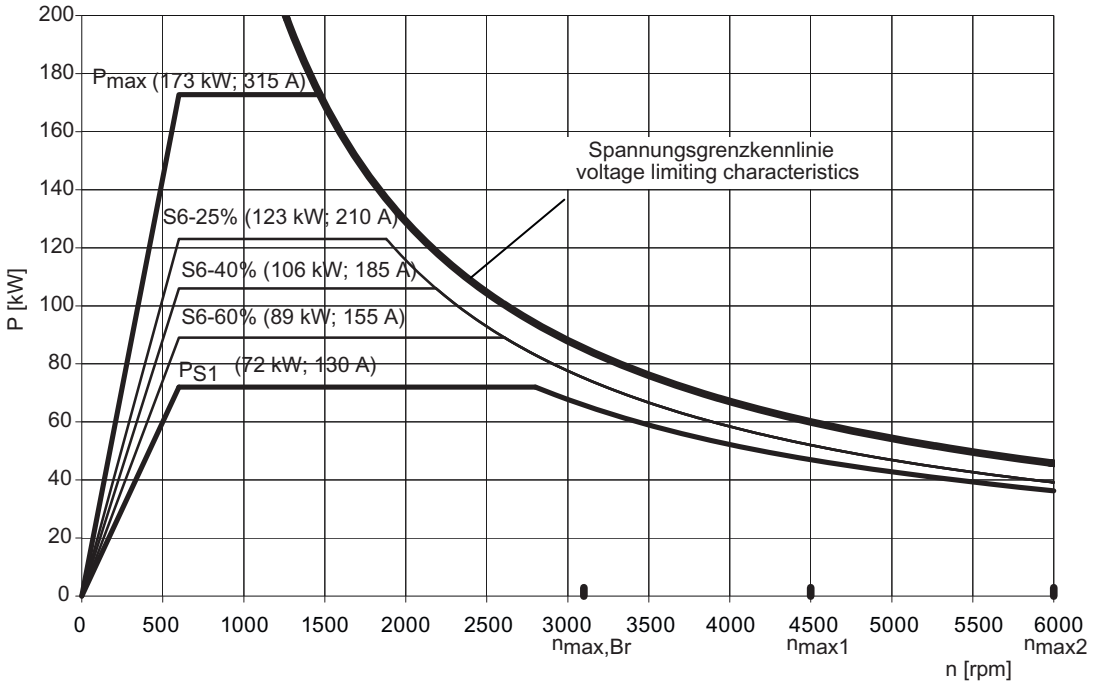



Tabella 4- 252 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-□□B□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 72 | 1146 | 130 | 4500 | 6000 | - | 3100 | 2800 | 2750 | 315 | 1146 | 130 |



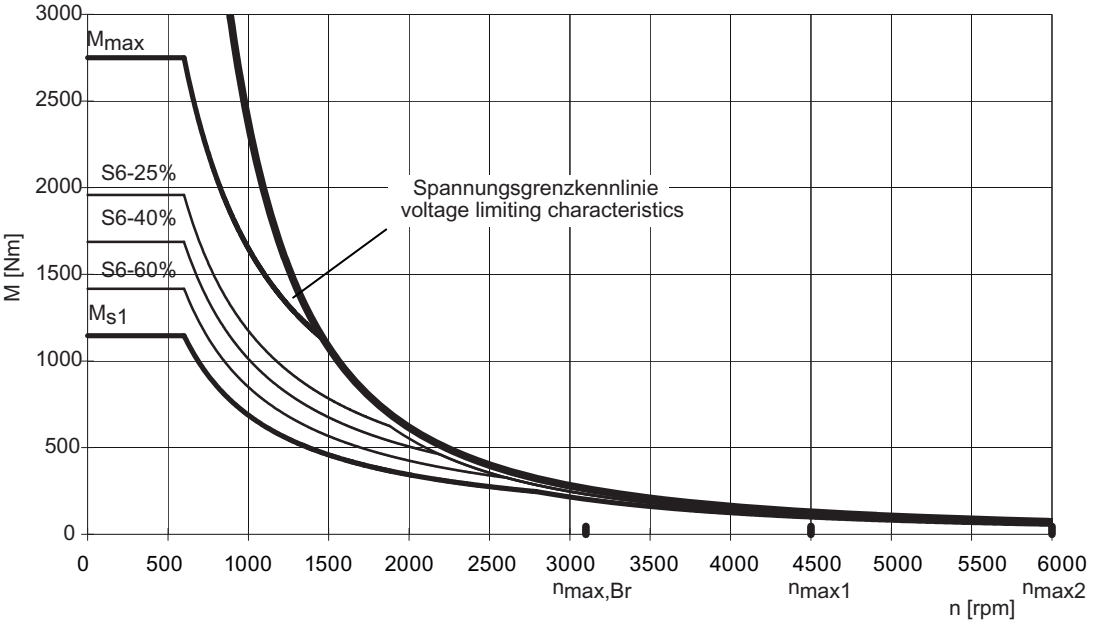
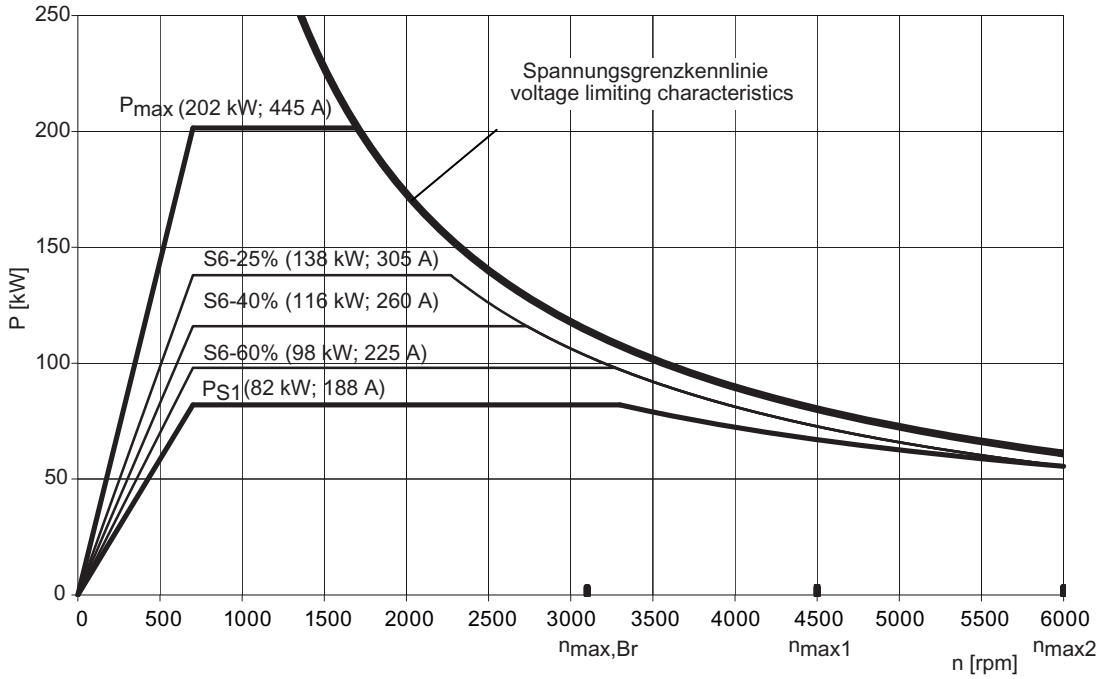



Tabella 4- 253 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-□□C□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 82 | 1119 | 188 | 4500 | 6000 | - | 3100 | 3300 | 2750 | 445 | 1119 | 188 |



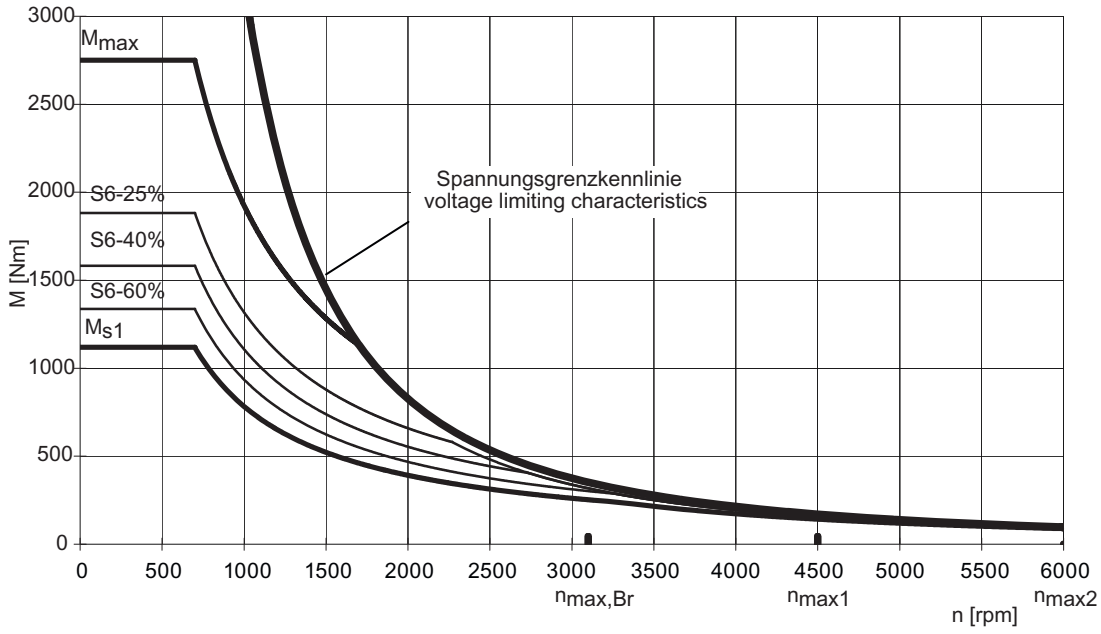
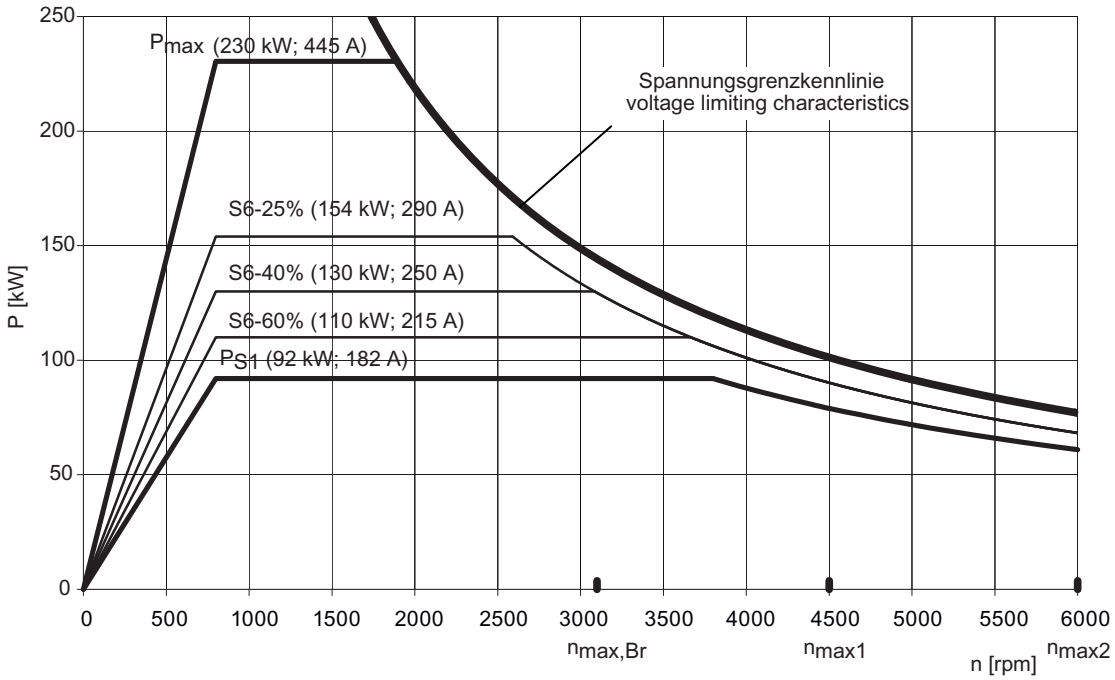



Tabella 4- 254 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-□□C□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 92 | 1098 | 182 | 4500 | 6000 | - | 3100 | 3800 | 2750 | 445 | 1098 | 182 |
| 700 | 82 | 1119 | 188 | | | | | 4300 | | | | |



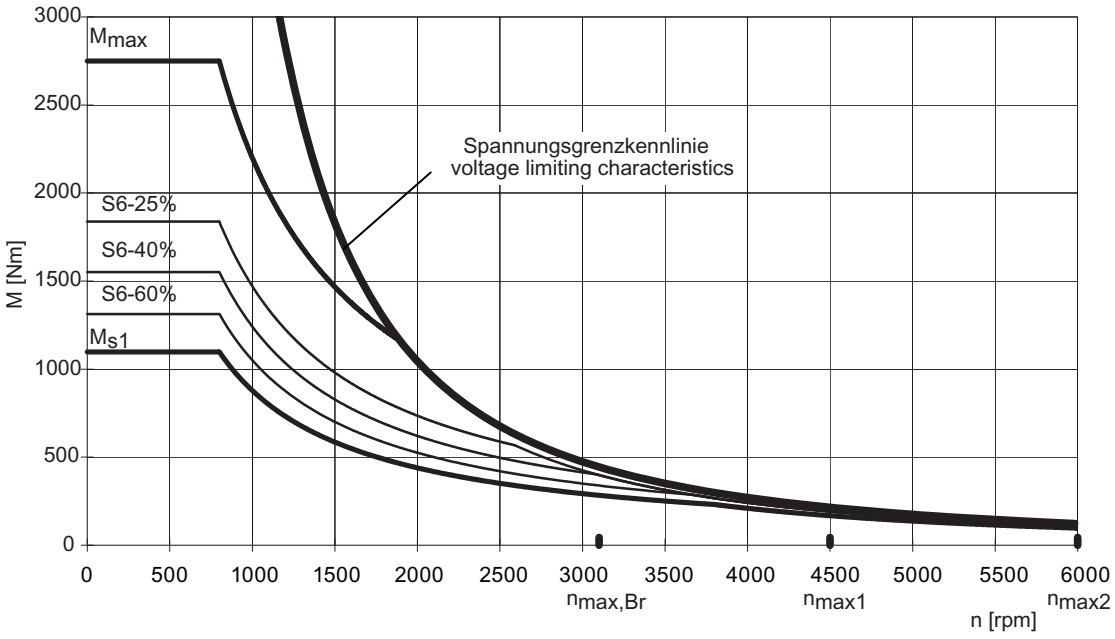
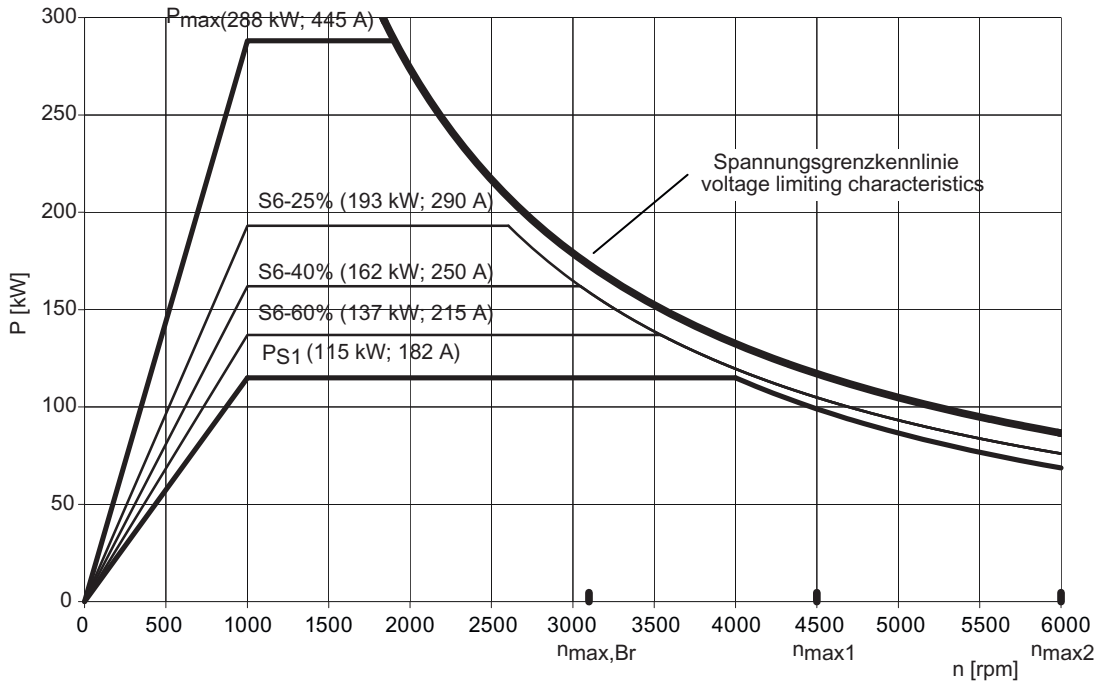



Tabella 4- 255 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-□□C□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 115 | 1098 | 182 | 4500 | 6000 | - | 3100 | 4000 | 2750 | 445 | 1098 | 182 |



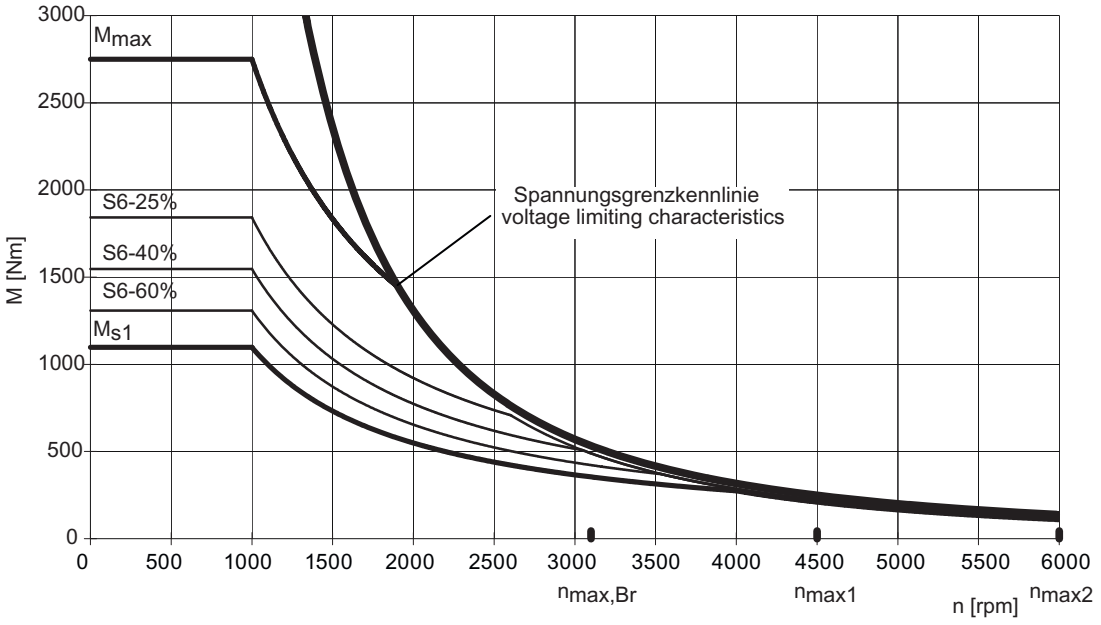
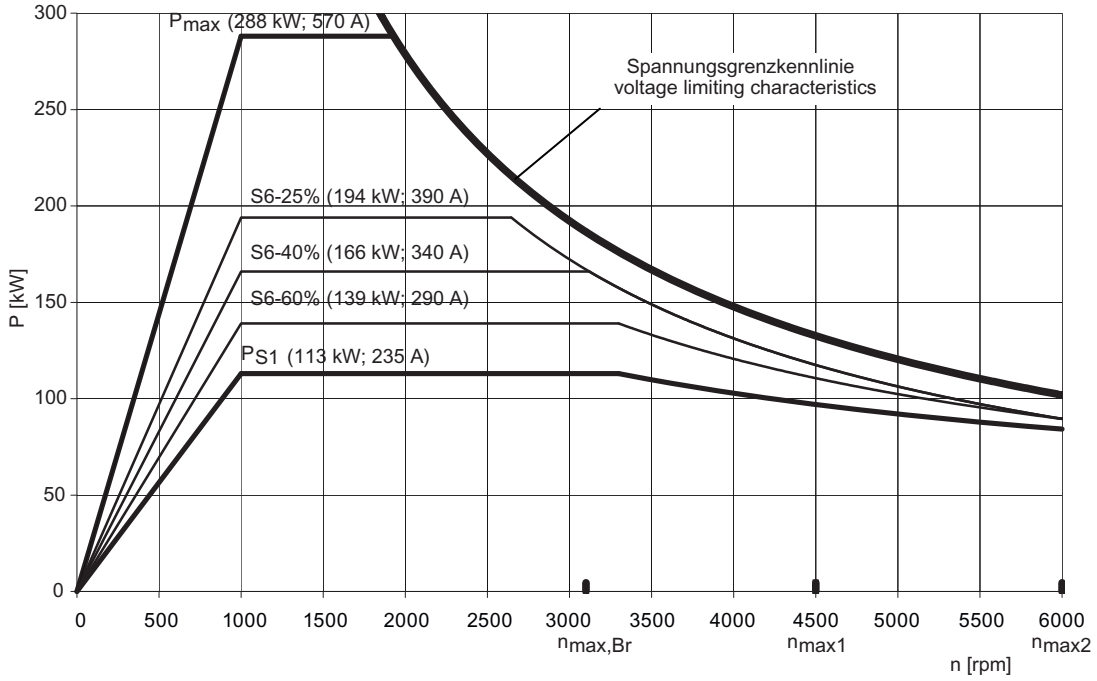



Tabella 4- 256 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-□□D□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 113 | 1079 | 235 | 4500 | 6000 | - | 3100 | 3300 | 2750 | 570 | 1079 | 235 |



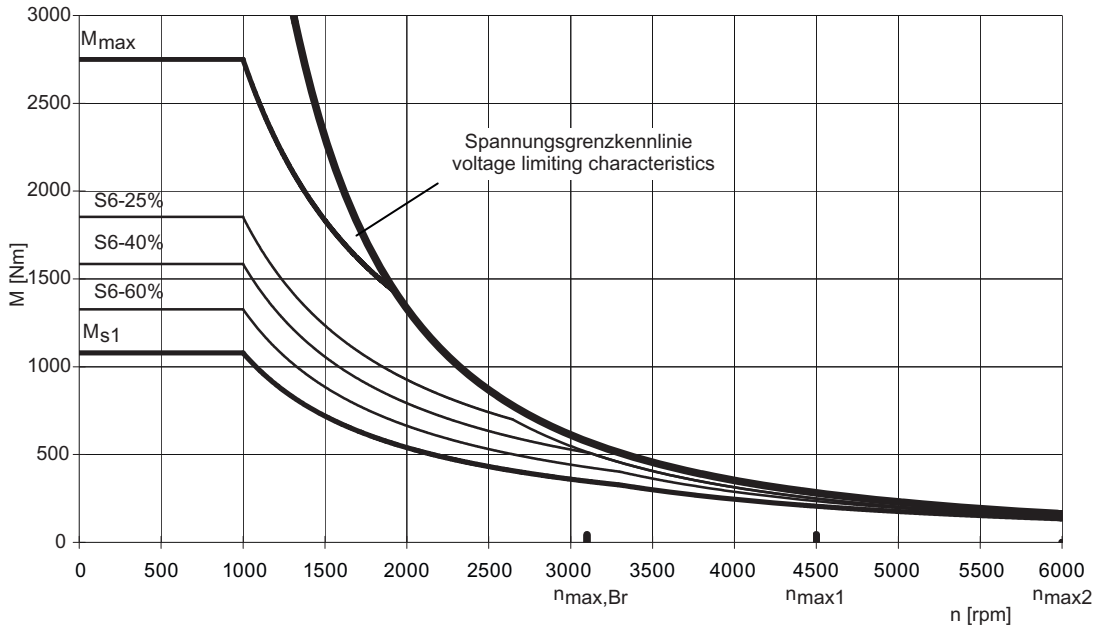
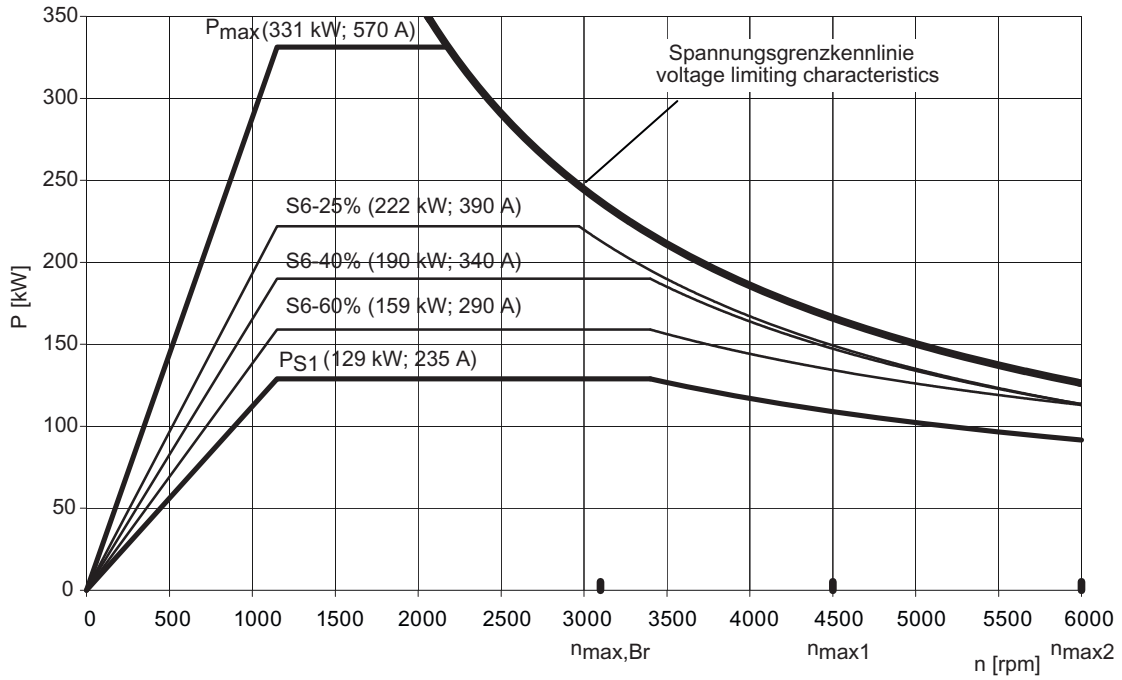



Tabella 4- 257 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-□□D□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 129 | 1071 | 235 | 4500 | 6000 | - | 3100 | 3400 | 2750 | 570 | 1071 | 235 |
| 1000 | 113 | 1079 | 235 | | | | | 4200 | | | | |



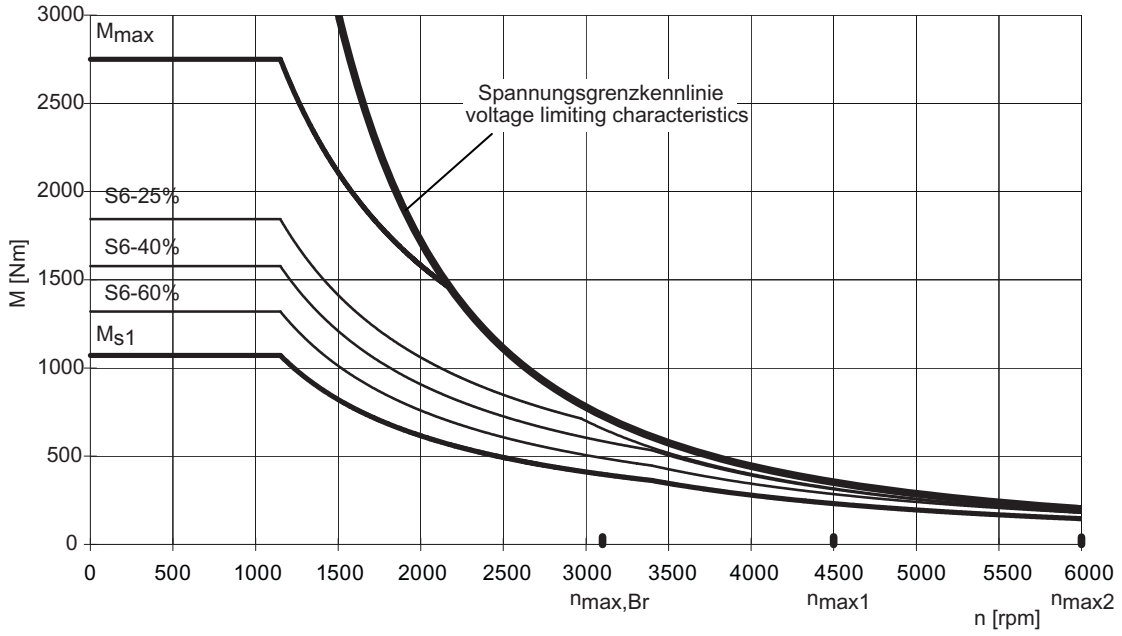
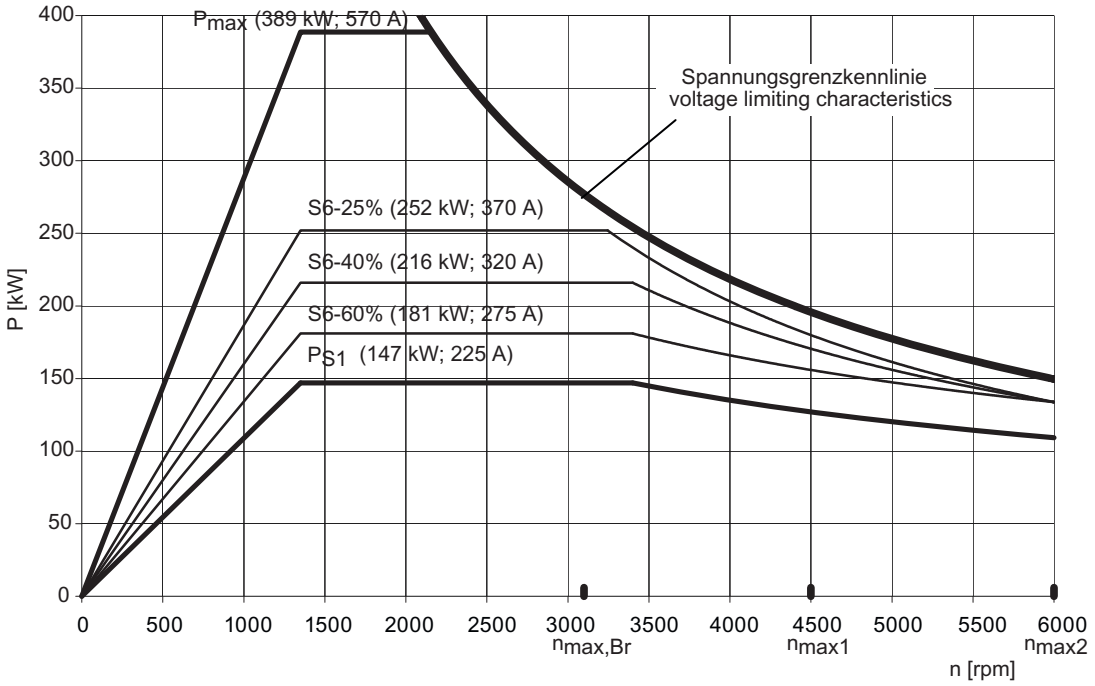



Tabella 4- 258 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-□□D□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 147 | 1040 | 225 | 4500 | 6000 | - | 3100 | 3400 | 2750 | 570 | 1040 | 225 |



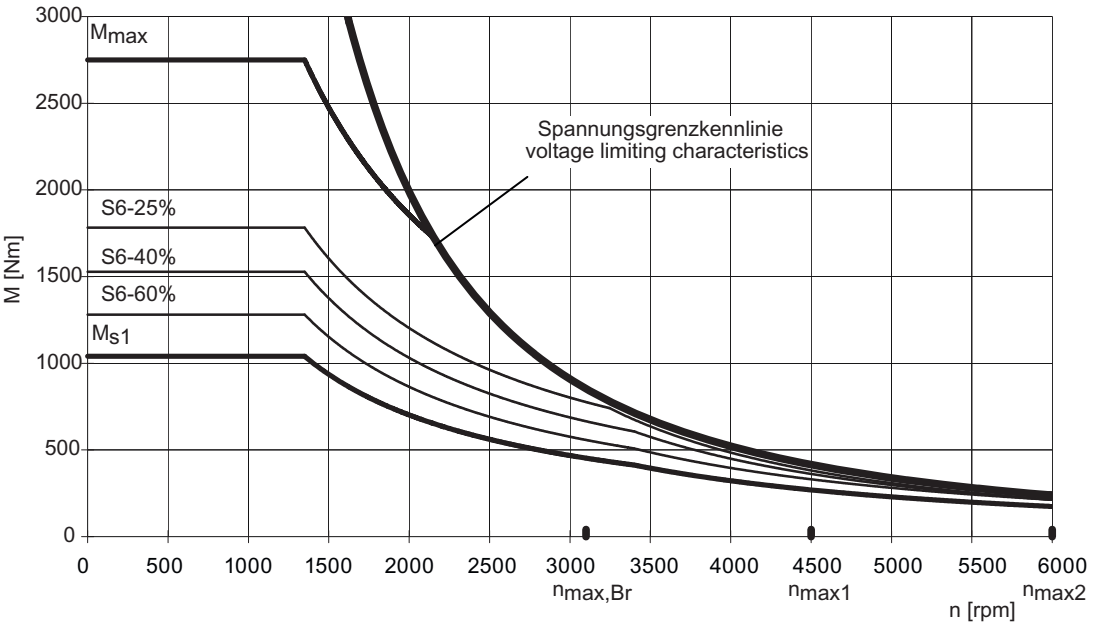
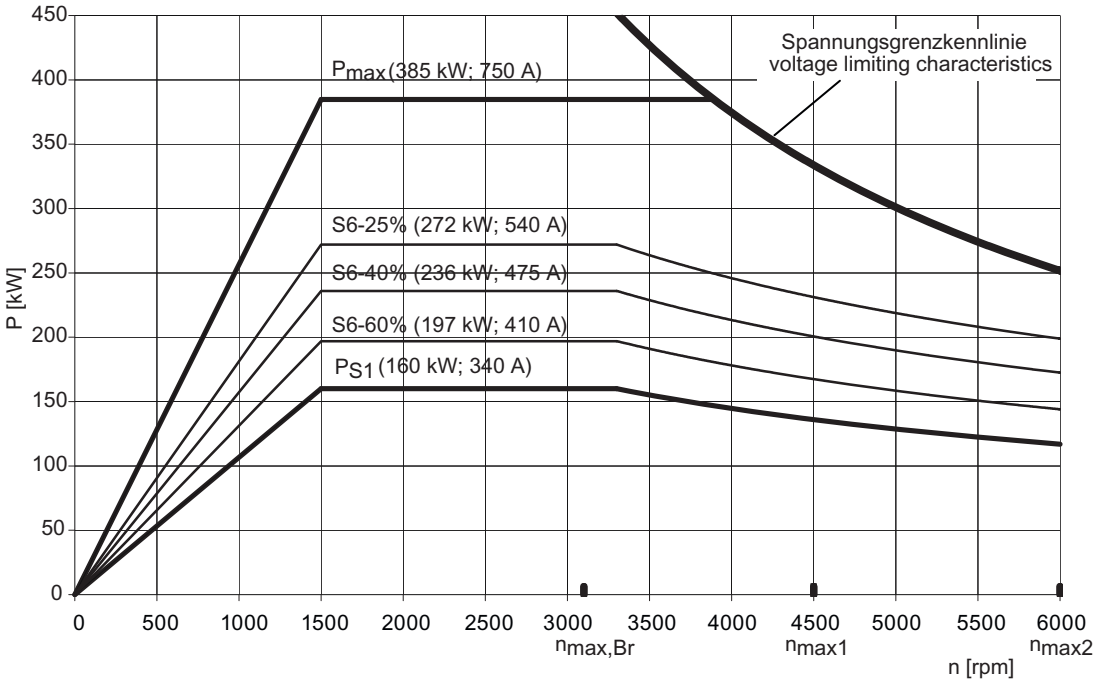



Tabella 4- 259 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-□□F□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 160 | 1019 | 340 | 4500 | 6000 | - | 3100 | 3300 | 2450 | 750 | 1019 | 340 |



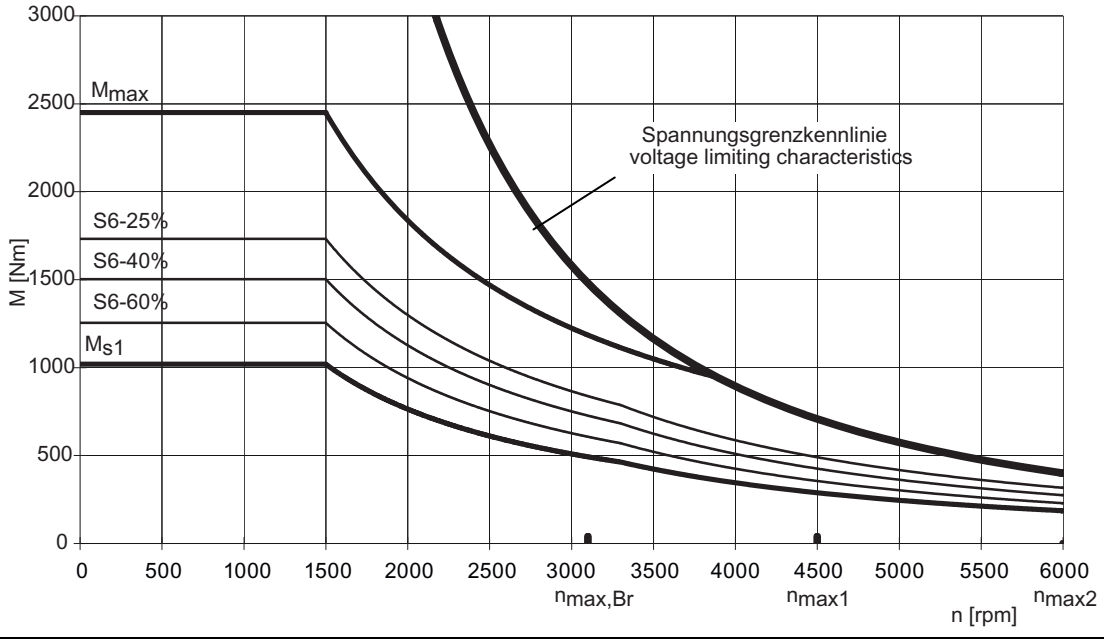
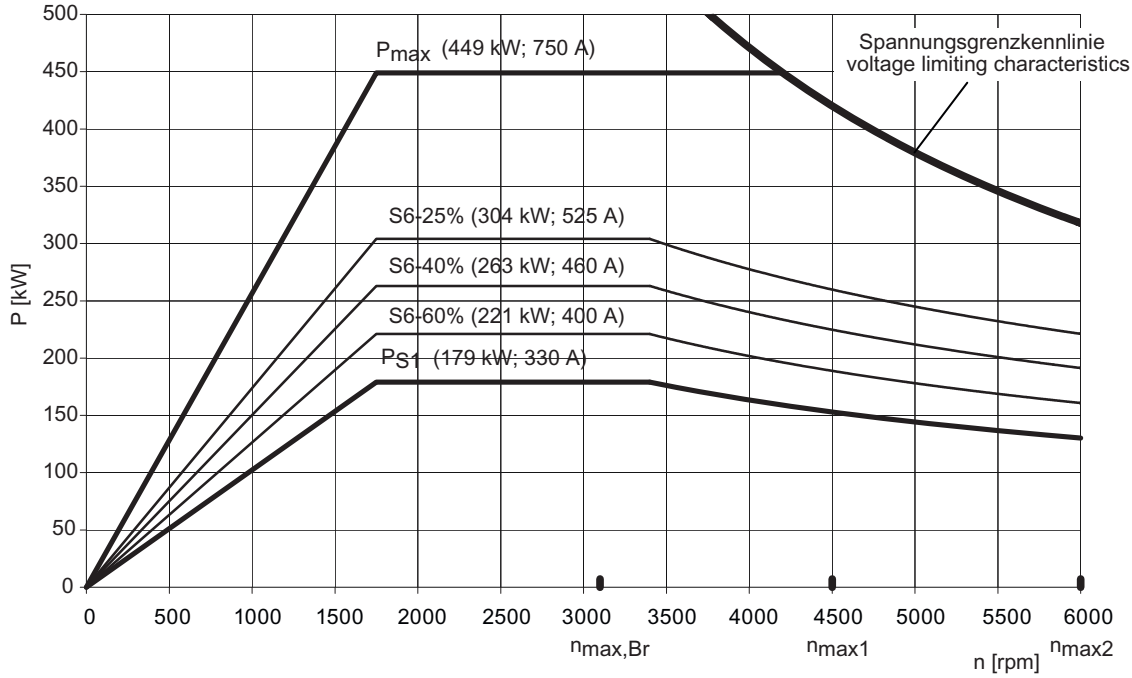



Tabella 4- 260 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-□□F□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 179 | 977 | 330 | 4500 | 6000 | - | 3100 | 3400 | 2450 | 750 | 977 | 330 |
| 1500 | 160 | 1019 | 340 | | | | | 4200 | | | | |



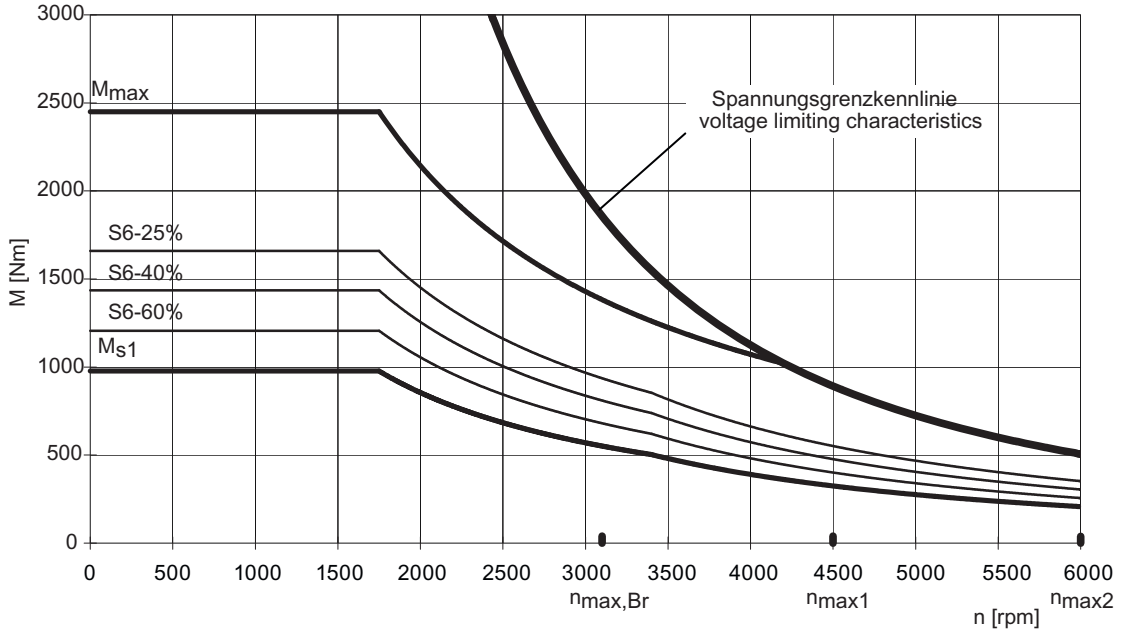
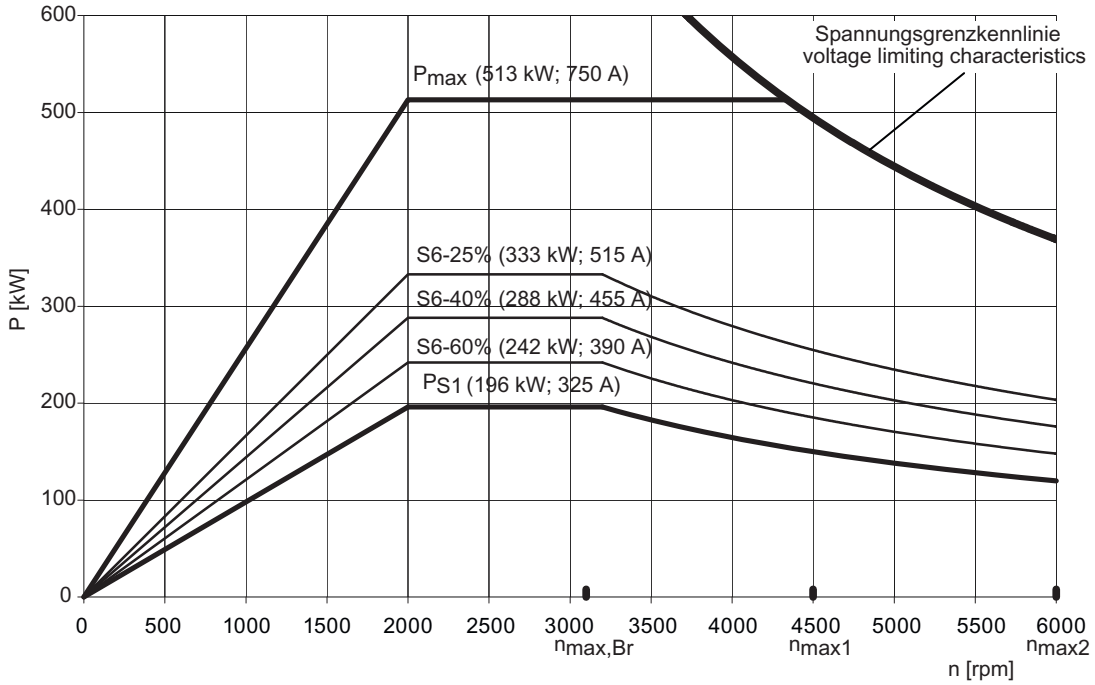



Tabella 4- 261 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-□□F□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 196 | 936 | 325 | 4500 | 6000 | - | 3100 | 3200 | 2450 | 750 | 036 | 325 |



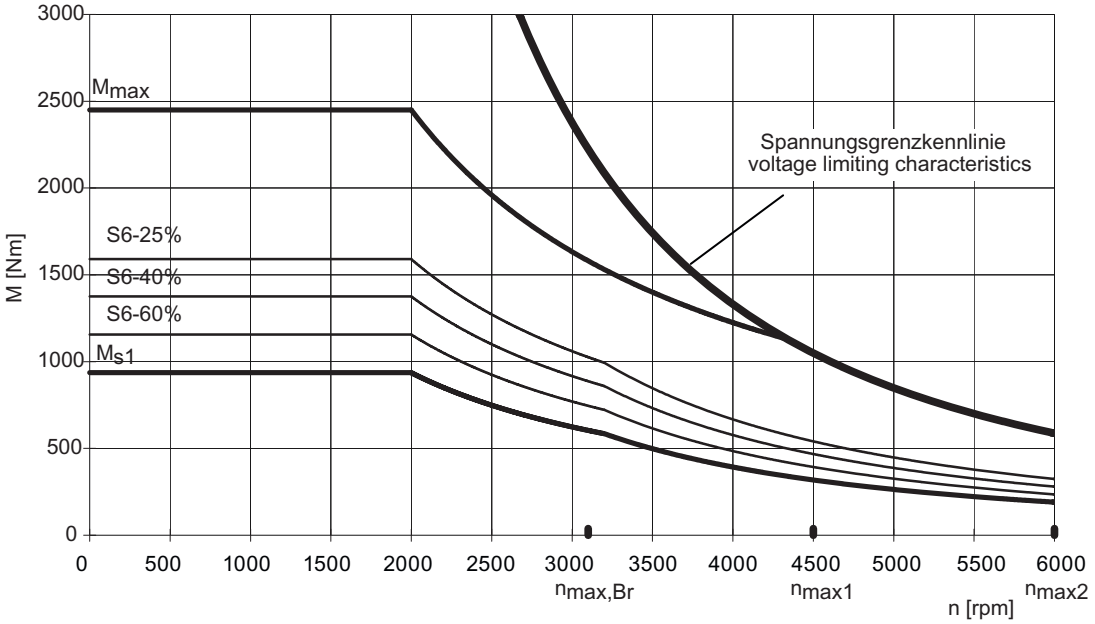
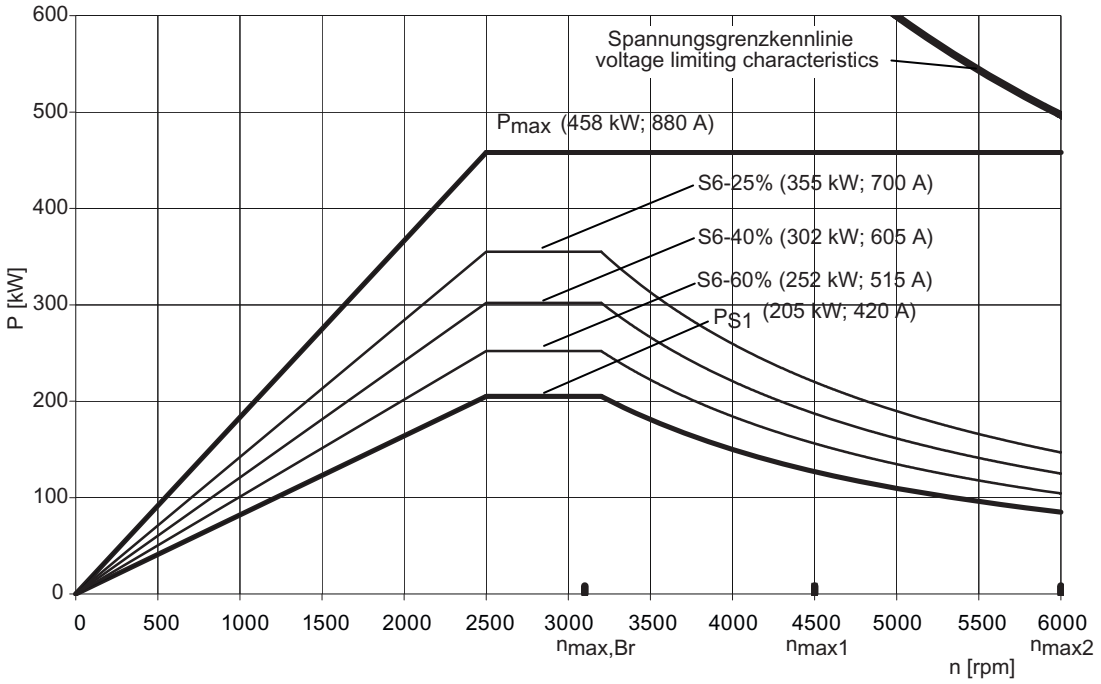



Tabella 4- 262 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-□□L□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 205 | 783 | 420 | 4500 | 6000 | - | 3100 | 3200 | 1750 | 880 | 783 | 420 |



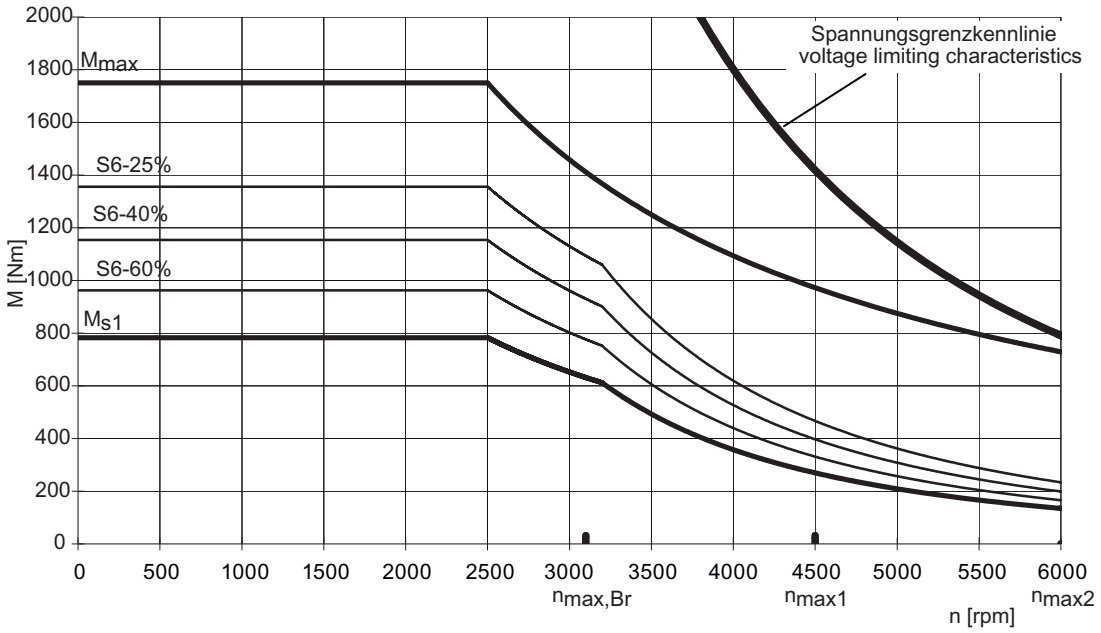



Tabella 4- 263 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-□□L□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 215 | 708 | 390 | 4500 | 6000 | - | 3100 | 3300 | 1750 | 880 | 708 | 390 |
| 2500 | 205 | 783 | 420 | | | | | 3400 | | | | |

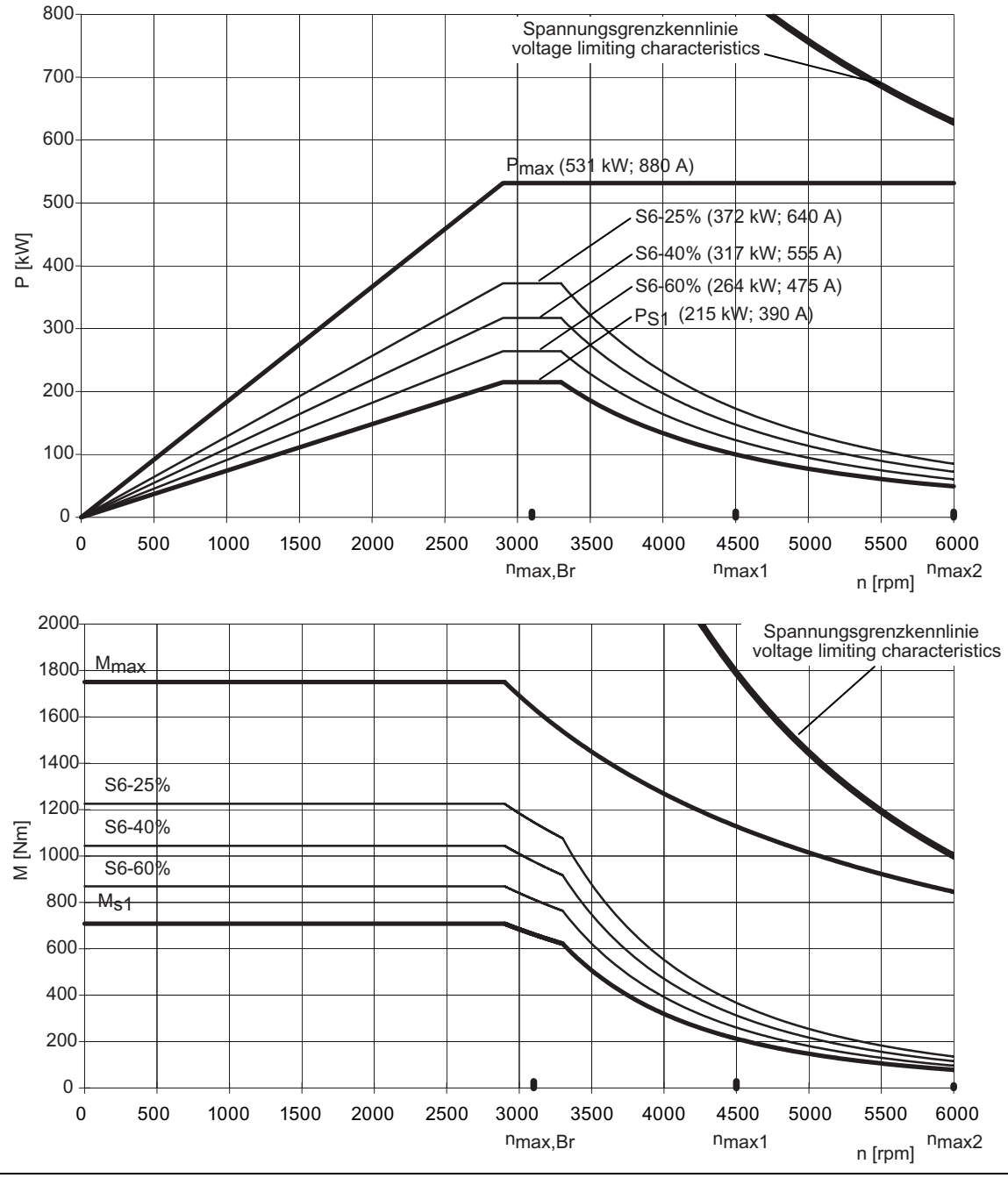
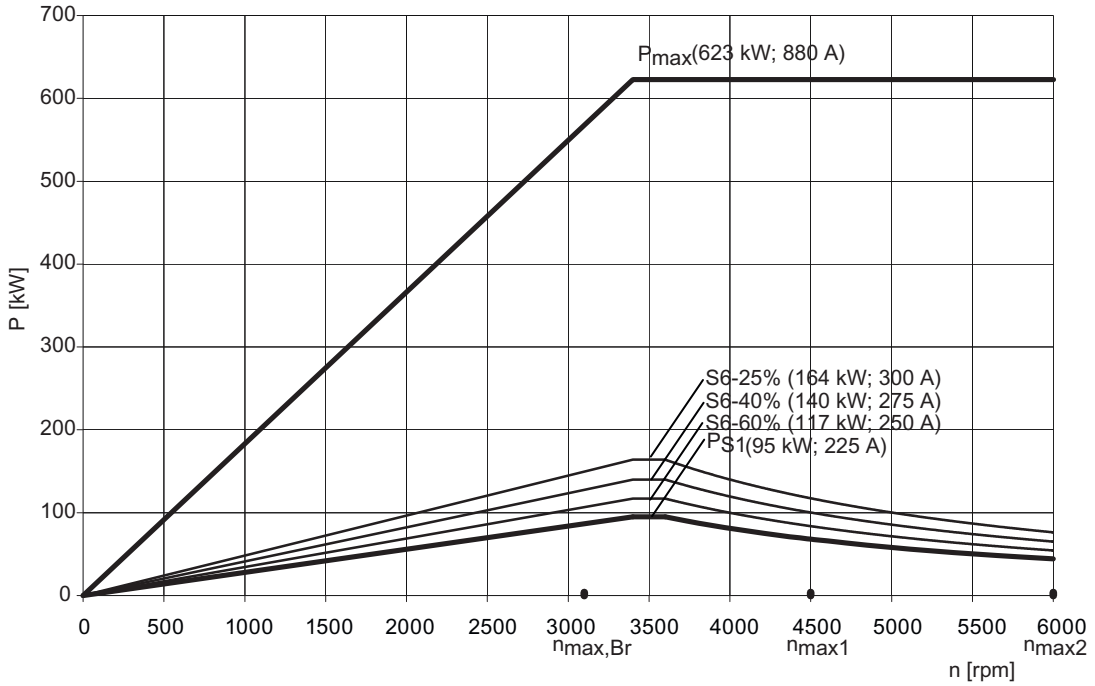
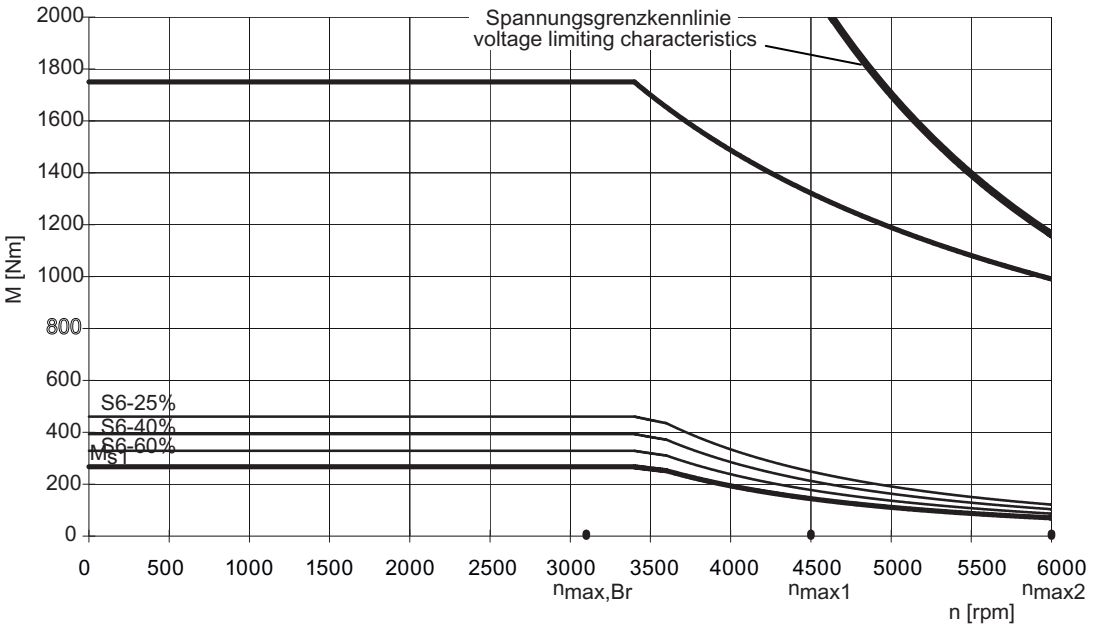


Tabella 4- 264 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-□□L□□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3400 | 95 | 267 | 225 | 4500 | 6000 | - | 3100 | 3600 | 1750 | 880 | 267 | 225 |

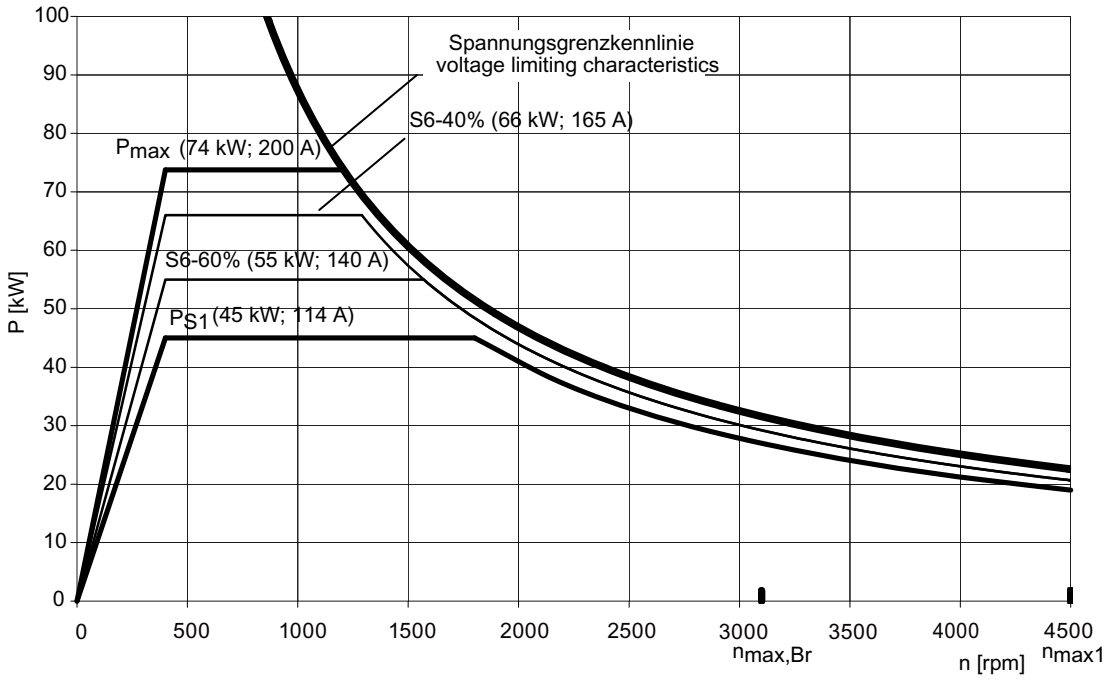


### 4.1.2.8 Altezza d'asse 225 - Ventilazione forzata (ventilazione passante)

Tabella 4- 265 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-□□B□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 45 | 1074 | 114 | 4500 | - | - | 3100 | 1800 | 1760 | 200 | 1074 | 114 |



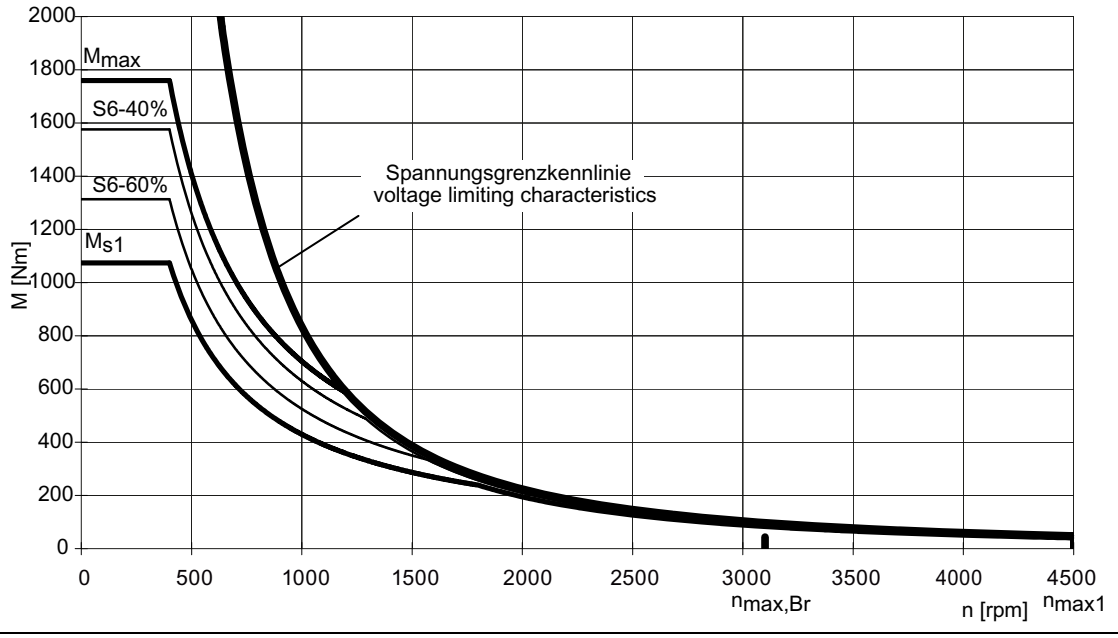
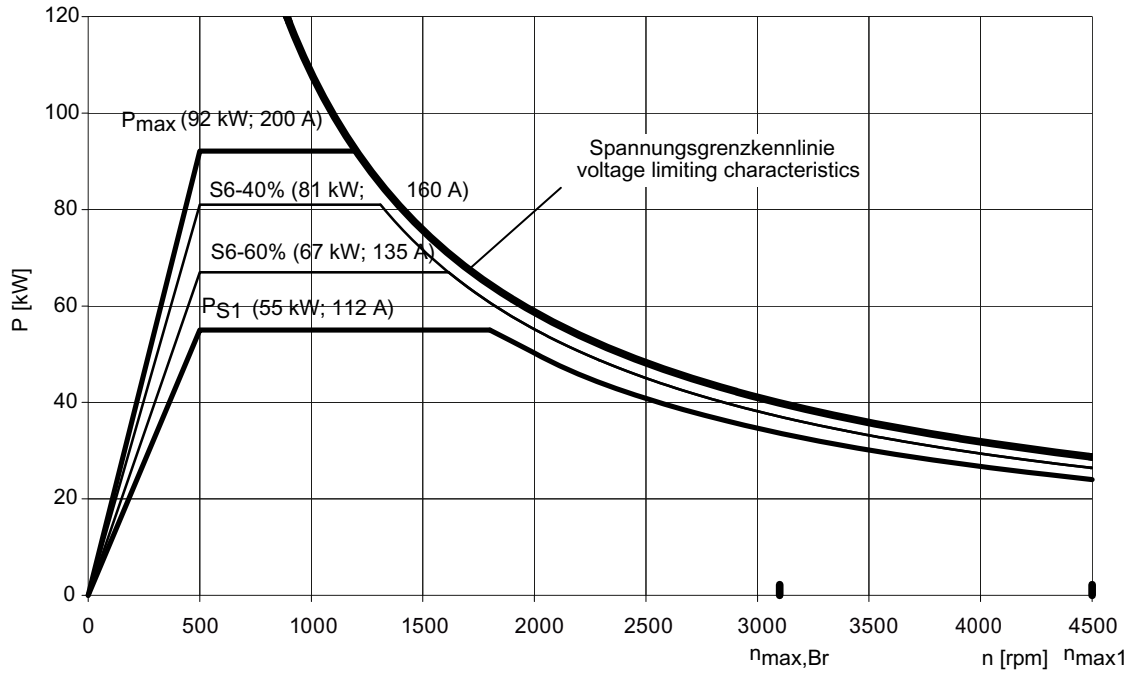



Tabella 4- 266 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-□□B□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 55 | 1051 | 112 | 4500 | - | - | 3100 | 1800 | 1760 | 200 | 1051 | 112 |
| 400 | 45 | 1074 | 114 | | | | | 2200 | | | | |



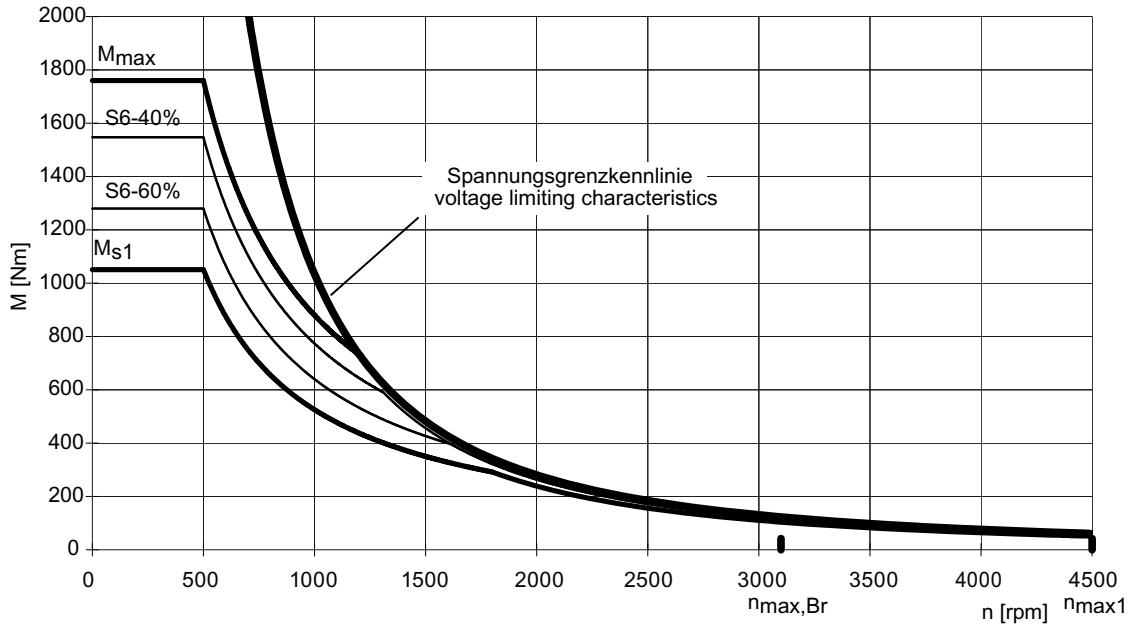
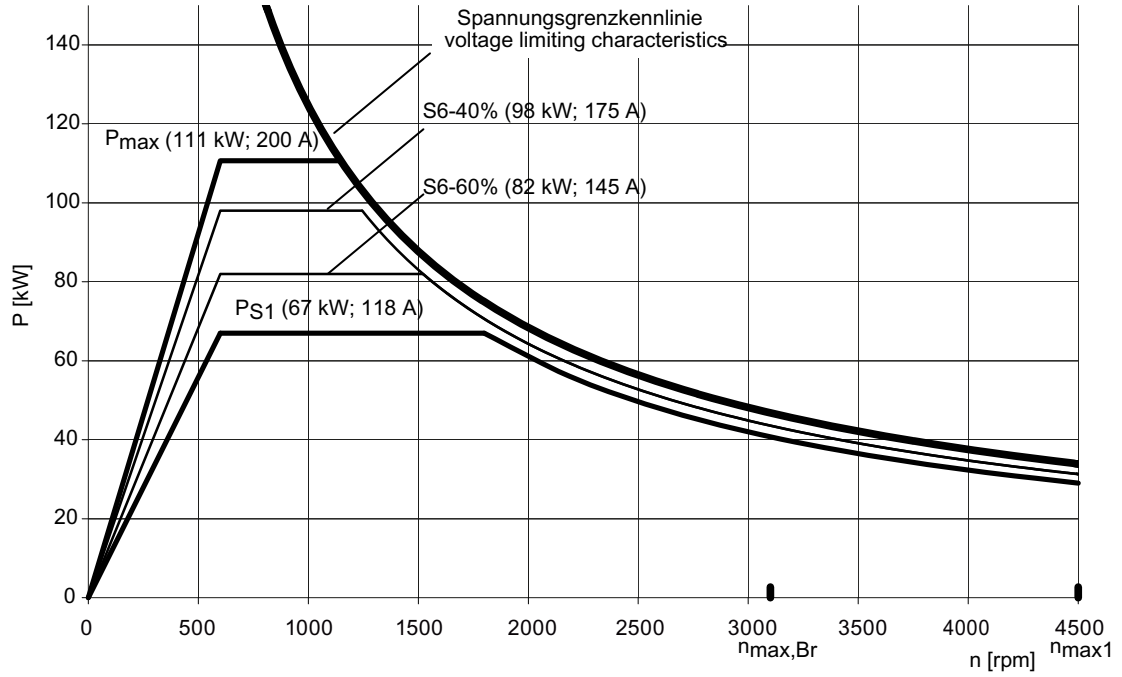



Tabella 4- 267 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-□□B□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 67 | 1066 | 118 | 4500 | - | - | 3100 | 1800 | 1760 | 200 | 1066 | 118 |



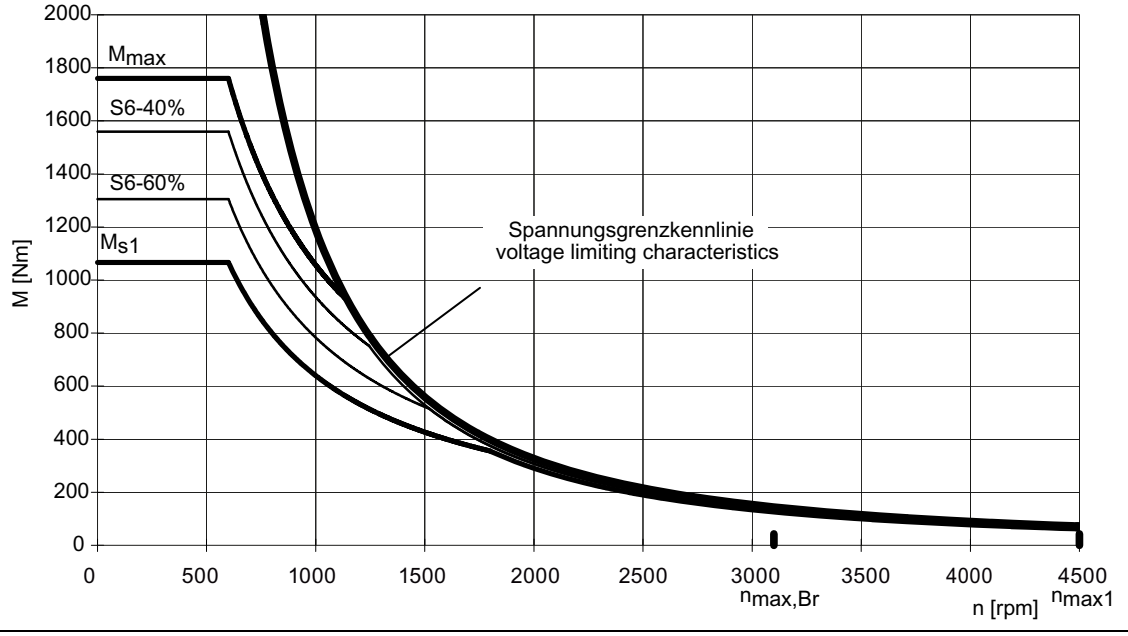
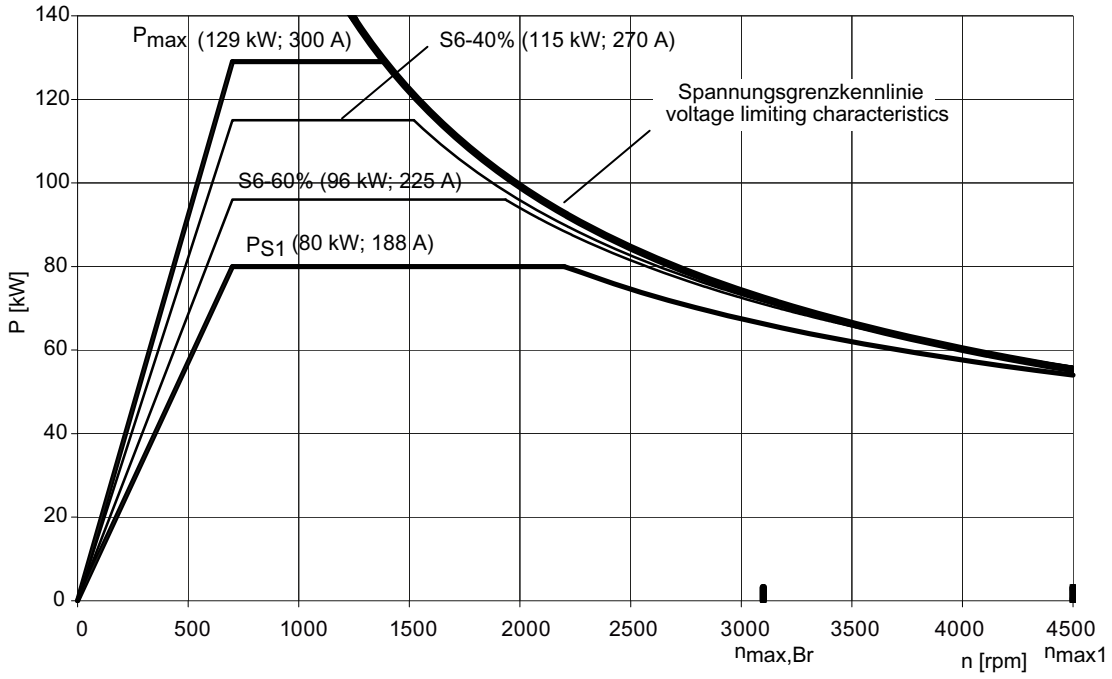



Tabella 4- 268 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-□□C□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 80 | 1091 | 188 | 4500 | - | - | 3100 | 2200 | 1760 | 300 | 1091 | 188 |



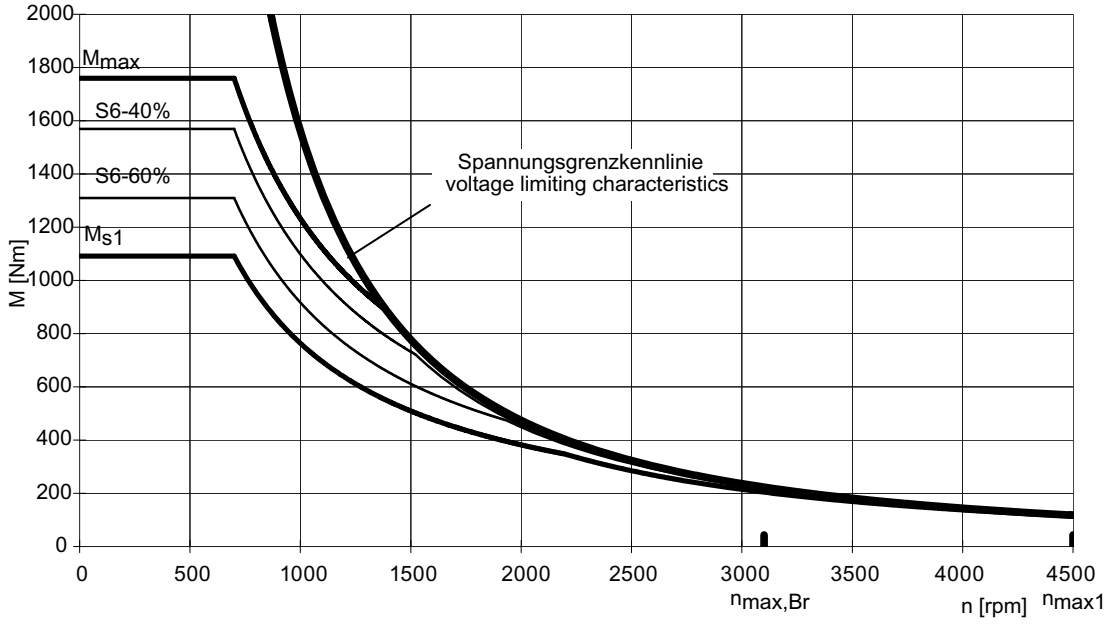
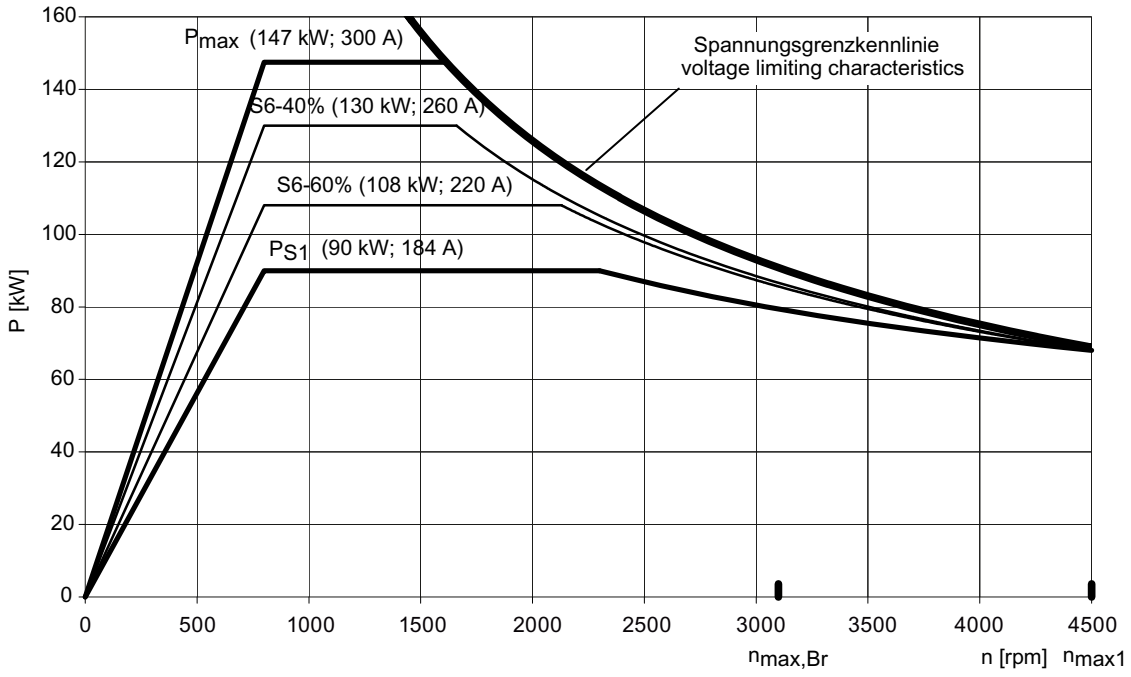



Tabella 4- 269 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-□□C□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 90 | 1074 | 184 | 4500 | - | - | 3100 | 2300 | 1760 | 300 | 1074 | 184 |
| 700 | 80 | 1091 | 188 | | | | | 3000 | | | | |



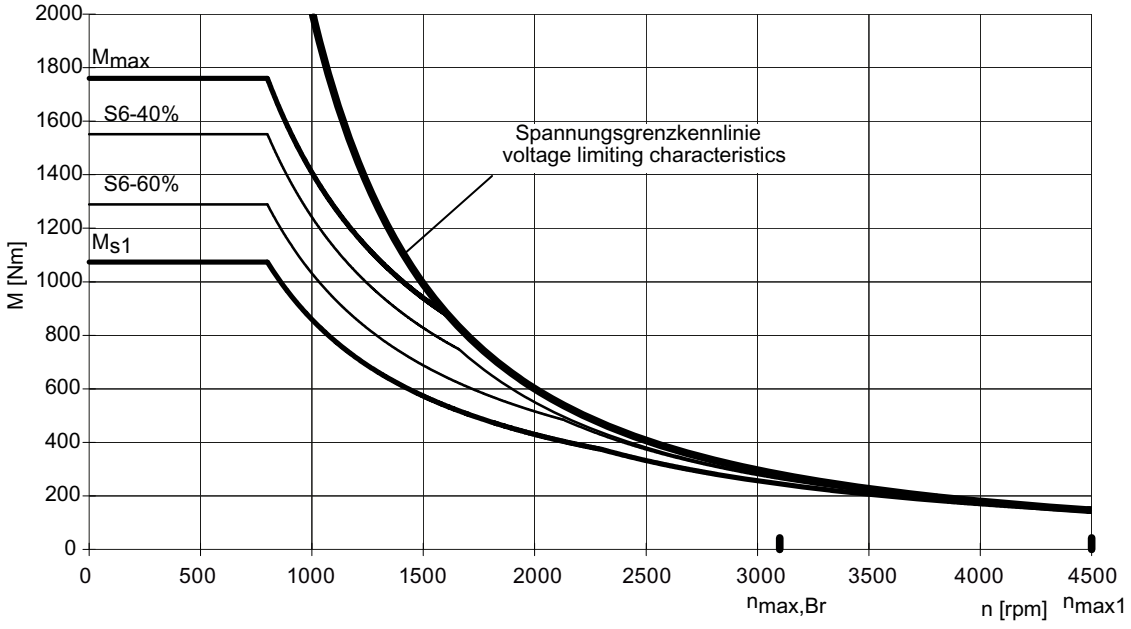
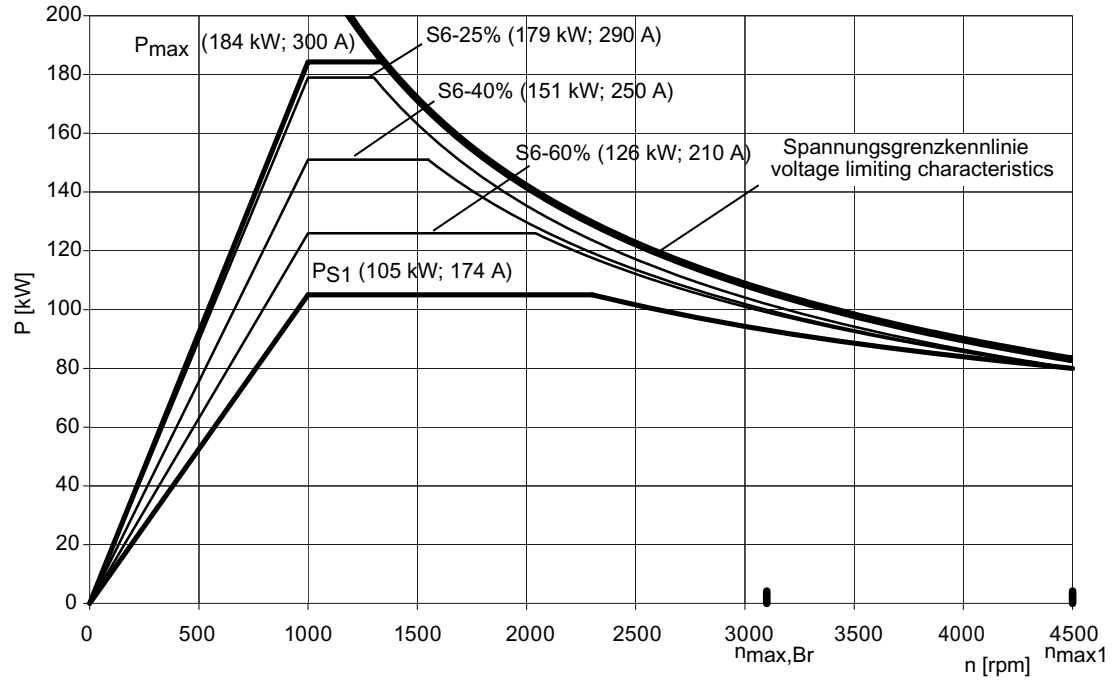



Tabella 4- 270 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-□□C□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 105 | 1003 | 174 | 4500 | - | - | 3100 | 2300 | 1760 | 300 | 1003 | 174 |



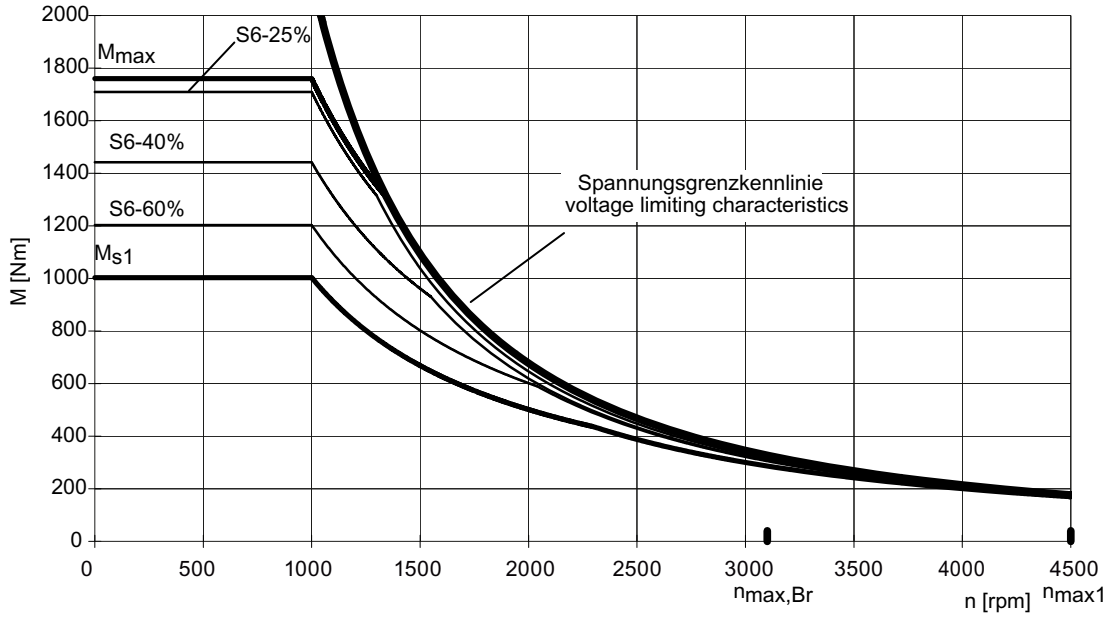
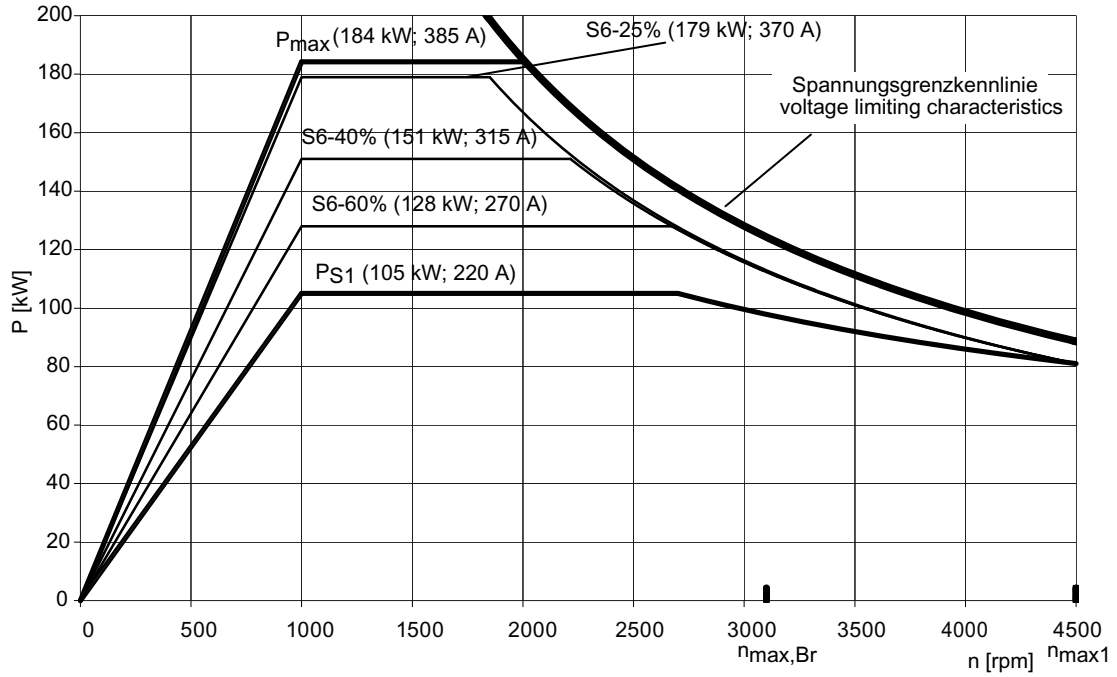



Tabella 4- 271 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-□□D□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 105 | 1003 | 220 | 4500 | - | - | 3100 | 2700 | 1760 | 385 | 1003 | 2200 |



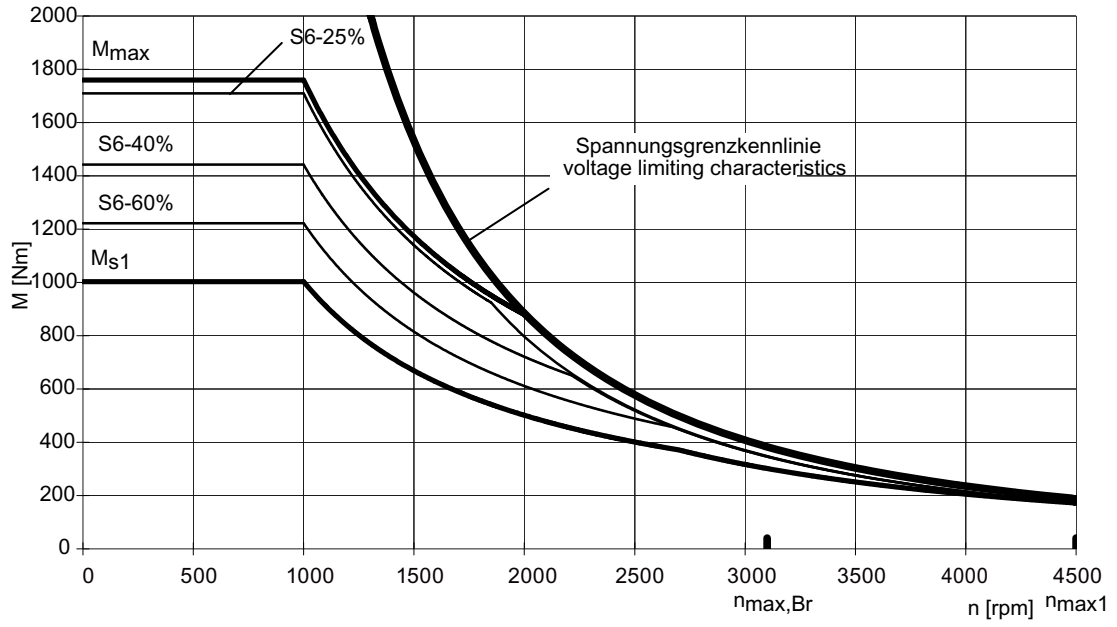
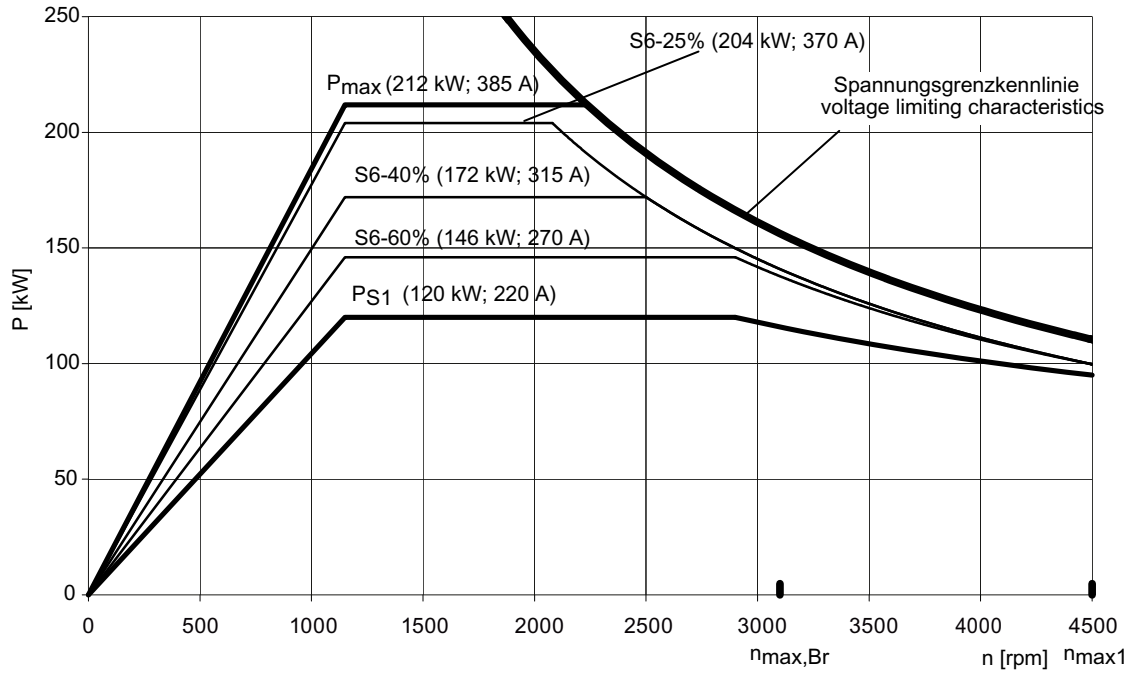



Tabella 4- 272 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-□□D□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 120 | 997 | 220 | 4500 | - | - | 3100 | 2900 | 1760 | 385 | 997 | 220 |
| 1000 | 105 | 1003 | 220 | | | | | 3700 | | | | |



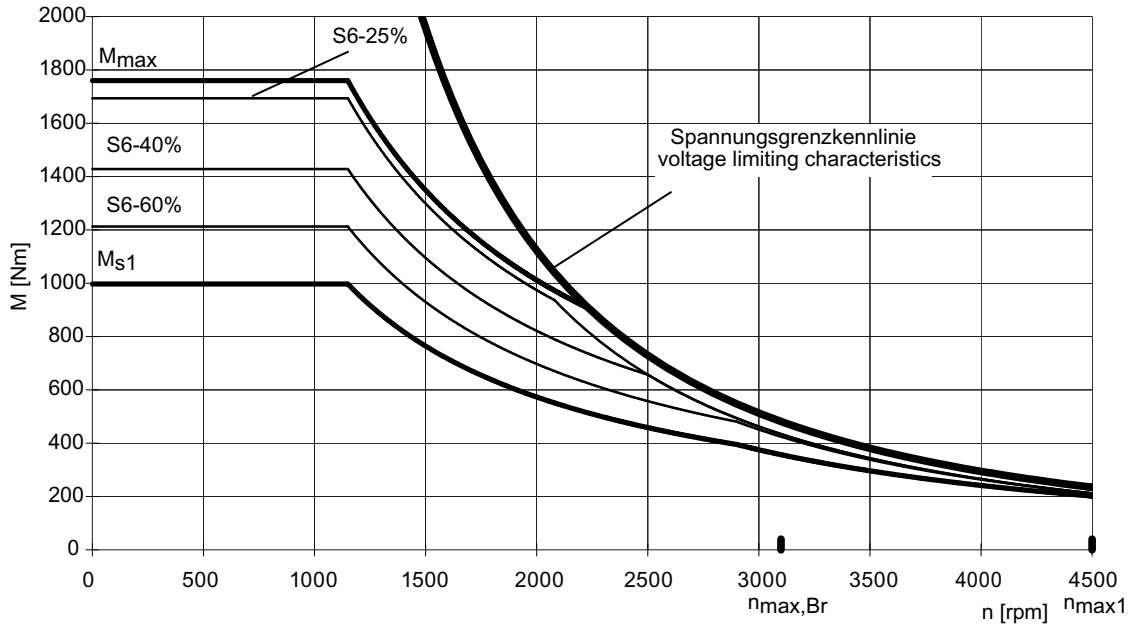
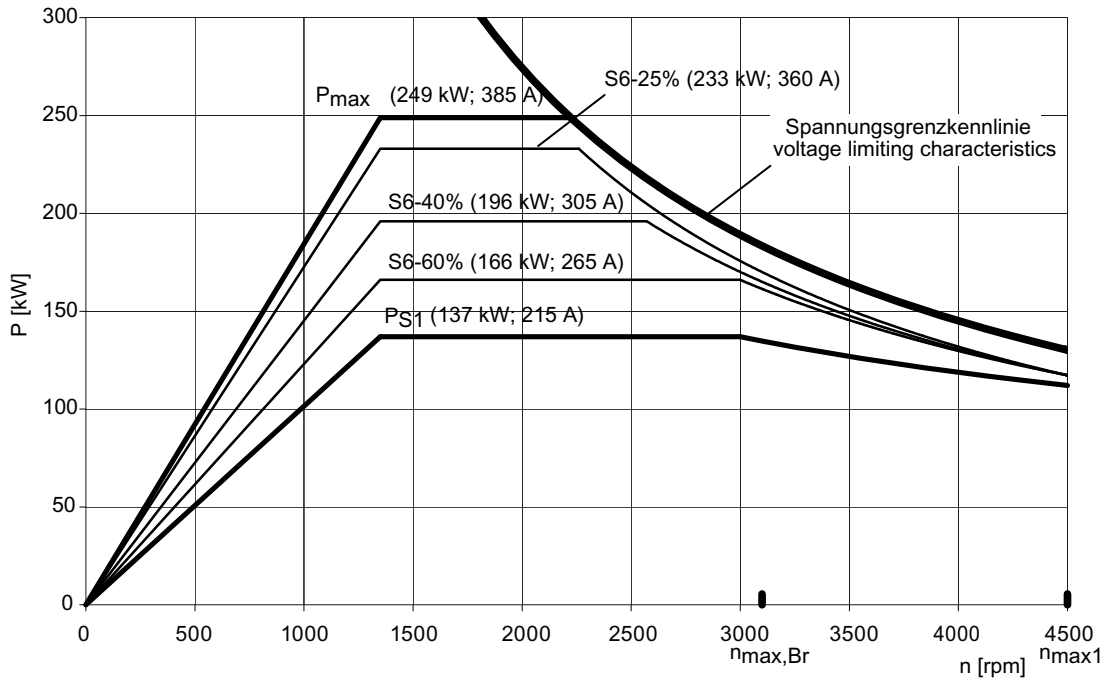



Tabella 4- 273 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-□□D□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 137 | 969 | 215 | 4500 | - | - | 3100 | 3000 | 1760 | 385 | 969 | 215 |



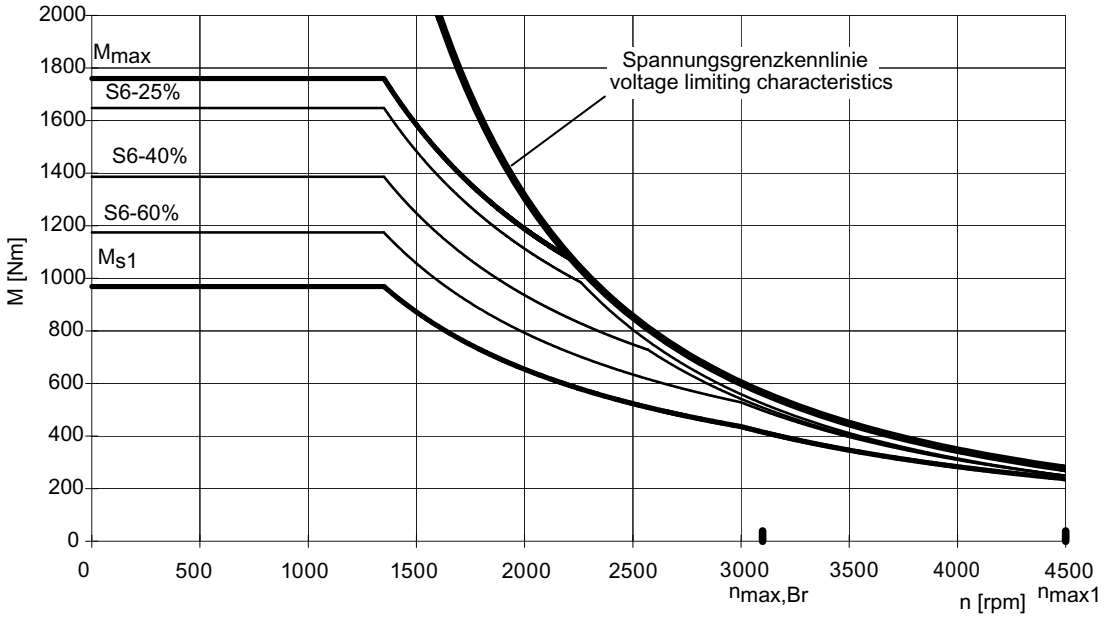
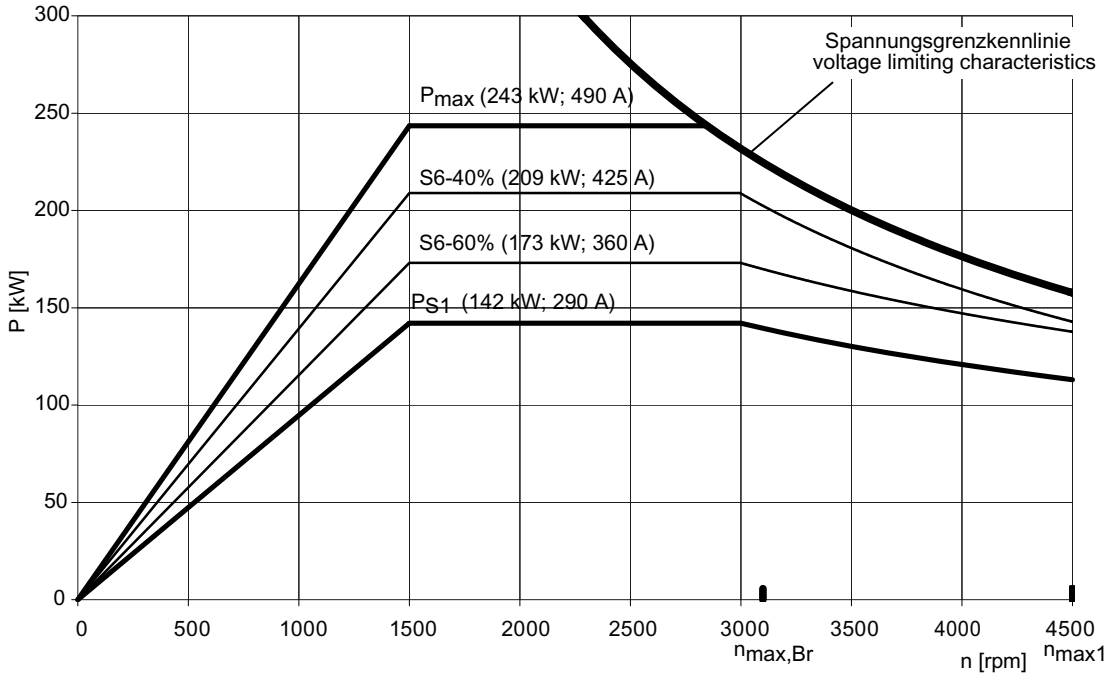



Tabella 4- 274 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-□□F□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 142 | 904 | 290 | 4500 | - | - | 3100 | 3000 | 1550 | 490 | 904 | 290 |



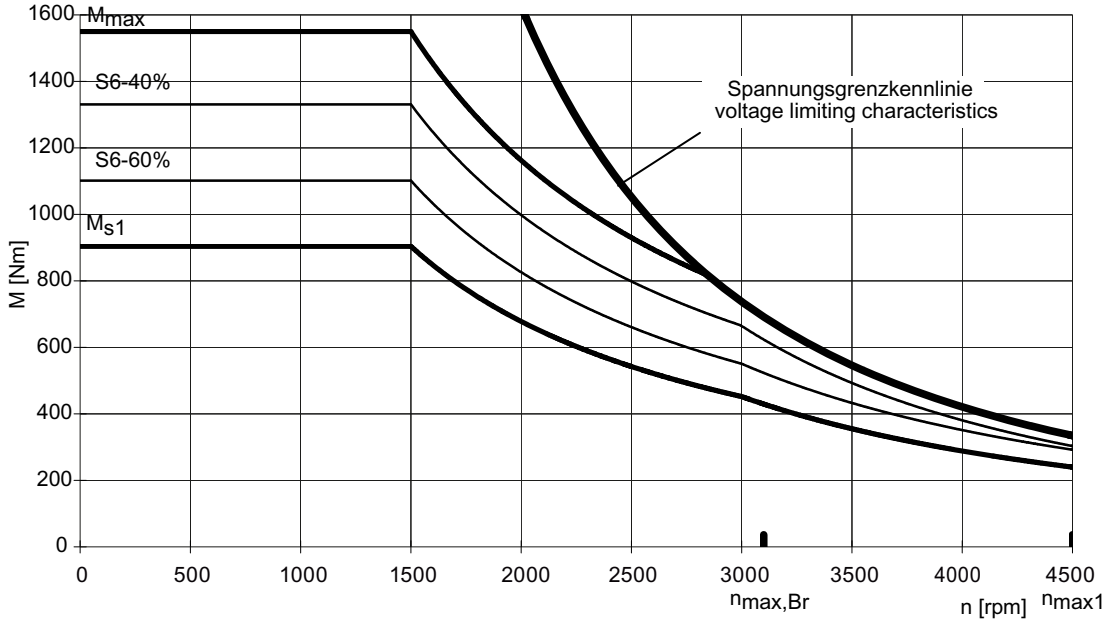
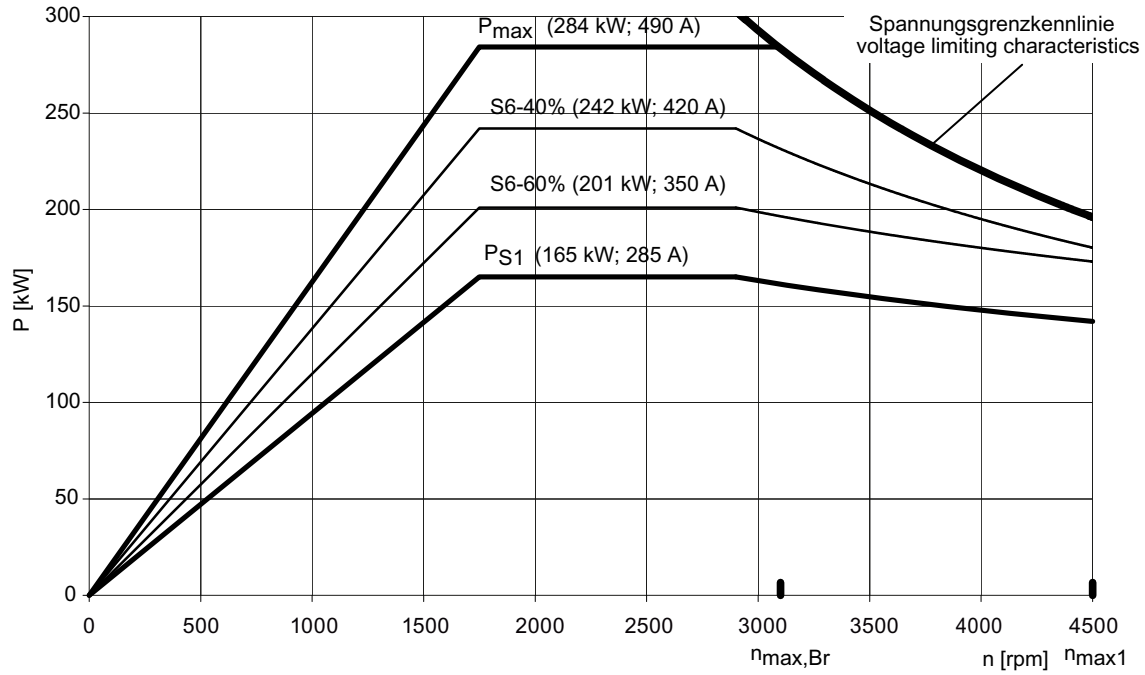



Tabella 4- 275 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-□□F□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 165 | 900 | 285 | 4500 | - | - | 3100 | 2900 | 1550 | 490 | 900 | 285 |
| 1500 | 142 | 904 | 290 | | | | | 4500 | | | | |



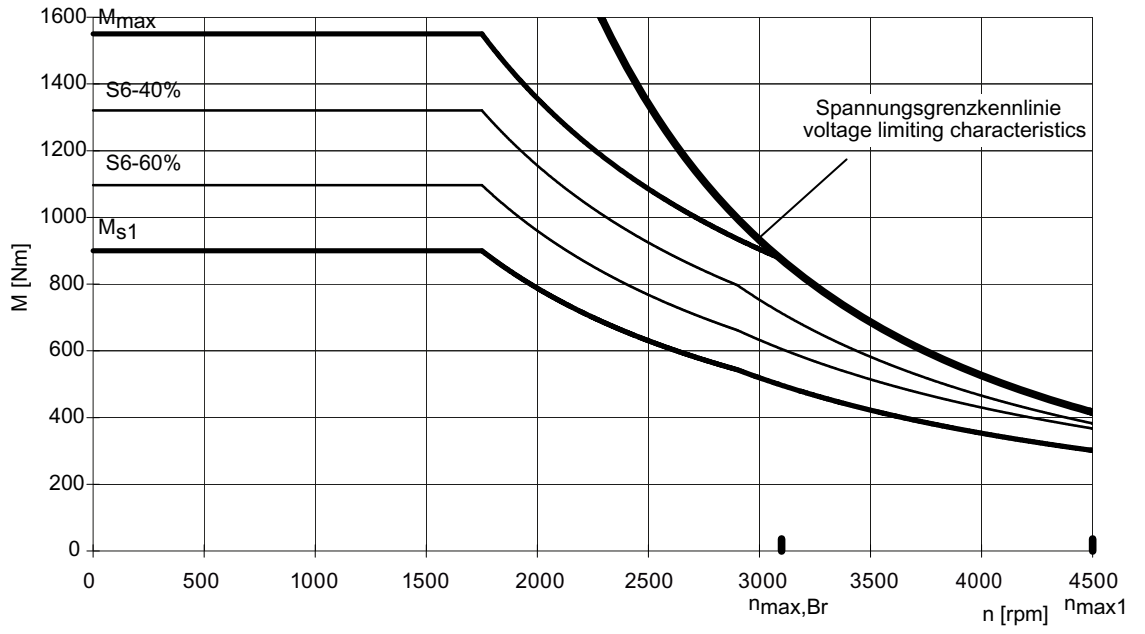
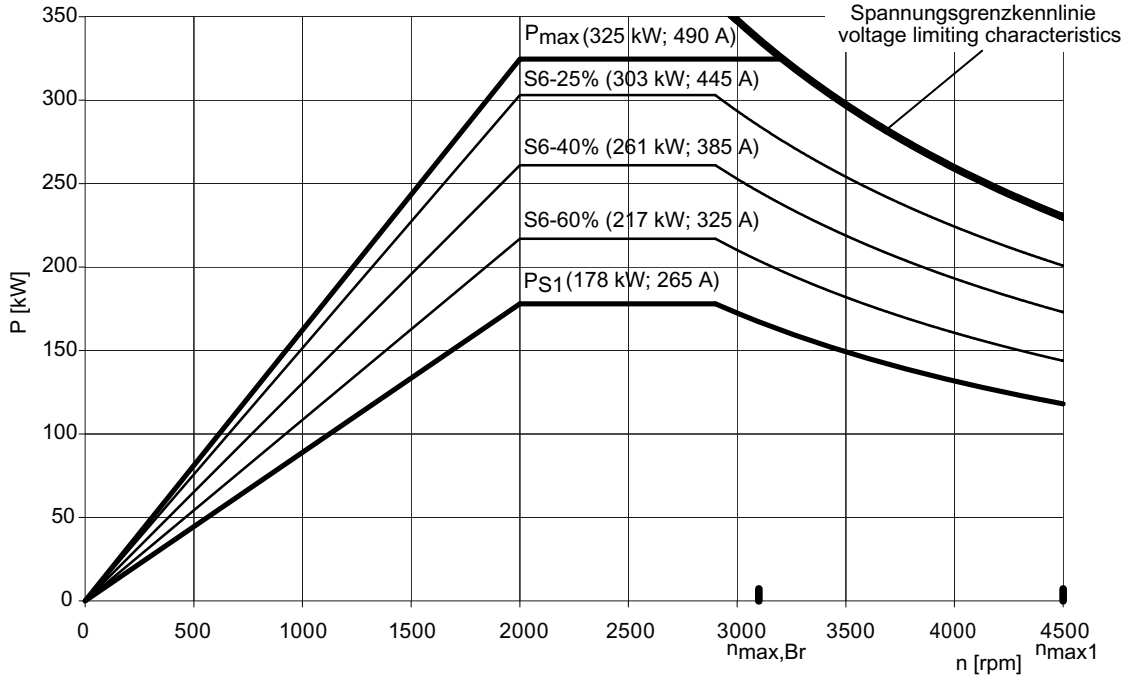



Tabella 4- 276 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-□□F□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 178 | 850 | 265 | 4500 | - | - | 3100 | 2900 | 1550 | 490 | 850 | 265 |



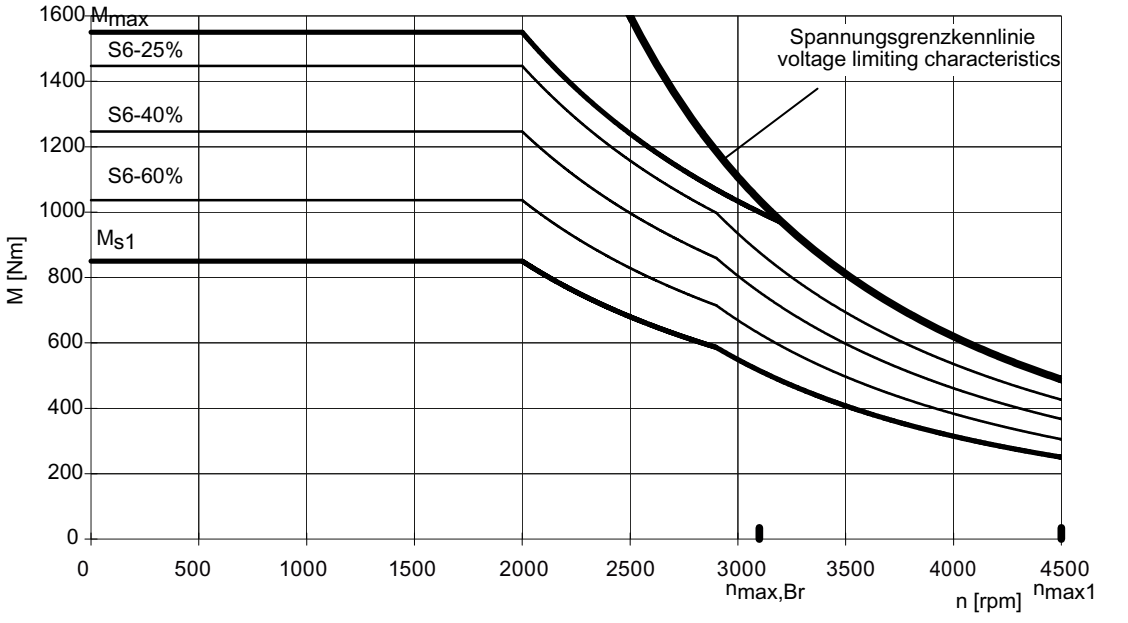
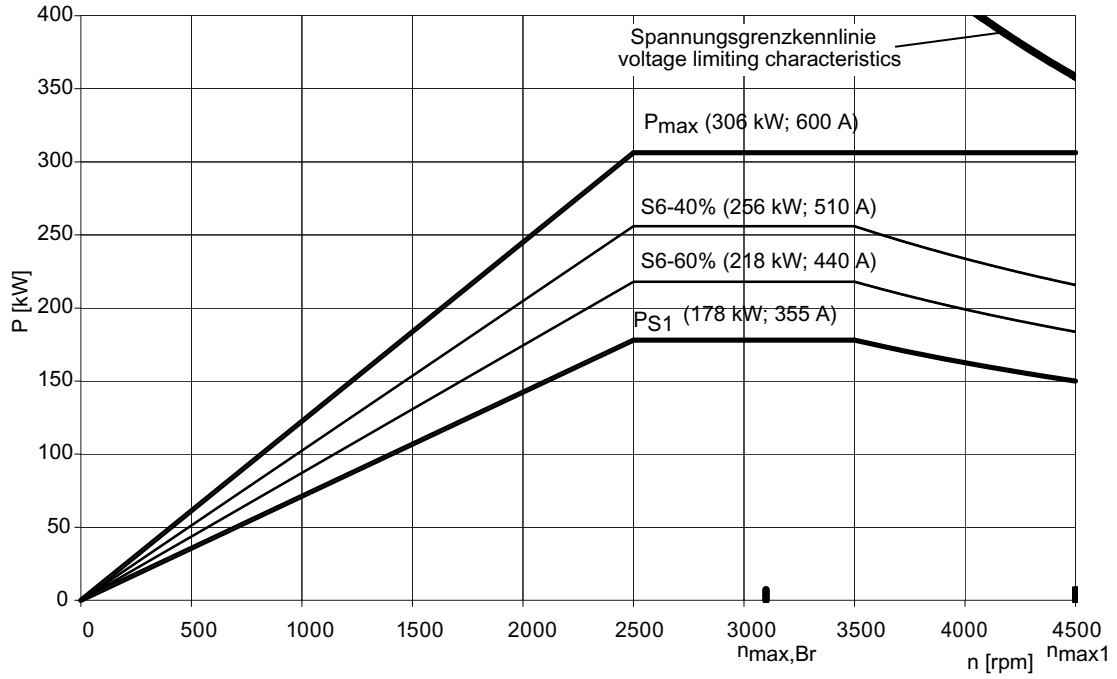



Tabella 4- 277 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-□□L□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 178 | 680 | 355 | 4500 | - | - | 3100 | 3500 | 1170 | 600 | 680 | 355 |



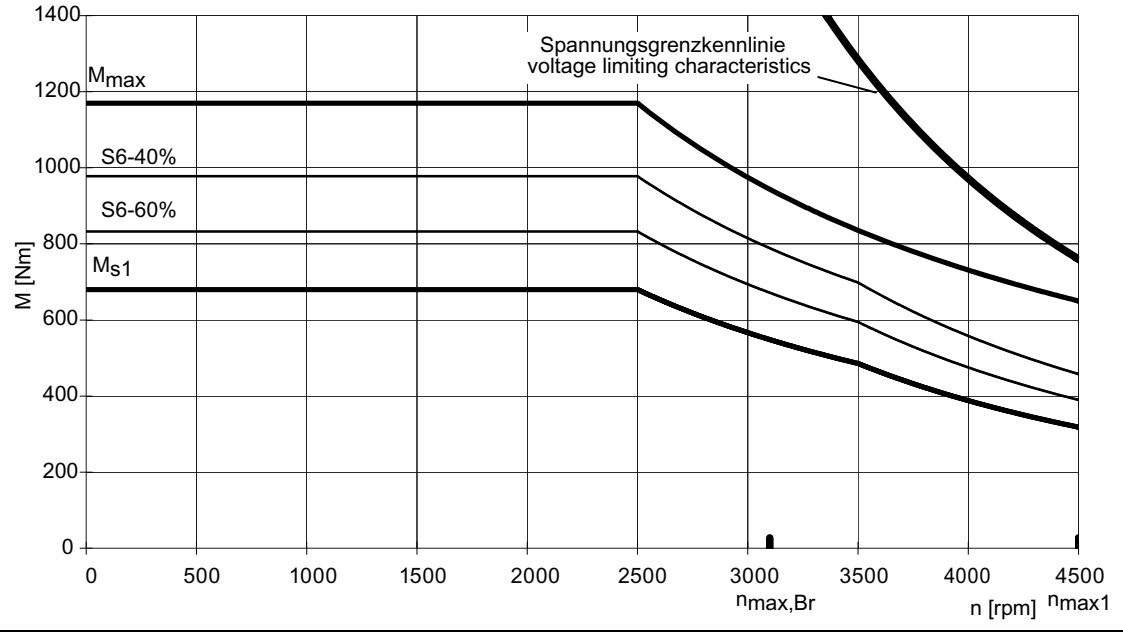
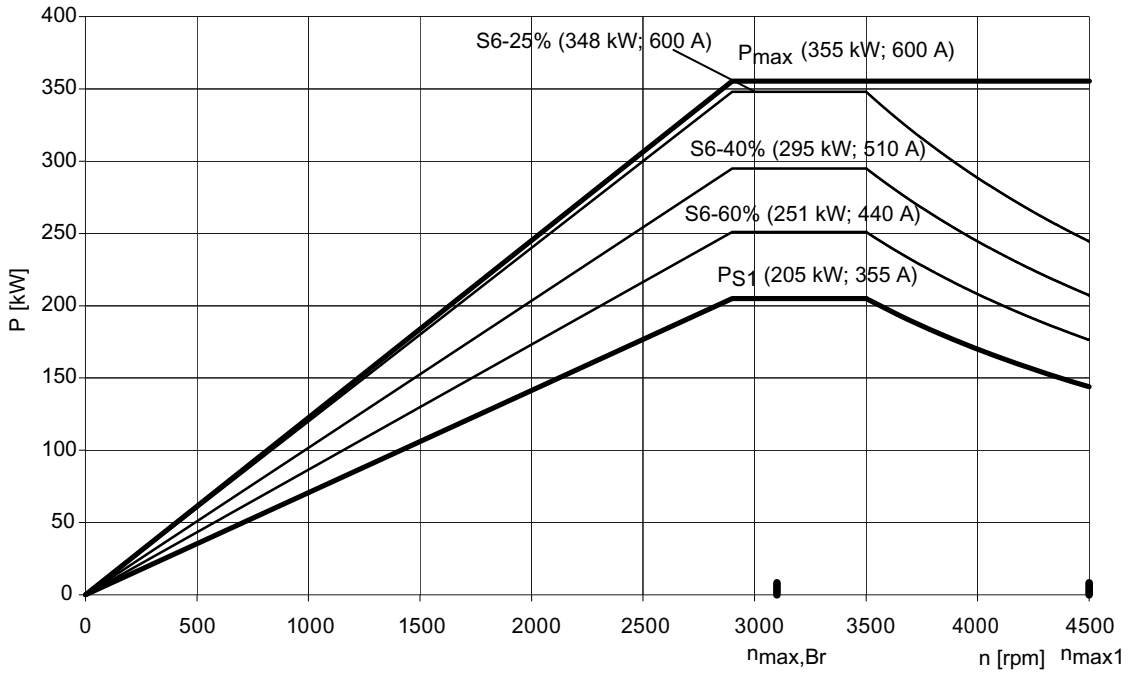



Tabella 4- 278 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-□□L□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 205 | 675 | 355 | 4500 | - | - | 3100 | 3500 | 1170 | 600 | 675 | 355 |
| 2500 | 178 | 680 | 355 | | | | | 3900 | | | | |



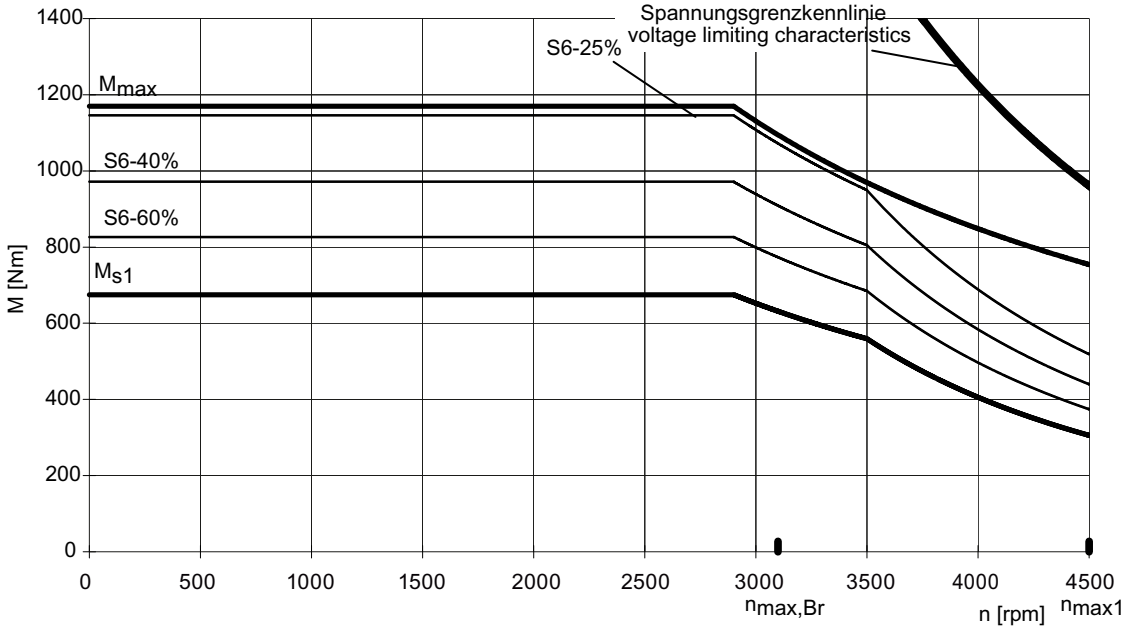
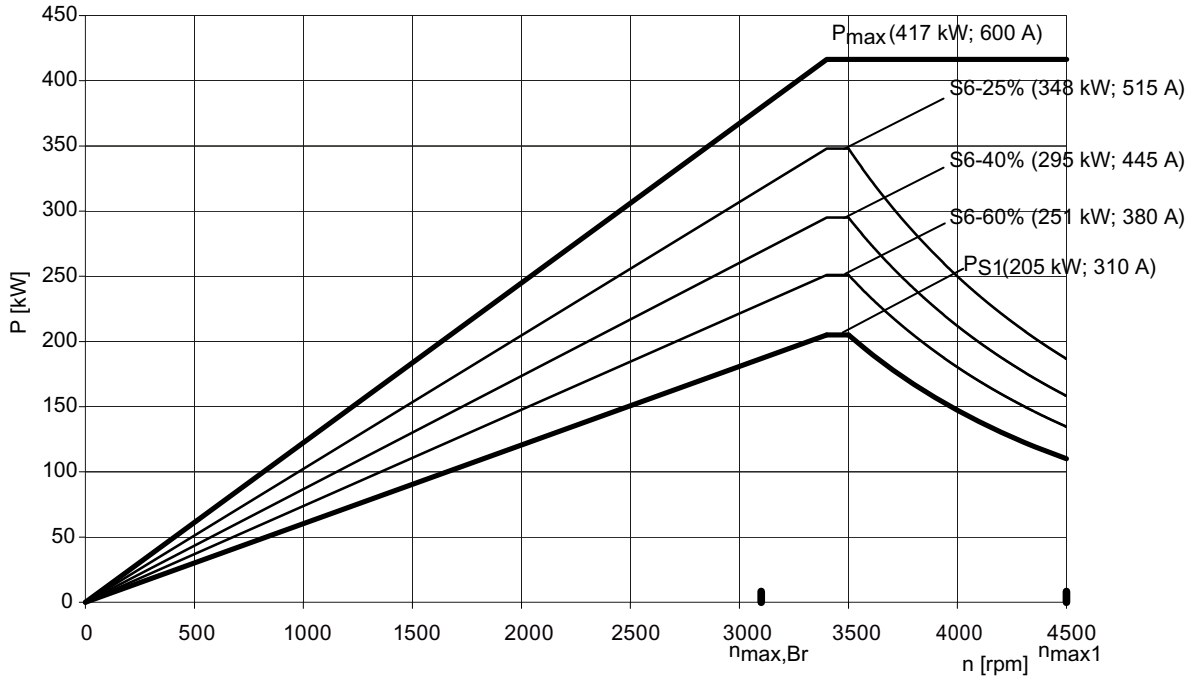



Tabella 4- 279 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-□□L□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3400 | 205 | 576 | 310 | 4500 | - | - | 3100 | 3500 | 1170 | 600 | 576 | 310 |



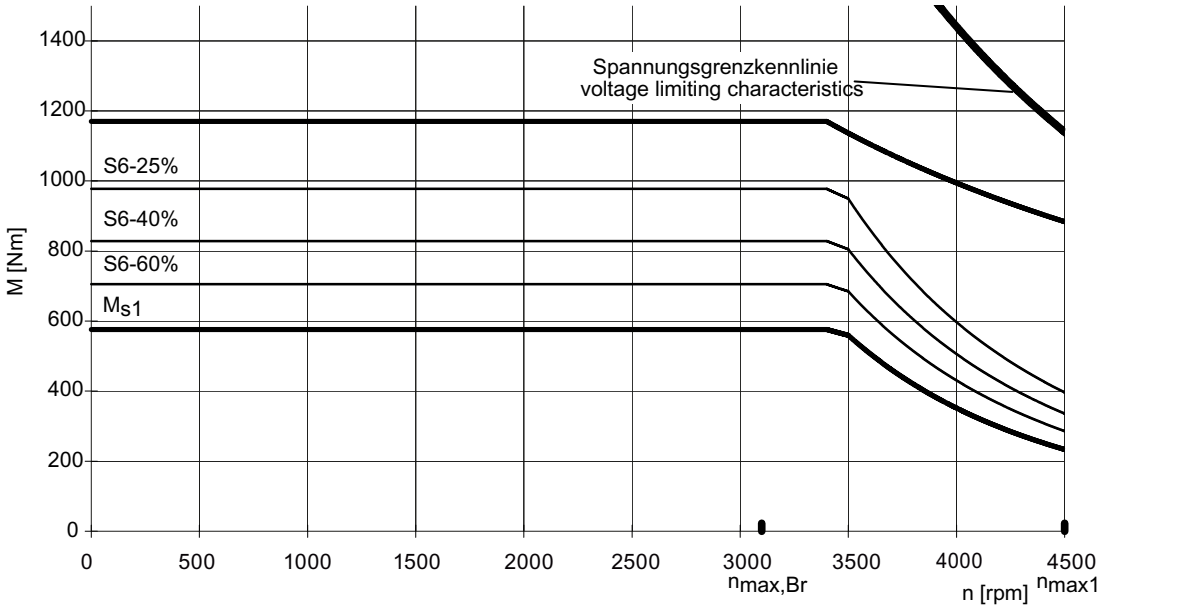
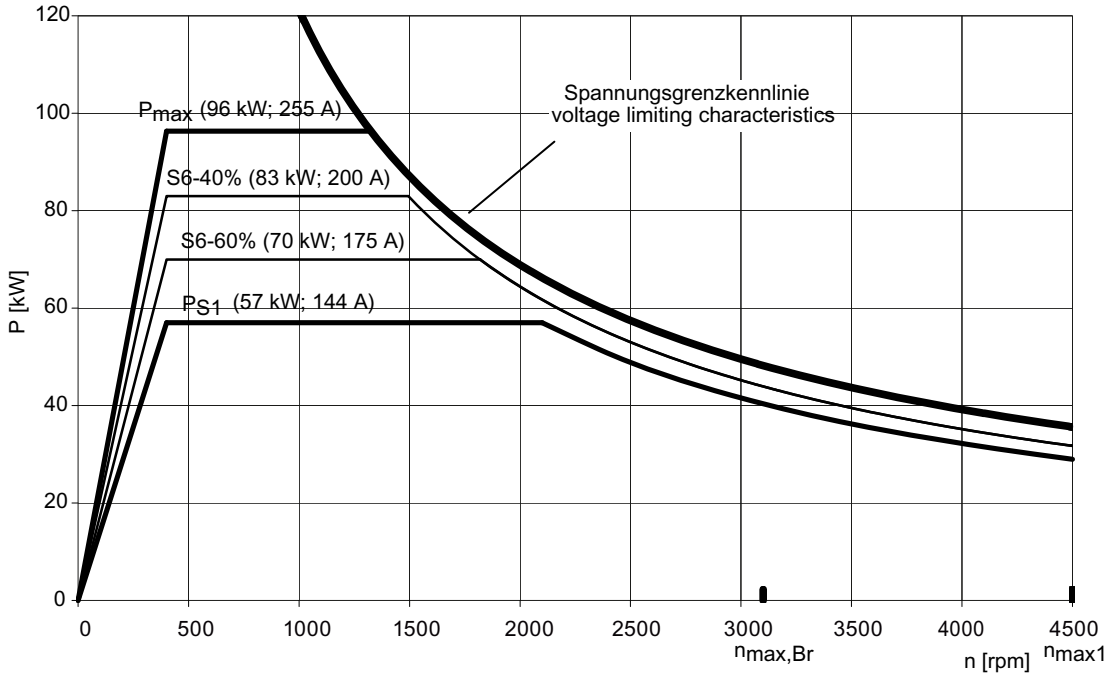



Tabella 4- 280 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-□□B□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 57 | 1361 | 144 | 4500 | - | - | 3100 | 2100 | 2300 | 255 | 1361 | 144 |



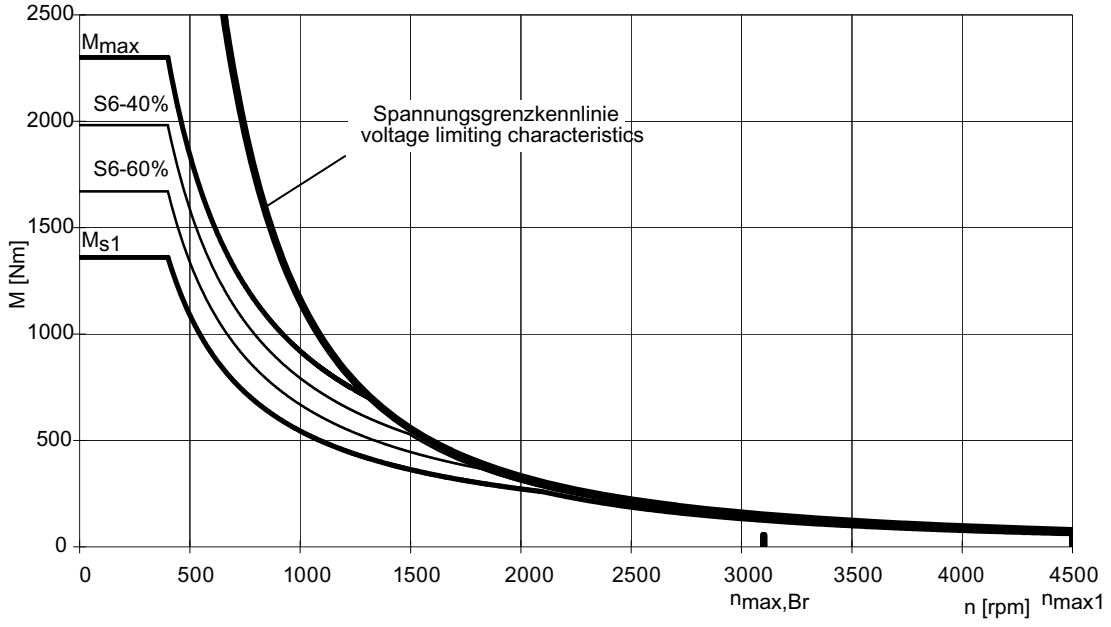
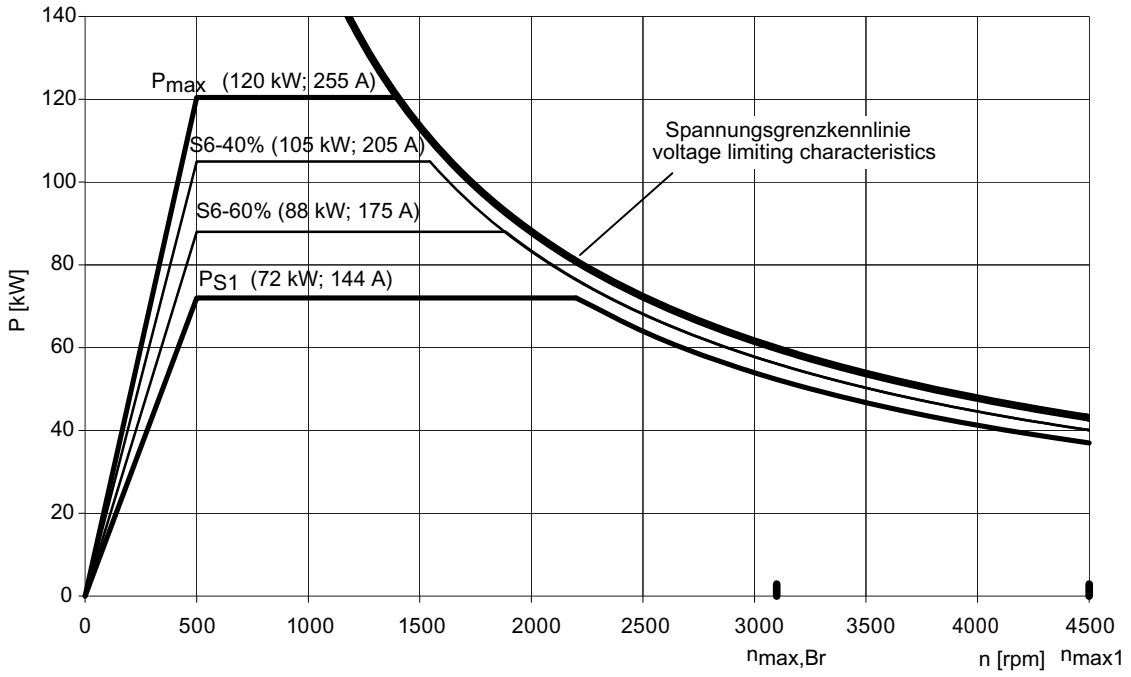



Tabella 4- 281 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-□□B□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 72 | 1375 | 144 | 4500 | - | - | 3100 | 2200 | 2300 | 255 | 1375 | 144 |
| 400 | 57 | 1361 | 144 | | | | | 2800 | | | | |



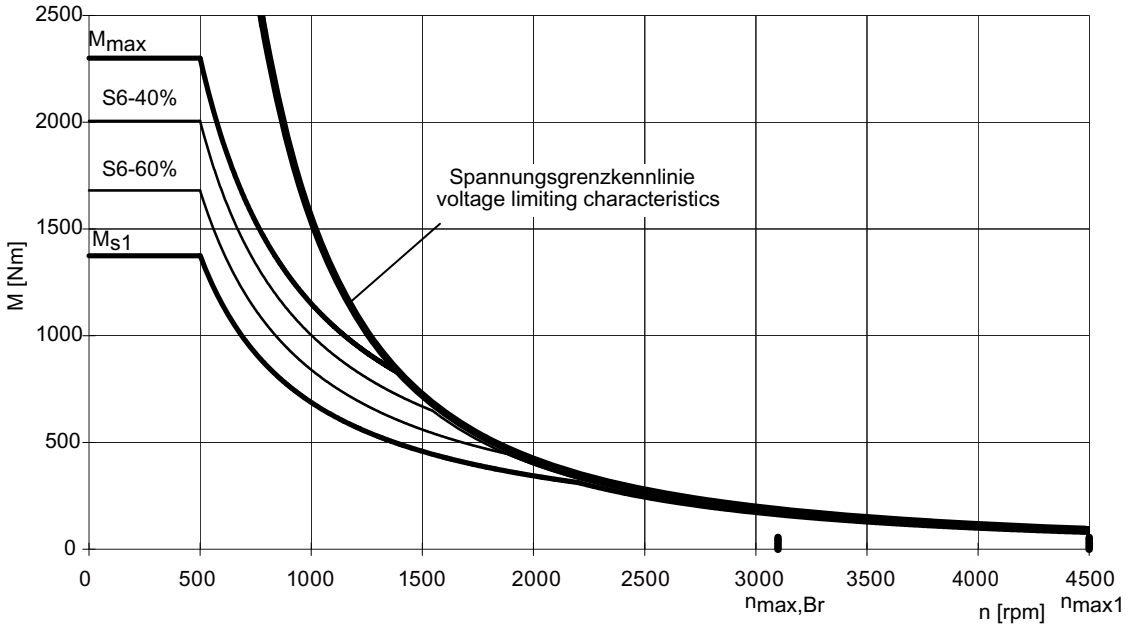
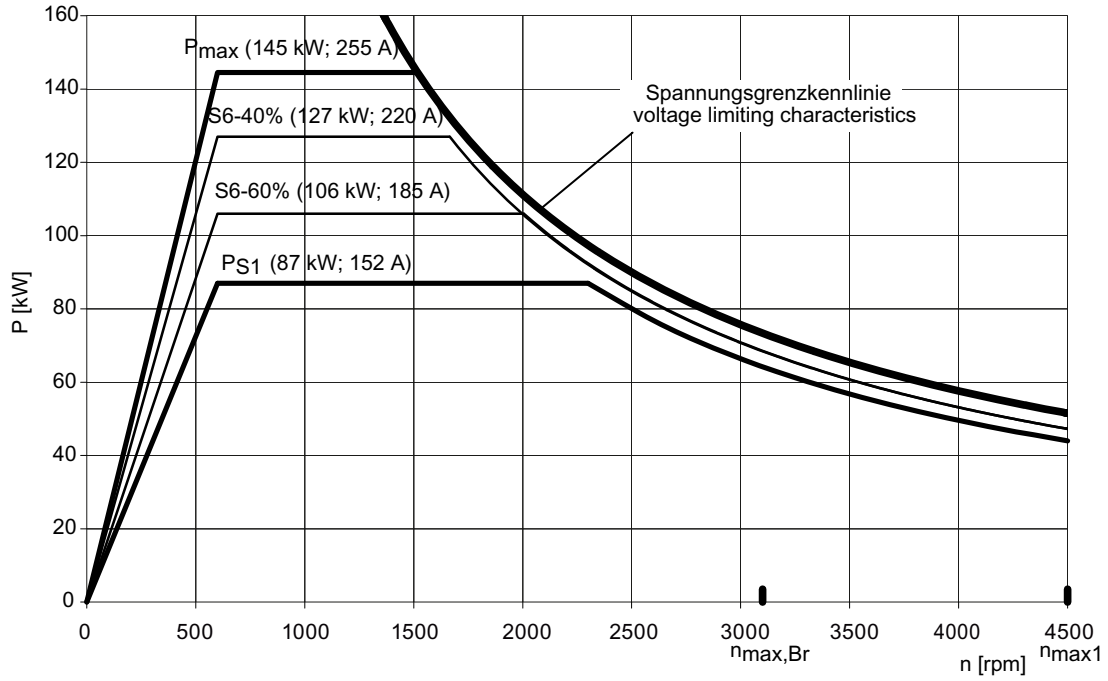



Tabella 4- 282 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-□□B□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 87 | 1385 | 152 | 4500 | - | - | 3100 | 2300 | 2300 | 255 | 1385 | 152 |



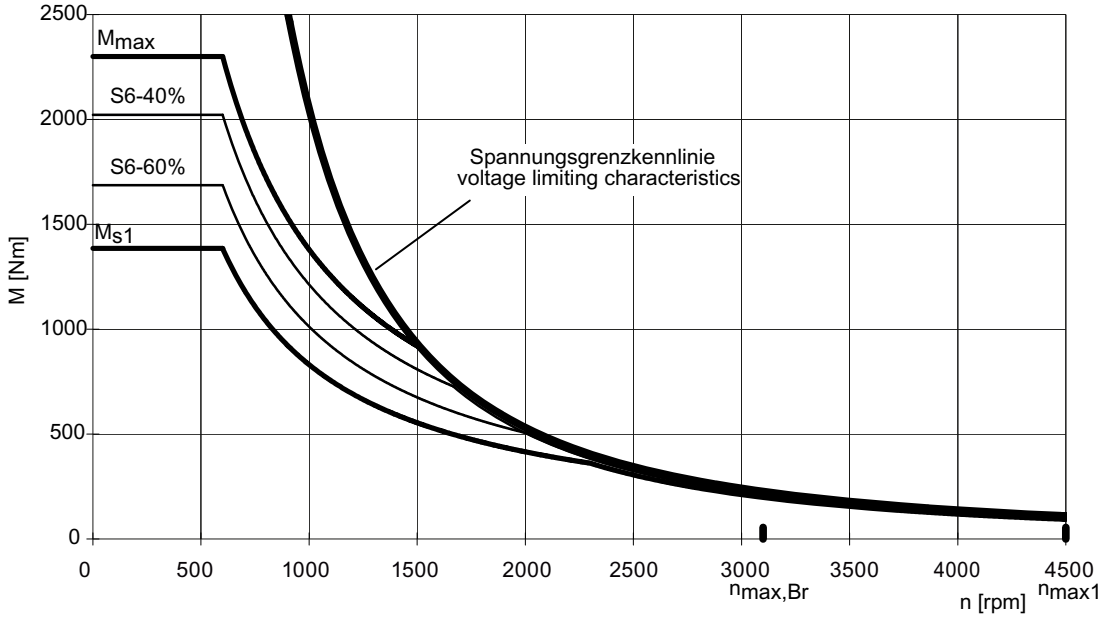
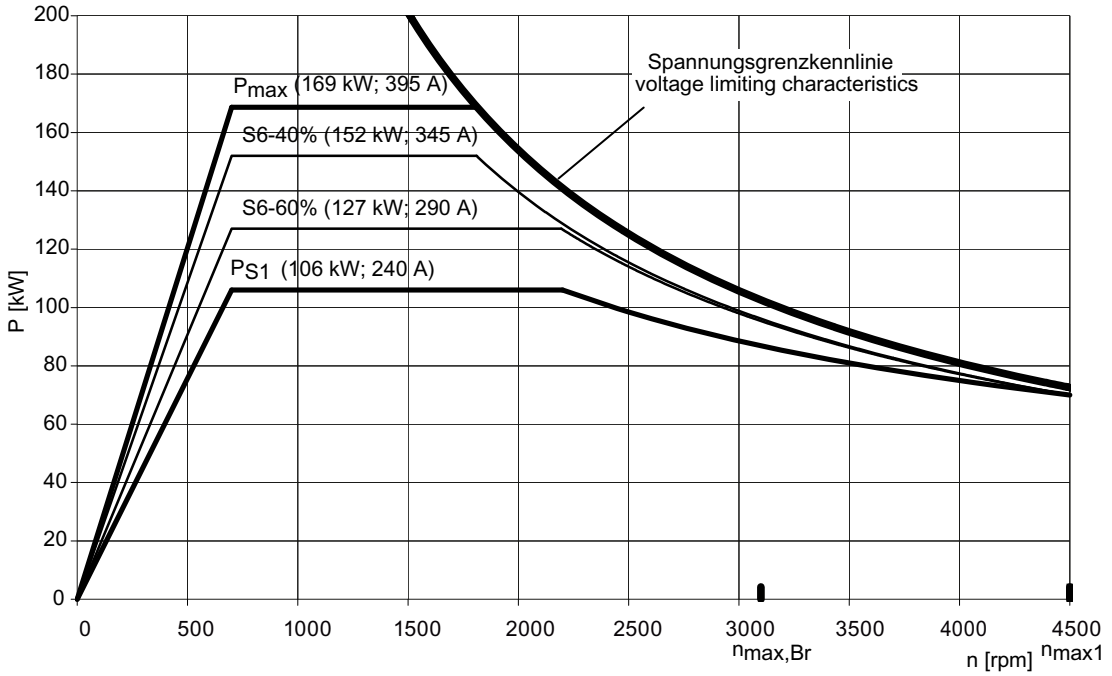



Tabella 4- 283 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-□□C□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 106 | 1446 | 240 | 4500 | - | - | 3100 | 2200 | 2300 | 395 | 1446 | 240 |



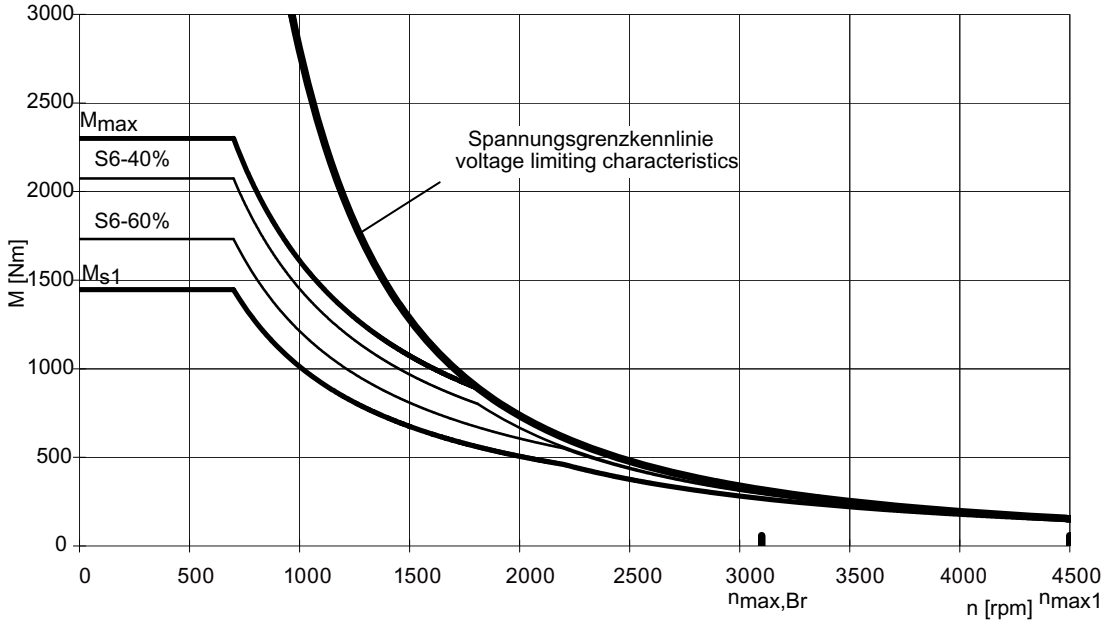
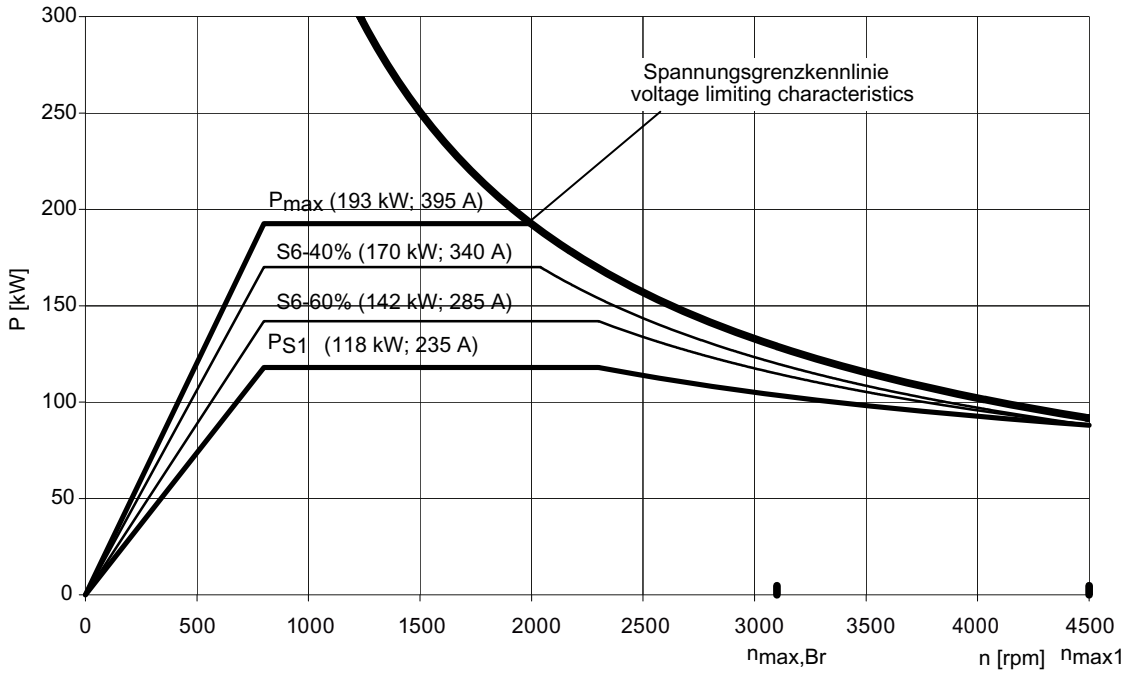



Tabella 4- 284 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-□□C□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 118 | 1409 | 235 | 4500 | - | - | 3100 | 2300 | 2300 | 395 | 1409 | 235 |
| 700 | 106 | 1446 | 240 | | | | | 2900 | | | | |



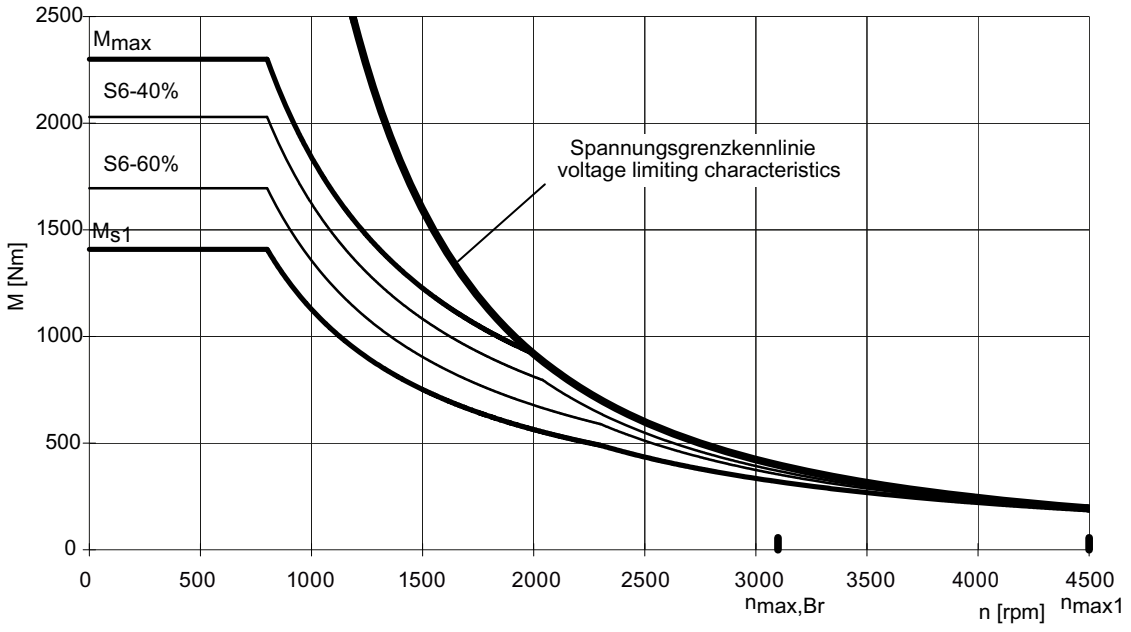
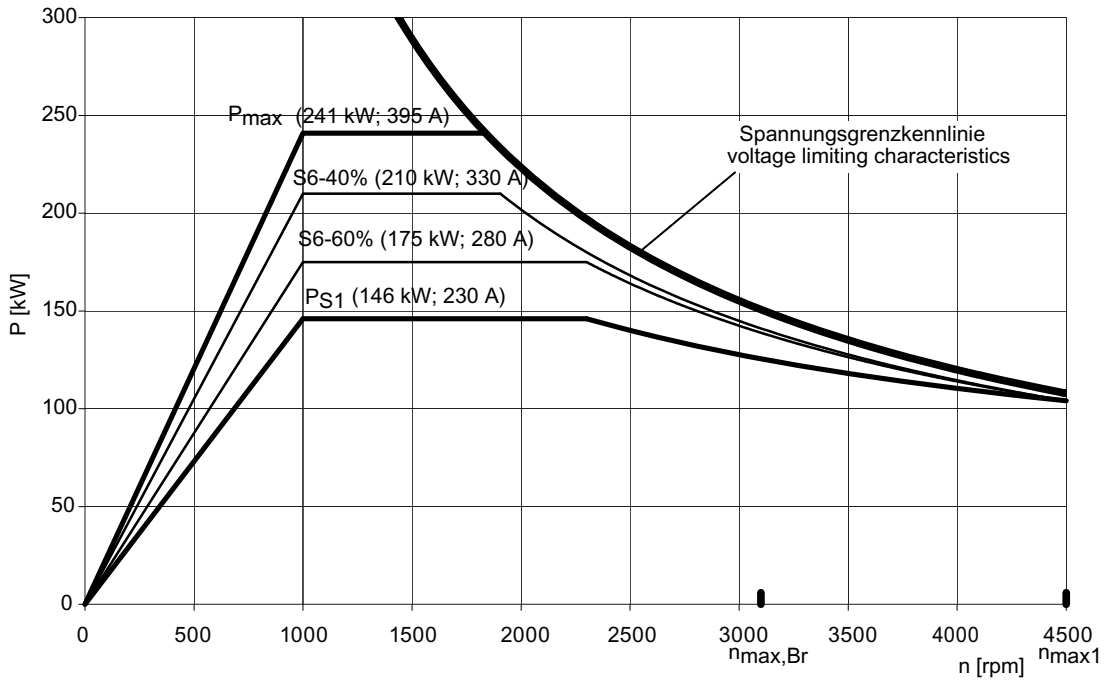



Tabella 4- 285 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-□□C□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 146 | 1394 | 230 | 4500 | - | - | 3100 | 2300 | 2300 | 395 | 1394 | 230 |



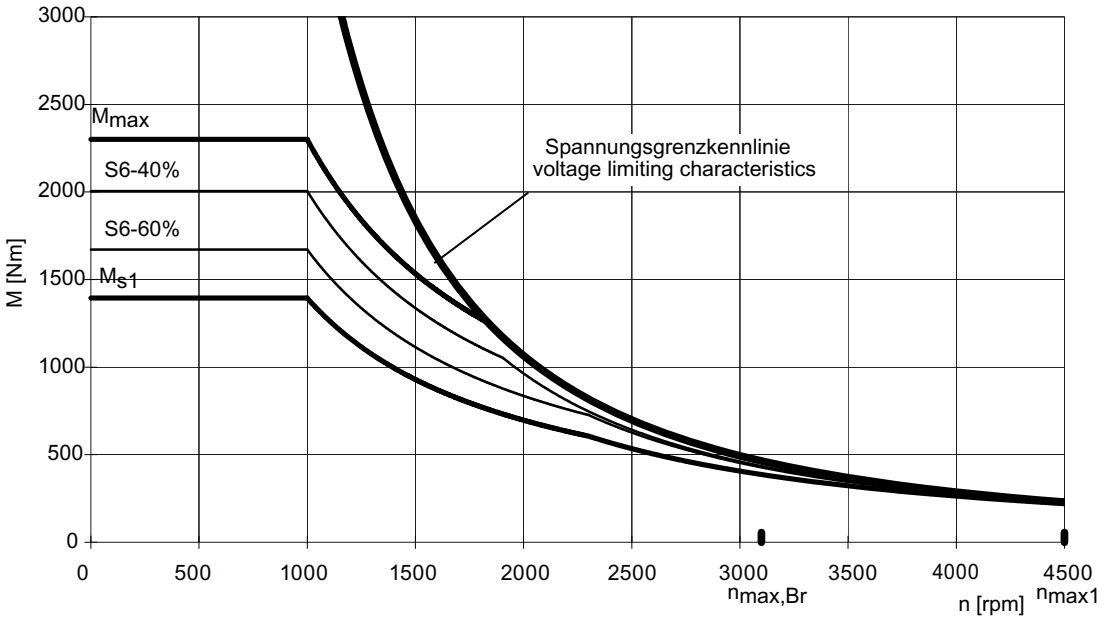
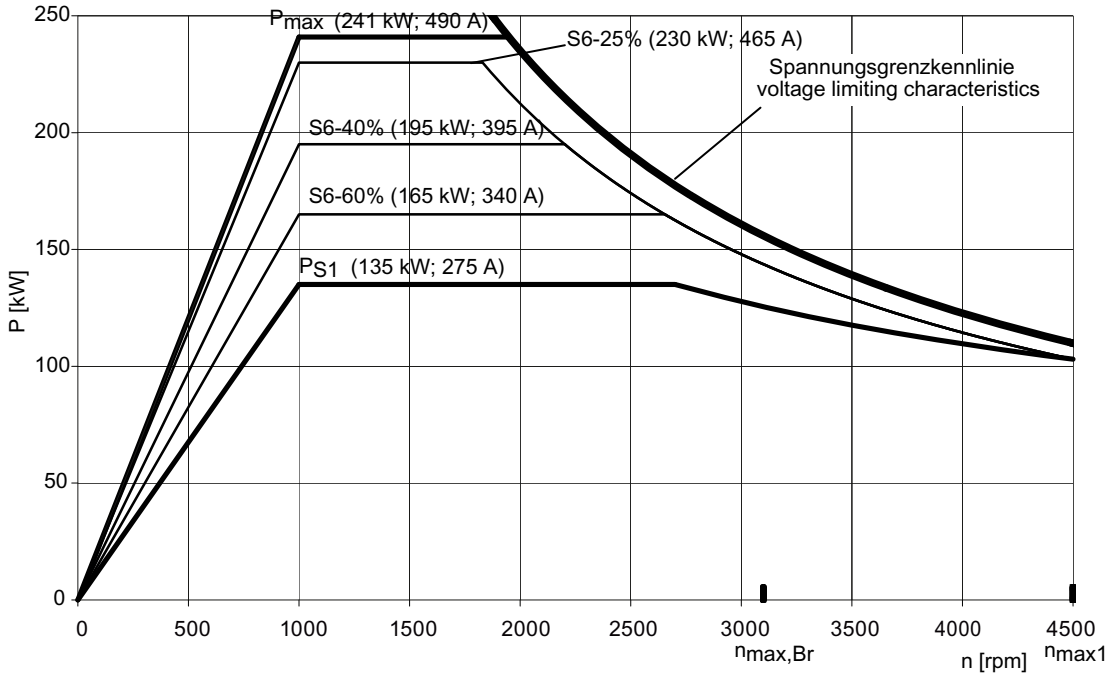



Tabella 4- 286 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-□□D□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 135 | 1289 | 275 | 4500 | - | - | 3100 | 2700 | 2300 | 490 | 1289 | 275 |



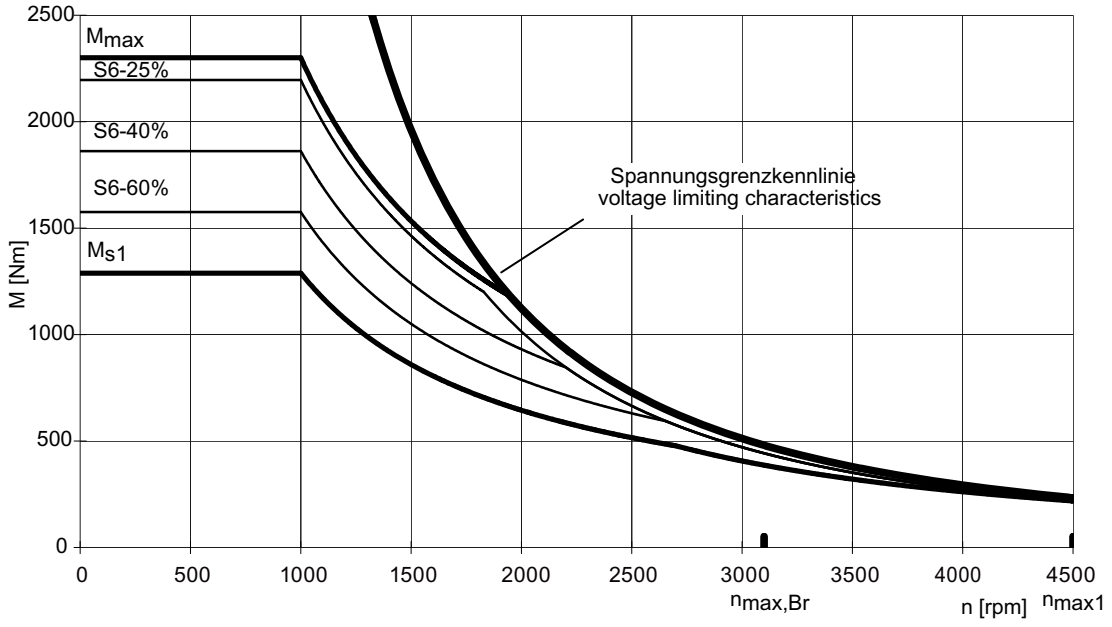
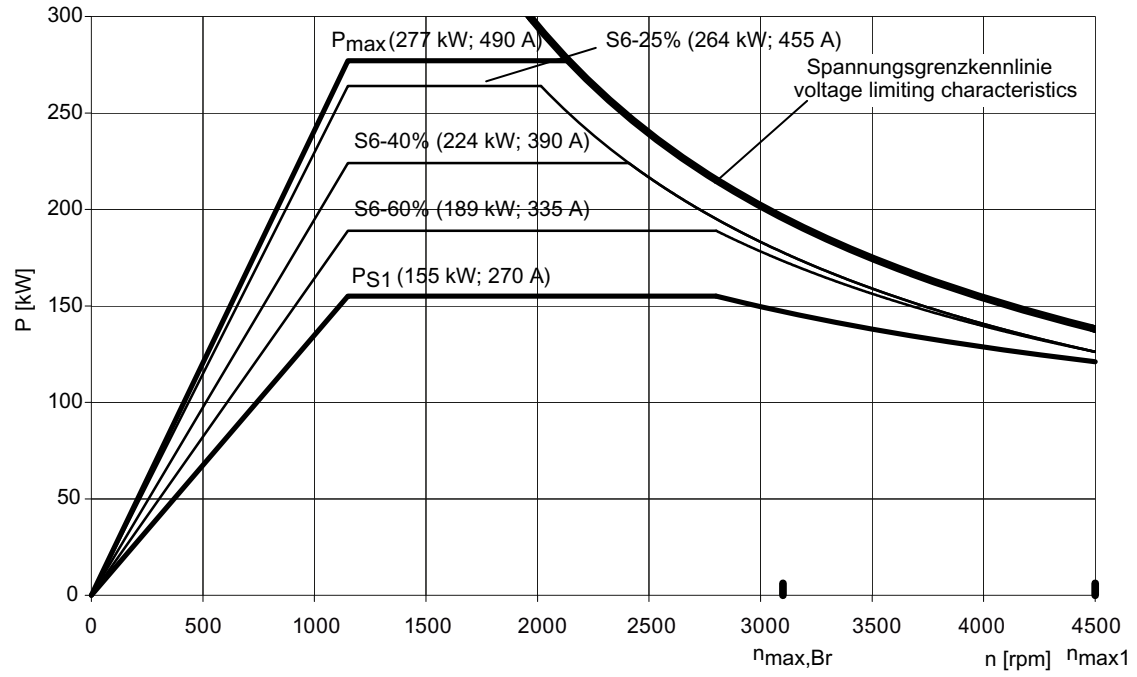



Tabella 4- 287 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-□□D□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 155 | 1287 | 270 | 4500 | - | - | 3100 | 2800 | 2300 | 490 | 1287 | 270 |
| 1000 | 135 | 1289 | 275 | | | | | 3600 | | | | |



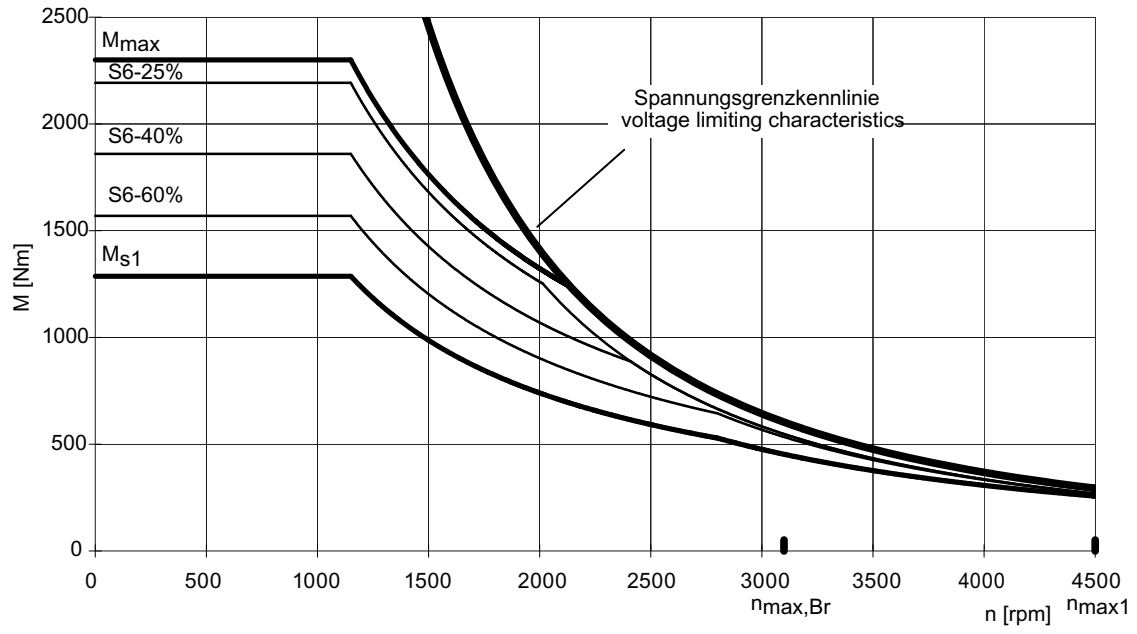
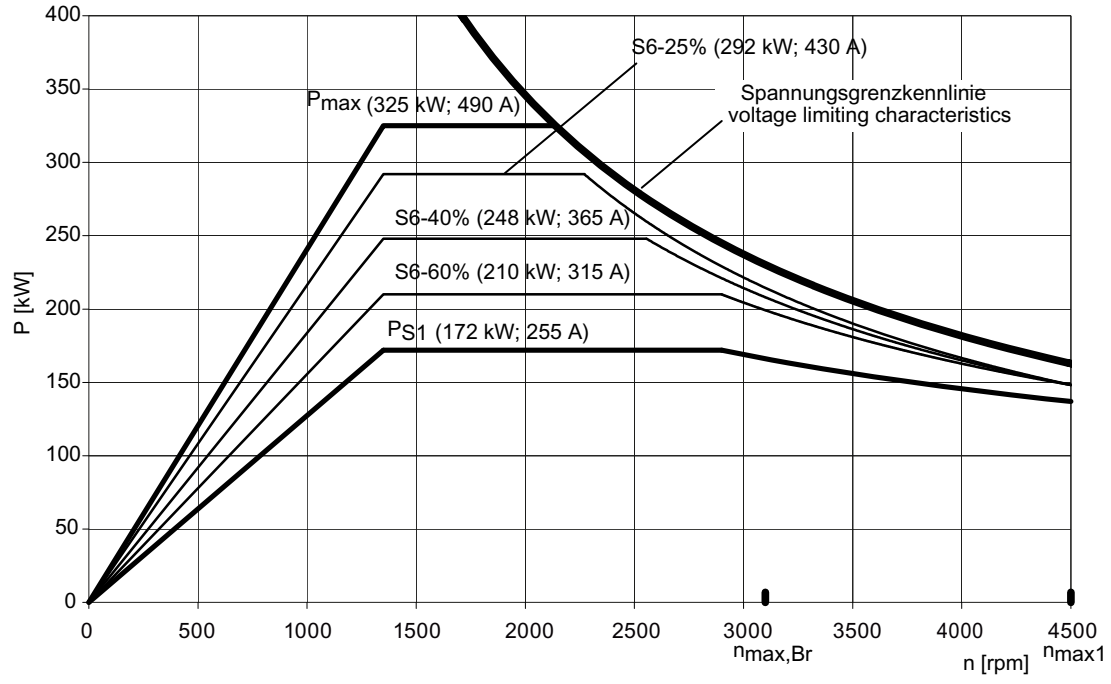



Tabella 4- 288 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-□□D□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 172 | 1217 | 255 | 4500 | - | - | 3100 | 2900 | 2300 | 490 | 1217 | 255 |



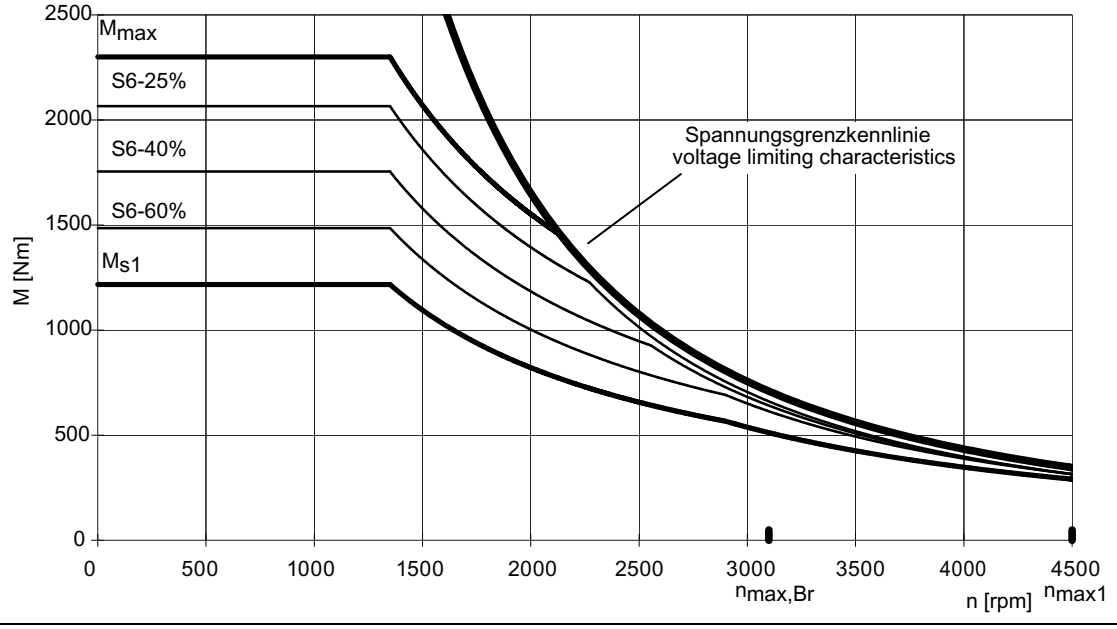
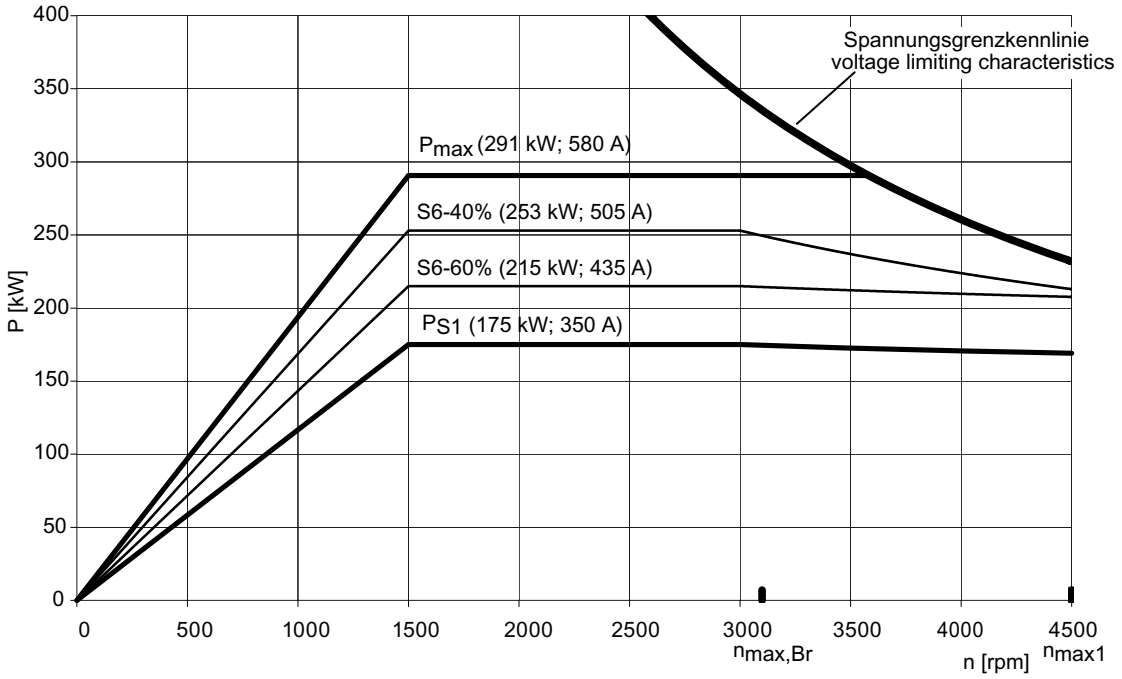



Tabella 4- 289 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-□□F□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 175 | 1114 | 350 | 4500 | - | - | 3100 | 3000 | 1850 | 580 | 1114 | 350 |



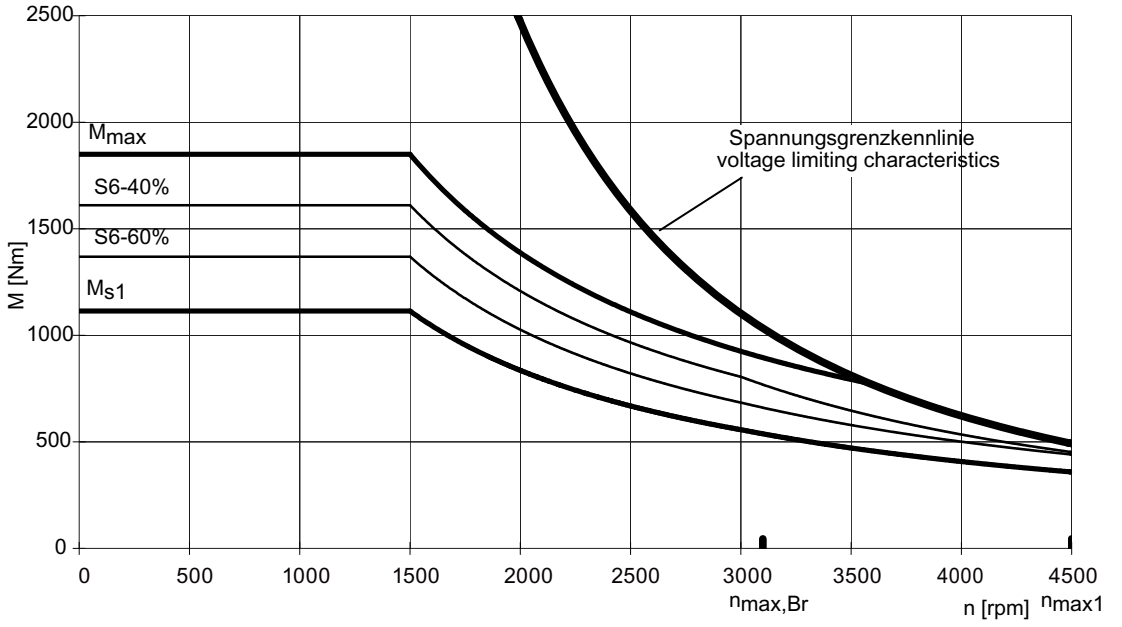



Tabella 4- 290 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-□□F□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 200 | 1091 | 350 | 4500 | - | - | 3100 | 2900 | 1850 | 580 | 1091 | 350 |
| 1500 | 175 | 1114 | 350 | | | | | 4500 | | | | |

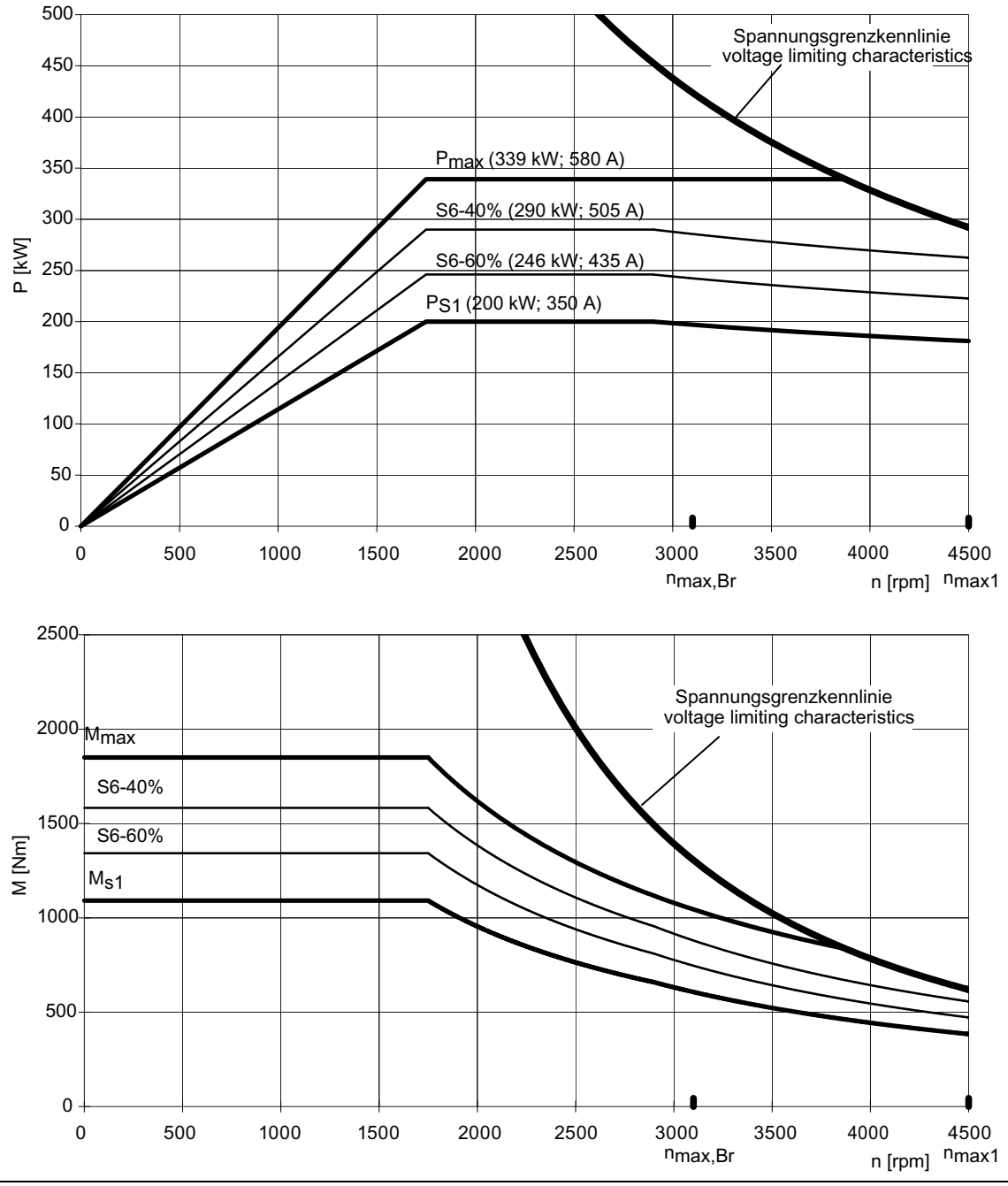
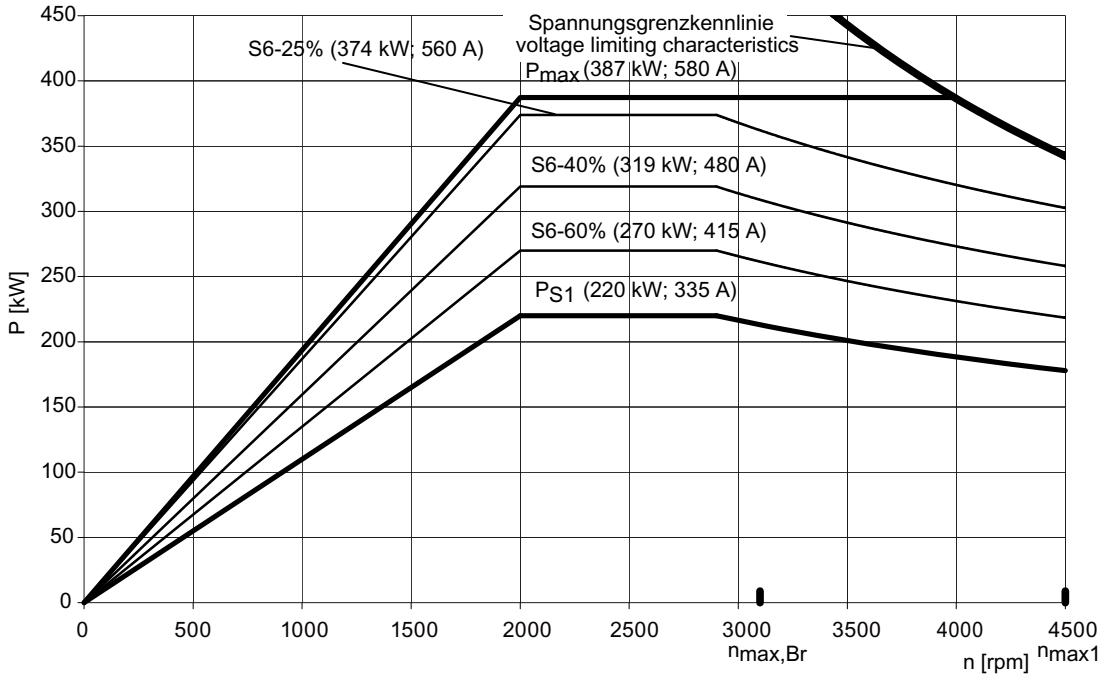


Tabella 4- 291 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-□□F□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 220 | 1051 | 335 | 4500 | - | - | 3100 | 2900 | 1850 | 580 | 1051 | 335 |



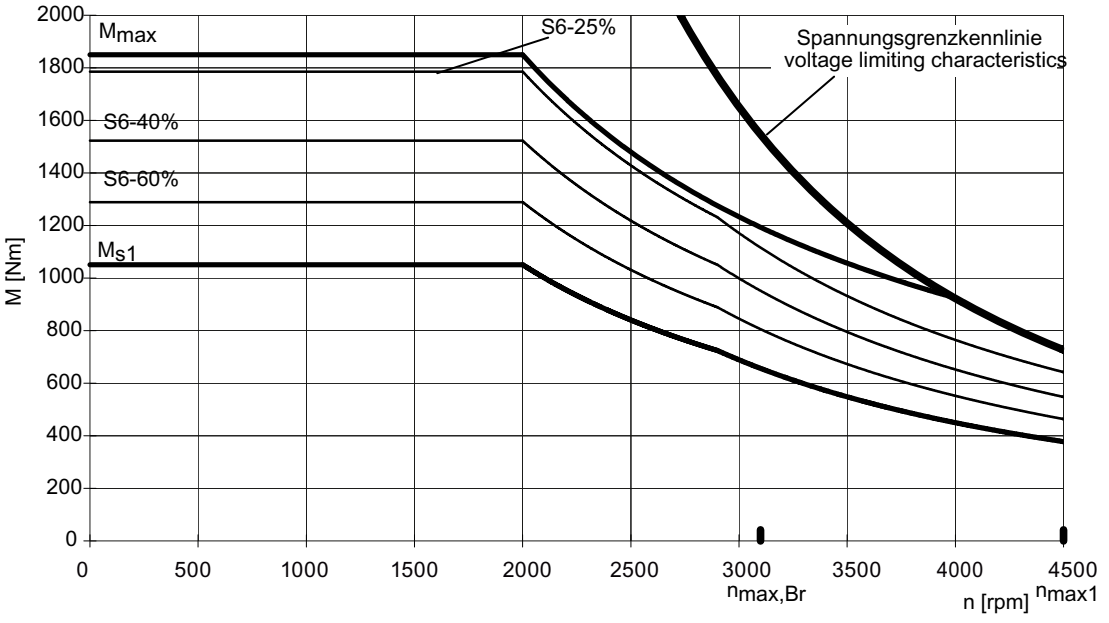
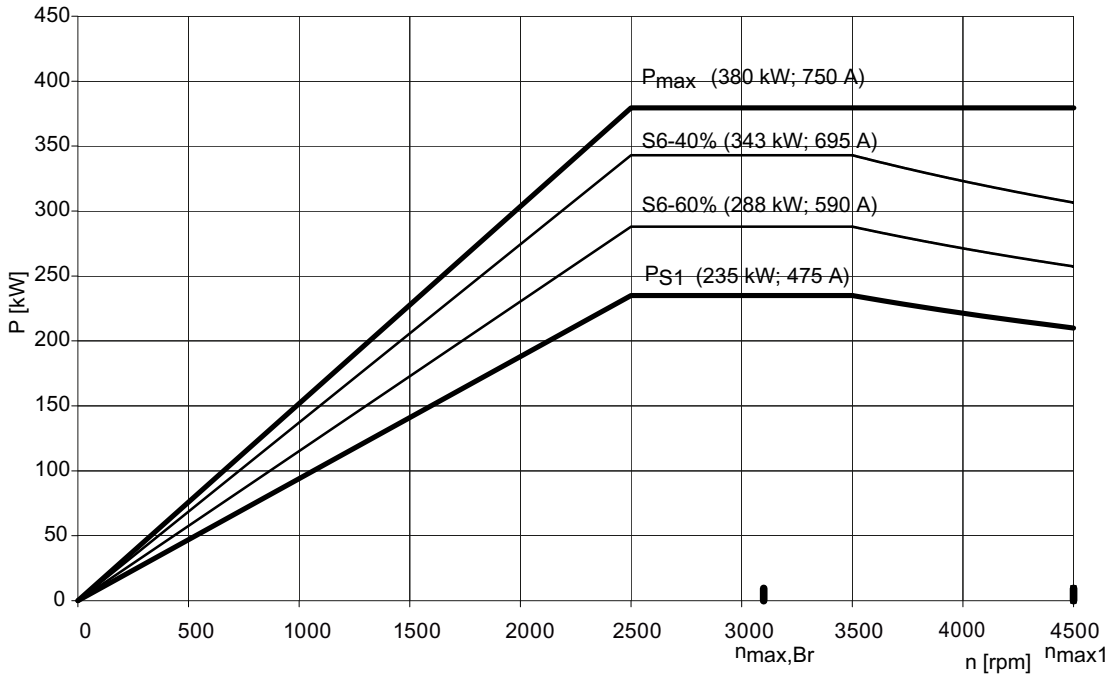



Tabella 4- 292 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-□□L□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 235 | 898 | 475 | 4500 | - | - | 3100 | 3500 | 1450 | 750 | 898 | 475 |



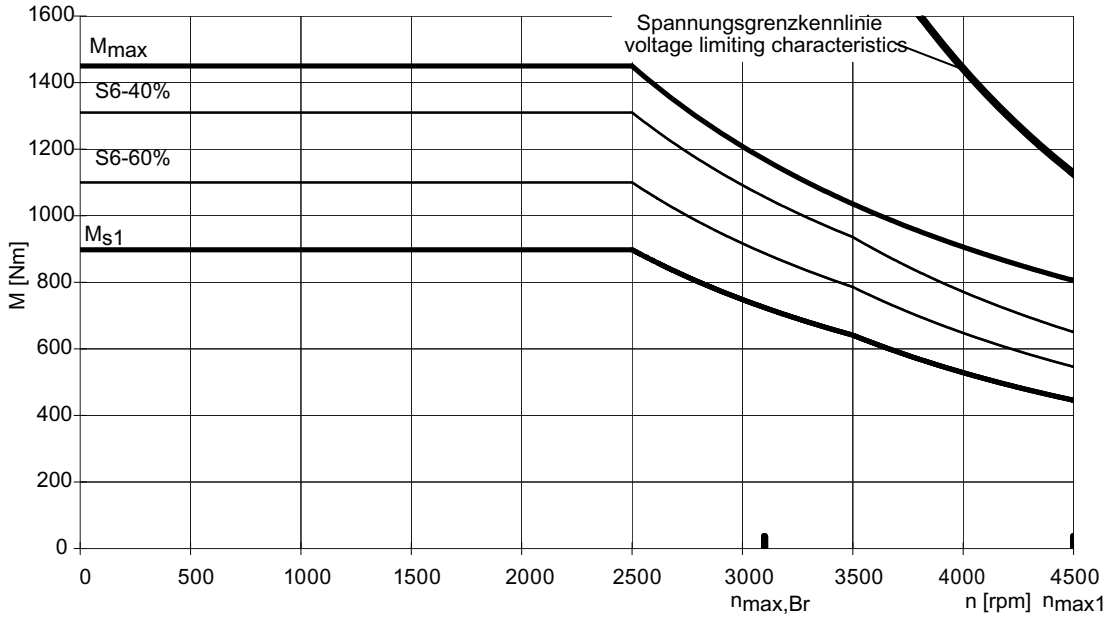
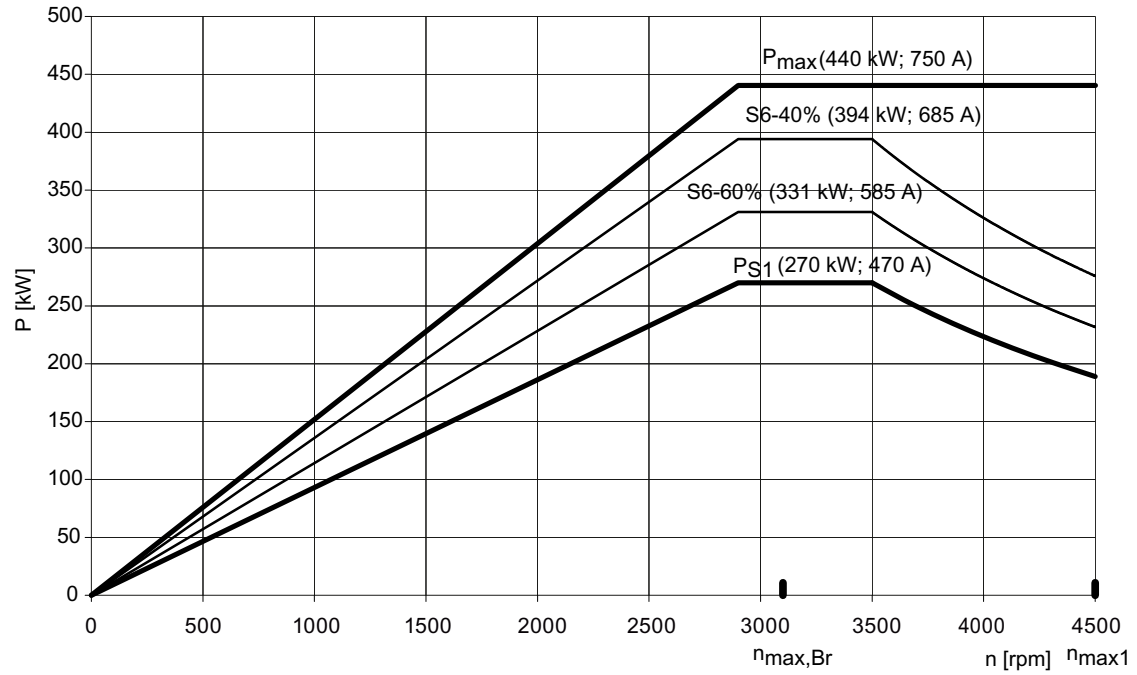



Tabella 4- 293 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-□□L□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 270 | 889 | 470 | 4500 | - | - | 3100 | 3500 | 1450 | 750 | 889 | 470 |
| 2500 | 235 | 898 | 475 | | | | | 3900 | | | | |



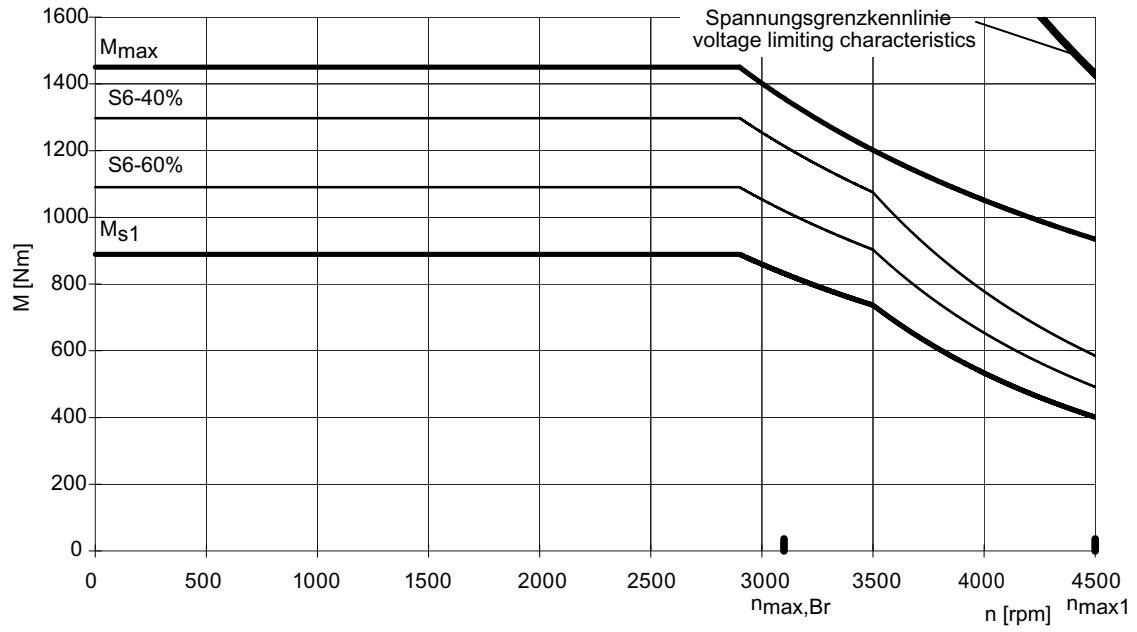
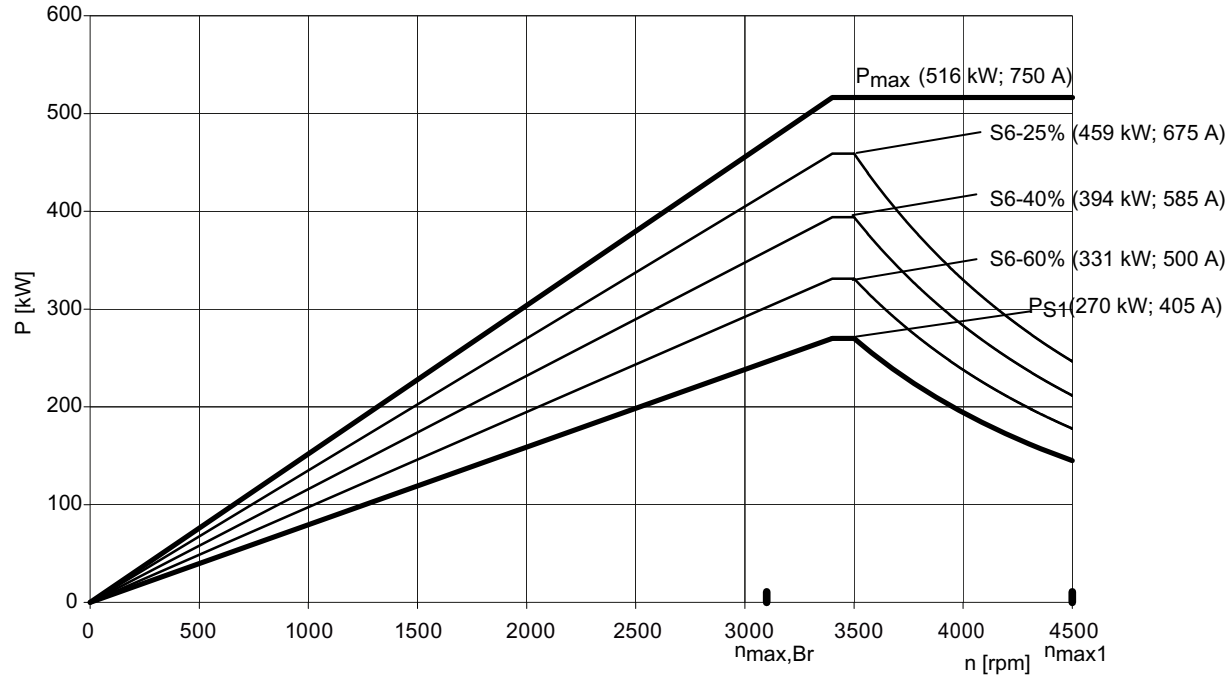



Tabella 4- 294 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-□□L□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3400 | 270 | 758 | 405 | 4500 | - | - | 3100 | 3500 | 1450 | 750 | 758 | 405 |



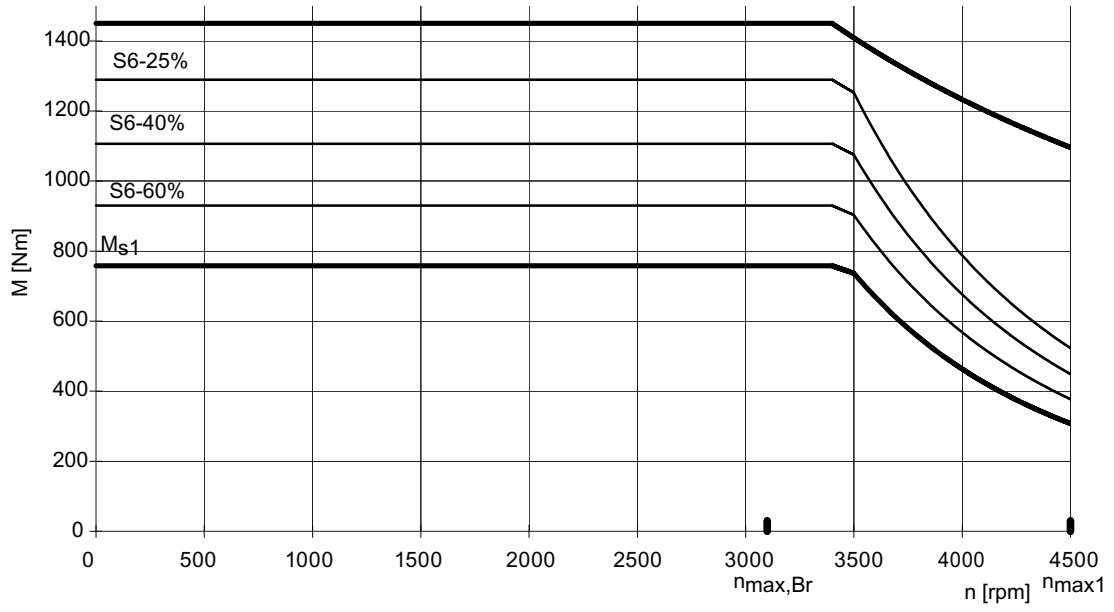
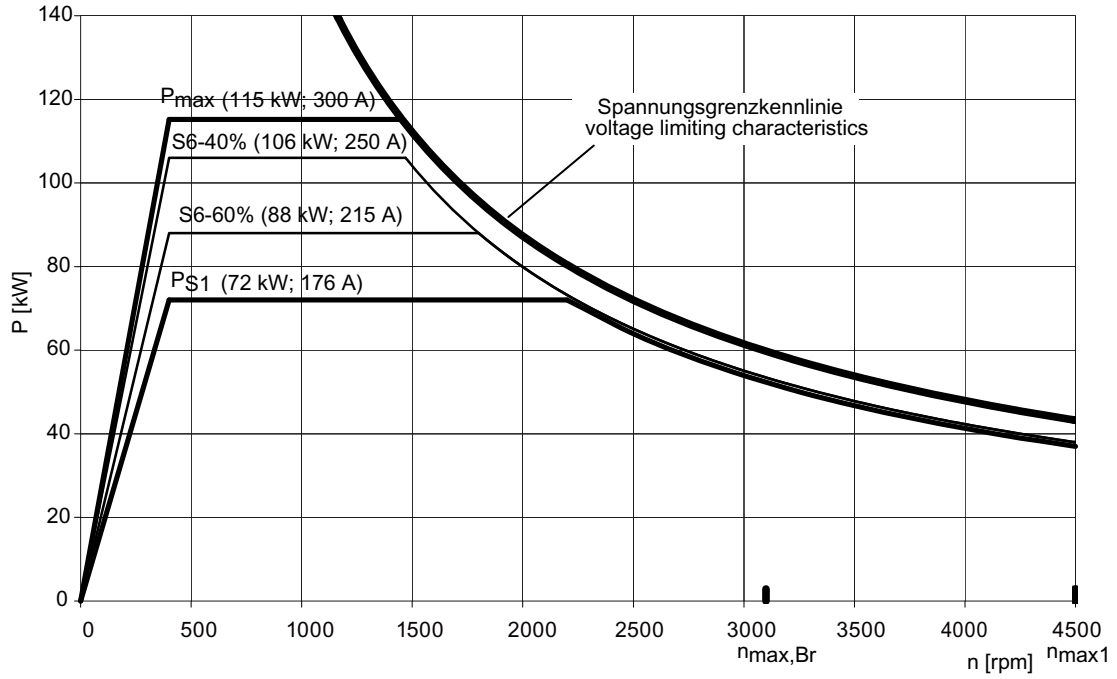



Tabella 4- 295 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-□□B□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 72 | 1719 | 176 | 4500 | - | - | 3100 | 2200 | 2750 | 300 | 1719 | 176 |



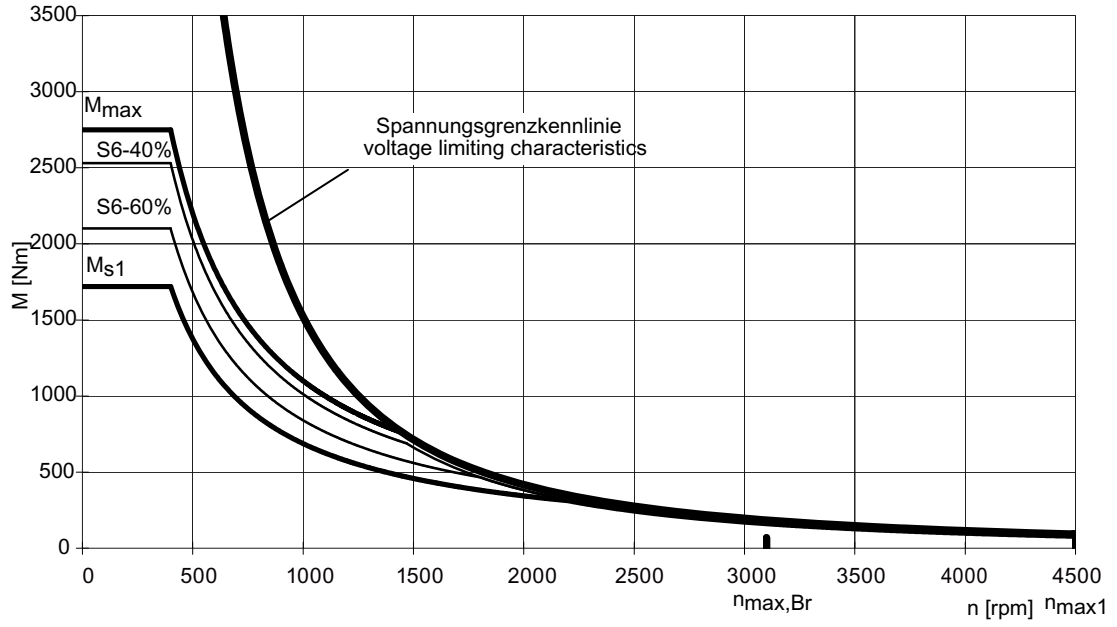
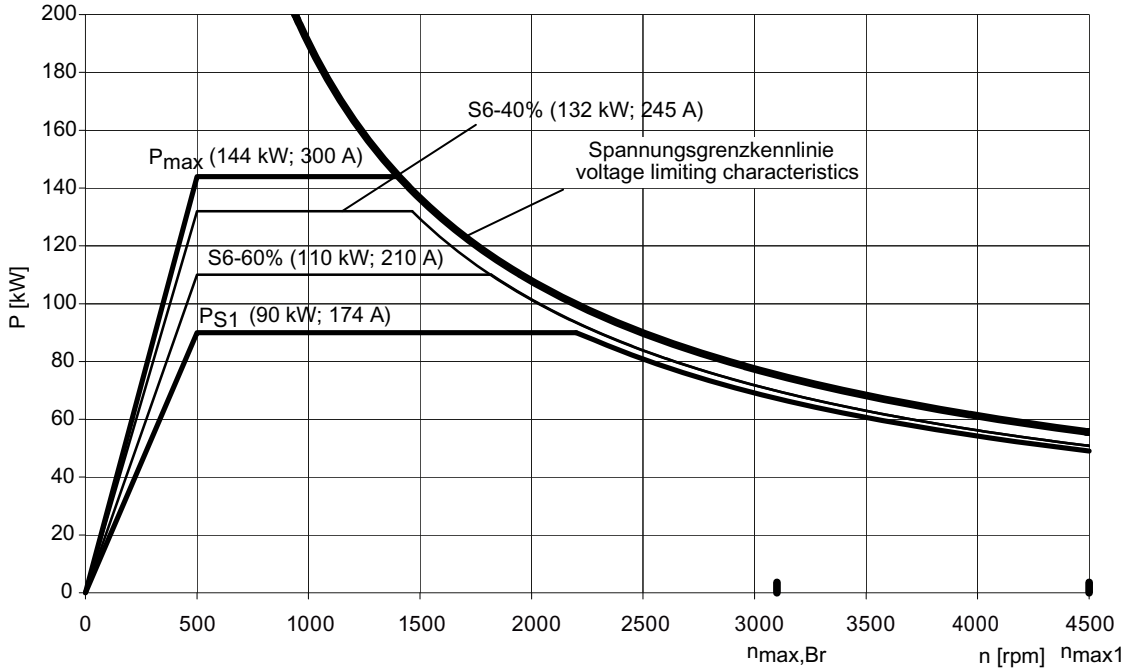



Tabella 4- 296 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-□□B□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 90 | 1719 | 174 | 4500 | - | - | 3100 | 2200 | 2750 | 300 | 1719 | 174 |
| 400 | 72 | 1719 | 176 | | | | | 2900 | | | | |



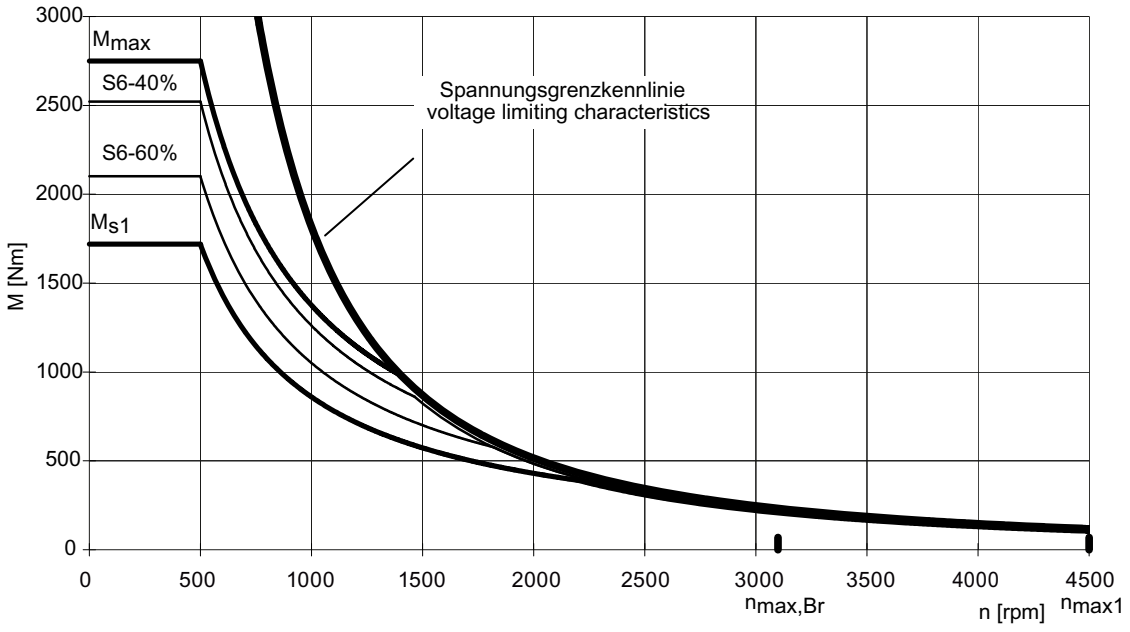
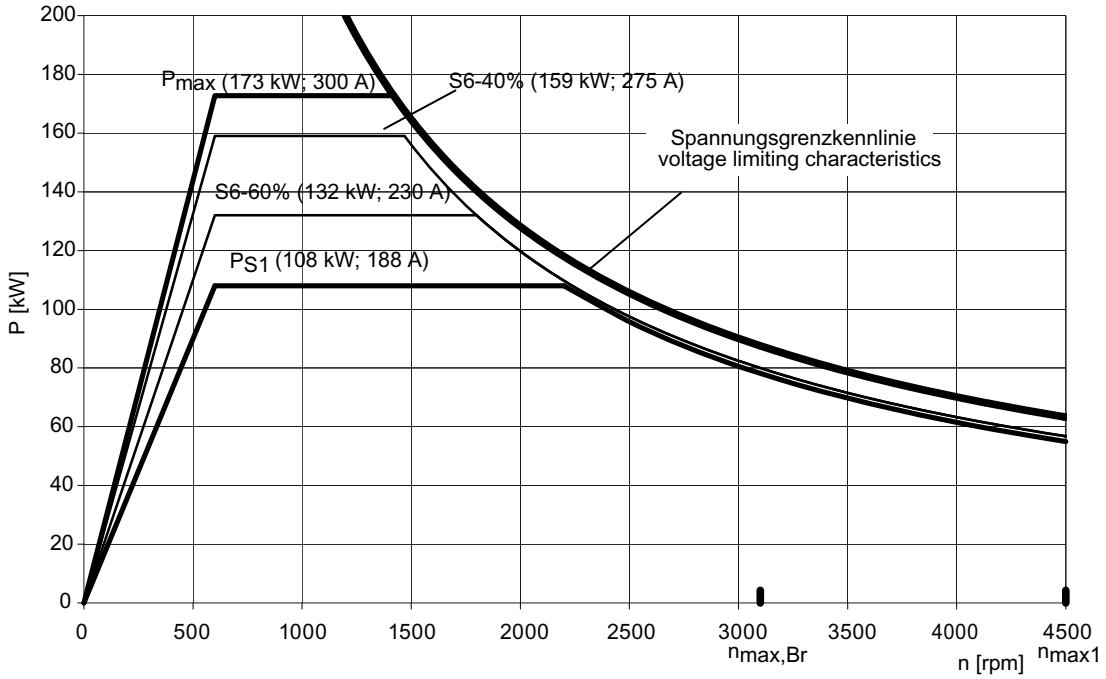



Tabella 4- 297 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-□□B□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 108 | 1719 | 188 | 4500 | - | - | 3100 | 2200 | 2750 | 300 | 1719 | 188 |



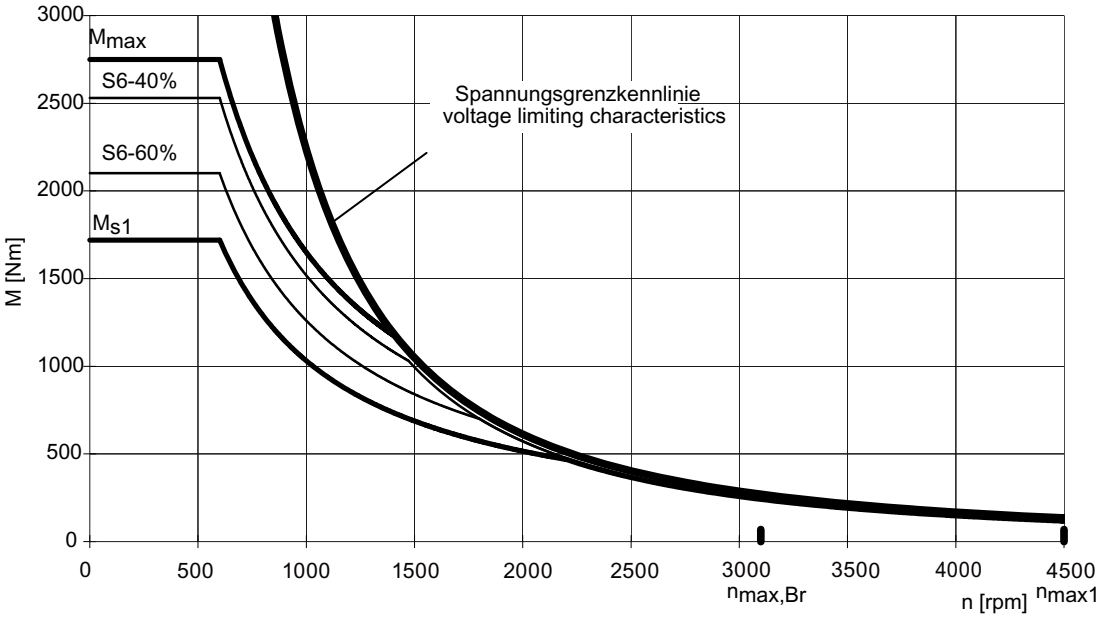
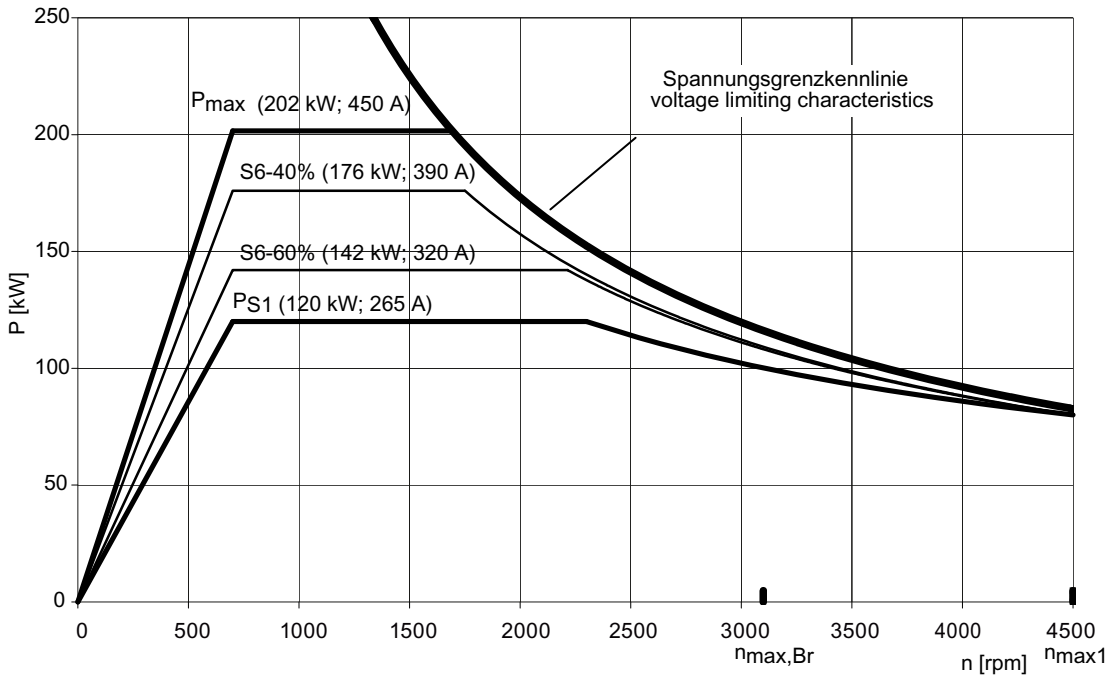



Tabella 4- 298 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-□□C□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 120 | 1637 | 265 | 4500 | - | - | 3100 | 2300 | 2750 | 450 | 1637 | 265 |



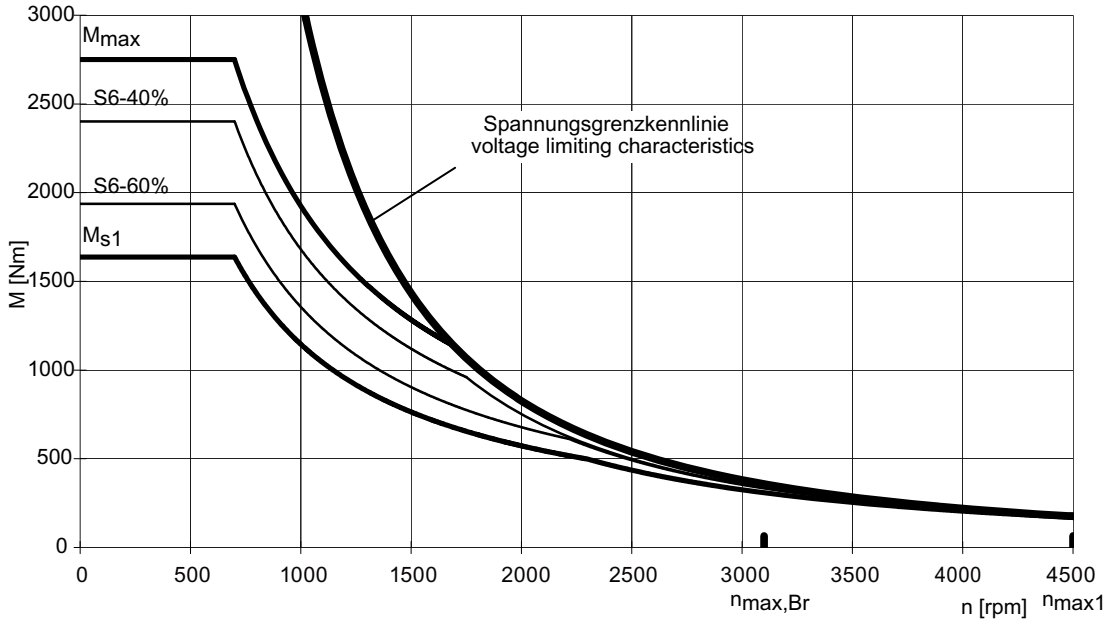
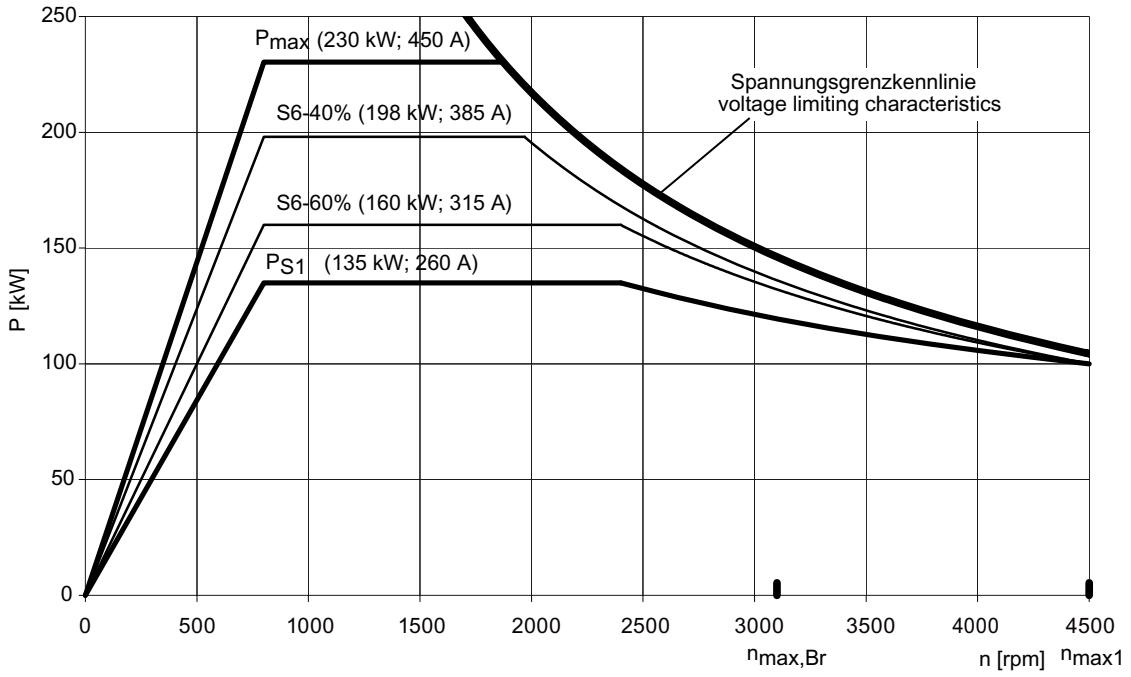



Tabella 4- 299 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-□□C□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 135 | 1612 | 260 | 4500 | - | - | 3100 | 2400 | 2750 | 450 | 1612 | 260 |
| 700 | 120 | 1637 | 265 | | | | | 3100 | | | | |



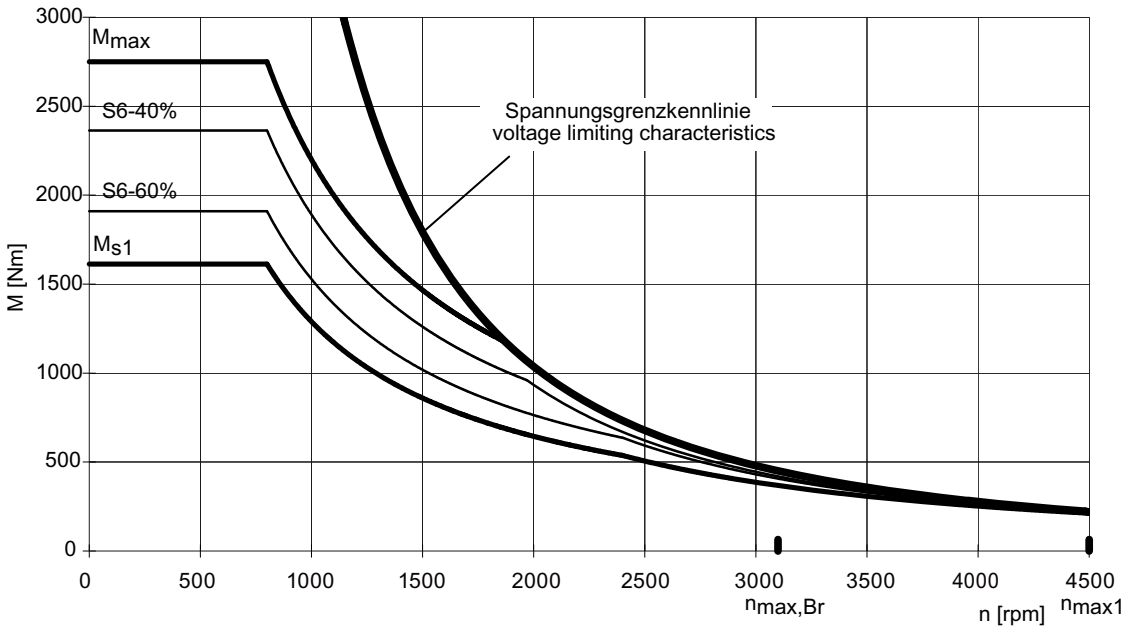
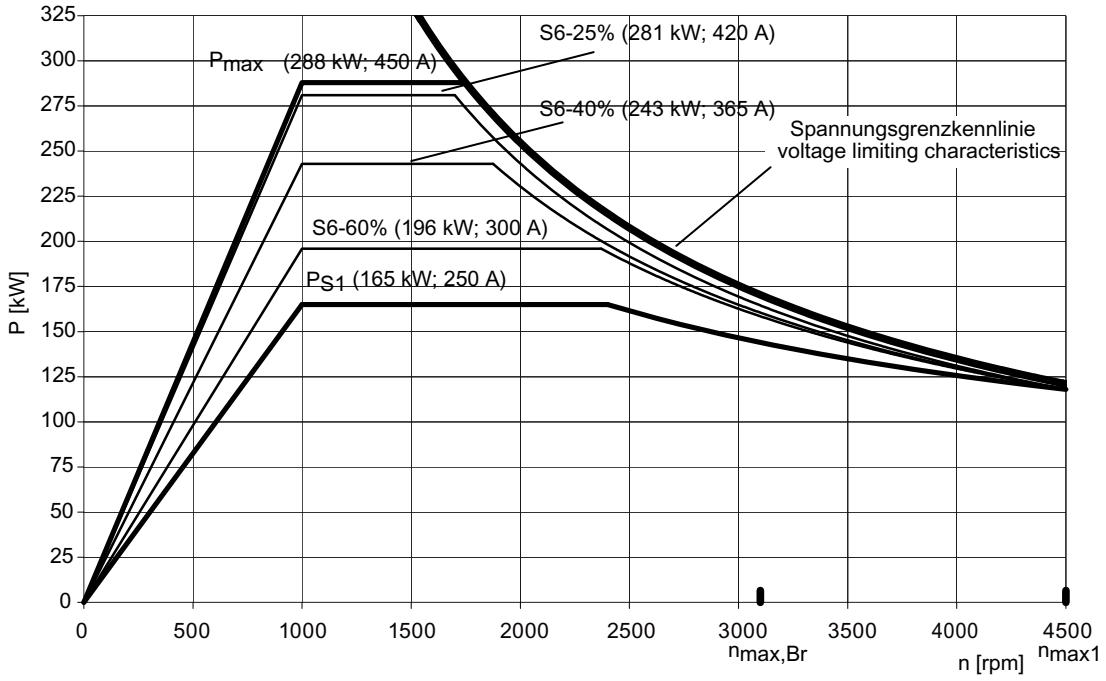



Tabella 4- 300 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-□□C□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 165 | 1576 | 250 | 4500 | - | - | 3100 | 2400 | 2750 | 450 | 1576 | 250 |



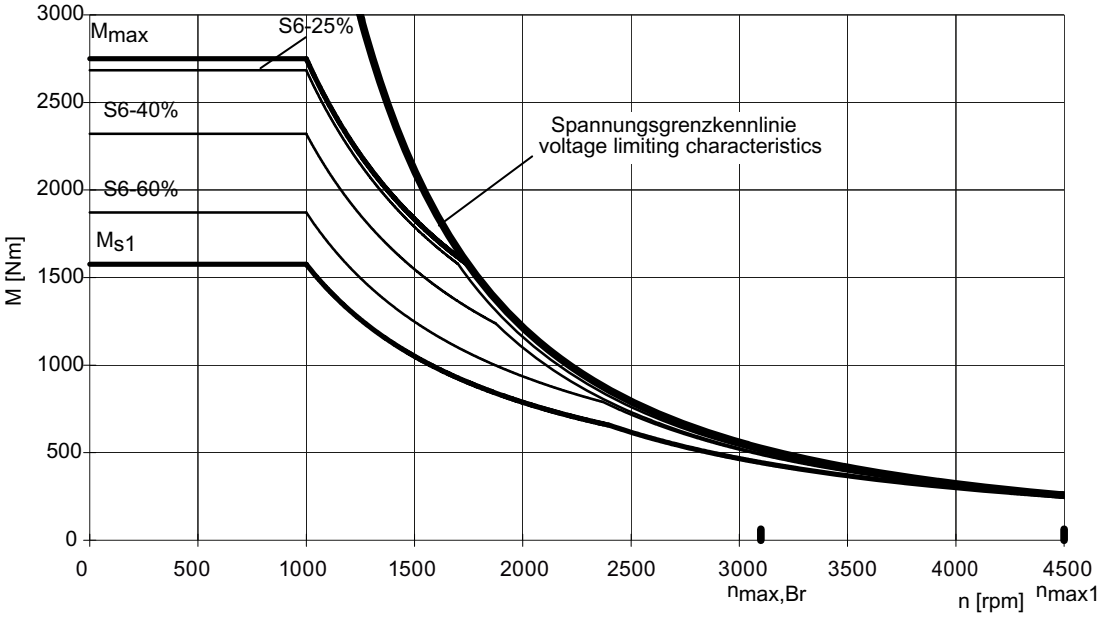
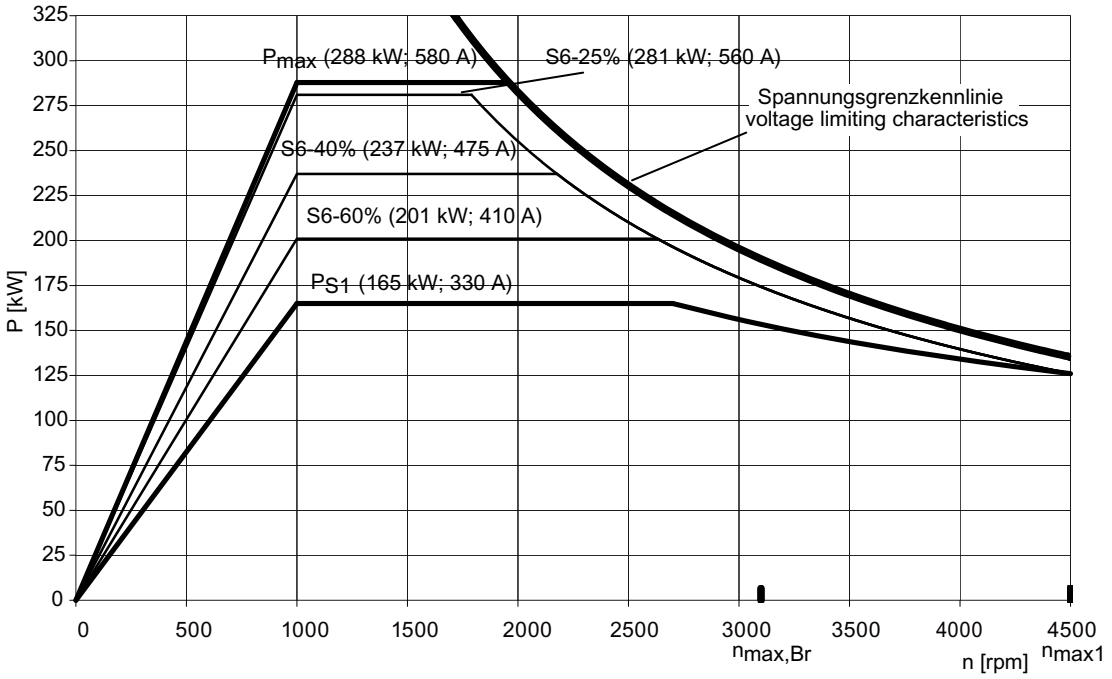



Tabella 4- 301 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-□□D□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 165 | 1576 | 330 | 4500 | - | - | 3100 | 2700 | 2750 | 580 | 1576 | 330 |



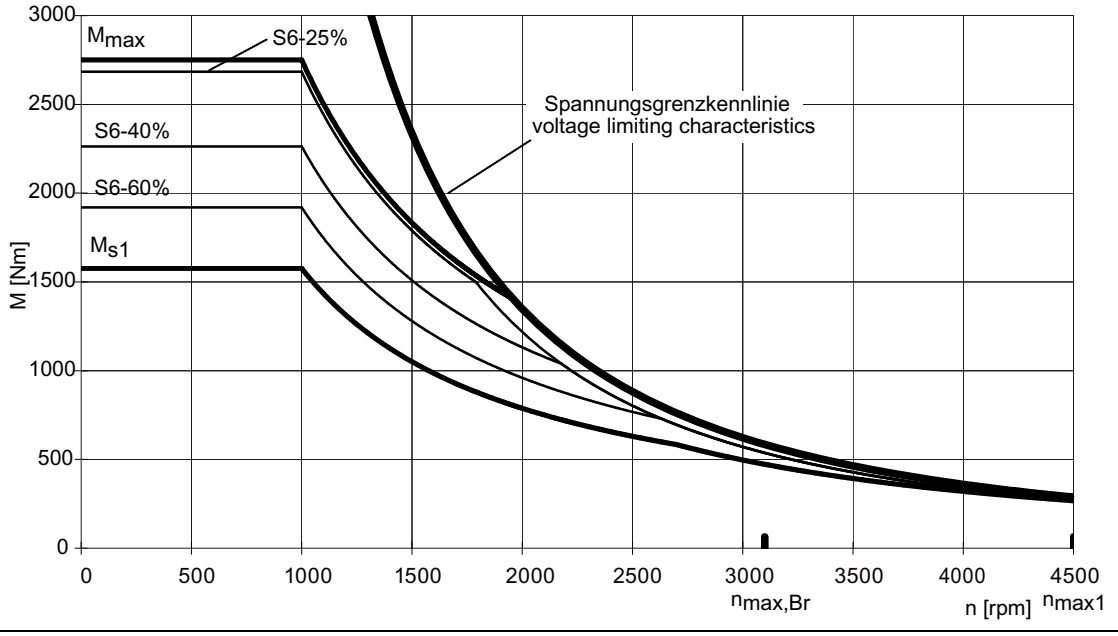
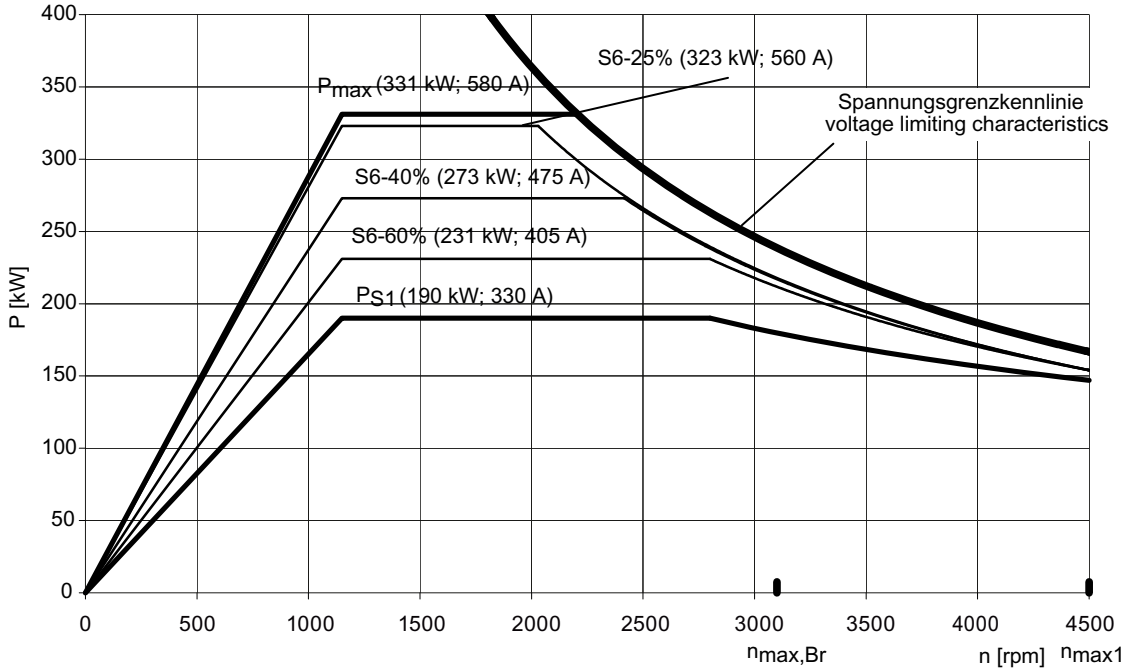



Tabella 4- 302 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-□□D□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 190 | 1578 | 330 | 4500 | - | - | 3100 | 2800 | 2750 | 580 | 1578 | 330 |
| 1000 | 165 | 1576 | 330 | | | | | 3600 | | | | |



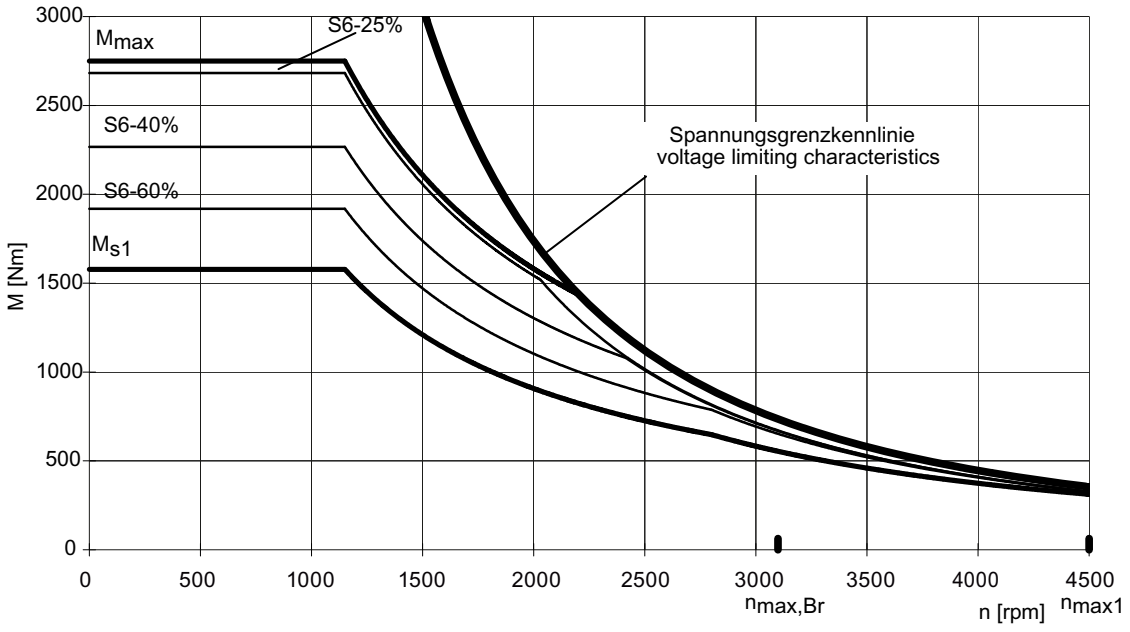
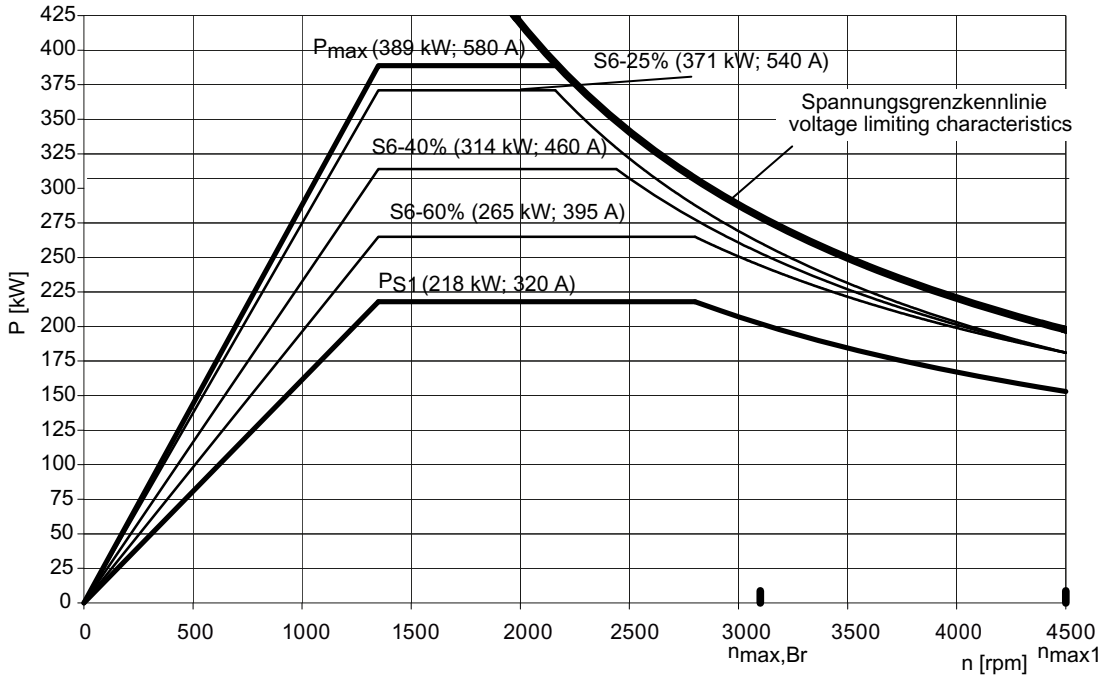



Tabella 4- 303 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-□□D□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 218 | 1542 | 320 | 4500 | - | - | 3100 | 2800 | 2750 | 580 | 1542 | 320 |



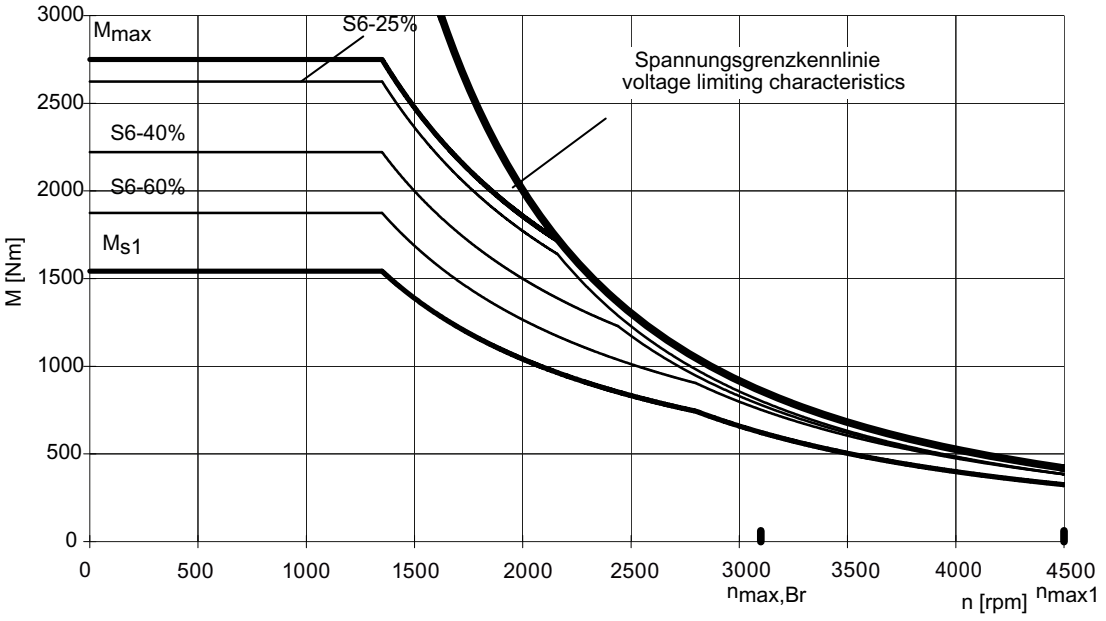
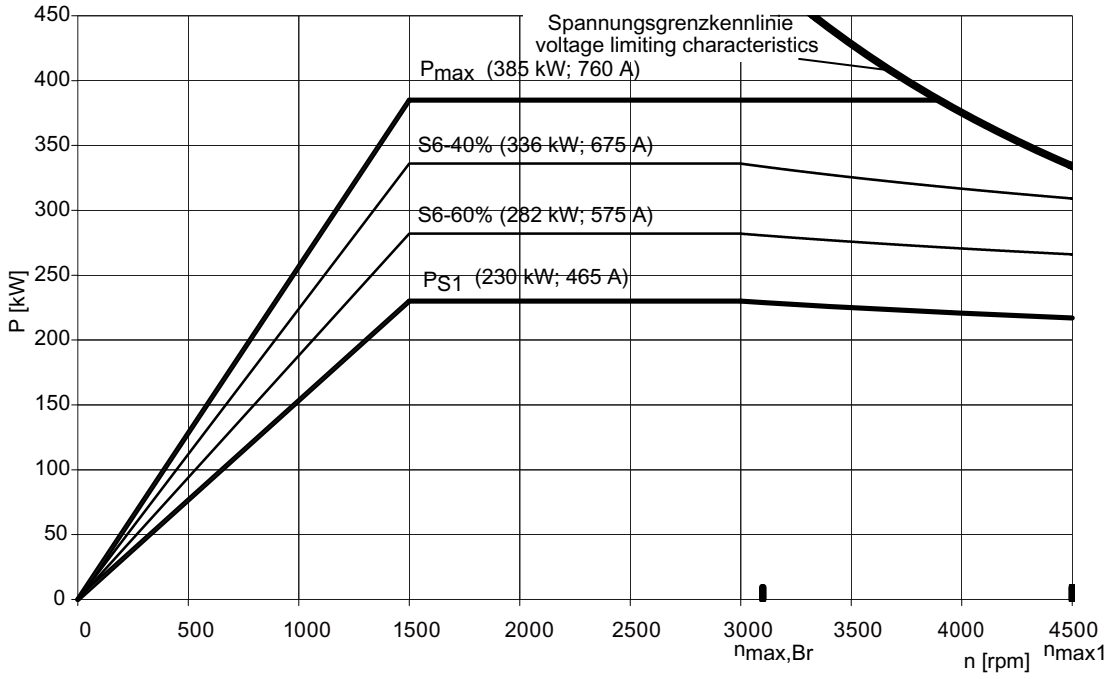



Tabella 4- 304 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-□□F□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 230 | 1464 | 465 | 4500 | - | - | 3100 | 3000 | 2450 | 760 | 1464 | 465 |



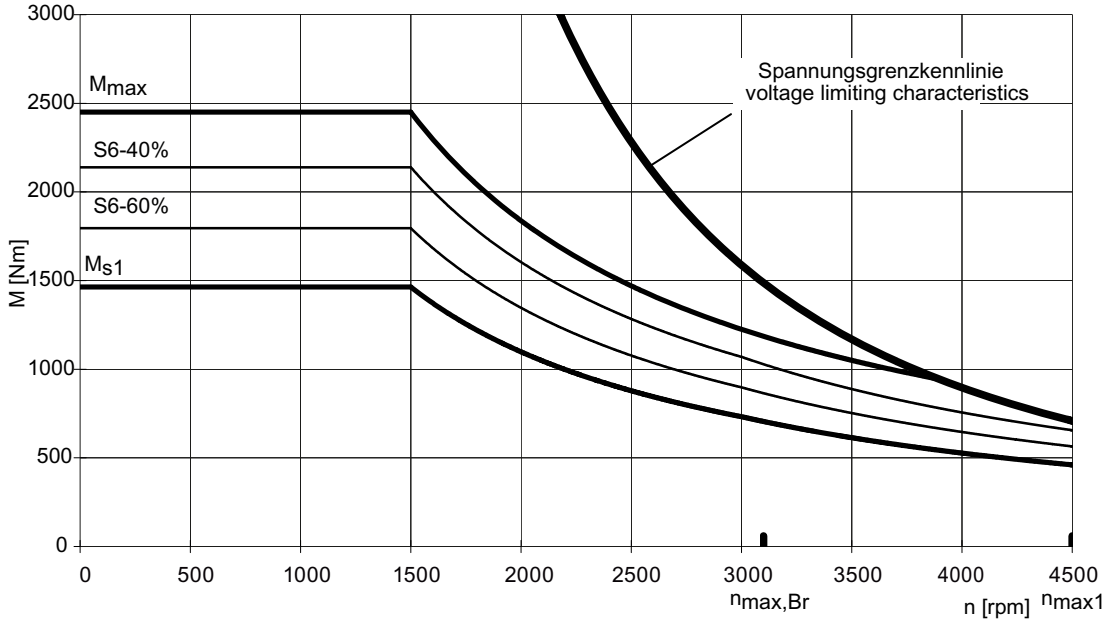
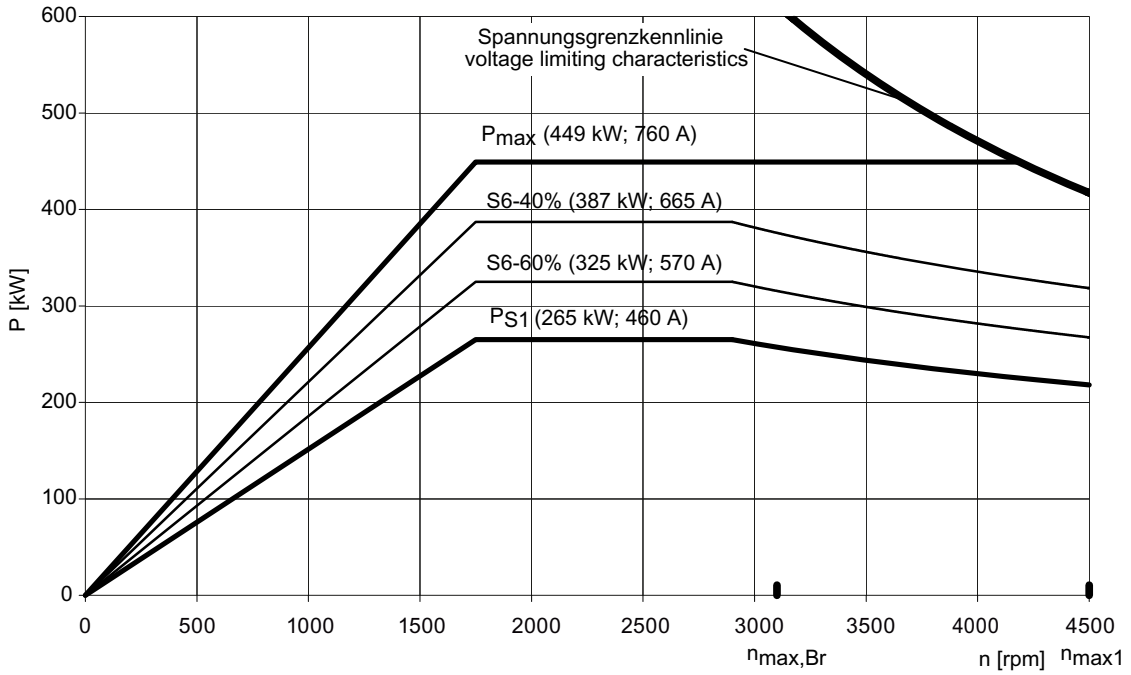



Tabella 4- 305 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-□□F□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 265 | 1446 | 460 | 4500 | - | - | 3100 | 2900 | 2450 | 760 | 1446 | 460 |
| 1500 | 230 | 1464 | 465 | | | | | 4000 | | | | |



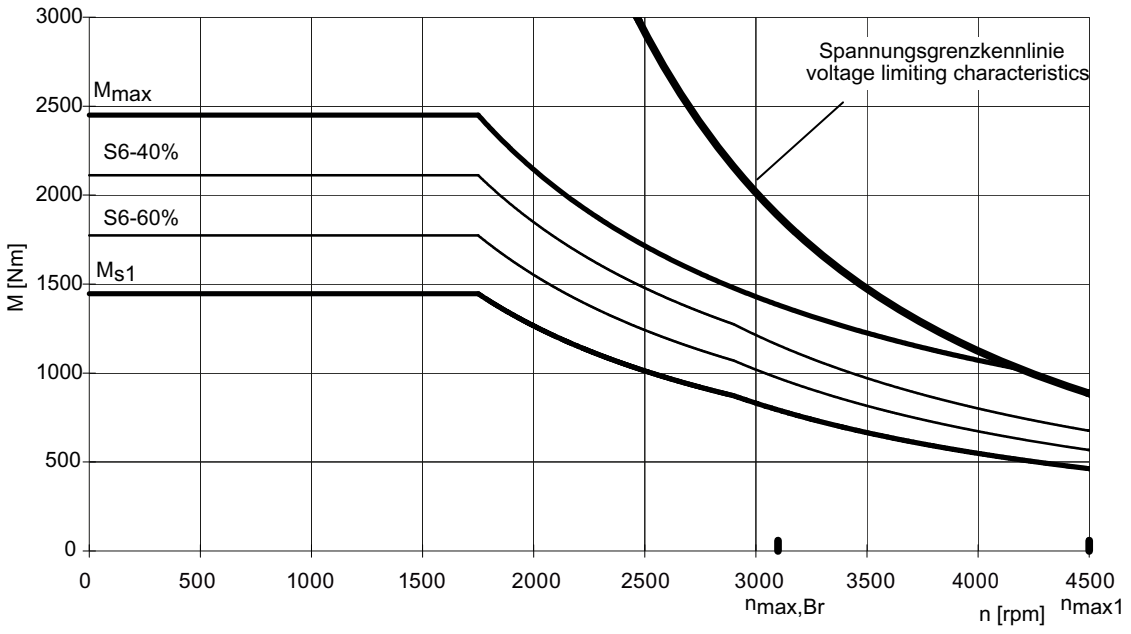
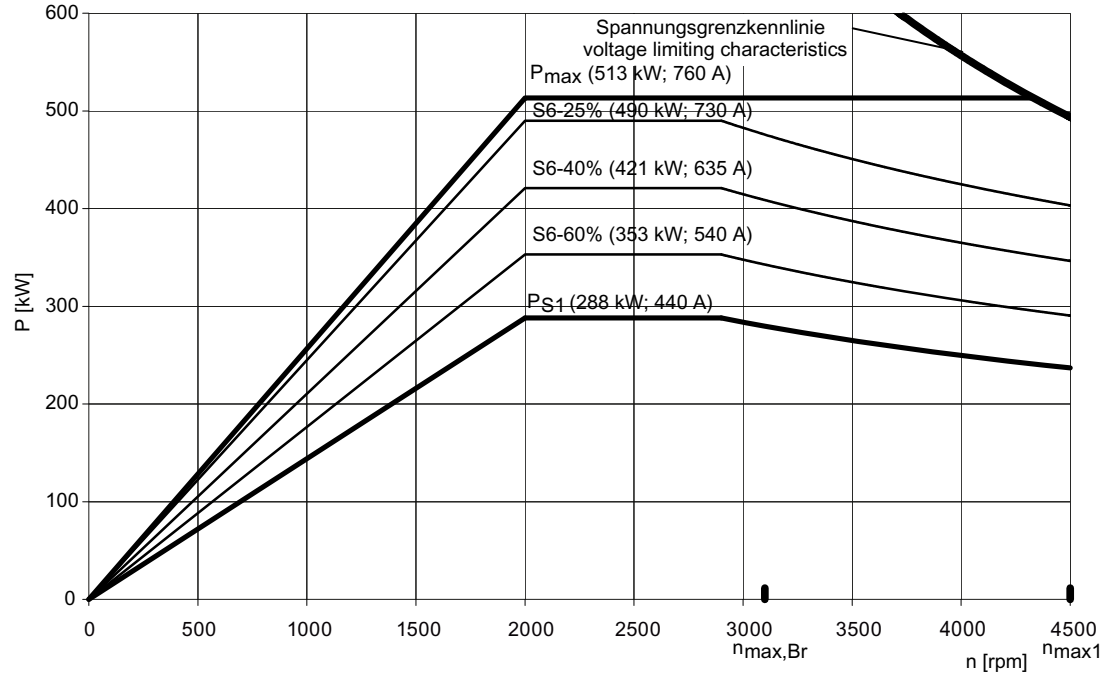



Tabella 4- 306 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-□□F□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 288 | 1375 | 440 | 4500 | - | - | 3100 | 2900 | 2450 | 760 | 1375 | 440 |



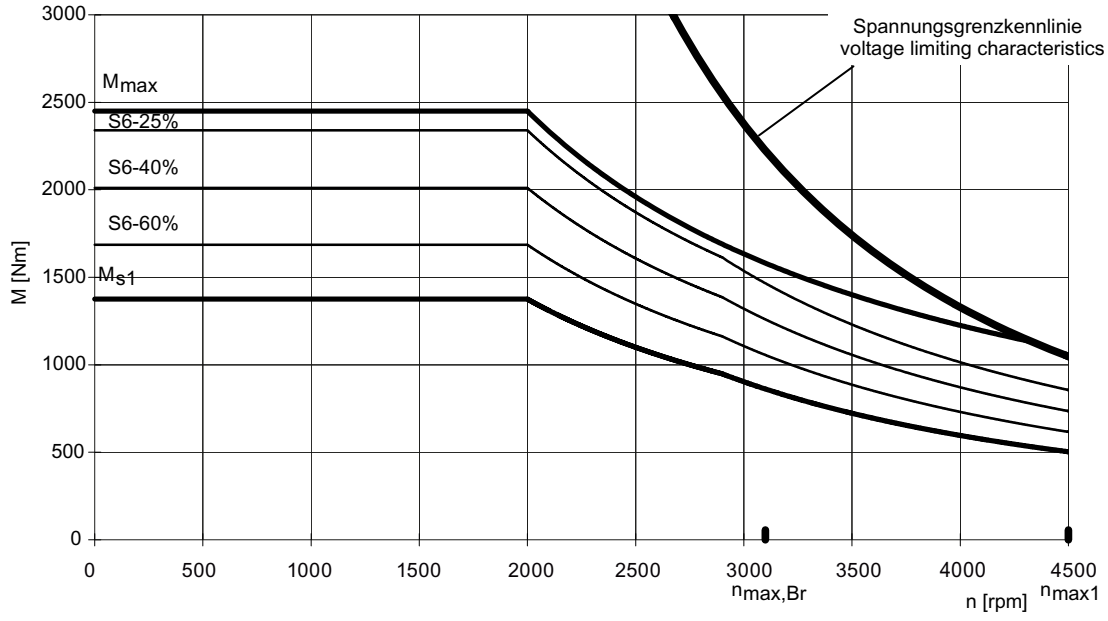
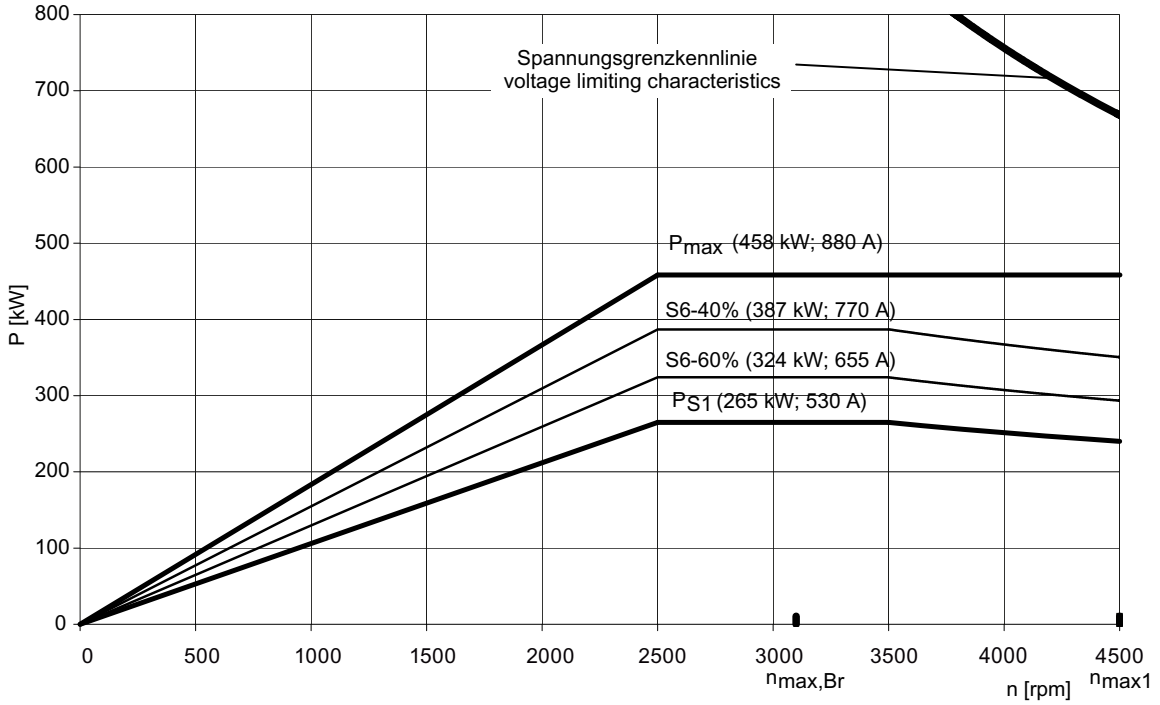



Tabella 4- 307 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-□□L□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 265 | 1012 | 530 | 4500 | - | - | 3100 | 3500 | 1750 | 880 | 1012 | 530 |



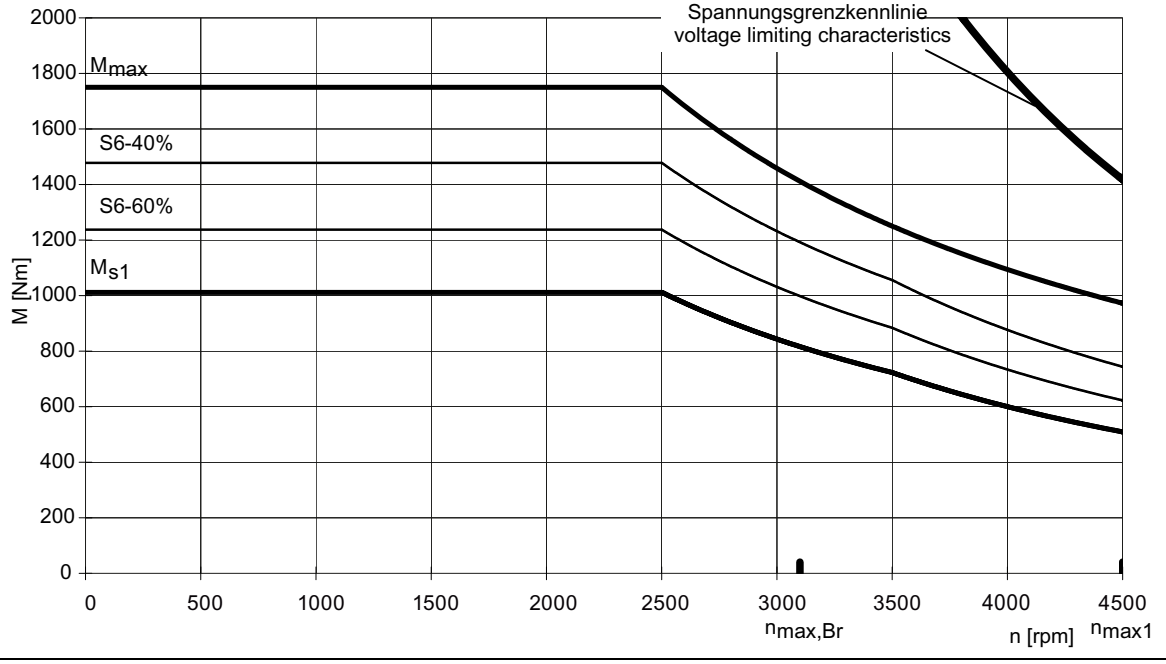
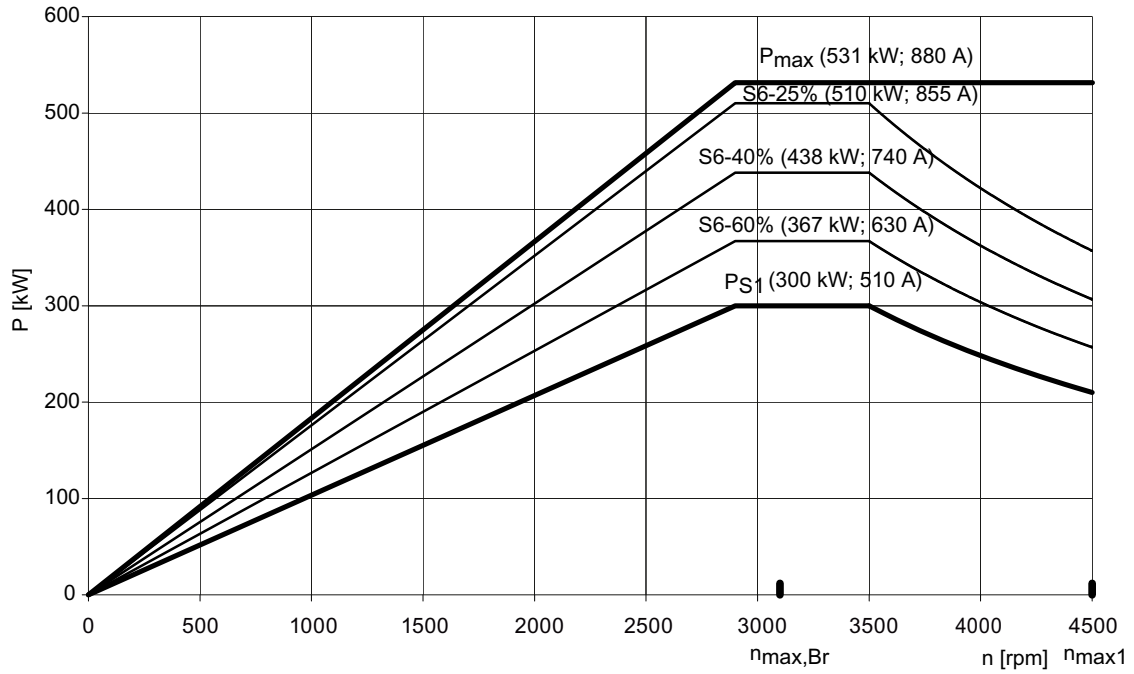



Tabella 4- 308 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-□□L□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 300 | 988 | 510 | 4500 | - | - | 3100 | 3500 | 1750 | 880 | 988 | 510 |
| 2500 | 265 | 1012 | 530 | | | | | 3800 | | | | |



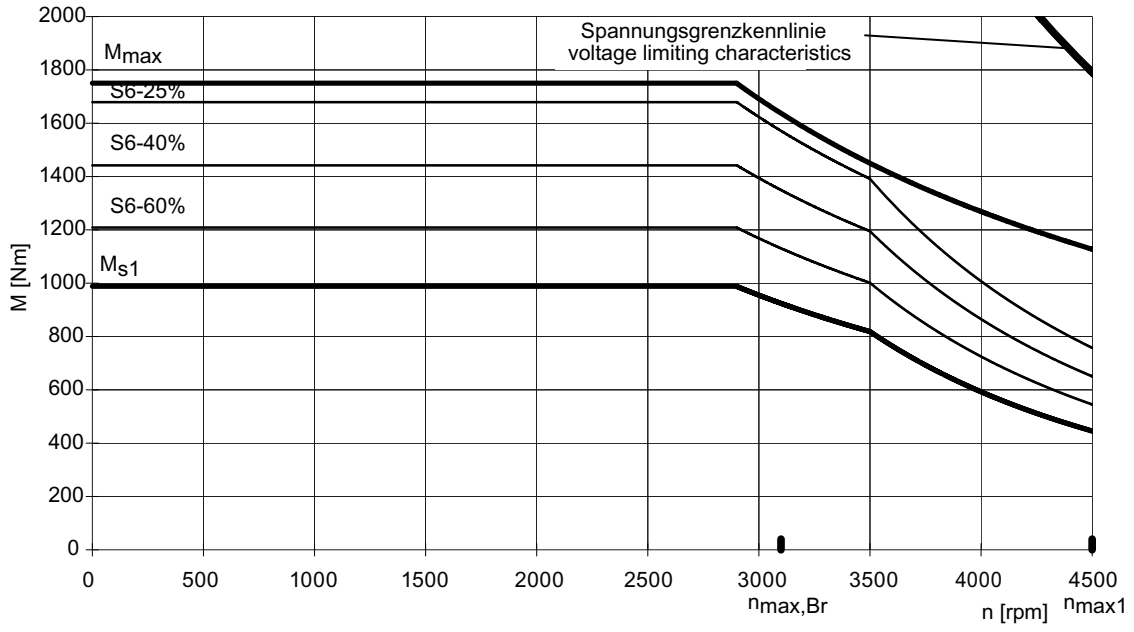
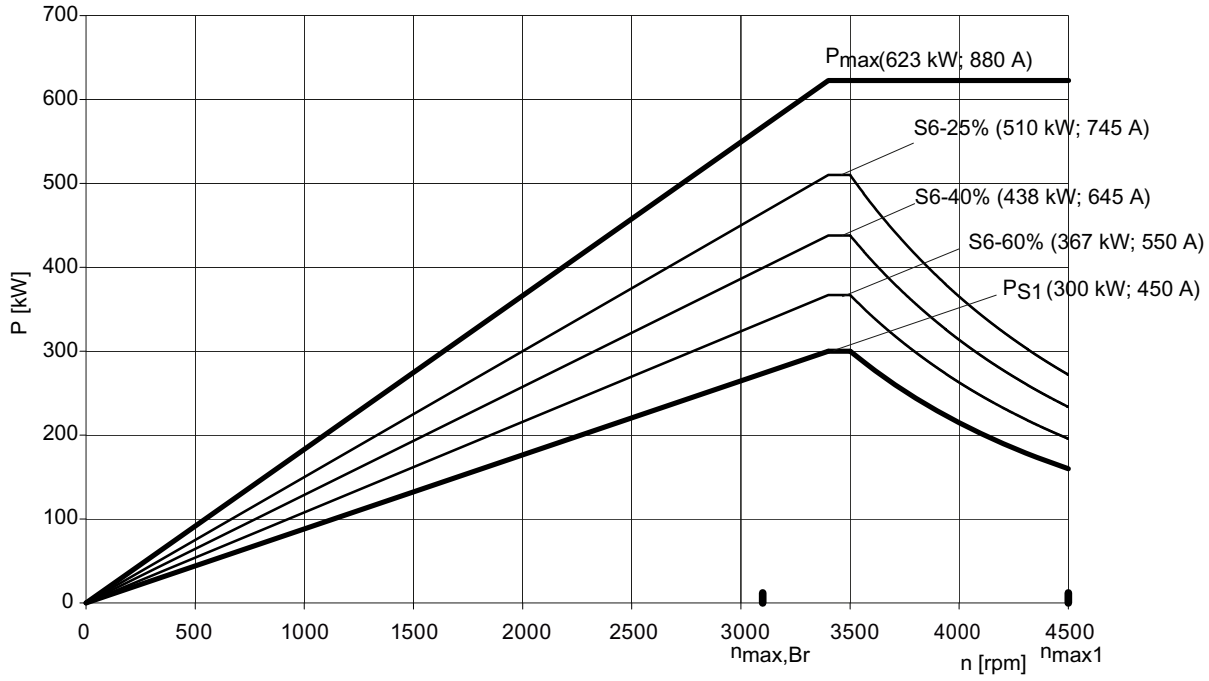
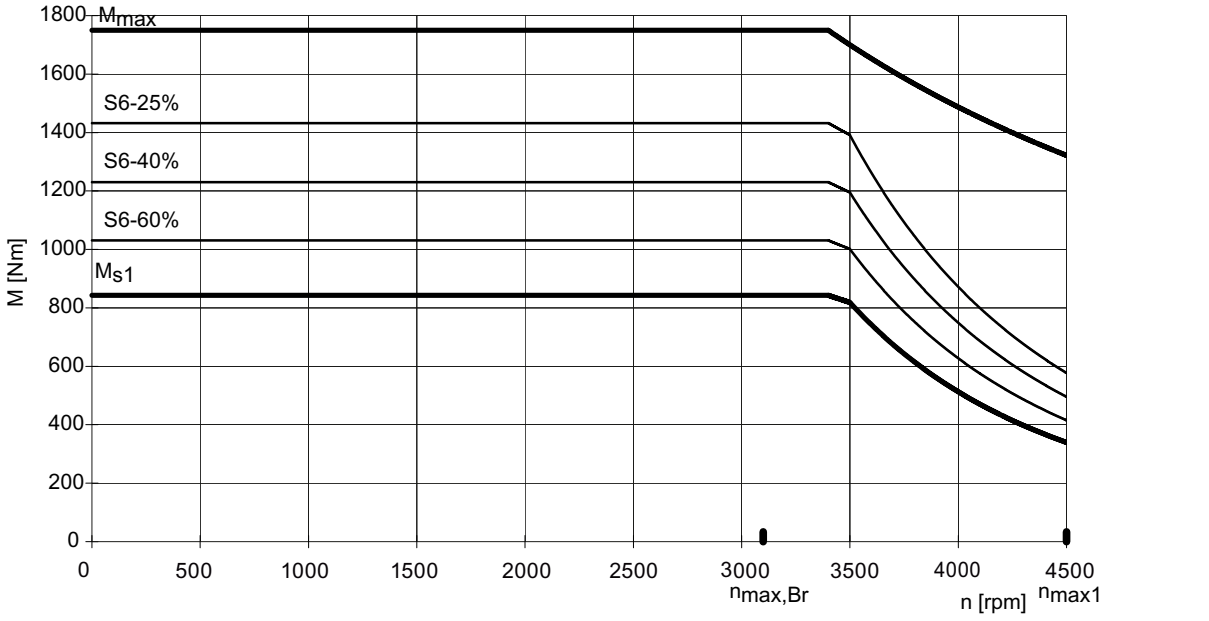



Tabella 4- 309 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-□□L□□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3400 | 300 | 843 | 450 | 4500 | - | - | 3100 | 3500 | 1750 | 880 | 843 | 450 |

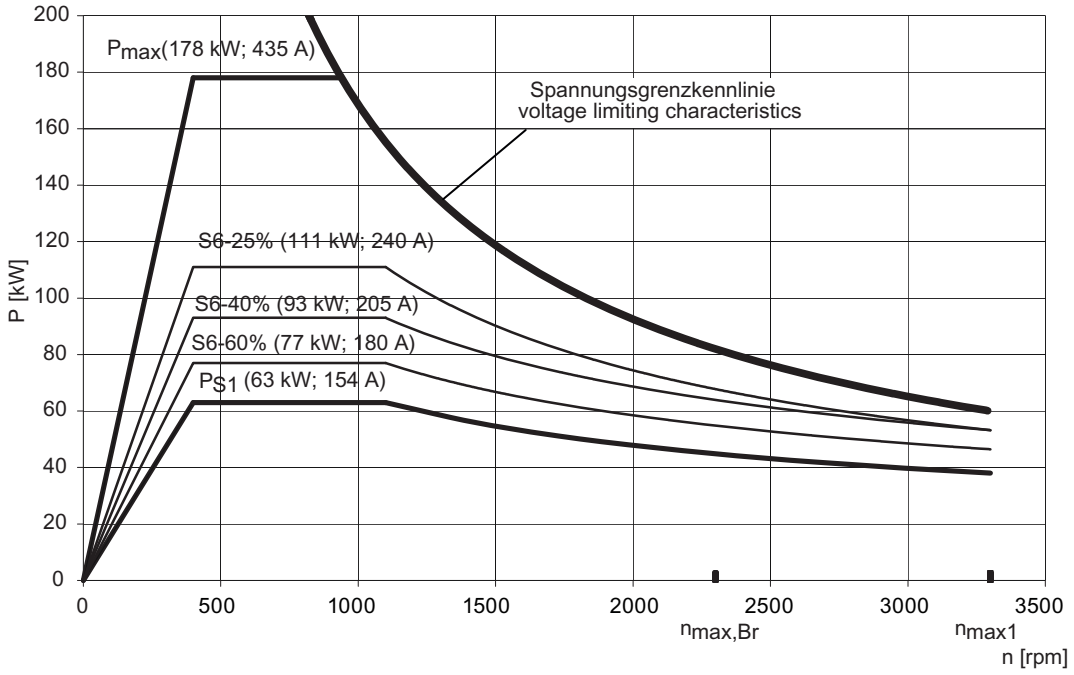


### 4.1.2.9 Altezza d'asse 280 - Ventilazione forzata

Tabella 4- 310 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8284-□□B1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 63 | 1504 | 154 | 3300 | - | - | 2300 | 1100 | 4250 | 435 | 1504 | 154 |



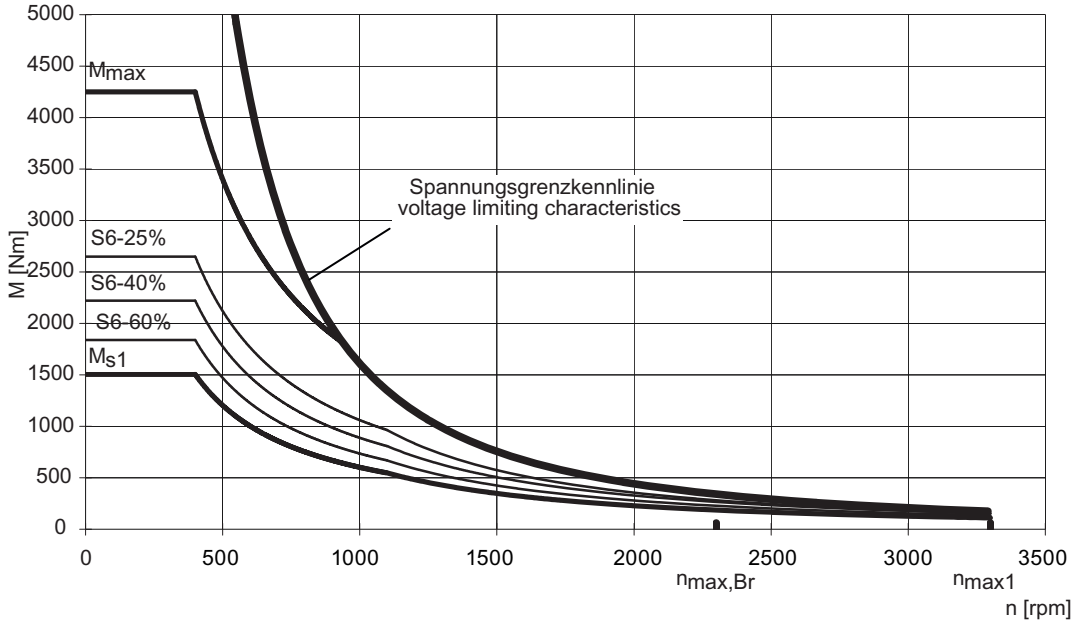
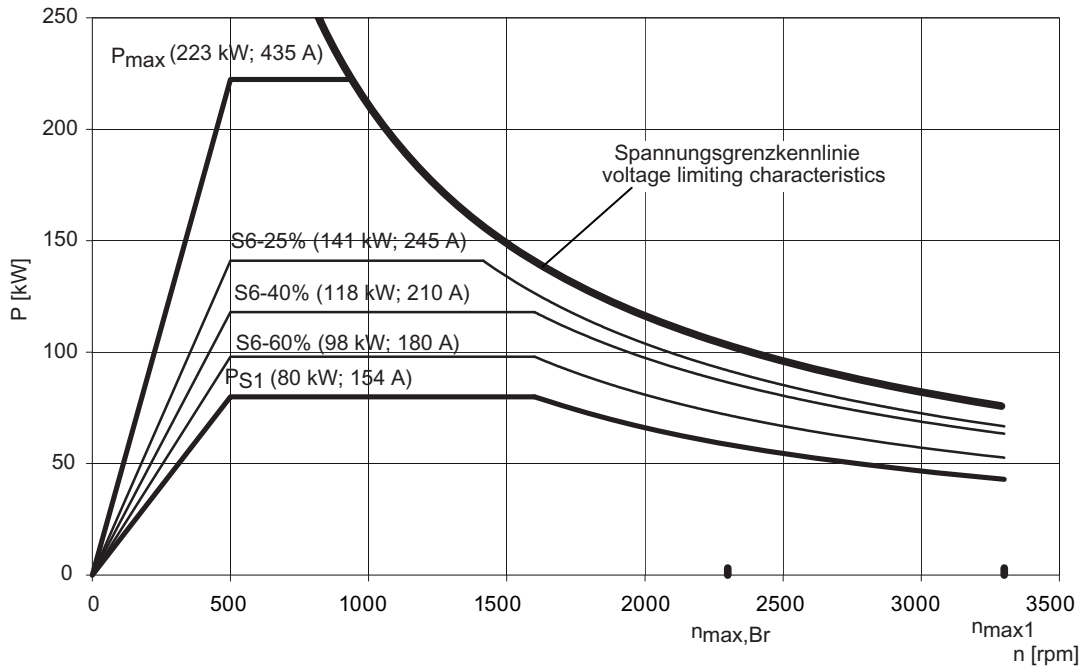



Tabella 4- 311 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8284-□□B1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 80 | 1529 | 154 | 3300 | - | - | 2300 | 1600 | 4250 | 435 | 1529 | 154 |
| 400 | 63 | 1504 | 154 | | | | | 2100 | | | | |



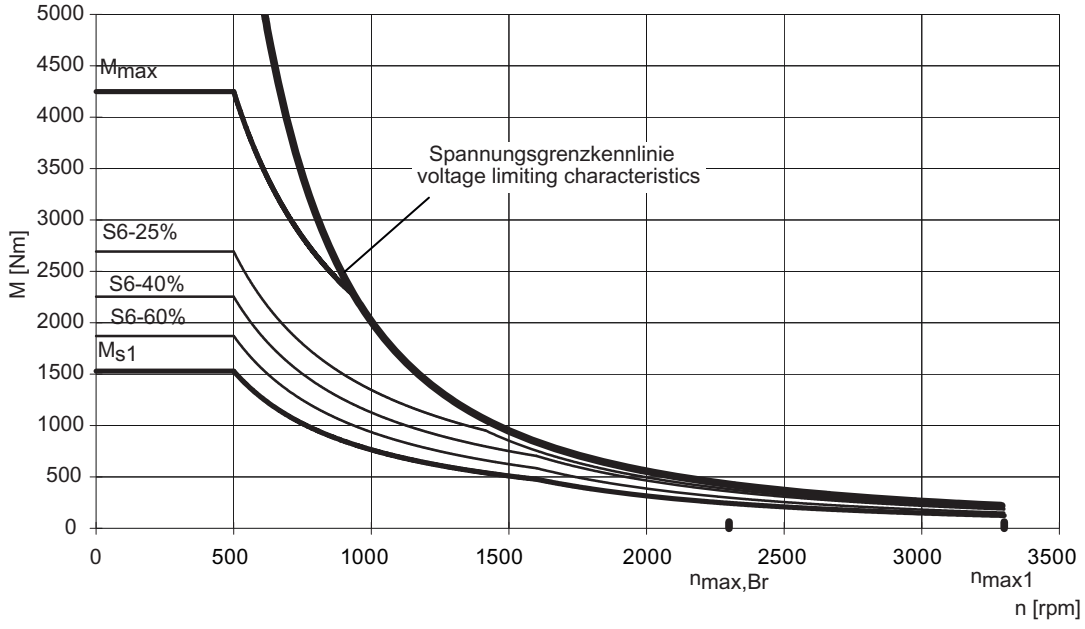
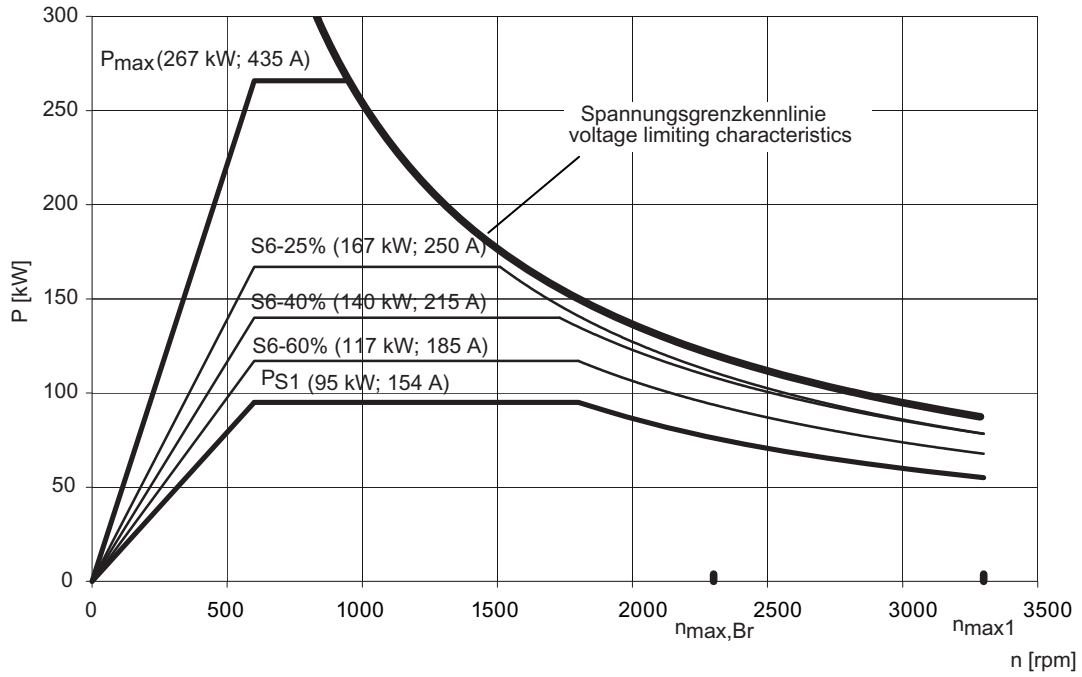



Tabella 4- 312 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8284-□□B1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 95 | 1519 | 154 | 3300 | - | - | 2300 | 1800 | 4250 | 435 | 1519 | 154 |



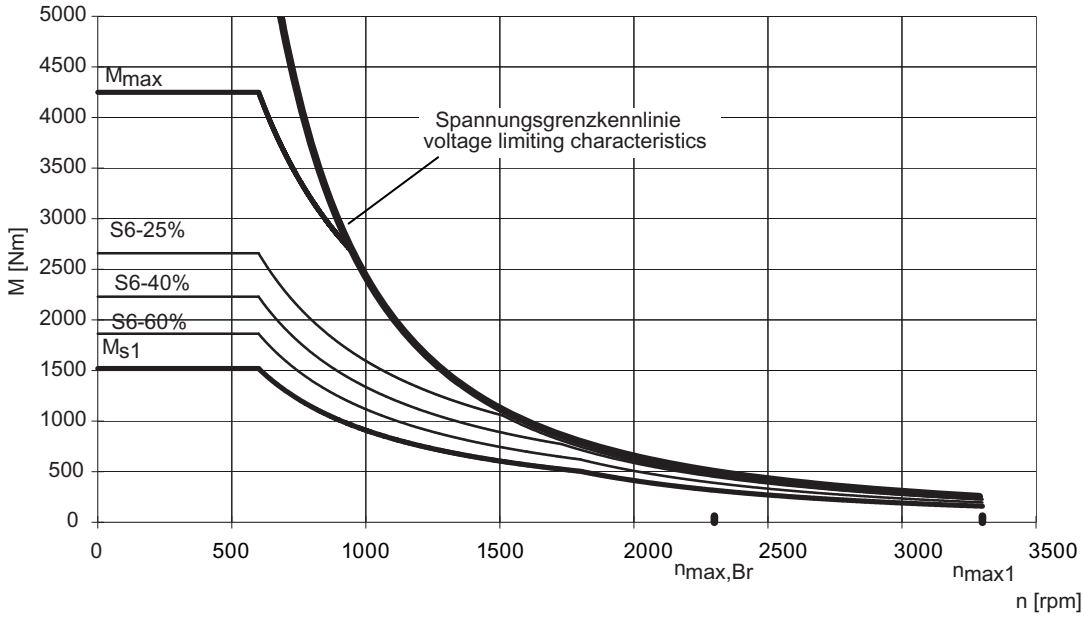
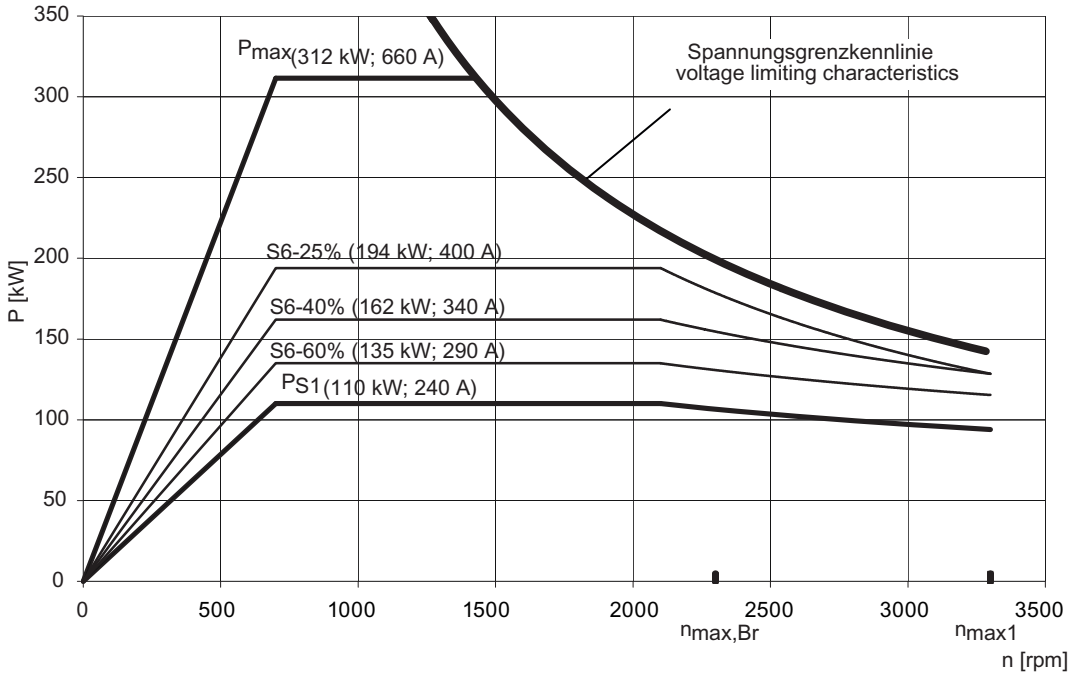



Tabella 4- 313 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8284-□□C1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 110 | 1501 | 240 | 3300 | - | - | 2300 | 2100 | 4250 | 660 | 1501 | 240 |



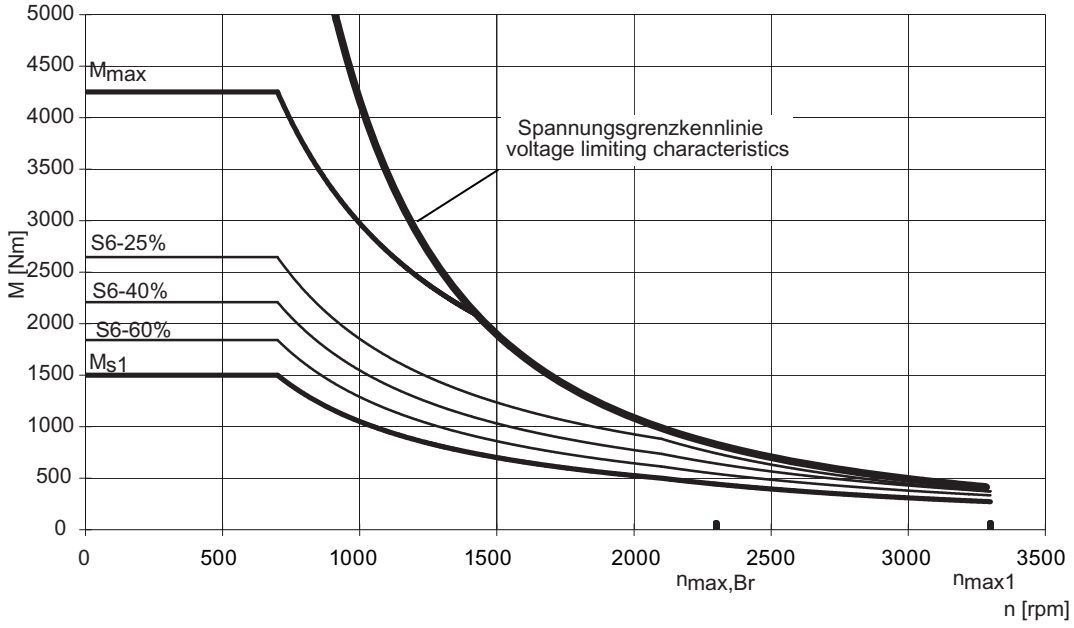
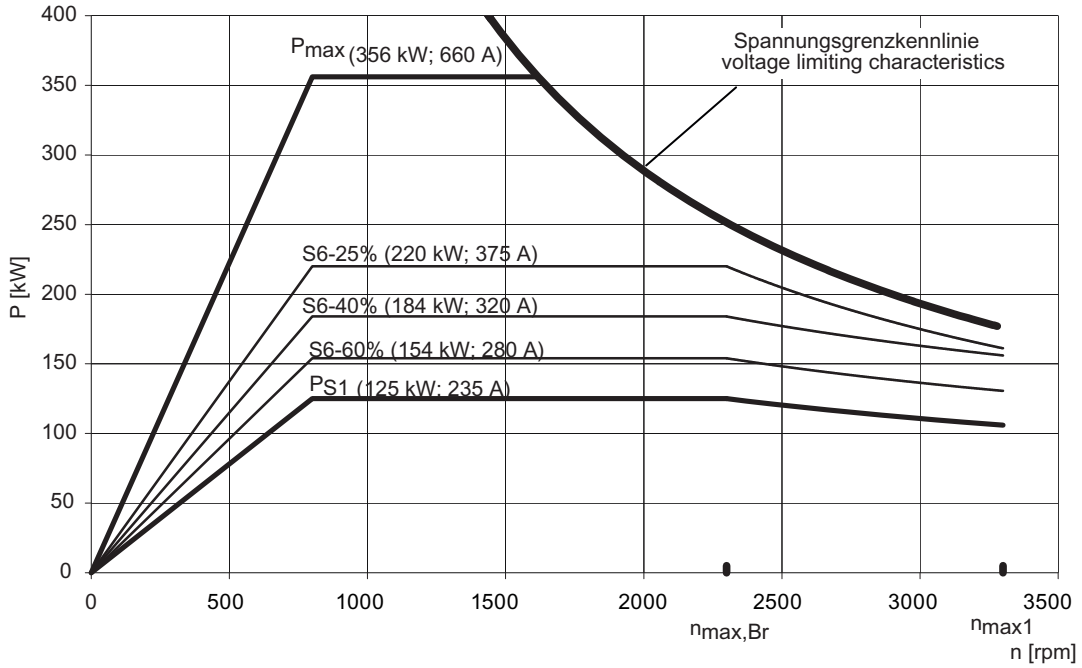



Tabella 4- 314 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8284-□□C1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 125 | 1492 | 235 | 3300 | - | - | 2300 | 2300 | 4250 | 660 | 1492 | 235 |
| 700 | 110 | 1501 | 240 | | | | | 3000 | | | | |



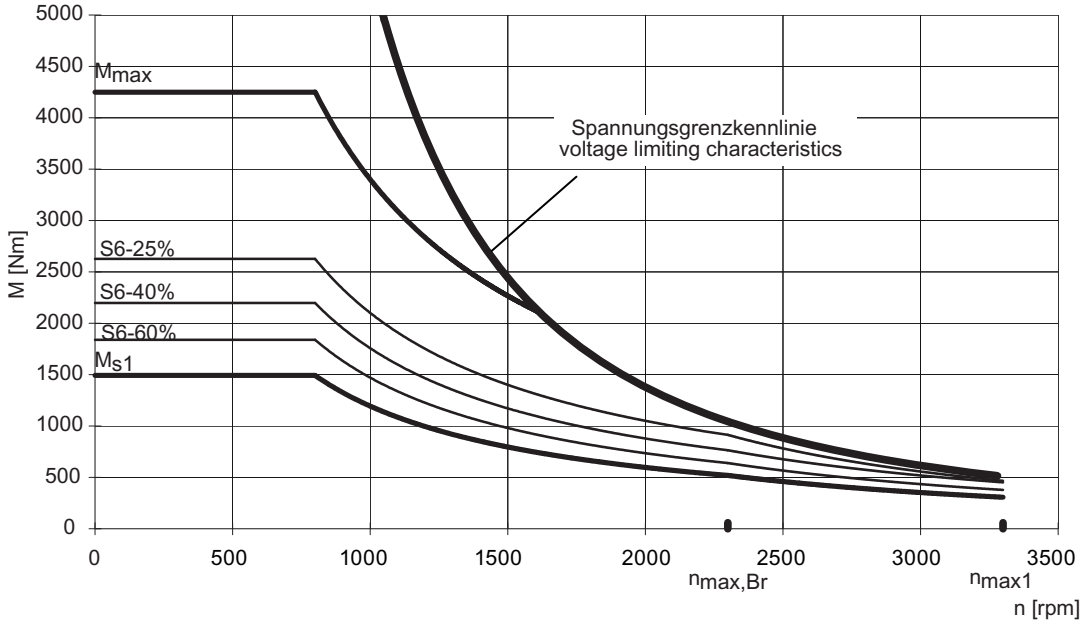
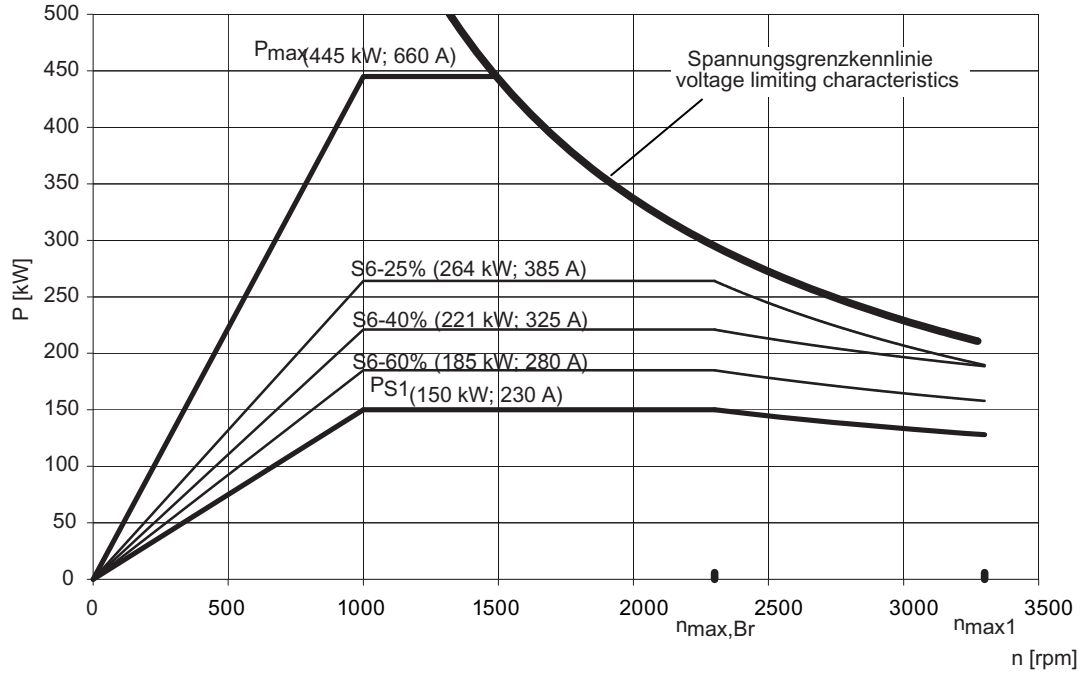



Tabella 4- 315 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8284-□□C1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 150 | 1433 | 230 | 3300 | - | - | 2300 | 2300 | 4250 | 660 | 1433 | 230 |



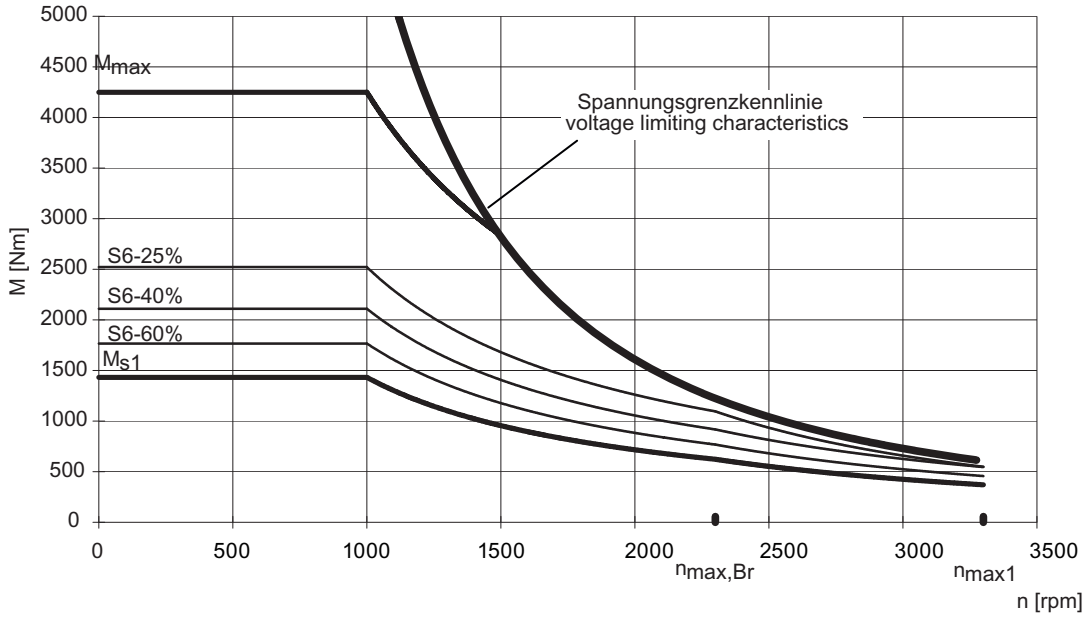
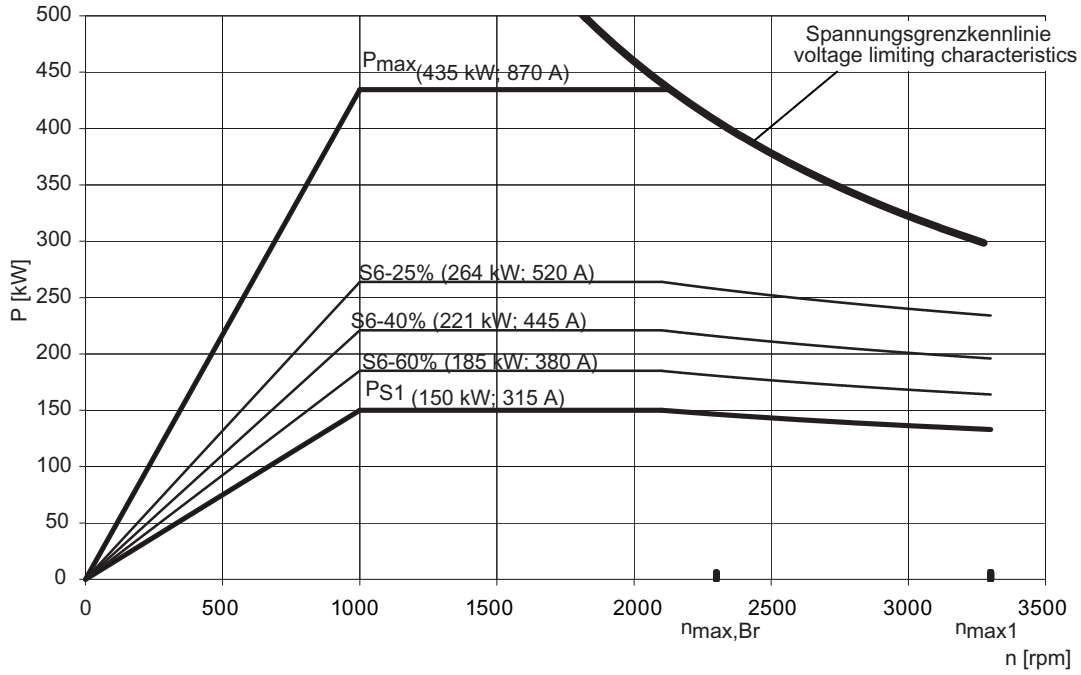



Tabella 4- 316 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8284-□□D1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 150 | 1433 | 315 | 3300 | - | - | 2300 | 2100 | 4150 | 870 | 1433 | 315 |



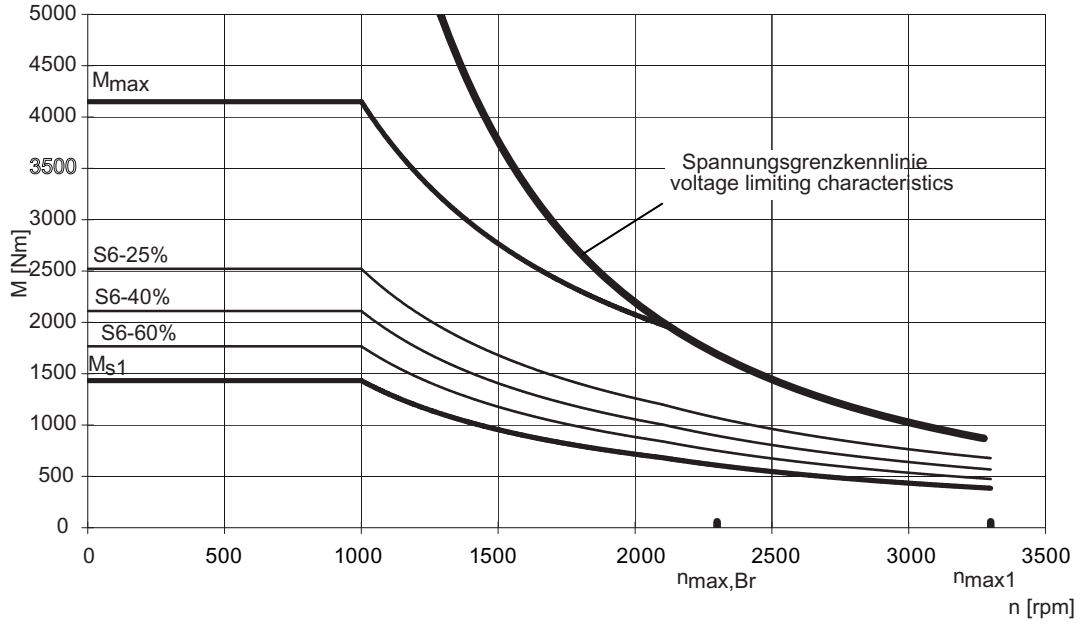
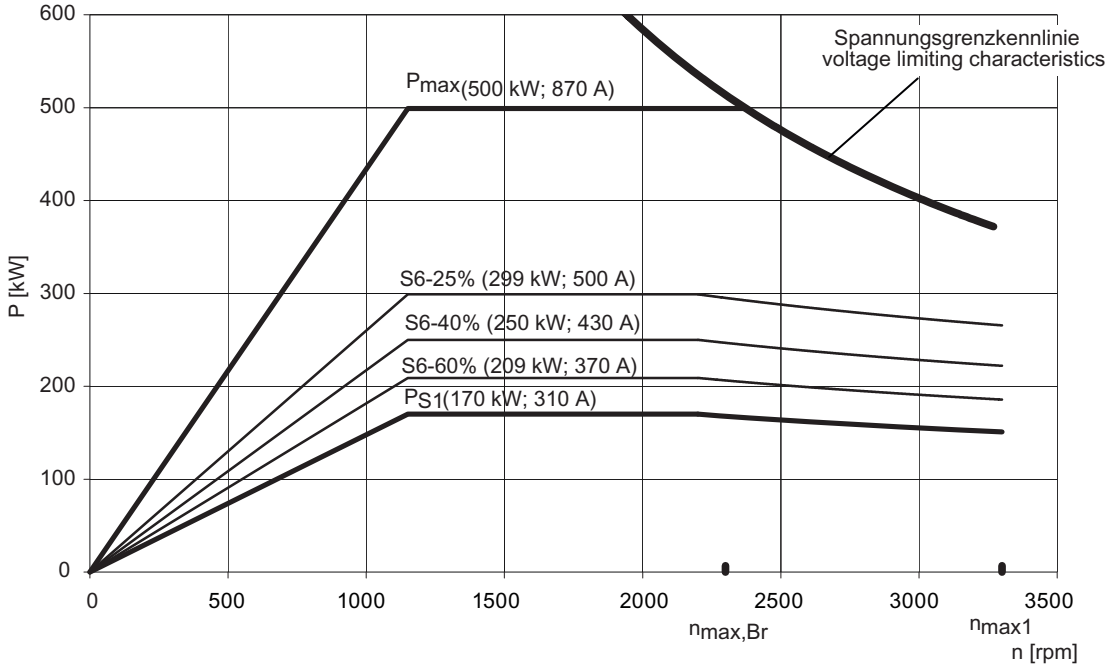



Tabella 4- 317 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8284-□□D1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 170 | 1414 | 310 | 3300 | - | - | 2300 | 2200 | 4150 | 870 | 1414 | 310 |
| 1000 | 150 | 1433 | 315 | | | | | 3300 | | | | |



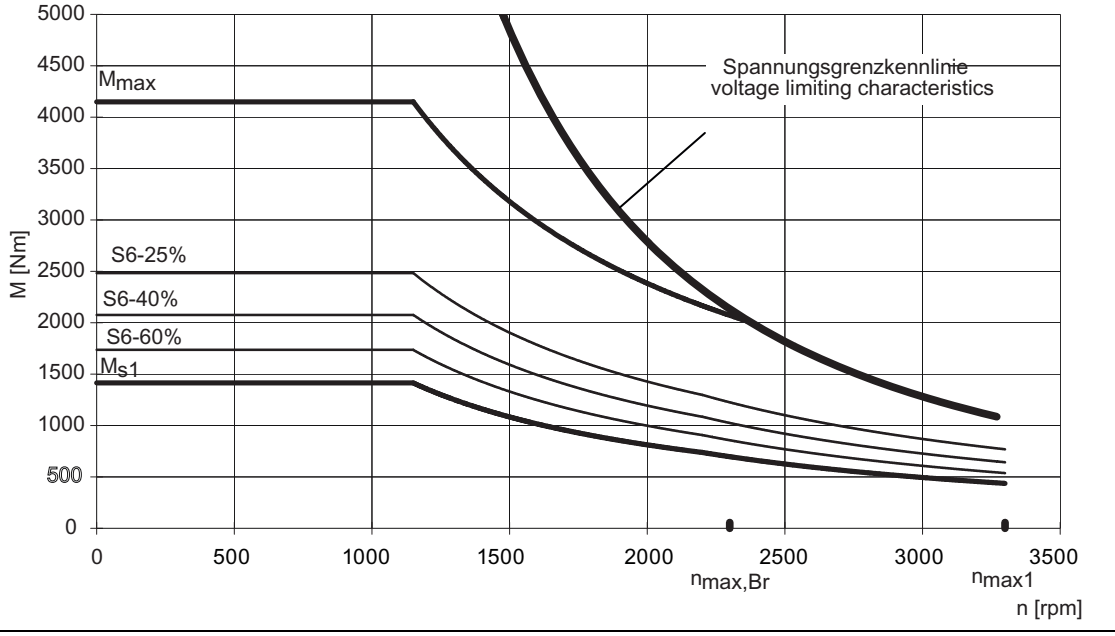
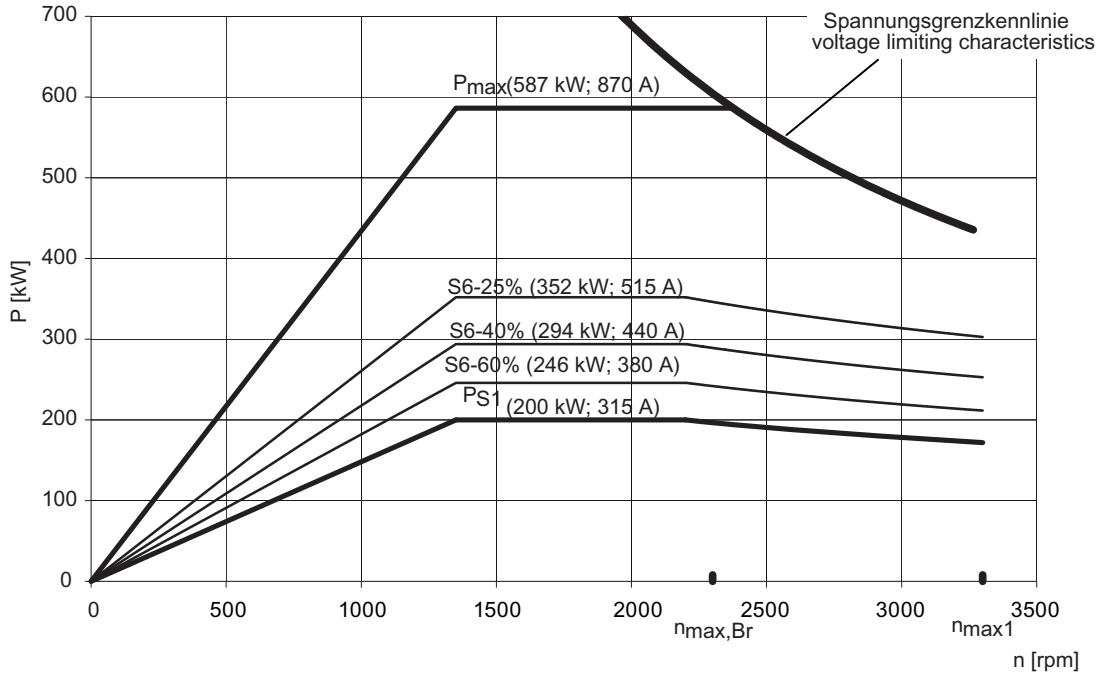



Tabella 4- 318 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8284-□□D1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 200 | 1416 | 315 | 3300 | - | - | 2300 | 2200 | 4150 | 870 | 1416 | 315 |



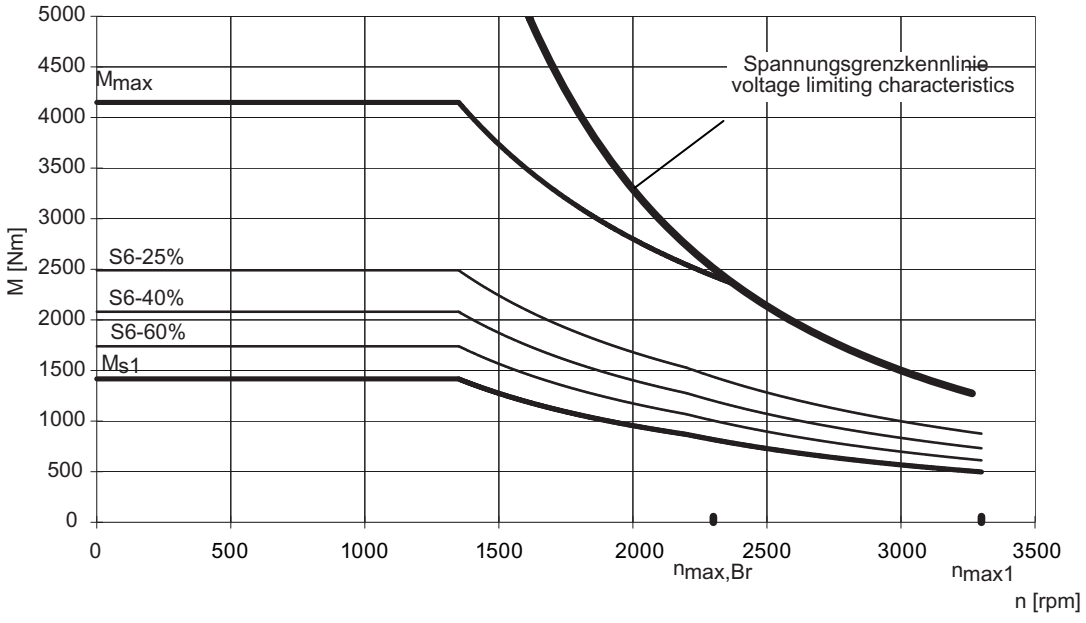
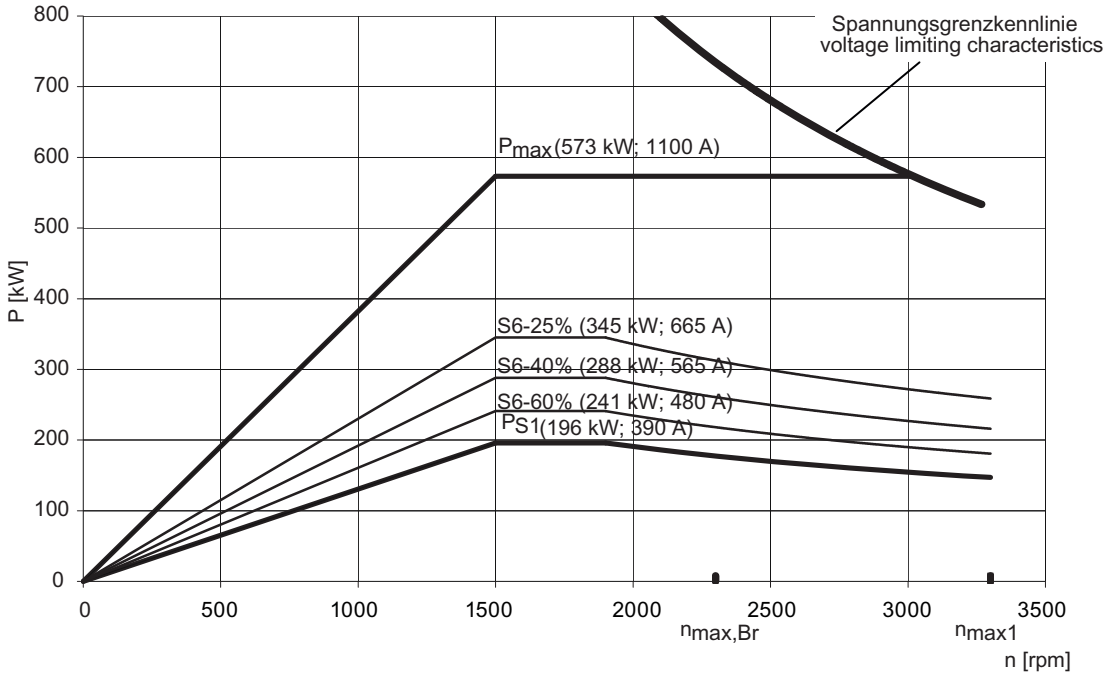



Tabella 4- 319 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8284-□□F1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 196 | 1248 | 390 | 3300 | - | - | 2300 | 1900 | 3650 | 1100 | 1248 | 390 |



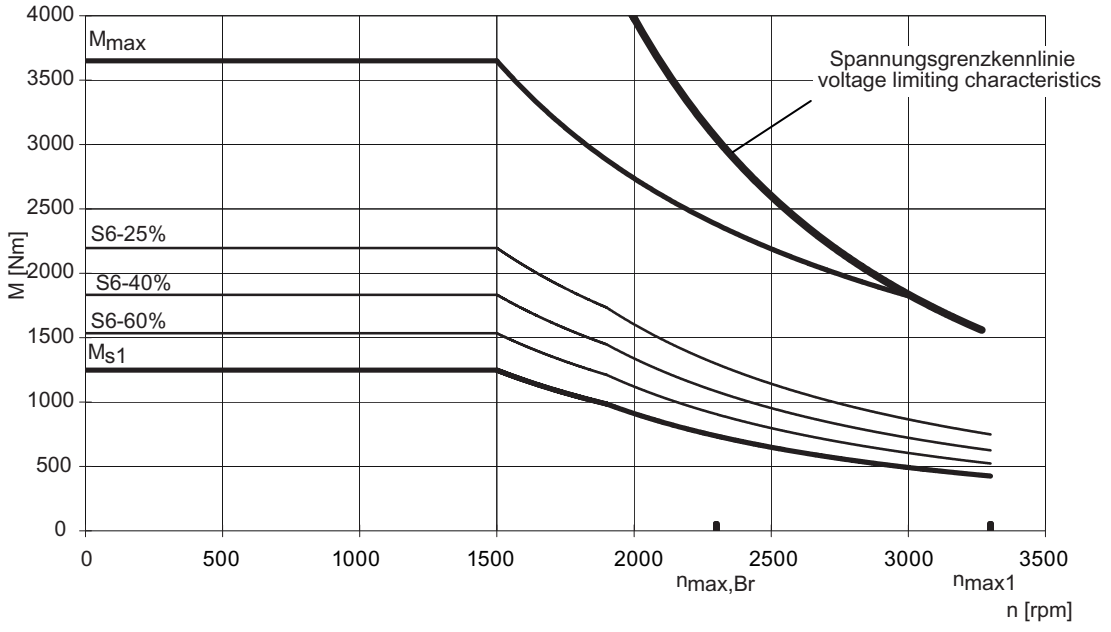
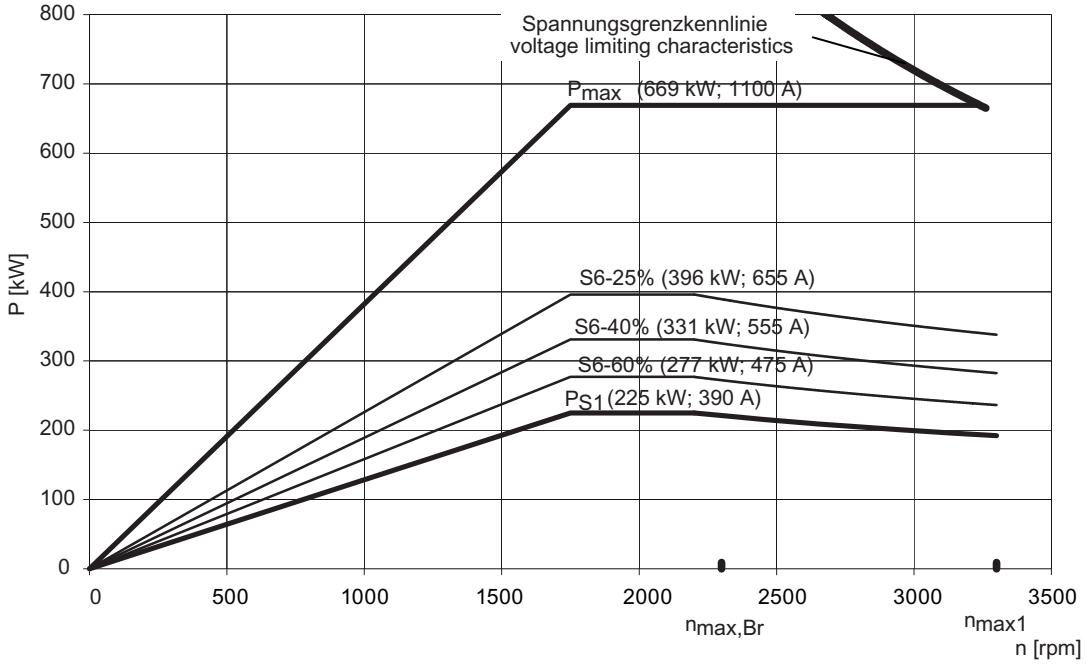



Tabella 4- 320 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8284-□□F1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 225 | 1228 | 390 | 3300 | - | - | 2300 | 2200 | 3650 | 1100 | 1228 | 390 |
| 1500 | 196 | 1248 | 390 | | | | | 3100 | | | | |



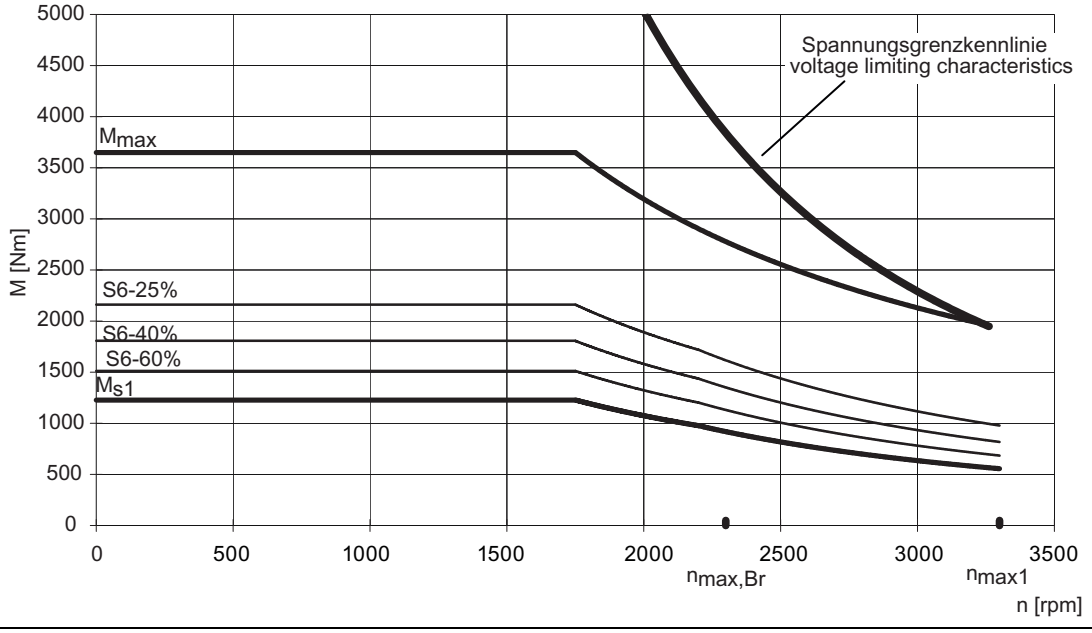
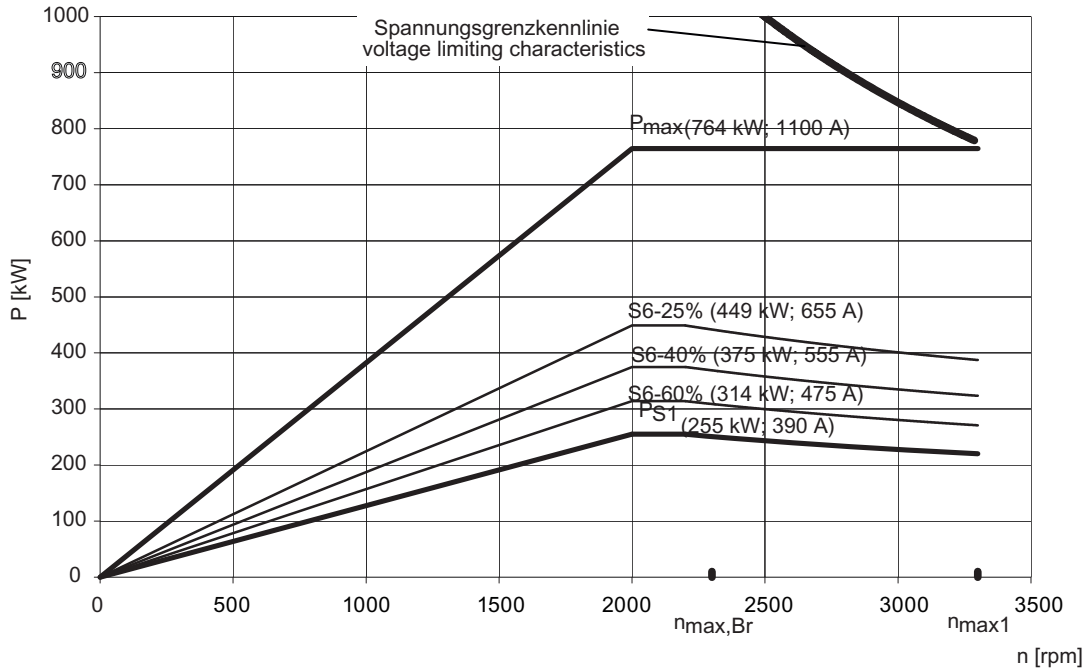



Tabella 4- 321 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8284-□□F1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 255 | 1218 | 390 | 3300 | - | - | 2300 | 2200 | 3650 | 1100 | 1218 | 390 |



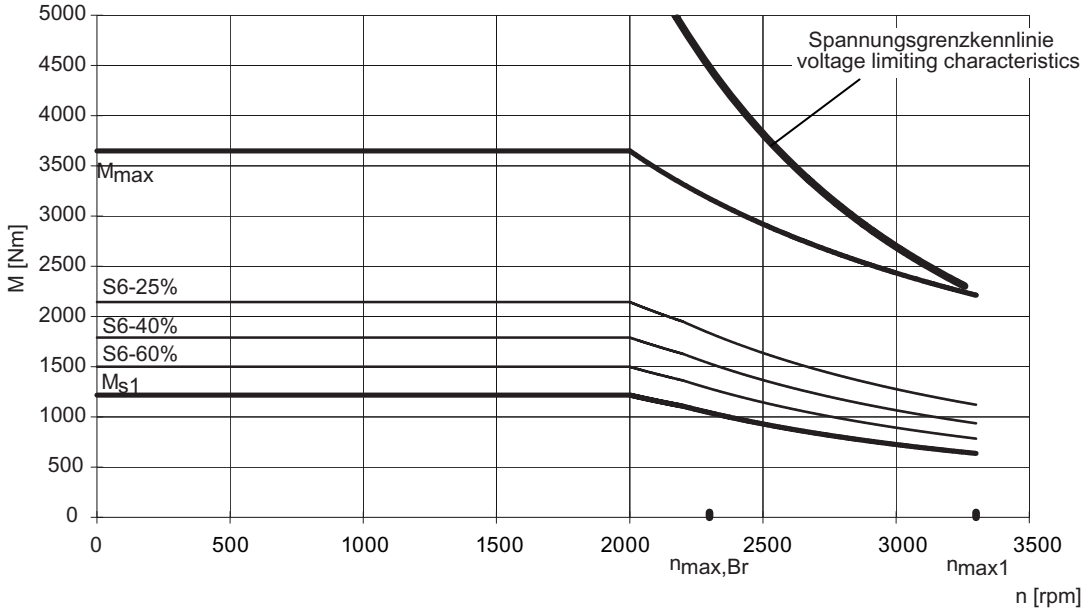
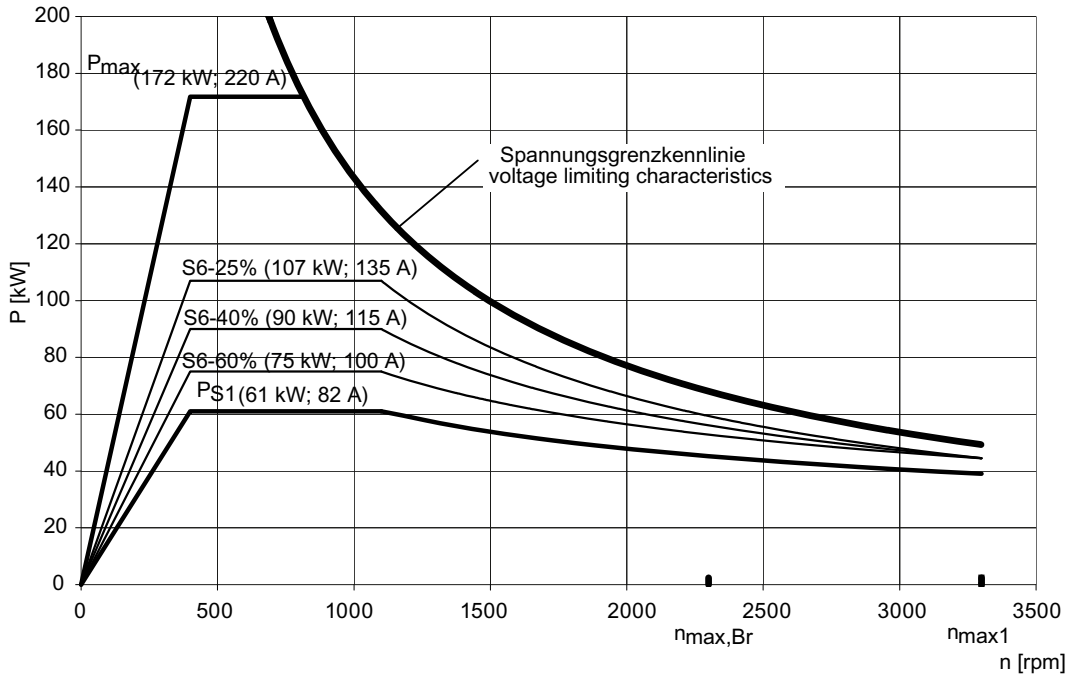



Tabella 4- 322 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8284-□□H1□ , (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 61 | 1456 | 82 | 3300 | - | - | 2300 | 1100 | 4100 | 220 | 1456 | 82 |



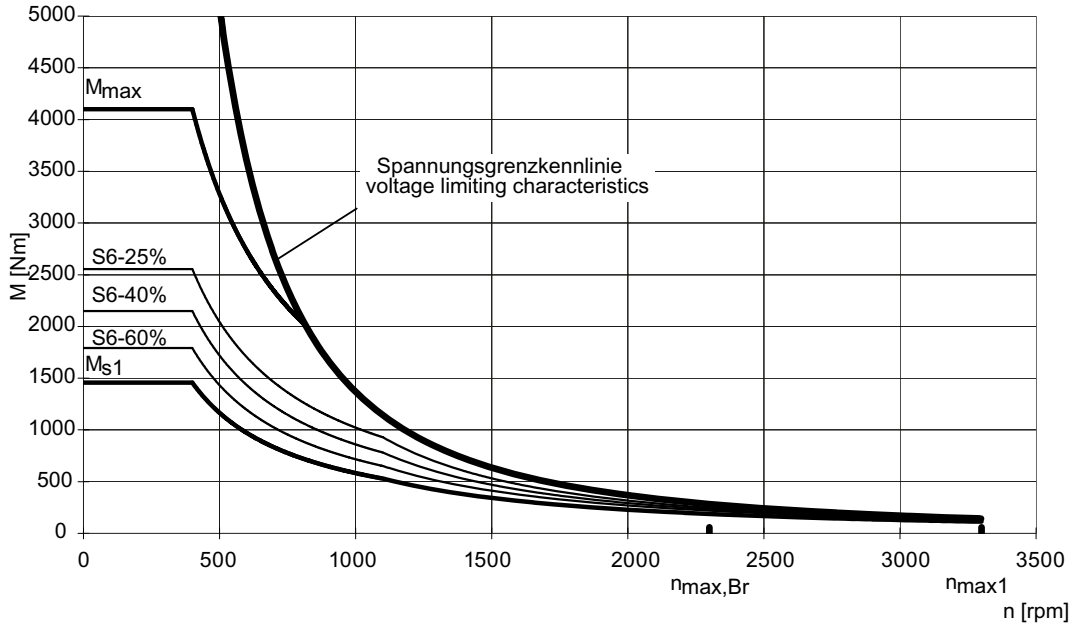
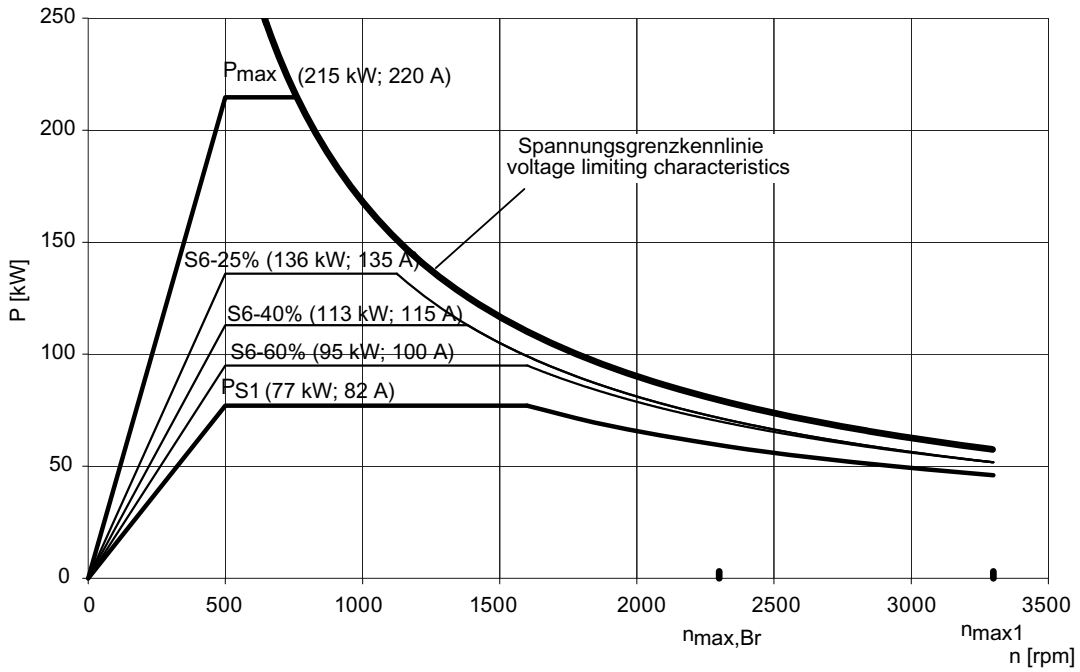



Tabella 4- 323 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8284-□□H1□ , (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 77 | 1471 | 82 | 3300 | - | - | 2300 | 1600 | 4100 | 220 | 1471 | 82 |
| 400 | 61 | 1456 | 82 | | | | | 2200 | | | | |



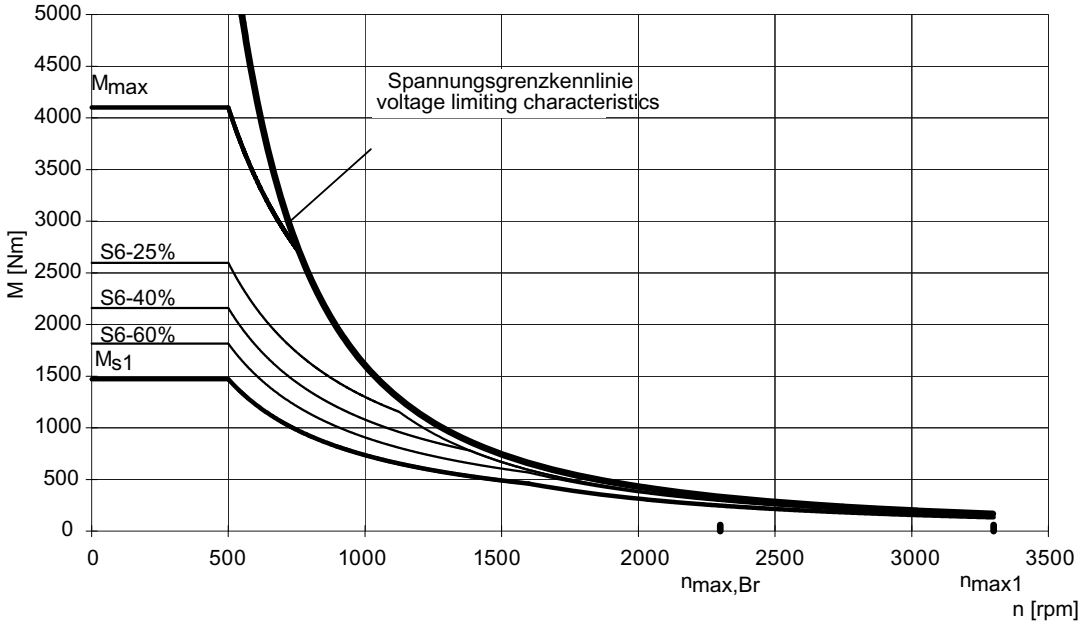
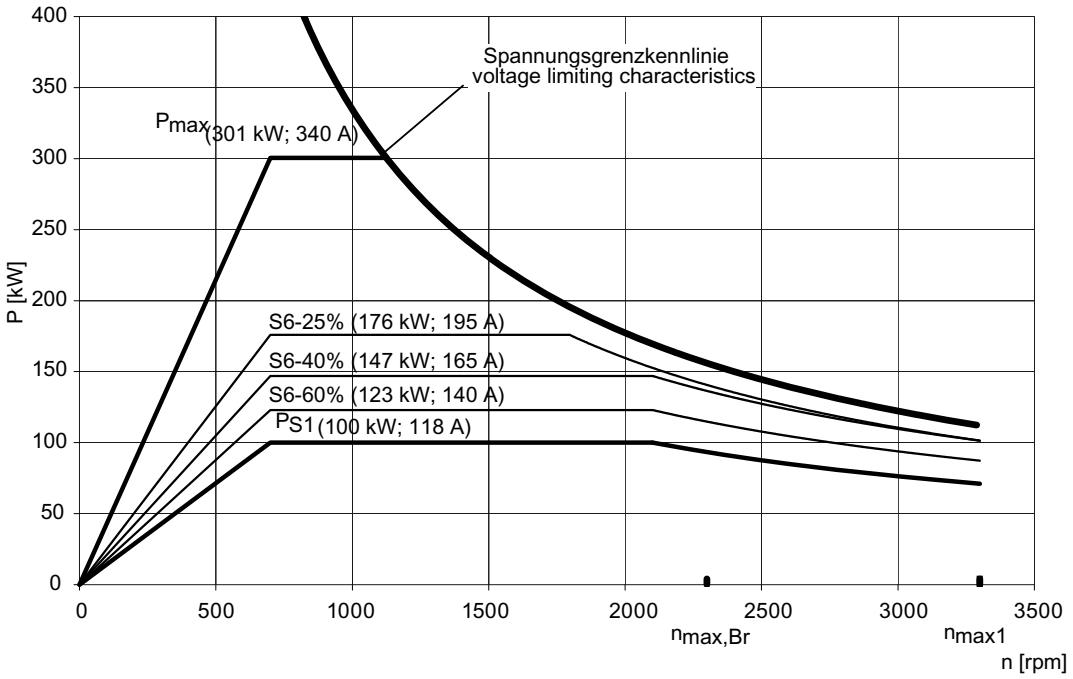



Tabella 4- 324 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8284-□□K1□ , (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 100 | 1364 | 118 | 3300 | - | - | 2300 | 2100 | 4100 | 340 | 1364 | 118 |



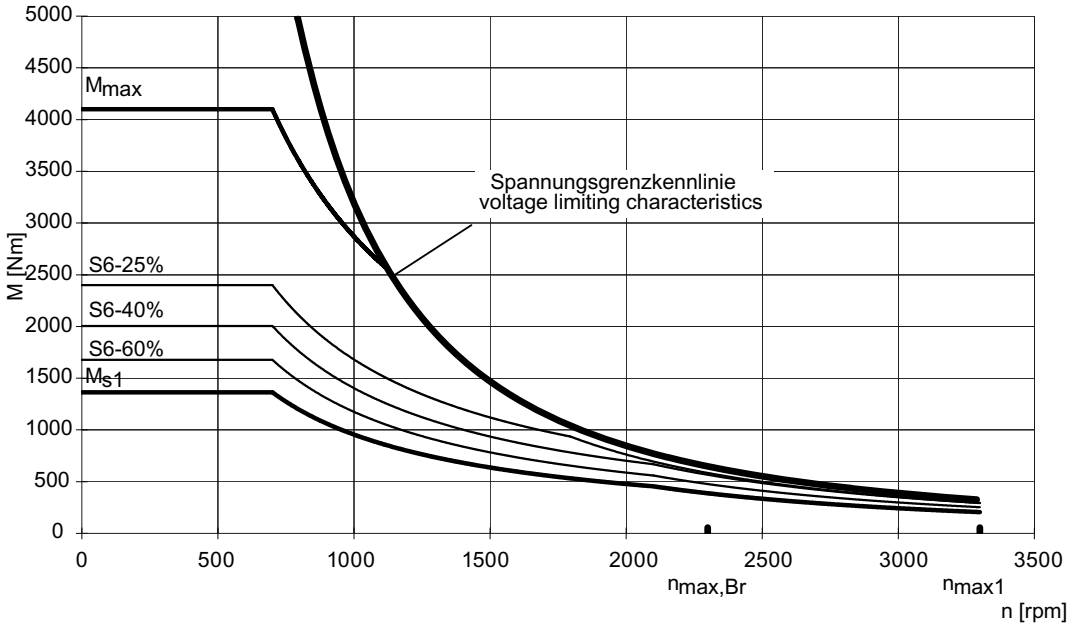
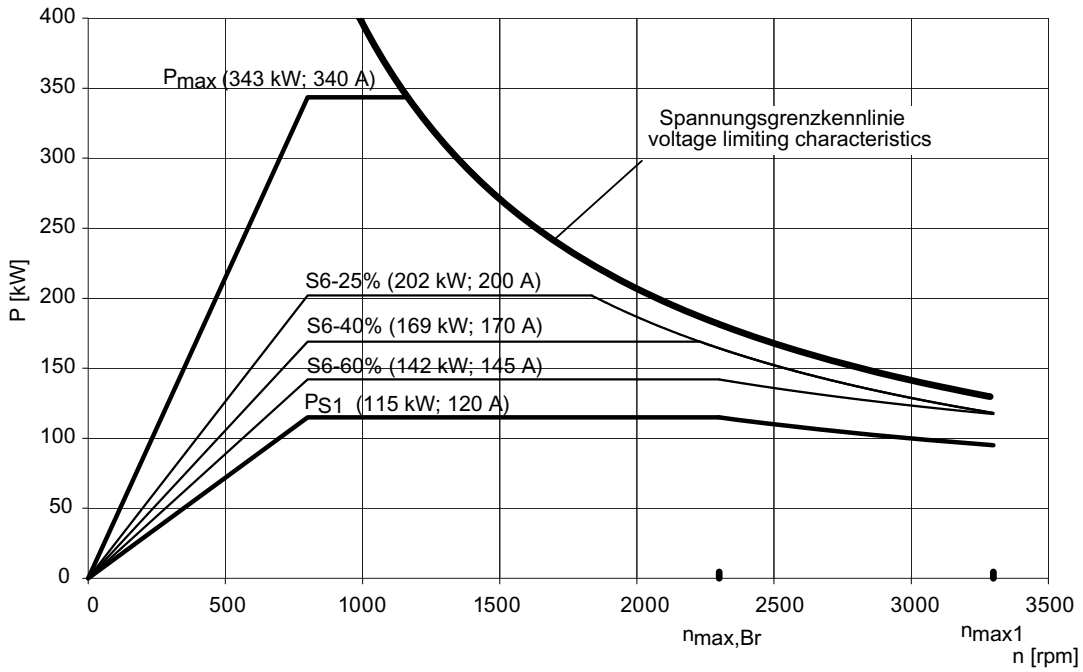



Tabella 4- 325 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8284-□□K1□ , (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 115 | 1373 | 120 | 3300 | - | - | 2300 | 2300 | 4100 | 340 | 1373 | 120 |
| 700 | 100 | 1364 | 118 | | | | | 3000 | | | | |



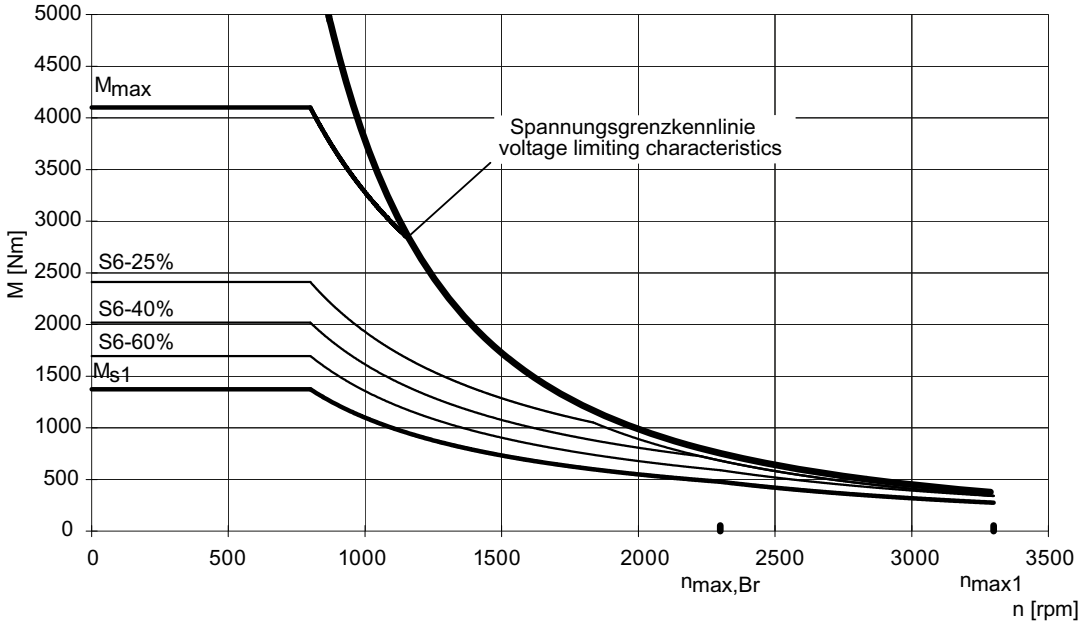
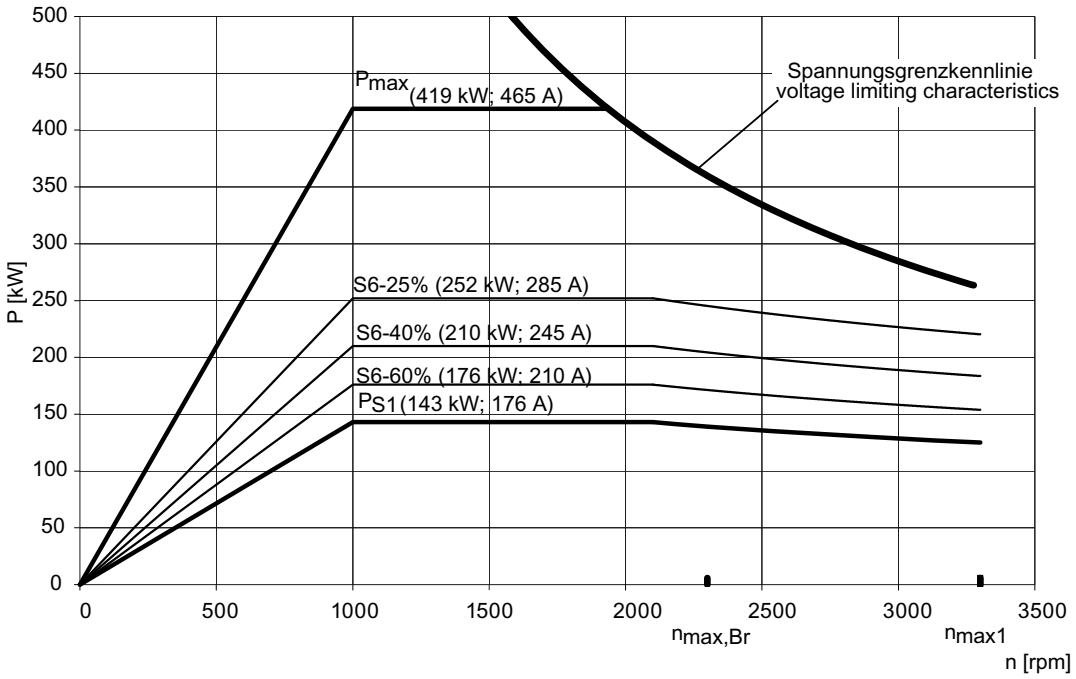



Tabella 4- 326 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8284-□□U1□ , (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 143 | 1366 | 176 | 3300 | - | - | 2300 | 2100 | 4000 | 465 | 1366 | 176 |



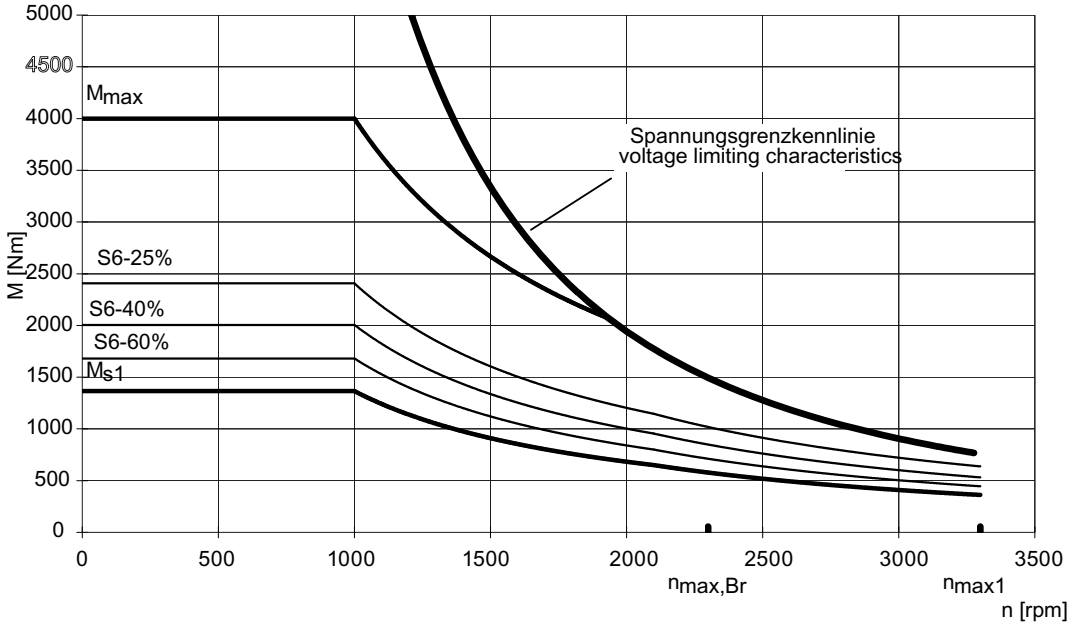
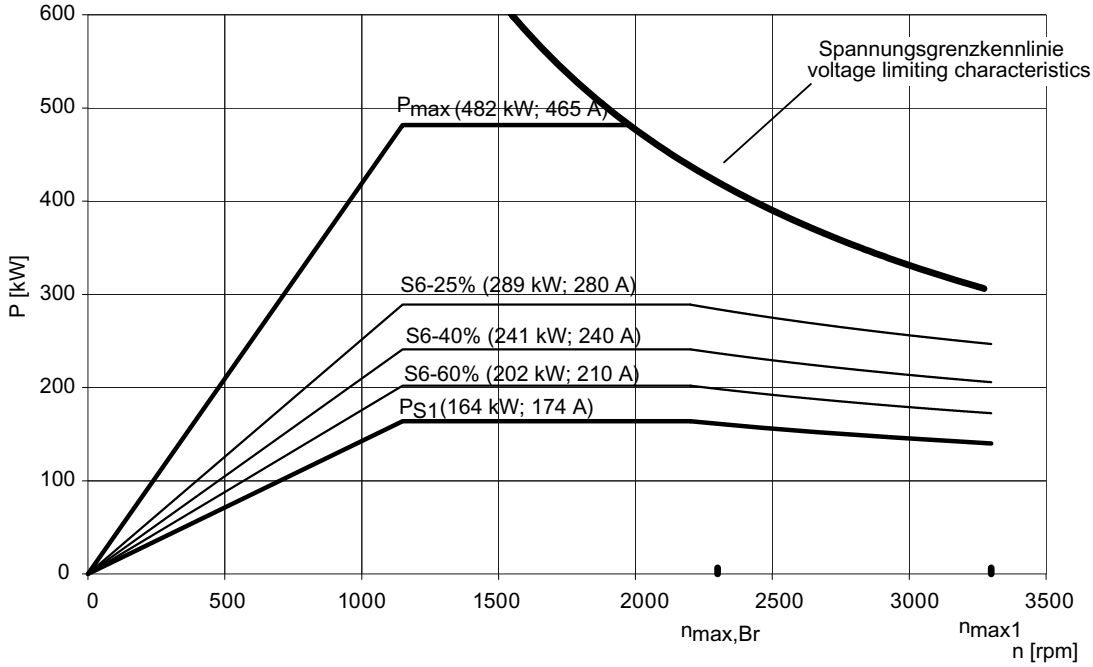



Tabella 4- 327 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8284-□□U1□ , (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 164 | 1362 | 174 | 3300 | - | - | 2300 | 2200 | 4000 | 465 | 1362 | 174 |
| 1000 | 143 | 1366 | 176 | | | | | 3100 | | | | |



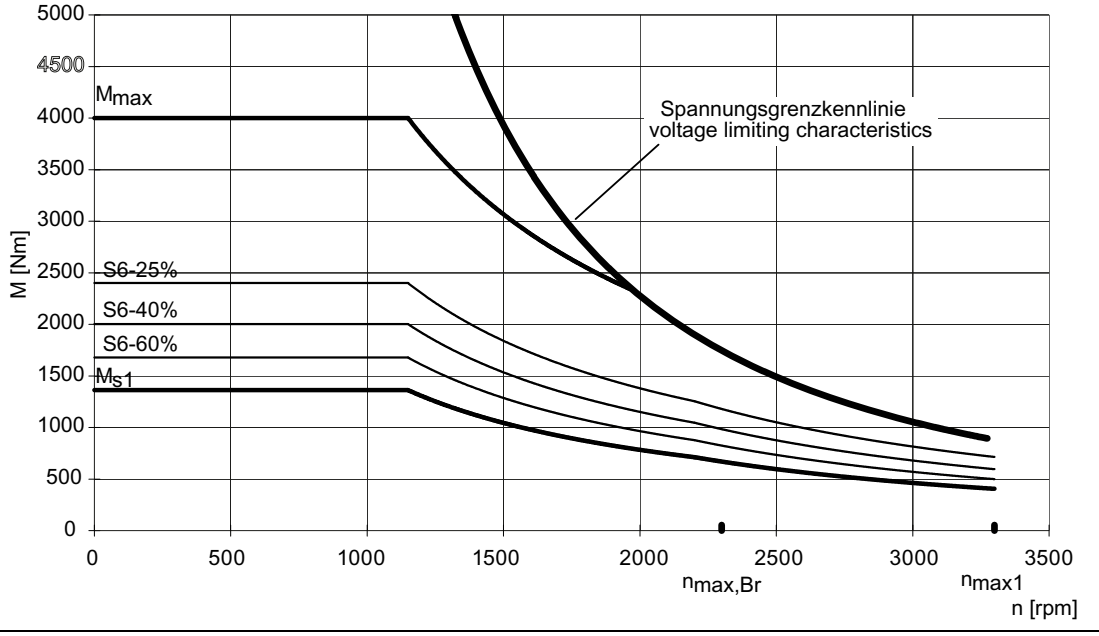
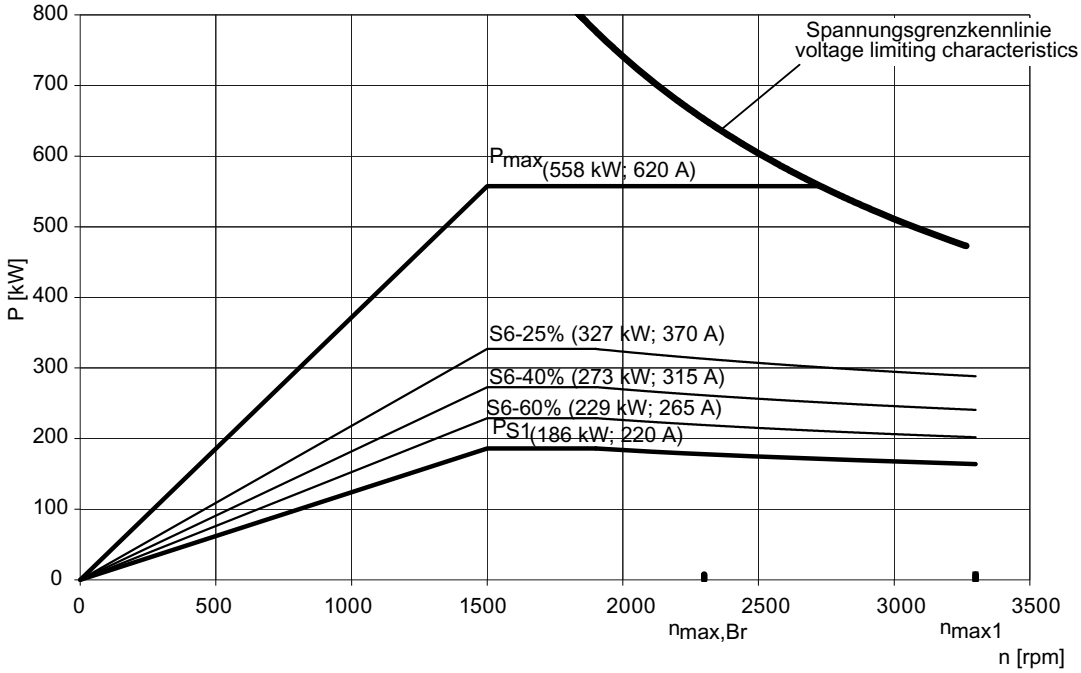



Tabella 4- 328 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8284-□□W1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 186 | 1184 | 220 | 3300 | - | - | 2300 | 1900 | 3550 | 620 | 1184 | 220 |



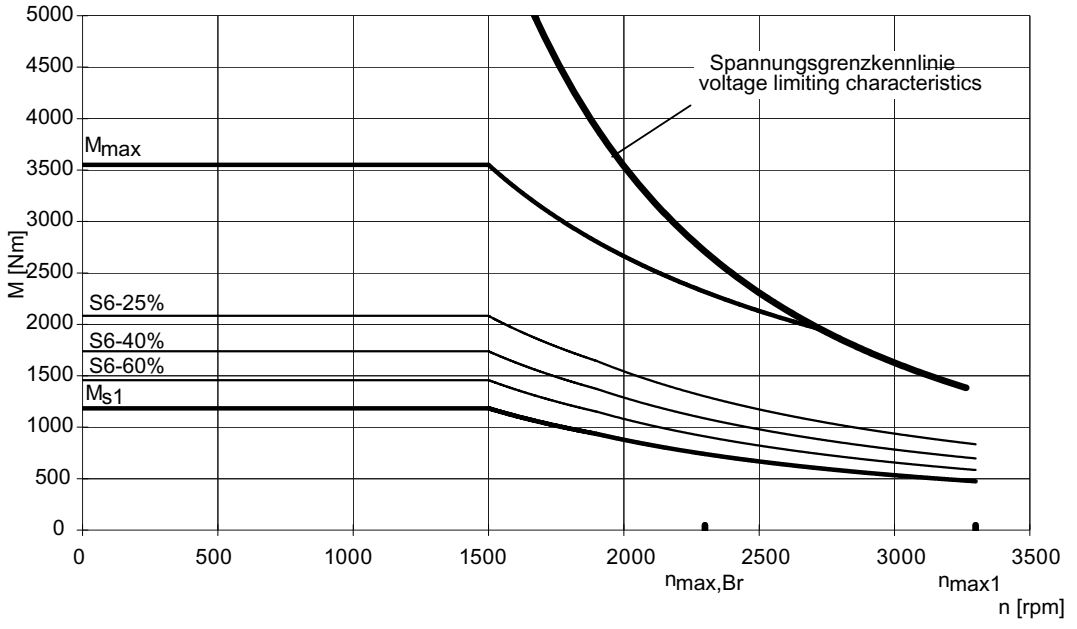
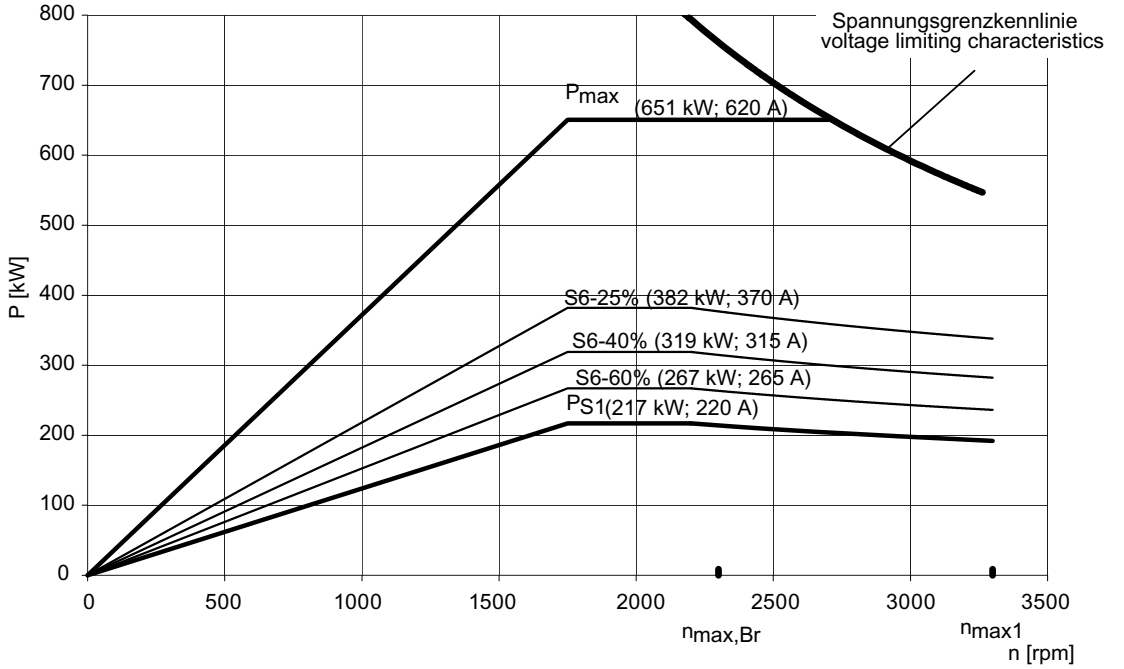



Tabella 4- 329 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8284-□□W1□ , (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 217 | 1184 | 220 | 3300 | - | - | 2300 | 2200 | 3550 | 620 | 1184 | 220 |
| 1500 | 186 | 1184 | 220 | | | | | 3300 | | | | |



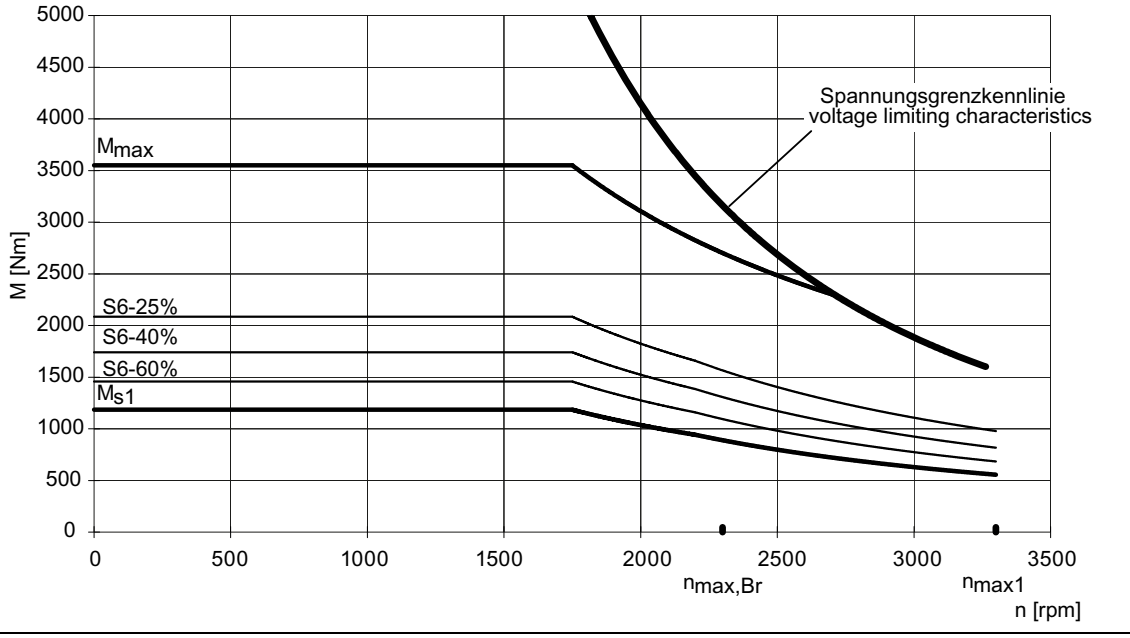
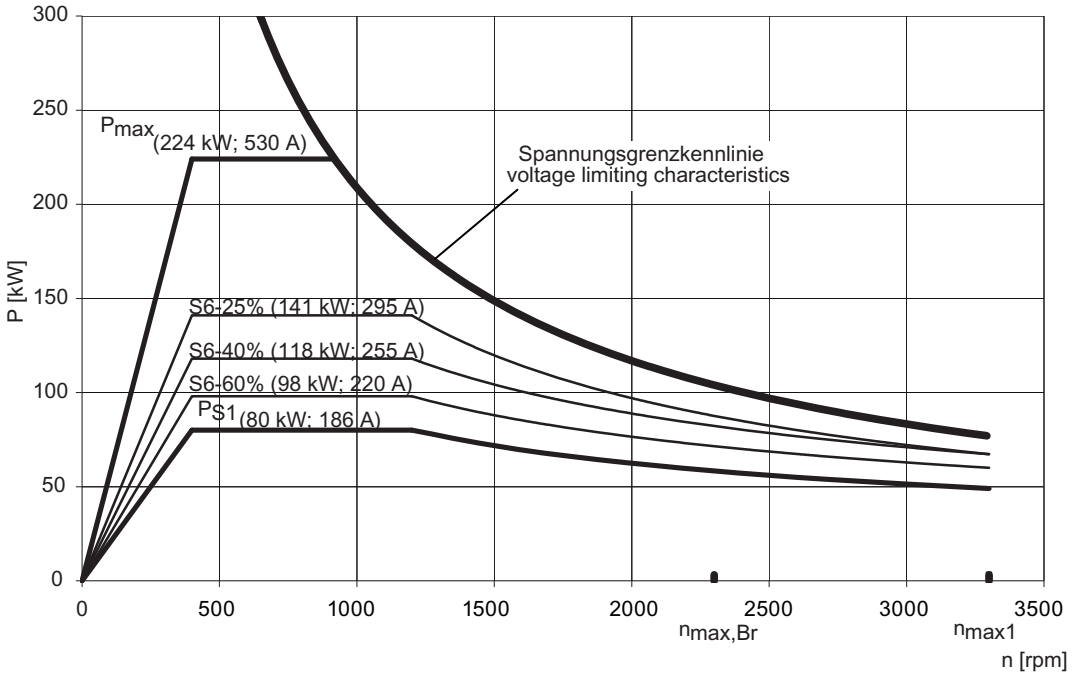



Tabella 4- 330 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8286-□□B1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 80 | 1910 | 186 | 3300 | - | - | 2300 | 1200 | 5350 | 530 | 1910 | 186 |



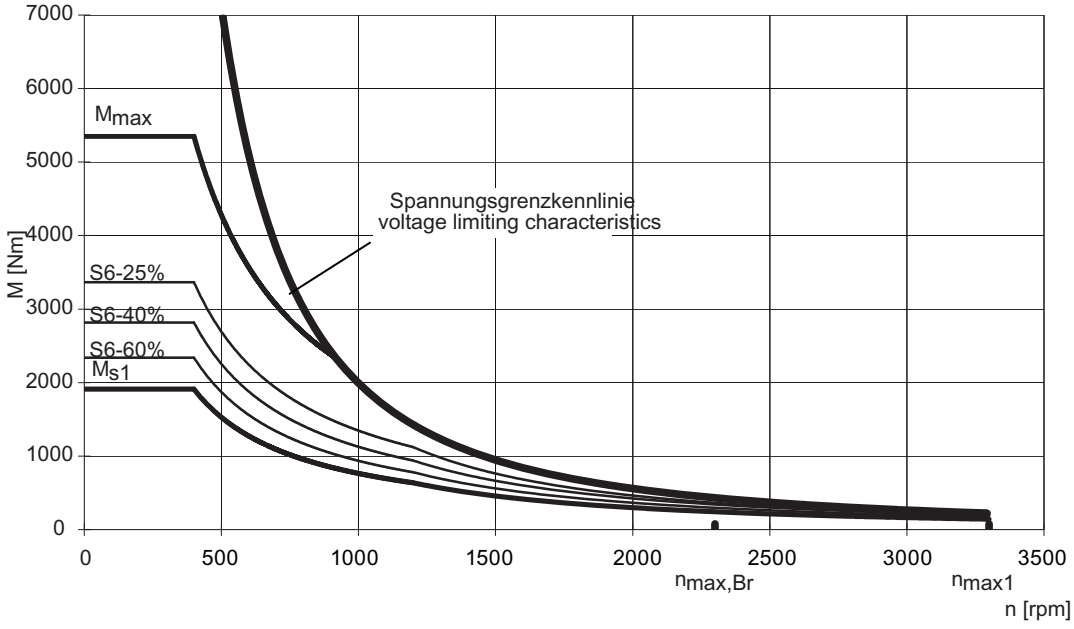
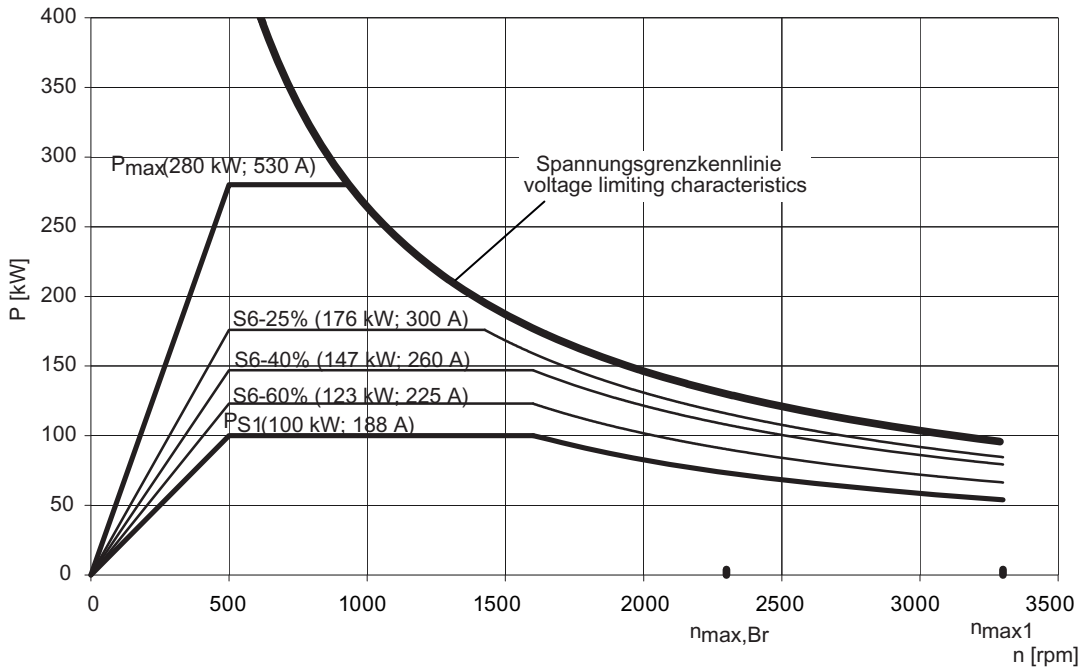



Tabella 4- 331 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8286-□□B1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 100 | 1909 | 188 | 3300 | - | - | 2300 | 1600 | 5350 | 530 | 1909 | 188 |
| 400 | 80 | 1910 | 186 | | | | | 2100 | | | | |



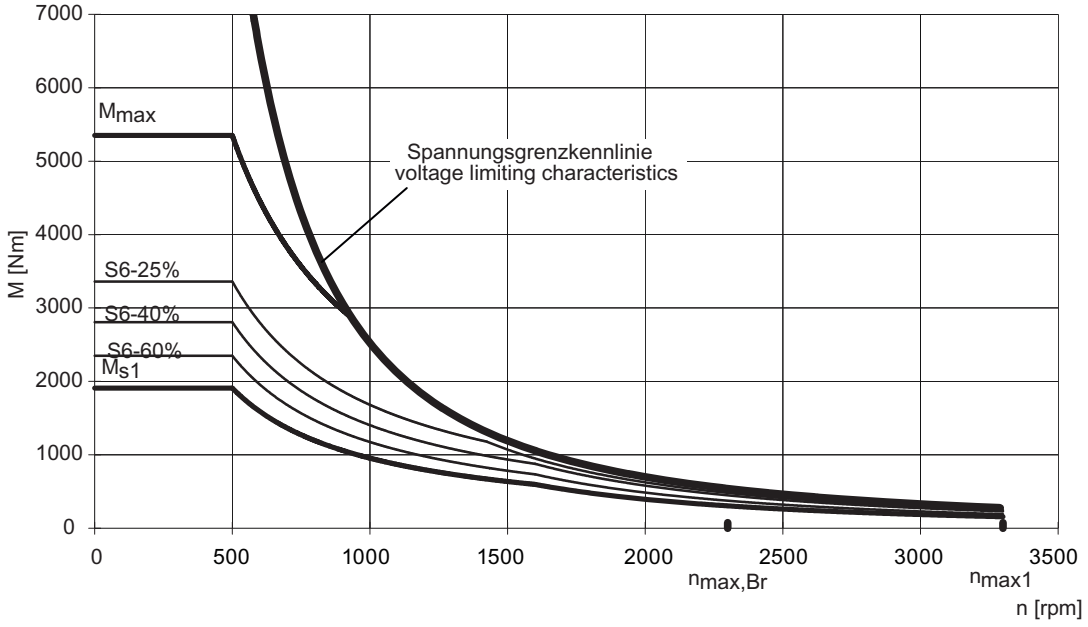
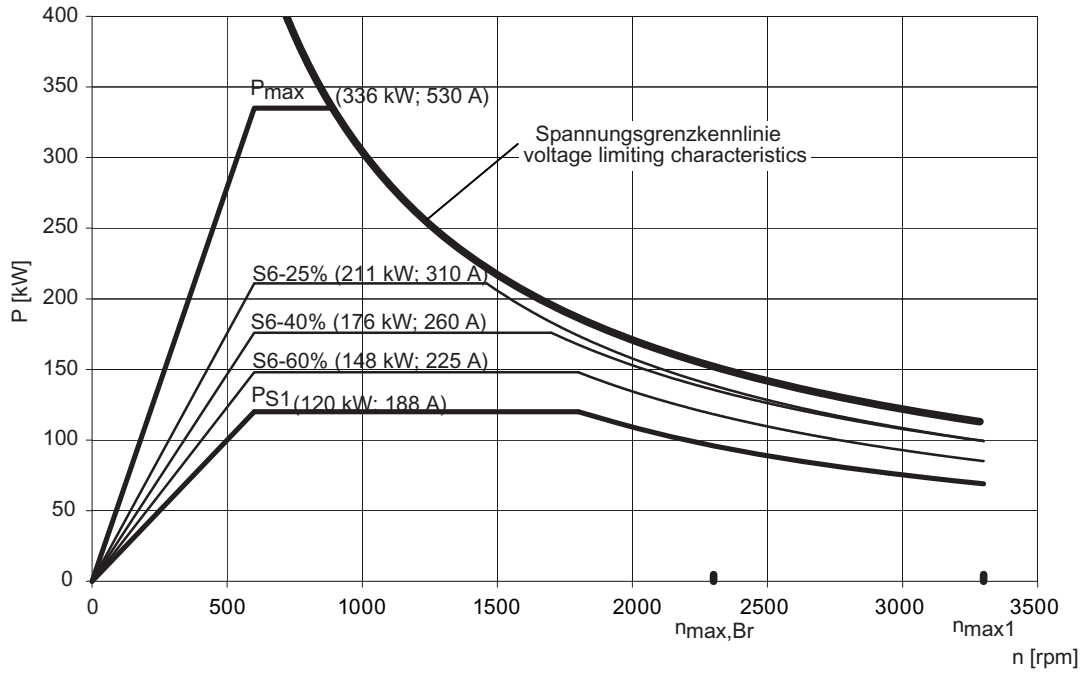



Tabella 4- 332 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8286-□□B1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 120 | 1916 | 188 | 3300 | - | - | 2300 | 1800 | 5350 | 530 | 1916 | 188 |



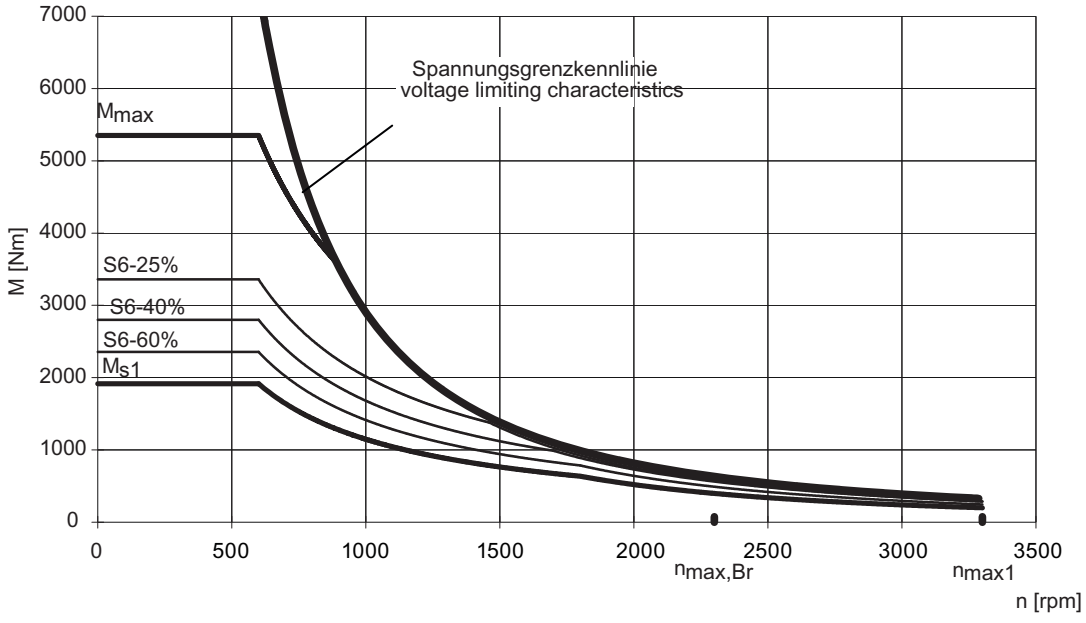
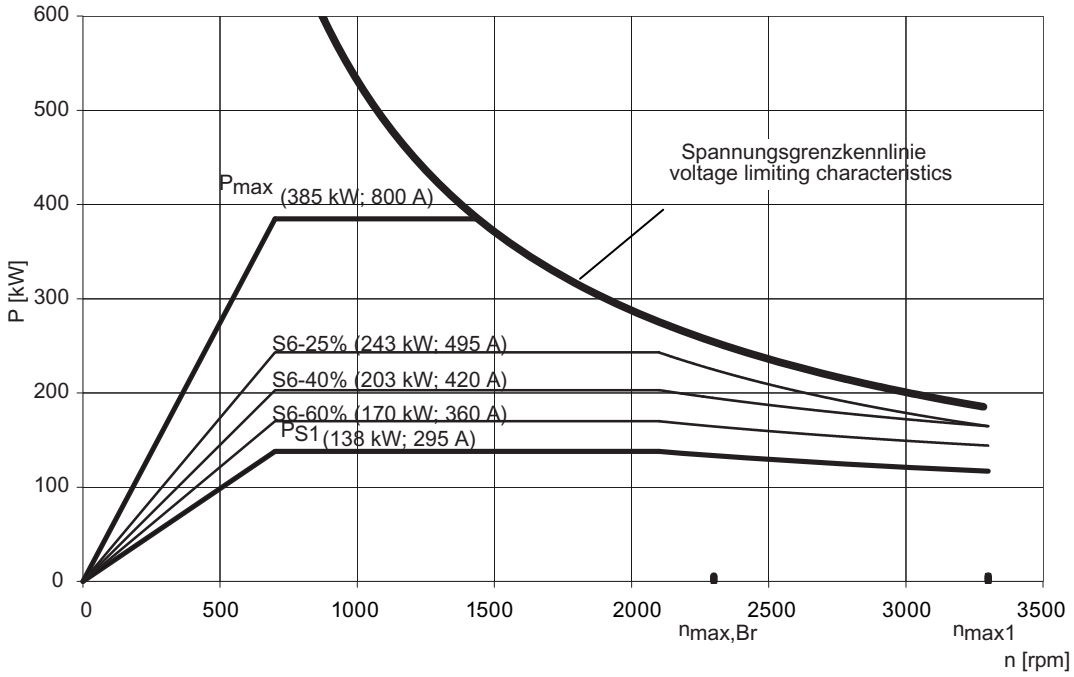



Tabella 4- 333 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8286-□□C1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 138 | 1883 | 295 | 3300 | - | - | 2300 | 2100 | 5250 | 800 | 1883 | 295 |



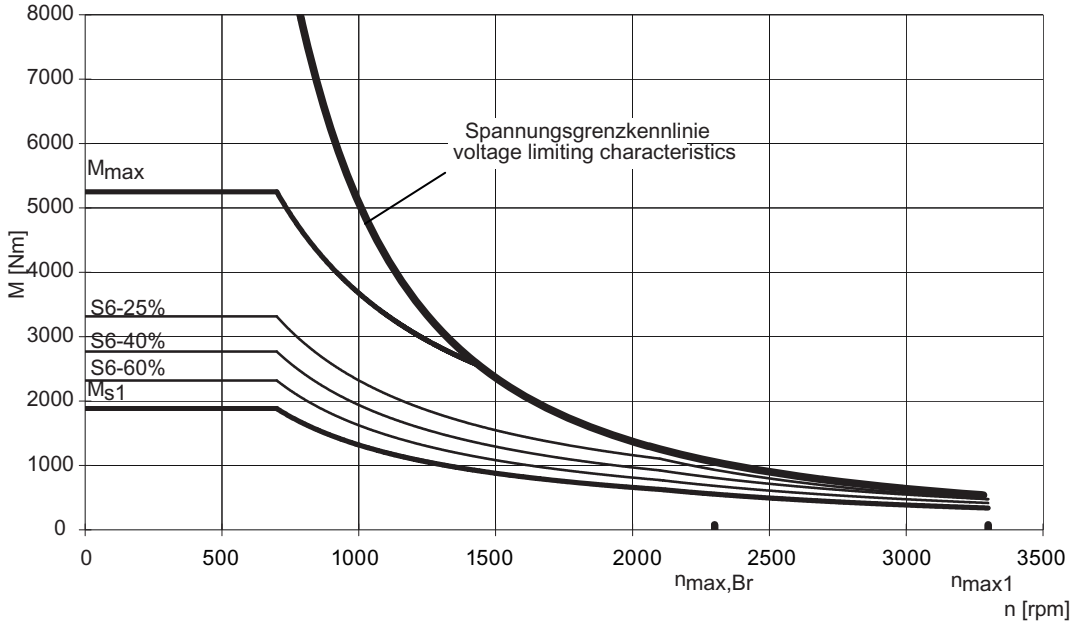
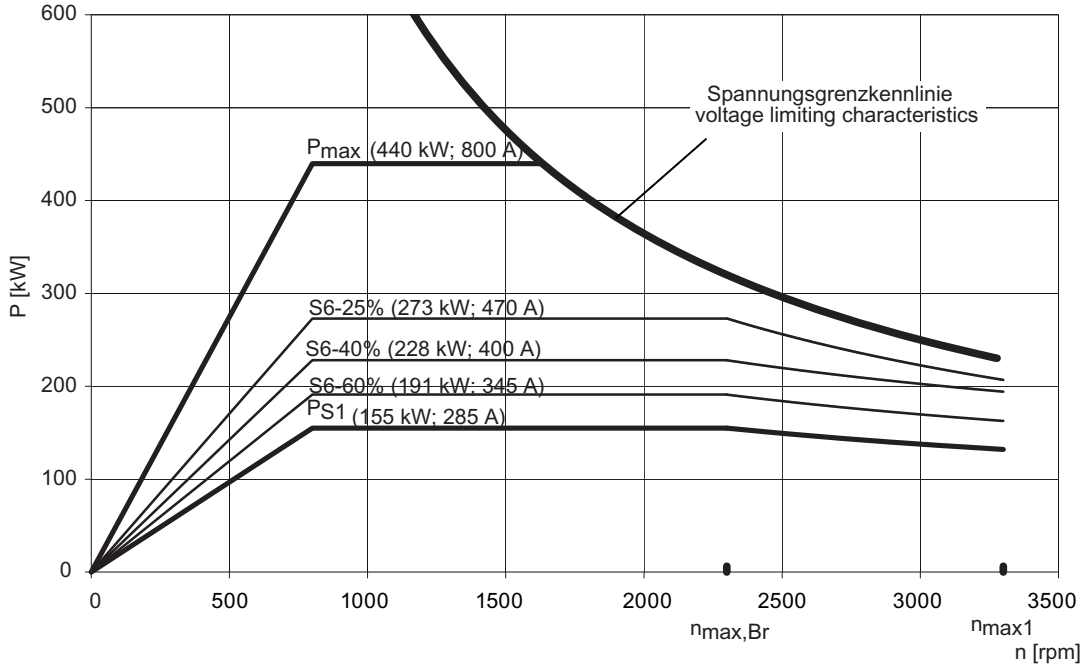



Tabella 4- 334 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8286-□□C1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 155 | 1850 | 285 | 3300 | - | - | 2300 | 2300 | 5250 | 800 | 1850 | 285 |
| 700 | 138 | 1883 | 295 | | | | | 3000 | | | | |



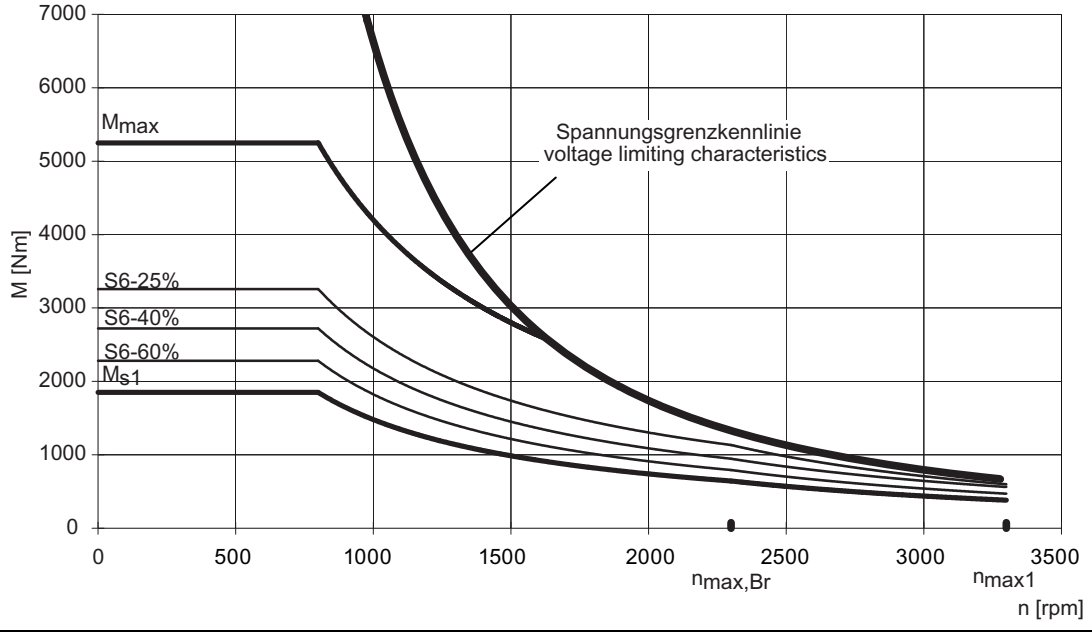
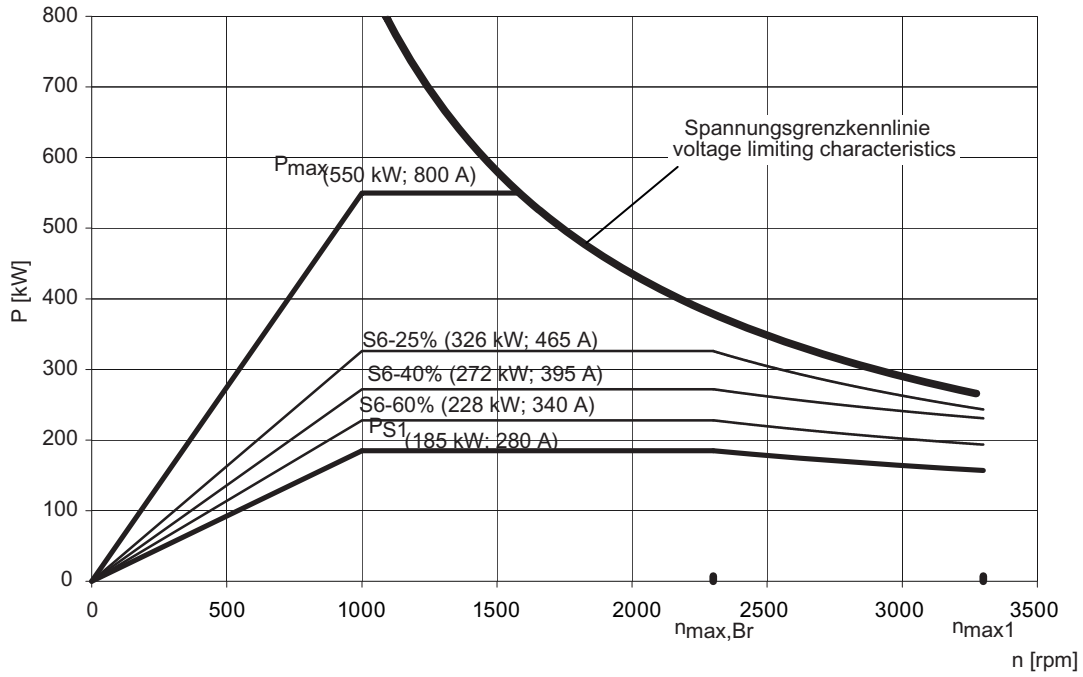



Tabella 4- 335 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8286-□□C1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 185 | 1767 | 280 | 3300 | - | - | 2300 | 2300 | 5250 | 800 | 1767 | 280 |



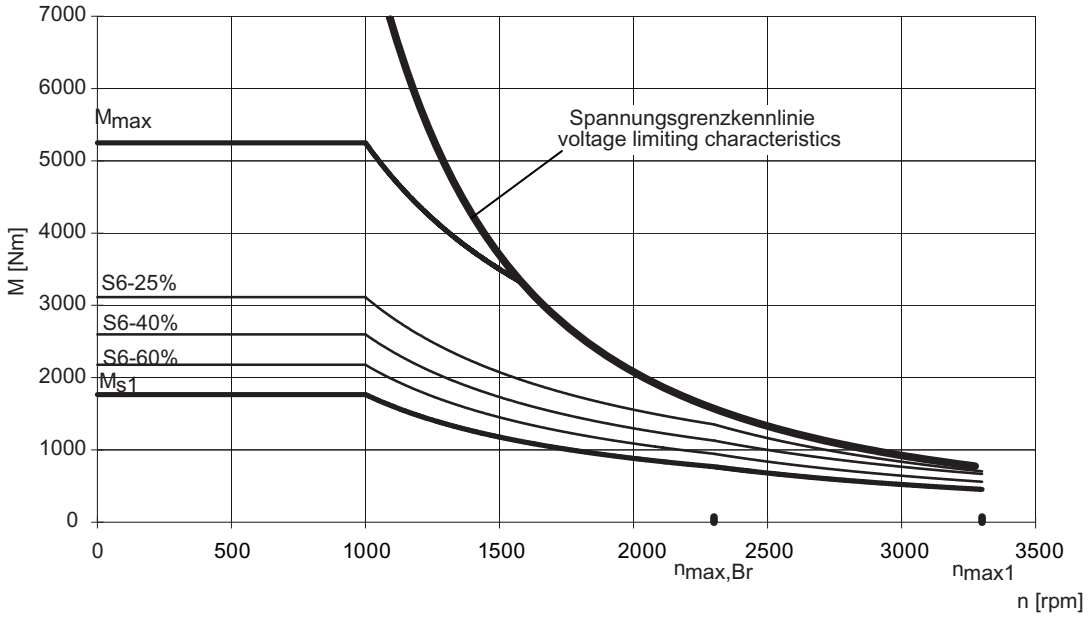
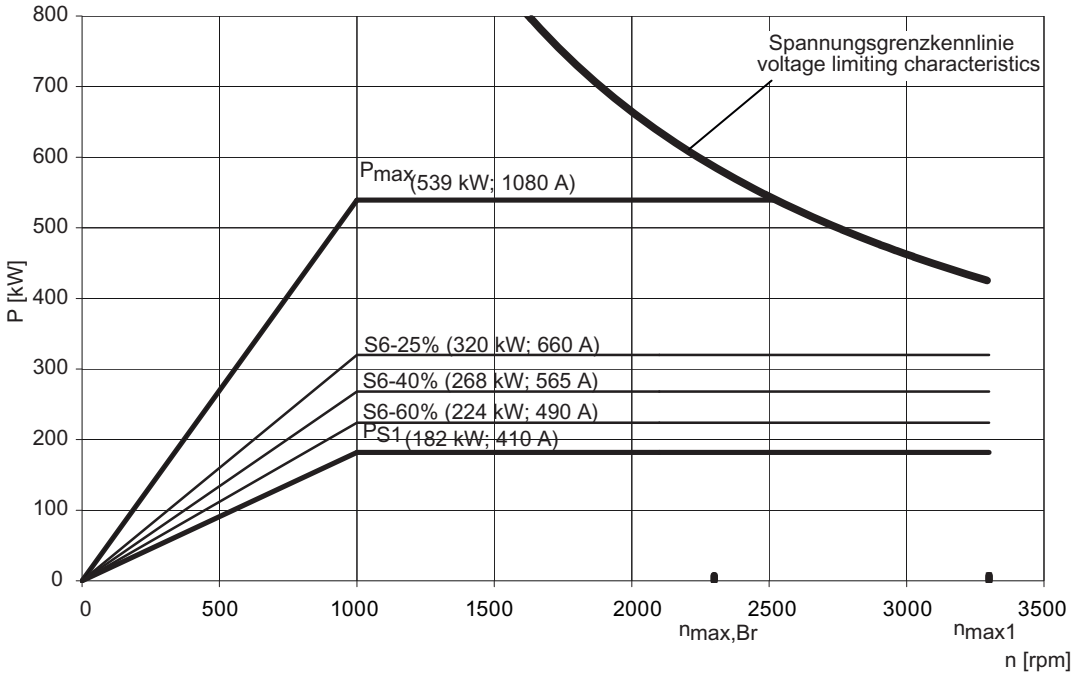



Tabella 4- 336 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8286-□□D1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 182 | 1738 | 410 | 3300 | - | - | 2300 | 2100 | 5150 | 1080 | 1738 | 410 |



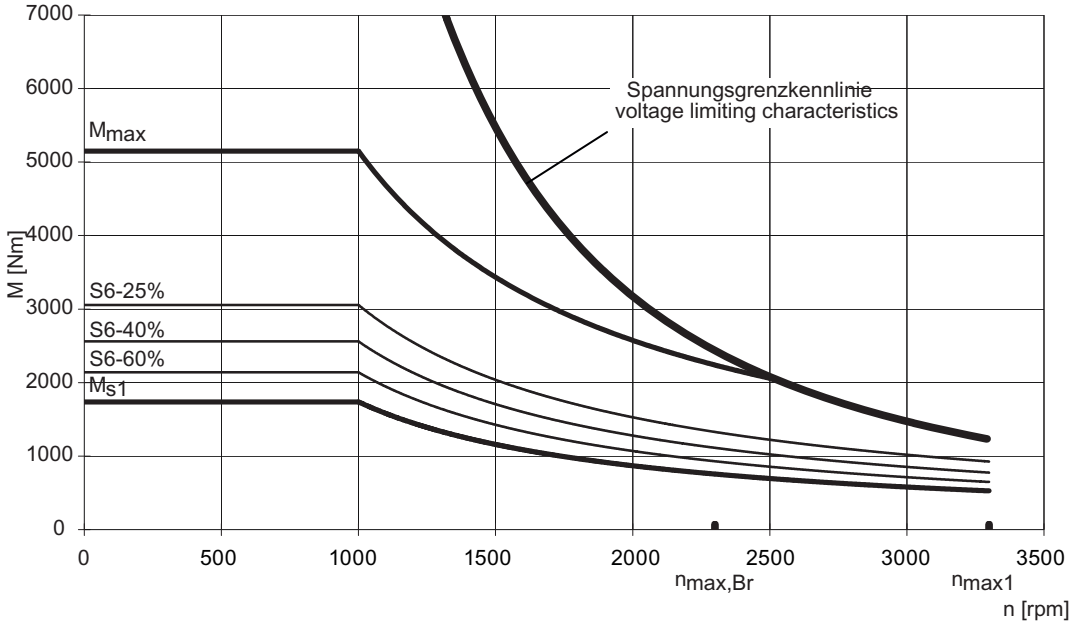
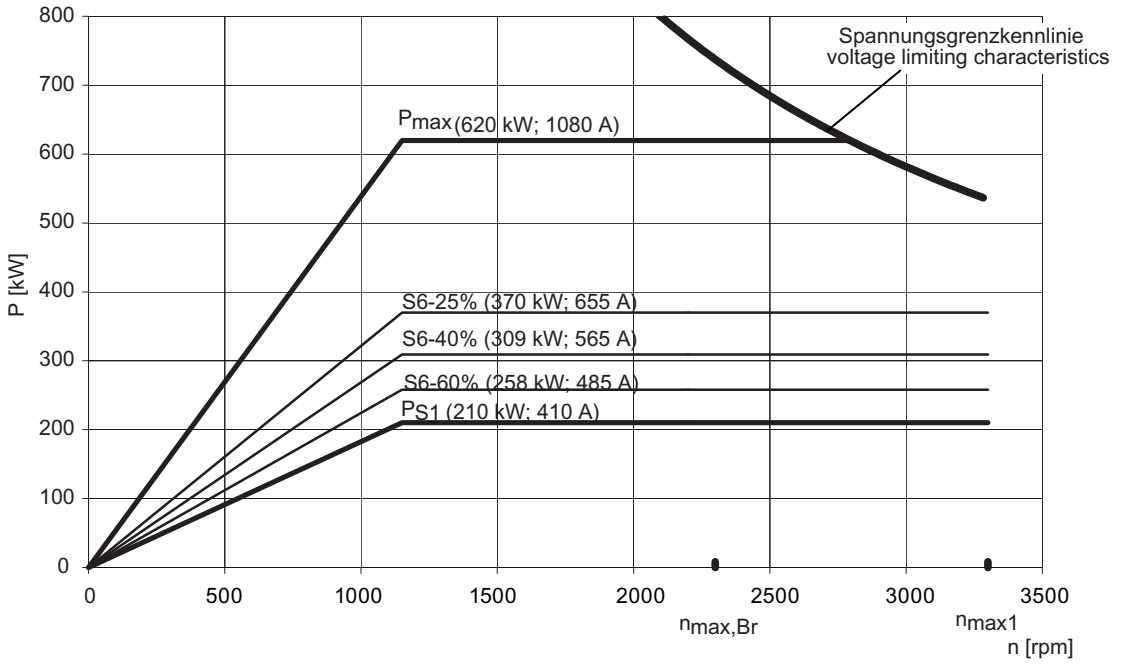



Tabella 4- 337 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8286-□□D1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 210 | 1745 | 410 | 3300 | - | - | 2300 | 2200 | 5150 | 1080 | 1745 | 410 |
| 1000 | 182 | 1738 | 410 | | | | | 3300 | | | | |



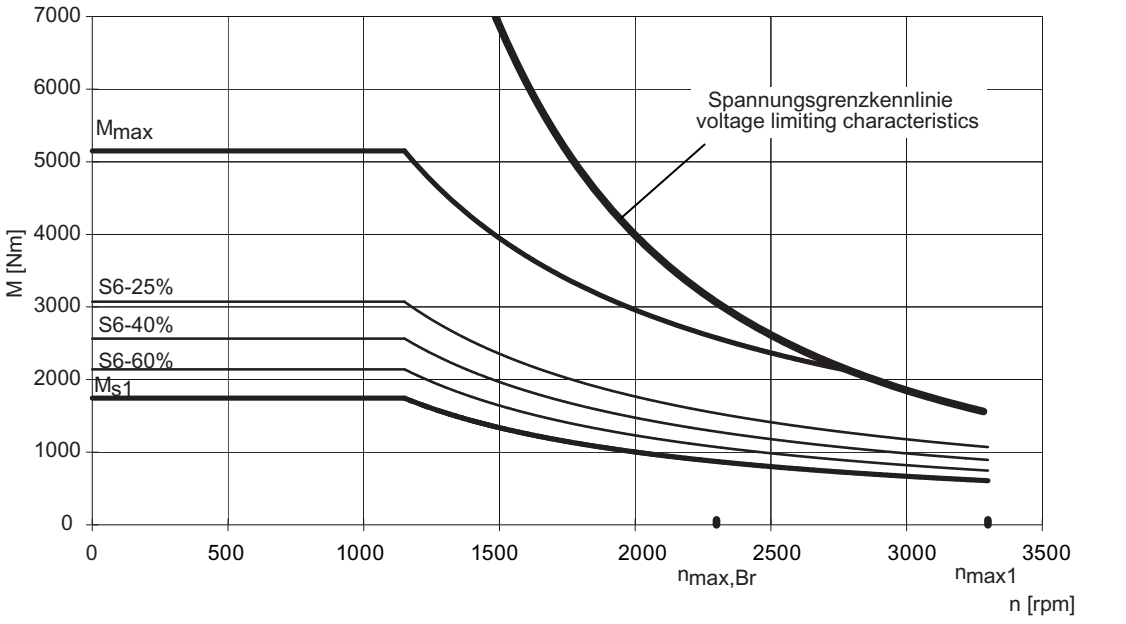
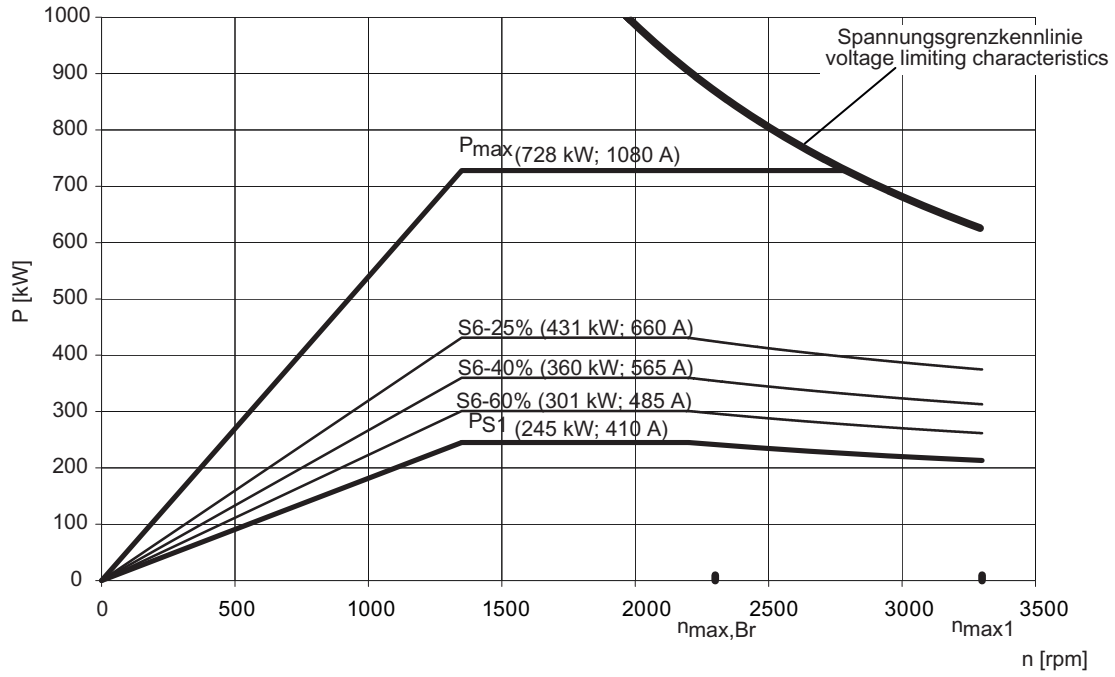



Tabella 4- 338 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8286-□□D1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 245 | 1733 | 410 | 3300 | - | - | 2300 | 2200 | 5150 | 1080 | 1733 | 410 |



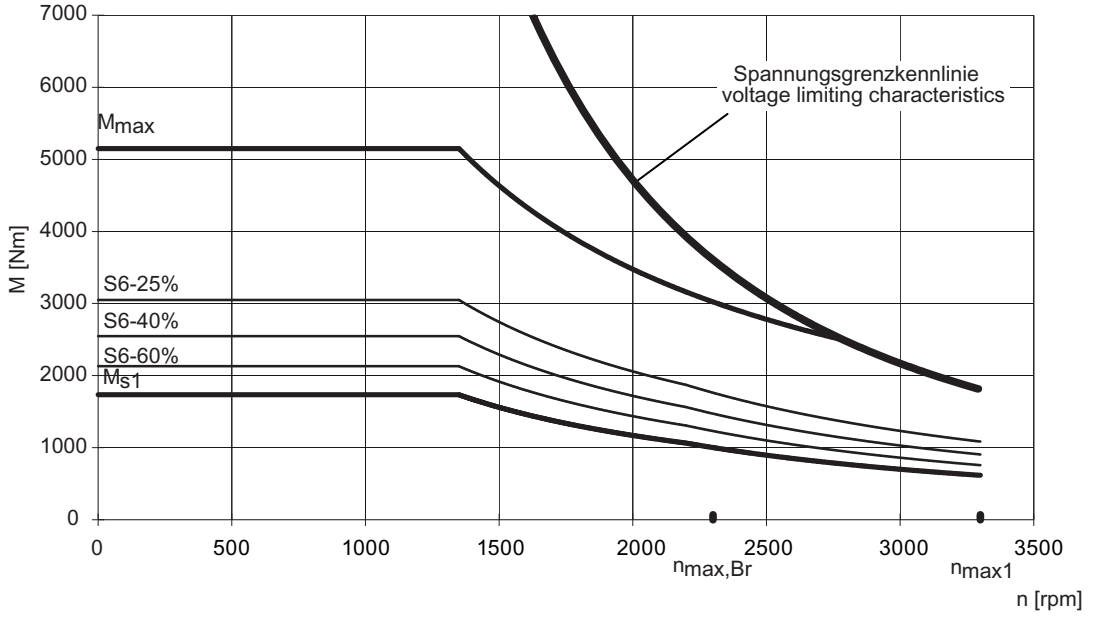
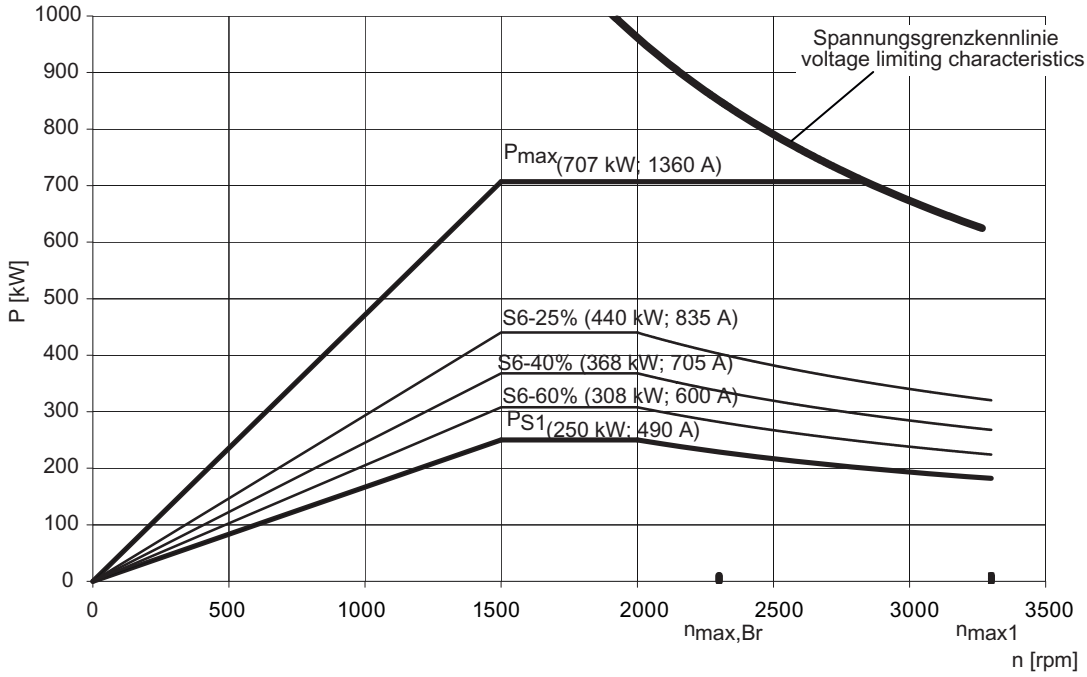



Tabella 4- 339 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8286-□□F1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 250 | 1592 | 490 | 3300 | - | - | 2300 | 2000 | 4500 | 1360 | 1592 | 490 |



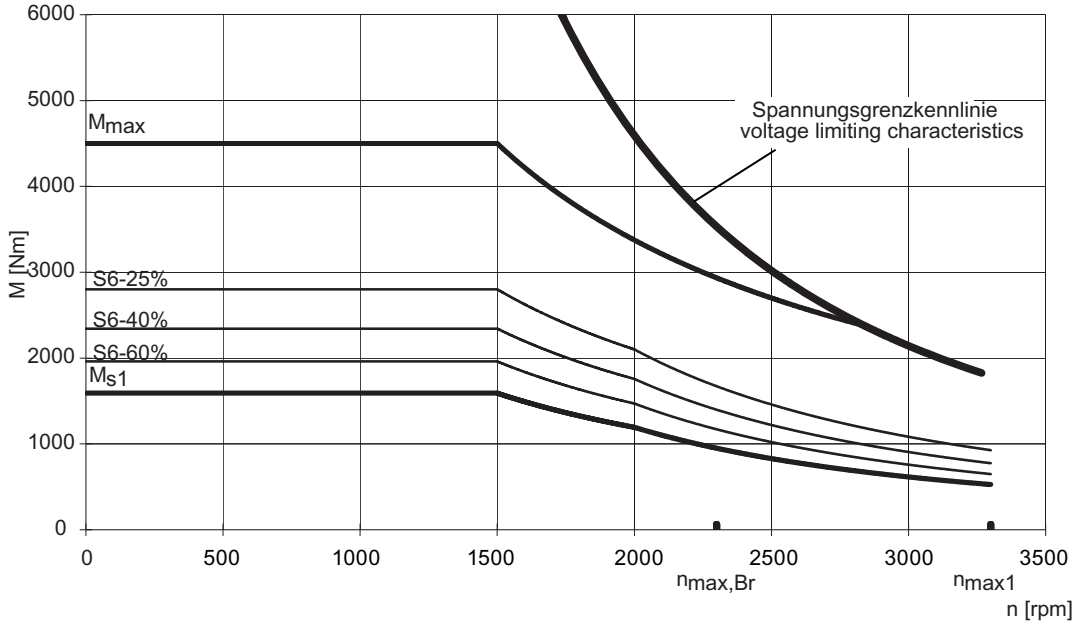
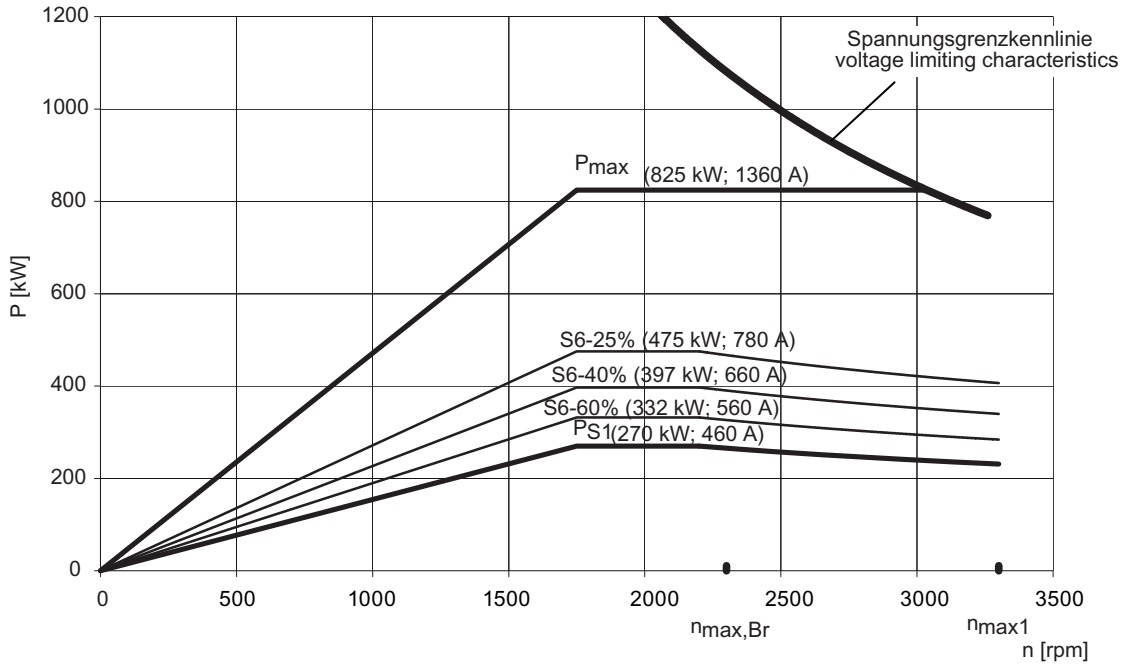



Tabella 4- 340 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8286-□□F1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 270 | 1474 | 460 | 3300 | - | - | 2300 | 2200 | 4500 | 1360 | 1474 | 460 |
| 1500 | 250 | 1592 | 490 | | | | | 2700 | | | | |



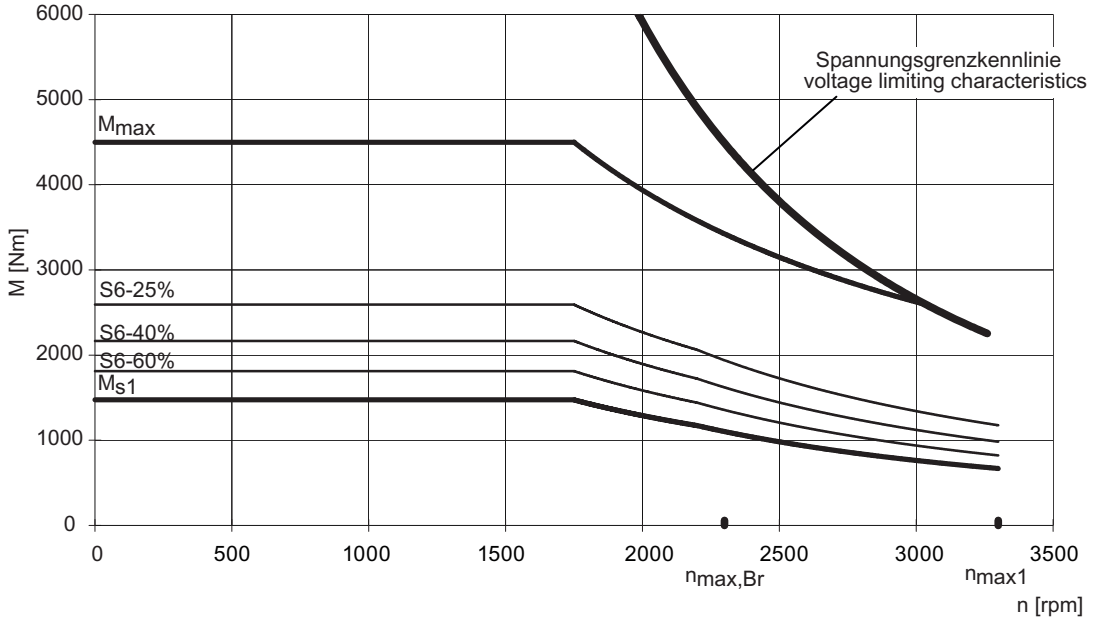
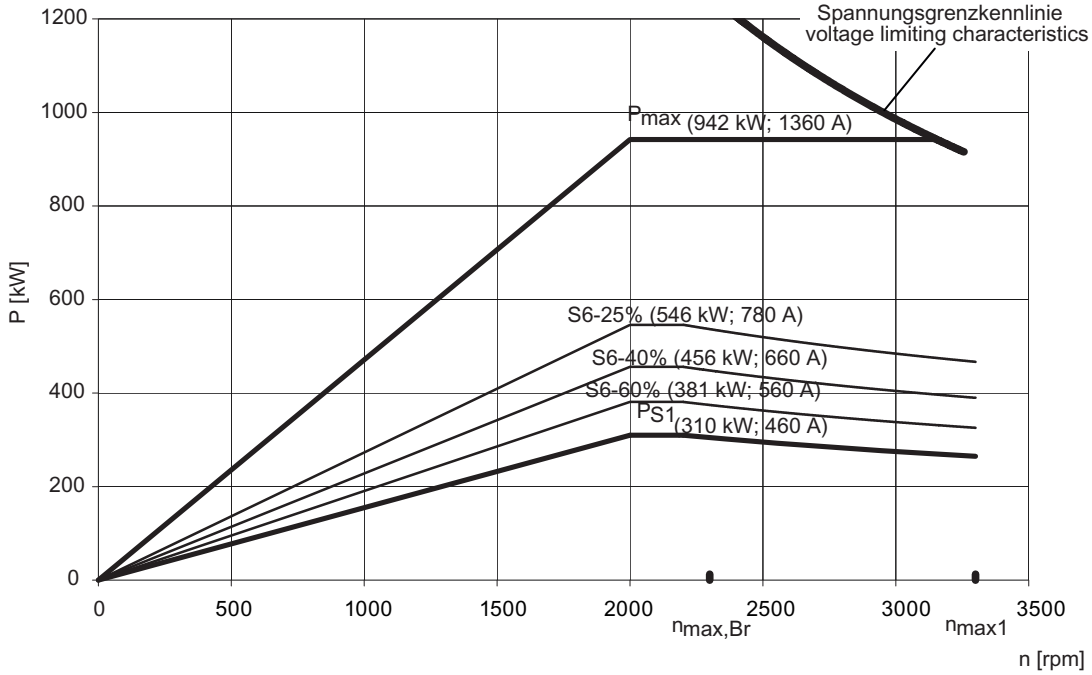



Tabella 4- 341 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8286-□□F1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 310 | 1481 | 460 | 3300 | - | - | 2300 | 2200 | 4500 | 1360 | 1481 | 460 |



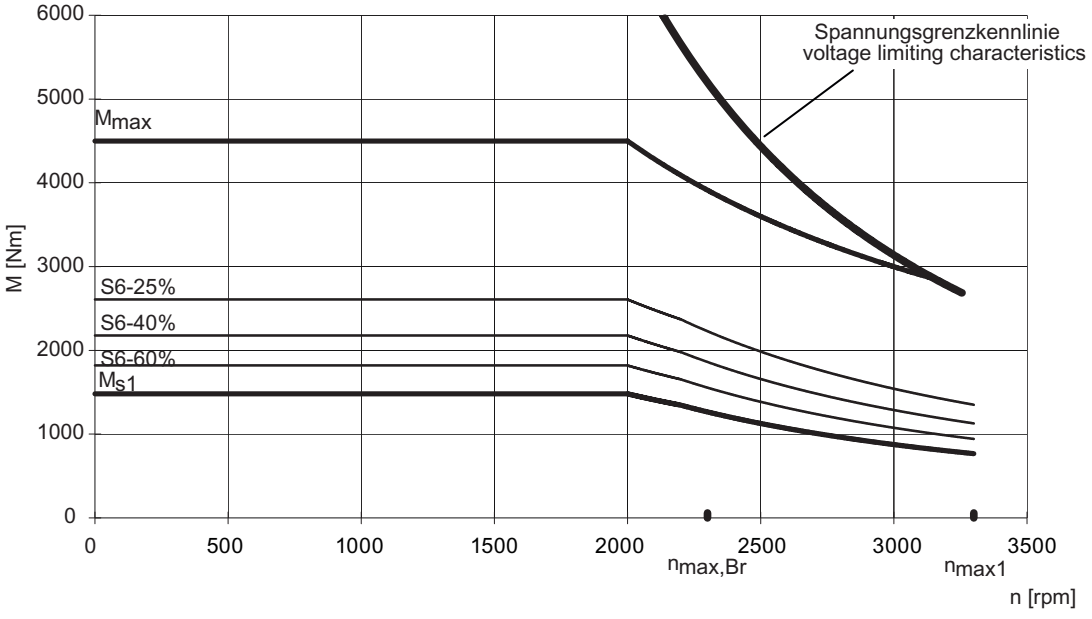
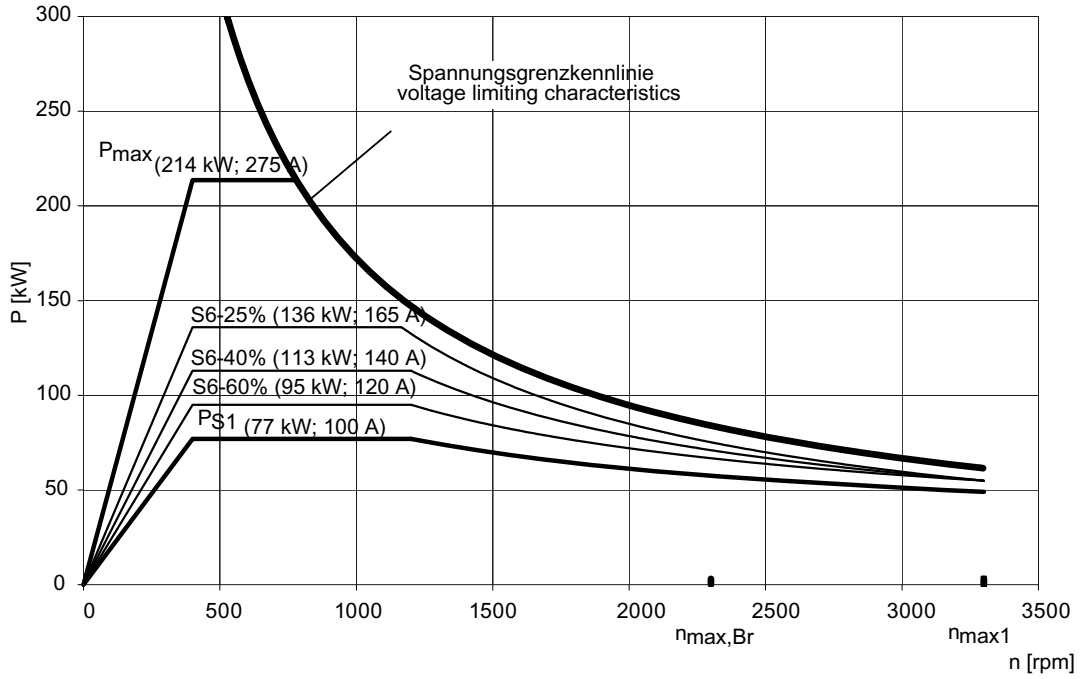



Tabella 4- 342 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8286-□□H1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 77 | 1838 | 100 | 3300 | - | - | 2300 | 1200 | 5100 | 275 | 1838 | 100 |



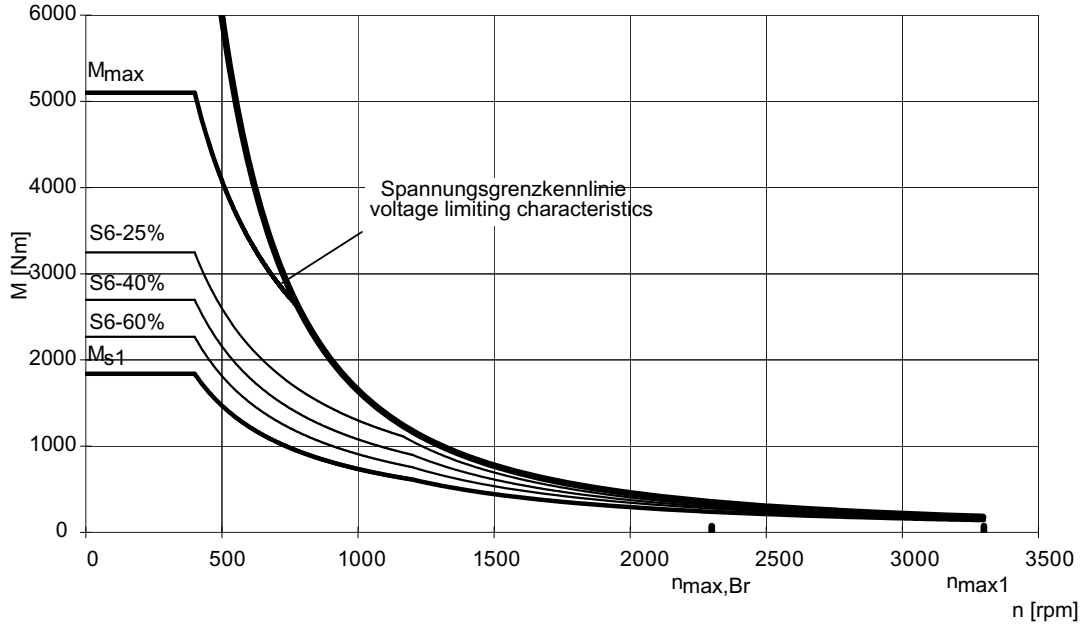
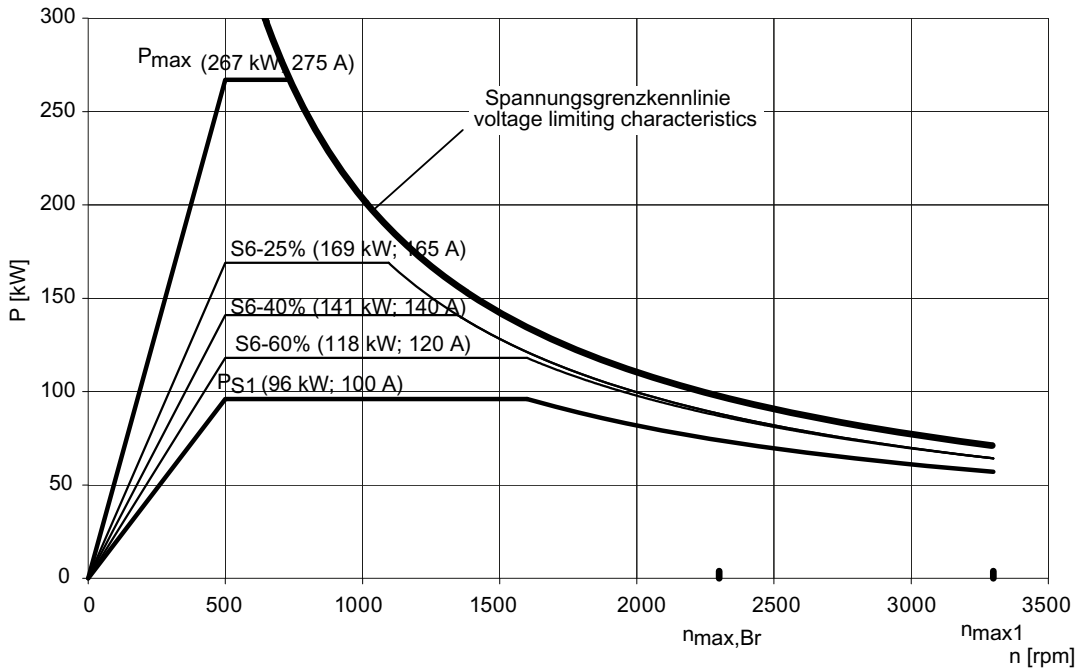



Tabella 4- 343 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8286-□□H1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 96 | 1834 | 100 | 3300 | - | - | 2300 | 1600 | 5100 | 275 | 1834 | 100 |
| 400 | 77 | 1838 | 100 | | | | | 2200 | | | | |



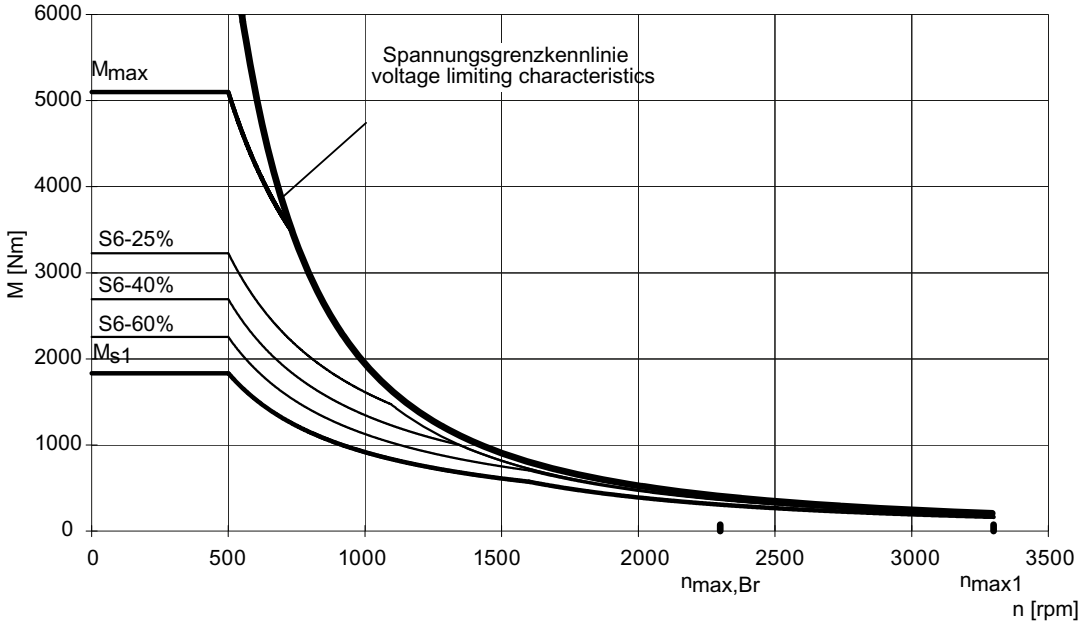
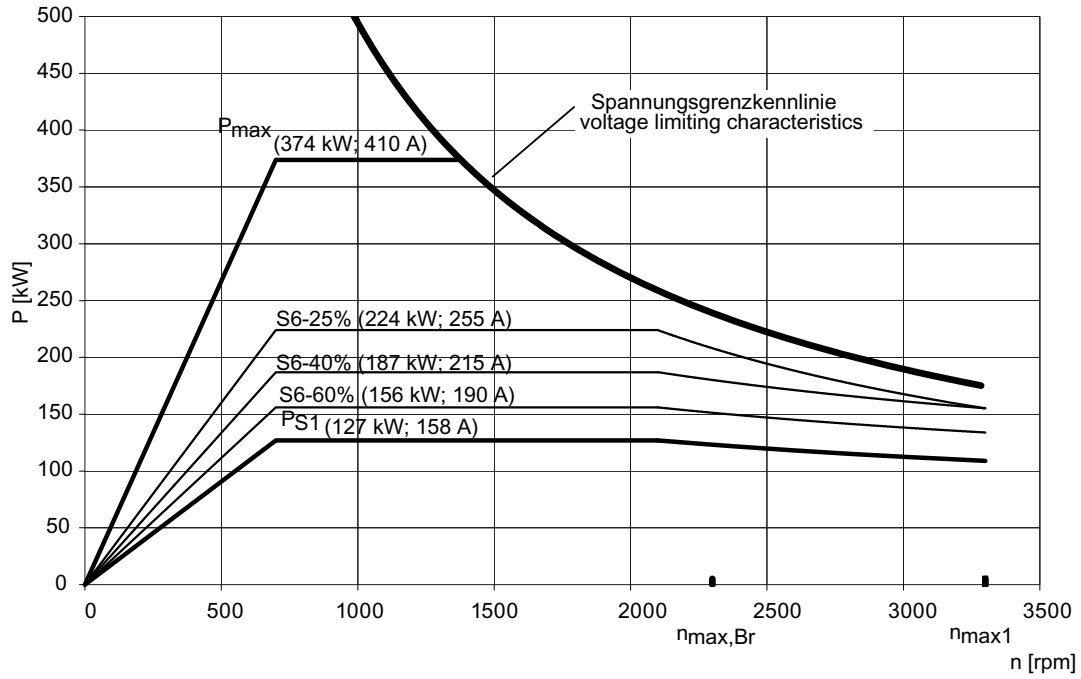



Tabella 4- 344 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8286-□□K1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 127 | 1733 | 158 | 3300 | - | - | 2300 | 2100 | 5100 | 410 | 1733 | 158 |



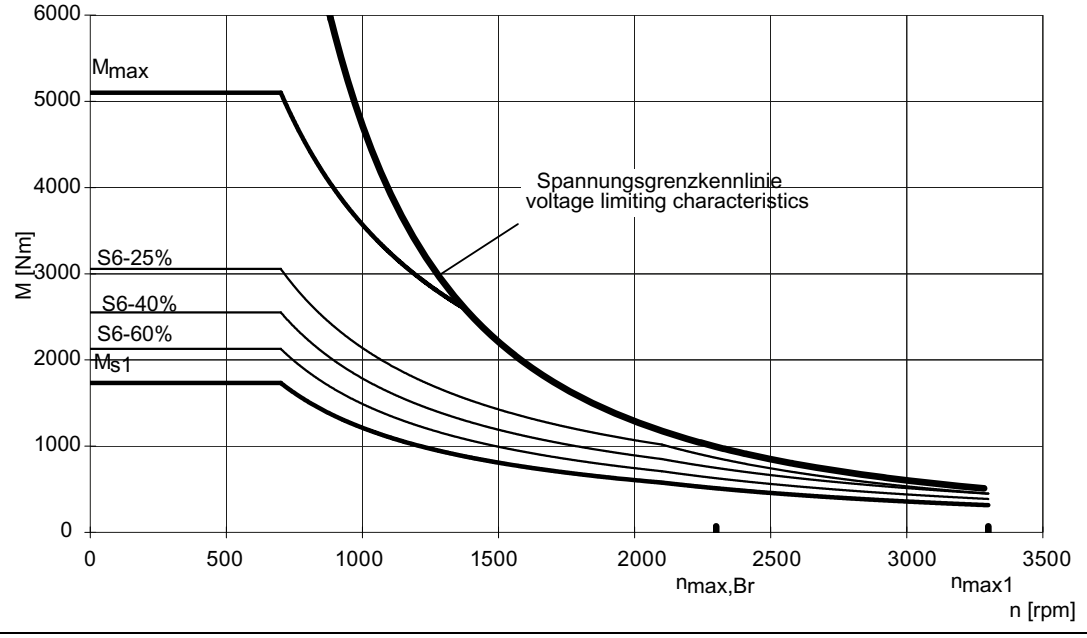
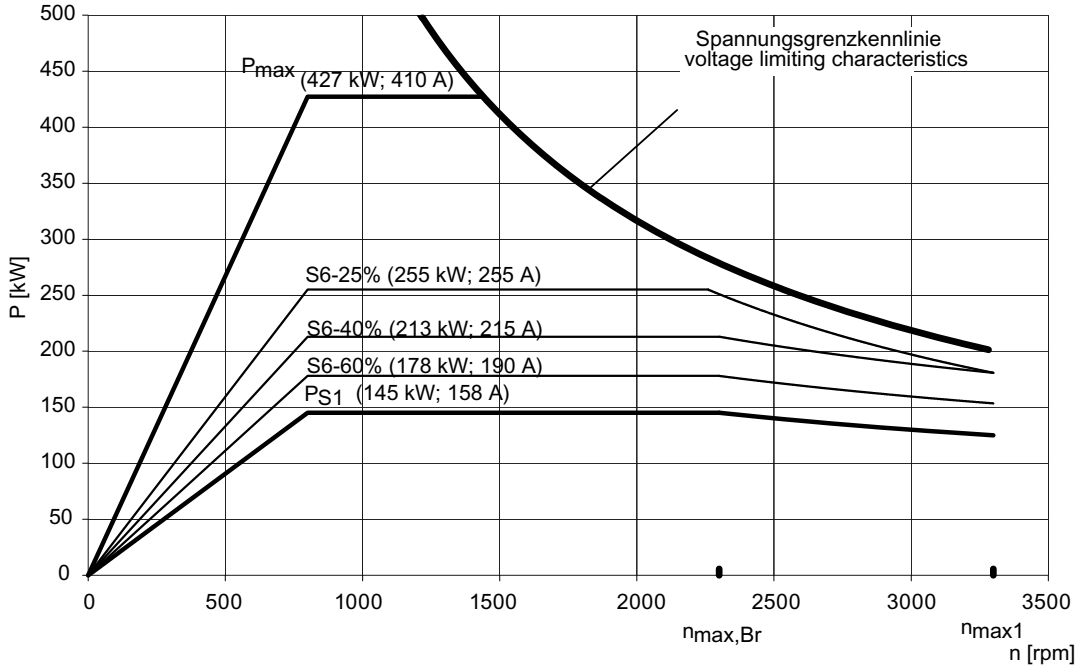



Tabella 4- 345 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8286-□□K1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 145 | 1731 | 158 | 3300 | - | - | 2300 | 2300 | 5100 | 410 | 1731 | 158 |
| 700 | 127 | 1733 | 158 | | | | | 3200 | | | | |



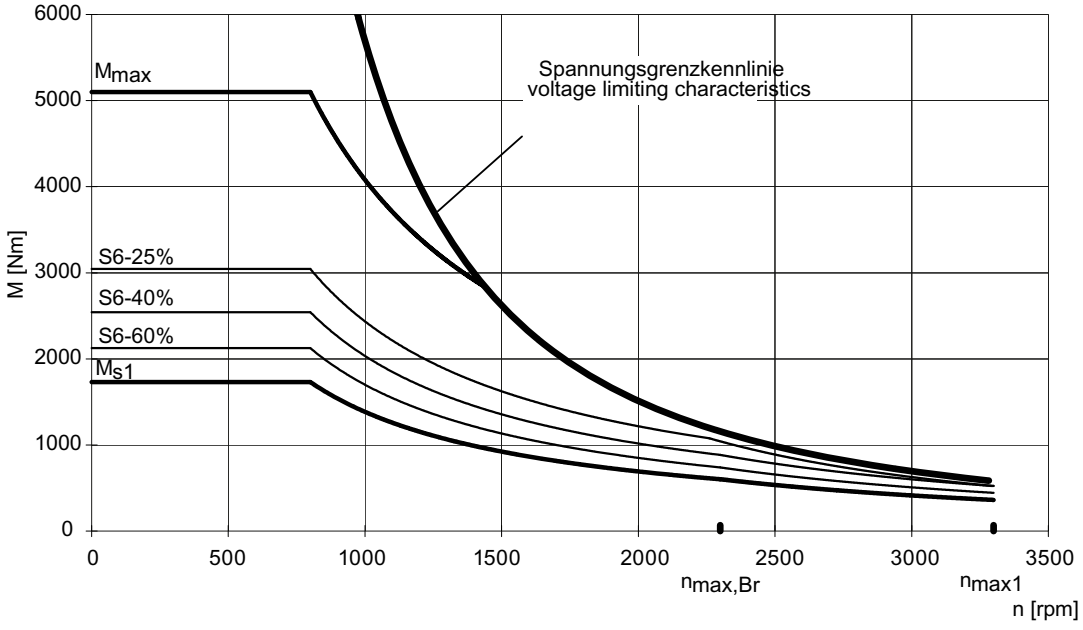
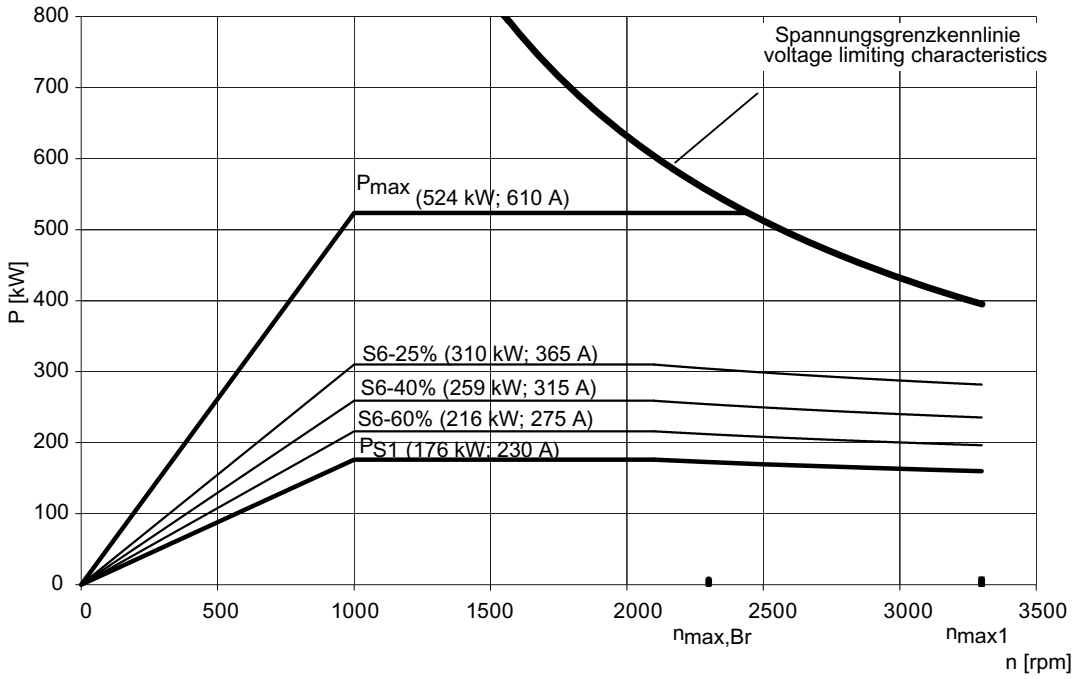



Tabella 4- 346 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8286-□□U1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 176 | 1681 | 230 | 3300 | - | - | 2300 | 2100 | 5000 | 610 | 1681 | 230 |



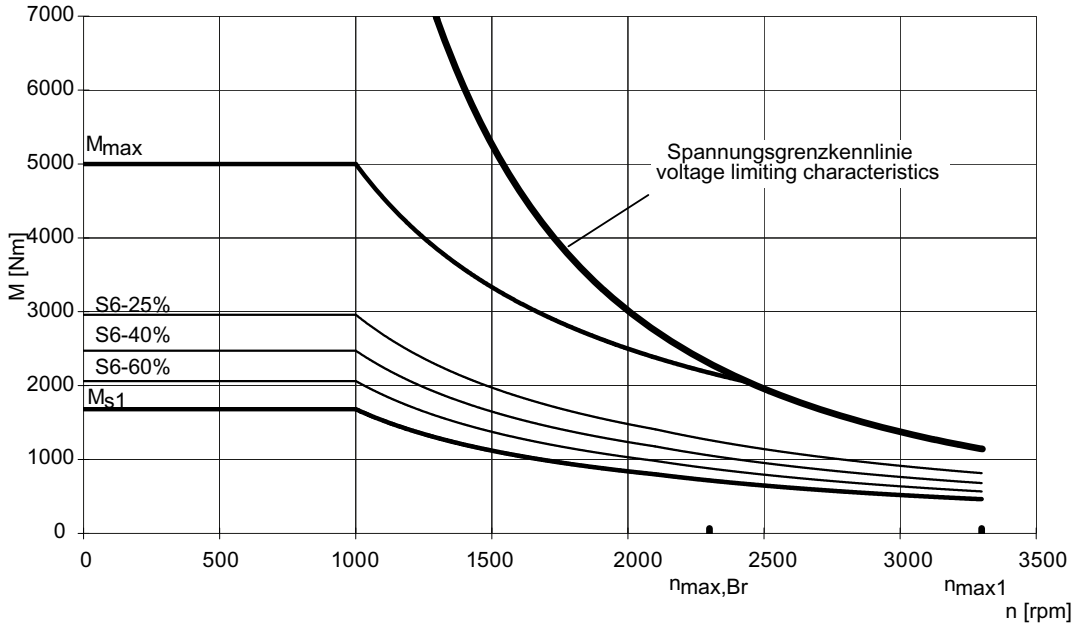
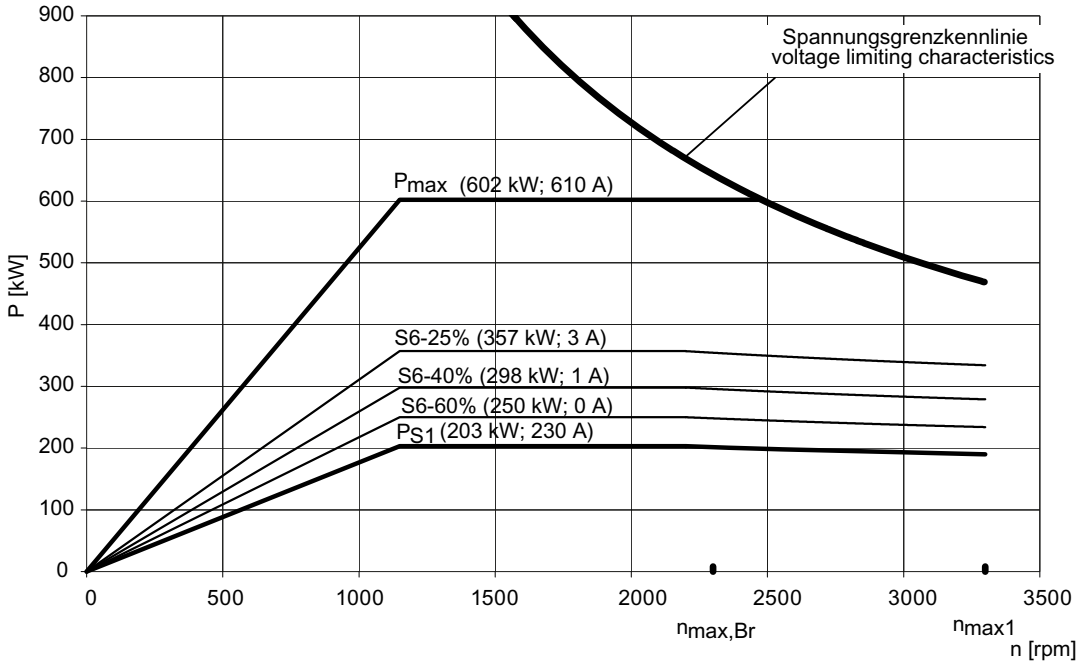



Tabella 4- 347 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8286-□□U1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 203 | 1686 | 230 | 3300 | - | - | 2300 | 2200 | 5000 | 610 | 1686 | 230 |
| 1000 | 176 | 1681 | 230 | | | | | 3300 | | | | |



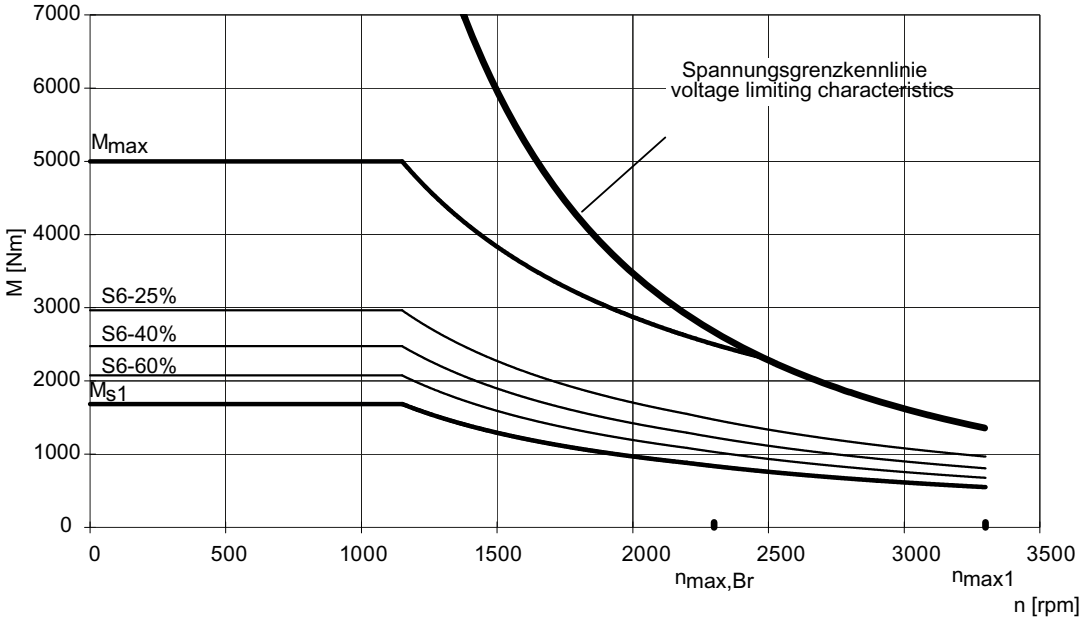
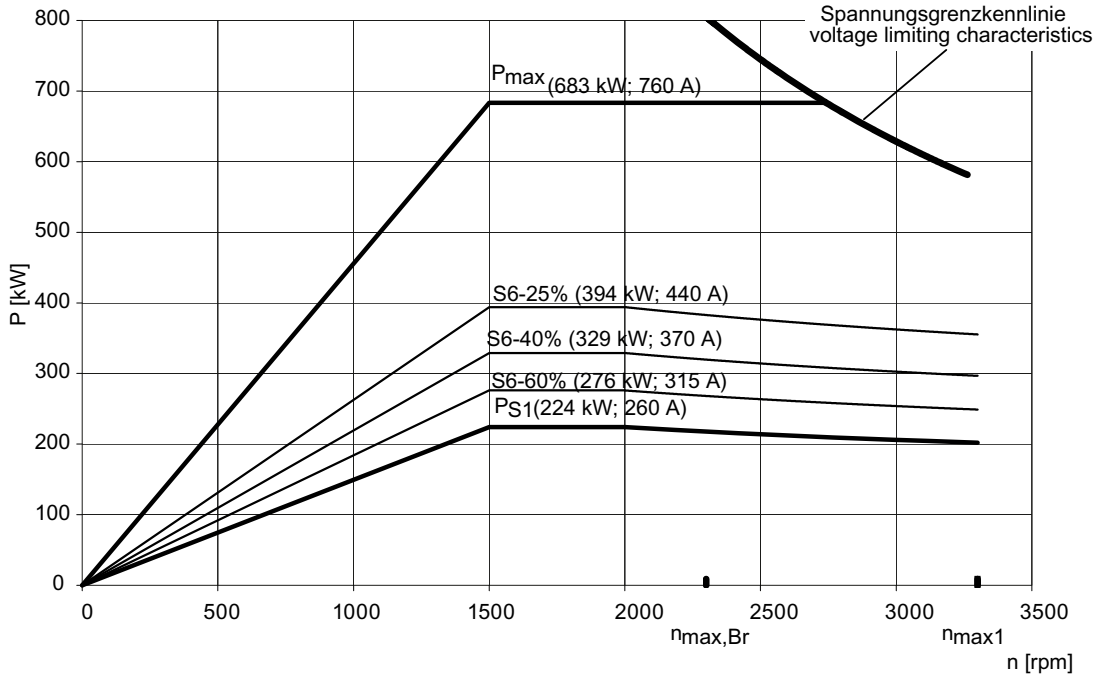



Tabella 4- 348 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8286-□□W1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 224 | 1426 | 260 | 3300 | - | - | 2300 | 2000 | 4350 | 760 | 1426 | 260 |



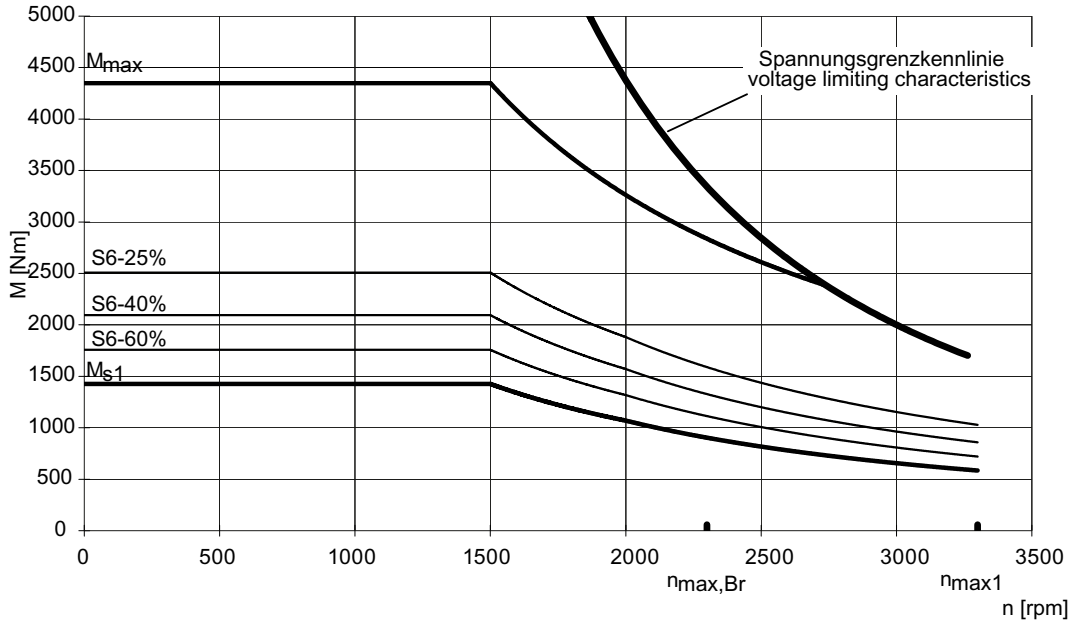
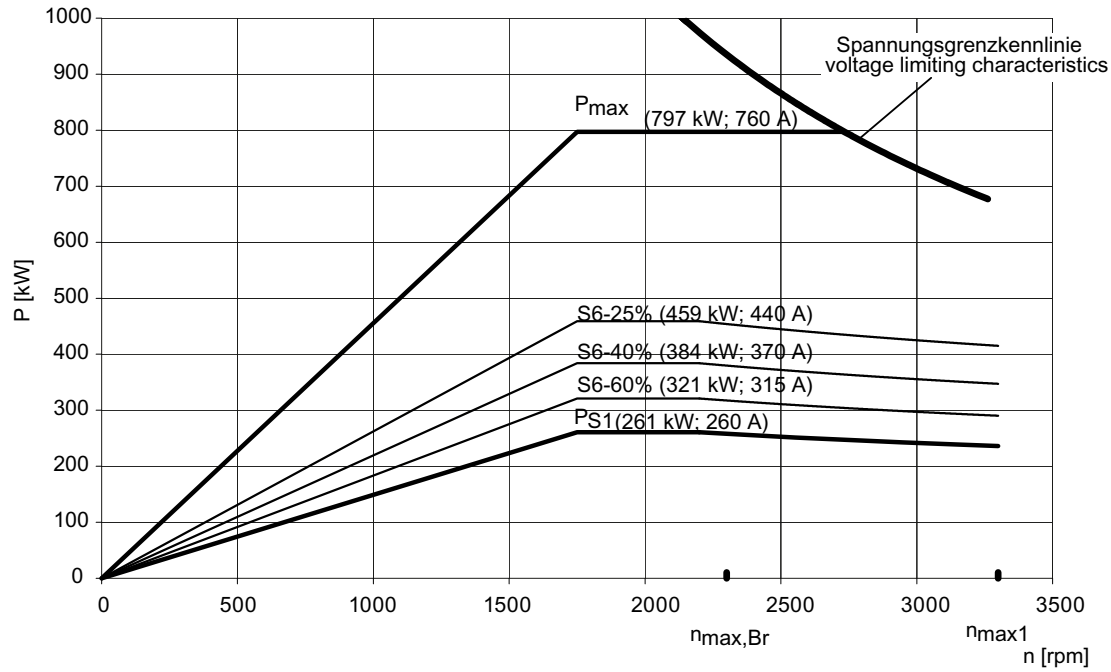



Tabella 4- 349 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8286-□□W1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 261 | 1424 | 260 | 3300 | - | - | 2300 | 2200 | 4350 | 760 | 1424 | 260 |
| 1500 | 224 | 1426 | 260 | | | | | 3300 | | | | |



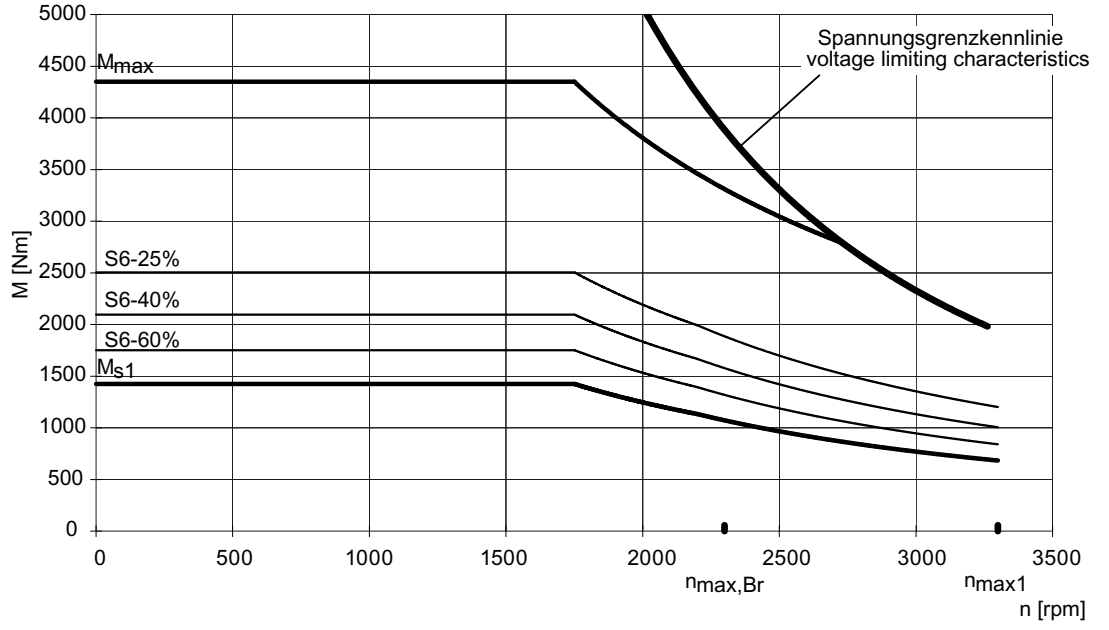
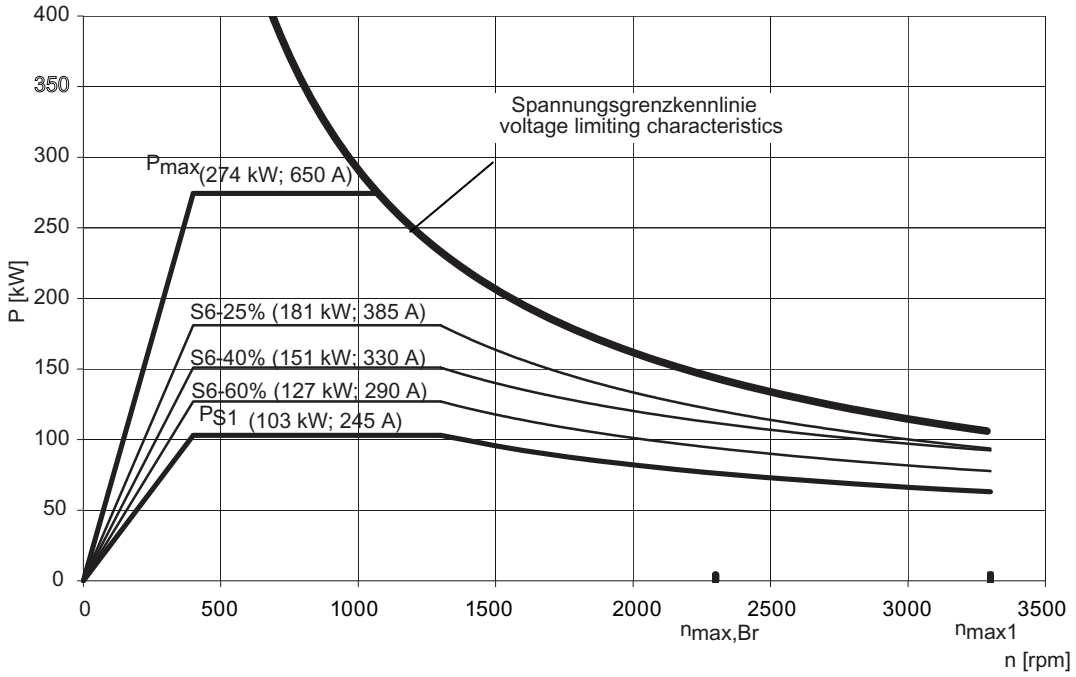



Tabella 4- 350 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8288-□□B1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 103 | 2459 | 245 | 3300 | - | - | 2300 | 1300 | 6550 | 650 | 2459 | 245 |



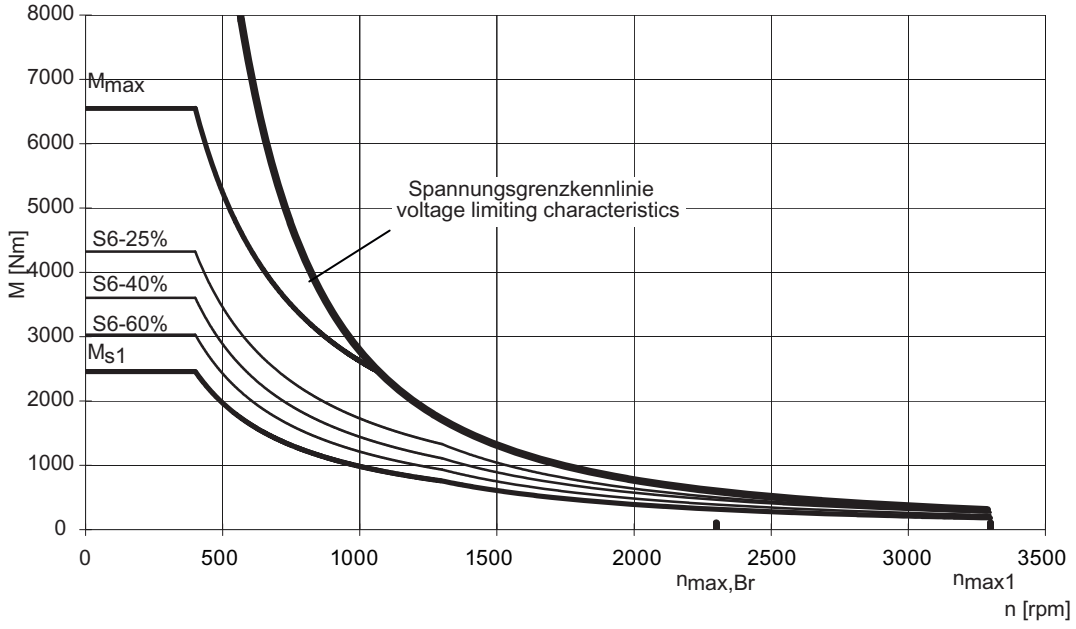
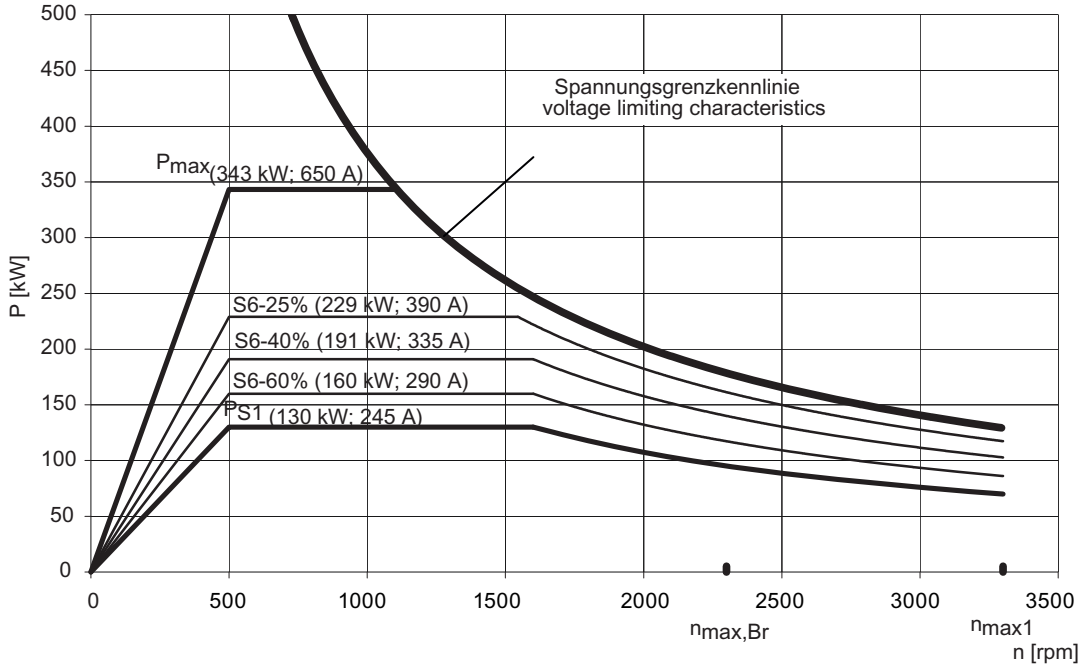



Tabella 4- 351 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8288-□□B1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 130 | 2481 | 245 | 3300 | - | - | 2300 | 1600 | 6550 | 650 | 2481 | 245 |
| 400 | 104 | 2481 | 245 | | | | | 2100 | | | | |



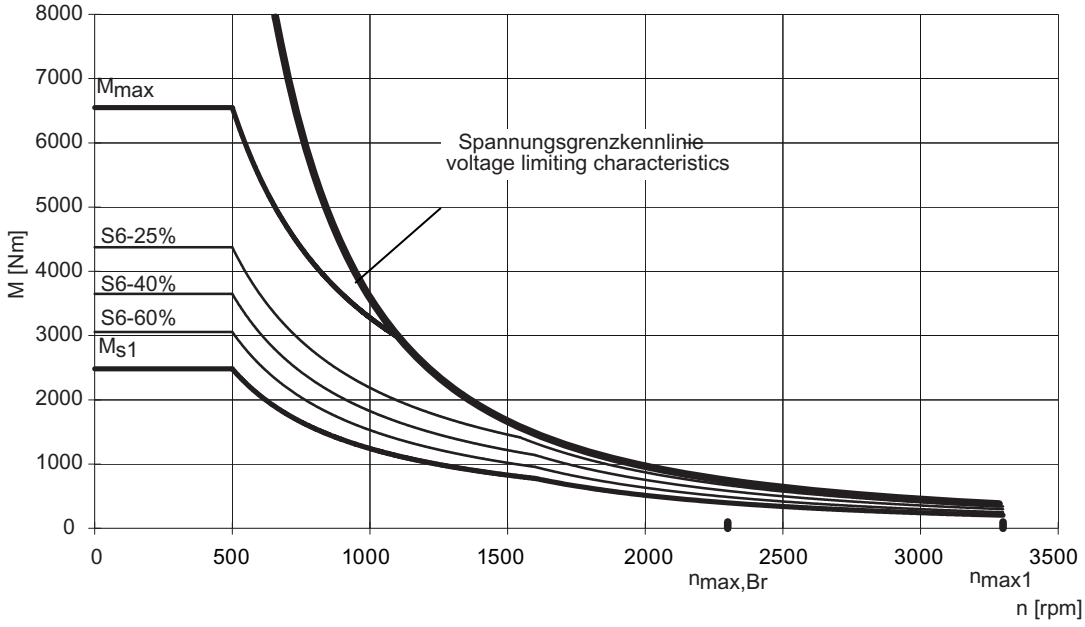
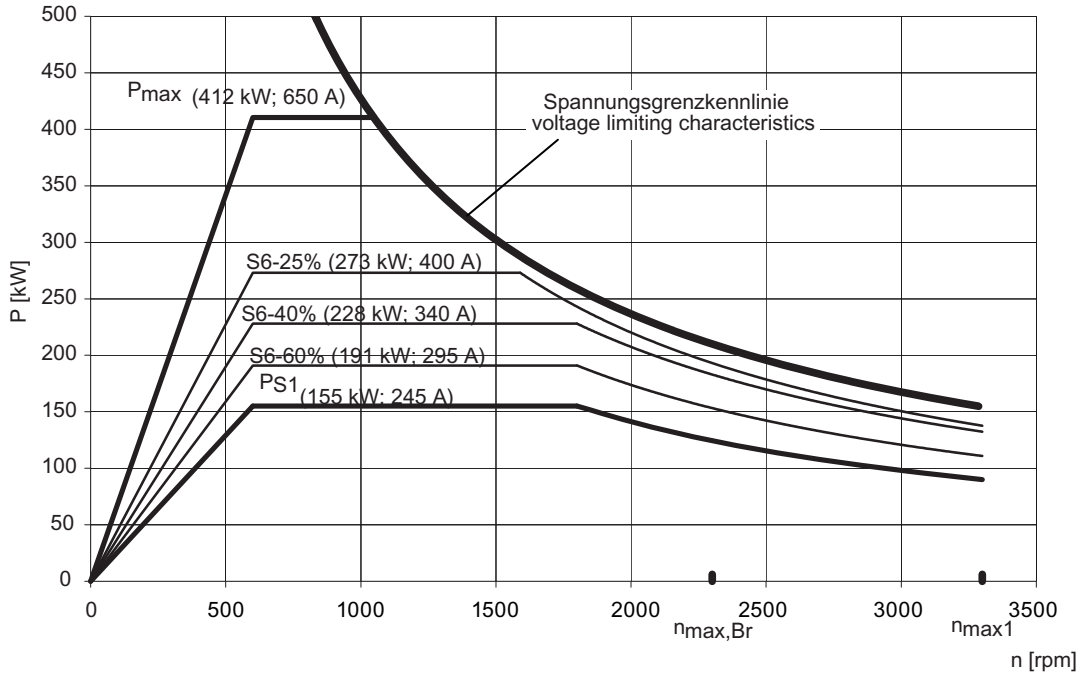



Tabella 4- 352 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8288-□□B1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 155 | 2474 | 245 | 3300 | - | - | 2300 | 1800 | 6550 | 650 | 2474 | 245 |



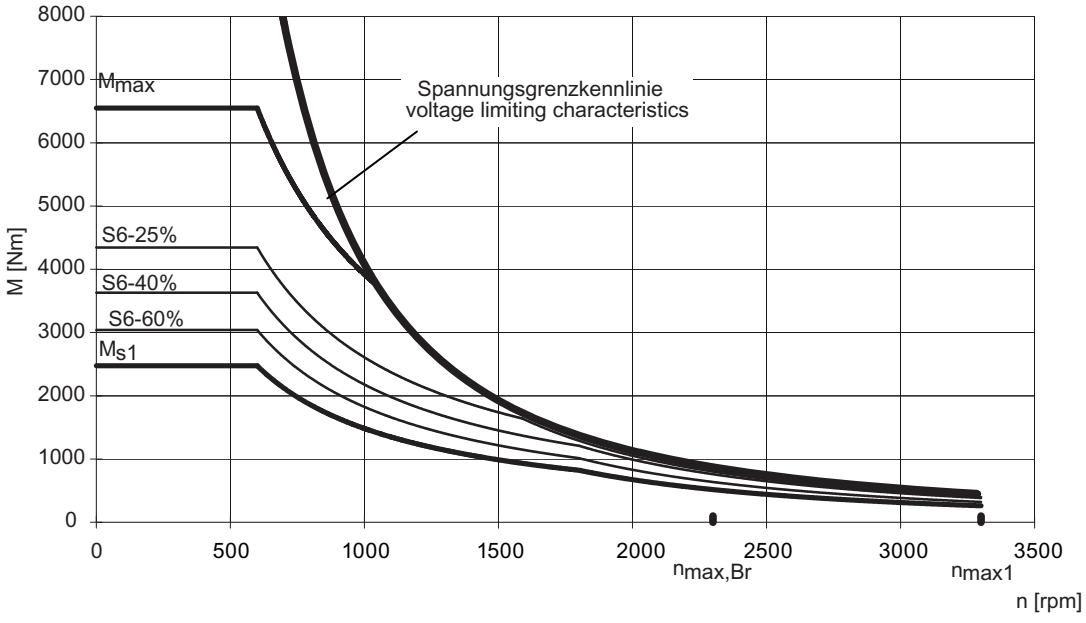
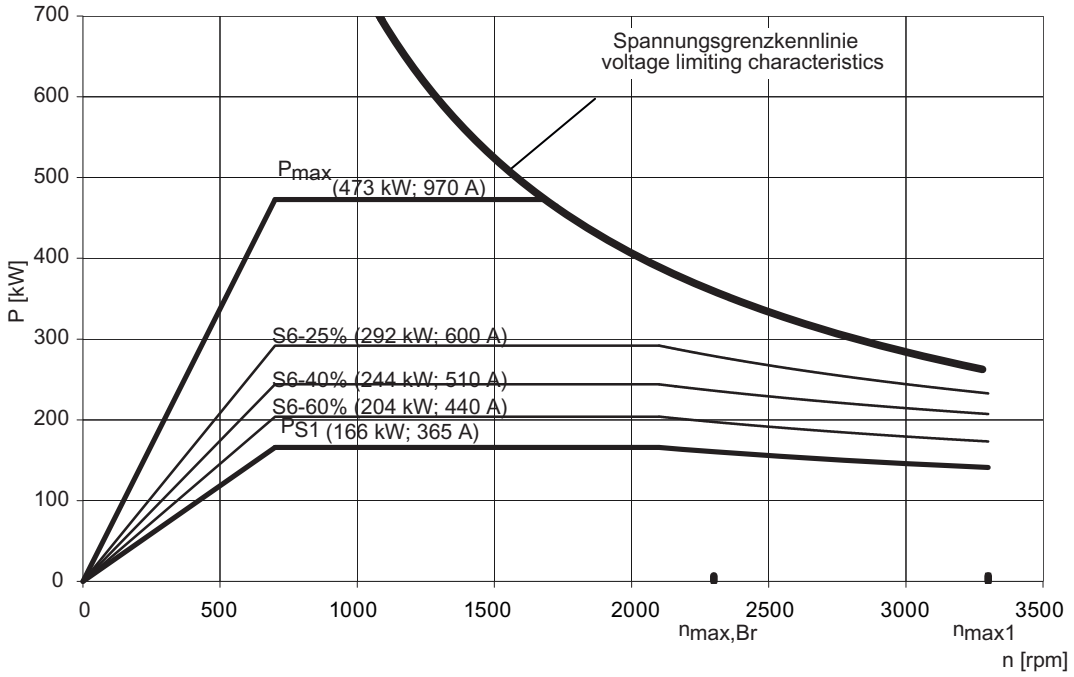



Tabella 4- 353 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8288-□□C1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 166 | 2265 | 365 | 3300 | - | - | 2300 | 2100 | 6450 | 970 | 2265 | 365 |



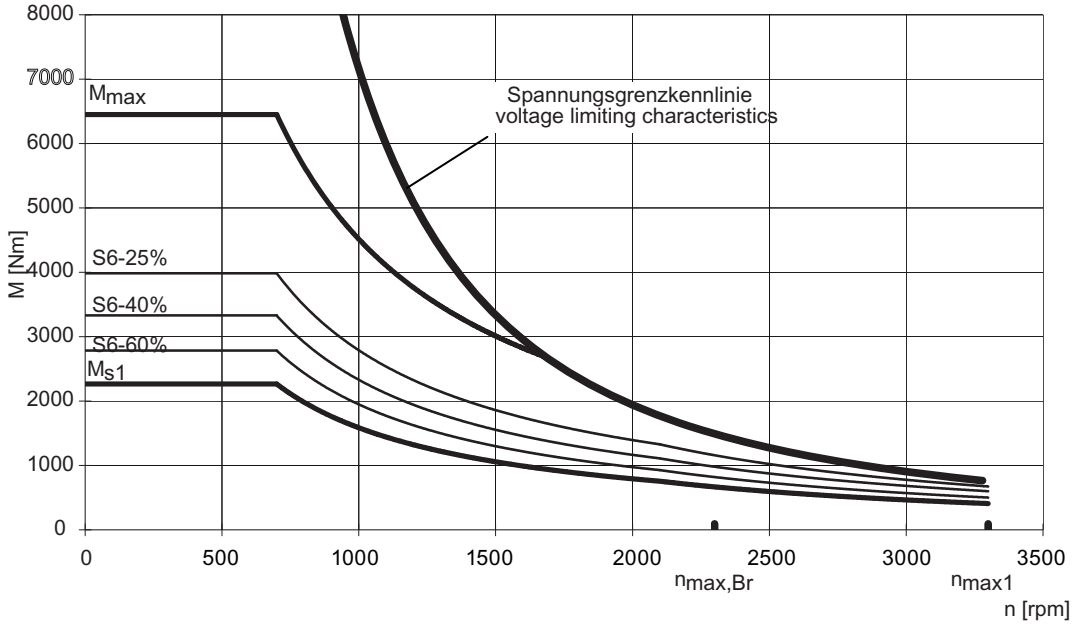
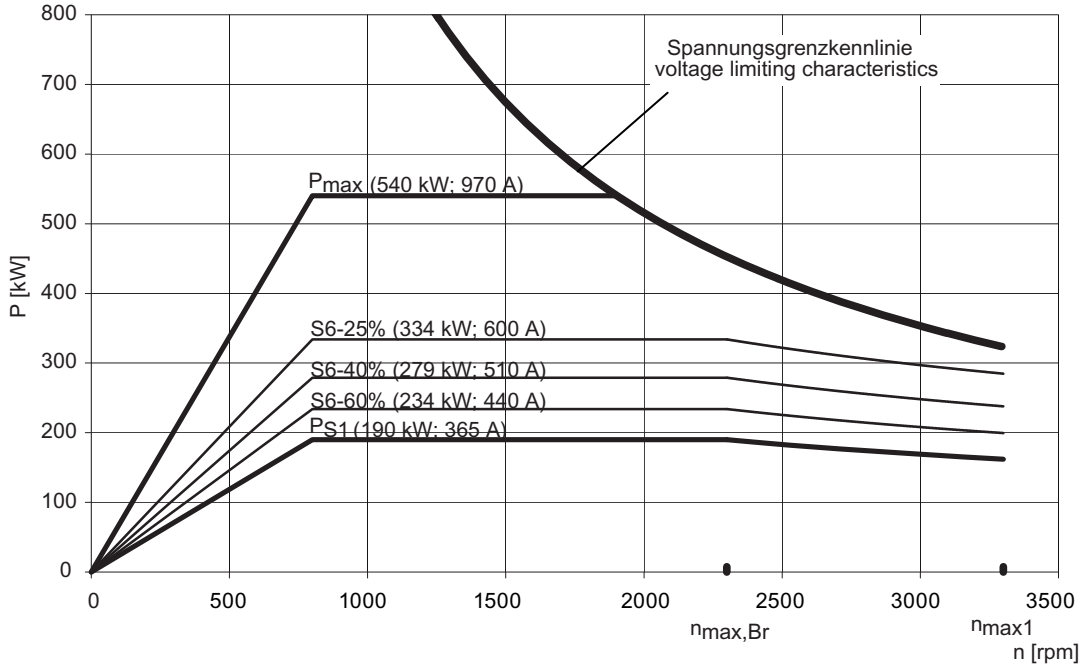



Tabella 4- 354 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8288-□□C1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 190 | 2268 | 365 | 3300 | - | - | 2300 | 2300 | 6450 | 970 | 2268 | 365 |
| 700 | 166 | 2268 | 365 | | | | | 3100 | | | | |



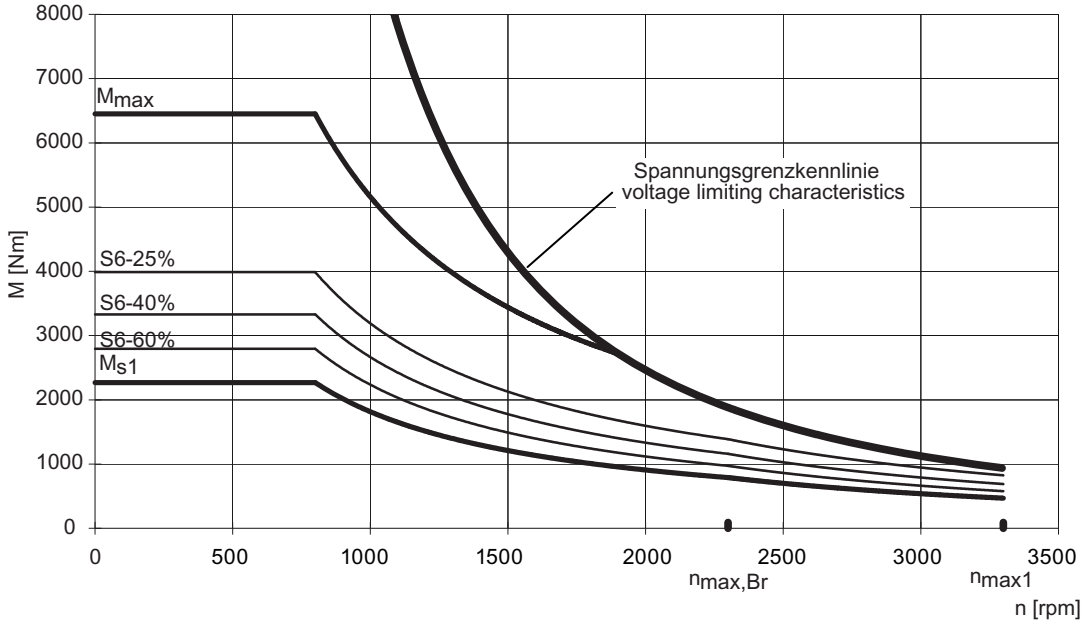
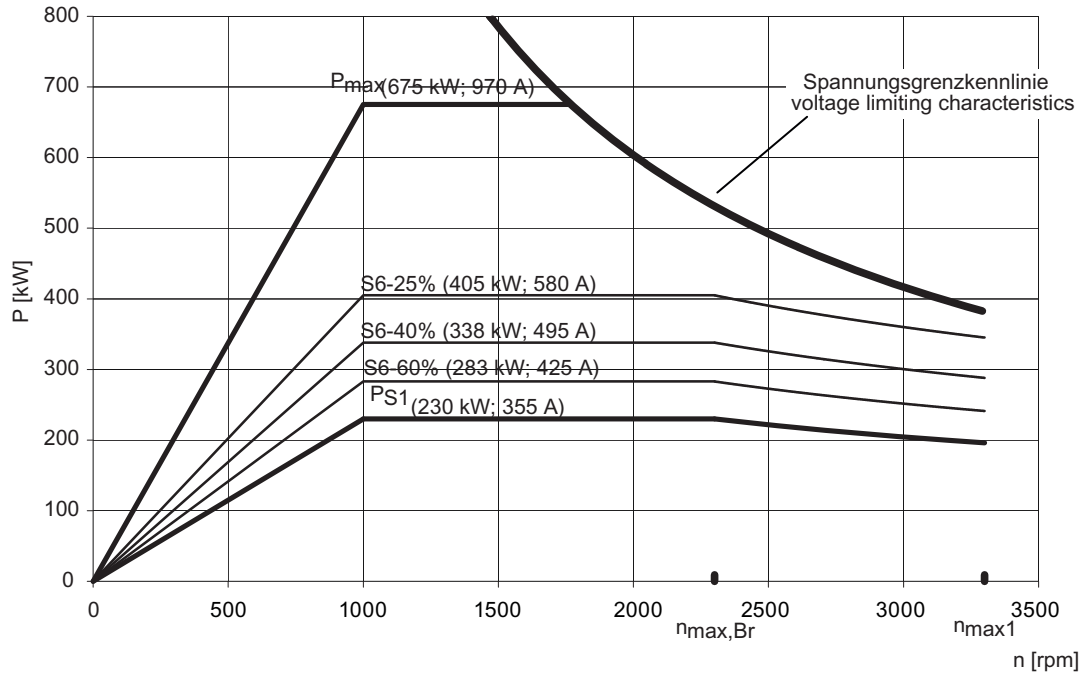



Tabella 4- 355 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8288-□□C1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 230 | 2197 | 355 | 3300 | - | - | 2300 | 2300 | 6450 | 970 | 2197 | 355 |



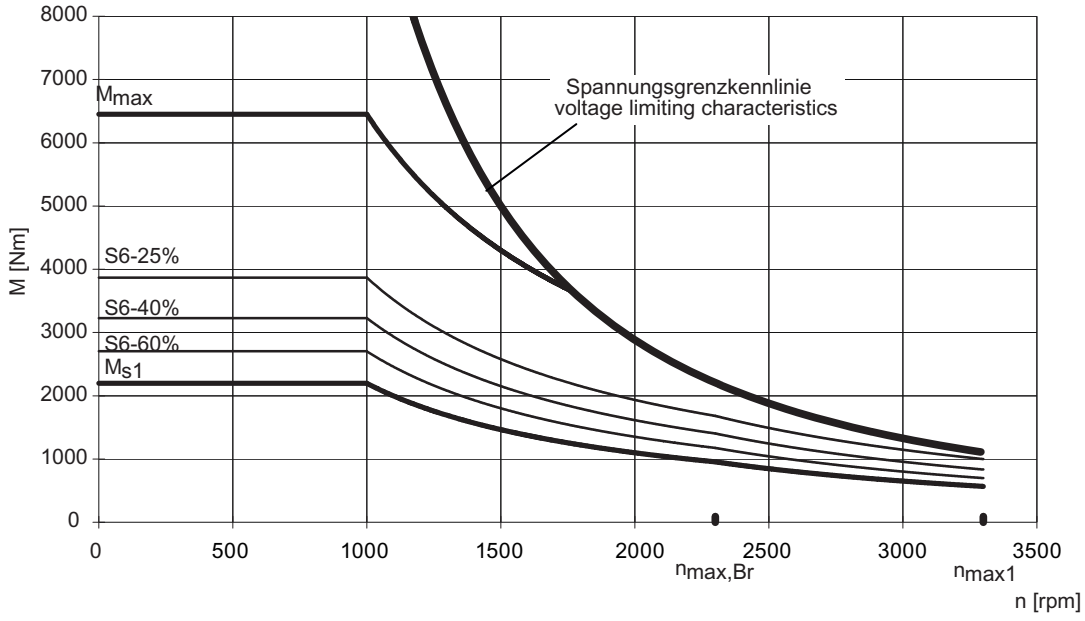
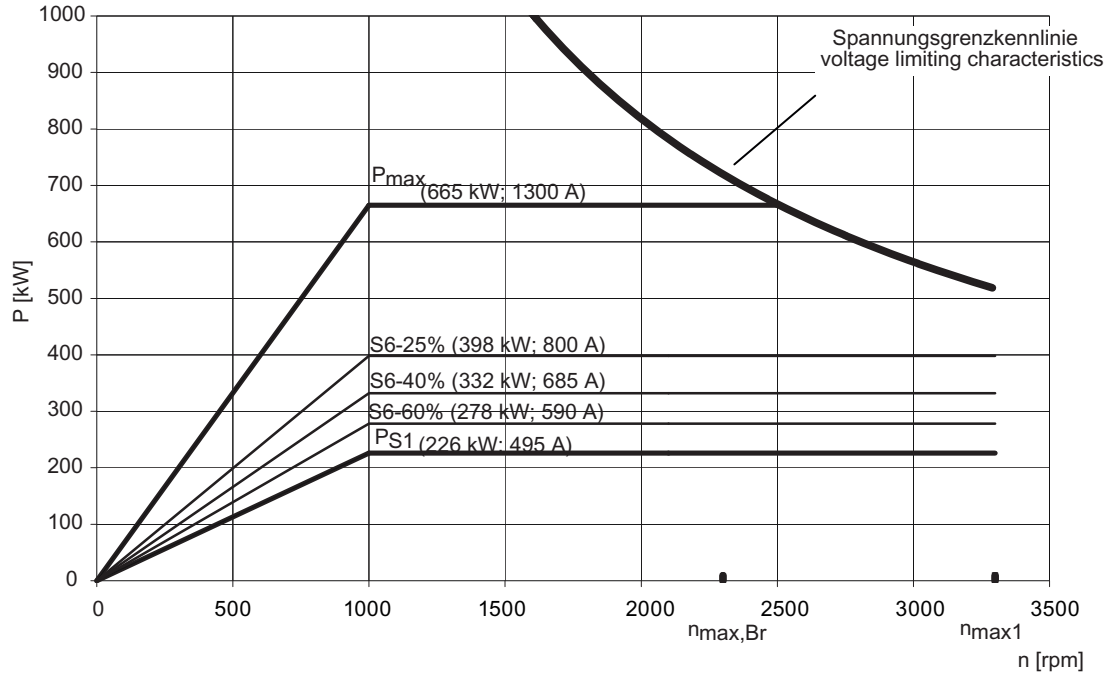



Tabella 4- 356 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8288-□□D1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 226 | 2158 | 495 | 3300 | - | - | 2300 | 2100 | 6350 | 1300 | 2158 | 495 |



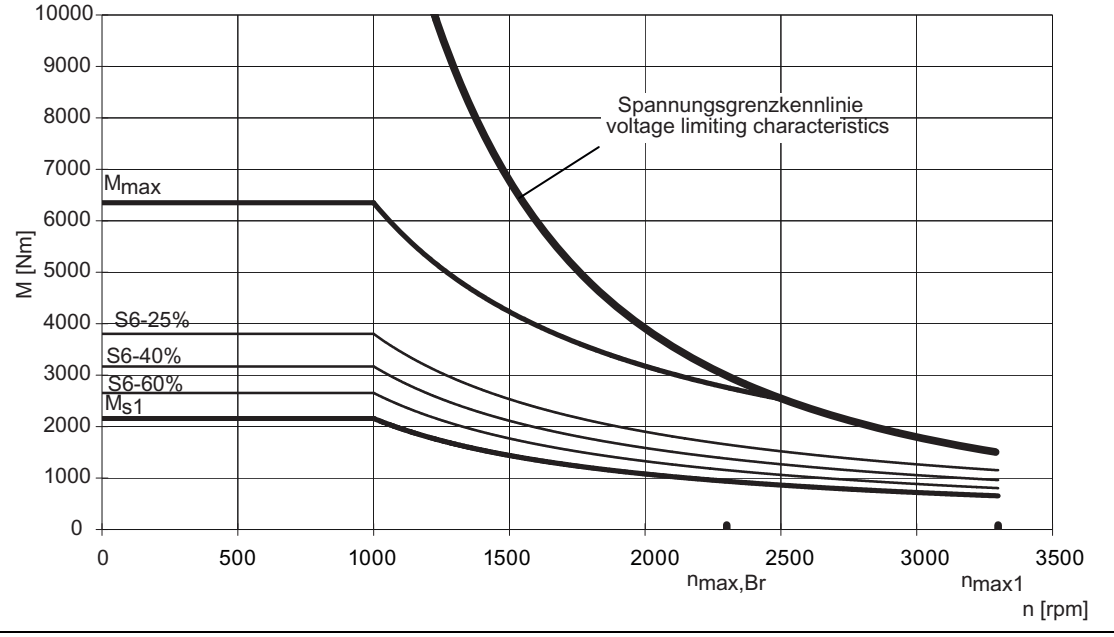
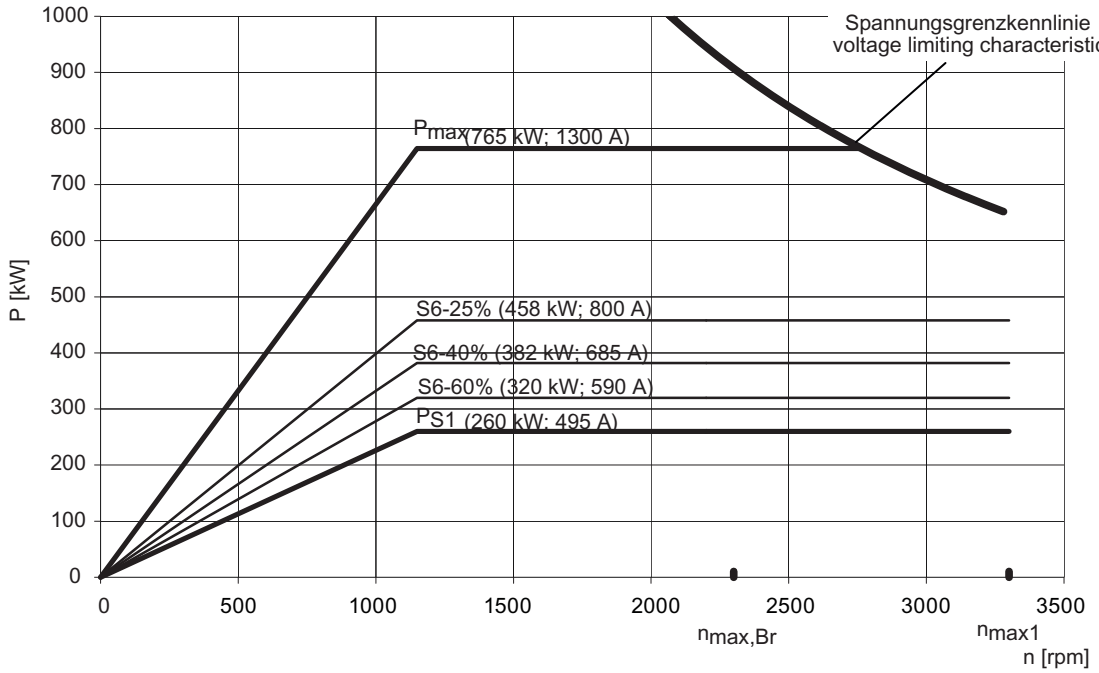



Tabella 4- 357 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8288-□□D1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 260 | 2160 | 495 | 3300 | - | - | 2300 | 2200 | 6350 | 1300 | 2160 | 495 |
| 1000 | 226 | 2160 | 495 | | | | | 3300 | | | | |



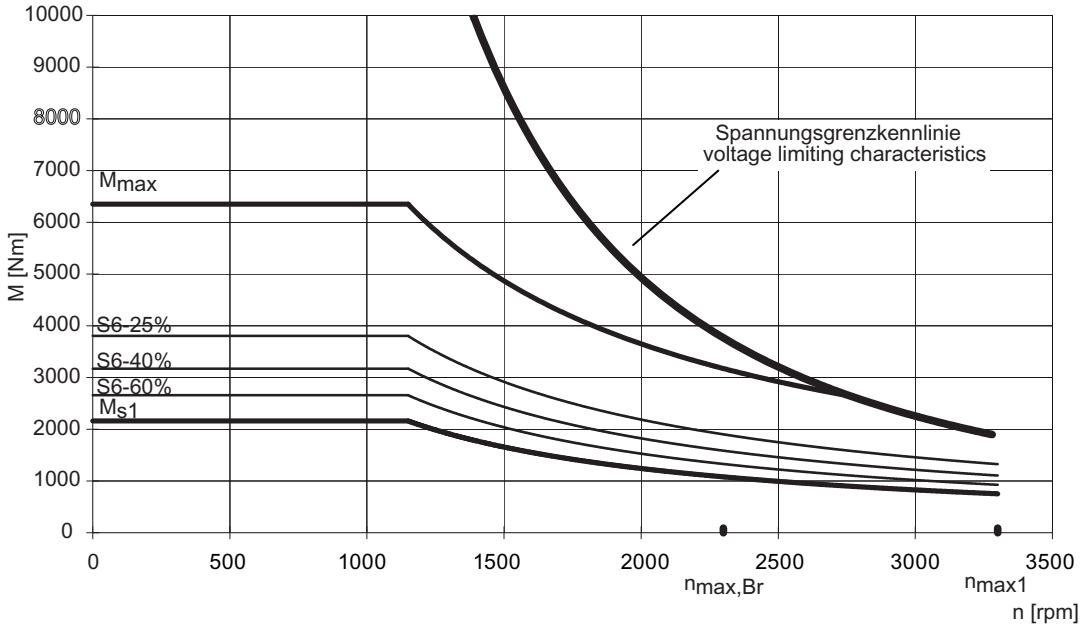
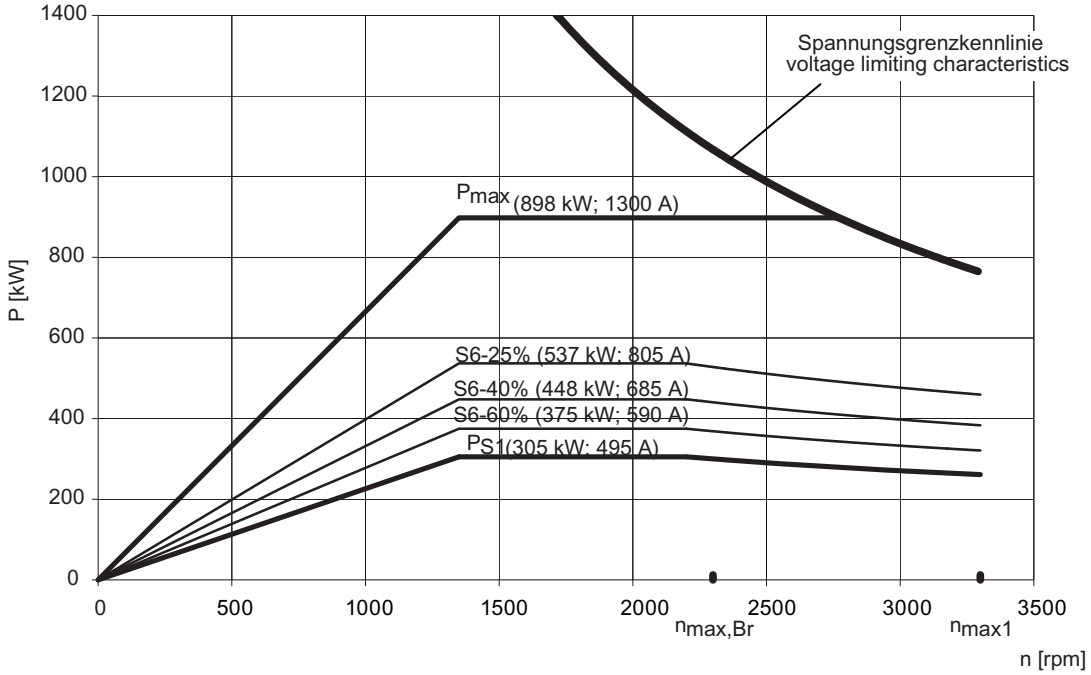



Tabella 4- 358 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8288-□□D1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 305 | 2158 | 495 | 3300 | - | - | 2300 | 2200 | 6350 | 1300 | 2158 | 495 |



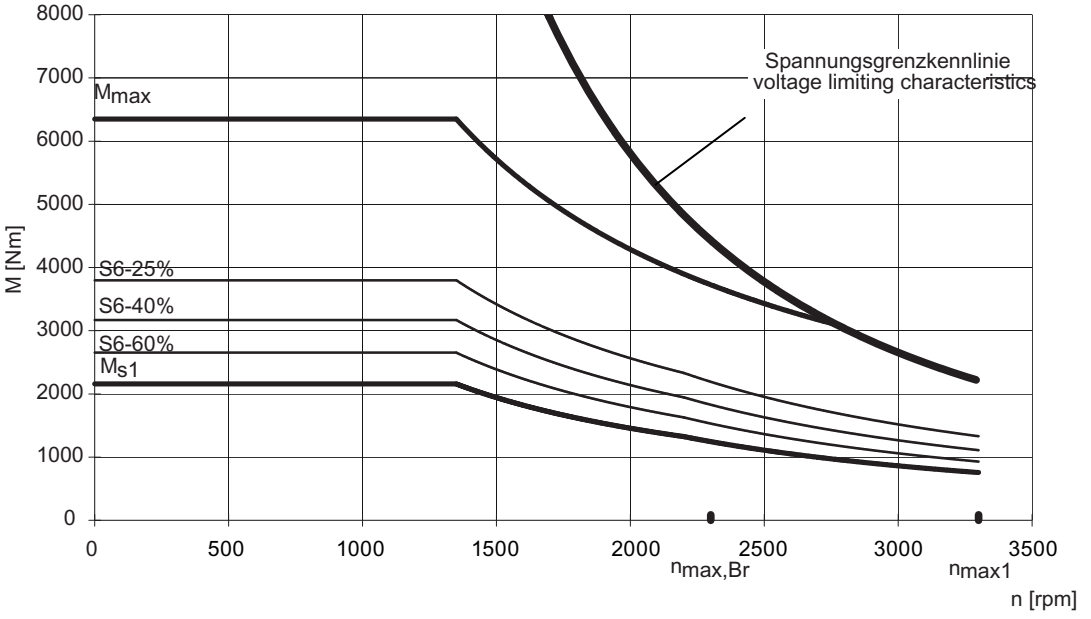
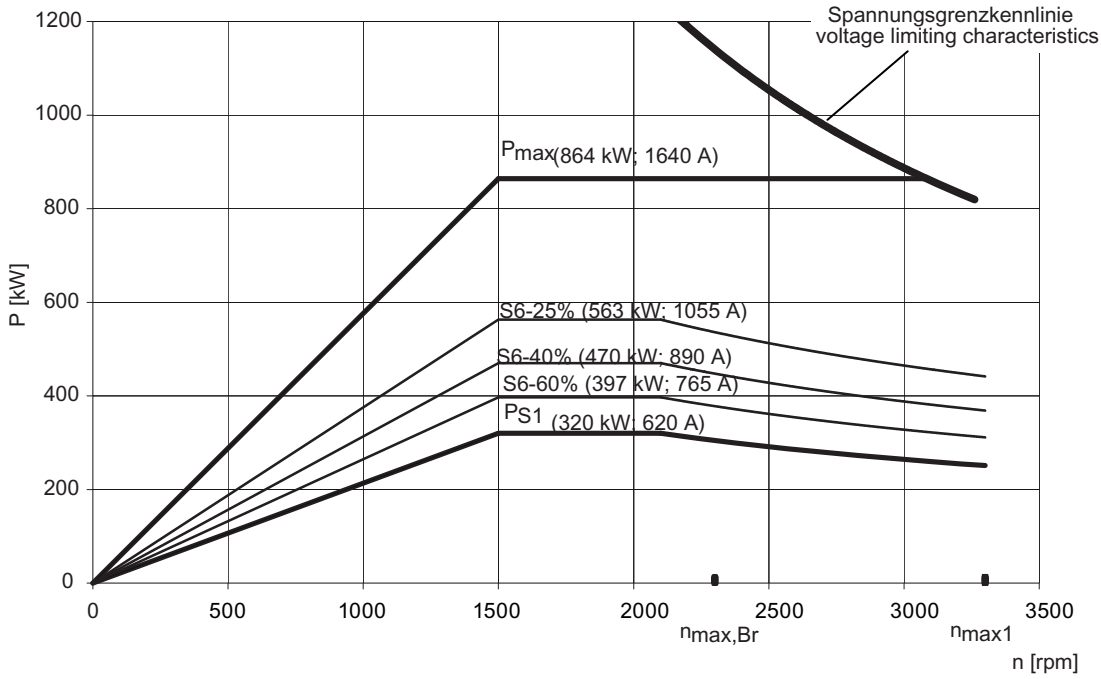



Tabella 4- 359 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8288-□□F1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 320 | 2037 | 620 | 3300 | - | - | 2300 | 2100 | 5500 | 1640 | 2037 | 1640 |



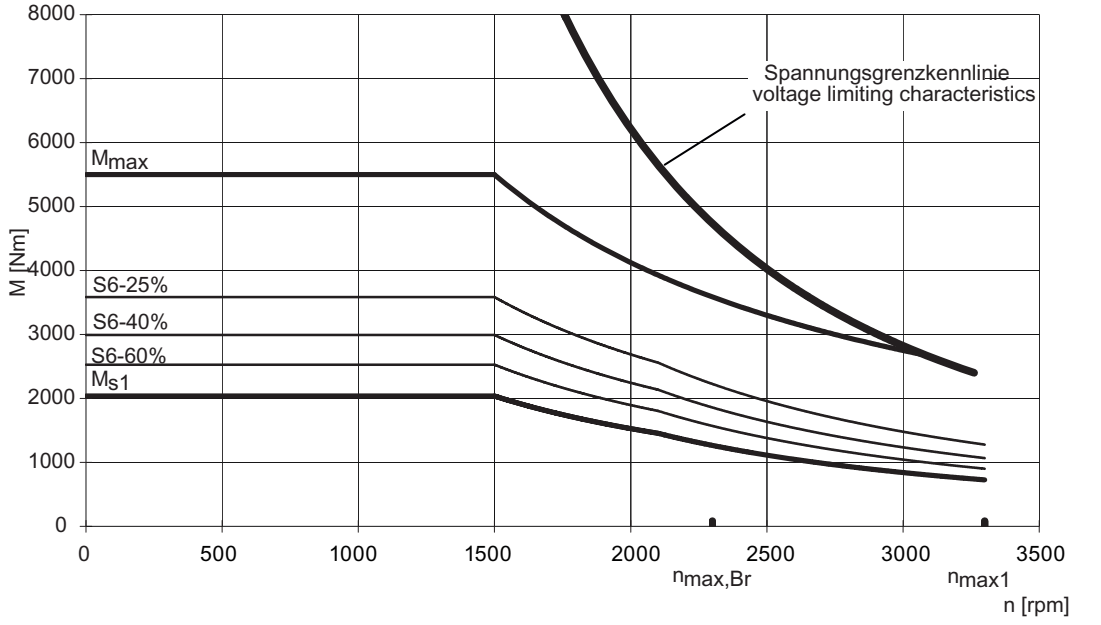
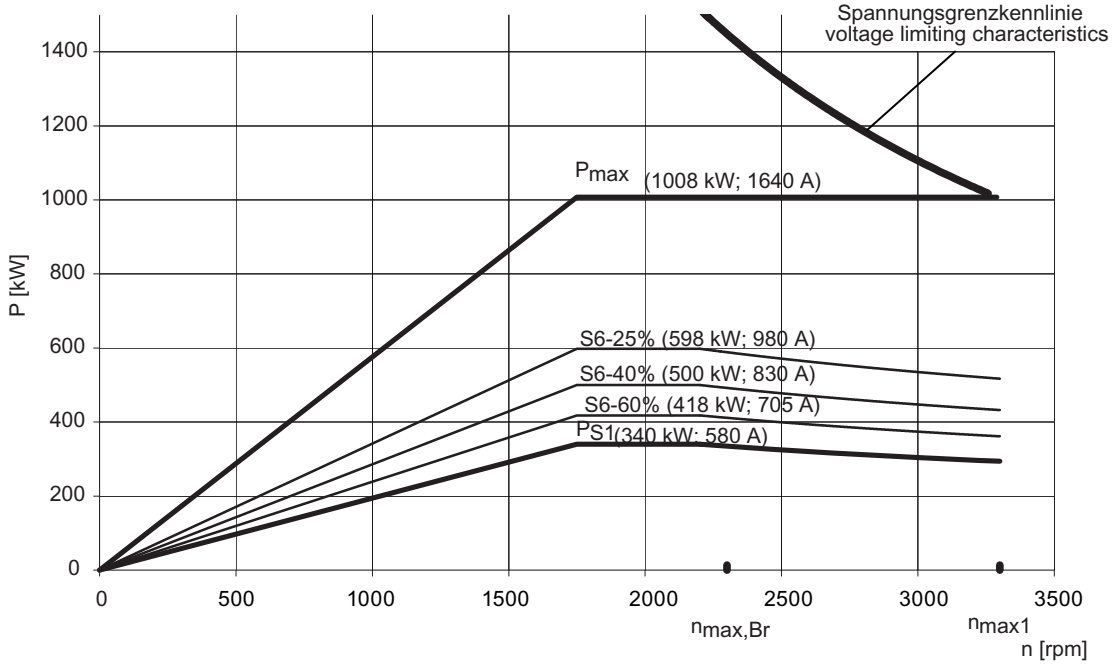



Tabella 4- 360 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8288-□□F1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 340 | 1856 | 580 | 3300 | - | - | 2300 | 2200 | 5500 | 1640 | 1856 | 1640 |
| 1500 | 292 | 1856 | 580 | | | | | 3300 | | | | |



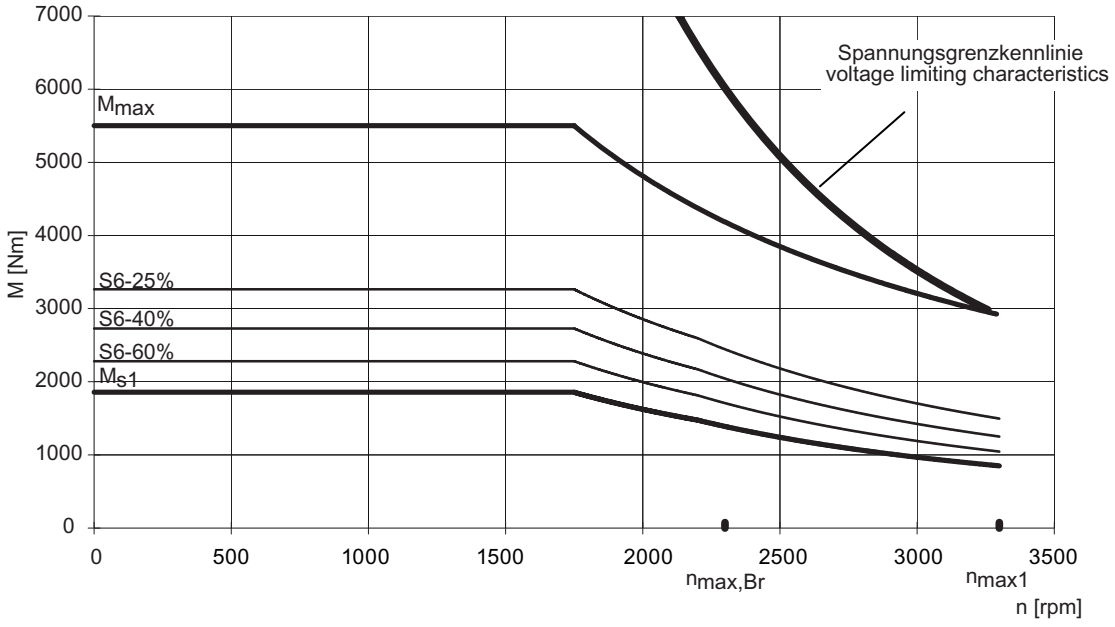
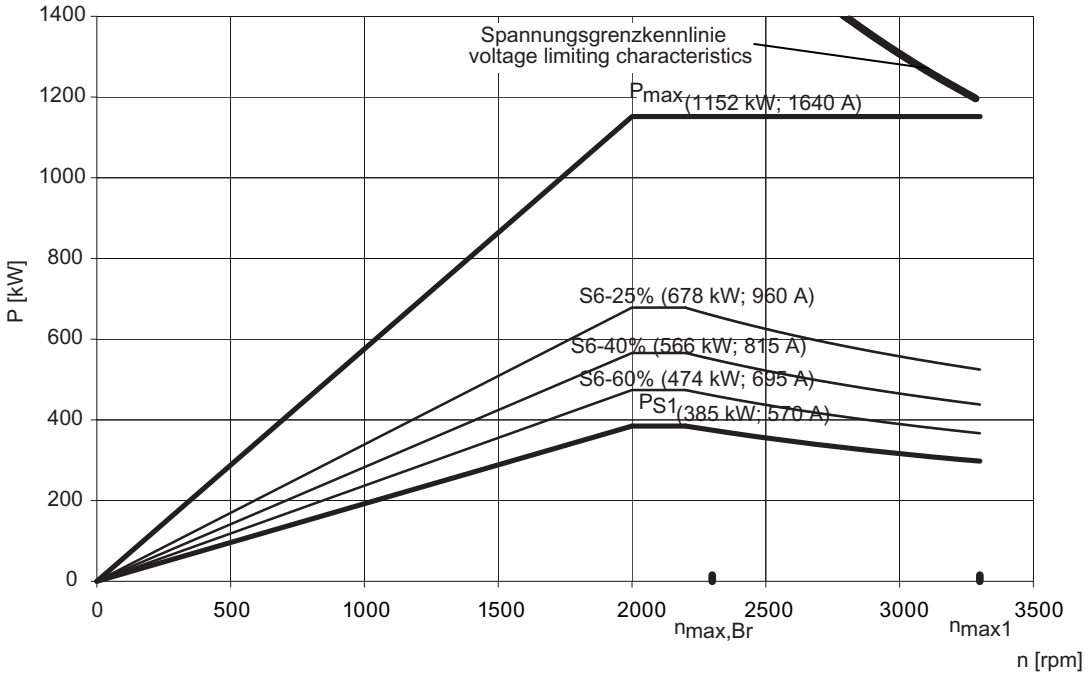



Tabella 4- 361 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8288-□□F1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 385 | 1838 | 570 | 3300 | - | - | 2399 | 2200 | 5500 | 1640 | 1838 | 1640 |



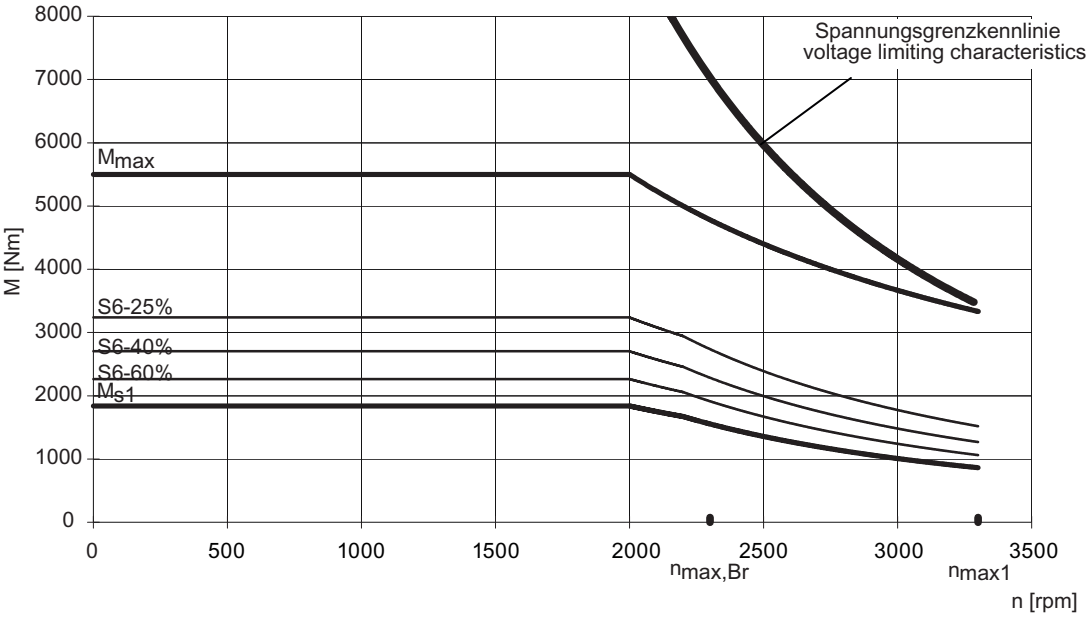
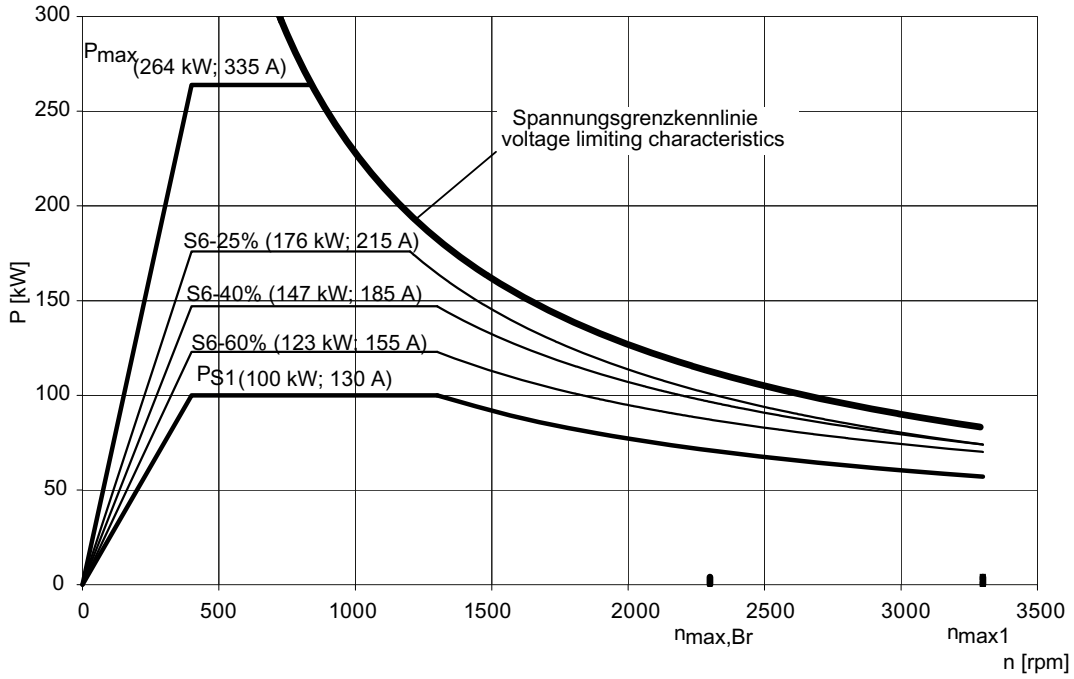



Tabella 4- 362 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8288-□□H1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 100 | 2388 | 130 | 3300 | - | - | 2300 | 1300 | 6300 | 335 | 2388 | 130 |



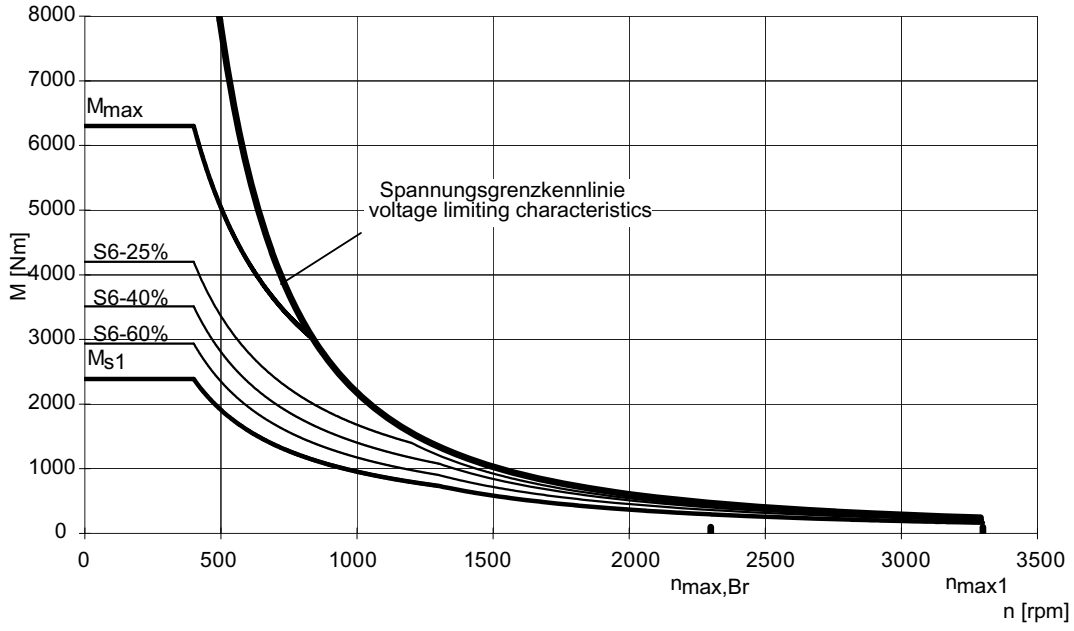
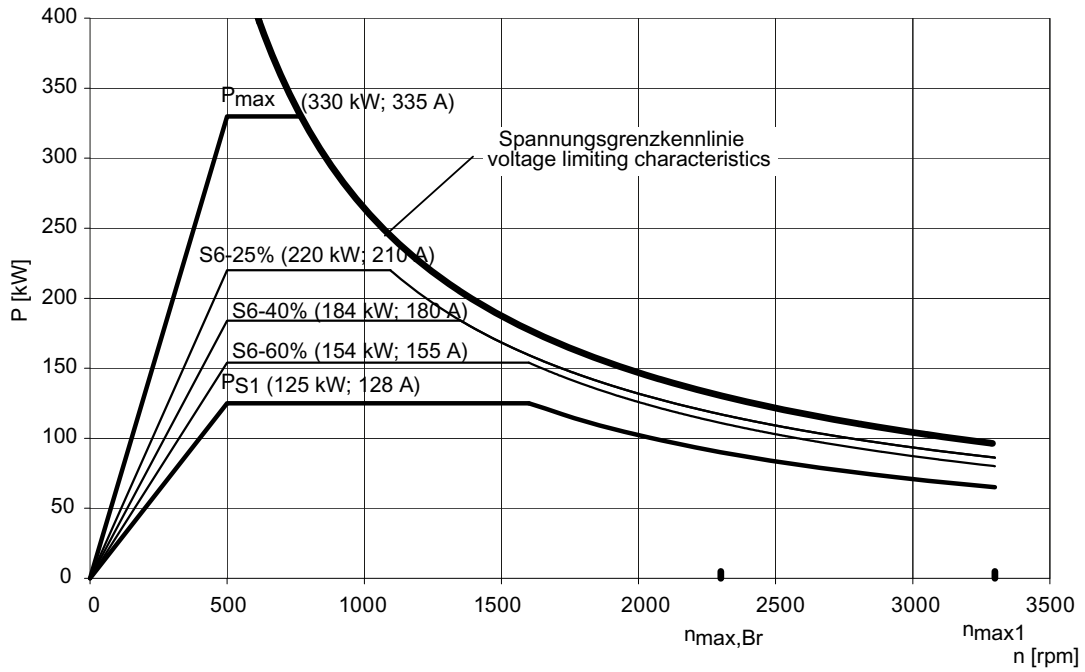



Tabella 4- 363 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8288-□□H1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 125 | 2388 | 128 | 3300 | - | - | 2300 | 1600 | 6300 | 335 | 2388 | 128 |
| 400 | 100 | 2388 | 128 | | | | | 2000 | | | | |



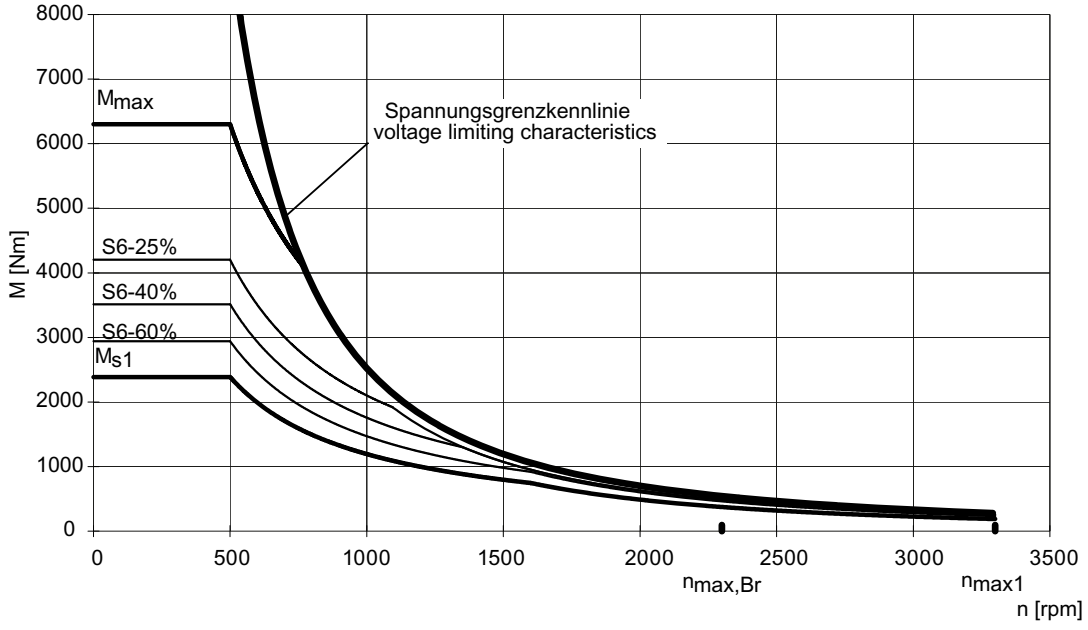
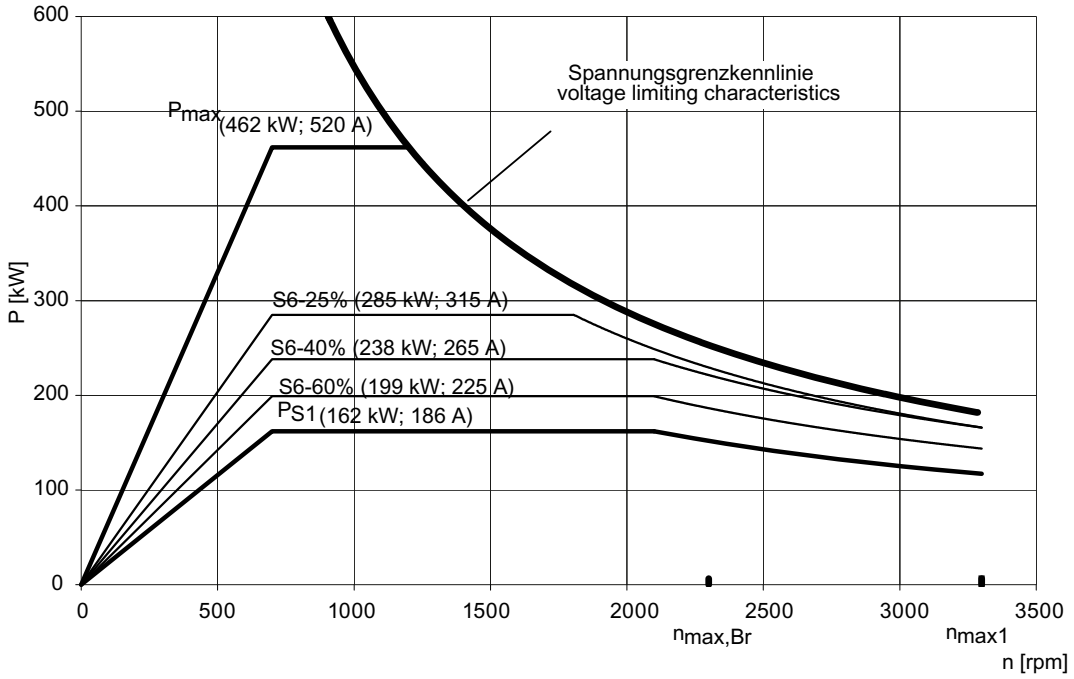



Tabella 4- 364 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8288-□□K1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 162 | 2210 | 186 | 3300 | - | - | 2300 | 2100 | 6300 | 520 | 2210 | 186 |



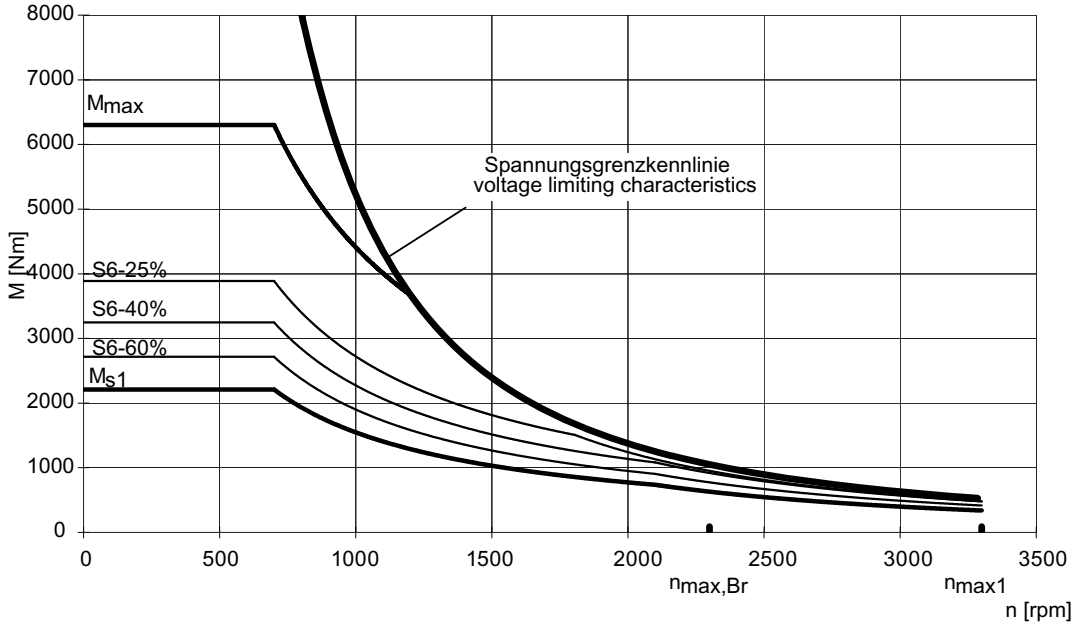
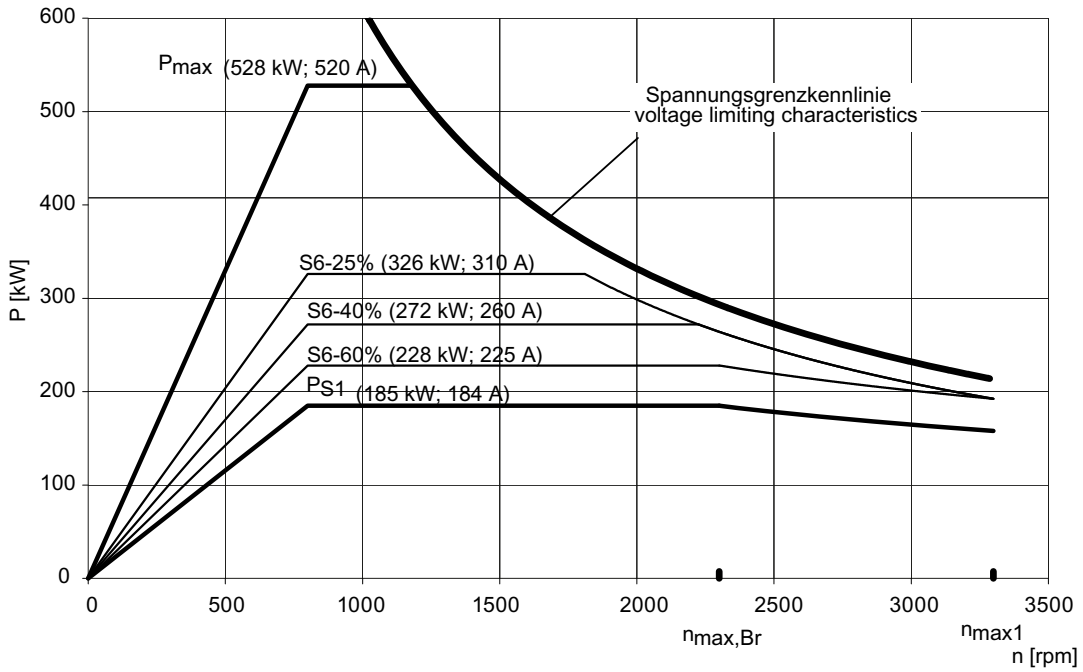



Tabella 4- 365 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8288-□□K1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 185 | 2208 | 184 | 3300 | - | - | 2300 | 2300 | 6300 | 520 | 2208 | 184 |
| 700 | 162 | 2208 | 184 | | | | | 3100 | | | | |



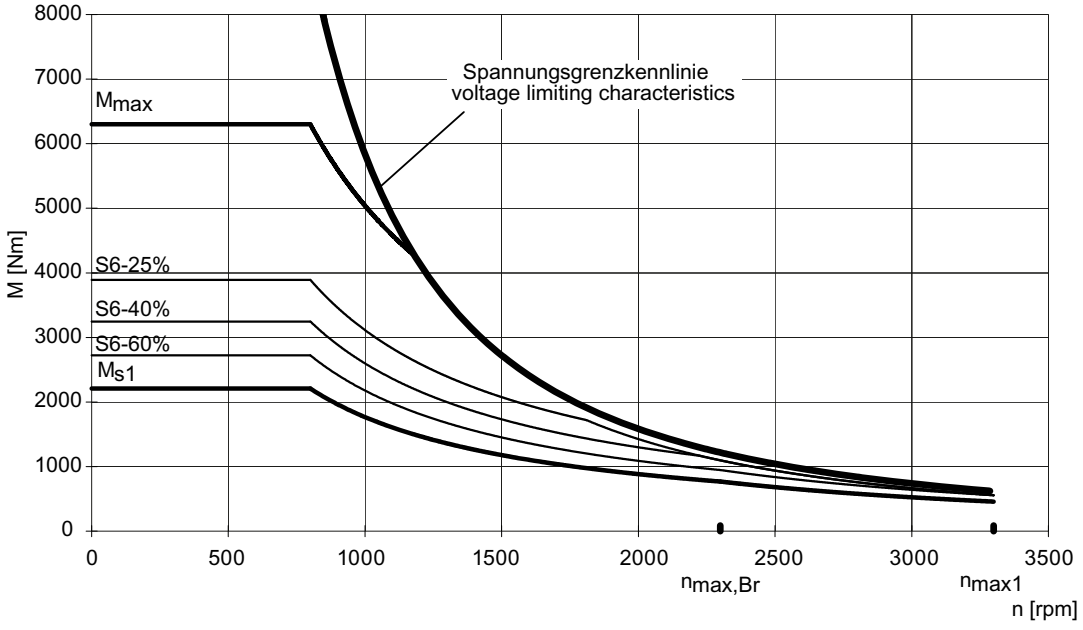
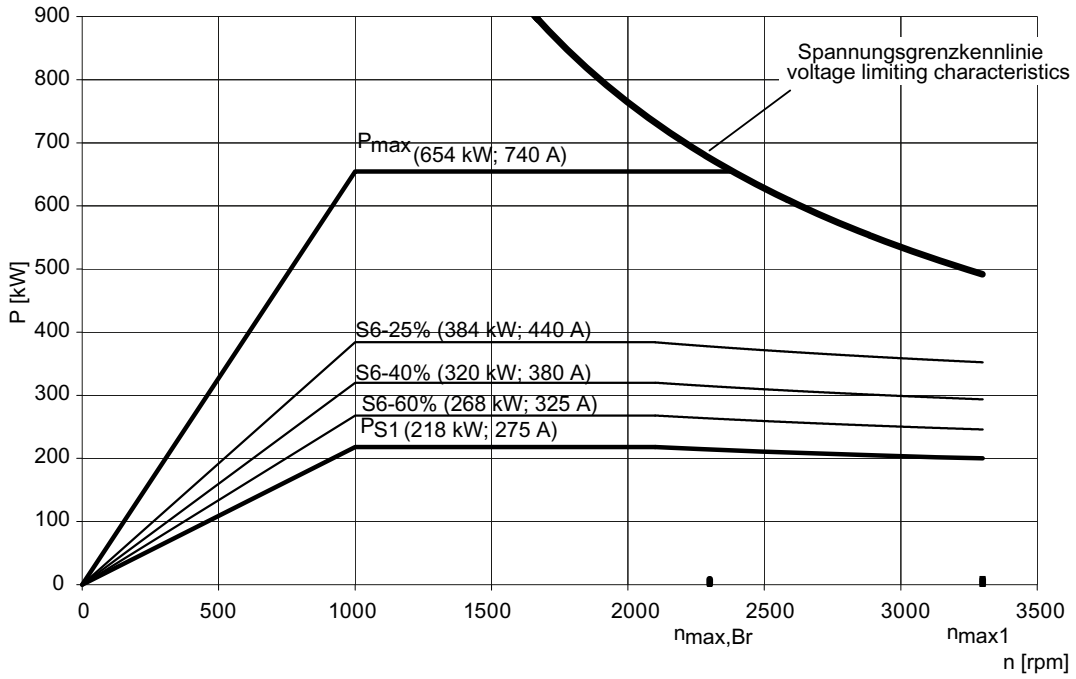



Tabella 4- 366 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8288-□□U1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 218 | 2082 | 275 | 3300 | - | - | 2300 | 2100 | 6250 | 740 | 2082 | 275 |



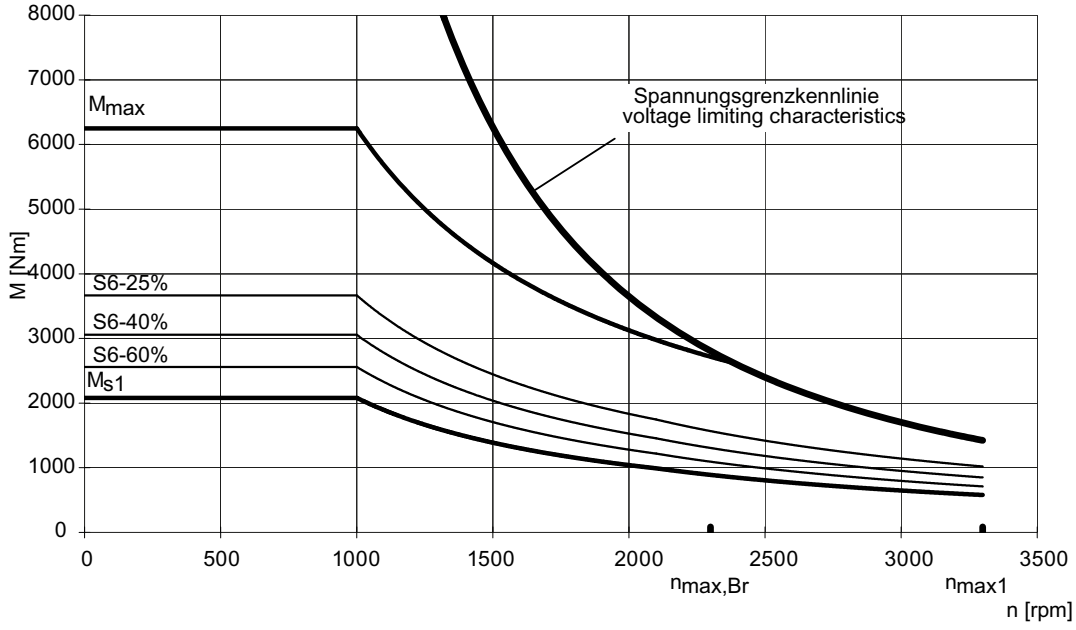
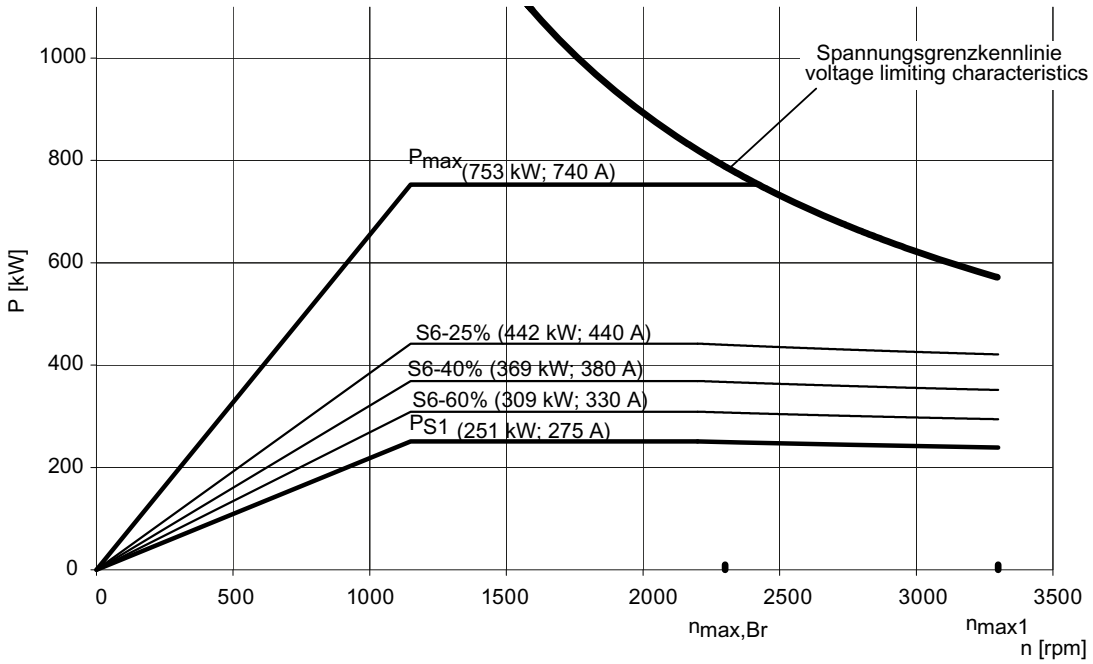



Tabella 4- 367 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8288-□□U1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 251 | 2084 | 275 | 3300 | - | - | 2300 | 2200 | 6250 | 740 | 2084 | 275 |
| 1000 | 218 | 2084 | 275 | | | | | 3300 | | | | |



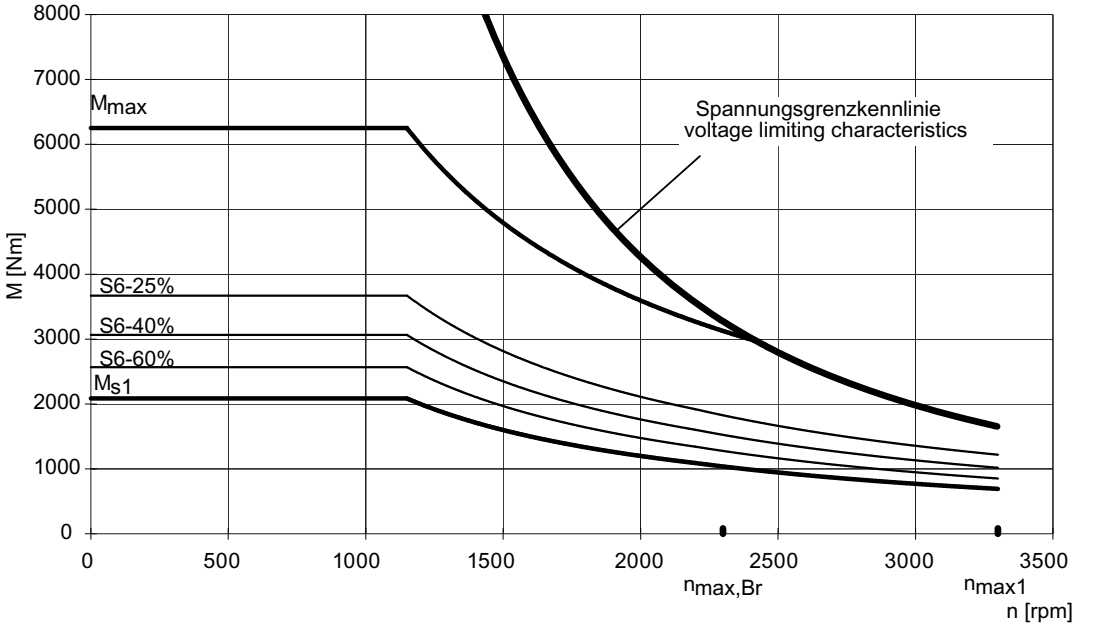
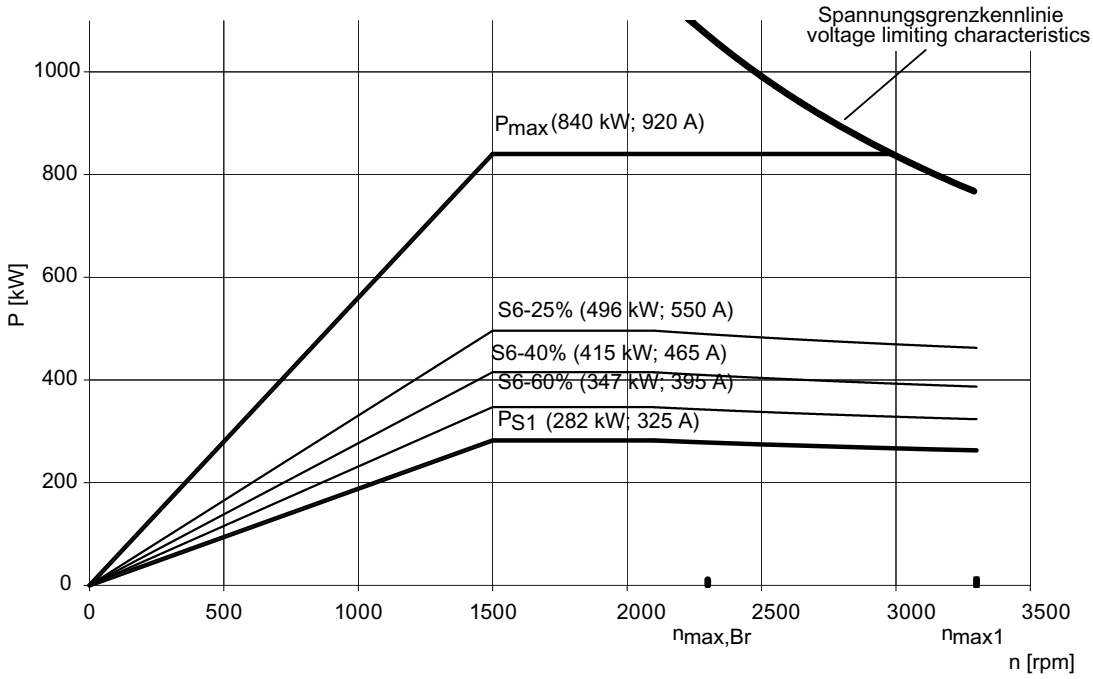



Tabella 4- 368 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8288-□□W1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 282 | 1795 | 325 | 3300 | - | - | 2300 | 2100 | 5350 | 920 | 1795 | 325 |



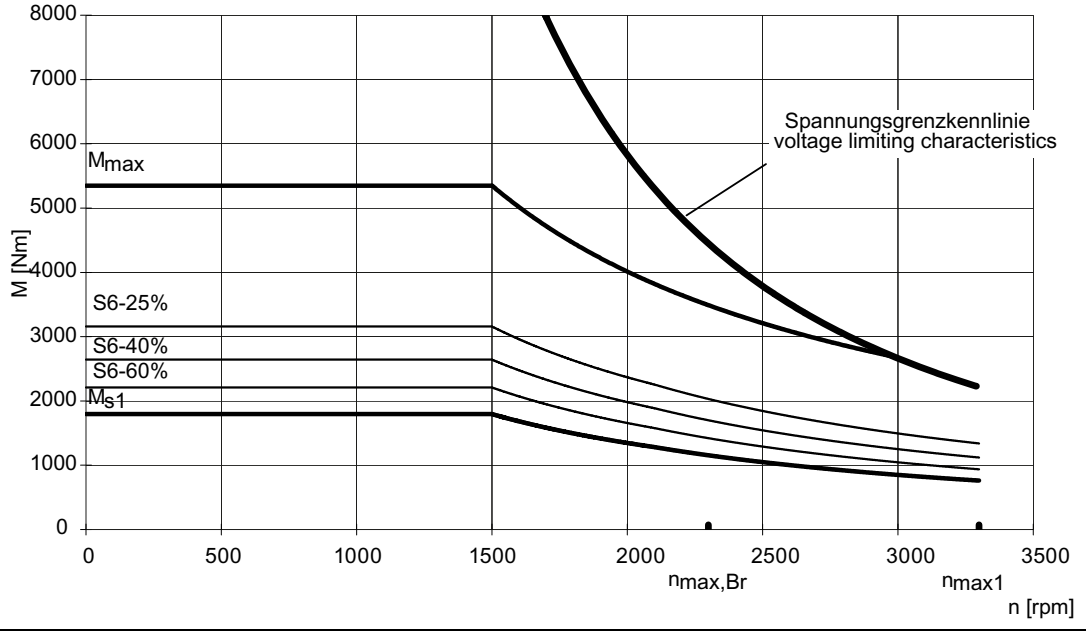
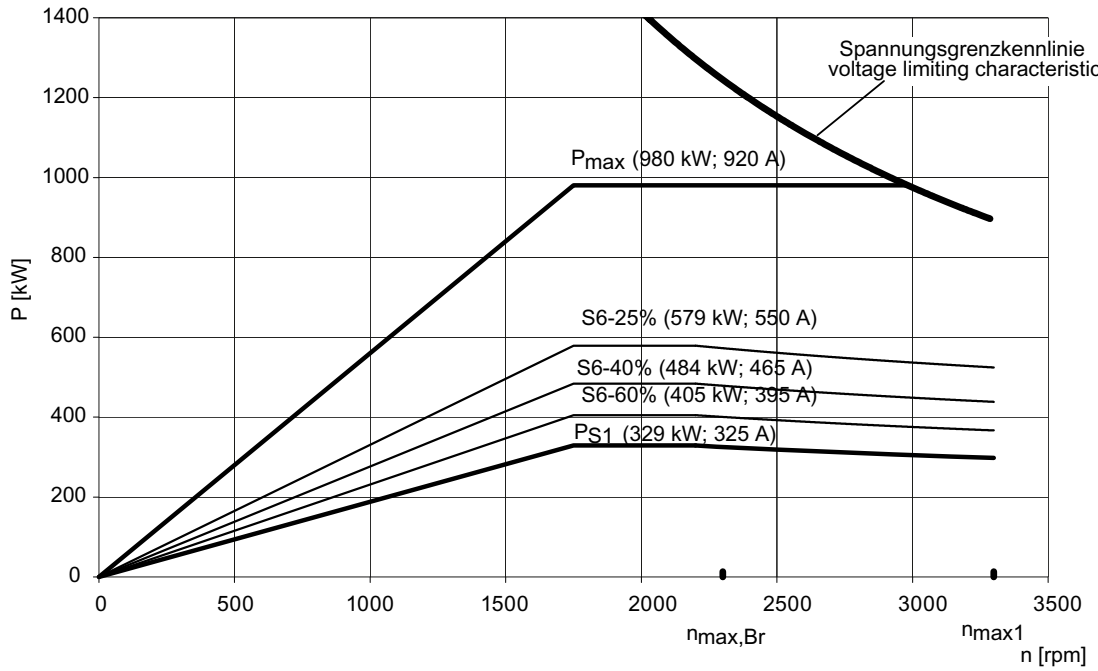
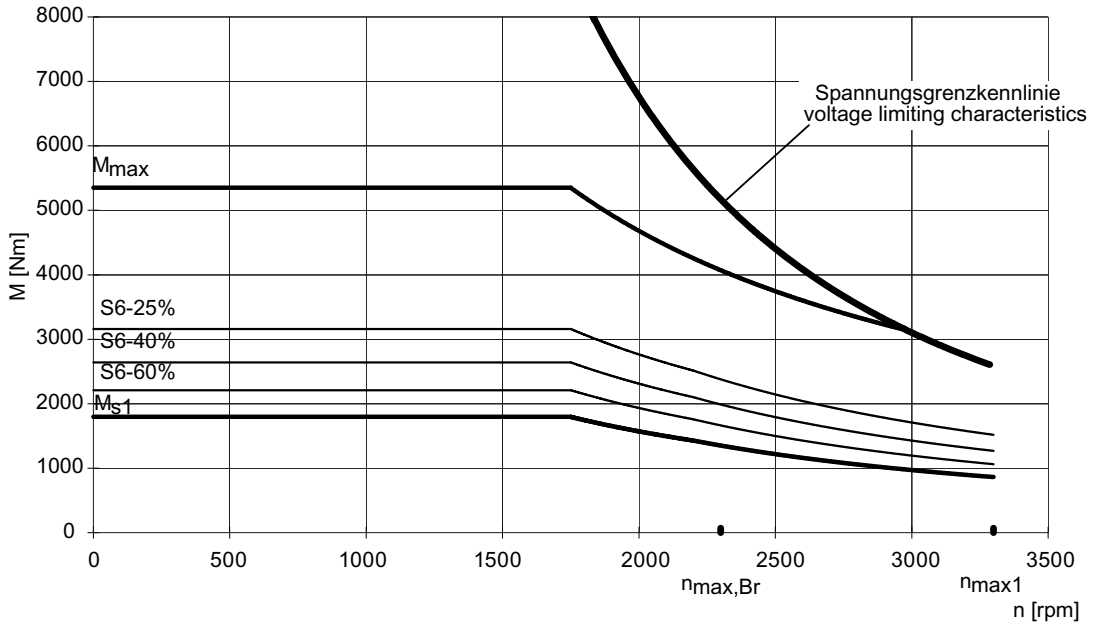



Tabella 4- 369 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8288-□□W1□, (IP55)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 329 | 1795 | 325 | 3300 | - | - | 2300 | 2200 | 5350 | 920 | 1795 | 325 |
| 1500 | 282 | 1795 | 325 | | | | | 3300 | | | | |

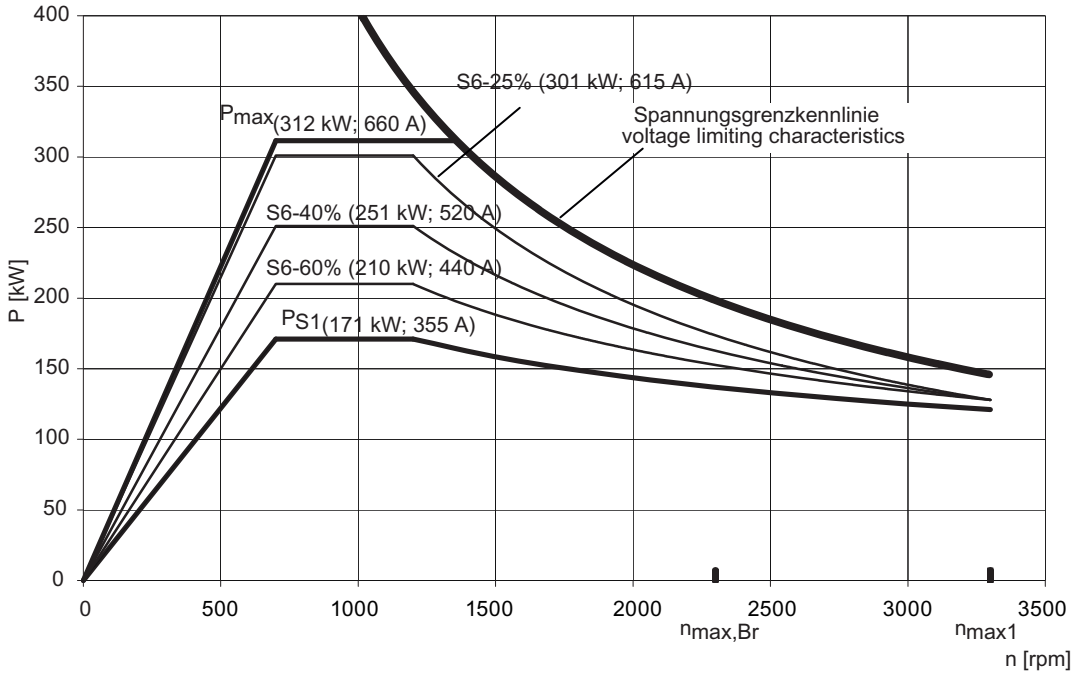


### 4.1.2.10 Altezza d'asse 280 - Ventilazione forzata (ventilazione passante)

Tabella 4- 370 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8284-□□C4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 171 | 2333 | 355 | 3300 | - | - | 2300 | 1200 | 4250 | 660 | 2333 | 355 |



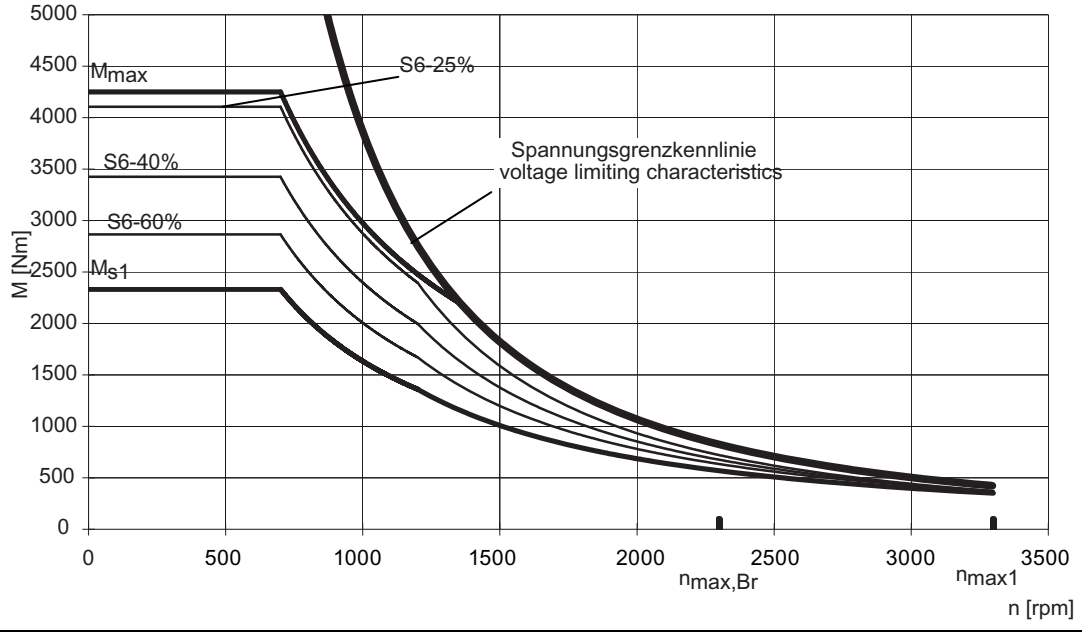
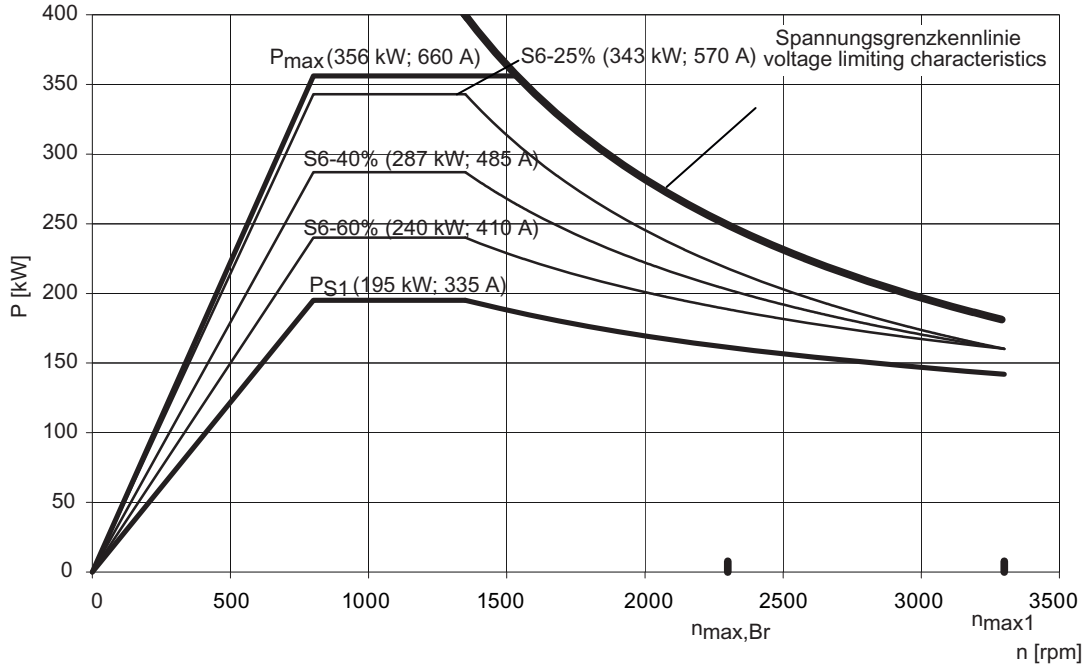



Tabella 4- 371 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8284-□□C4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 195 | 2328 | 335 | 3300 | - | - | 2300 | 1350 | 4250 | 660 | 2328 | 335 |
| 700 | 171 | 2333 | 355 | | | | | 2000 | | | | |



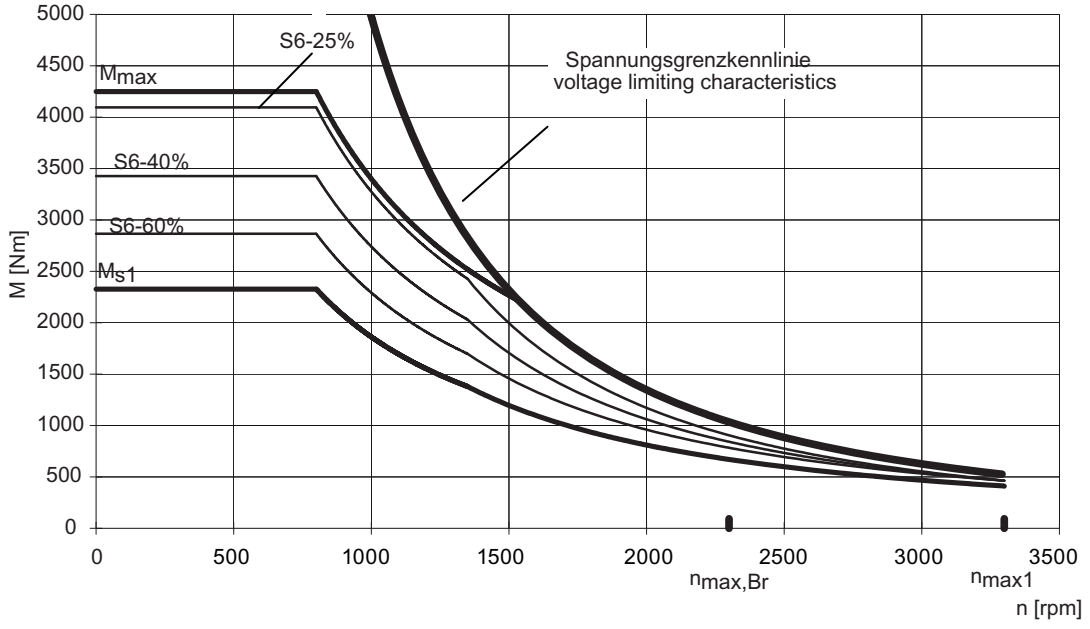
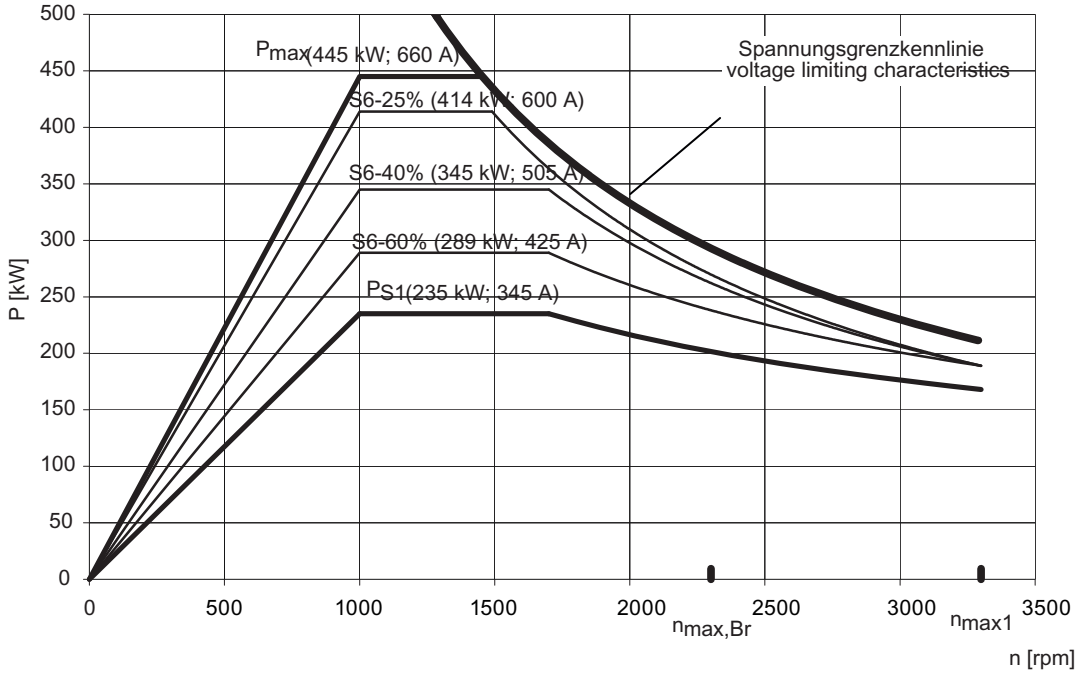



Tabella 4- 372 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8284-□□C4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 235 | 2244 | 345 | 3300 | - | - | 2300 | 1700 | 4250 | 660 | 2244 | 345 |



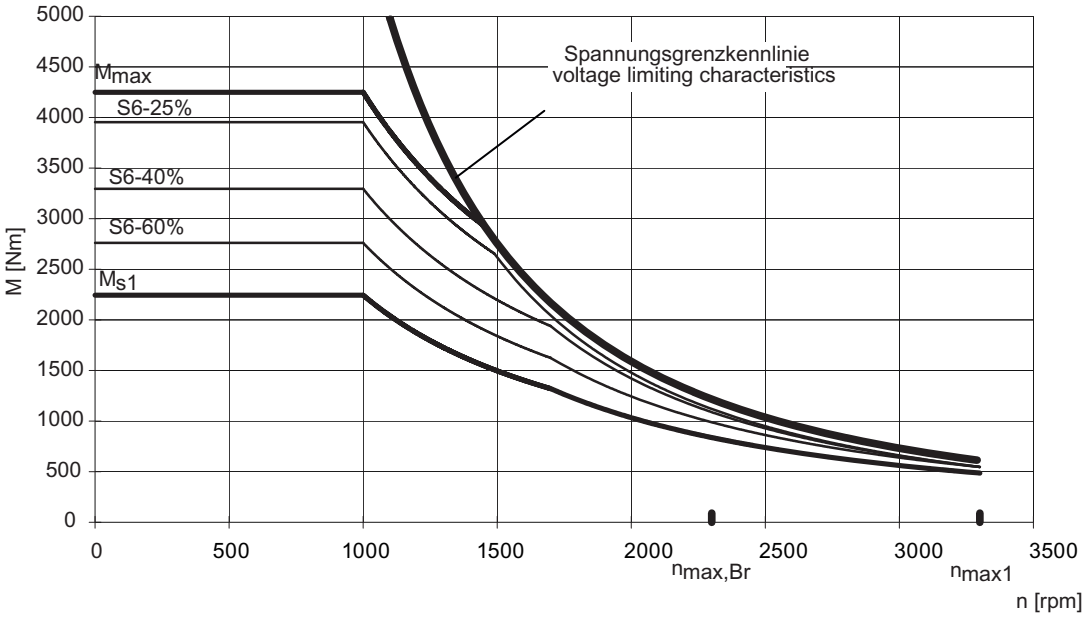
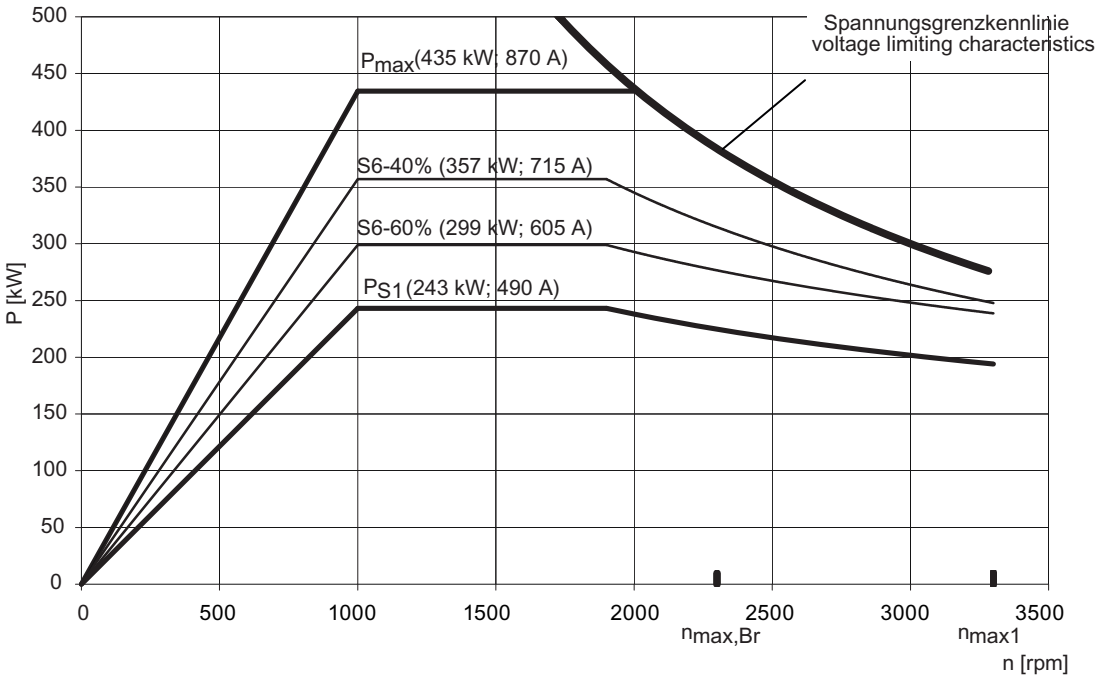



Tabella 4- 373 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8284-□□D4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 243 | 2321 | 490 | 3300 | - | - | 2300 | 1900 | 4150 | 870 | 2321 | 490 |



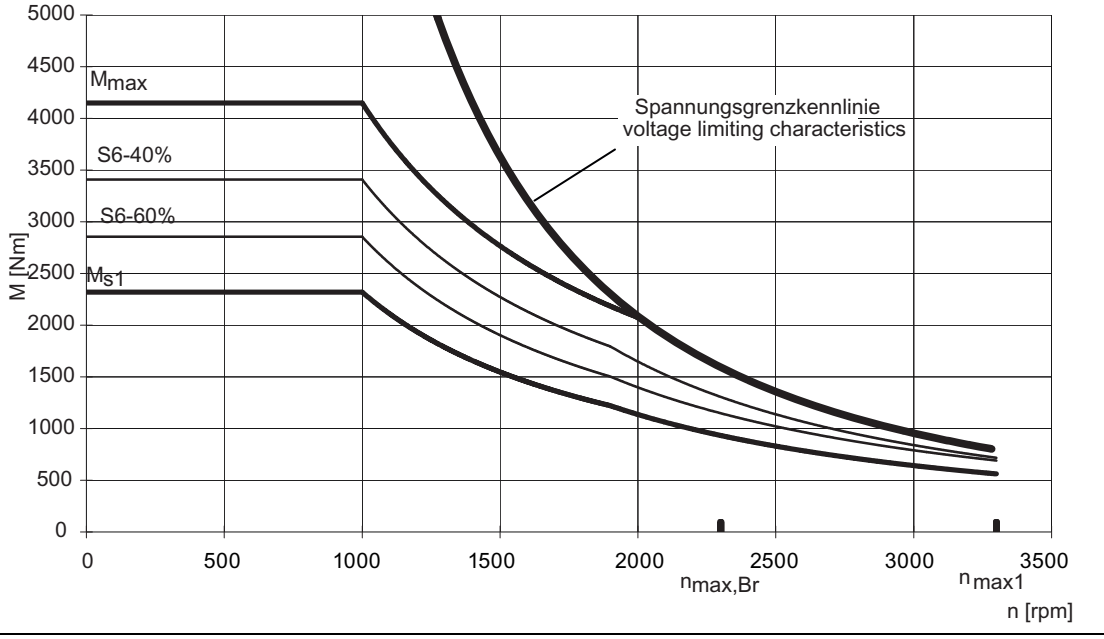
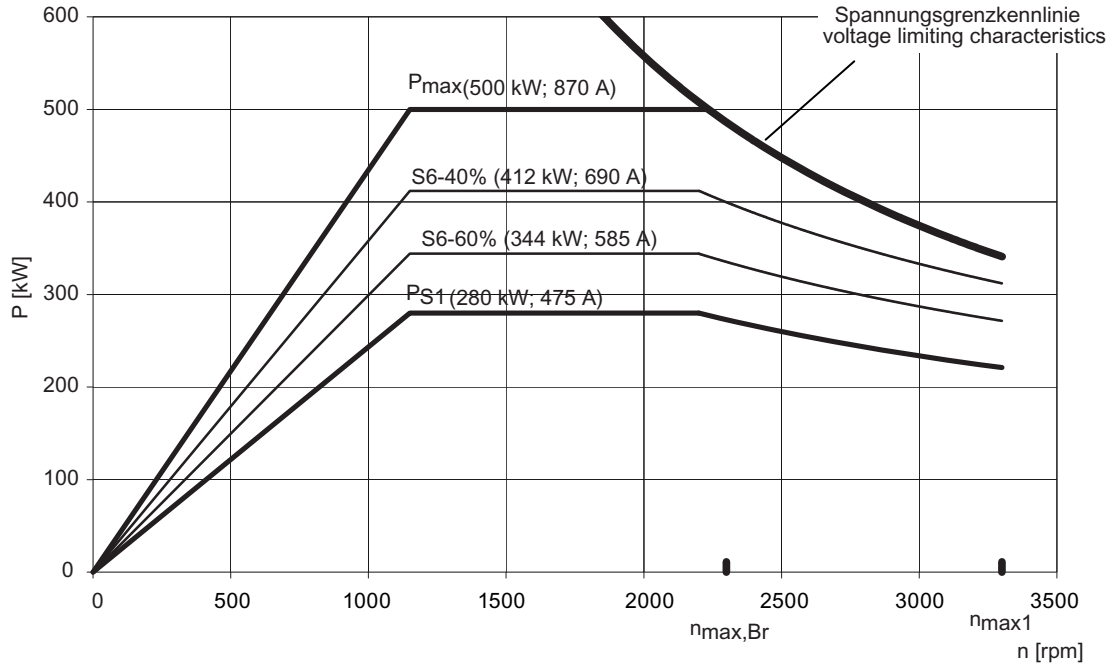



Tabella 4- 374 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8284-□□D4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 280 | 2325 | 475 | 3300 | - | - | 2300 | 2200 | 4150 | 870 | 2325 | 475 |
| 1000 | 243 | 2321 | 490 | | | | | 2800 | | | | |



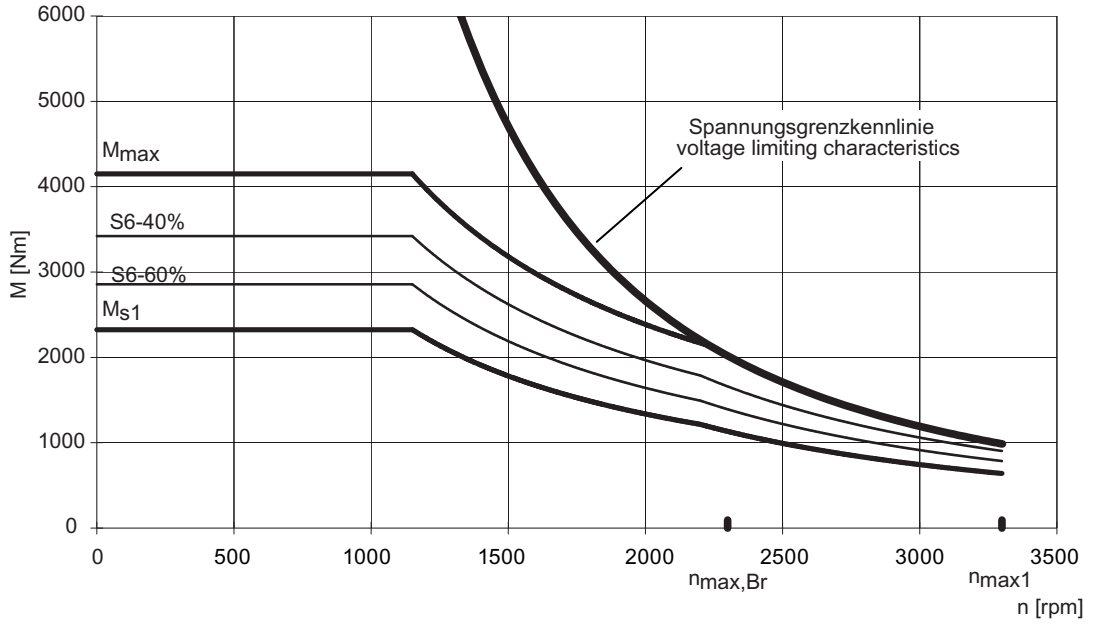
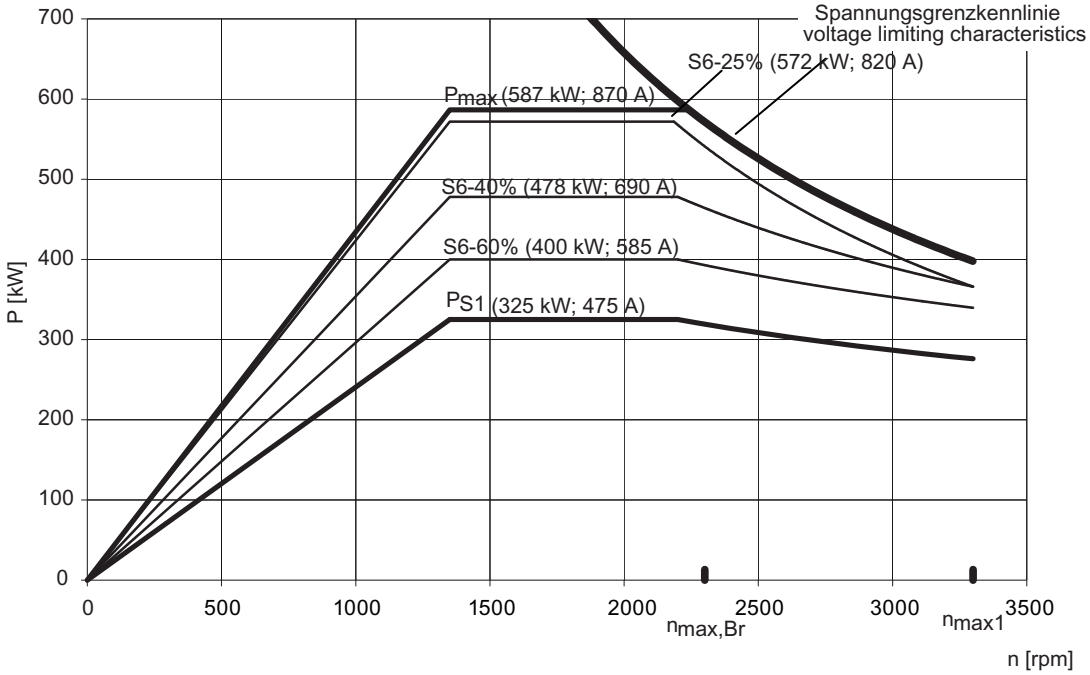



Tabella 4- 375 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8284-□□D4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 325 | 2299 | 475 | 3300 | - | - | 2300 | 2200 | 4150 | 870 | 2299 | 475 |



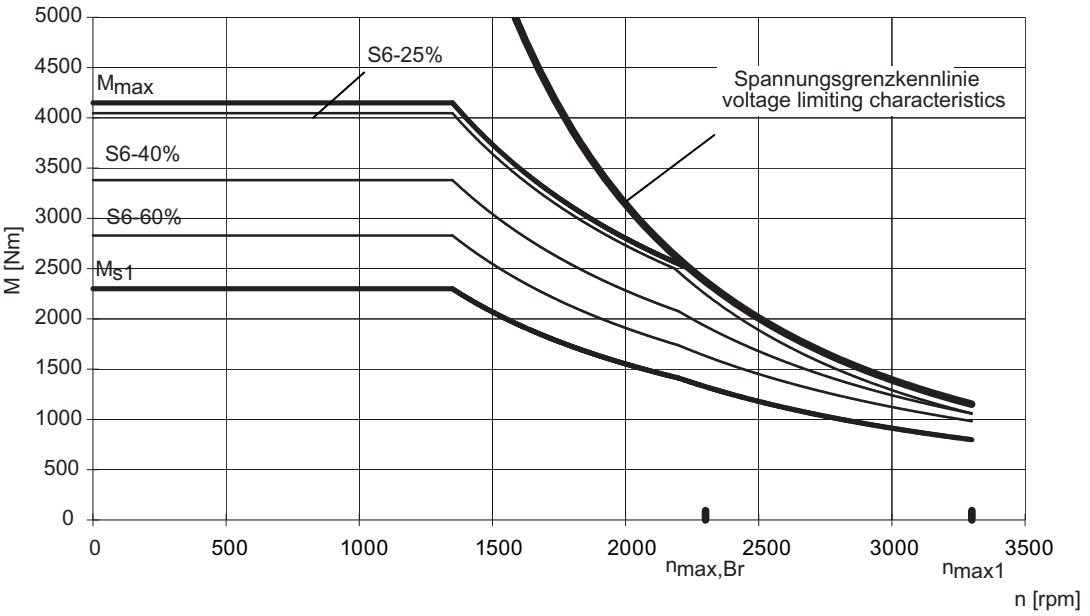
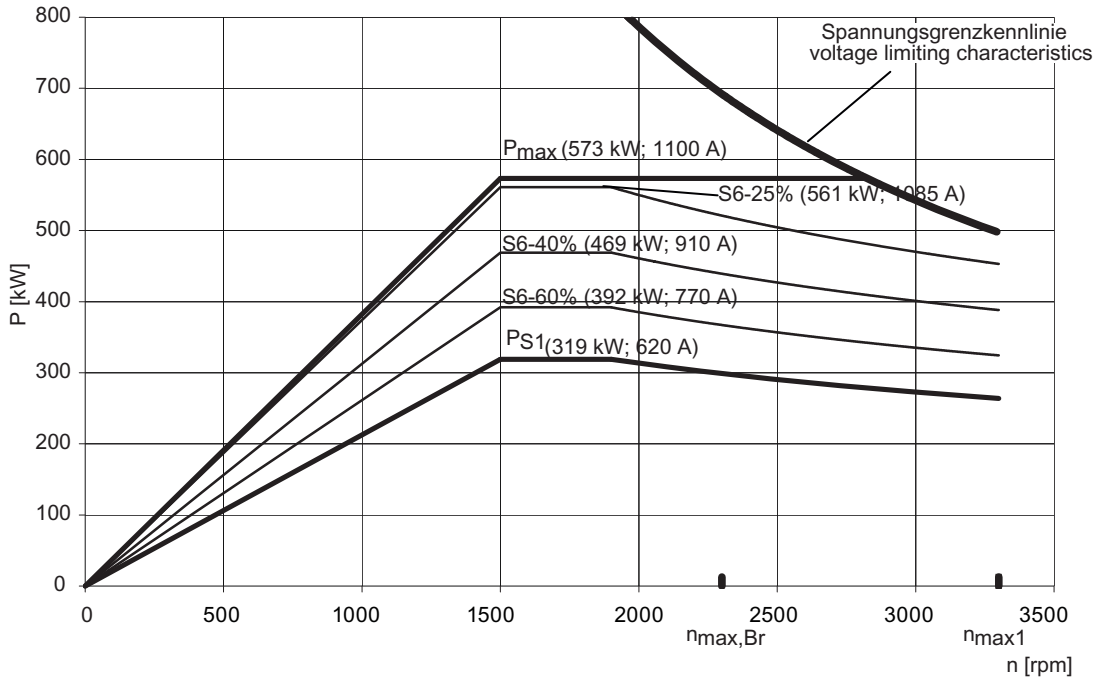



Tabella 4- 376 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8284-□□F4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 319 | 2031 | 620 | 3300 | - | - | 2300 | 1900 | 3650 | 1100 | 2031 | 620 |



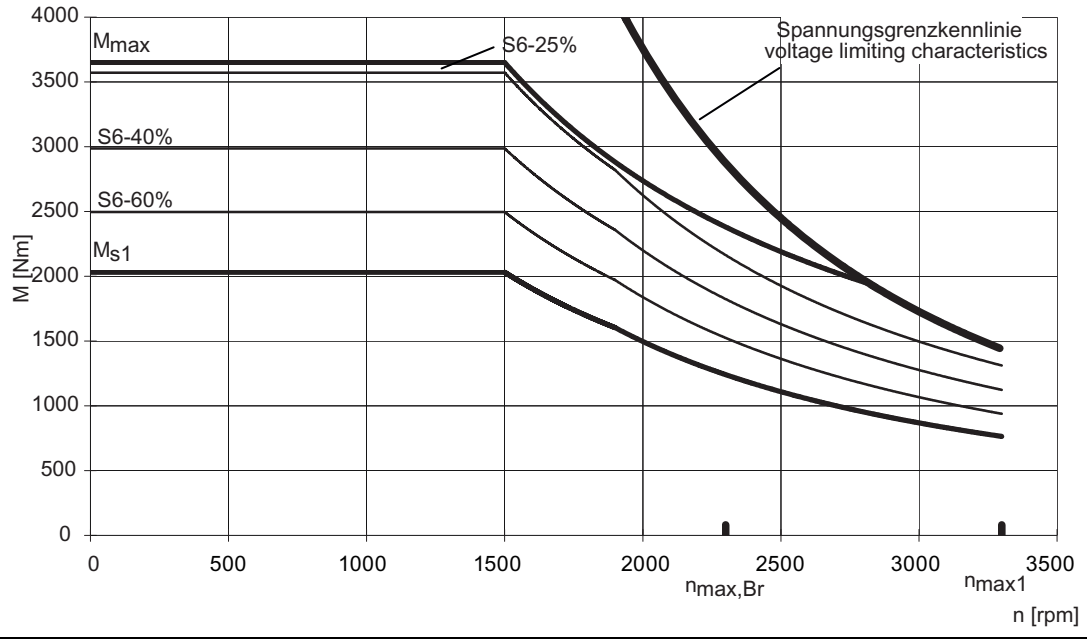
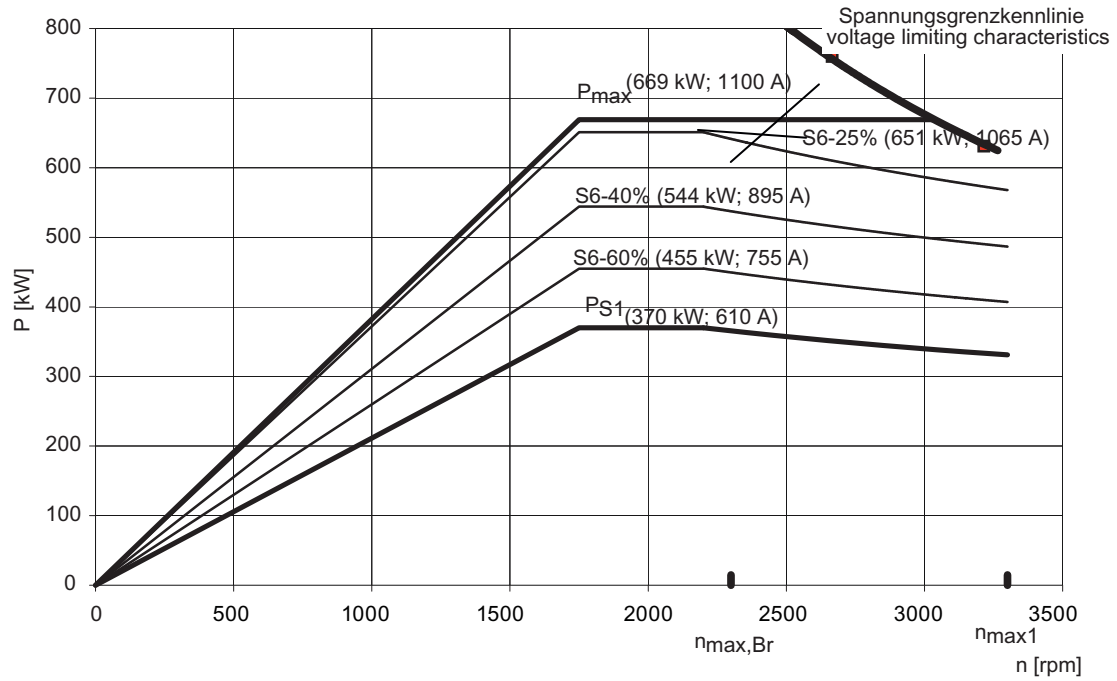



Tabella 4- 377 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8284-□□F4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 370 | 2019 | 610 | 3300 | - | - | 2300 | 2200 | 3650 | 1100 | 2019 | 610 |
| 1500 | 319 | 2031 | 620 | | | | | 3300 | | | | |



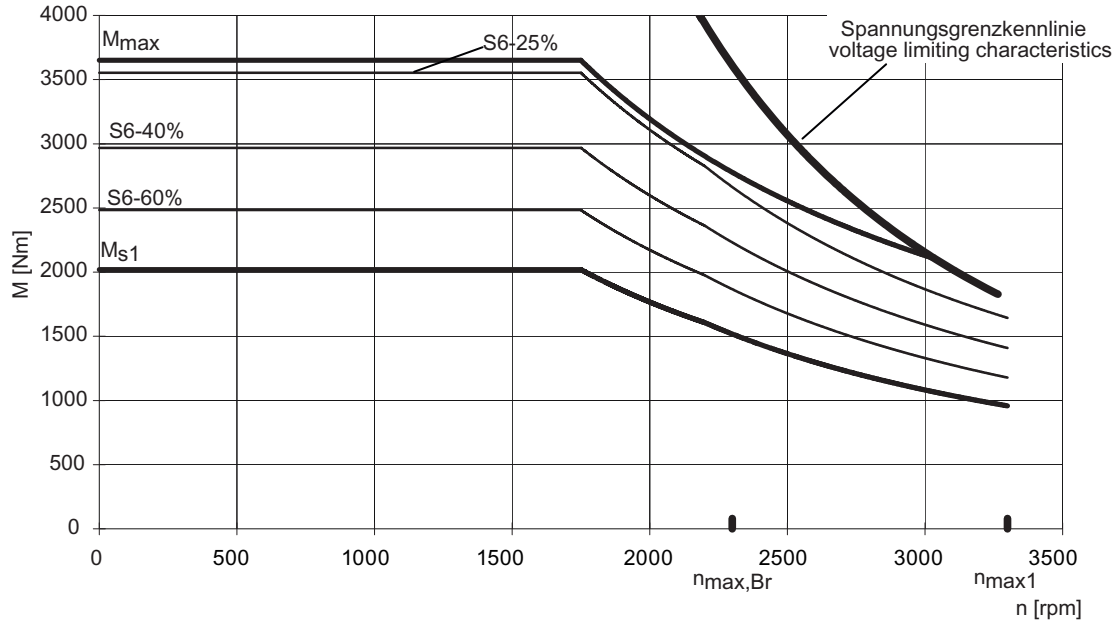
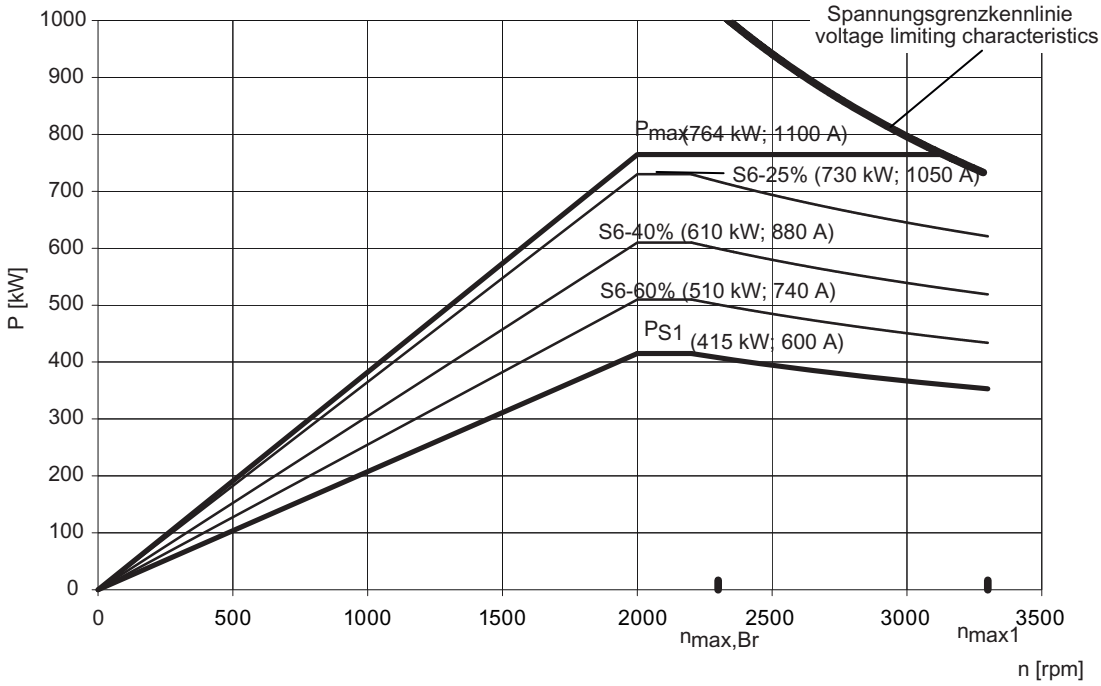



Tabella 4- 378 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8284-□□F4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 415 | 1981 | 600 | 3300 | - | - | 2300 | 2200 | 3650 | 1100 | 1981 | 600 |



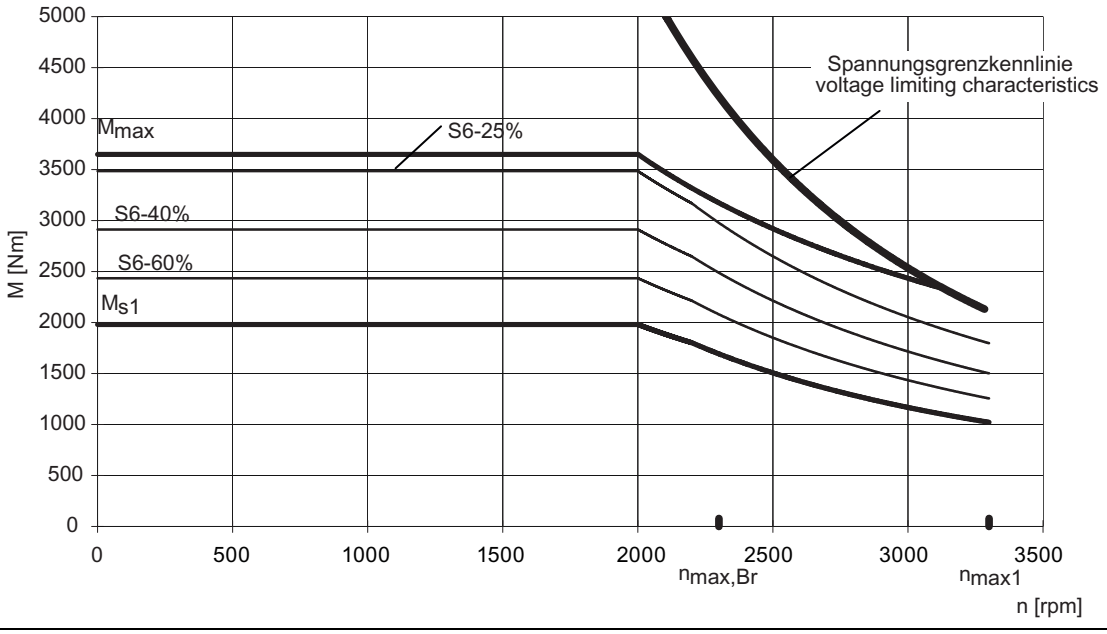
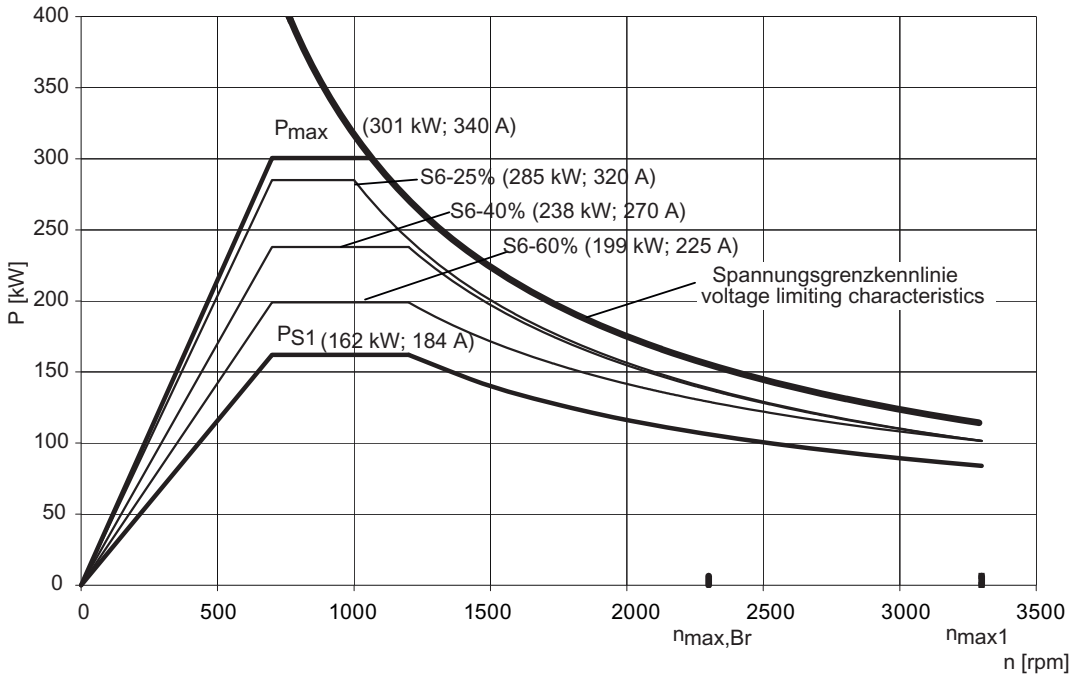



Tabella 4- 379 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8284-□□K4□ , (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 162 | 2210 | 184 | 3300 | - | - | 2300 | 1200 | 4100 | 340 | 2210 | 184 |



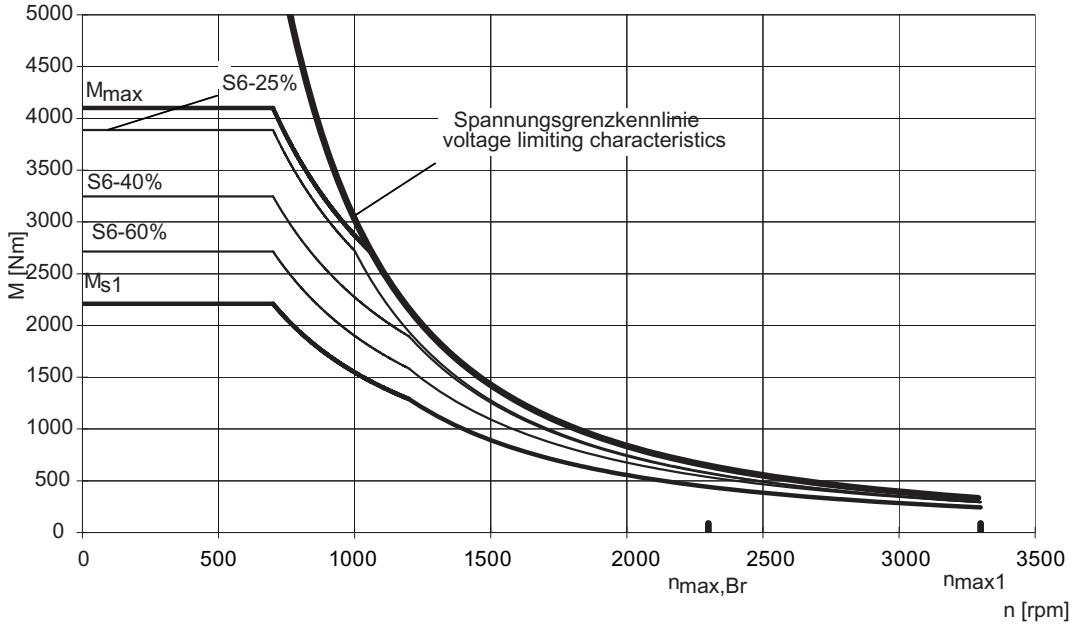
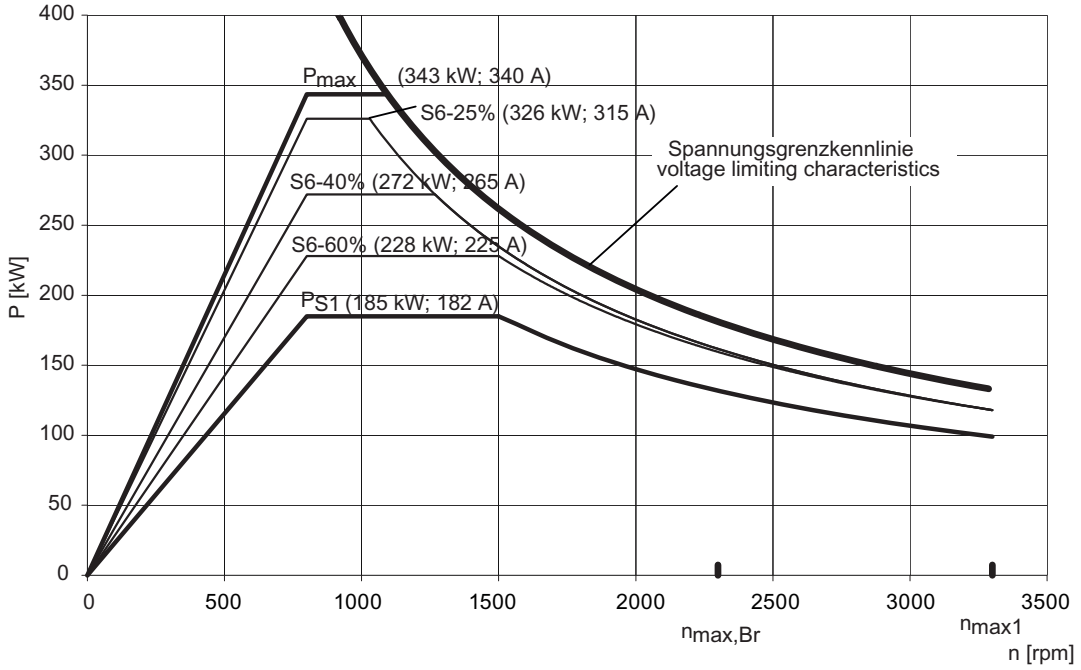



Tabella 4- 380 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8284-□□K4□ , (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 185 | 2208 | 182 | 3300 | - | - | 2300 | 1500 | 4100 | 340 | 2208 | 182 |
| 700 | 162 | 2210 | 184 | | | | | 1800 | | | | |



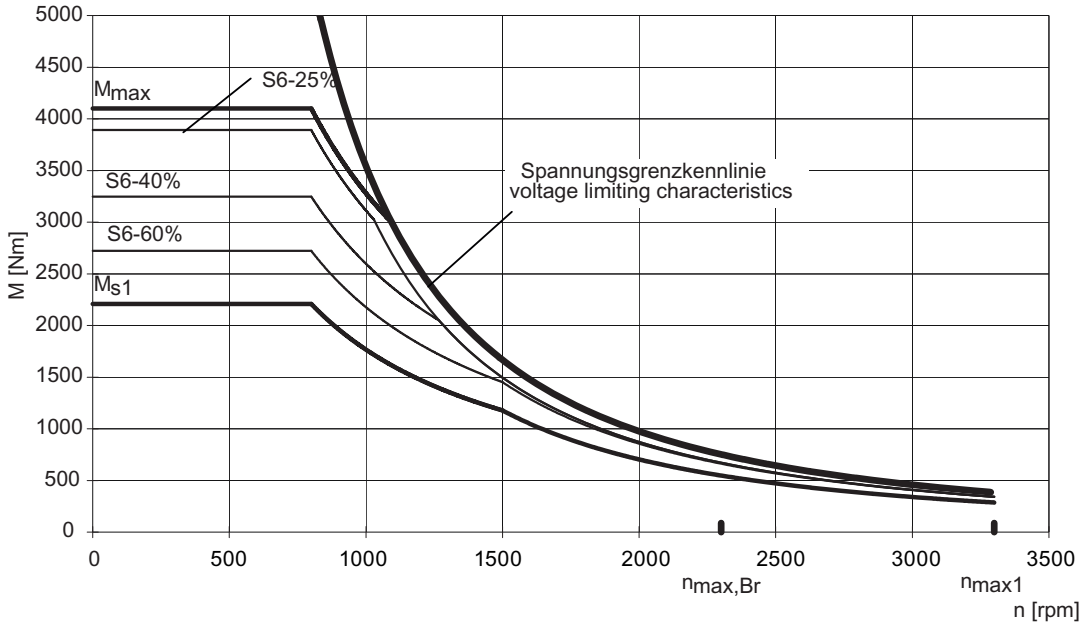
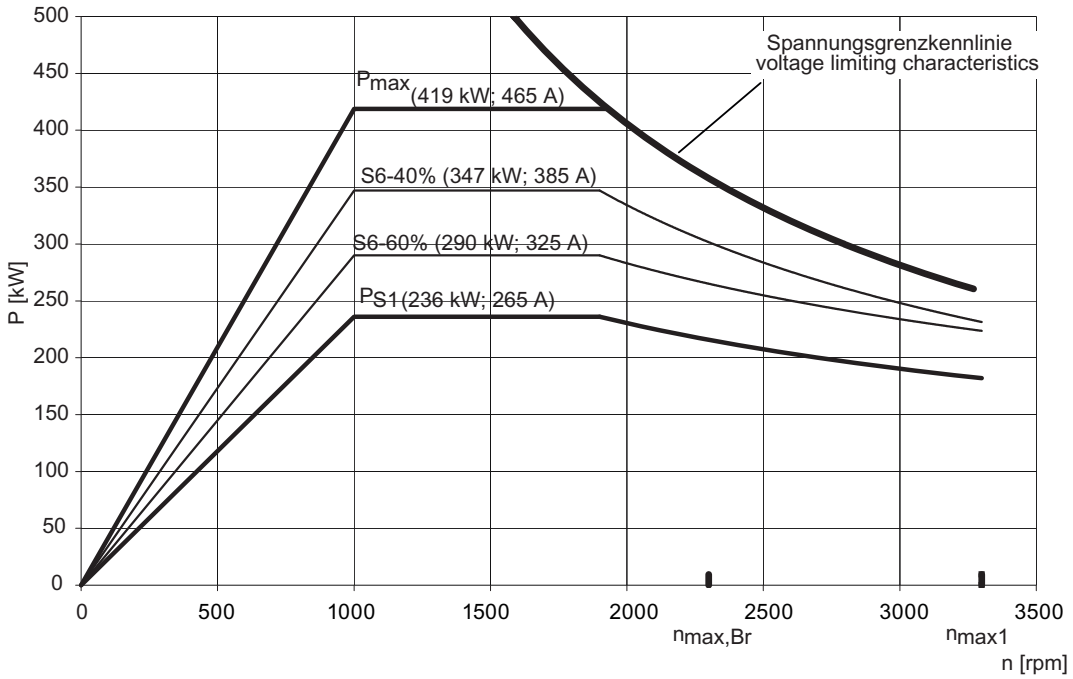



Tabella 4- 381 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8284-□□U4□ , (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 236 | 2254 | 265 | 3300 | - | - | 2300 | 1900 | 4000 | 465 | 2254 | 265 |



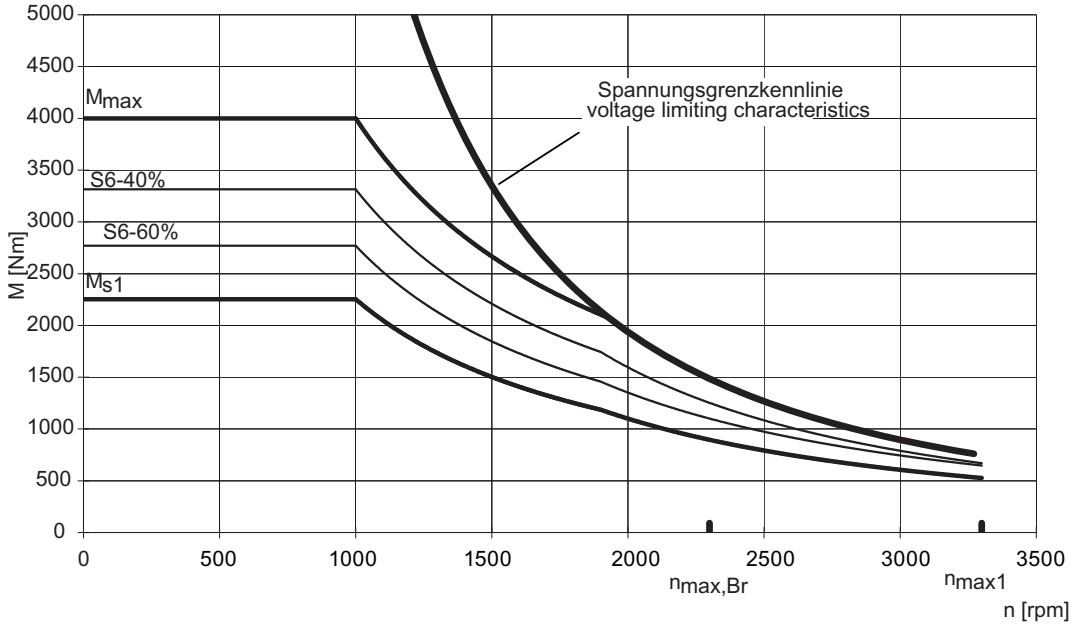
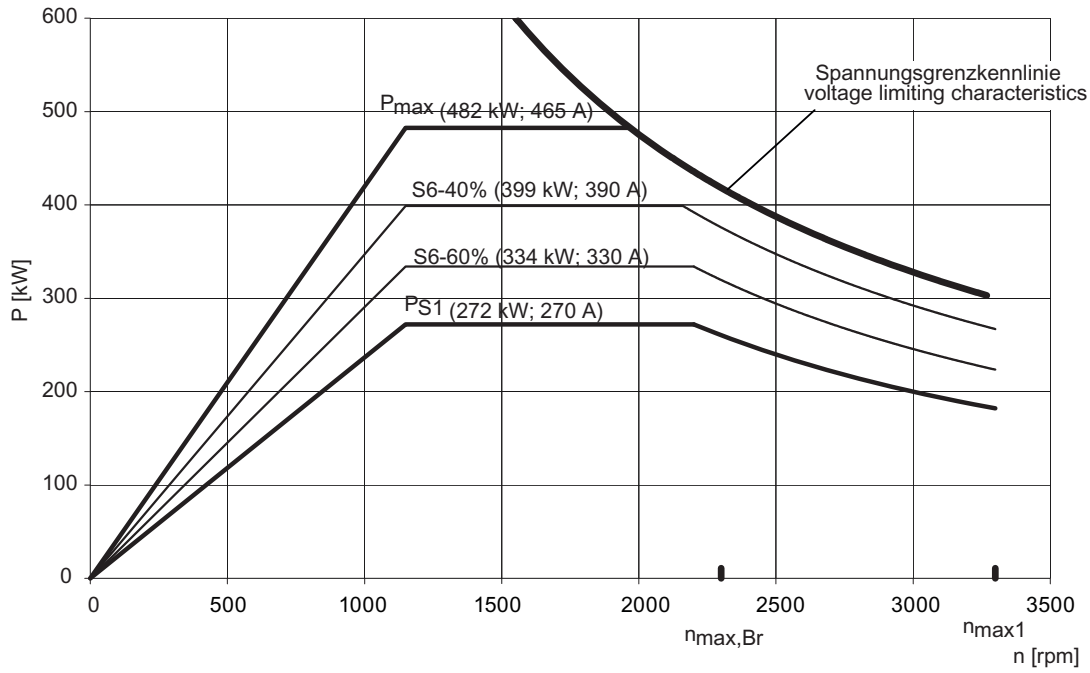



Tabella 4- 382 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8284-□□U4□ , (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 272 | 2255 | 270 | 3300 | - | - | 2300 | 2200 | 4000 | 465 | 2255 | 270 |
| 1000 | 236 | 2254 | 265 | | | | | 2500 | | | | |



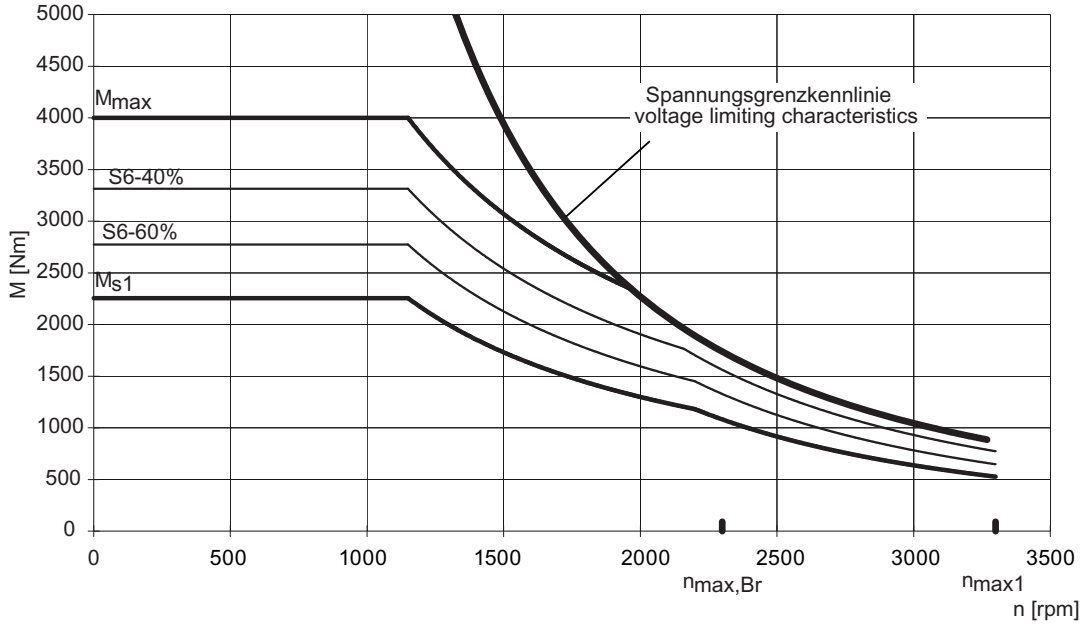
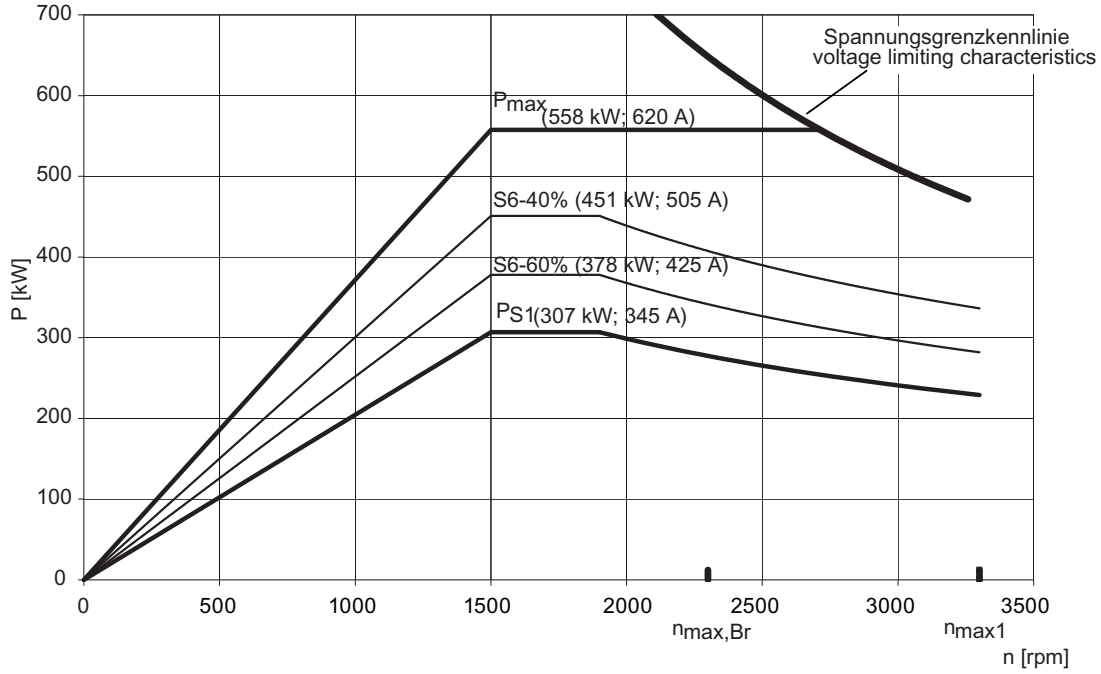



Tabella 4- 383 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8284-□□W4□ , (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 307 | 1955 | 345 | 3300 | - | - | 2300 | 1900 | 3550 | 620 | 1955 | 345 |



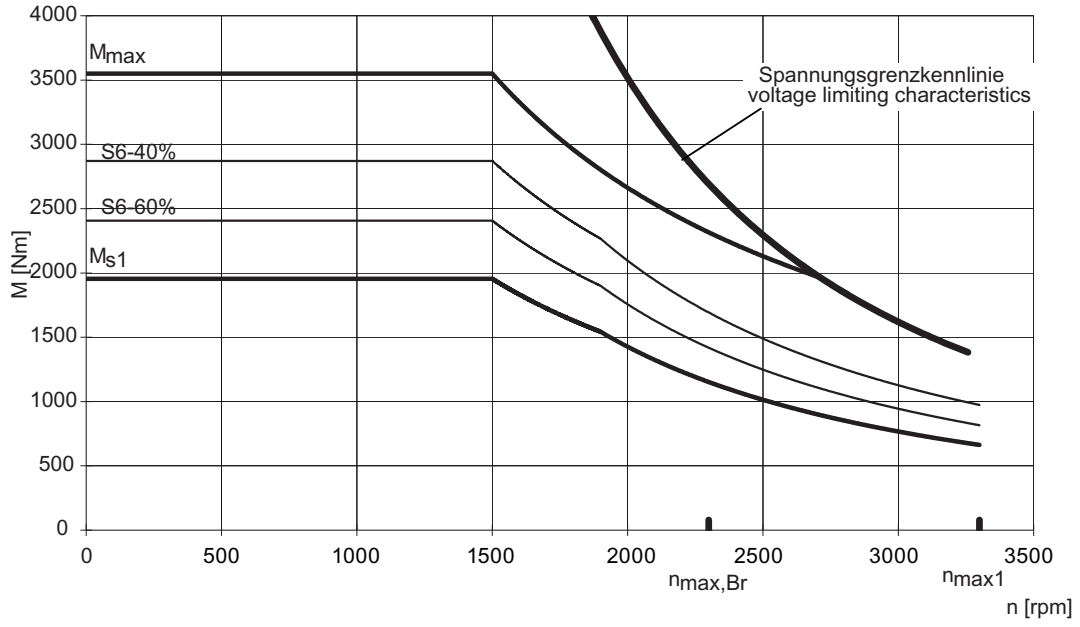
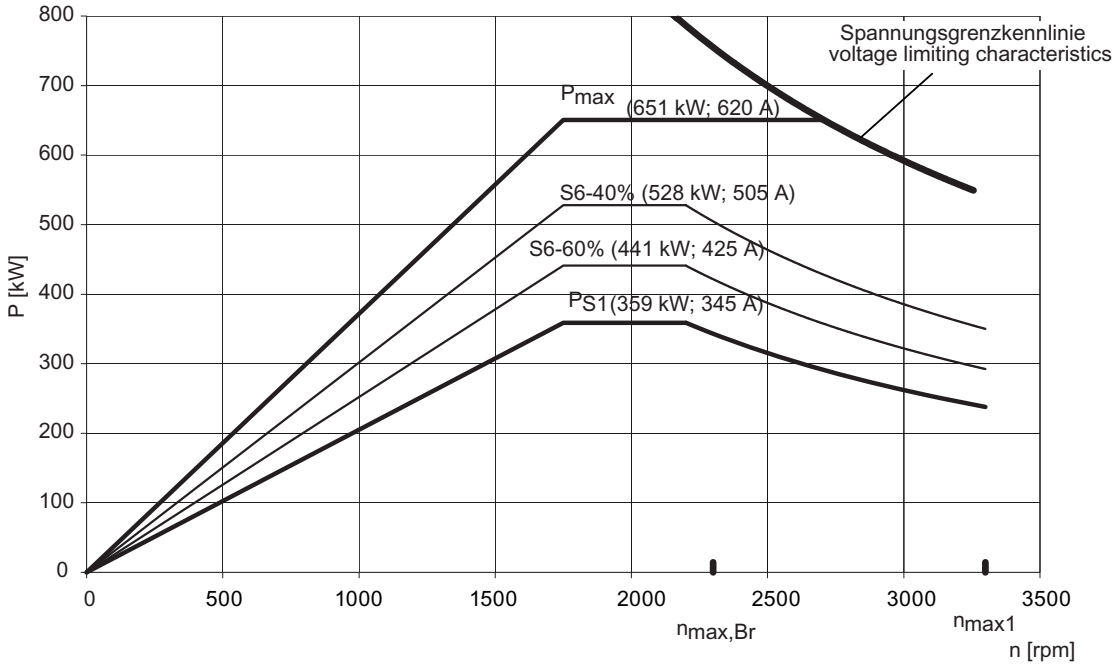



Tabella 4- 384 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8284-□□W4□ , (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 359 | 1959 | 345 | 3300 | - | - | 2300 | 2200 | 3550 | 620 | 1959 | 345 |
| 1500 | 307 | 1955 | 345 | | | | | 2600 | | | | |



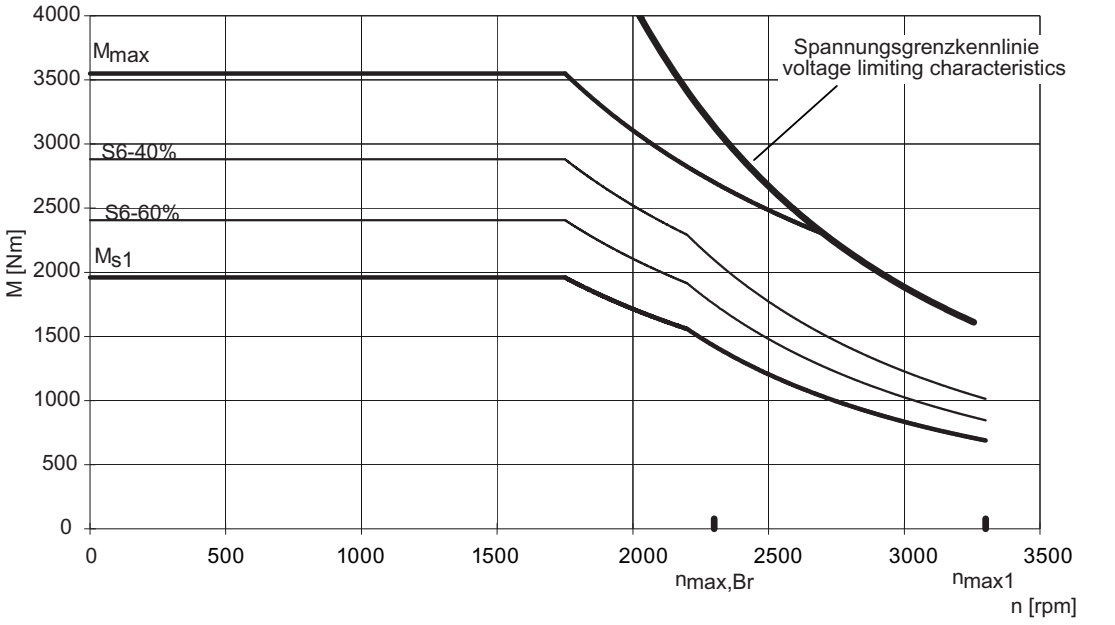
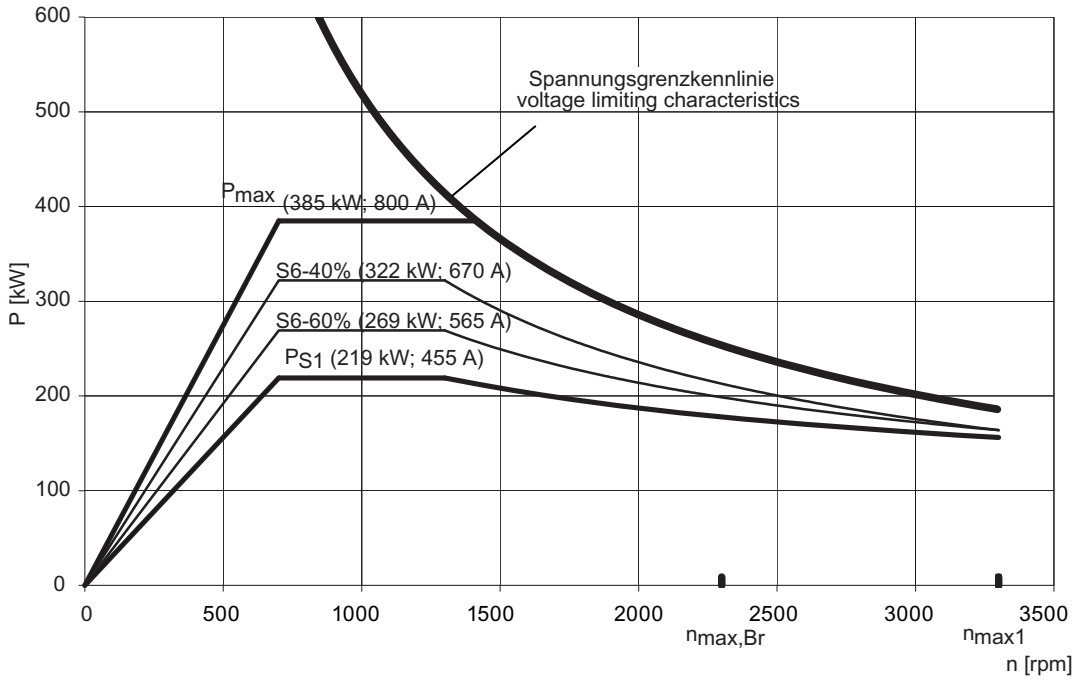



Tabella 4- 385 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8286-□□C4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 219 | 2988 | 455 | 3300 | - | - | 2300 | 1300 | 5250 | 800 | 2988 | 455 |



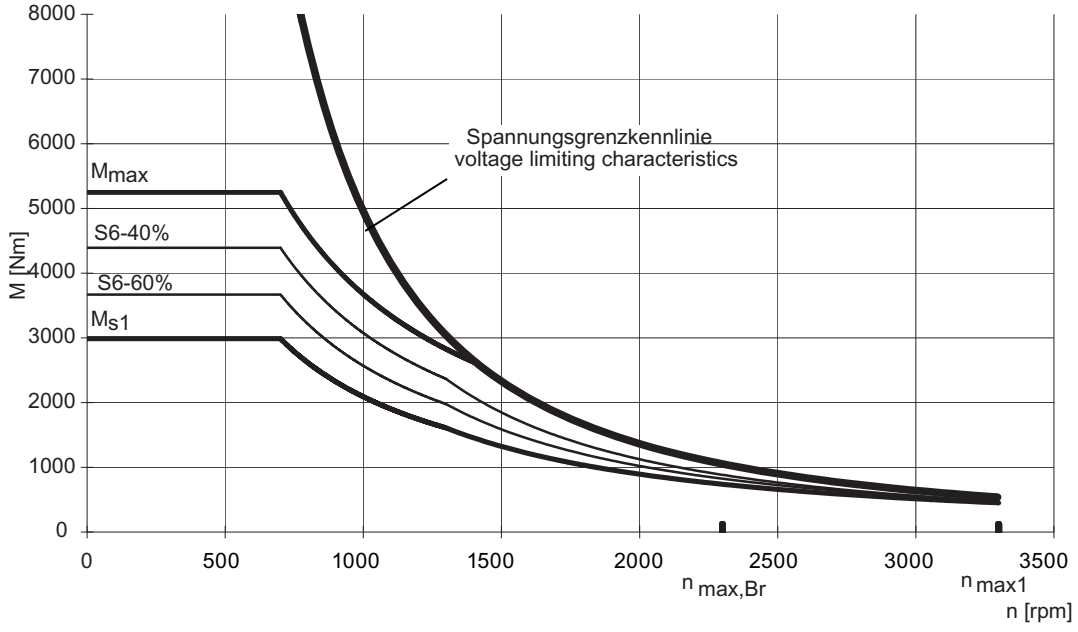
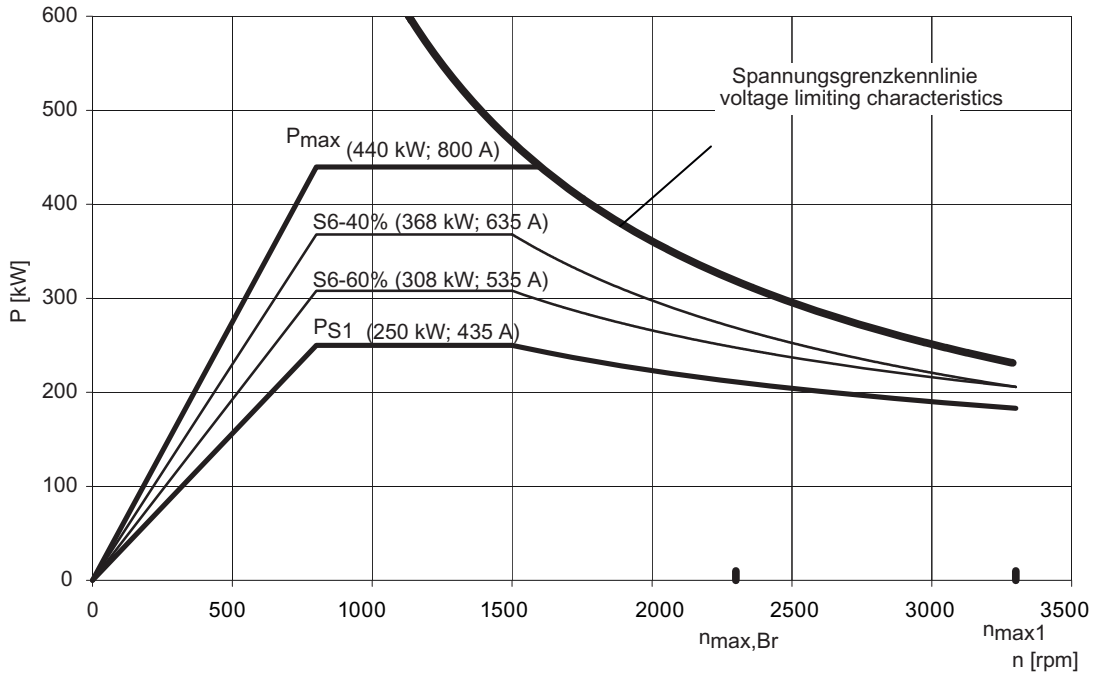



Tabella 4- 386 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8286-□□C4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 250 | 2984 | 435 | 3300 | - | - | 2300 | 1500 | 5250 | 800 | 2984 | 435 |
| 700 | 219 | 2988 | 455 | | | | | 2100 | | | | |



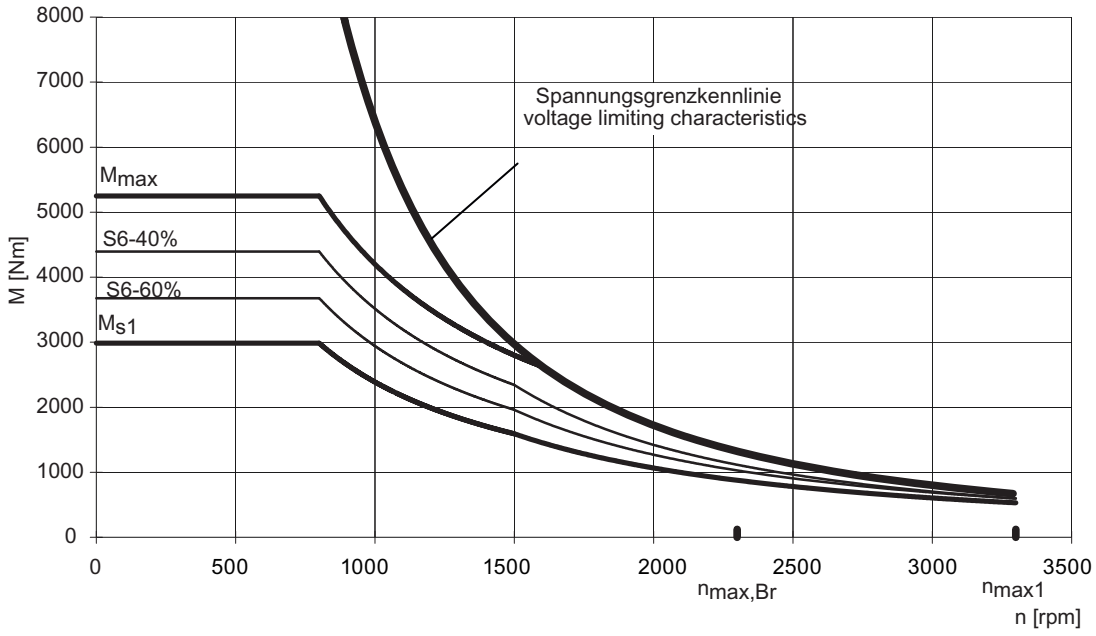
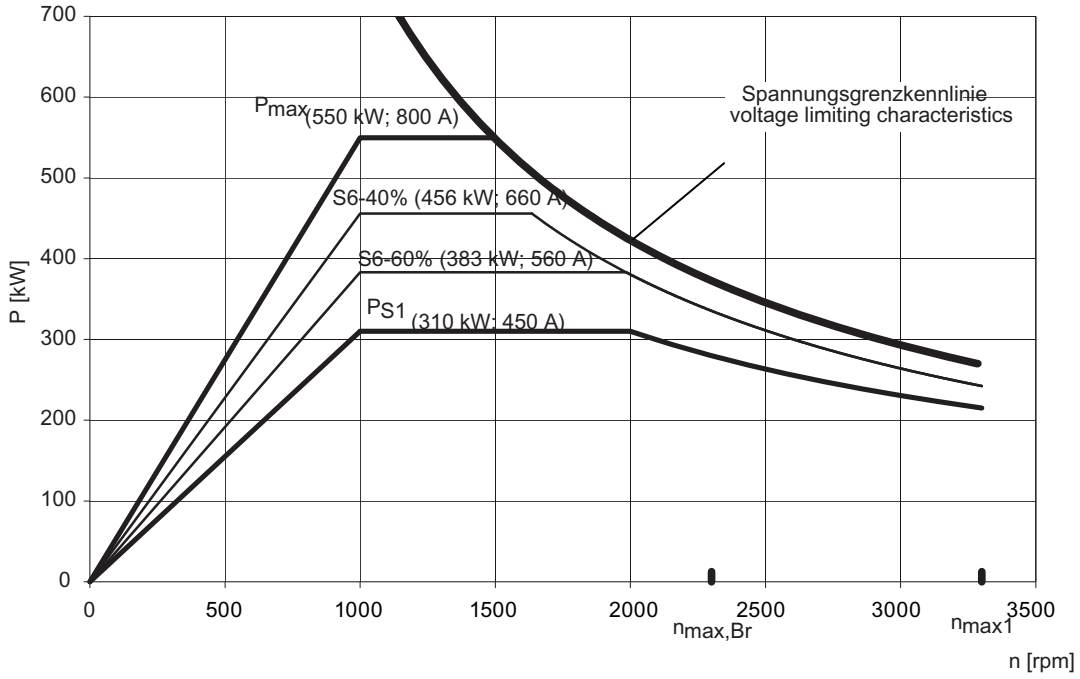



Tabella 4- 387 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8286-□□C4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 310 | 2961 | 450 | 3300 | - | - | 2300 | 2000 | 5250 | 800 | 2961 | 450 |



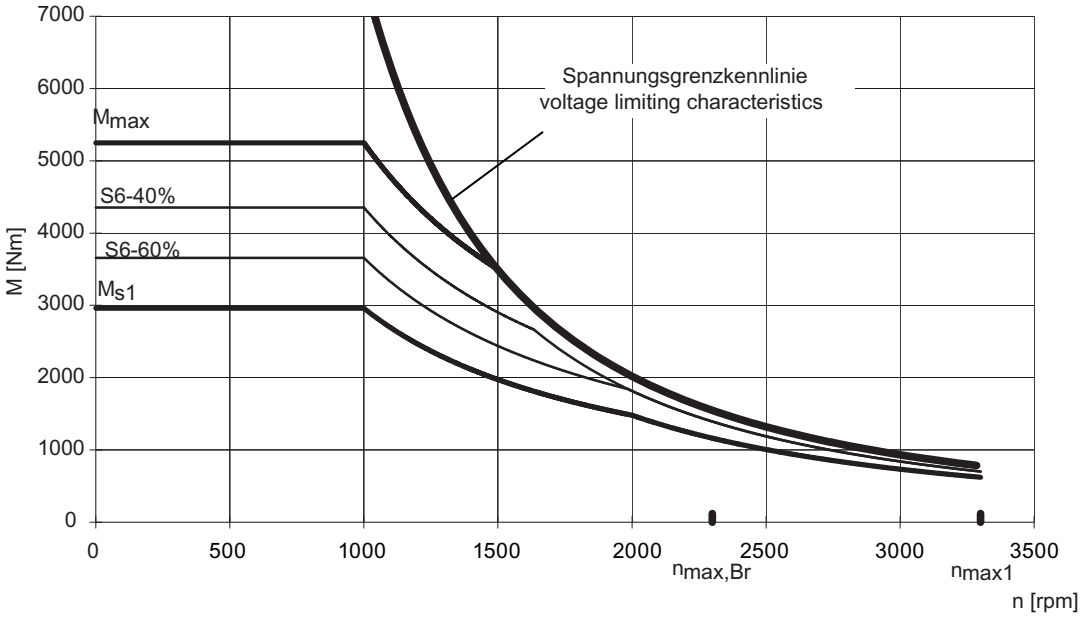
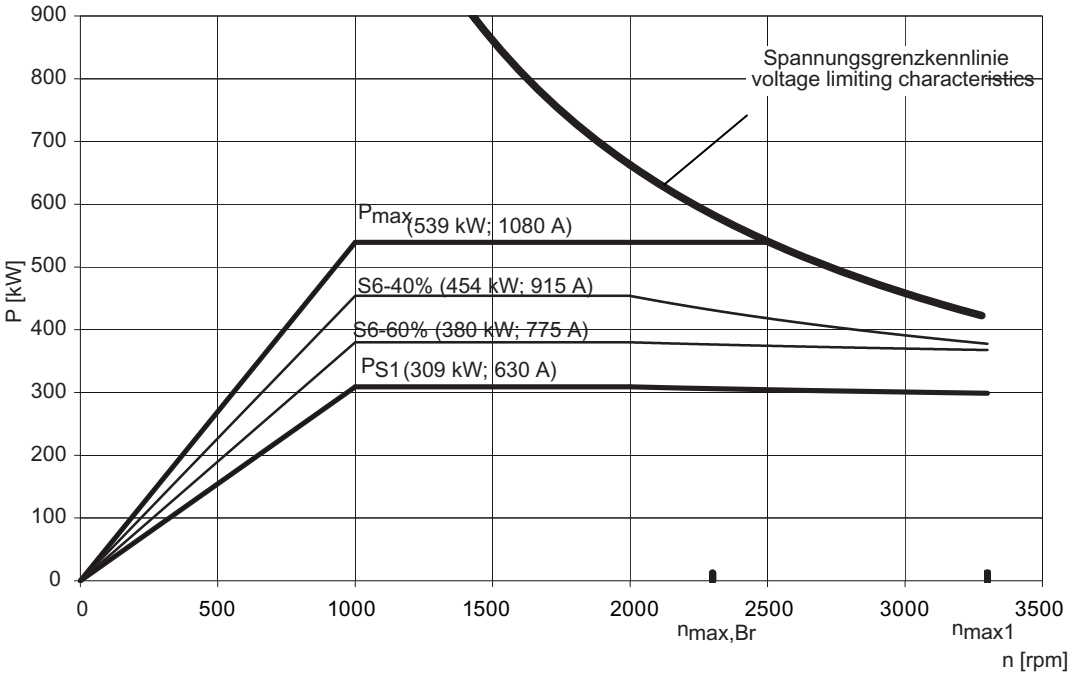



Tabella 4- 388 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8286-□□D4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 309 | 2951 | 630 | 3300 | - | - | 2300 | 2000 | 5150 | 1080 | 2951 | 630 |



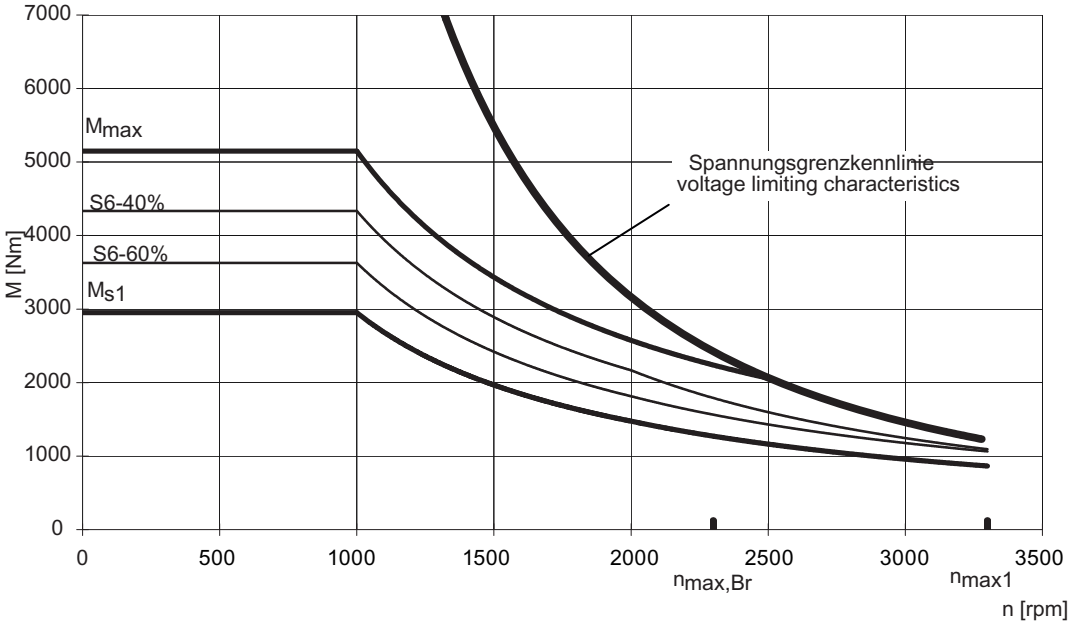
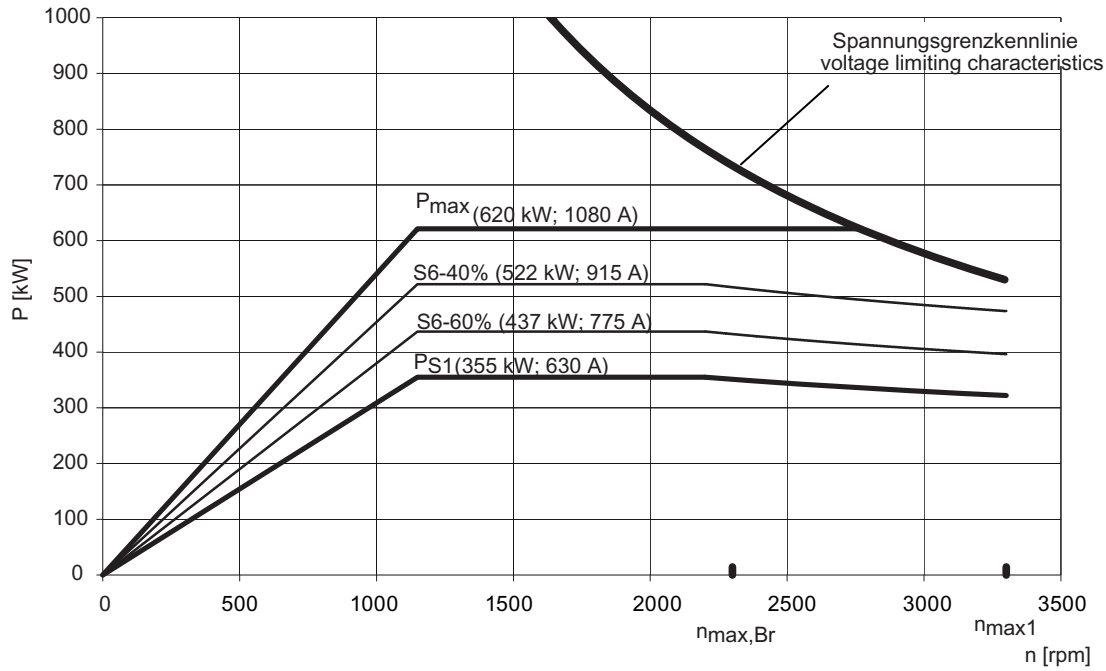



Tabella 4- 389 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8286-□□D4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 355 | 2944 | 630 | 3300 | - | - | 2300 | 2200 | 5150 | 1080 | 2944 | 630 |
| 1000 | 309 | 2951 | 630 | | | | | 3300 | | | | |



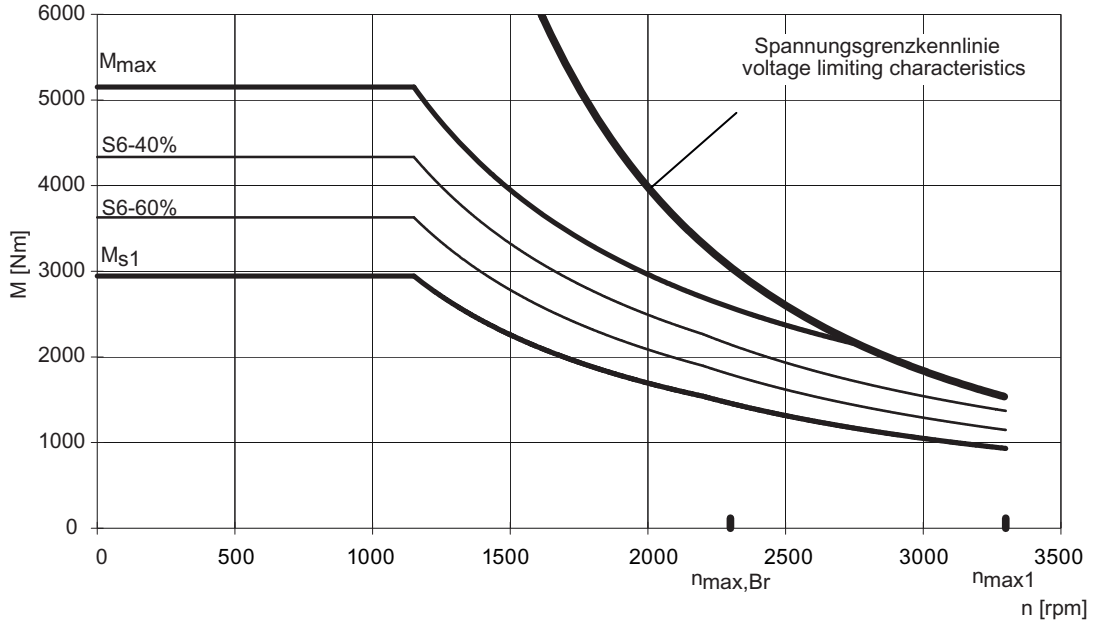
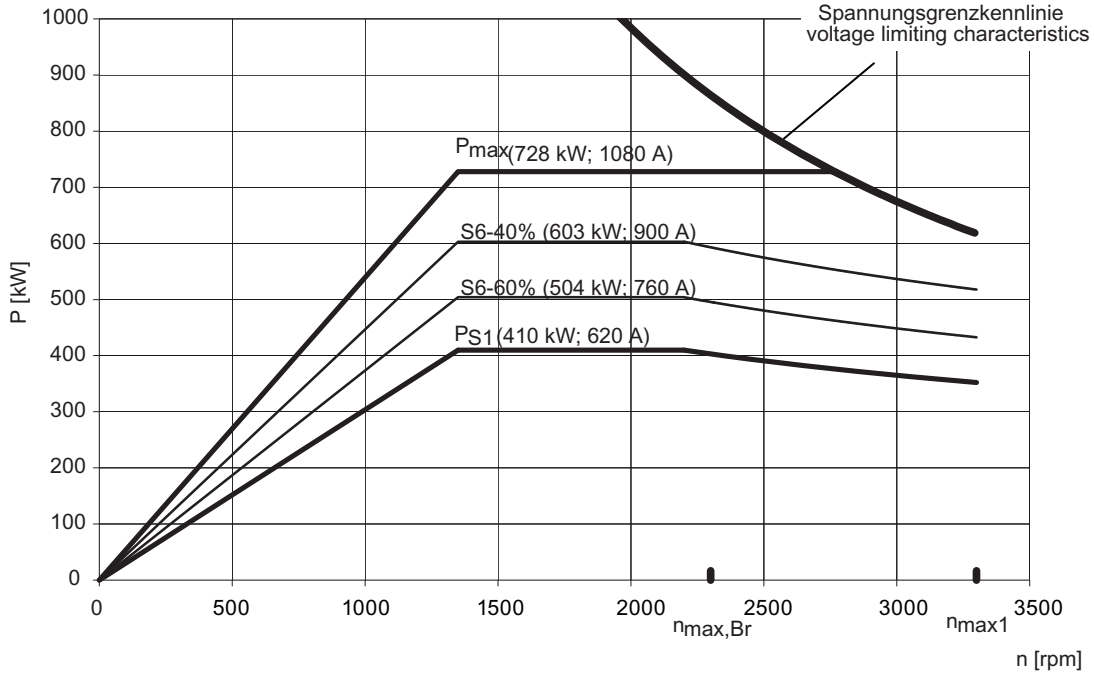



Tabella 4- 390 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8286-□□D4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 410 | 2901 | 620 | 3300 | - | - | 2300 | 2200 | 5150 | 1080 | 2901 | 620 |



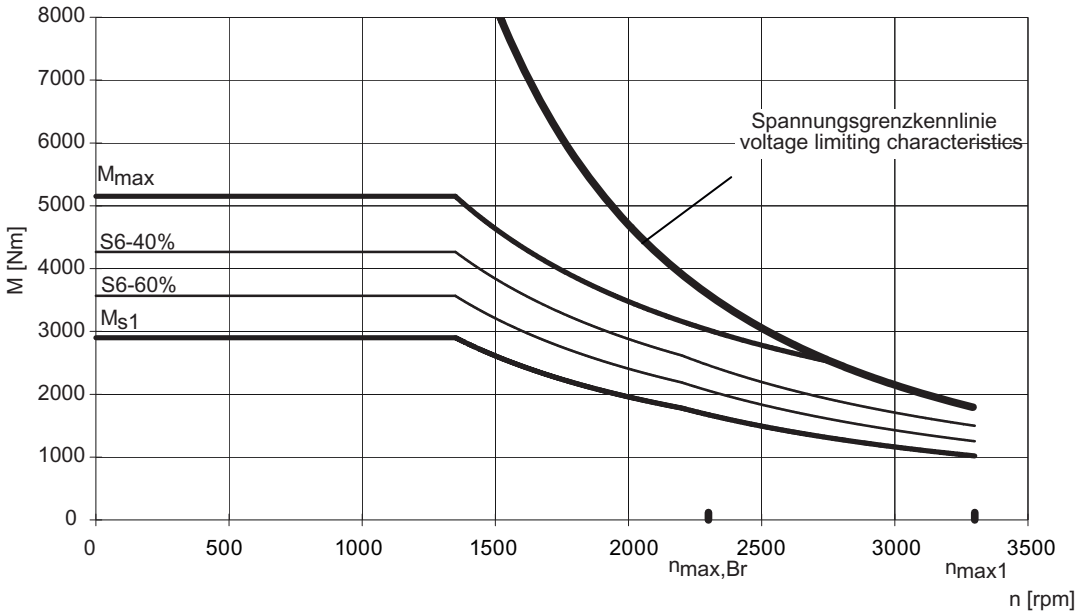
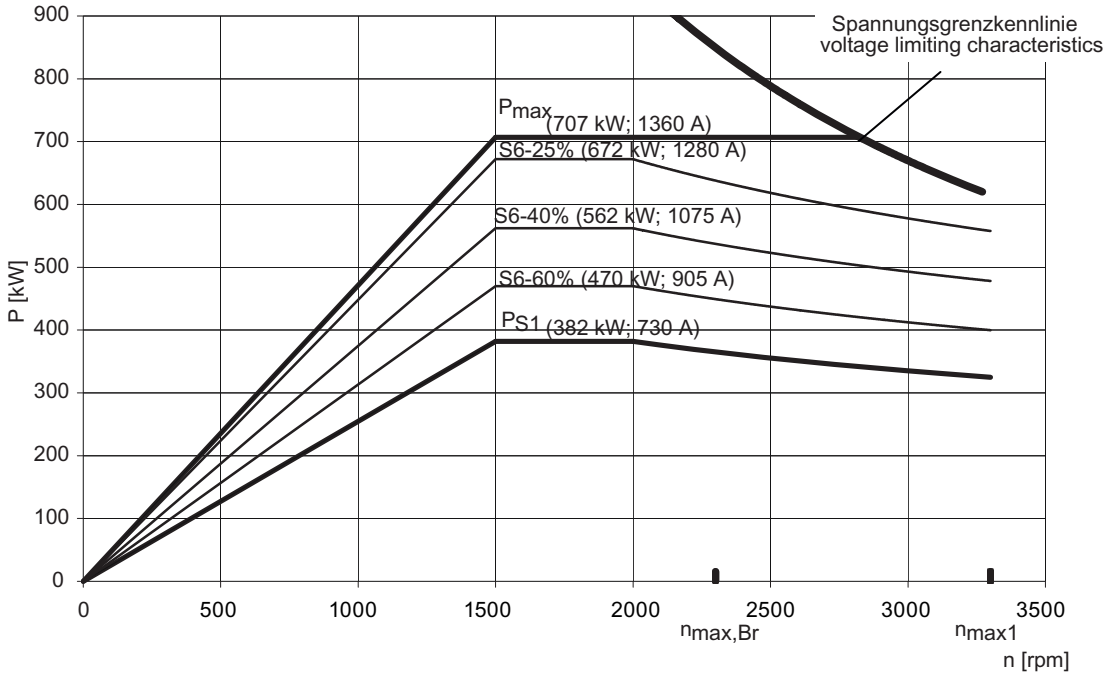



Tabella 4- 391 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8286-□□F4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 382 | 2432 | 730 | 3300 | - | - | 2300 | 2000 | 4500 | 1360 | 2432 | 730 |



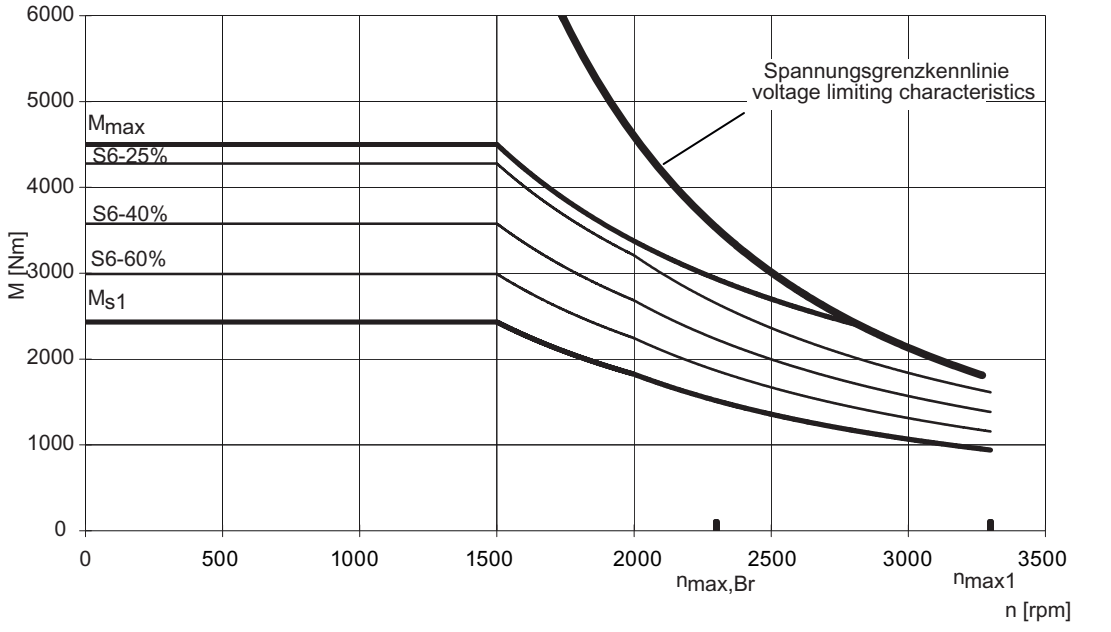
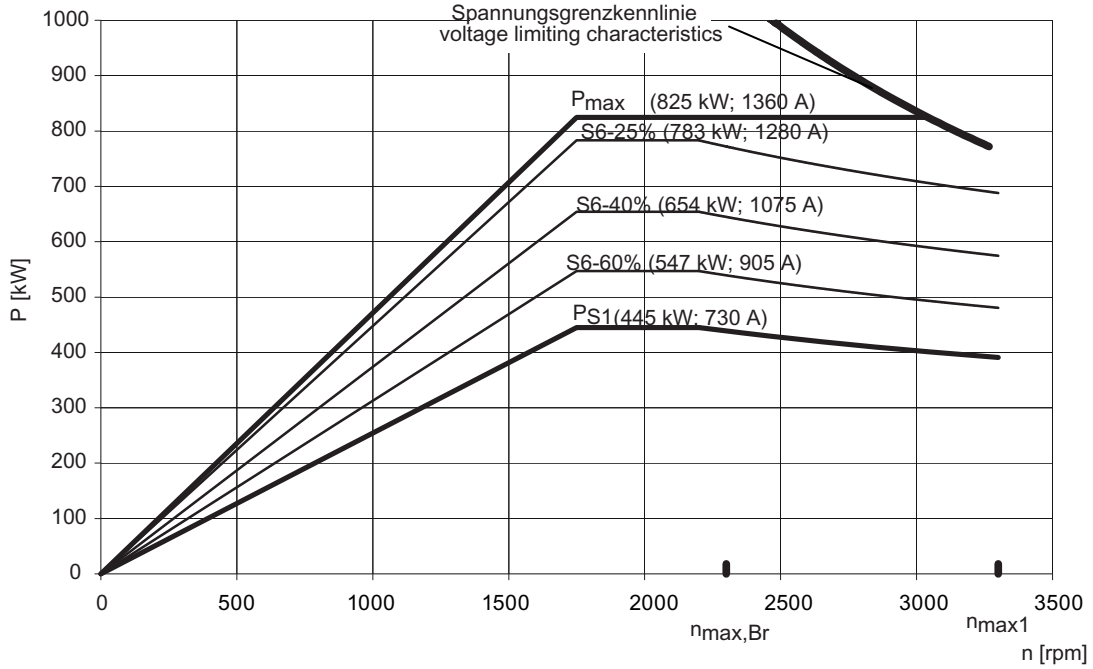



Tabella 4- 392 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8286-□□F4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 445 | 2429 | 730 | 3300 | - | - | 2300 | 2200 | 4500 | 1360 | 2429 | 730 |
| 1500 | 382 | 2432 | 730 | | | | | 3300 | | | | |



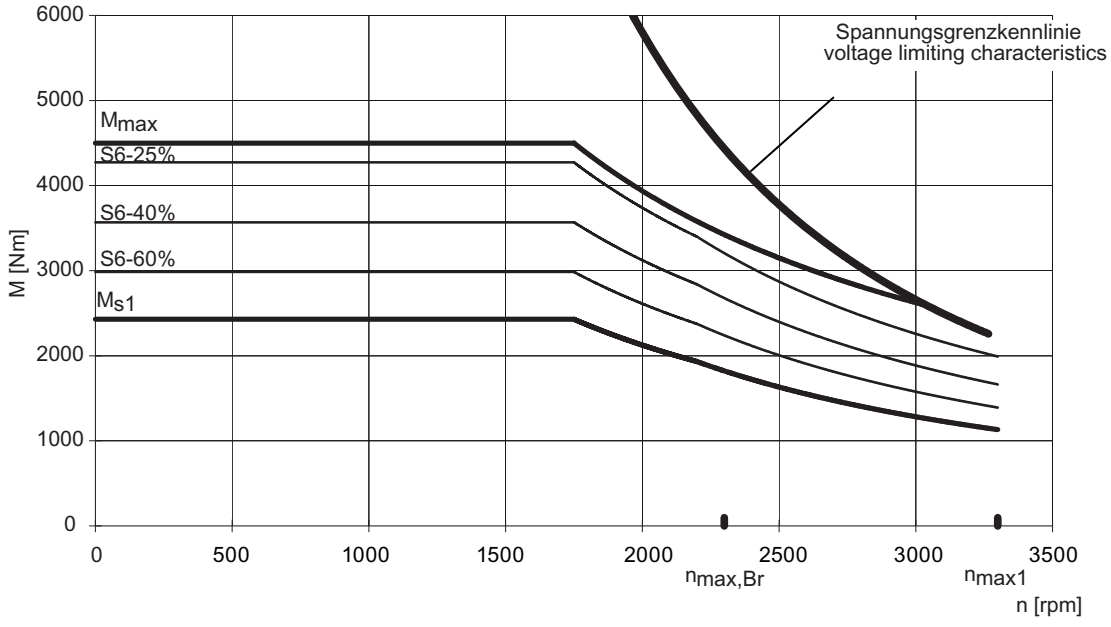
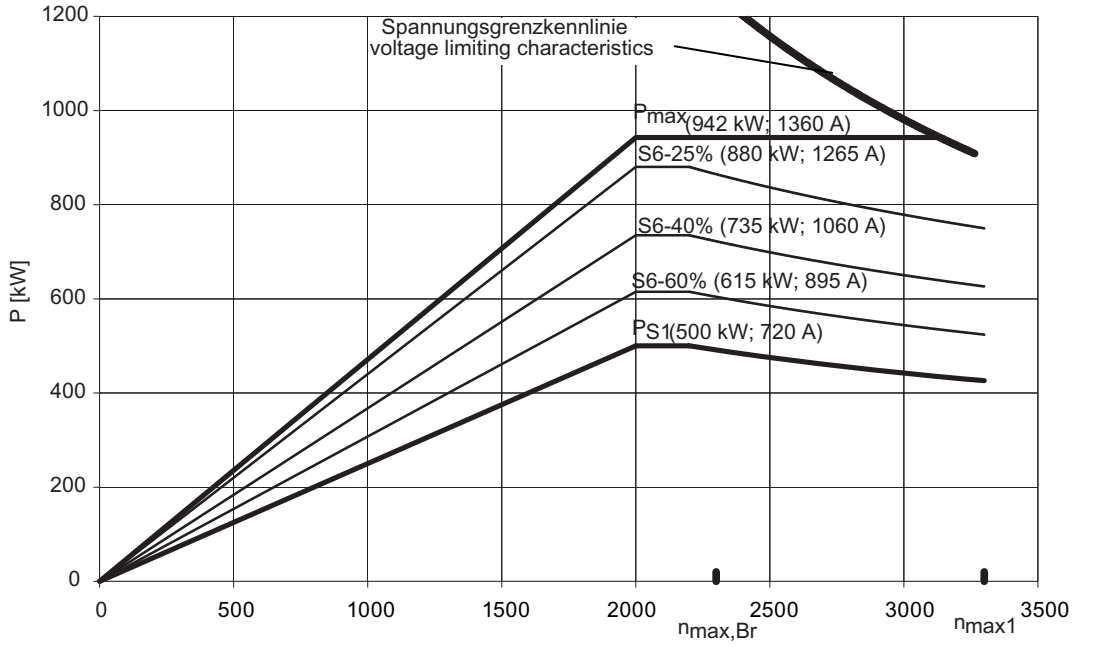



Tabella 4- 393 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8286-□□F4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 500 | 2387 | 720 | 3300 | - | - | 2300 | 2200 | 4500 | 1360 | 2387 | 720 |



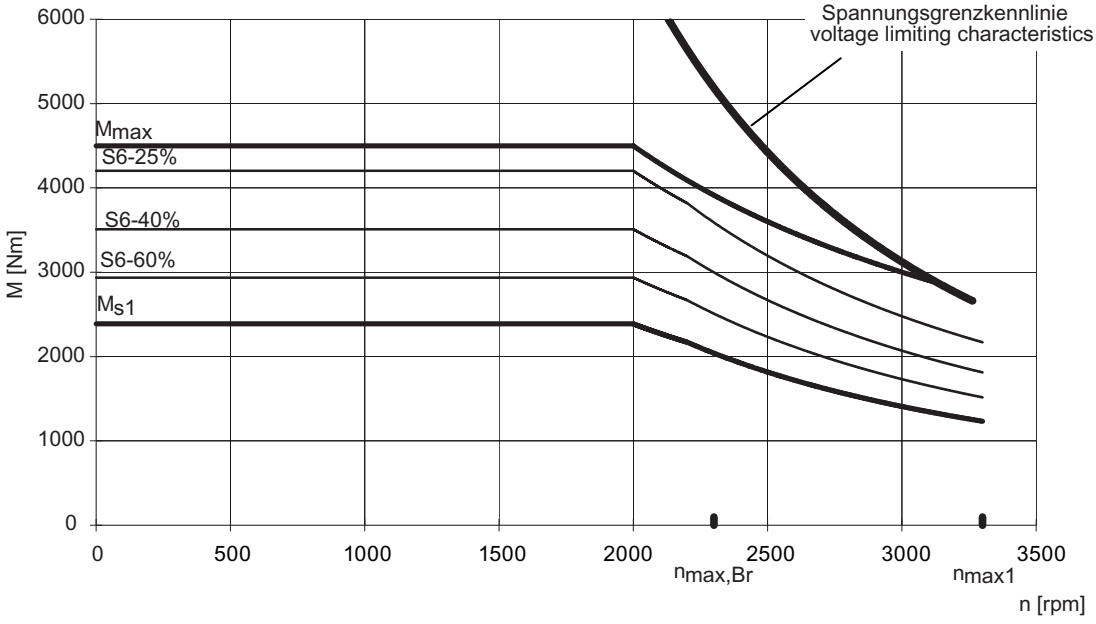
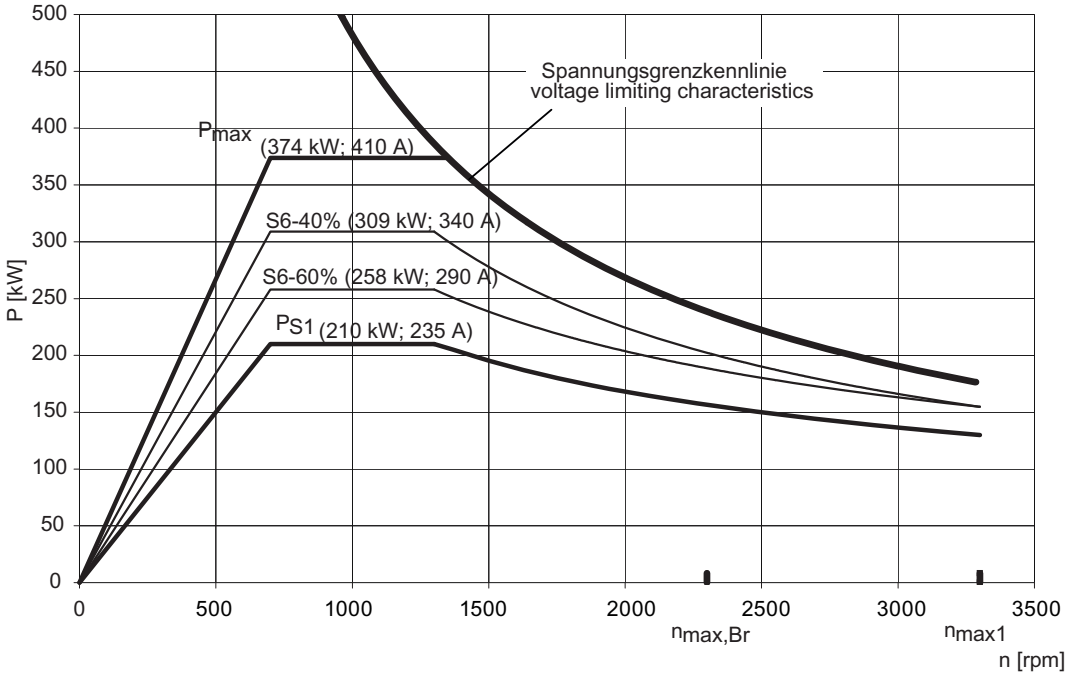



Tabella 4- 394 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8286-□□K4□ , (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 210 | 2865 | 235 | 3300 | - | - | 2300 | 1300 | 5100 | 410 | 2865 | 235 |



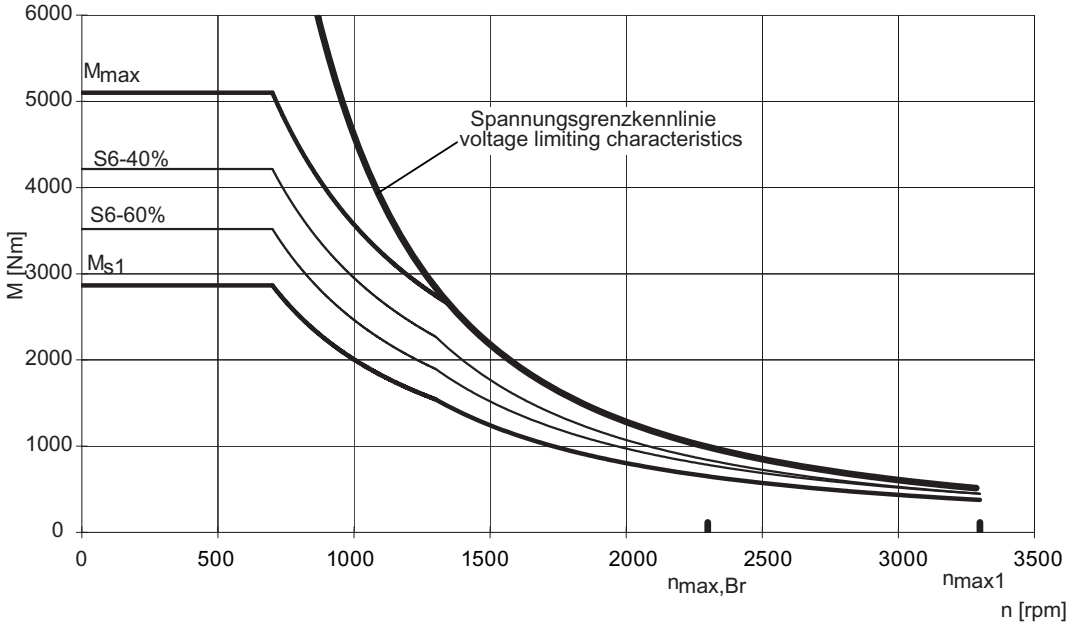
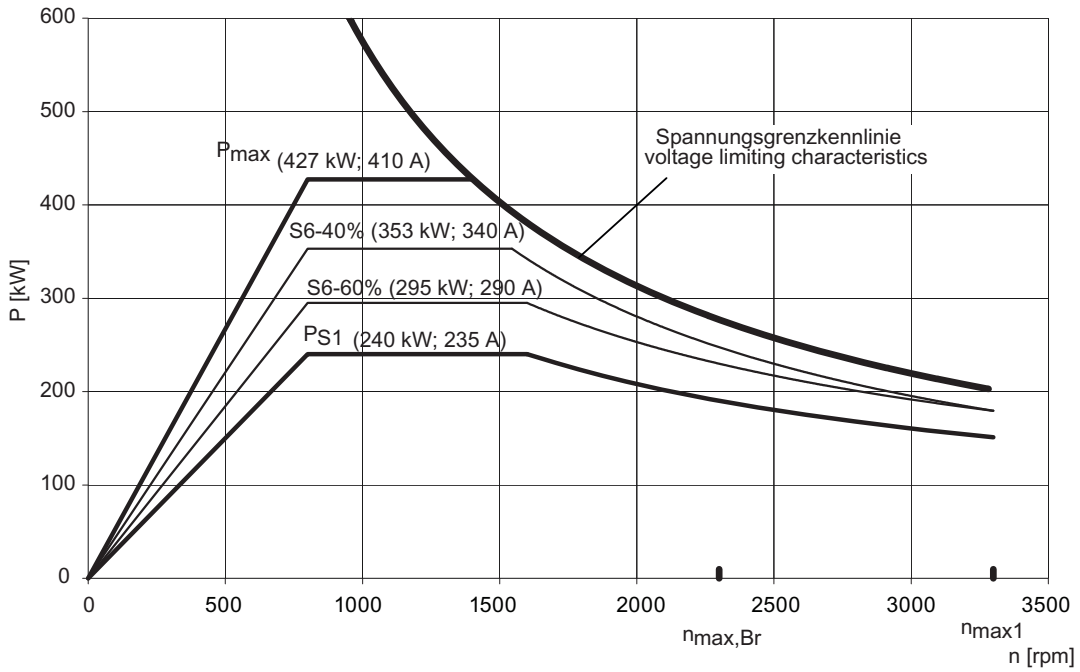



Tabella 4- 395 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8286-□□K4□ , (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 240 | 2865 | 235 | 3300 | - | - | 2300 | 1600 | 5100 | 410 | 2865 | 235 |
| 700 | 210 | 2865 | 235 | | | | | 2000 | | | | |



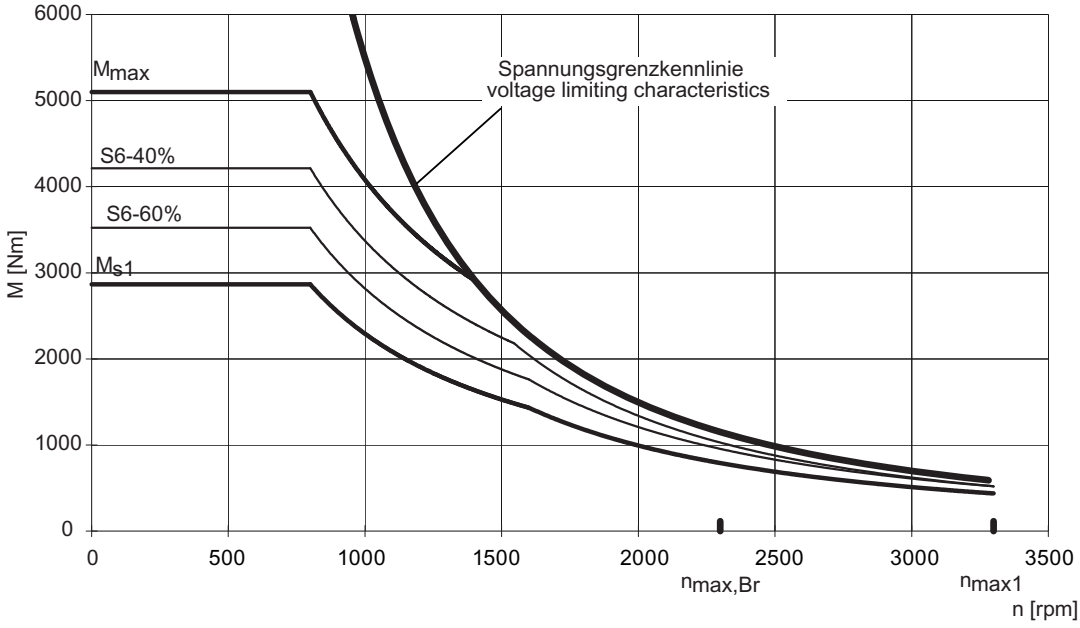
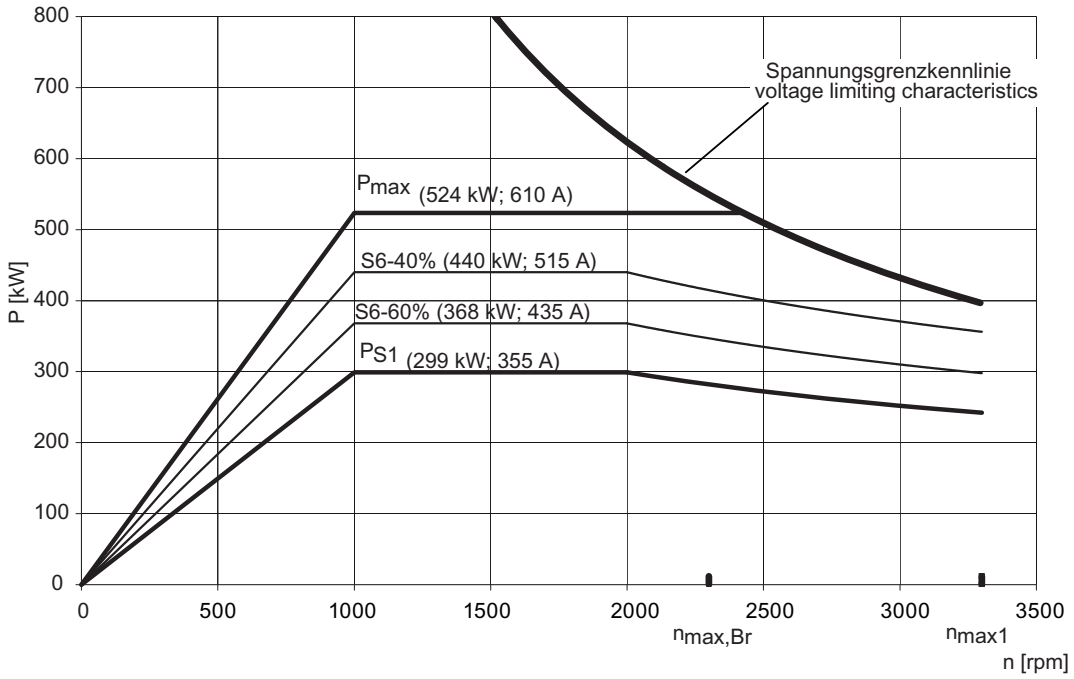



Tabella 4- 396 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8286-□□U4□ , (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 299 | 2855 | 355 | 3300 | - | - | 2300 | 2000 | 5000 | 610 | 2855 | 355 |



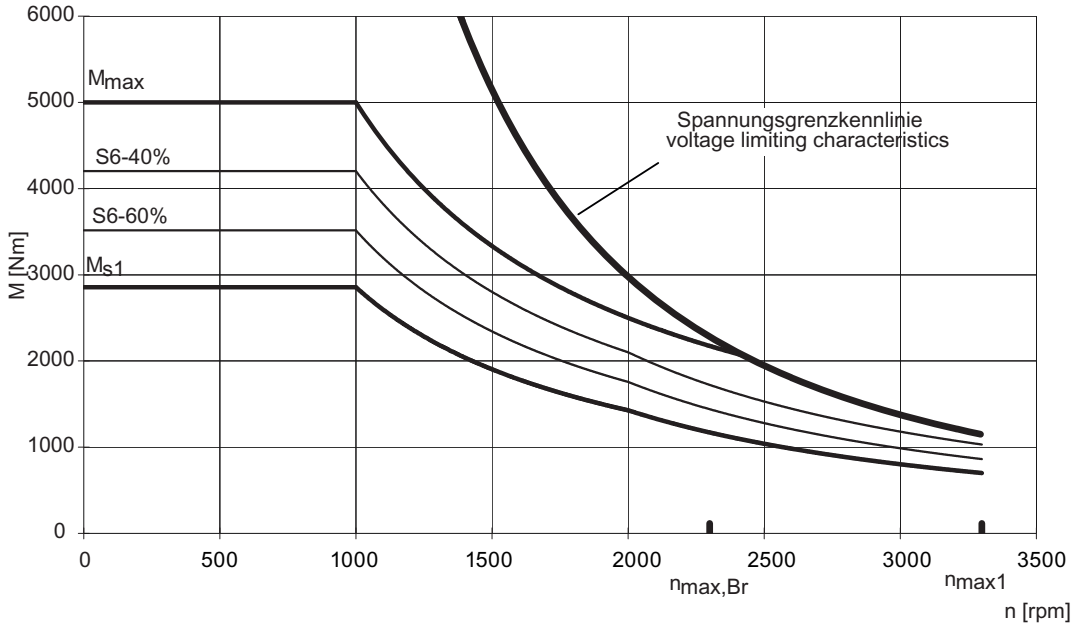
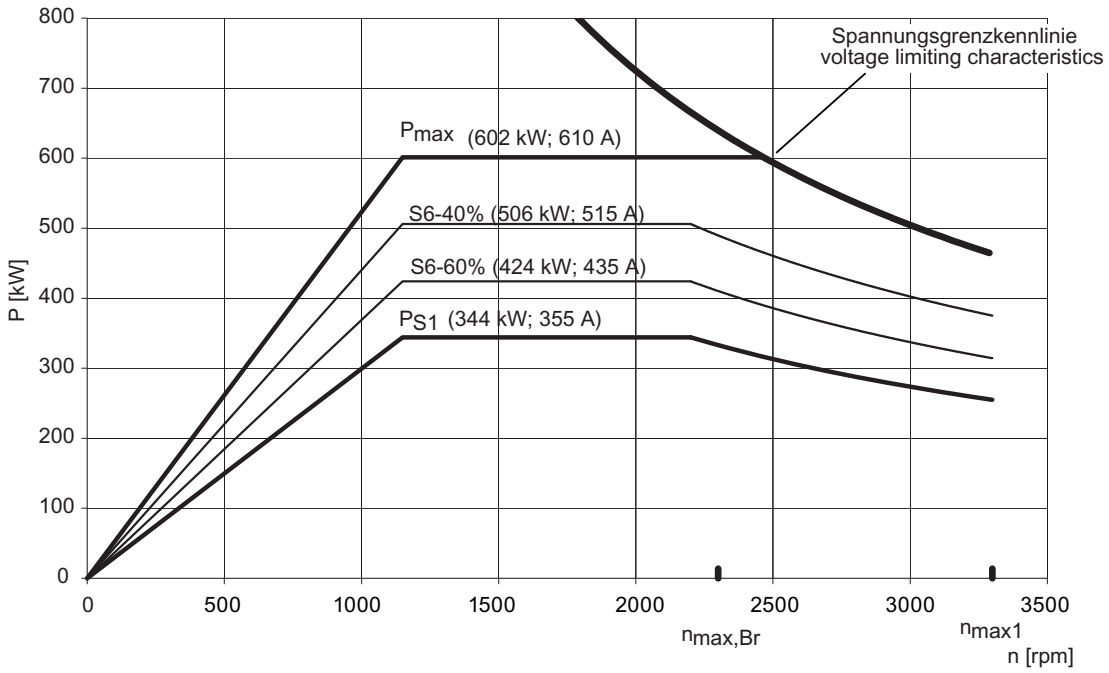



Tabella 4- 397 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8286-□□U4□ , (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 344 | 2860 | 355 | 3300 | - | - | 2300 | 2200 | 5000 | 610 | 2860 | 355 |
| 1000 | 299 | 2855 | 355 | | | | | 2700 | | | | |



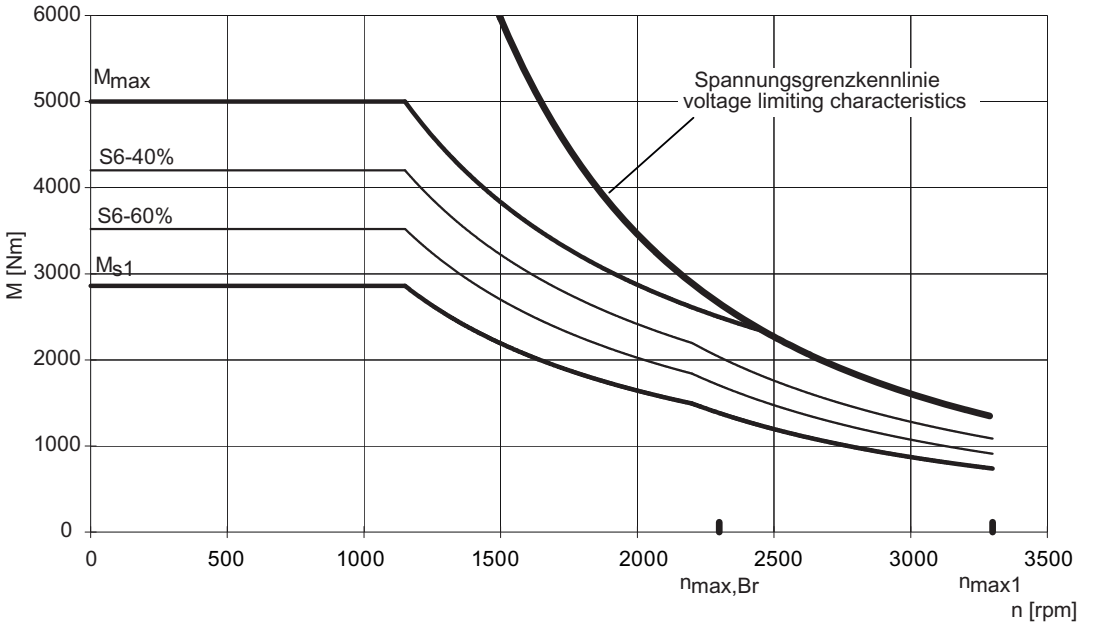
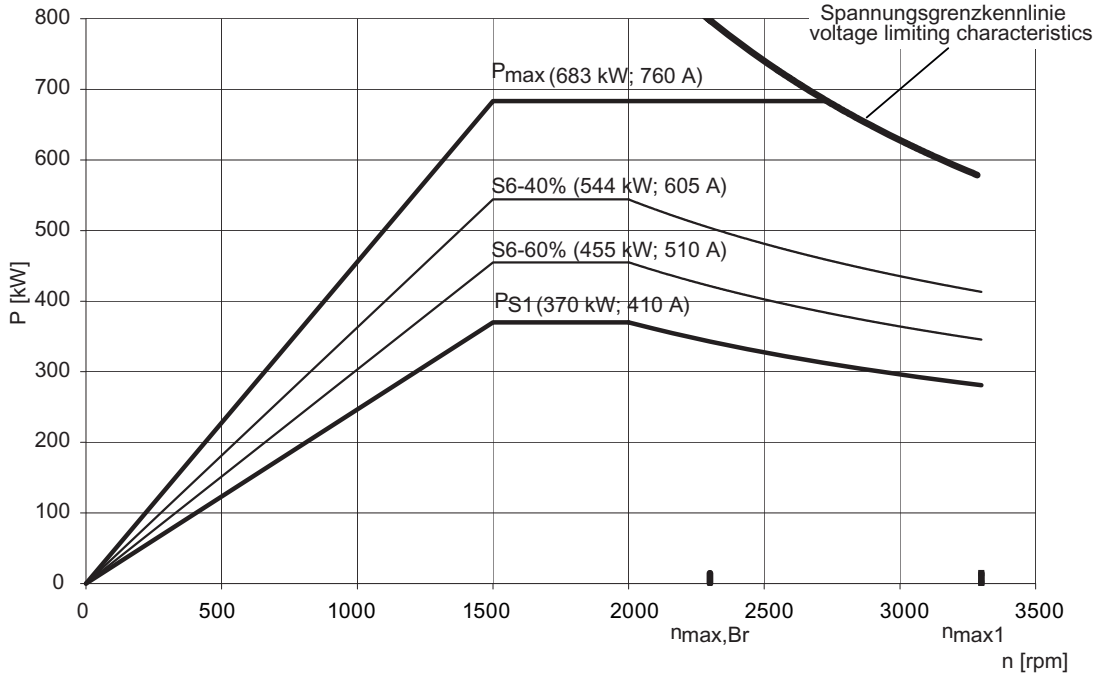



Tabella 4- 398 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8286-□□W4□ , (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 370 | 2356 | 410 | 3300 | - | - | 2300 | 2000 | 4350 | 760 | 2356 | 410 |



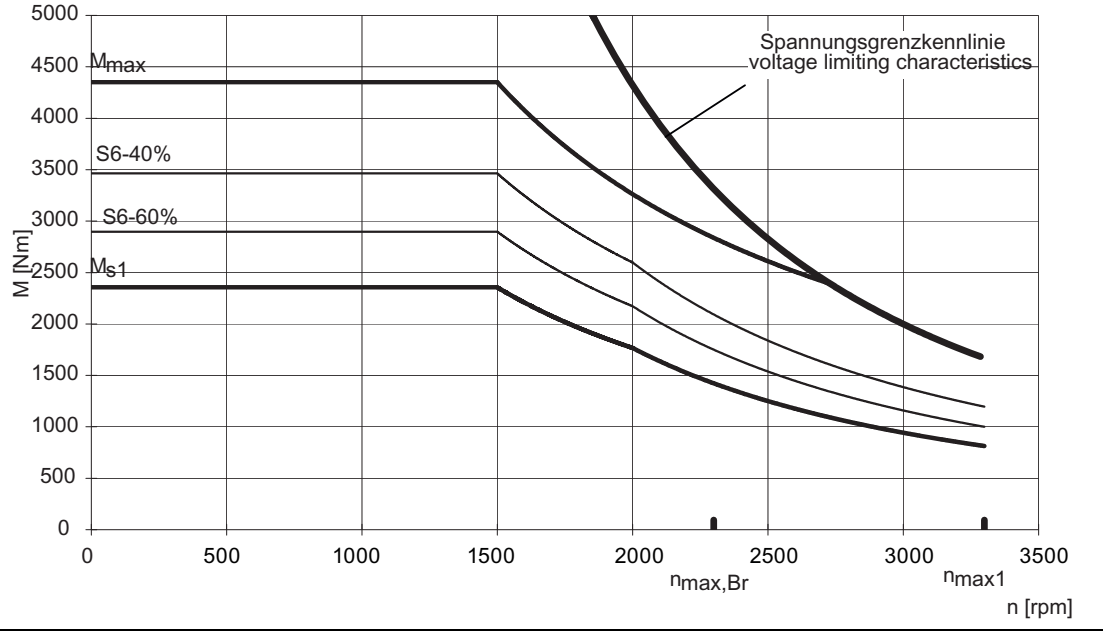
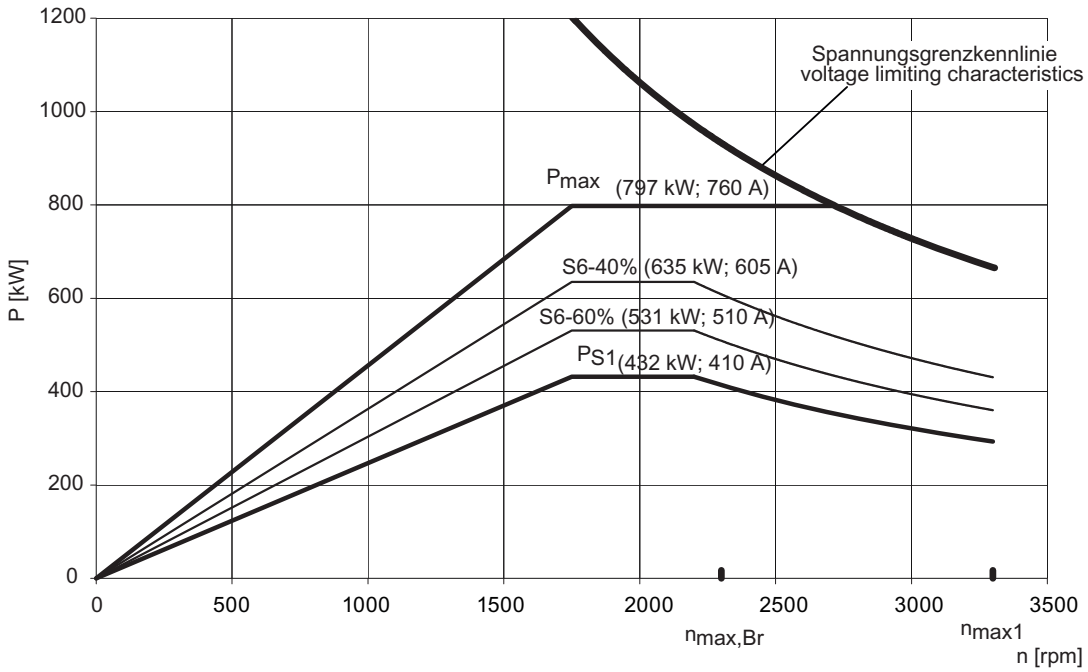



Tabella 4- 399 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8286-□□W4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 432 | 2356 | 410 | 3300 | - | - | 2300 | 2200 | 4350 | 760 | 2356 | 410 |
| 1500 | 370 | 2356 | 410 | | | | | 2600 | | | | |



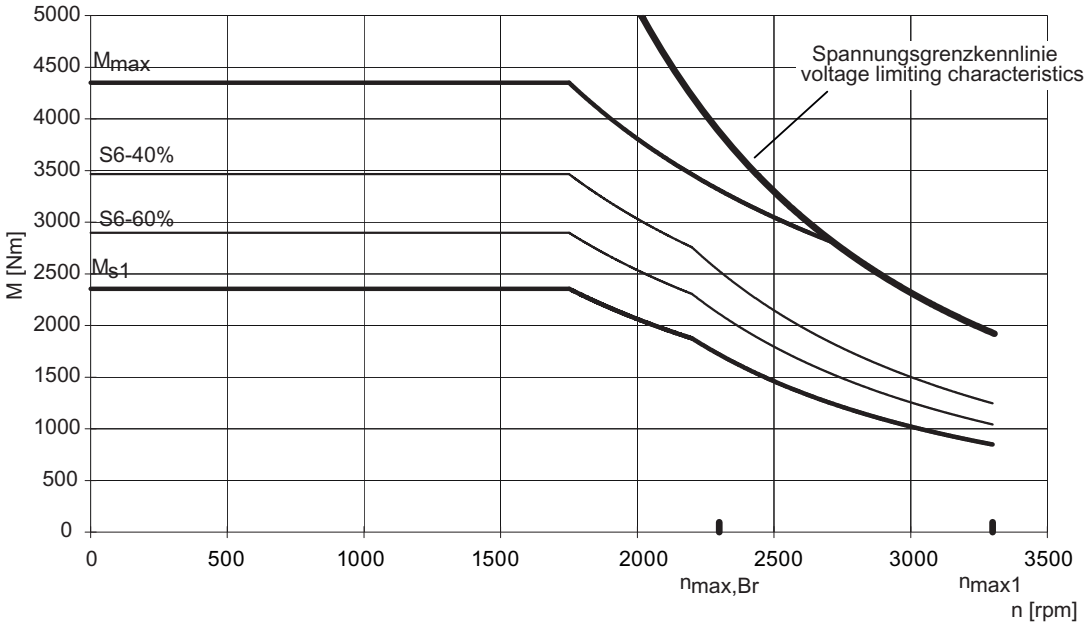
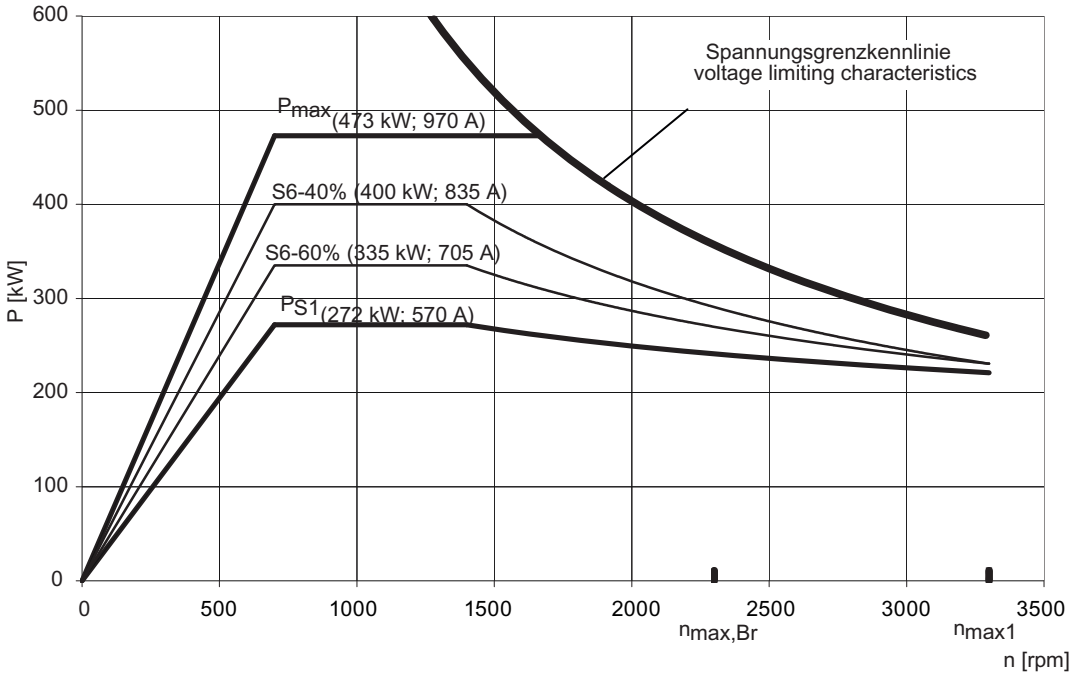



Tabella 4- 400 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8288-□□C4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 272 | 3711 | 570 | 3300 | - | - | 2300 | 1400 | 6450 | 970 | 3711 | 570 |



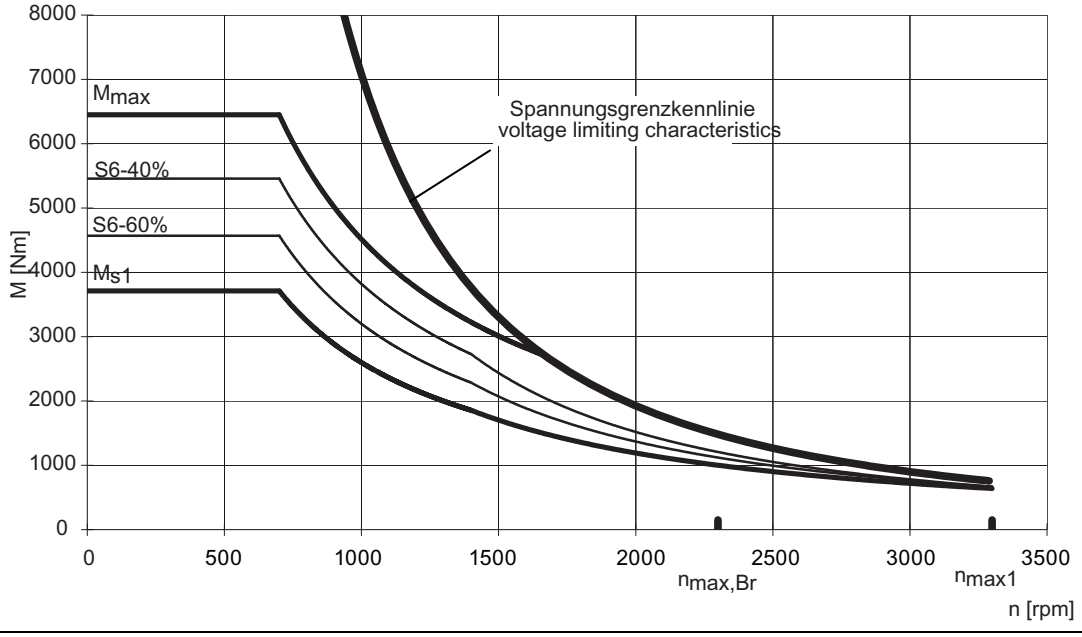
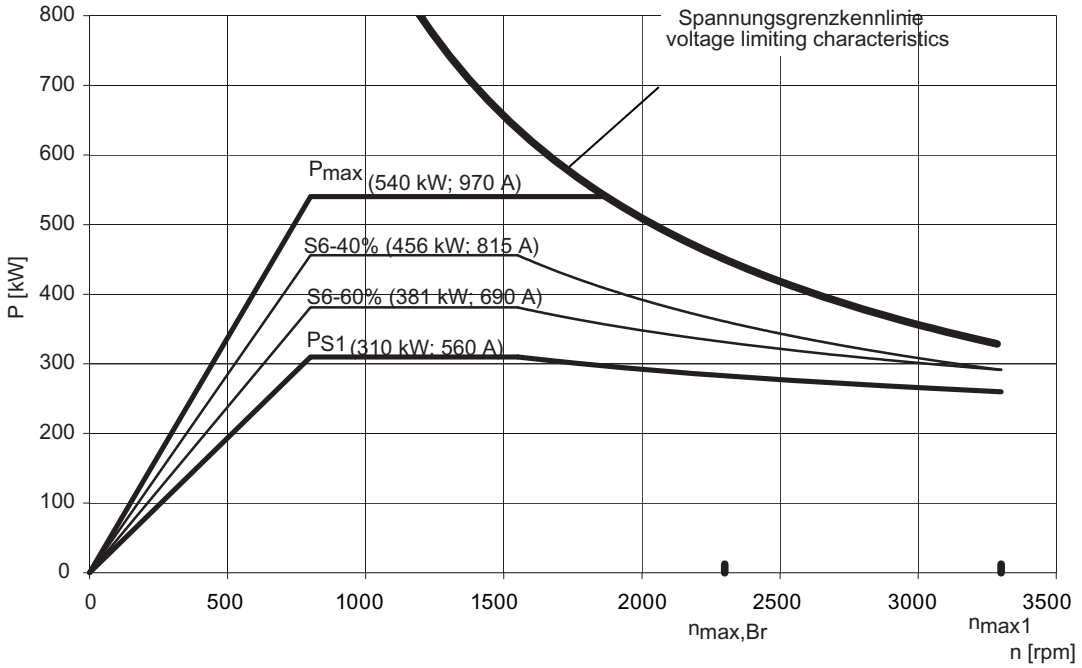



Tabella 4- 401 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8288-□□C4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 310 | 3701 | 560 | 3300 | - | - | 2300 | 1550 | 6450 | 970 | 3701 | 560 |
| 700 | 271 | 3701 | 560 | | | | | 2800 | | | | |



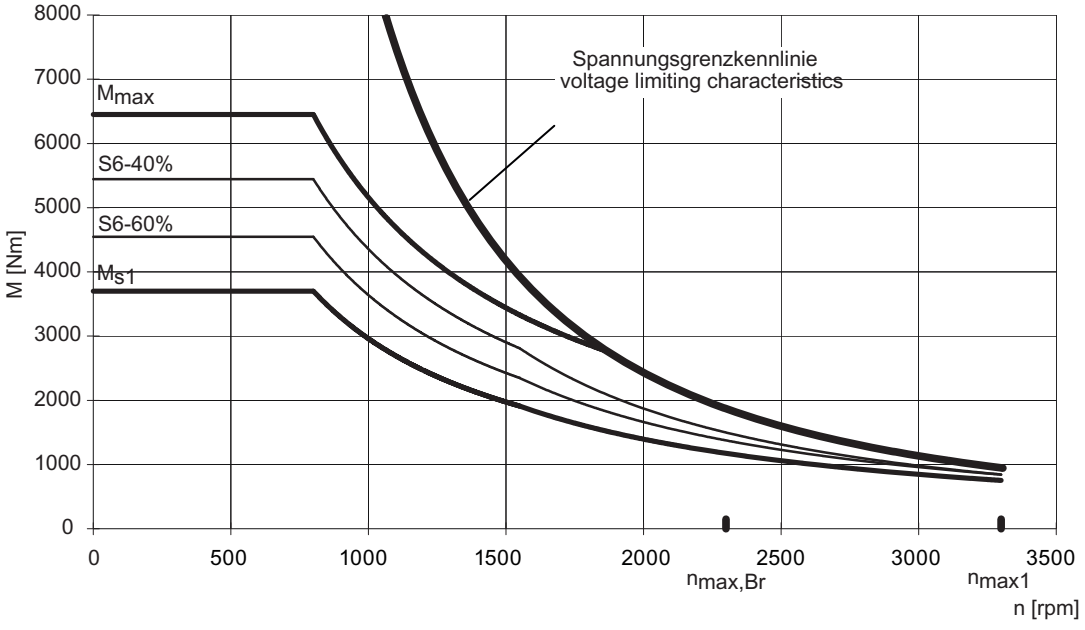
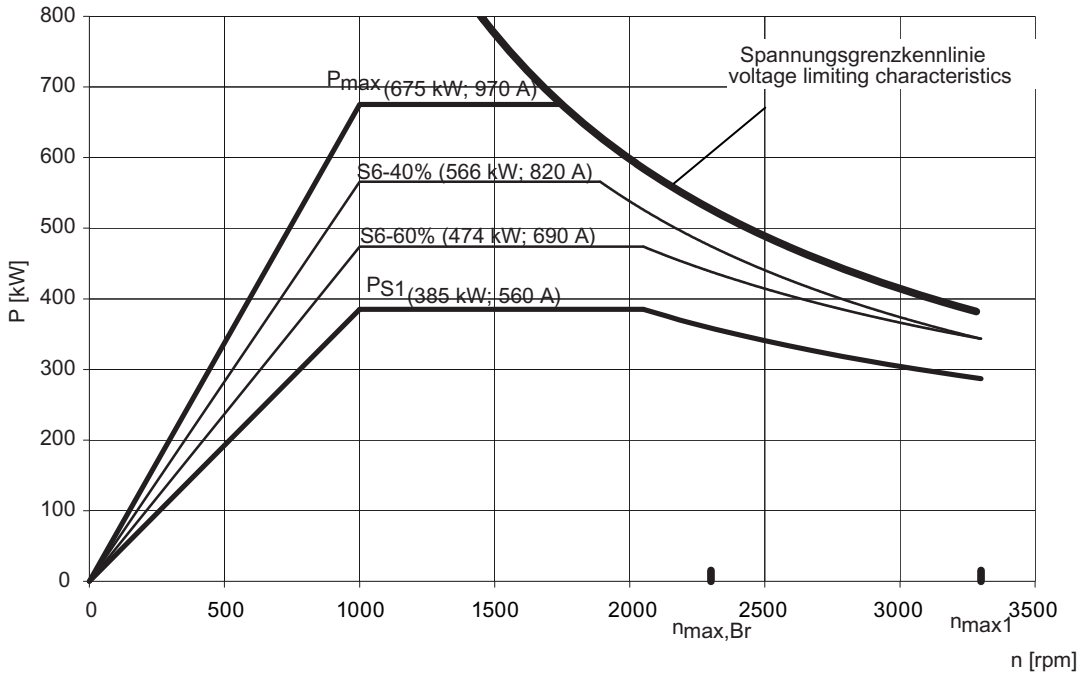



Tabella 4- 402 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8288-□□C4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 385 | 3677 | 560 | 3300 | - | - | 2300 | 2050 | 6450 | 970 | 3677 | 560 |



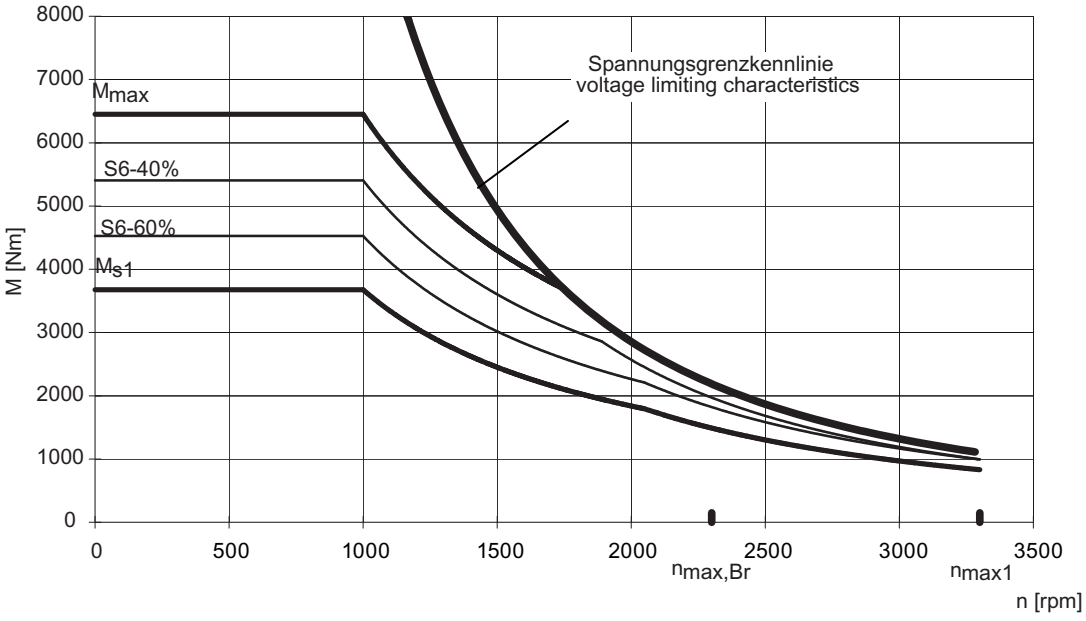
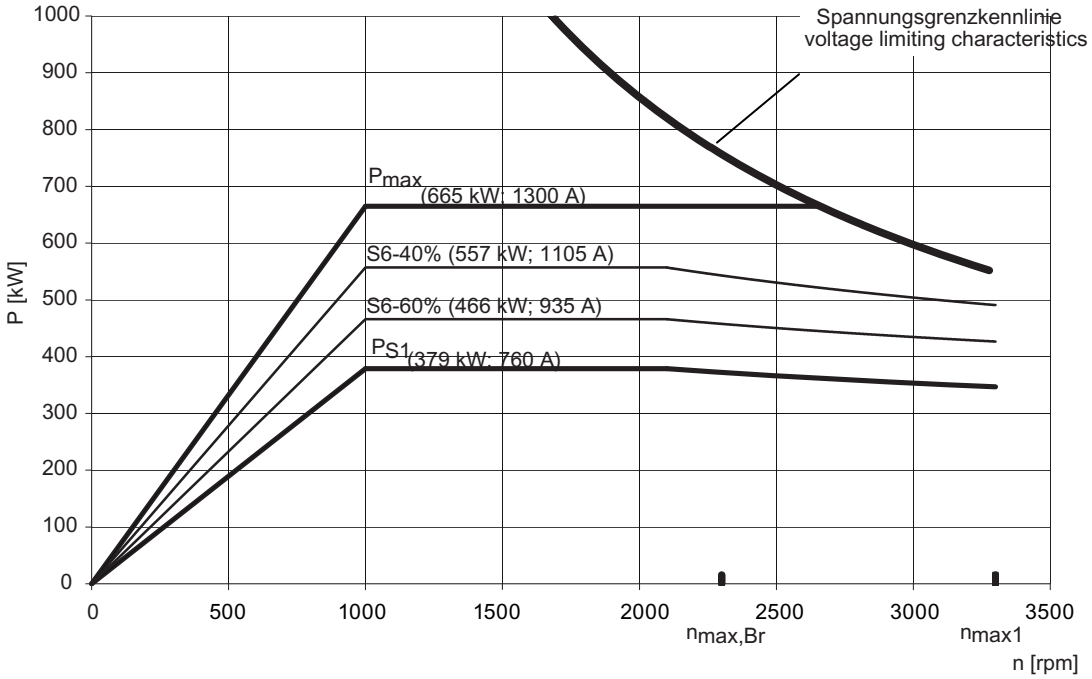



Tabella 4- 403 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8288-□□D4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 379 | 3619 | 760 | 3300 | - | - | 2300 | 2100 | 6350 | 1300 | 3619 | 760 |



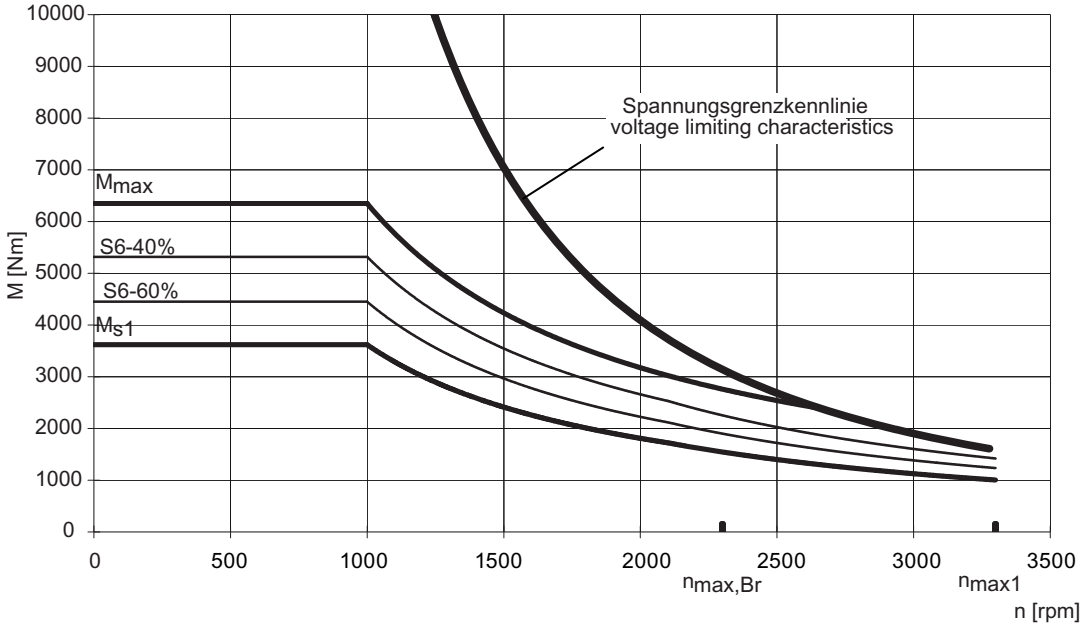
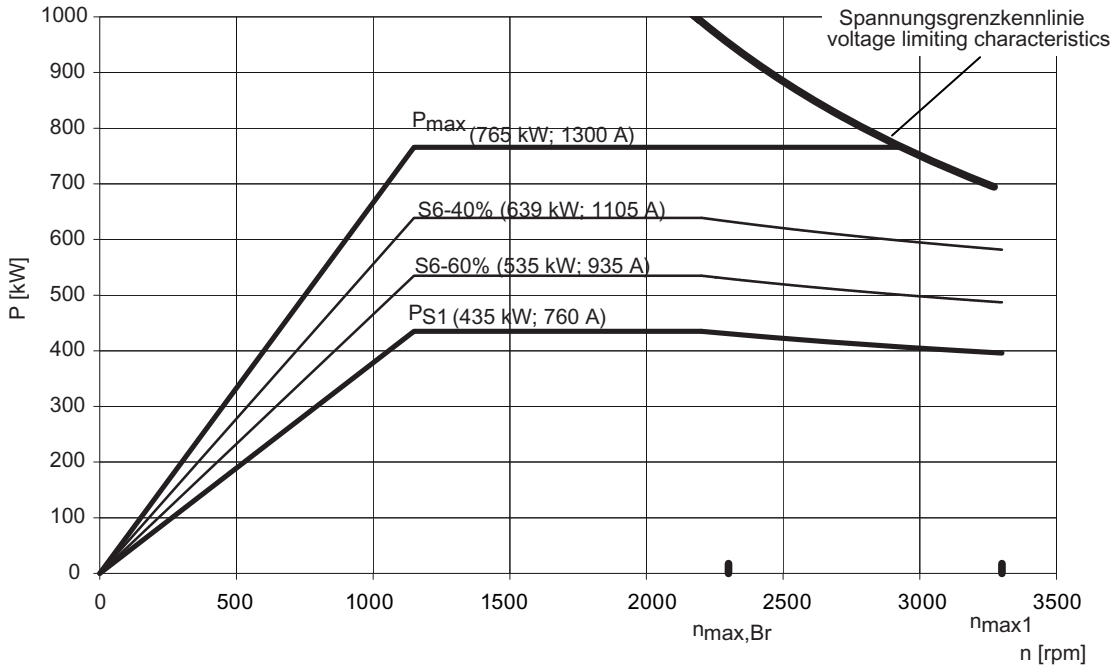



Tabella 4- 404 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8288-□□D4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 435 | 3607 | 760 | 3300 | - | - | 2300 | 2200 | 6350 | 1300 | 3607 | 760 |
| 1000 | 378 | 3607 | 760 | | | | | 3300 | | | | |



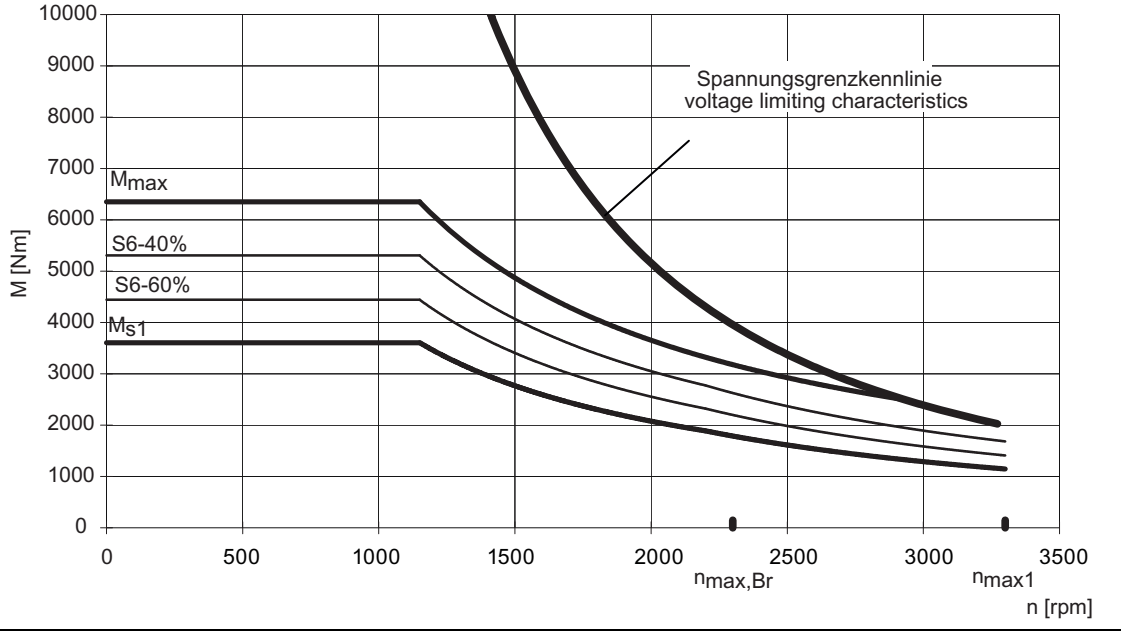
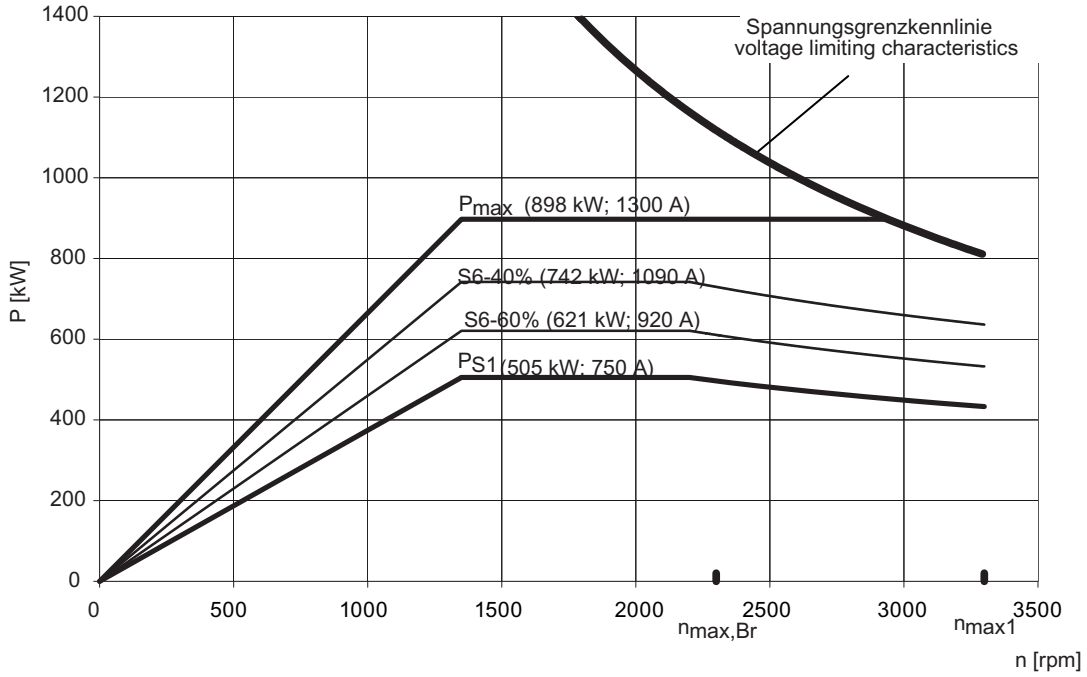



Tabella 4- 405 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8288-□□D4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 505 | 3573 | 750 | 3300 | - | - | 2300 | 2200 | 6350 | 1300 | 3573 | 750 |



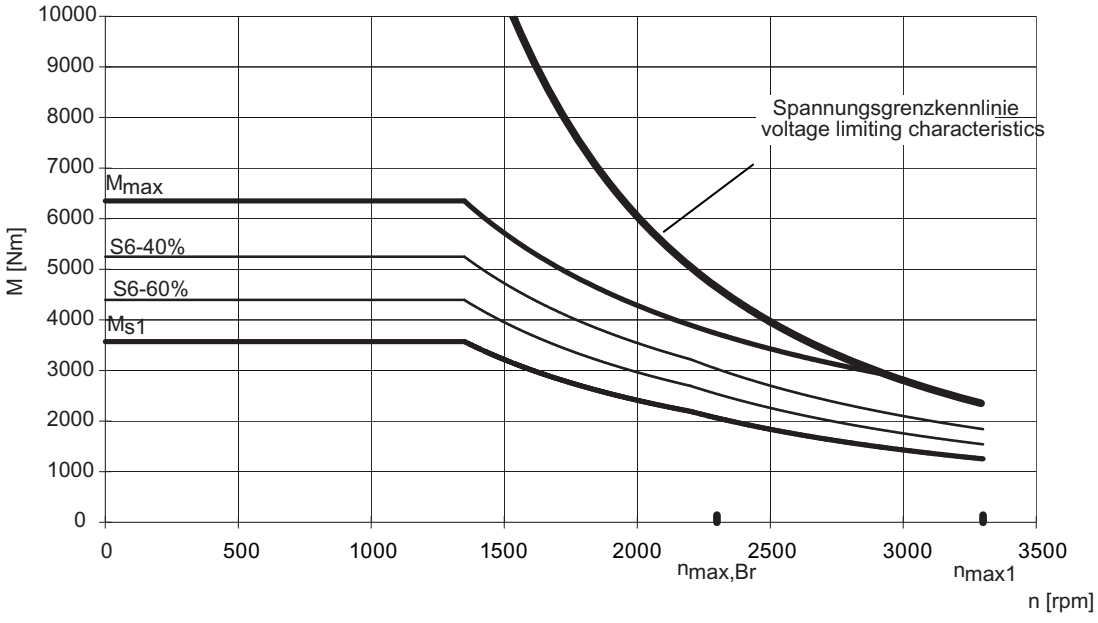
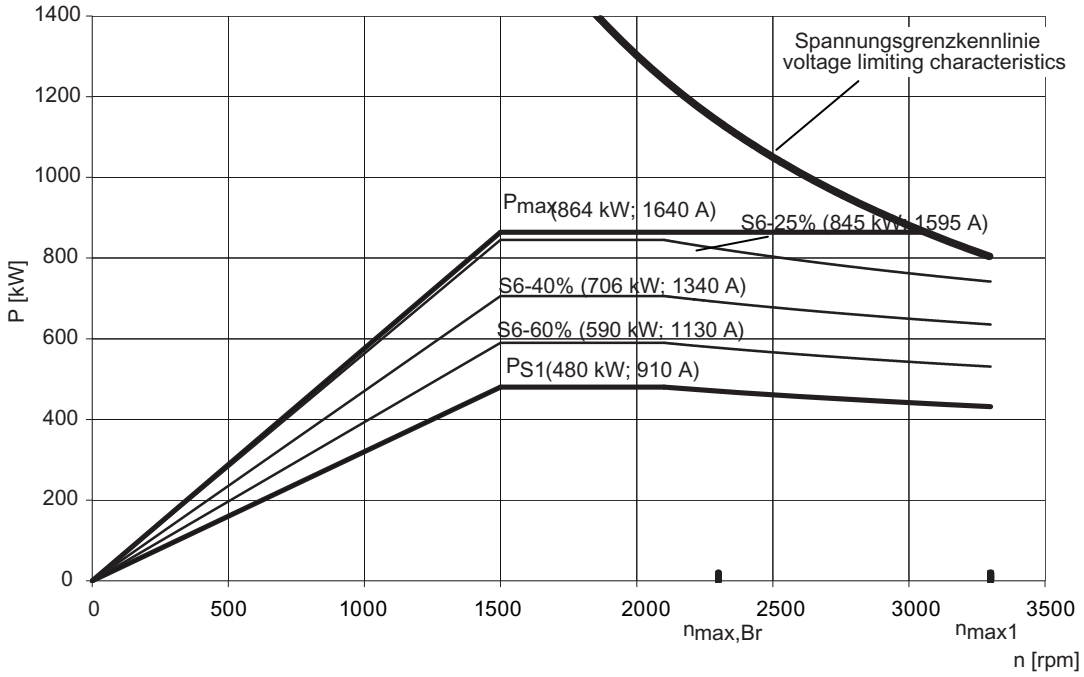



Tabella 4- 406 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8288-□□F4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 480 | 3056 | 910 | 3300 | - | - | 2300 | 2100 | 5500 | 1640 | 3056 | 910 |



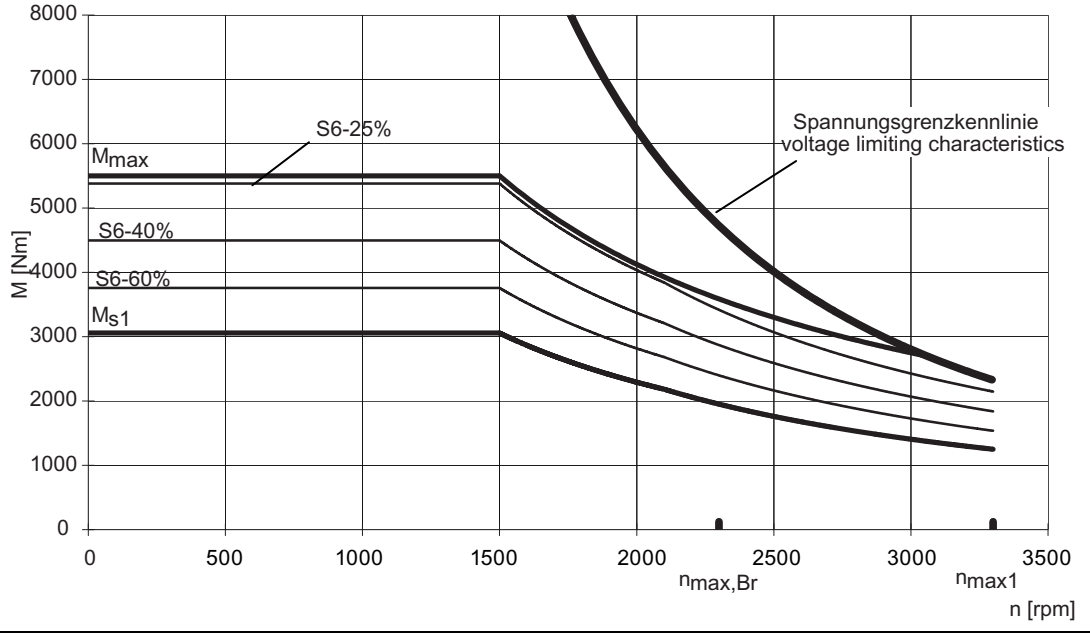
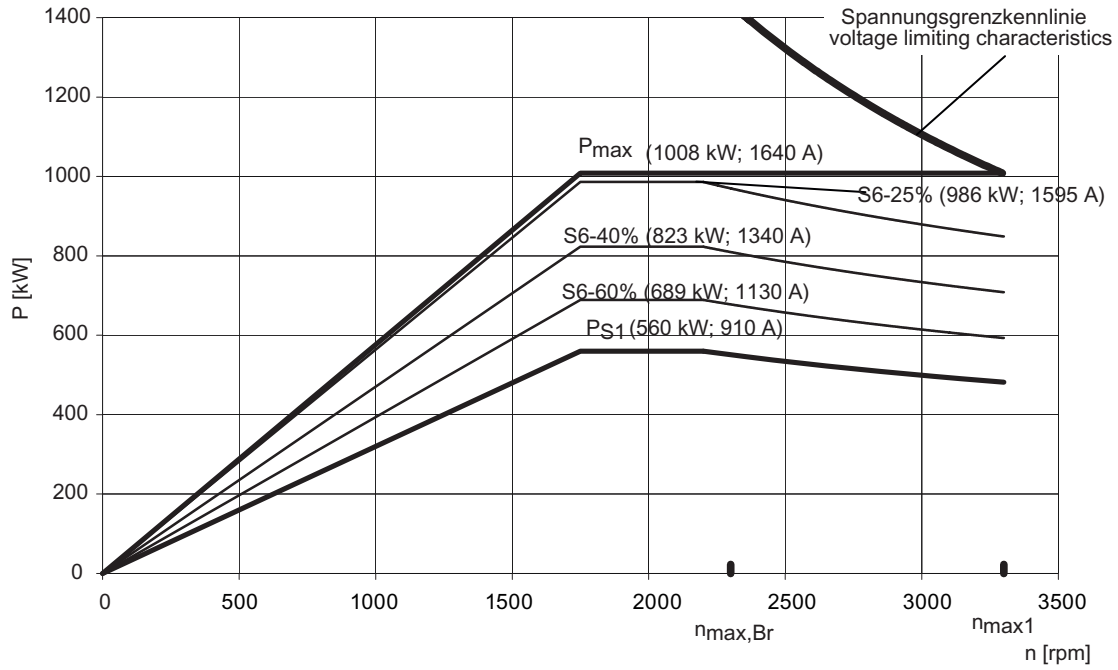



Tabella 4- 407 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8288-□□F4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 560 | 3055 | 910 | 3300 | - | - | 2300 | 2200 | 5500 | 1640 | 3055 | 910 |
| 1500 | 480 | 3055 | 910 | | | | | 3300 | | | | |



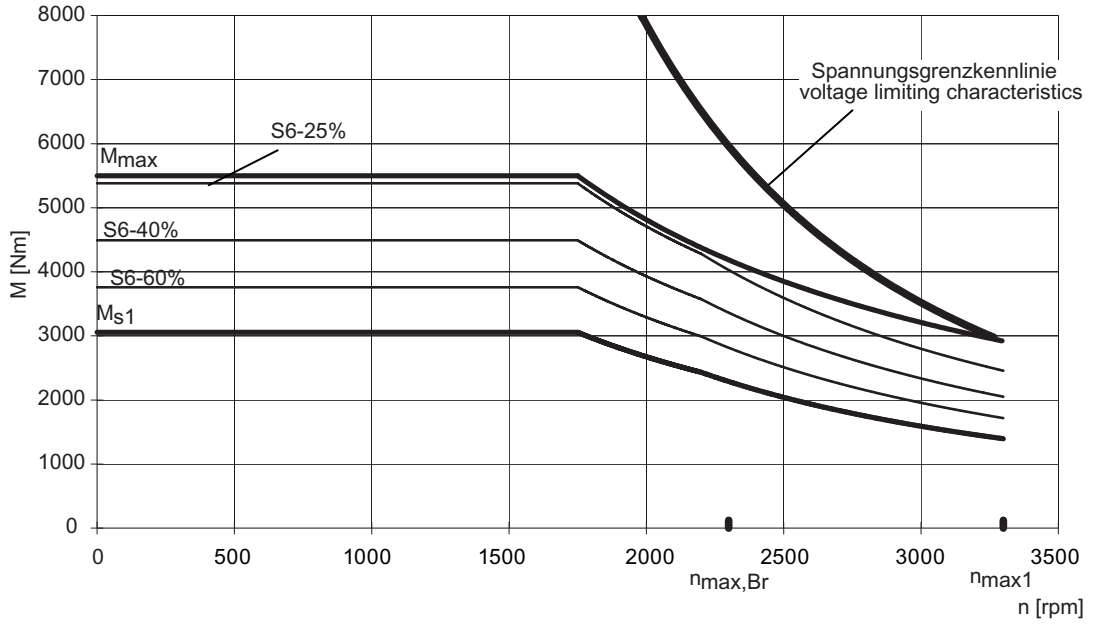
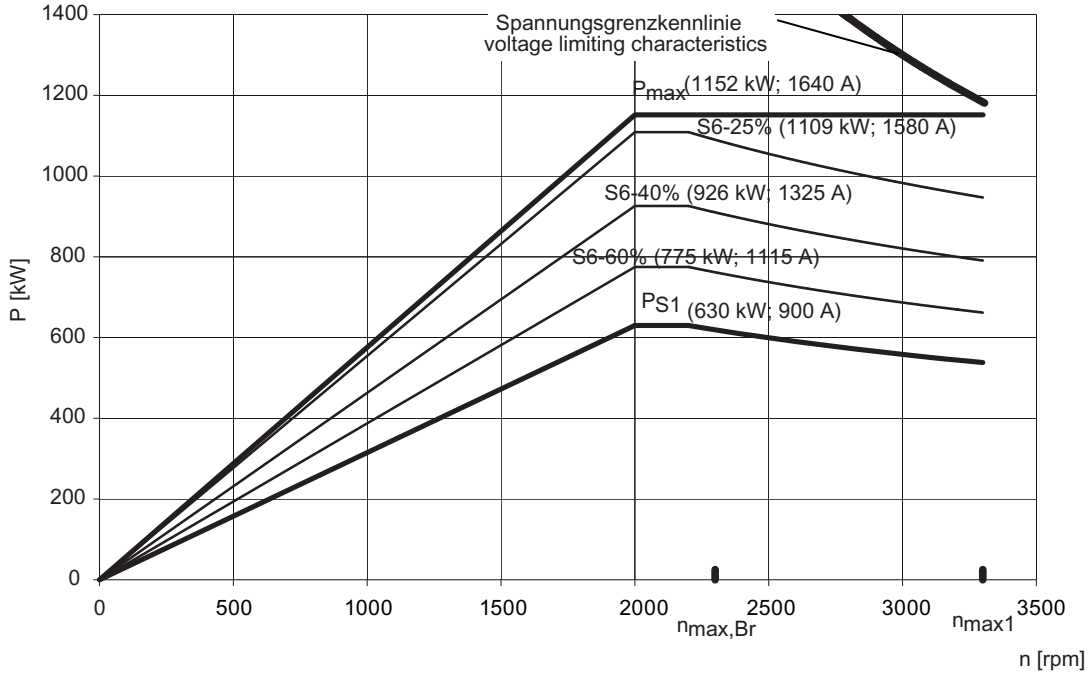



Tabella 4- 408 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8288-□□F4□, (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 630 | 3009 | 900 | 3300 | - | - | 2300 | 2200 | 5500 | 1640 | 3009 | 900 |



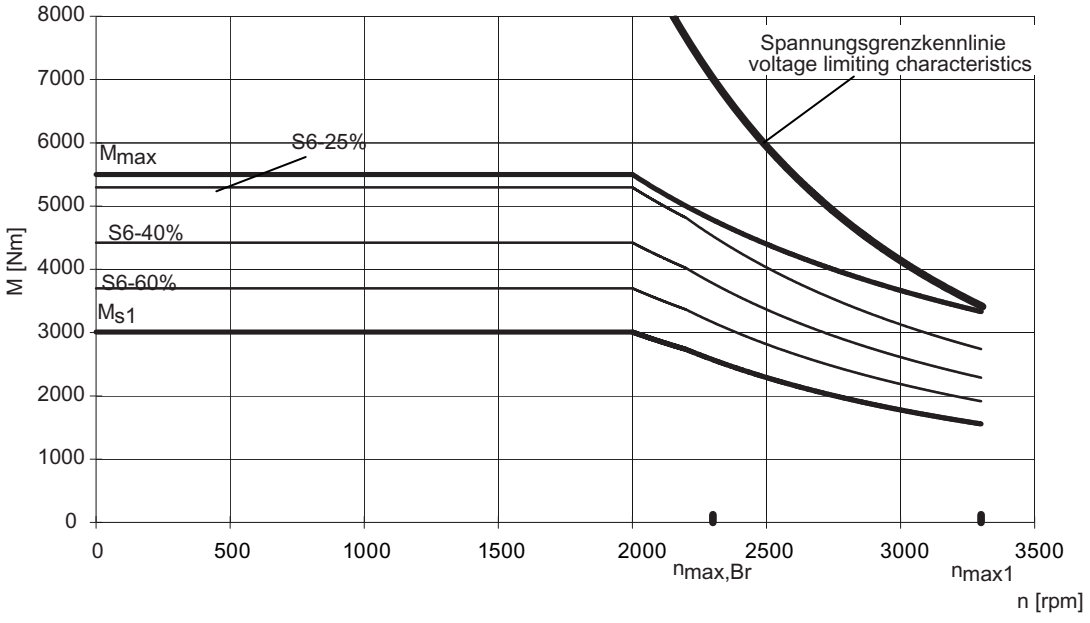
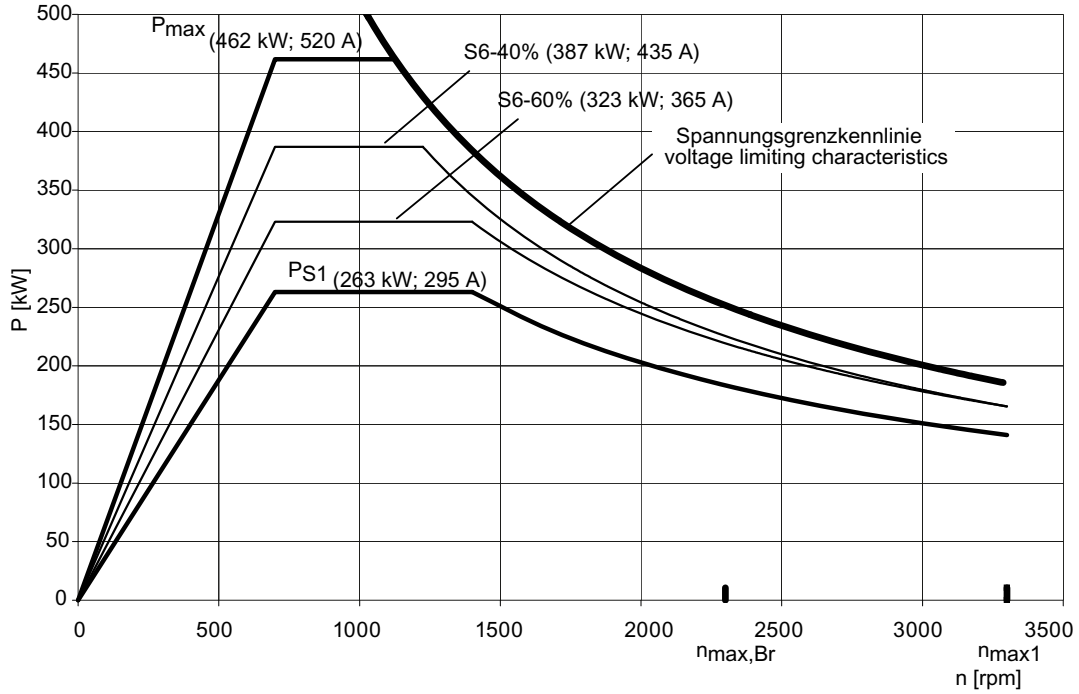



Tabella 4- 409 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8288-□□K4□ , (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 263 | 3588 | 295 | 3300 | - | - | 2300 | 1400 | 6300 | 520 | 3588 | 295 |



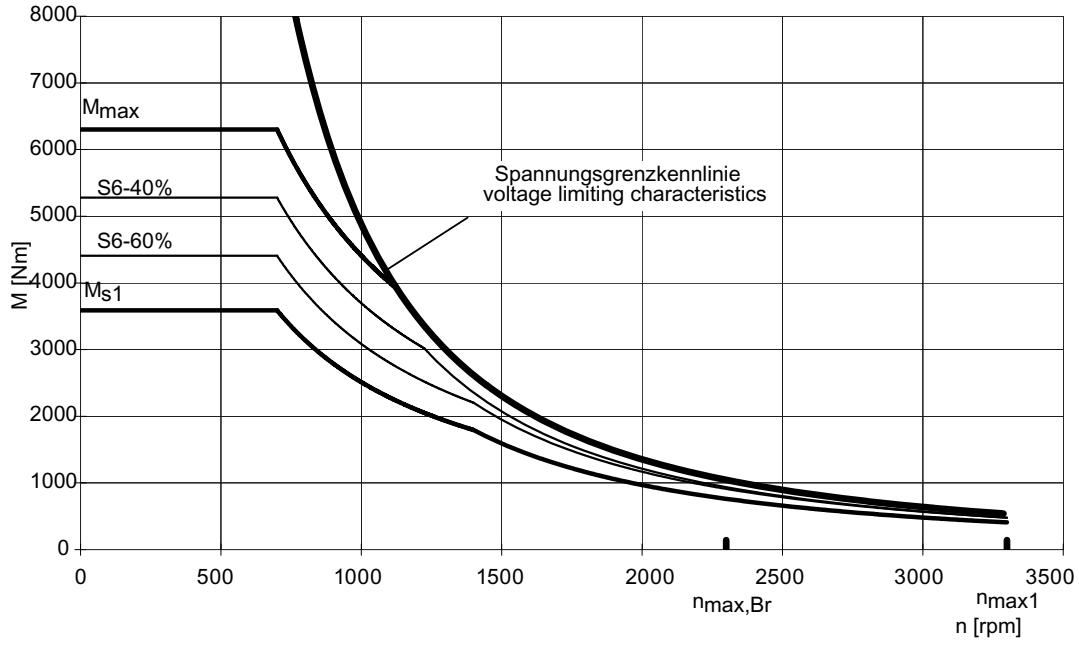
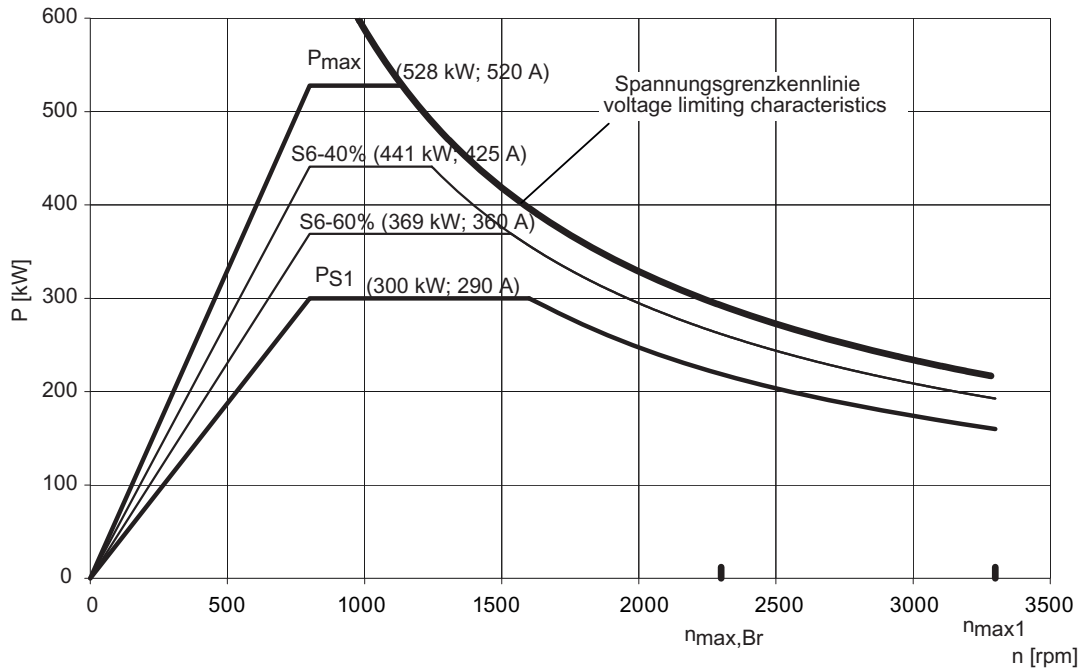



Tabella 4- 410 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8288-□□K4□ , (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 300 | 3581 | 290 | 3300 | - | - | 2300 | 1600 | 6300 | 520 | 3581 | 290 |
| 700 | 263 | 3581 | 290 | | | | | 1900 | | | | |



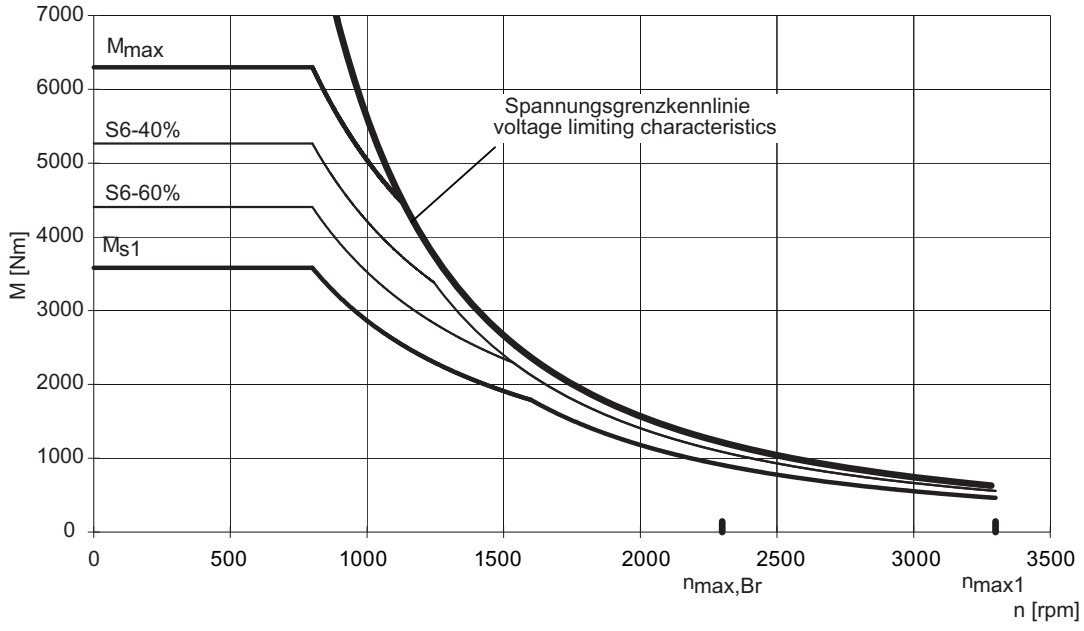
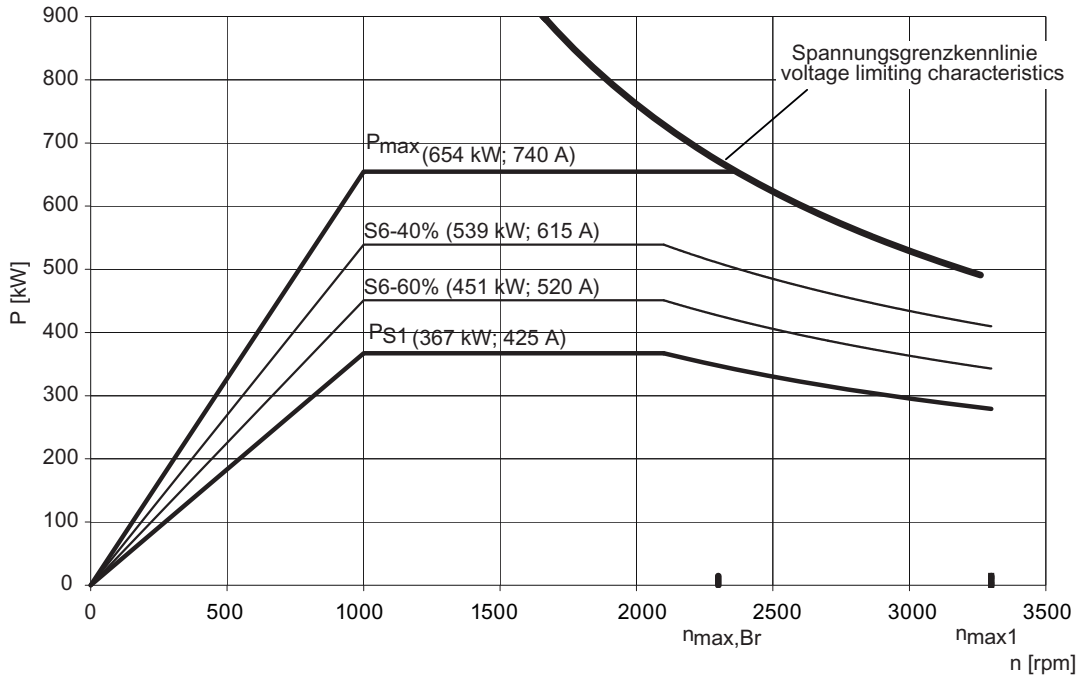



Tabella 4- 411 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8288-□□U4□ , (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 367 | 3505 | 425 | 3300 | - | - | 2300 | 2100 | 6250 | 740 | 3505 | 425 |



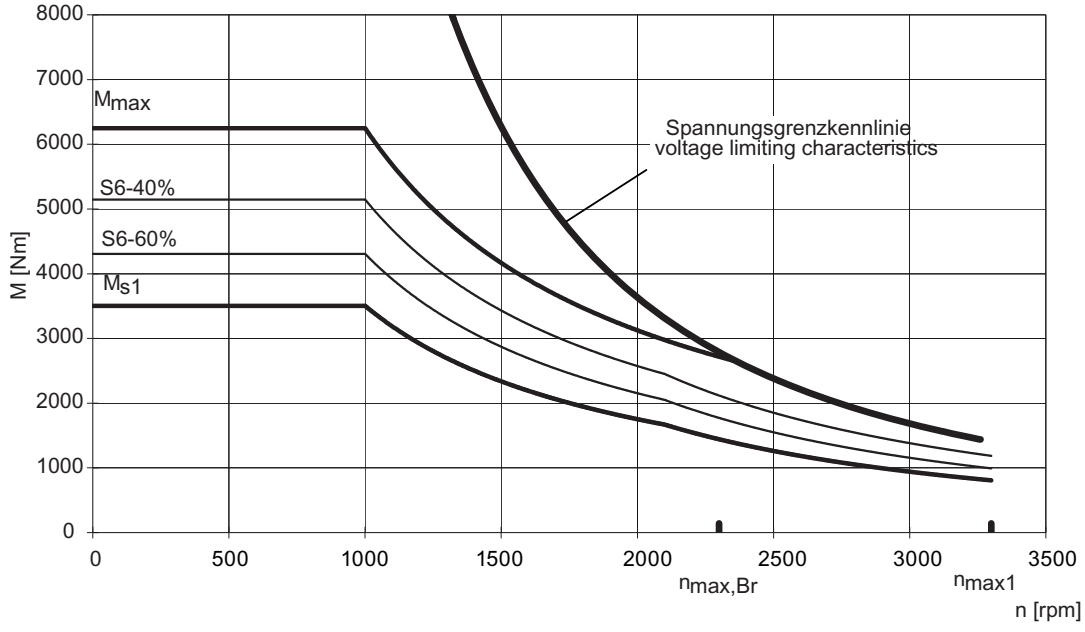
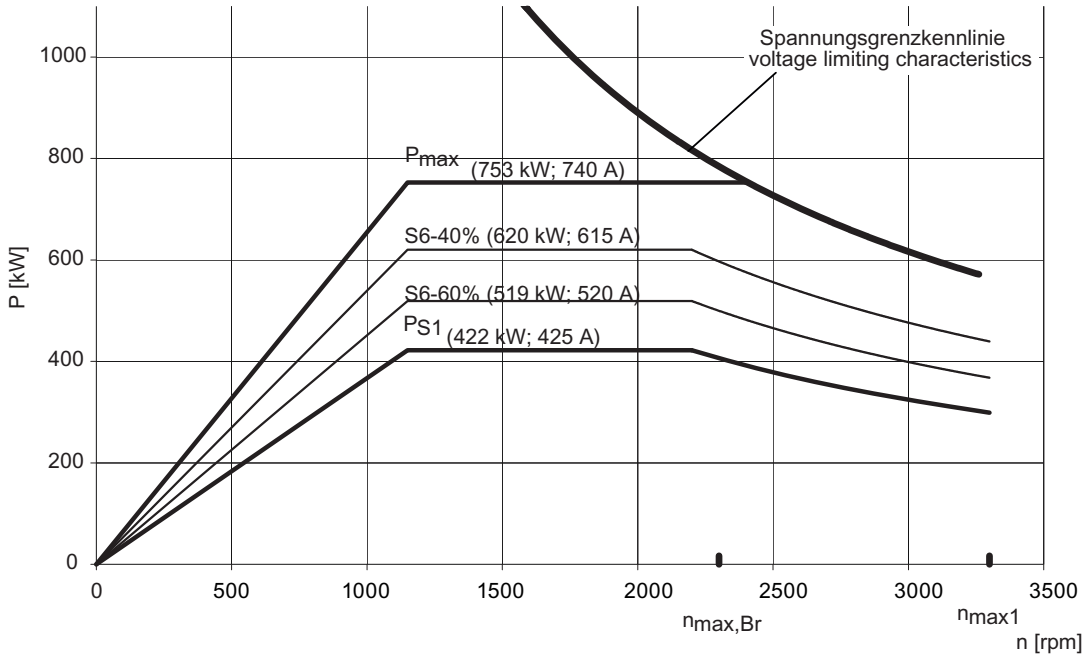



Tabella 4- 412 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8288-□□U4□ , (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 422 | 3504 | 425 | 3300 | - | - | 2300 | 2200 | 6250 | 740 | 3504 | 425 |
| 1000 | 367 | 3504 | 425 | | | | | 2600 | | | | |



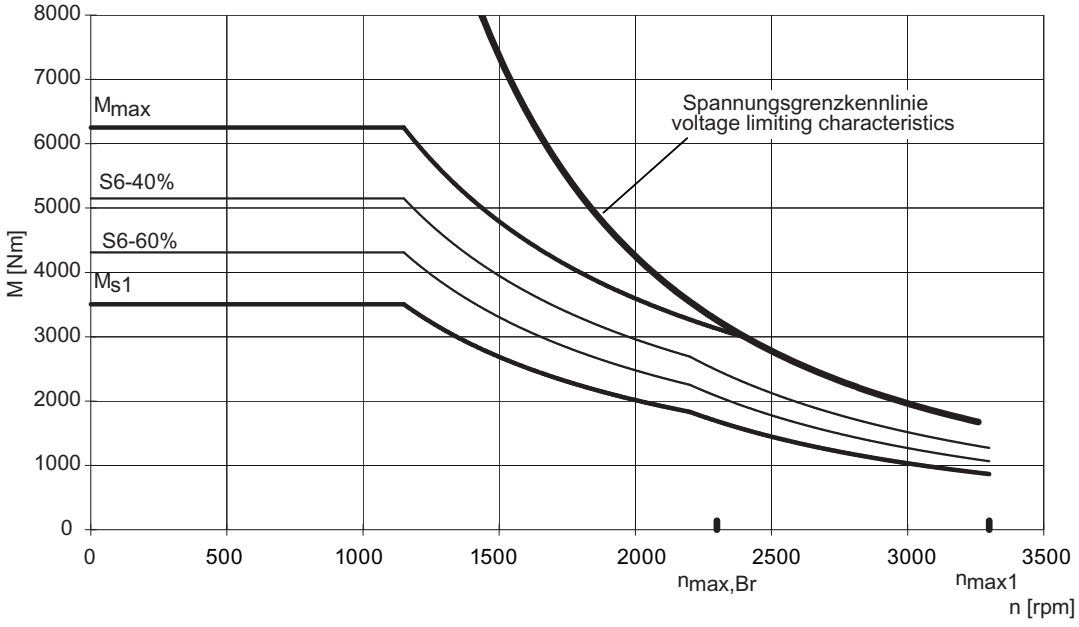
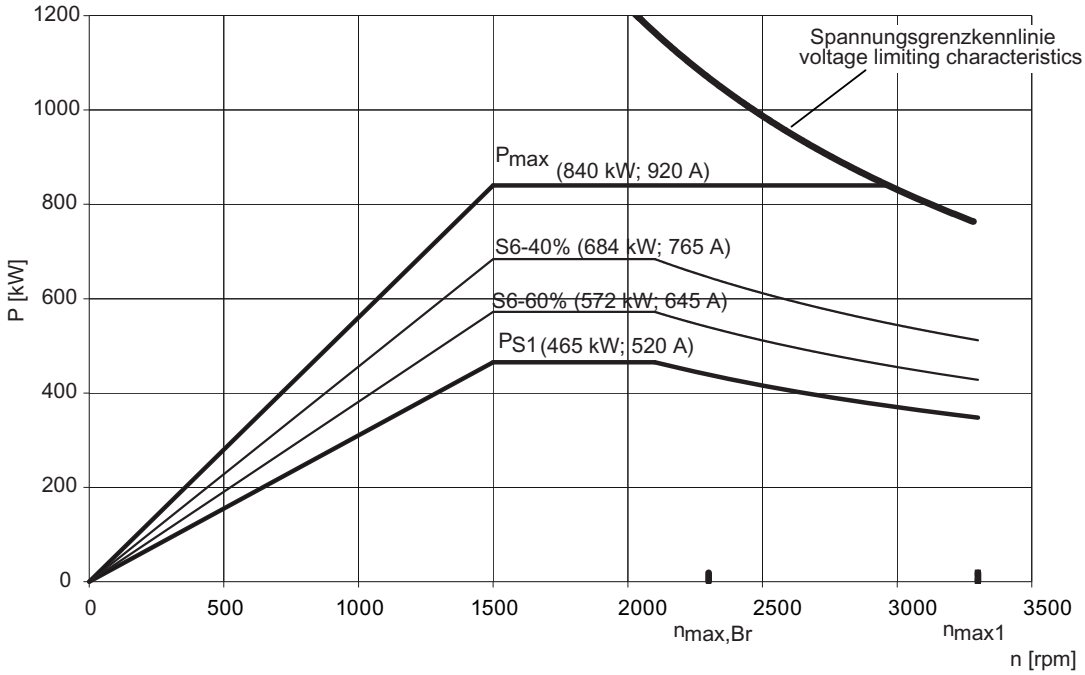



Tabella 4- 413 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8288-□□W4□ , (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 465 | 2961 | 520 | 3300 | - | - | 2300 | 2100 | 5350 | 920 | 2961 | 520 |



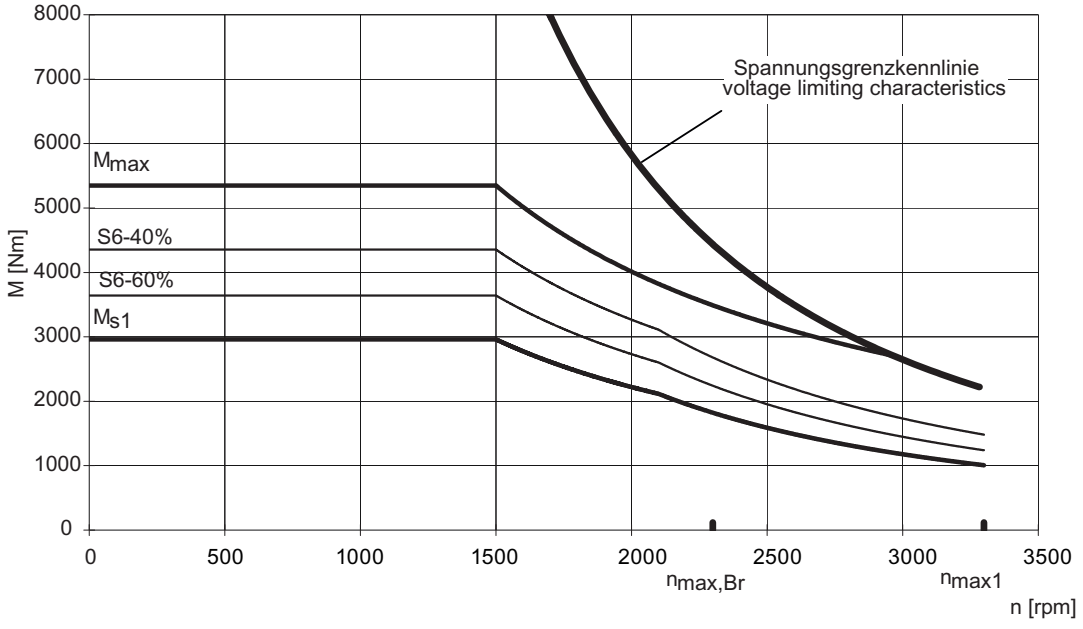
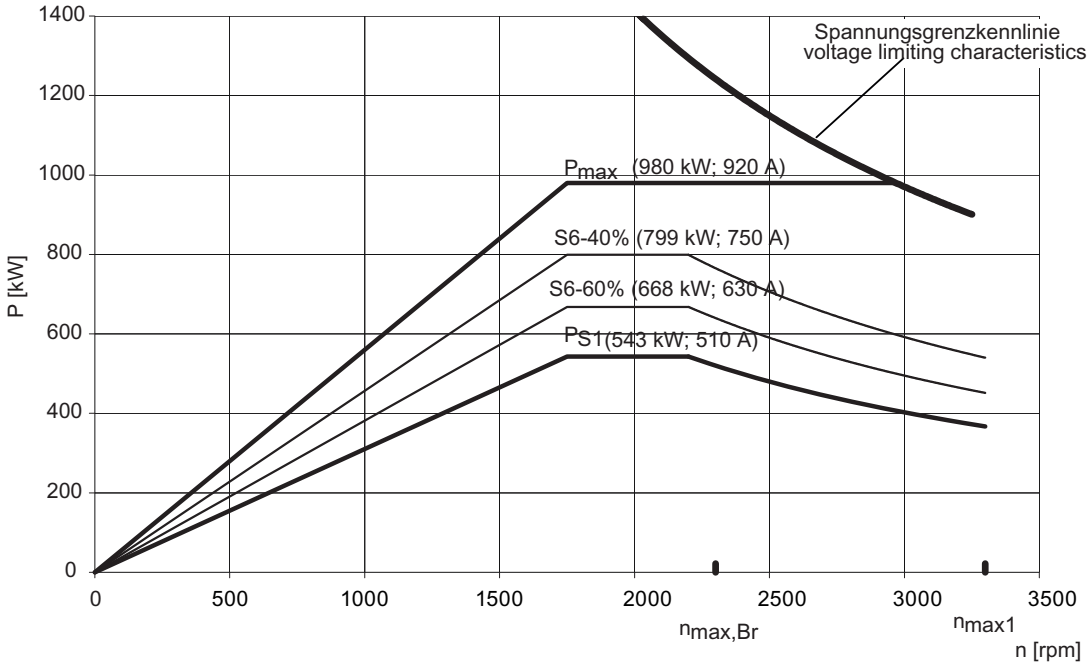
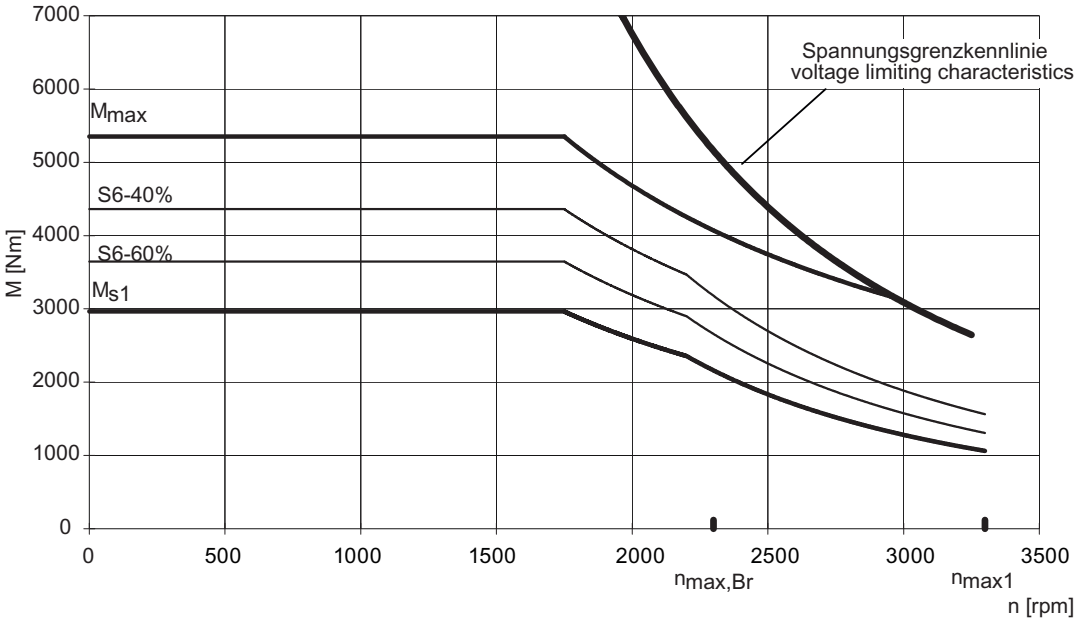



Tabella 4- 414 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8288-□□W4□ , (IP23)

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 543 | 2964 | 510 | 3300 | - | - | 2300 | 2200 | 5350 | 920 | 2964 | 510 |
| 1500 | 466 | 2964 | 510 | | | | | 2600 | | | | |



## 4.1.3 Curve caratteristiche raffreddamento ad acqua

### 4.1.3.1 Altezza dell'asse 80 - Raffreddamento ad acqua

Tabella 4- 415 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8083-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 3,5 | 22 | 8,9 | 10000 | 12000 | - | 5000 | 3550 | 32 | 13 | 23 | 9 |

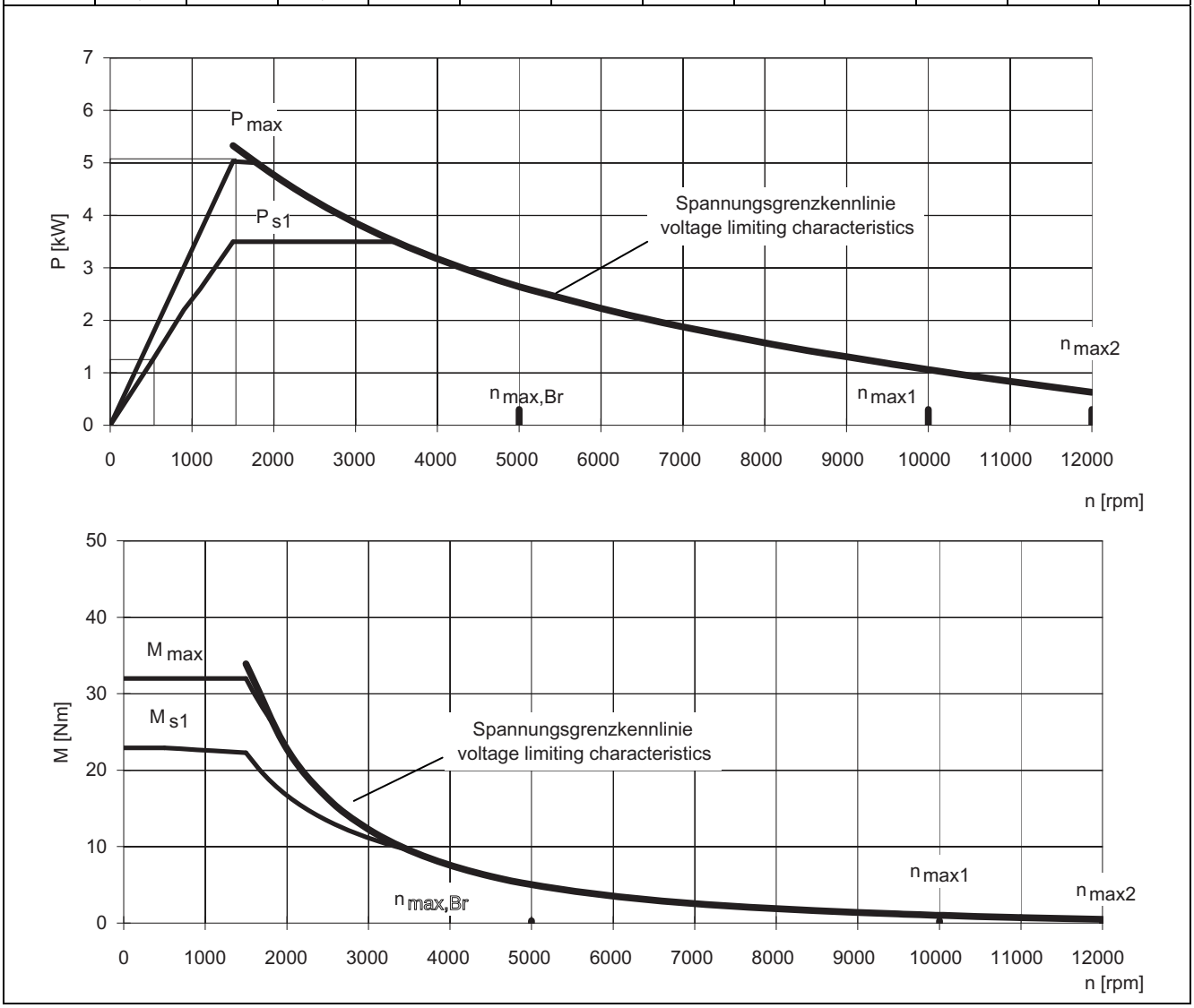


Tabella 4- 416 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8083-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 4,0 | 22 | 8,7 | 10000 | 12000 | - | 5000 | 4100 | 32 | 13 | 23 | 9 |
| 1500 | 3,5 | 22 | 8,9 | | | | | 4850 | | | | |

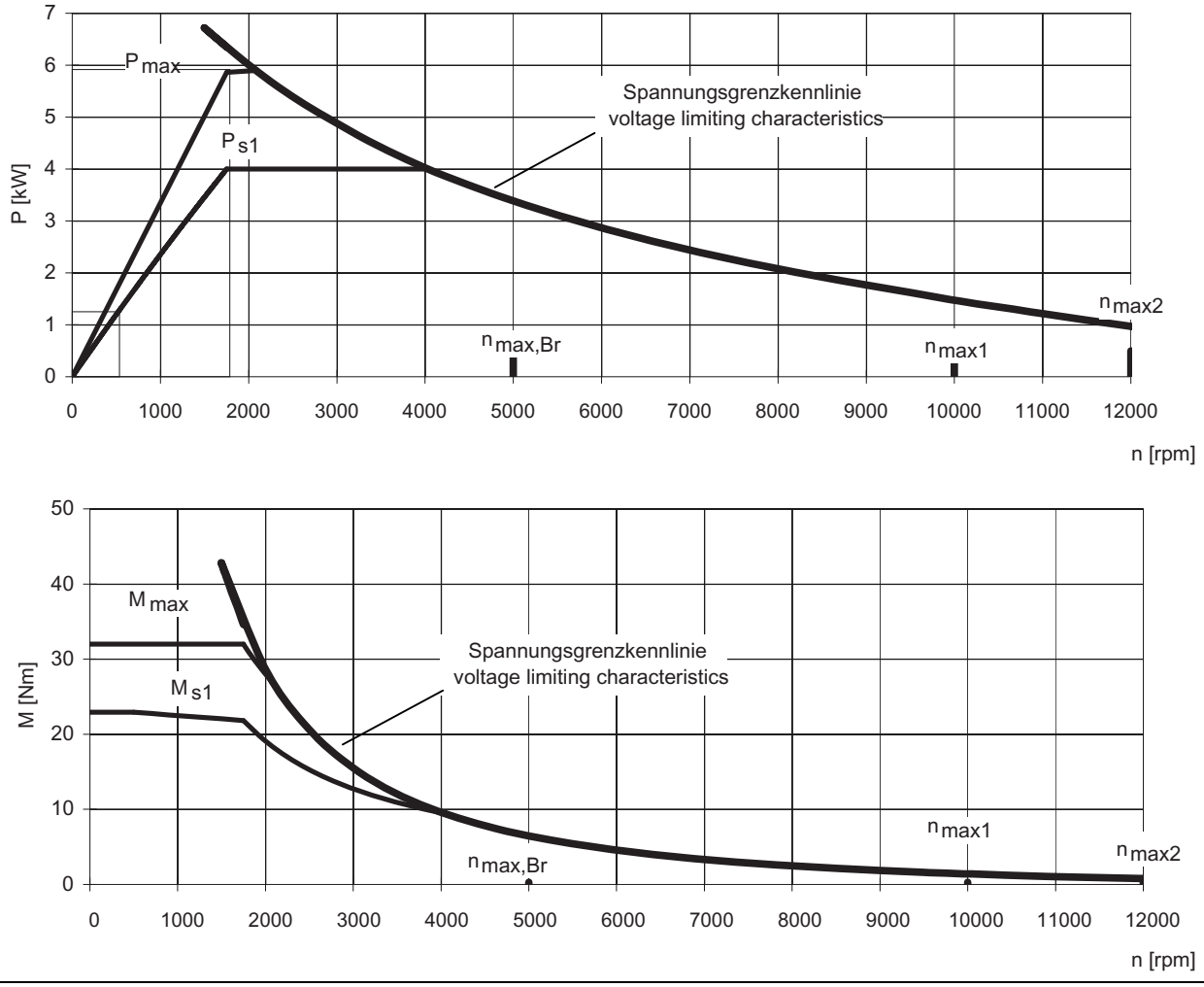
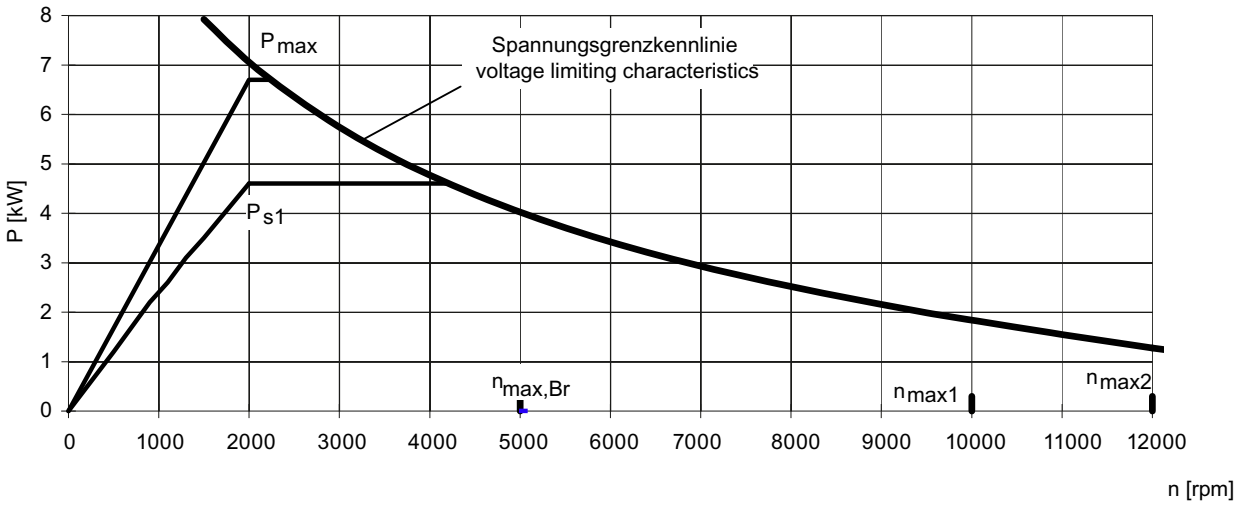


Tabella 4- 417 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8083-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 4,6 | 22 | 8,7 | 10000 | 12000 | - | 5000 | 4250 | 32 | 13 | 23 | 9 |



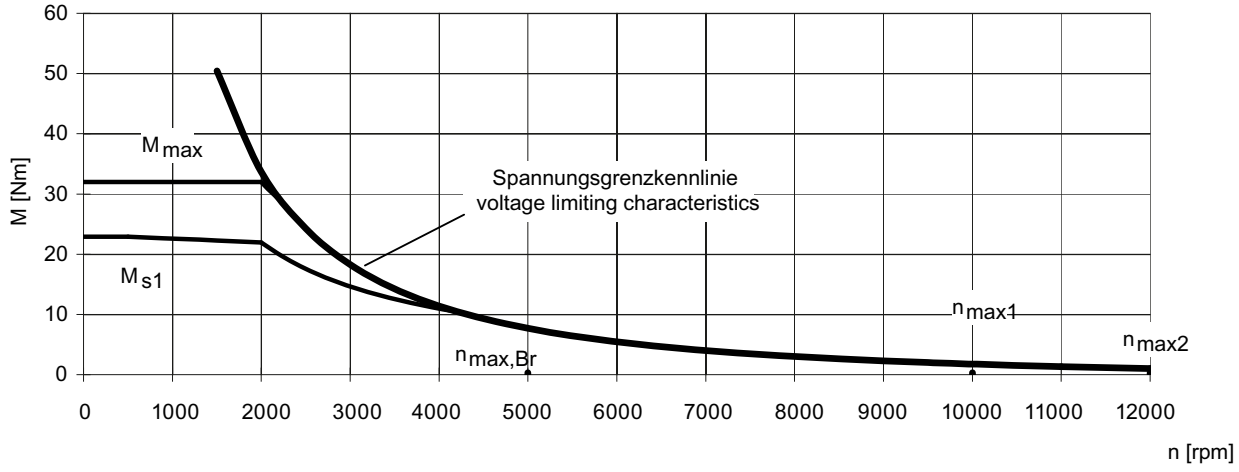



Tabella 4- 418 S SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8083-□□G2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 4,3 | 21 | 12,0 | 10000 | 15000 | 16000 | 5000 | 7200 | 45 | 26 | 23 | 13 |

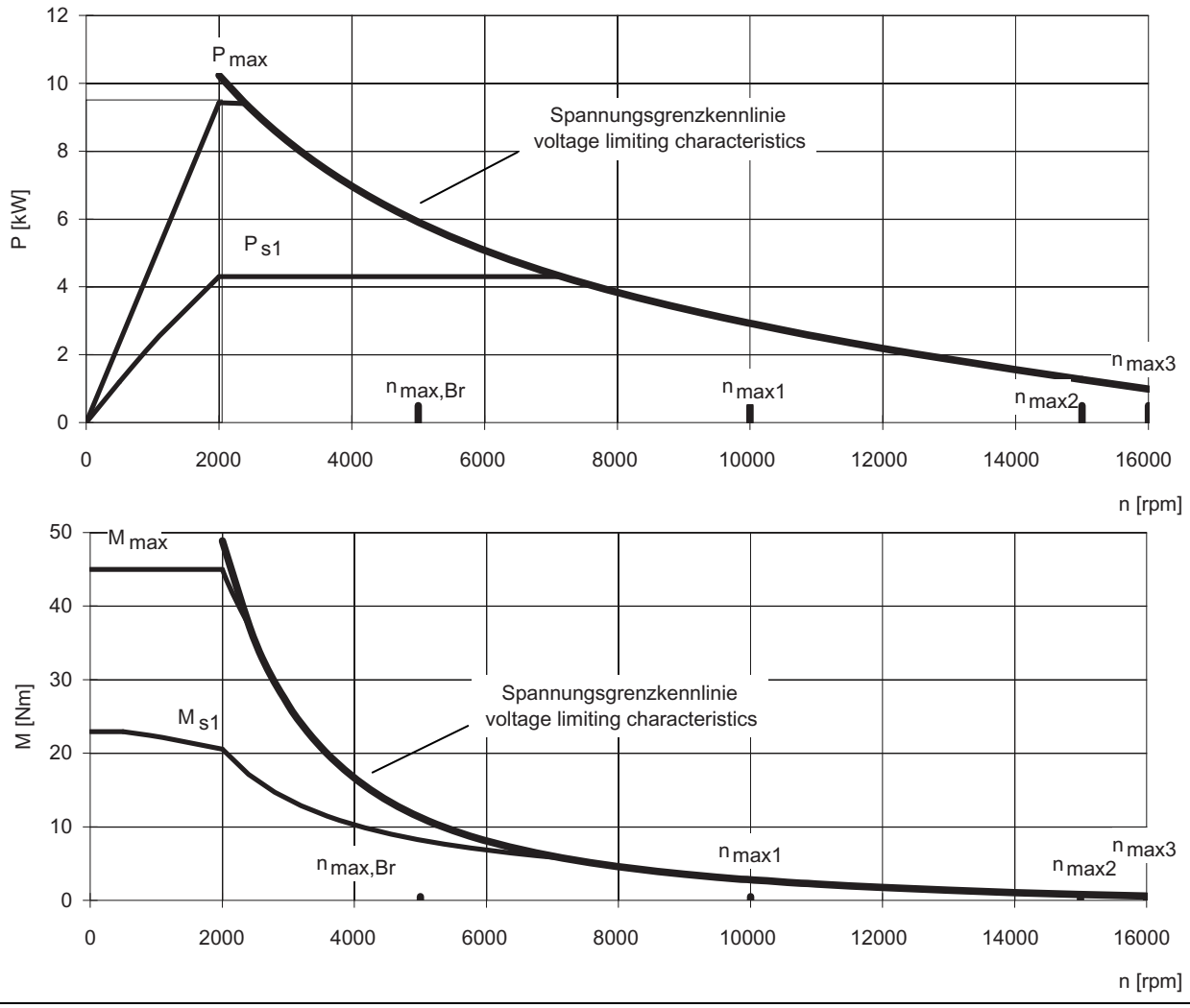


Tabella 4- 419 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8083-□□G2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 4,9 | 20 | 12,0 | 10000 | 15000 | 16000 | 5000 | 8150 | 45 | 26 | 23 | 13 |
| 2000 | 4,3 | 21 | 12,0 | | | | | 9150 | | | | |

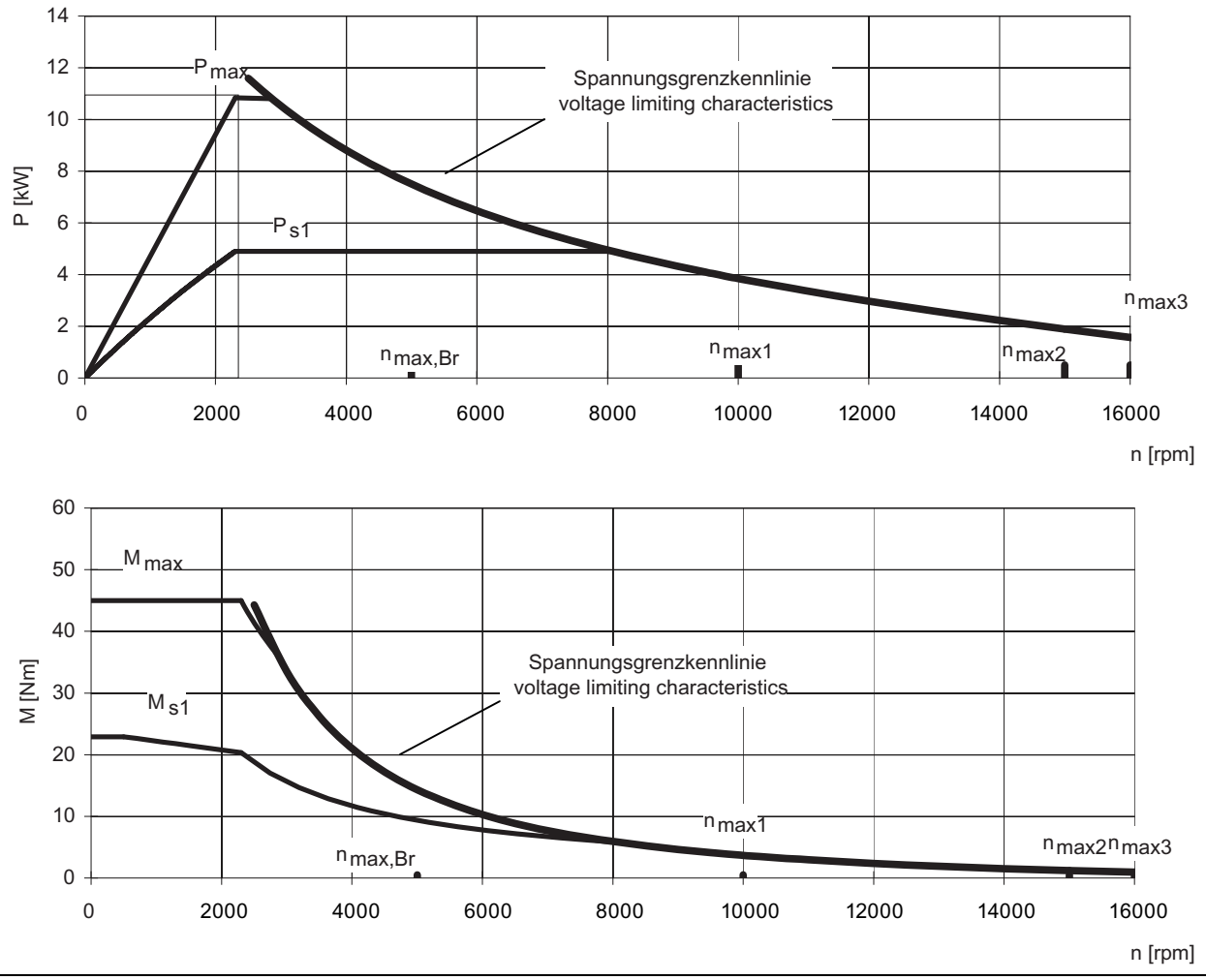
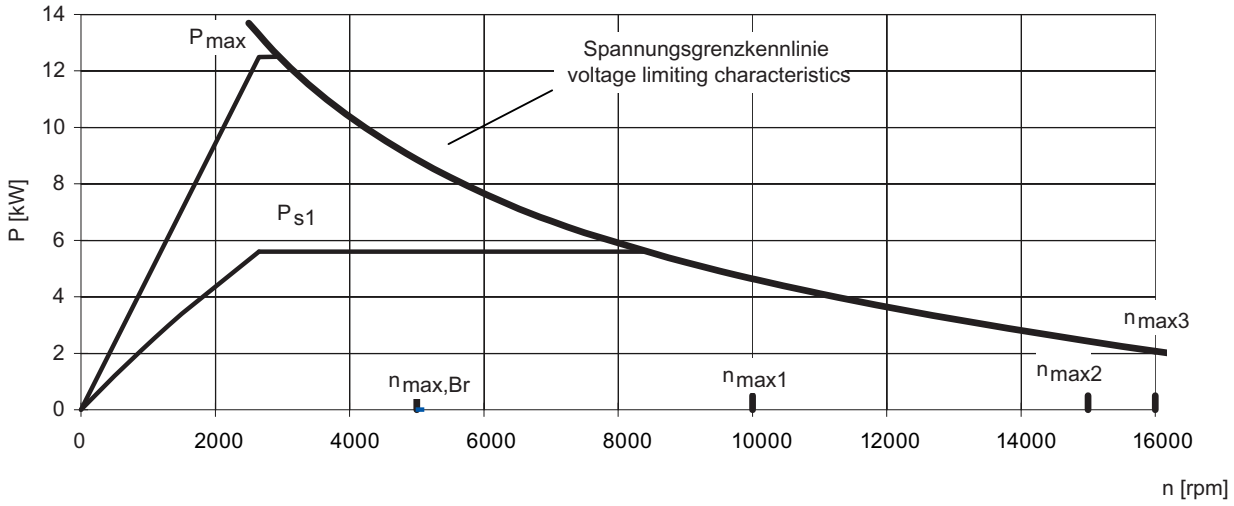


Tabella 4- 420 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8083-□□G2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 5,6 | 20 | 12,0 | 10000 | 15000 | 16000 | 5000 | 8500 | 45 | 26 | 23 | 13 |



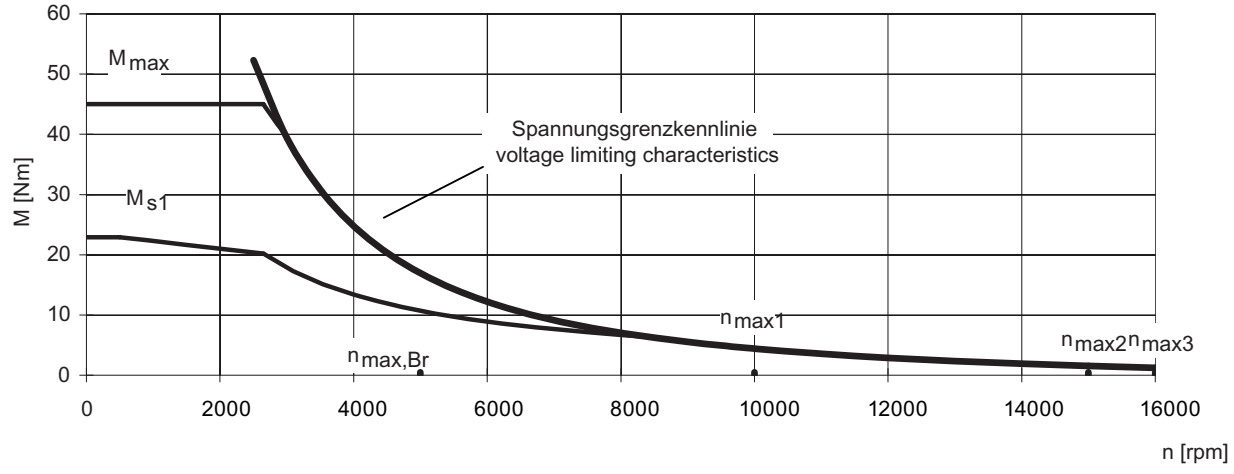



Tabella 4- 421 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8083-□□N2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4500 | 6,7 | 14 | 18,0 | 10000 | 15000 | 20000 | 5000 | 15850 | 45 | 45 | 23 | 23 |

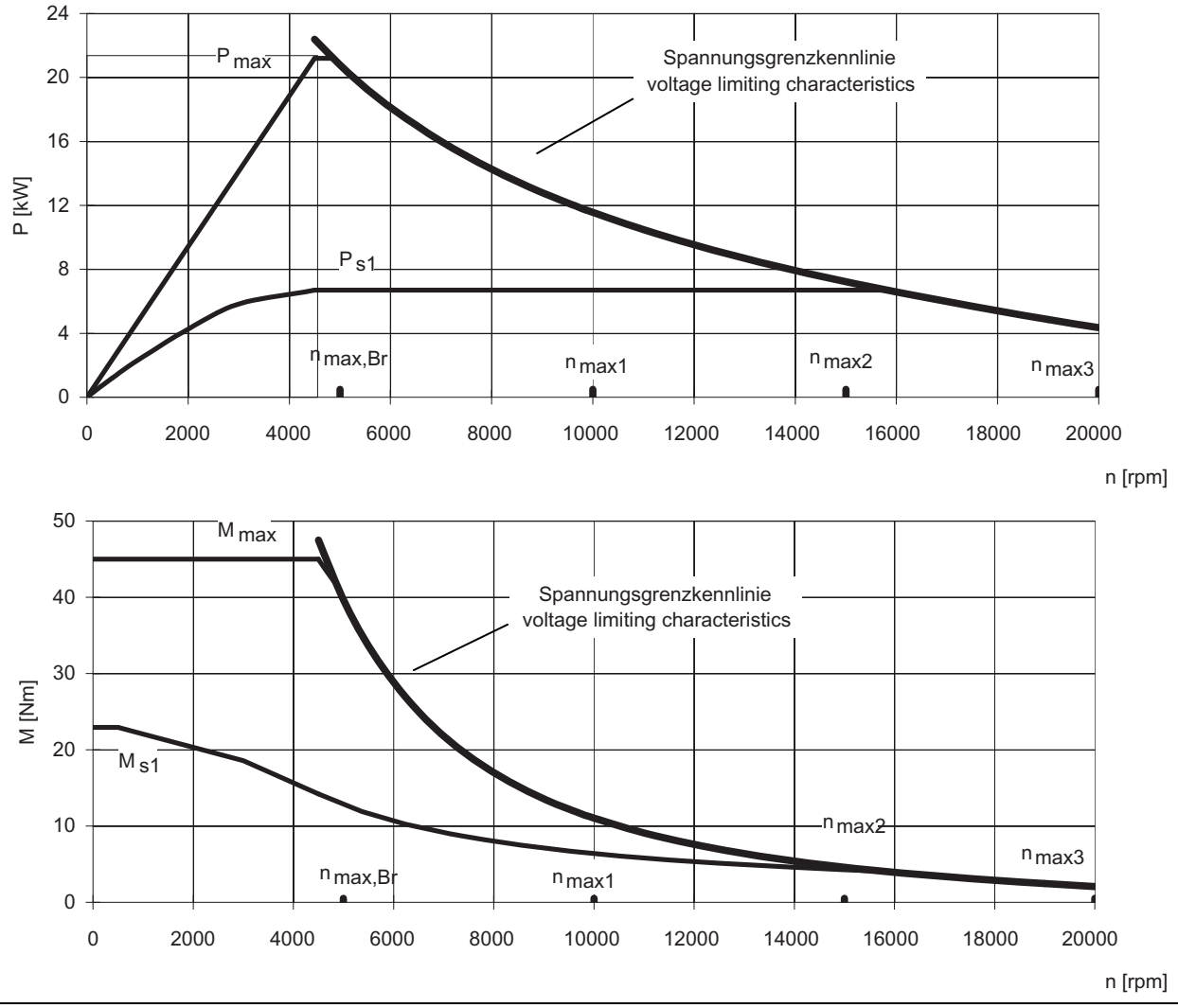


Tabella 4- 422 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8083-□□N2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5000 | 7,5 | 14 | 18,0 | 10000 | 15000 | 20000 | 5000 | 17700 | 45 | 45 | 23 | 23 |
| 4500 | 6,7 | 14 | 18,0 | | | | | 18950 | | | | |

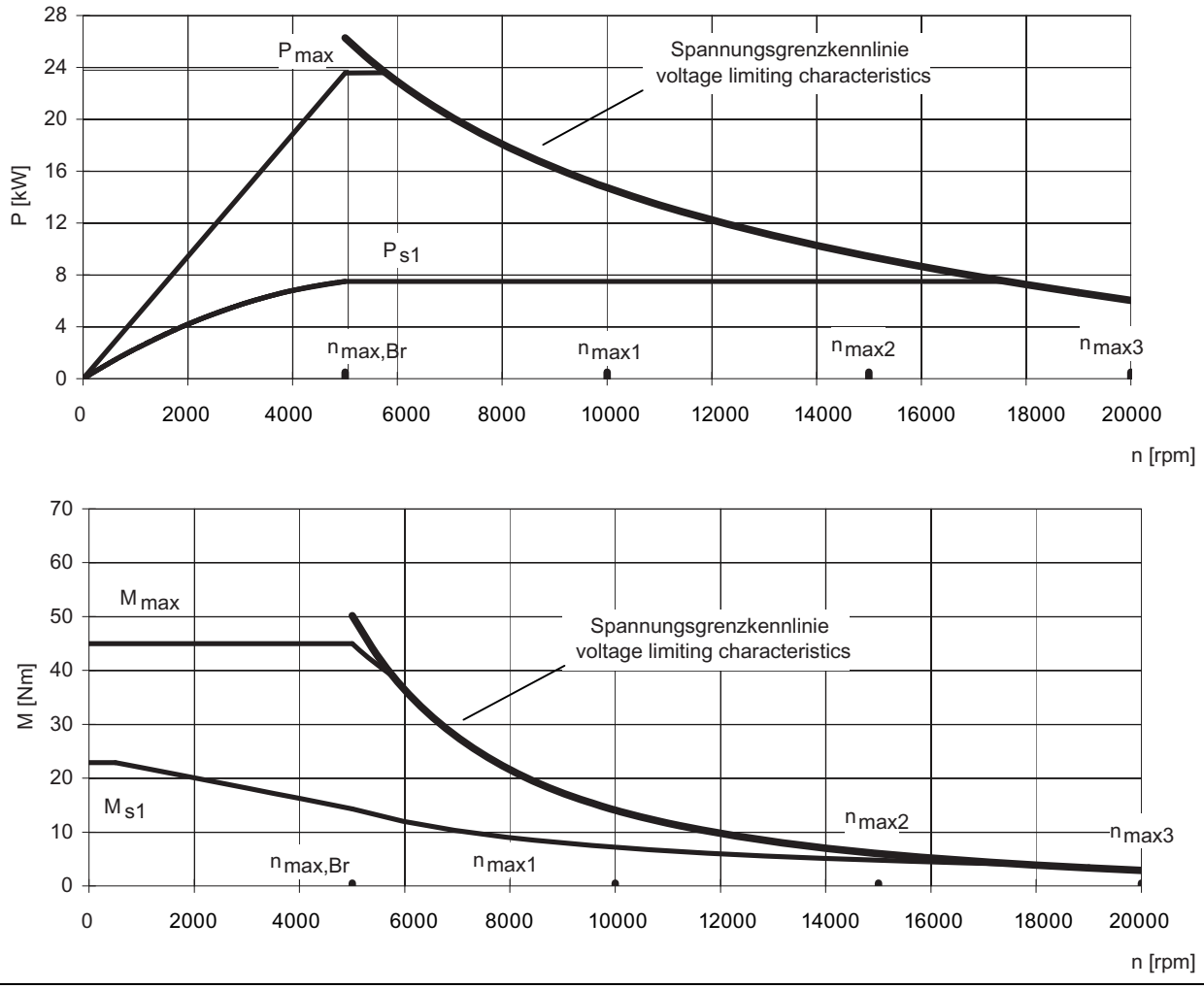
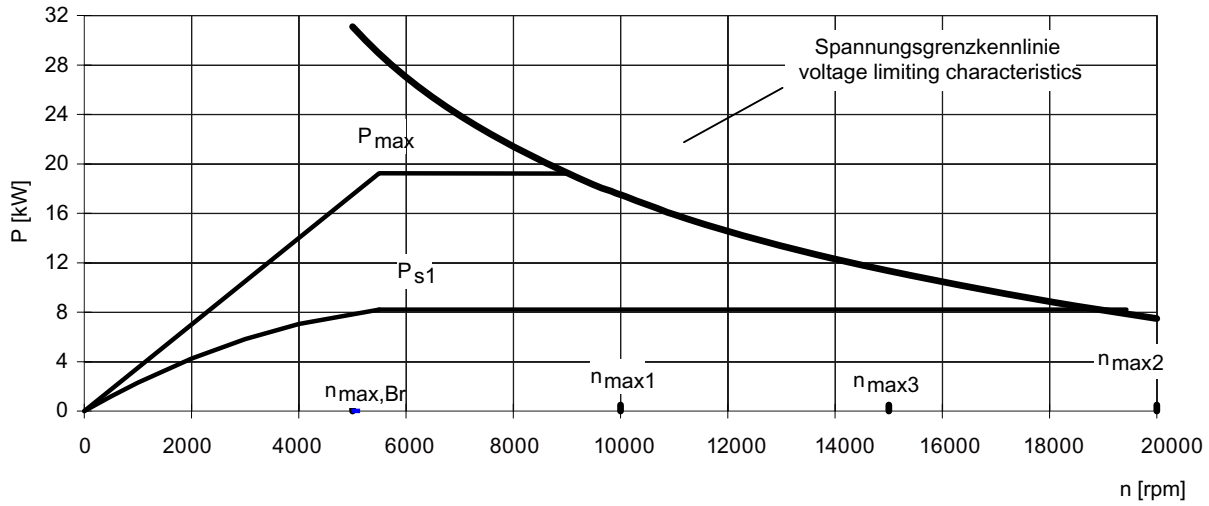


Tabella 4- 423 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8083-□□N2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5500 | 8,2 | 14 | 18,0 | 10000 | 15000 | 20000 | 5000 | 19500 | 33 | 36 | 23 | 23 |



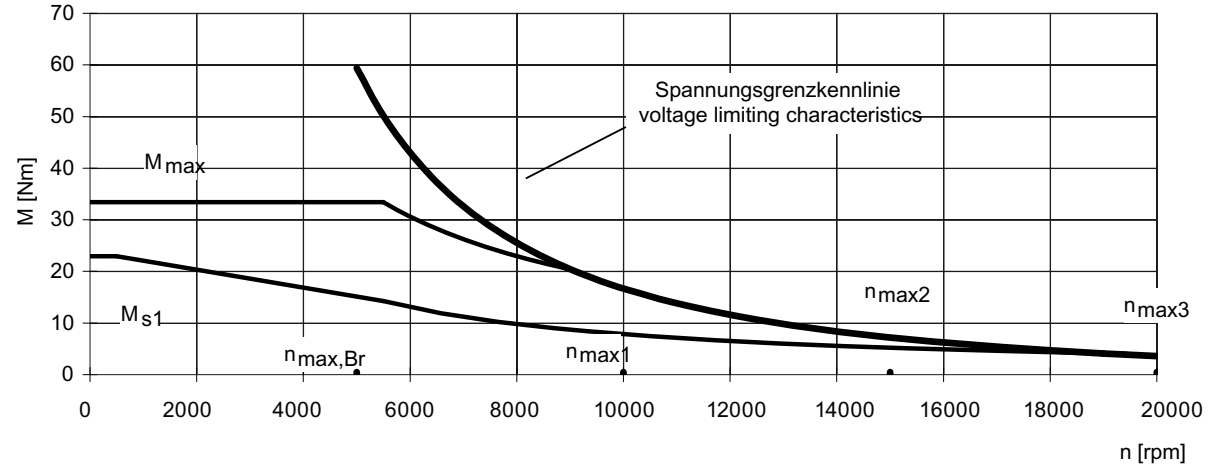



Tabella 4- 424 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8087-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 4,6 | 29 | 13,7 | 10000 | 15000 | - | 5000 | 6000 | 65 | 29 | 34 | 15 |

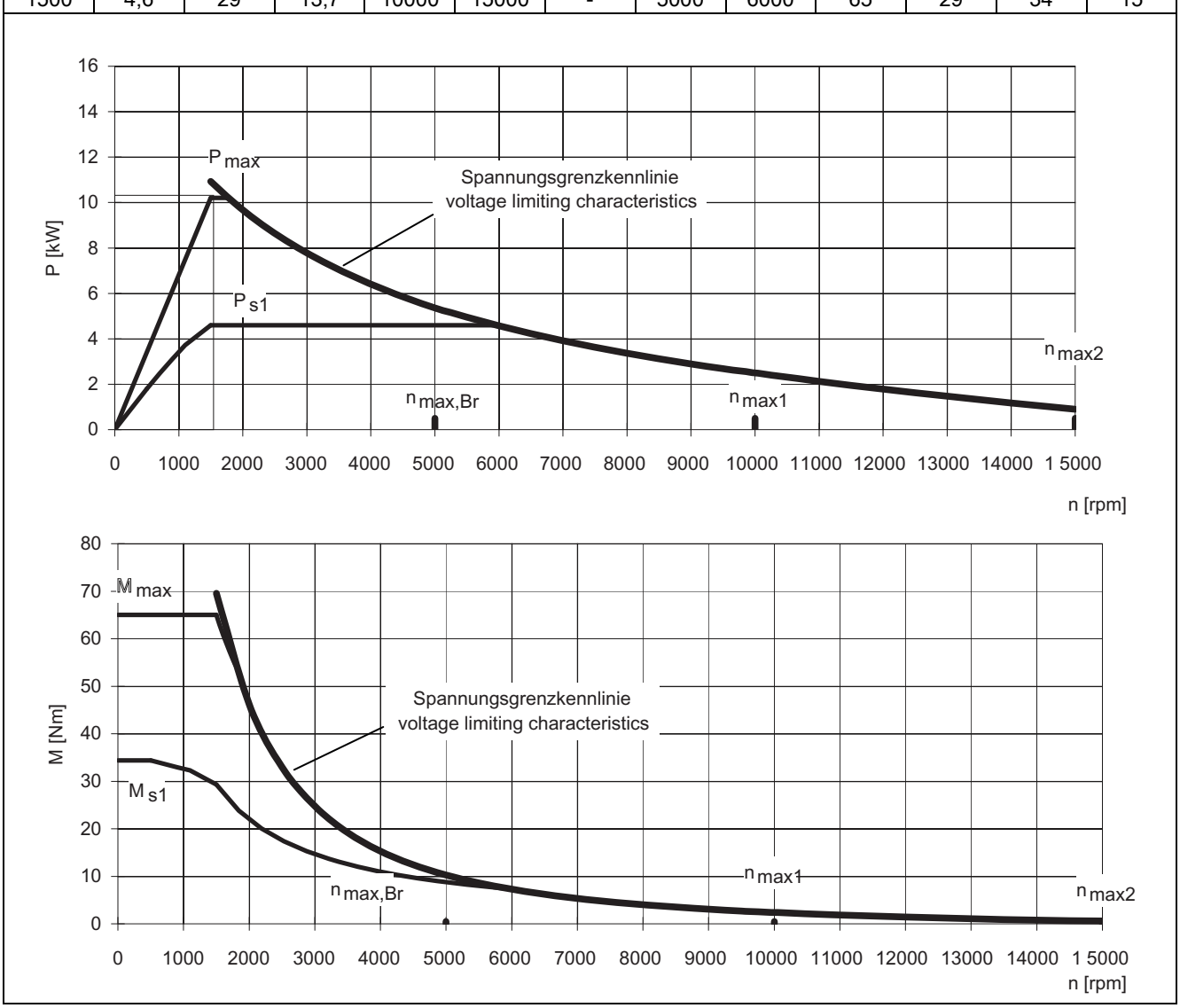


Tabella 4- 425 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8087-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 5,4 | 29 | 13,7 | 10000 | 15000 | - | 5000 | 6600 | 65 | 29 | 34 | 15 |
| 1500 | 4,6 | 29 | 13,7 | | | | | 7700 | | | | |

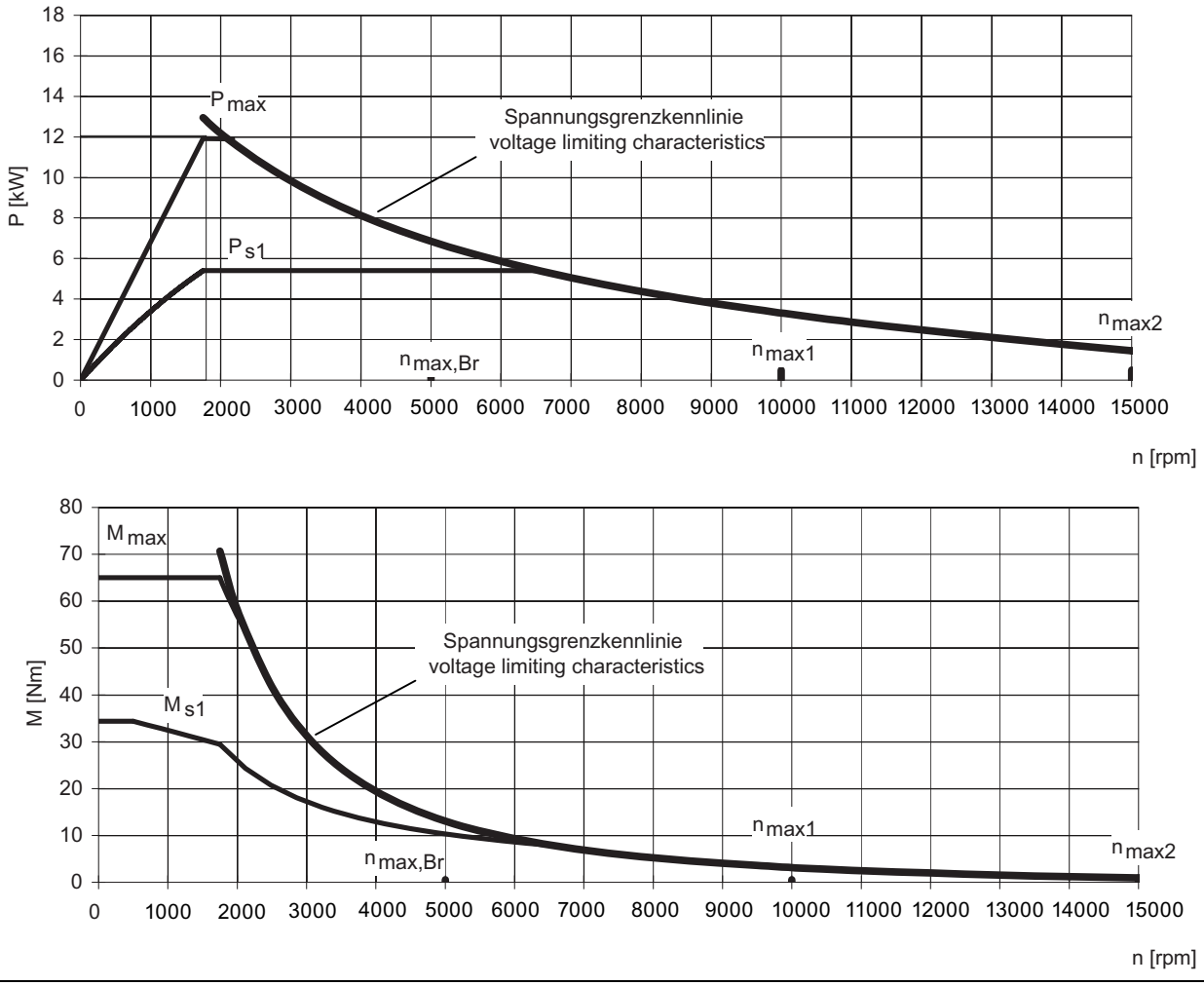
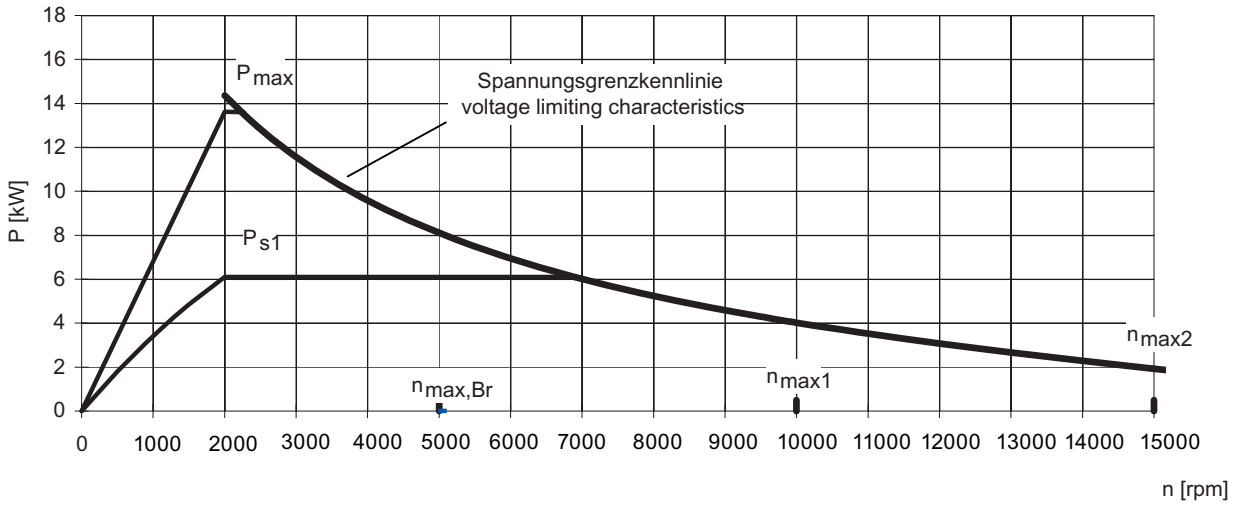


Tabella 4- 426 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8087-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 6,1 | 29 | 13,7 | 10000 | 15000 | - | 5000 | 6950 | 65 | 29 | 34 | 15 |



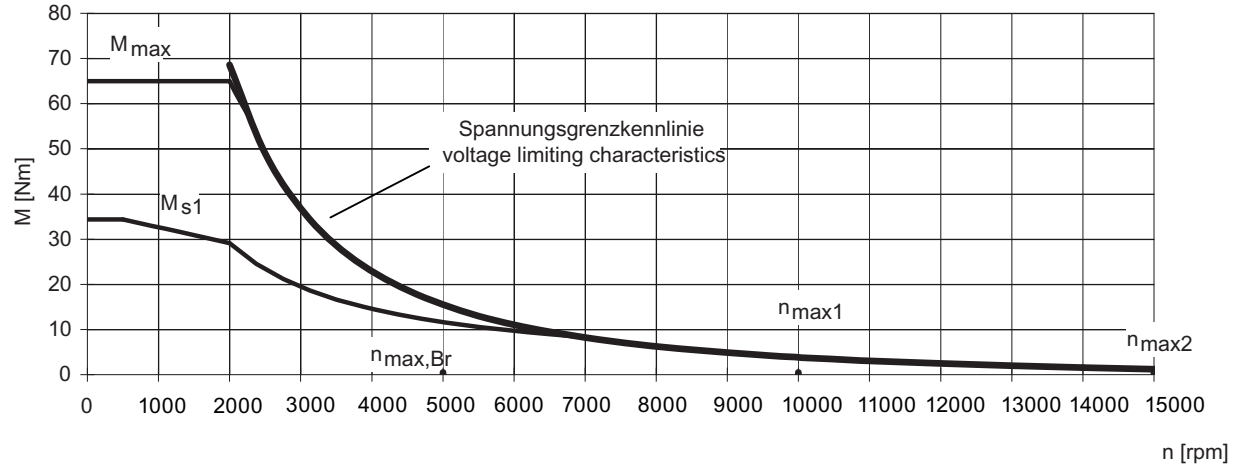



Tabella 4- 427 S SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8087-□□G2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 6,1 | 29 | 17,5 | 10000 | 15000 | 19000 | 5000 | 7950 | 65 | 38 | 34 | 19 |

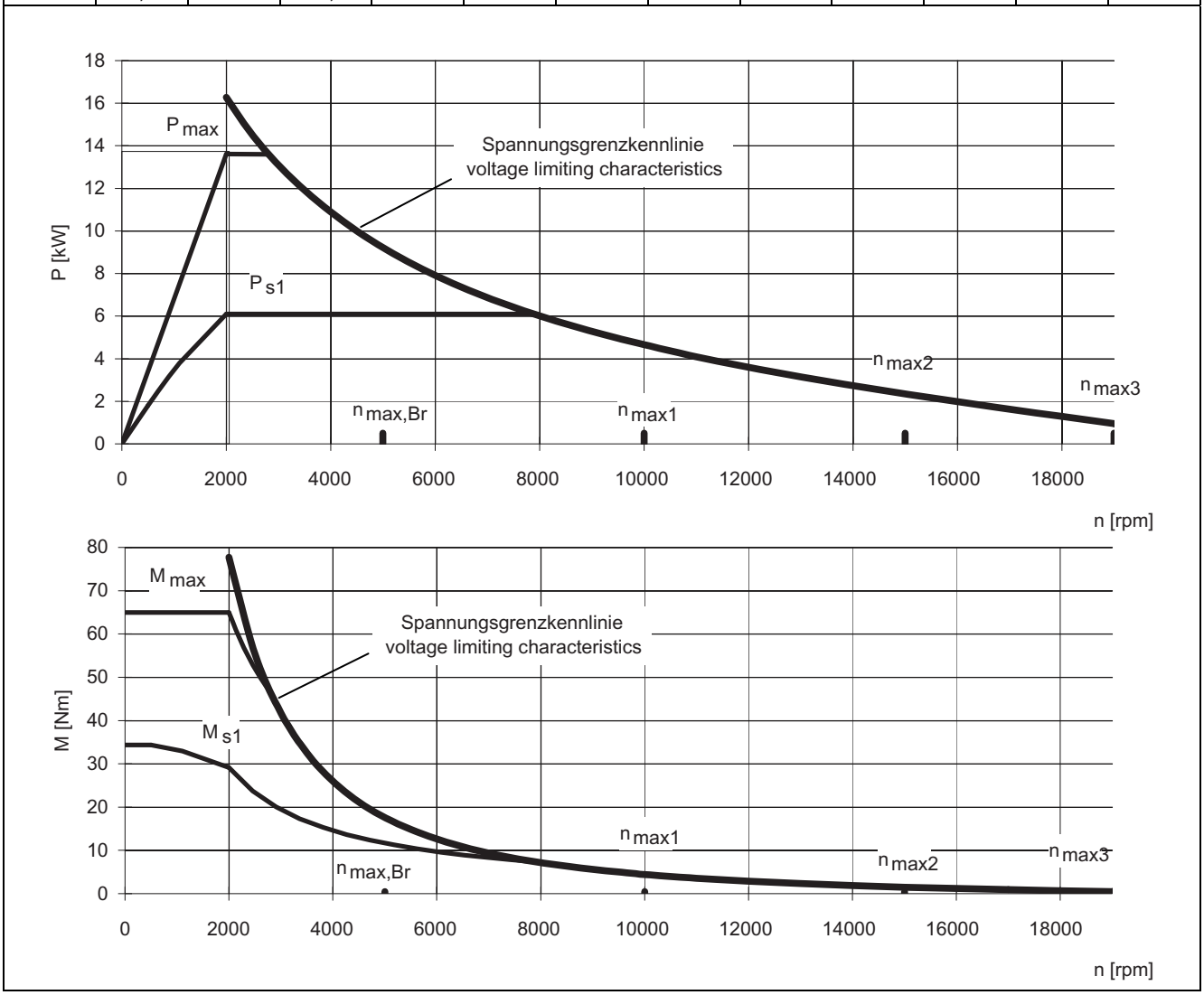


Tabella 4- 428 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8087-□□G2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 7,0 | 29 | 17,7 | 10000 | 15000 | 19000 | 5000 | 8850 | 65 | 38 | 34 | 19 |
| 2000 | 6,1 | 29 | 17,5 | | | | | 10000 | | | | |

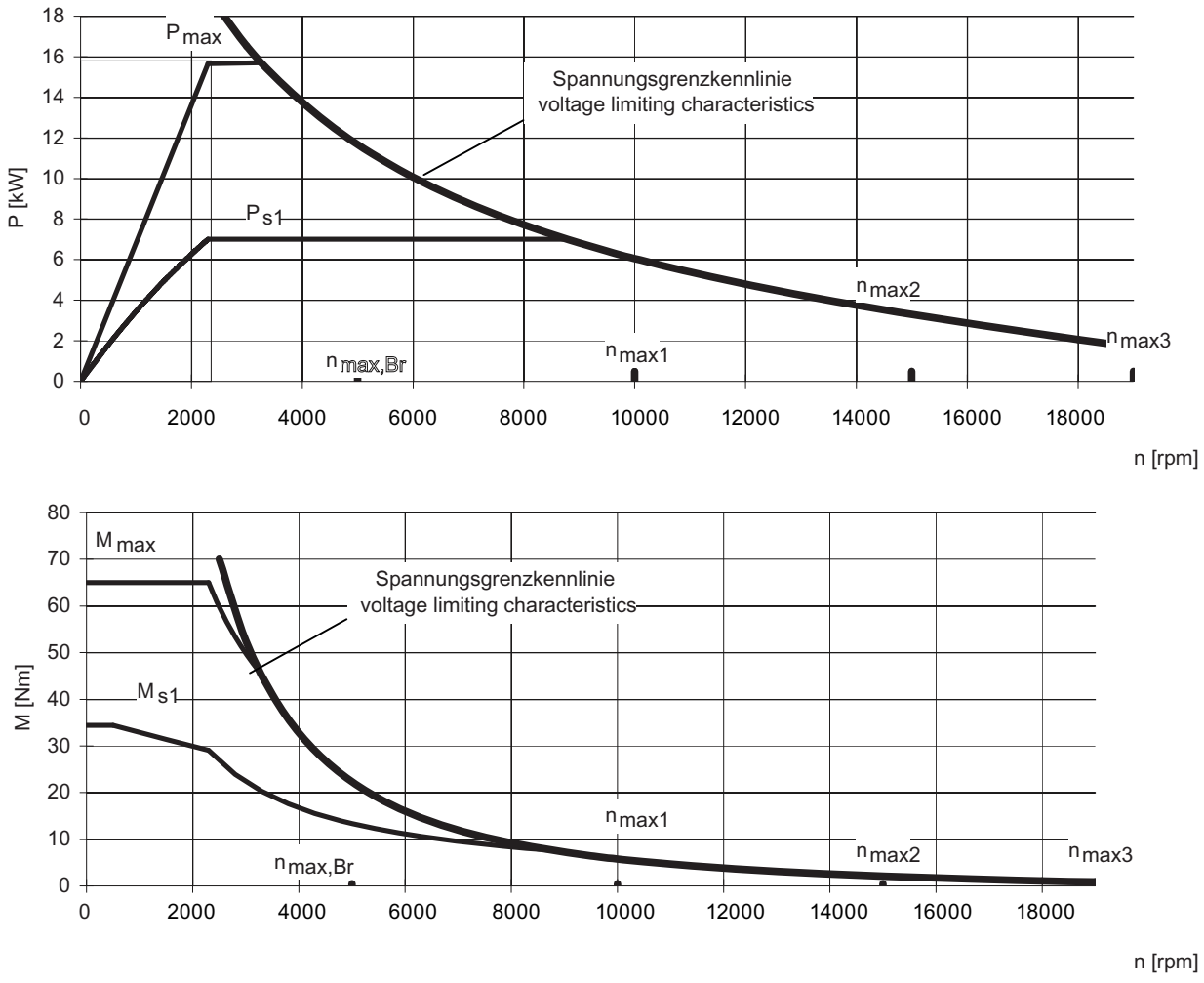
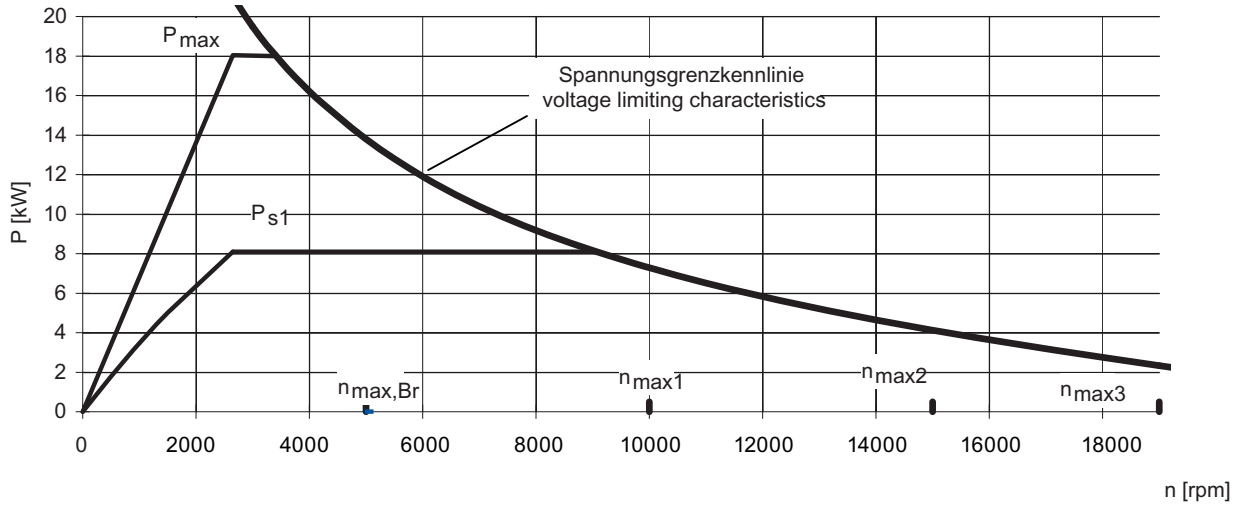


Tabella 4- 429 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8087-□□G2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 8,1 | 29 | 17,8 | 10000 | 15000 | 19000 | 5000 | 9150 | 65 | 38 | 34 | 19 |



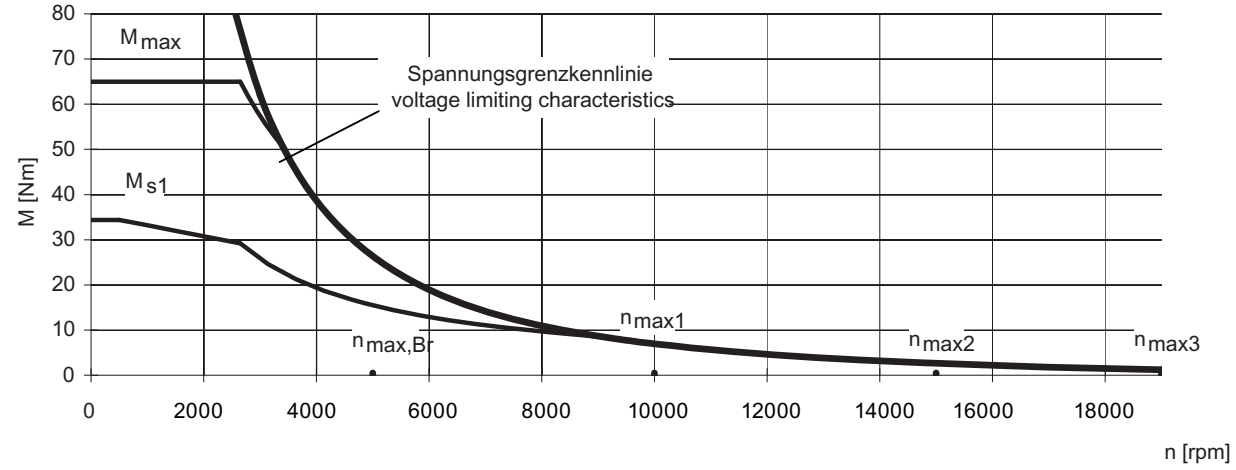



Tabella 4- 430 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8087-□□N2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4500 | 8,5 | 18 | 24,0 | 10000 | 15000 | 20000 | 5000 | 16750 | 60 | 64 | 27 | 31 |

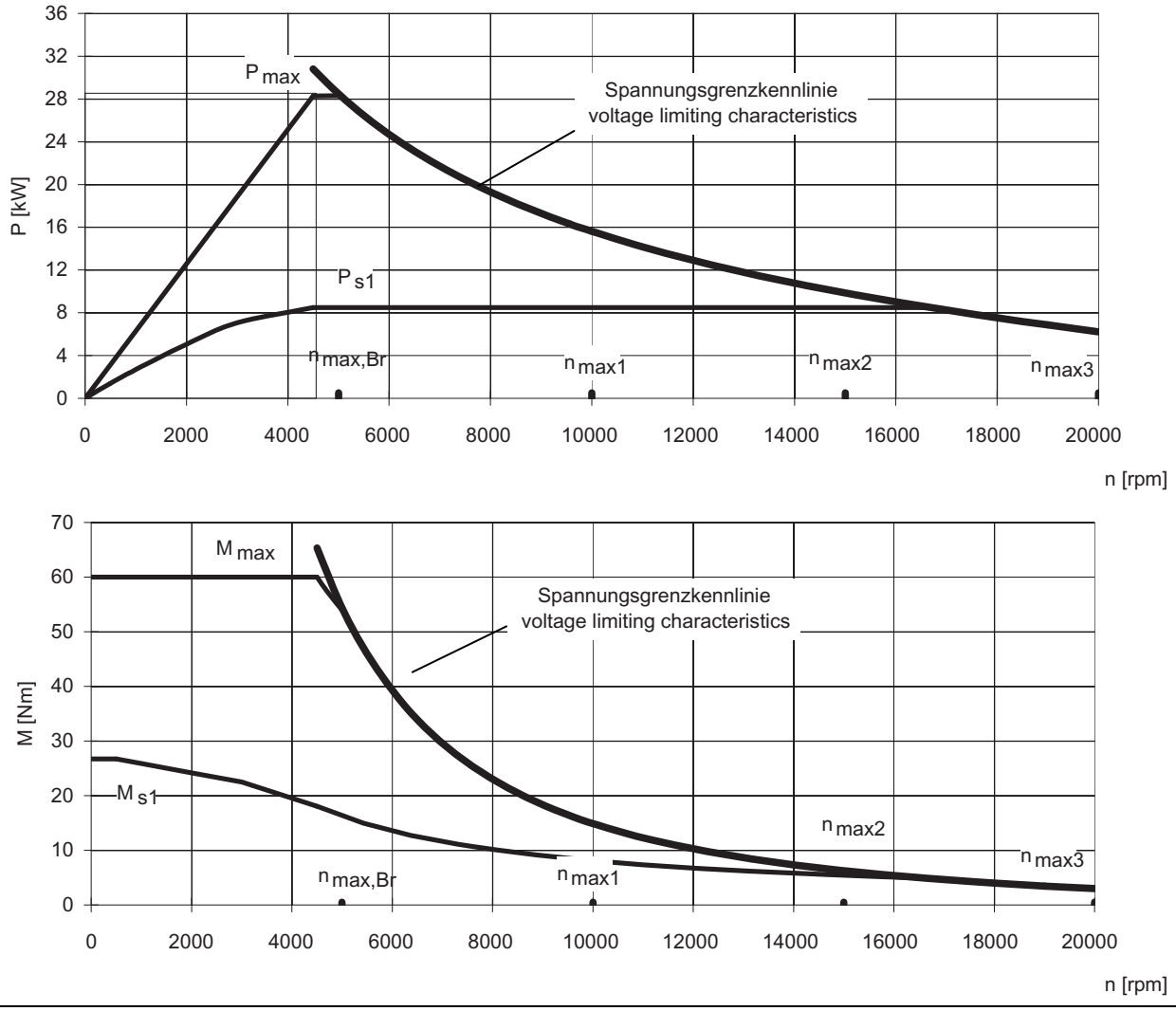
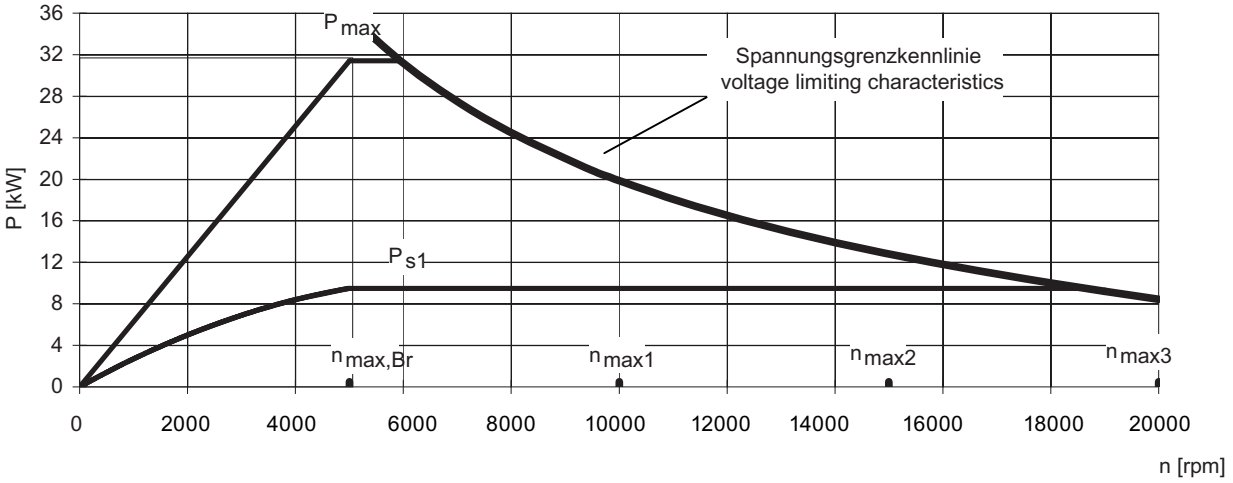


Tabella 4- 431 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8087-□□N2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5000 | 9,5 | 18 | 24,0 | 10000 | 15000 | 20000 | 5000 | 18700 | 60 | 64 | 27 | 31 |
| 4500 | 8,5 | 18 | 24,0 | | | | | 20000 | | | | |



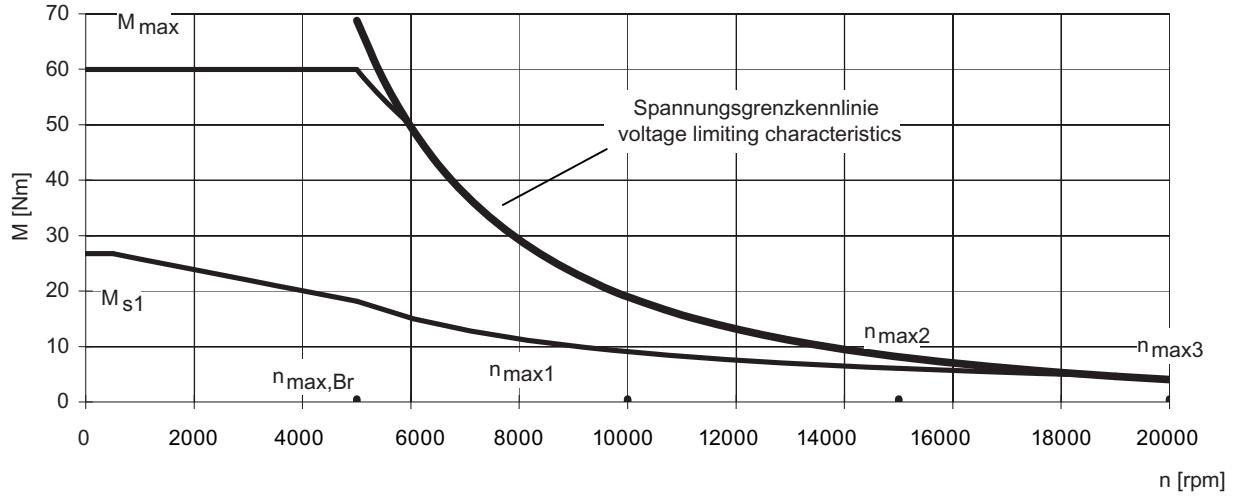
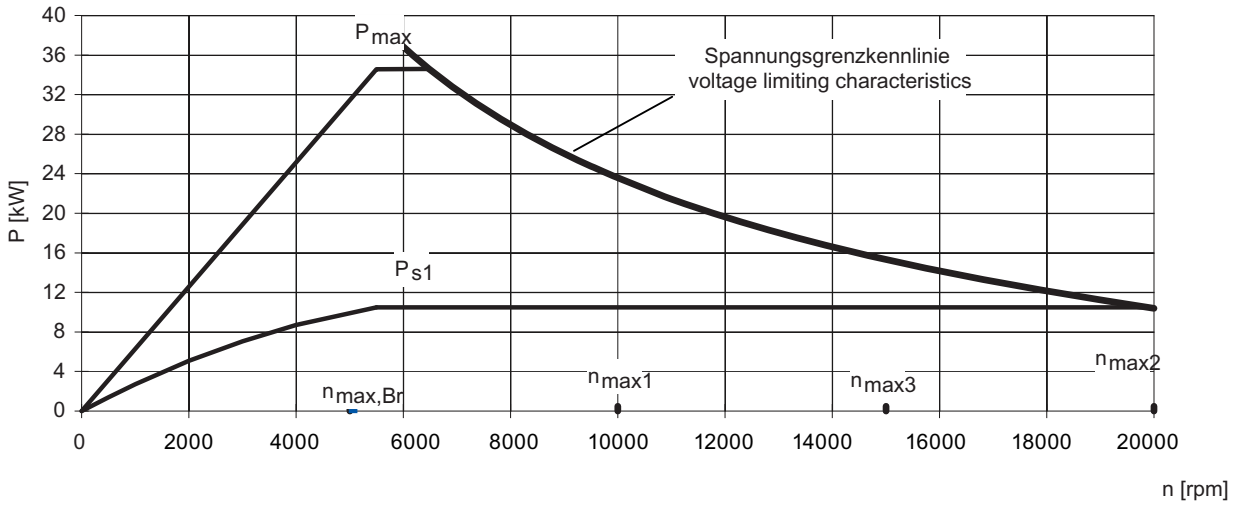
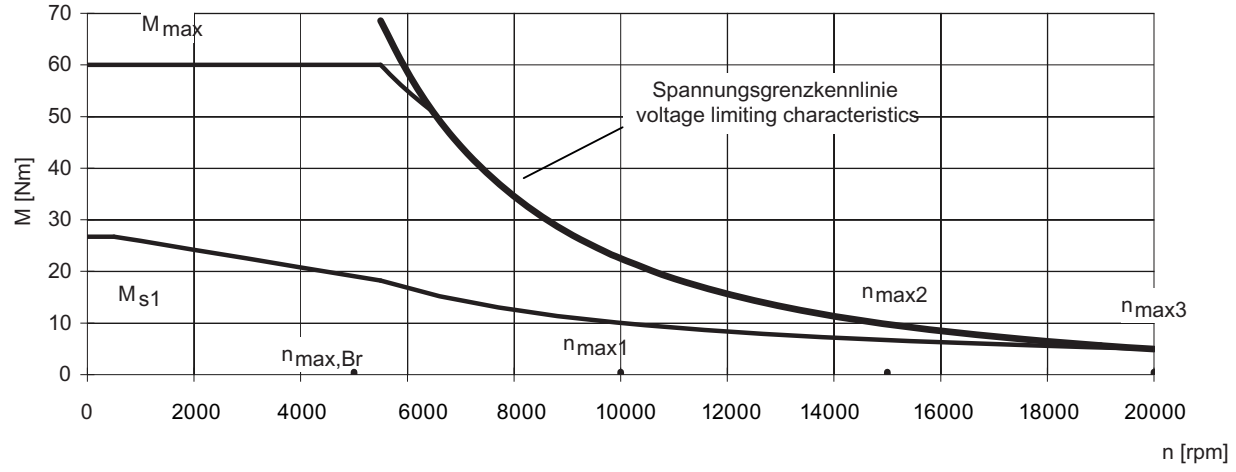



Tabella 4- 432 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8087-□□N2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5500 | 10,5 | 18 | 24,0 | 10000 | 15000 | 20000 | 5000 | 19900 | 60 | 64 | 27 | 31 |



### 4.1.3.2 Altezza dell'asse 100 - Raffreddamento ad acqua

Tabella 4- 433 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8101-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 5,0 | 32 | 12,8 | 9000 | - | - | 5000 | 2500 | 50 | 25 | 34 | 13 |

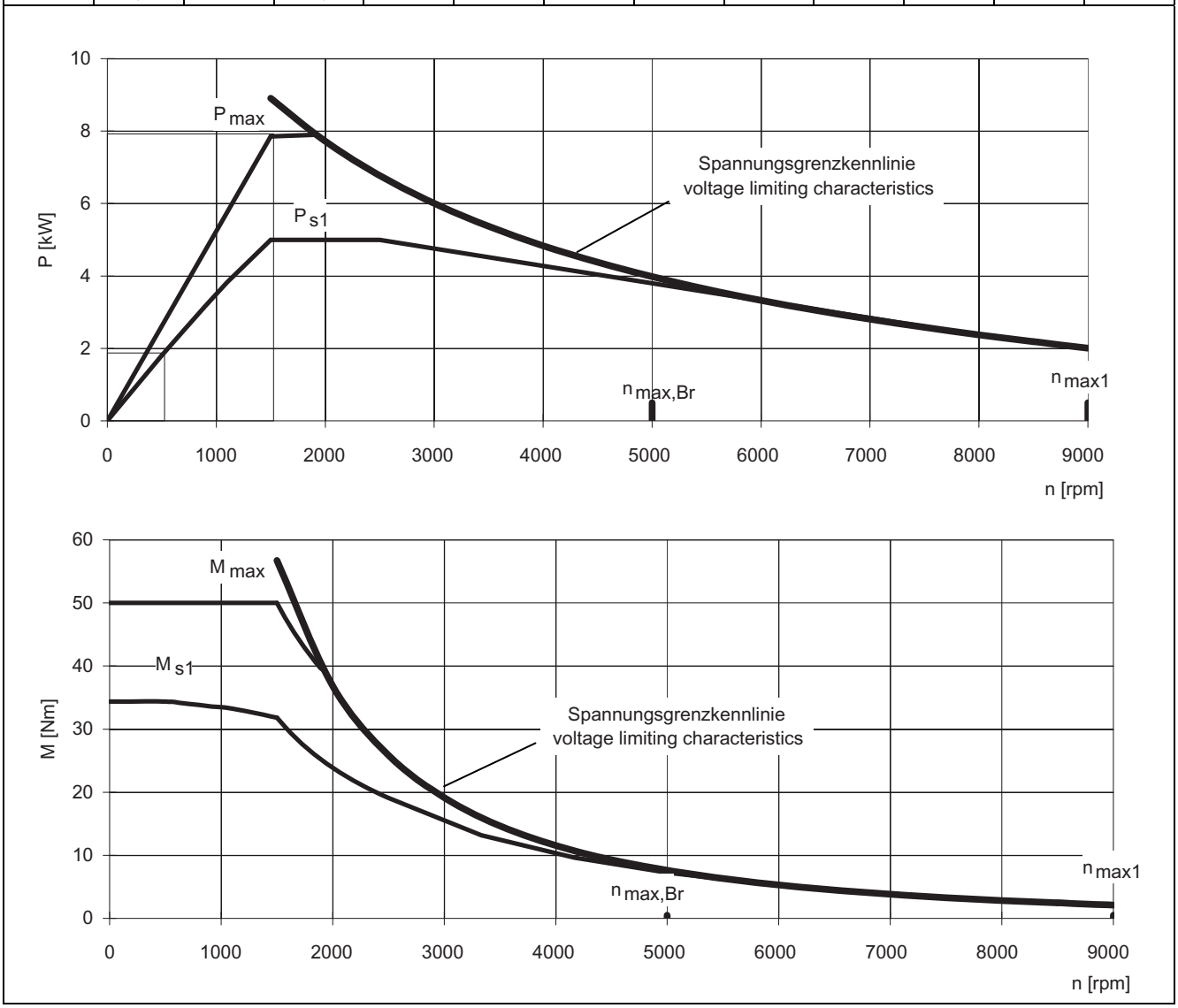
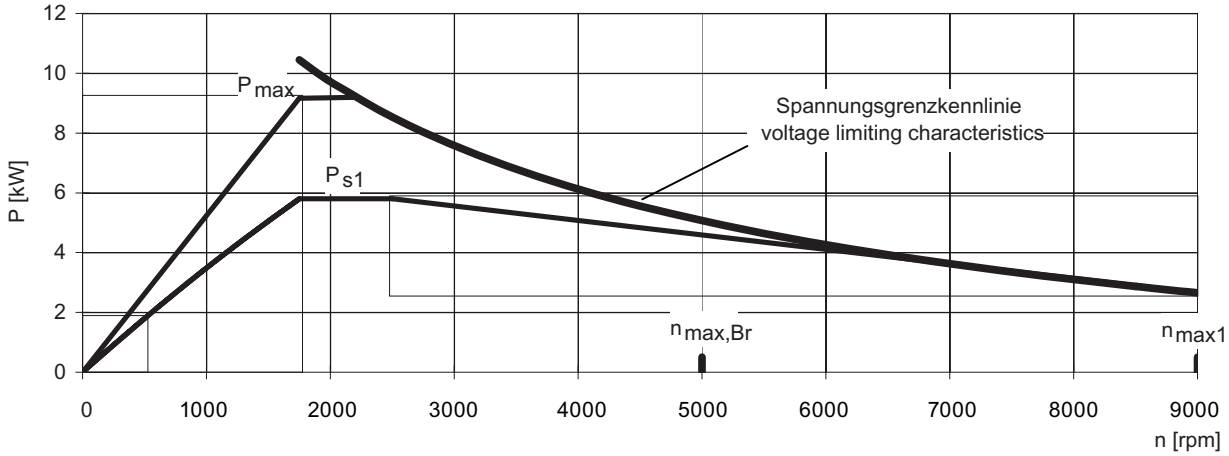


Tabella 4- 434 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8101-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 5,8 | 32 | 12,8 | 9000 | - | - | 5000 | 5000 | 50 | 25 | 34 | 13 |
| 1500 | 5,0 | 32 | 12,8 | | | | | 4200 | | | | |



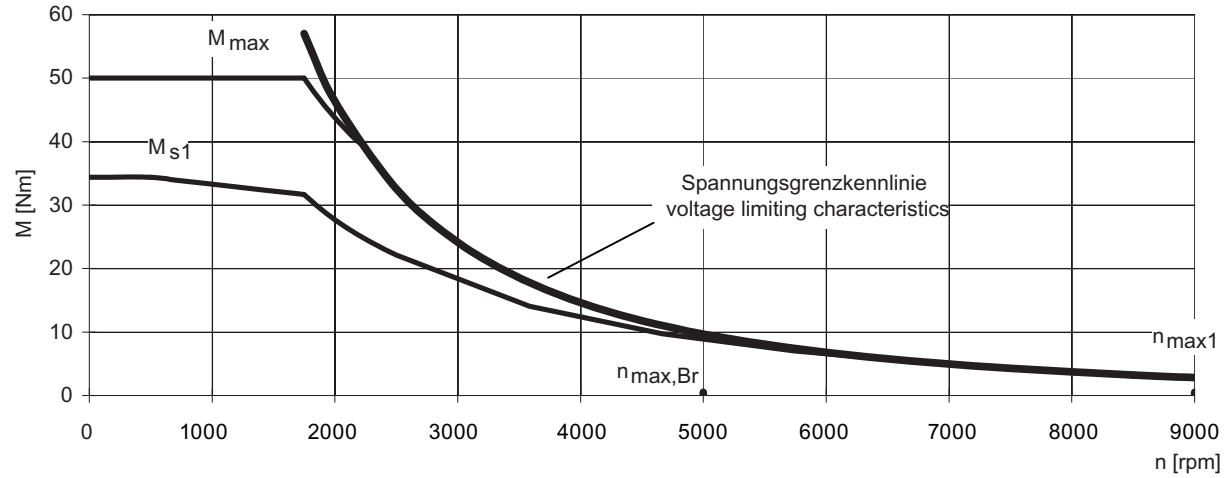



Tabella 4- 435 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8101-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 6,6 | 32 | 12,5 | 9000 | - | - | 5000 | 2500 | 50 | 25 | 34 | 13 |

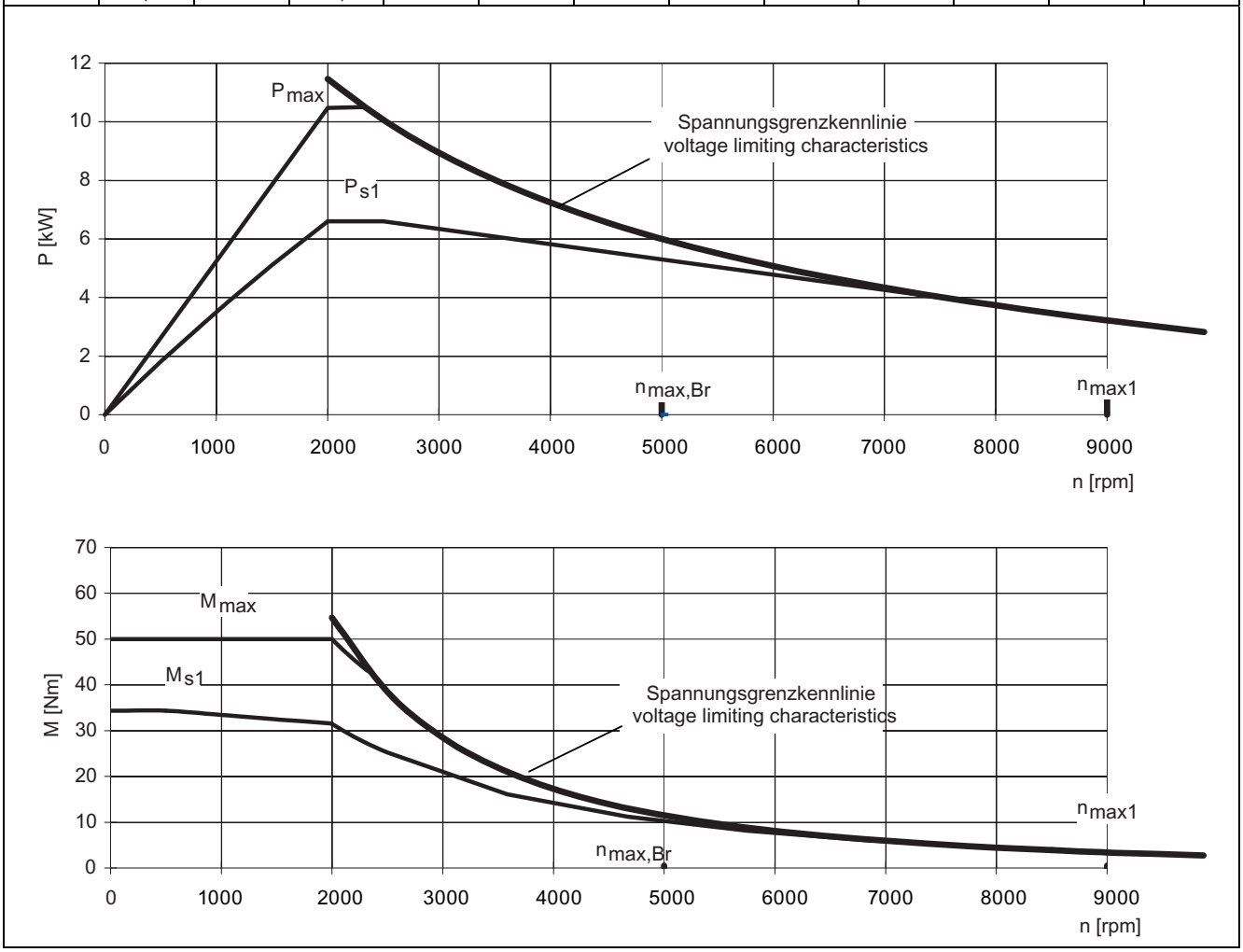
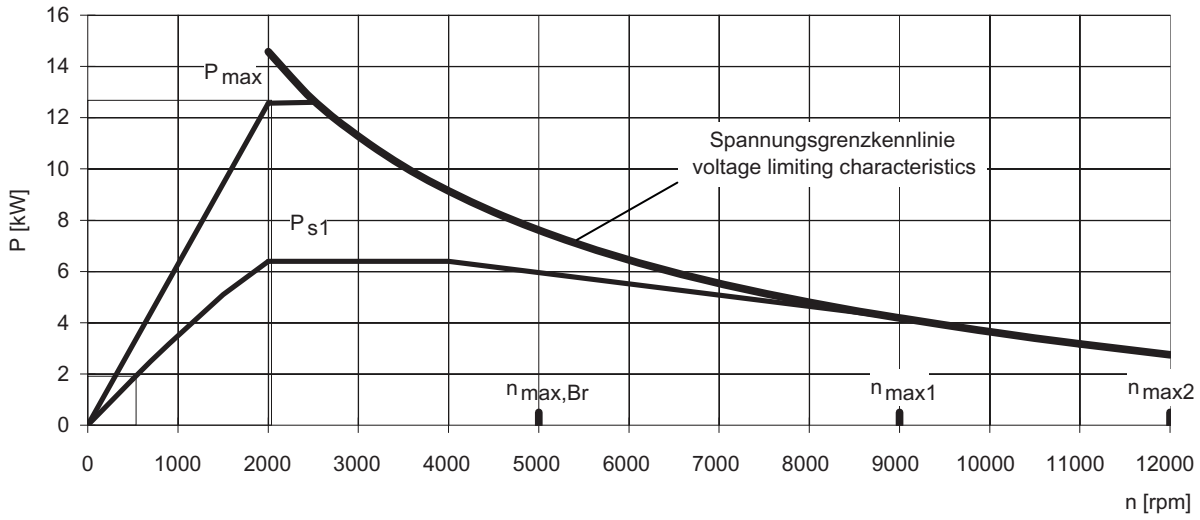


Tabella 4- 436 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8101-□□G2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 6,4 | 31 | 16,8 | 9000 | 12000 | - | 5000 | 4000 | 60 | 33 | 34 | 18 |



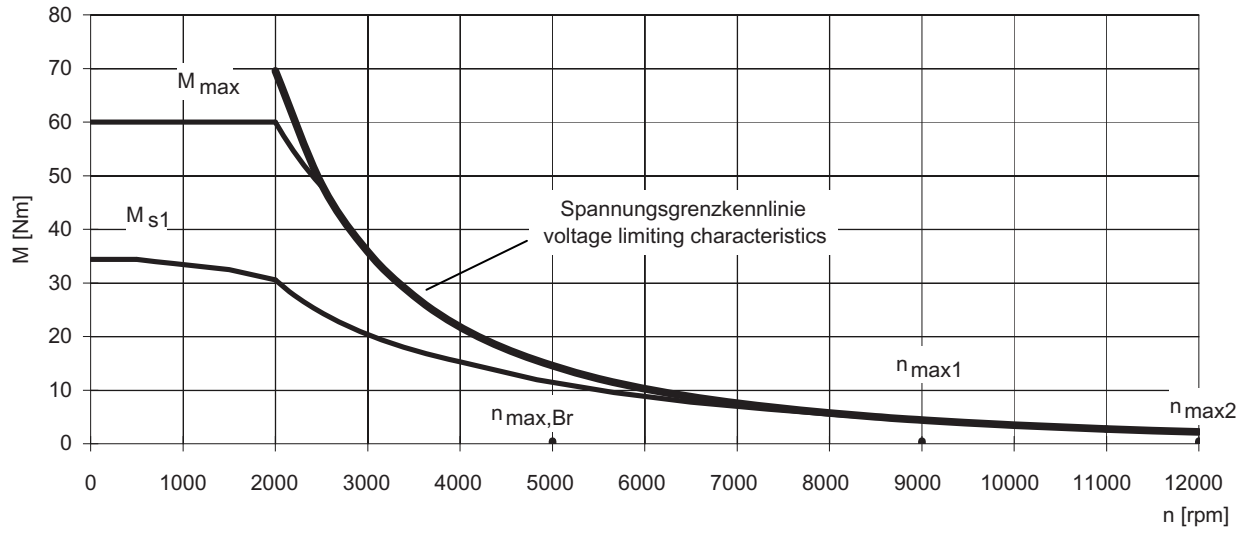
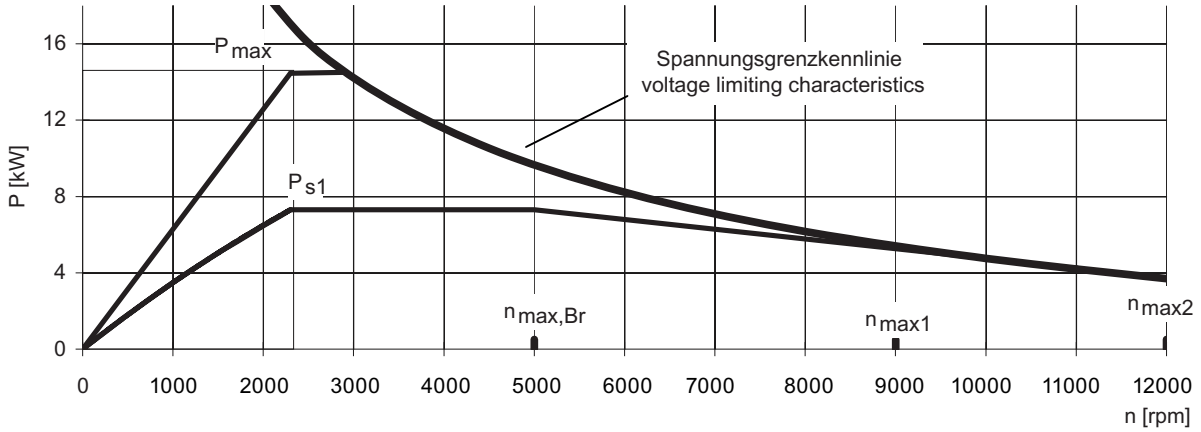



Tabella 4- 437 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8101-□□G2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 7,3 | 30 | 16,8 | 9000 | 12000 | - | 5000 | 5000 | 60 | 33 | 34 | 18 |
| 2000 | 6,4 | 31 | 16,8 | | | | | 6800 | | | | |
| 1500 | 5,0 | 32 | 17,3 | | | | | 9600 | | | | |



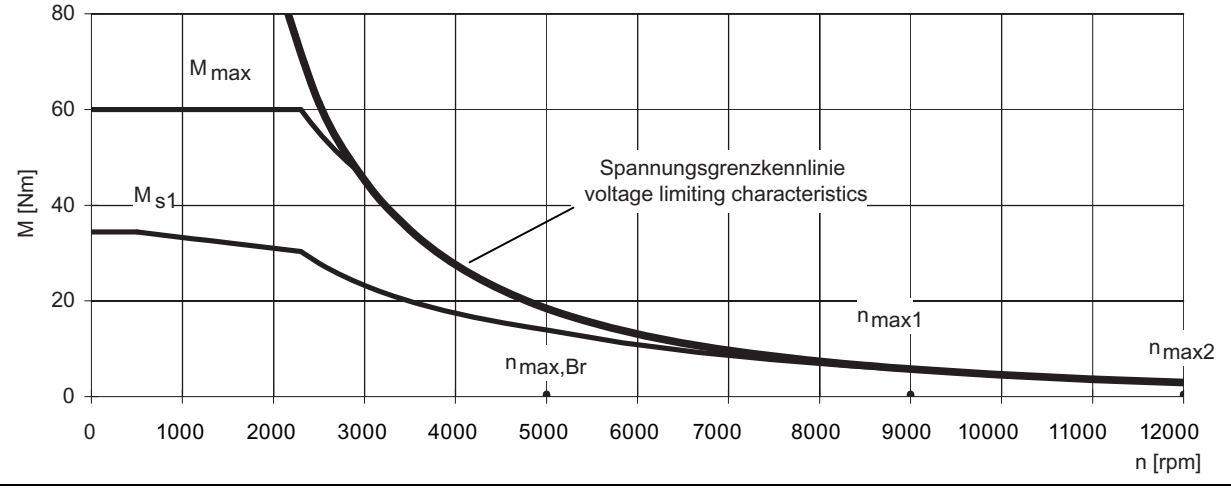



Tabella 4- 438 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8101-□□G2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 8,4 | 30 | 16,8 | 9000 | 12000 | - | 5000 | 4000 | 60 | 33 | 34 | 18 |

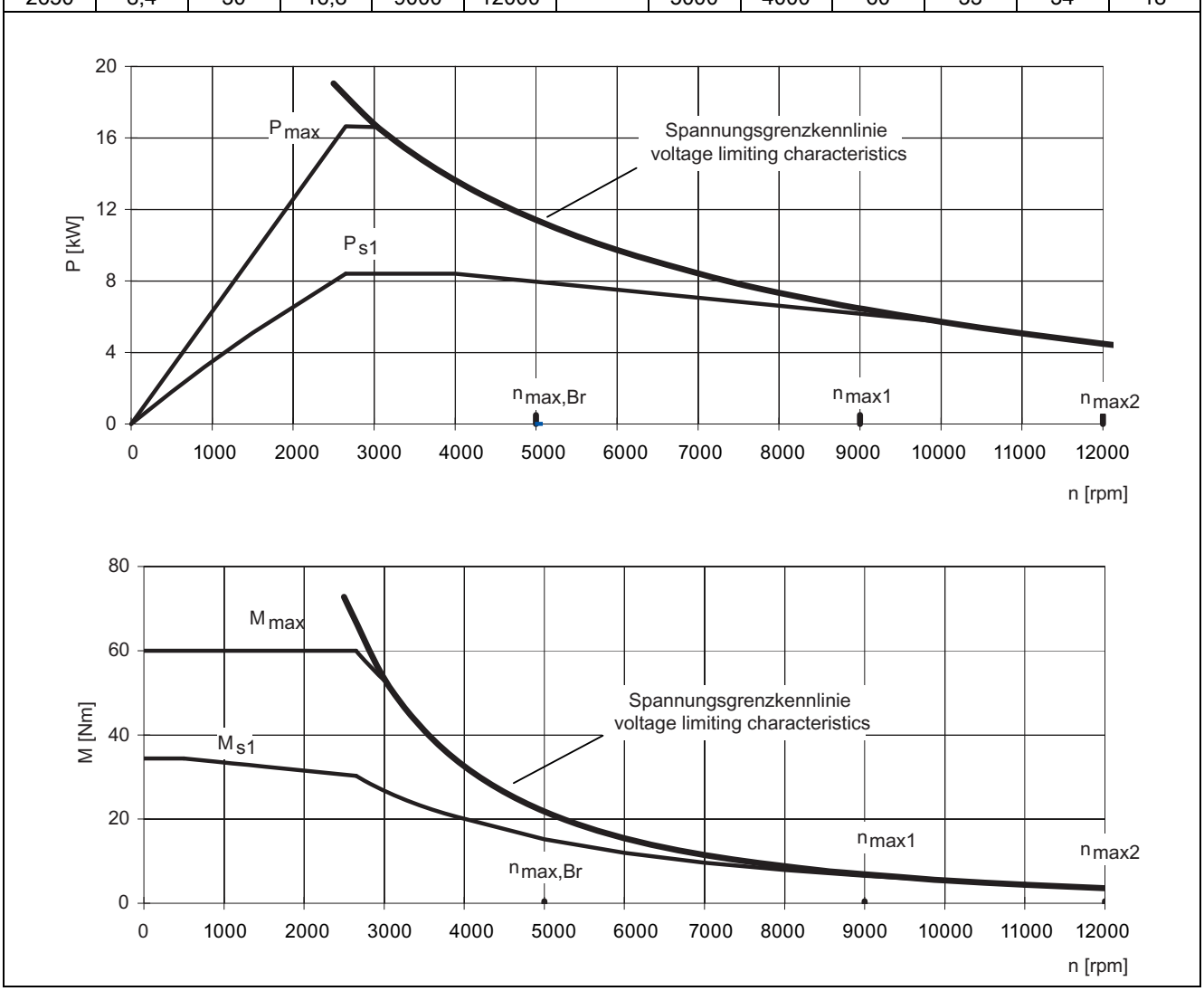
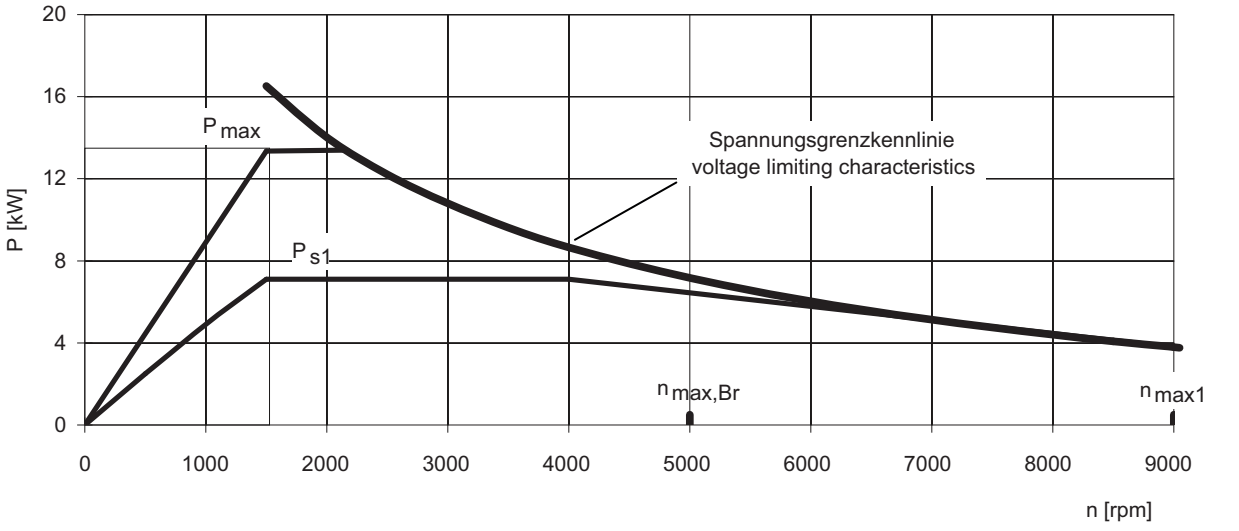


Tabella 4- 439 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8103-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 7,1 | 45 | 19,7 | 9000 | - | - | 5000 | 4000 | 85 | 37 | 48 | 20 |



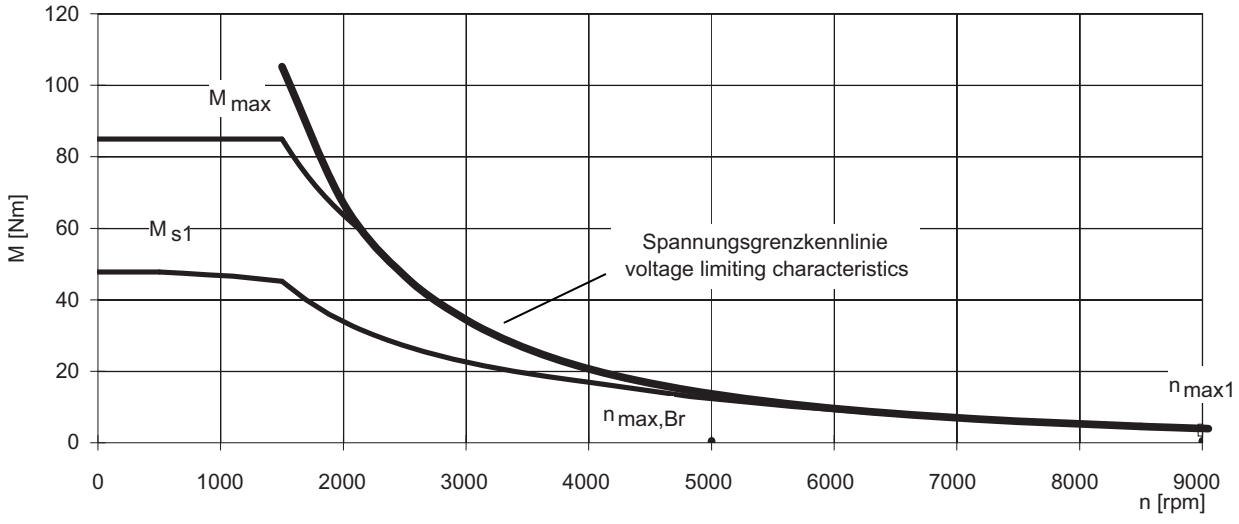
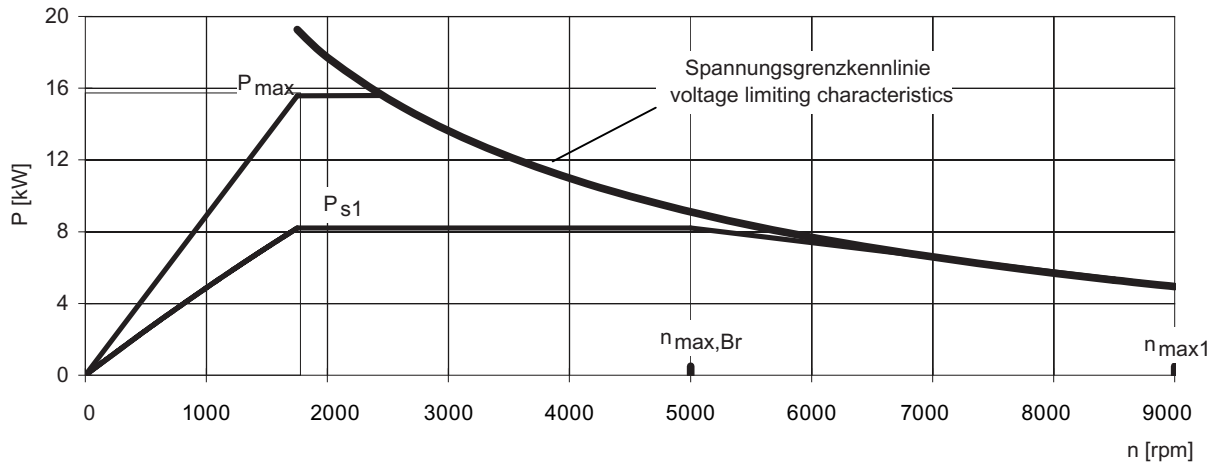



Tabella 4- 440 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8103-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 8,2 | 45 | 19,7 | 9000 | - | - | 5000 | 5000 | 85 | 37 | 48 | 20 |
| 1500 | 7,1 | 45 | 19,7 | | | | | 6400 | | | | |



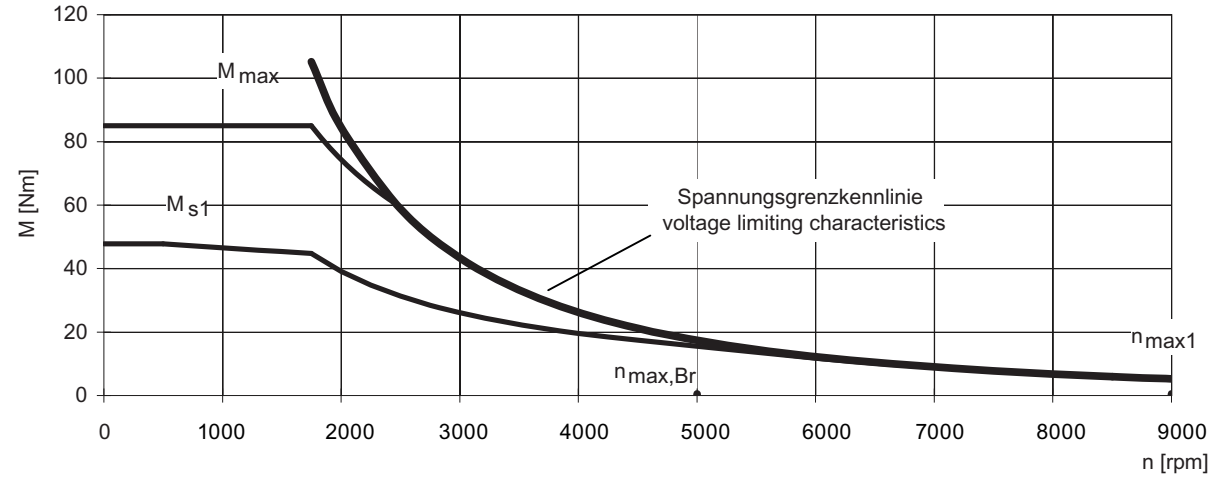
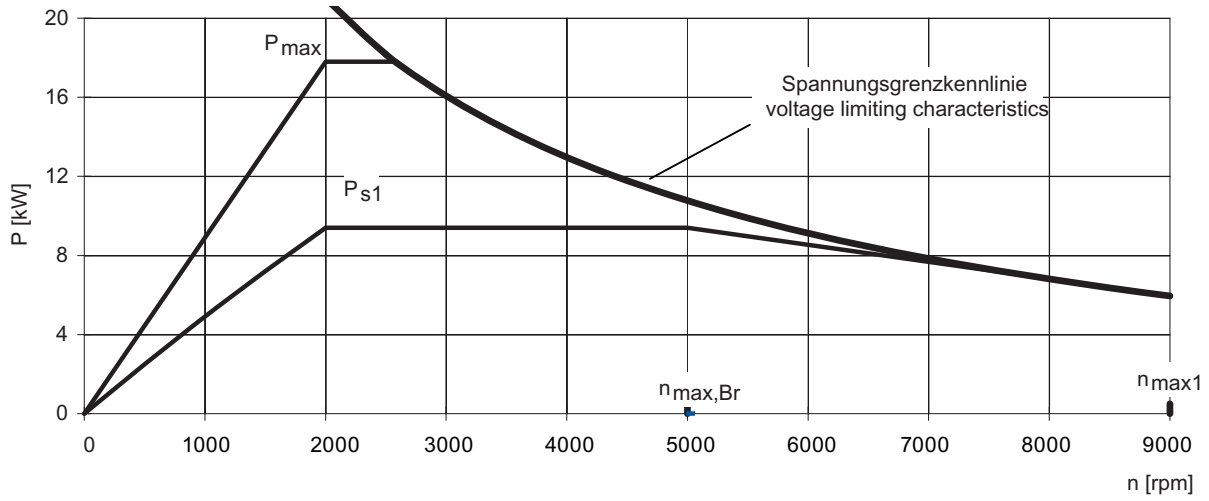



Tabella 4- 441 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8103-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 9,4 | 45 | 19,7 | 9000 | - | - | 5000 | 5000 | 85 | 37 | 48 | 20 |



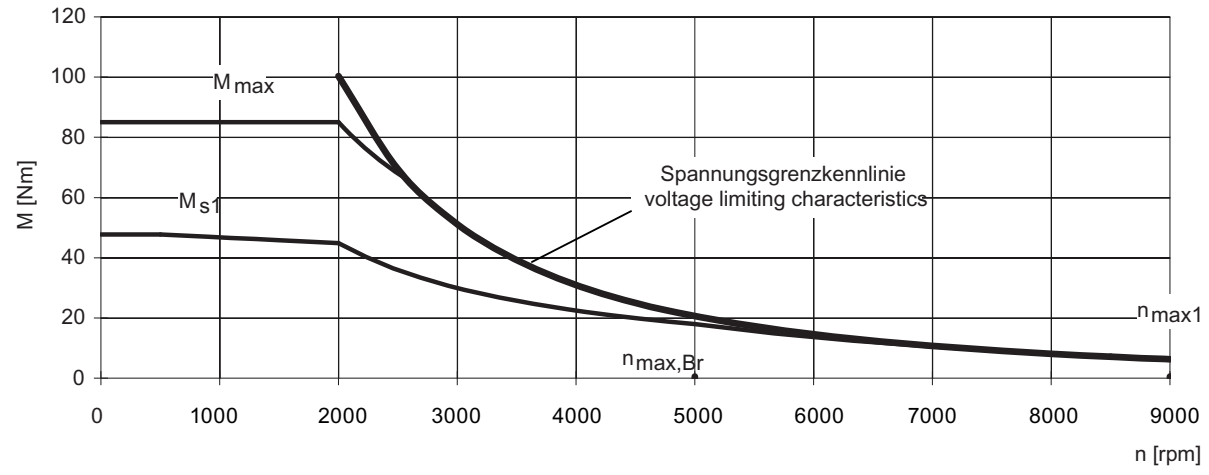
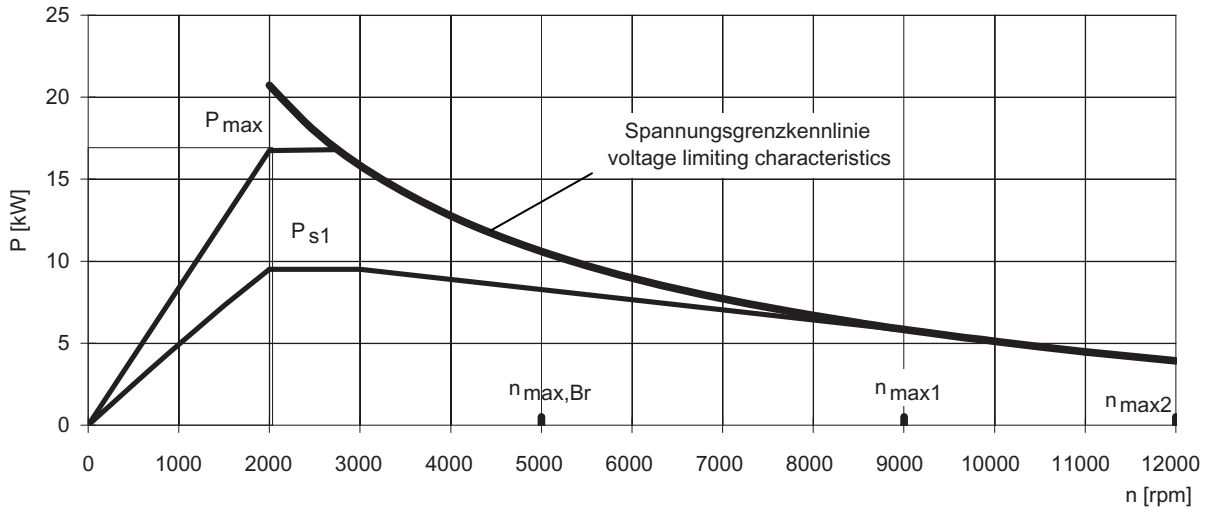



Tabella 4- 442 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8103-□□G2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 9,5 | 45 | 23,8 | 9000 | 12000 | - | 5000 | 3000 | 80 | 43 | 48 | 24 |



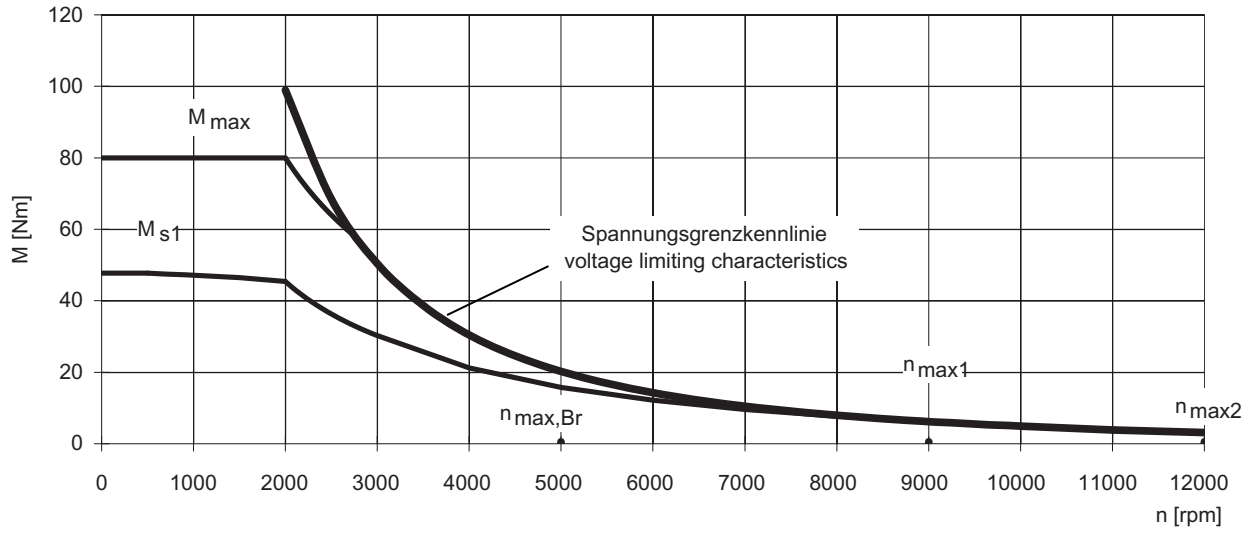
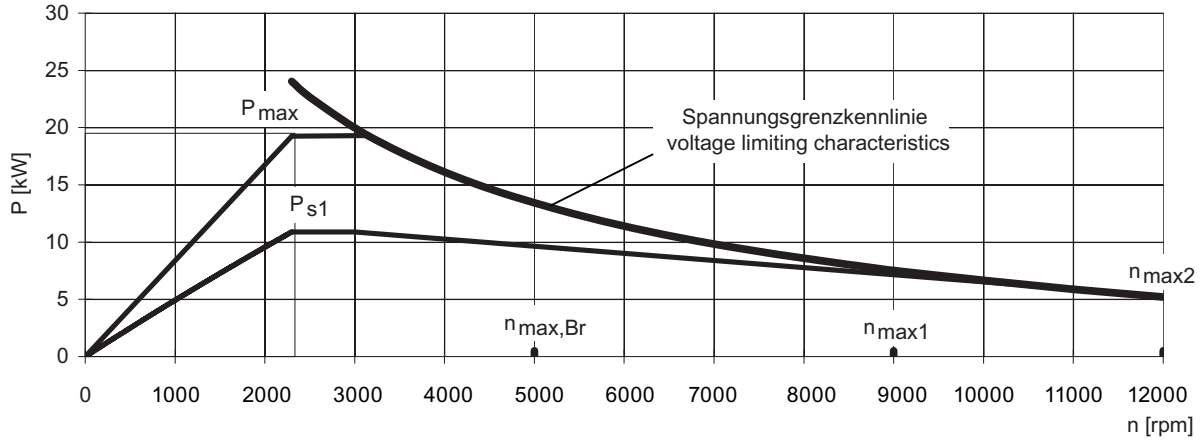



Tabella 4- 443 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8103-□□G2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 10,9 | 45 | 23,8 | 9000 | 12000 | - | 5000 | 3000 | 80 | 43 | 48 | 24 |
| 2000 | 9,5 | 45 | 23,8 | | | | | 5300 | | | | |
| 1500 | 7,0 | 45 | 23,7 | | | | | 8900 | | | | |



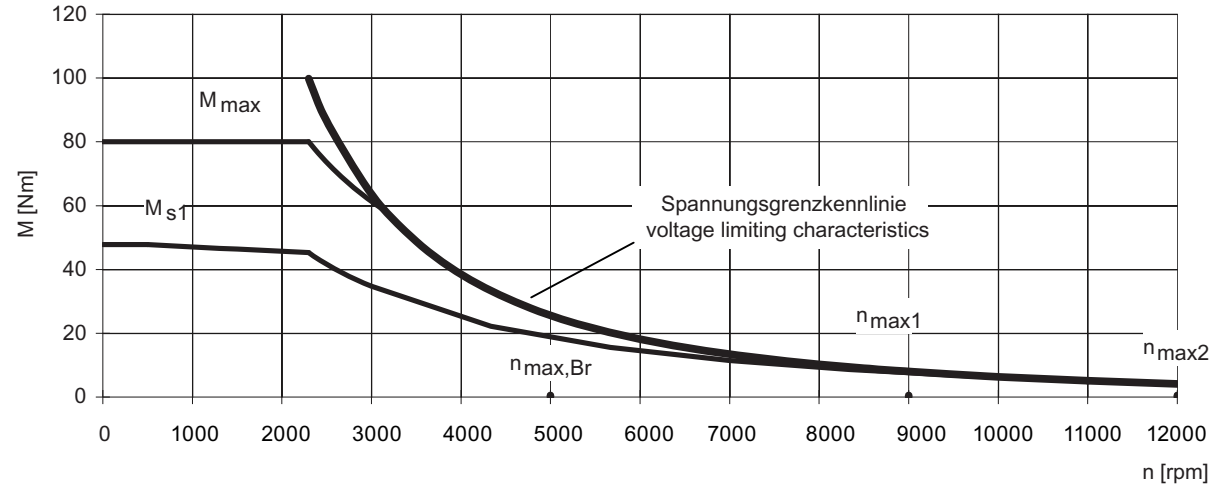
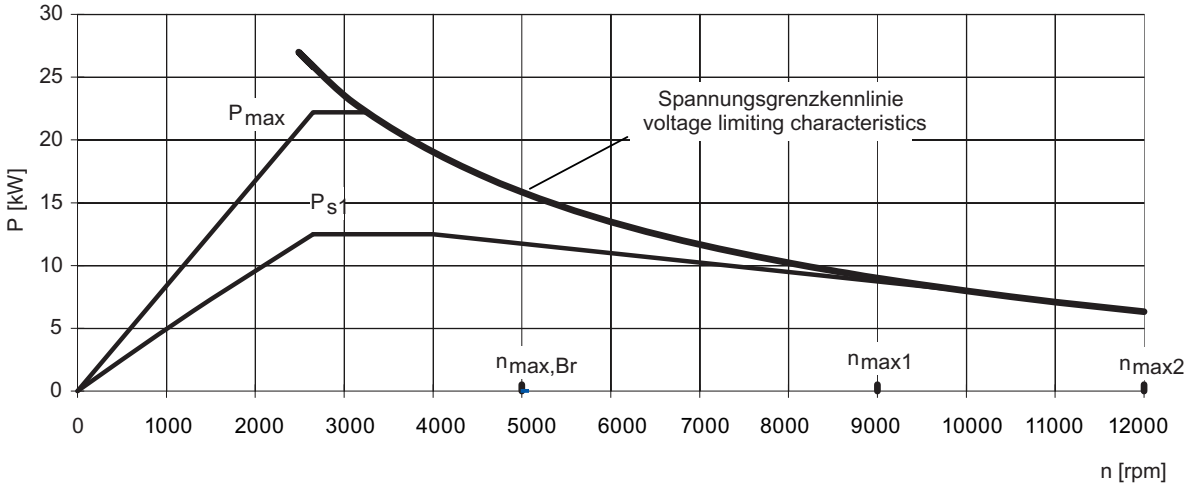



Tabella 4- 444 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8103-□□G2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 12,5 | 45 | 23,5 | 9000 | 12000 | - | 5000 | 4000 | 80 | 43 | 48 | 24 |



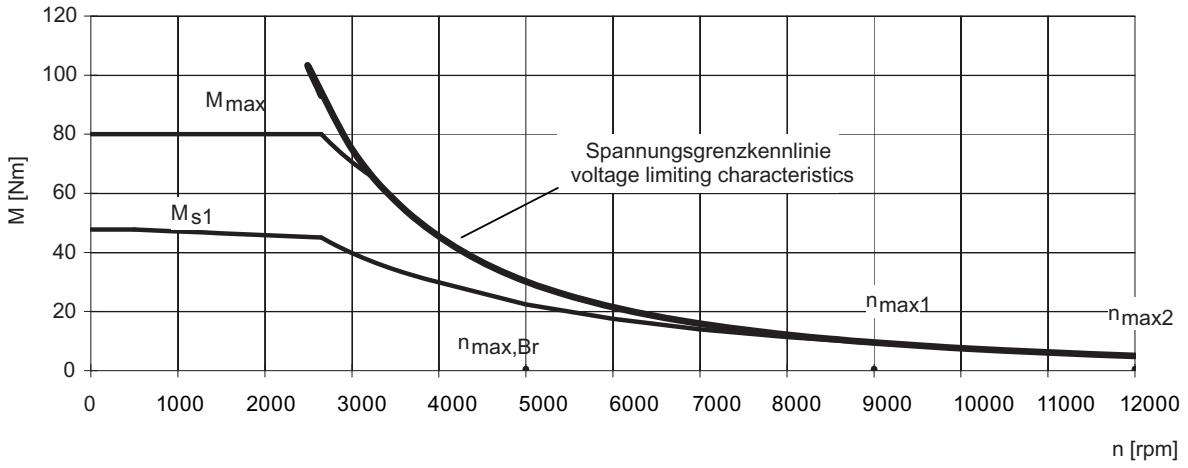



Tabella 4- 445 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8103-□□M2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3000 | 10,6 | 34 | 30,0 | 9000 | 12000 | 18000 | 5000 | 11900 | 95 | 82 | 46 | 35 |

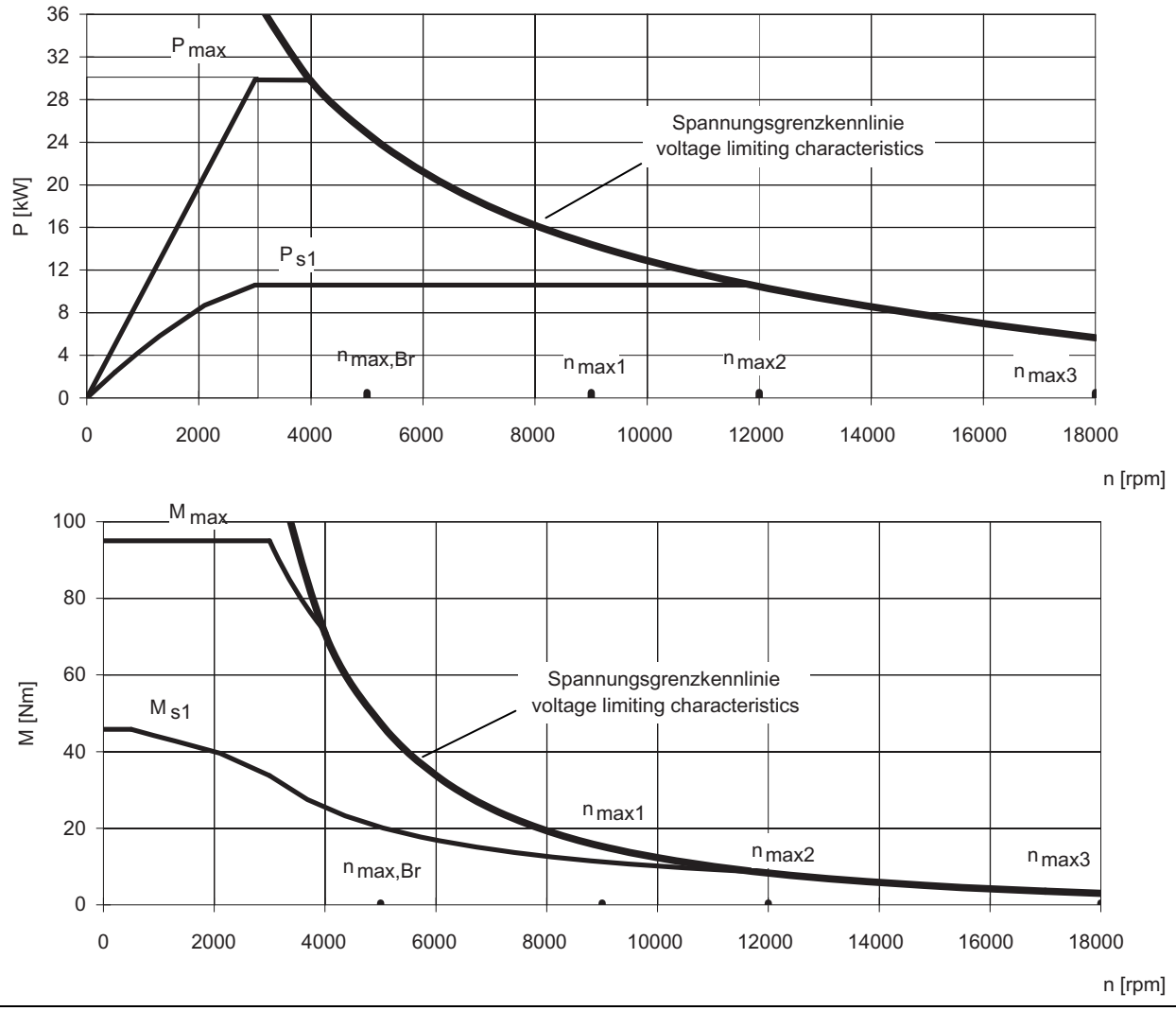
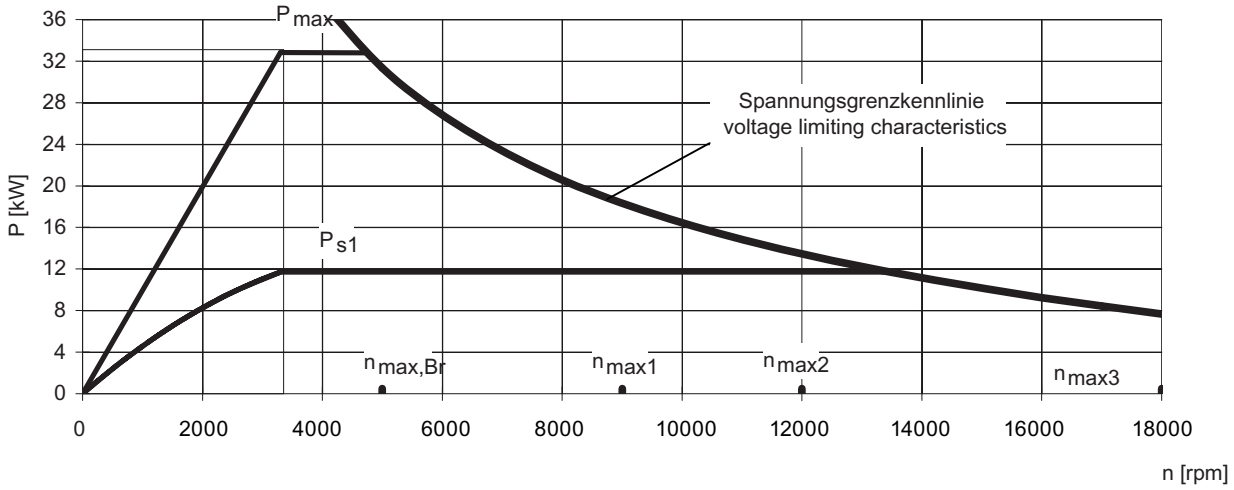


Tabella 4- 446 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8103-□□M2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3300 | 11,7 | 34 | 30,0 | 9000 | 12000 | 18000 | 5000 | 13550 | 95 | 82 | 46 | 35 |
| 3000 | 10,6 | 34 | 30,0 | | | | | 14600 | | | | |



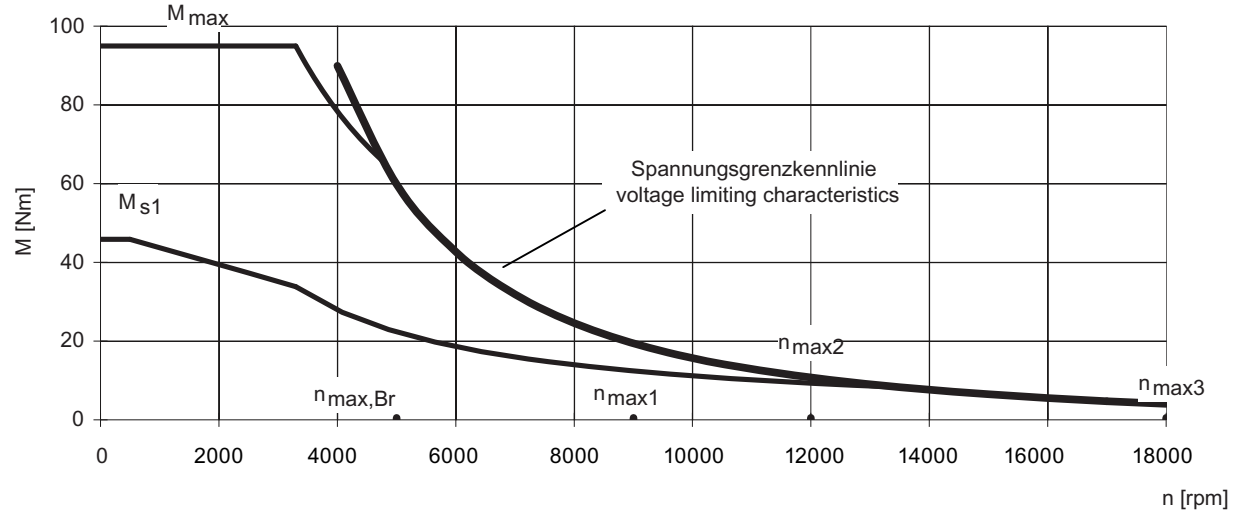
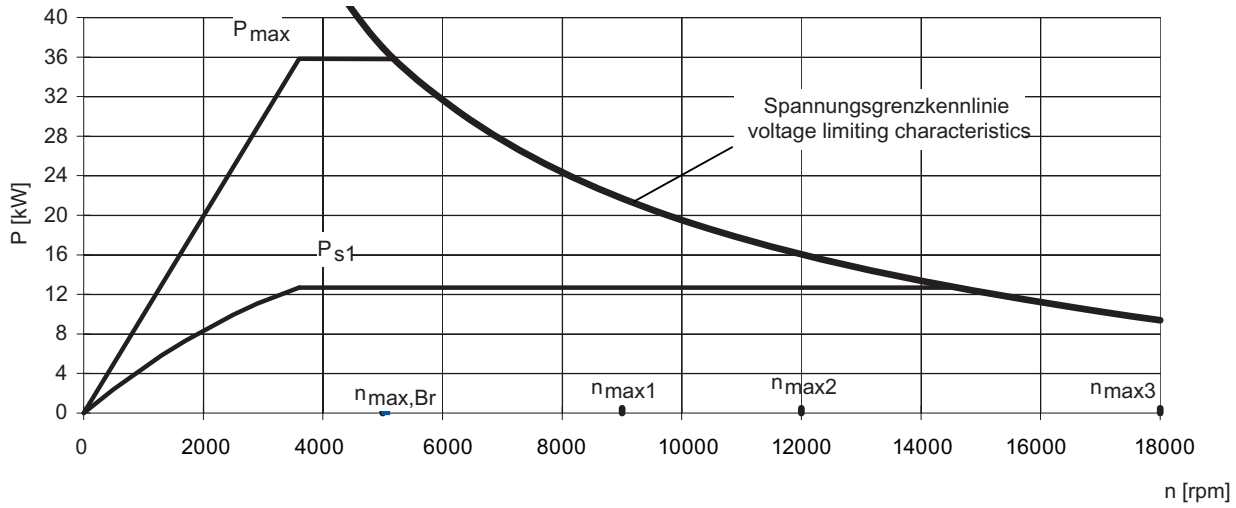



Tabella 4- 447 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8103-□□M2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3600 | 12,7 | 34 | 29,7 | 9000 | 12000 | 18000 | 5000 | 17650 | 95 | 82 | 46 | 35 |



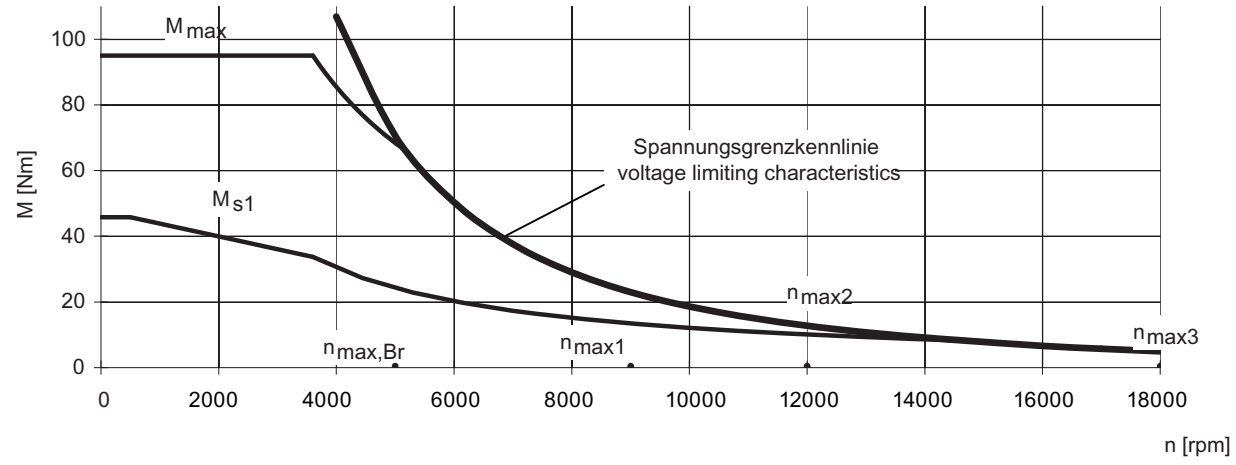
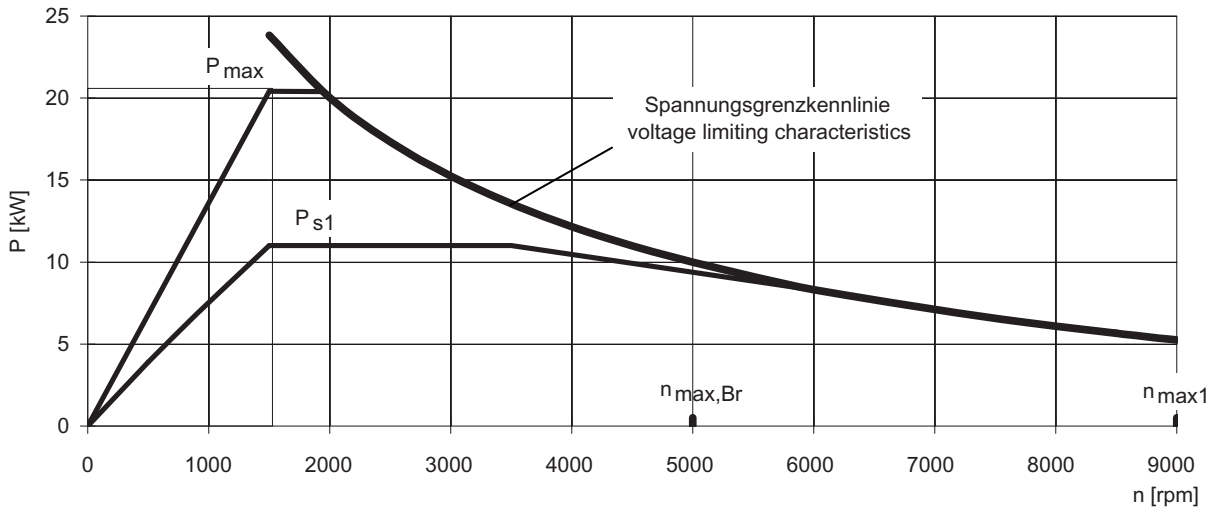



Tabella 4- 448 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8105-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 11,0 | 70 | 28,5 | 9000 | - | - | 5000 | 3500 | 130 | 54 | 74 | 29 |



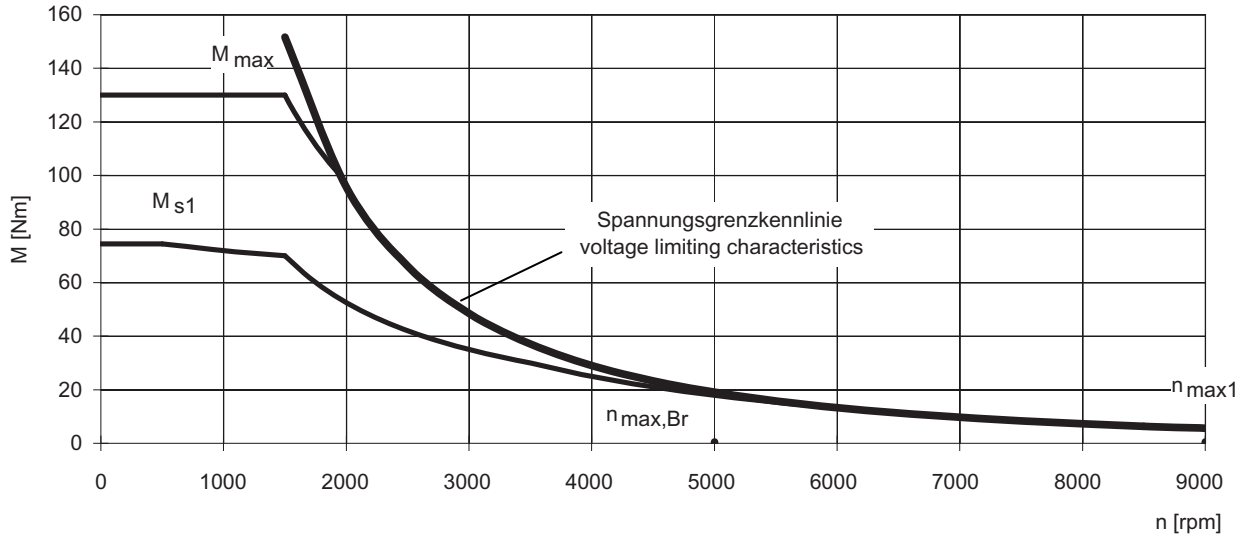
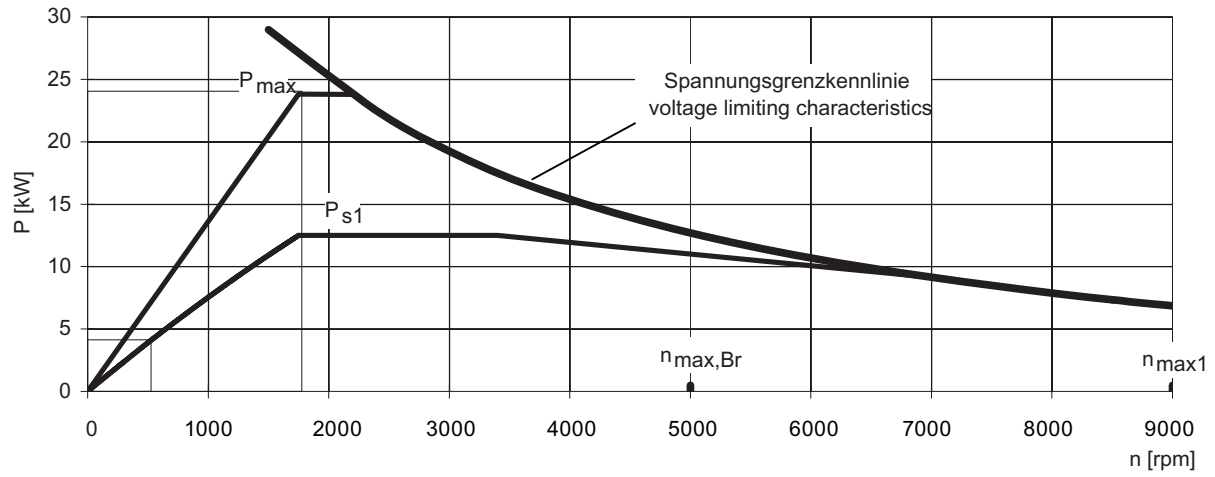



Tabella 4- 449 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8105-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 12,5 | 68 | 28,5 | 9000 | - | - | 5000 | 3400 | 130 | 54 | 74 | 29 |
| 1500 | 11,0 | 70 | 28,5 | | | | | 5000 | | | | |



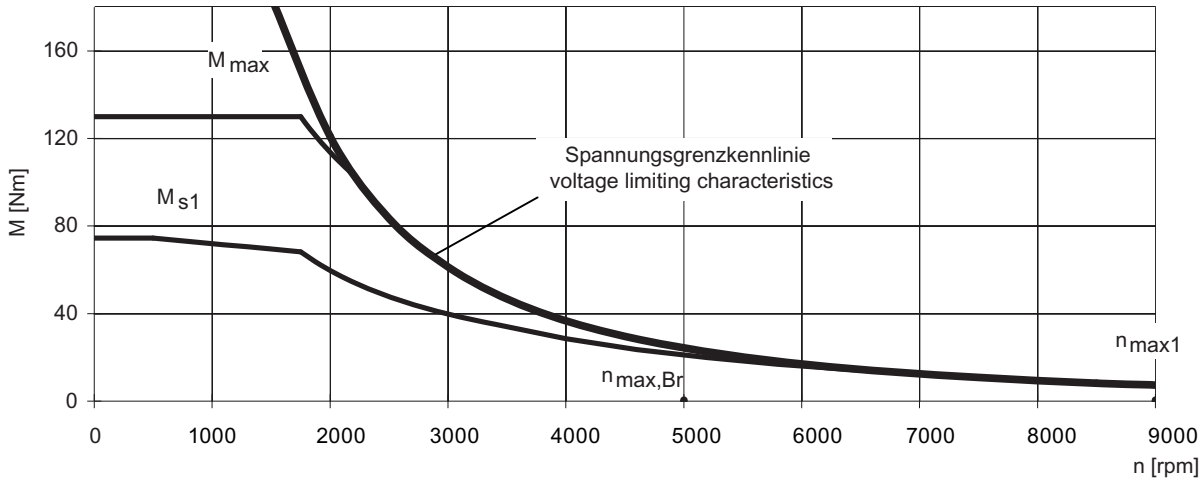
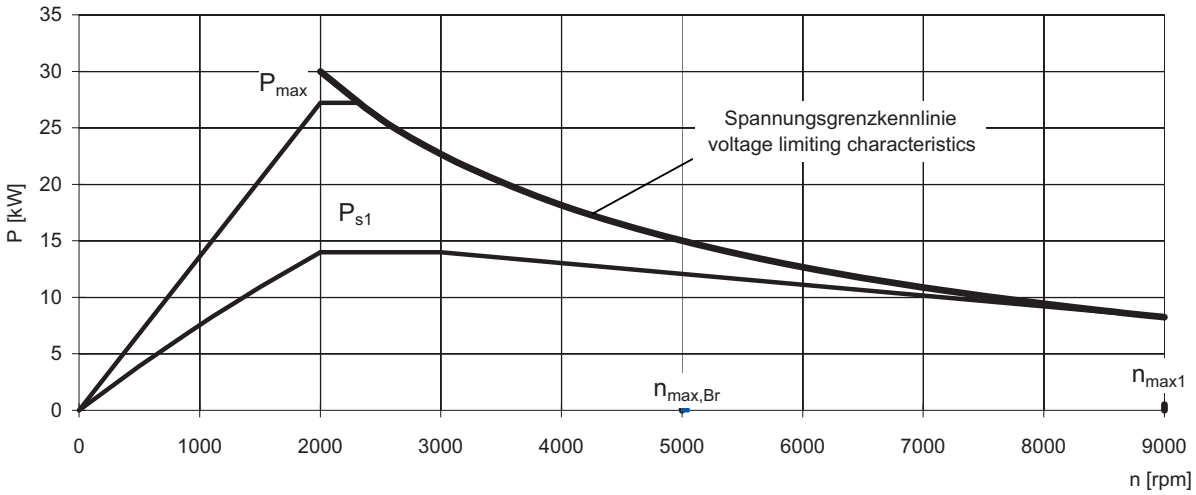



Tabella 4- 450 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8105-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 14,0 | 67 | 27,5 | 9000 | - | - | 5000 | 3000 | 130 | 54 | 74 | 29 |



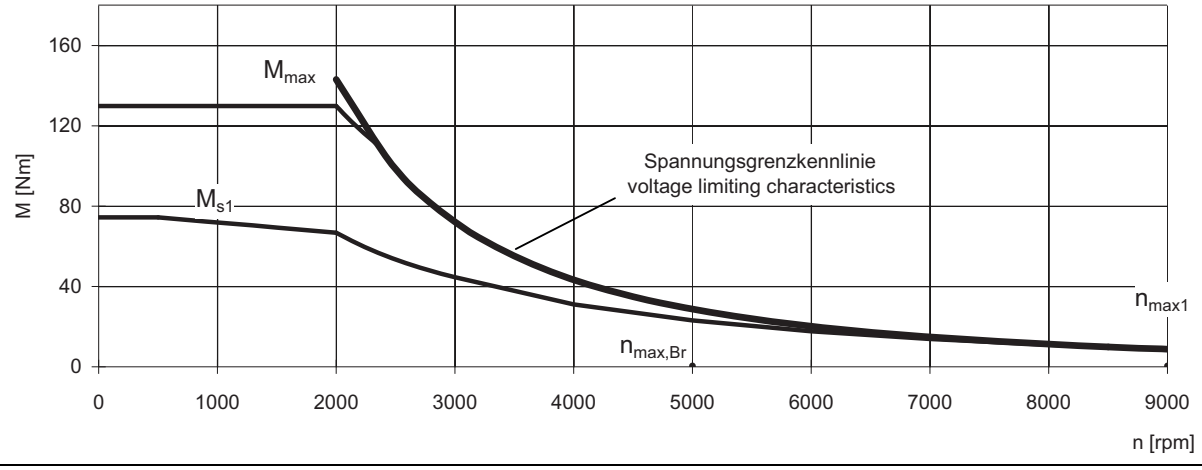
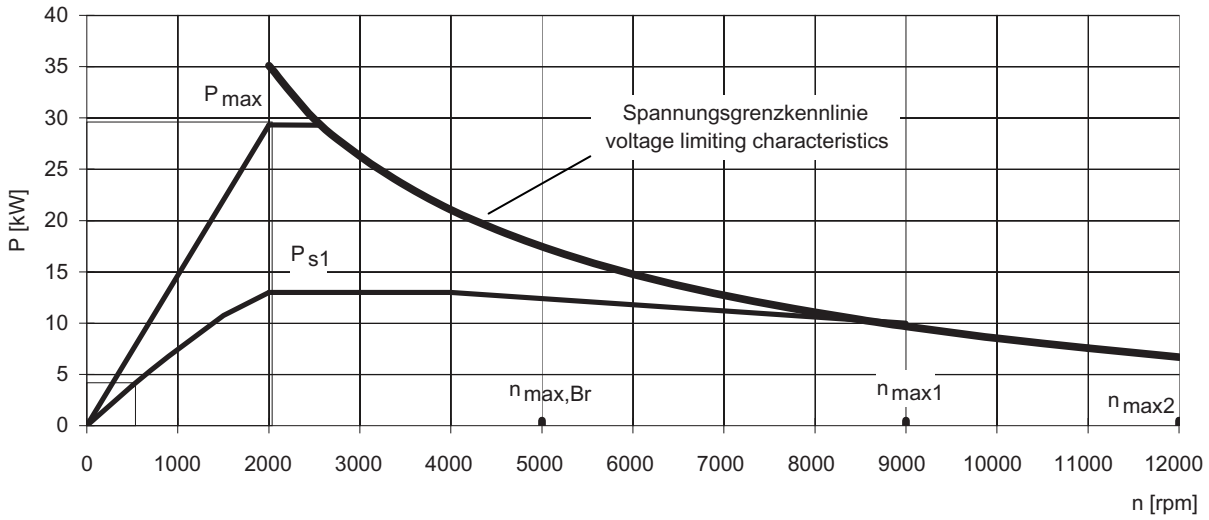



Tabella 4- 451 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8105-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 13,0 | 62 | 34,5 | 9000 | 12000 | - | 5000 | 4000 | 140 | 75 | 74 | 38 |



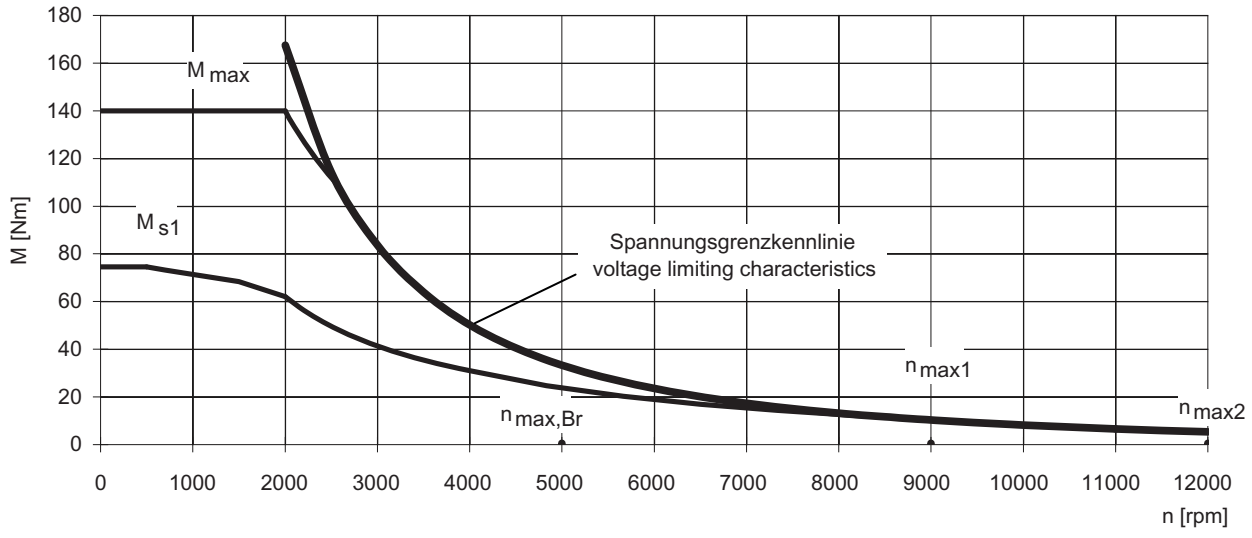
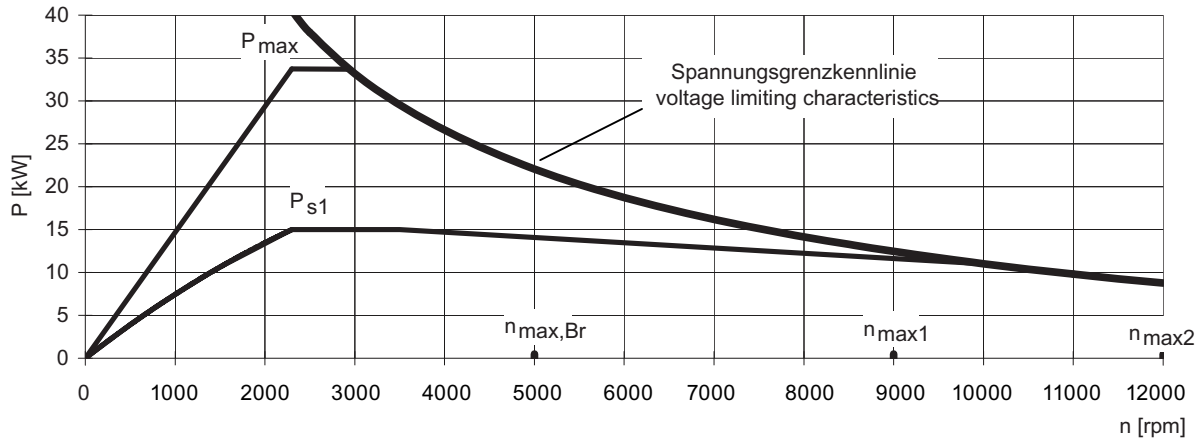



Tabella 4- 452 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8105-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 15,0 | 62 | 34,0 | 9000 | 12000 | - | 5000 | 3500 | 140 | 75 | 74 | 38 |
| 2000 | 13,0 | 62 | 34,5 | | | | | 6750 | | | | |
| 1500 | 11,0 | 70 | 35,2 | | | | | 10000 | | | | |



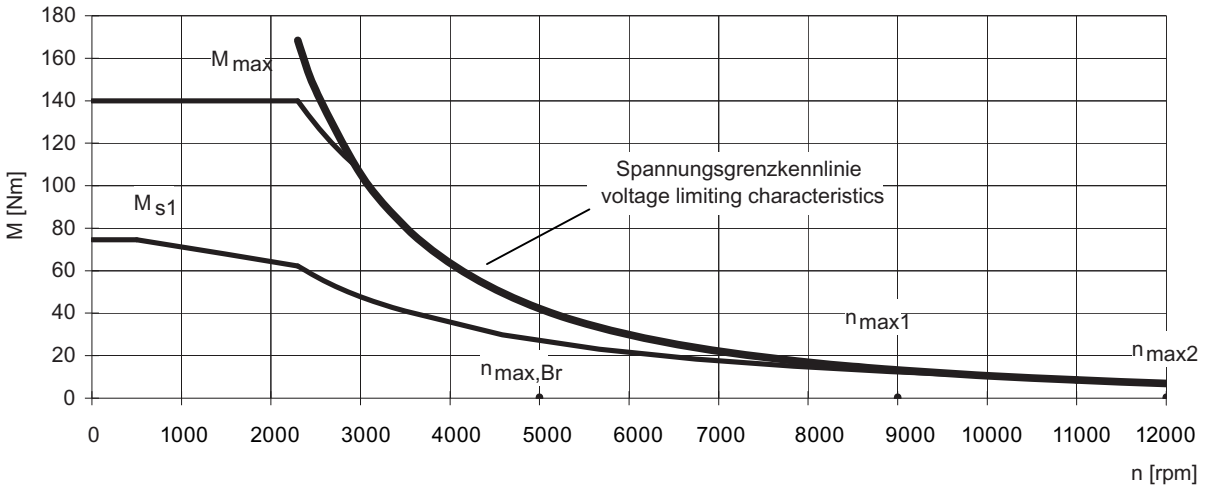
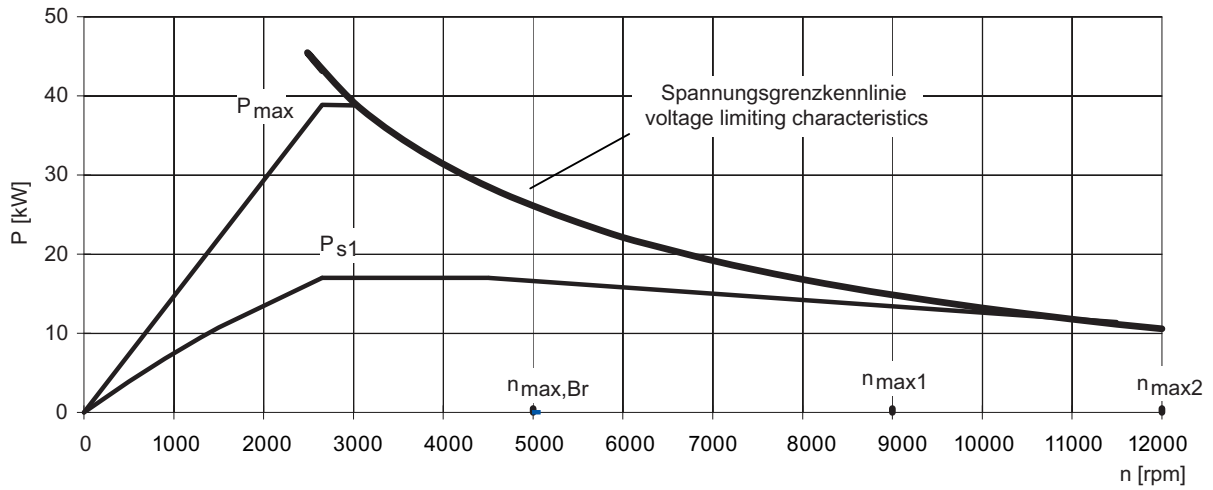



Tabella 4- 453 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8105-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 17,0 | 61 | 33,5 | 9000 | 12000 | - | 5000 | 4500 | 140 | 75 | 74 | 38 |



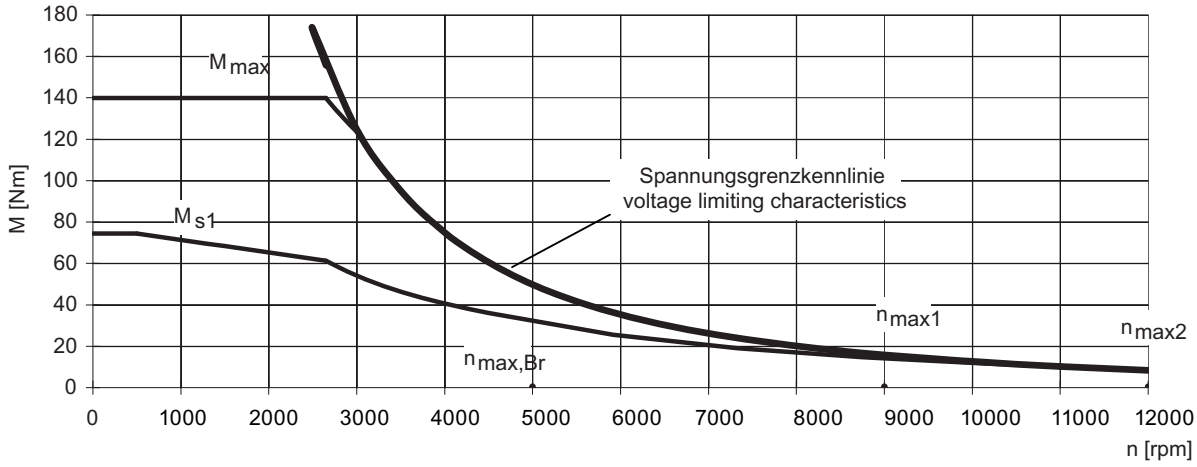



Tabella 4- 454 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8105-□□M2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3000 | 16,8 | 53 | 45,0 | 9000 | 12000 | 18000 | 5000 | 8050 | 145 | 119 | 71 | 52 |

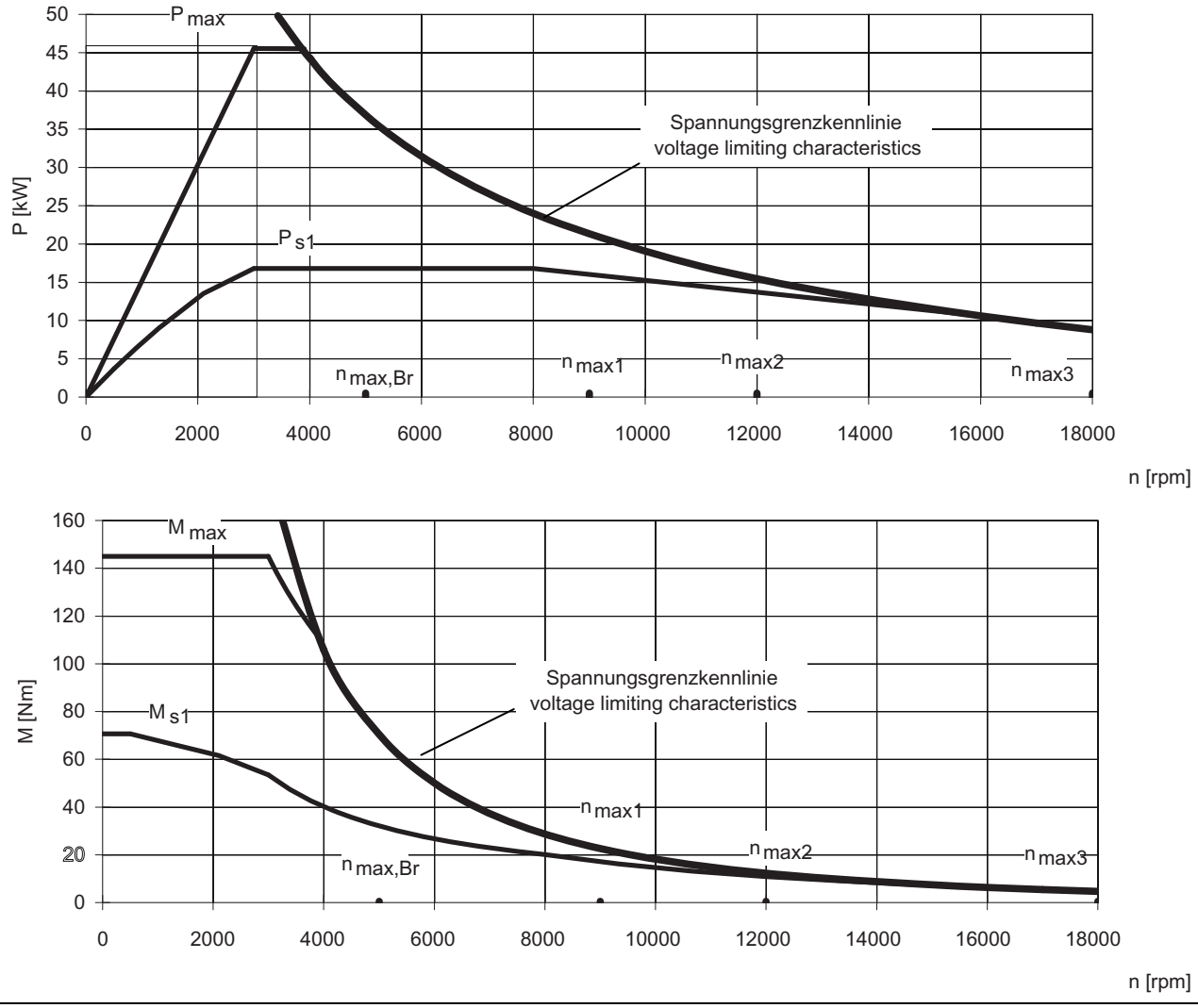
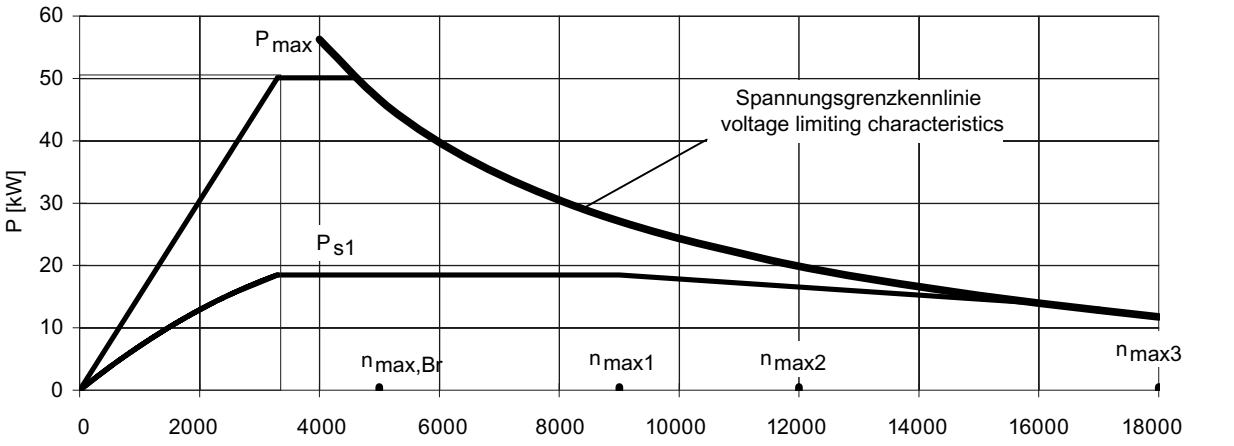


Tabella 4- 455 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8105-□□M2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3300 | 18,5 | 54 | 45,0 | 9000 | 12000 | 18000 | 5000 | 9050 | 145 | 119 | 71 | 52 |
| 3000 | 16,8 | 53 | 45,0 | | | | | 11700 | | | | |



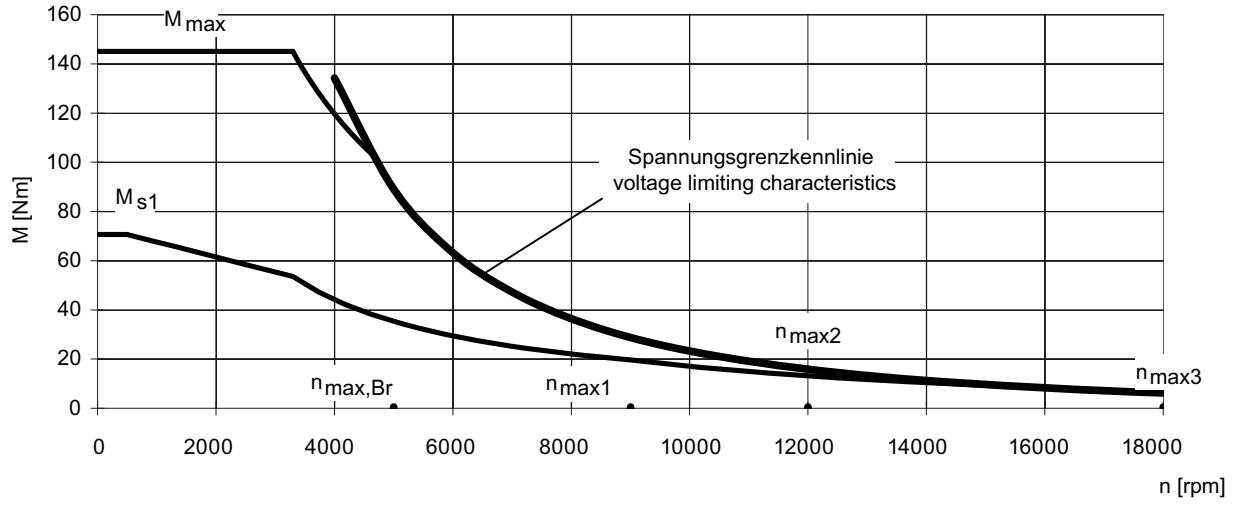
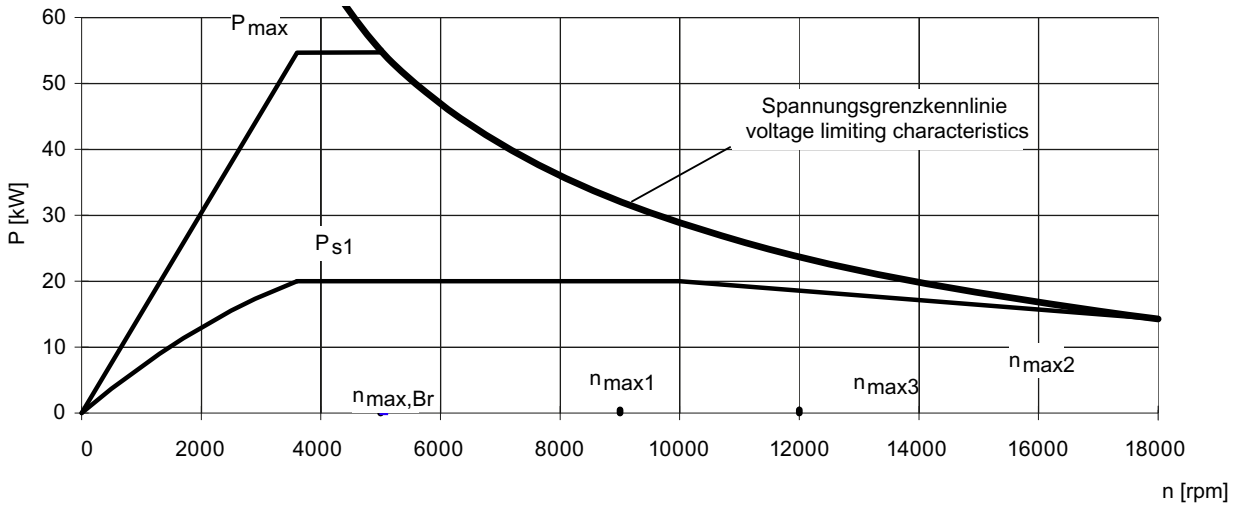



Tabella 4- 456 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8105-□□M2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3600 | 20,0 | 53 | 45,0 | 9000 | 12000 | 18000 | 5000 | 10000 | 145 | 119 | 71 | 42 |



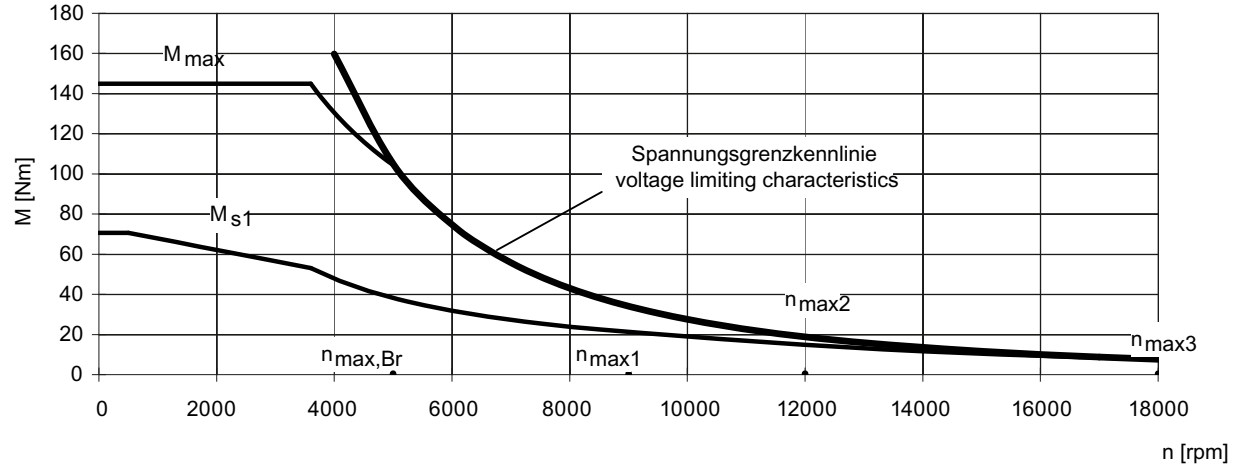
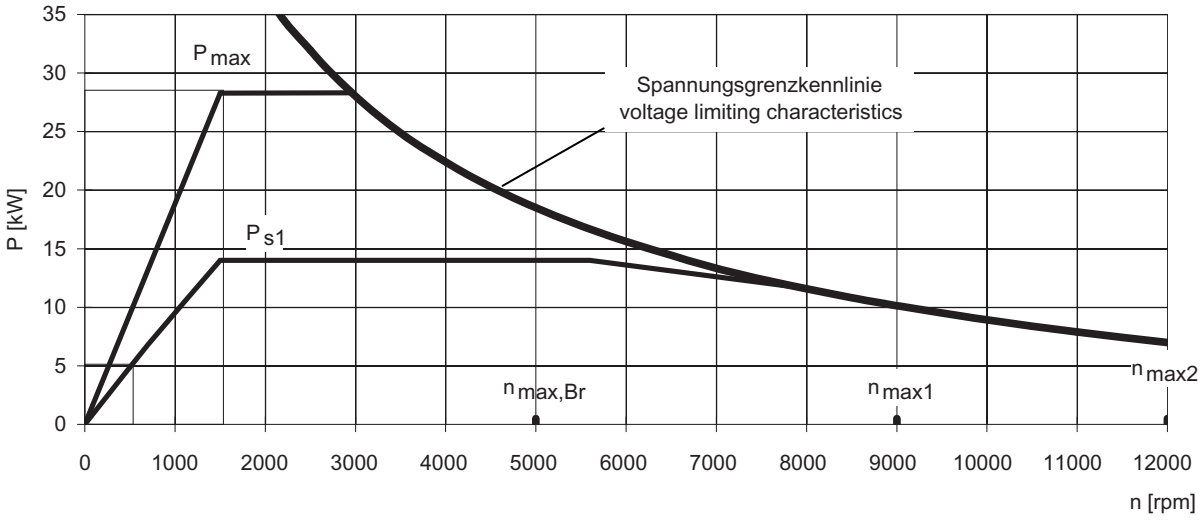



Tabella 4- 457 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8107-□□F2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 14,0 | 89 | 43,7 | 9000 | 12000 | - | 5000 | 5600 | 180 | 89 | 94 | 44 |



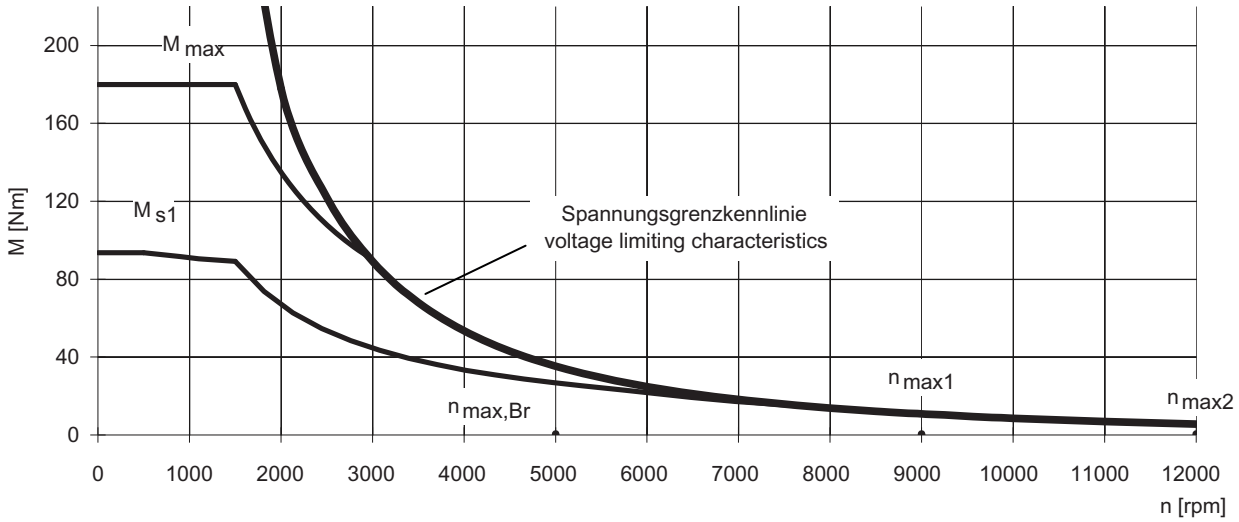
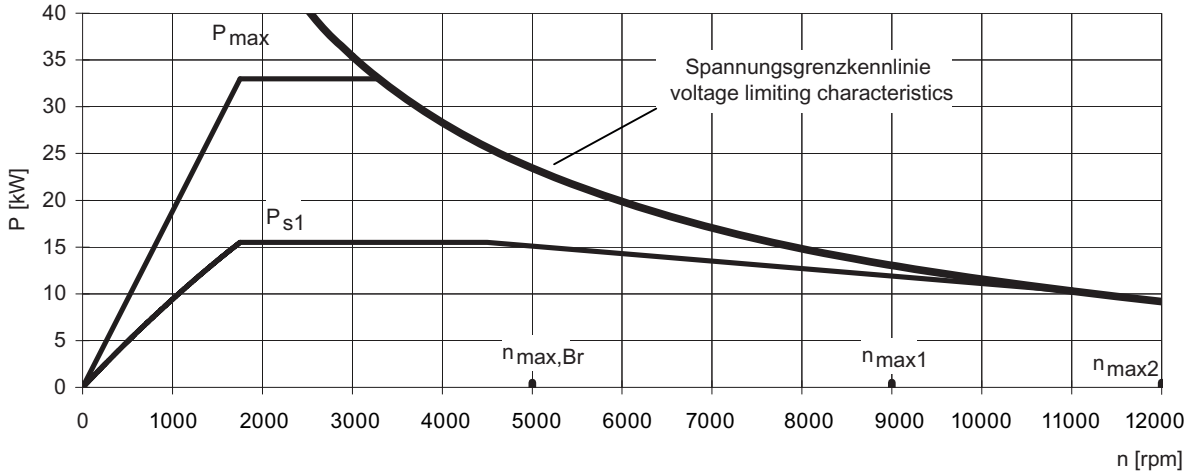



Tabella 4- 458 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8107-□□F2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 15,5 | 85 | 42,0 | 9000 | 12000 | - | 5000 | 4500 | 180 | 89 | 94 | 44 |
| 1500 | 14,0 | 89 | 43,7 | | | | | 6400 | | | | |



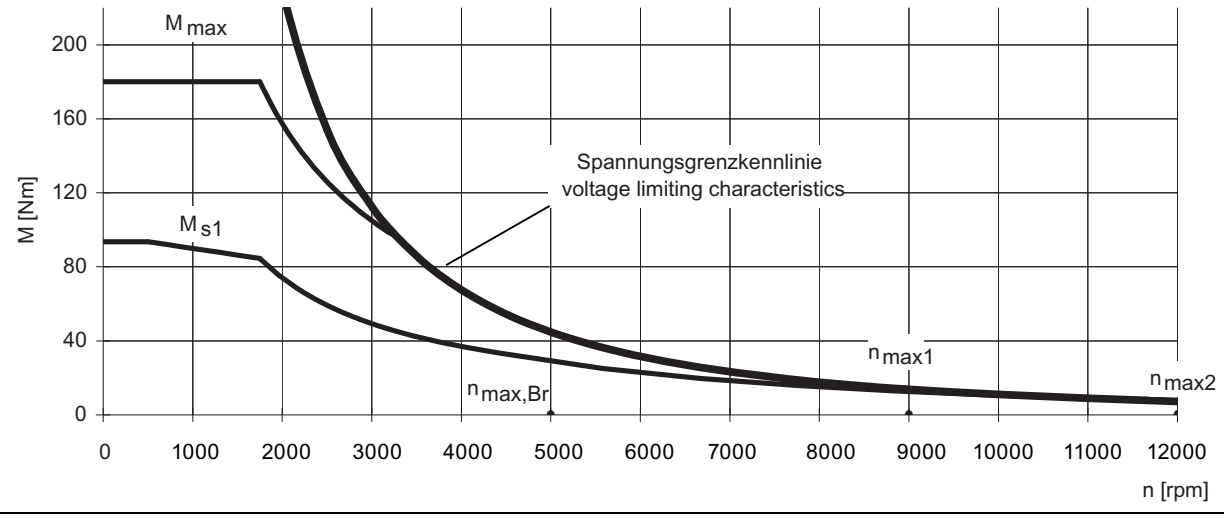
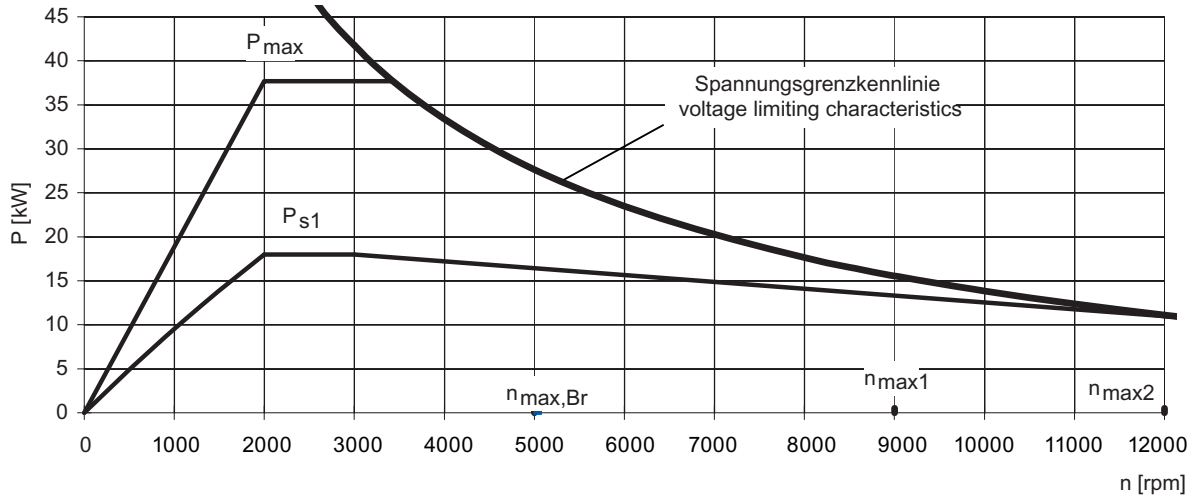



Tabella 4- 459 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8107-□□F2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 18,0 | 86 | 42,6 | 9000 | 12000 | - | 5000 | 3000 | 180 | 89 | 94 | 44 |



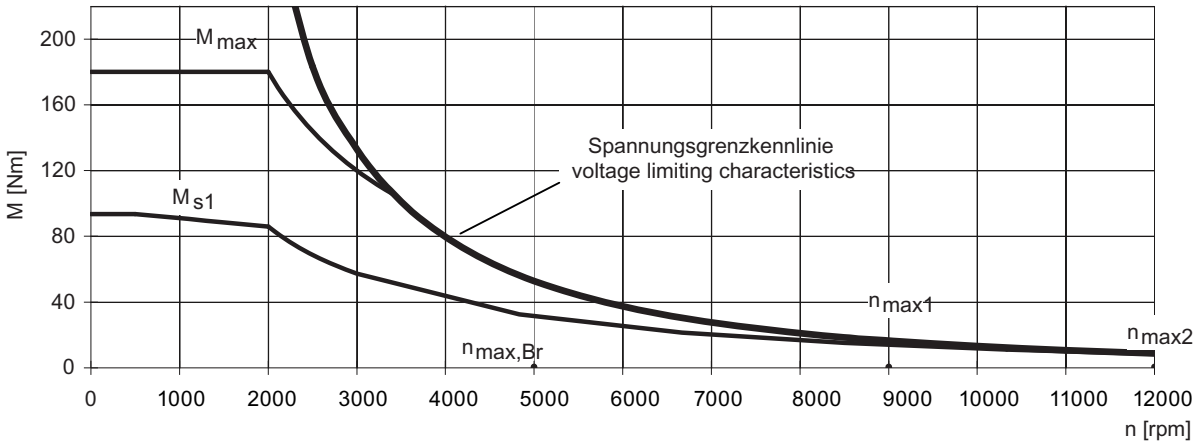



Tabella 4- 460 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8107-□□M2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3000 | 18,0 | 57 | 60,0 | 9000 | 12000 | 18000 | 5000 | 17000 | 175 | 178 | 82 | 73 |

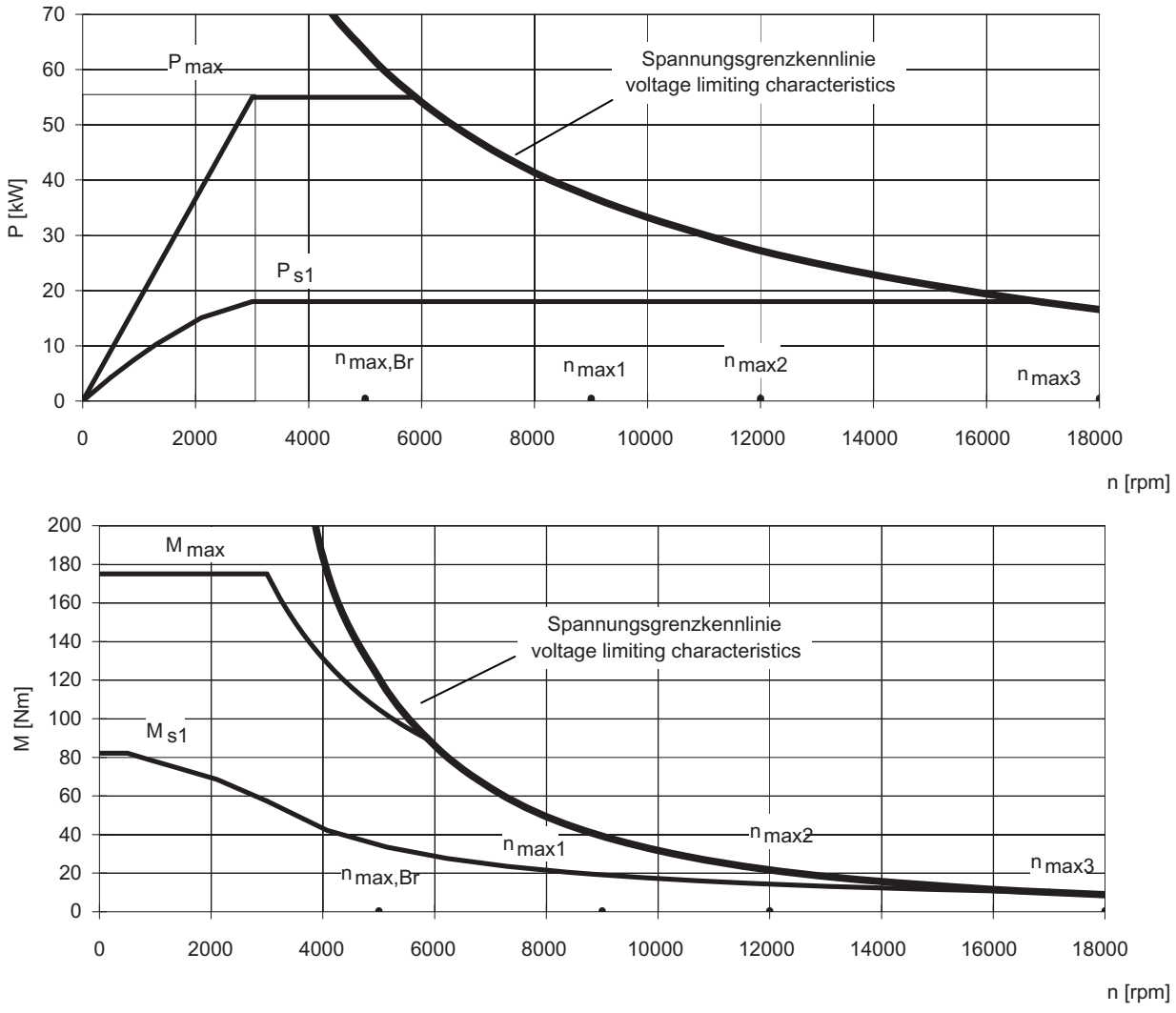


Tabella 4- 461 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8107-□□M2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3300 | 20,0 | 58 | 60,0 | 9000 | 12000 | 18000 | 5000 | 18050 | 175 | 178 | 82 | 73 |
| 3000 | 18,0 | 57 | 60,0 | | | | | 18050 | | | | |

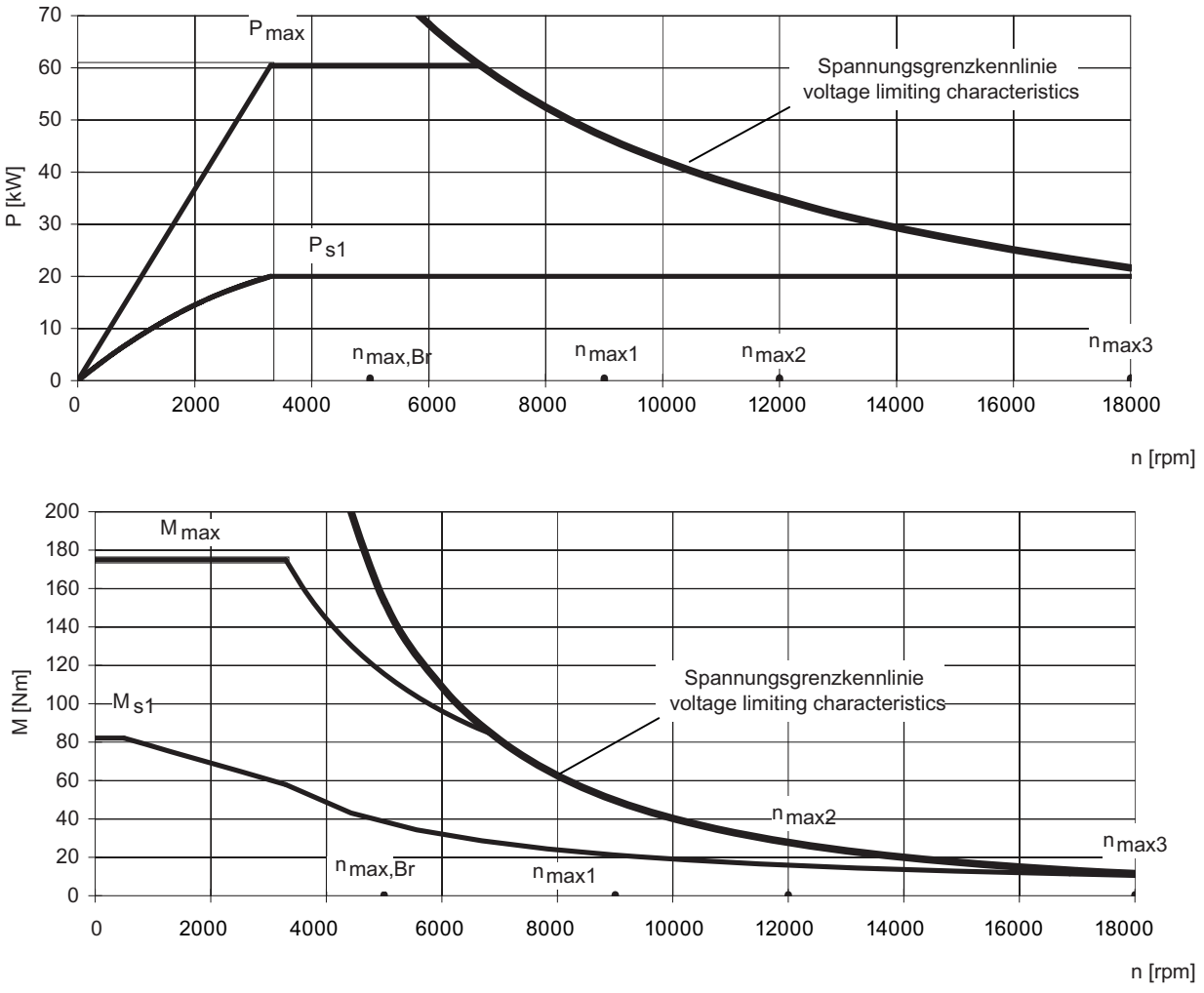
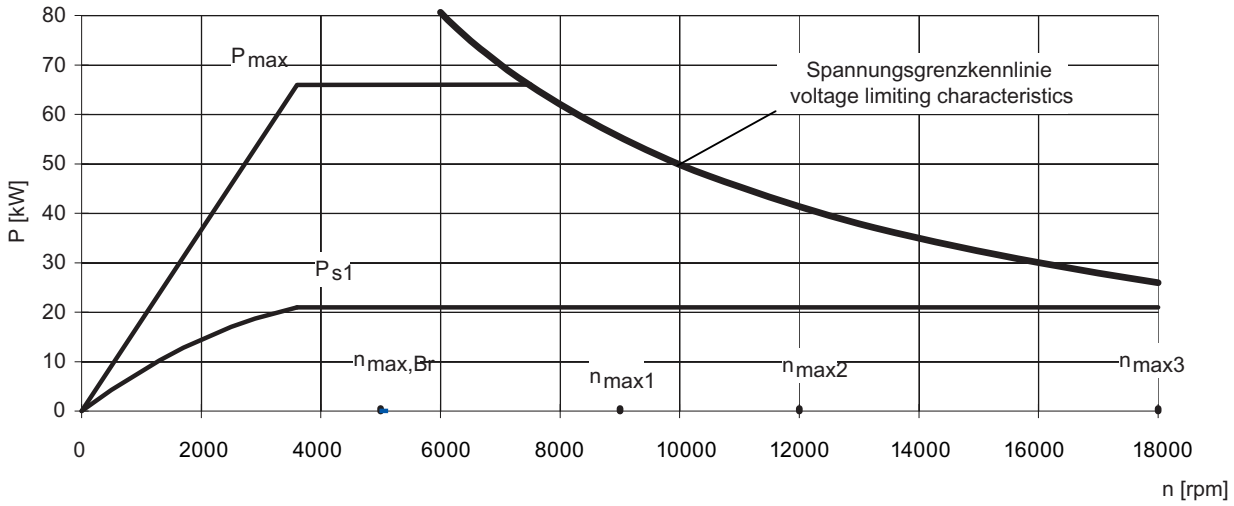
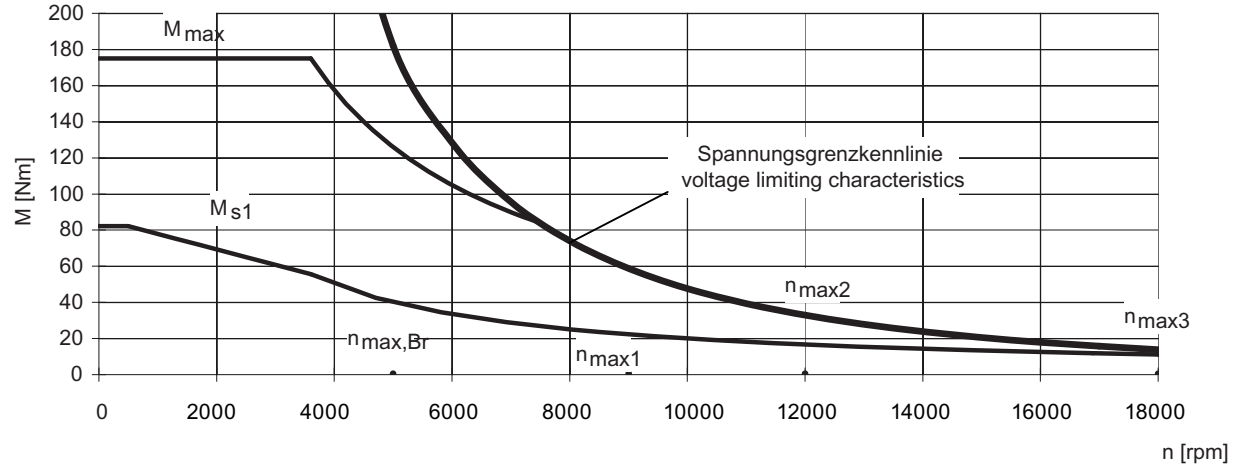


Tabella 4- 462 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8107-□□M2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3600 | 21,0 | 56 | 59,0 | 9000 | 12000 | 1800 | 5000 | 17650 | 175 | 178 | 82 | 73 |



### 4.1.3.3 Altezza dell'asse 132 - Raffreddamento ad acqua

Tabella 4- 463 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8131-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 15,0 | 96 | 30 | 8000 | 10000 | 11000 | 4500 | 2500 | 145 | 46 | 96 | 30 |

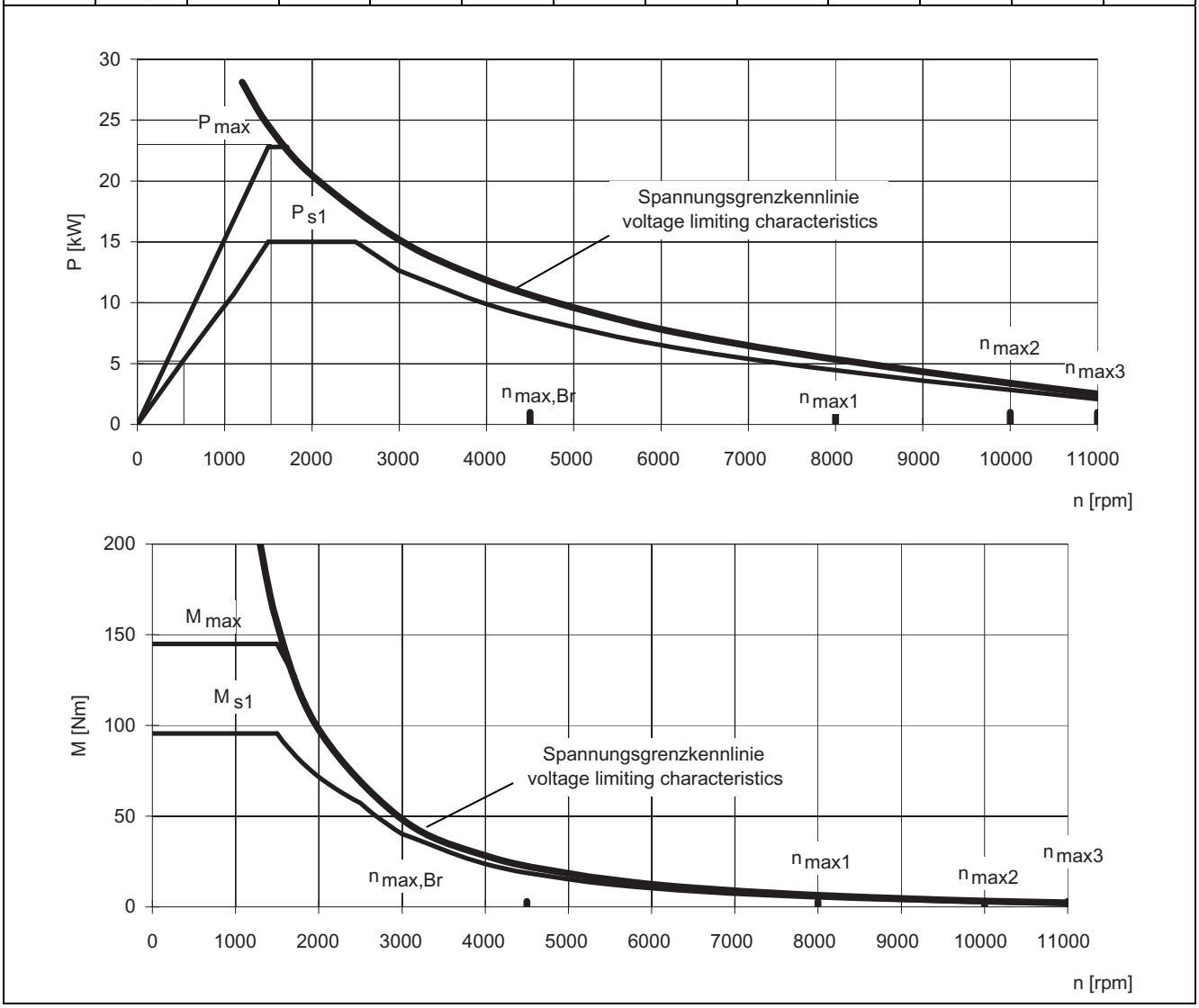


Tabella 4- 464 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8131-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 17,0 | 93 | 30 | 8000 | 10000 | 11000 | 4500 | 2500 | 145 | 46 | 96 | 30 |
| 1500 | 15,0 | 96 | 30 | | | | | 3200 | | | | |

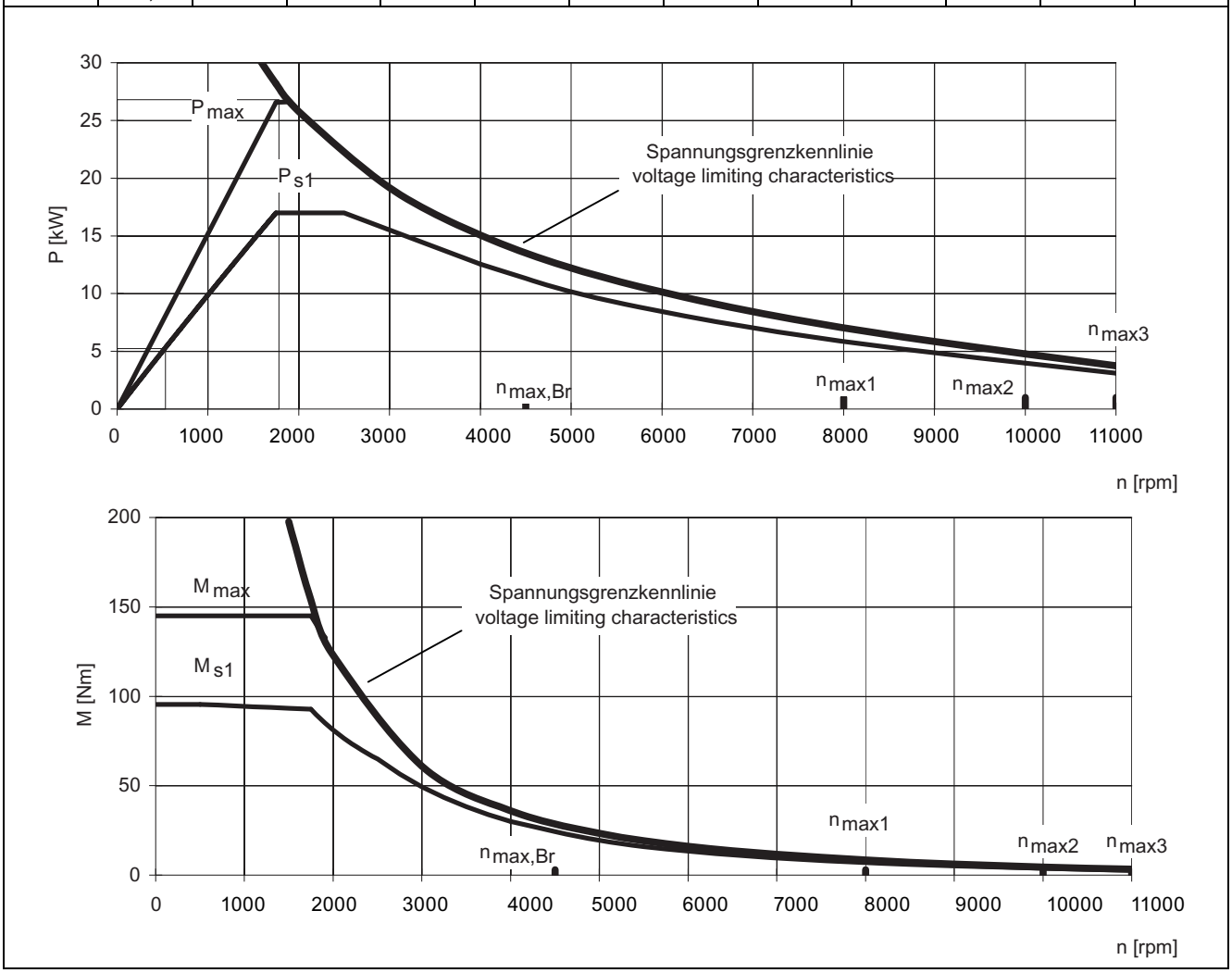
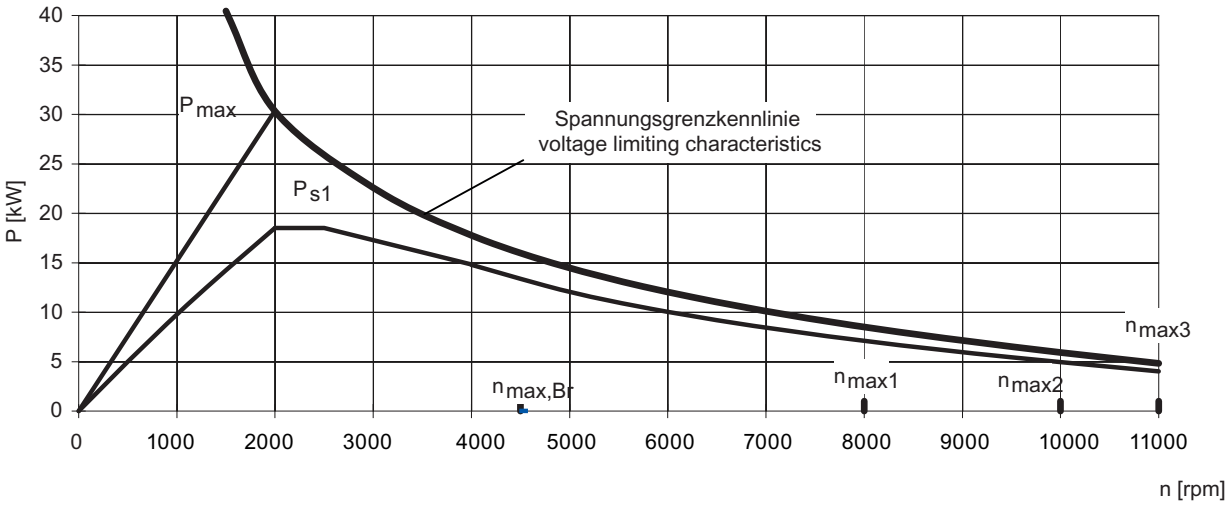


Tabella 4- 465 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8131-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 18,5 | 88 | 30 | 8000 | 10000 | 11000 | 4500 | 2500 | 145 | 46 | 96 | 30 |



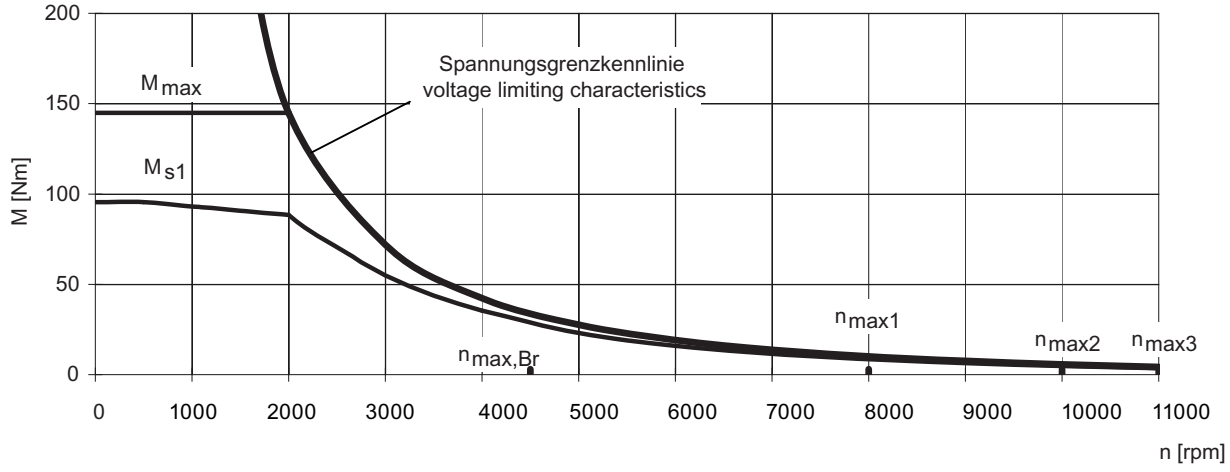
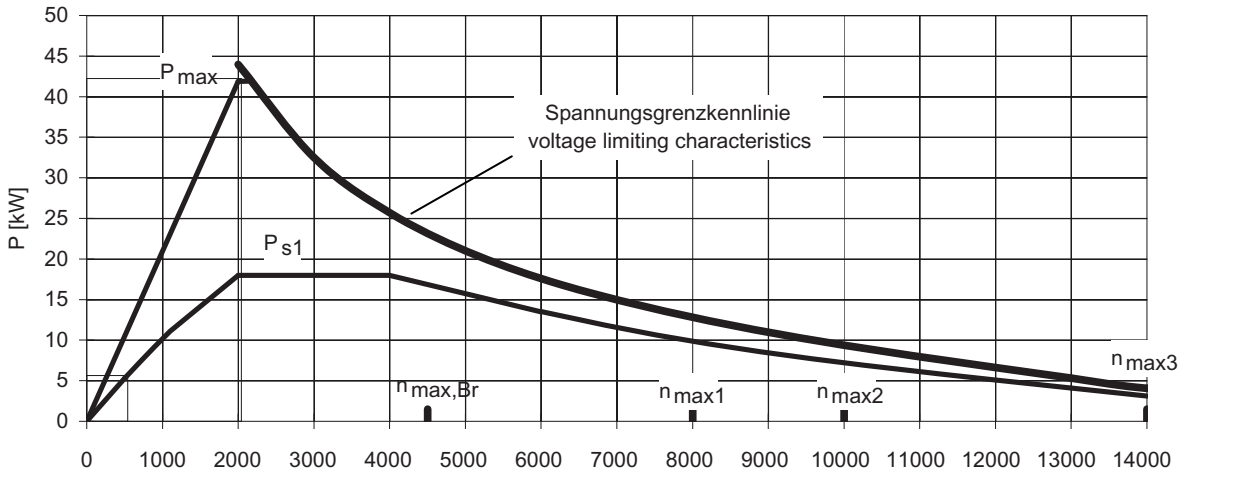



Tabella 4- 466 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8131-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 18,0 | 86 | 40 | 8000 | 10000 | 14000 | 4500 | 4000 | 200 | 93 | 101 | 44 |



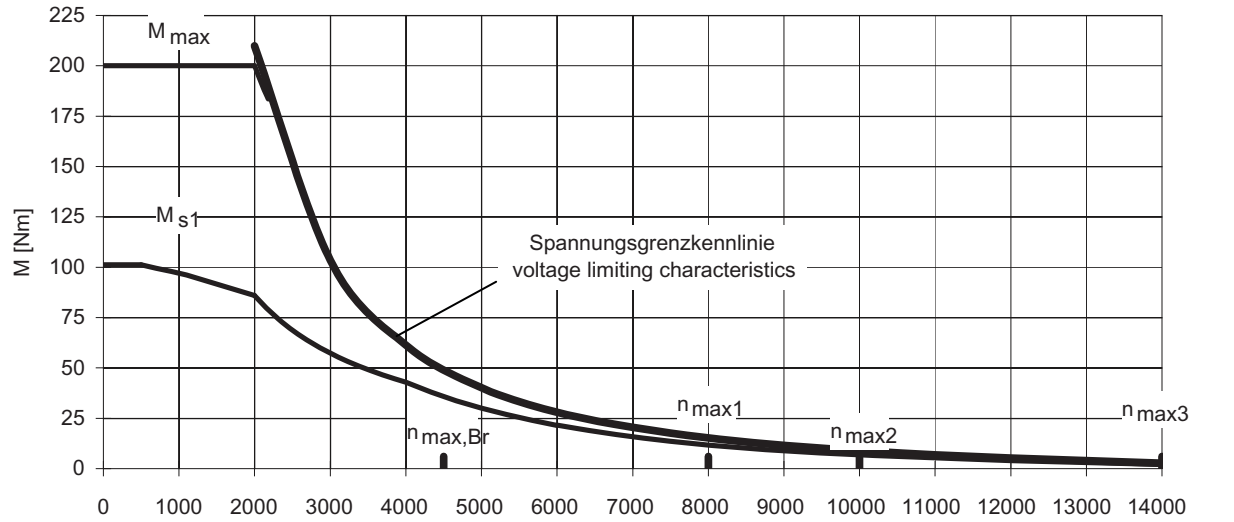
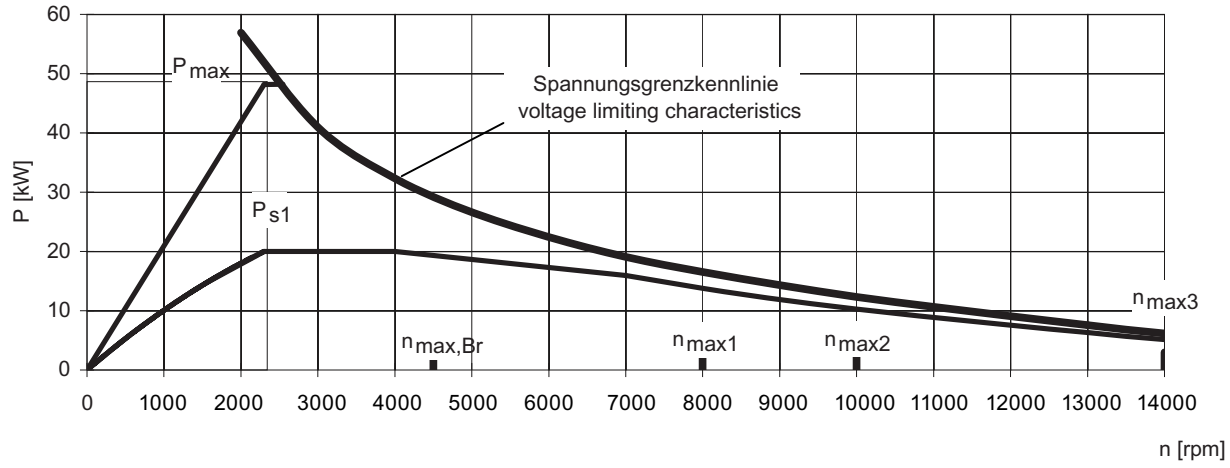



Tabella 4- 467 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8131-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 20,0 | 83 | 39 | 8000 | 10000 | 14000 | 4500 | 4000 | 200 | 93 | 101 | 44 |
| 2000 | 18,0 | 86 | 40 | | | | | 5500 | | | | |
| 1500 | 14,3 | 91 | 41 | | | | | 7800 | | | | |



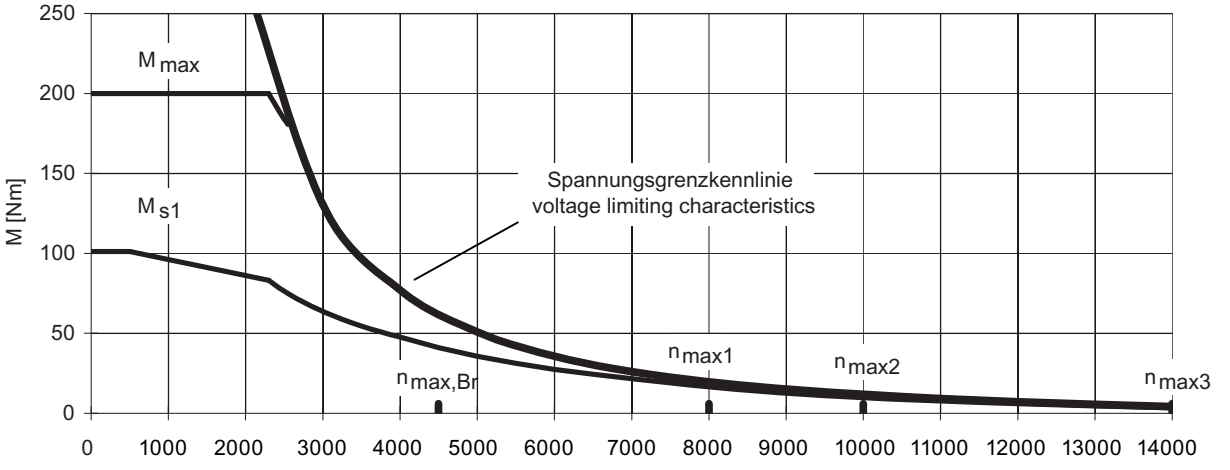
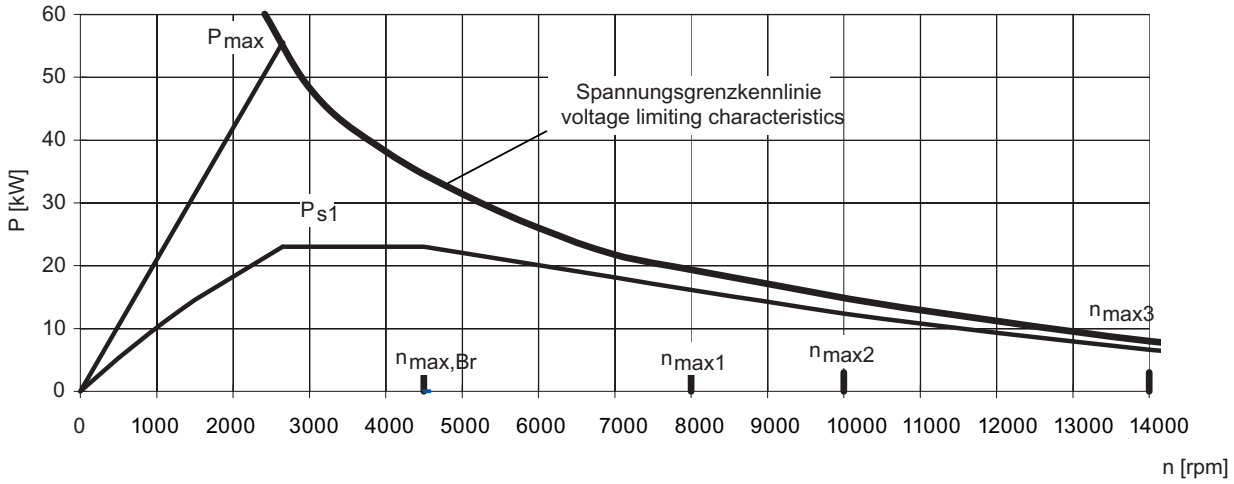



Tabella 4- 468 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8131-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 23,0 | 83 | 39 | 8000 | 10000 | 14000 | 4500 | 4500 | 200 | 93 | 101 | 44 |



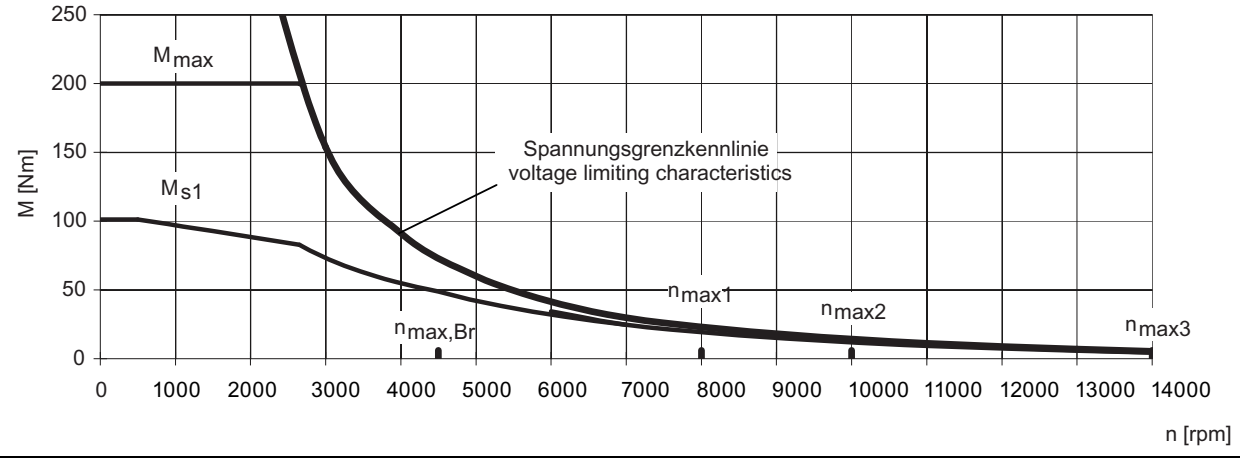
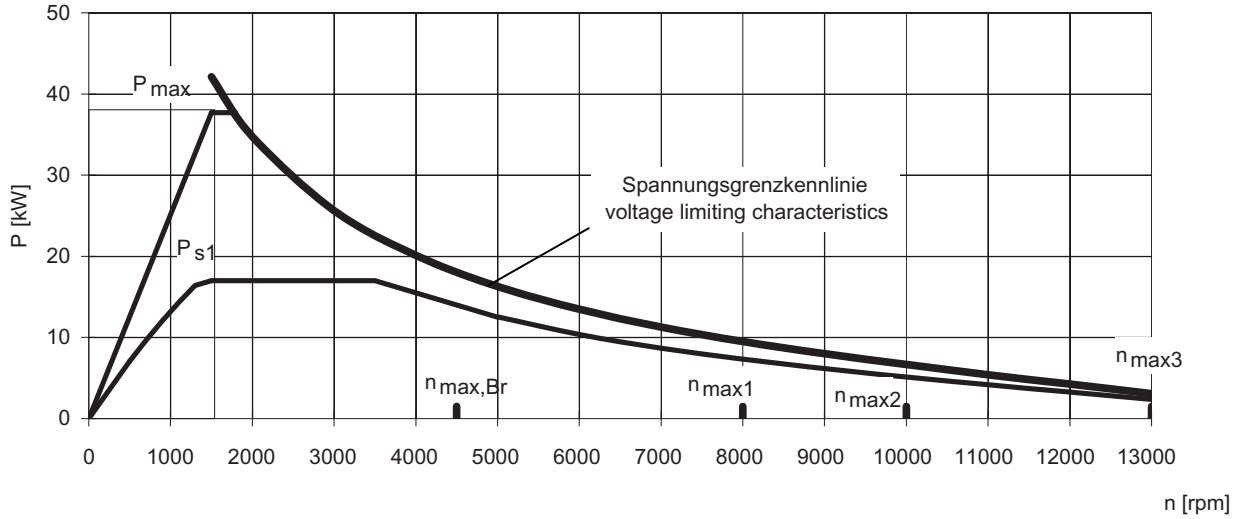



Tabella 4- 469 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8133-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 17,0 | 108 | 38 | 8000 | 10000 | 13000 | 4500 | 3500 | 240 | 85 | 136 | 45 |



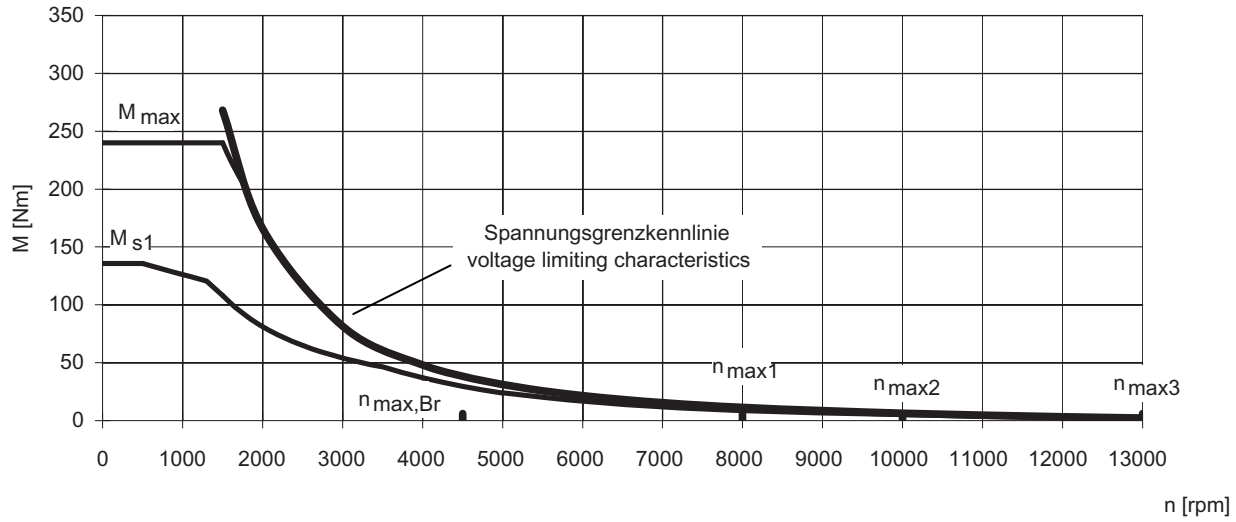



Tabella 4- 470 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8133-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 19,5 | 106 | 38 | 8000 | 10000 | 13000 | 4500 | 3500 | 240 | 85 | 136 | 45 |
| 1500 | 17,0 | 108 | 38 | | | | | 4500 | | | | |

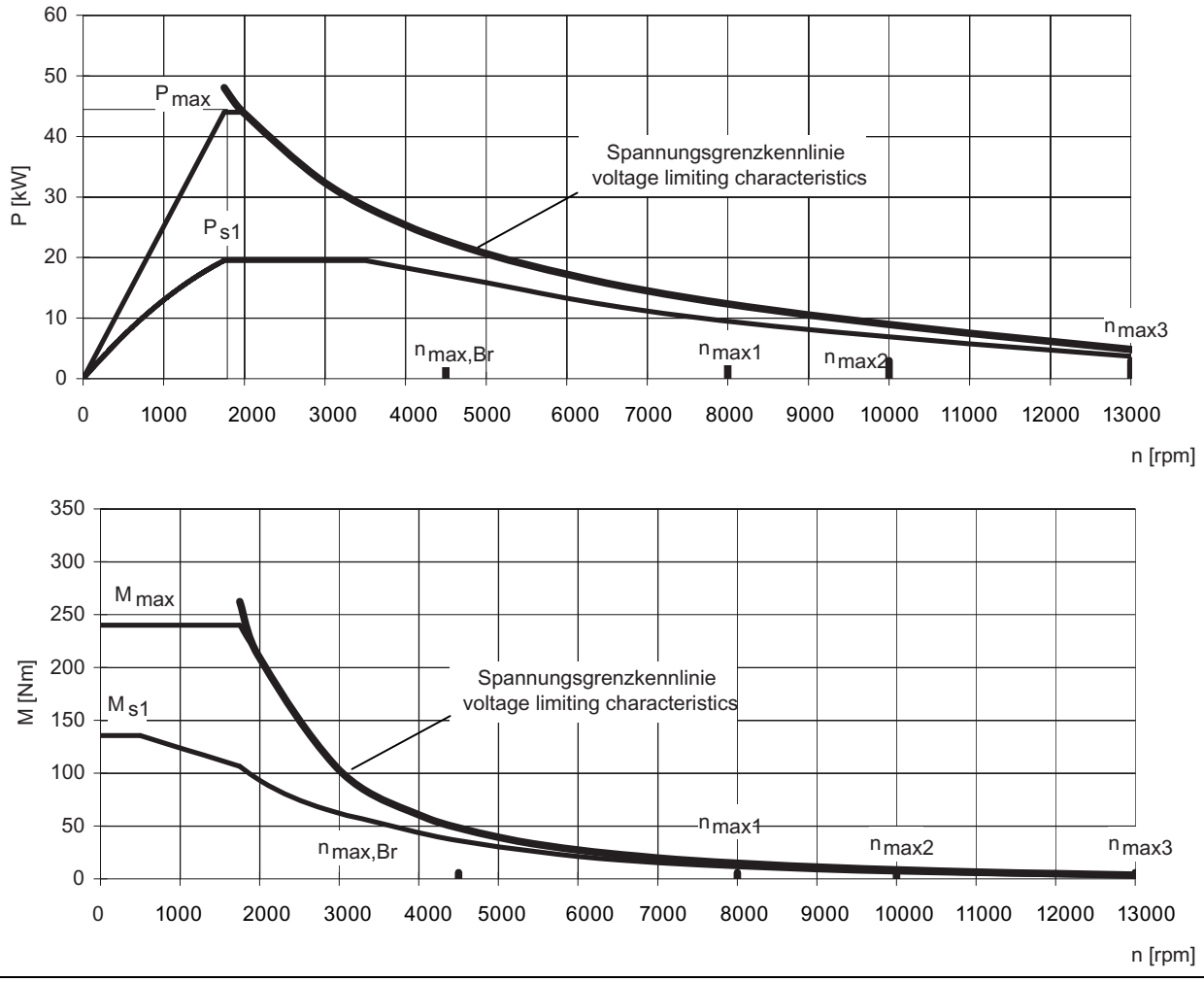
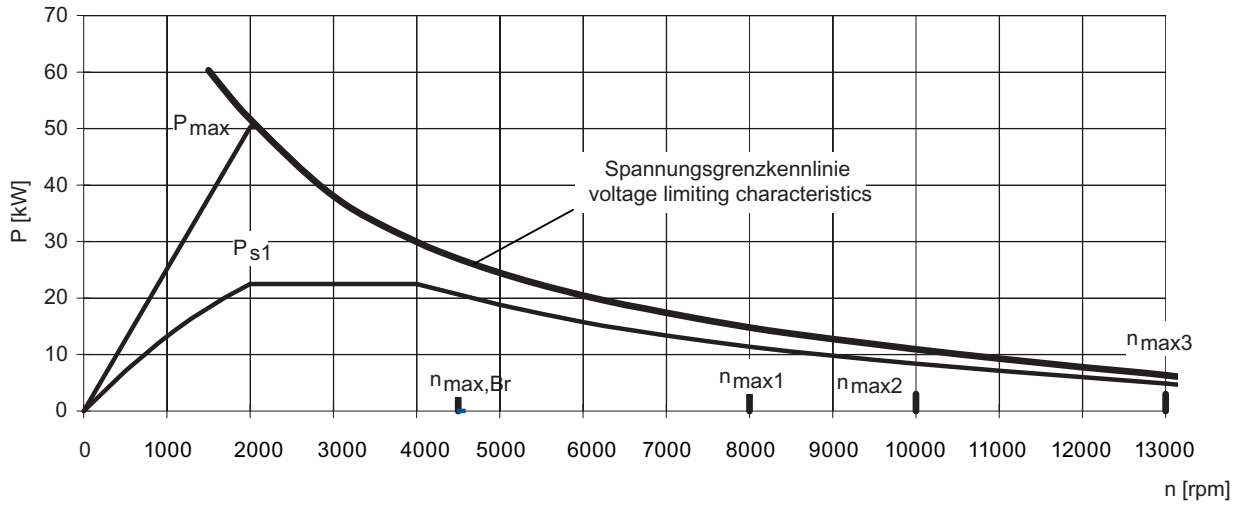


Tabella 4- 471 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8133-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 22,5 | 107 | 38 | 8000 | 10000 | 13000 | 4500 | 4000 | 240 | 85 | 136 | 45 |



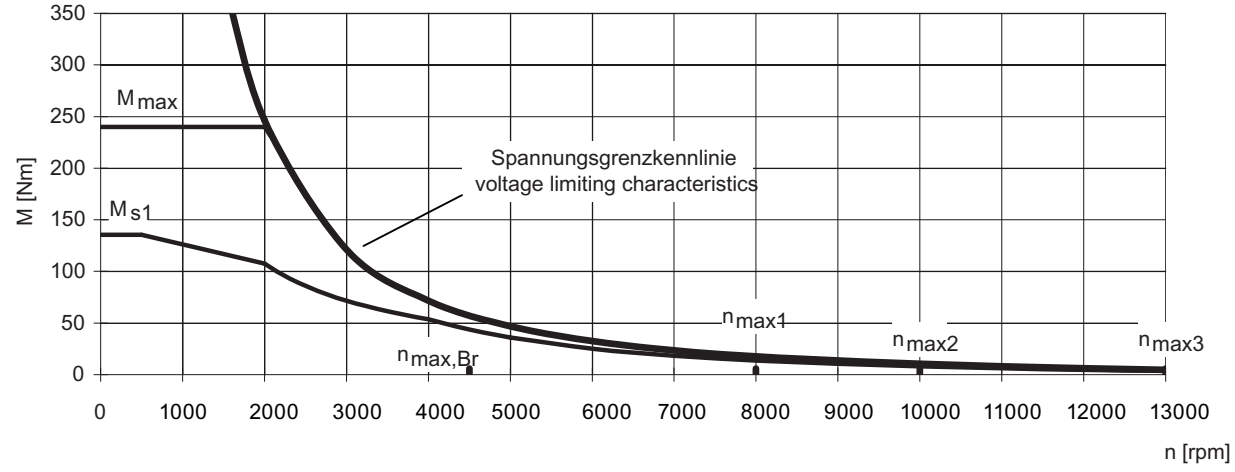
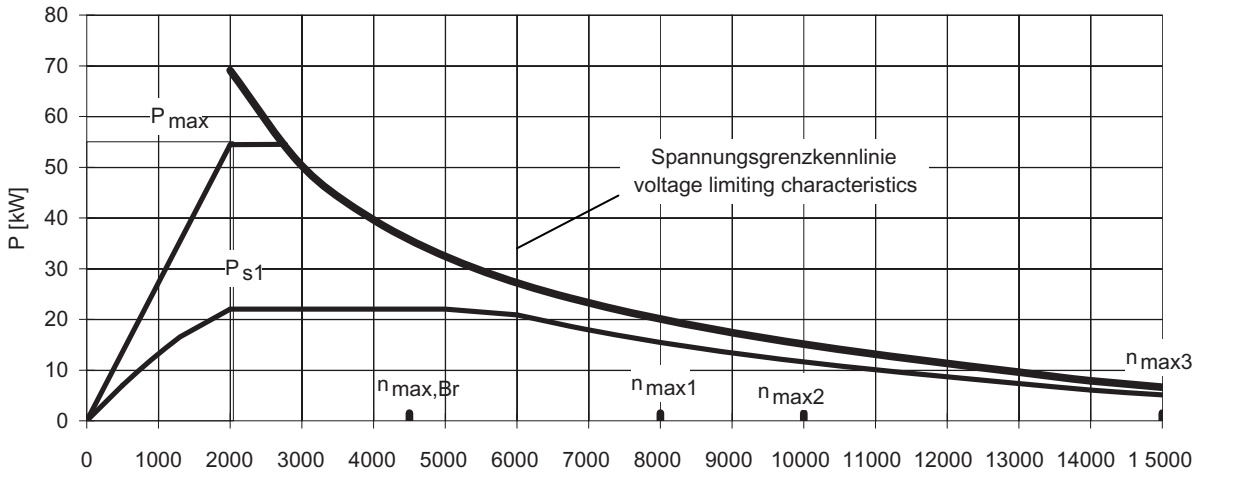



Tabella 4- 472 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8133-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 22,0 | 105 | 52 | 8000 | 10000 | 15000 | 4500 | 5000 | 260 | 129 | 134 | 61 |



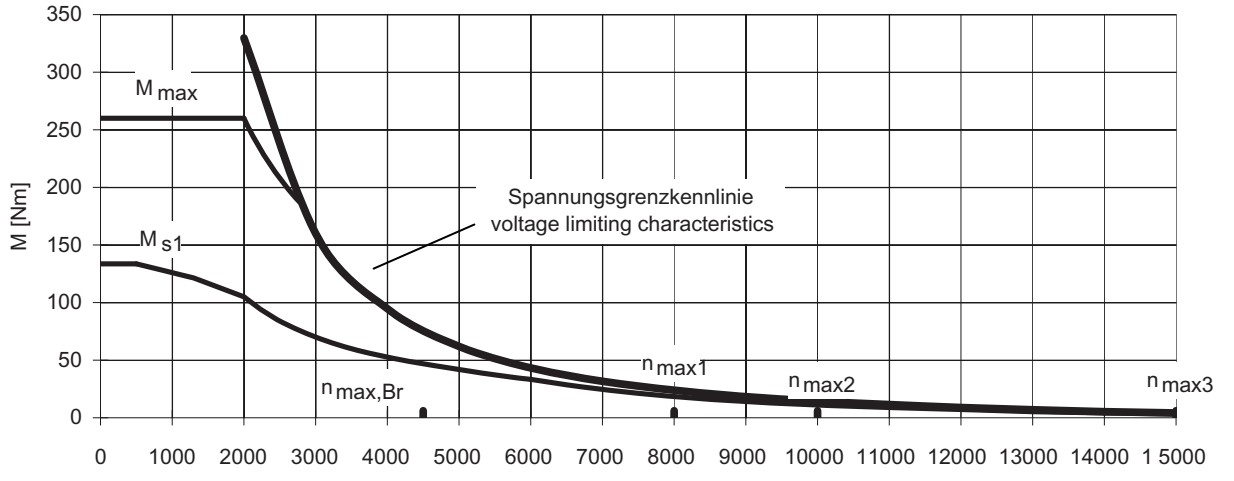
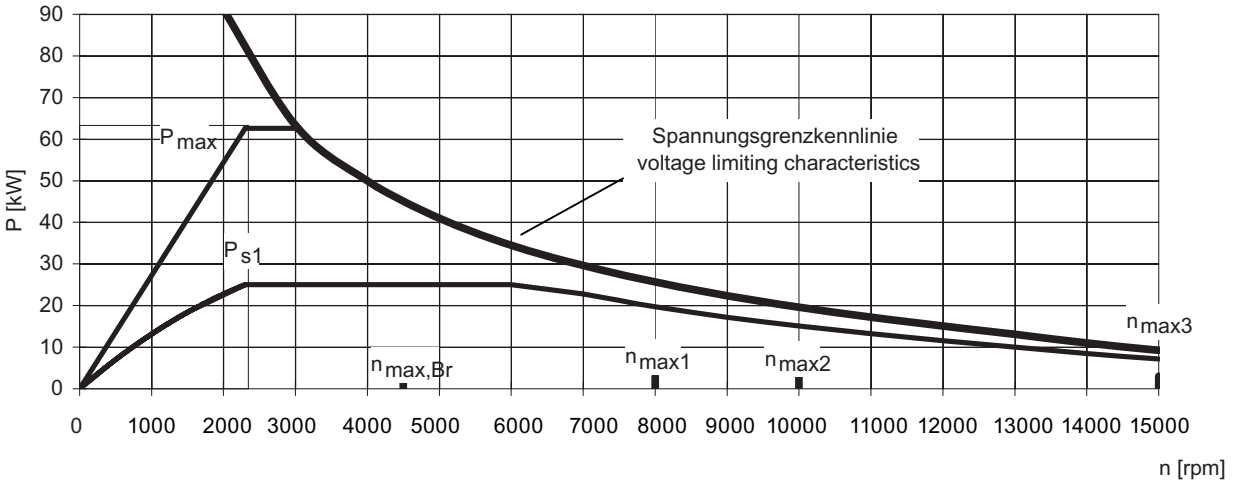



Tabella 4- 473 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8133-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 25,0 | 104 | 52 | 8000 | 10000 | 15000 | 4500 | 6000 | 260 | 129 | 134 | 61 |
| 2000 | 22,0 | 105 | 52 | | | | | 7000 | | | | |
| 1500 | 18,4 | 117 | 54 | | | | | 8000 | | | | |



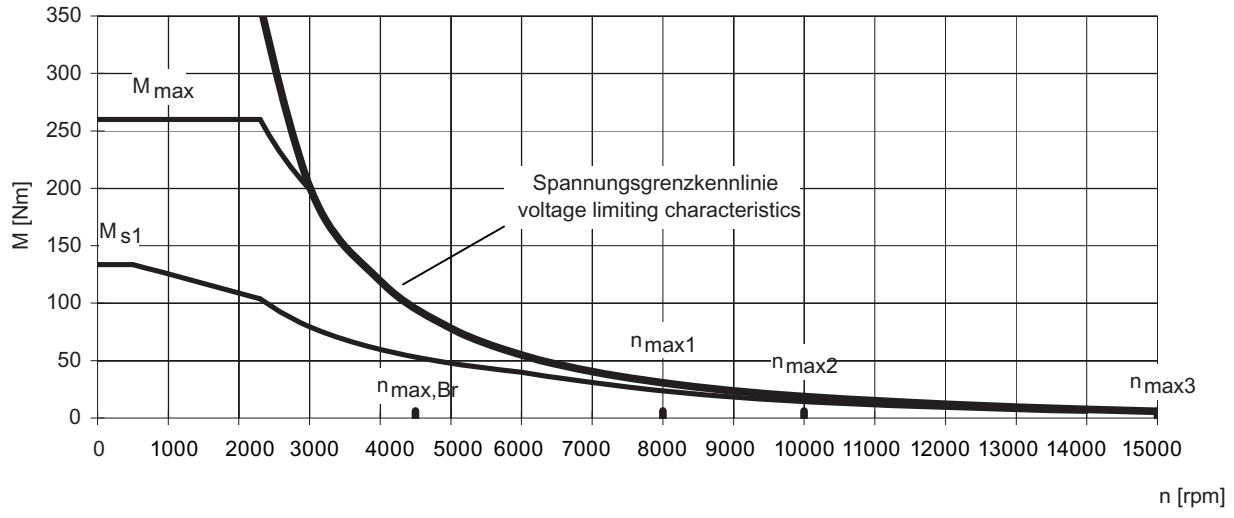
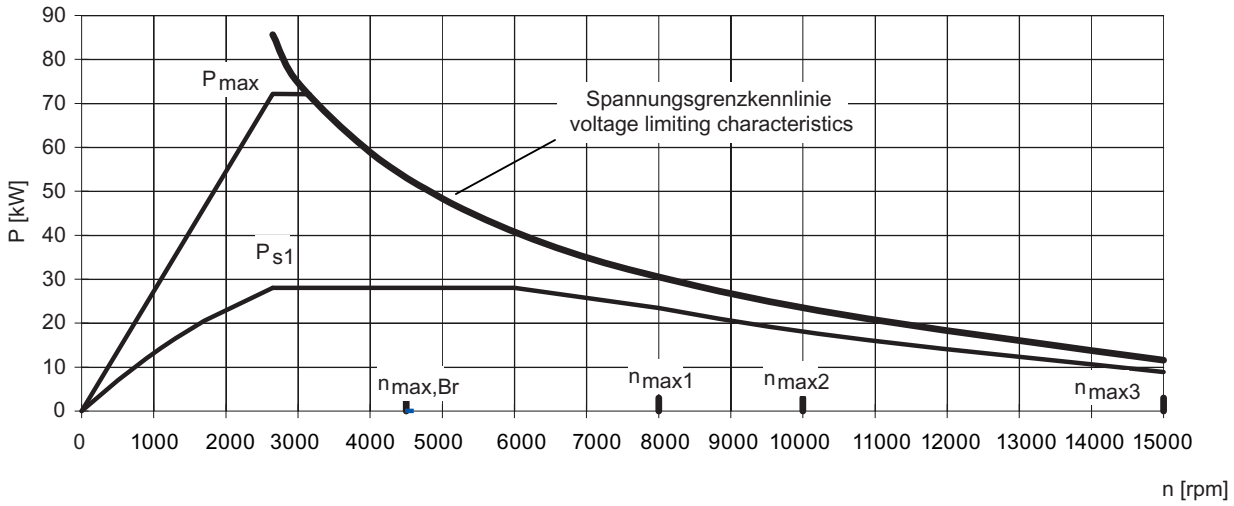



Tabella 4- 474 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8133-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 28,0 | 101 | 50 | 8000 | 10000 | 15000 | 4500 | 6000 | 260 | 129 | 134 | 61 |



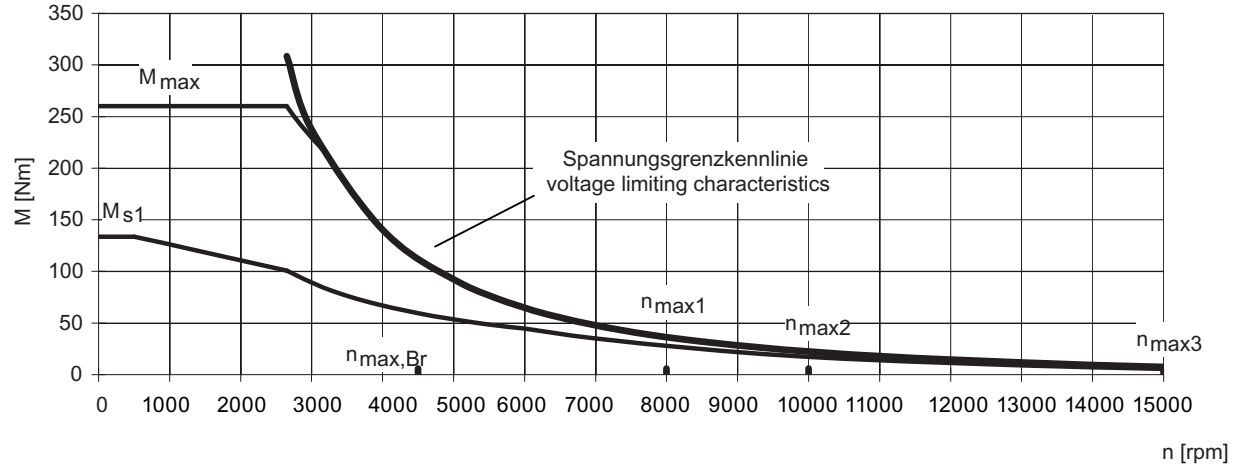
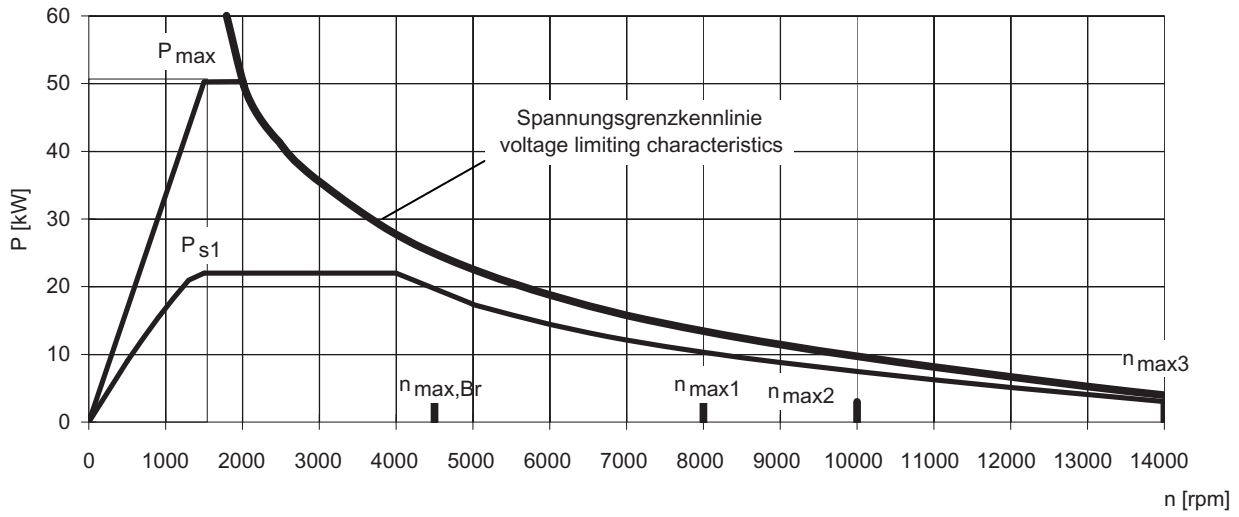



Tabella 4- 475 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8135-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 22,0 | 140 | 51 | 8000 | 10000 | 14000 | 4500 | 4000 | 320 | 117 | 172 | 58 |



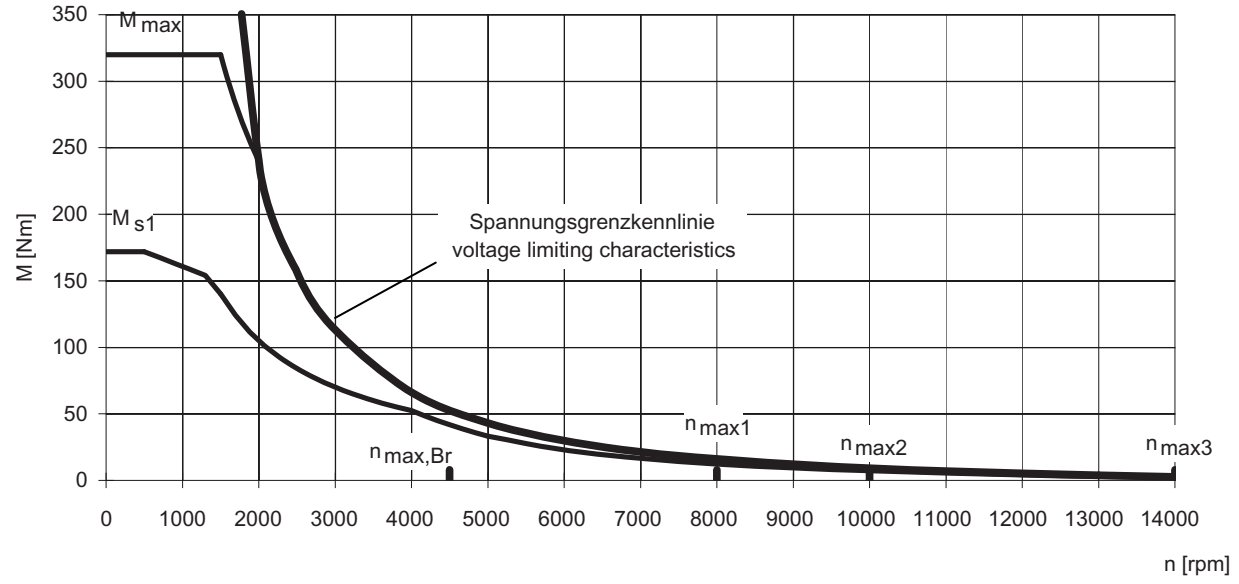
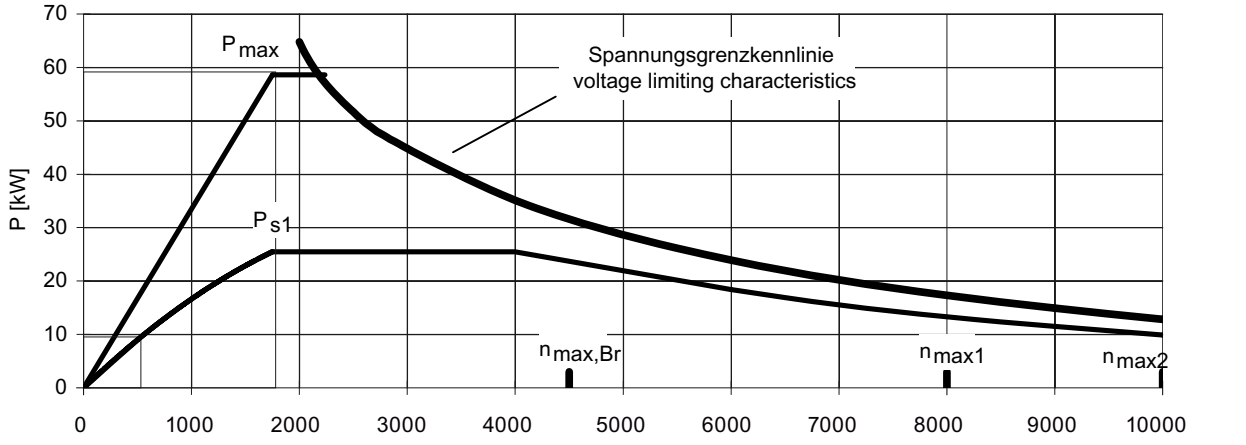



Tabella 4- 476 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8135-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 25,5 | 139 | 51 | 8000 | 10000 | 14000 | 4500 | 4000 | 320 | 117 | 172 | 58 |
| 1500 | 22,0 | 140 | 51 | | | | | 5250 | | | | |



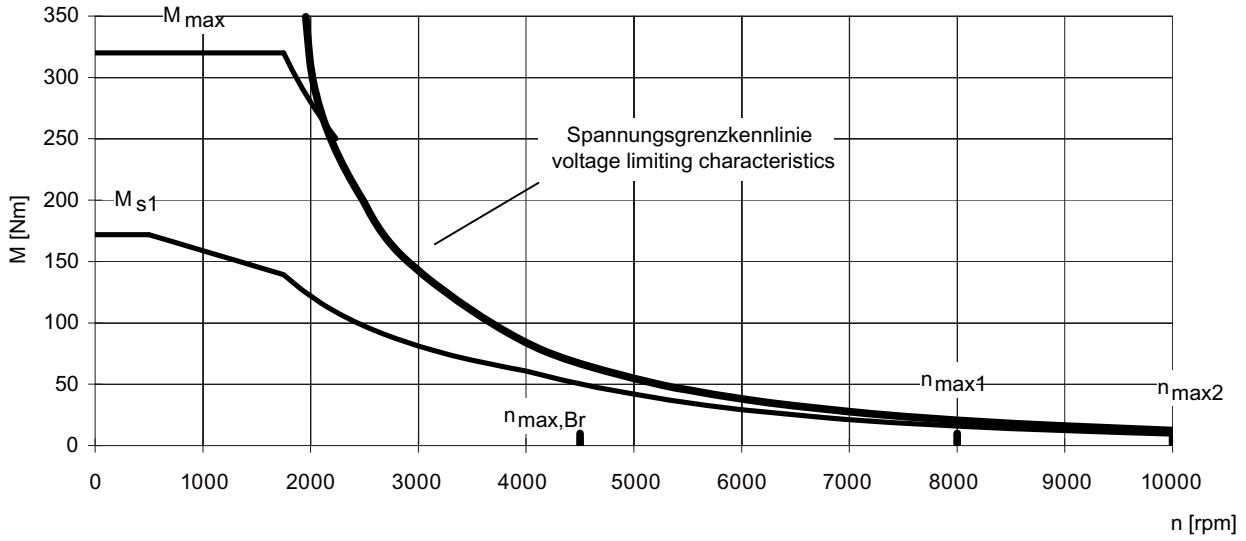
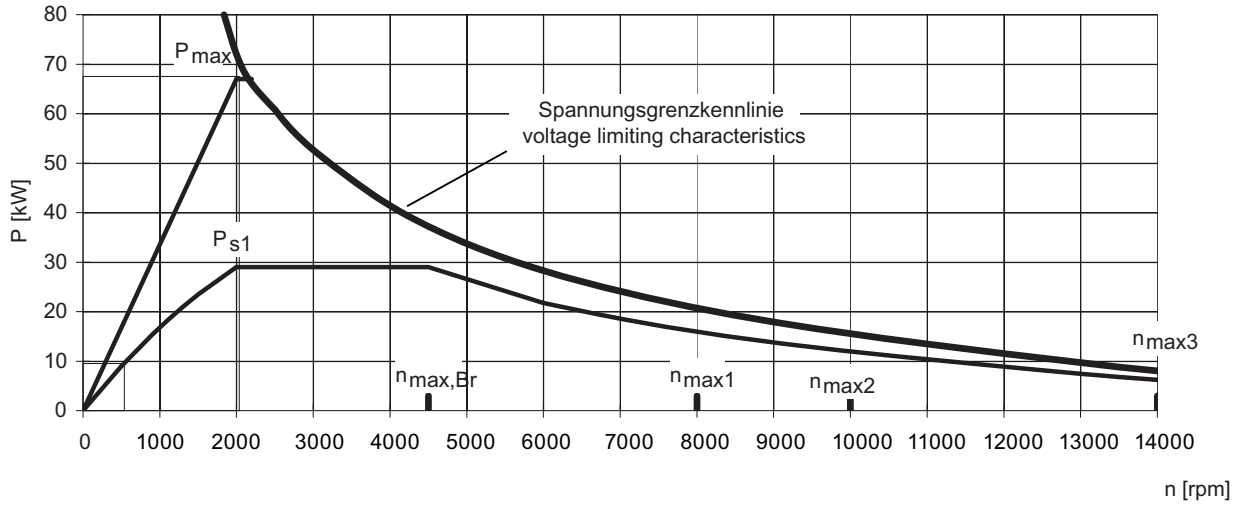



Tabella 4- 477 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8135-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 29,0 | 138 | 52 | 8000 | 10000 | 14000 | 4500 | 4500 | 320 | 117 | 172 | 58 |



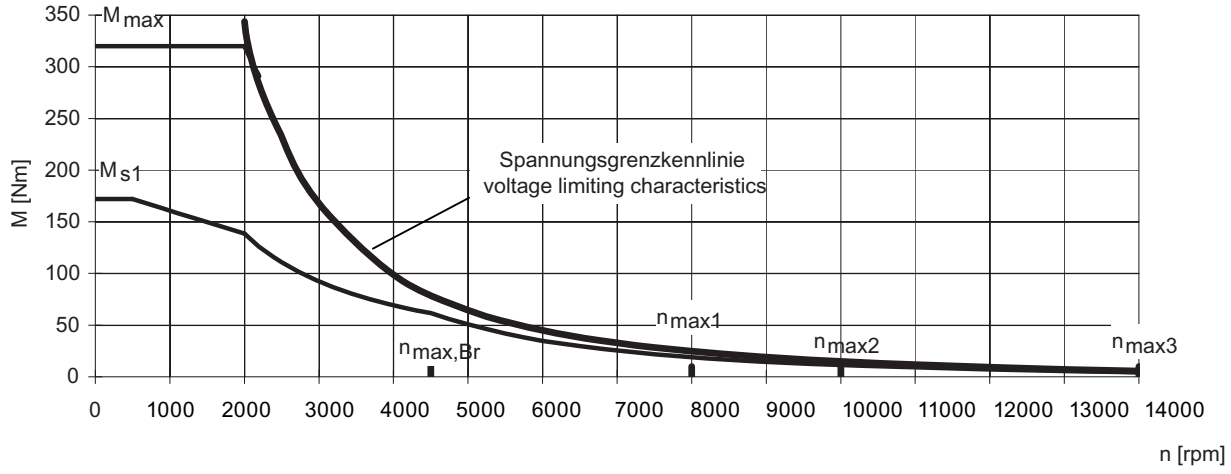



Tabella 4- 478 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8135-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 29,0 | 138 | 64 | 8000 | 10000 | 15000 | 4500 | 4500 | 320 | 148 | 170 | 73 |

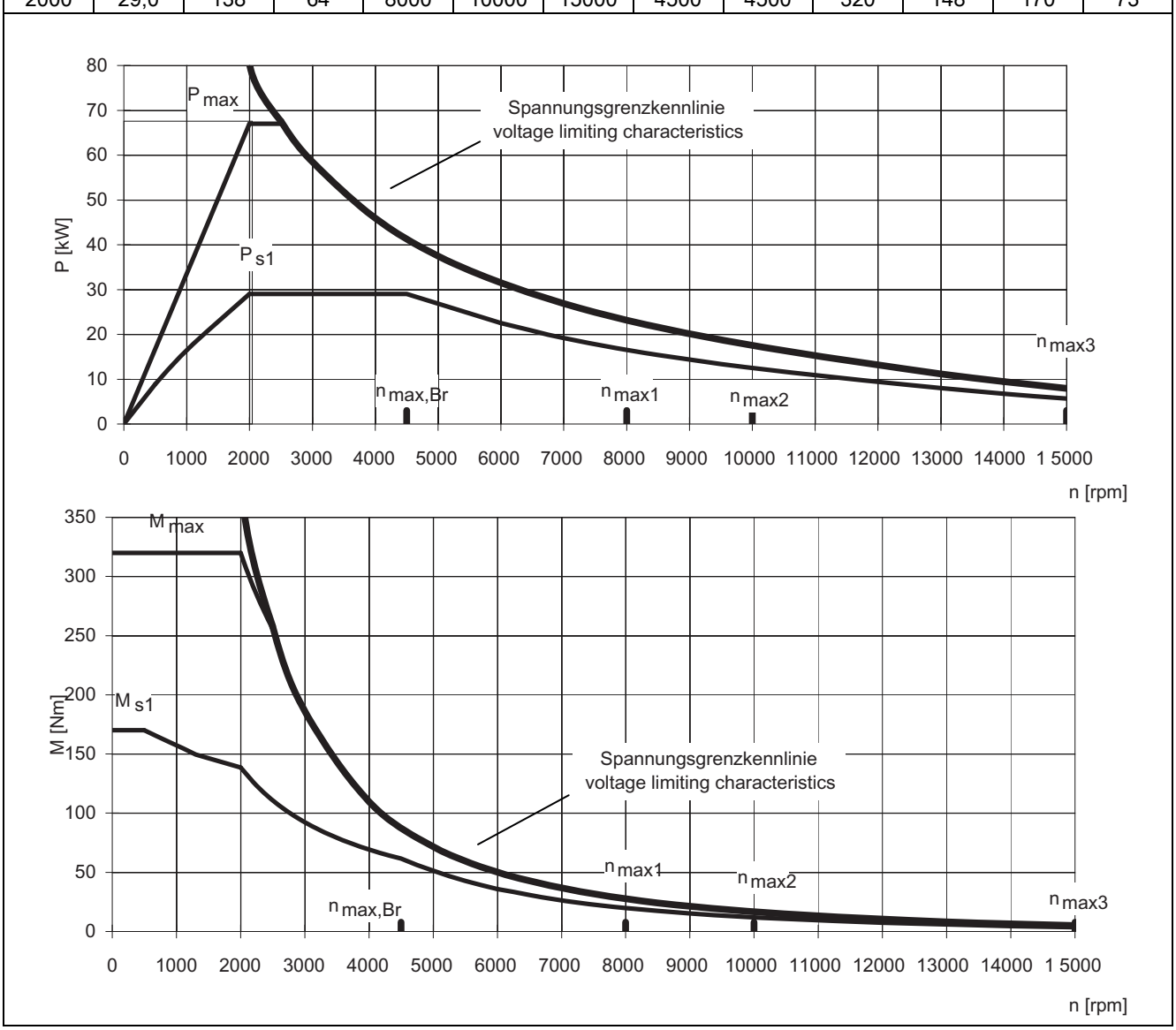
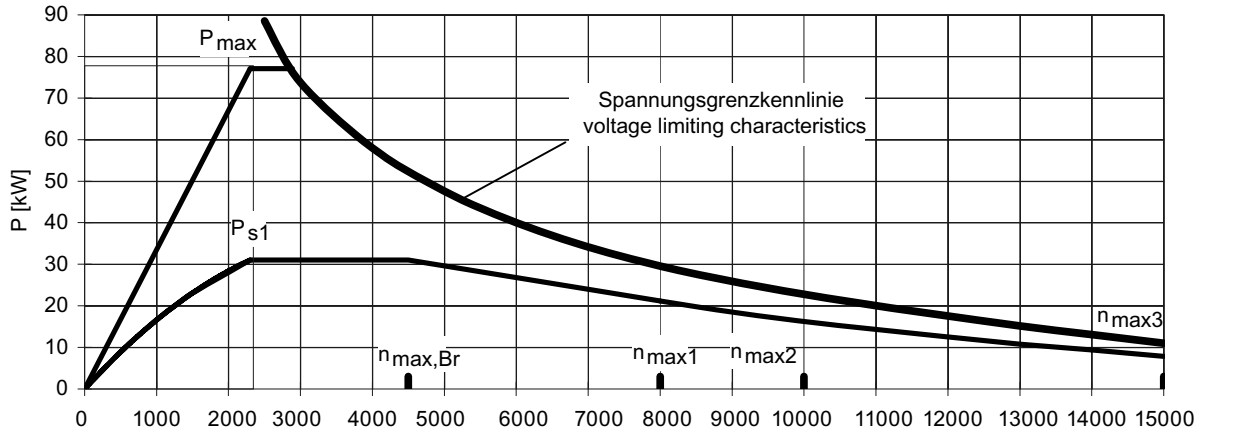


Tabella 4- 479 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8135-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 31,0 | 129 | 61 | 8000 | 10000 | 15000 | 4500 | 4500 | 320 | 148 | 170 | 73 |
| 2000 | 29,0 | 138 | 64 | | | | | 5250 | | | | |
| 1500 | 23,1 | 147 | 63 | | | | | 7300 | | | | |



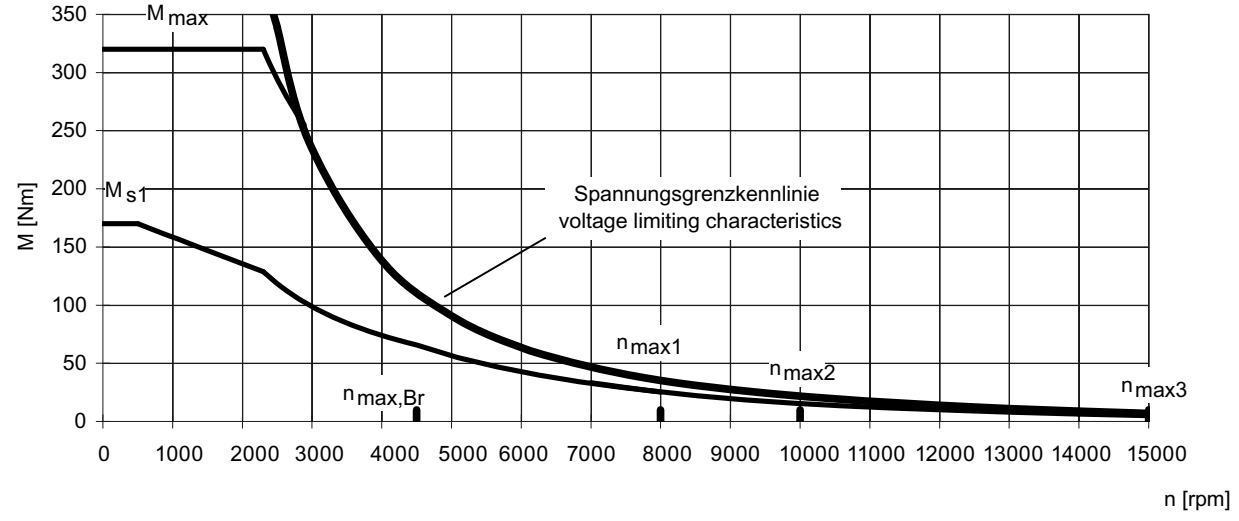
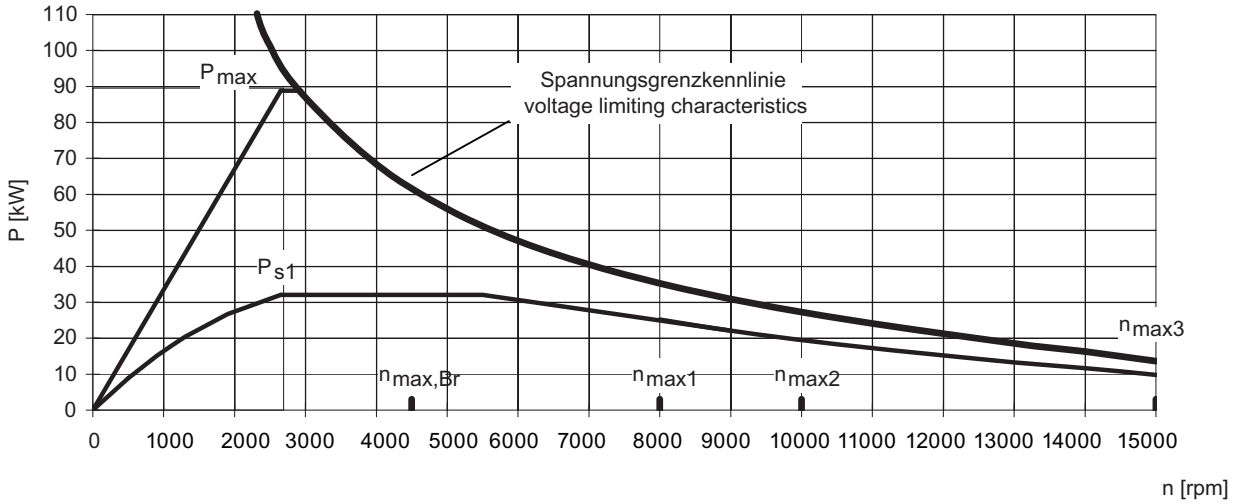



Tabella 4- 480 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8135-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 32,0 | 115 | 58 | 8000 | 10000 | 15000 | 4500 | 5500 | 320 | 148 | 170 | 73 |



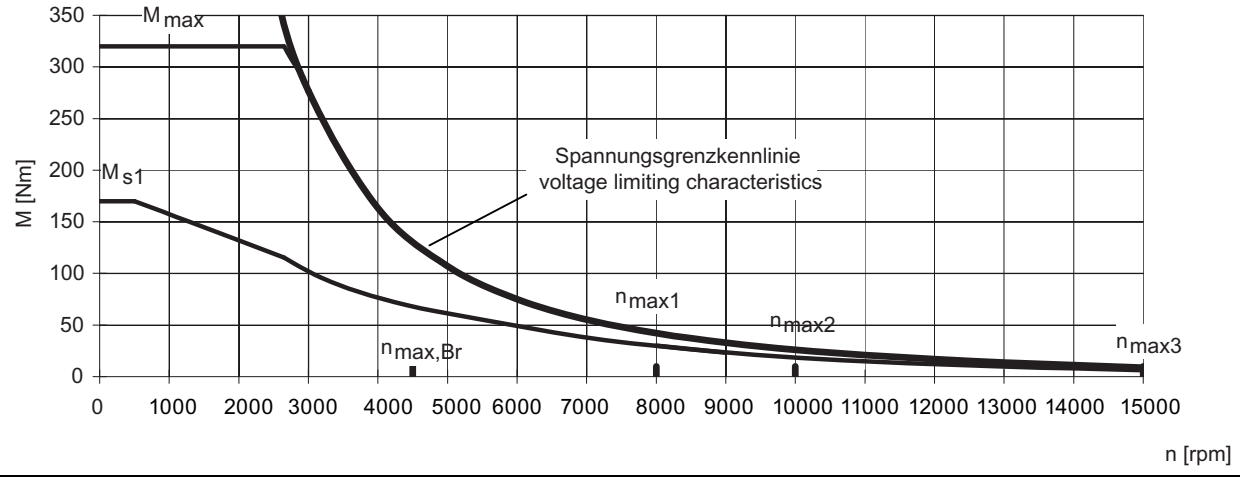
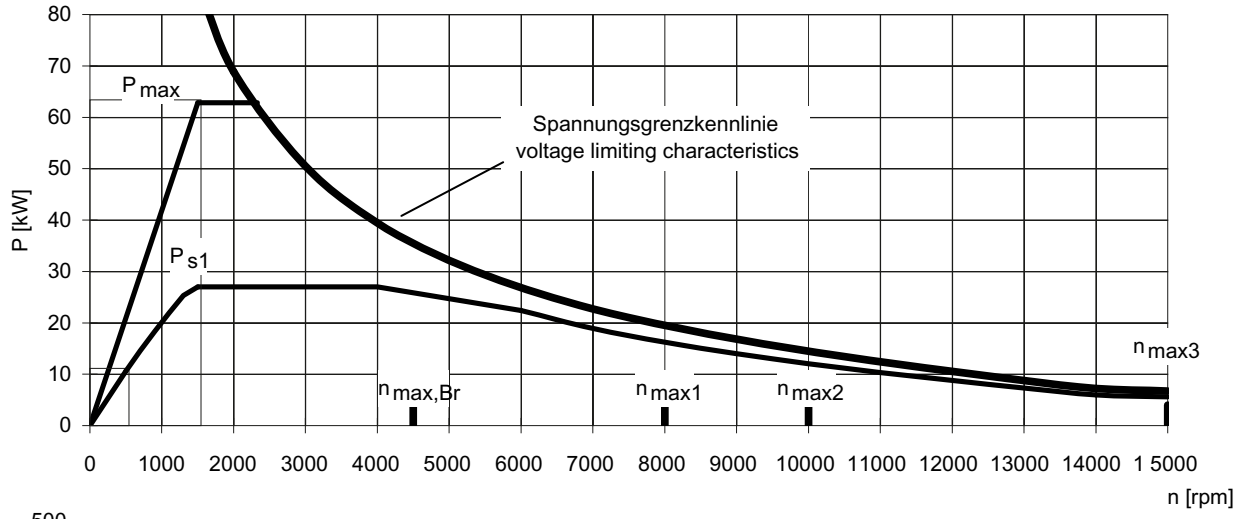



Tabella 4- 481 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8137-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 27,0 | 172 | 67 | 8000 | 10000 | 15000 | 4500 | 4000 | 400 | 156 | 202 | 73 |



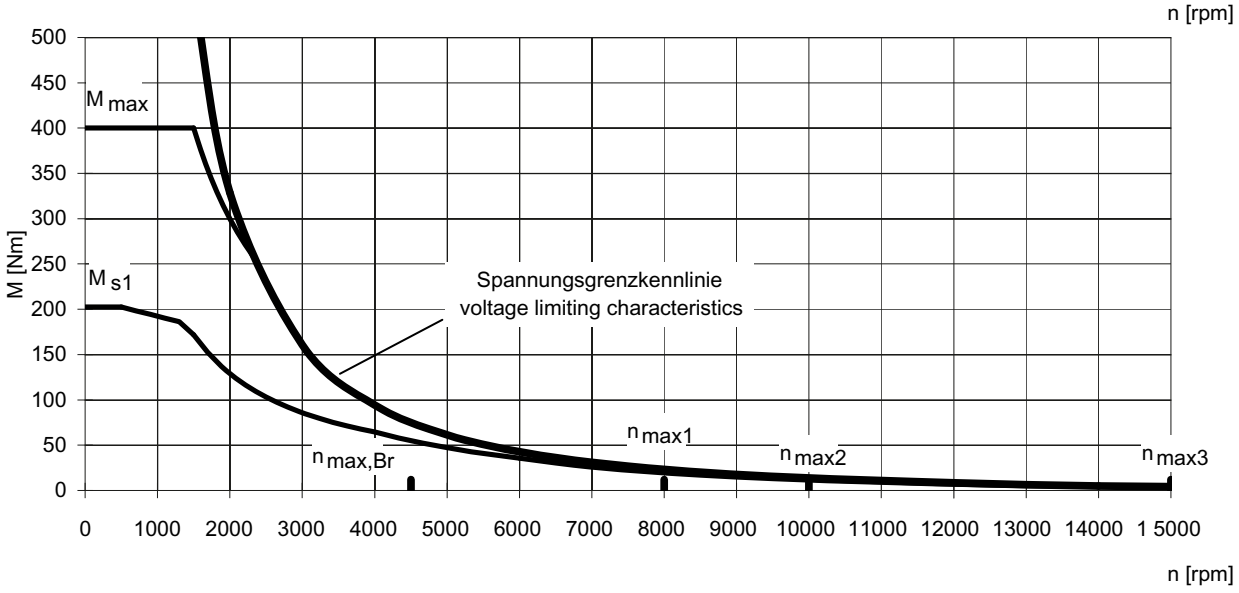
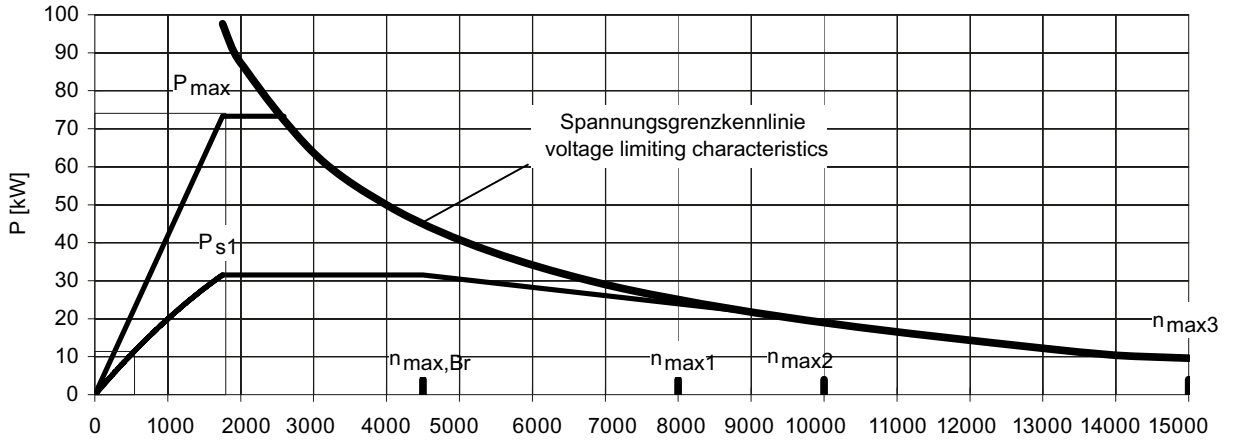



Tabella 4- 482 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8137-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 31,5 | 172 | 67 | 8000 | 10000 | 15000 | 4500 | 4500 | 400 | 156 | 202 | 73 |
| 1500 | 27,0 | 172 | 67 | | | | | 6500 | | | | |



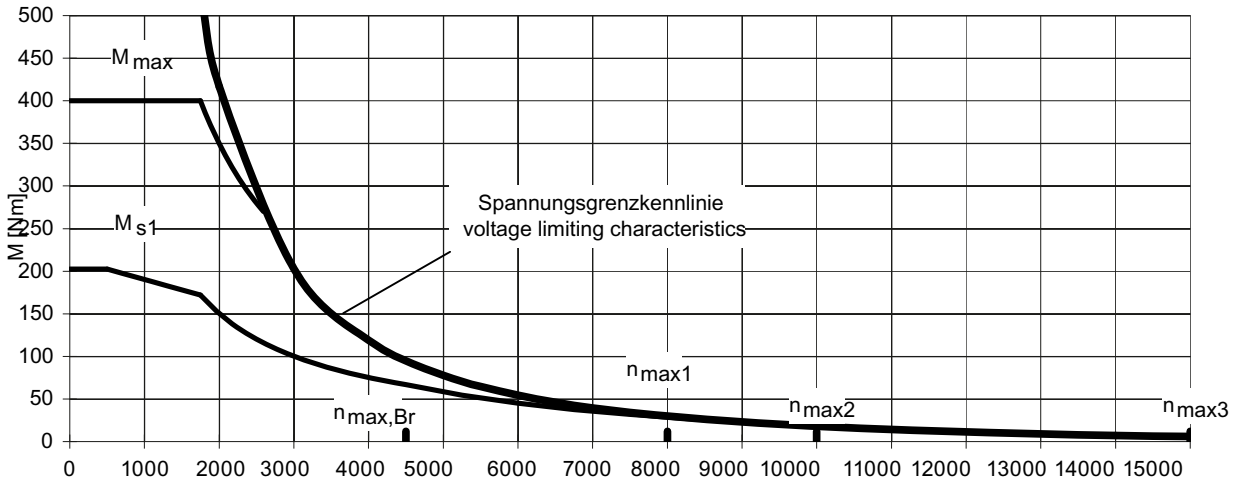



Tabella 4- 483 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8137-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 36,0 | 172 | 67 | 8000 | 10000 | 15000 | 4500 | 4000 | 400 | 156 | 202 | 73 |

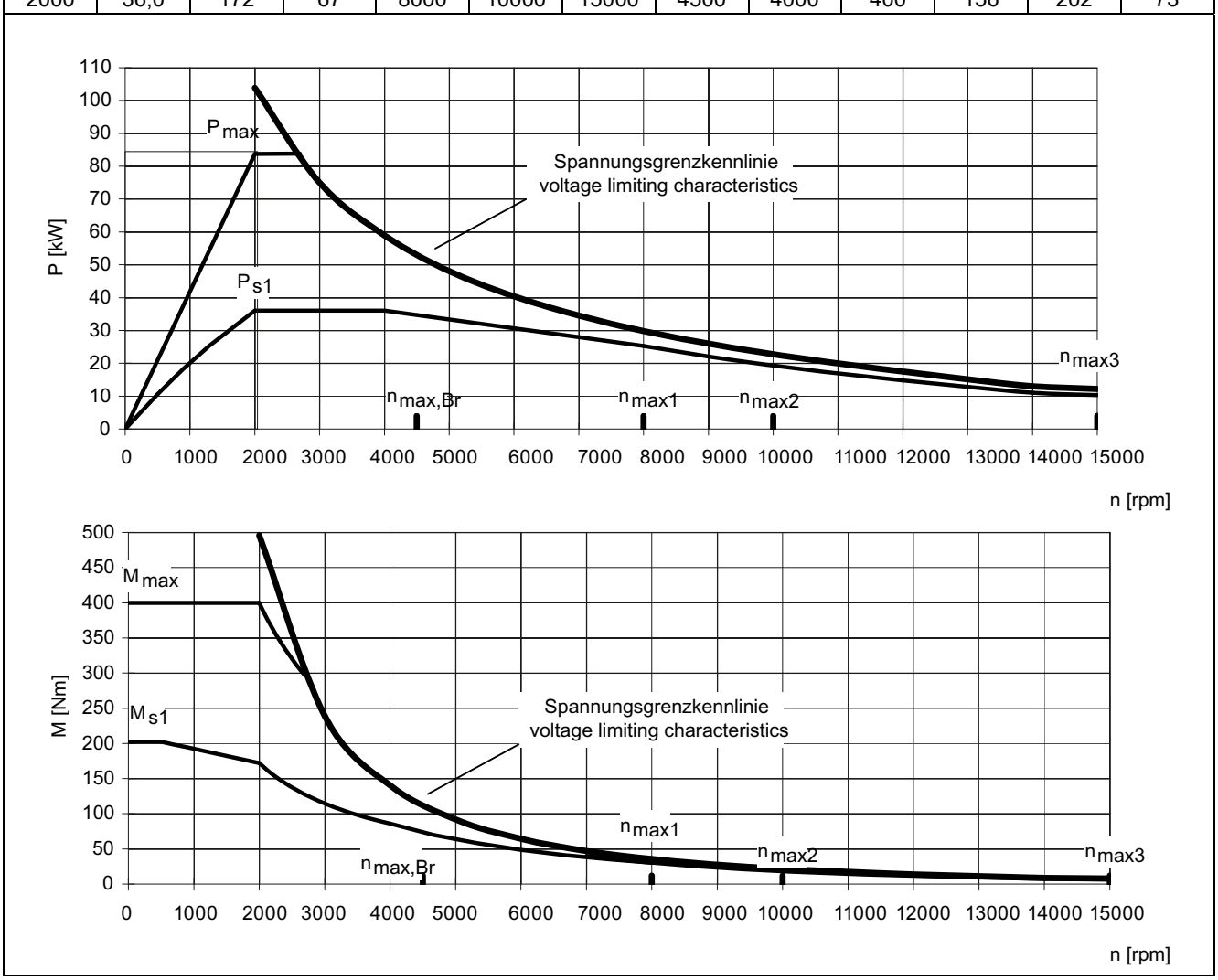
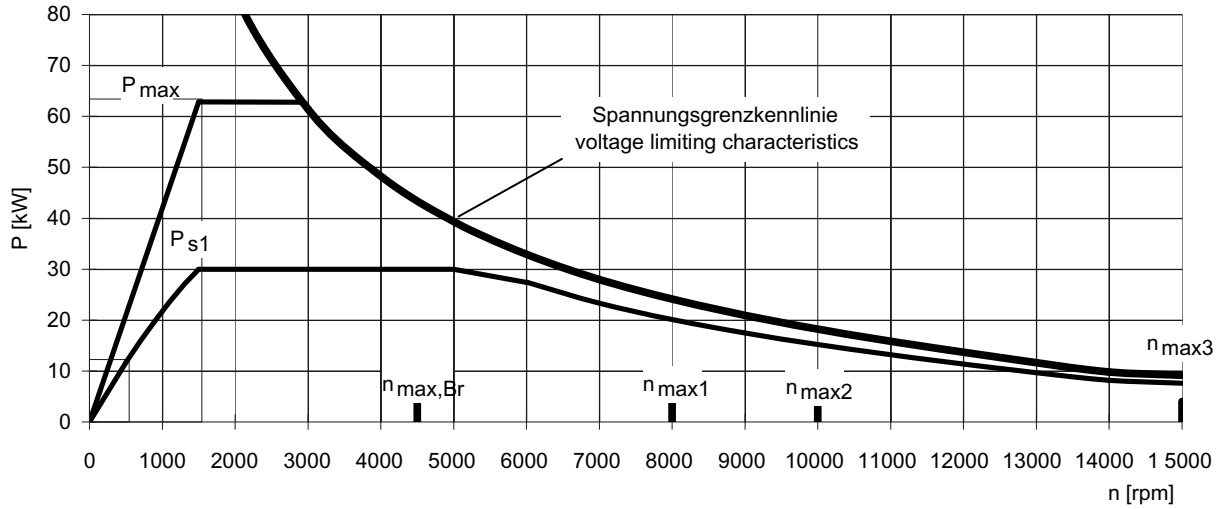


Tabella 4- 484 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8138-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 30,0 | 191 | 80 | 8000 | 10000 | 15000 | 4500 | 5000 | 400 | 168 | 223 | 88 |



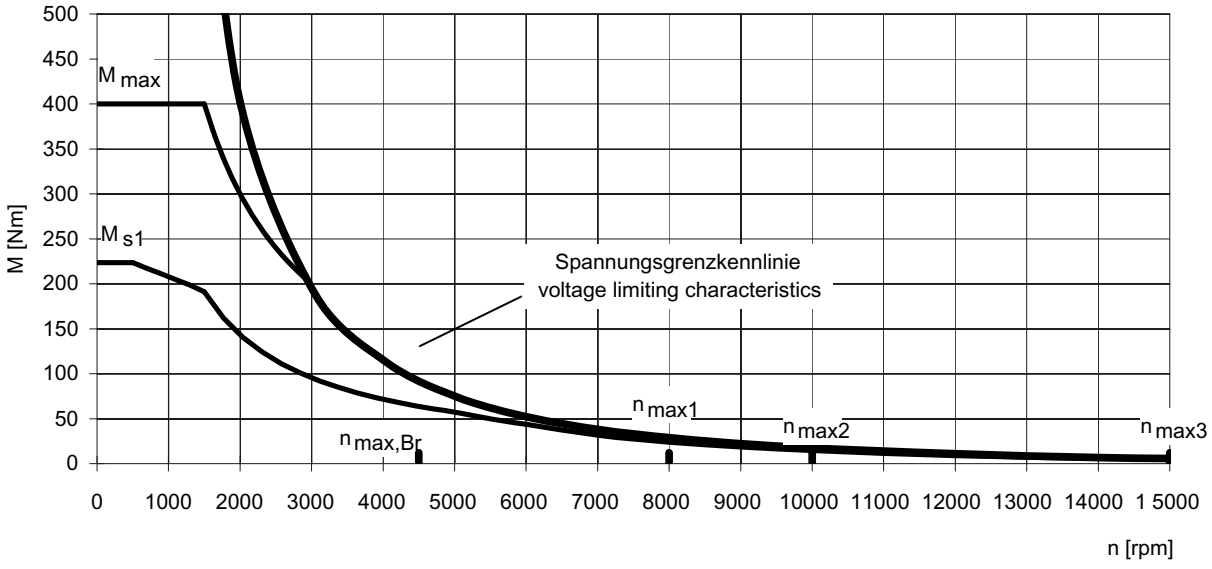
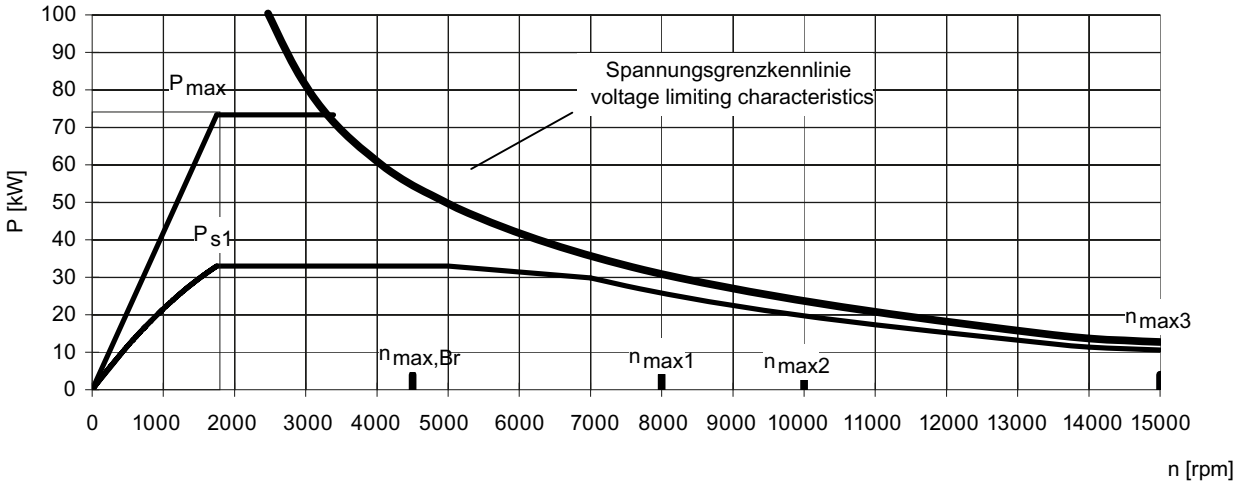



Tabella 4- 485 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8138-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 33,0 | 180 | 77 | 8000 | 10000 | 15000 | 4500 | 5000 | 400 | 168 | 223 | 88 |
| 1500 | 30,0 | 191 | 80 | | | | | 7000 | | | | |



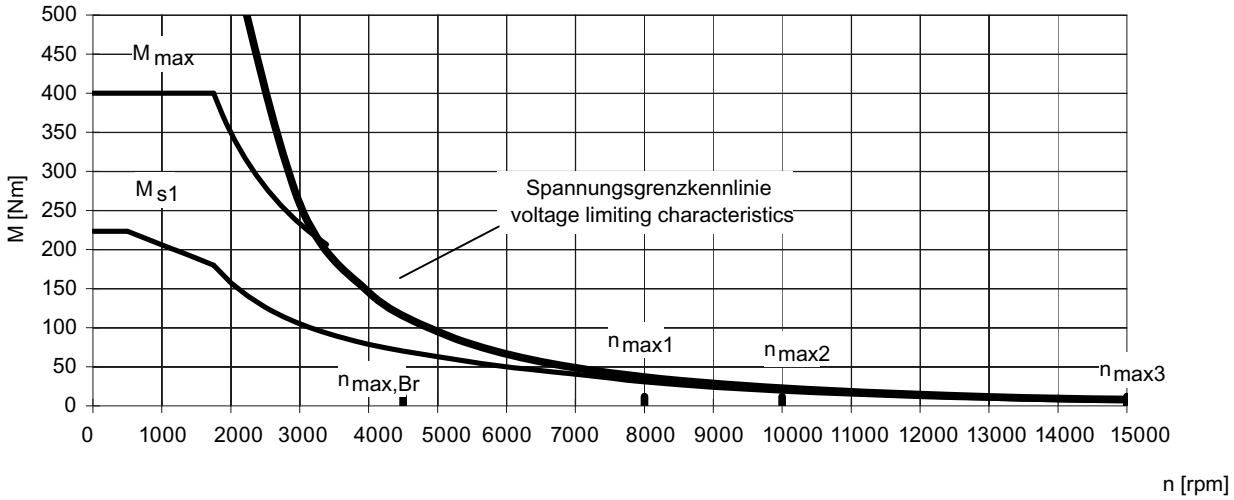
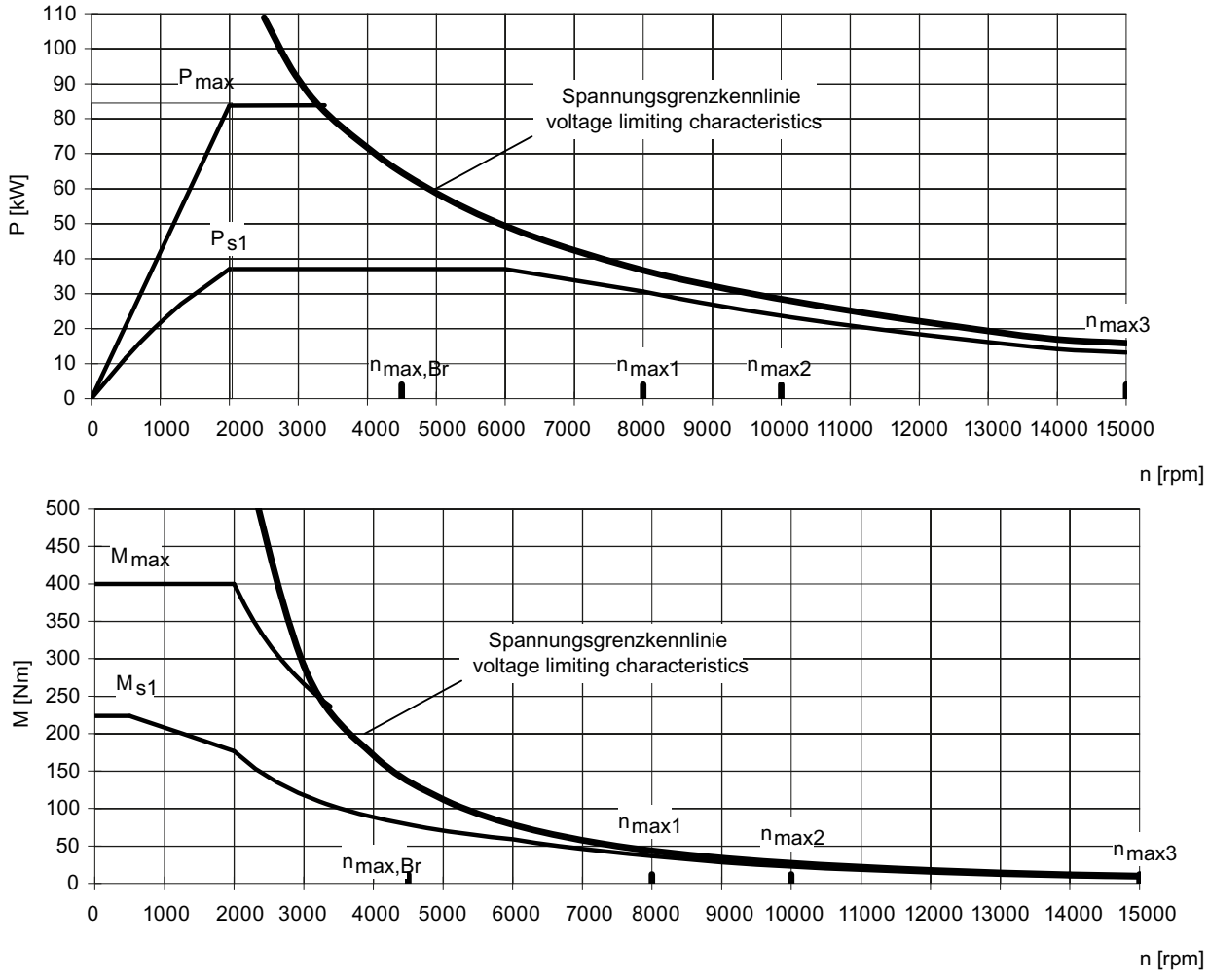



Tabella 4- 486 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8138-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 37,0 | 177 | 76 | 8000 | 10000 | 15000 | 4500 | 6000 | 400 | 168 | 223 | 88 |



### 4.1.3.4 Altezza d'asse 160 - Raffreddamento ad acqua

Tabella 4- 487 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8163-□□F2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 37,0 | 236 | 84,0 | 6500 | 9000 | 10000 | 4000 | 3000 | 600 | 208 | 288 | 96 |

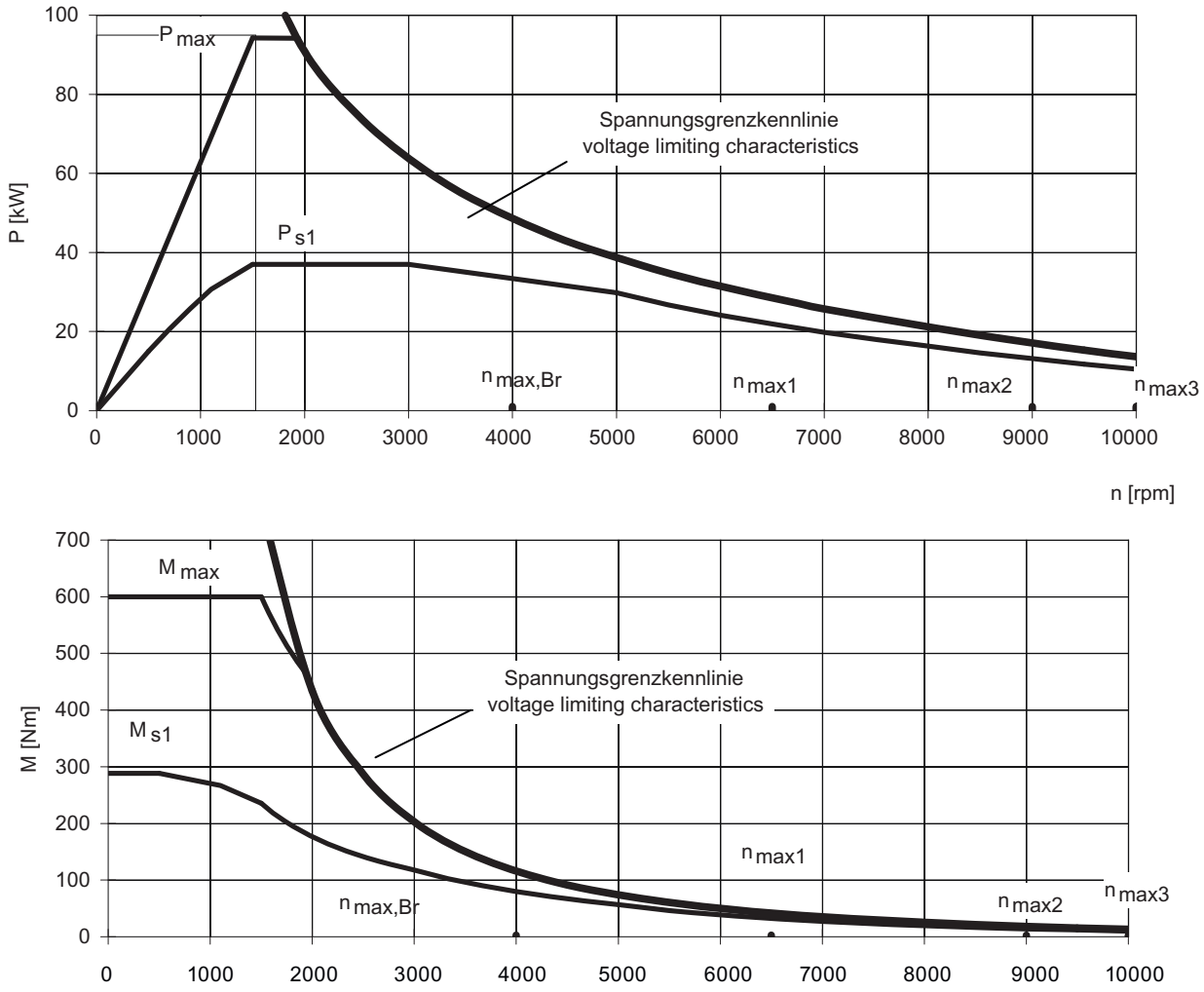
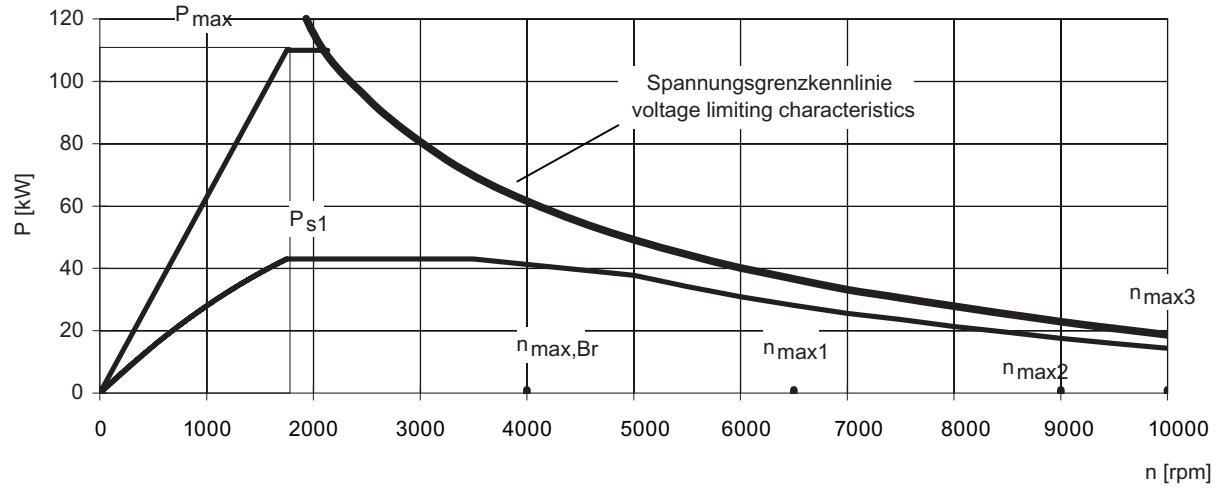


Tabella 4- 488 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8163-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 43,0 | 235 | 84,0 | 6500 | 9000 | 10000 | 4000 | 3500 | 600 | 208 | 288 | 96 |
| 1500 | 37,0 | 236 | 84,0 | | | | | 5000 | | | | |



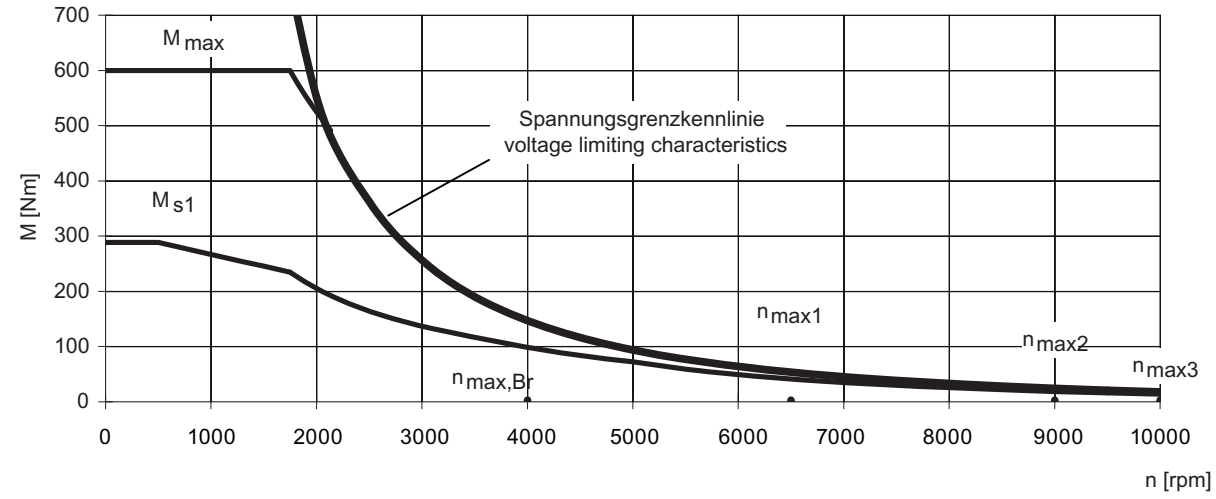
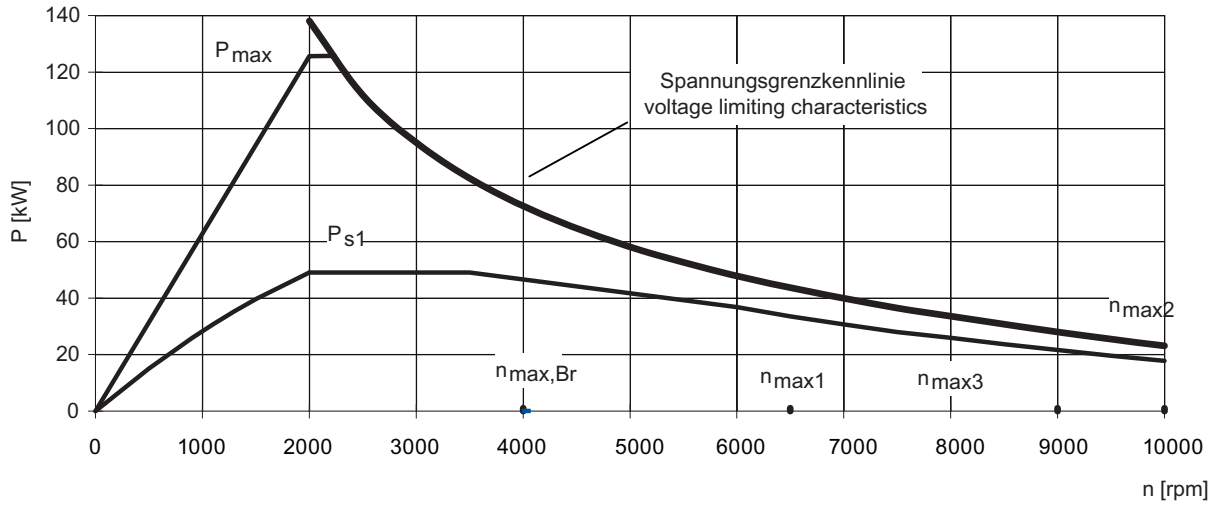



Tabella 4- 489 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8163-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 49,0 | 234 | 80,0 | 6500 | 9000 | 10000 | 4000 | 3500 | 600 | 208 | 288 | 96 |



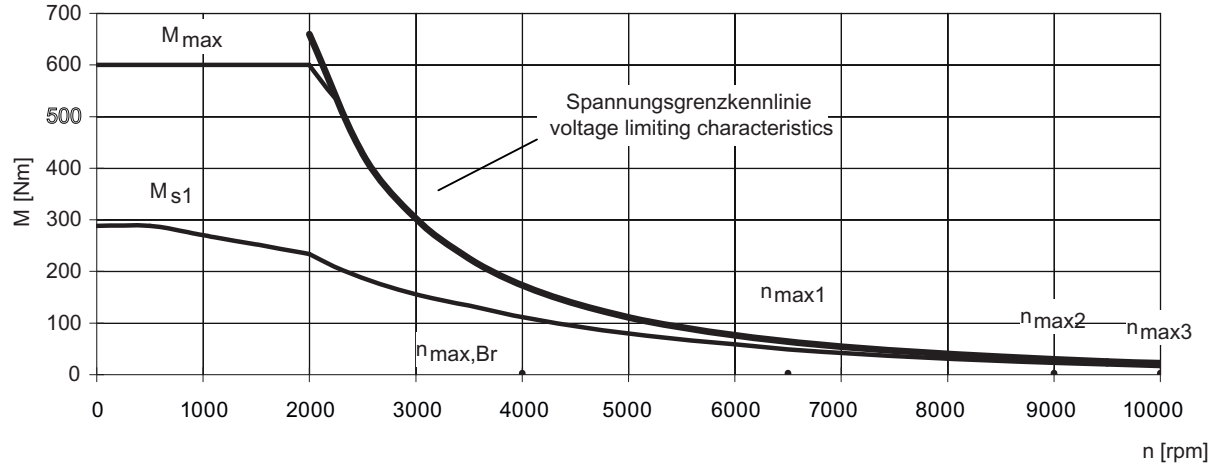
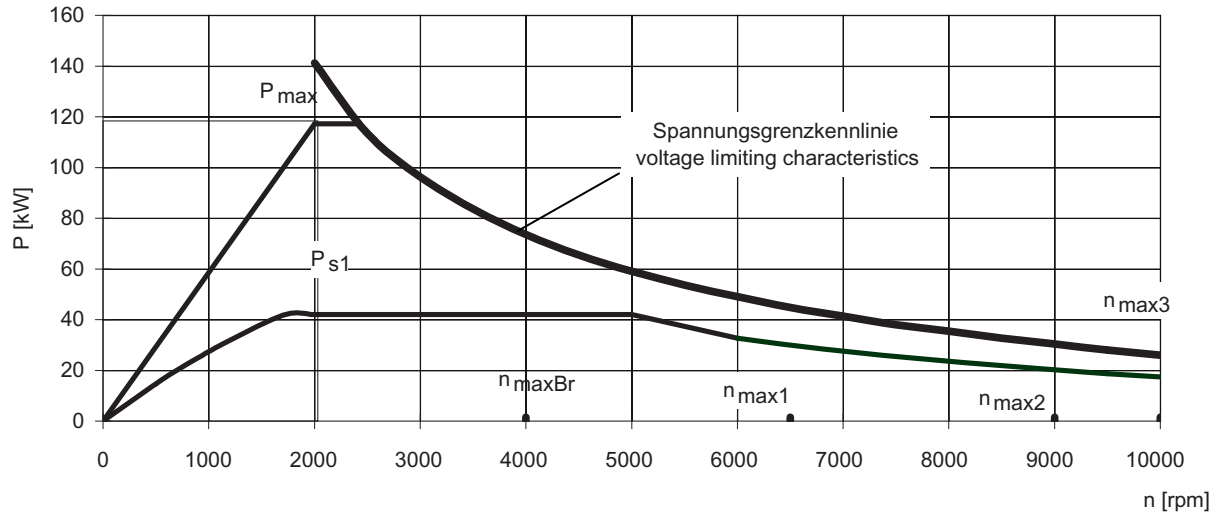



Tabella 4- 490 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8163-□□G2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 42,0 | 201 | 93,0 | 6500 | 9000 | 10000 | 4000 | 5000 | 560 | 253 | 281 | 120 |



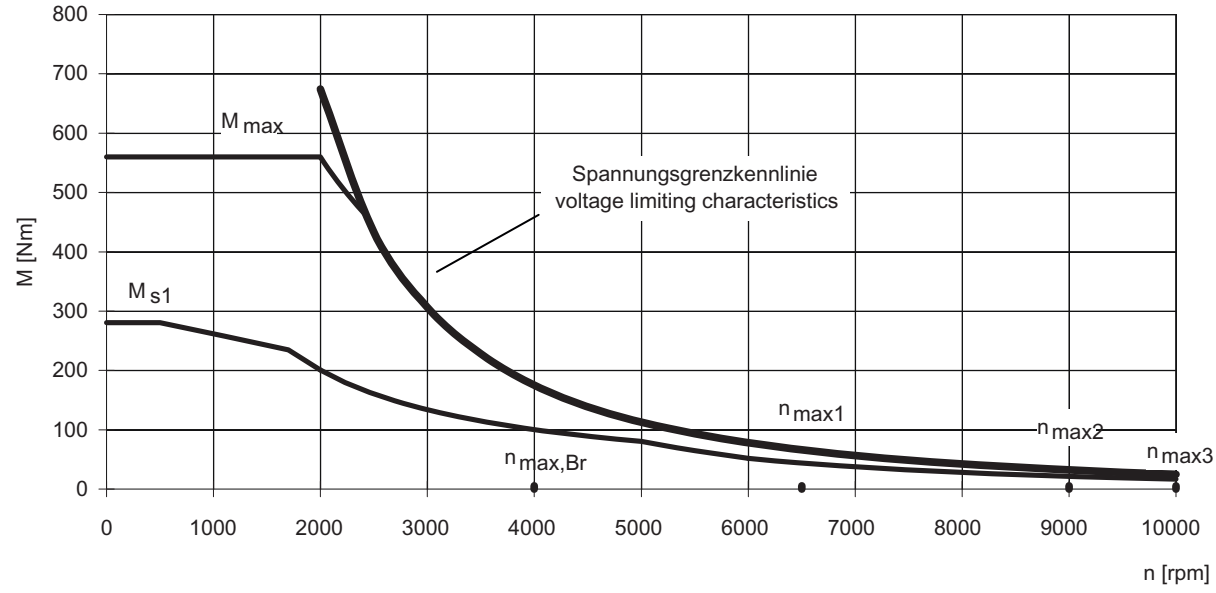
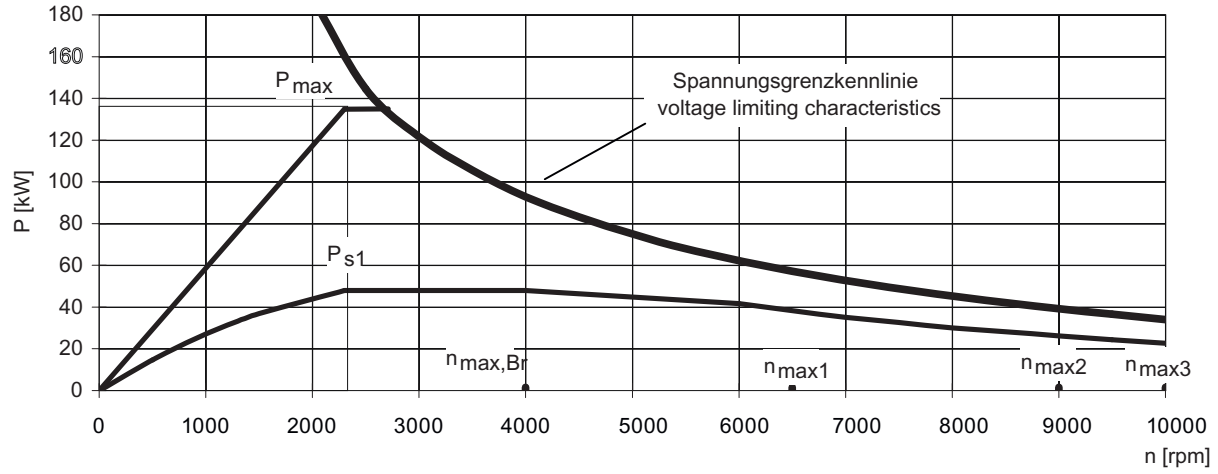



Tabella 4- 491 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8163-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 48,0 | 199 | 93,0 | 6500 | 9000 | 10000 | 4000 | 4000 | 560 | 253 | 281 | 120 |
| 2000 | 42,0 | 201 | 93,0 | | | | | 5800 | | | | |
| 1500 | 37,0 | 236 | 98,0 | | | | | 6600 | | | | |



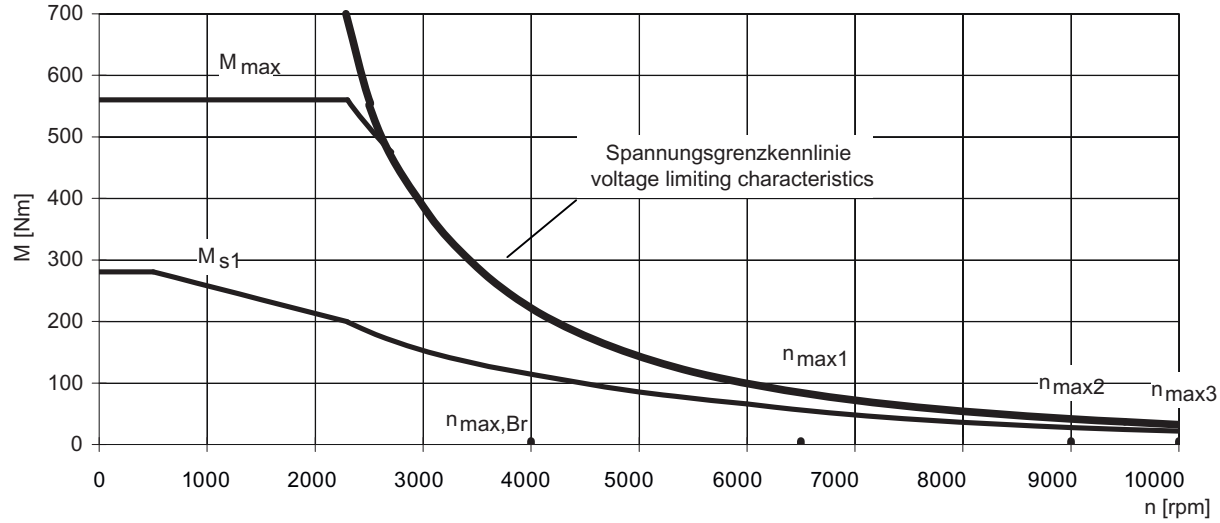



Tabella 4- 492 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8163-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 55,0 | 198 | 90,0 | 6500 | 9000 | 10000 | 4000 | 5000 | 560 | 253 | 281 | 120 |

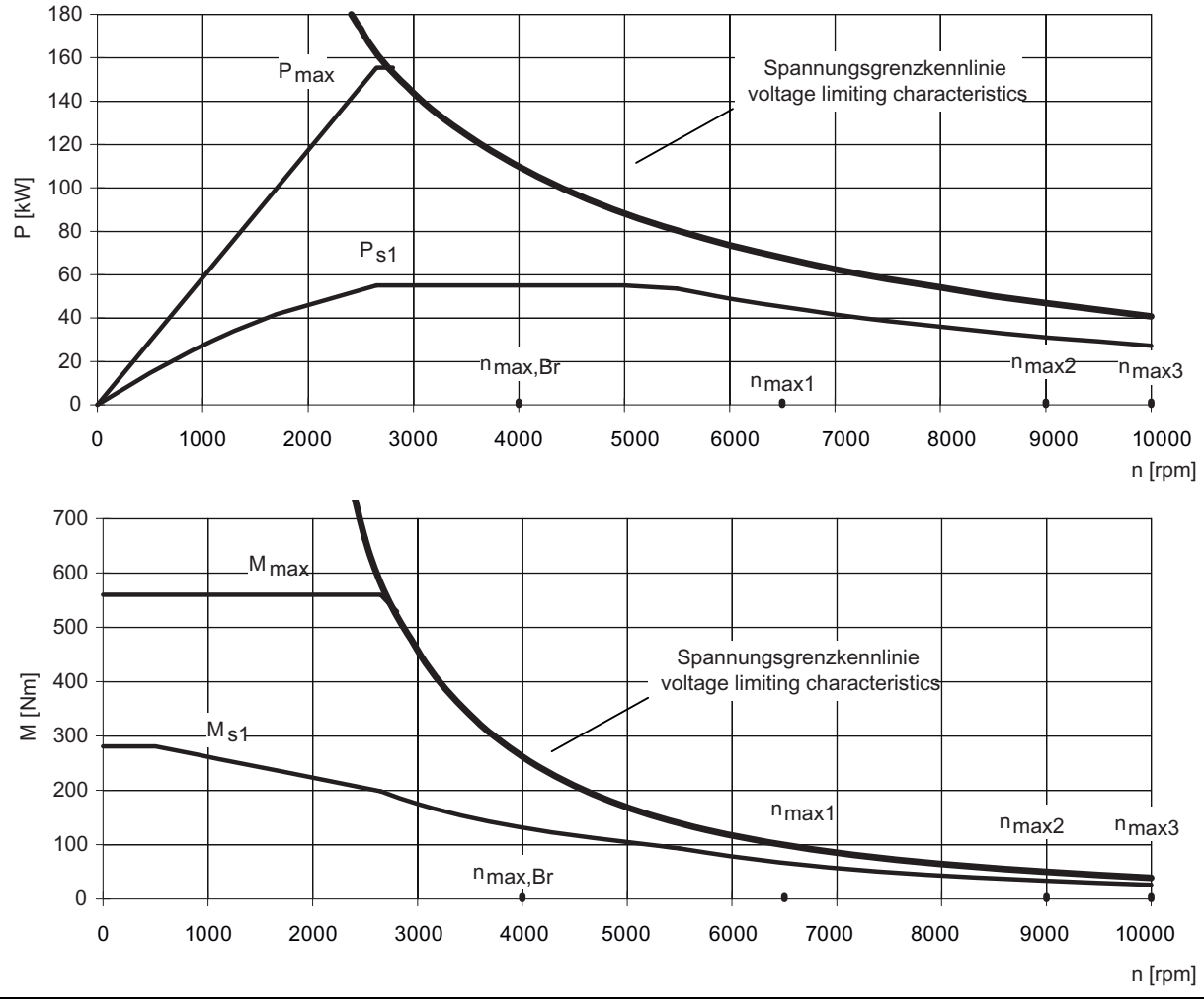
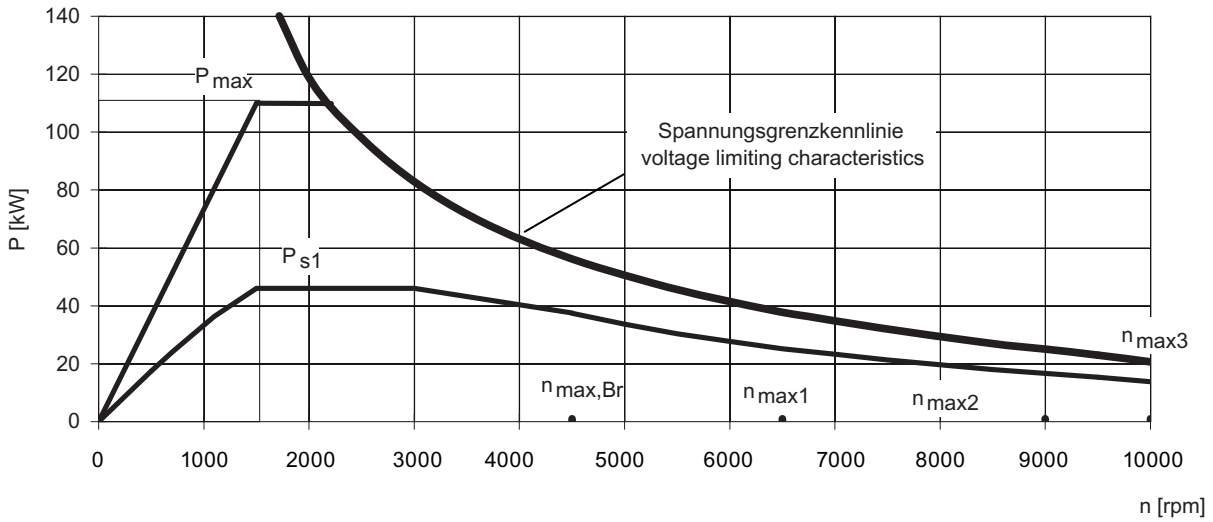


Tabella 4- 493 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8165-□□F2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 46,0 | 293 | 104,0 | 6500 | 9000 | 10000 | 4500 | 3050 | 700 | 245 | 334 | 112 |



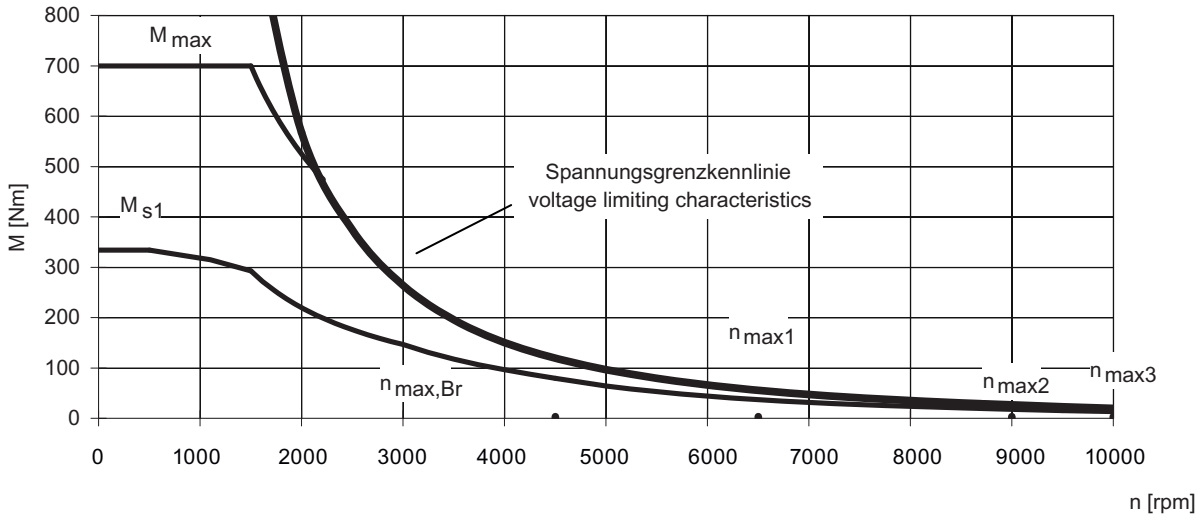



Tabella 4- 494 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8165-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 53,0 | 289 | 104,0 | 6500 | 9000 | 10000 | 4500 | 3050 | 700 | 245 | 334 | 112 |
| 1500 | 46,0 | 293 | 104,0 | | | | | 4150 | | | | |

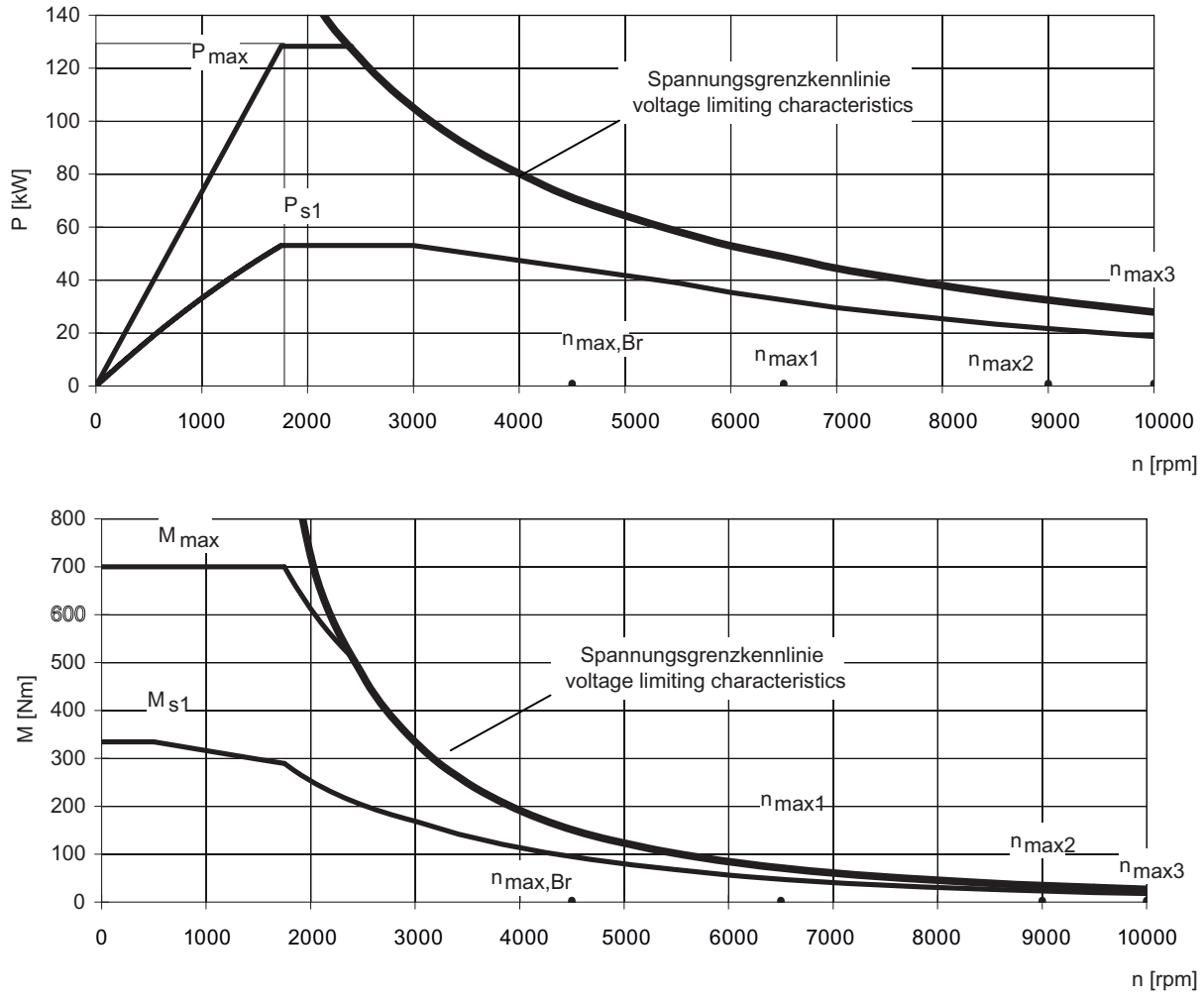
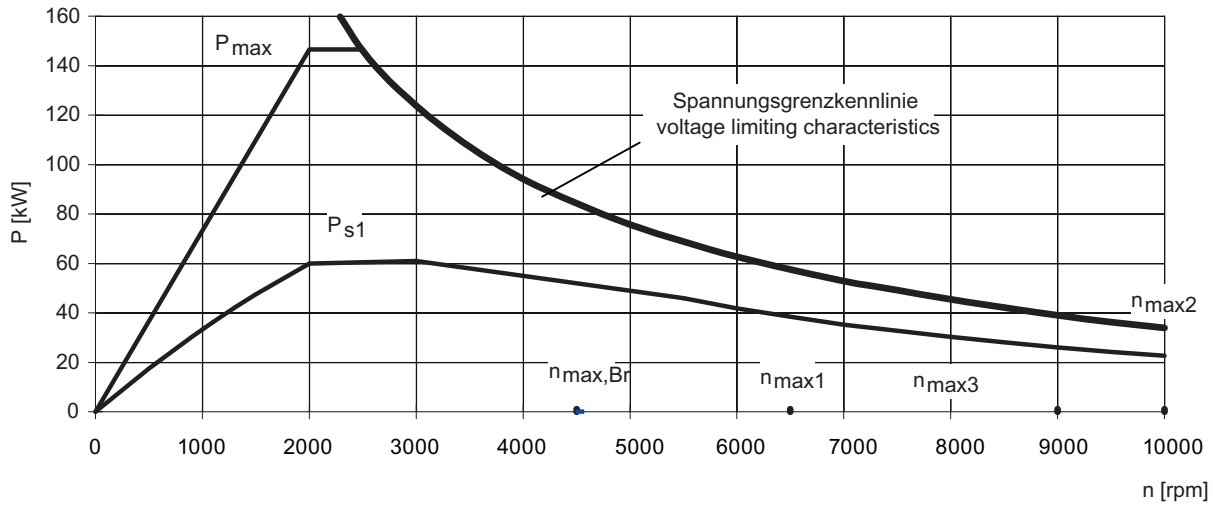


Tabella 4- 495 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8165-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 60,0 | 287 | 103,0 | 6500 | 9000 | 10000 | 4500 | 3050 | 700 | 245 | 334 | 112 |



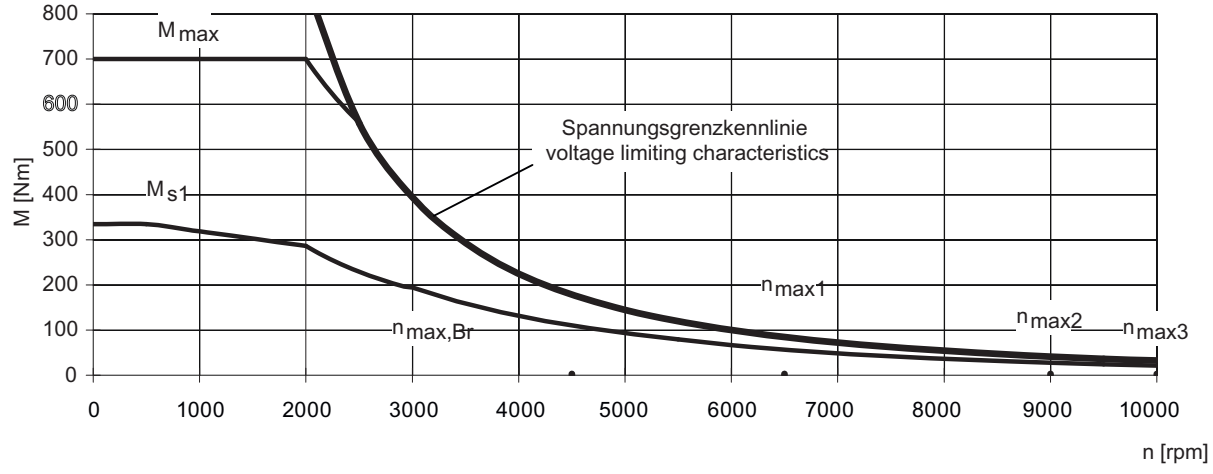



Tabella 4- 496 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8165-□□G2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 53,0 | 253 | 110,0 | 6500 | 9000 | 10000 | 4500 | 3500 | 600 | 250 | 306 | 135 |

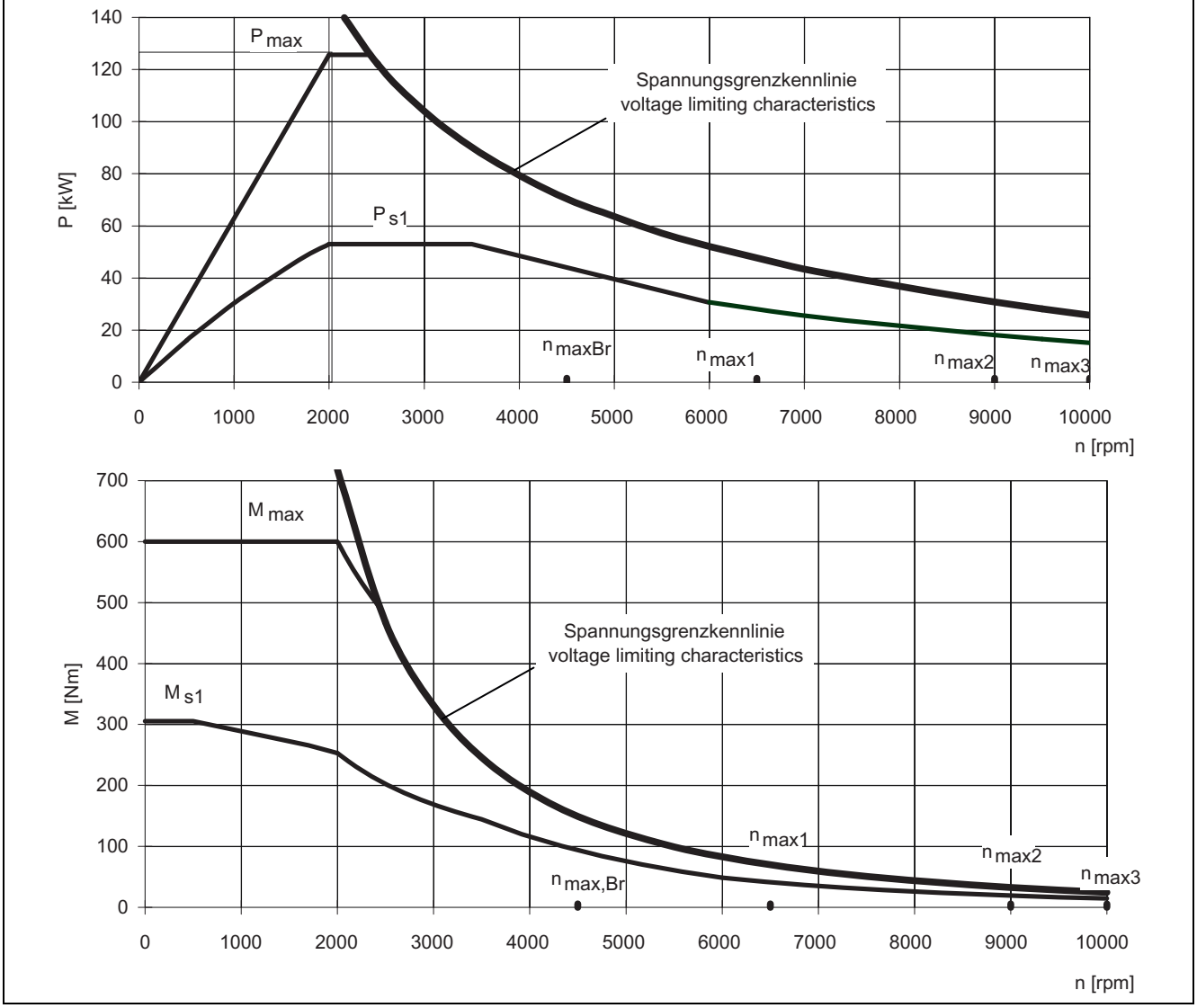
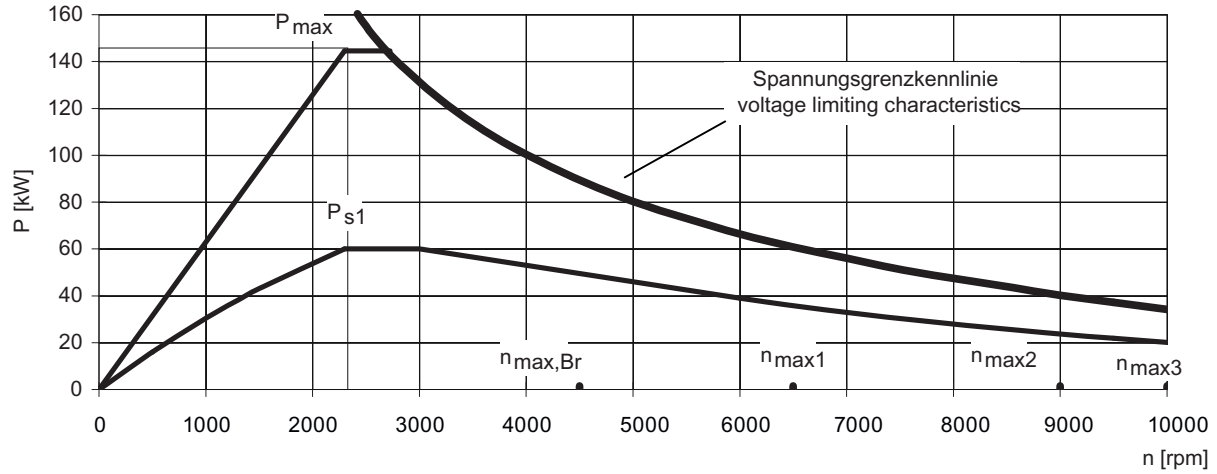


Tabella 4- 497 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8165-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 60,0 | 249 | 107,0 | 6500 | 9000 | 10000 | 4500 | 3000 | 600 | 250 | 306 | 135 |
| 2000 | 53,0 | 253 | 110,0 | | | | | 3900 | | | | |
| 1500 | 43,1 | 274 | 112,0 | | | | | 5000 | | | | |



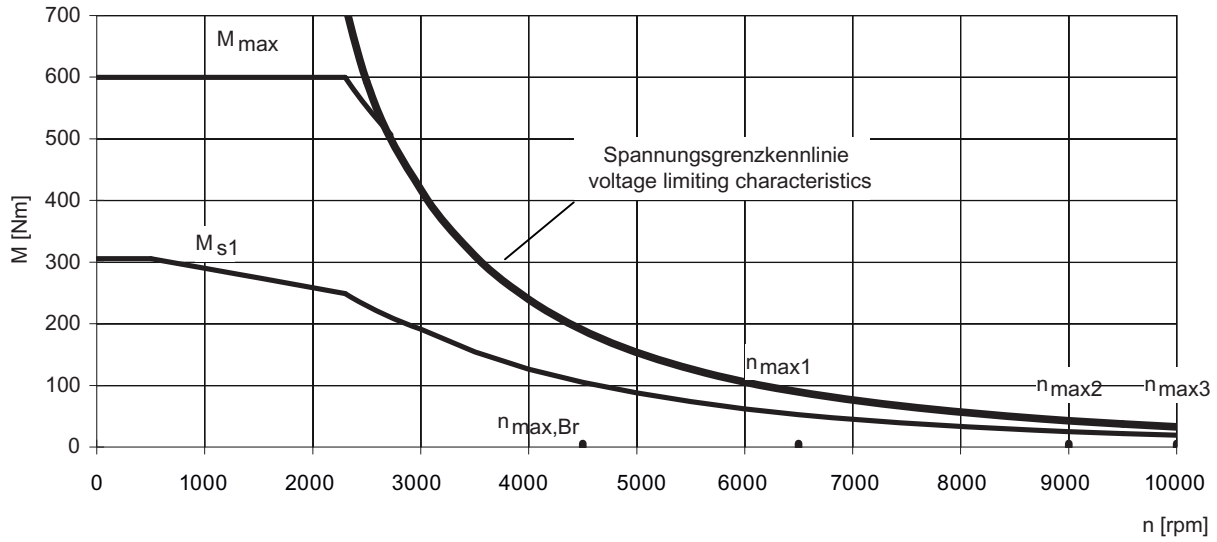
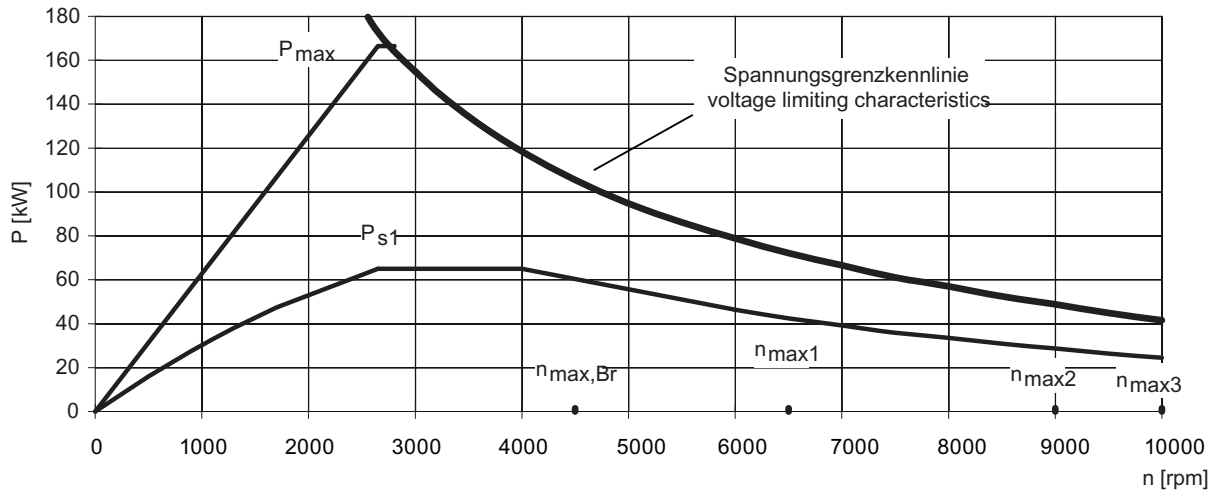



Tabella 4- 498 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8165-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 65,0 | 234 | 100,0 | 6500 | 9000 | 10000 | 4500 | 4000 | 600 | 250 | 306 | 135 |



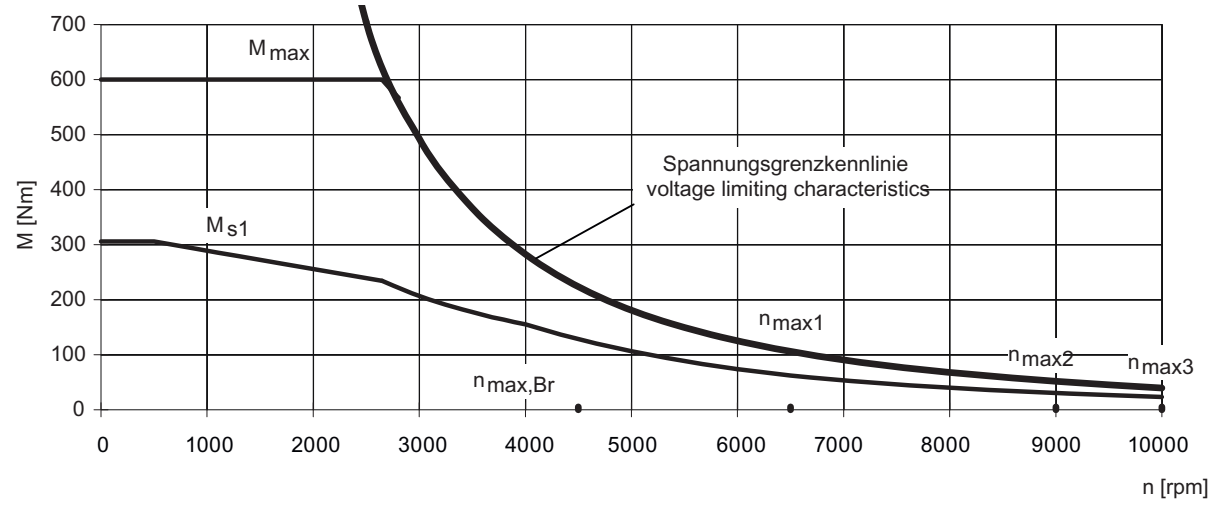
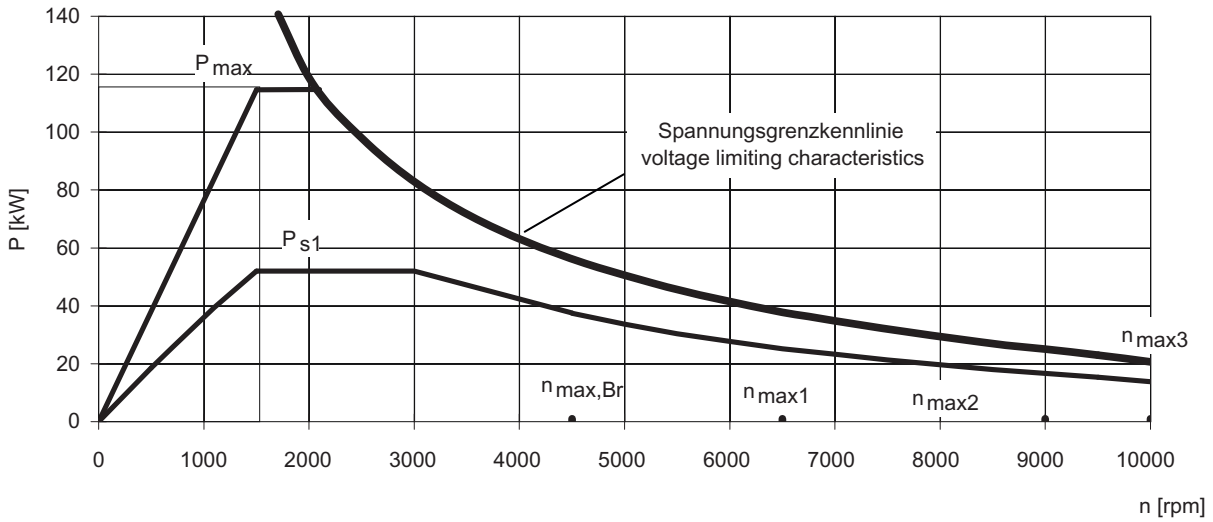



Tabella 4- 499 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8166-□□F2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 52,0 | 331 | 116,0 | 6500 | 9000 | 10000 | 4500 | 3050 | 730 | 250 | 353 | 127 |



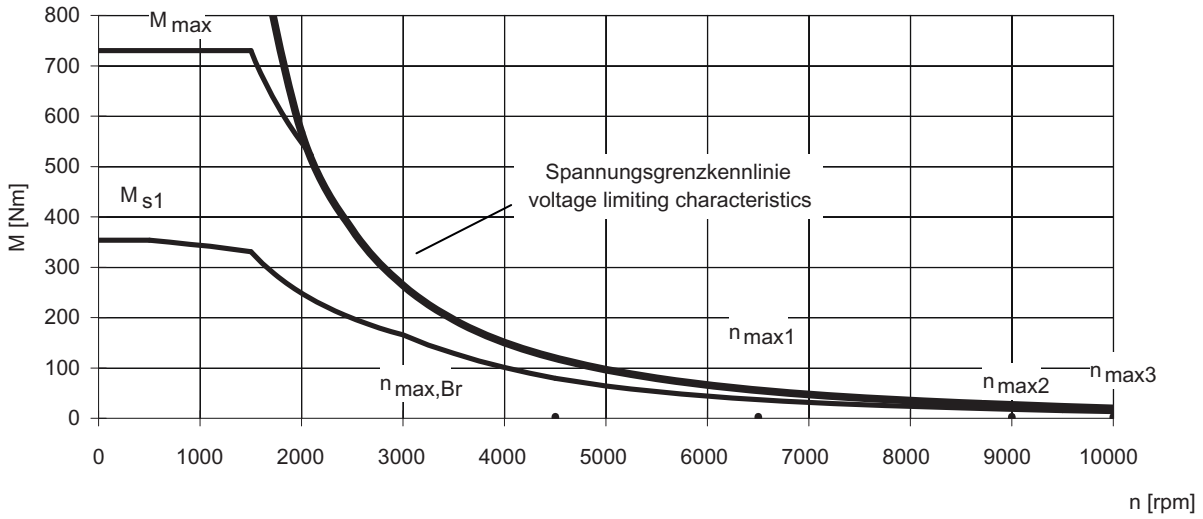



Tabella 4- 500 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8166-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 61,0 | 333 | 116,0 | 6500 | 9000 | 10000 | 4500 | 3050 | 730 | 250 | 353 | 127 |
| 1500 | 52,0 | 331 | 116,0 | | | | | 4050 | | | | |

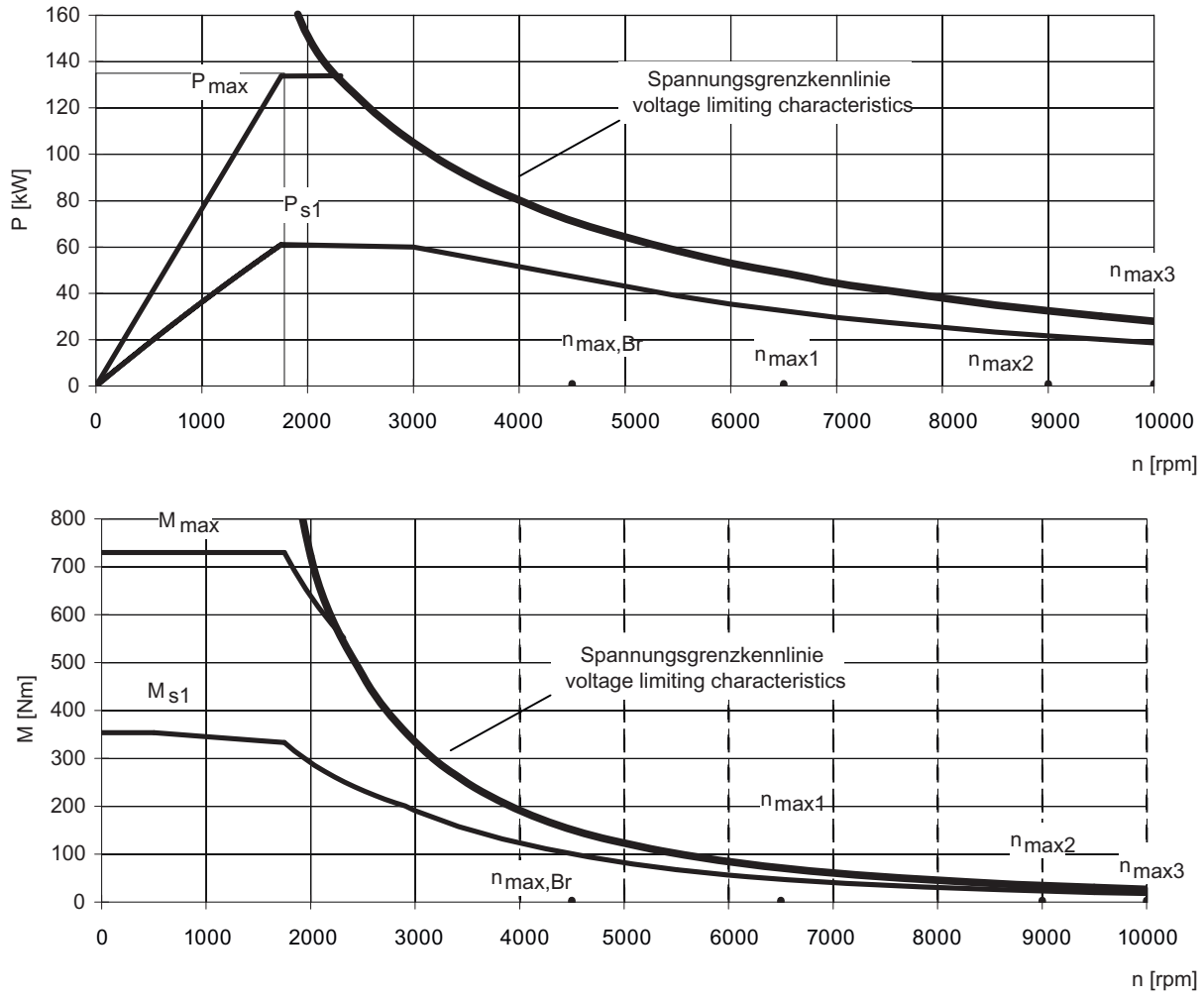
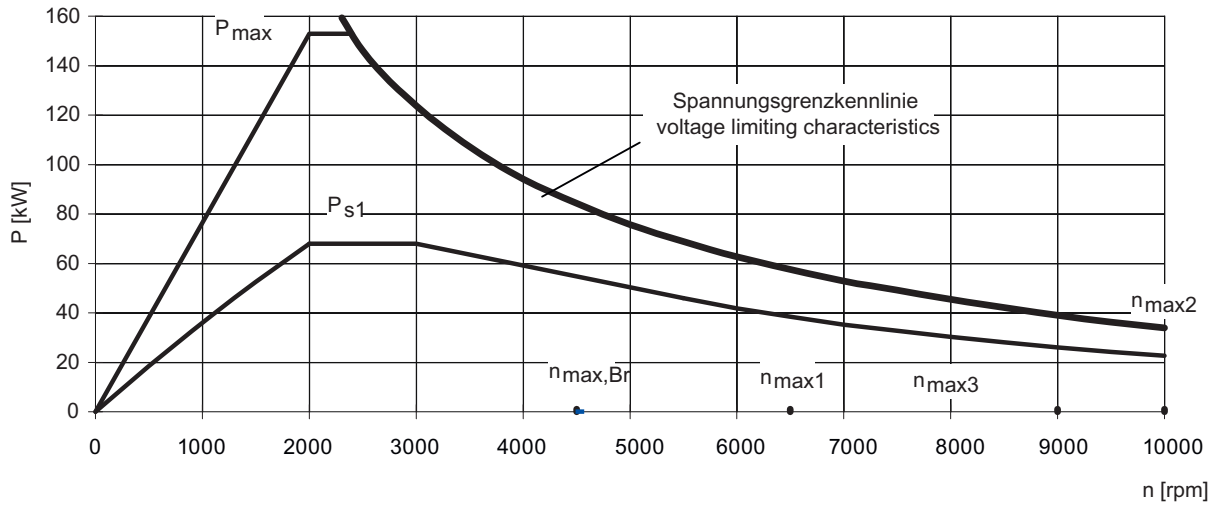


Tabella 4- 501 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8166-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 68,0 | 325 | 116,0 | 6500 | 9000 | 10000 | 4500 | 3050 | 730 | 250 | 353 | 127 |



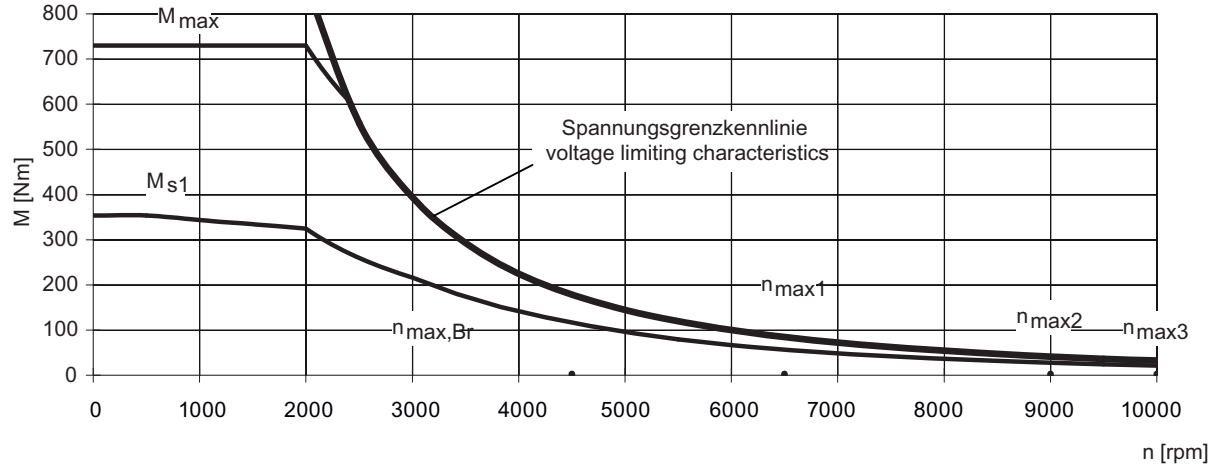
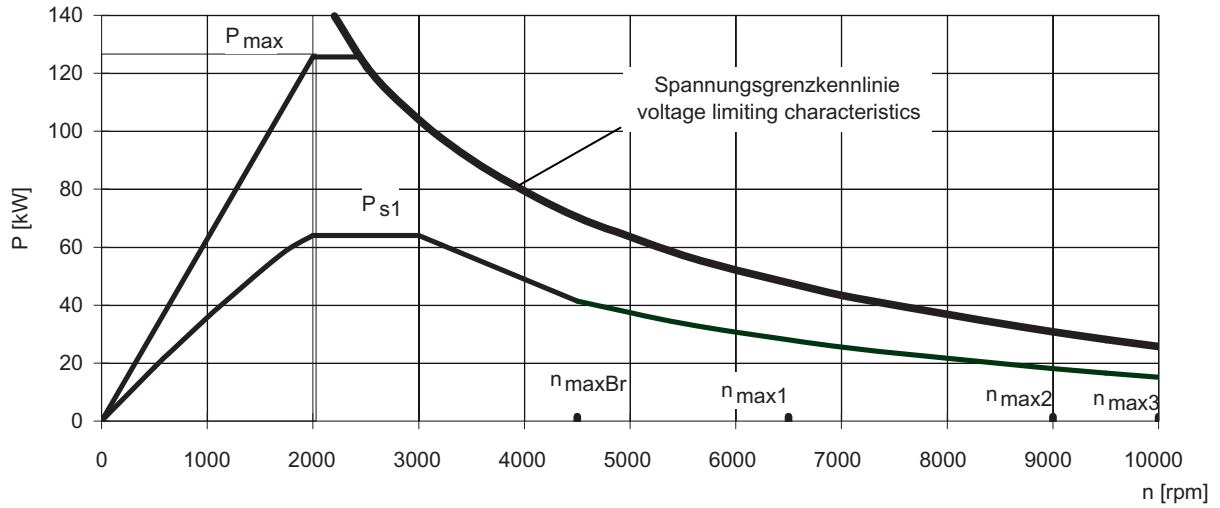



Tabella 4- 502 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8166-□□G2□,

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [kW] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 64,0 | 306 | 125,0 | 6500 | 9000 | 10000 | 4500 | 3000 | 600 | 241 | 353 | 147 |



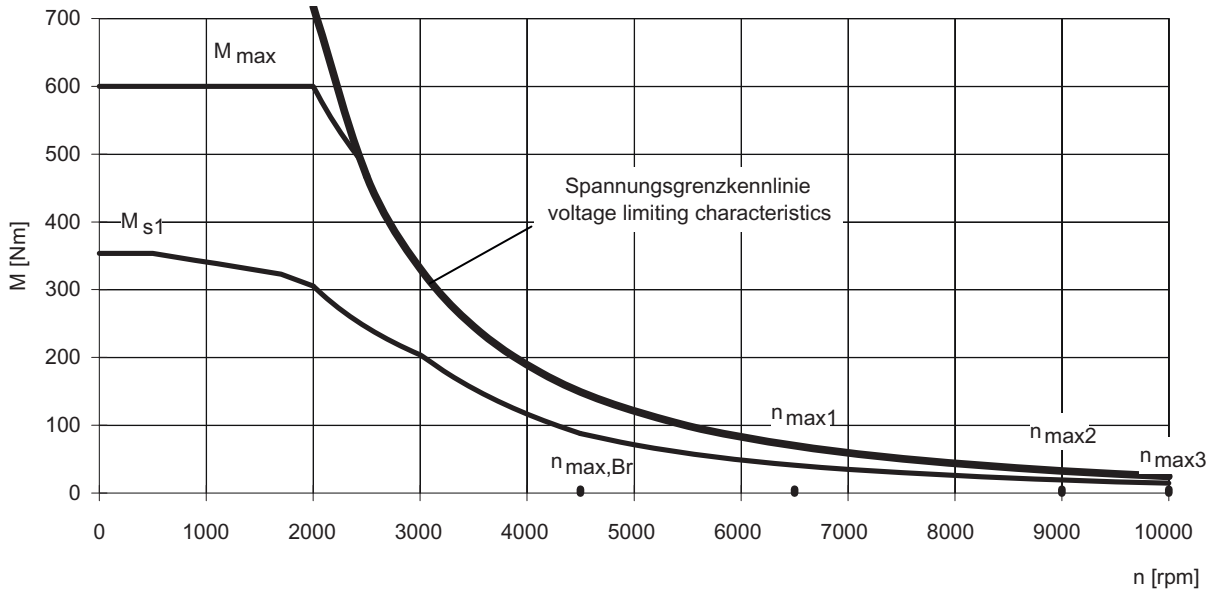
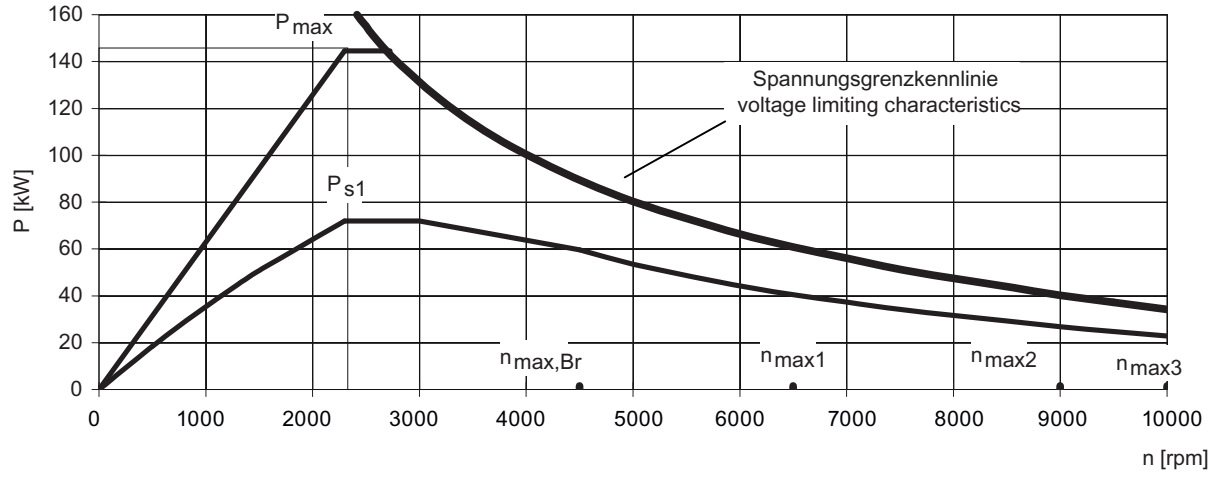



Tabella 4- 503 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8166-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 72,0 | 299 | 124,0 | 6500 | 9000 | 10000 | 4500 | 3000 | 600 | 241 | 353 | 147 |
| 2000 | 64,0 | 306 | 125,0 | | | | | 4000 | | | | |
| 1500 | 52,0 | 331 | 126,0 | | | | | 5200 | | | | |



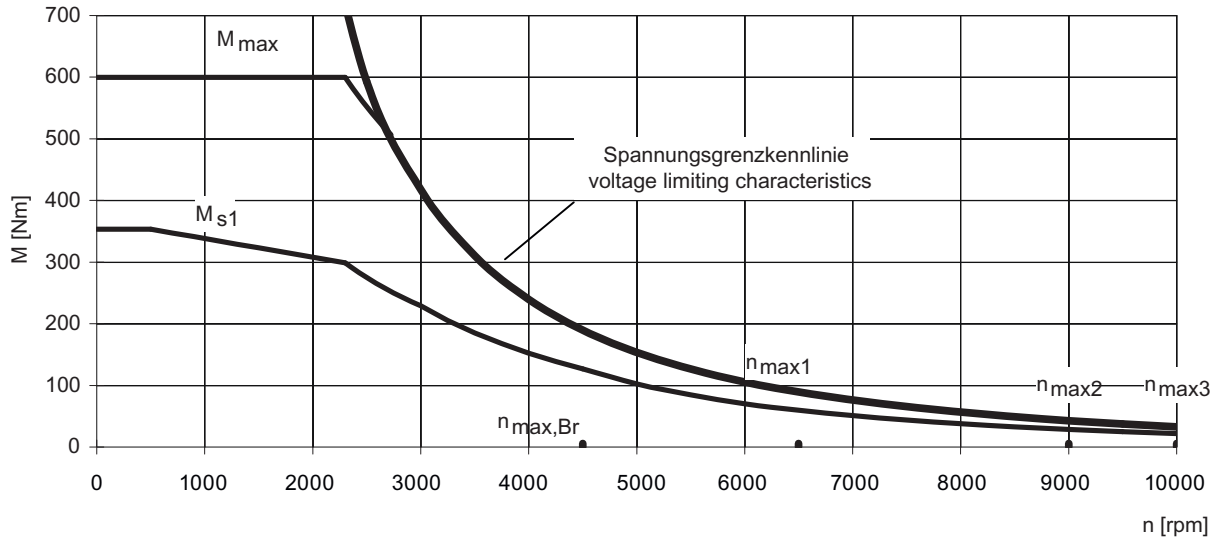
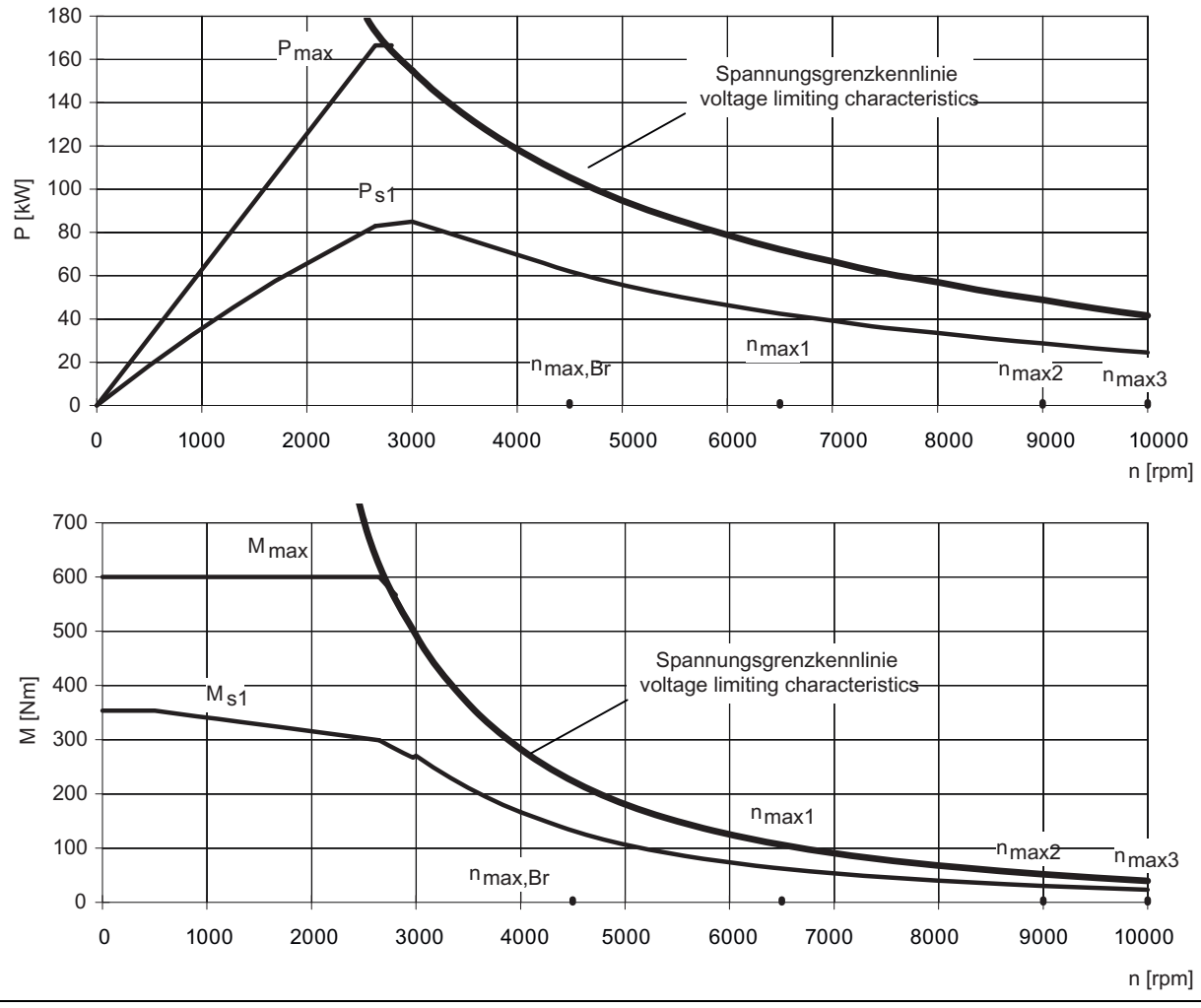



Tabella 4- 504 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8166-□□G2□

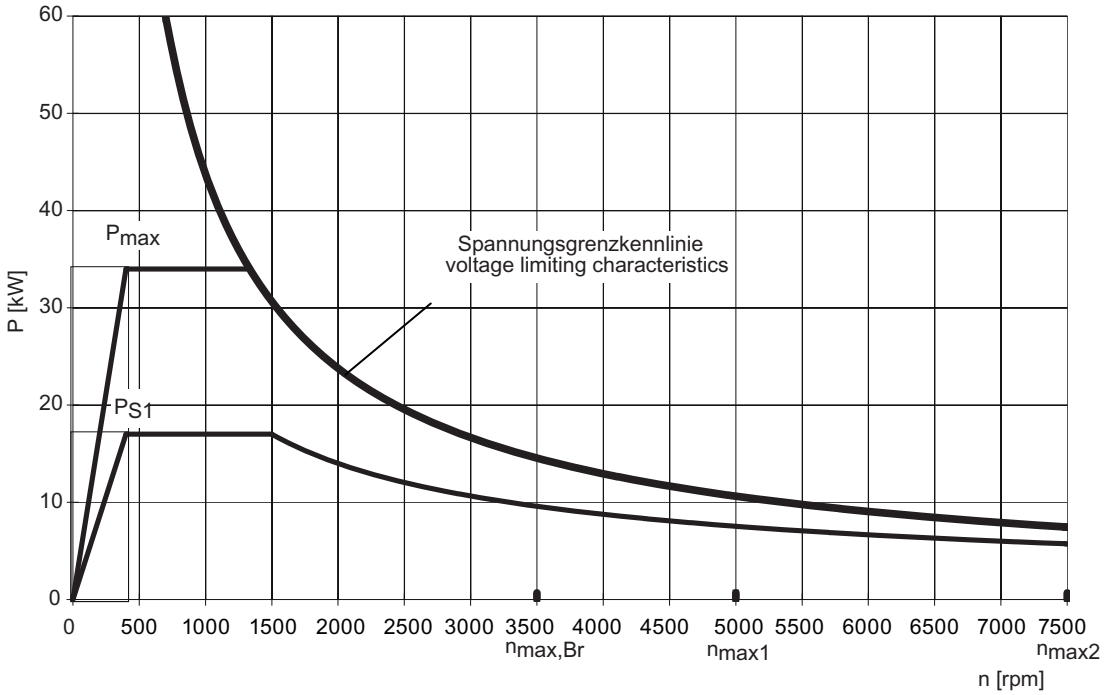
| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 83,0 | 299 | 125,0 | 6500 | 9000 | 10000 | 4500 | 3000 | 600 | 241 | 353 | 147 |



### 4.1.3.5 Altezza dell'asse 180 - Raffreddamento ad acqua

Tabella 4- 505 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 17 | 406 | 50 | 5000 | 7500 | - | 3500 | 1500 | 812 | 100 | 406 | 50 |



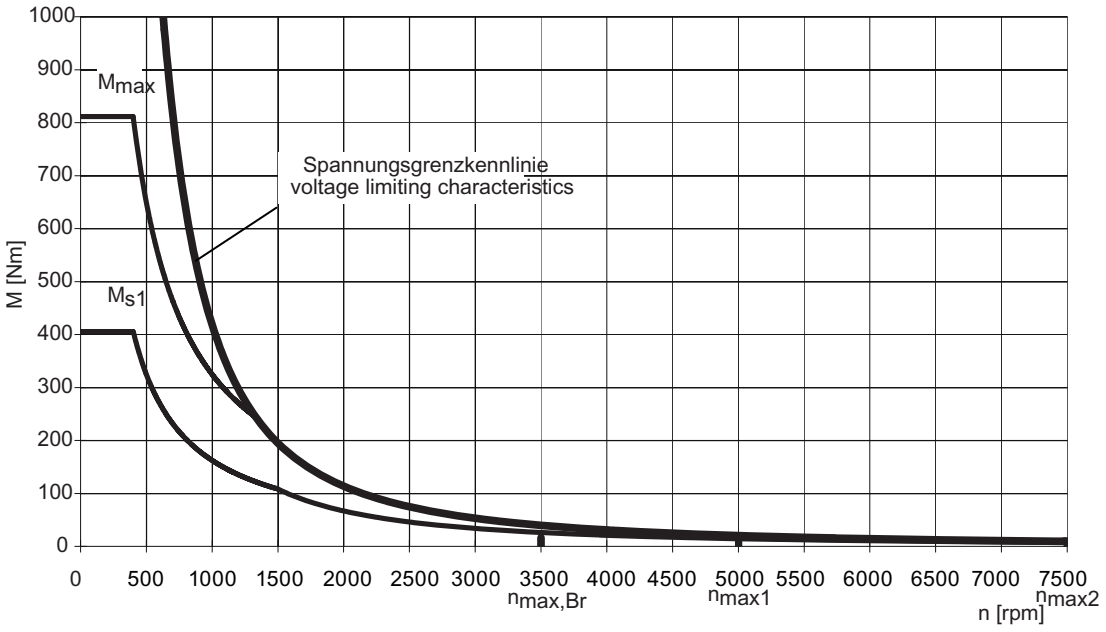
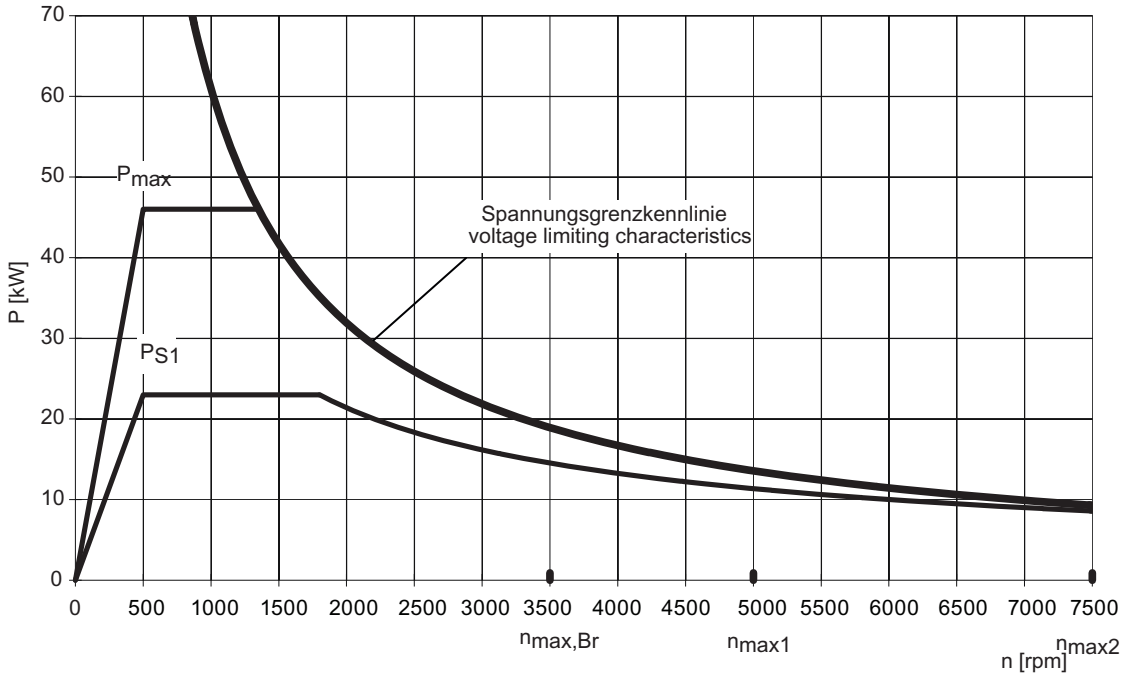



Tabella 4- 506 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 23 | 439 | 54 | 5000 | 7500 | - | 3500 | 1800 | 879 | 108 | 439 | 54 |
| 400 | 18 | 439 | 54 | | | | | 2500 | | | | |



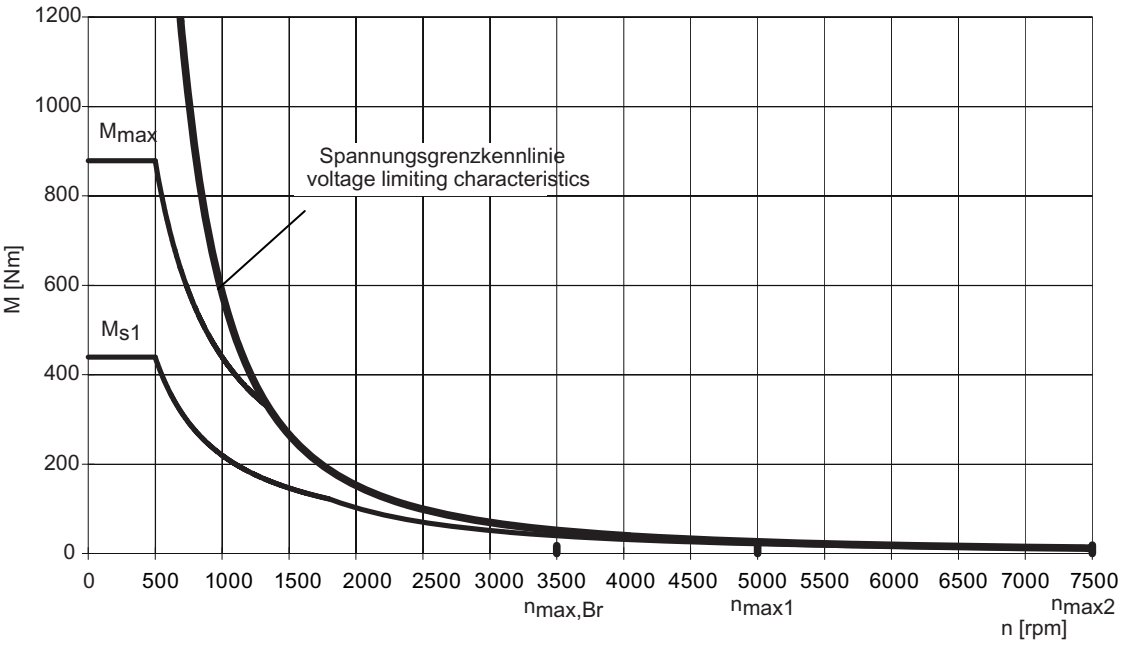
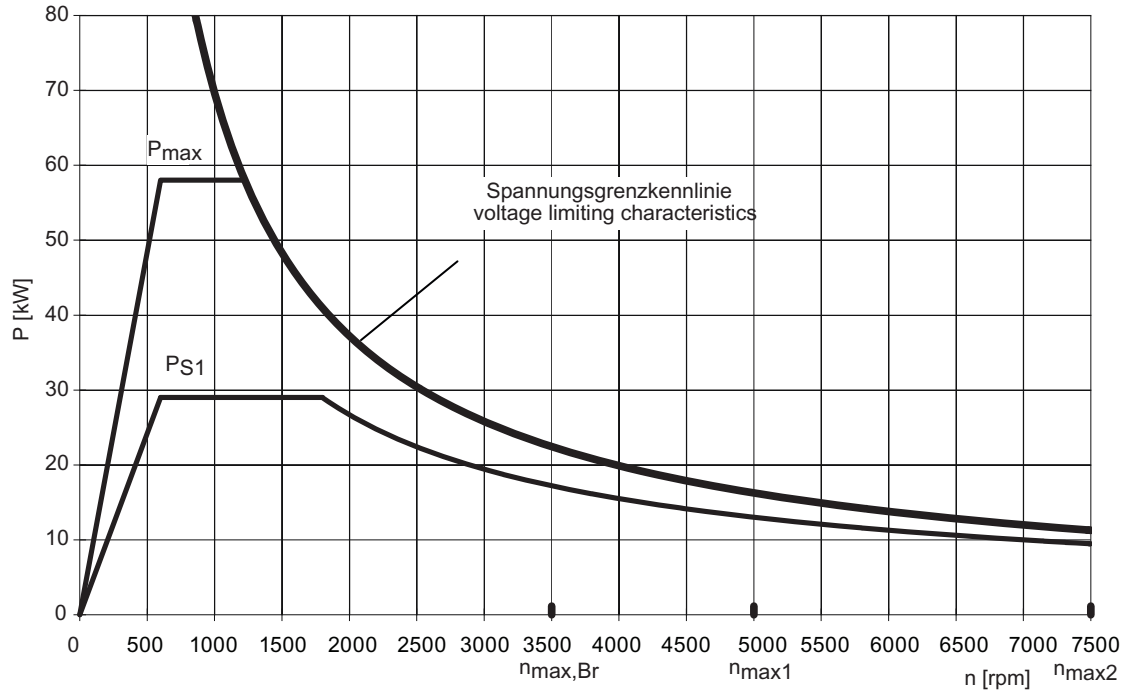



Tabella 4- 507 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 29 | 462 | 55 | 5000 | 7500 | - | 3500 | 1800 | 923 | 110 | 462 | 55 |



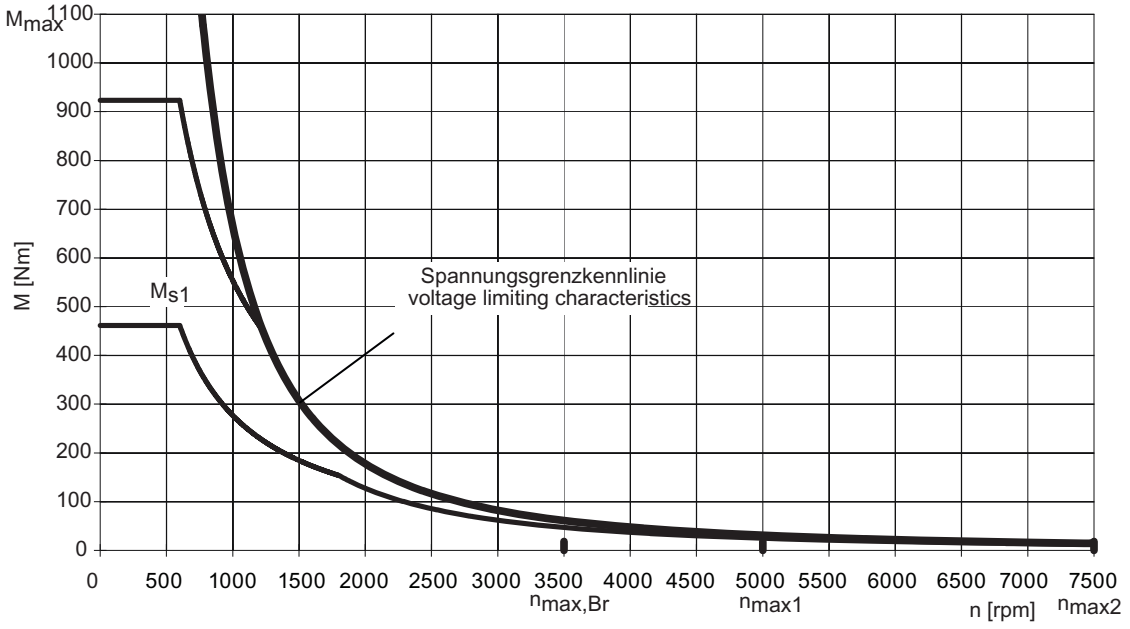
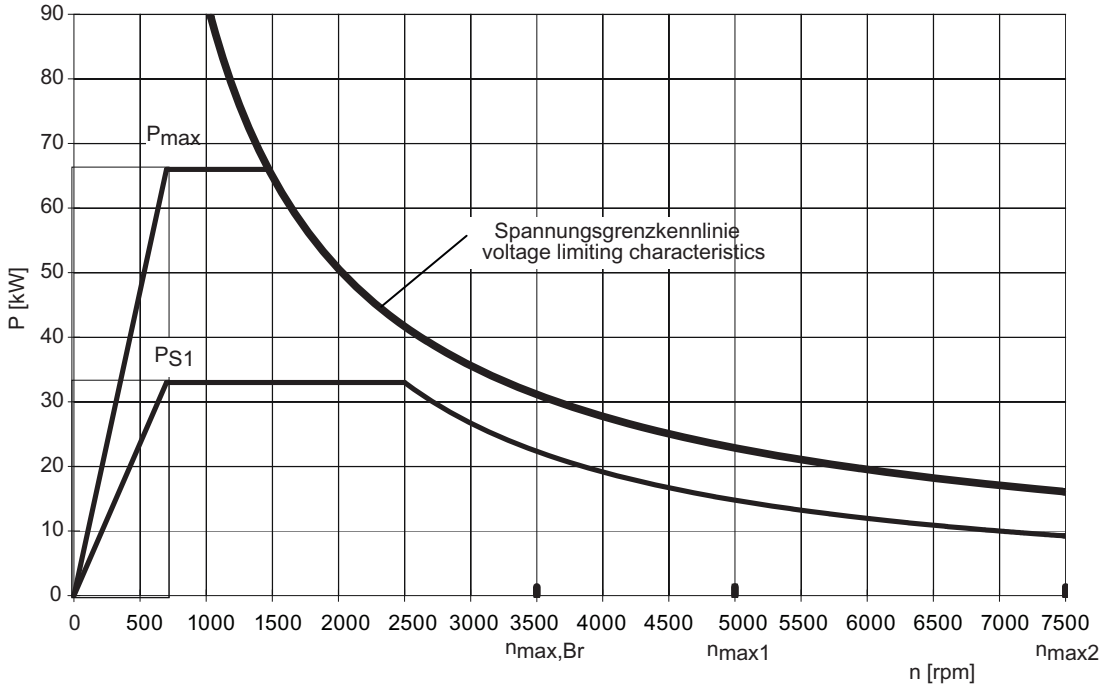



Tabella 4- 508 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 33 | 450 | 77 | 5000 | 7500 | - | 3500 | 2500 | 900 | 154 | 450 | 77 |



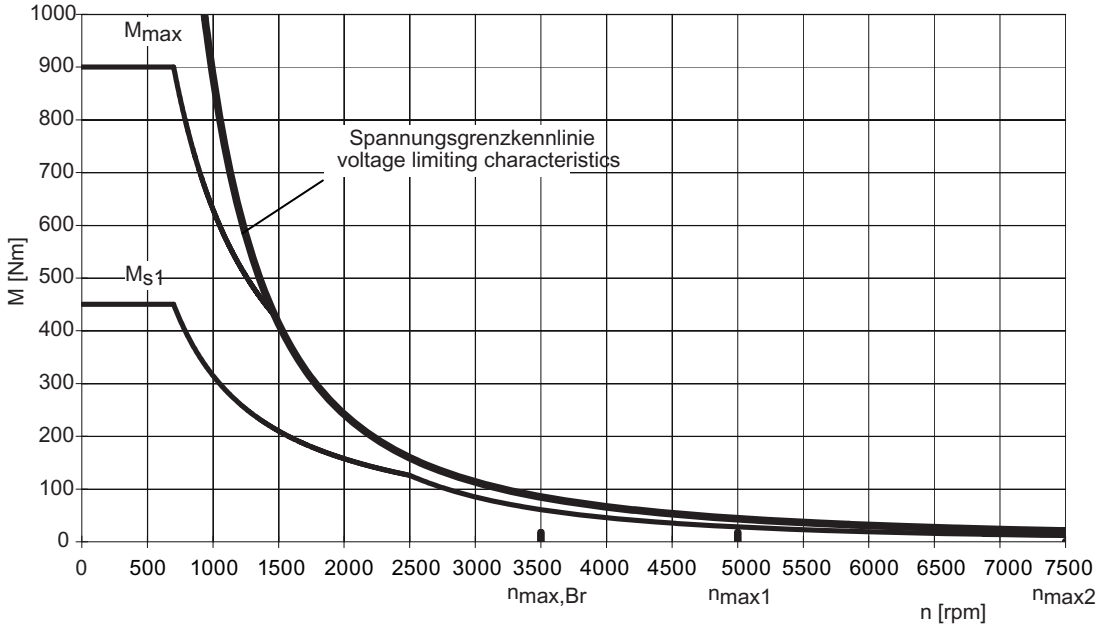
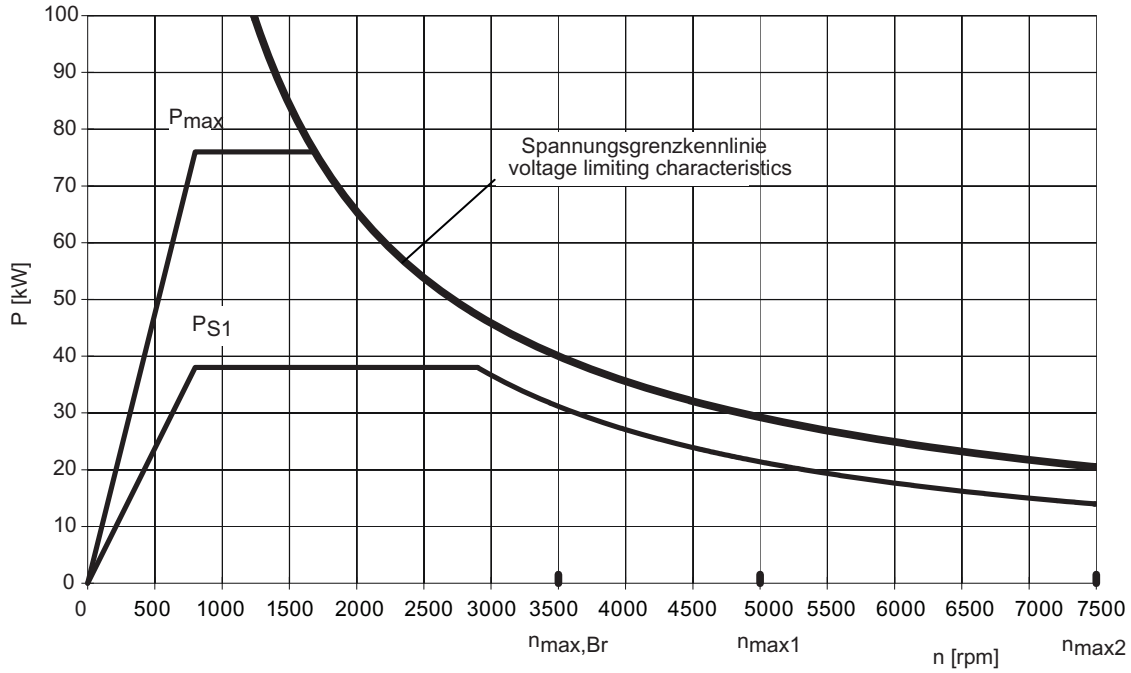



Tabella 4- 509 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 38 | 454 | 77 | 5000 | 7500 | - | 3500 | 2900 | 907 | 154 | 454 | 77 |
| 700 | 33 | 454 | 77 | | | | | 3300 | | | | |



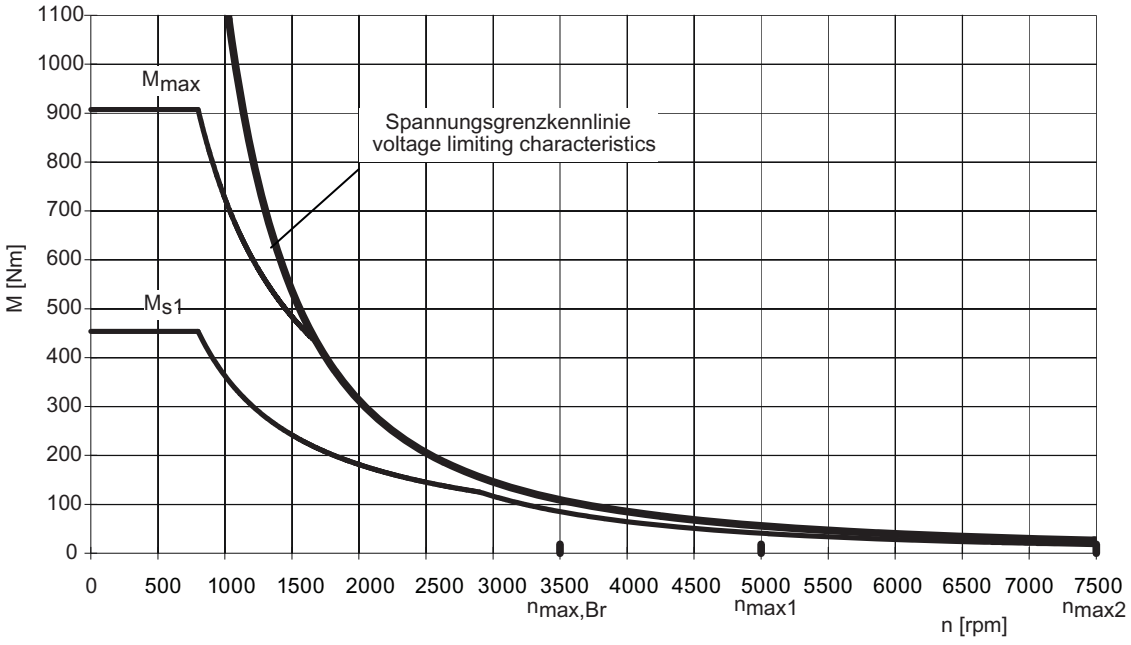
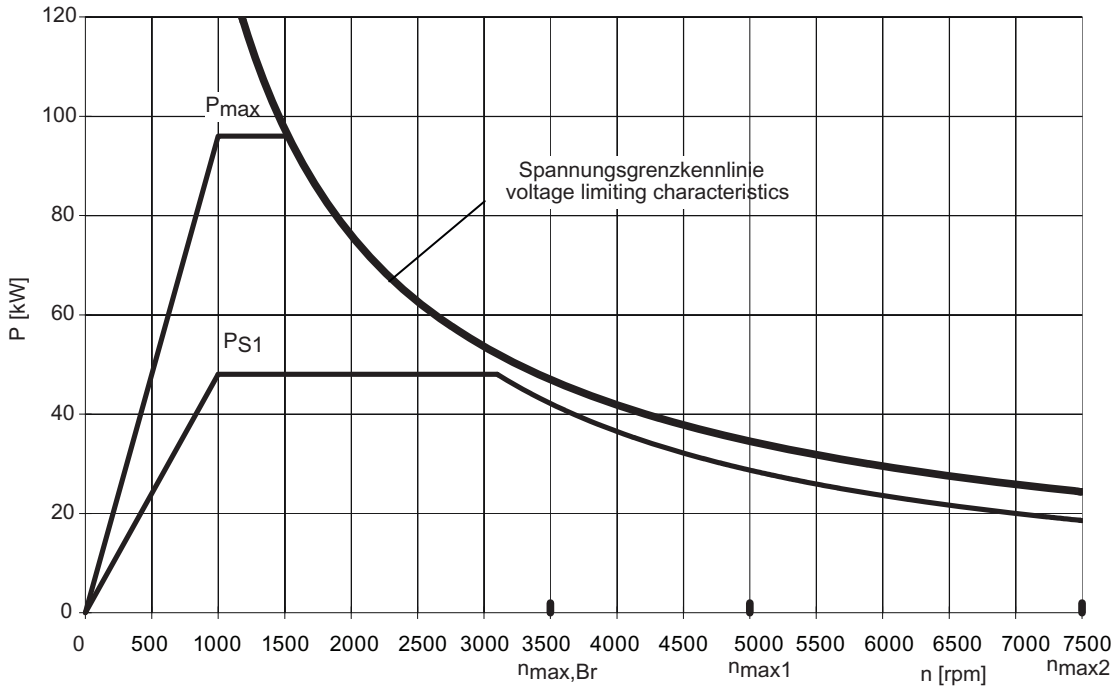



Tabella 4- 510 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 48 | 458 | 77 | 5000 | 7500 | - | 3500 | 3100 | 917 | 154 | 458 | 77 |



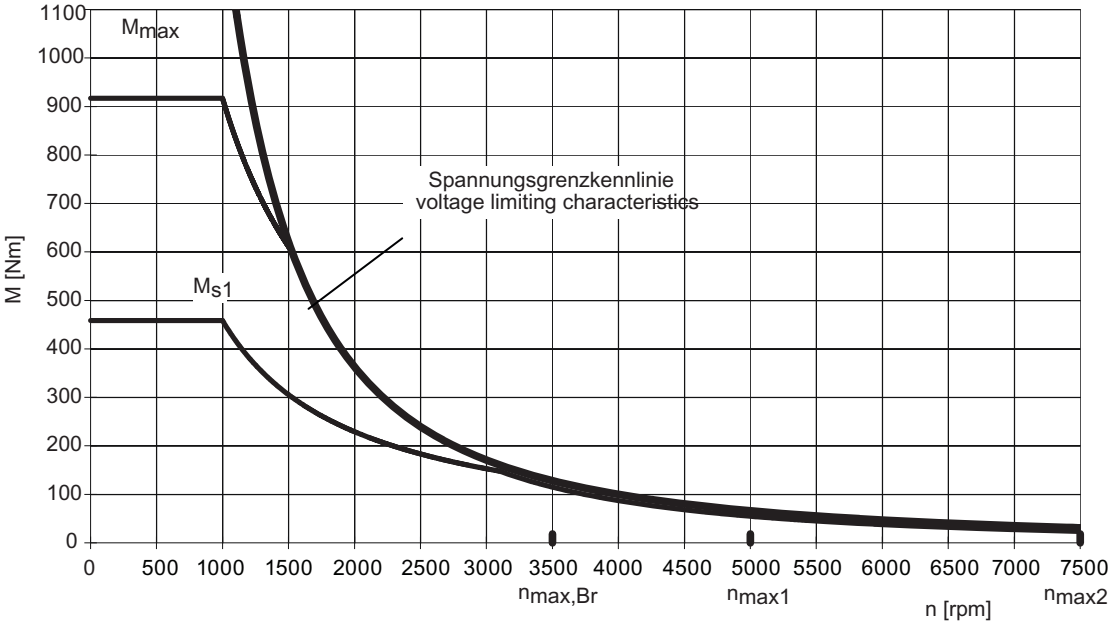
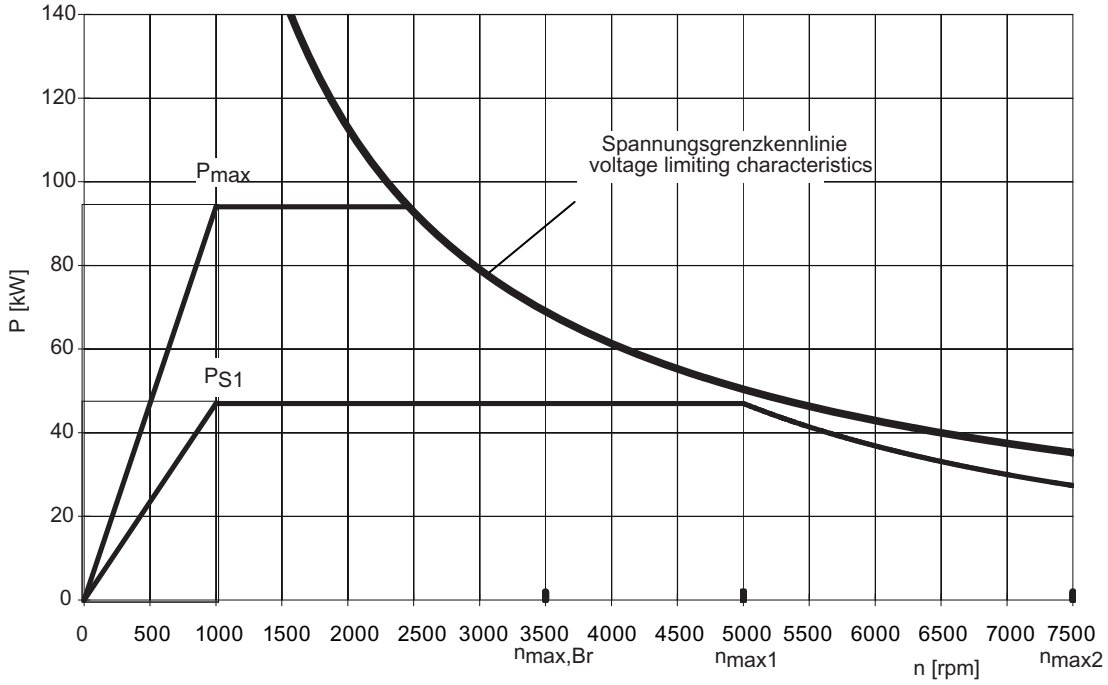



Tabella 4- 511 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 47 | 449 | 114 | 5000 | 7500 | - | 3500 | 5000 | 898 | 228 | 449 | 114 |



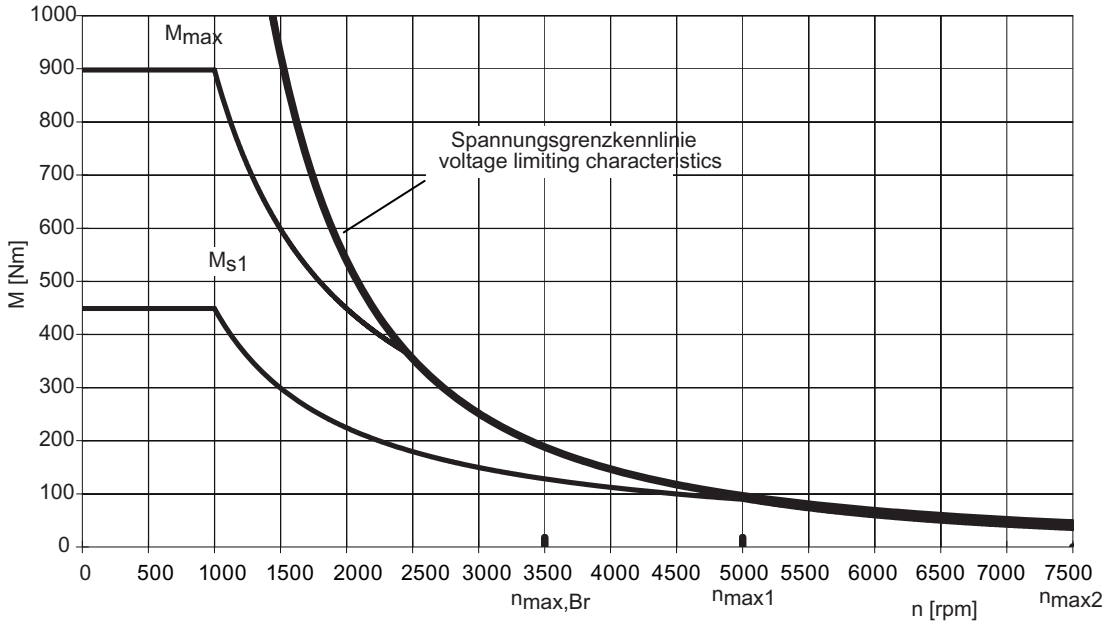
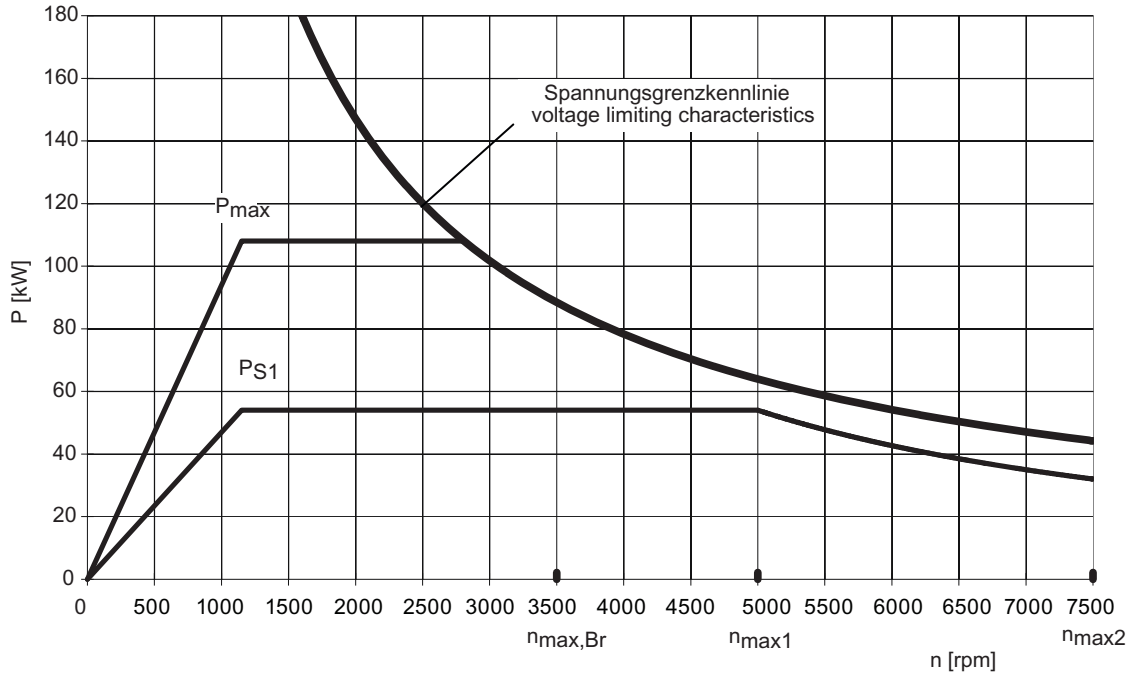



Tabella 4- 512 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 54 | 448 | 112 | 5000 | 7500 | - | 3500 | 5000 | 897 | 224 | 448 | 112 |
| 1000 | 47 | 448 | 112 | | | | | 5500 | | | | |



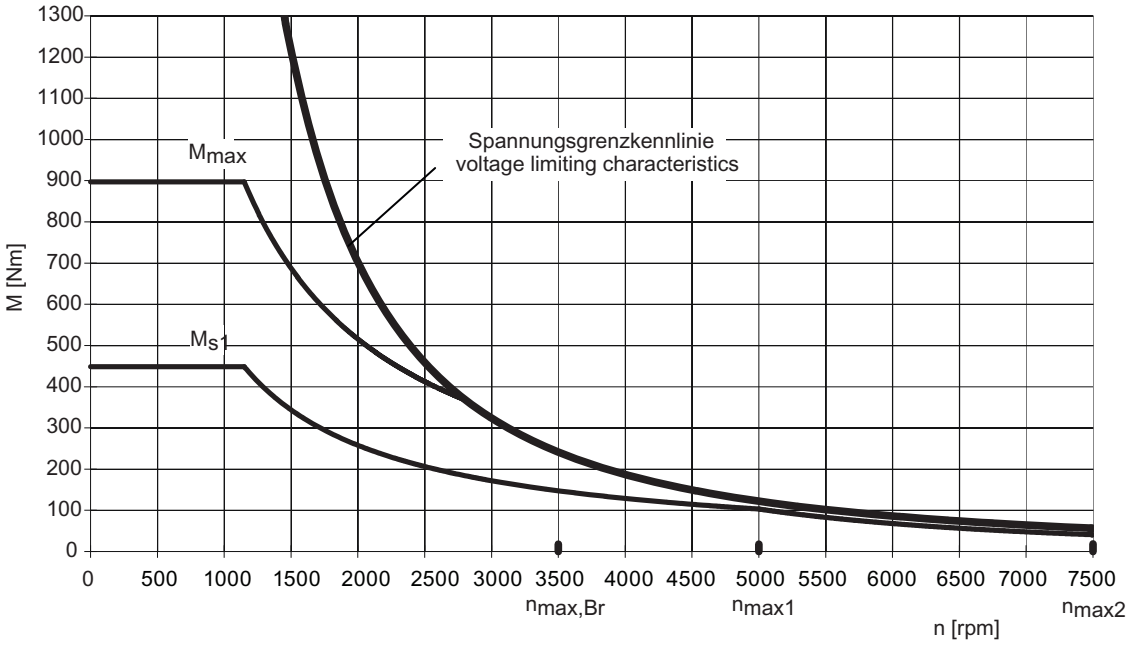



Tabella 4- 513 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 64 | 453 | 112 | 5000 | 7500 | - | 3500 | 5000 | 905 | 224 | 453 | 112 |

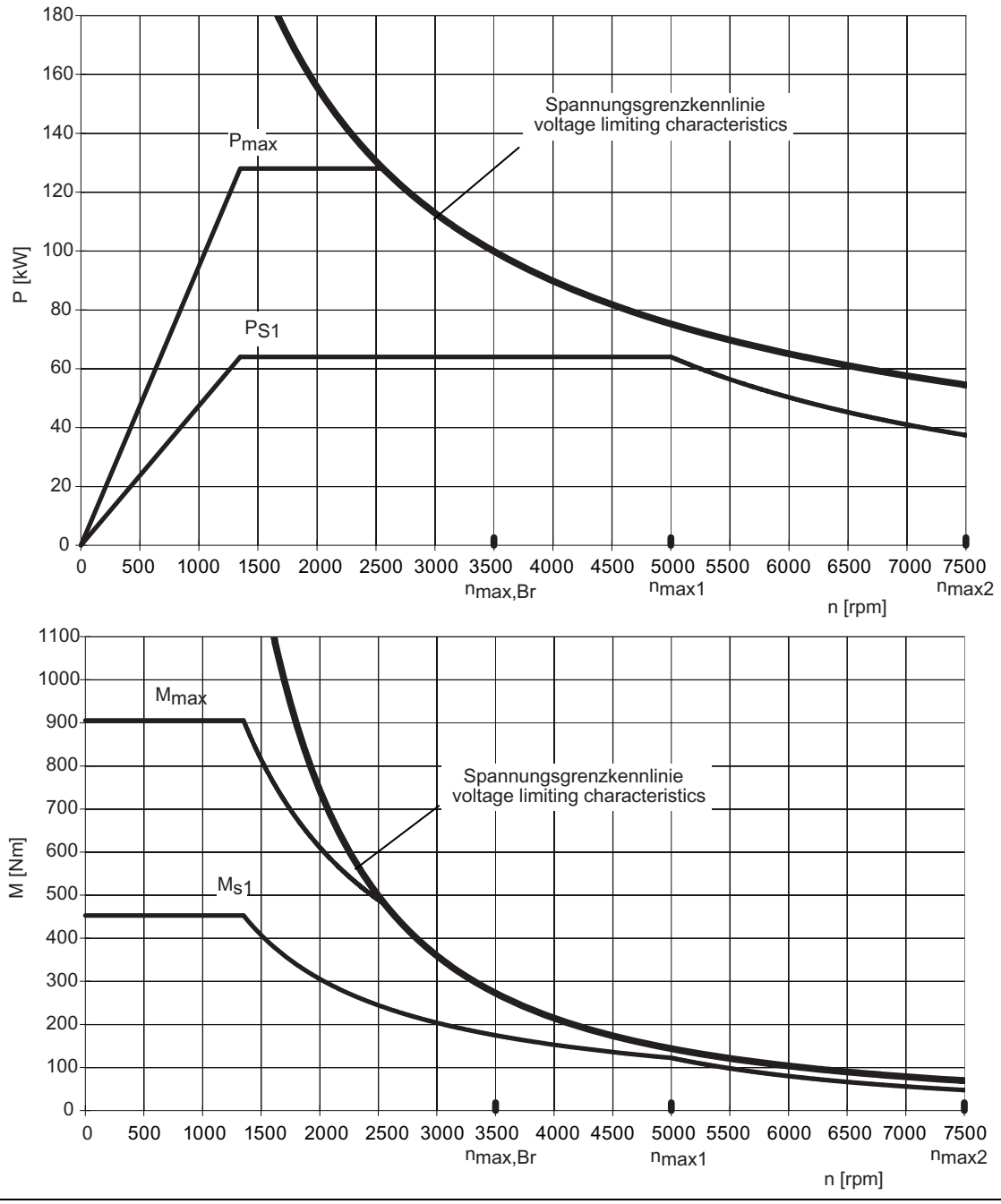
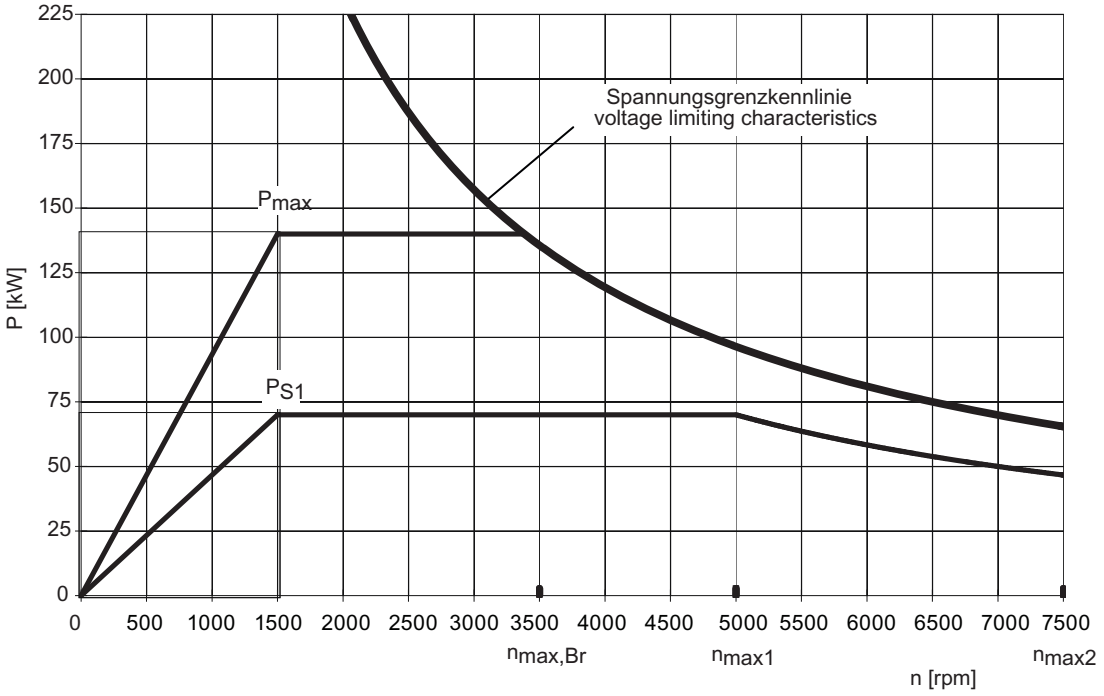


Tabella 4- 514 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 70 | 446 | 150 | 5000 | 7500 | - | 3500 | 5000 | 891 | 300 | 446 | 150 |



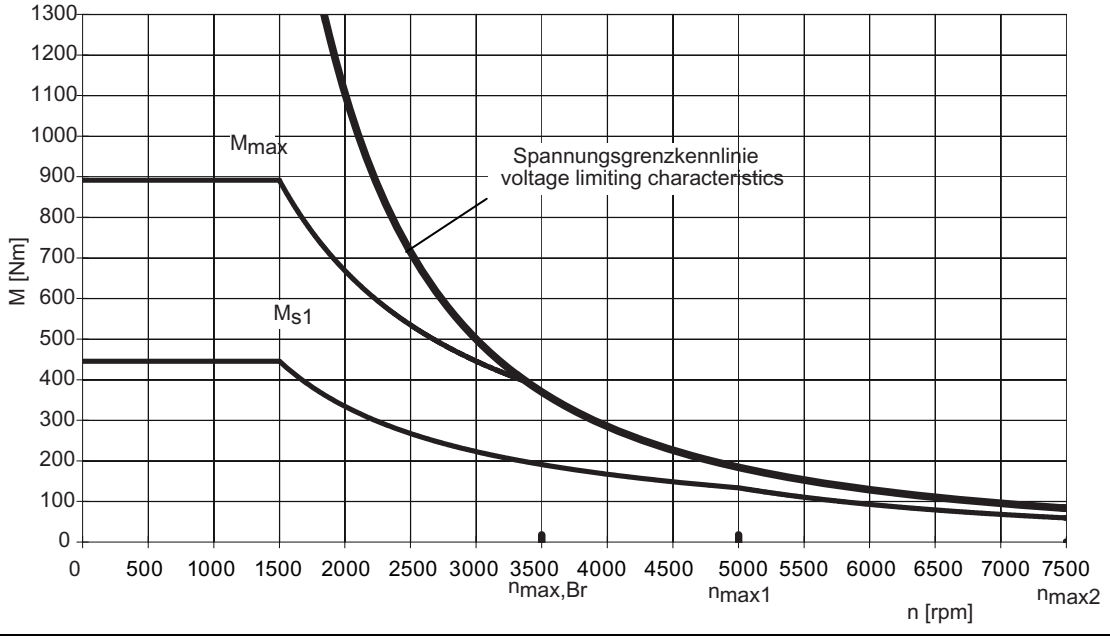
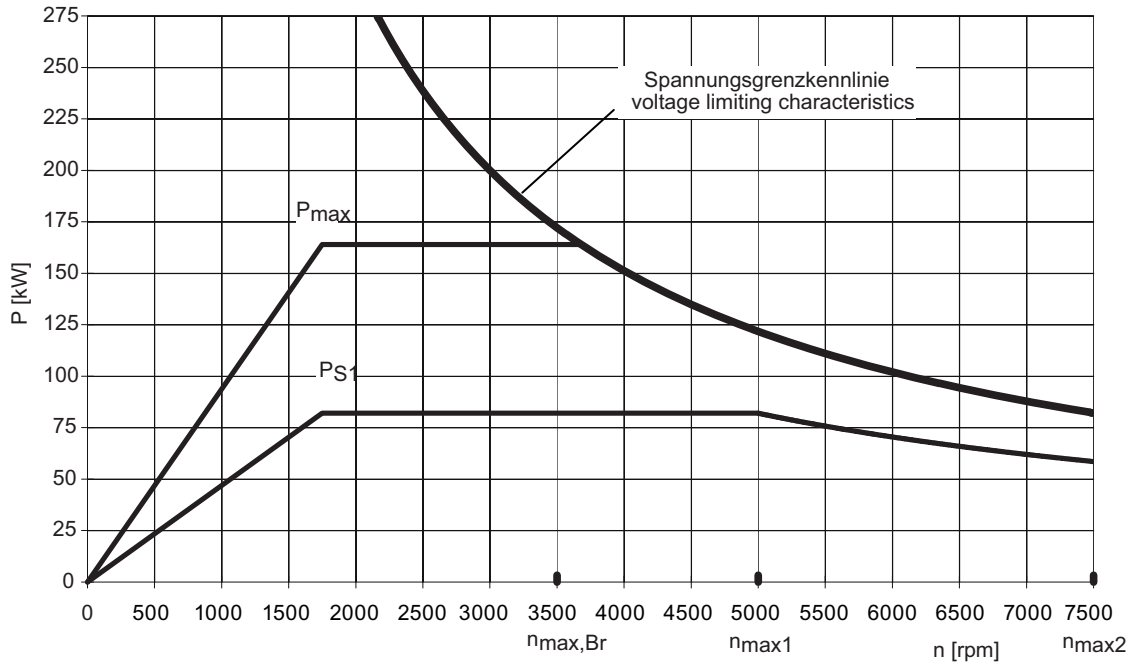



Tabella 4- 515 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 82 | 447 | 150 | 5000 | 7500 | - | 3500 | 5000 | 895 | 300 | 447 | 150 |
| 1500 | 70 | 447 | 150 | | | | | 5000 | | | | |



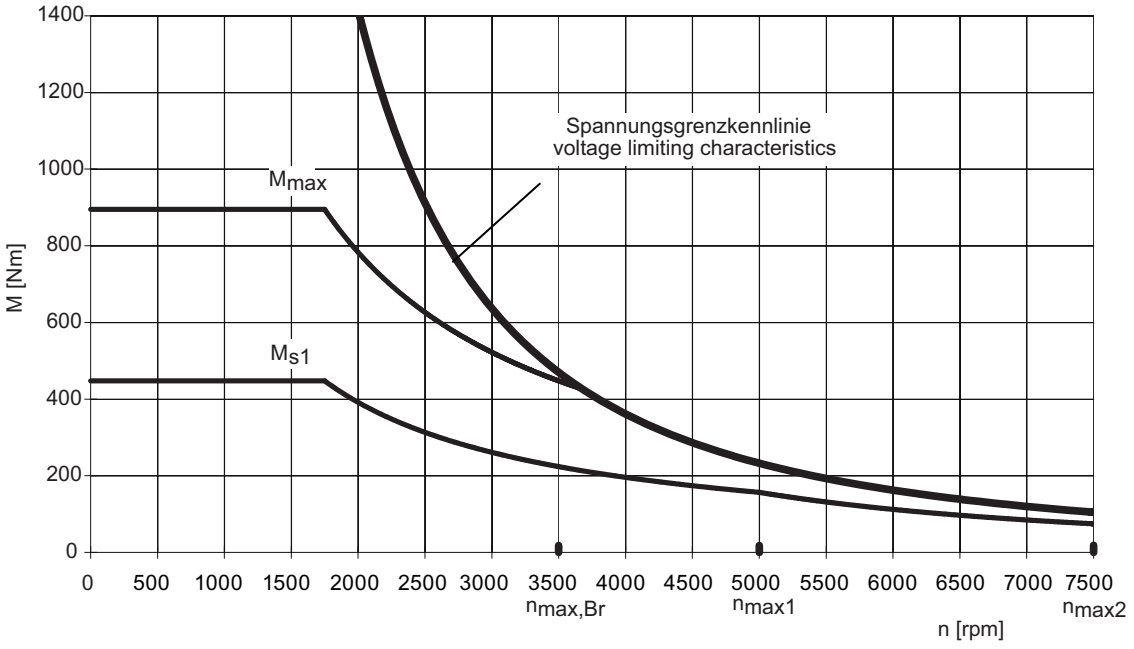
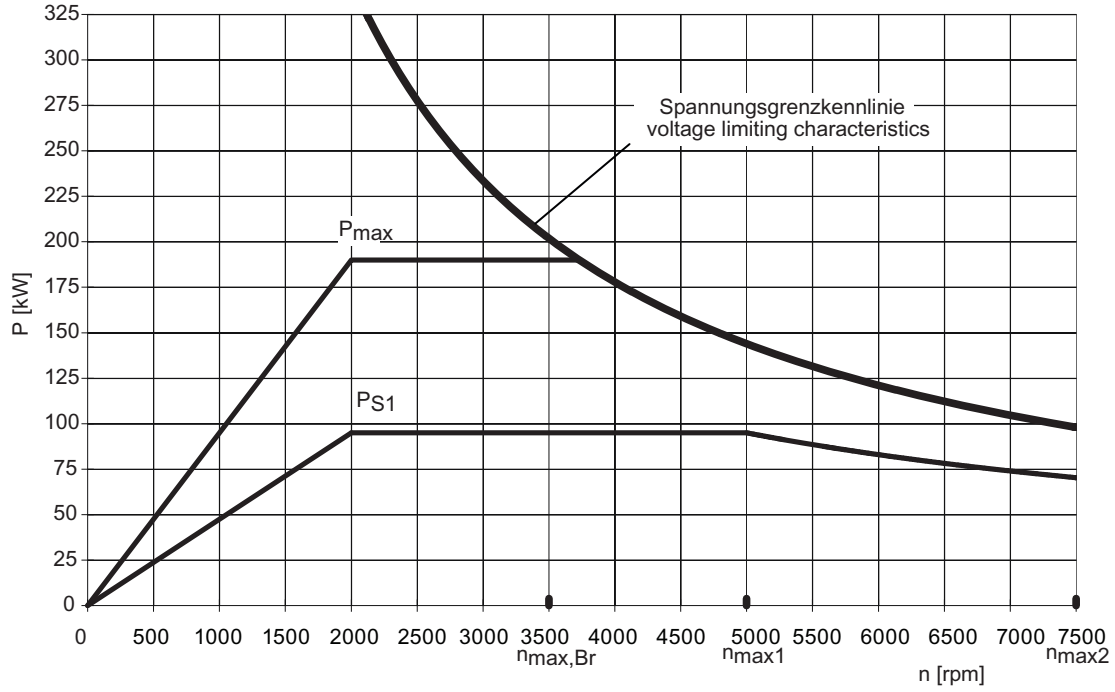



Tabella 4- 516 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 95 | 454 | 152 | 5000 | 7500 | - | 3500 | 5000 | 907 | 304 | 454 | 152 |



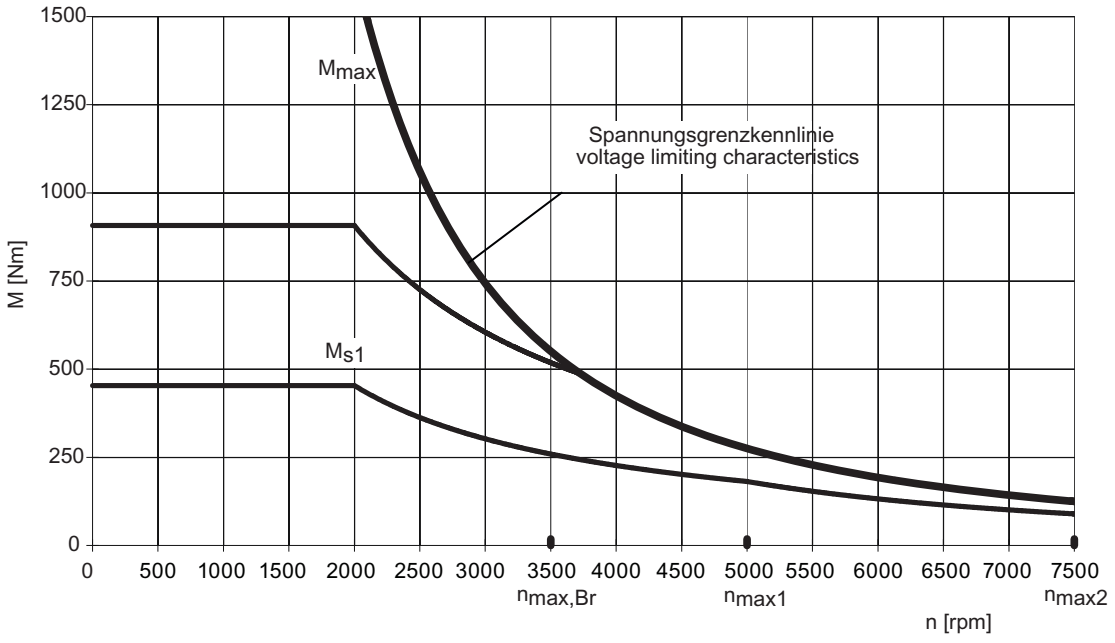
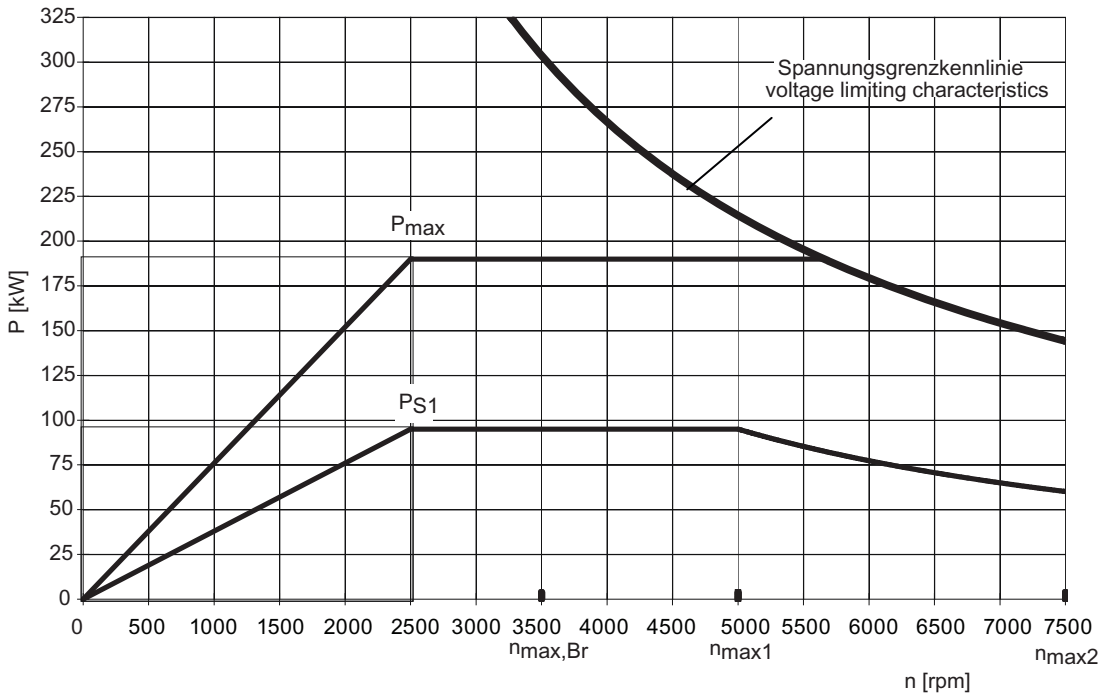



Tabella 4- 517 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-□□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 95 | 363 | 196 | 5000 | 7500 | - | 3500 | 5000 | 726 | 392 | 363 | 196 |



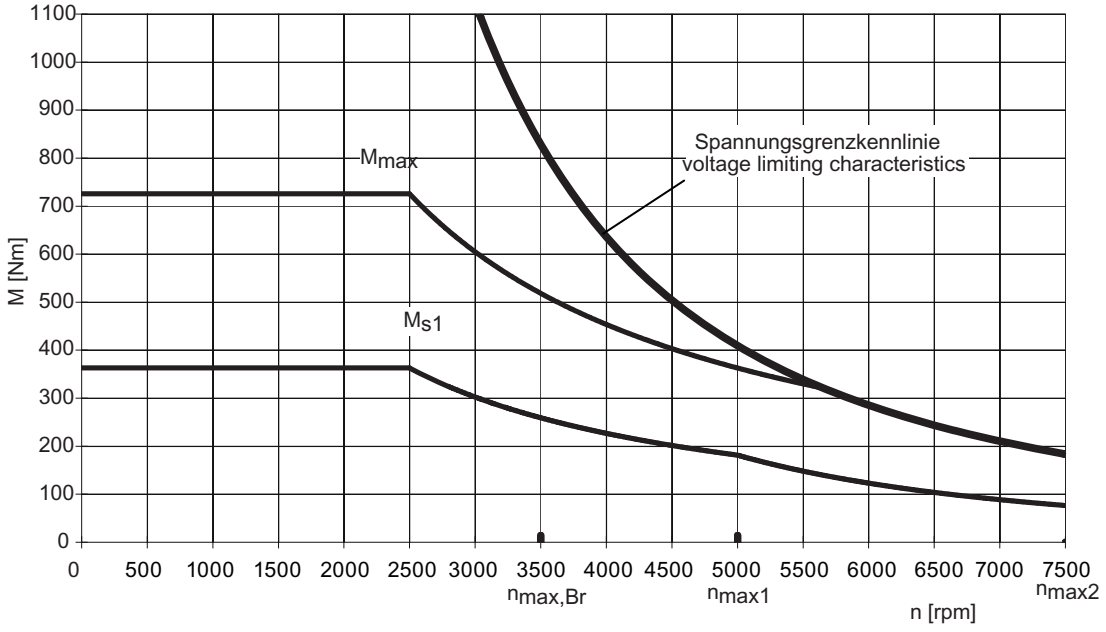
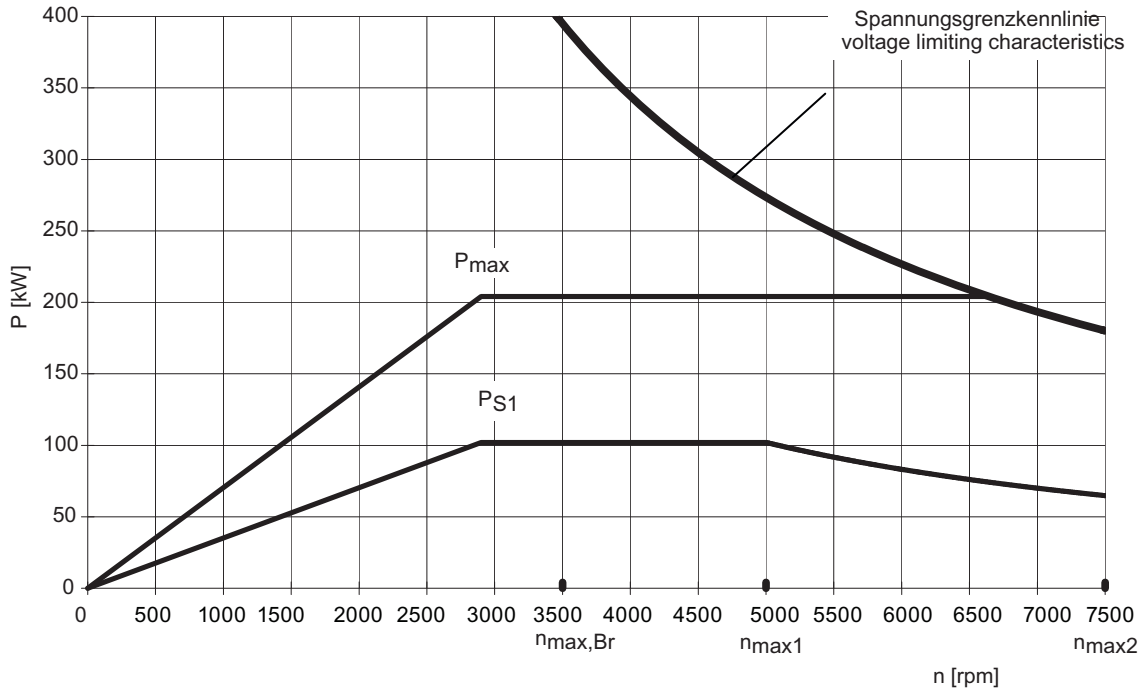



Tabella 4- 518 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-□□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 102 | 336 | 182 | 5000 | 7500 | - | 3500 | 5000 | 672 | 364 | 336 | 182 |
| 2500 | 88 | 336 | 182 | | | | | 5700 | | | | |



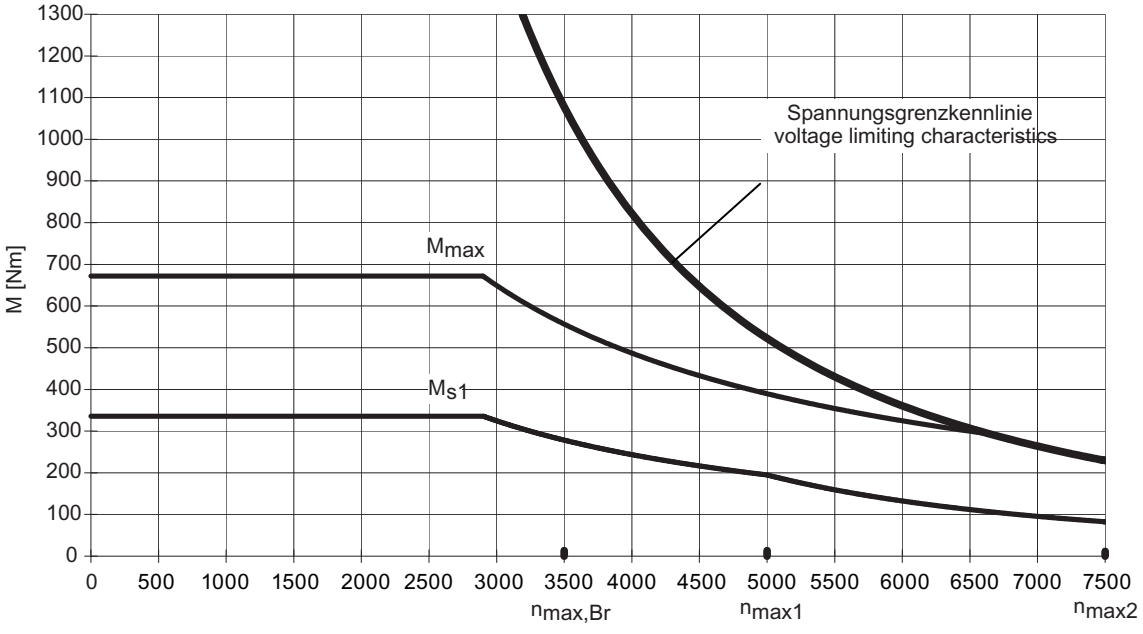
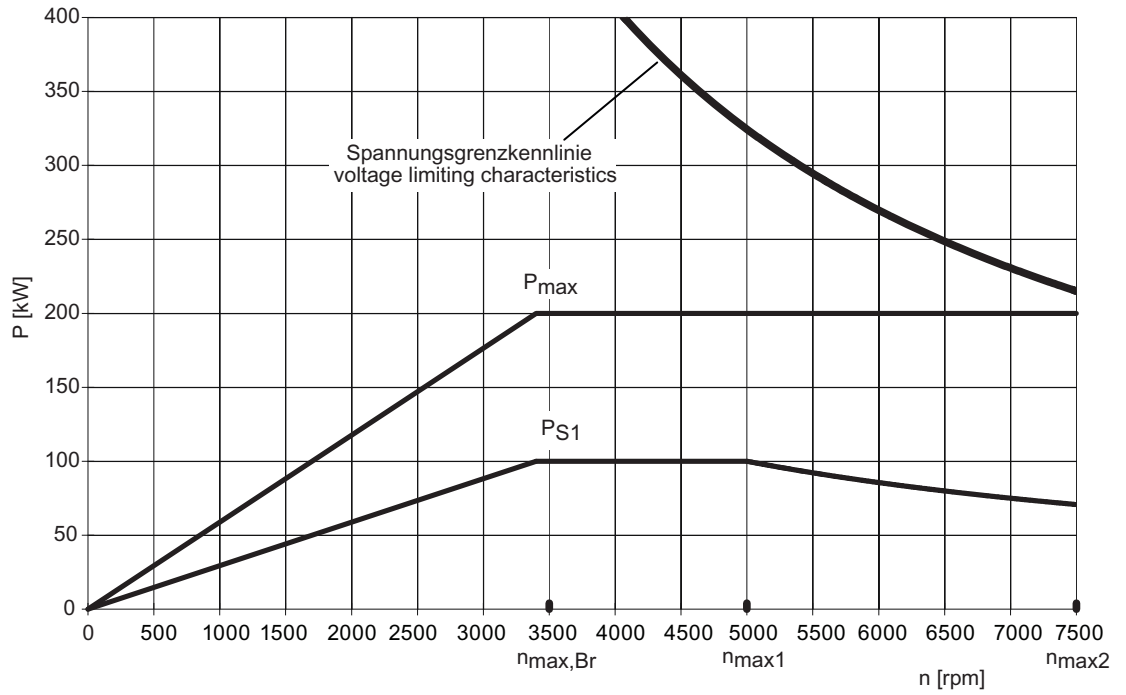



Tabella 4- 519 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-□□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3400 | 100 | 281 | 158 | 5000 | 7500 | - | 3500 | 5000 | 562 | 316 | 281 | 158 |



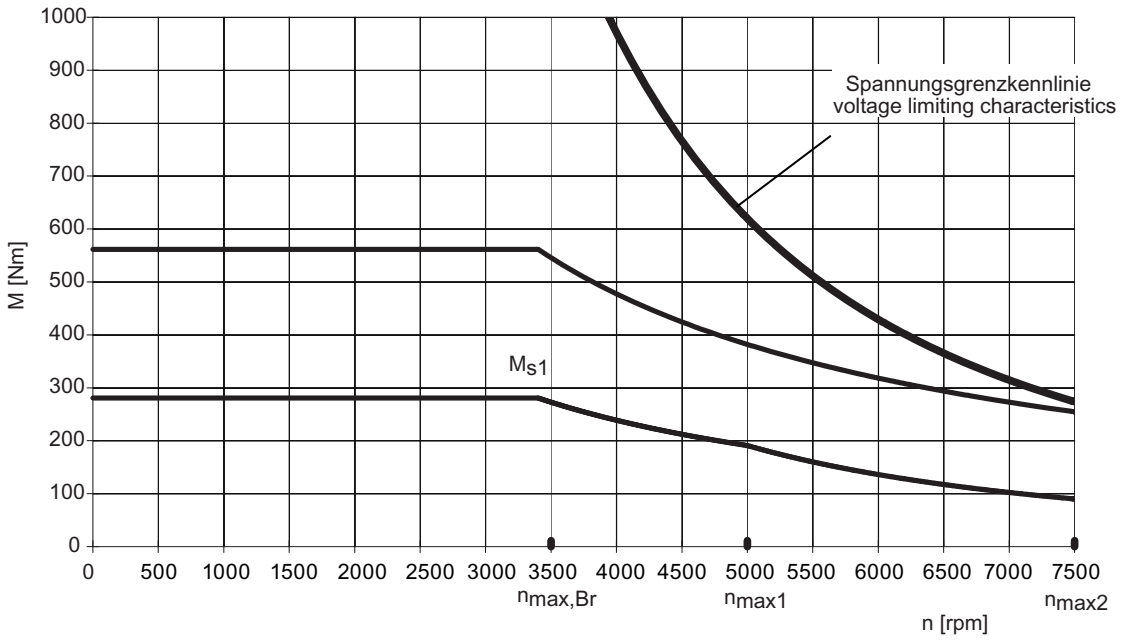
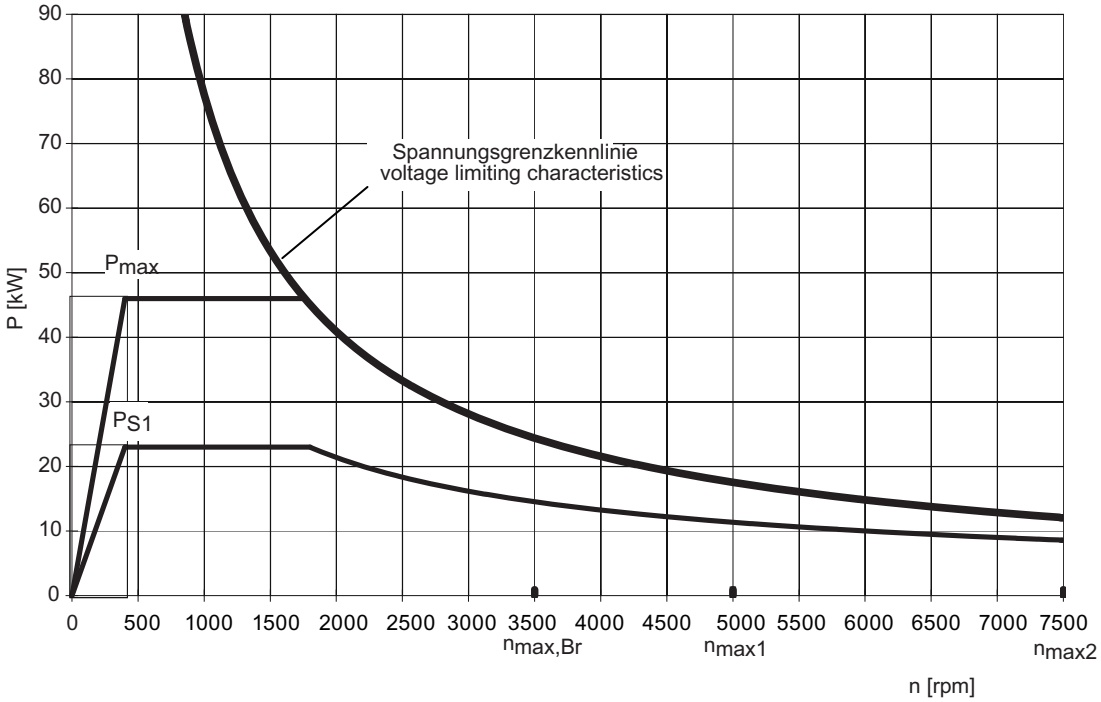



Tabella 4- 520 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 23 | 549 | 68 | 5000 | 7500 | - | 3500 | 1800 | 1098 | 136 | 549 | 68 |



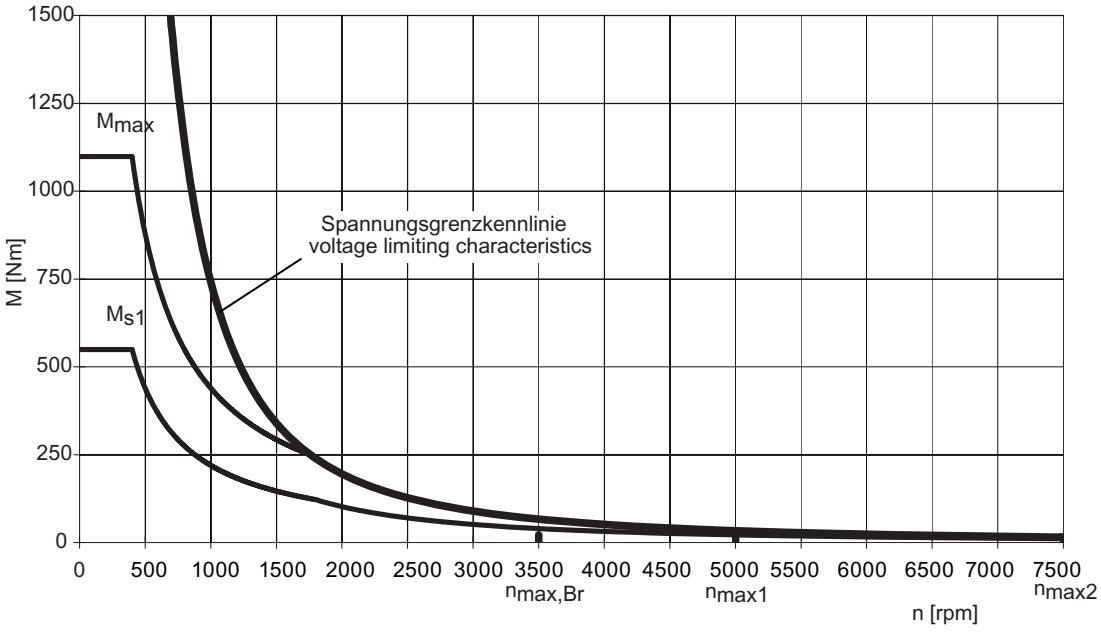
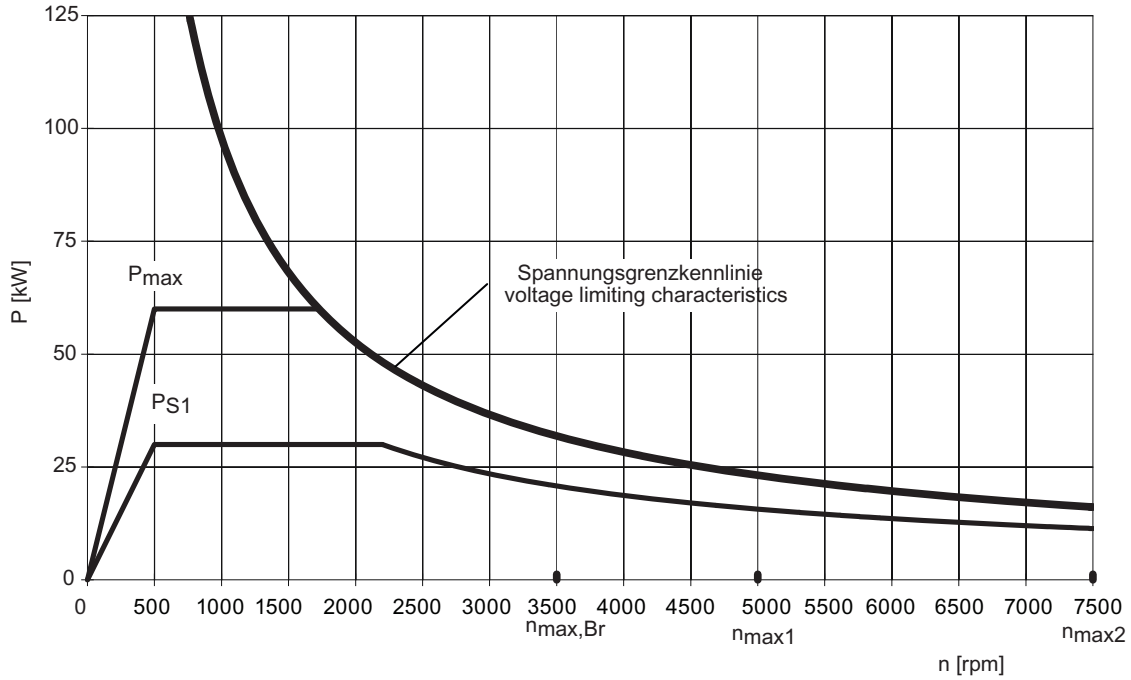



Tabella 4- 521 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8186-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 30 | 573 | 70 | 5000 | 7500 | - | 3500 | 2200 | 1146 | 140 | 573 | 70 |
| 400 | 24 | 573 | 70 | | | | | 2900 | | | | |



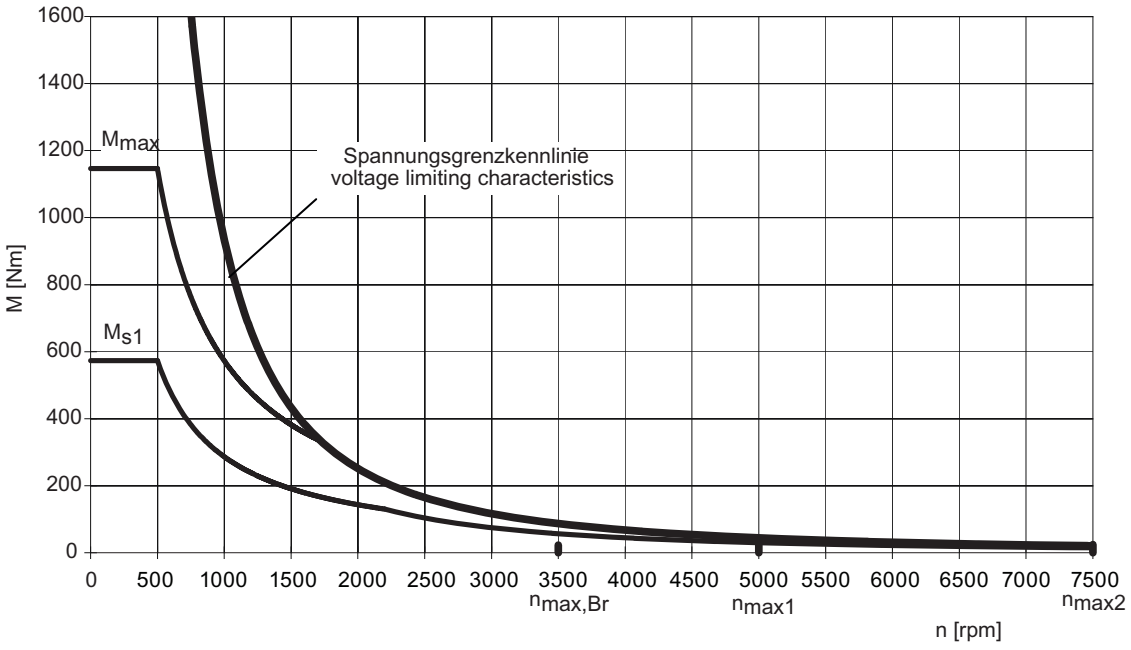
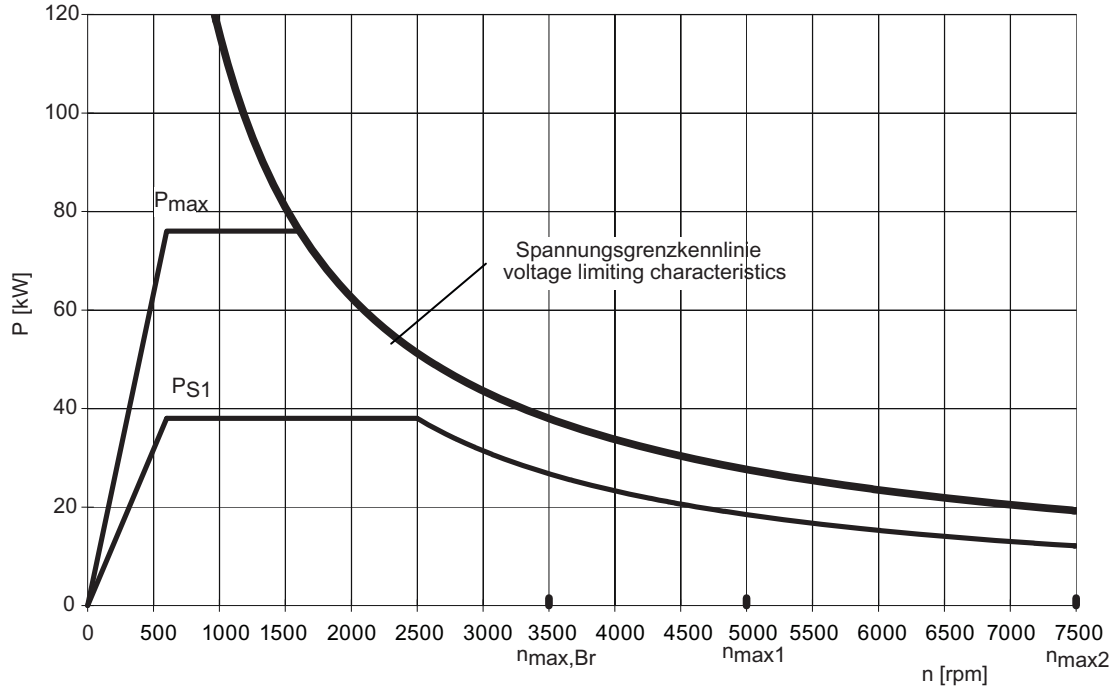



Tabella 4- 522 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 38 | 605 | 73 | 5000 | 7500 | - | 3500 | 2500 | 1210 | 146 | 605 | 73 |



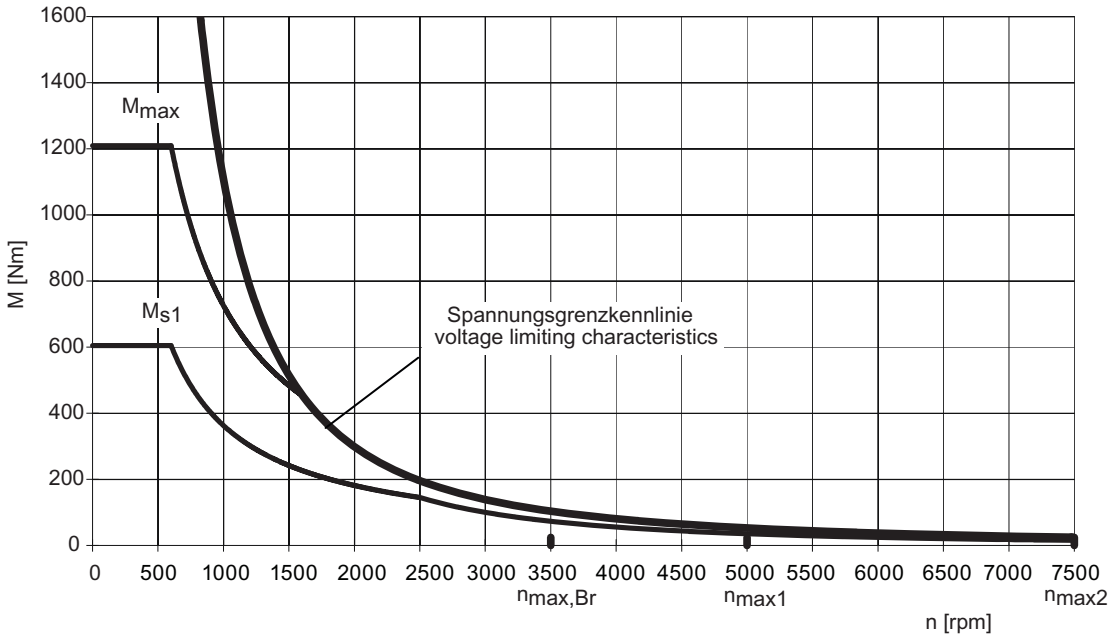
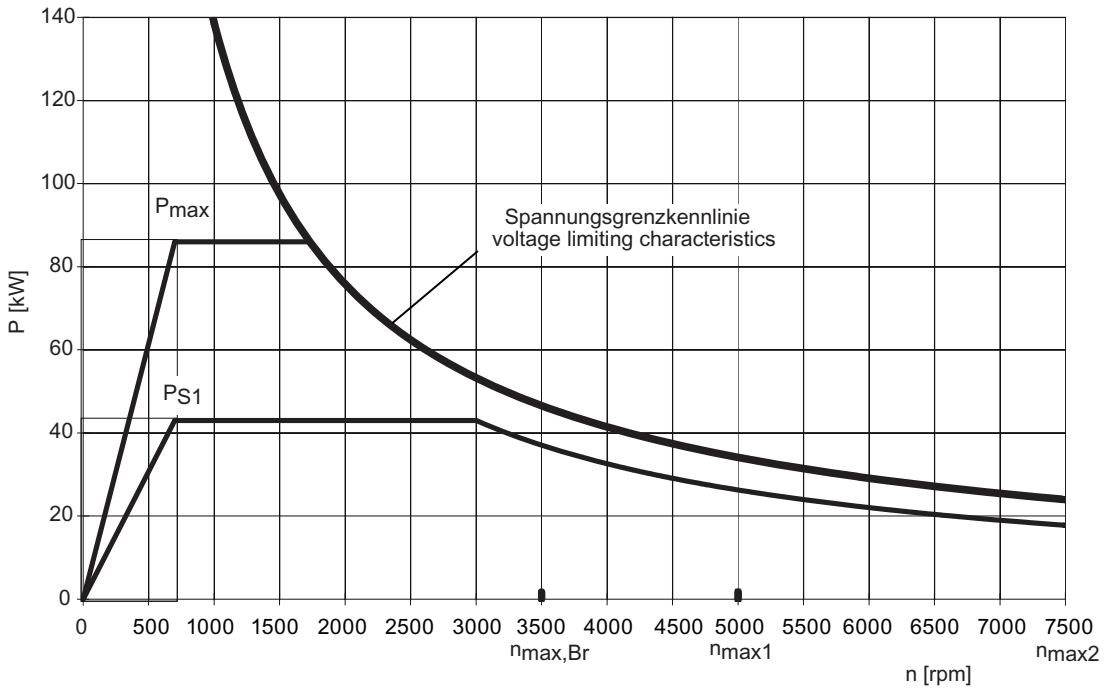



Tabella 4- 523 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 43 | 587 | 97 | 5000 | 7500 | - | 3500 | 3000 | 1173 | 194 | 587 | 97 |



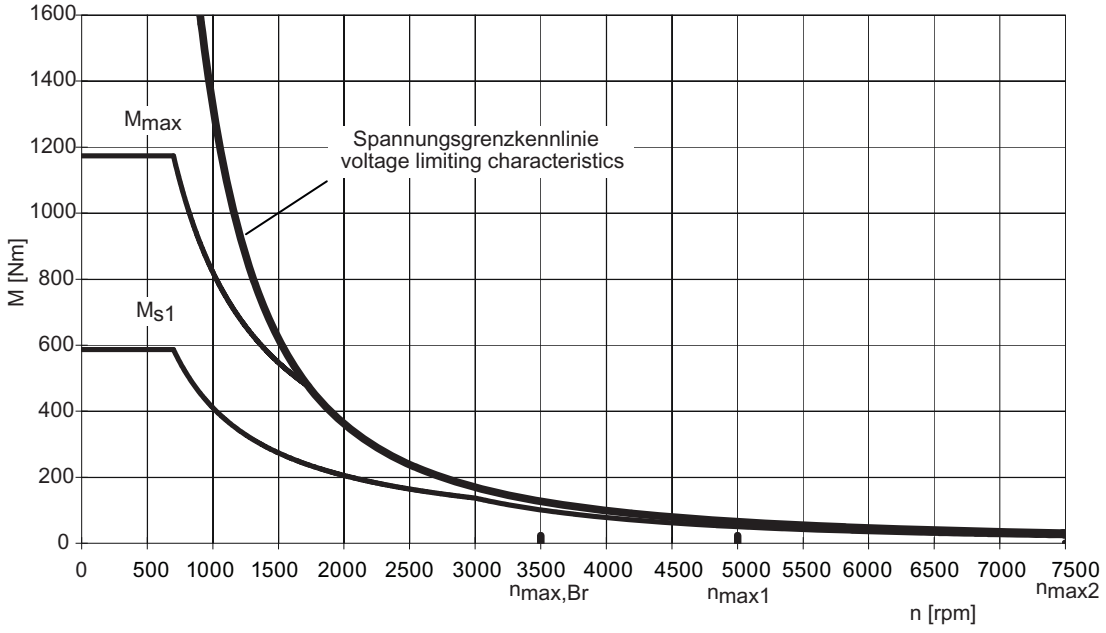
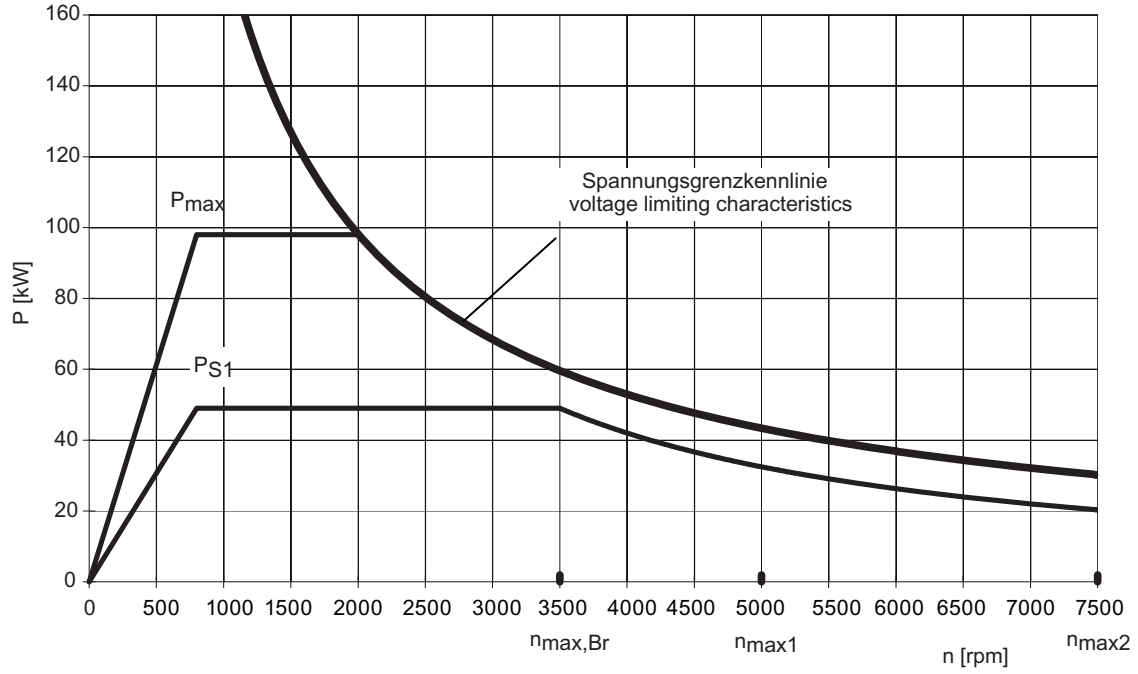



Tabella 4- 524 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8186-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 49 | 585 | 99 | 5000 | 7500 | - | 3500 | 3500 | 1170 | 198 | 585 | 99 |
| 700 | 43 | 585 | 99 | | | | | 3900 | | | | |



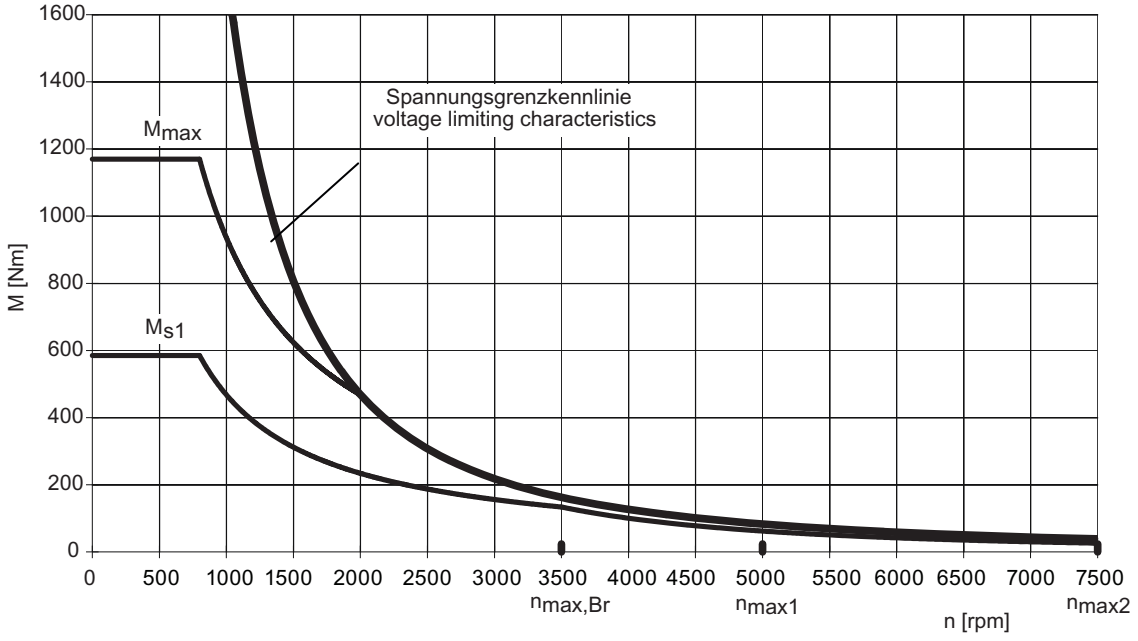
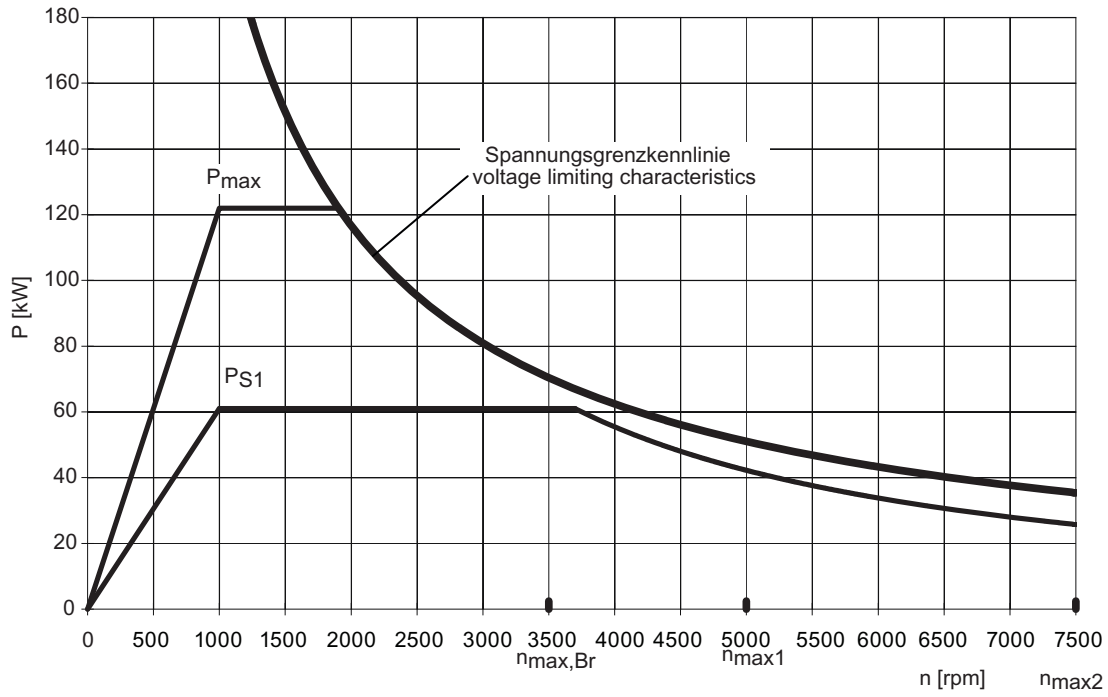



Tabella 4- 525 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 61 | 583 | 98 | 5000 | 7500 | - | 3500 | 3700 | 1165 | 196 | 583 | 98 |



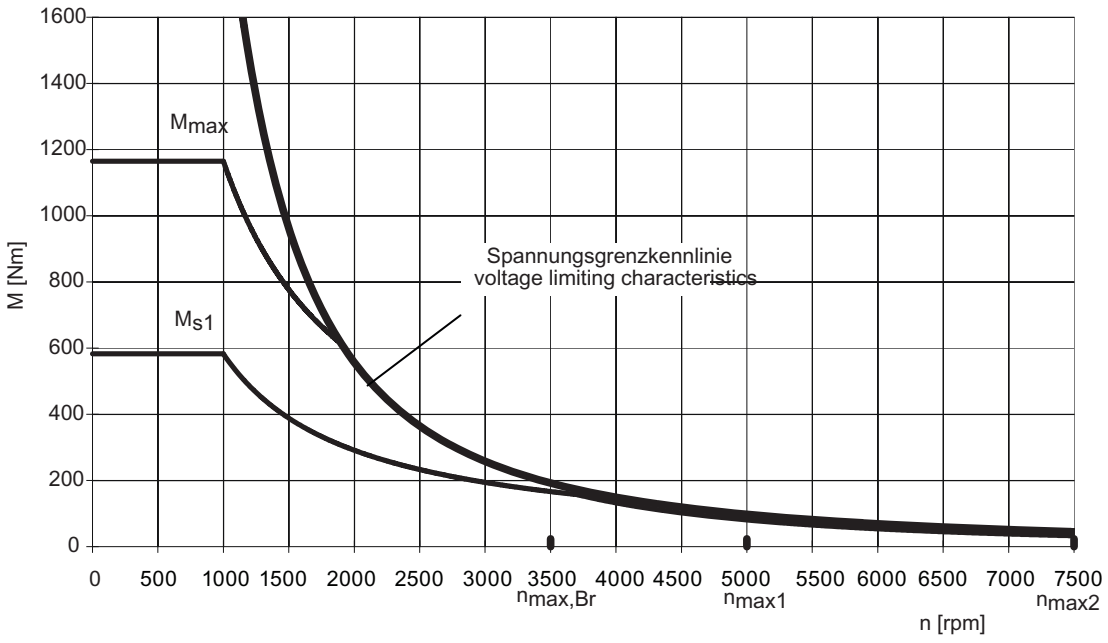
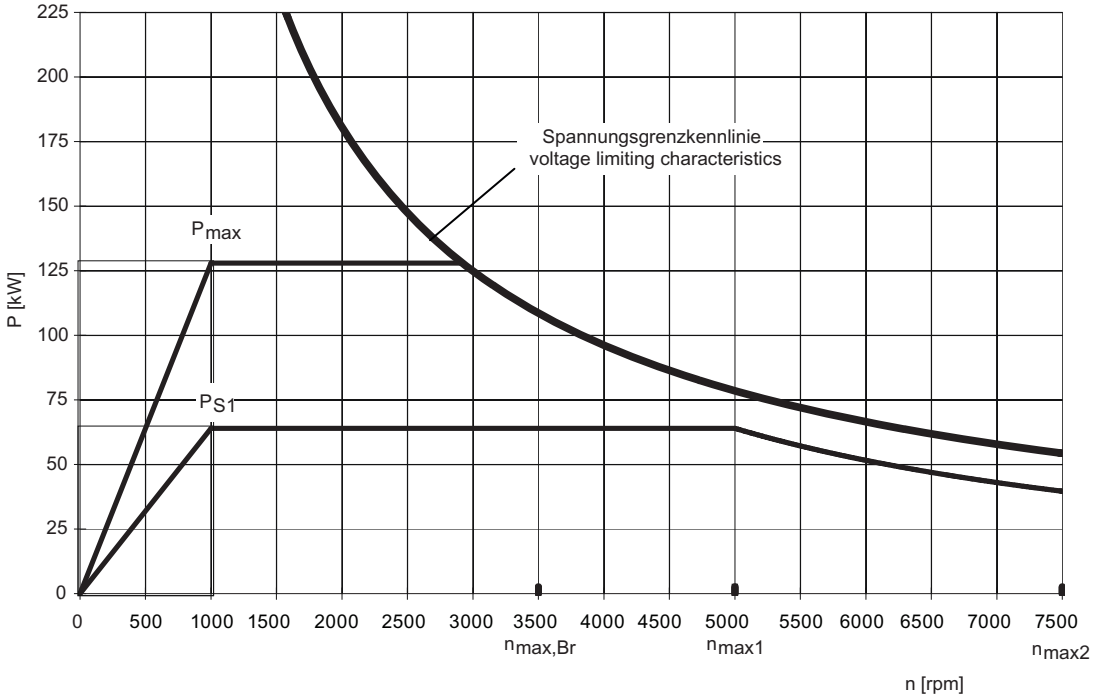



Tabella 4- 526 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 64 | 611 | 148 | 5000 | 7500 | - | 3500 | 5000 | 1222 | 296 | 611 | 148 |



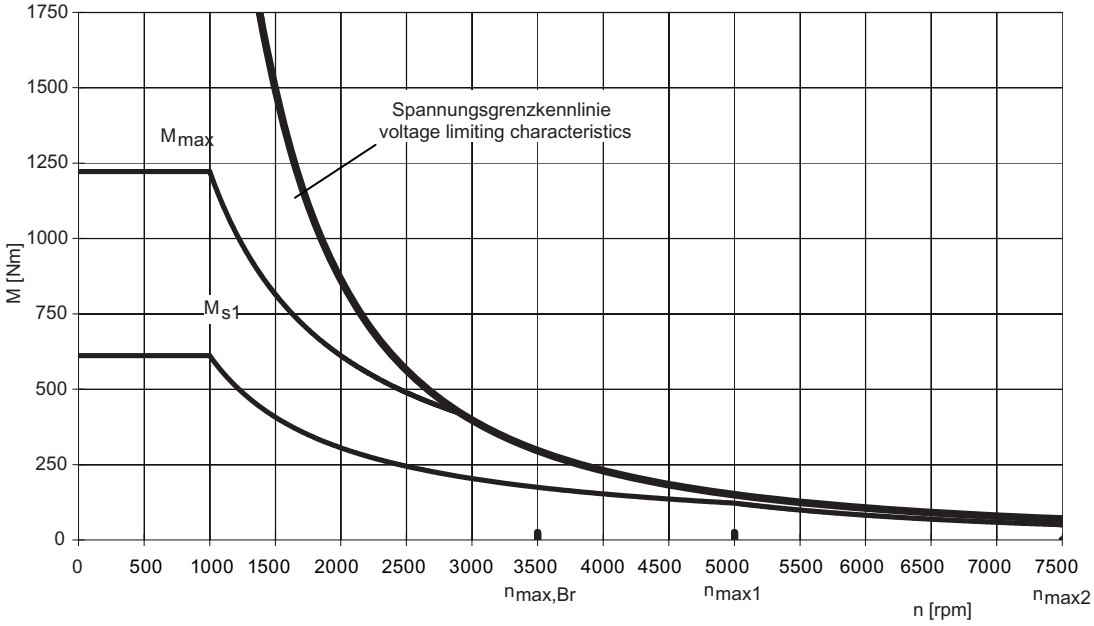
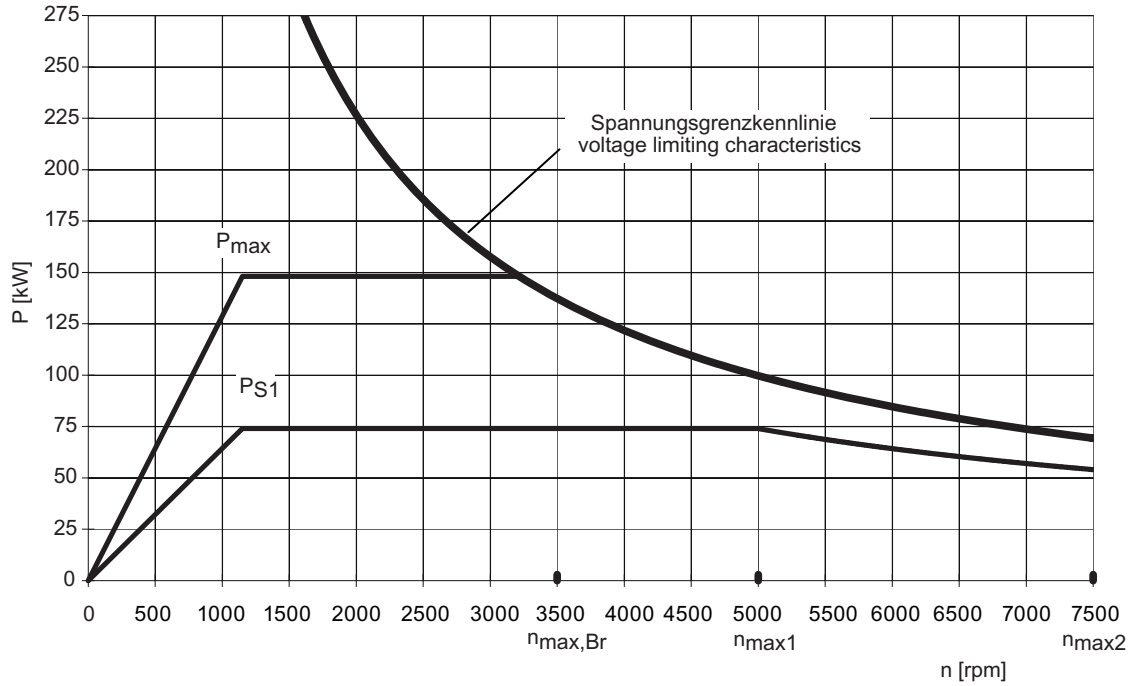



Tabella 4- 527 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8186-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 74 | 615 | 148 | 5000 | 7500 | - | 3500 | 5000 | 1229 | 296 | 615 | 148 |
| 1000 | 64 | 615 | 148 | | | | | 6000 | | | | |



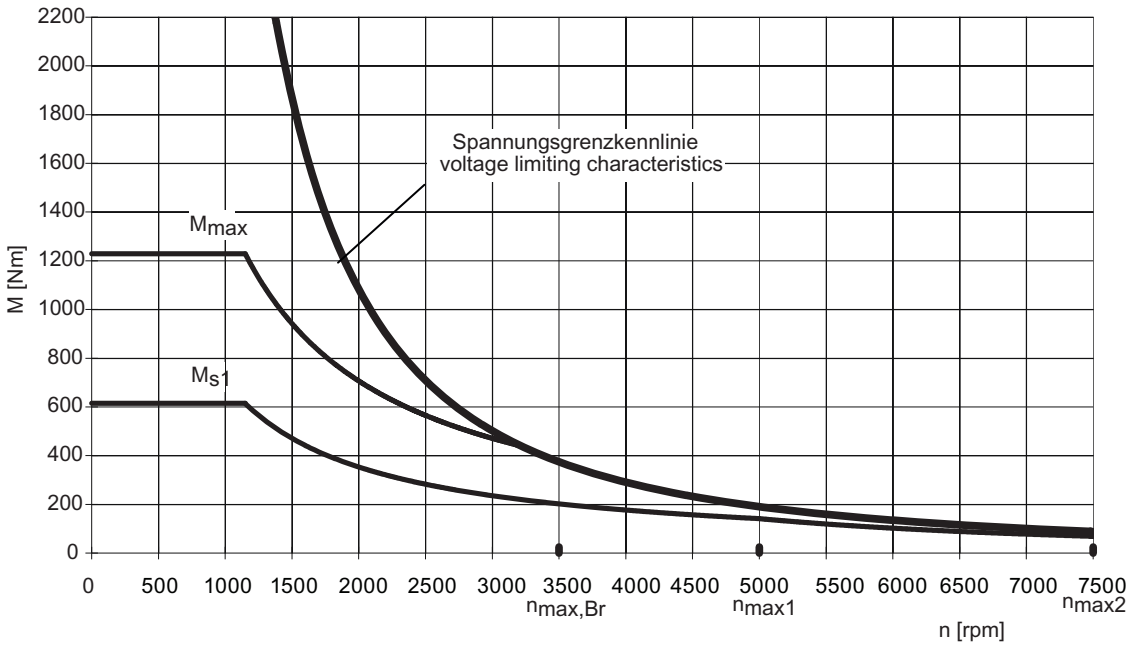
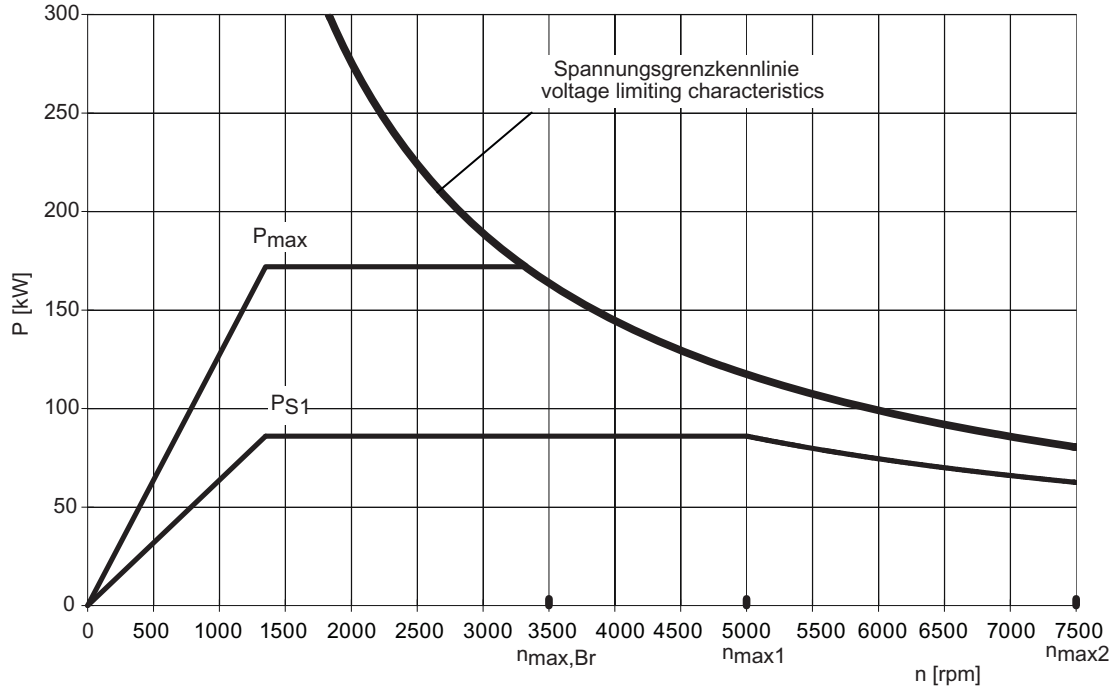



Tabella 4- 528 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 86 | 608 | 148 | 5000 | 7500 | - | 3500 | 5000 | 1217 | 296 | 608 | 148 |



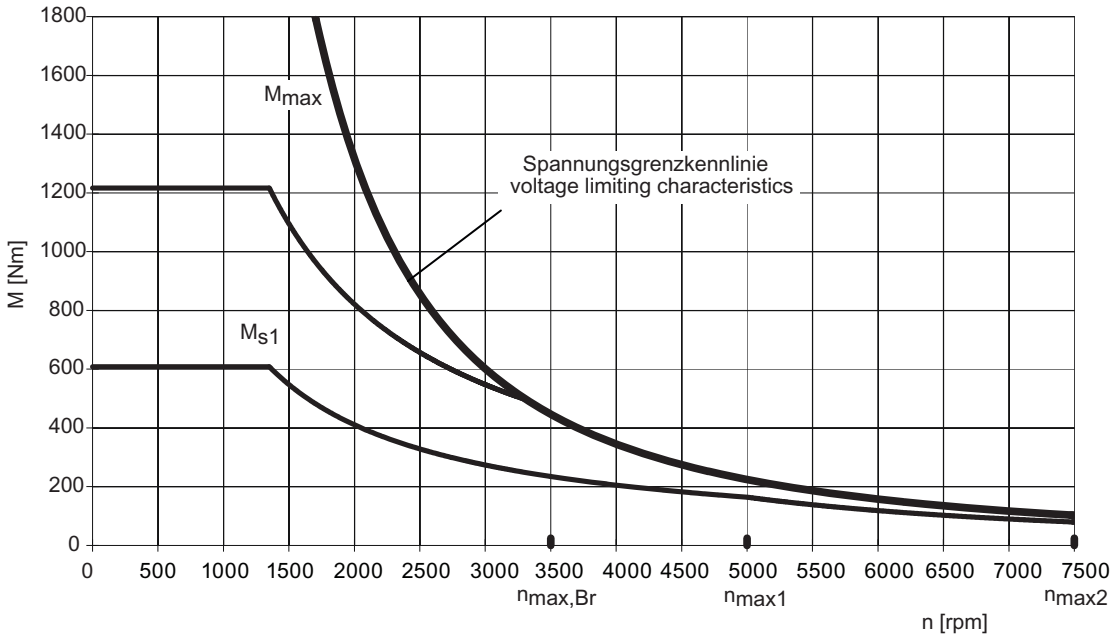
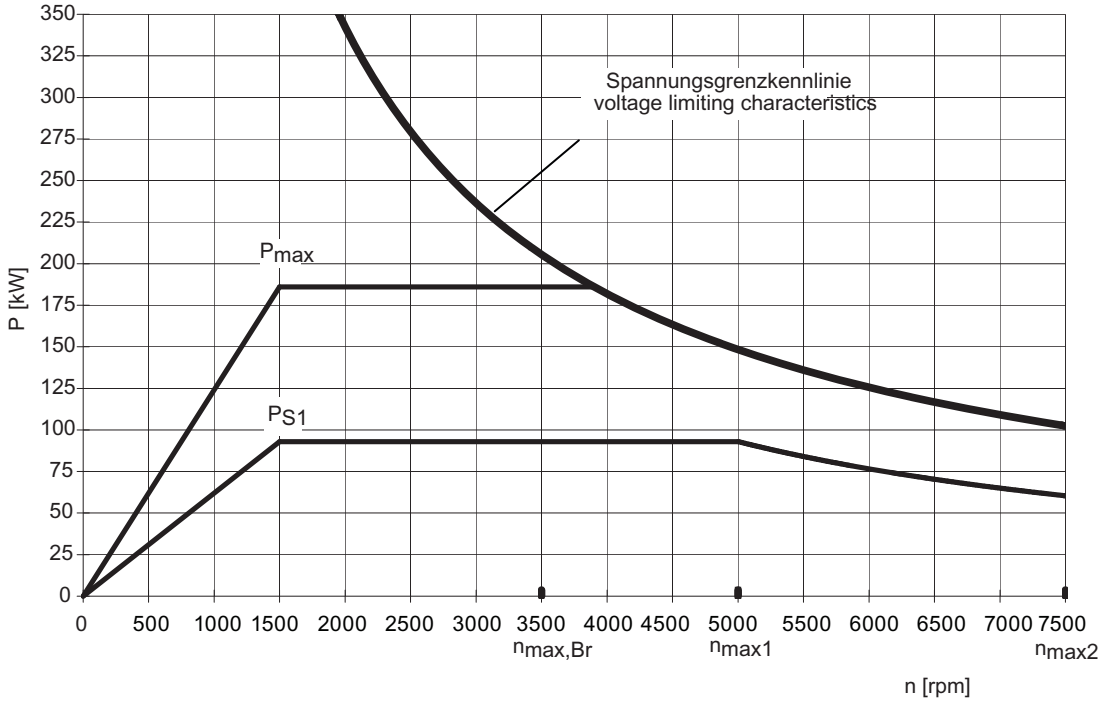



Tabella 4- 529 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 93 | 592 | 198 | 5000 | 7500 | - | 3500 | 5000 | 1184 | 396 | 592 | 198 |



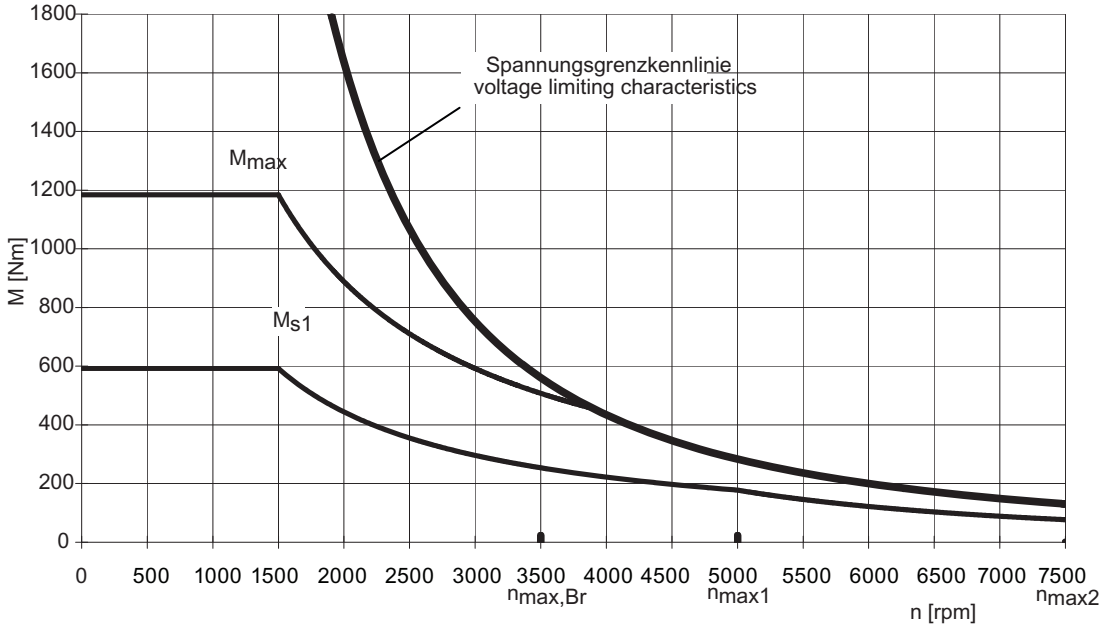
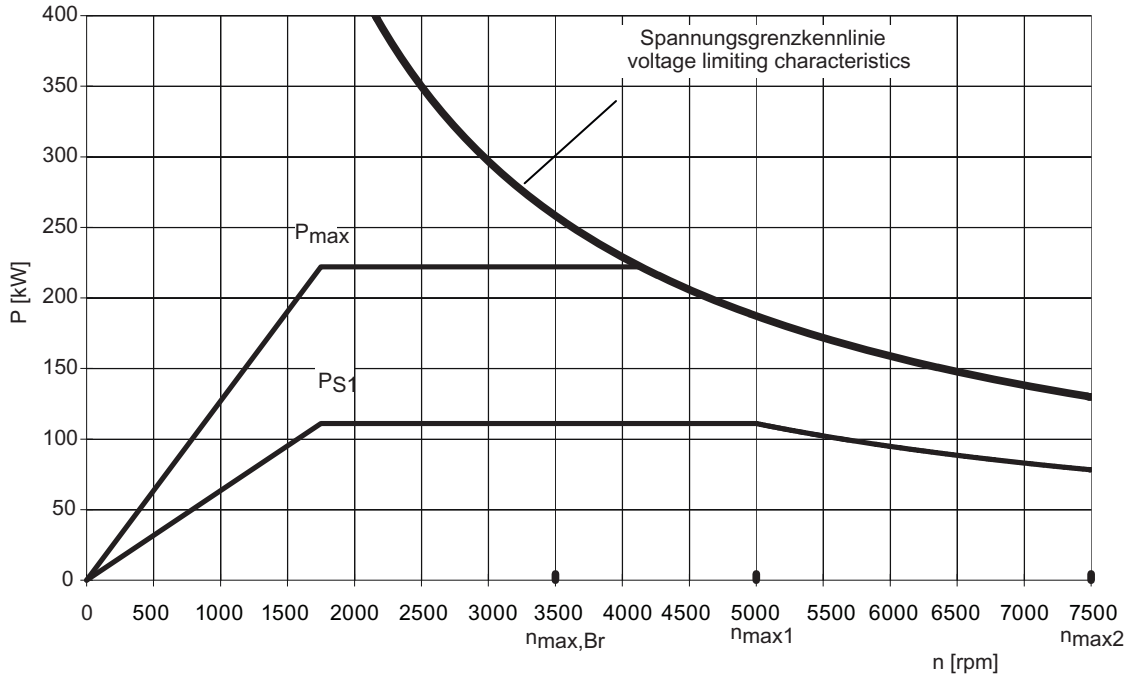



Tabella 4- 530 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8186-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 111 | 606 | 200 | 5000 | 7500 | - | 3500 | 5000 | 1211 | 400 | 606 | 200 |
| 1500 | 95 | 606 | 200 | | | | | 6000 | | | | |



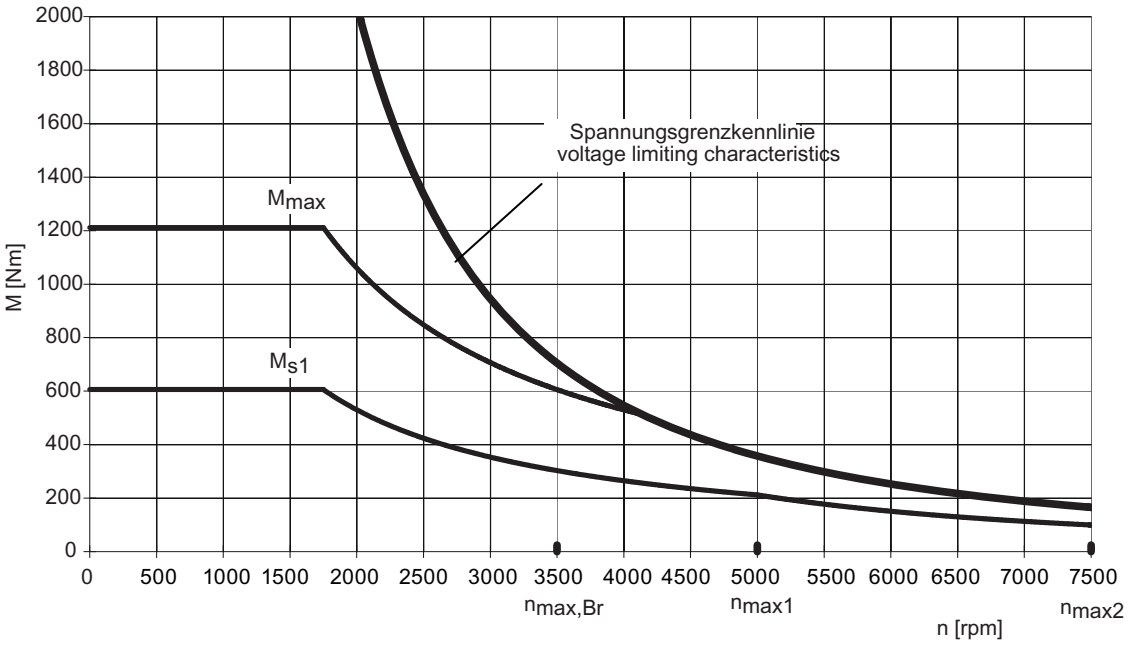
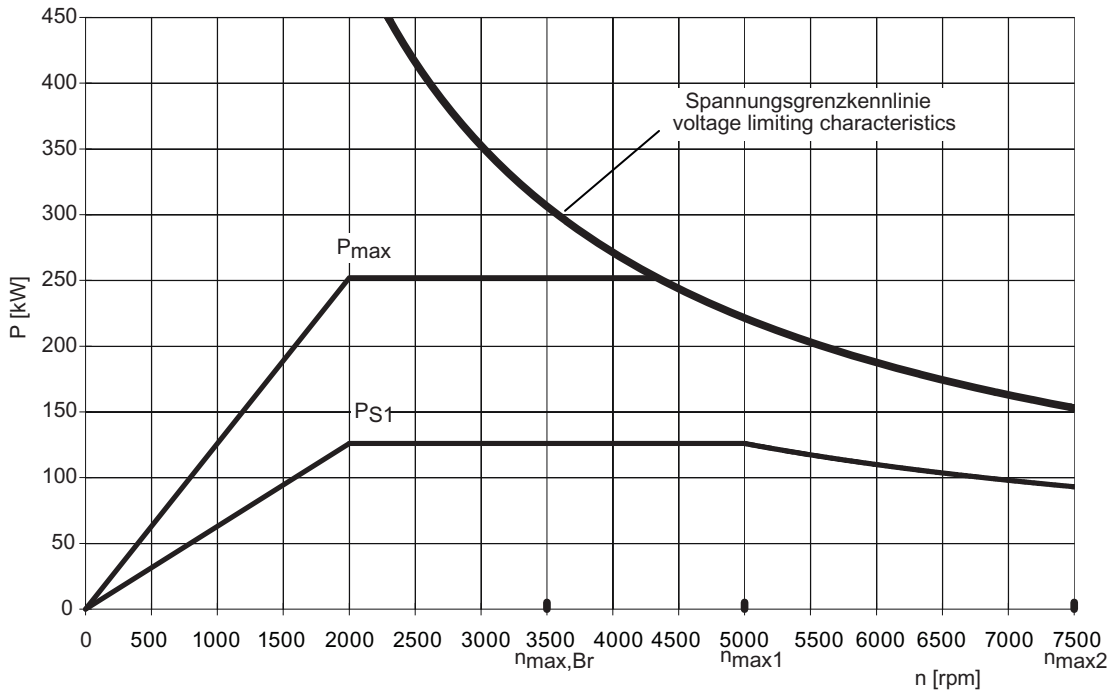



Tabella 4- 531 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 126 | 602 | 200 | 5000 | 7500 | - | 3500 | 5000 | 1203 | 400 | 602 | 200 |



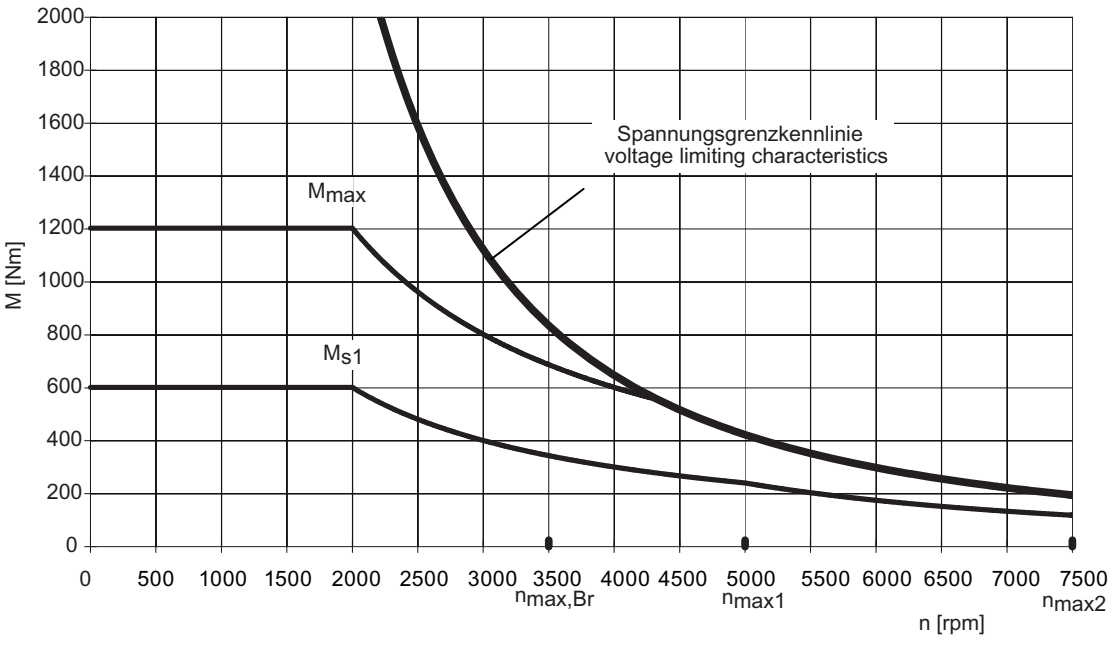
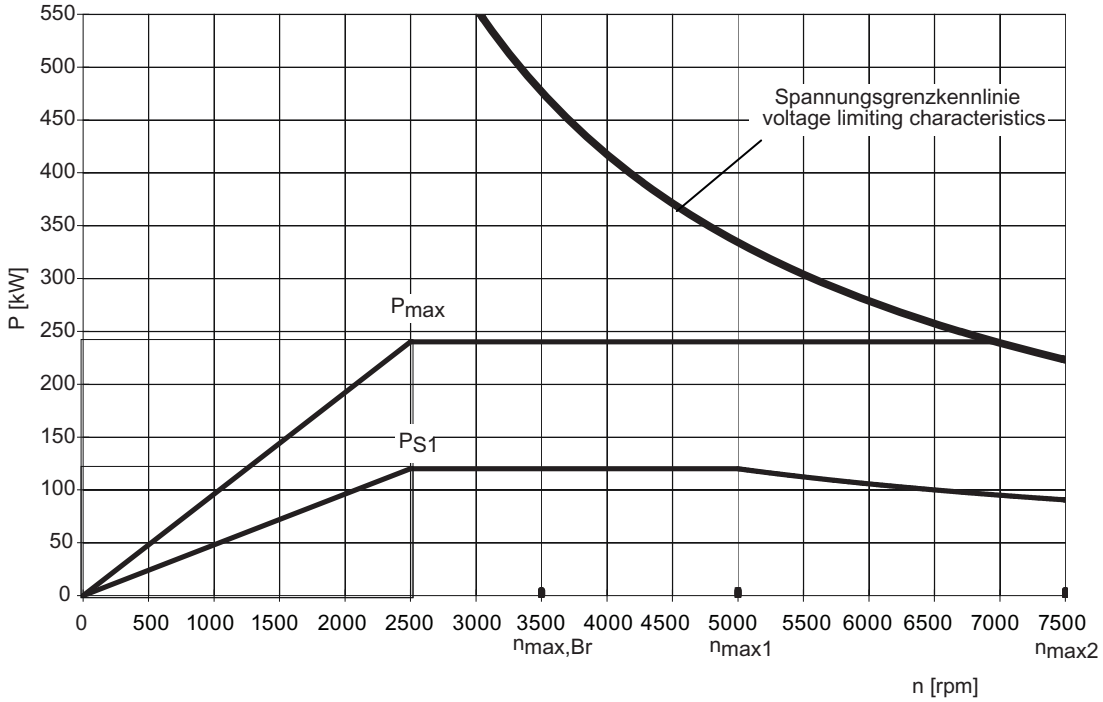



Tabella 4- 532 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-□□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 120 | 458 | 250 | 5000 | 7500 | - | 3500 | 5000 | 917 | 500 | 458 | 250 |



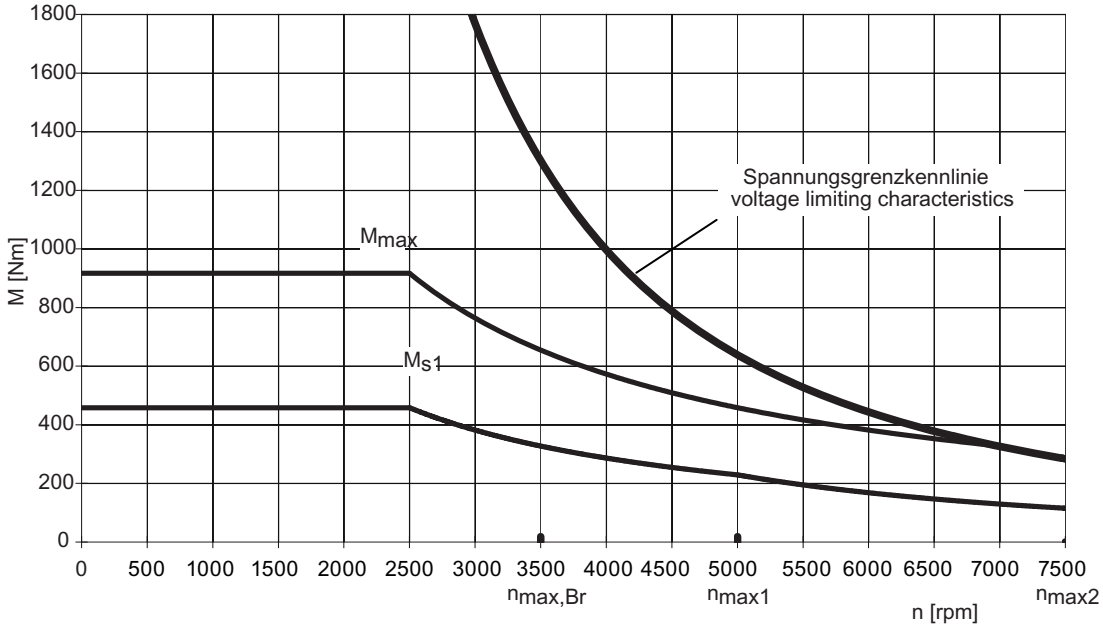
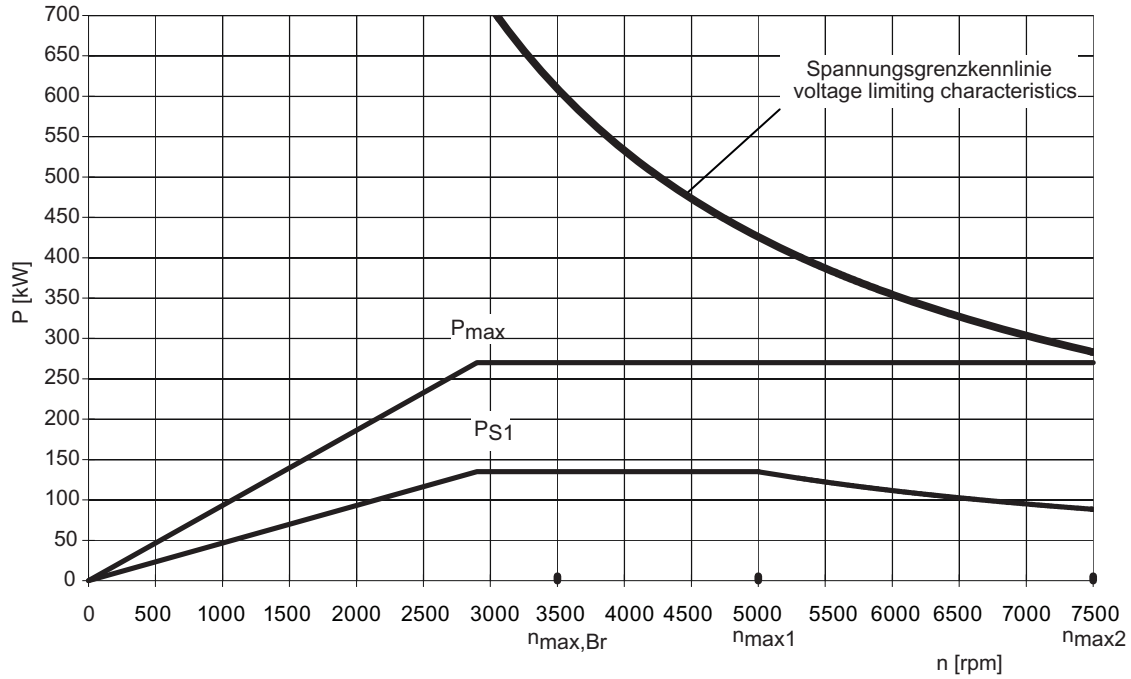



Tabella 4- 533 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8186-□□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 135 | 445 | 245 | 5000 | 7500 | - | 3500 | 5000 | 889 | 490 | 445 | 245 |
| 2500 | 116 | 445 | 245 | | | | | 5700 | | | | |



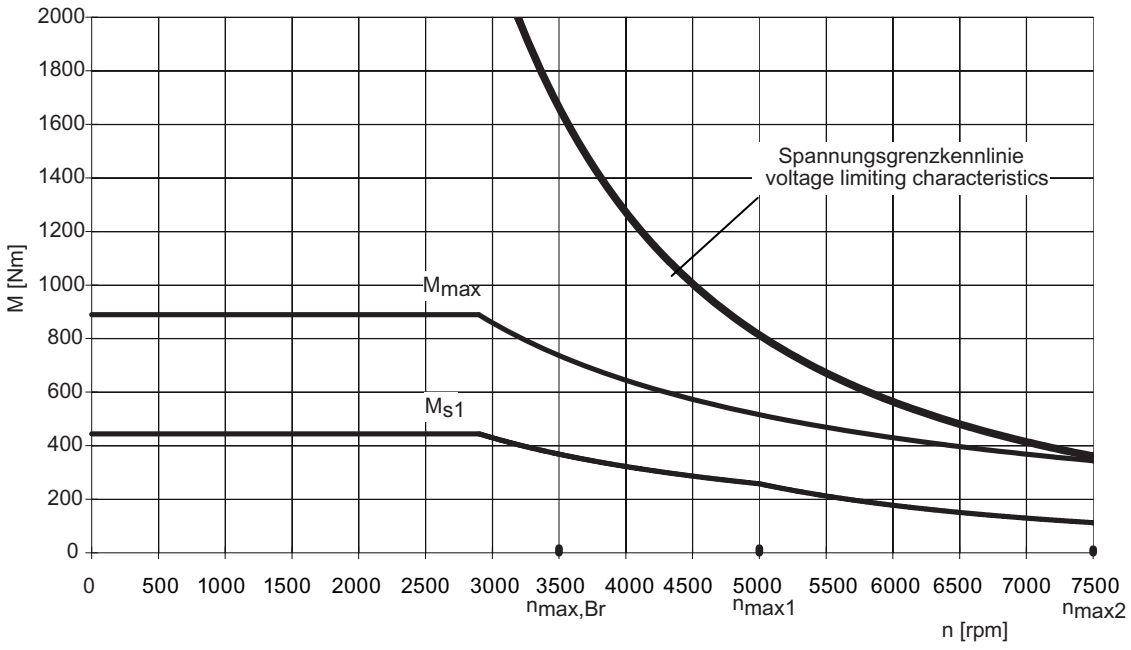
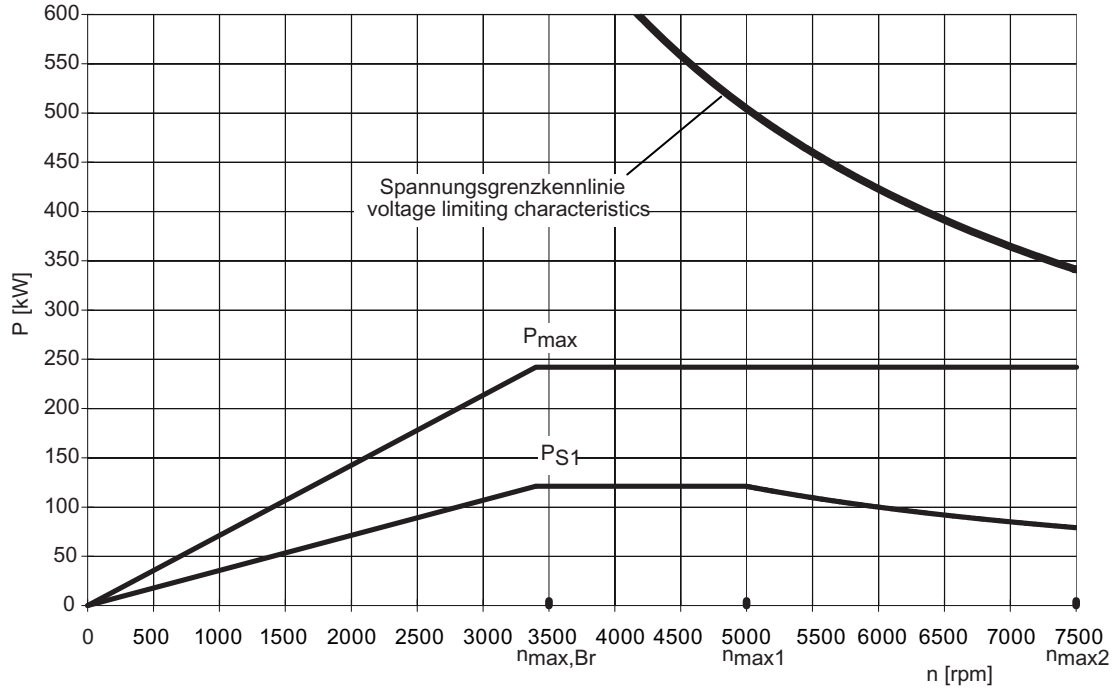
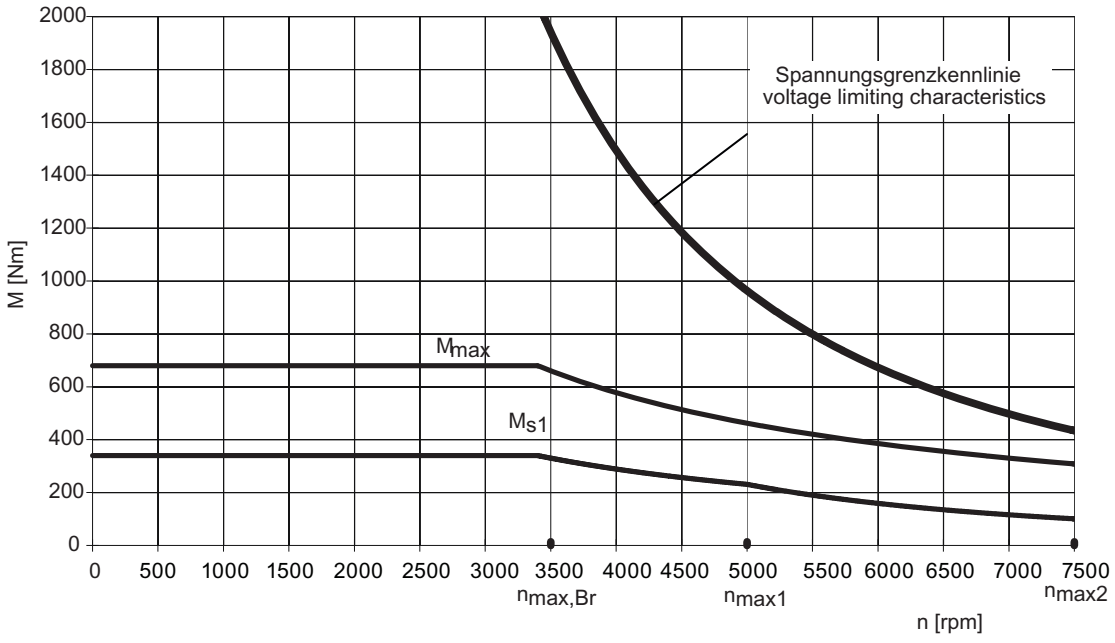



Tabella 4- 534 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-□□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3400 | 121 | 340 | 200 | 5000 | 7500 | - | 3500 | 5000 | 680 | 400 | 340 | 200 |

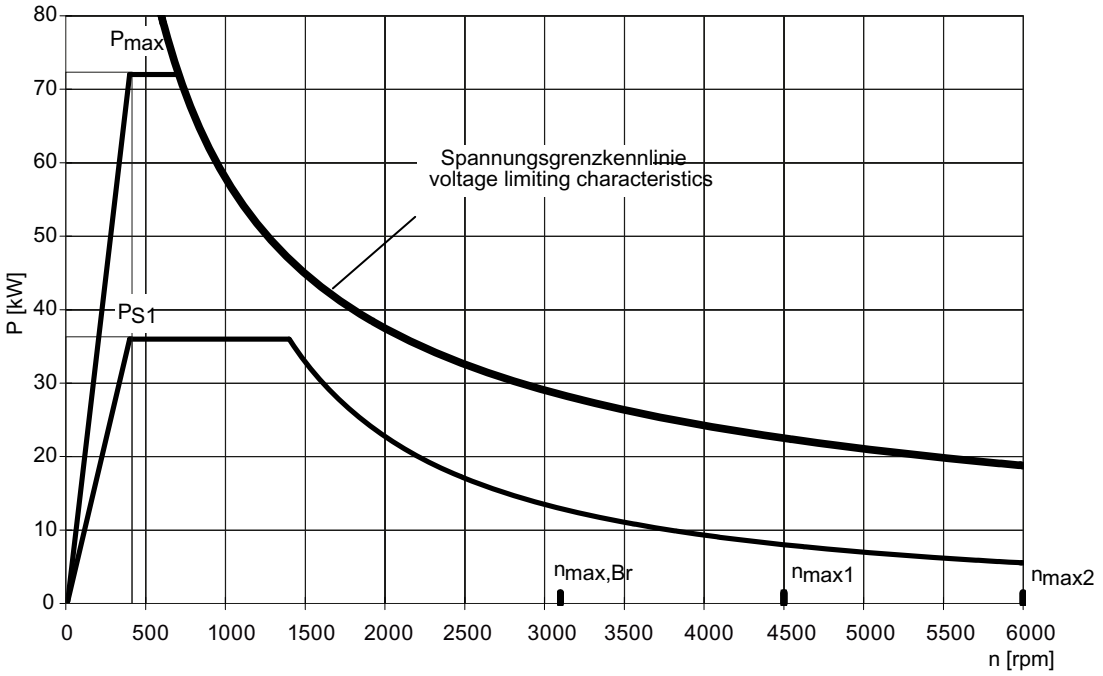


### 4.1.3.6 Altezza dell'asse 225 - Raffreddamento ad acqua

Tabella 4- 535 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 36 | 859 | 100 | 4500 | 6000 | - | 3100 | 1400 | 1719 | 200 | 859 | 100 |



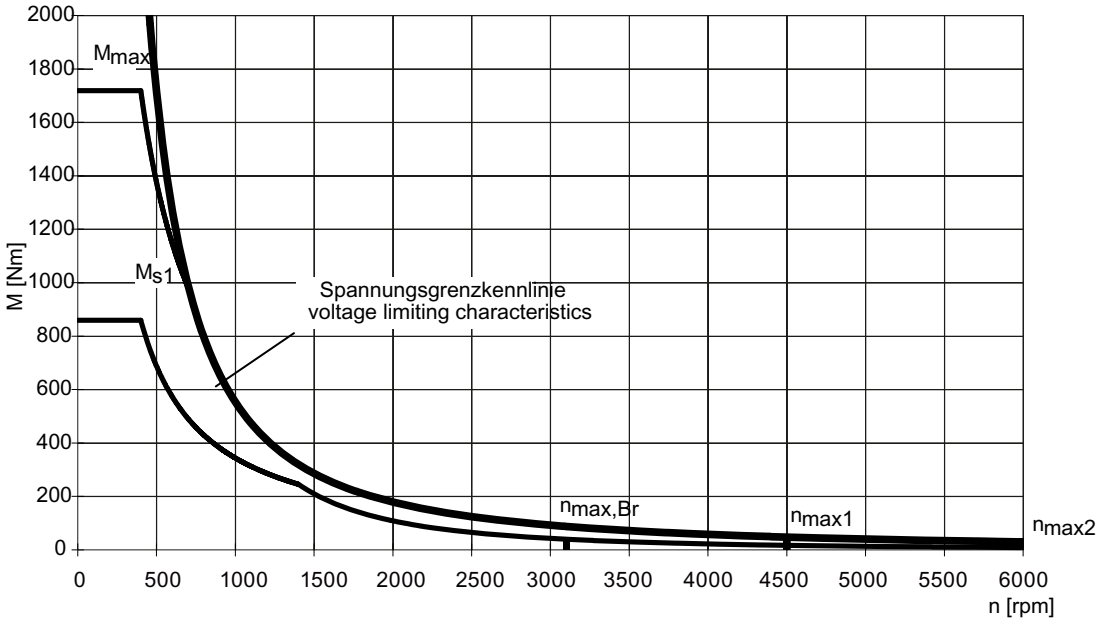
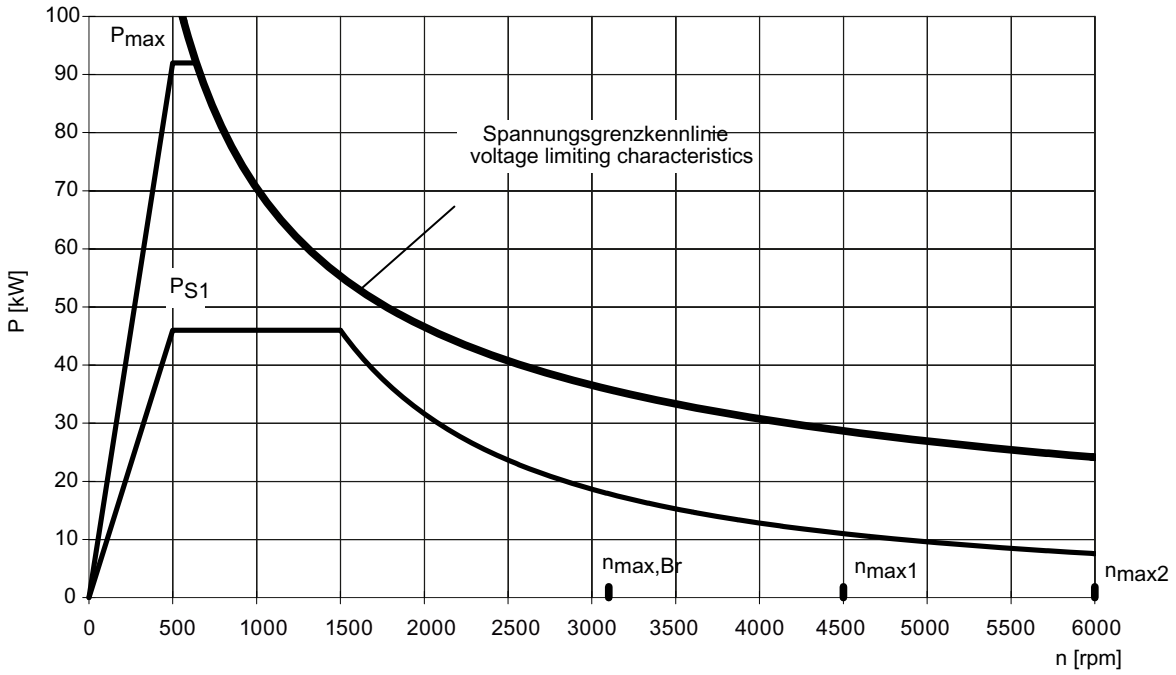



Tabella 4- 536 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 46 | 879 | 100 | 4500 | 6000 | - | 3100 | 1500 | 1757 | 200 | 879 | 100 |
| 400 | 37 | 879 | 100 | | | | | 1750 | | | | |



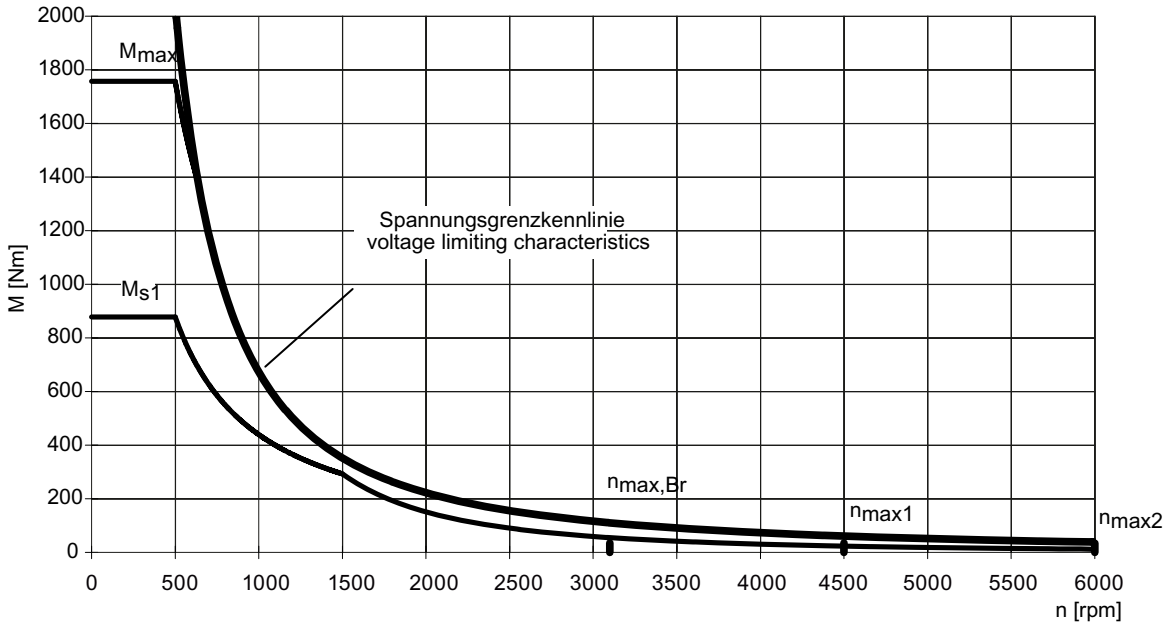
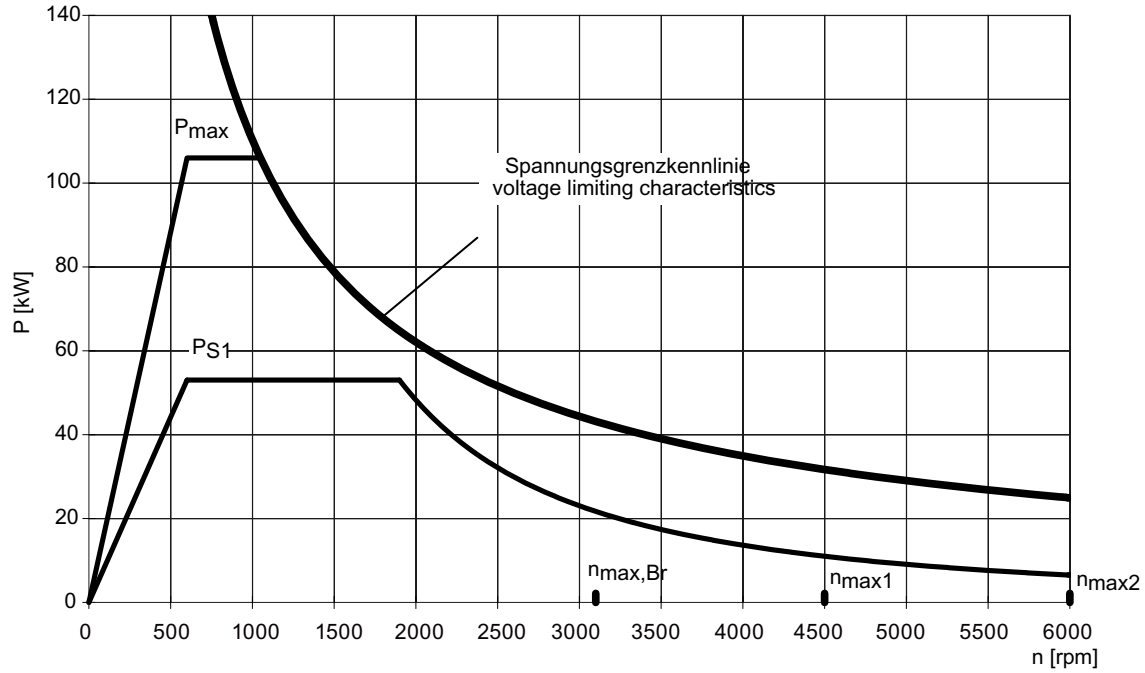



Tabella 4- 537 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 53 | 844 | 94 | 4500 | 6000 | - | 3100 | 1900 | 1687 | 188 | 844 | 94 |



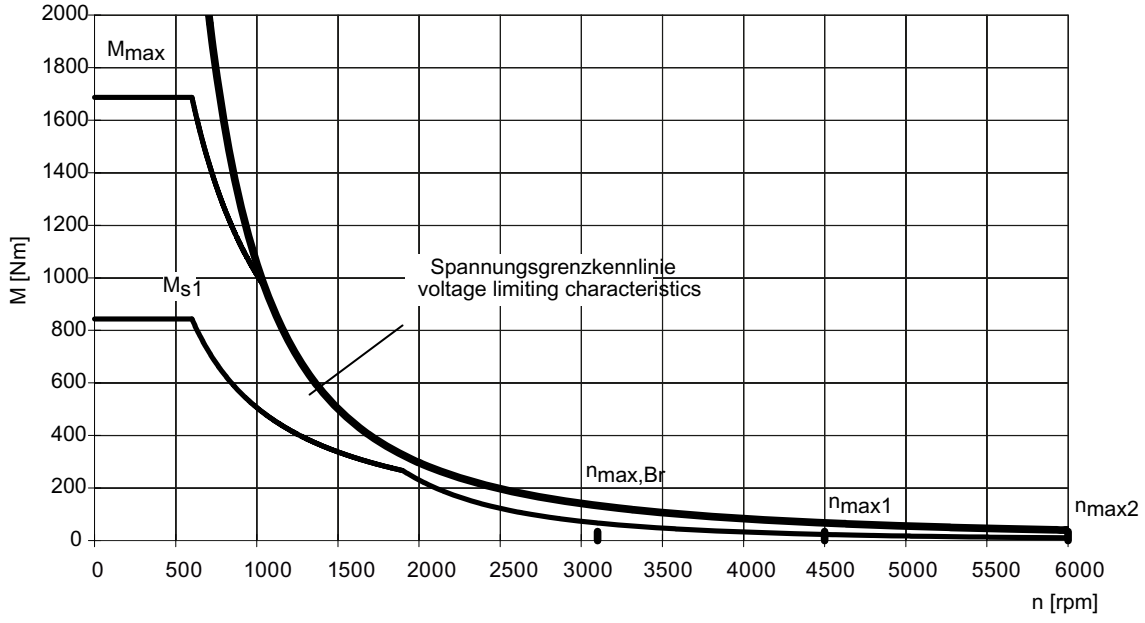
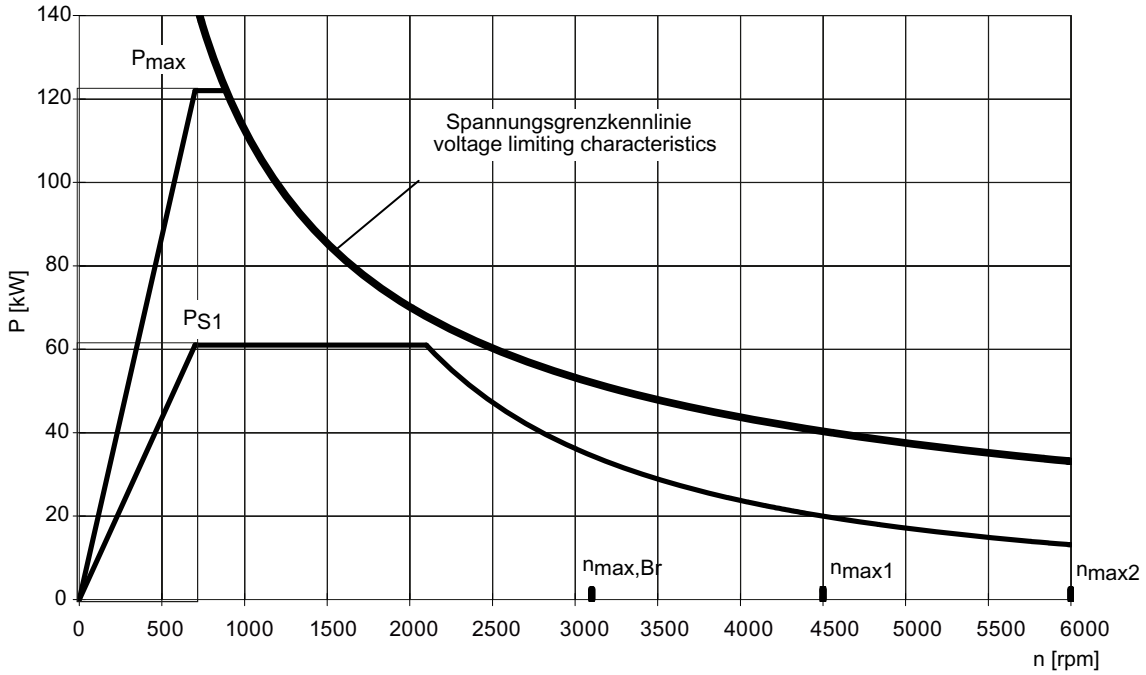



Tabella 4- 538 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 61 | 832 | 128 | 4500 | 6000 | - | 3100 | 2100 | 1664 | 256 | 832 | 128 |



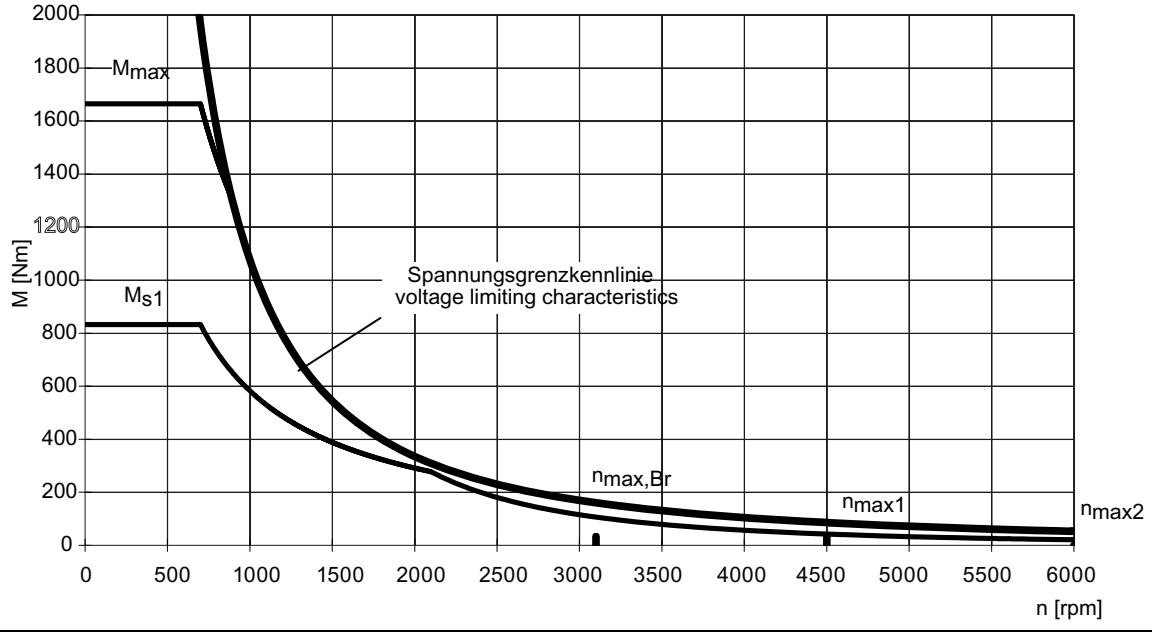
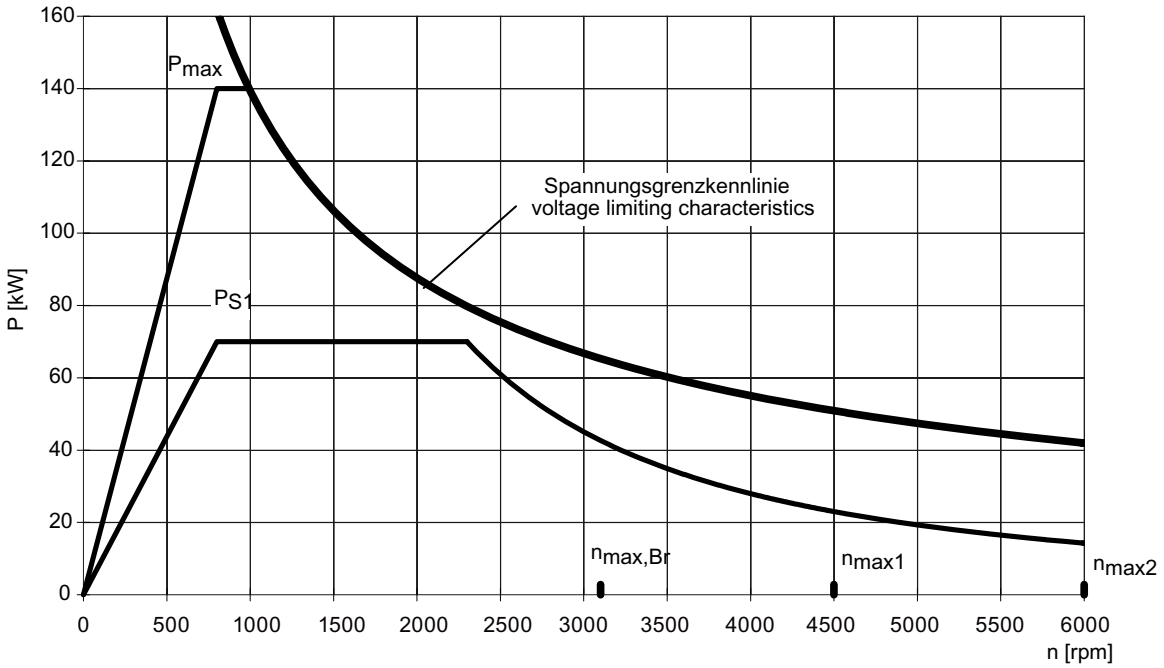



Tabella 4- 539 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 70 | 836 | 130 | 4500 | 6000 | - | 3100 | 2300 | 1671 | 260 | 836 | 130 |
| 700 | 61 | 836 | 130 | | | | | 2500 | | | | |



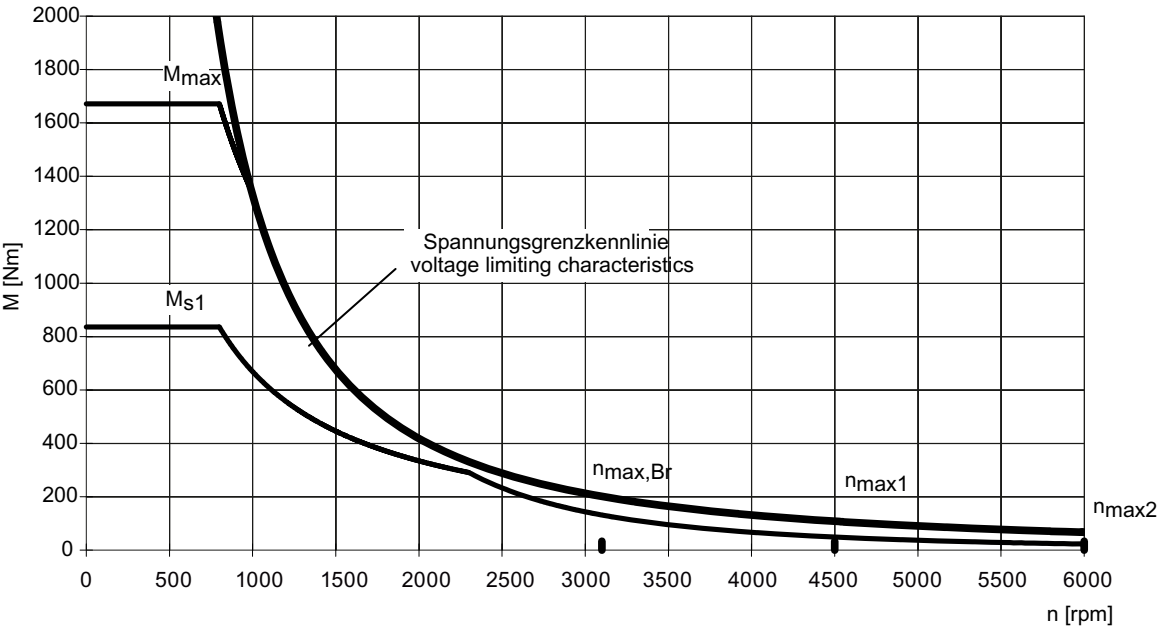
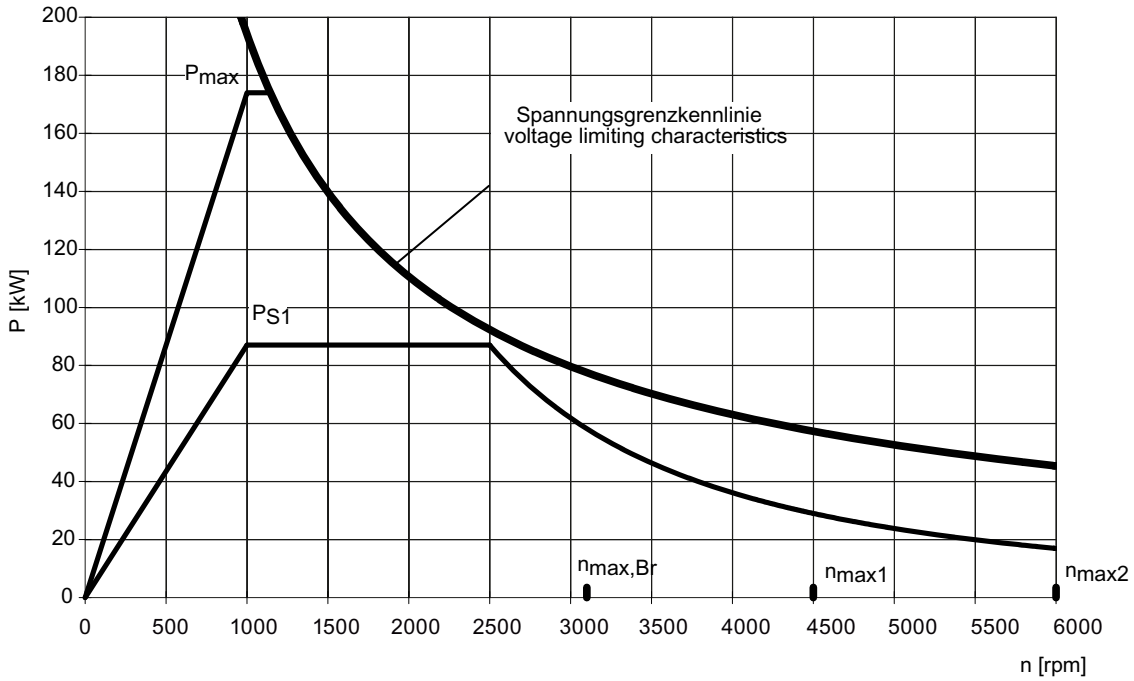



Tabella 4- 540 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 87 | 831 | 132 | 4500 | 6000 | - | 3100 | 2500 | 1662 | 264 | 831 | 132 |



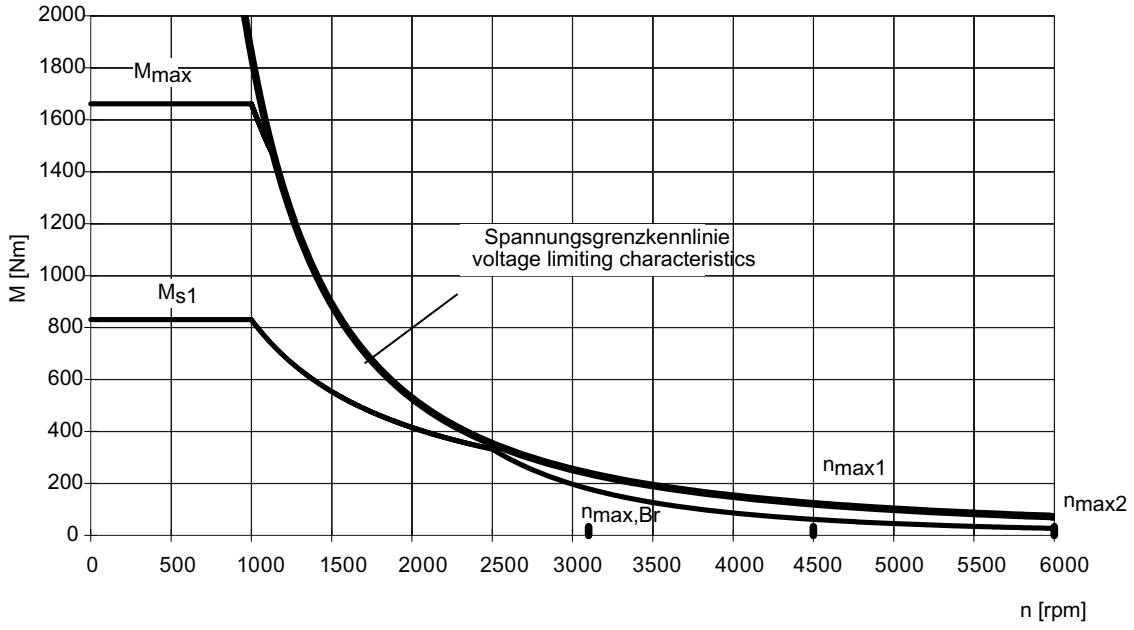
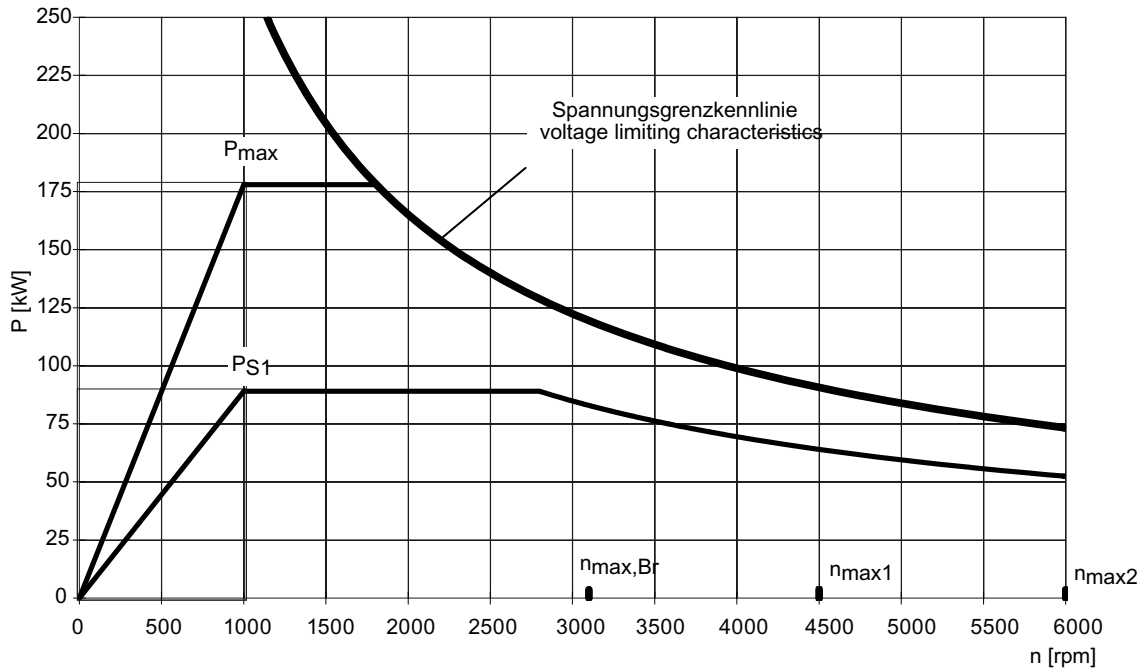



Tabella 4- 541 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 89 | 850 | 188 | 4500 | 6000 | - | 3100 | 2800 | 1700 | 376 | 850 | 188 |



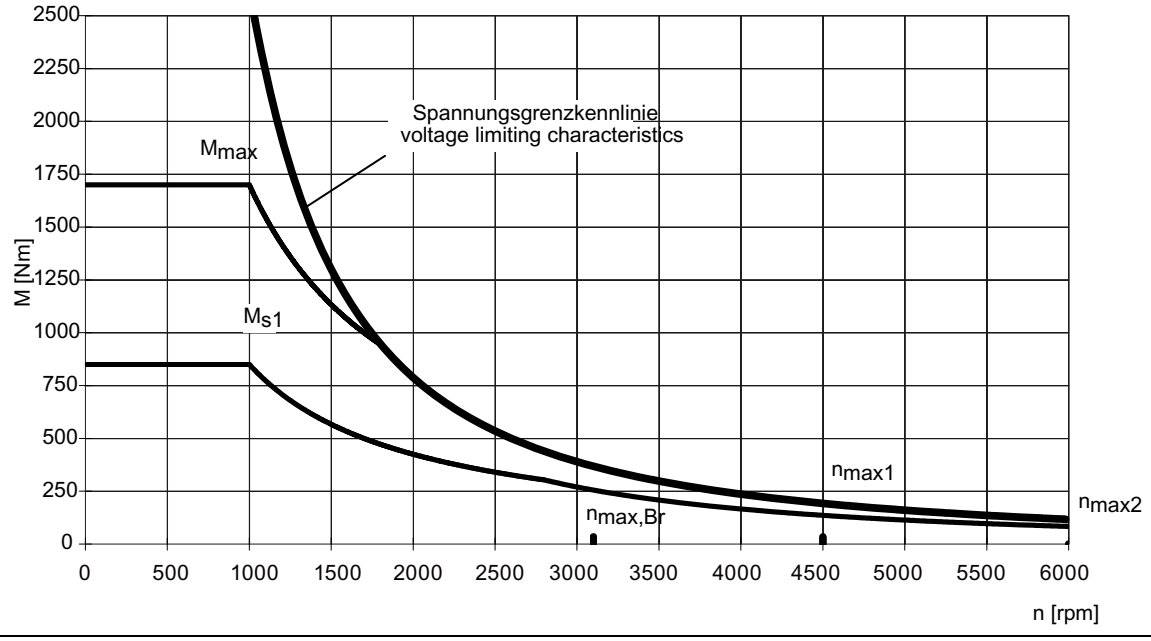
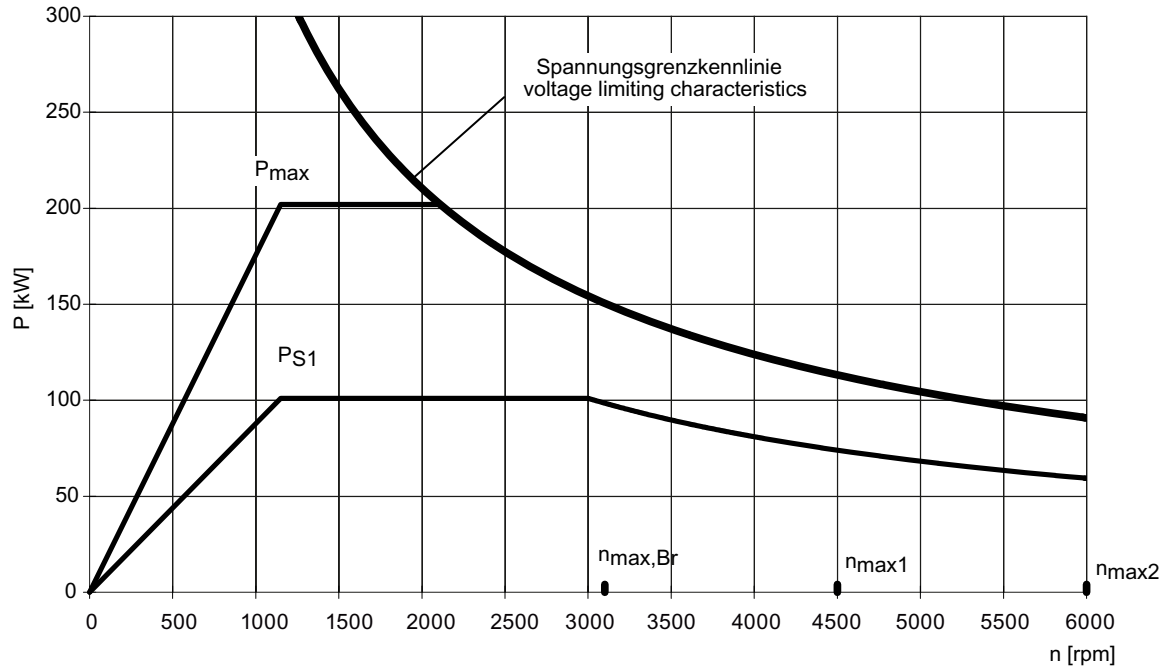



Tabella 4- 542 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 101 | 839 | 186 | 4500 | 6000 | - | 3100 | 3000 | 1677 | 372 | 839 | 186 |
| 1000 | 88 | 839 | 186 | | | | | 3600 | | | | |



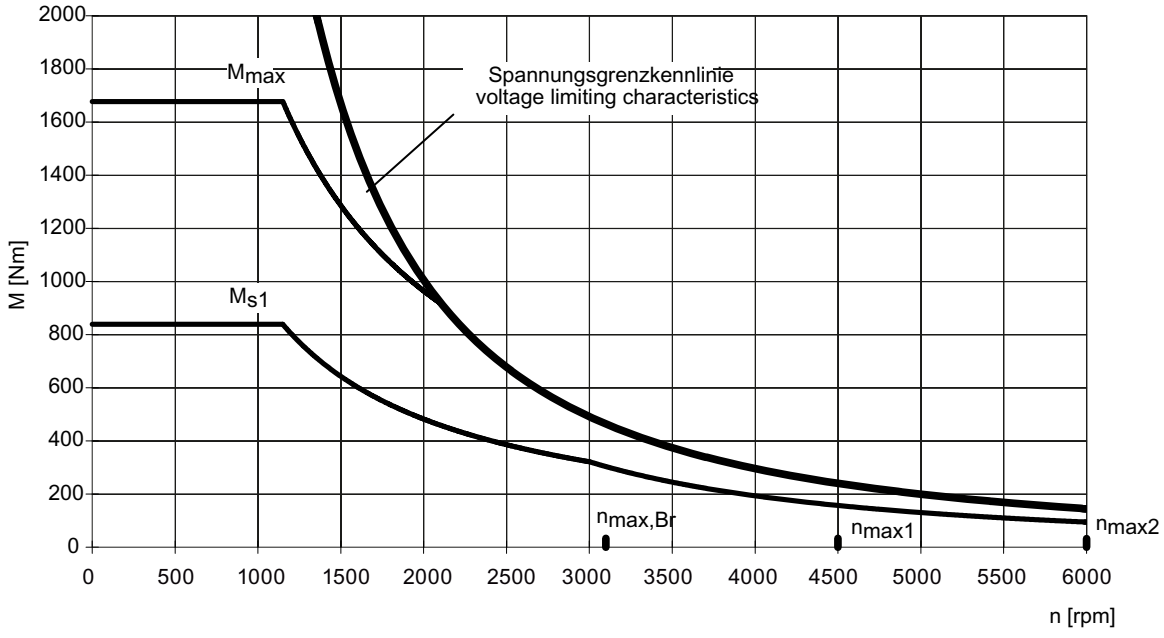
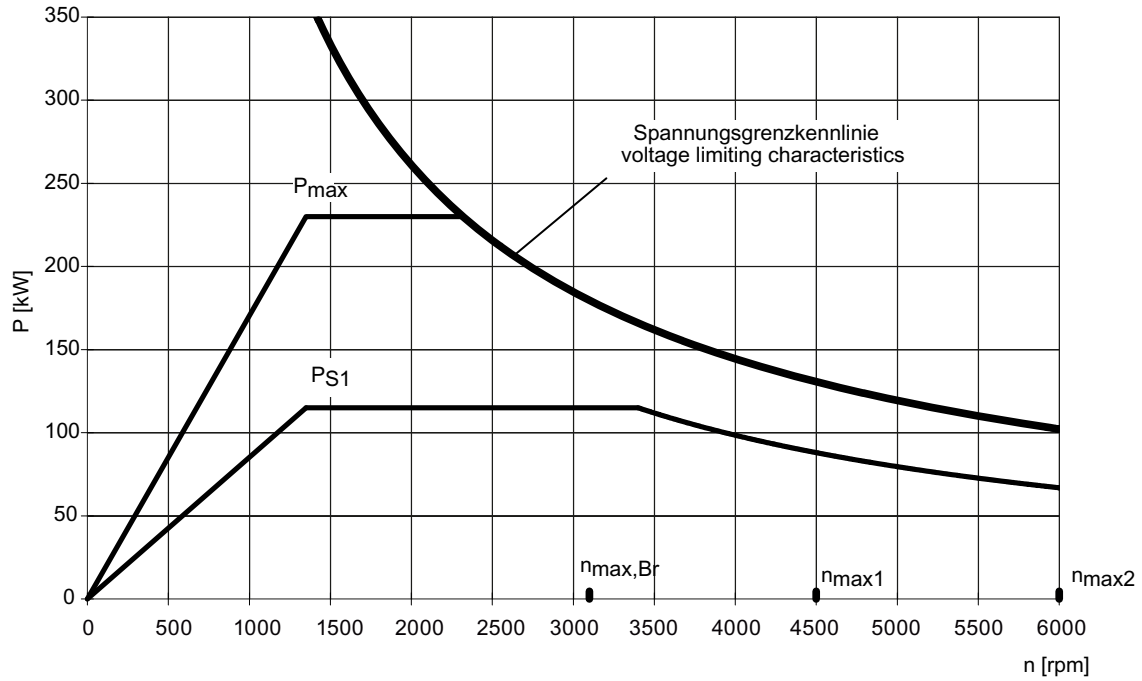



Tabella 4- 543 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 115 | 813 | 180 | 4500 | 6000 | - | 3100 | 3400 | 1627 | 360 | 814 | 180 |



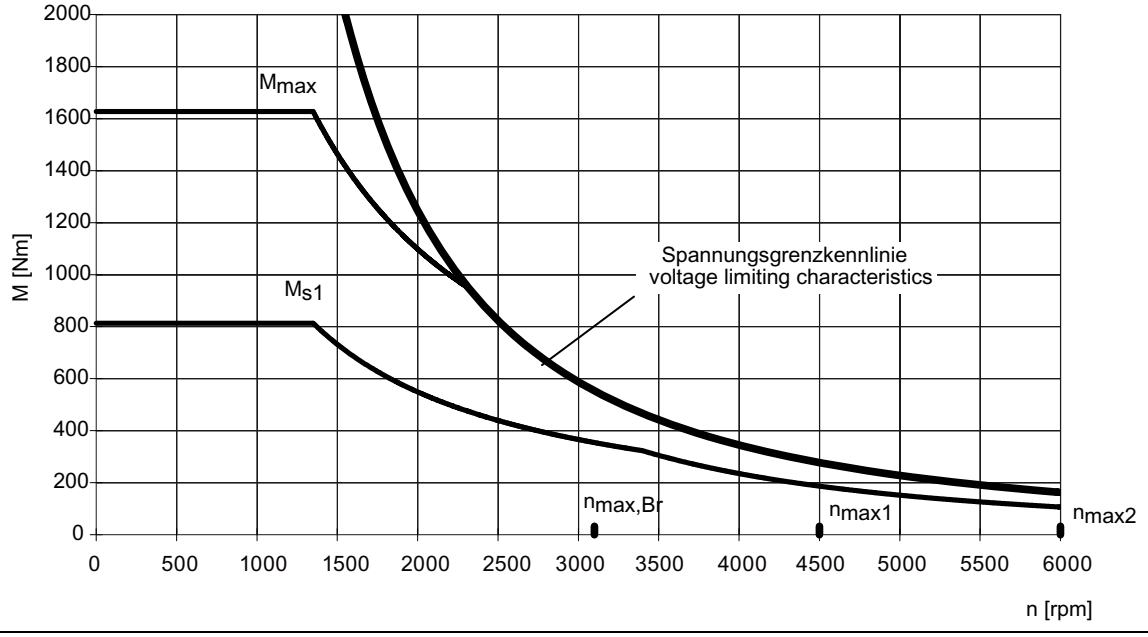
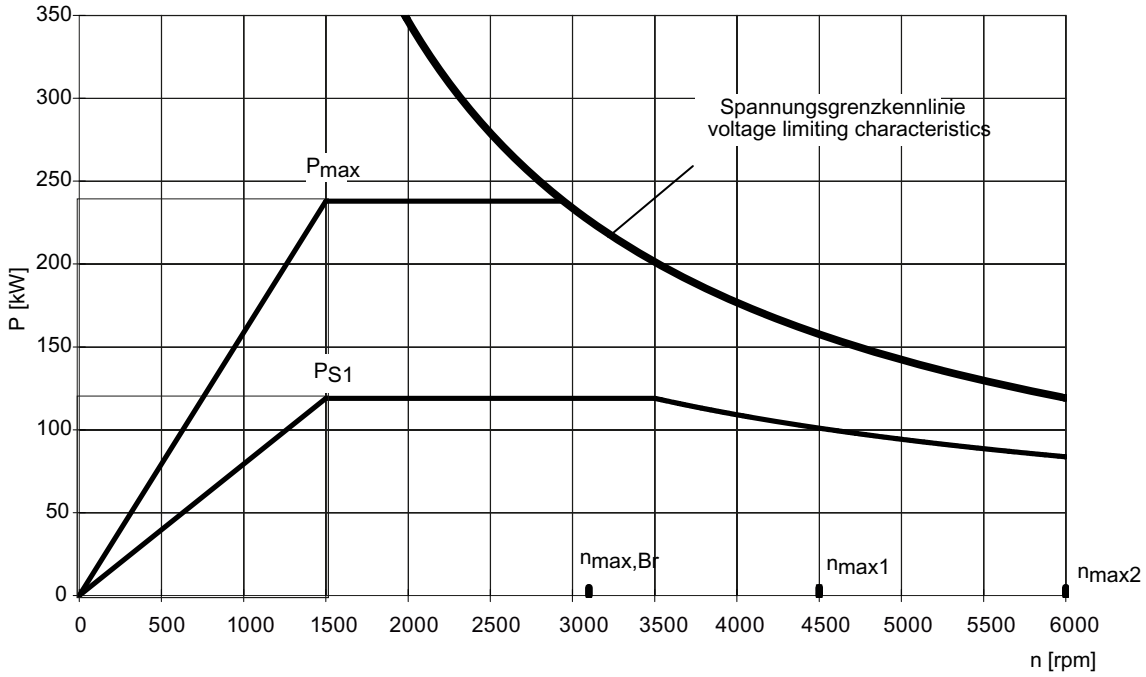



Tabella 4- 544 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 119 | 758 | 240 | 4500 | 6000 | - | 3100 | 3500 | 1515 | 480 | 758 | 240 |



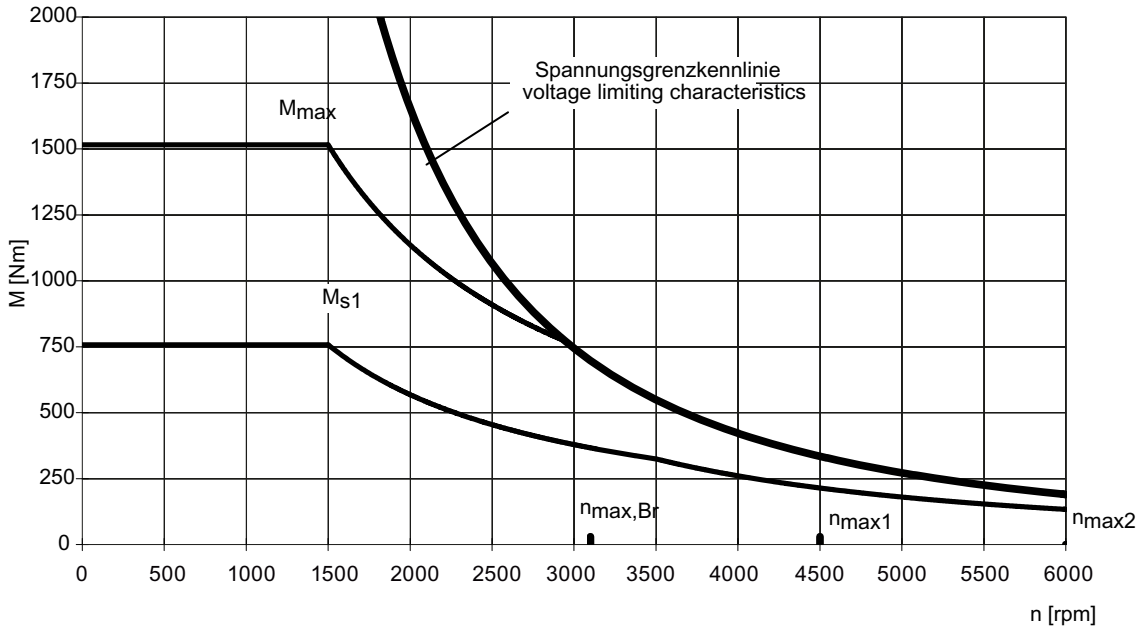
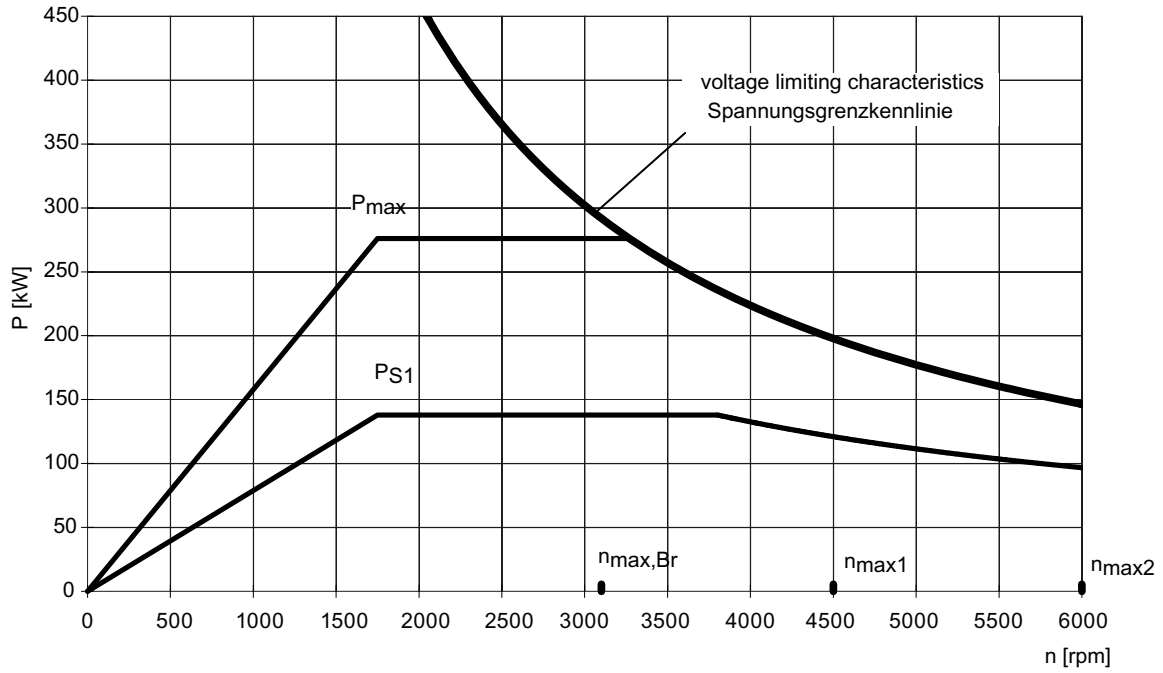



Tabella 4- 545 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 138 | 753 | 240 | 4500 | 6000 | - | 3100 | 3800 | 1506 | 480 | 753 | 240 |
| 1500 | 118 | 753 | 240 | | | | | 4500 | | | | |



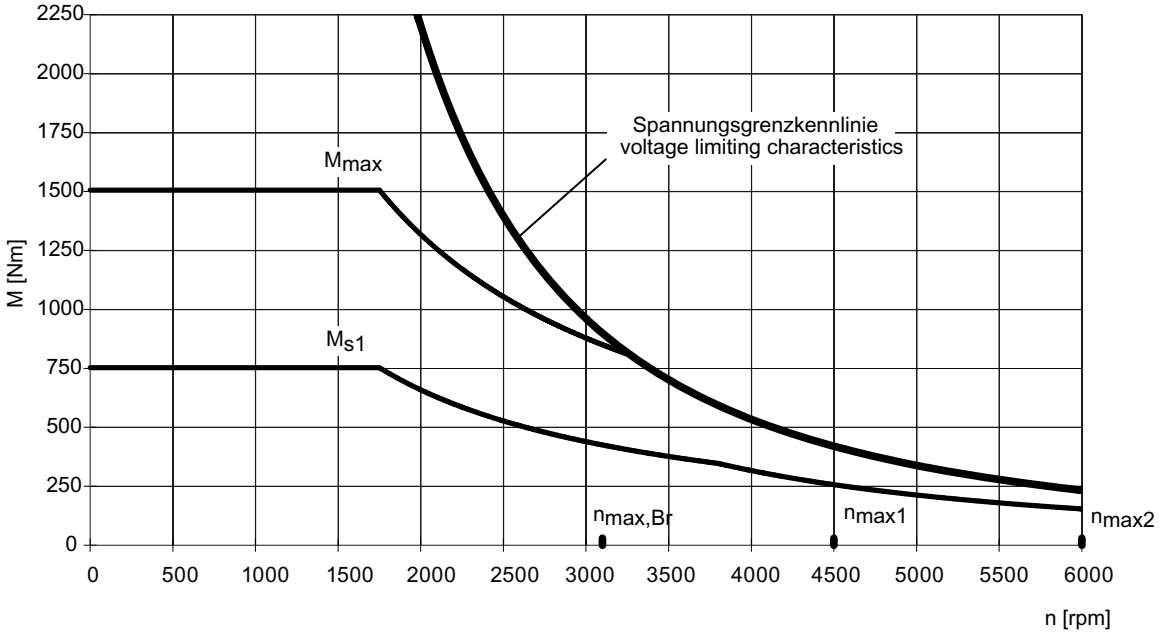
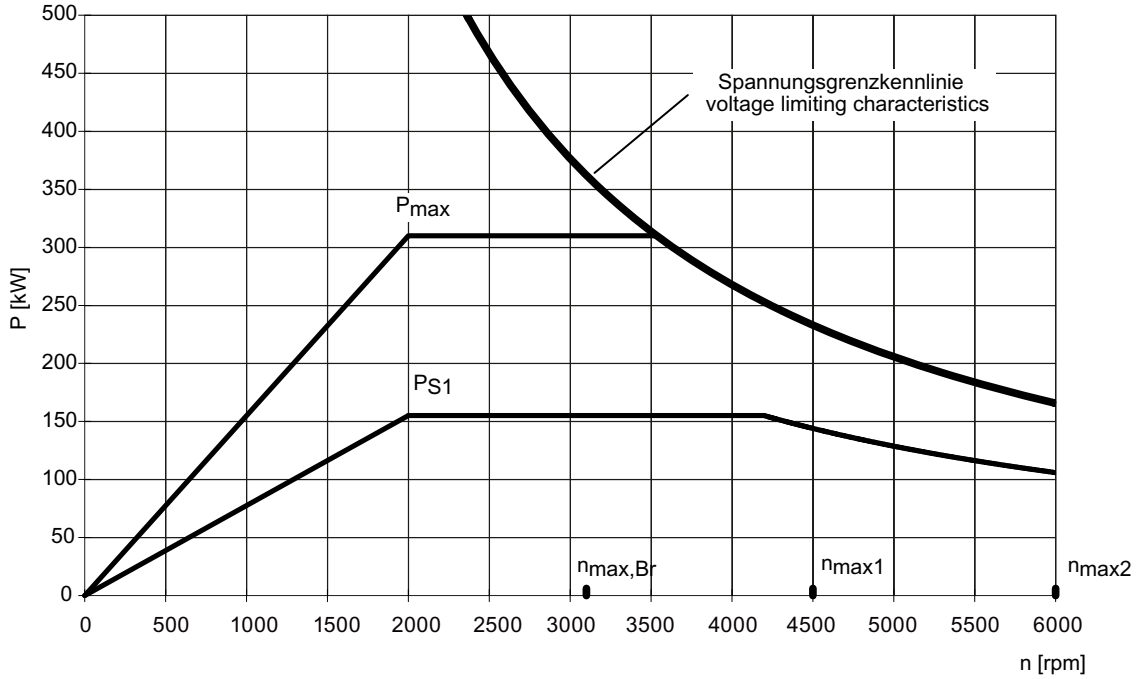



Tabella 4- 546 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 155 | 740 | 235 | 4500 | 6000 | - | 3100 | 4200 | 1480 | 470 | 740 | 235 |



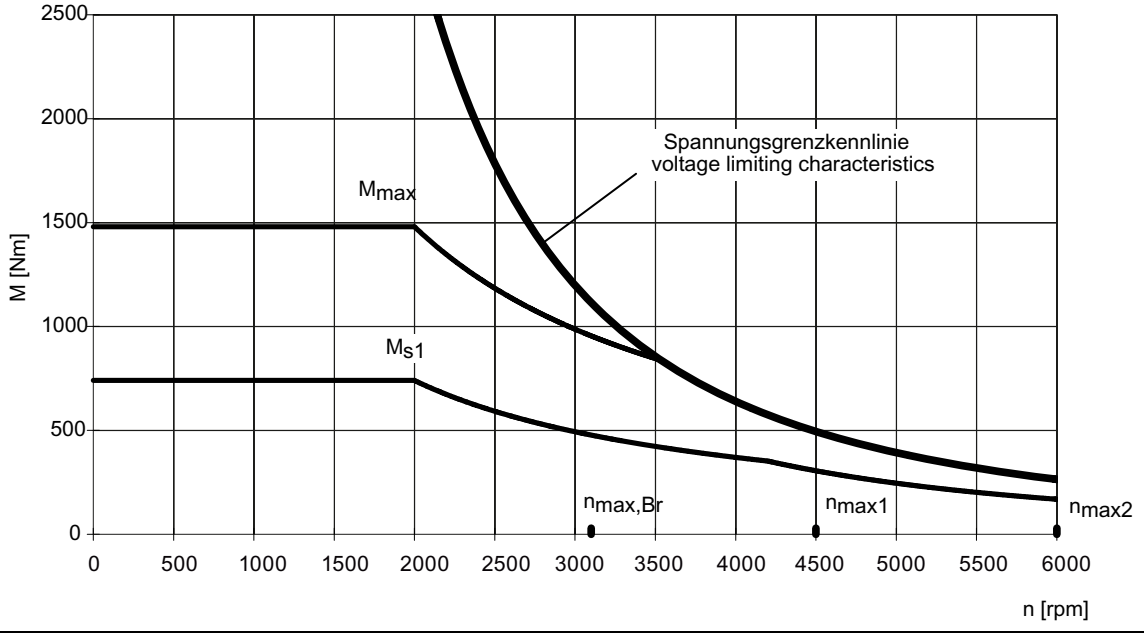
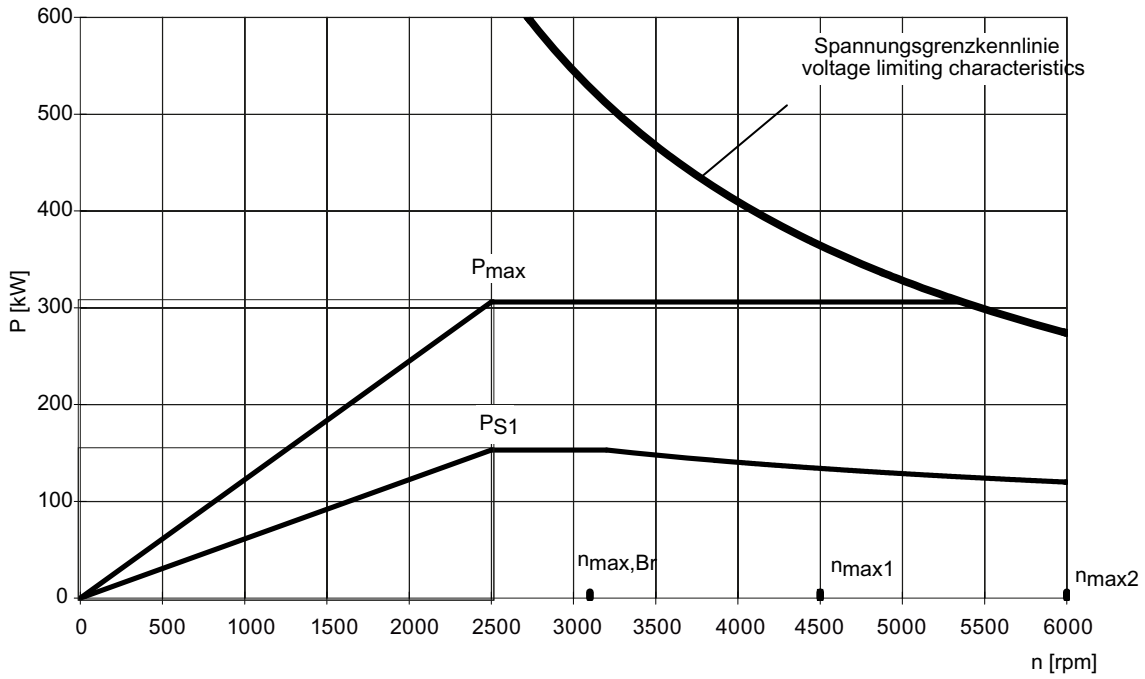



Tabella 4- 547 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-□□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 153 | 584 | 310 | 4500 | 6000 | - | 3100 | 3200 | 1169 | 620 | 584 | 310 |



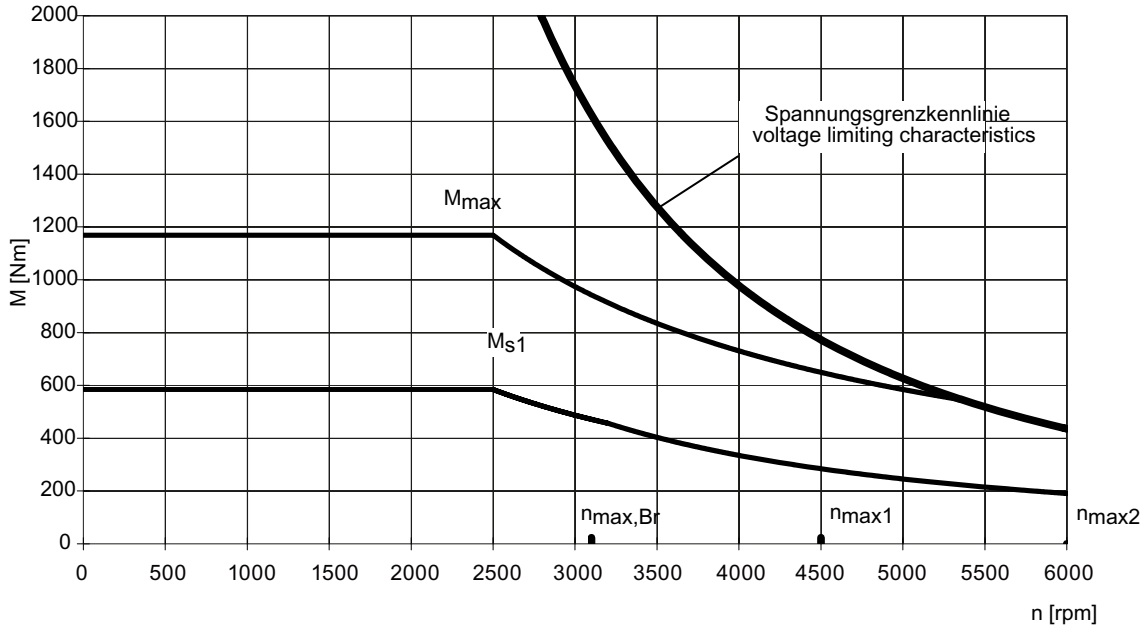



Tabella 4- 548 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-□□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 164 | 540 | 285 | 4500 | 6000 | - | 3100 | 3600 | 1080 | 570 | 540 | 285 |
| 2500 | 141 | 540 | 285 | | | | | 4500 | | | | |

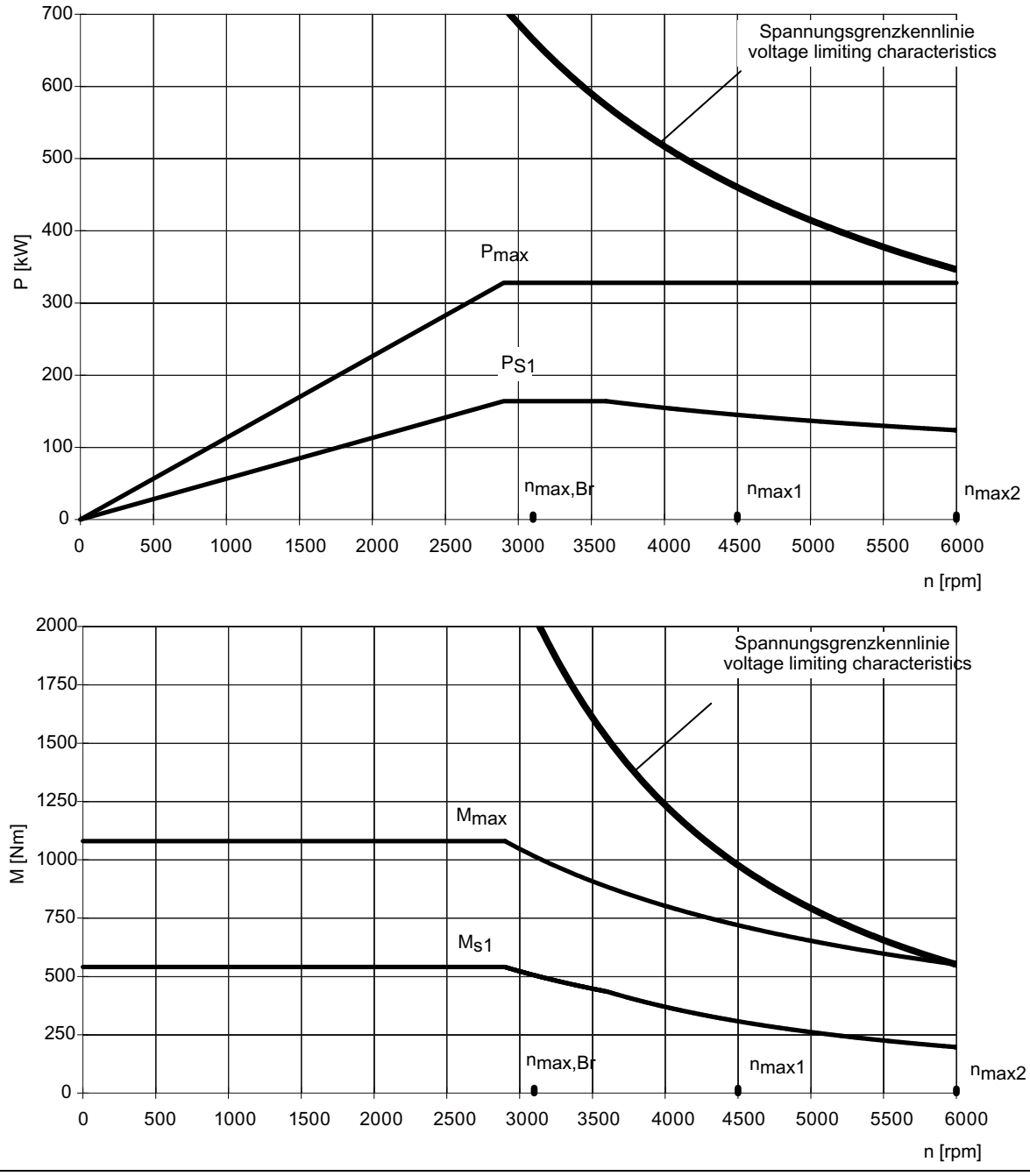
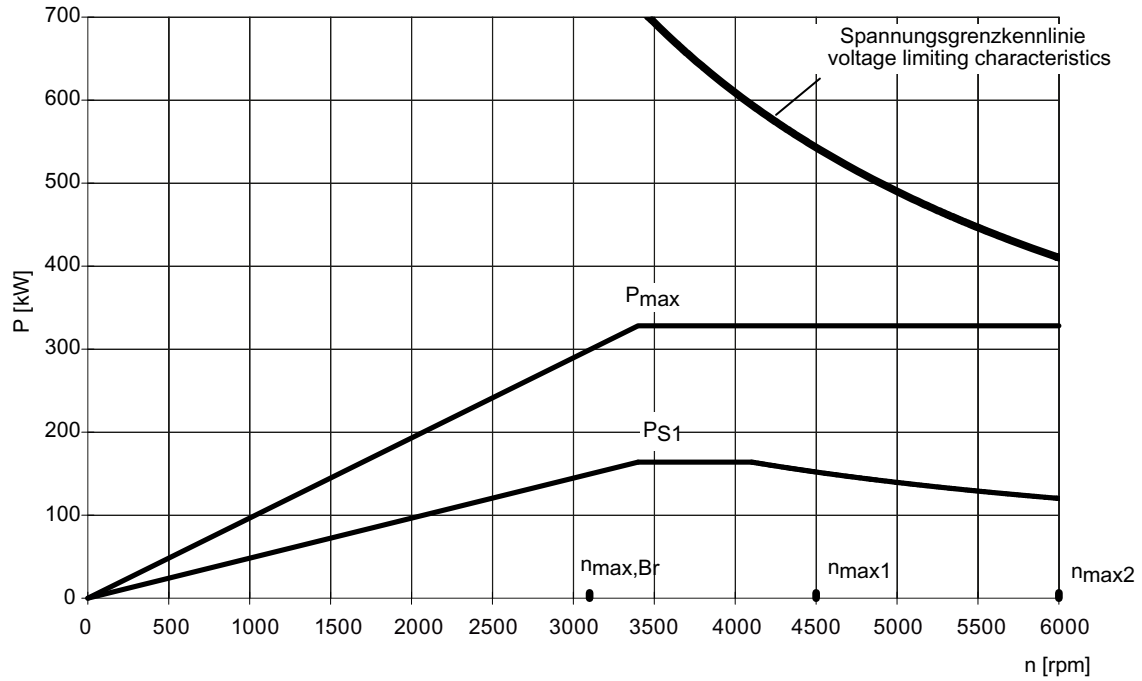


Tabella 4- 549 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-□□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3400 | 164 | 461 | 255 | 4500 | 6000 | - | 3100 | 4100 | 921 | 510 | 461 | 255 |



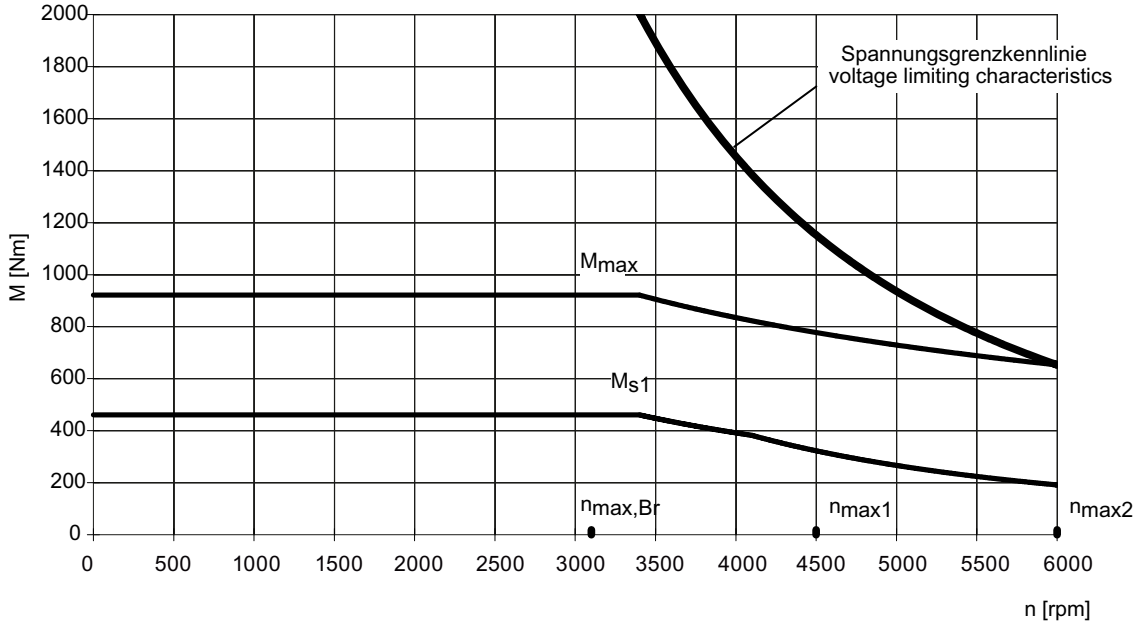
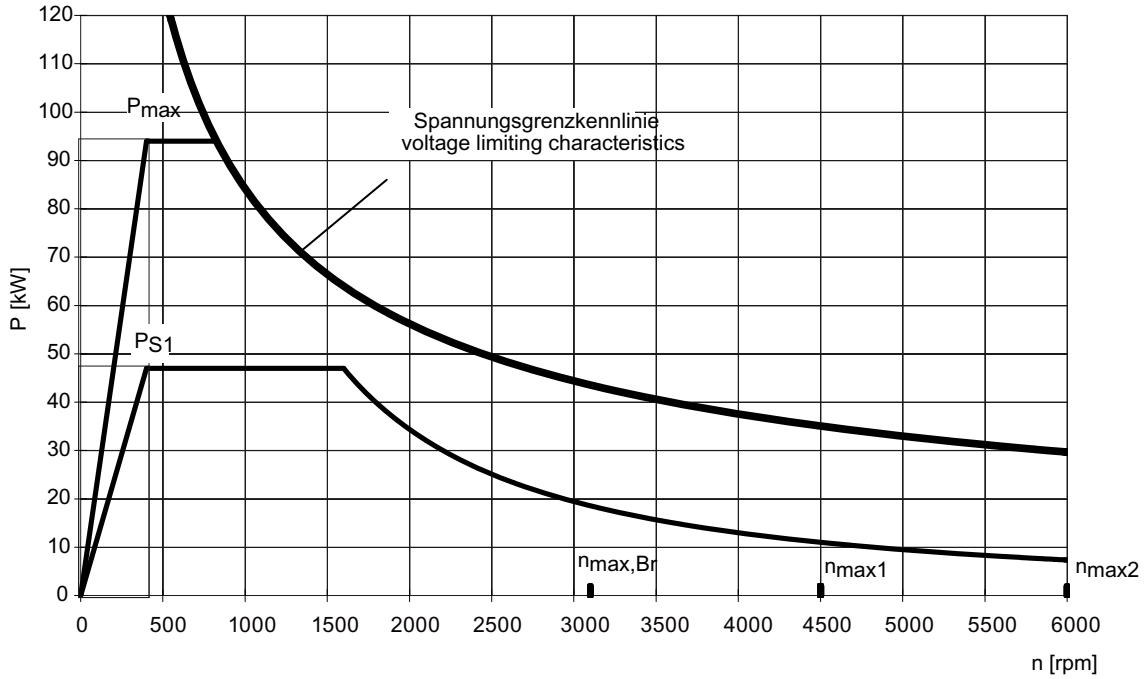



Tabella 4- 550 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 47 | 1122 | 130 | 4500 | 6000 | - | 3100 | 1600 | 2244 | 260 | 1122 | 130 |



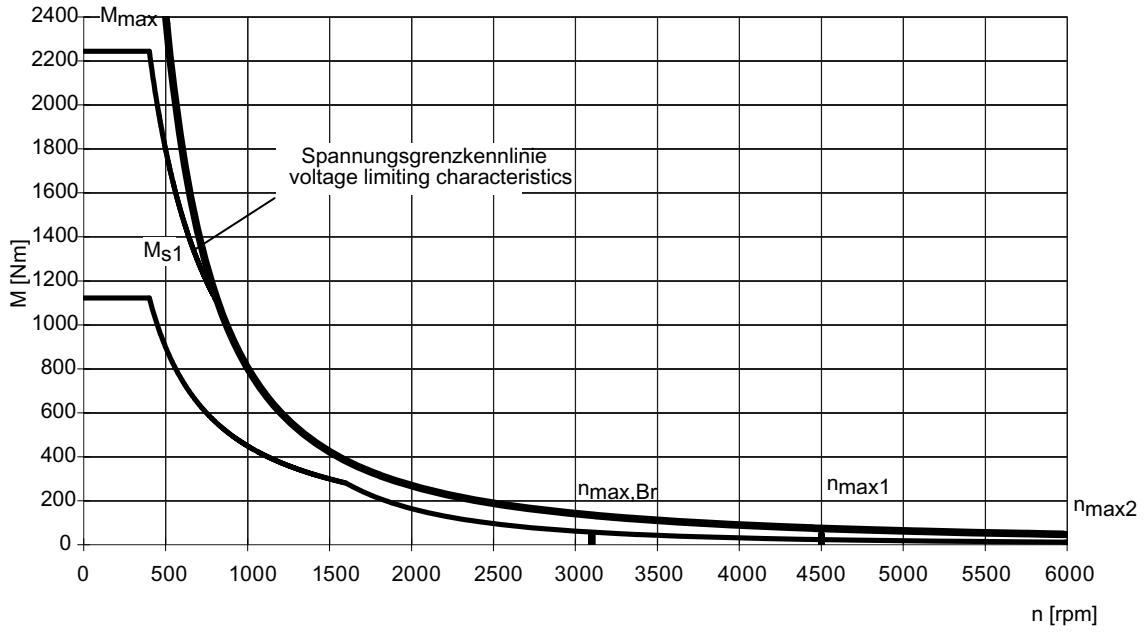
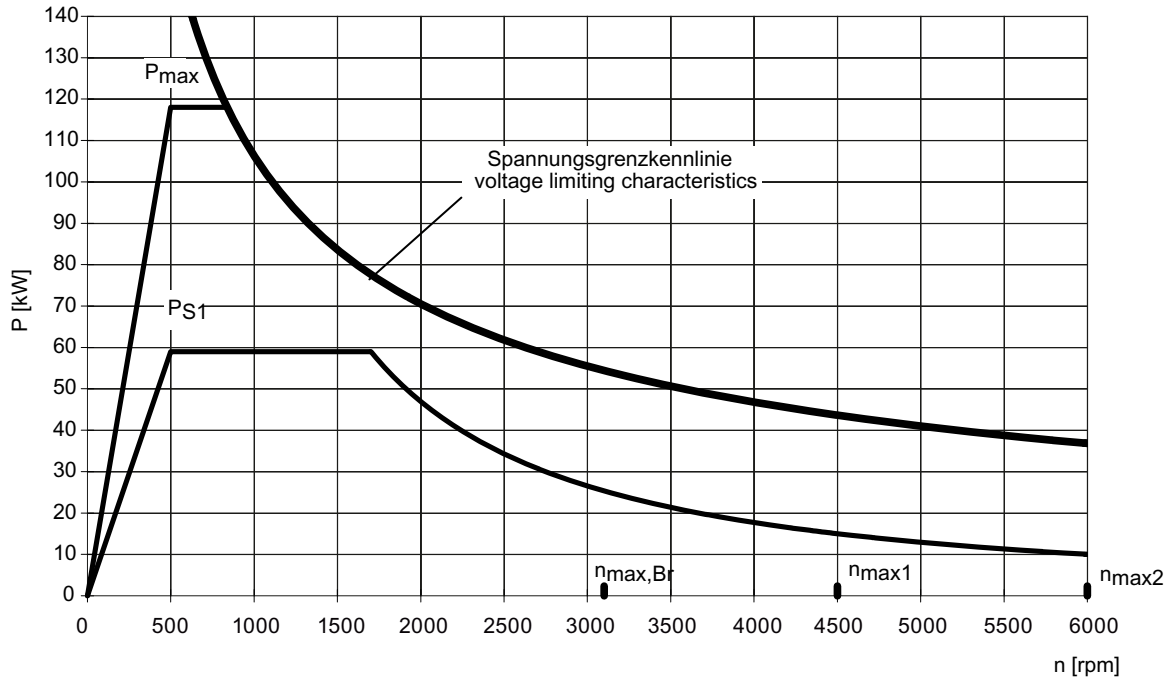



Tabella 4- 551 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 59 | 1127 | 128 | 4500 | 6000 | - | 3100 | 1700 | 2254 | 256 | 1127 | 128 |
| 400 | 47 | 1127 | 128 | | | | | 2000 | | | | |



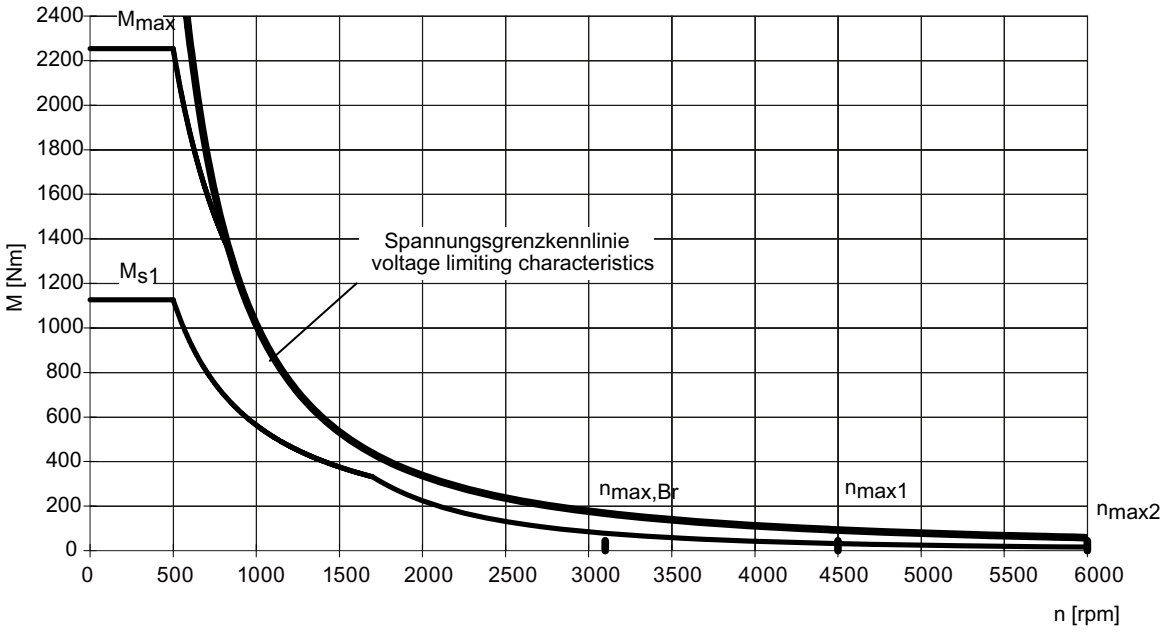
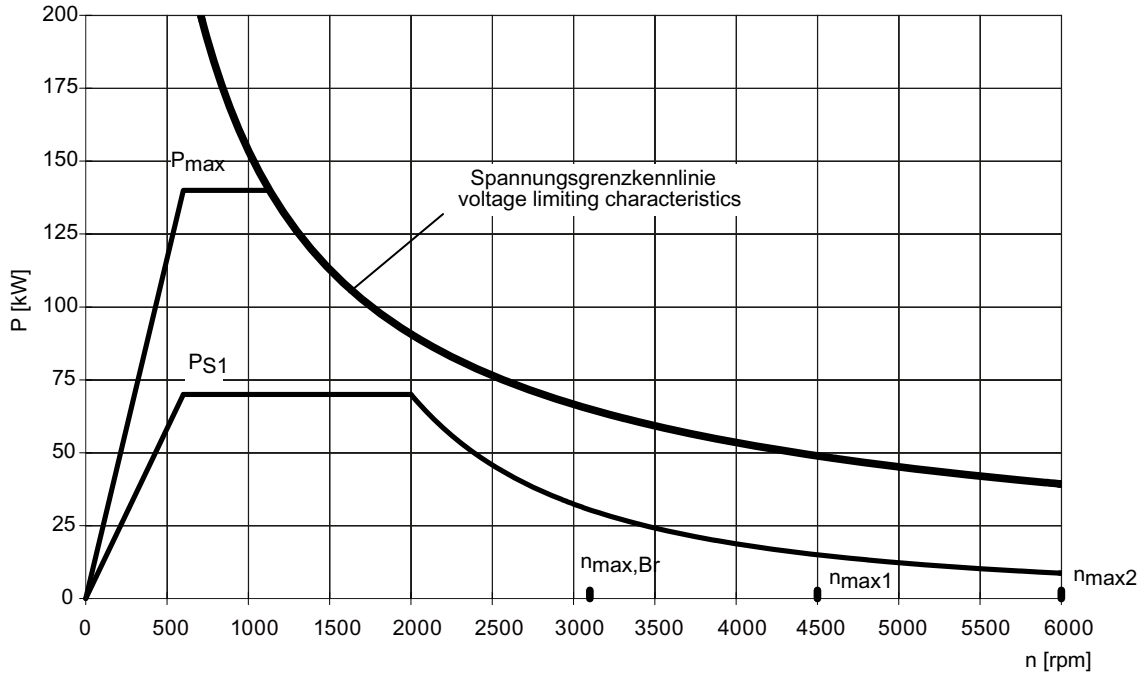



Tabella 4- 552 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 70 | 1114 | 122 | 4500 | 6000 | - | 3100 | 2000 | 2228 | 244 | 1114 | 122 |



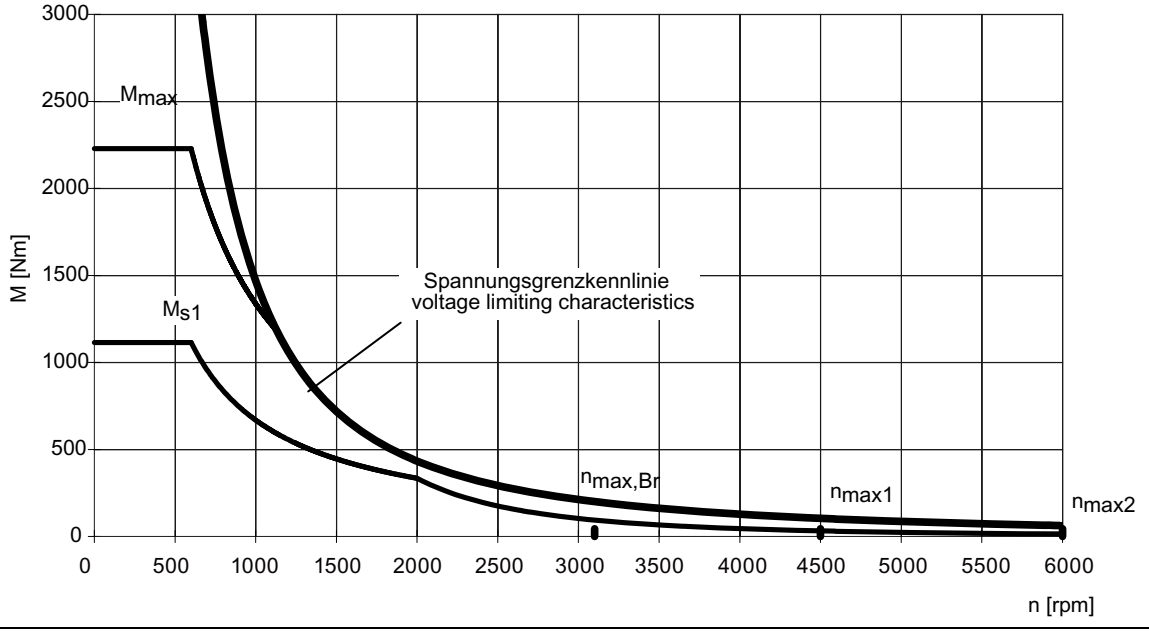
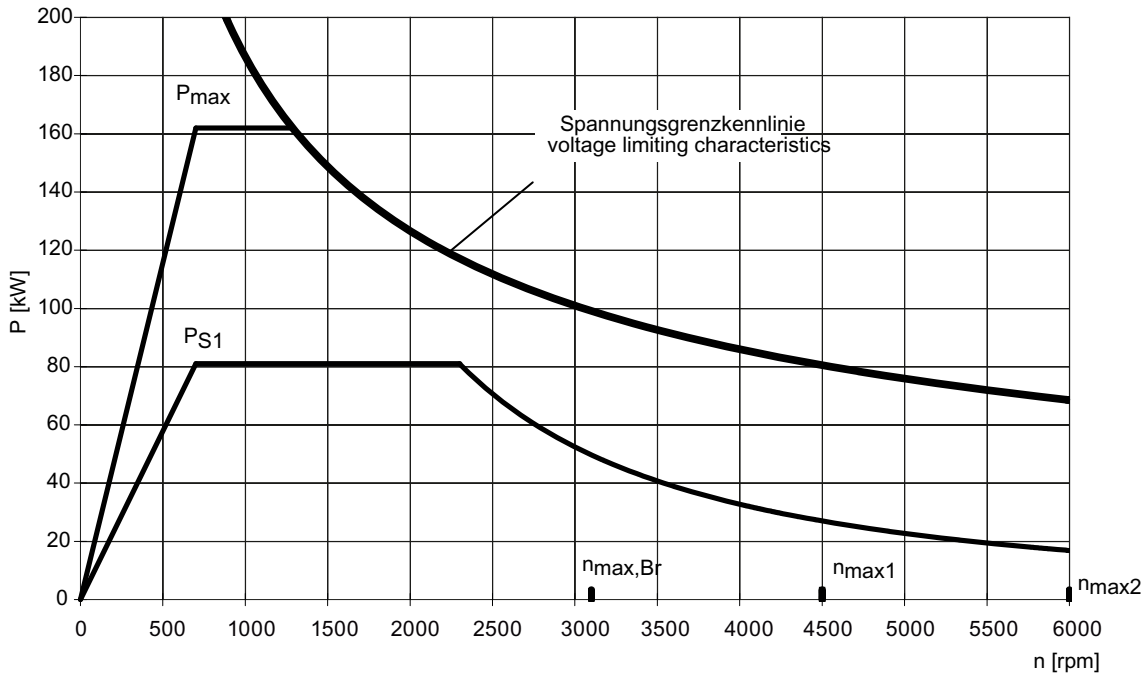



Tabella 4- 553 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 81 | 1105 | 184 | 4500 | 6000 | - | 3100 | 2300 | 2210 | 368 | 1105 | 184 |



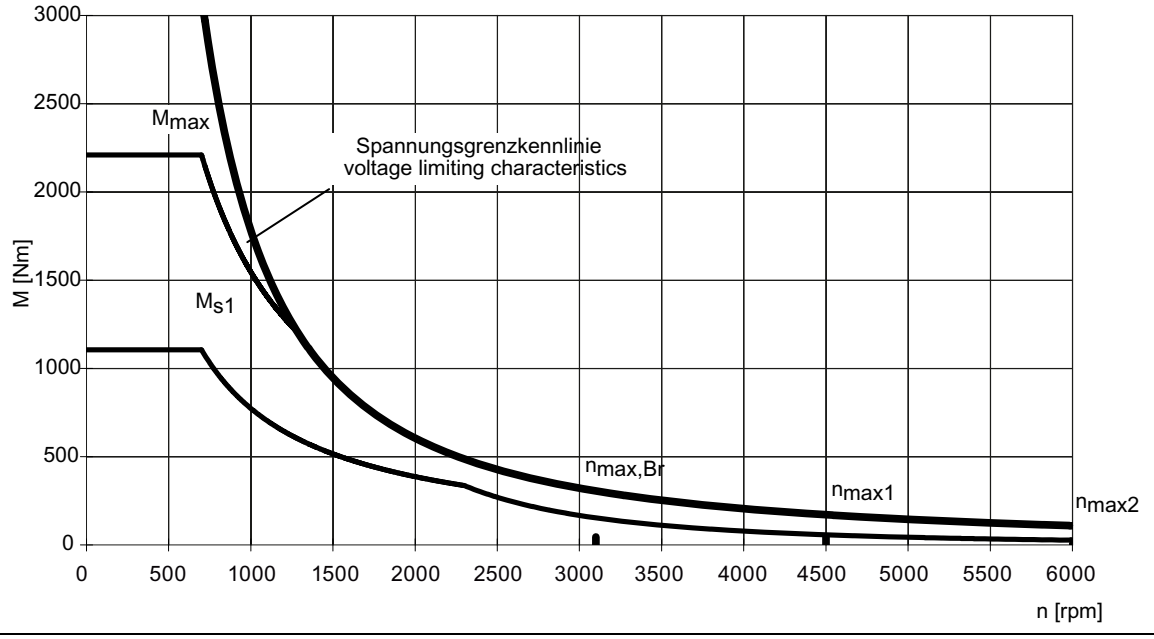
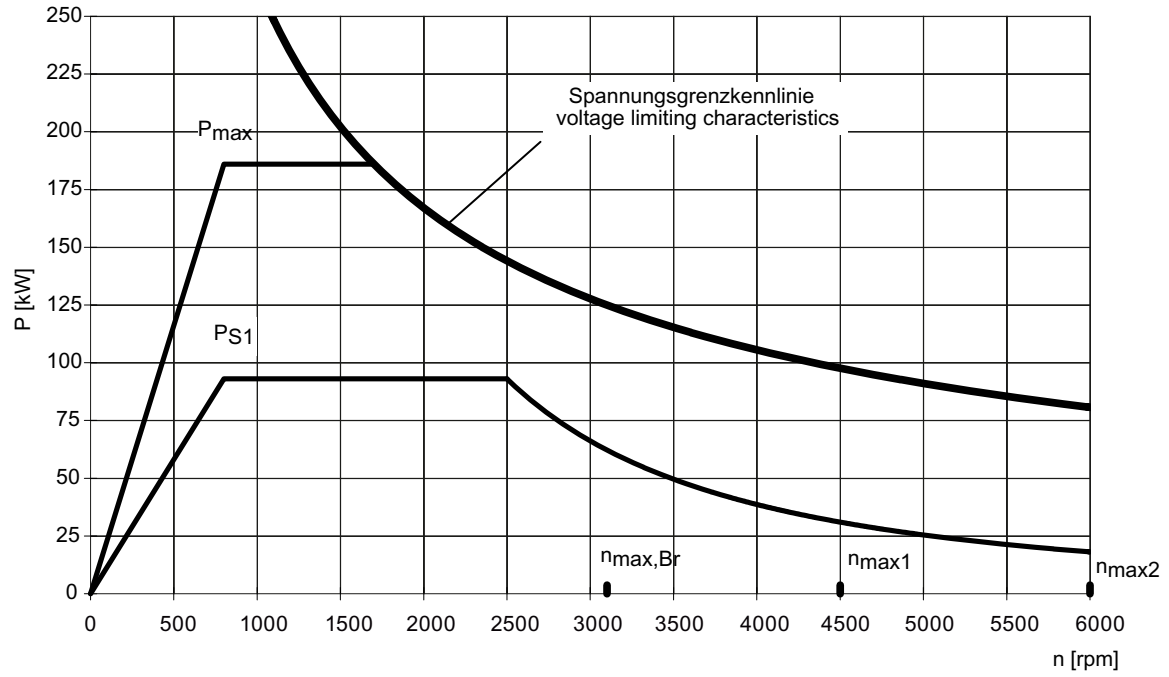



Tabella 4- 554 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 93 | 1110 | 186 | 4500 | 6000 | - | 3100 | 2500 | 2220 | 372 | 1110 | 186 |
| 700 | 81 | 1110 | 186 | | | | | 2700 | | | | |



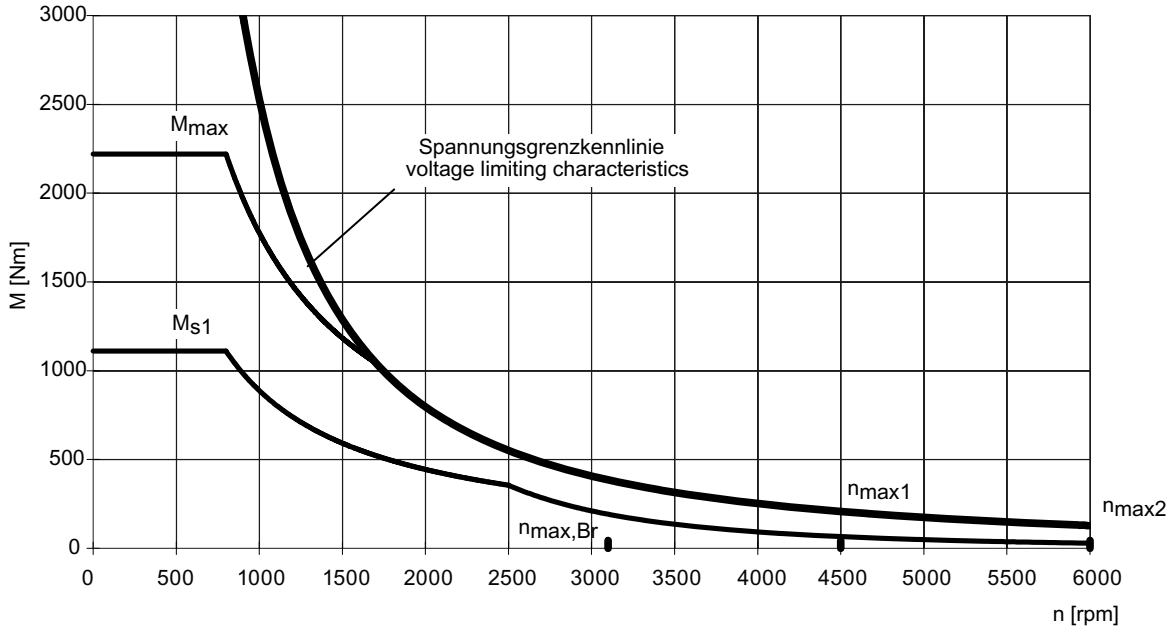
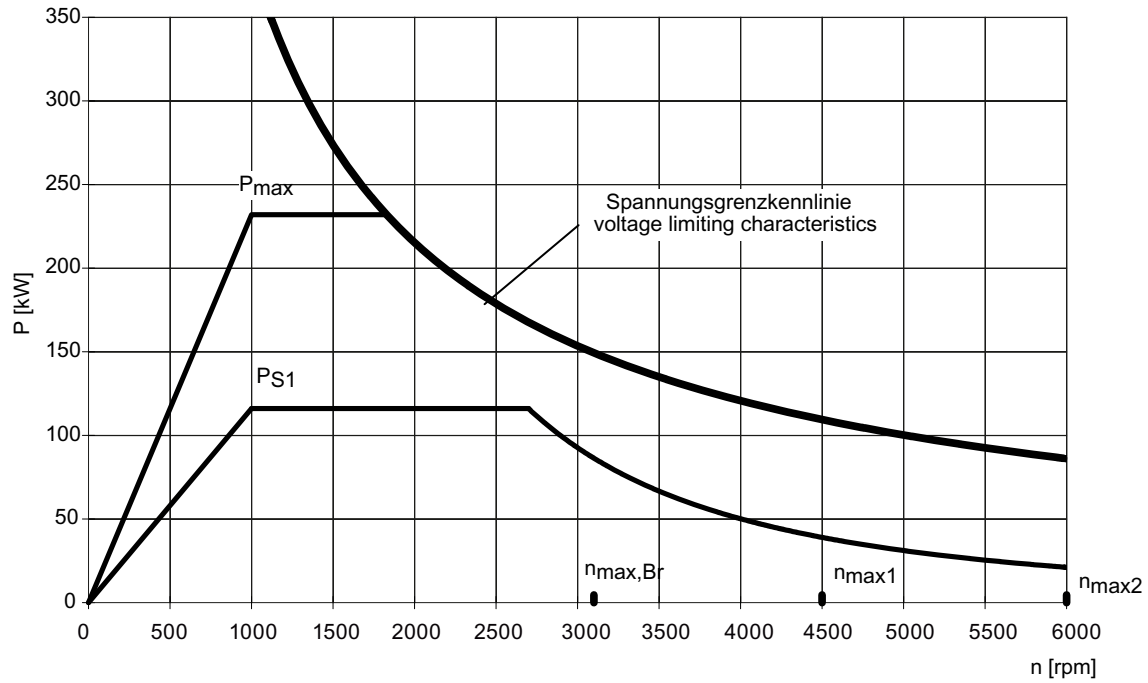



Tabella 4- 555 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 116 | 1108 | 184 | 4500 | 6000 | - | 3100 | 2700 | 2216 | 368 | 1108 | 184 |



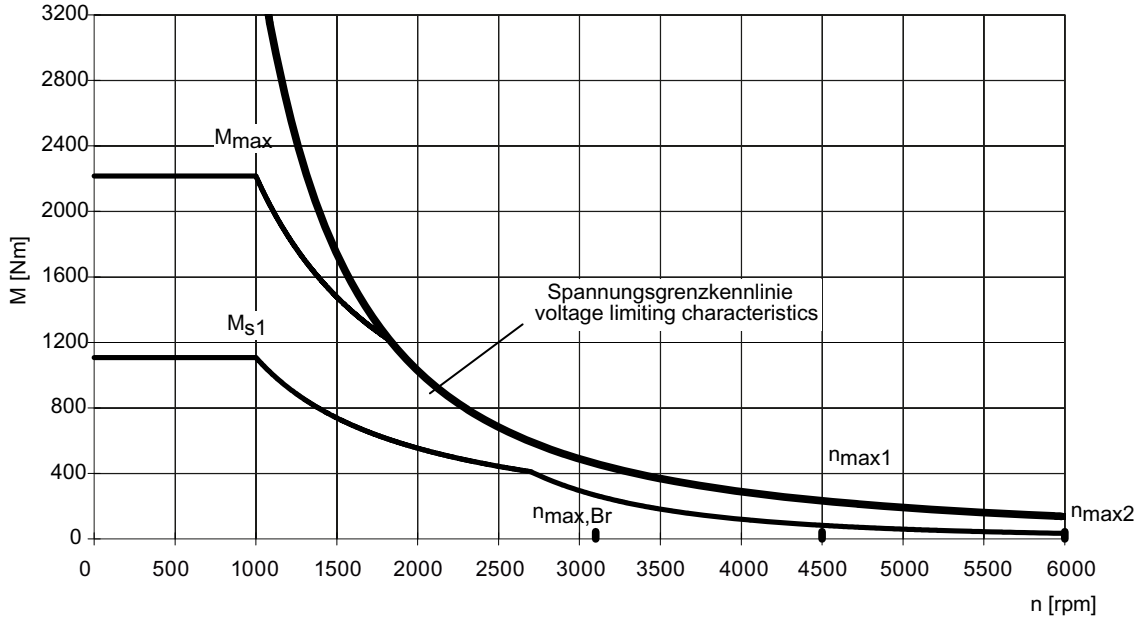
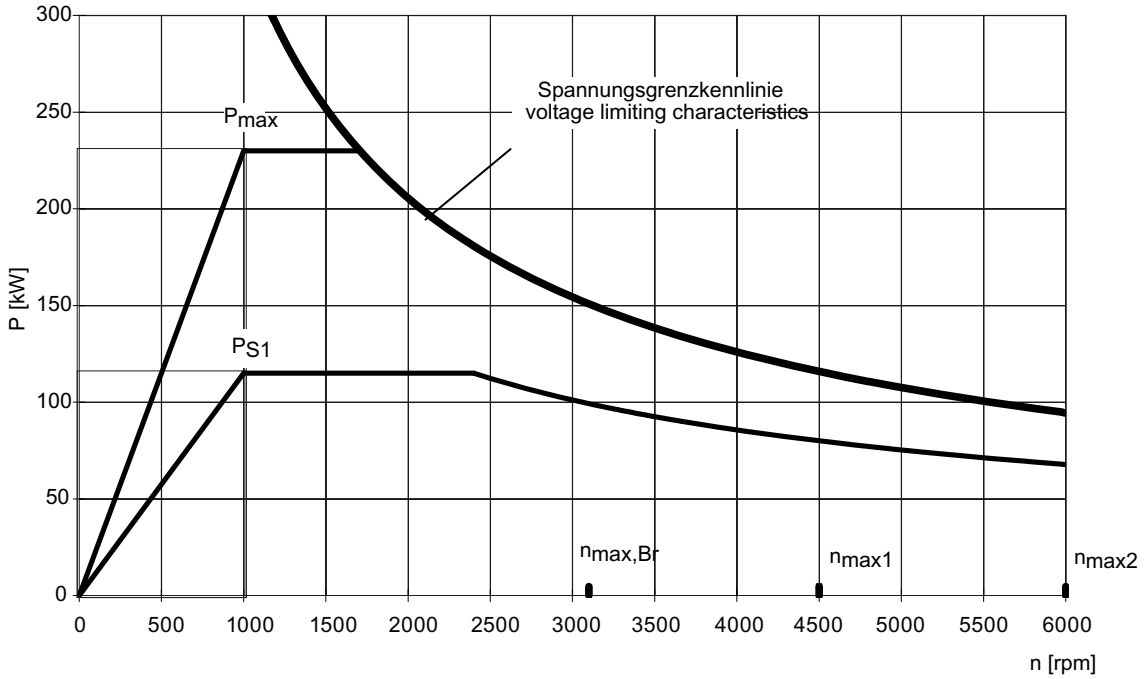



Tabella 4- 556 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 115 | 1098 | 235 | 4500 | 6000 | - | 3100 | 2400 | 2197 | 470 | 1098 | 235 |



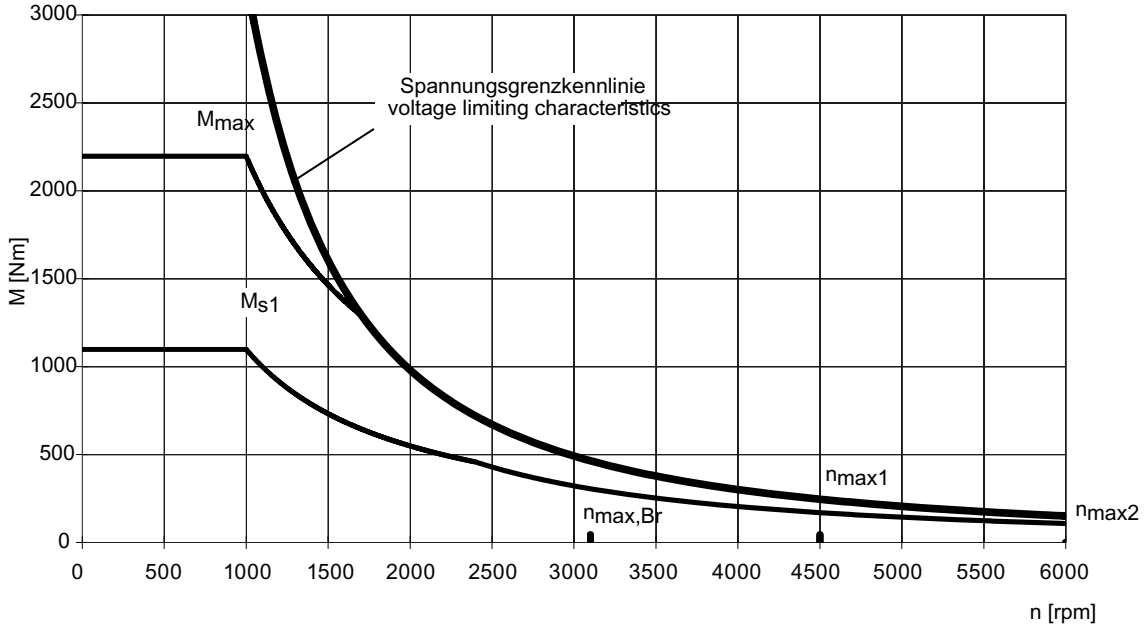
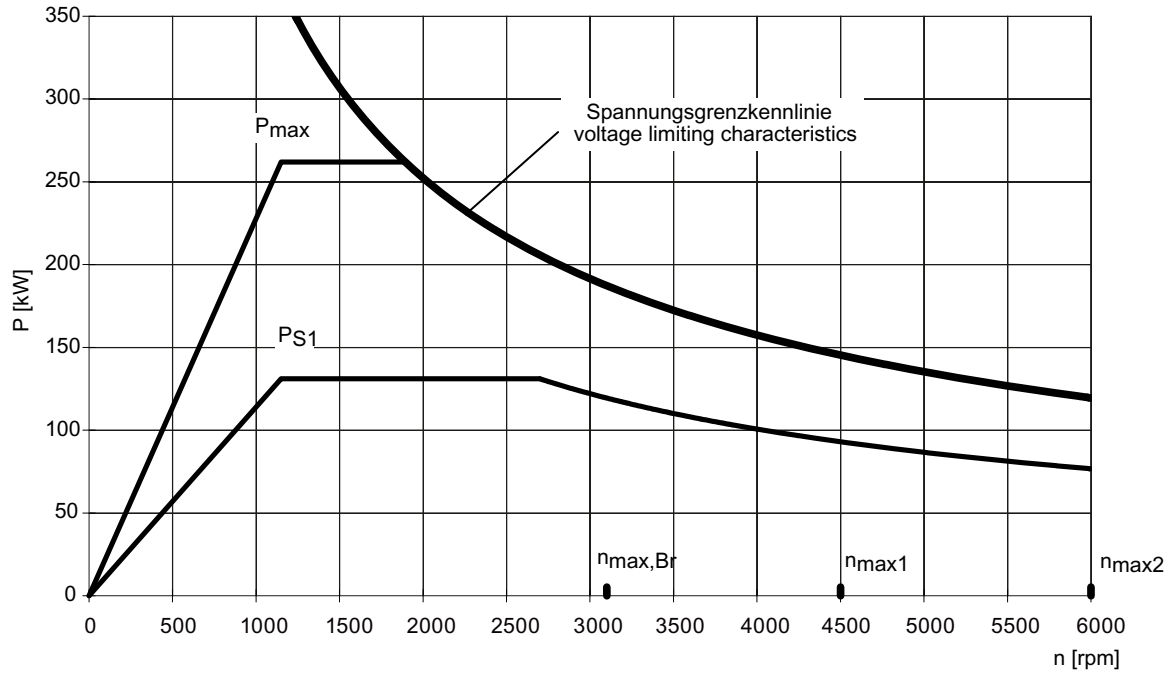



Tabella 4- 557 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 131 | 1088 | 230 | 4500 | 6000 | - | 3100 | 2700 | 2176 | 460 | 1088 | 230 |
| 1000 | 114 | 1088 | 230 | | | | | 3300 | | | | |



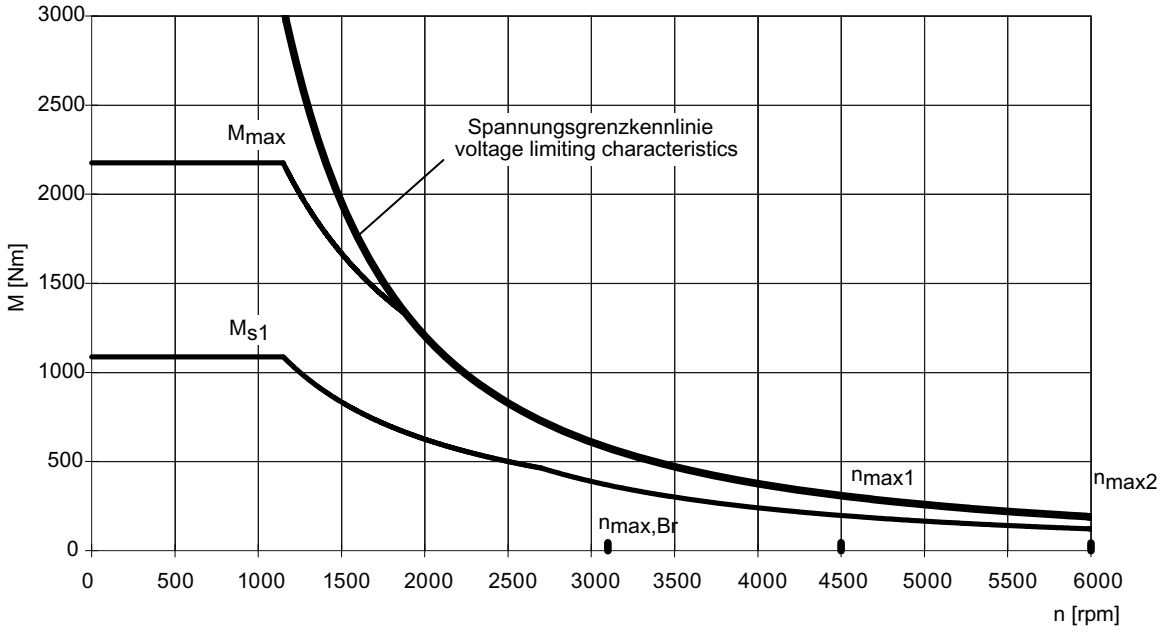
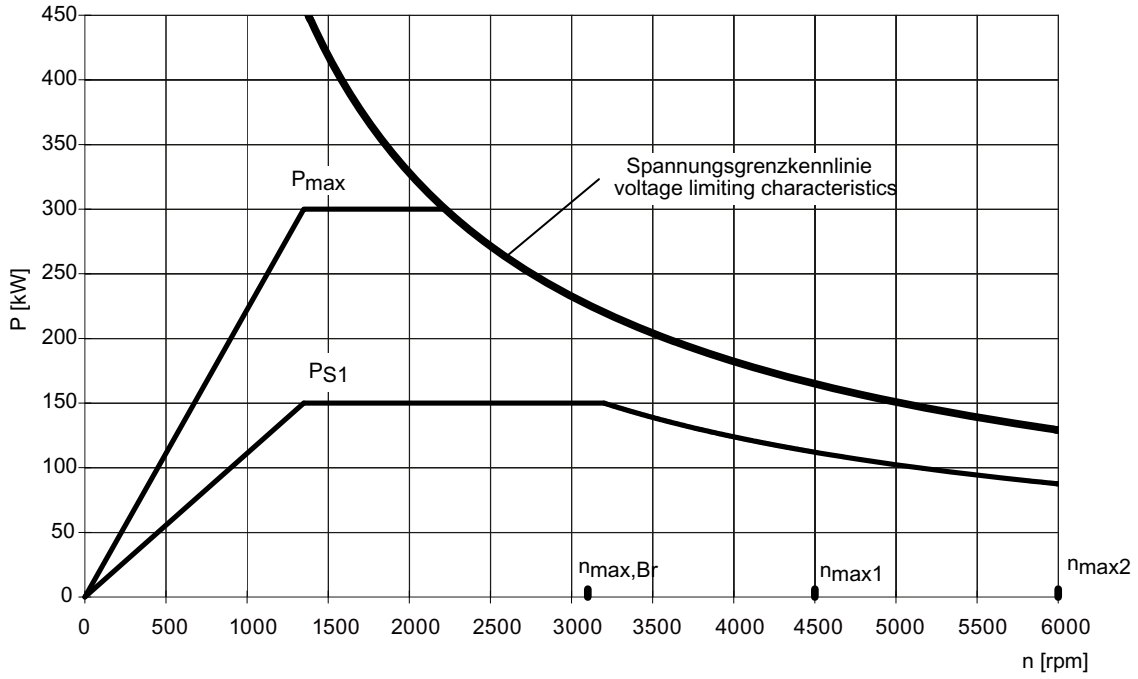



Tabella 4- 558 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 150 | 1061 | 225 | 4500 | 6000 | - | 3100 | 3200 | 2122 | 450 | 1061 | 225 |



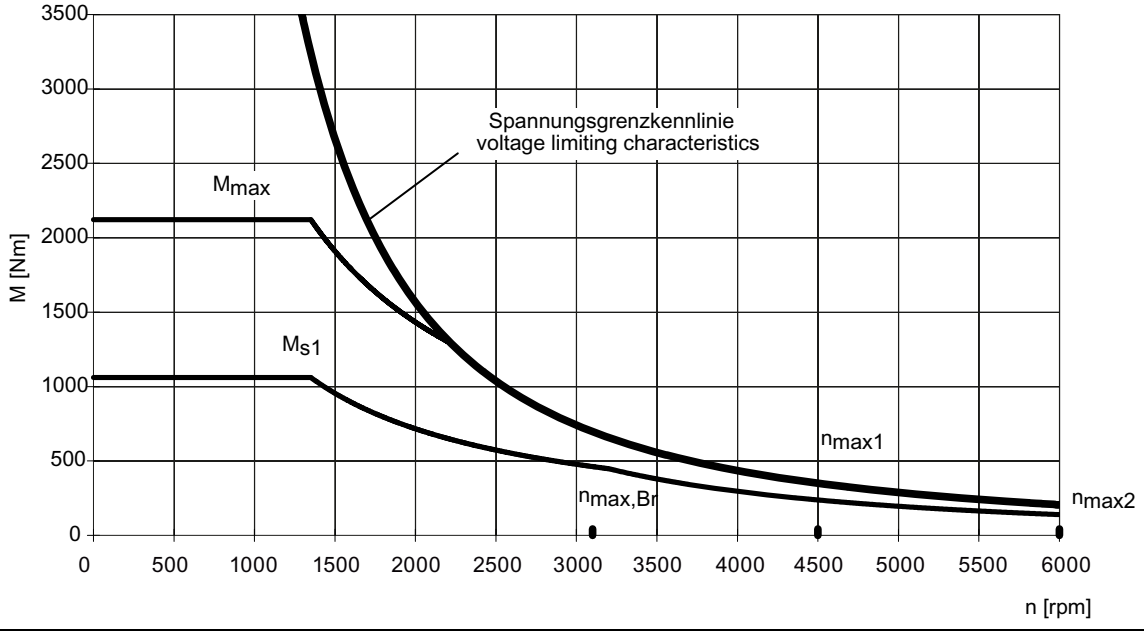
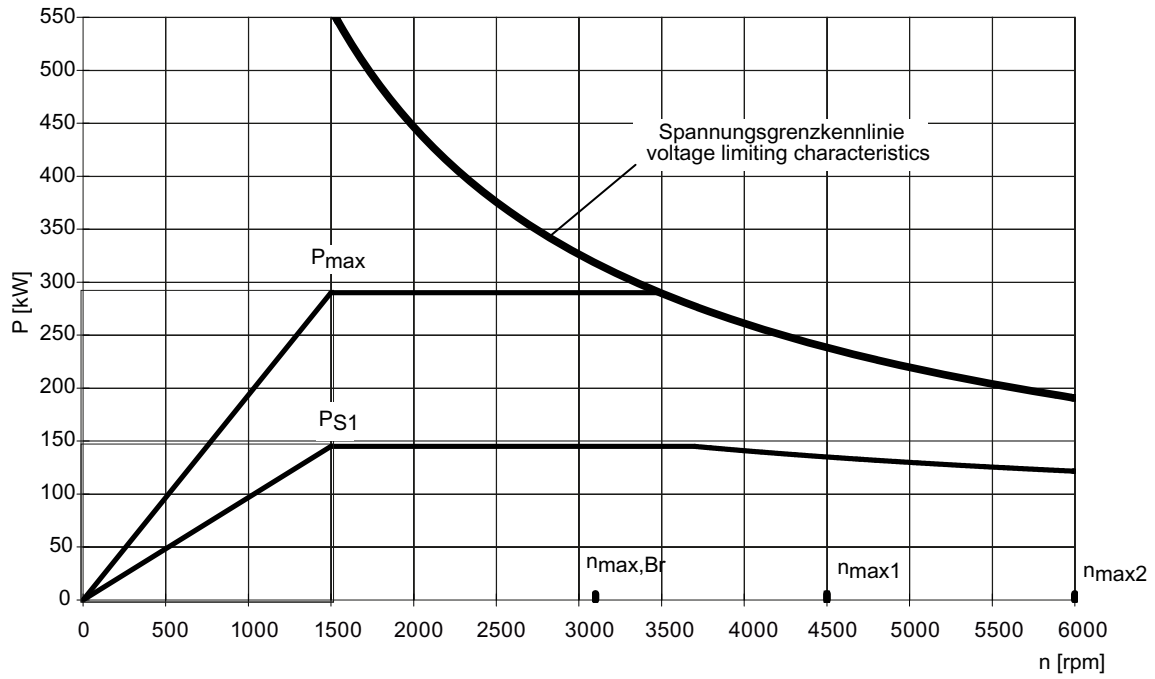



Tabella 4- 559 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 145 | 923 | 295 | 4500 | 6000 | - | 3100 | 3700 | 1846 | 590 | 923 | 295 |



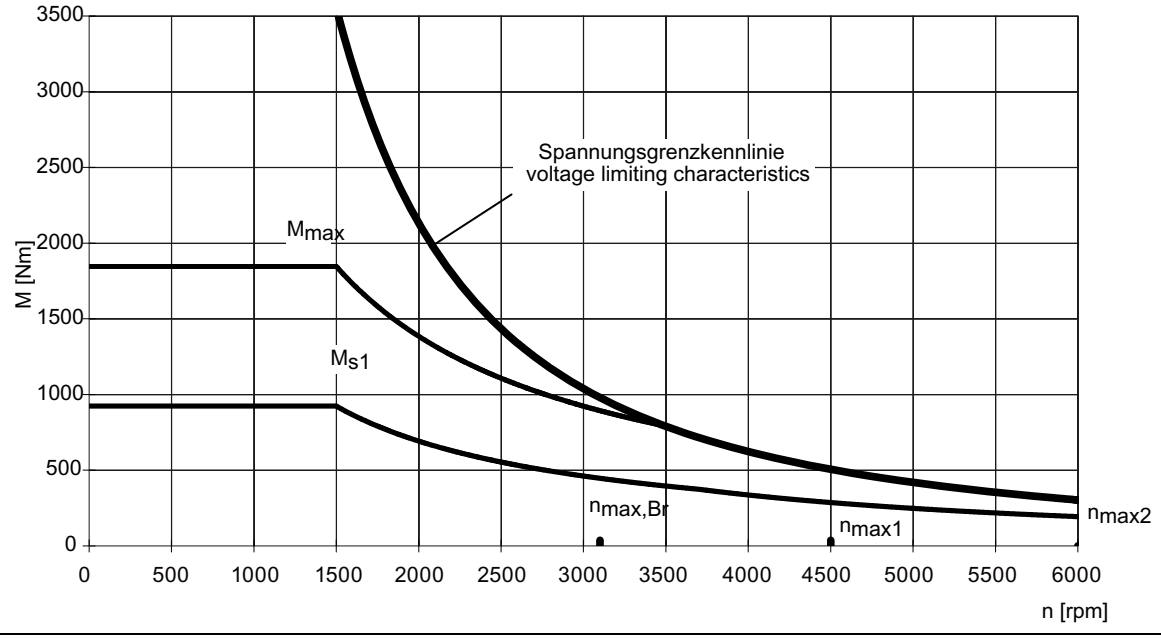
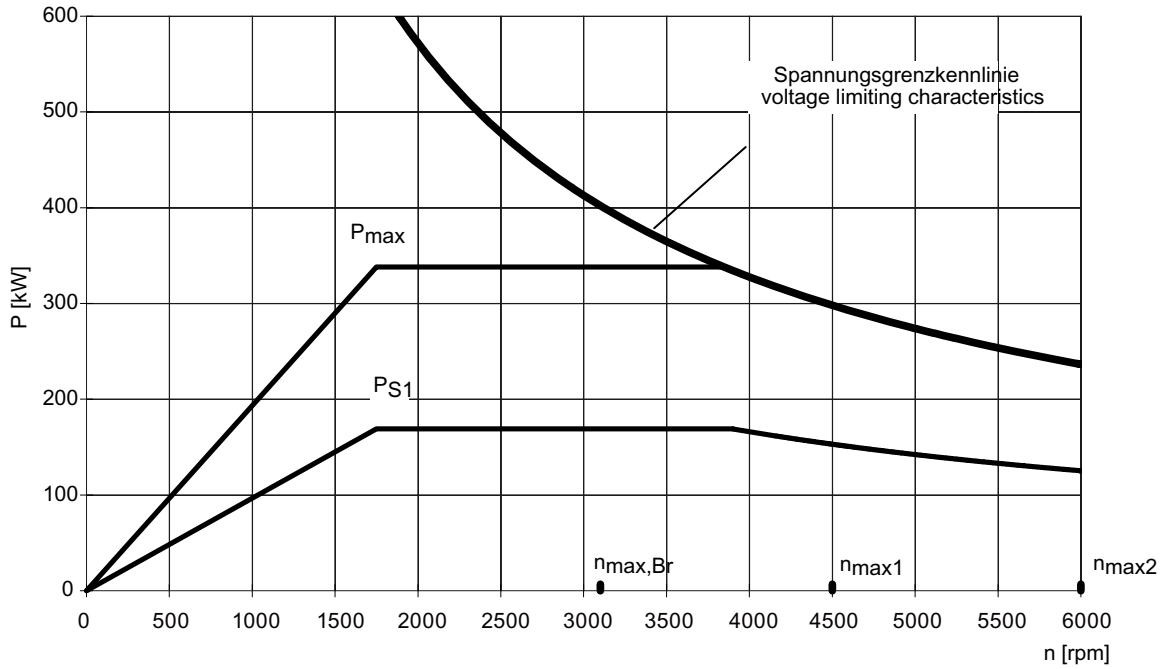



Tabella 4- 560 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 169 | 922 | 295 | 4500 | 6000 | - | 3100 | 3900 | 1845 | 590 | 922 | 295 |
| 1500 | 145 | 922 | 295 | | | | | 4500 | | | | |



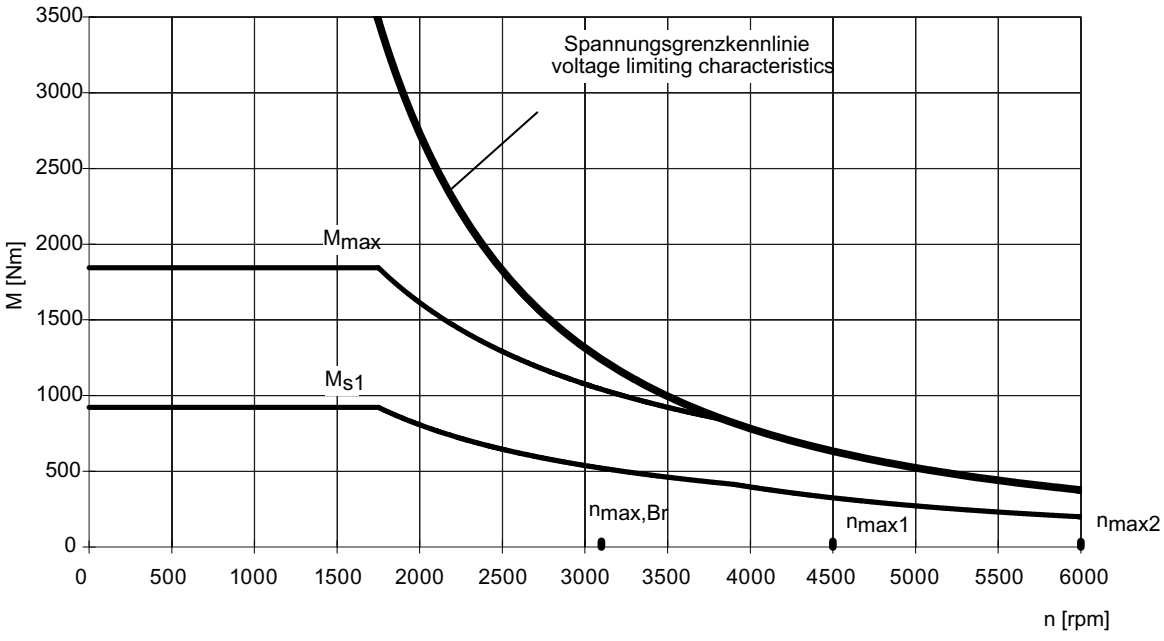
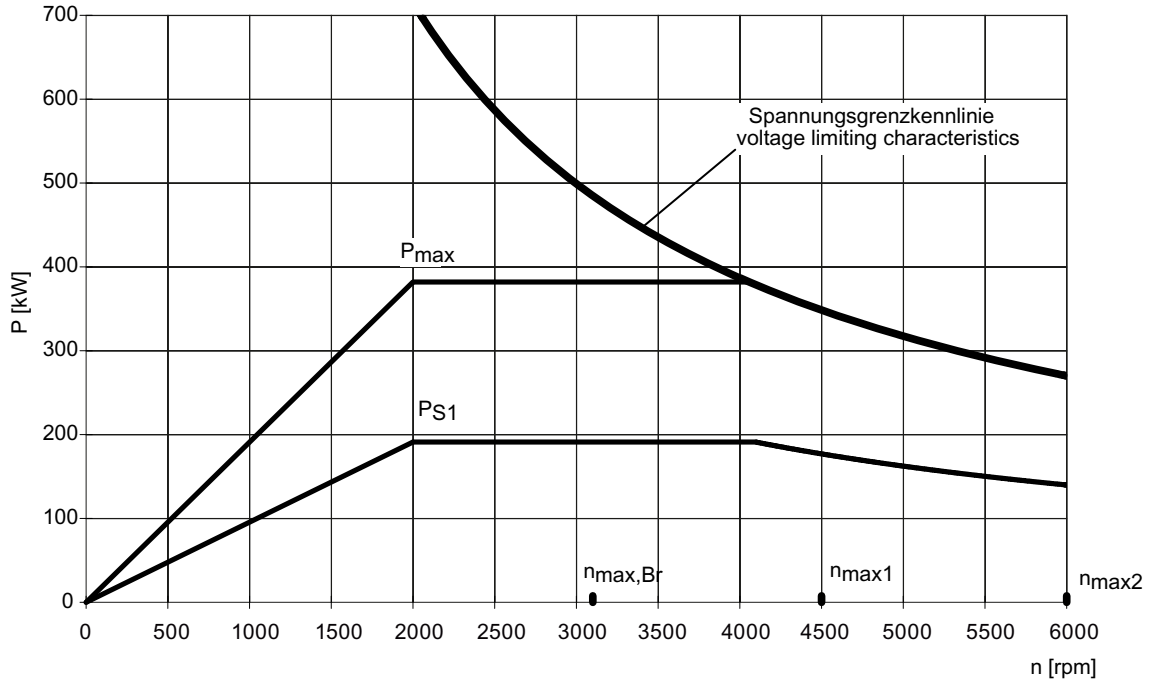



Tabella 4- 561 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 191 | 912 | 290 | 4500 | 6000 | - | 3100 | 4100 | 1824 | 580 | 912 | 290 |



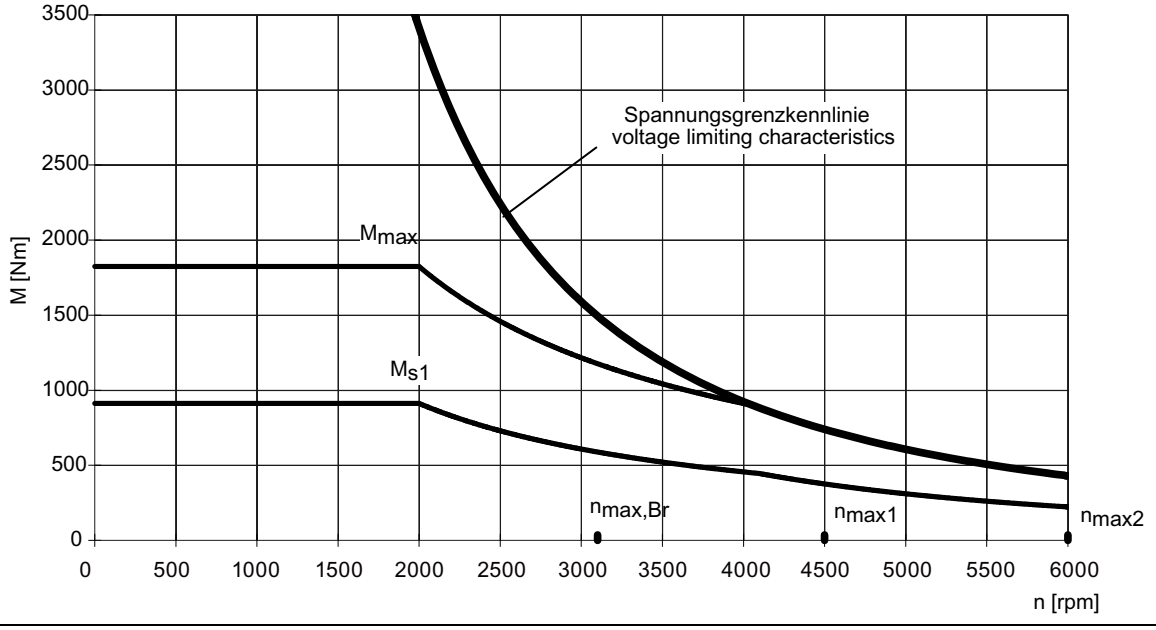
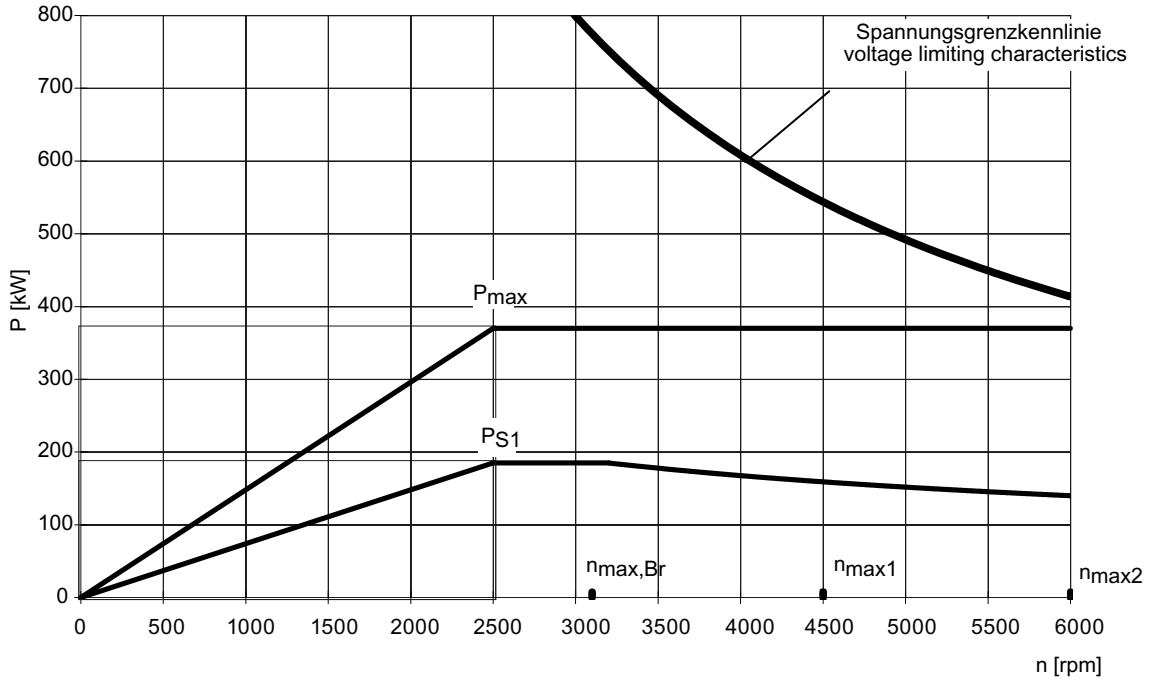



Tabella 4- 562 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-□□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 185 | 707 | 380 | 4500 | 6000 | - | 3100 | 3200 | 1413 | 760 | 707 | 380 |



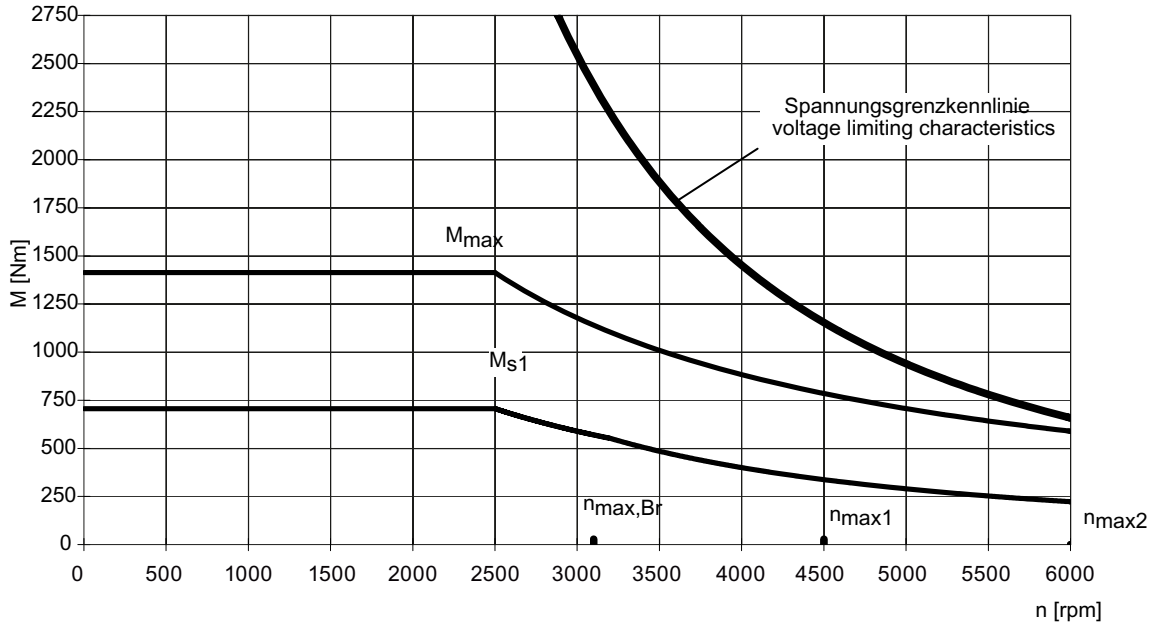
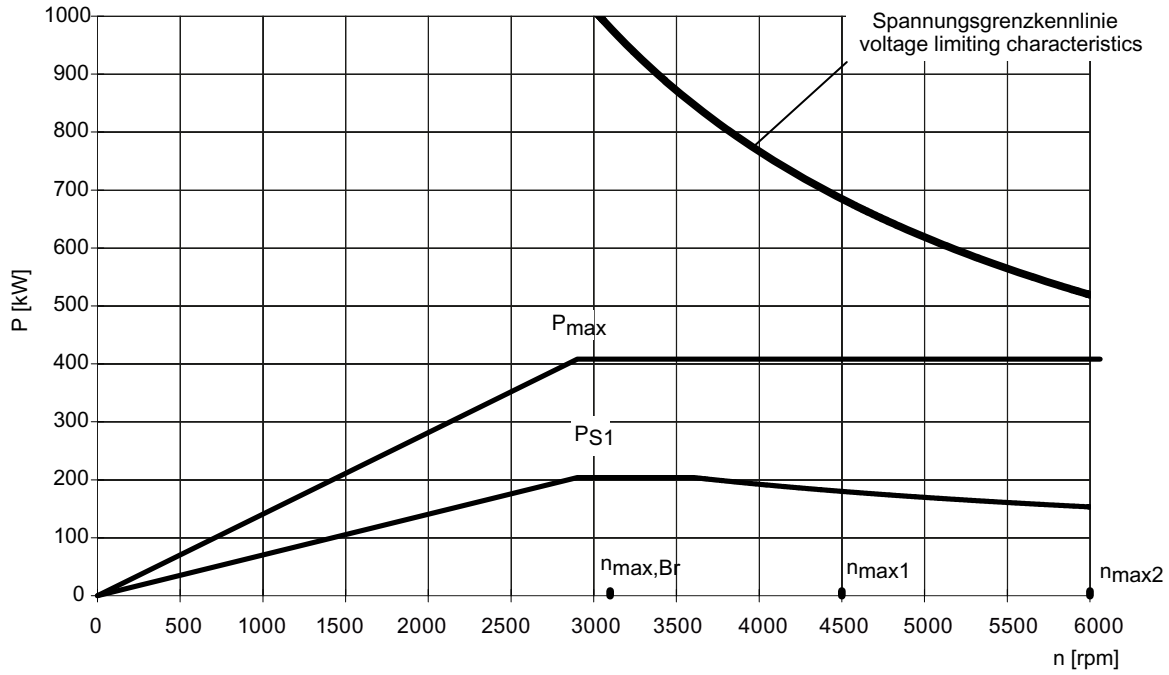



Tabella 4- 563 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-□□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 204 | 672 | 360 | 4500 | 6000 | - | 3100 | 3600 | 1343 | 720 | 672 | 360 |
| 2500 | 176 | 672 | 360 | | | | | 4500 | | | | |



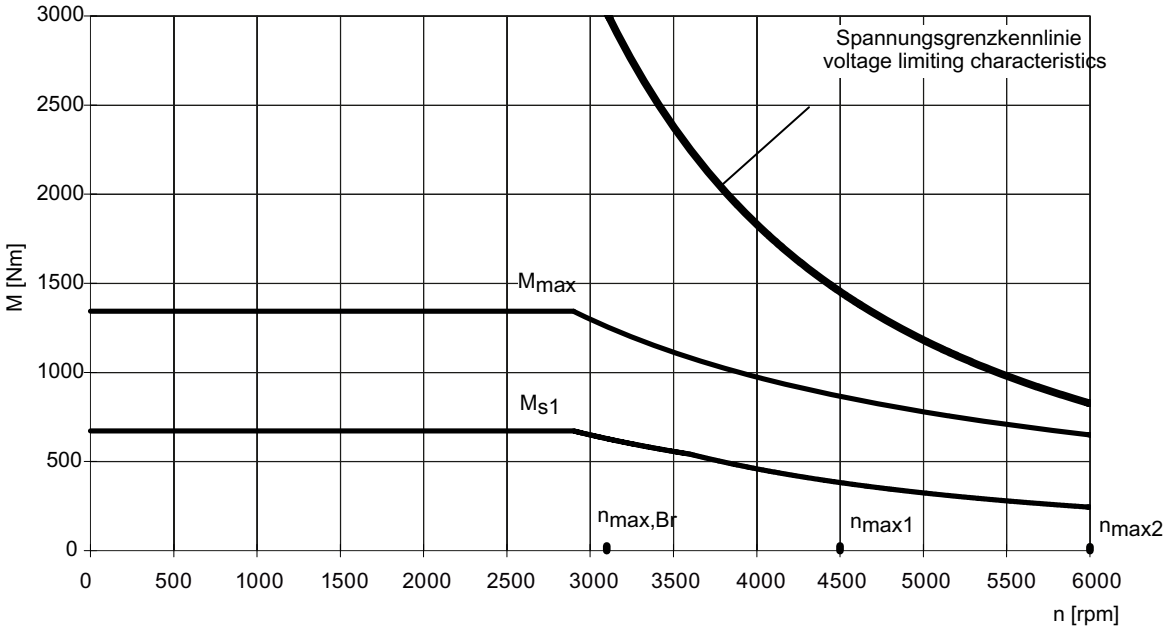
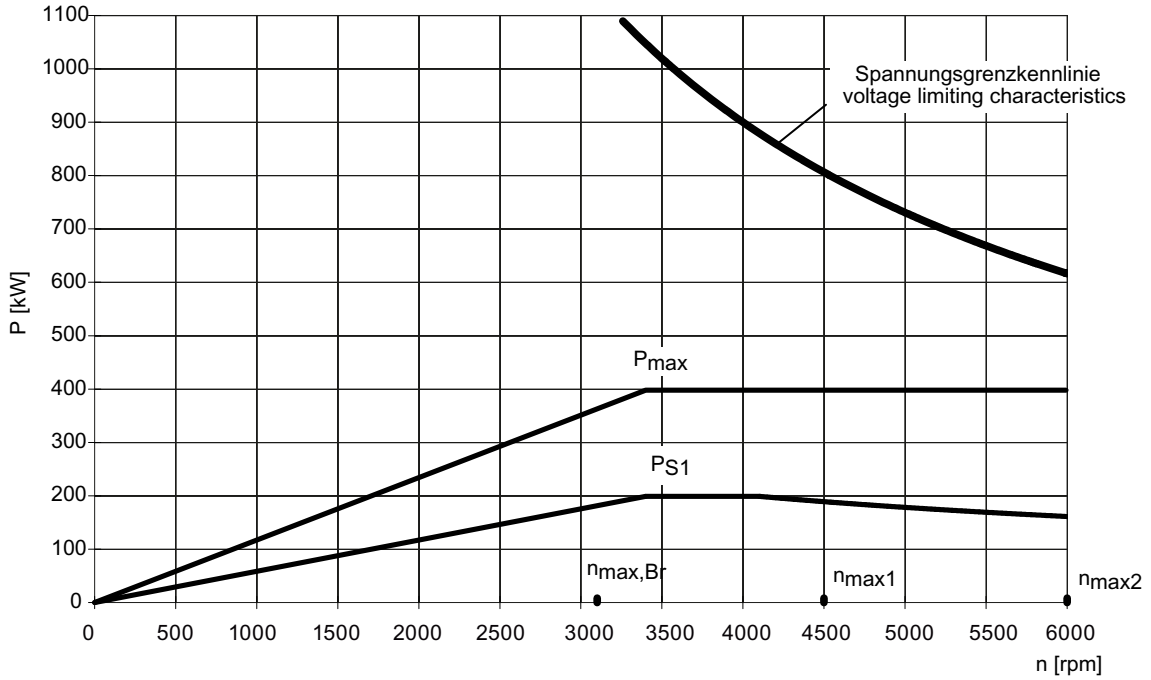



Tabella 4- 564 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-□□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3400 | 199 | 559 | 310 | 4500 | 6000 | - | 3100 | 4100 | 1118 | 620 | 559 | 310 |



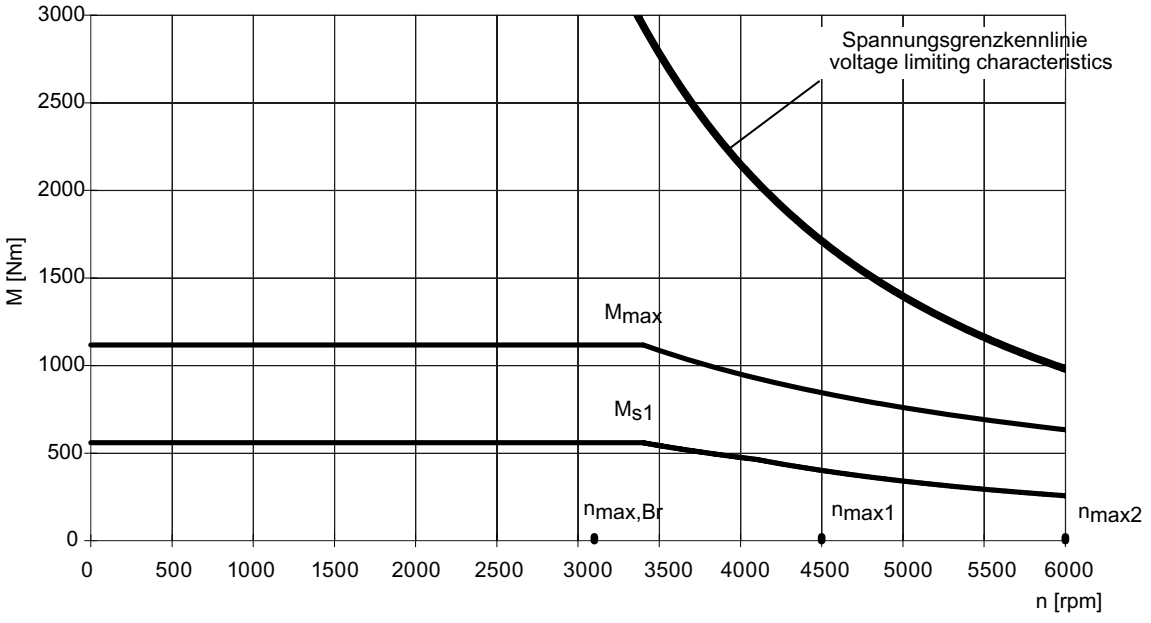
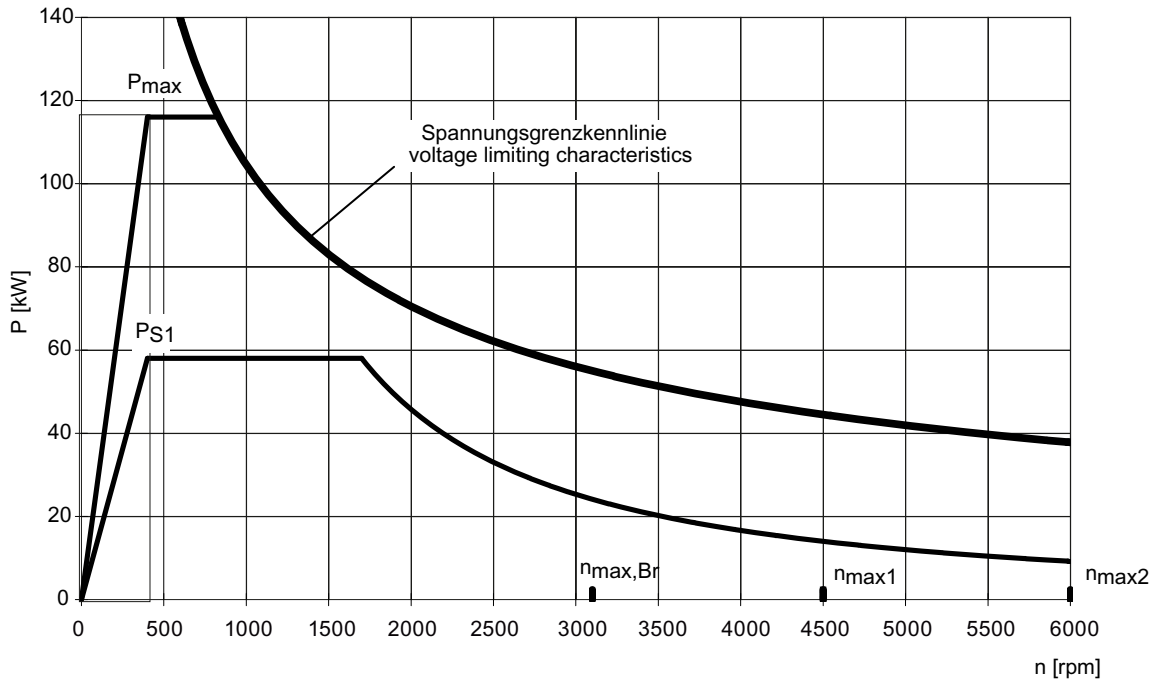



Tabella 4- 565 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 58 | 1385 | 154 | 4500 | 6000 | - | 3100 | 1700 | 2769 | 308 | 1385 | 154 |



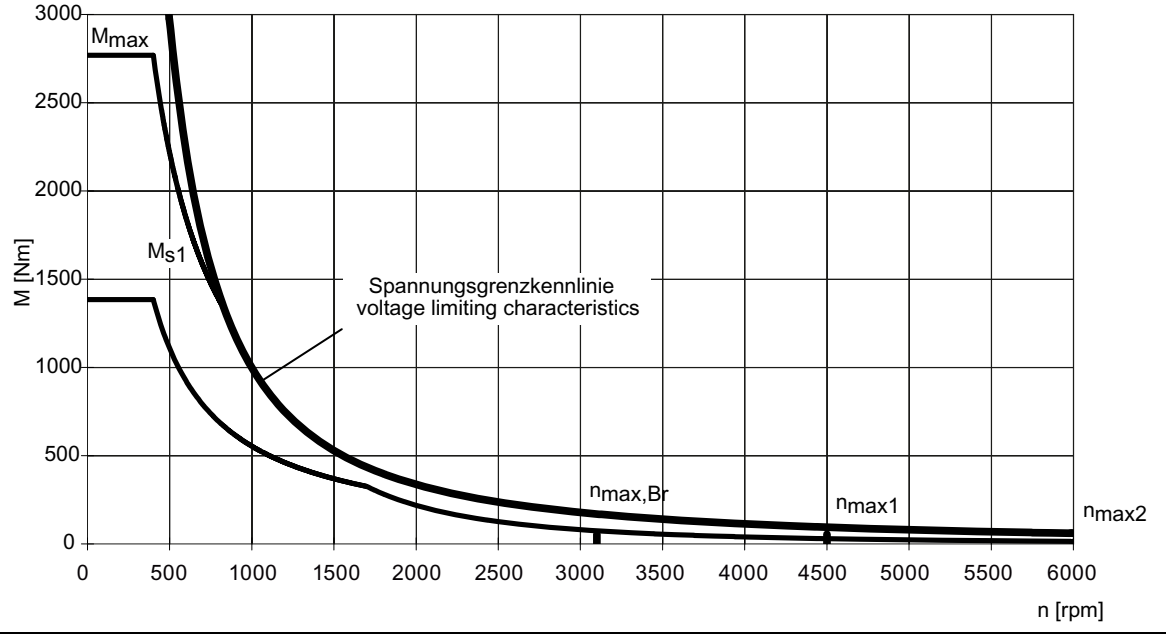
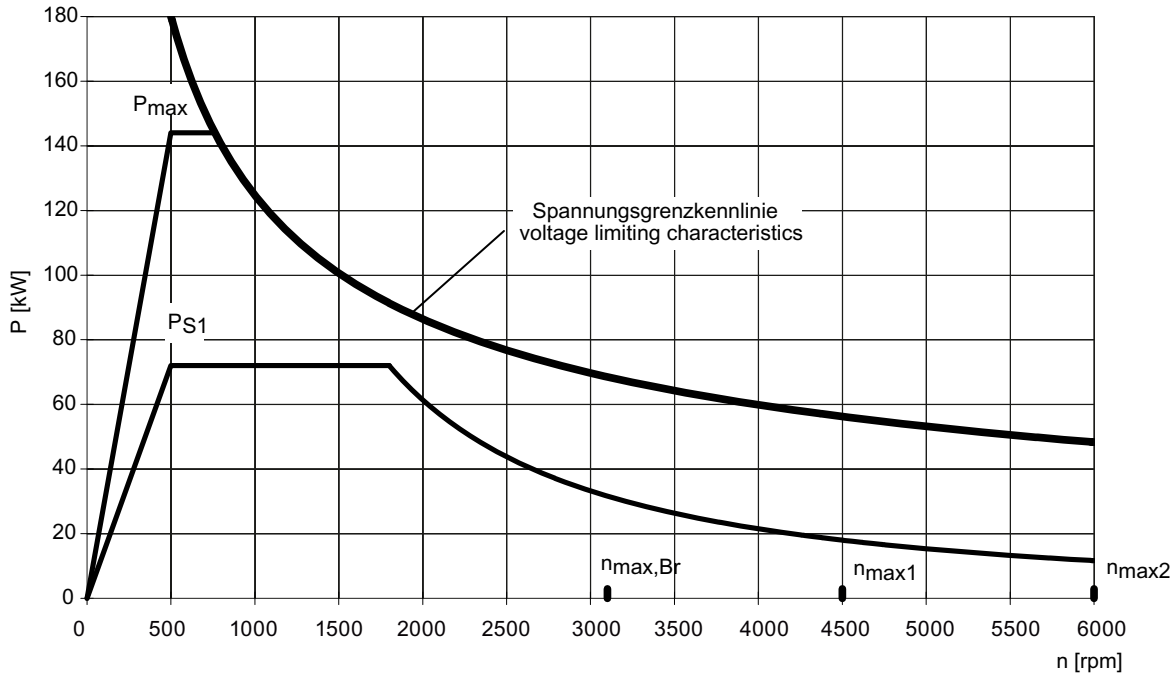



Tabella 4- 566 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 72 | 1375 | 150 | 4500 | 6000 | - | 3100 | 1800 | 2750 | 300 | 1375 | 150 |
| 400 | 58 | 1375 | 150 | | | | | 2100 | | | | |



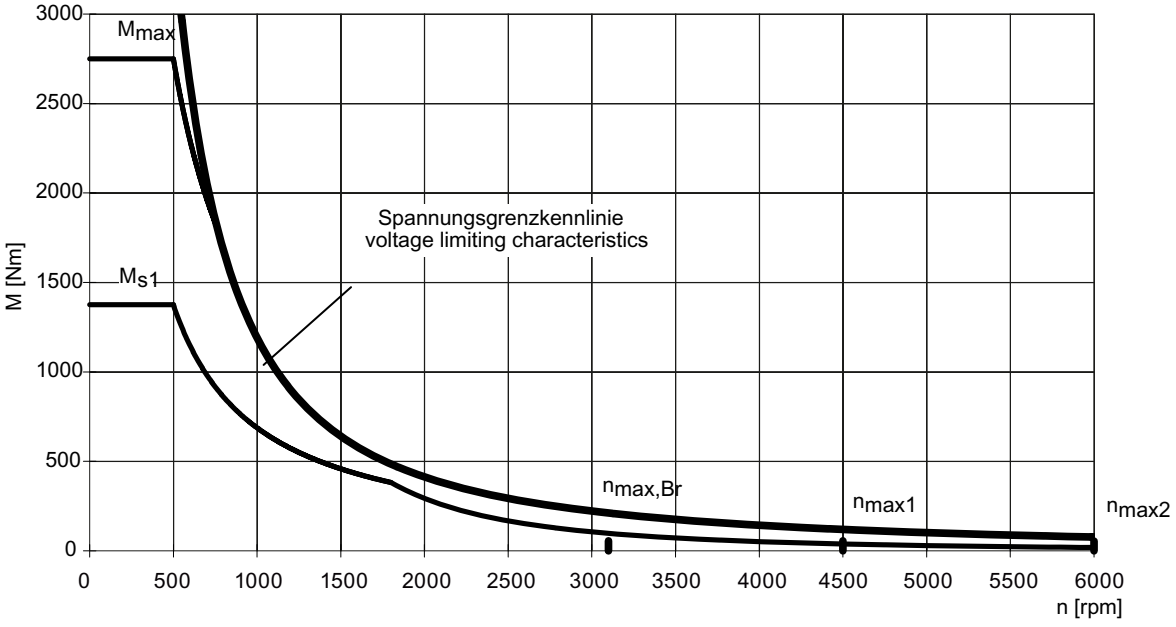
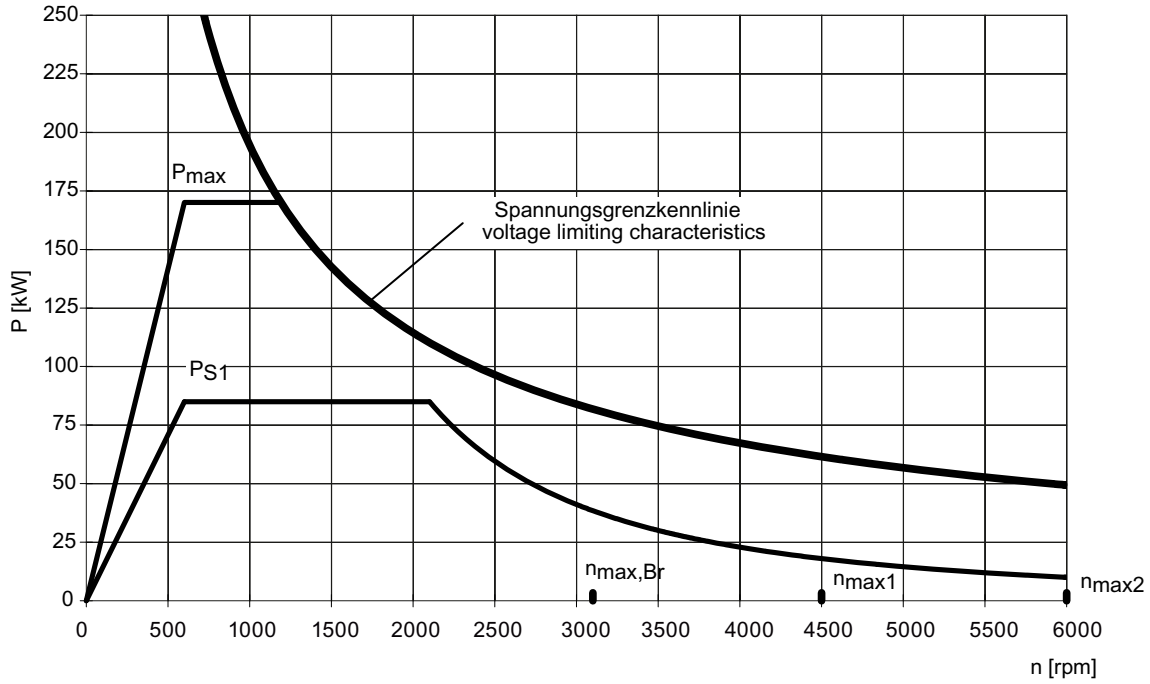



Tabella 4- 567 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 85 | 1353 | 148 | 4500 | 6000 | - | 3100 | 2100 | 2706 | 296 | 1353 | 148 |



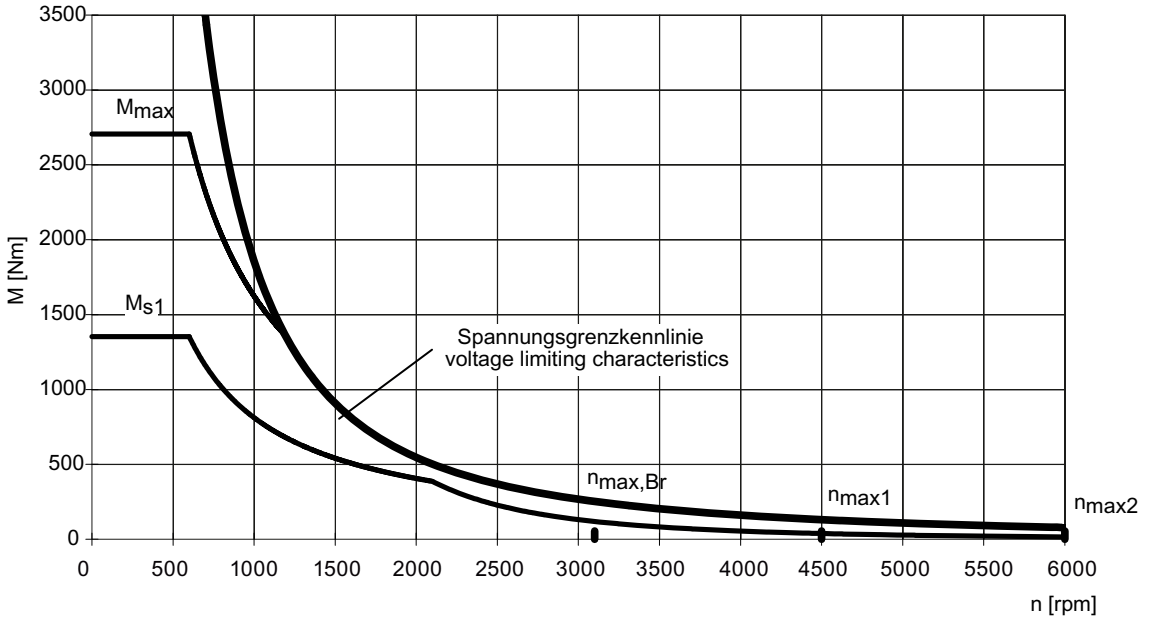
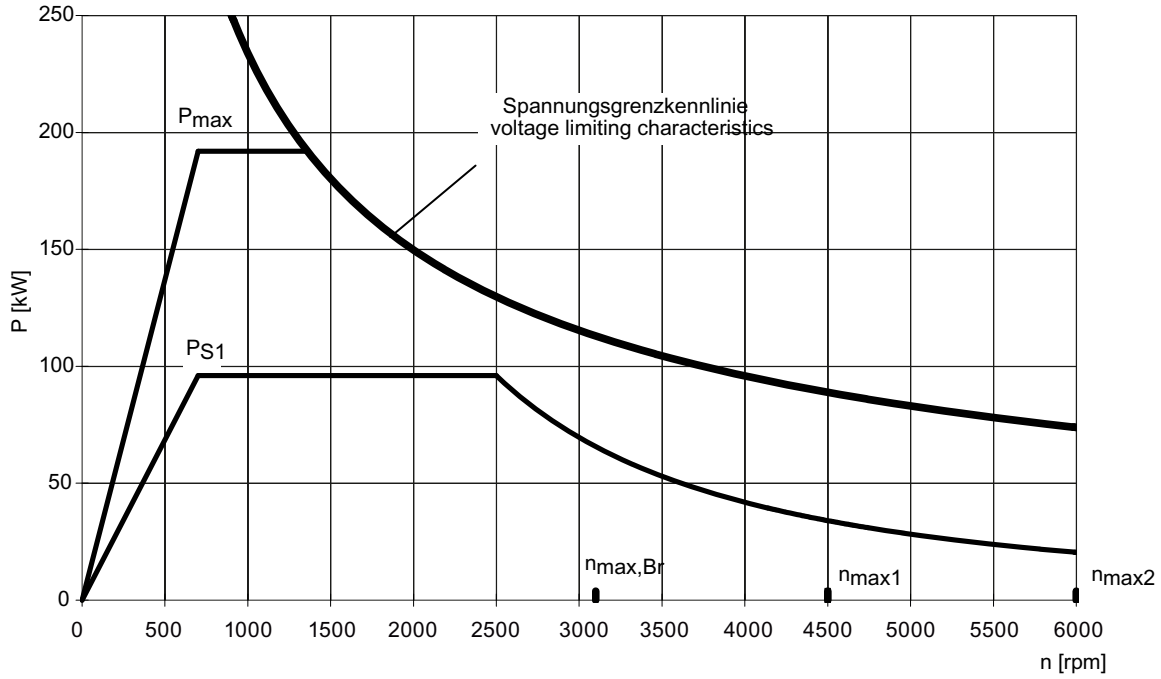



Tabella 4- 568 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 96 | 1310 | 210 | 4500 | 6000 | - | 3100 | 2500 | 2619 | 420 | 1310 | 210 |



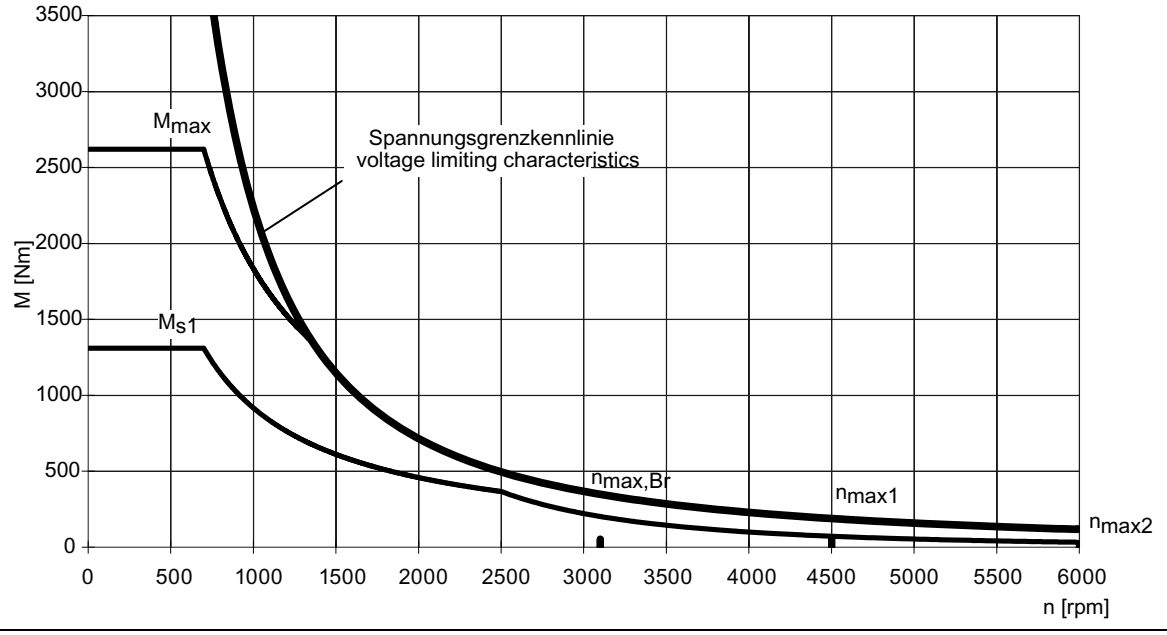
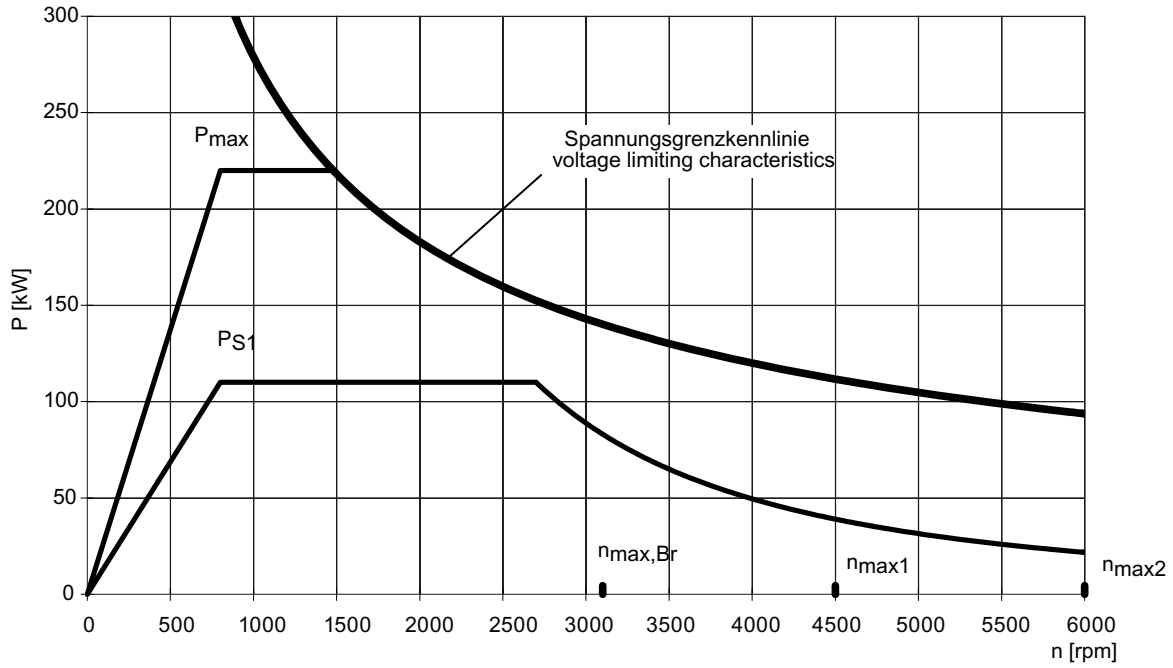



Tabella 4- 569 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 110 | 1313 | 210 | 4500 | 6000 | - | 3100 | 2700 | 2626 | 420 | 1313 | 210 |
| 700 | 96 | 1313 | 210 | | | | | 2900 | | | | |



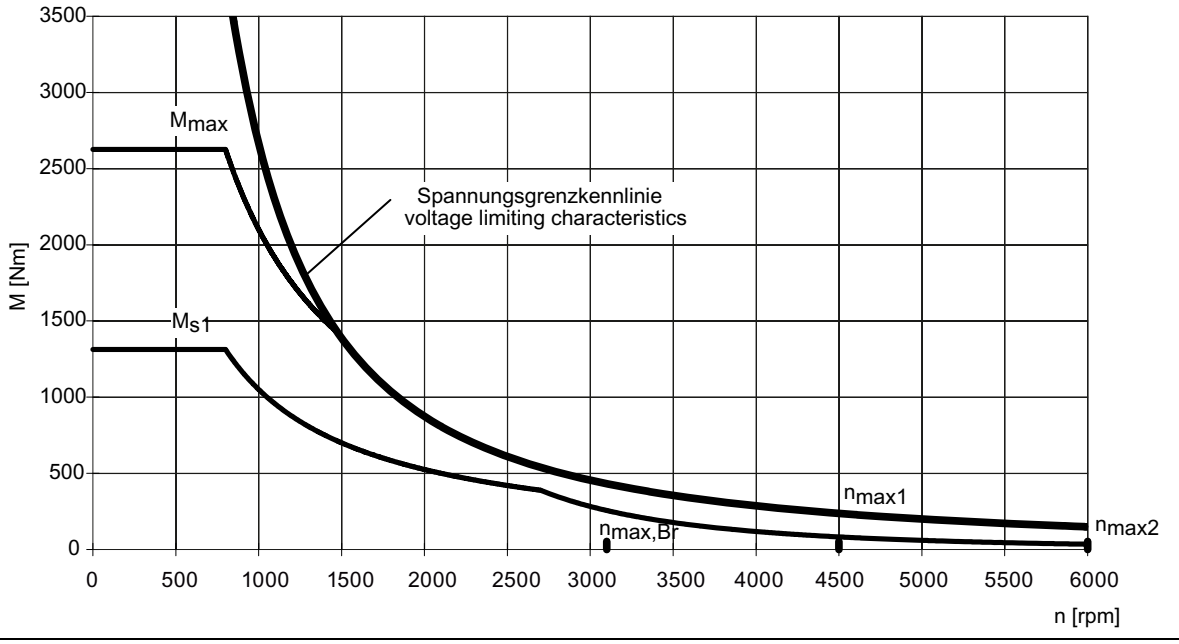
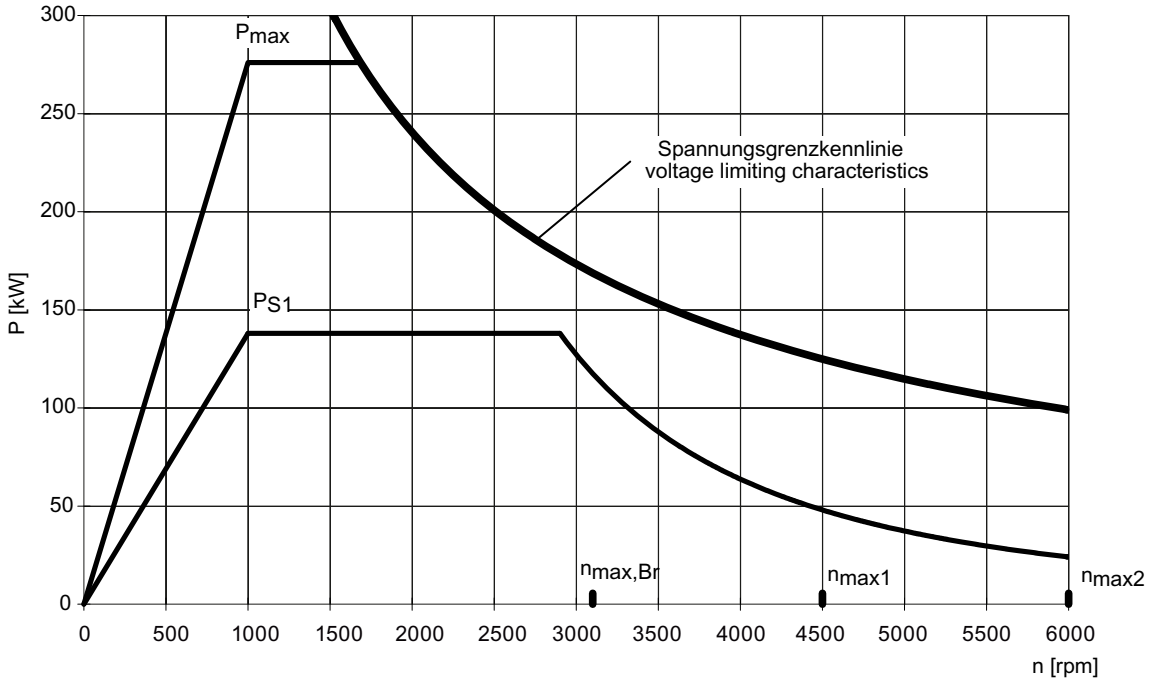



Tabella 4- 570 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 138 | 1318 | 210 | 4500 | 6000 | - | 3100 | 2900 | 2636 | 420 | 1318 | 210 |



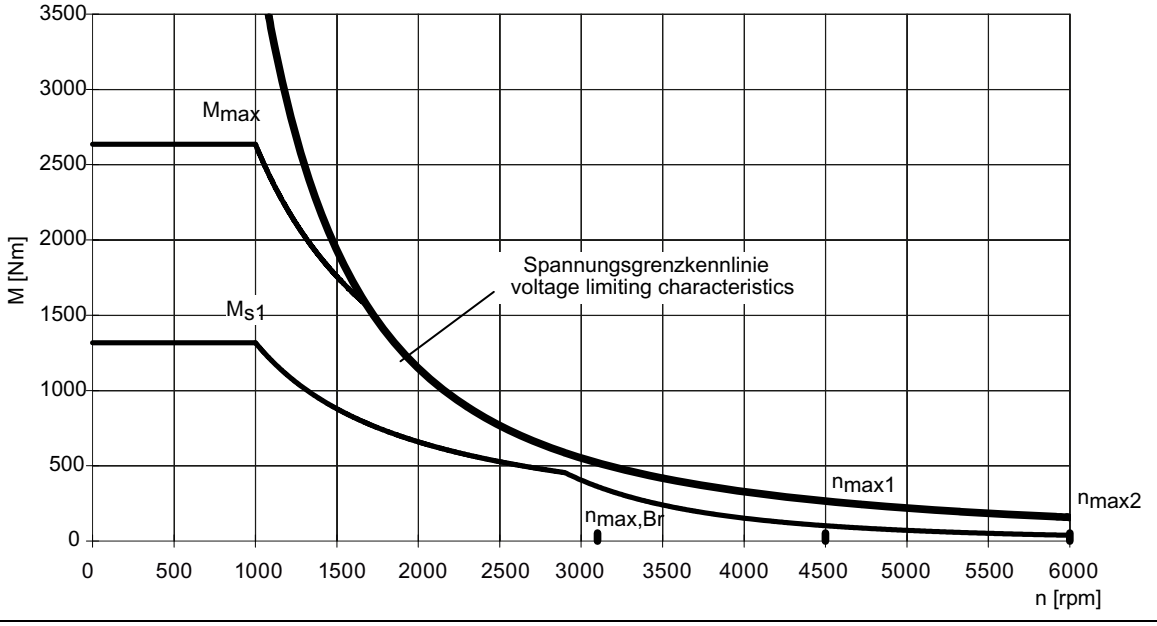
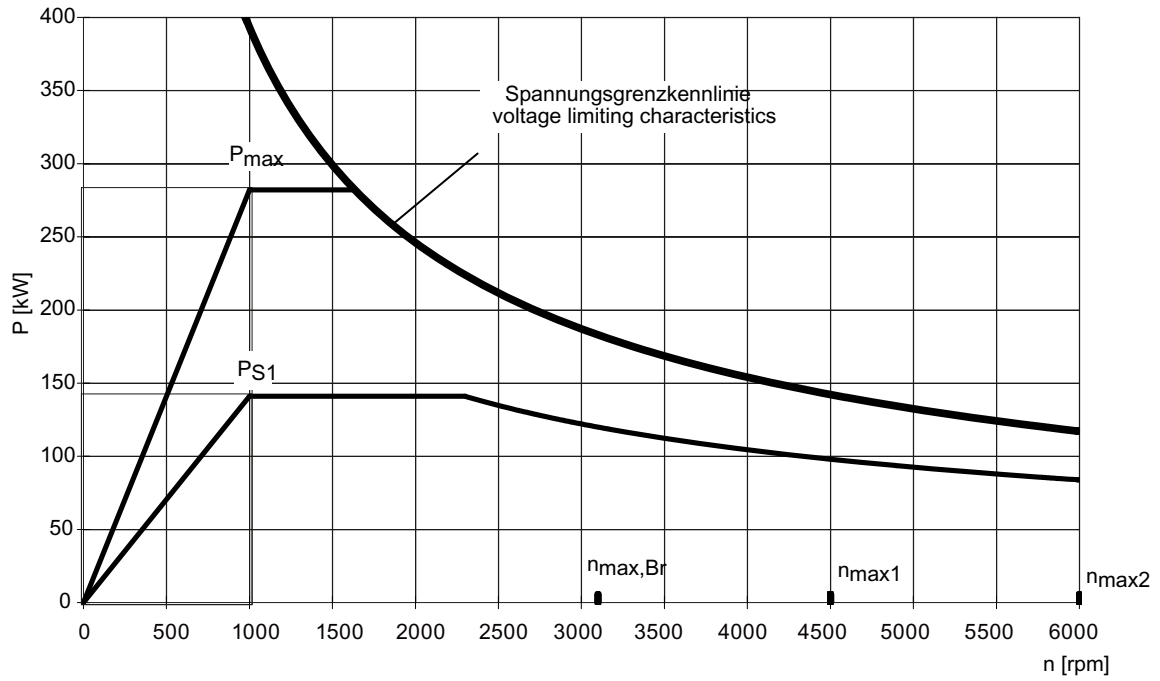



Tabella 4- 571 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 141 | 1346 | 280 | 4500 | 6000 | - | 3100 | 2300 | 2693 | 560 | 1346 | 280 |



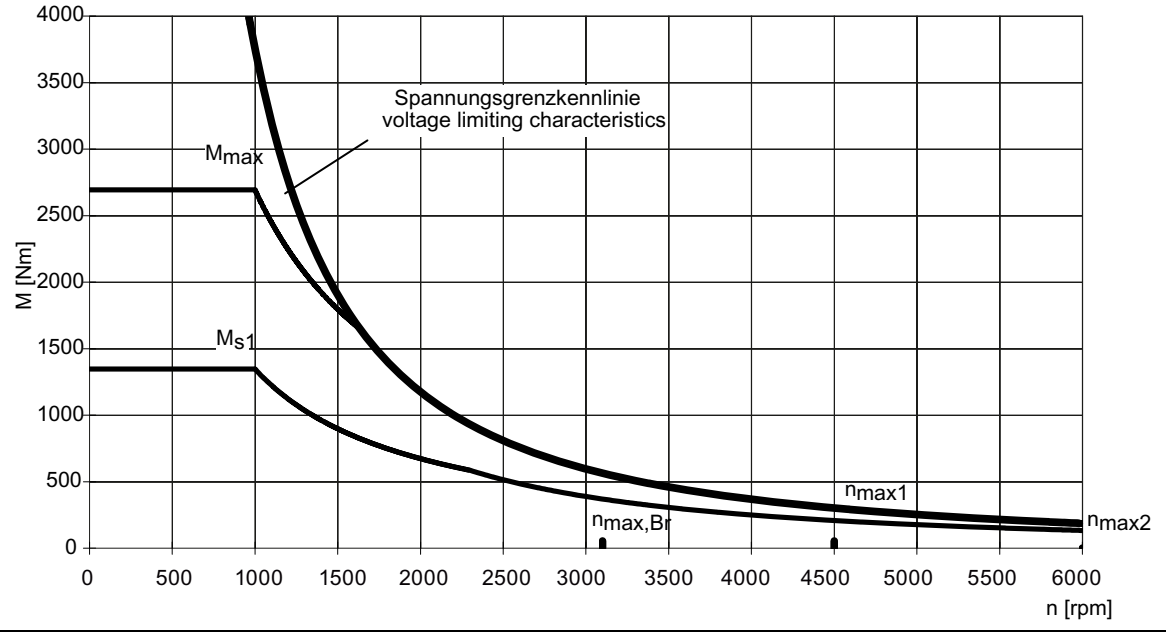
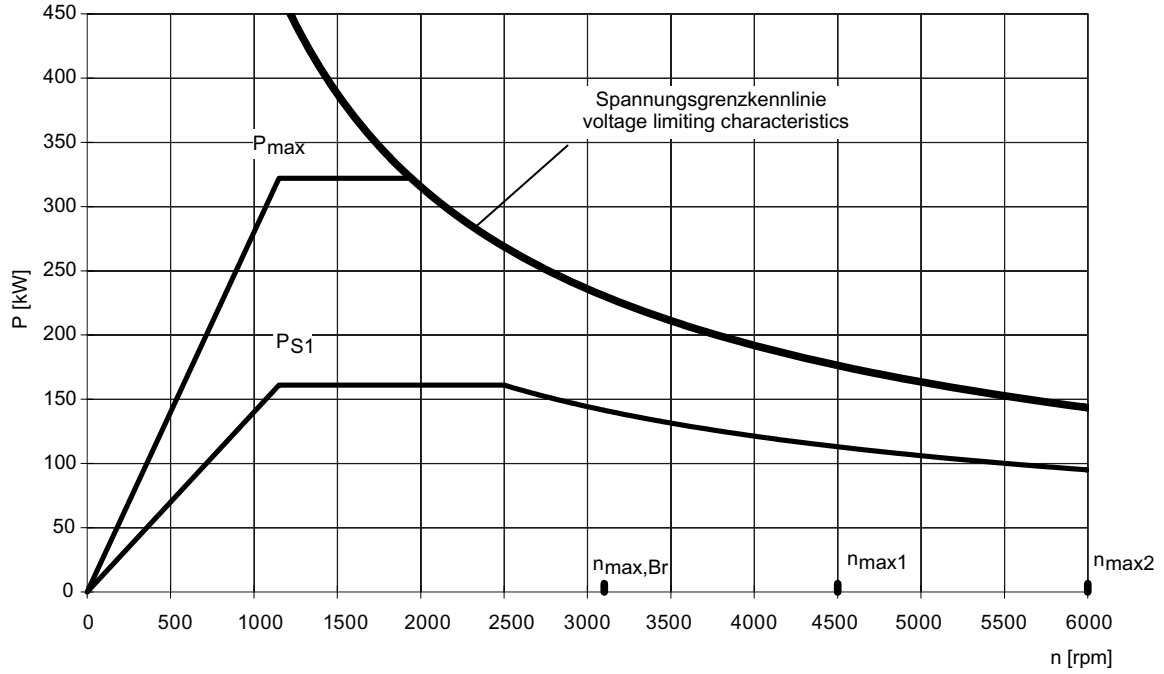



Tabella 4- 572 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 161 | 1337 | 280 | 4500 | 6000 | - | 3100 | 2500 | 2674 | 560 | 1337 | 280 |
| 1000 | 140 | 1337 | 280 | | | | | 3200 | | | | |



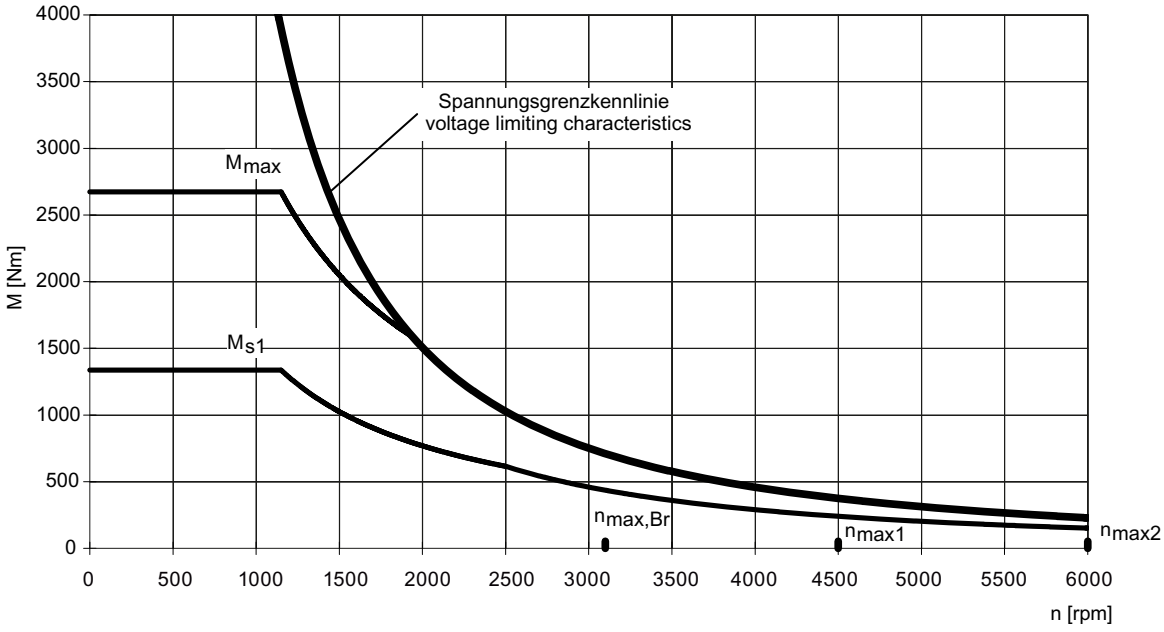
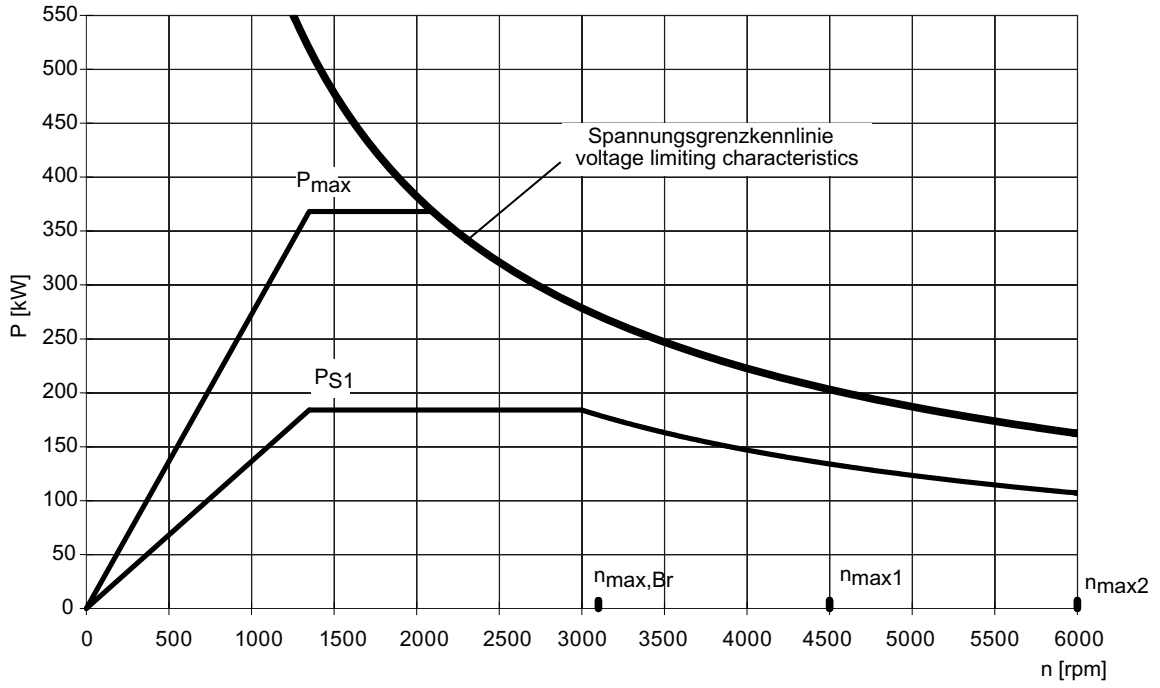



Tabella 4- 573 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 184 | 1302 | 270 | 4500 | 6000 | - | 3100 | 3000 | 2603 | 540 | 1302 | 270 |



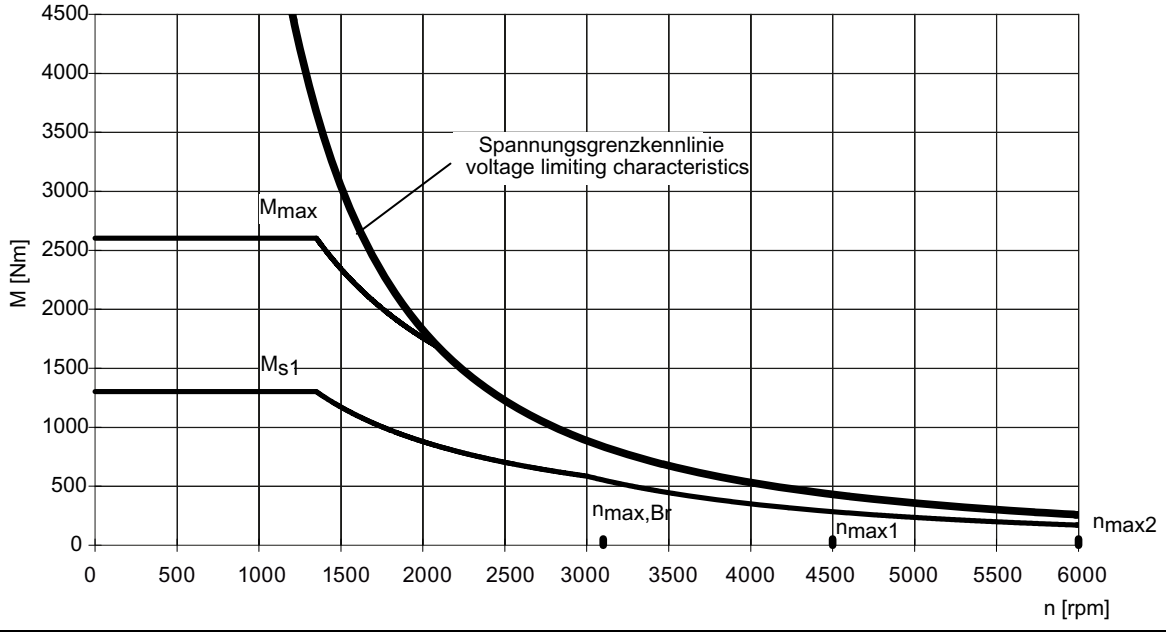
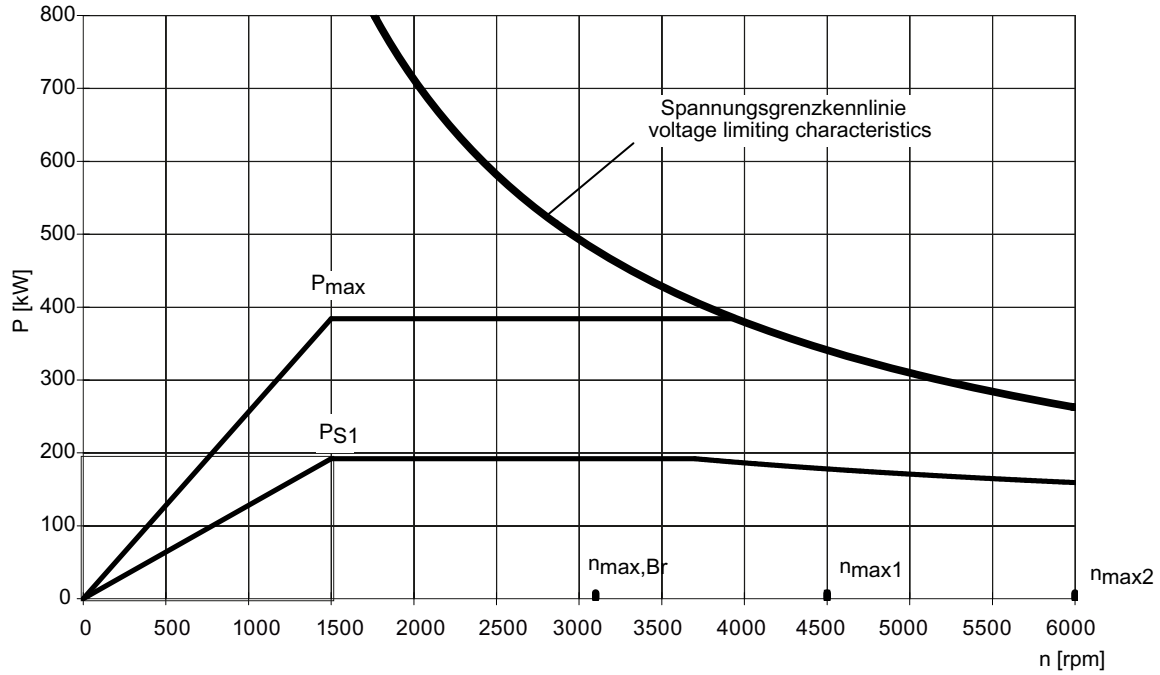



Tabella 4- 574 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 192 | 1222 | 390 | 4500 | 6000 | - | 3100 | 3700 | 2445 | 780 | 1222 | 390 |



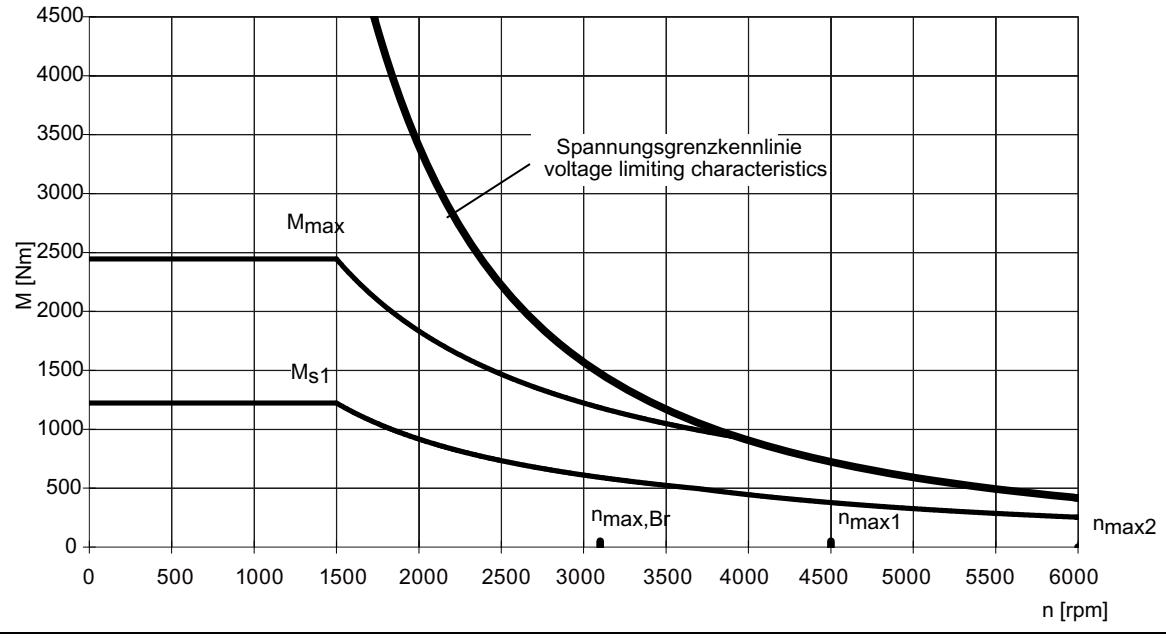
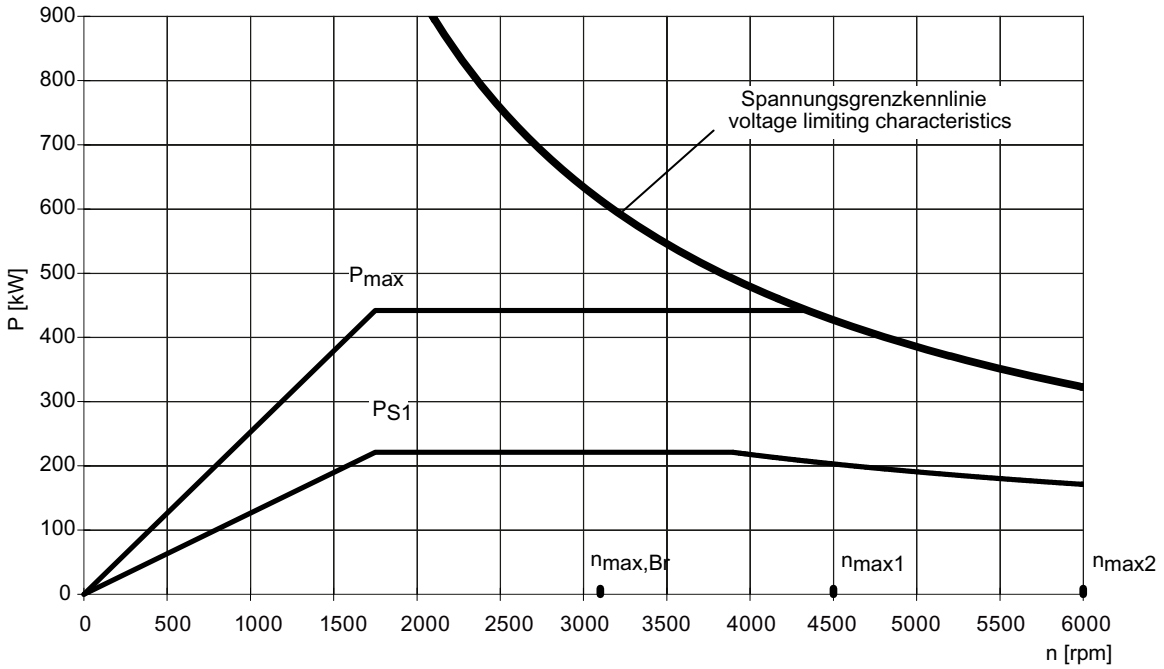



Tabella 4- 575 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 221 | 1206 | 390 | 4500 | 6000 | - | 3100 | 3900 | 2412 | 780 | 1206 | 390 |
| 1500 | 189 | 1206 | 390 | | | | | 4500 | | | | |



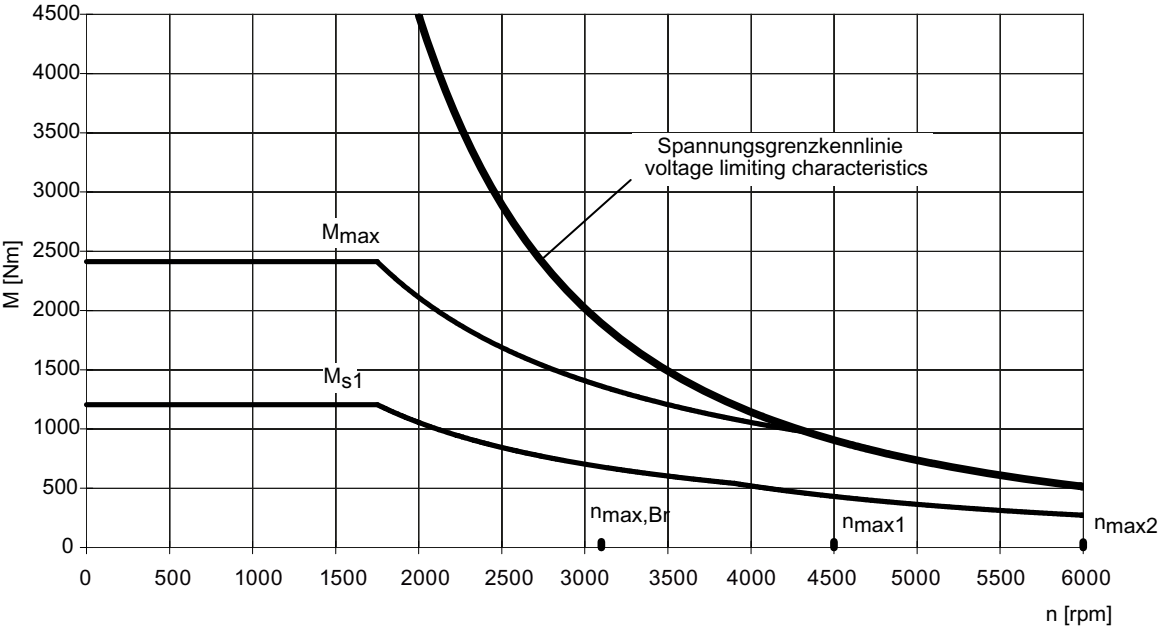
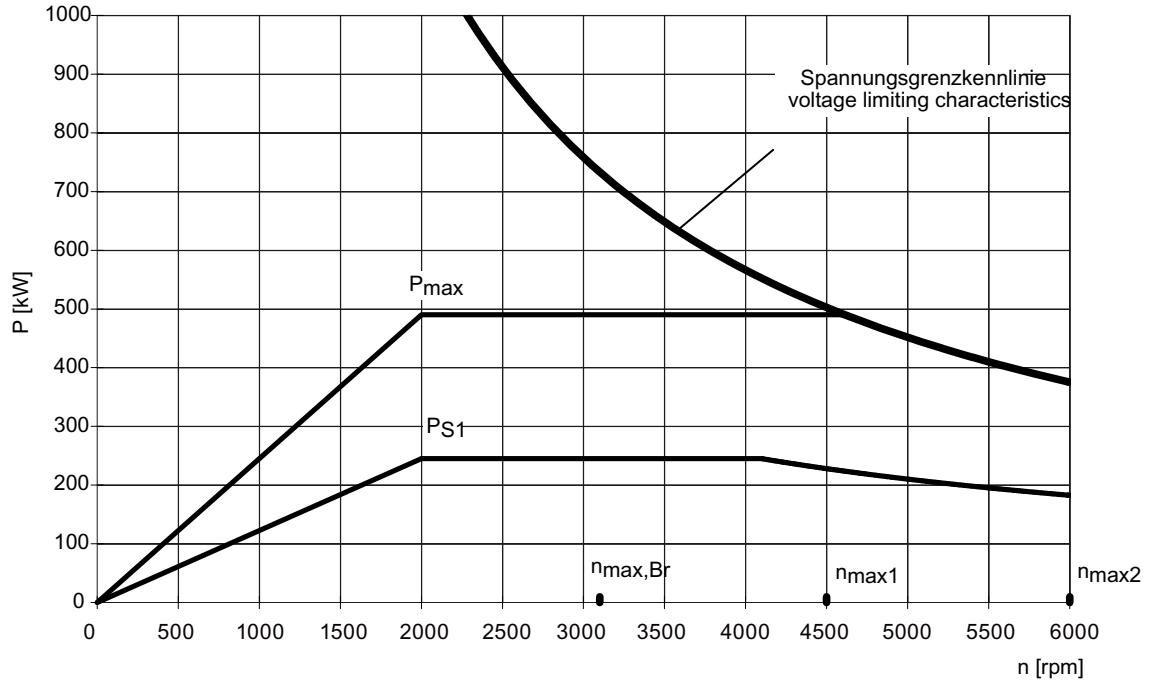



Tabella 4- 576 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 245 | 1170 | 380 | 4500 | 6000 | - | 3100 | 4100 | 2340 | 760 | 1170 | 380 |



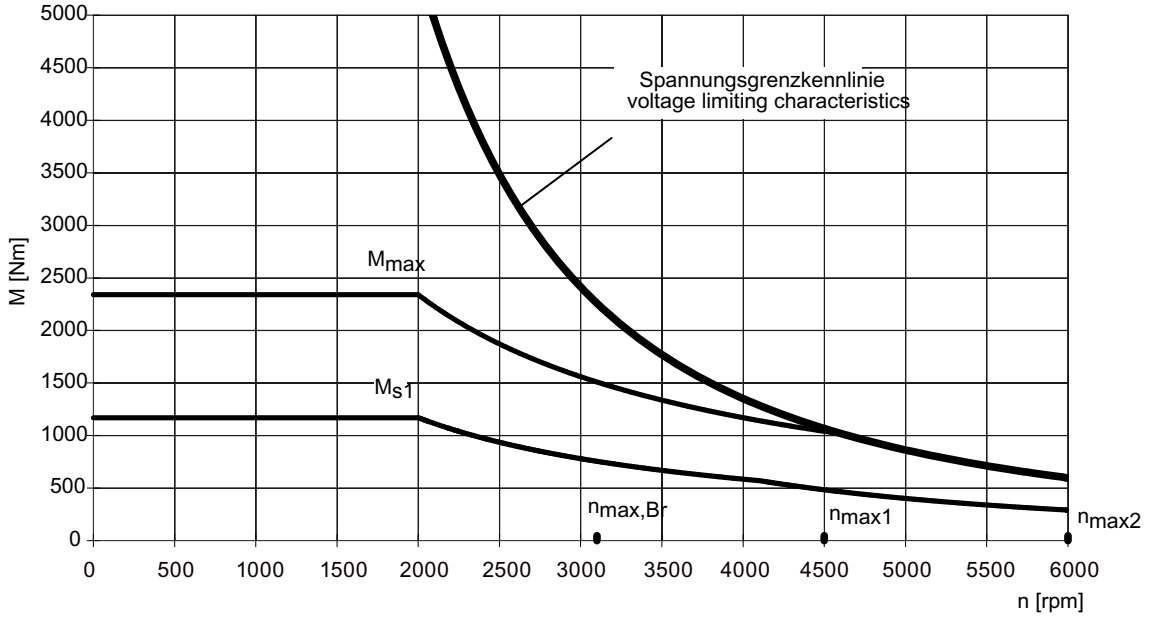
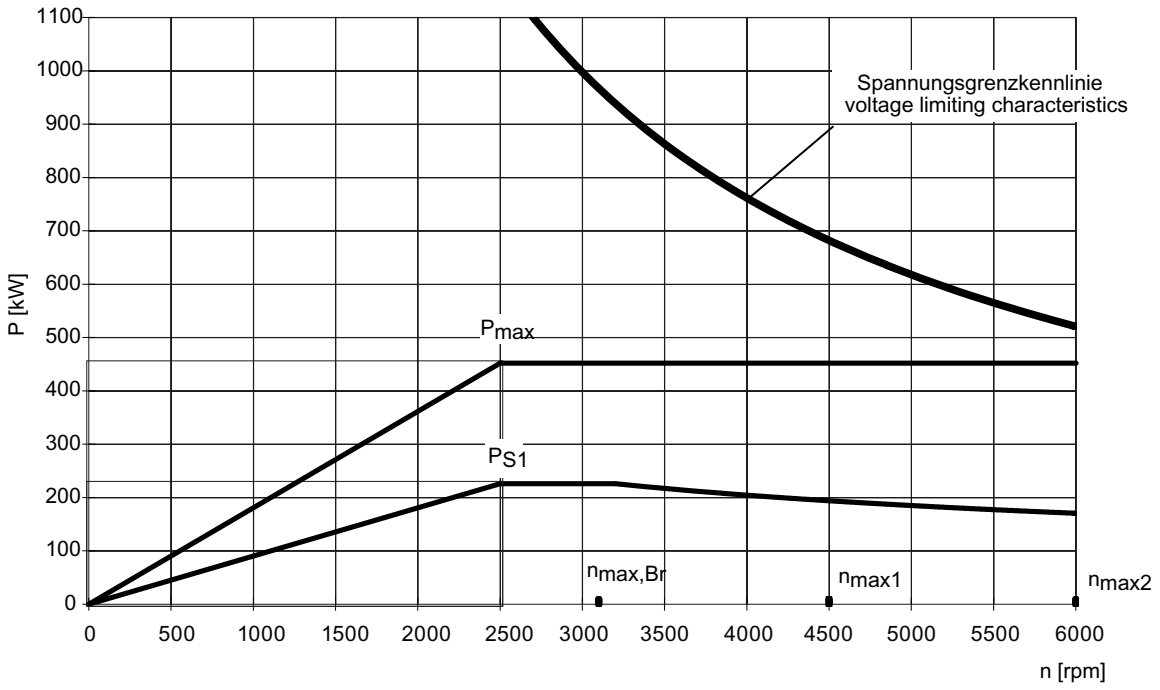



Tabella 4- 577 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-□□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 226 | 863 | 455 | 4500 | 6000 | - | 3100 | 3200 | 1727 | 910 | 863 | 455 |



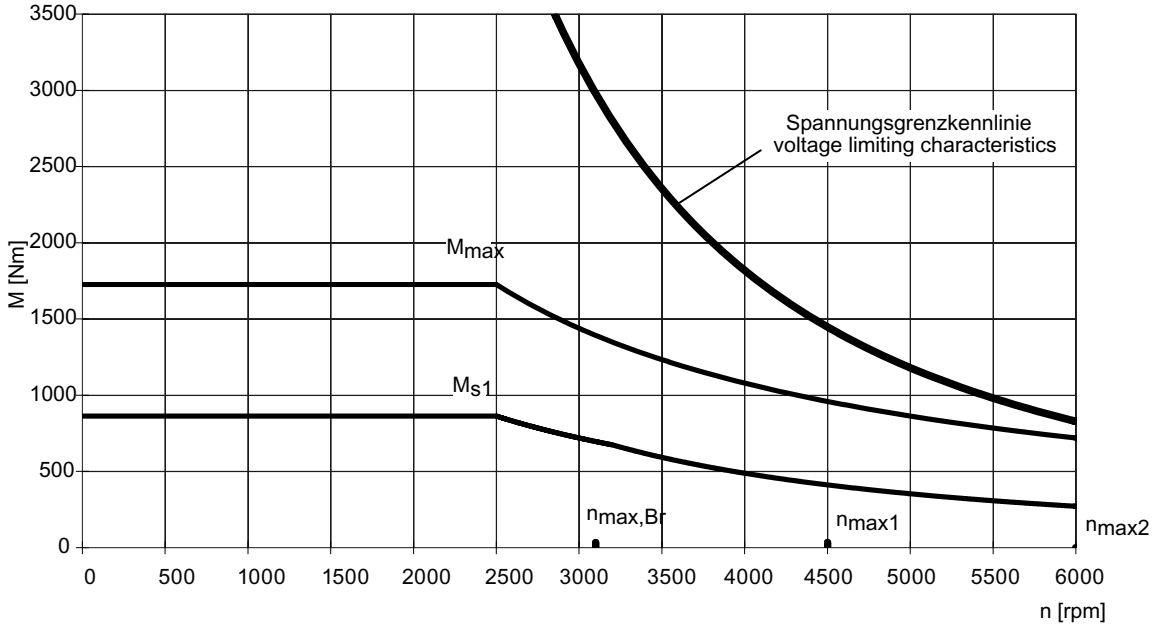
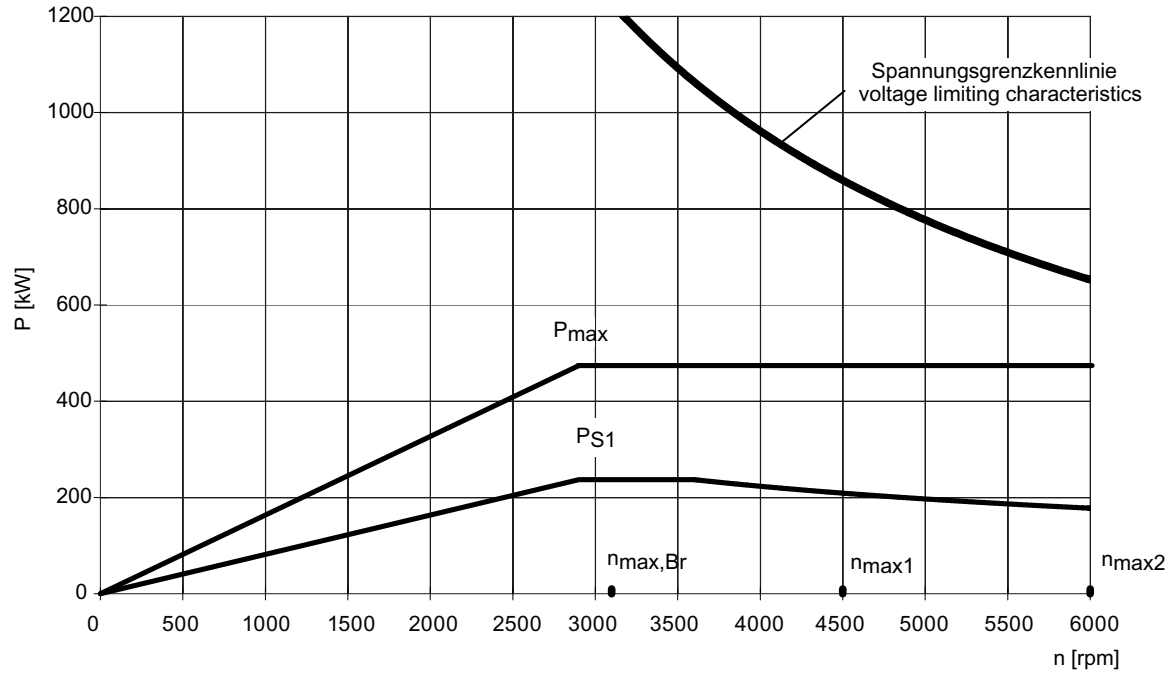



Tabella 4- 578 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-□□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 237 | 780 | 415 | 4500 | 6000 | - | 3100 | 3600 | 1561 | 830 | 780 | 415 |
| 2500 | 204 | 780 | 415 | | | | | 4500 | | | | |



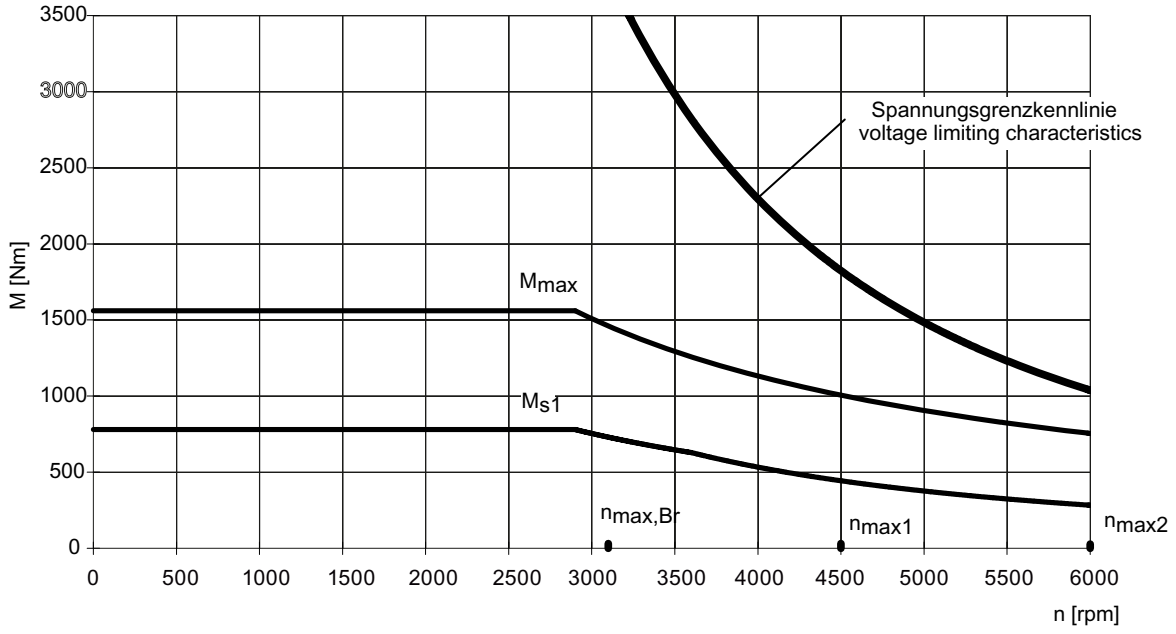
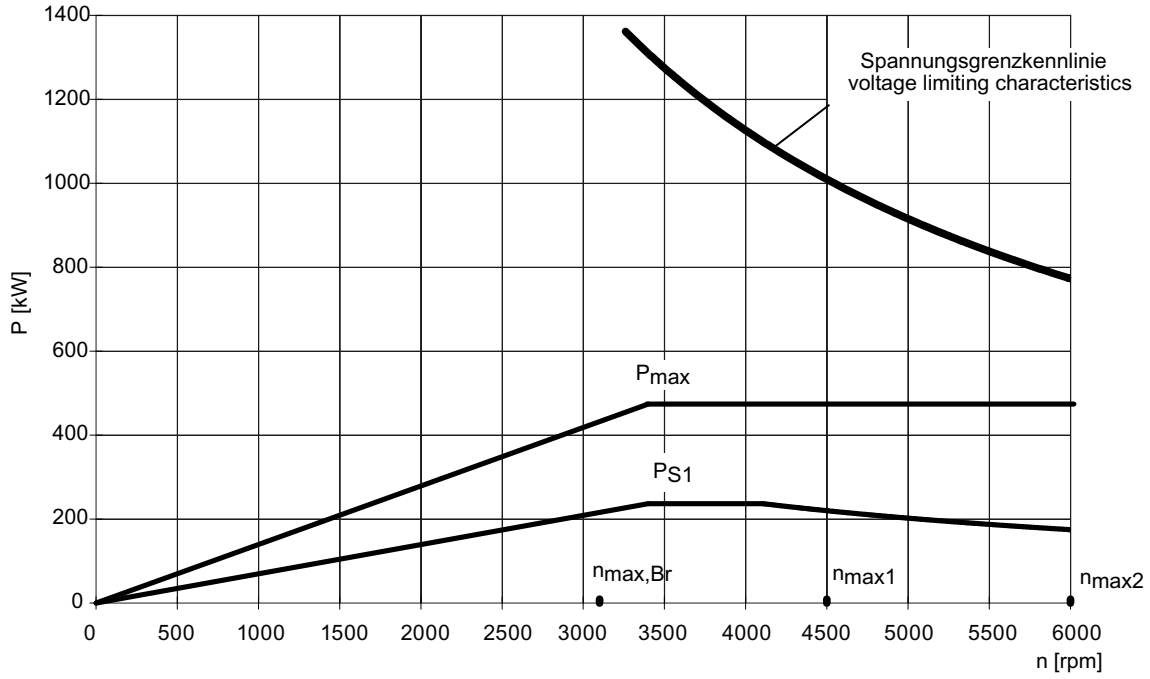
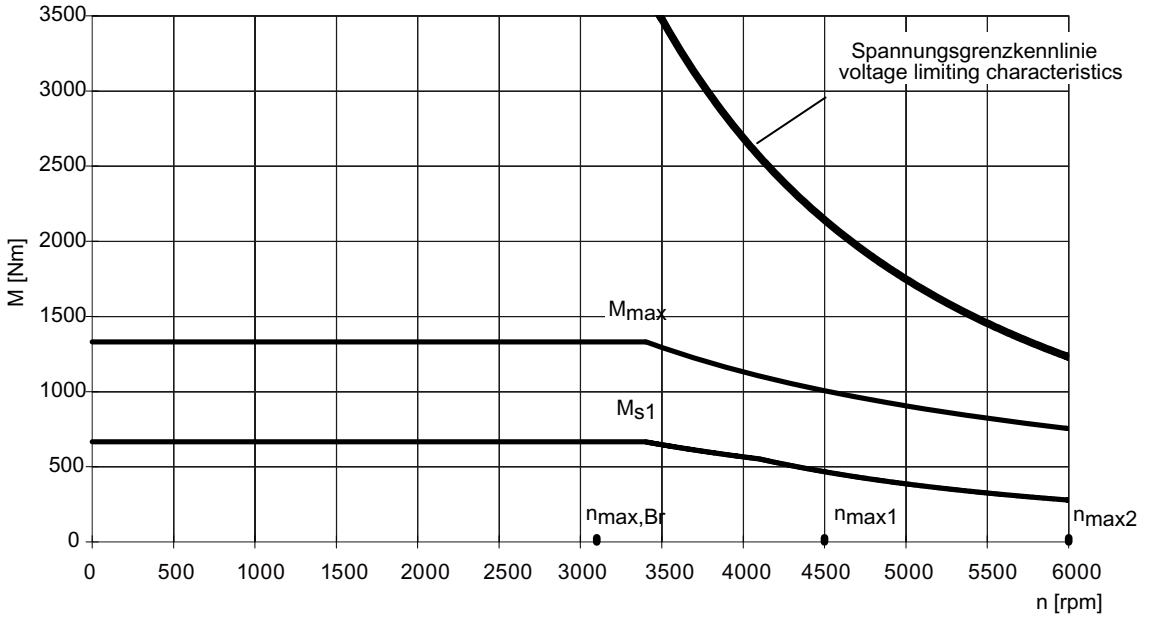



Tabella 4- 579 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-□□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3400 | 237 | 666 | 370 | 4500 | 6000 | - | 3100 | 4100 | 1331 | 740 | 666 | 370 |

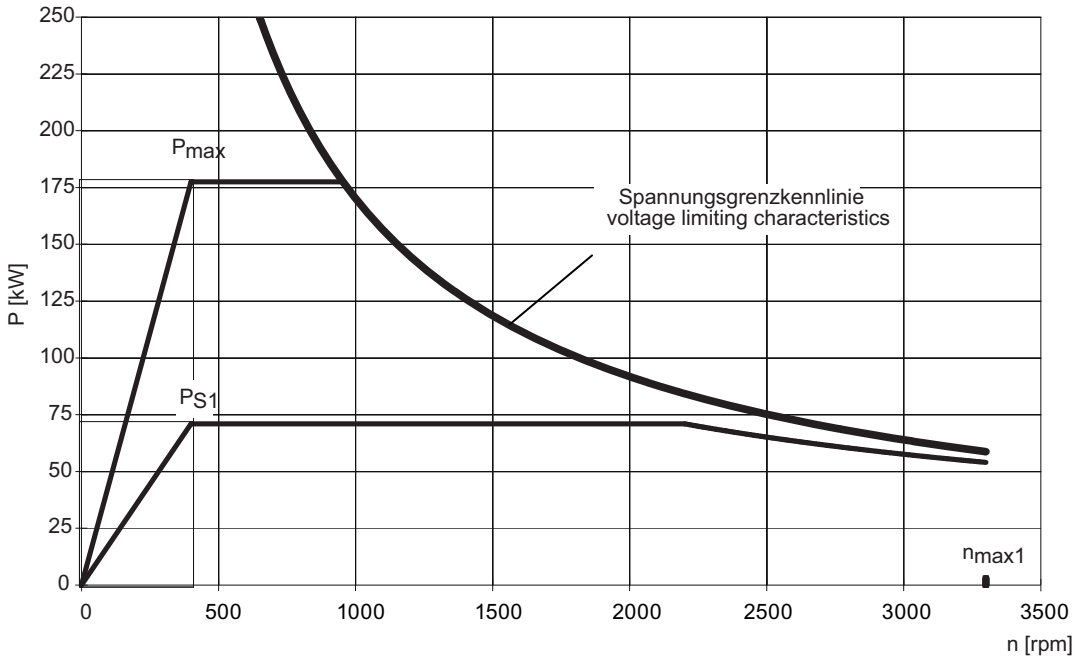


### 4.1.3.7 Altezza dell'asse 280 - Raffreddamento ad acqua

Tabella 4- 580 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8284-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 71 | 1695 | 170 | 3300 | - | - | - | 2200 | 4238 | 425 | 1695 | 170 |



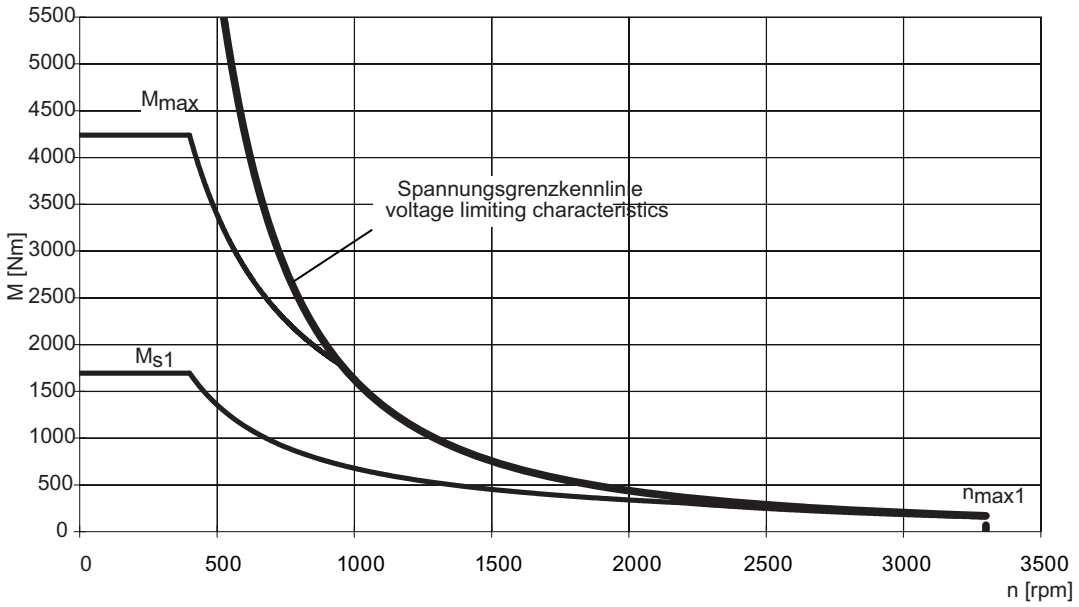
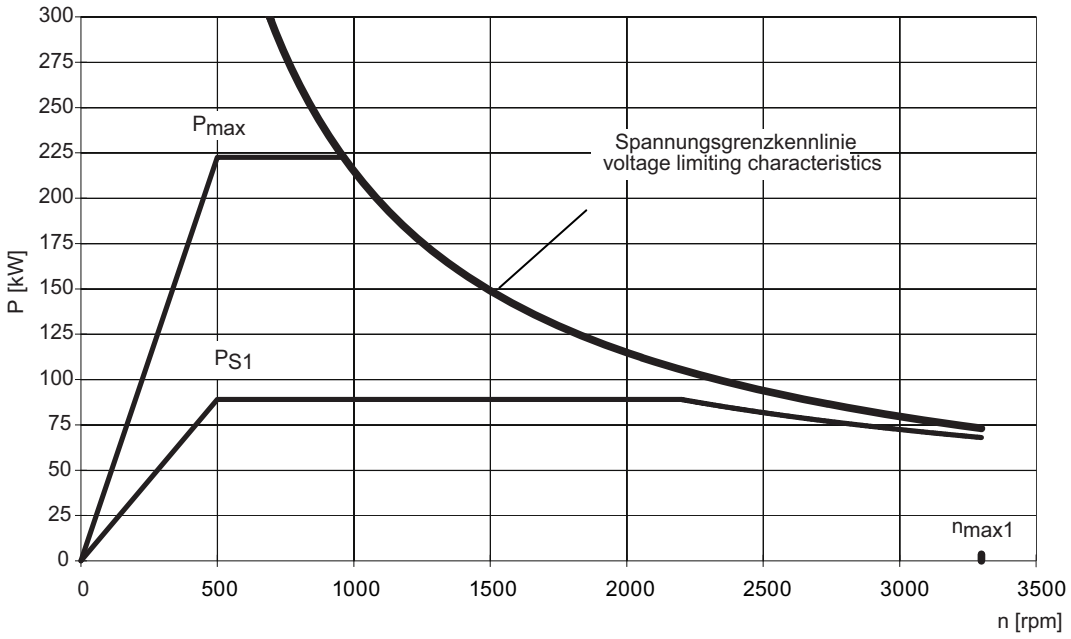



Tabella 4- 581 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8284-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 89 | 1700 | 172 | 3300 | - | - | - | 2200 | 4250 | 430 | 1700 | 172 |
| 400 | 71 | 1700 | 172 | | | | | 3100 | | | | |



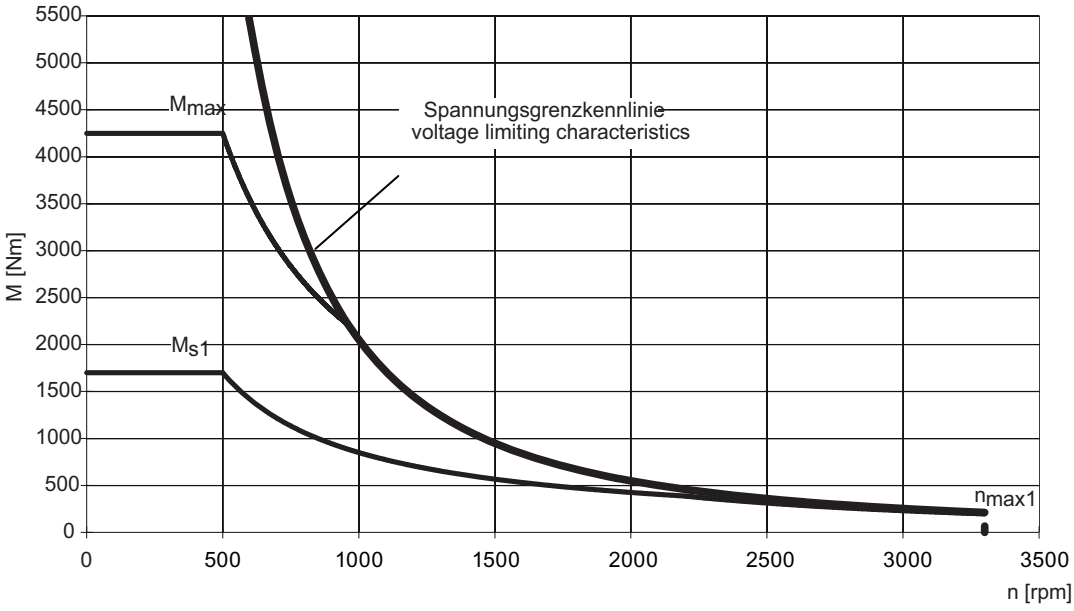
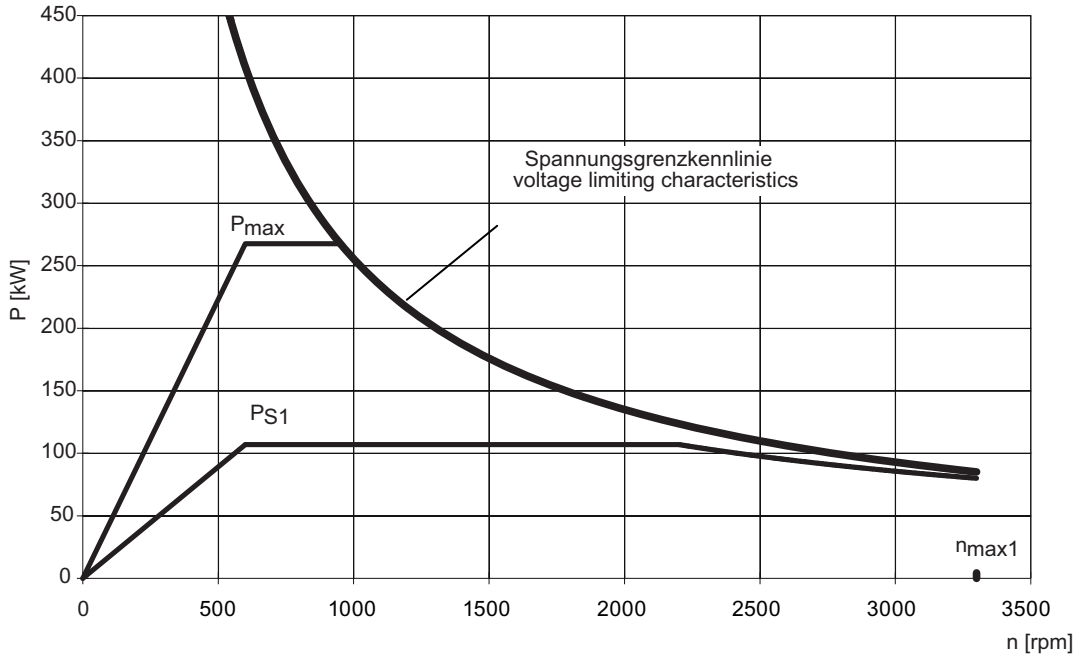



Tabella 4- 582 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8284-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 107 | 1703 | 170 | 3300 | - | - | - | 2200 | 4258 | 425 | 1703 | 170 |



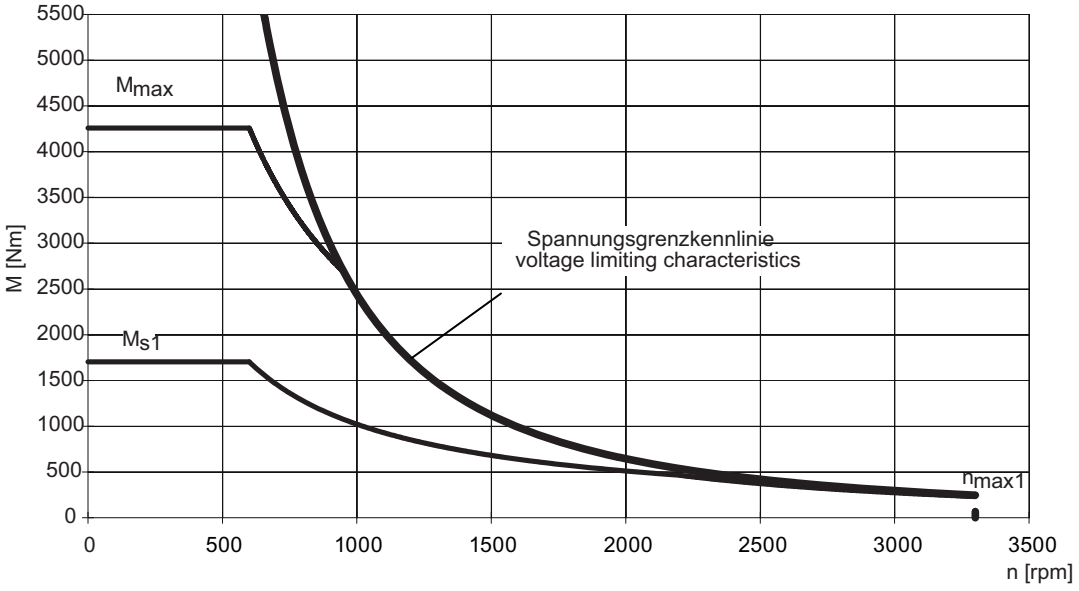
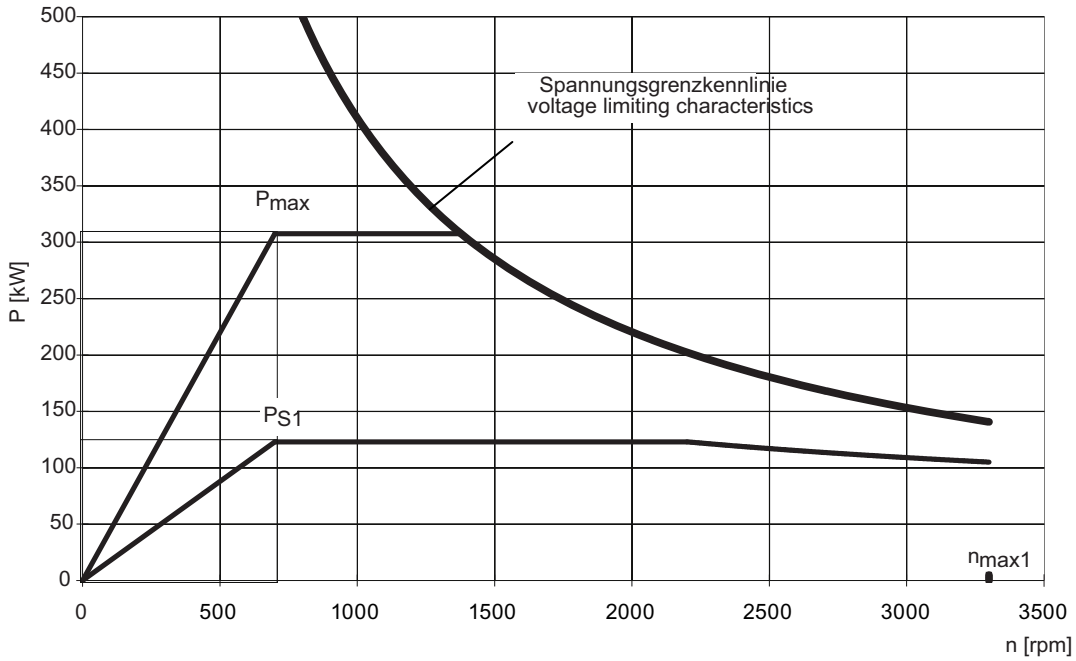



Tabella 4- 583 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8284-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 123 | 1678 | 260 | 3300 | - | - | - | 2200 | 4195 | 650 | 1678 | 260 |



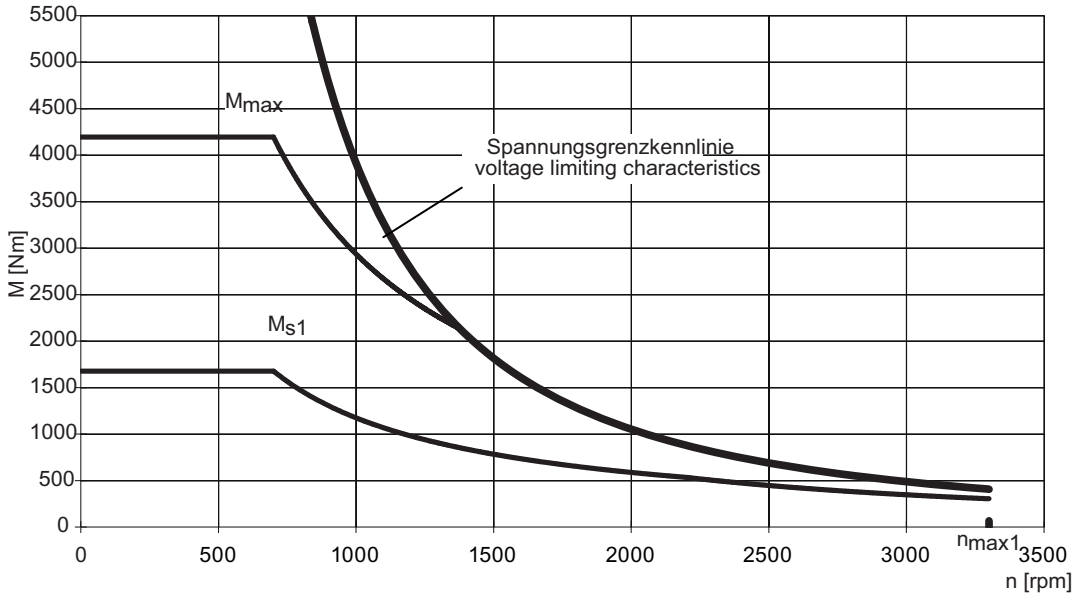
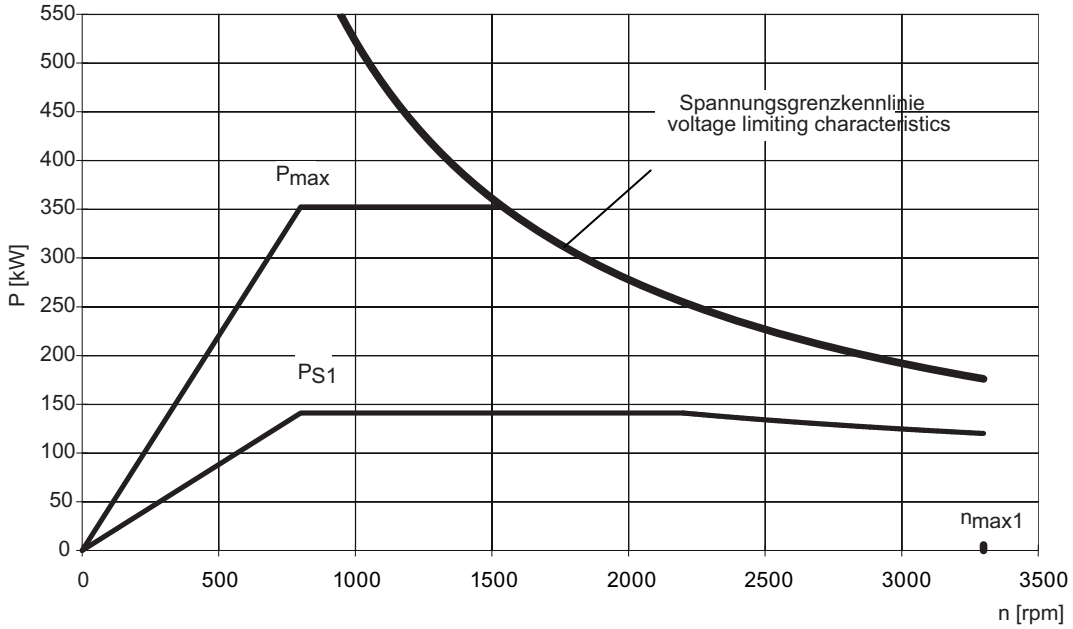



Tabella 4- 584 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8284-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 141 | 1683 | 260 | 3300 | - | - | - | 2200 | 4208 | 650 | 1683 | 260 |
| 700 | 123 | 1683 | 260 | | | | | 3100 | | | | |



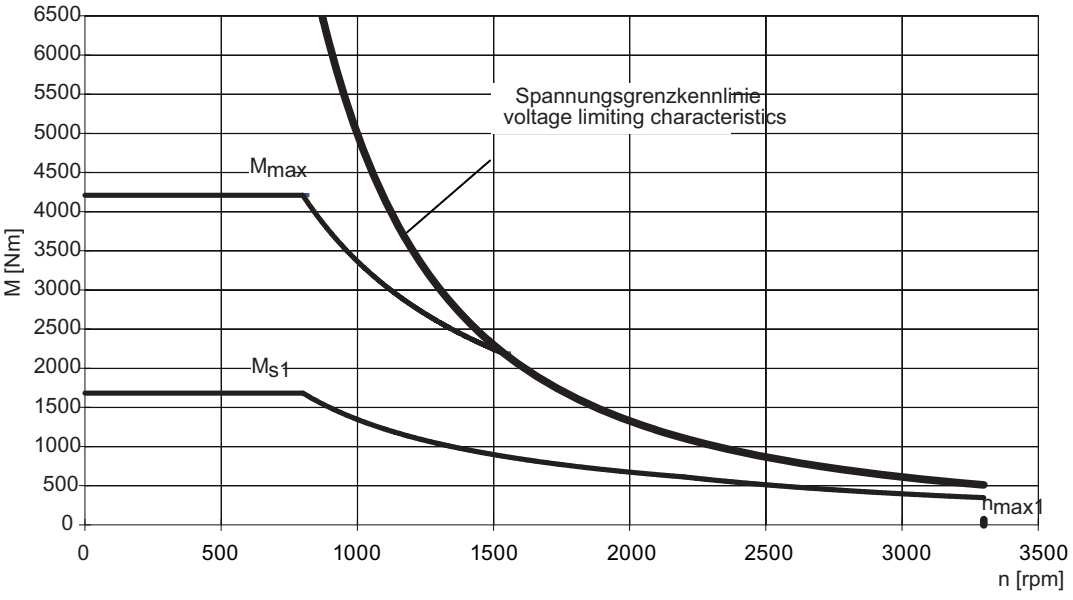
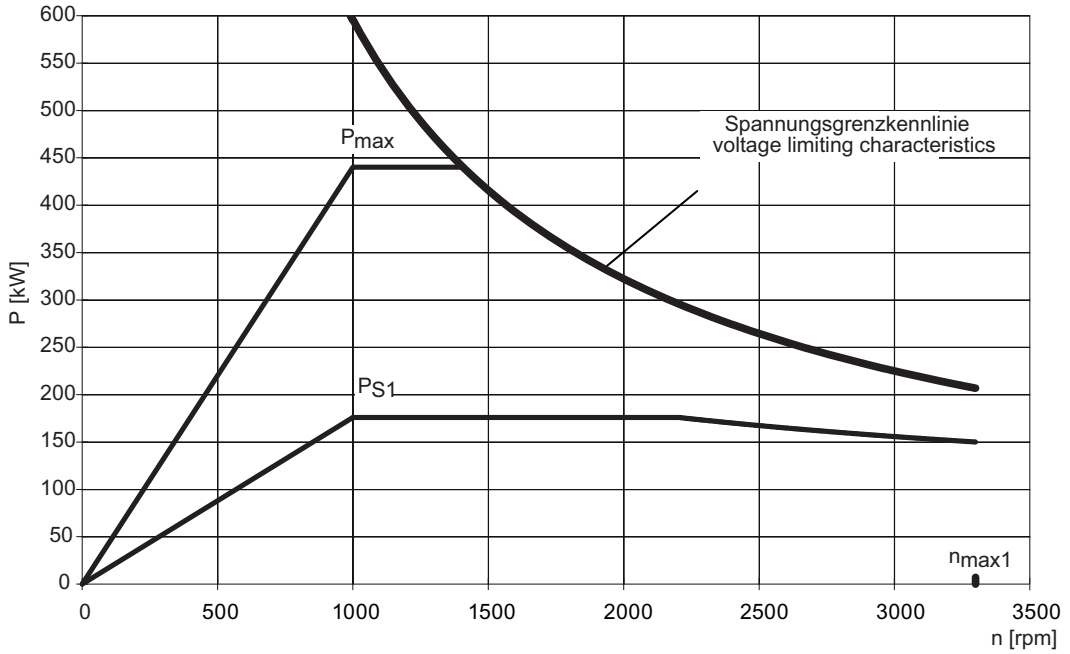



Tabella 4- 585 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8284-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 176 | 1681 | 265 | 3300 | - | - | - | 2200 | 4202 | 663 | 1681 | 265 |



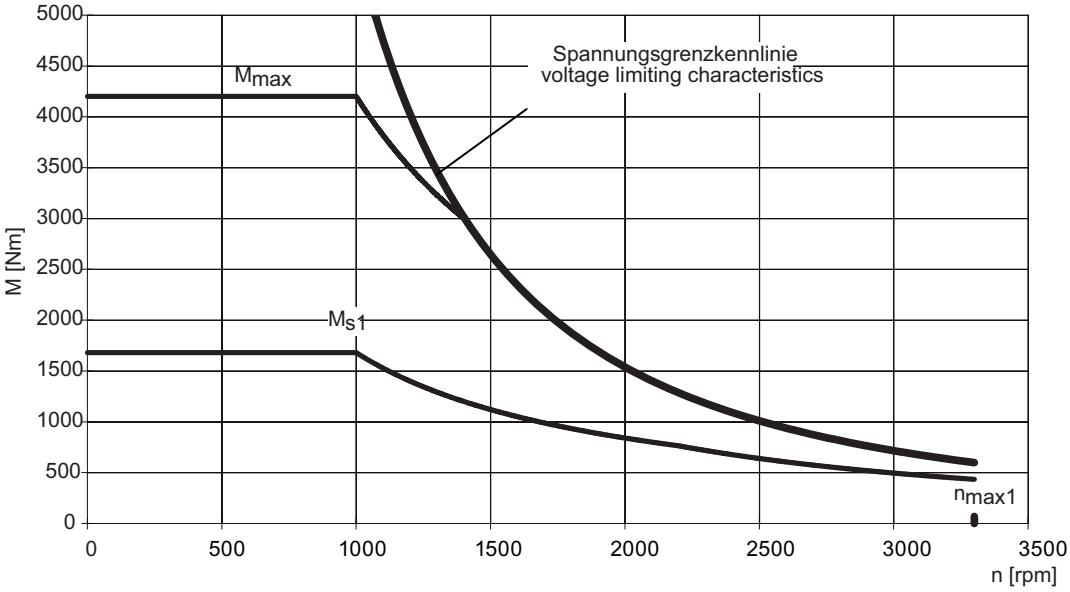
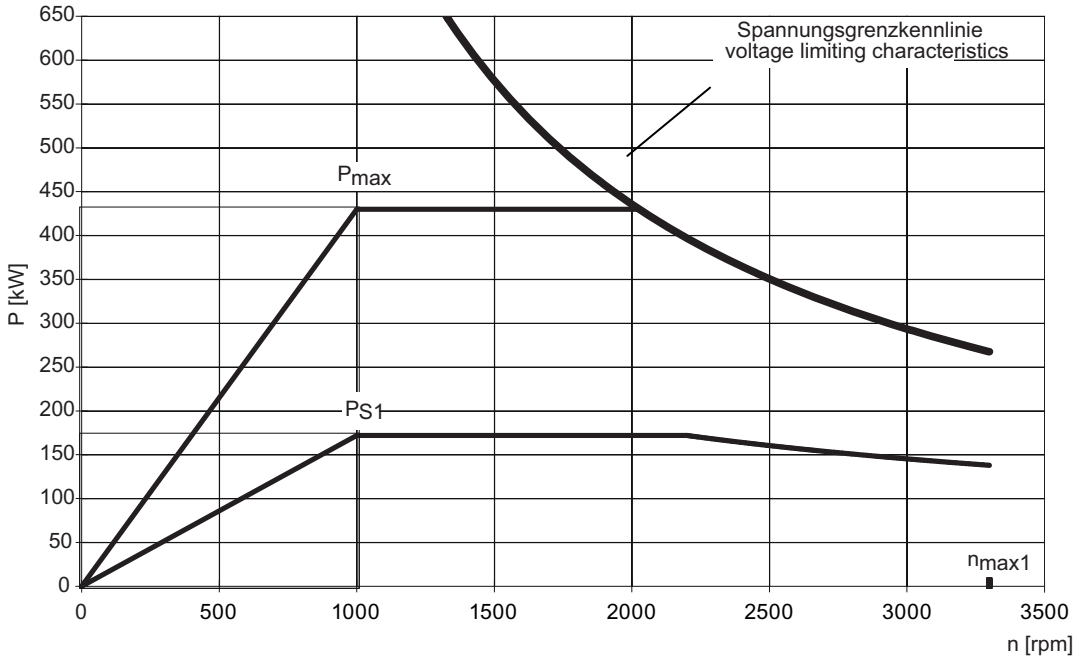



Tabella 4- 586 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8284-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 172 | 1643 | 350 | 3300 | - | - | - | 2200 | 4107 | 875 | 1643 | 350 |



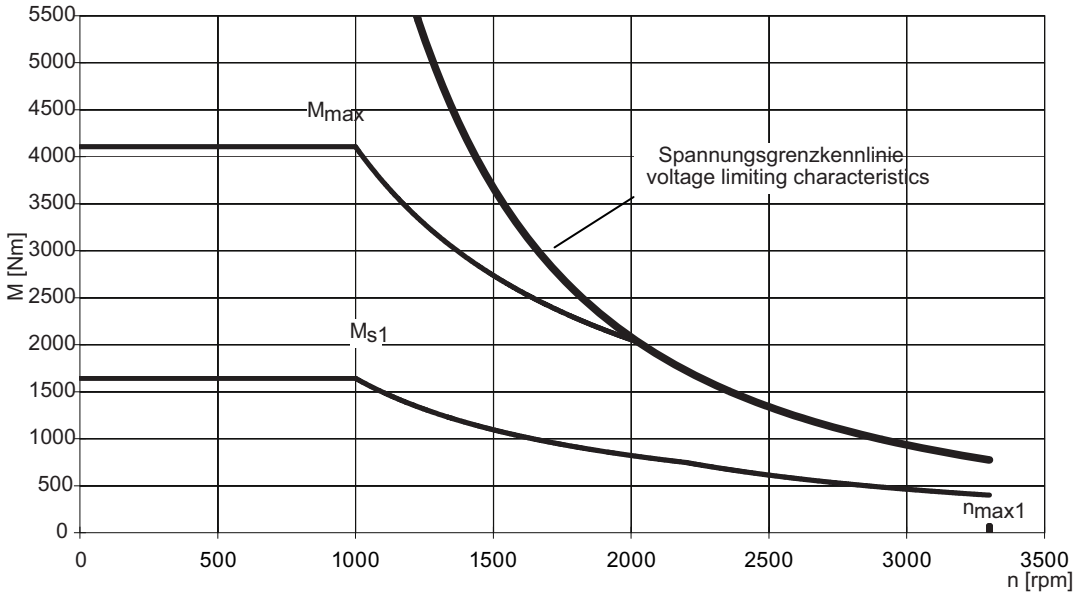
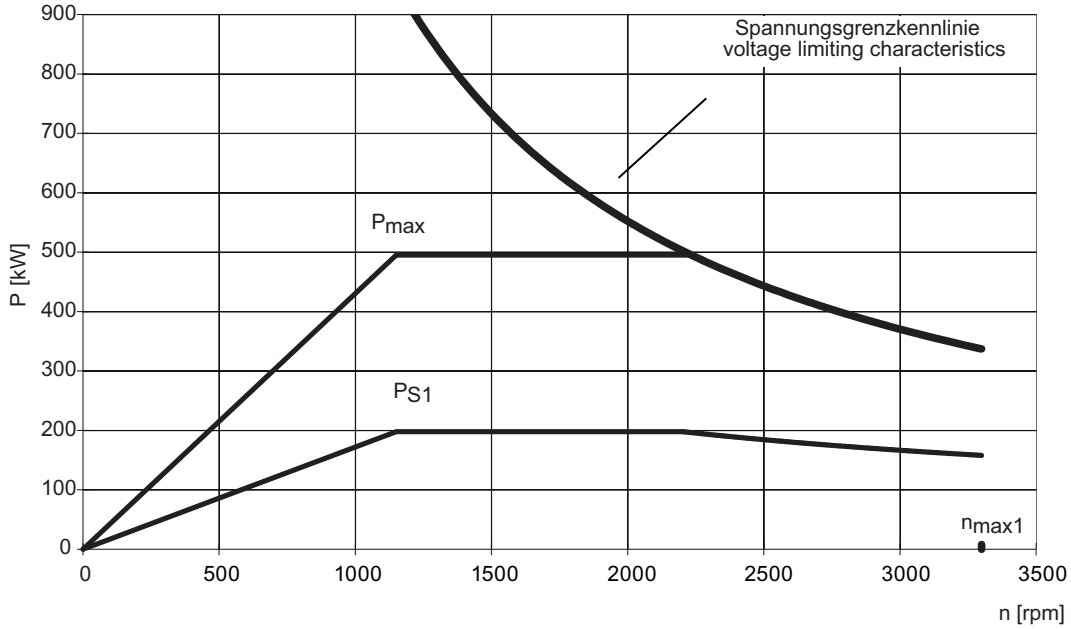



Tabella 4- 587 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8284-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 198 | 1644 | 355 | 3300 | - | - | - | 2200 | 4111 | 888 | 1644 | 355 |
| 1000 | 172 | 1644 | 355 | | | | | 2800 | | | | |



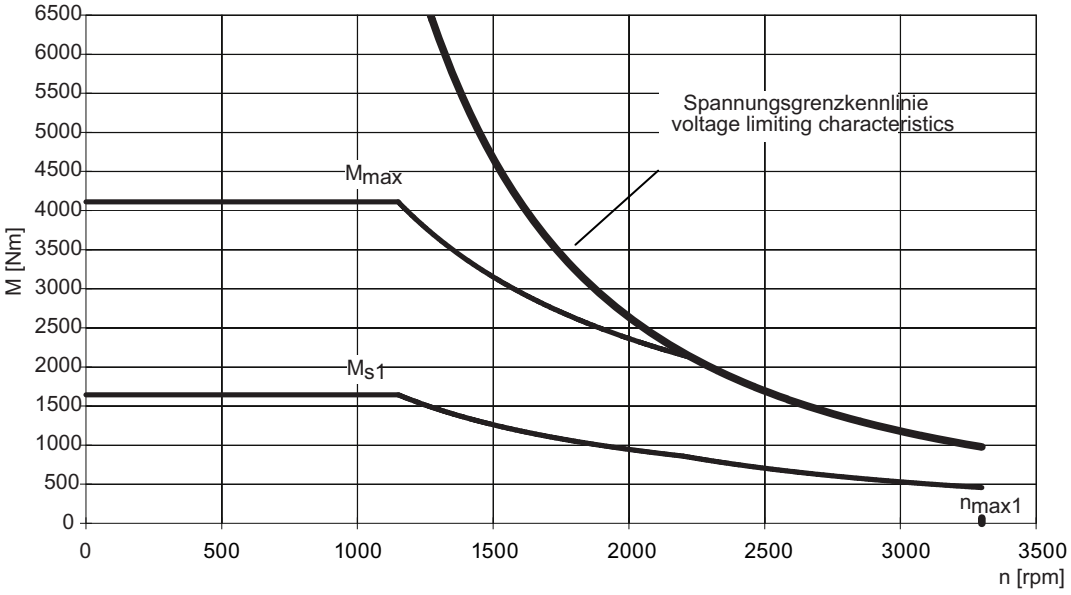
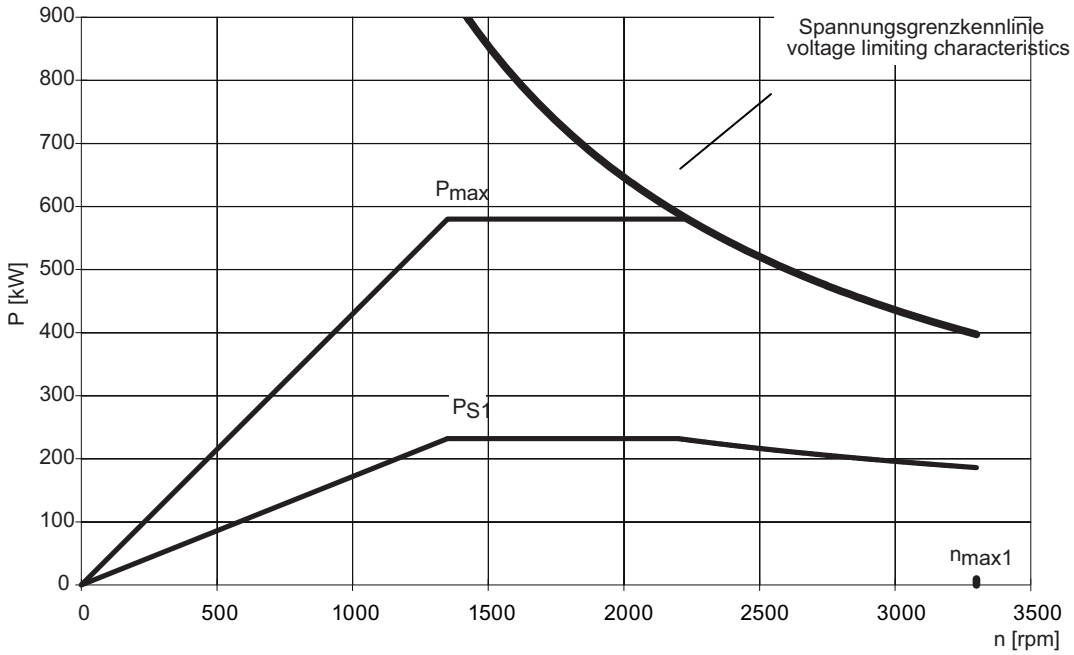



Tabella 4- 588 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8284-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 232 | 1641 | 355 | 3300 | - | - | - | 2200 | 4103 | 888 | 1641 | 355 |



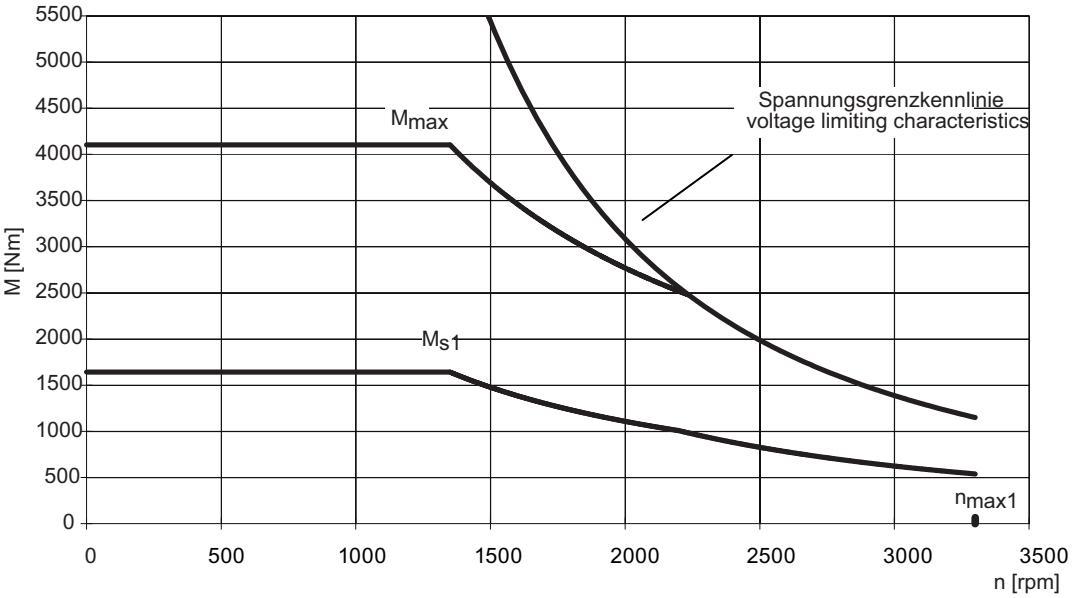
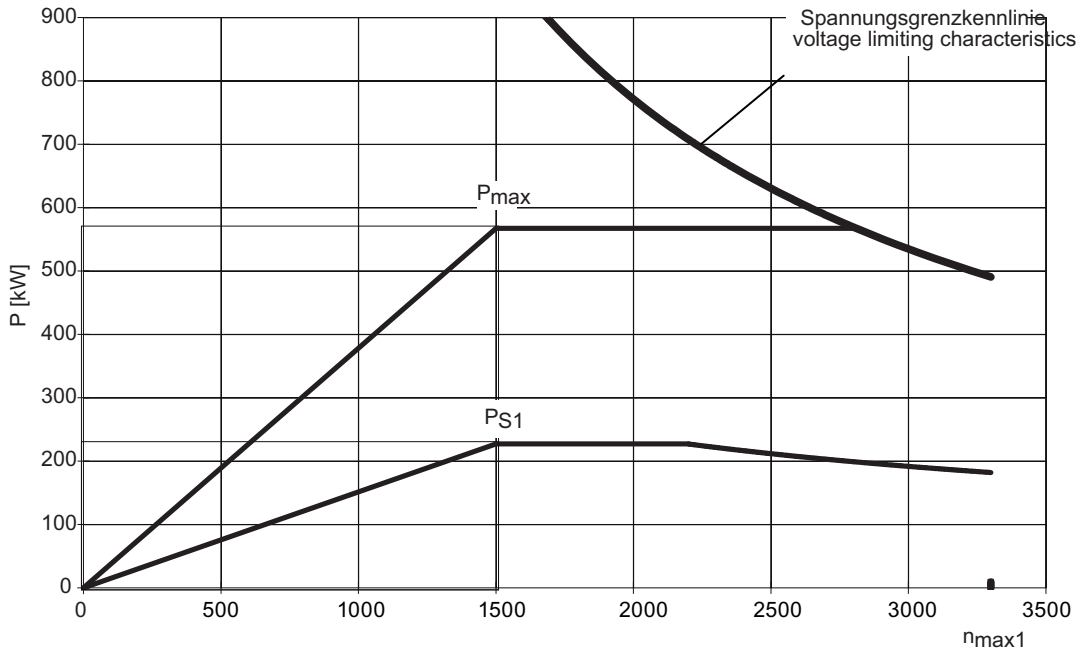



Tabella 4- 589 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8284-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 227 | 1445 | 445 | 3300 | - | - | - | 2200 | 3613 | 1113 | 1445 | 445 |



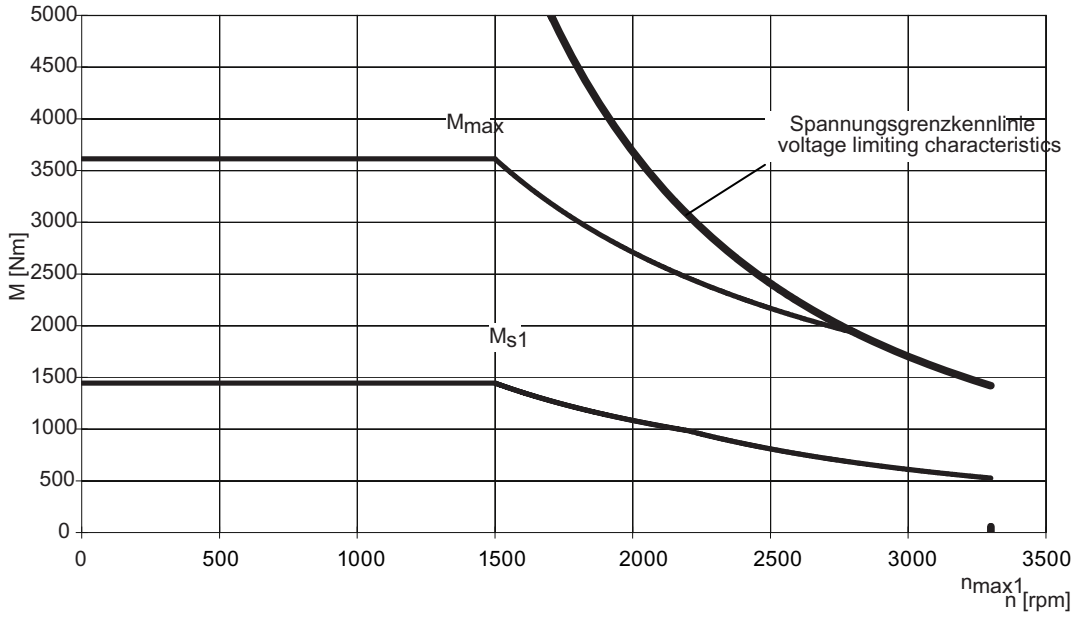
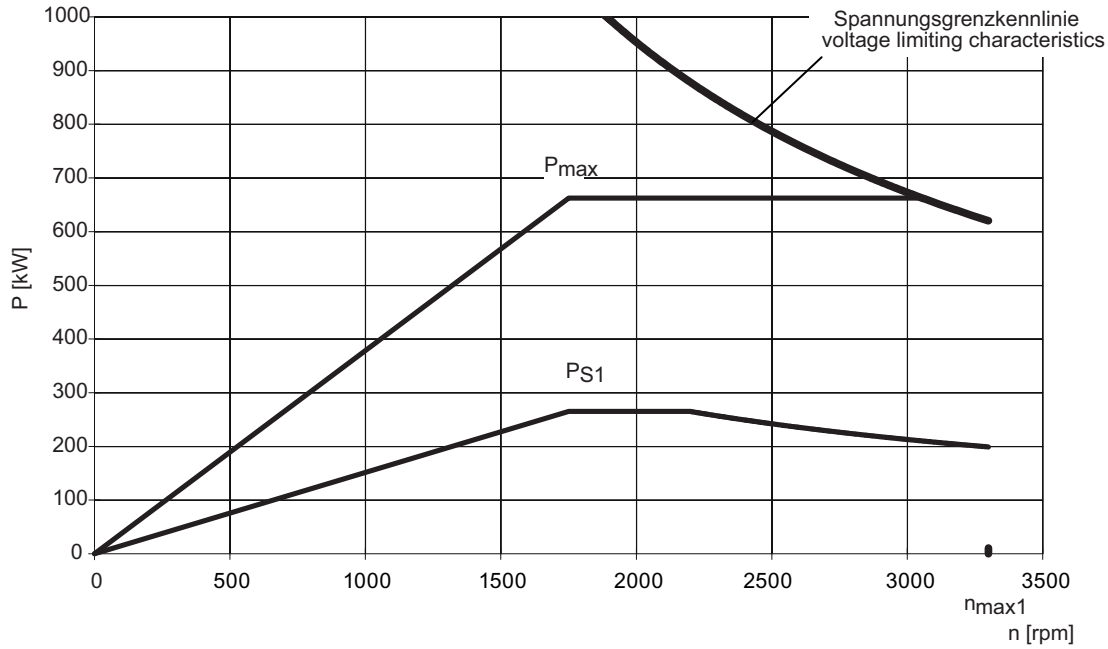



Tabella 4- 590 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8284-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 265 | 1446 | 445 | 3300 | - | - | - | 2200 | 3615 | 1113 | 1446 | 445 |
| 1500 | 227 | 1446 | 445 | | | | | 2700 | | | | |



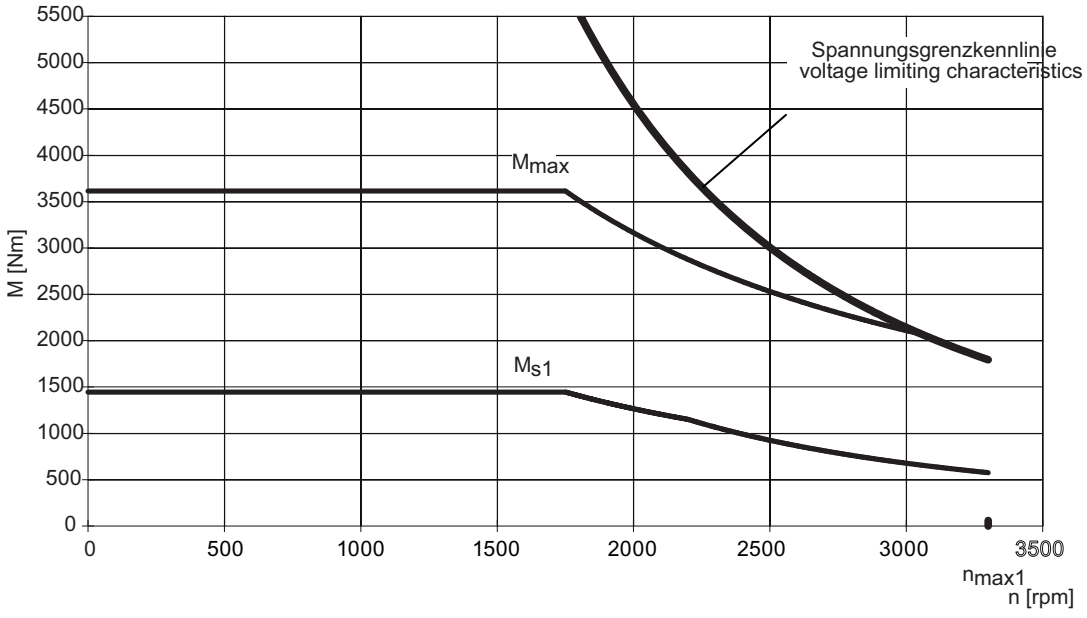
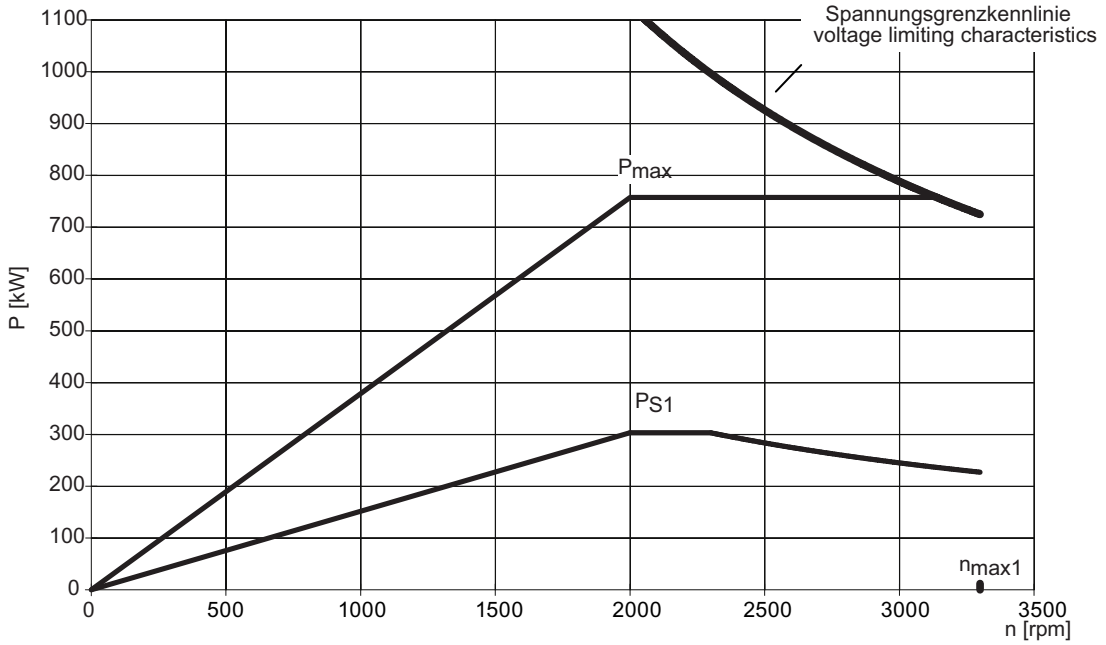



Tabella 4- 591 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8284-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 303 | 1447 | 445 | 3300 | - | - | - | 2300 | 3617 | 1113 | 1447 | 445 |



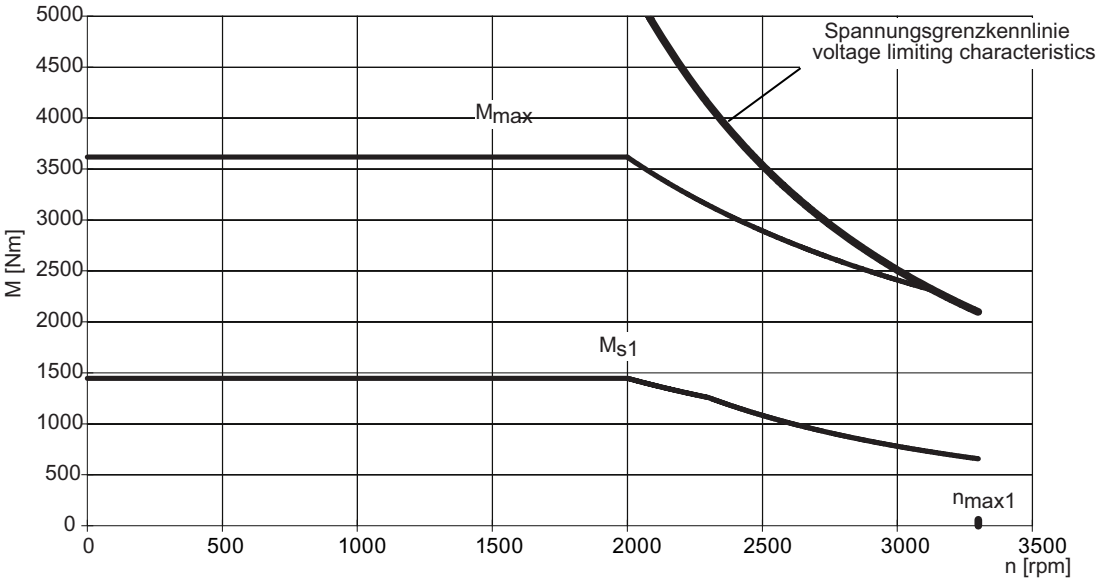
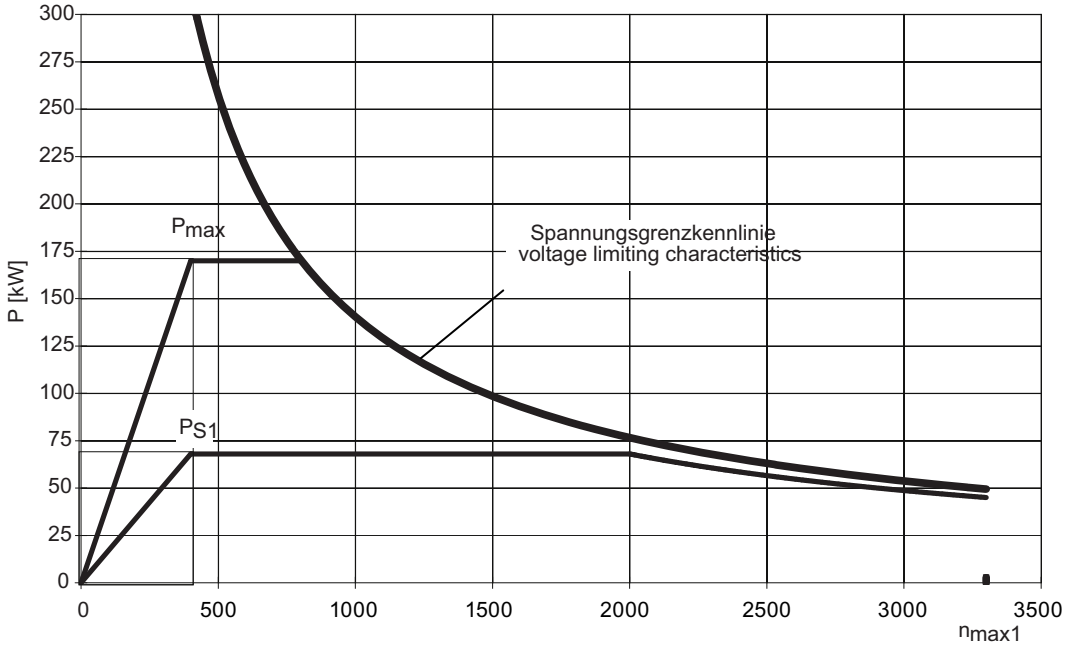



Tabella 4- 592 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8284-□□H2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 68 | 1624 | 89 | 3300 | - | - | - | 2000 | 4059 | 223 | 1624 | 89 |



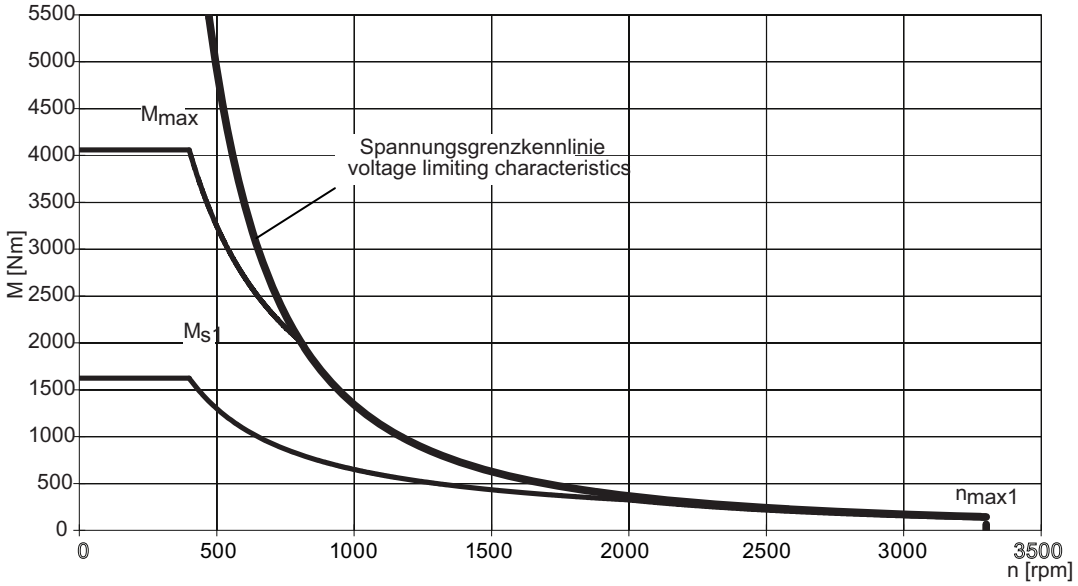
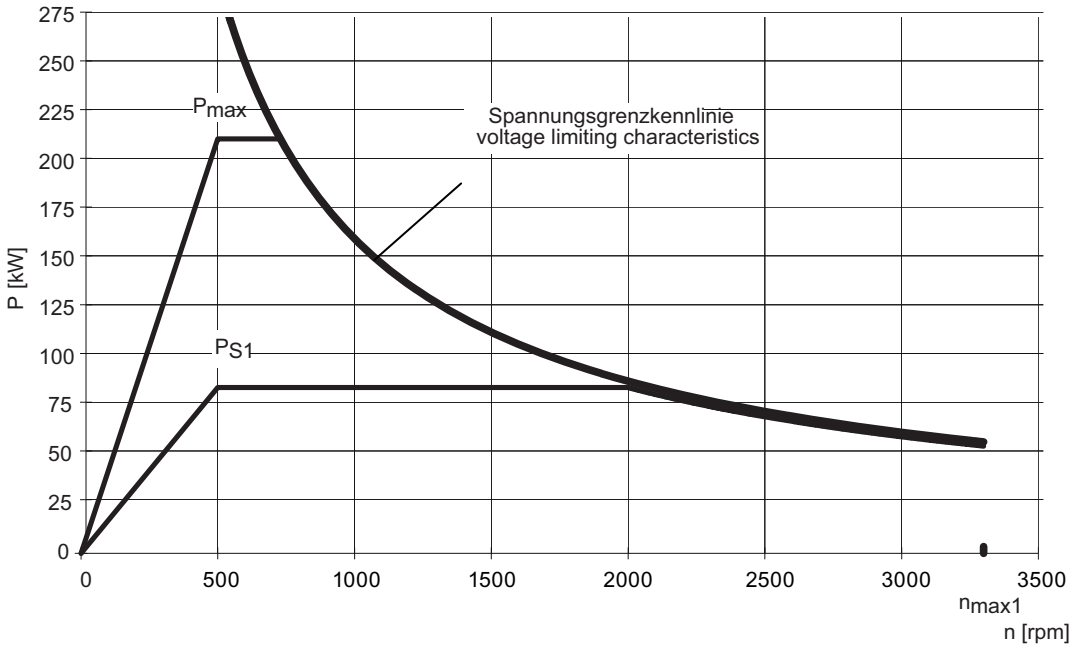



Tabella 4- 593 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8284-□□H2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 85 | 1624 | 89 | 3300 | - | - | - | 2000 | 4059 | 223 | 1624 | 89 |
| 400 | 68 | 1624 | 89 | | | | | 2600 | | | | |



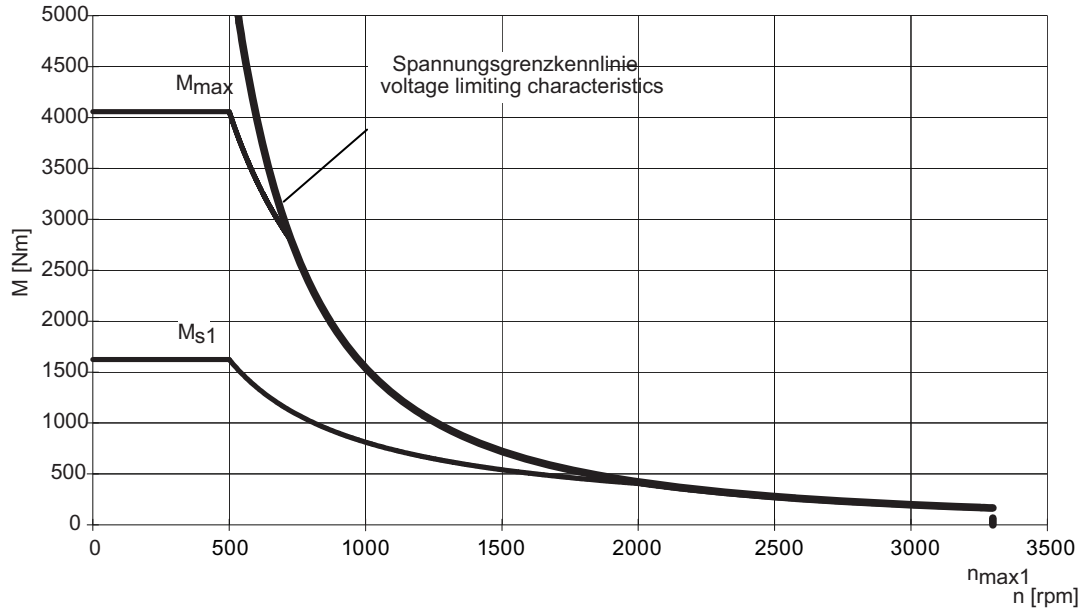
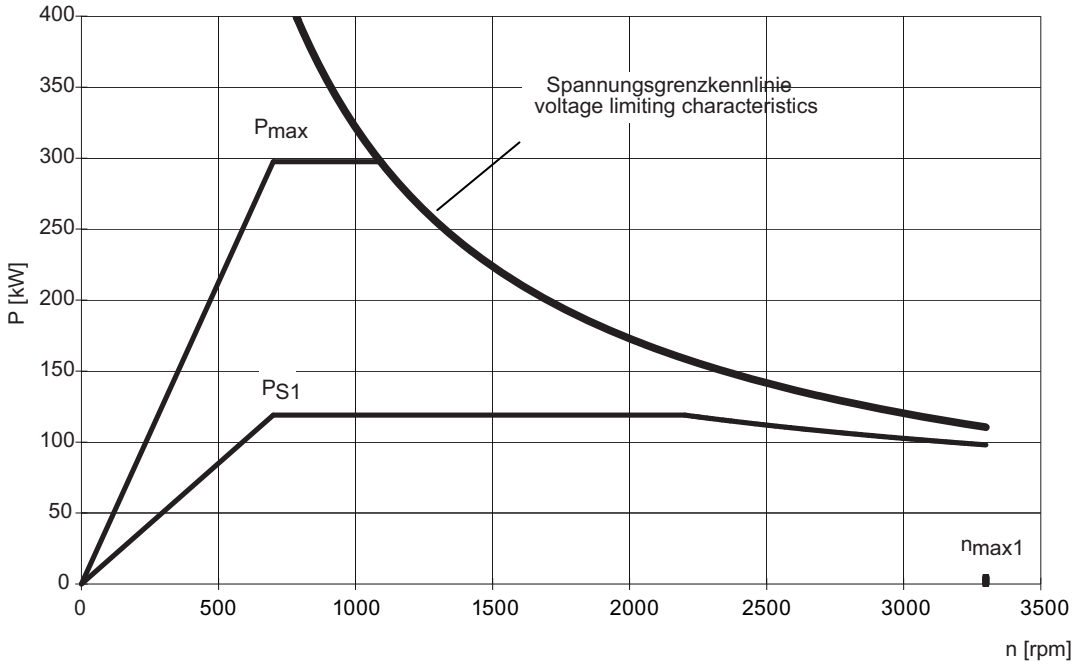



Tabella 4- 594 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8284-□□K2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 119 | 1624 | 136 | 3300 | - | - | - | 2200 | 4059 | 340 | 1624 | 136 |



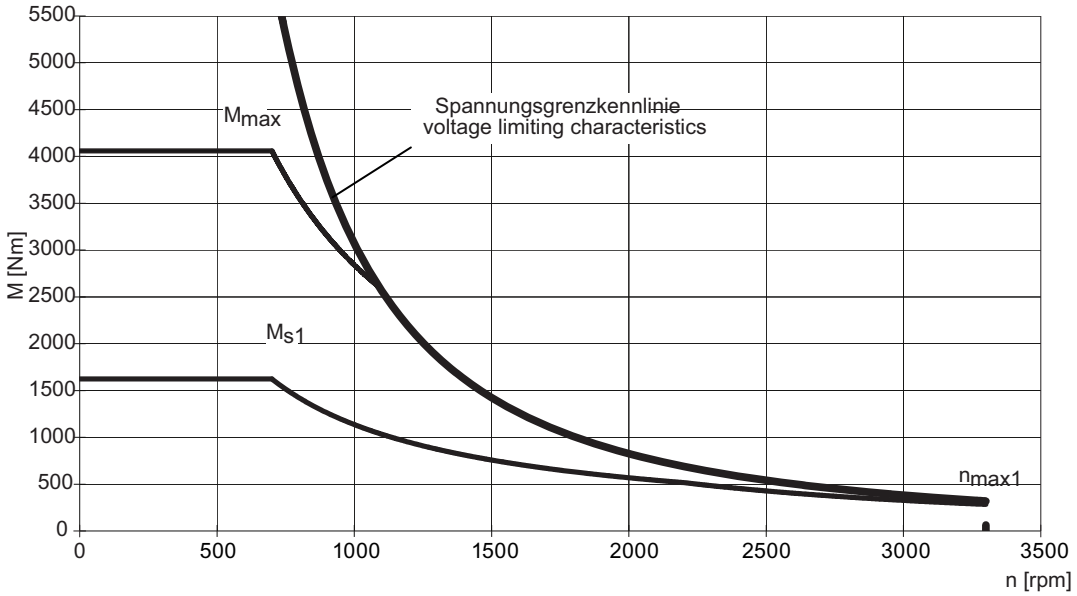
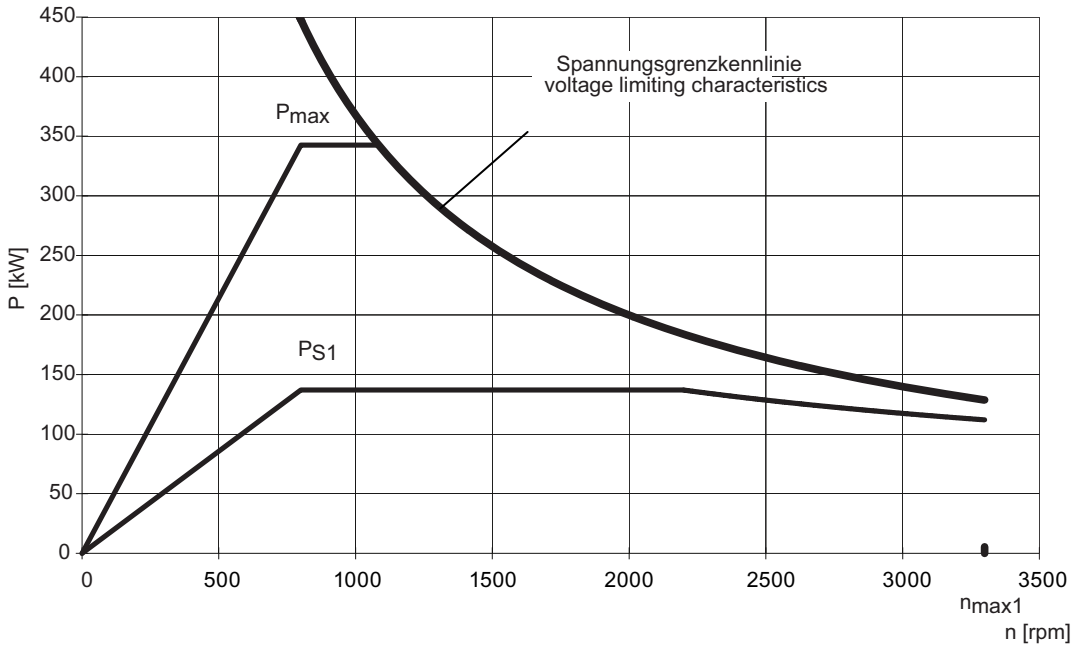



Tabella 4- 595 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8284-□□K2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 137 | 1635 | 138 | 3300 | - | - | - | 2200 | 4089 | 345 | 1635 | 138 |
| 700 | 120 | 1635 | 138 | | | | | 2900 | | | | |



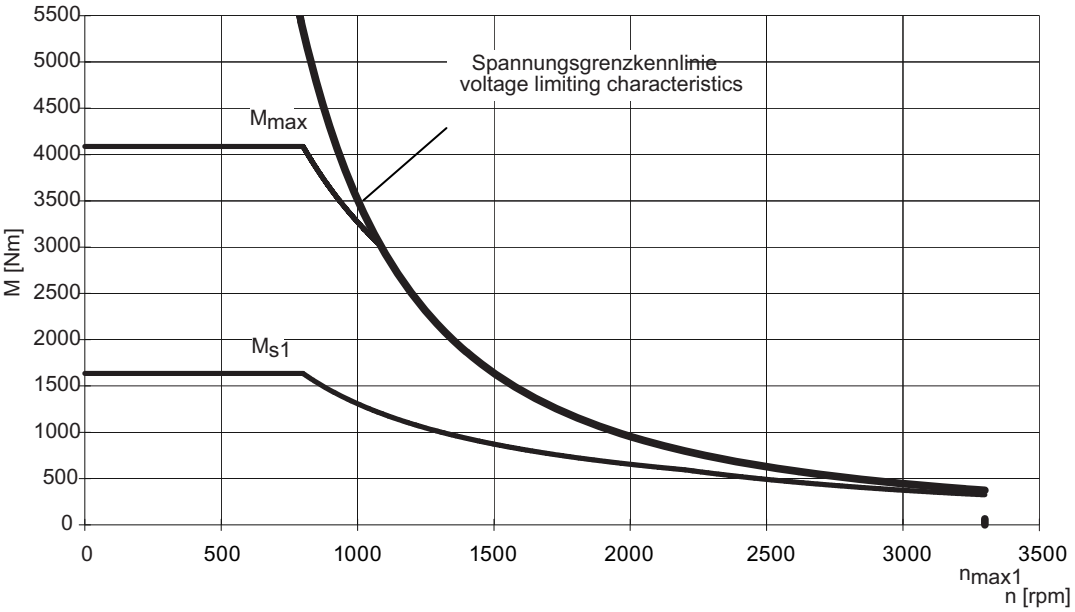
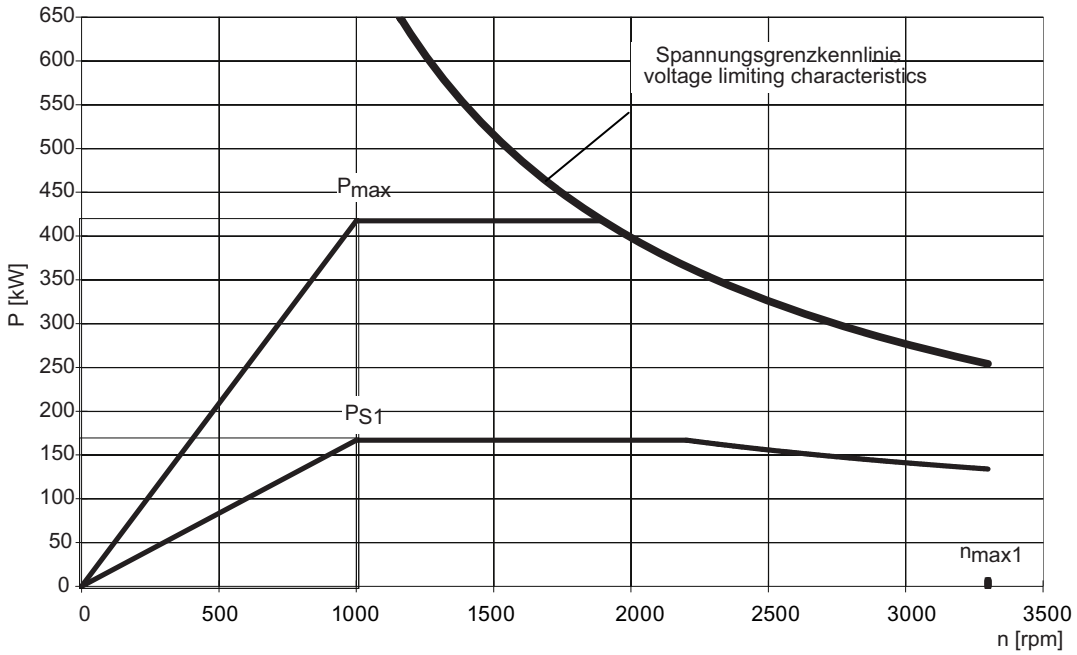



Tabella 4- 596 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8284-□□U2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 167 | 1595 | 196 | 3300 | - | - | - | 2200 | 3987 | 490 | 1595 | 196 |



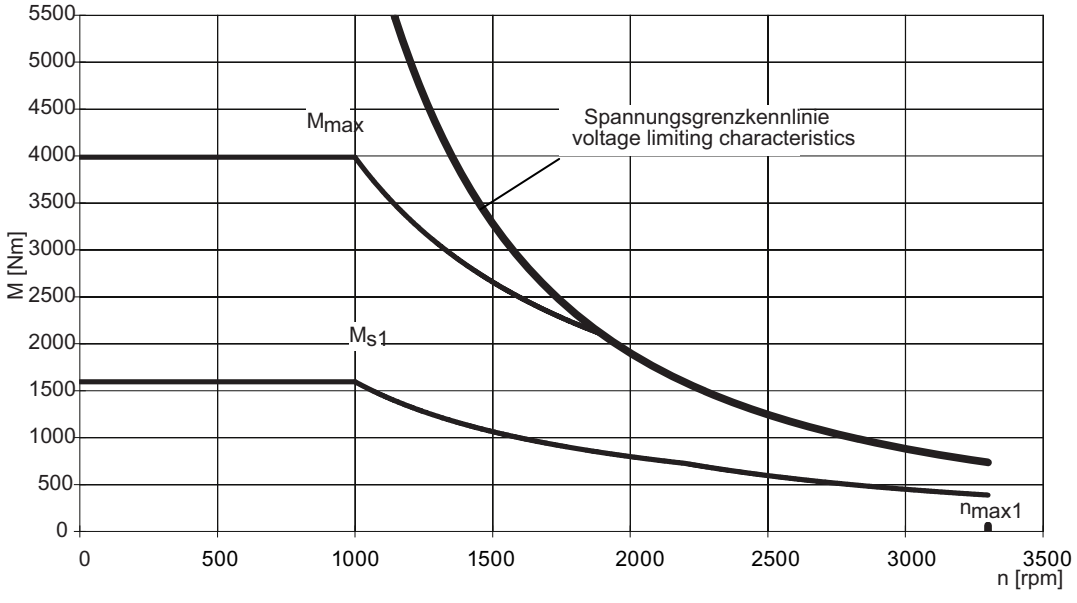
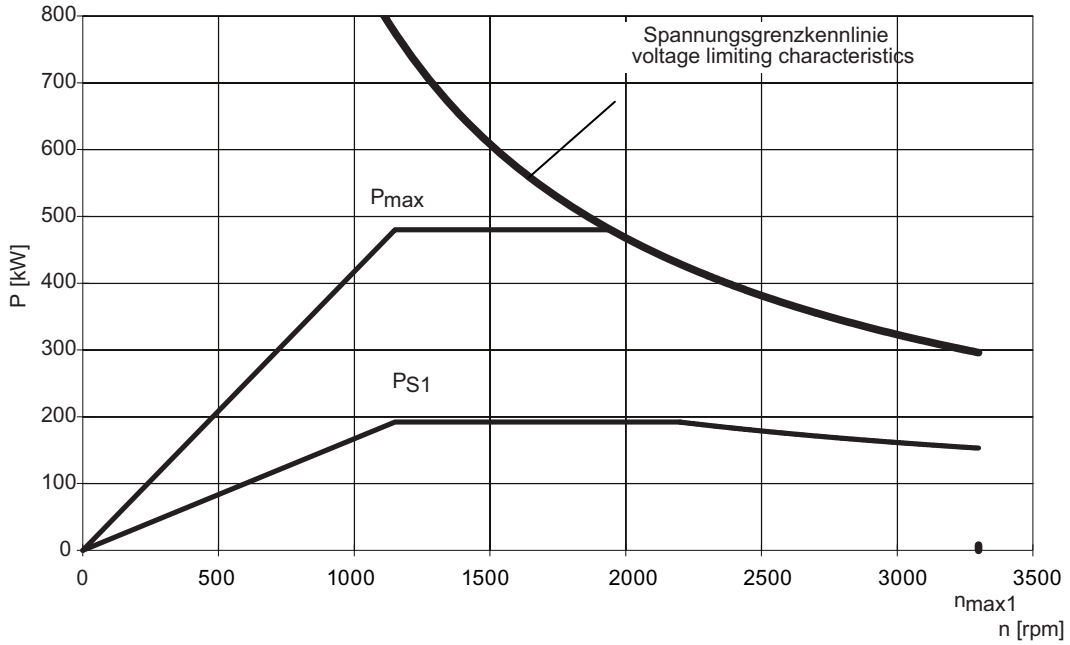



Tabella 4- 597 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8284-□□U2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 192 | 1594 | 198 | 3300 | - | - | - | 2200 | 3986 | 495 | 1594 | 198 |
| 1000 | 167 | 1594 | 198 | | | | | 2800 | | | | |



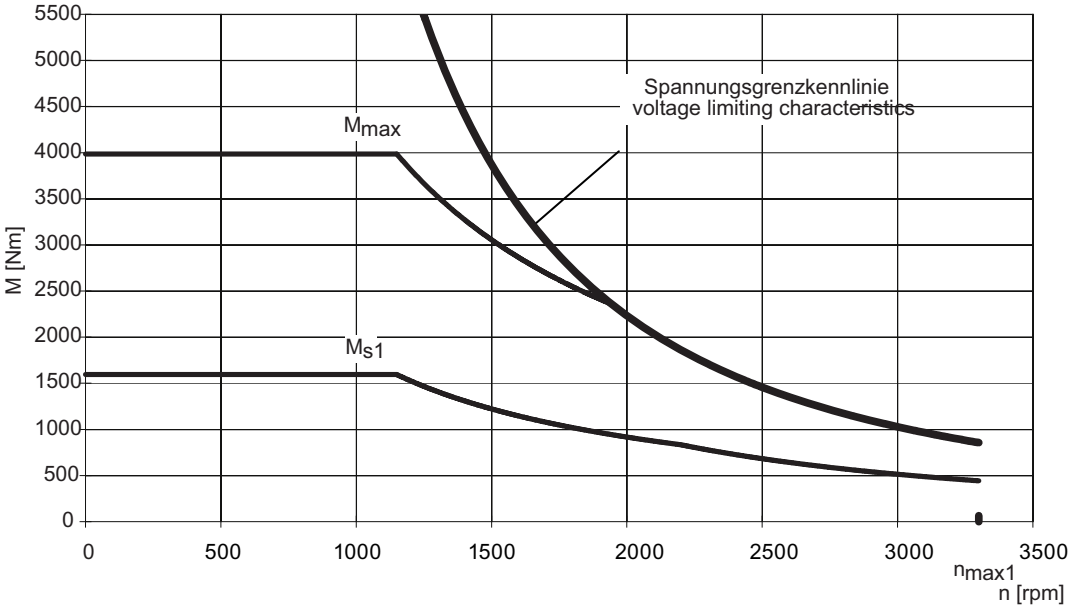
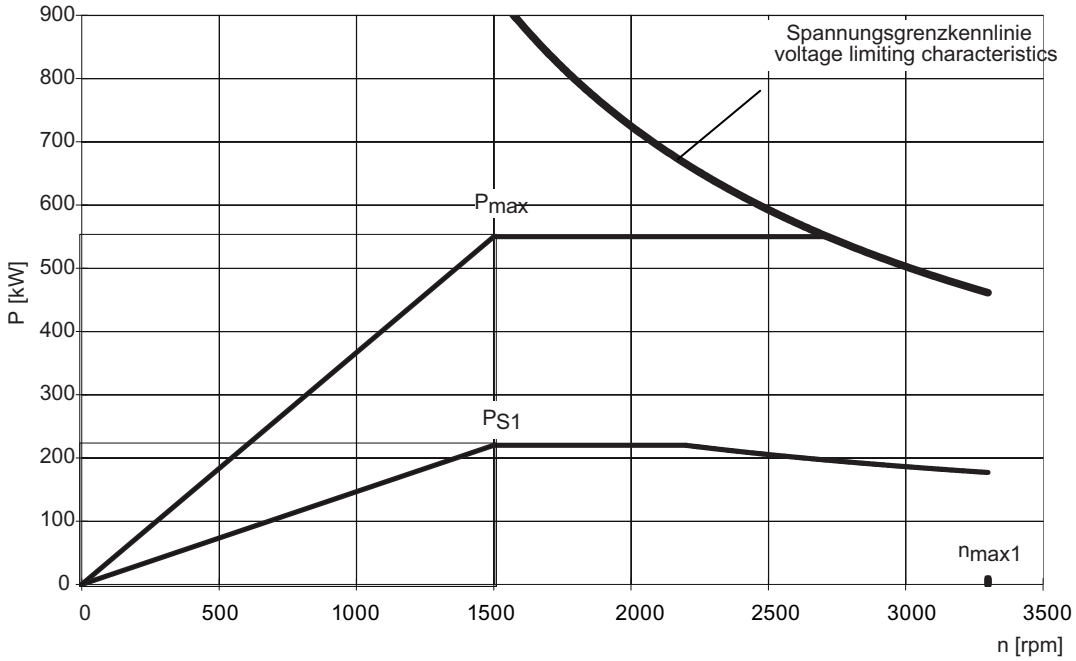



Tabella 4- 598 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8284-□□W2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 220 | 1401 | 250 | 3300 | - | - | - | 2200 | 3502 | 625 | 1401 | 250 |



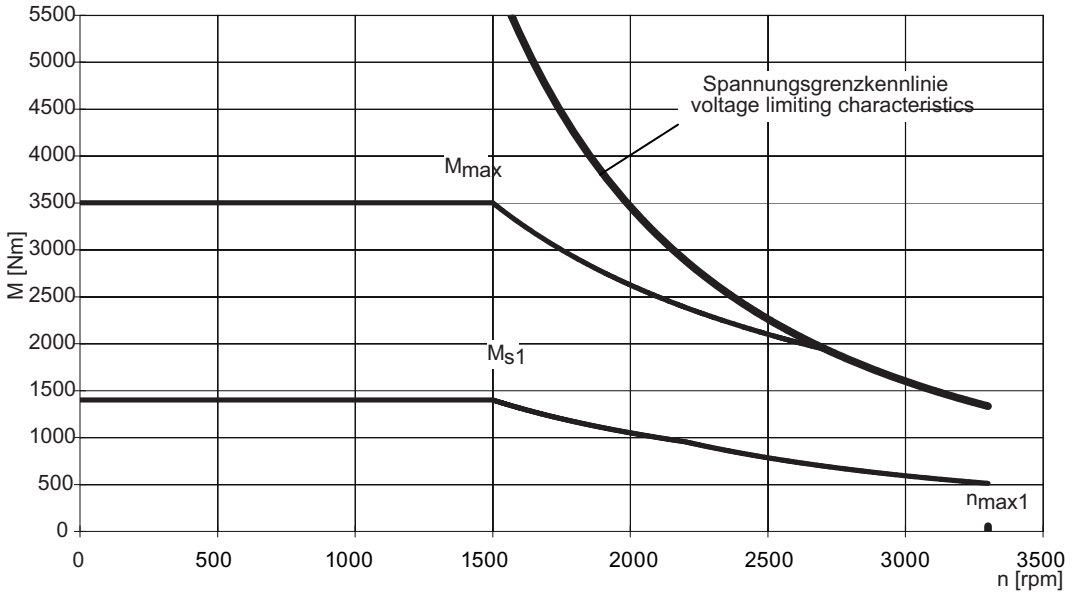
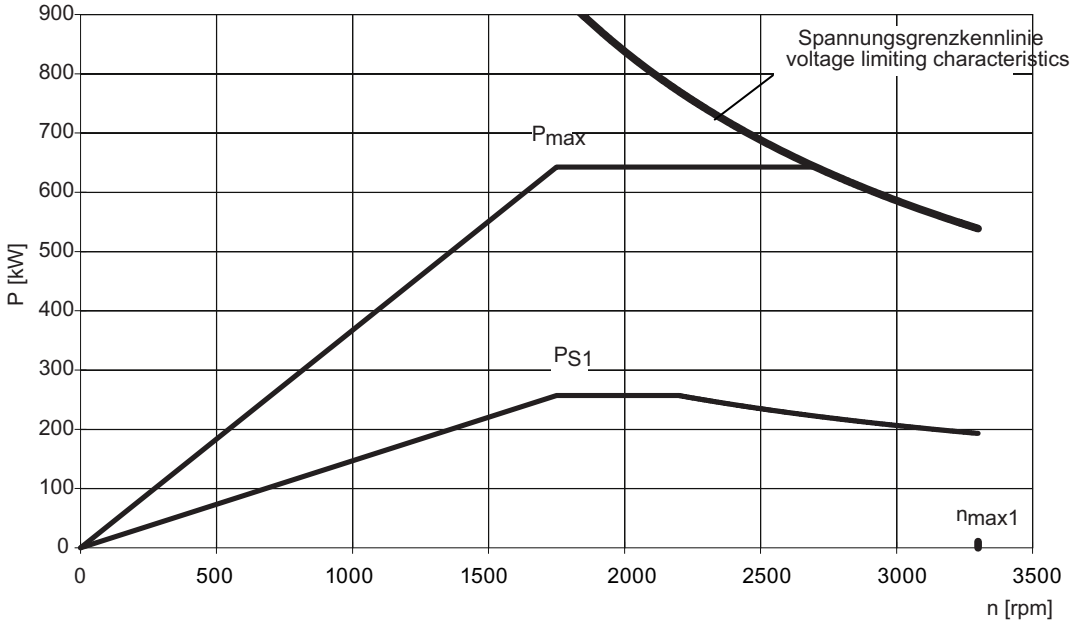



Tabella 4- 599 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8284-□□W2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 257 | 1402 | 250 | 3300 | - | - | - | 2200 | 3506 | 625 | 1402 | 250 |
| 1500 | 220 | 1402 | 250 | | | | | 2700 | | | | |



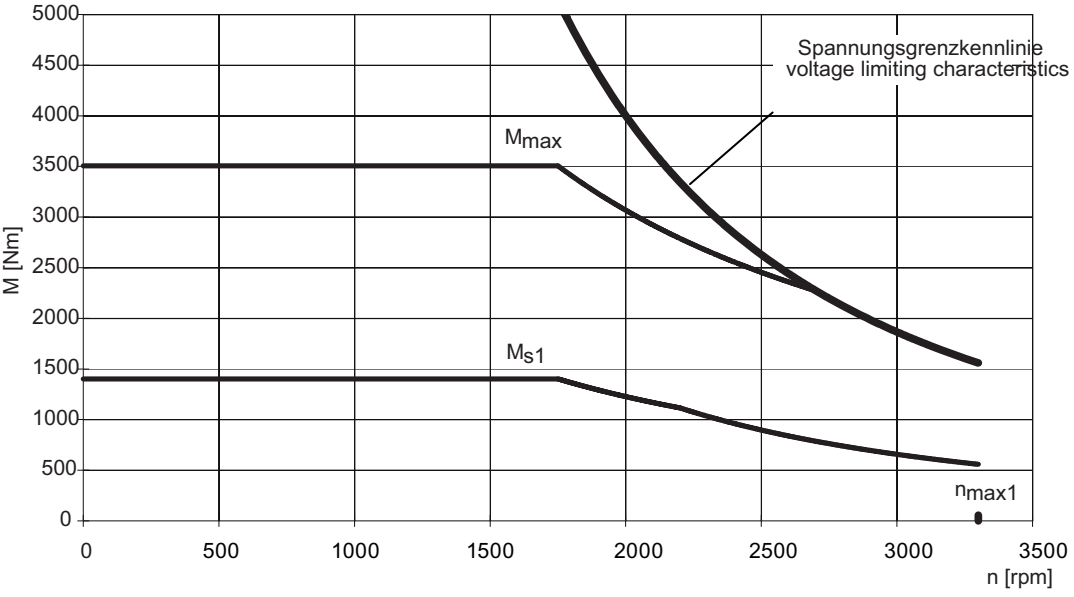
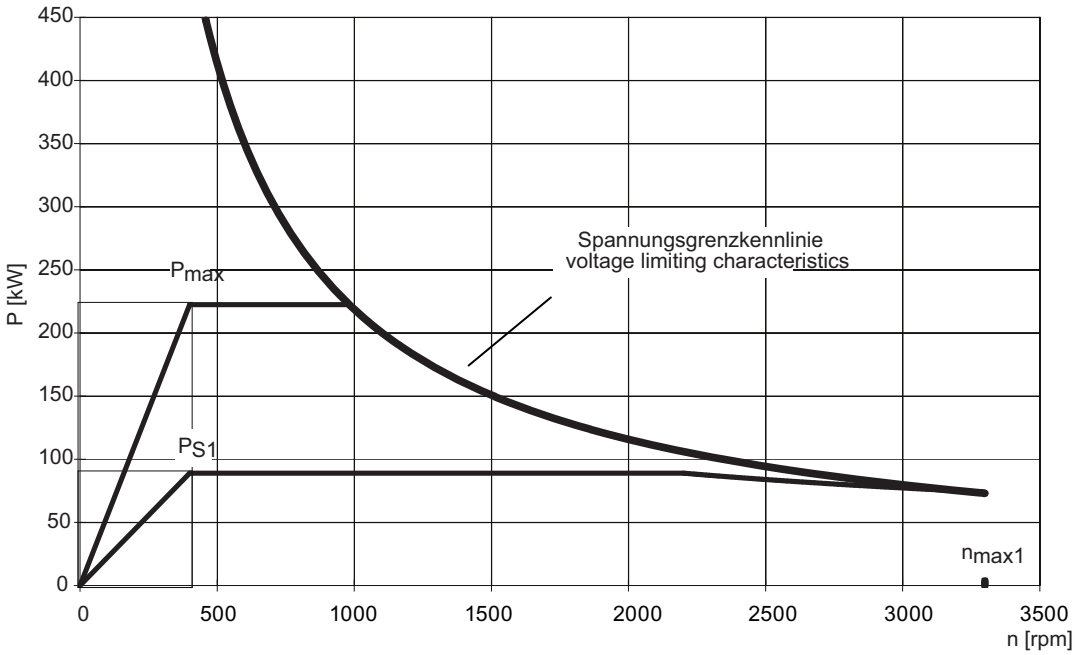



Tabella 4- 600 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8286-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 89 | 2125 | 210 | 3300 | - | - | - | 2200 | 5312 | 525 | 2125 | 210 |



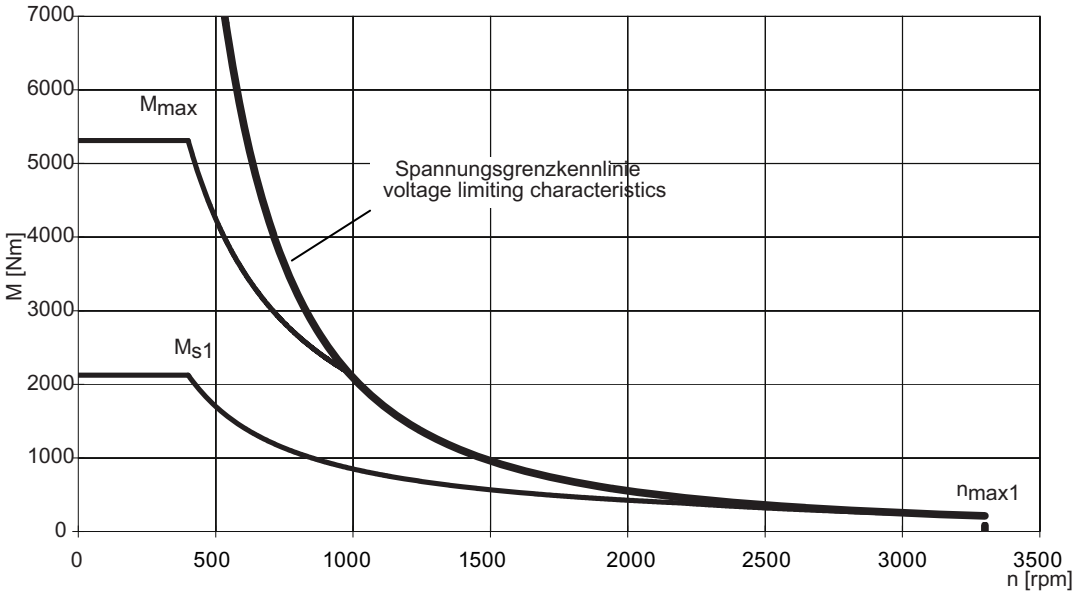
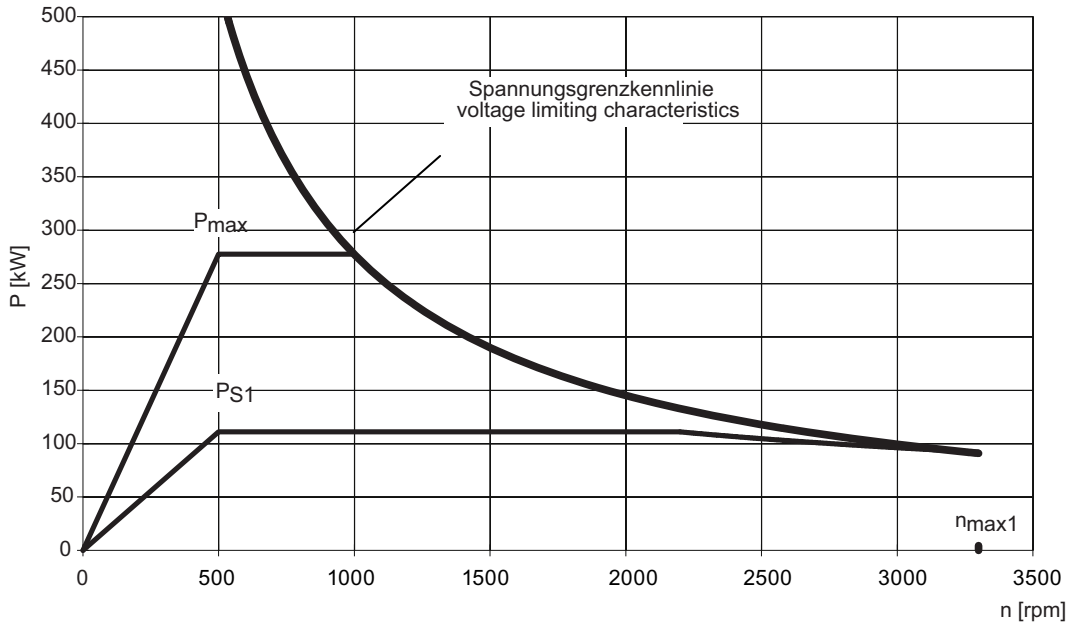



Tabella 4- 601 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8286-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 111 | 2120 | 205 | 3300 | - | - | - | 2200 | 5300 | 513 | 2120 | 205 |
| 400 | 89 | 2120 | 205 | | | | | 3300 | | | | |



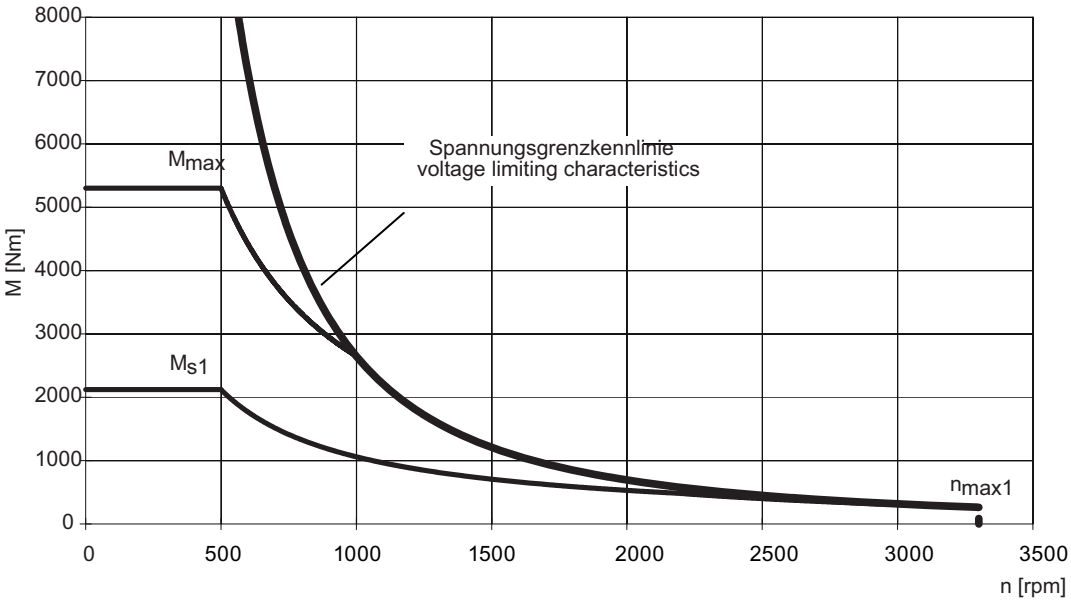



Tabella 4- 602 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8286-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 133 | 2117 | 205 | 3300 | - | - | - | 2200 | 5292 | 513 | 2117 | 205 |

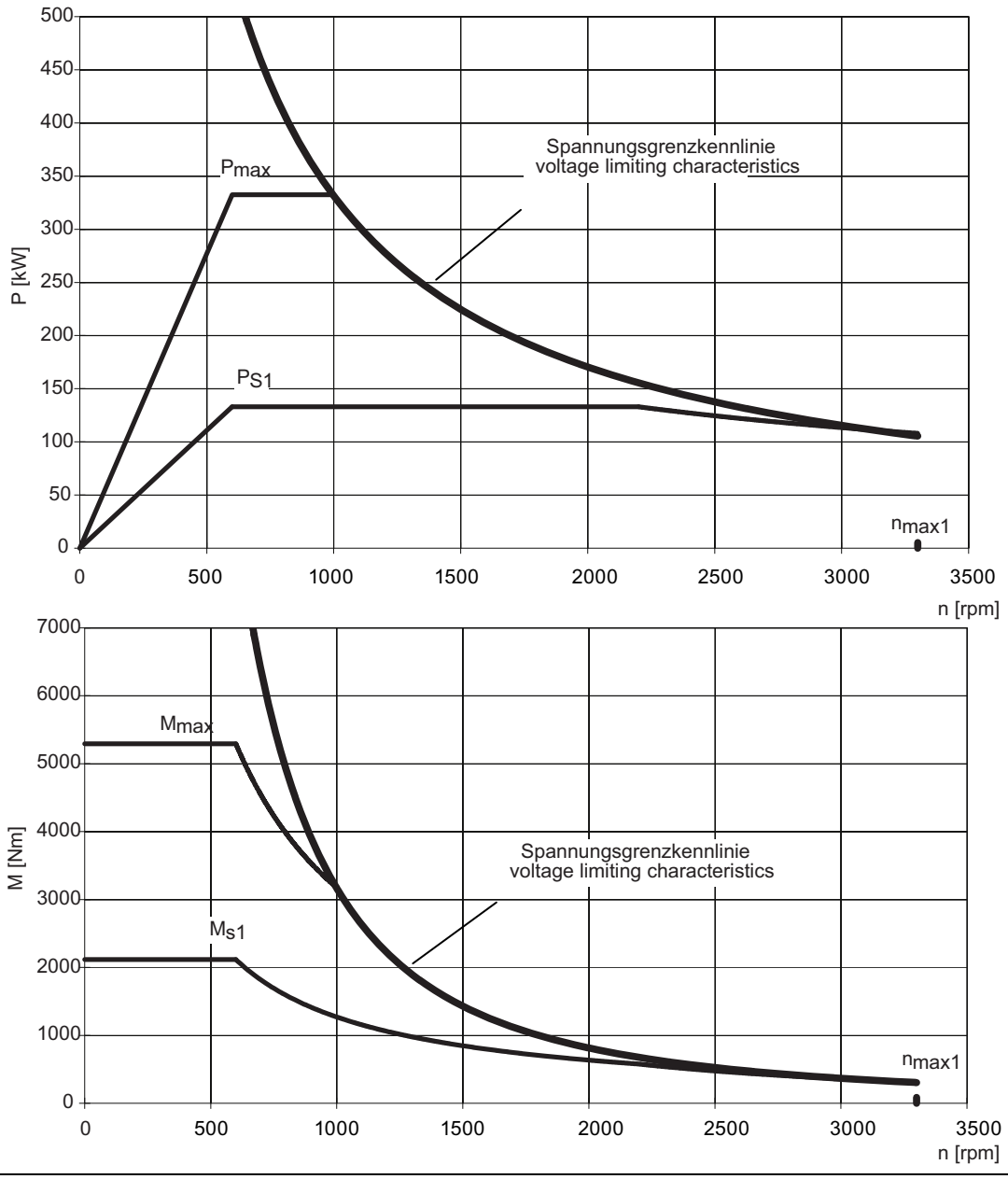
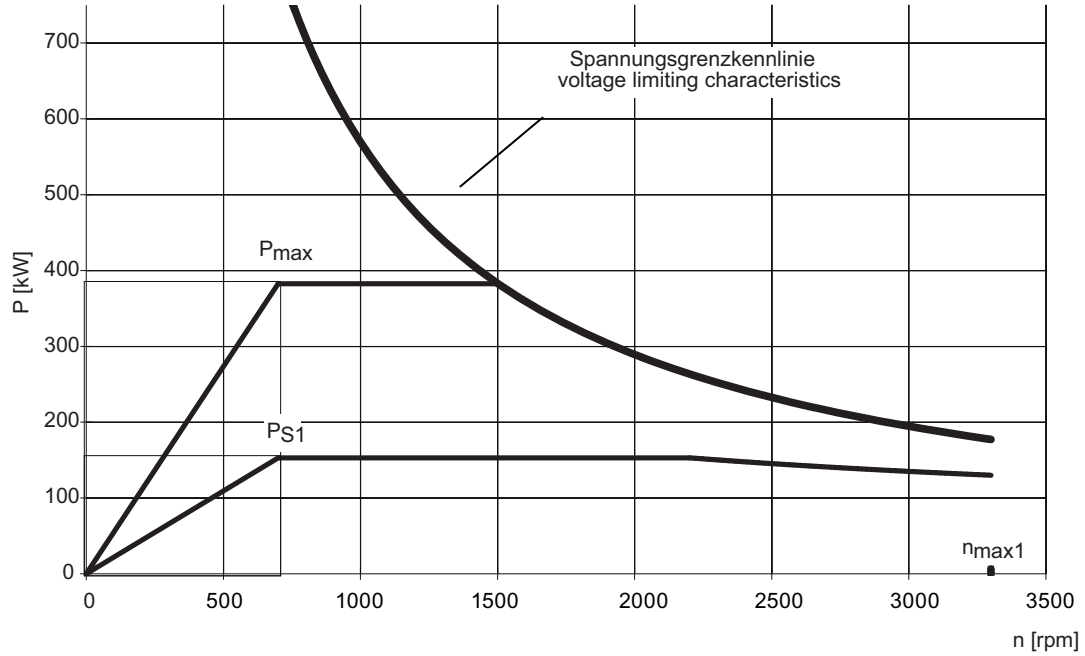


Tabella 4- 603 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8286-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 153 | 2087 | 320 | 3300 | - | - | - | 2200 | 5218 | 800 | 2087 | 320 |



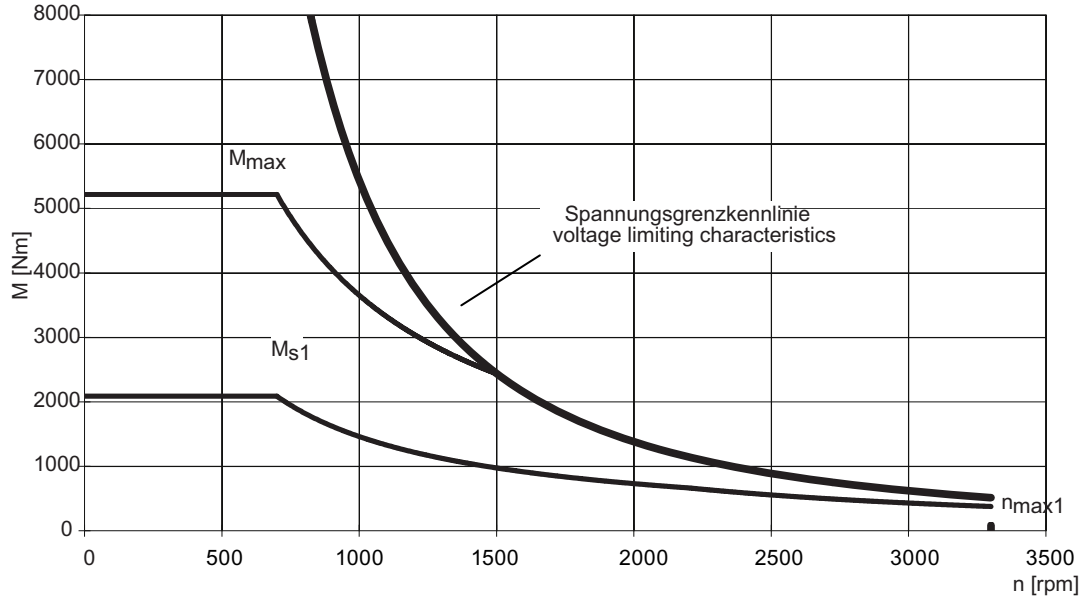
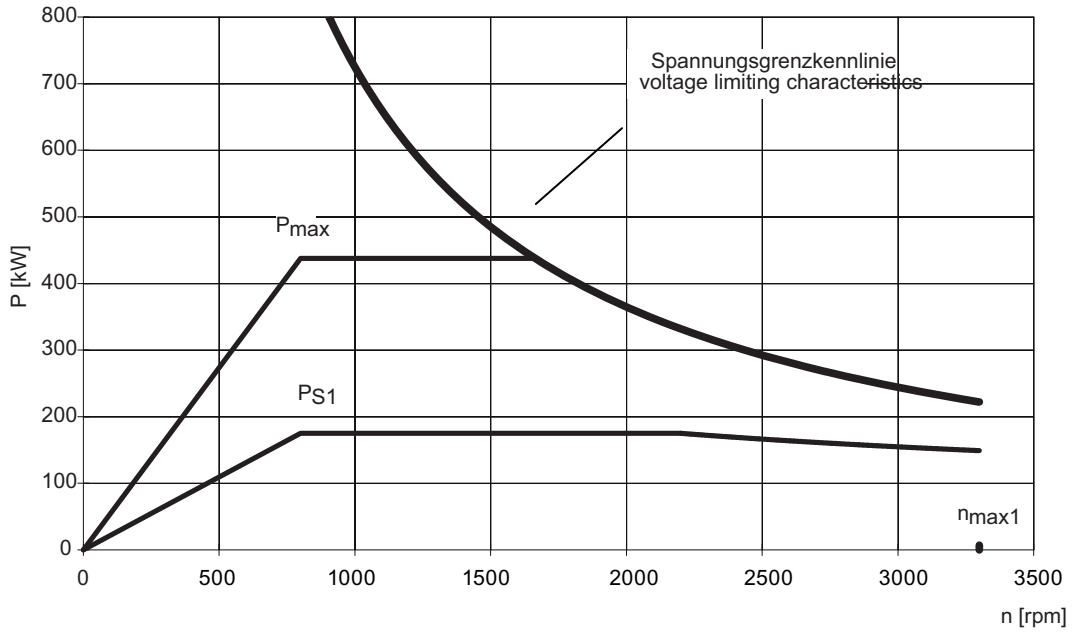



Tabella 4- 604 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8286-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 175 | 2089 | 320 | 3300 | - | - | - | 2200 | 5223 | 800 | 2089 | 320 |
| 700 | 153 | 2089 | 320 | | | | | 3100 | | | | |



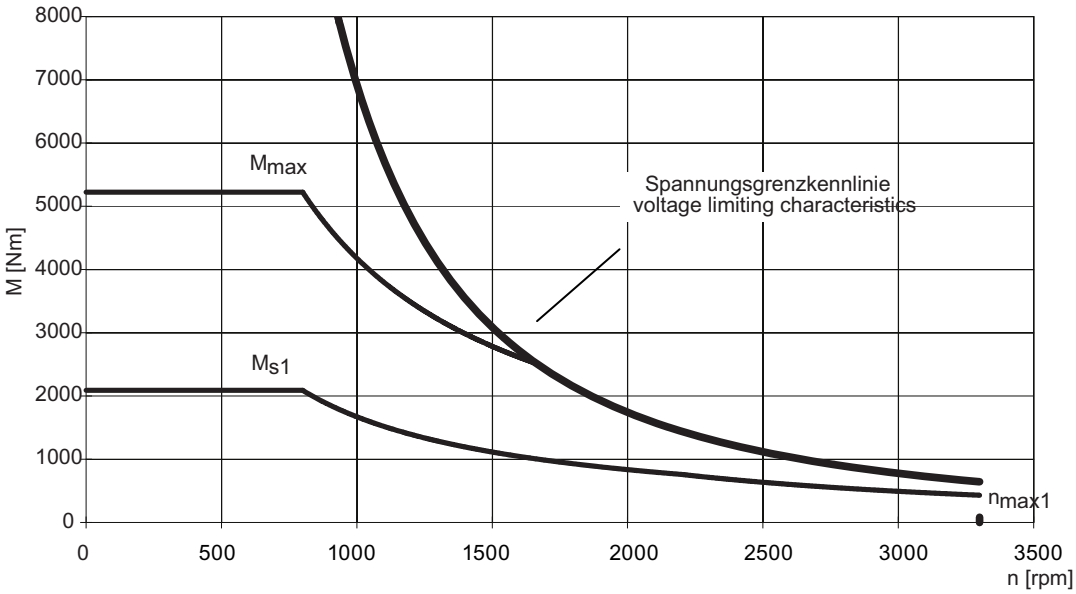
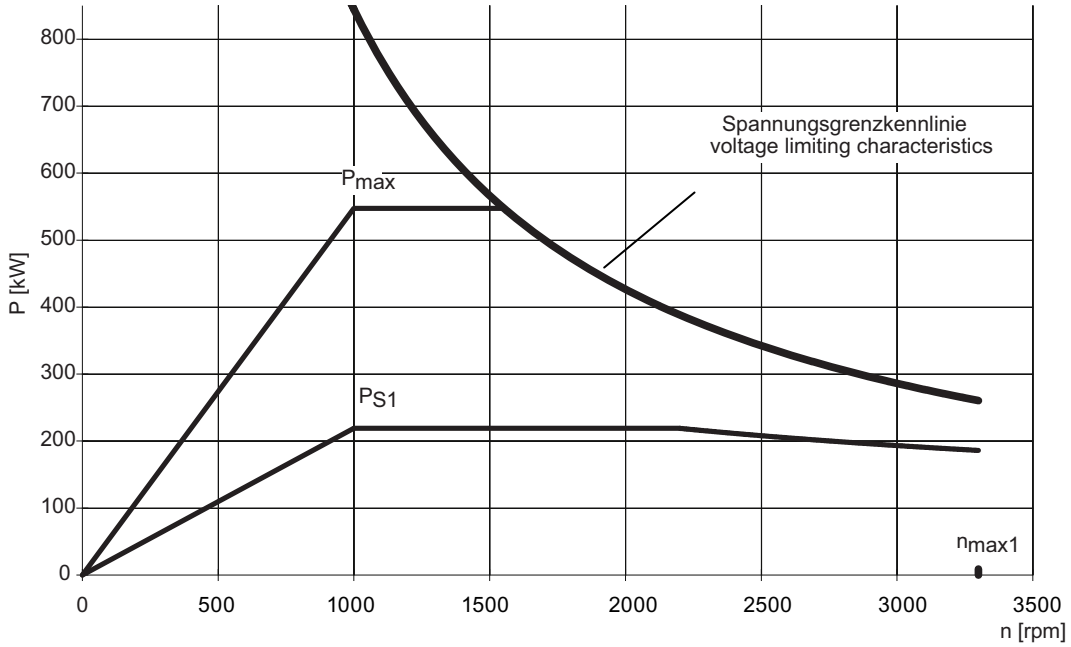



Tabella 4- 605 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8286-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 219 | 2091 | 325 | 3300 | - | - | - | 2200 | 5229 | 813 | 2091 | 325 |



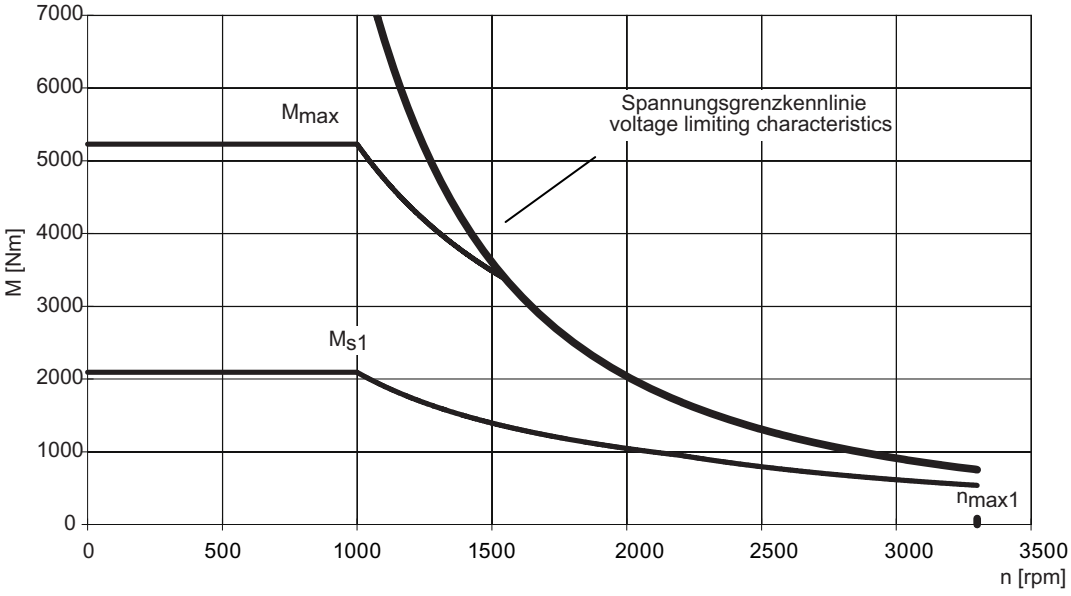
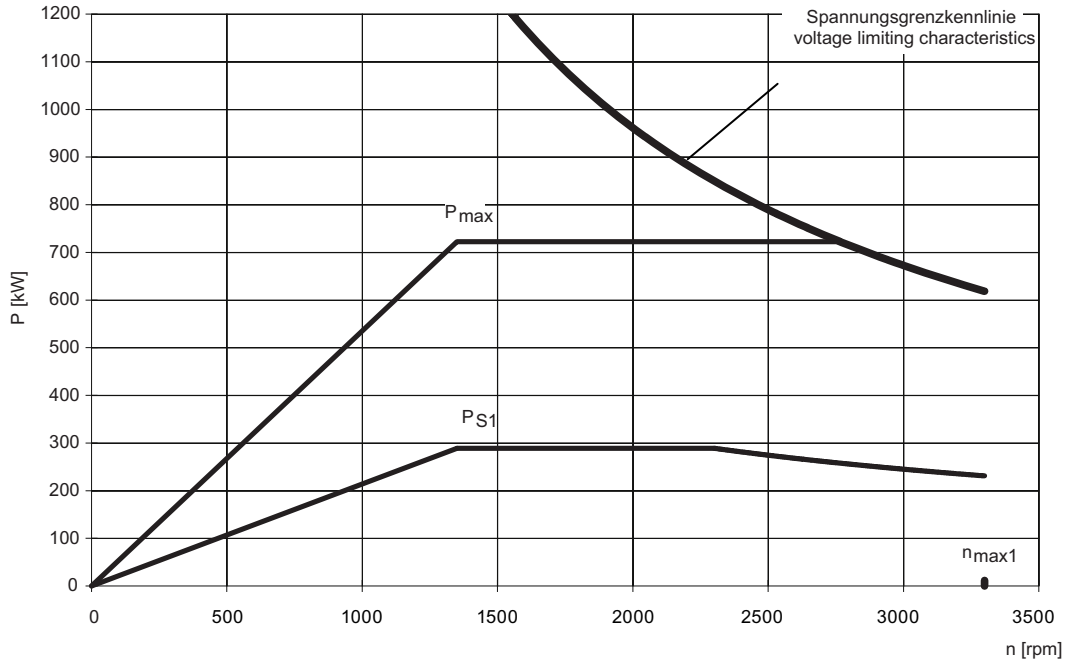



Tabella 4- 606 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8286-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 214 | 2044 | 460 | 3300 | - | - | - | 2200 | 5109 | 1150 | 2044 | 460 |



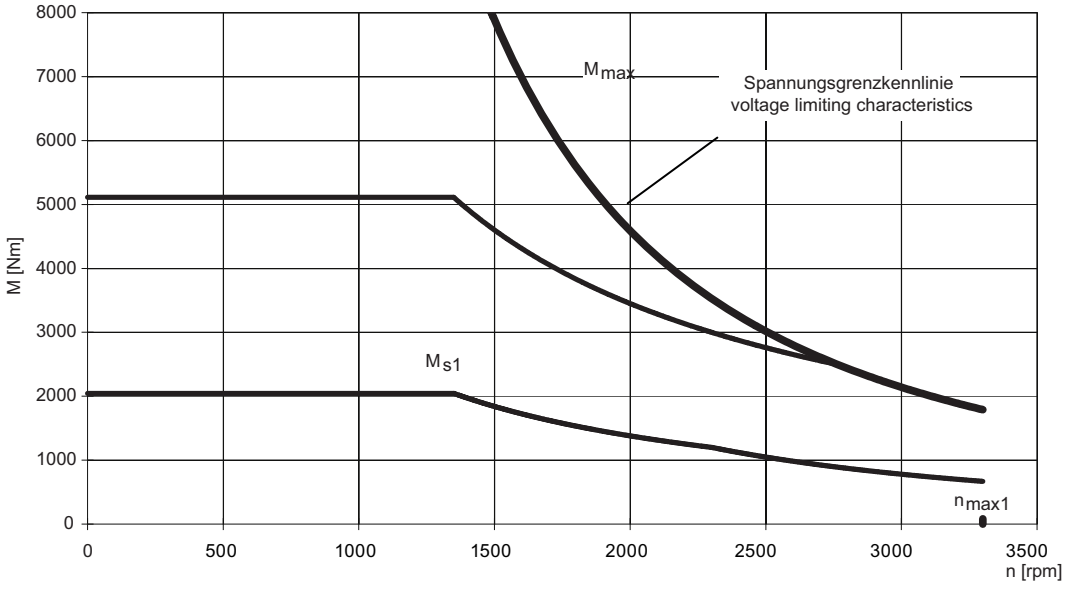
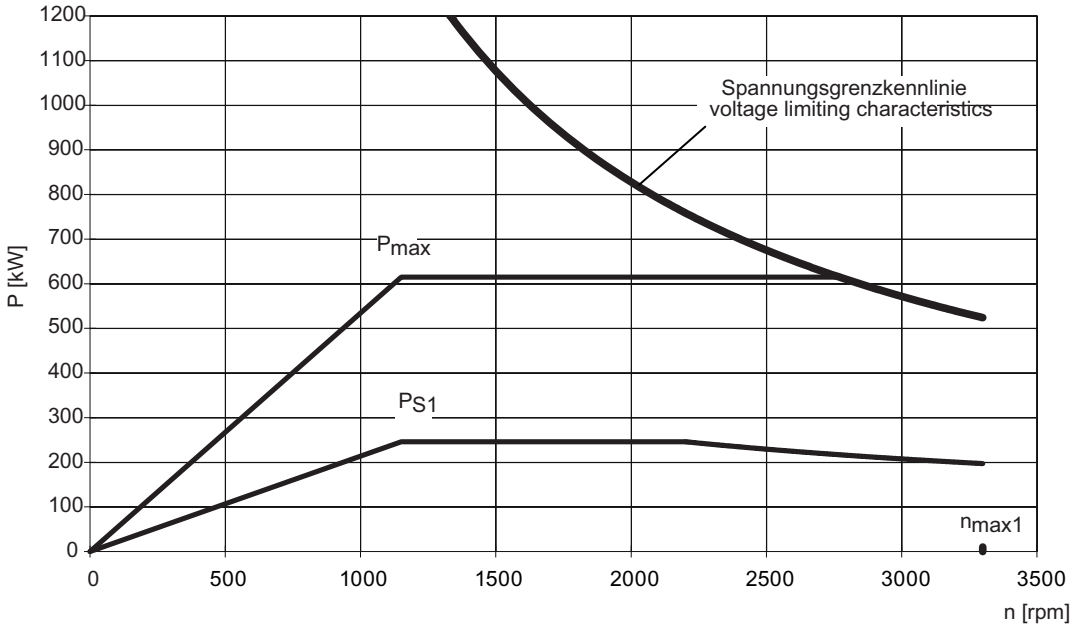



Tabella 4- 607 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8286-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 246 | 2043 | 455 | 3300 | - | - | - | 2200 | 5107 | 1138 | 2043 | 455 |
| 1000 | 214 | 2043 | 455 | | | | | 2800 | | | | |



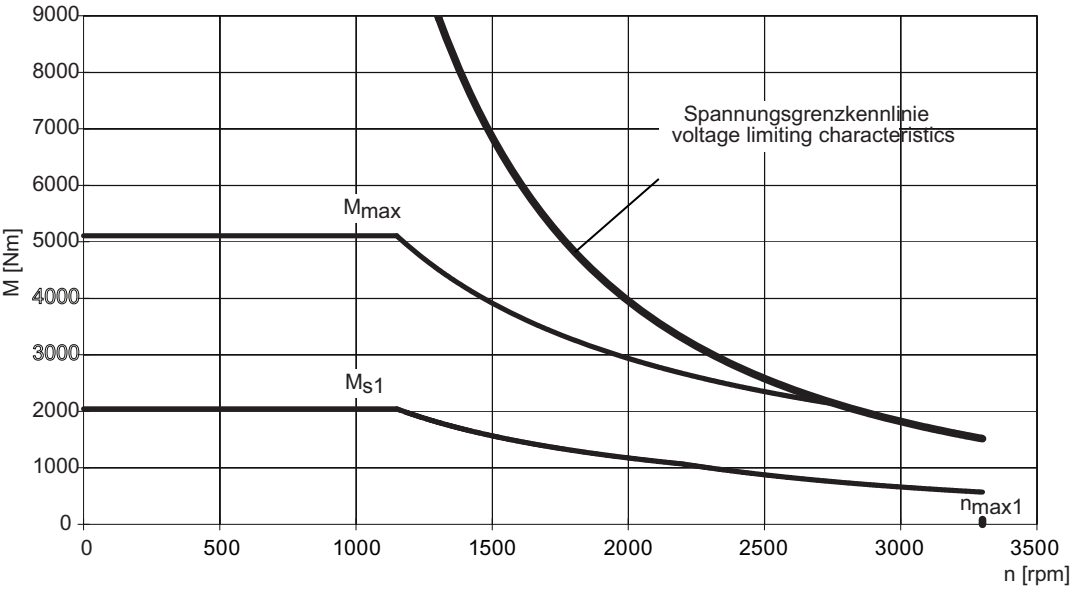
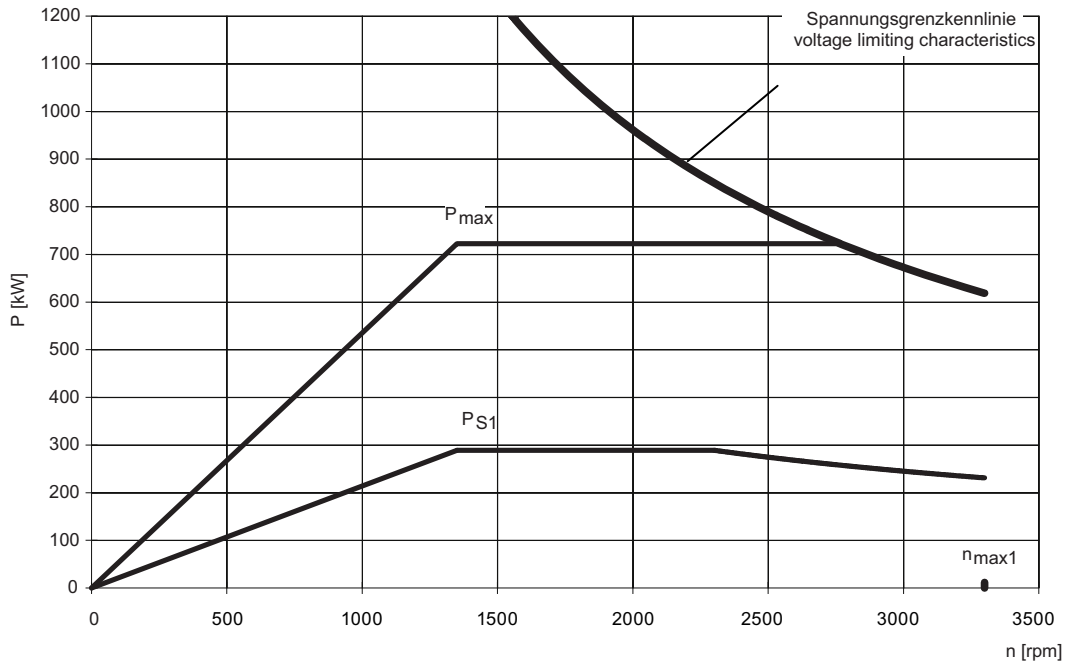



Tabella 4- 608 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8286-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 289 | 2044 | 460 | 3300 | - | - | - | 2300 | 5111 | 1150 | 2044 | 460 |



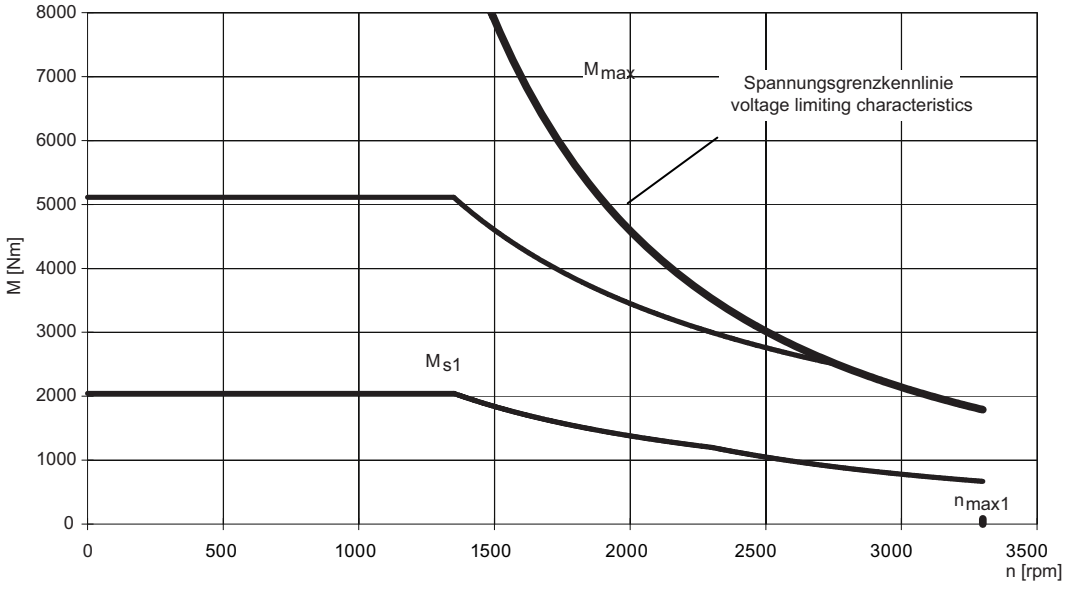
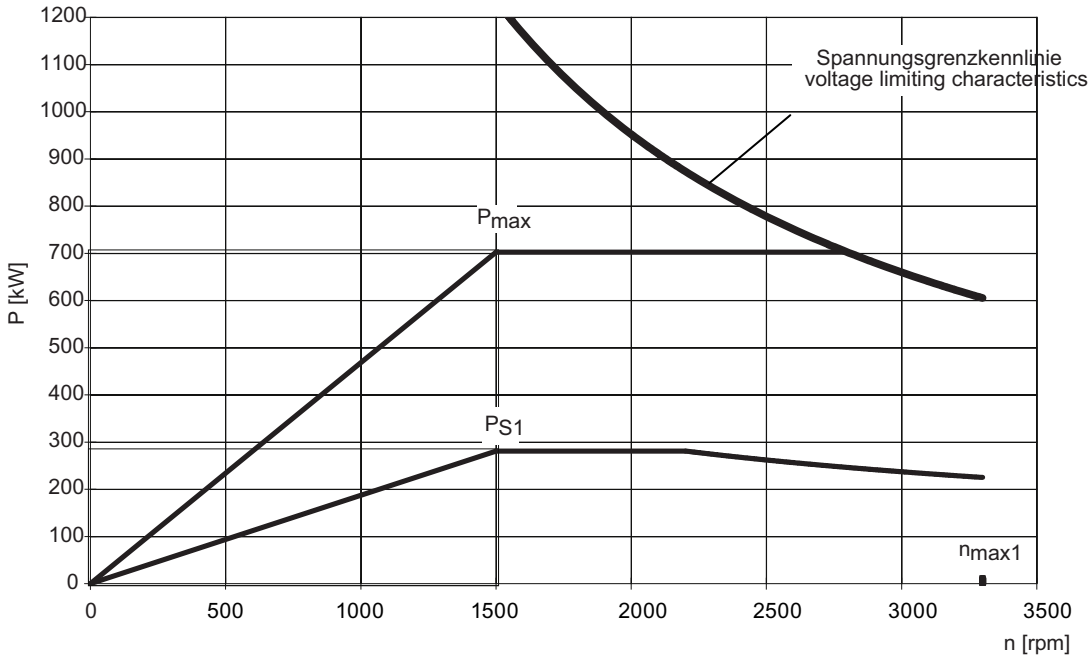



Tabella 4- 609 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8286-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 281 | 1789 | 540 | 3300 | - | - | - | 2200 | 4473 | 1350 | 1789 | 540 |



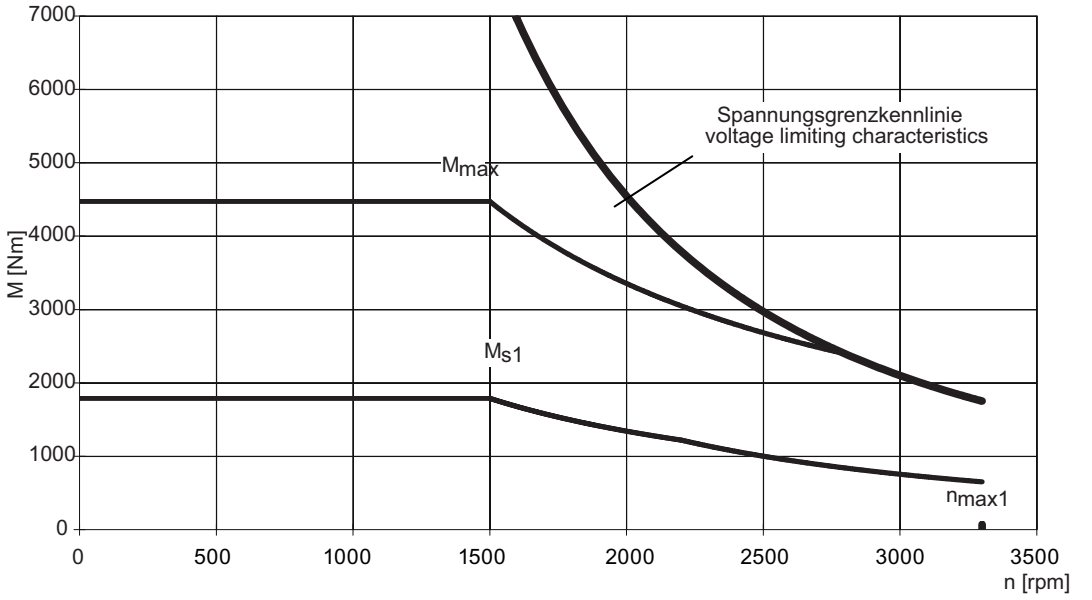
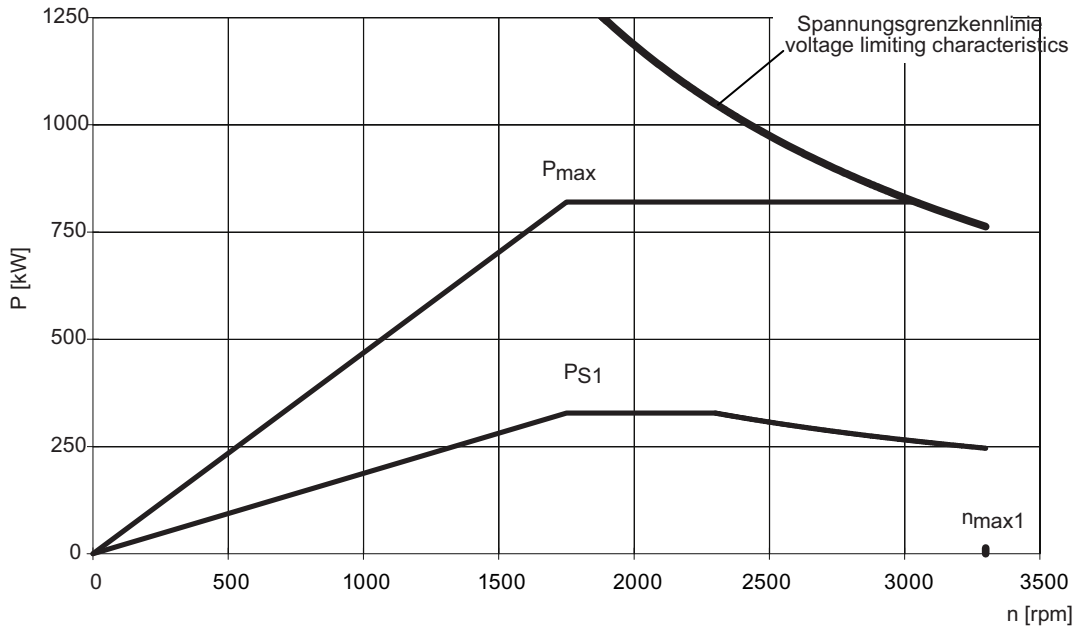



Tabella 4- 610 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8286-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 328 | 1790 | 540 | 3300 | - | - | - | 2300 | 4475 | 1350 | 1790 | 540 |
| 1500 | 281 | 1790 | 540 | | | | | 2800 | | | | |



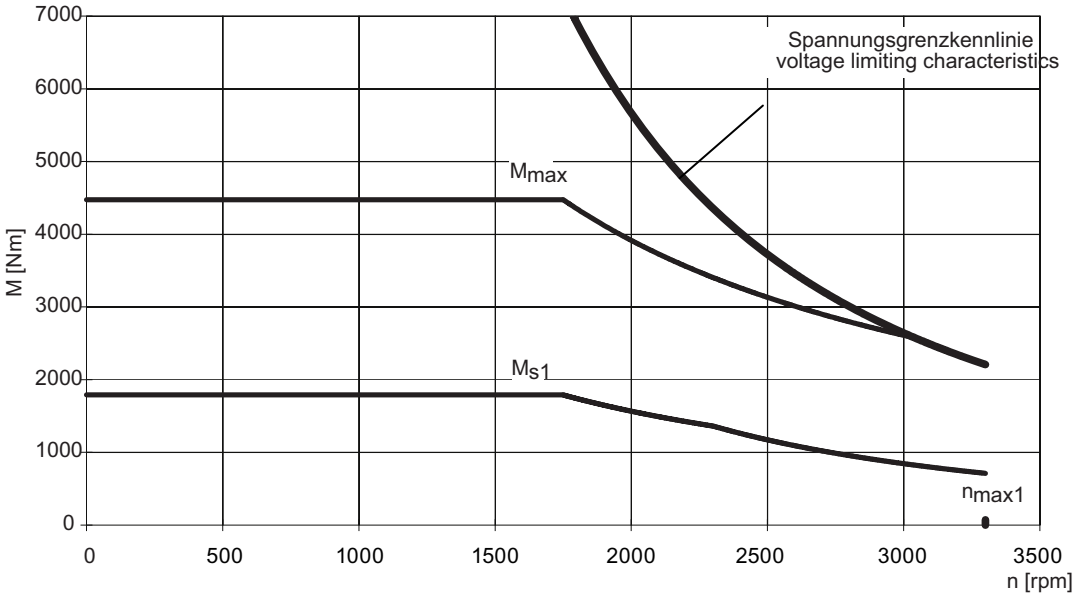



Tabella 4- 611 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8286-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 375 | 1791 | 550 | 3300 | - | - | - | 2400 | 4477 | 1375 | 1791 | 550 |

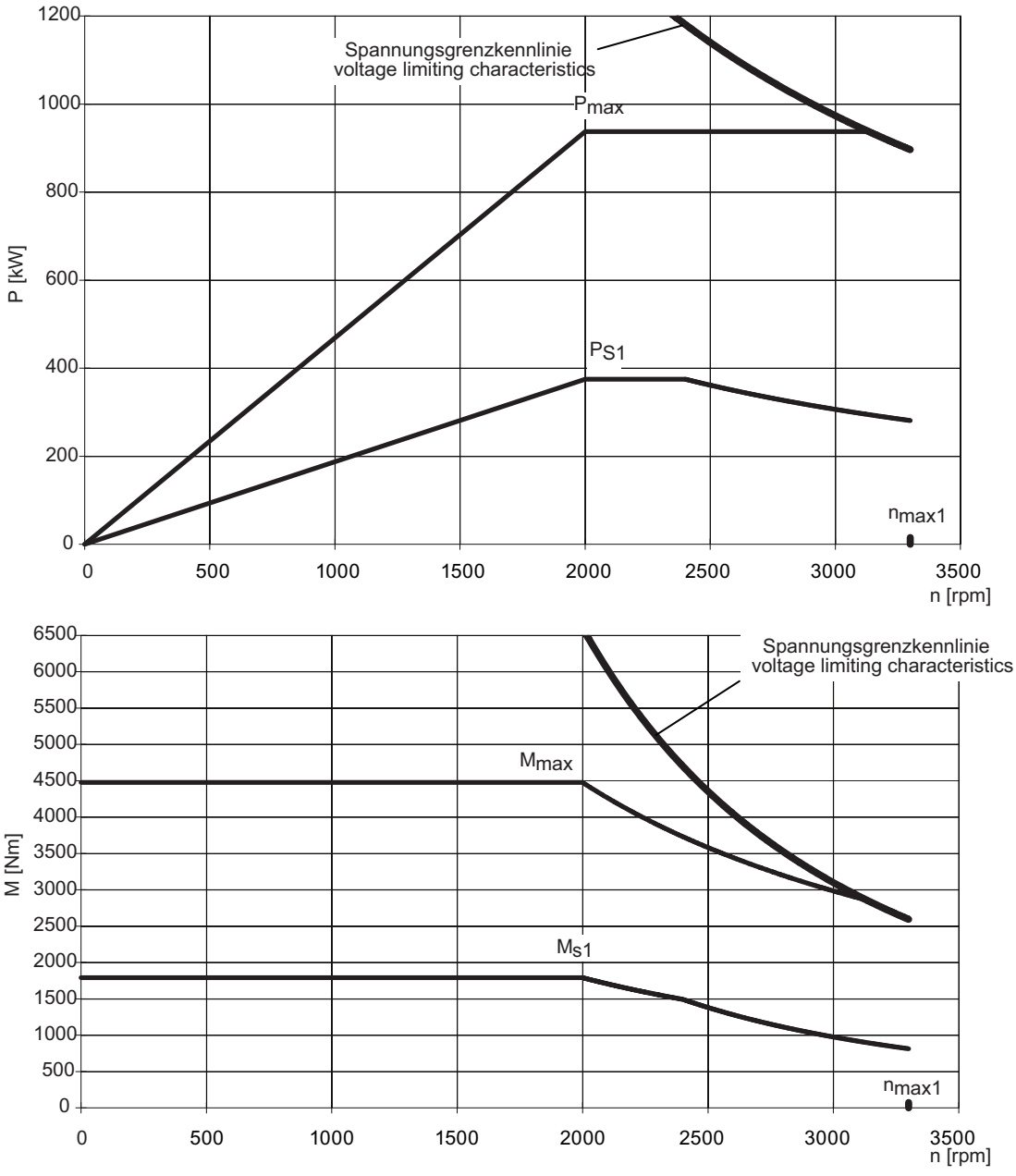
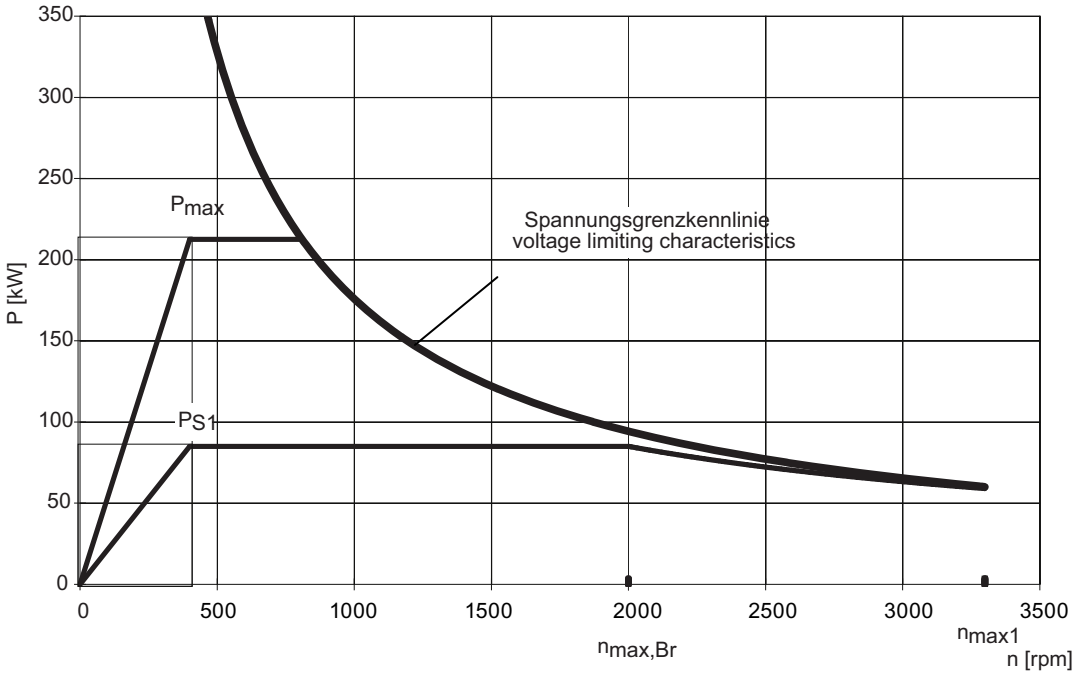


Tabella 4- 612 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8286-□□H2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 85 | 2029 | 108 | 3300 | - | - | 2000 | 2000 | 5073 | 270 | 2029 | 108 |



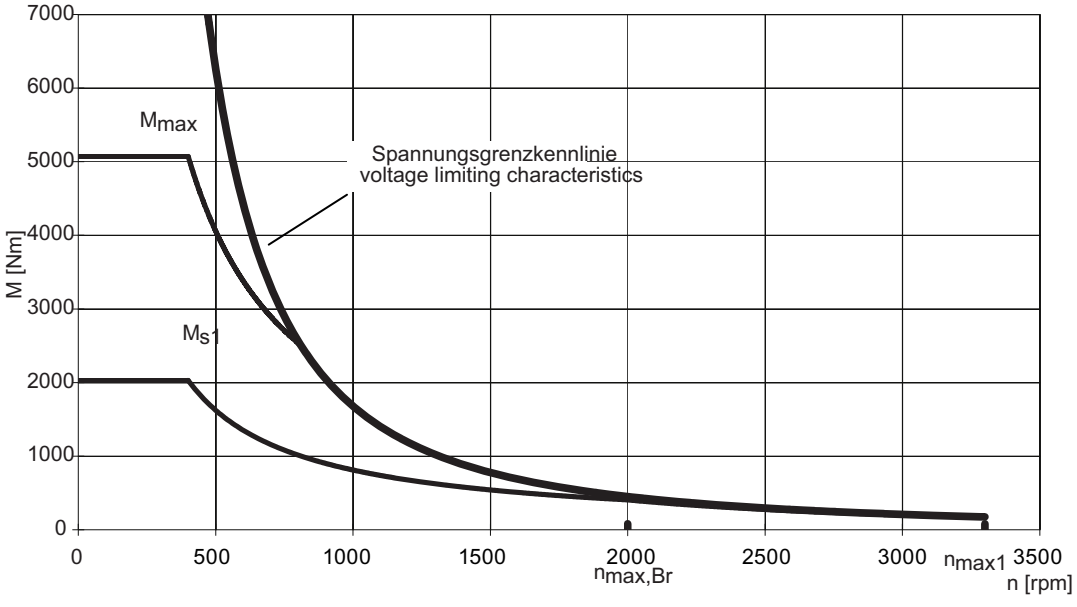
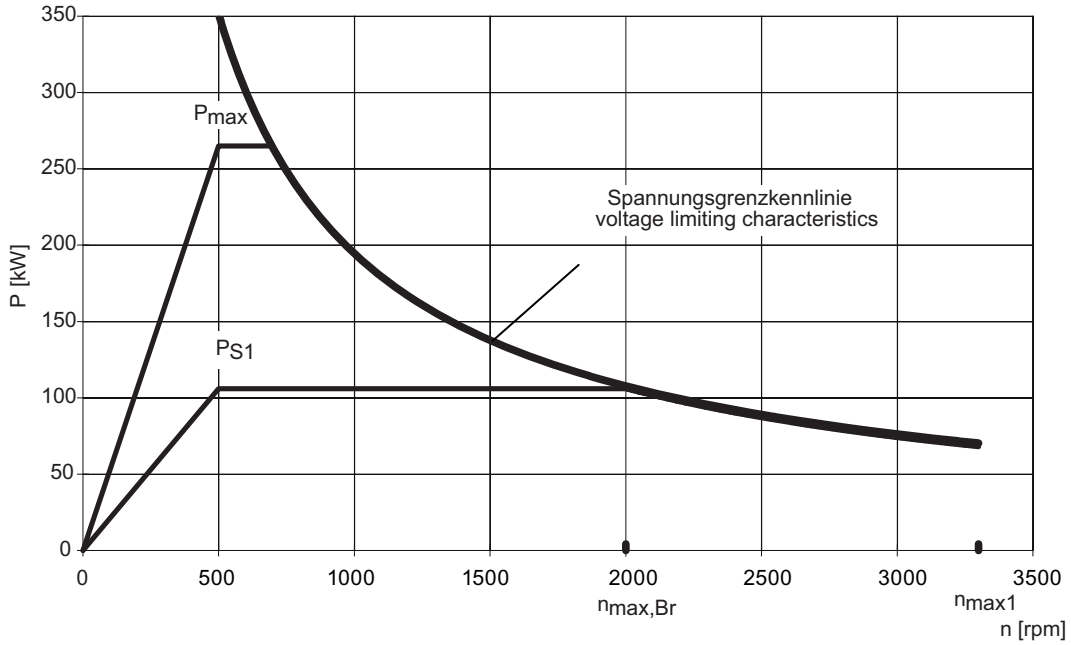



Tabella 4- 613 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8286-□□H2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 106 | 2025 | 108 | 3300 | - | - | - | 2000 | 5062 | 270 | 2025 | 108 |
| 400 | 85 | 2025 | 108 | | | | | 2600 | | | | |



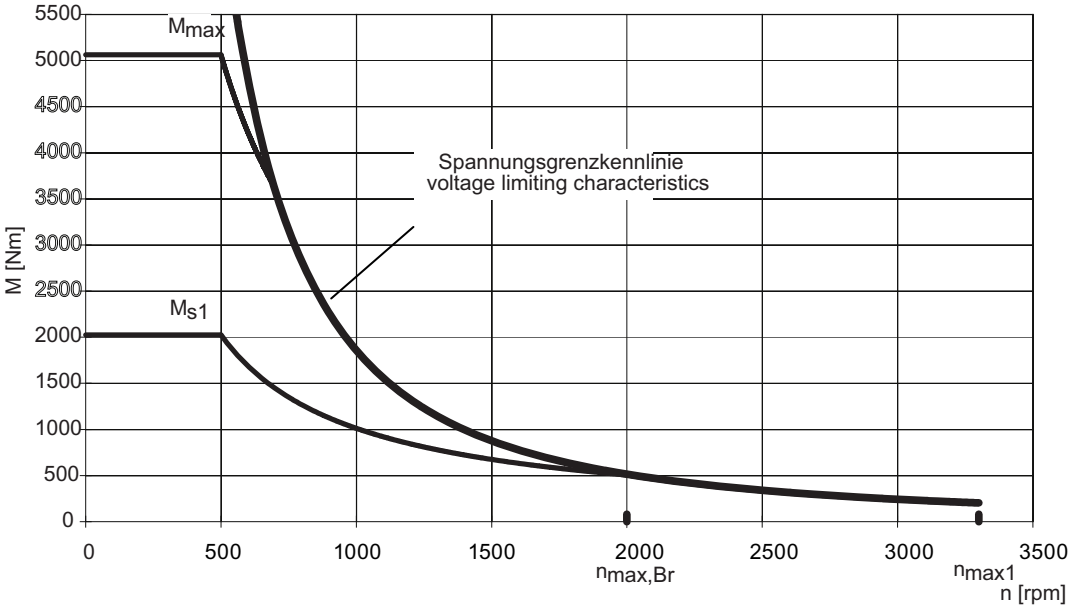
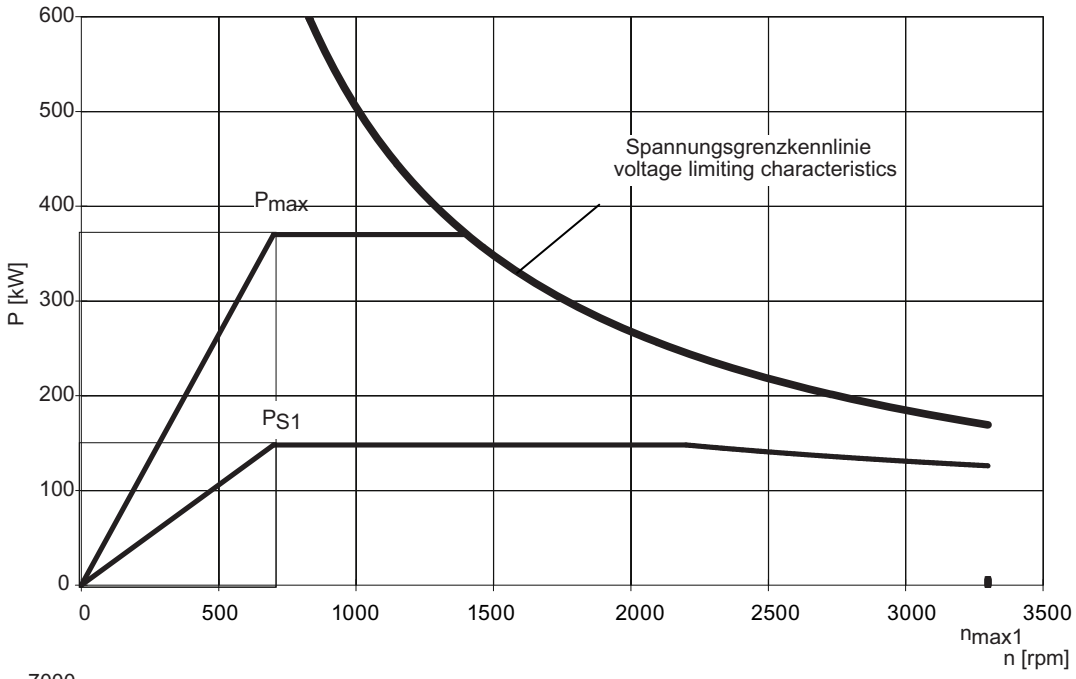



Tabella 4- 614 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8286-□□K2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 148 | 2019 | 174 | 3300 | - | - | - | 2200 | 5048 | 435 | 2019 | 174 |



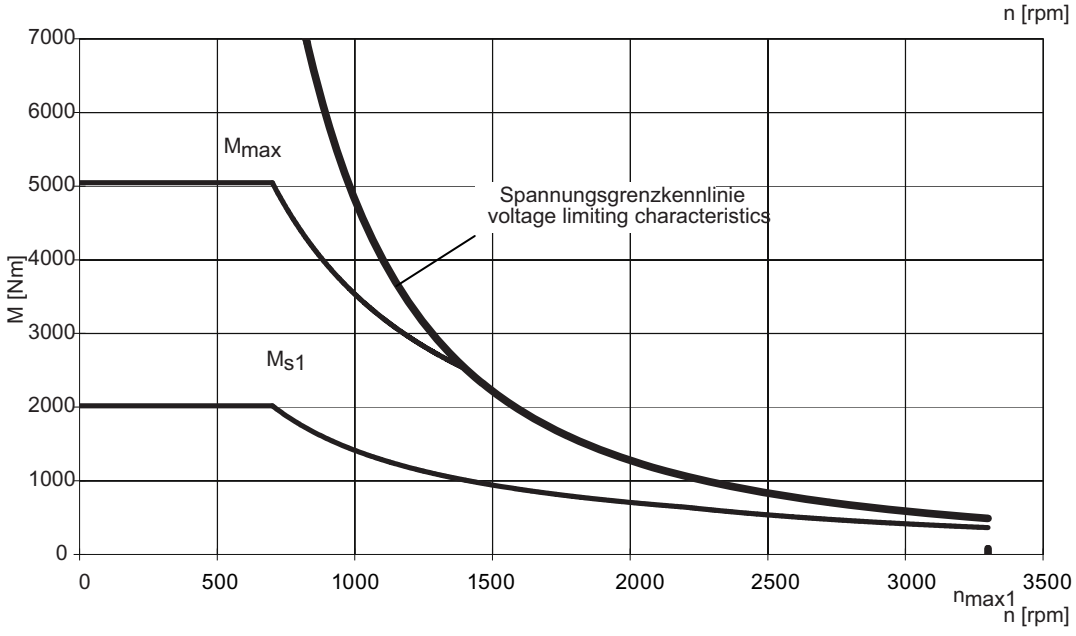
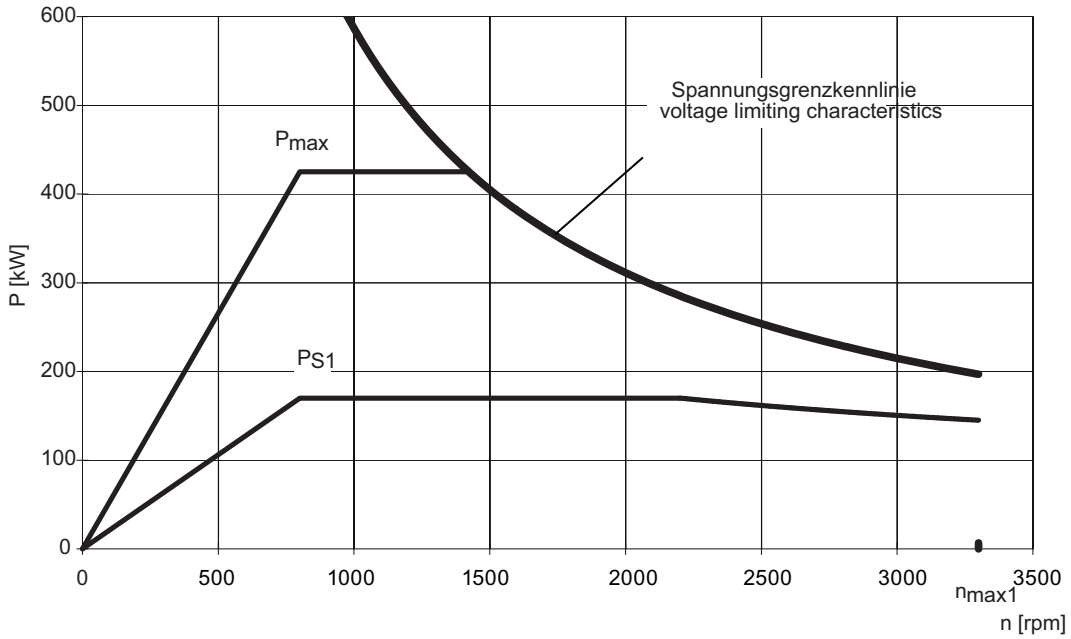



Tabella 4- 615 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8286-□□K2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 170 | 2029 | 176 | 3300 | - | - | - | 2200 | 5073 | 440 | 2029 | 176 |
| 700 | 149 | 2029 | 176 | | | | | 3100 | | | | |



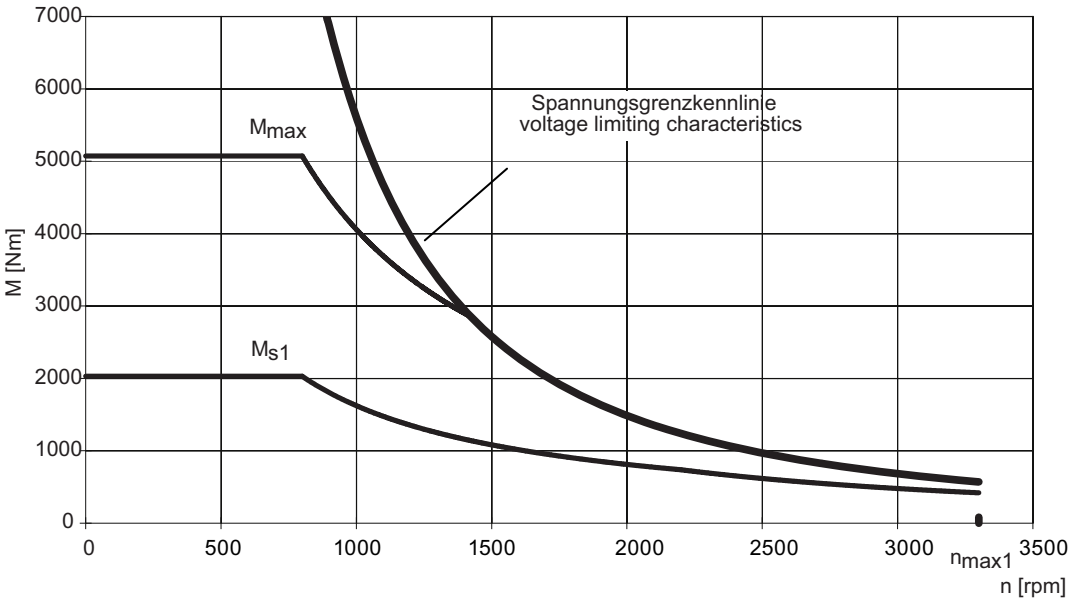
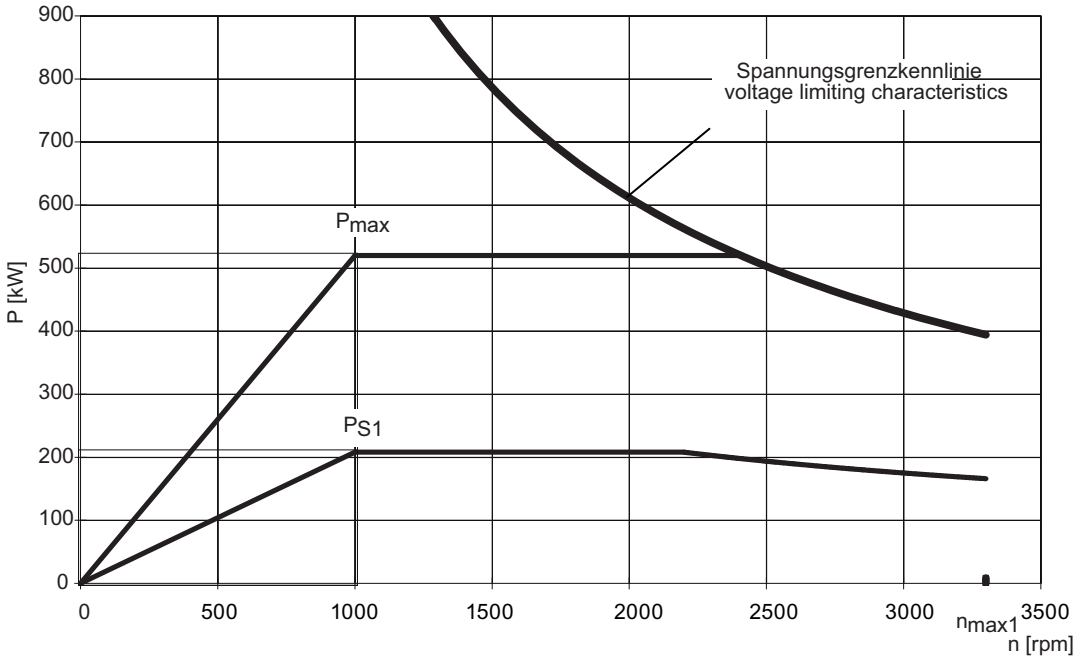



Tabella 4- 616 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8286-□□U2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 208 | 1986 | 260 | 3300 | - | - | - | 2200 | 4966 | 650 | 1986 | 260 |



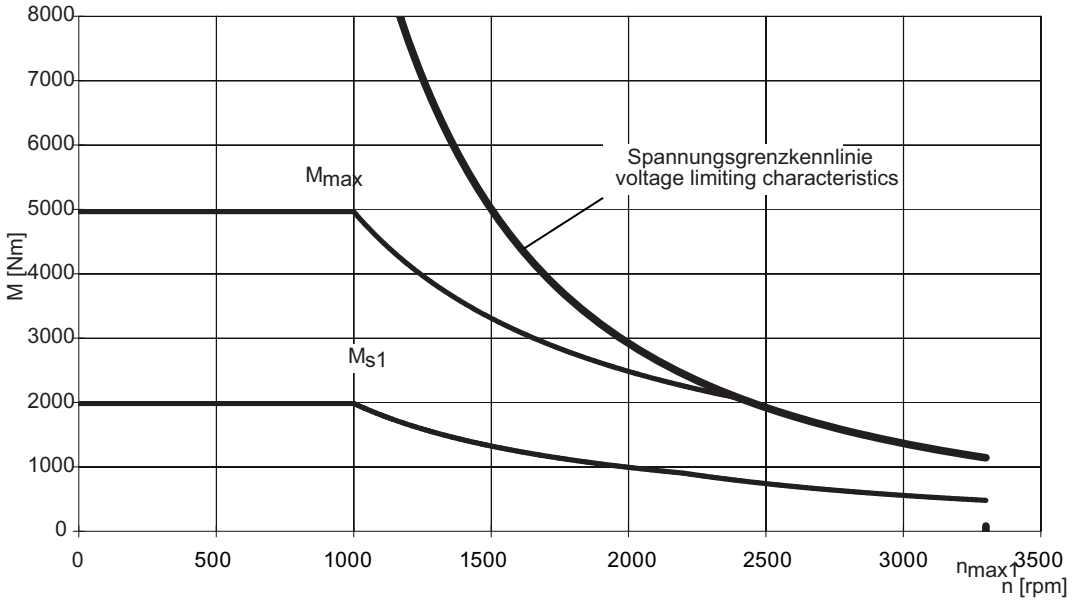
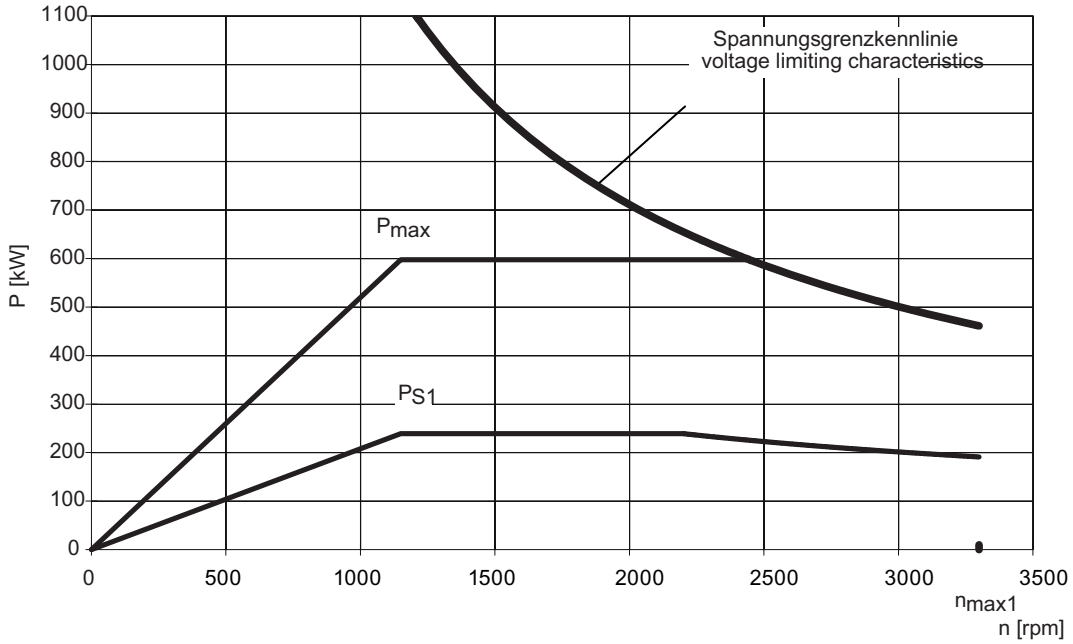



Tabella 4- 617 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8286-□□U2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 239 | 1985 | 260 | 3300 | - | - | - | 2200 | 4962 | 650 | 1985 | 260 |
| 1000 | 208 | 1985 | 260 | | | | | 2800 | | | | |



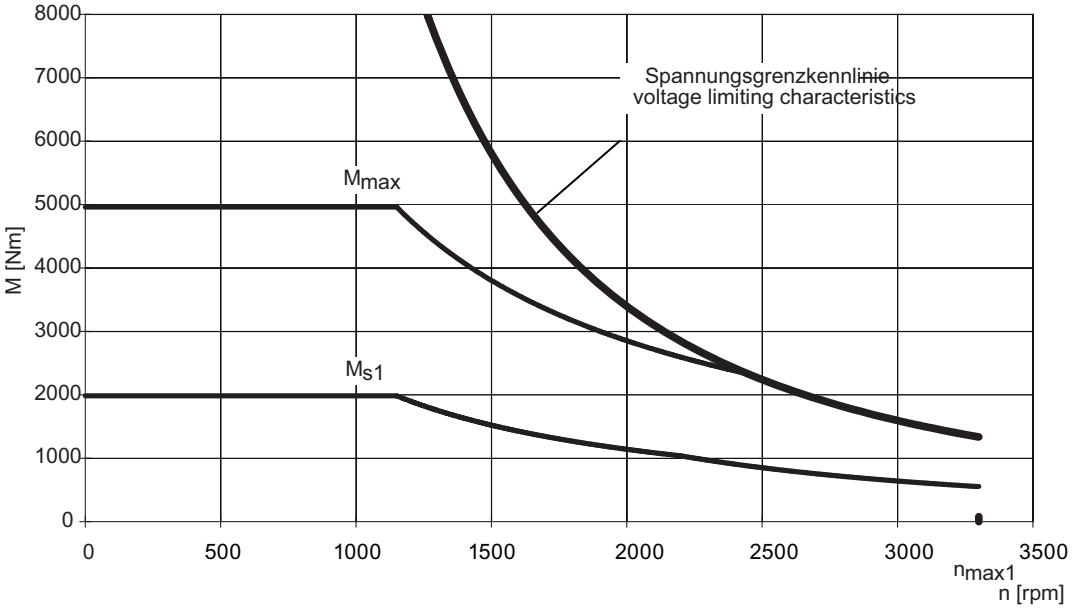
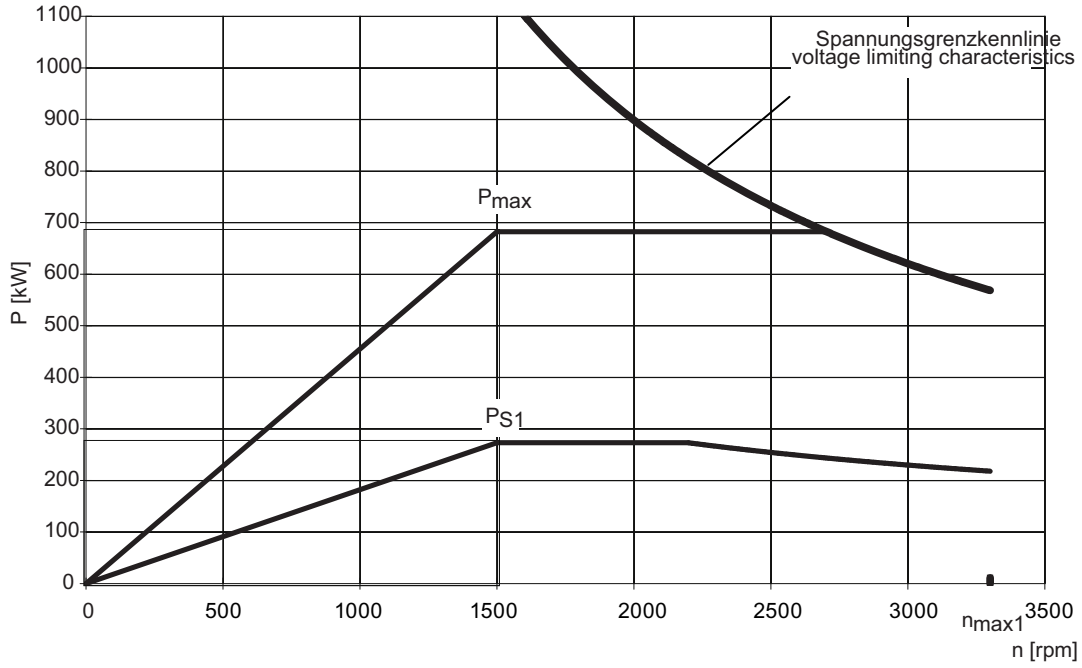



Tabella 4- 618 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8286-□□W2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 273 | 1738 | 310 | 3300 | - | - | - | 2200 | 4345 | 775 | 1738 | 310 |



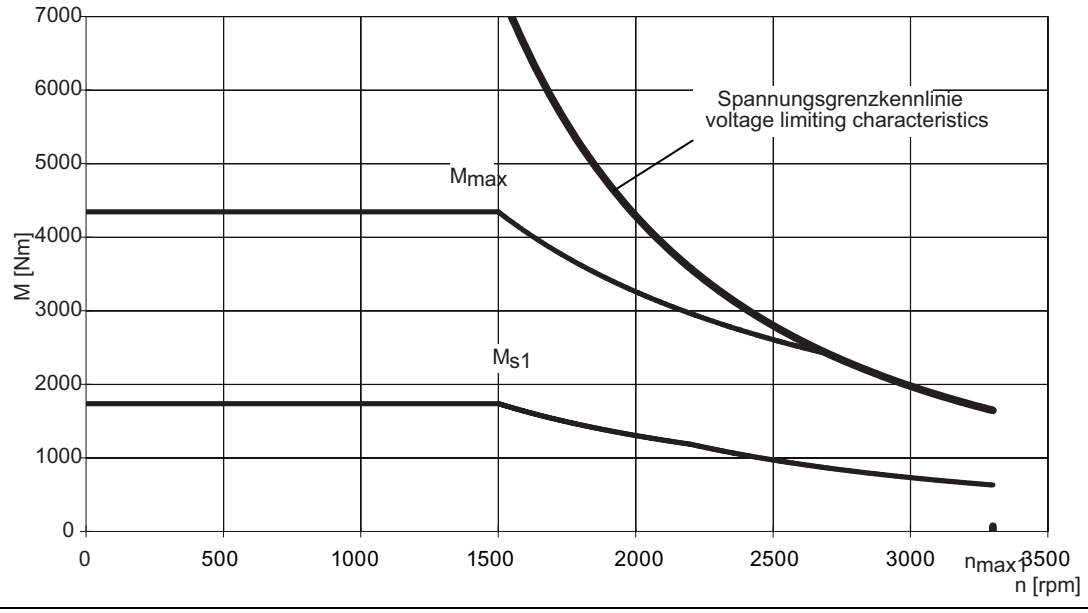
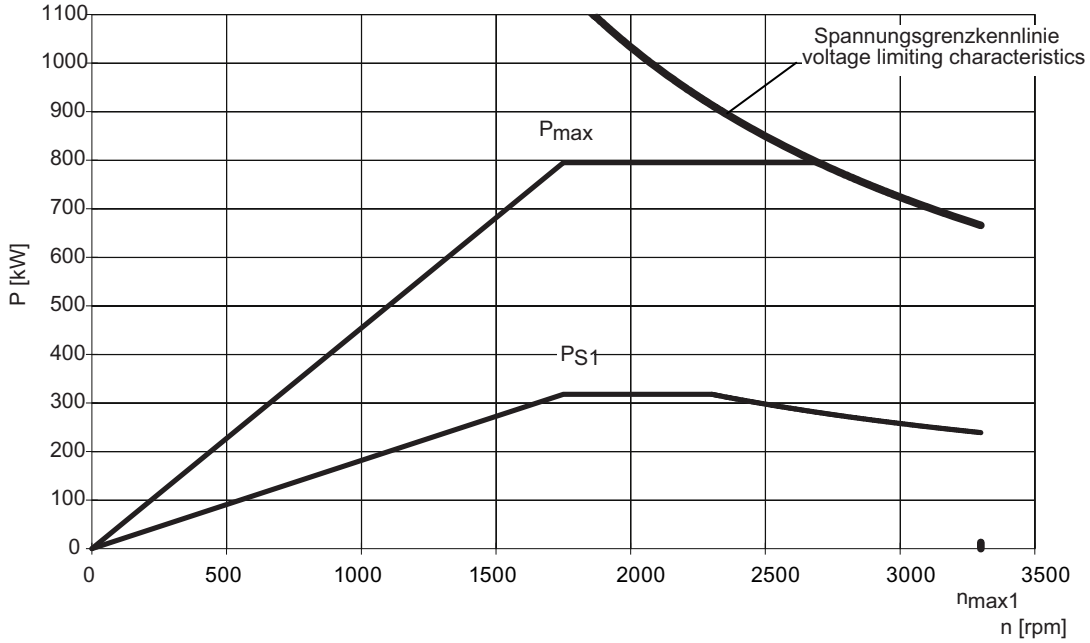



Tabella 4- 619 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8286-□□W2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 318 | 1735 | 305 | 3300 | - | - | - | 2300 | 4338 | 763 | 1735 | 305 |
| 1500 | 273 | 1735 | 305 | | | | | 2800 | | | | |



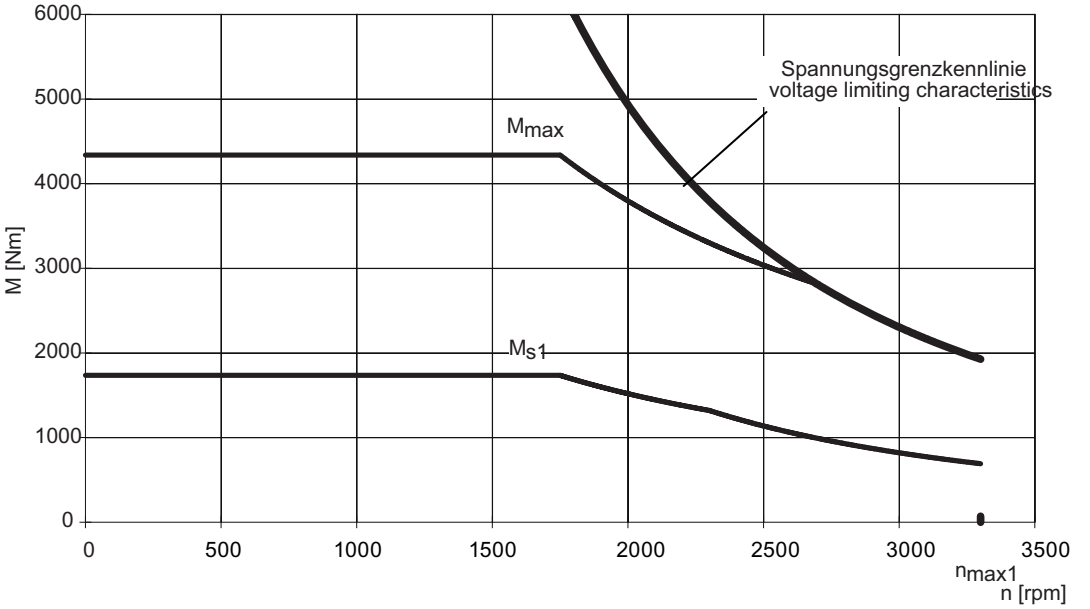
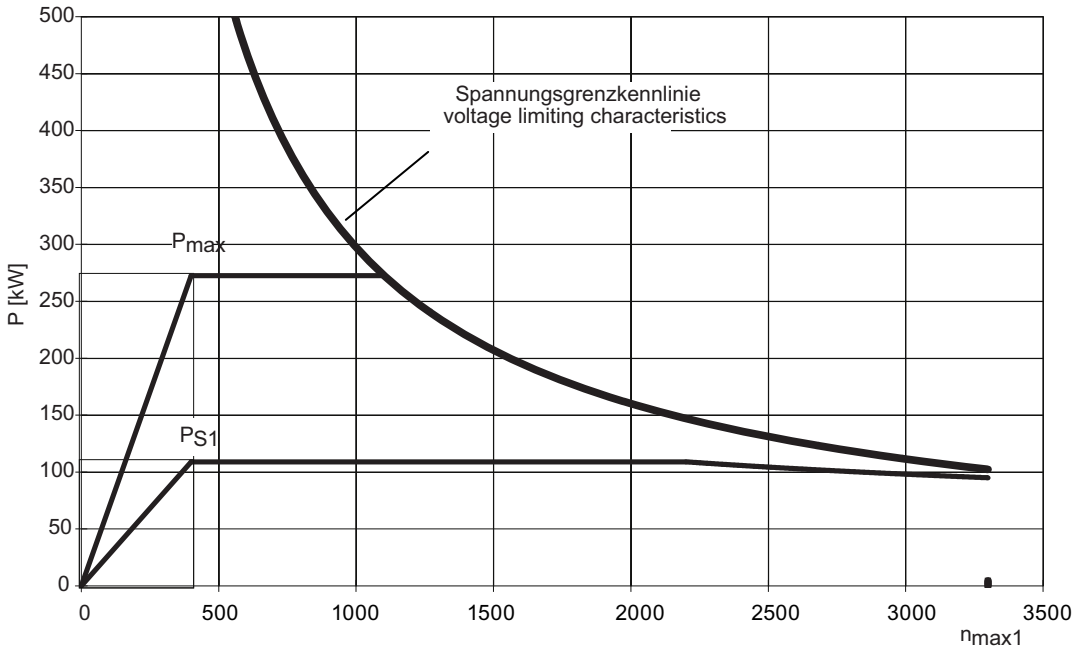



Tabella 4- 620 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8288-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 109 | 2602 | 260 | 3300 | - | - | - | 2200 | 6506 | 650 | 2602 | 260 |



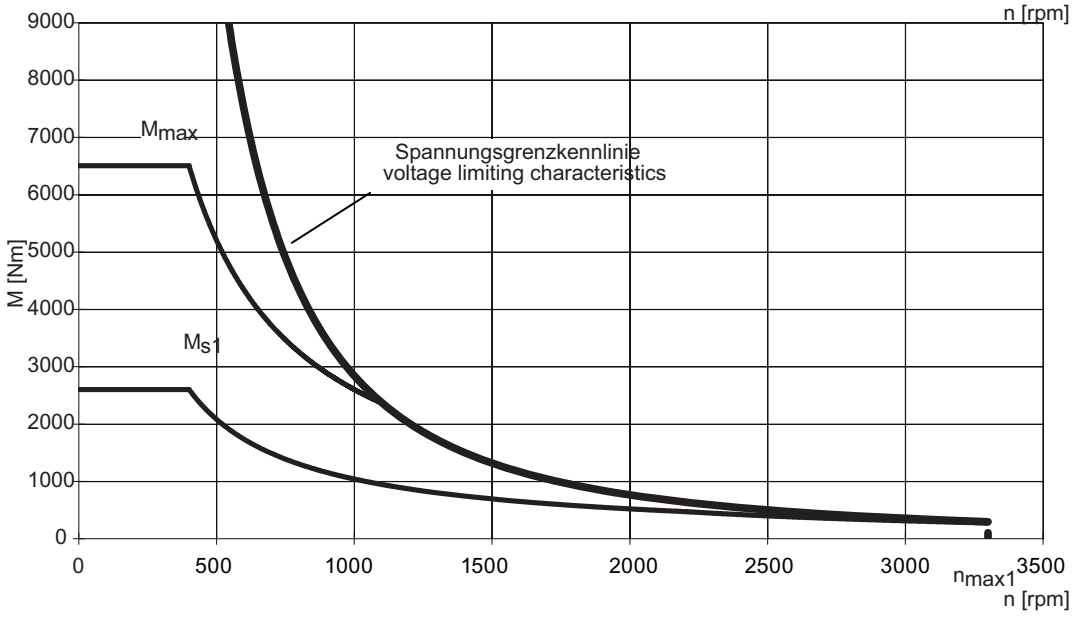
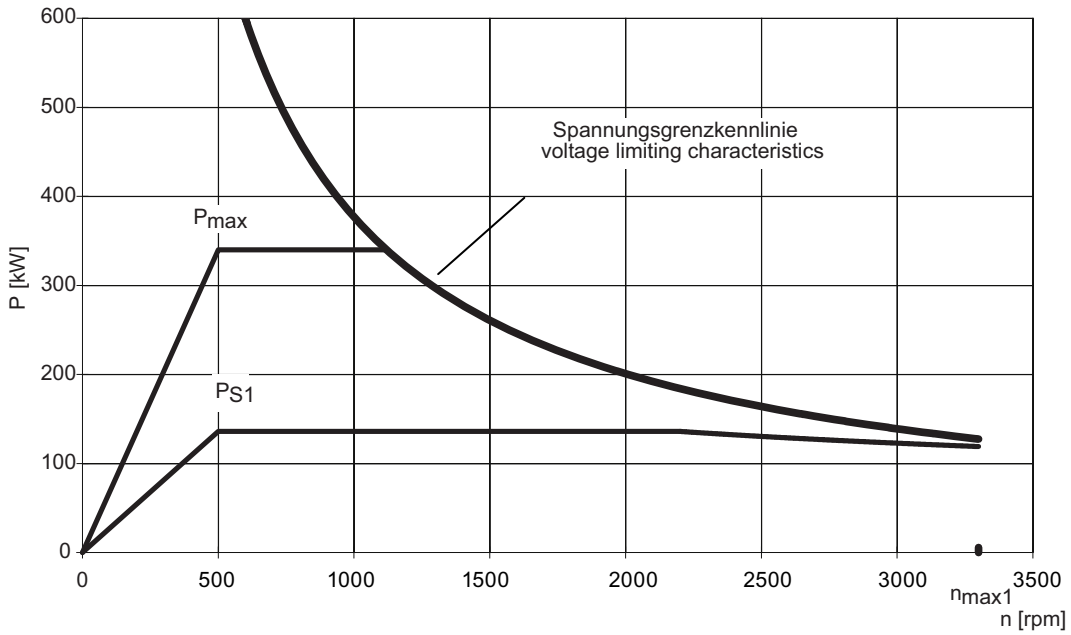



Tabella 4- 621 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8288-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 136 | 2598 | 260 | 3300 | - | - | - | 2200 | 6494 | 650 | 2598 | 260 |
| 400 | 109 | 2598 | 260 | | | | | 3300 | | | | |



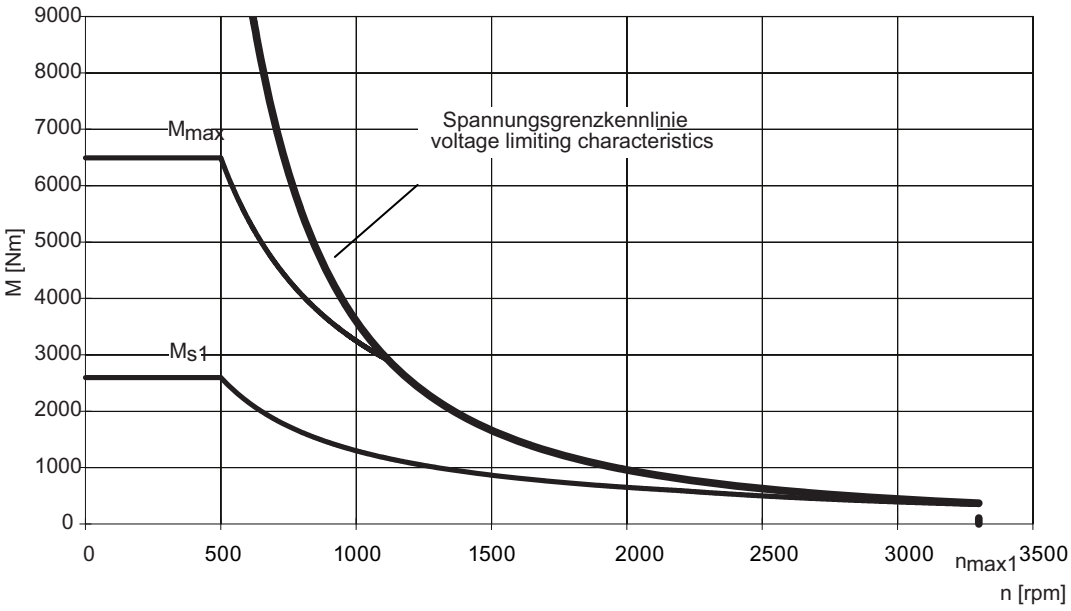
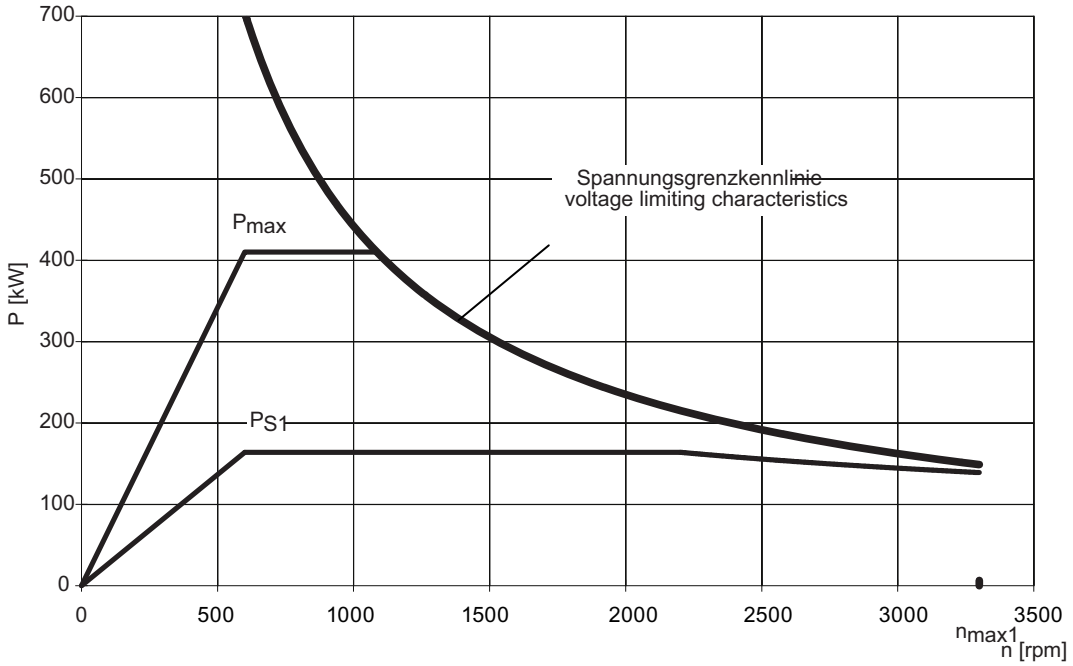



Tabella 4- 622 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8288-□□B2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 164 | 2610 | 260 | 3300 | | - | - | - | 2200 | 6526 | 2610 | 260 |



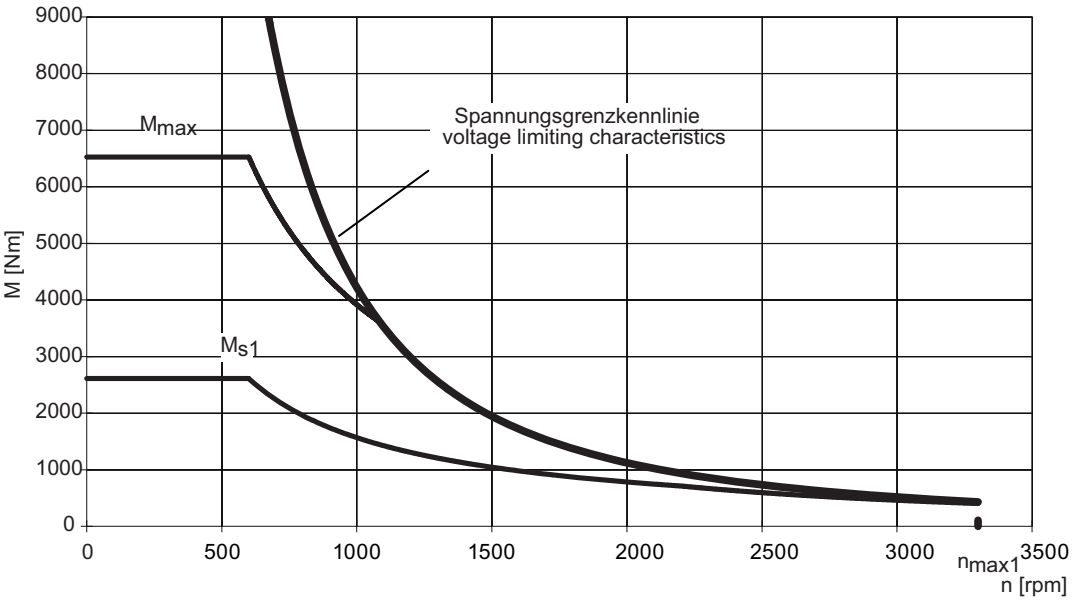
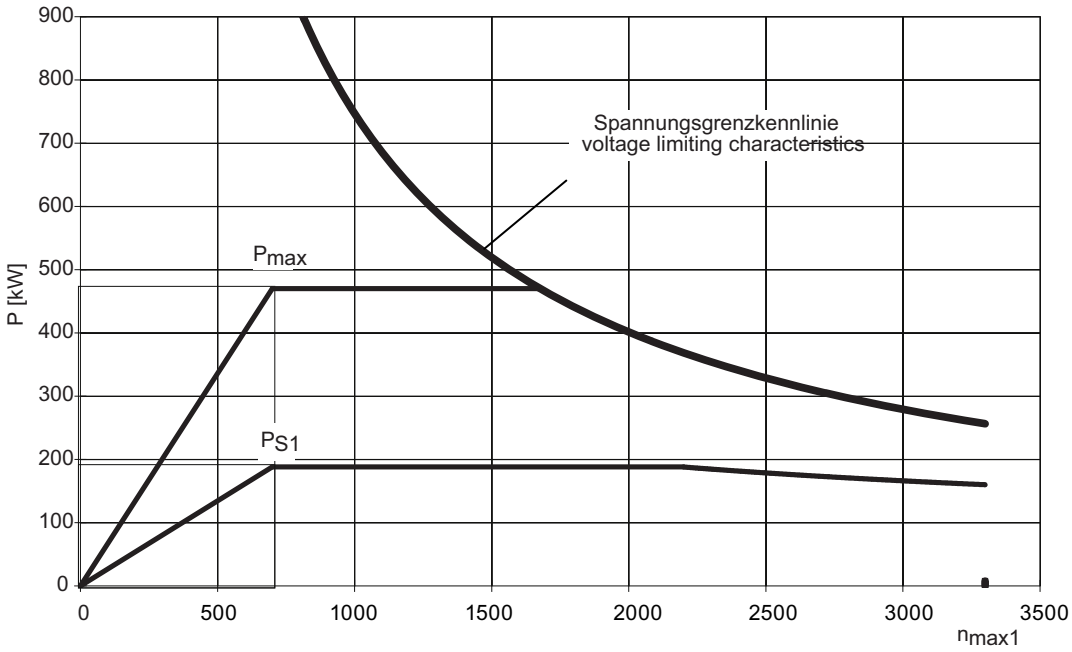



Tabella 4- 623 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8288-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 188 | 2565 | 400 | 3300 | - | - | - | 2200 | 6412 | 1000 | 2565 | 400 |



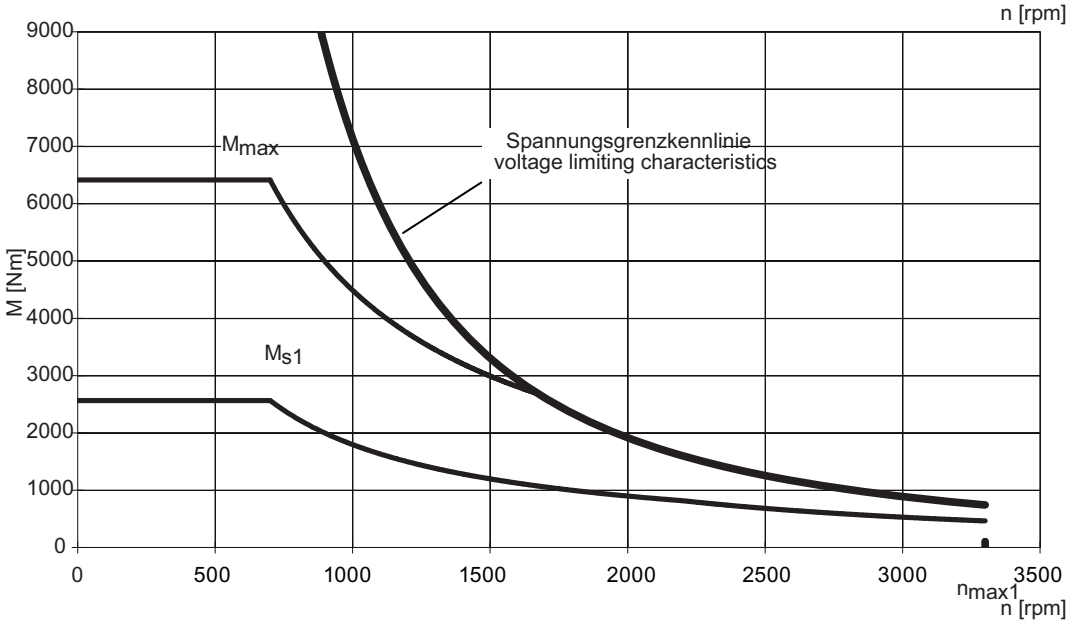
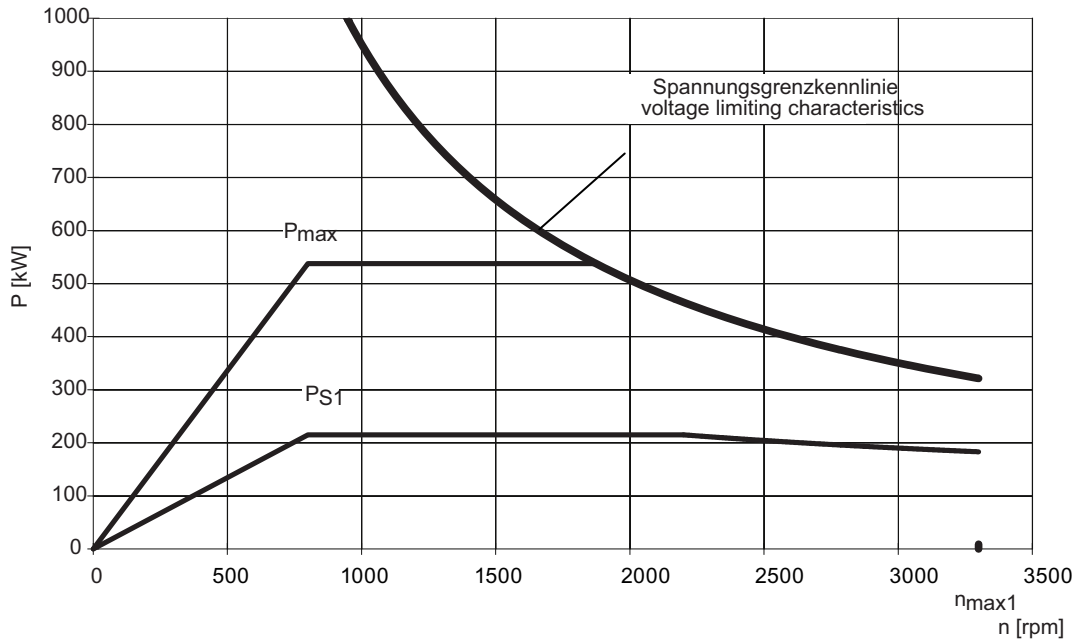



Tabella 4- 624 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8288-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 215 | 2567 | 405 | 3300 | - | - | - | 2200 | 6416 | 1013 | 2567 | 405 |
| 700 | 188 | 2567 | 405 | | | | | 3100 | | | | |



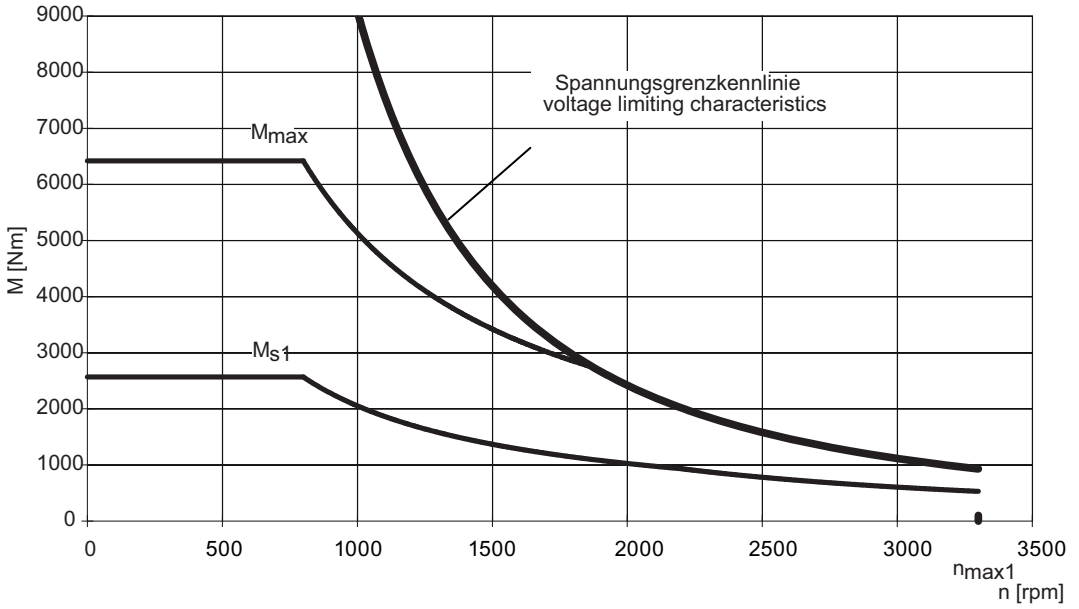
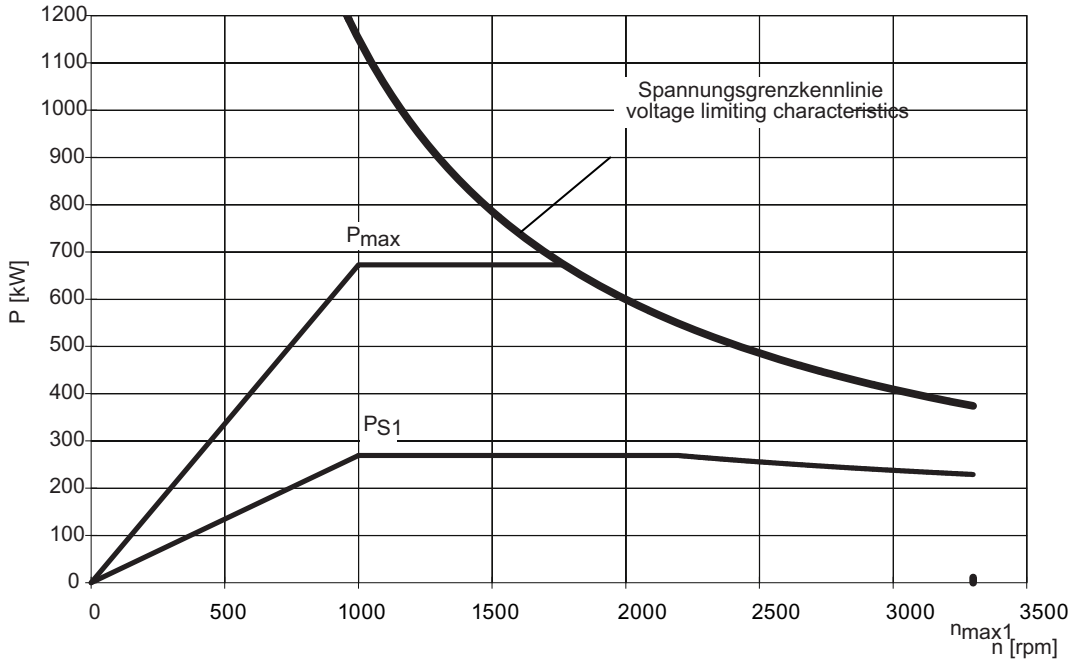



Tabella 4- 625 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8288-□□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 269 | 2569 | 405 | 3300 | - | - | - | 2200 | 6422 | 1013 | 2569 | 405 |



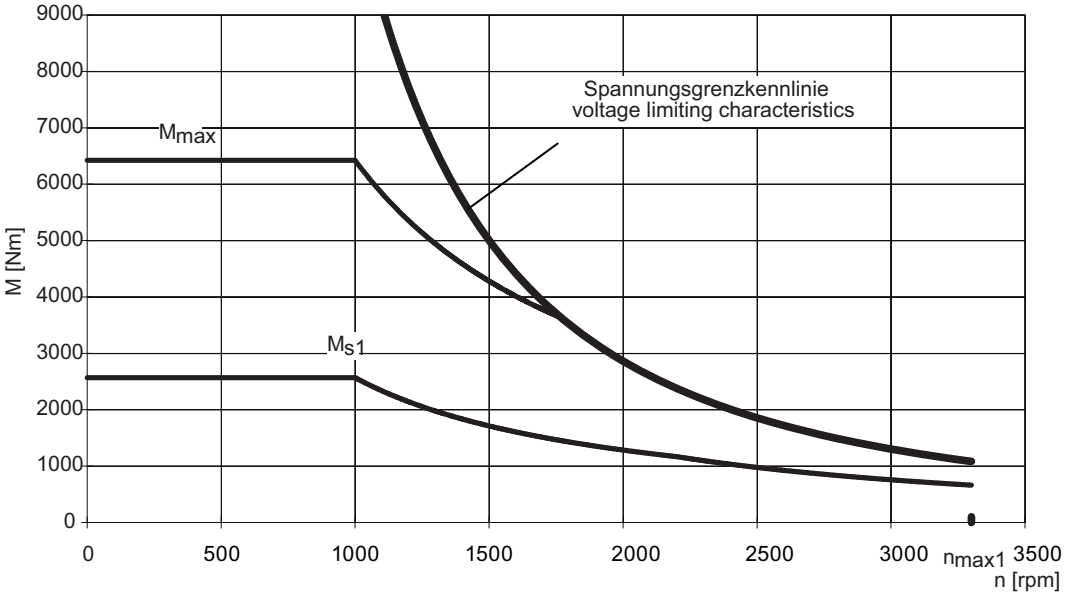
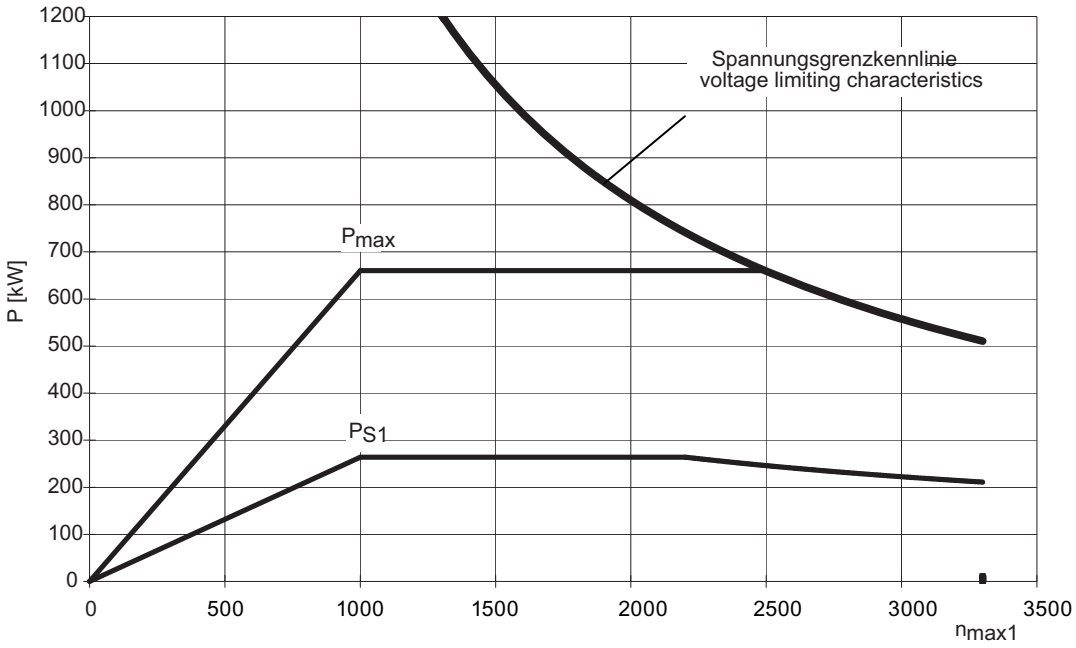



Tabella 4- 626 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8288-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 264 | 2521 | 550 | 3300 | - | - | - | 2200 | 6303 | 1375 | 2521 | 550 |



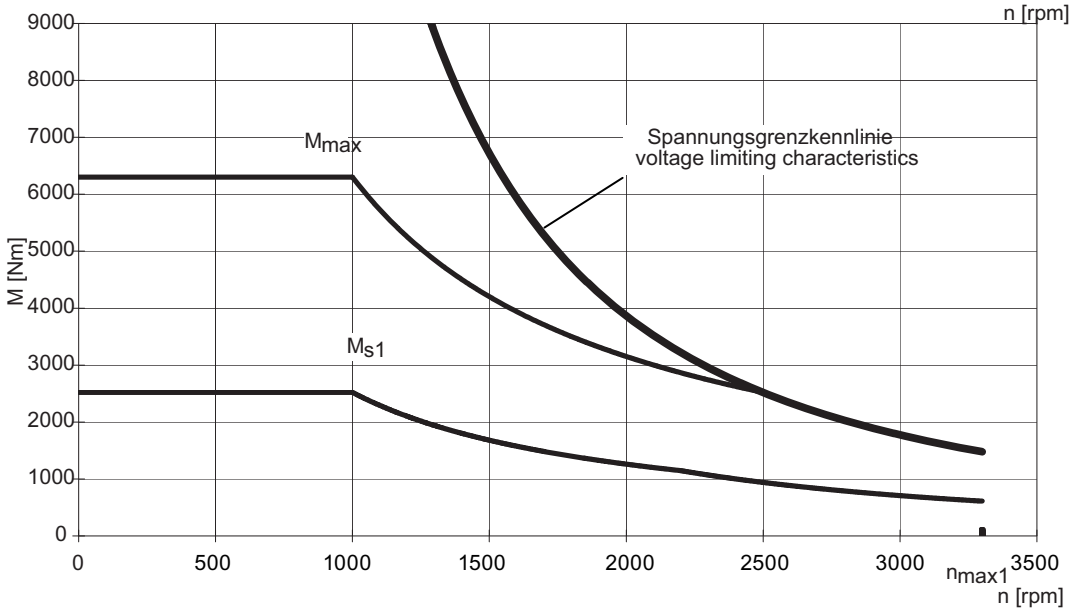
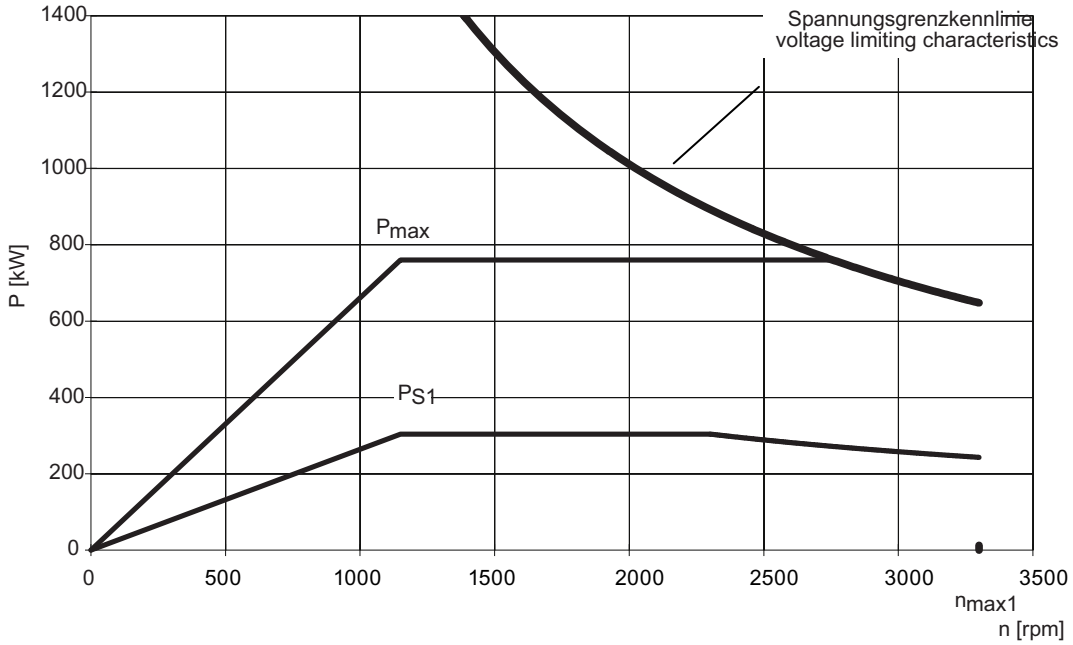



Tabella 4- 627 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8288-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 304 | 2525 | 550 | 3300 | - | - | - | 2300 | 6311 | 1375 | 2525 | 550 |
| 1000 | 264 | 2525 | 550 | | | | | 2900 | | | | |



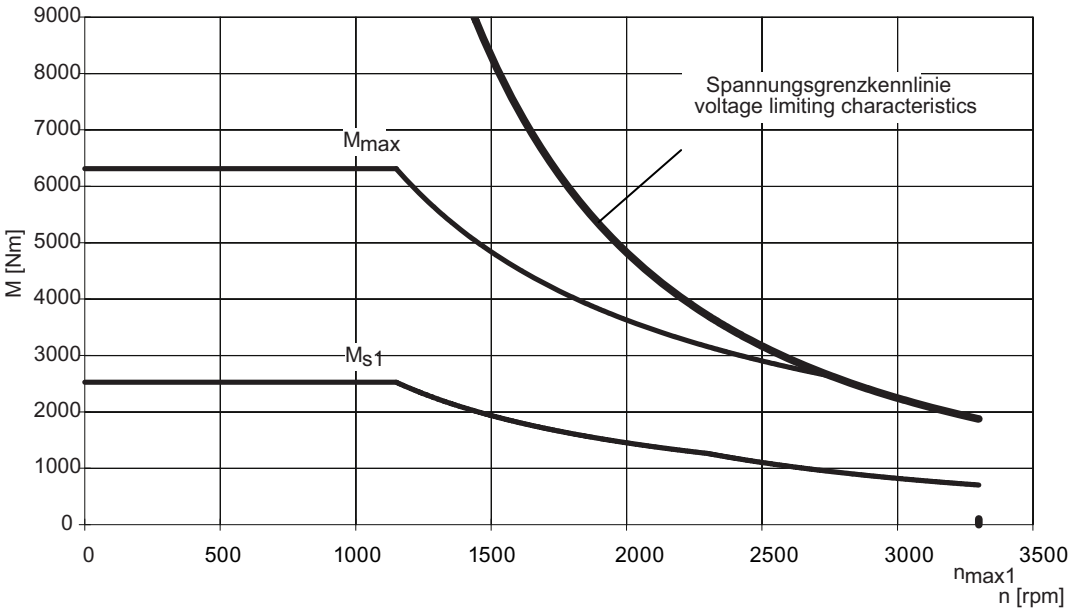
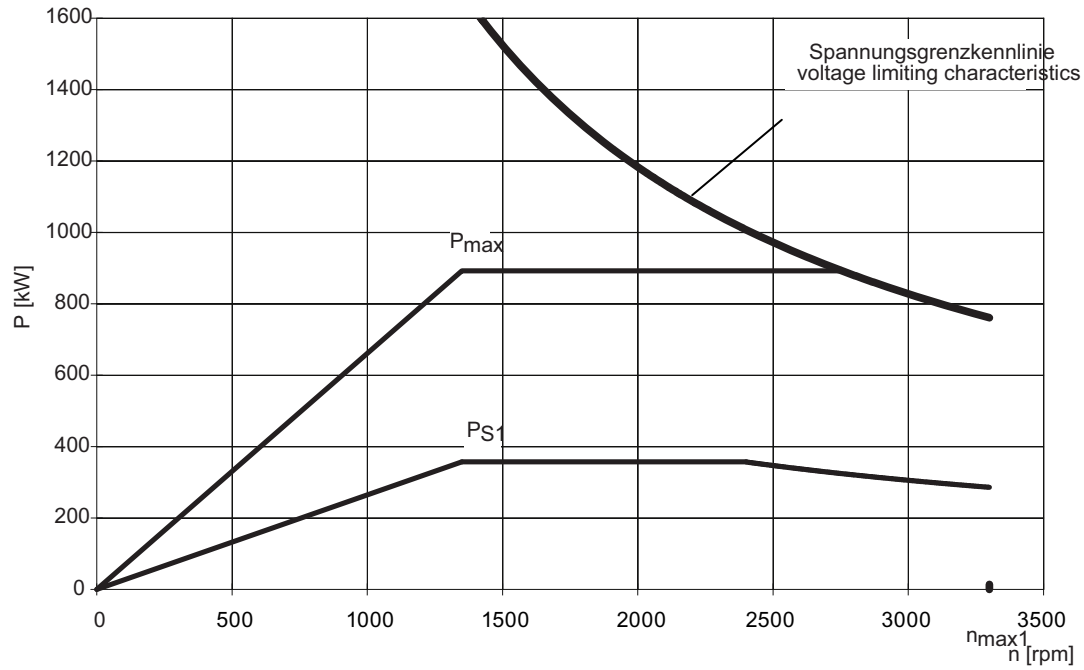



Tabella 4- 628 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8288-□□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 357 | 2525 | 550 | 3300 | - | - | - | 2400 | 6314 | 1375 | 2525 | 550 |



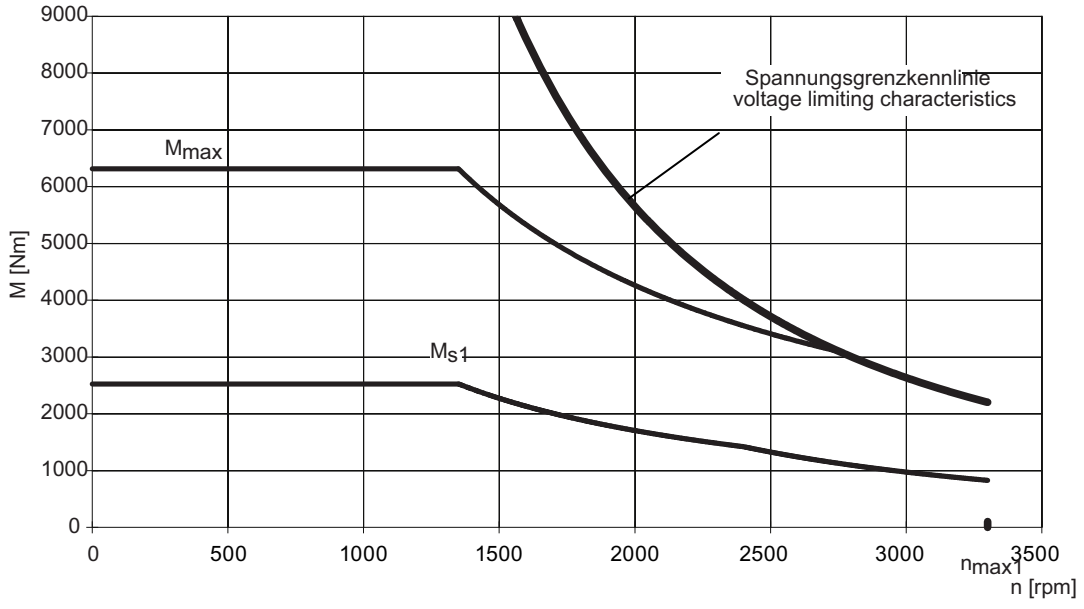
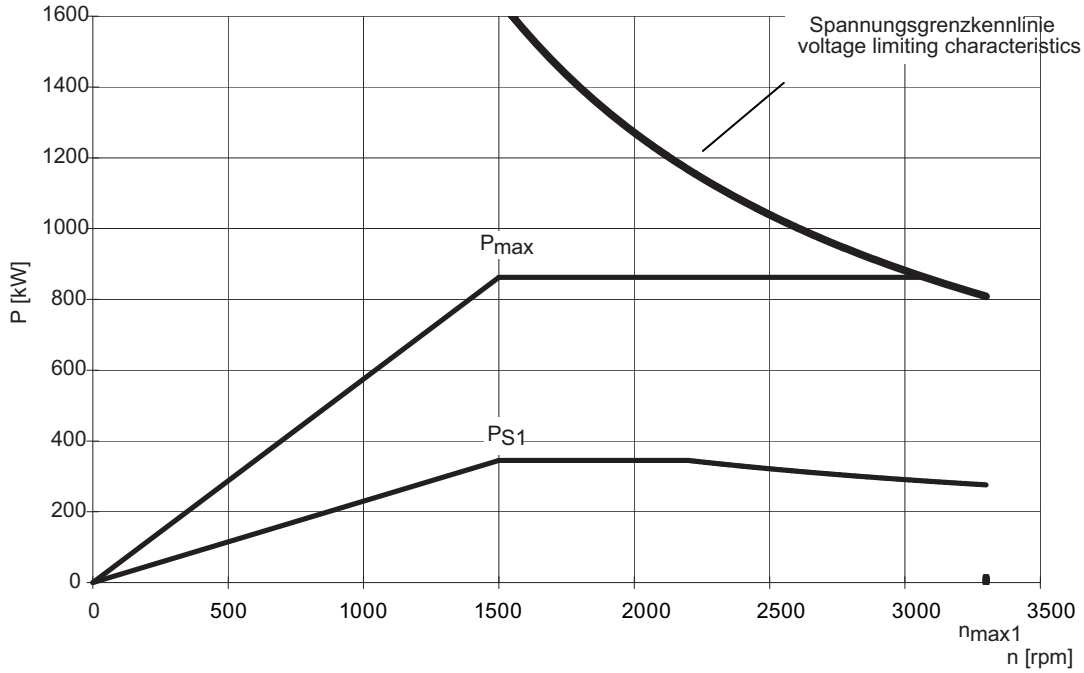



Tabella 4- 629 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8288-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 345 | 2197 | 660 | 3300 | - | - | - | 2200 | 5491 | 1650 | 2197 | 660 |



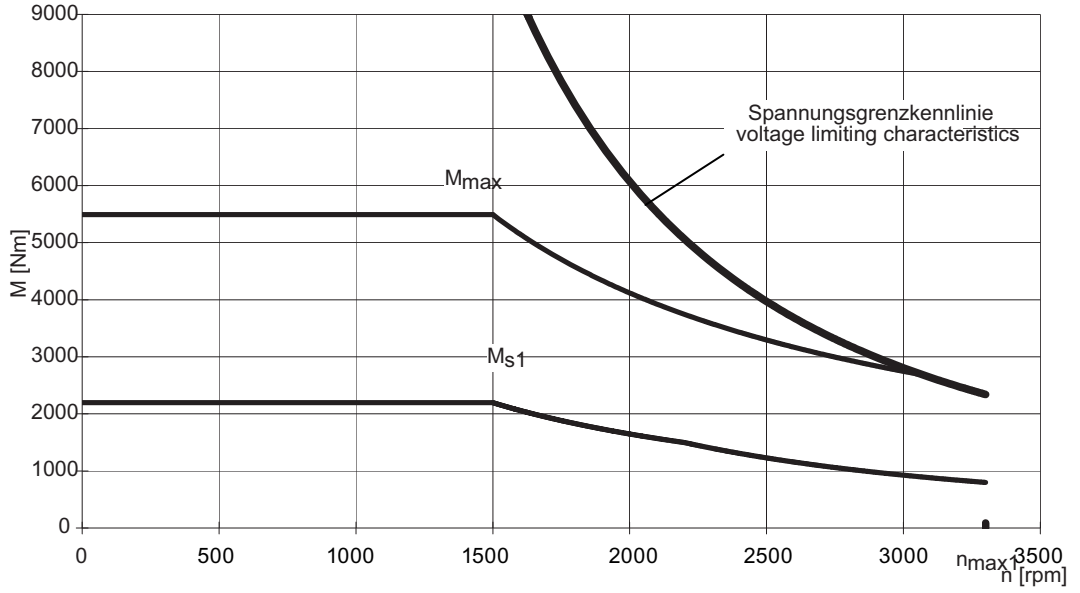
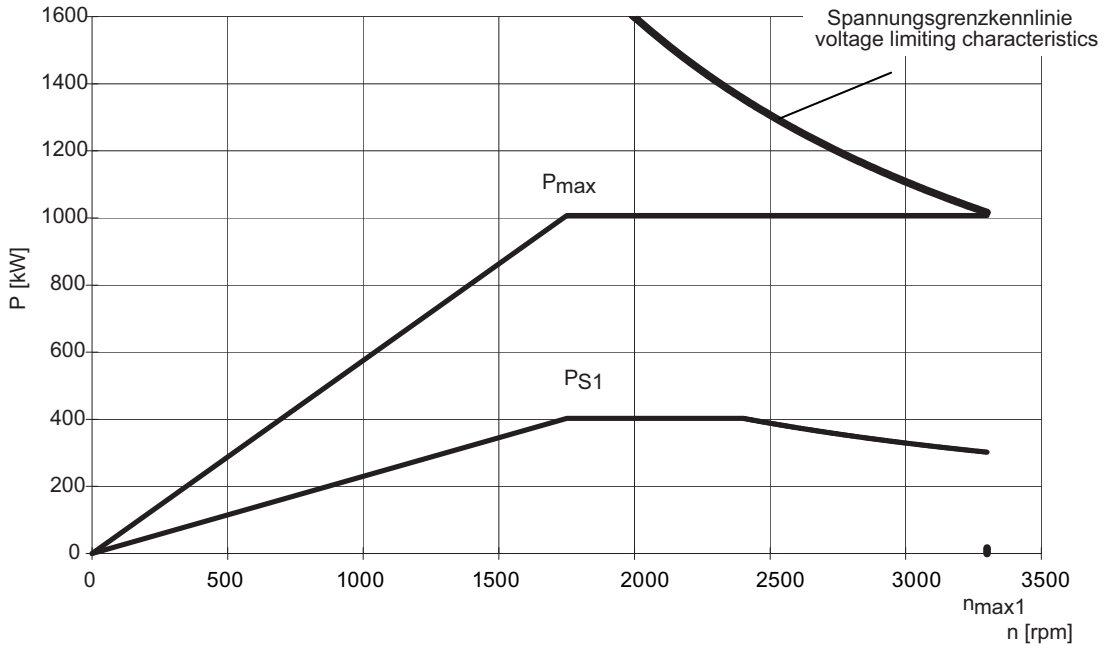



Tabella 4- 630 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8288-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 403 | 2199 | 670 | 3300 | - | - | - | 2400 | 5498 | 1675 | 2199 | 670 |
| 1500 | 345 | 2199 | 670 | | | | | 2800 | | | | |



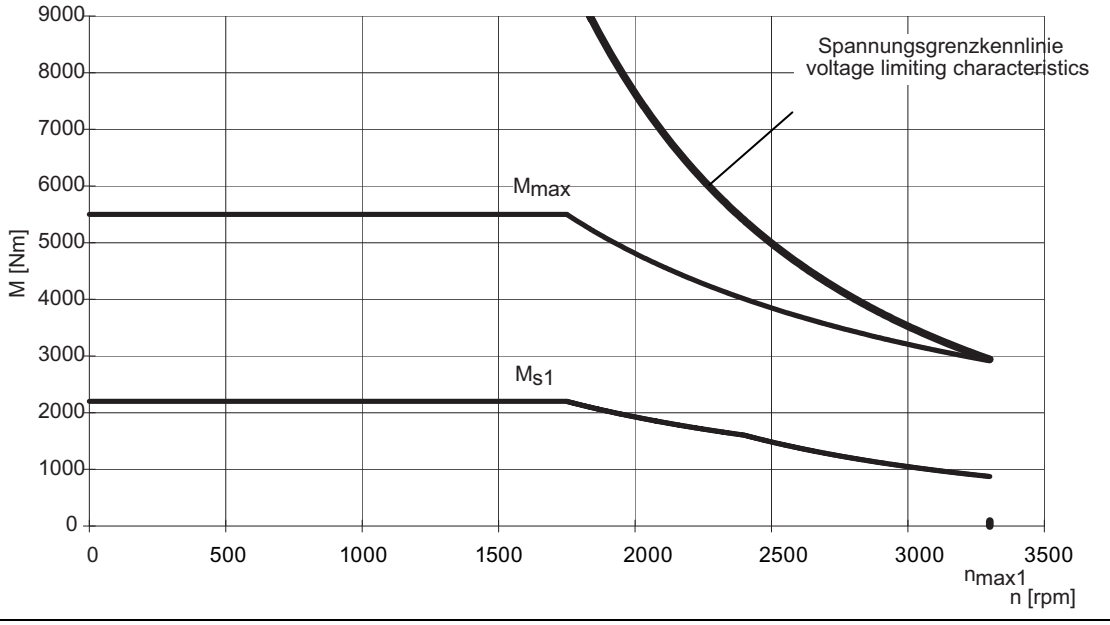
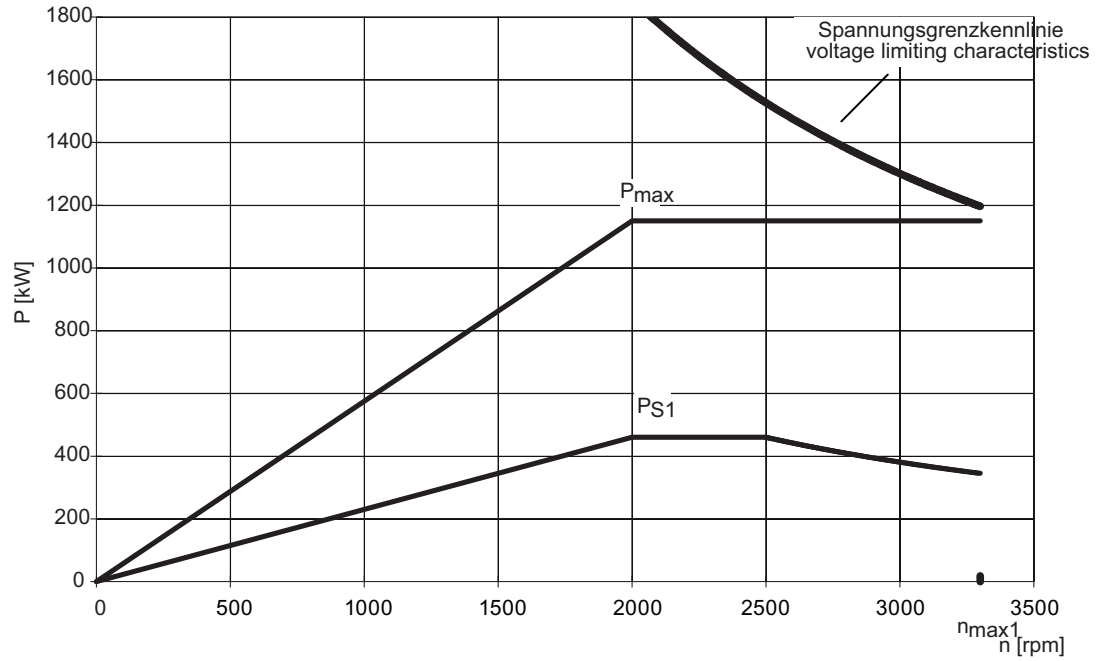



Tabella 4- 631 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8288-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 460 | 2197 | 670 | 3300 | - | - | - | 2500 | 5491 | 1675 | 2197 | 670 |



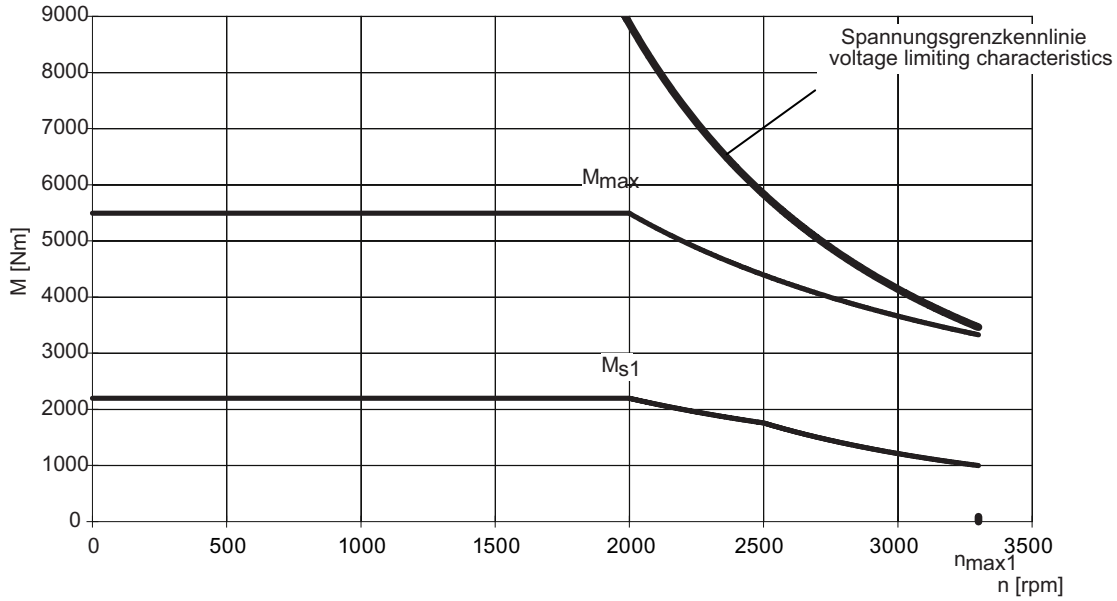
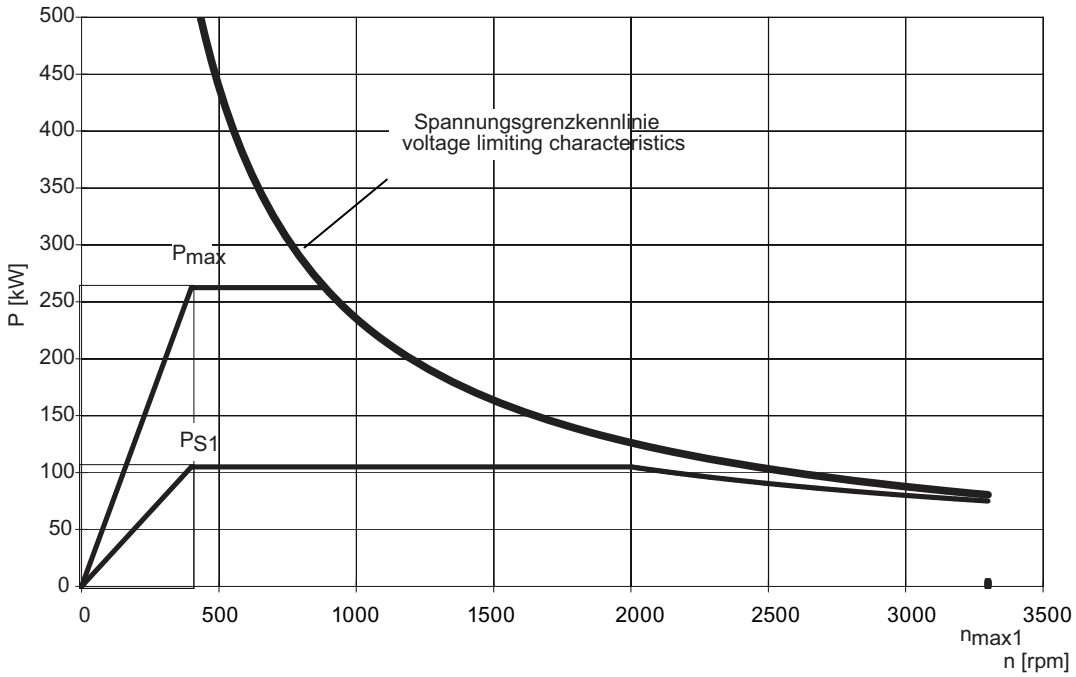



Tabella 4- 632 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8288-□□H2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 105 | 2507 | 134 | 3300 | - | - | - | 2000 | 6267 | 335 | 2507 | 134 |



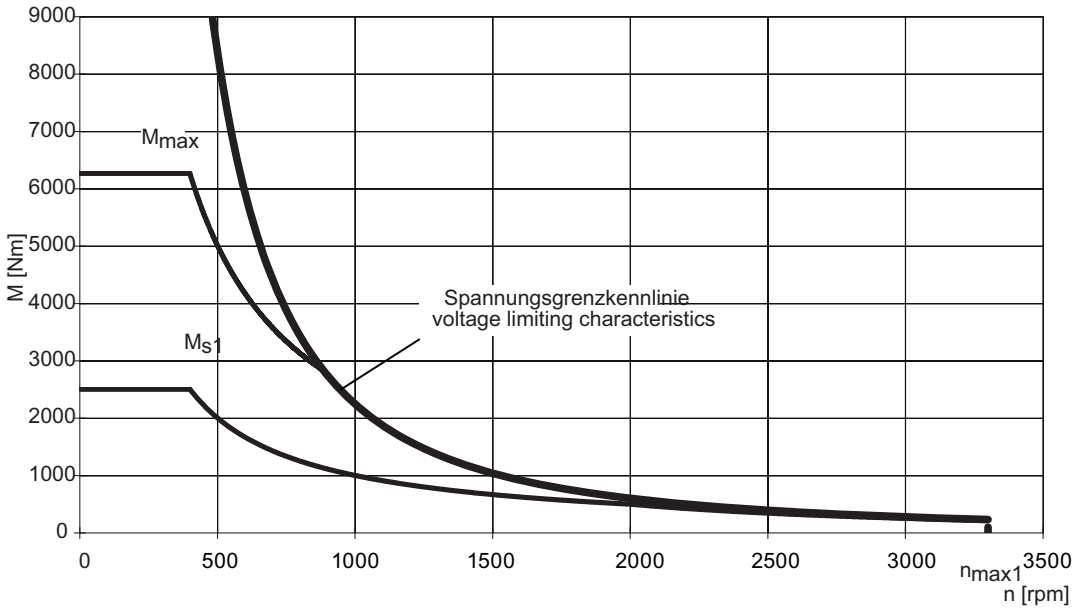
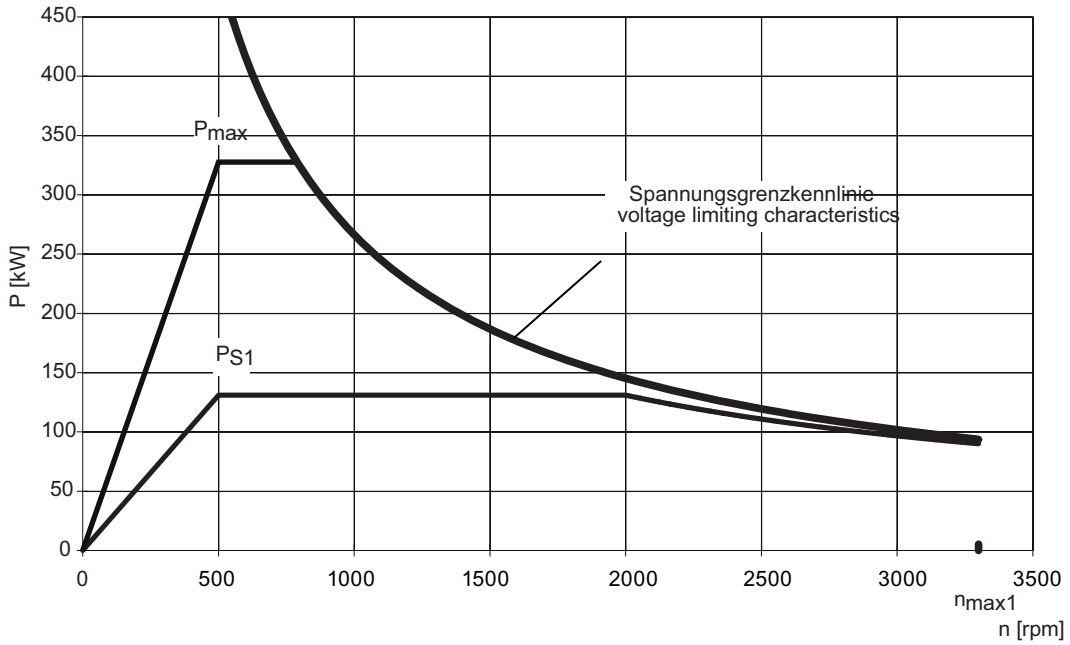



Tabella 4- 633 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8288-□□H2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 131 | 2502 | 134 | 3300 | - | - | - | 2000 | 6255 | 335 | 2502 | 134 |
| 400 | 105 | 2502 | 134 | | | | | 2700 | | | | |



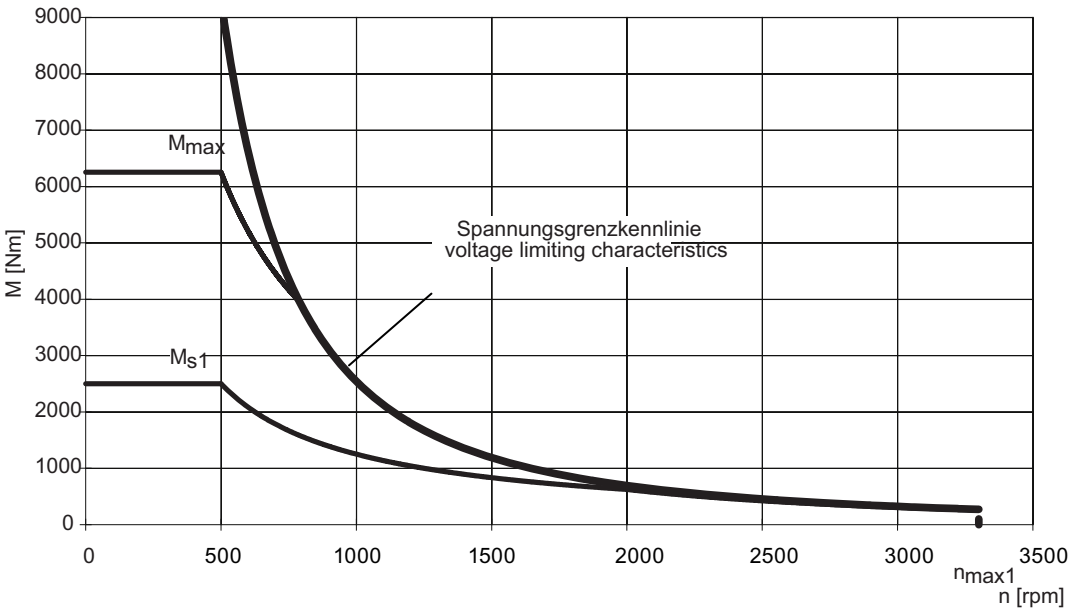
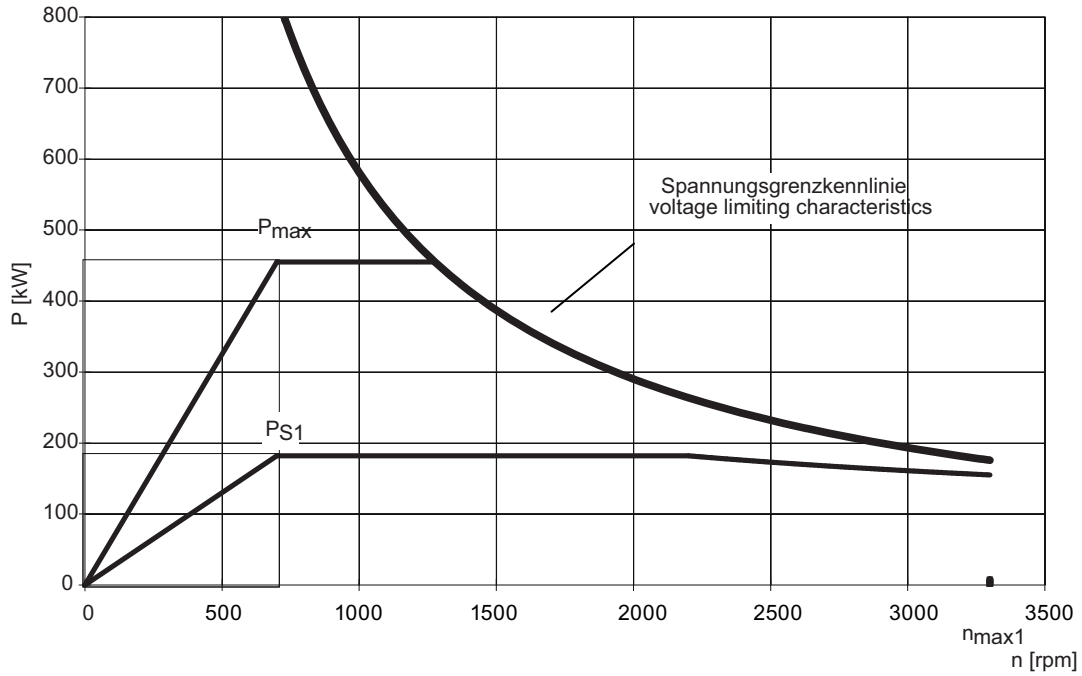



Tabella 4- 634 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8288-□□K2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 182 | 2483 | 205 | 3300 | - | - | - | 2200 | 6208 | 513 | 2483 | 205 |



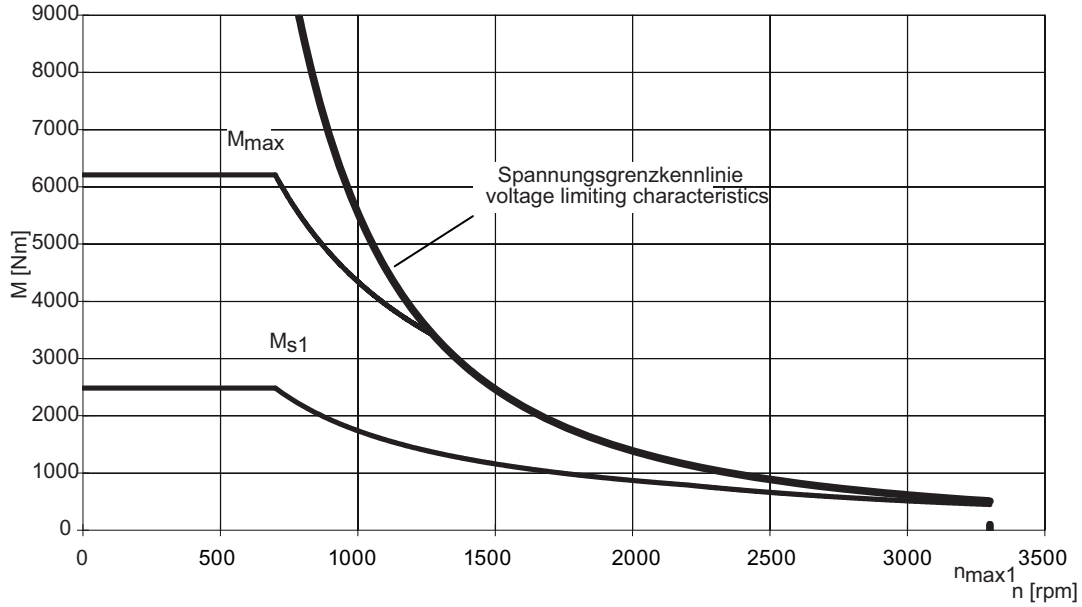
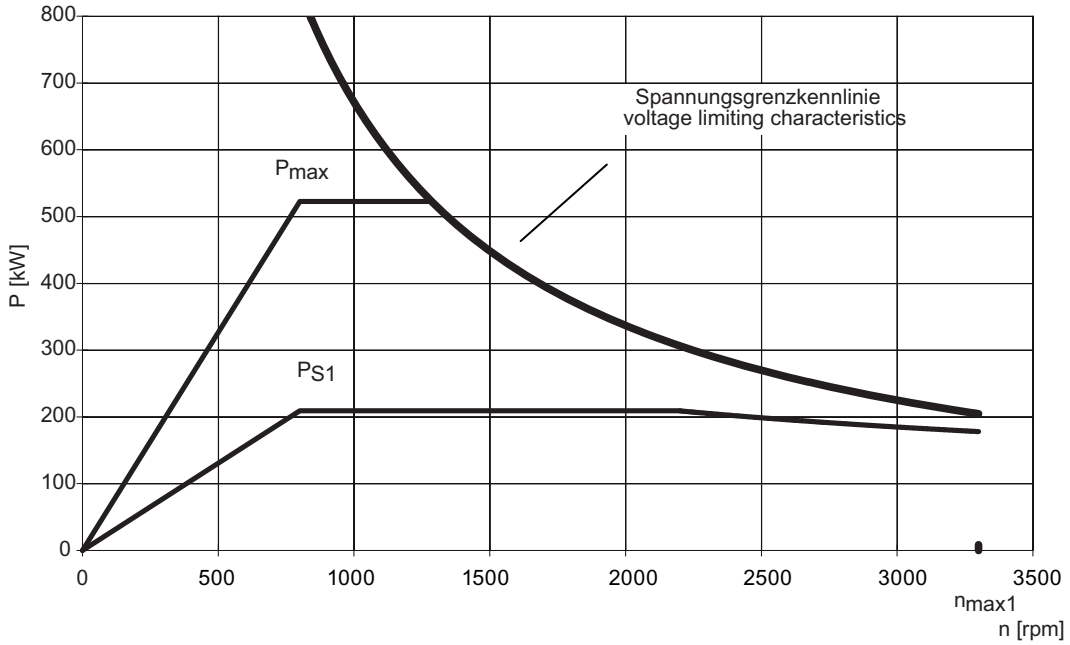



Tabella 4- 635 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8288-□□K2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 209 | 2495 | 205 | 3300 | - | - | - | 2200 | 6237 | 513 | 2495 | 205 |
| 700 | 183 | 2495 | 205 | | | | | 3100 | | | | |



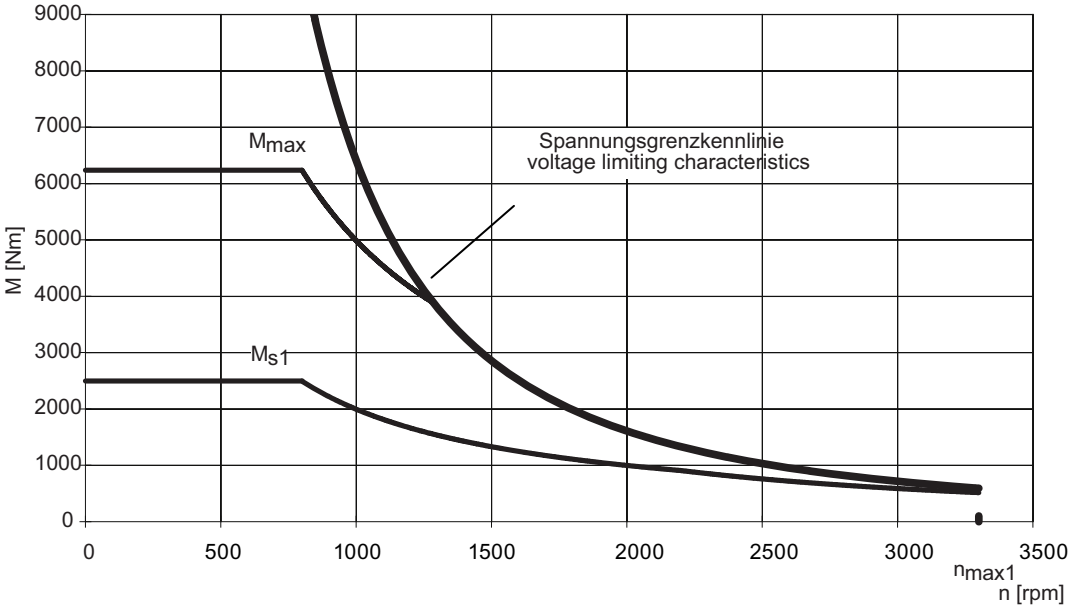
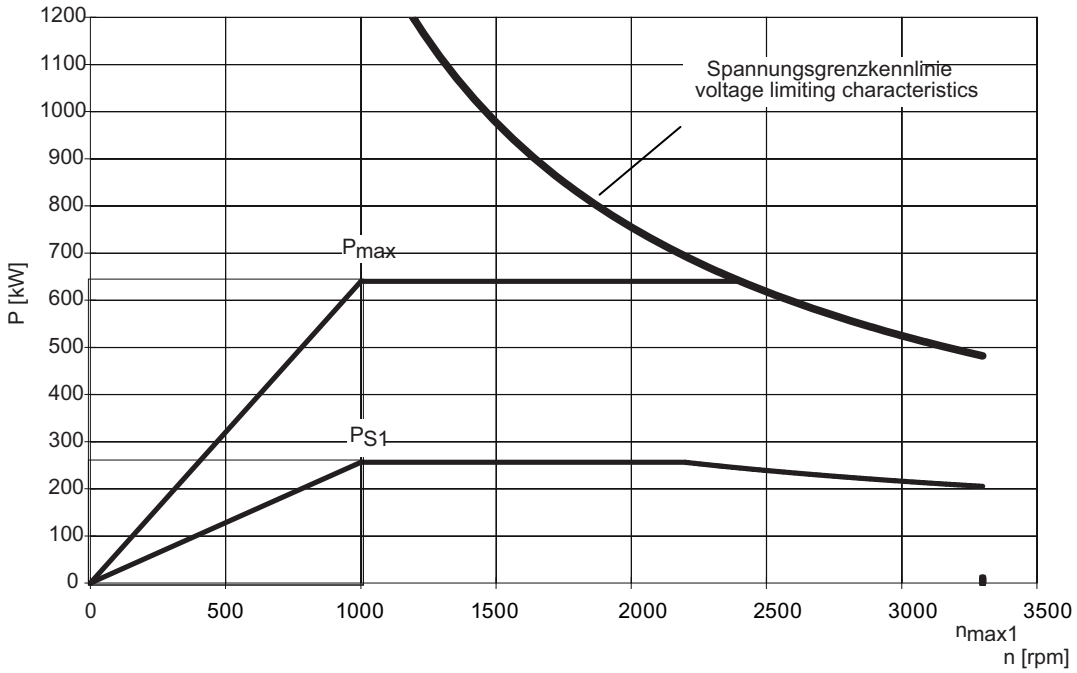



Tabella 4- 636 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8288-□□U2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 256 | 2445 | 310 | 3300 | - | - | - | 2200 | 6112 | 775 | 2445 | 310 |



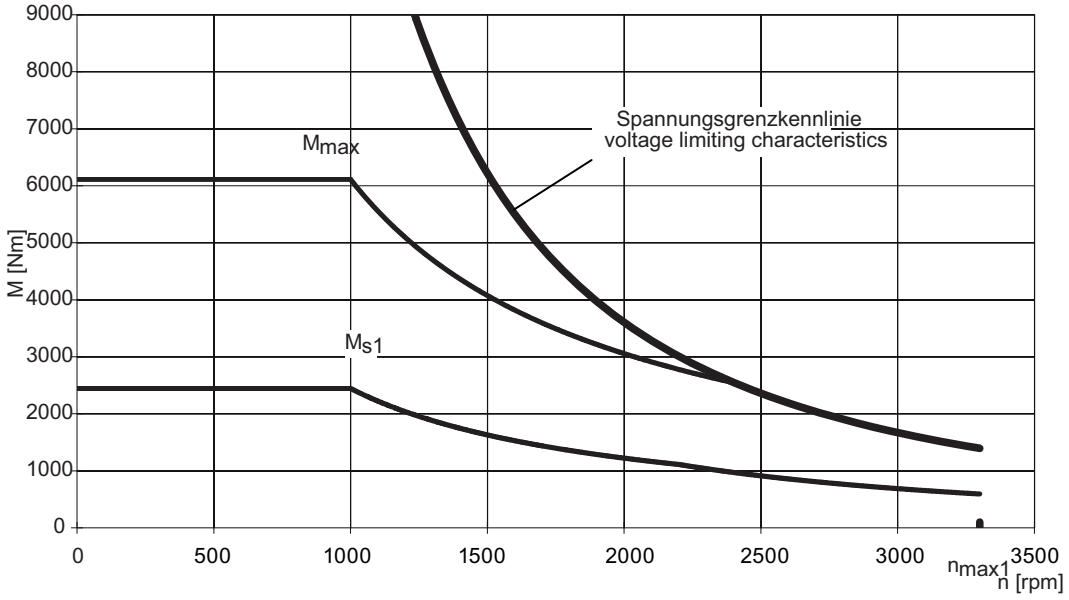
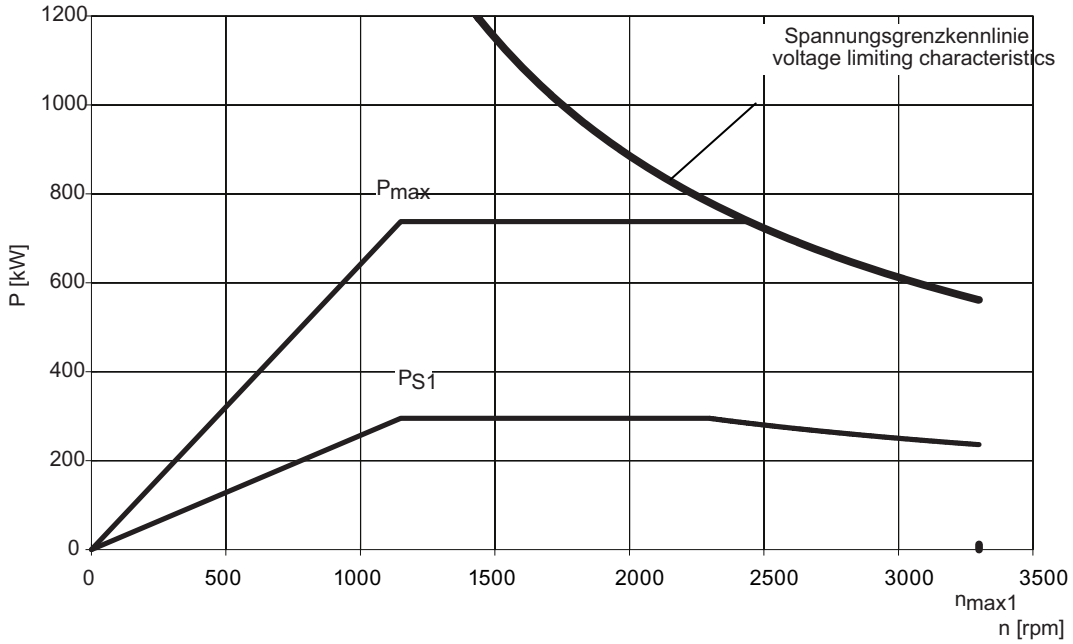



Tabella 4- 637 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8288-□□U2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 295 | 2450 | 310 | 3300 | - | - | - | 2300 | 6124 | 775 | 2450 | 310 |
| 1000 | 257 | 2450 | 310 | | | | | 2900 | | | | |



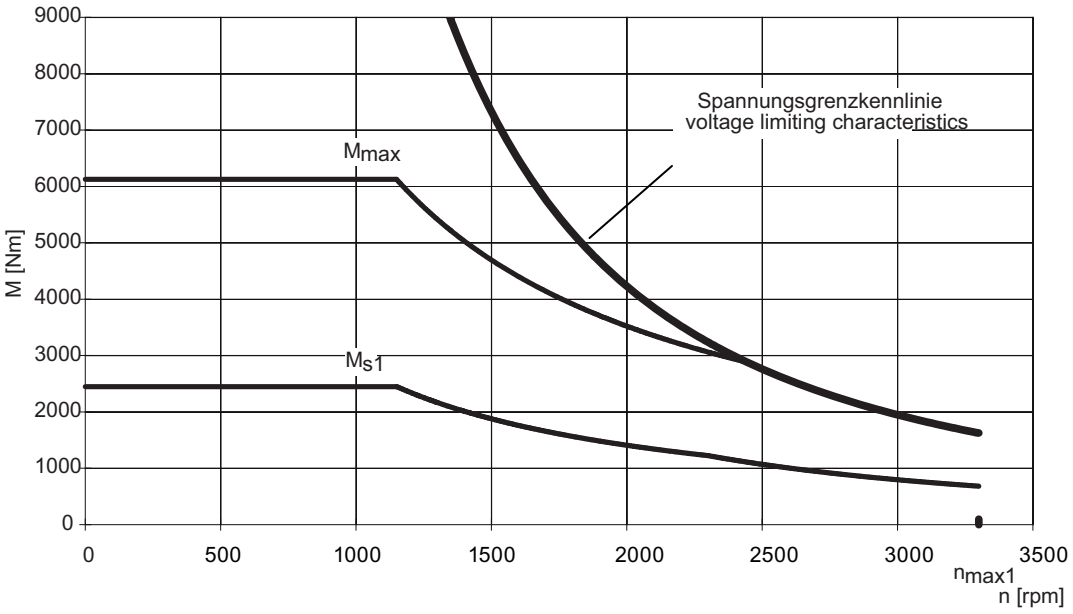
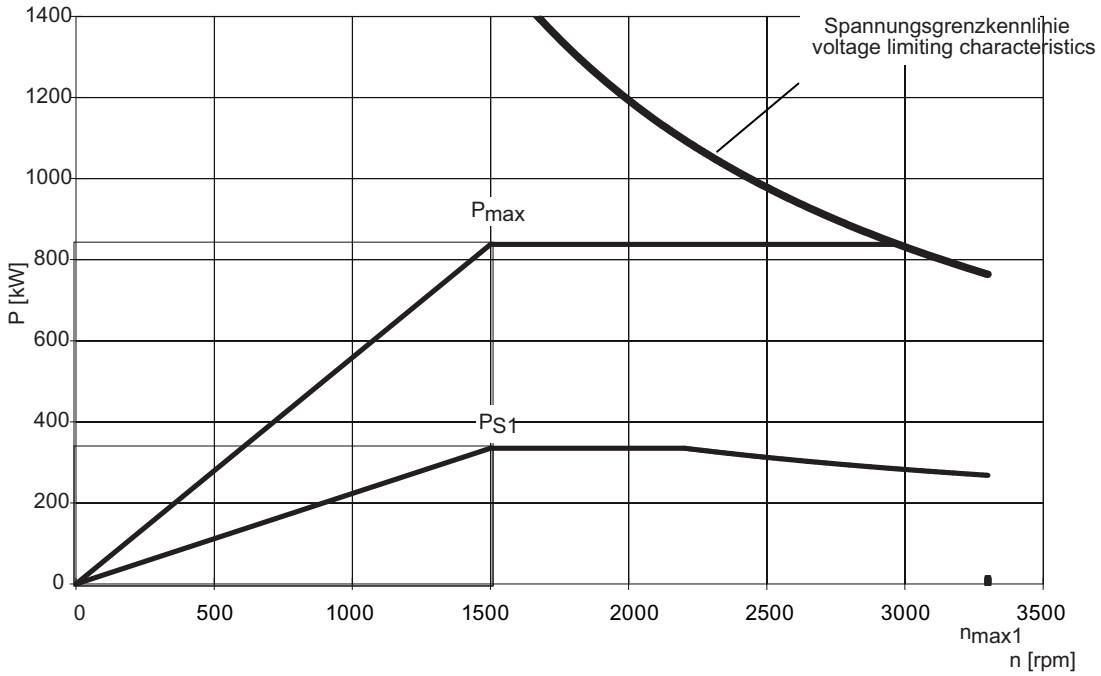



Tabella 4- 638 SINAMICS, 3 AC 690 V, Basic Line Module, (BLM), 1PH8288-□□W2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 335 | 2133 | 375 | 3300 | - | - | - | 2200 | 5332 | 938 | 2133 | 375 |



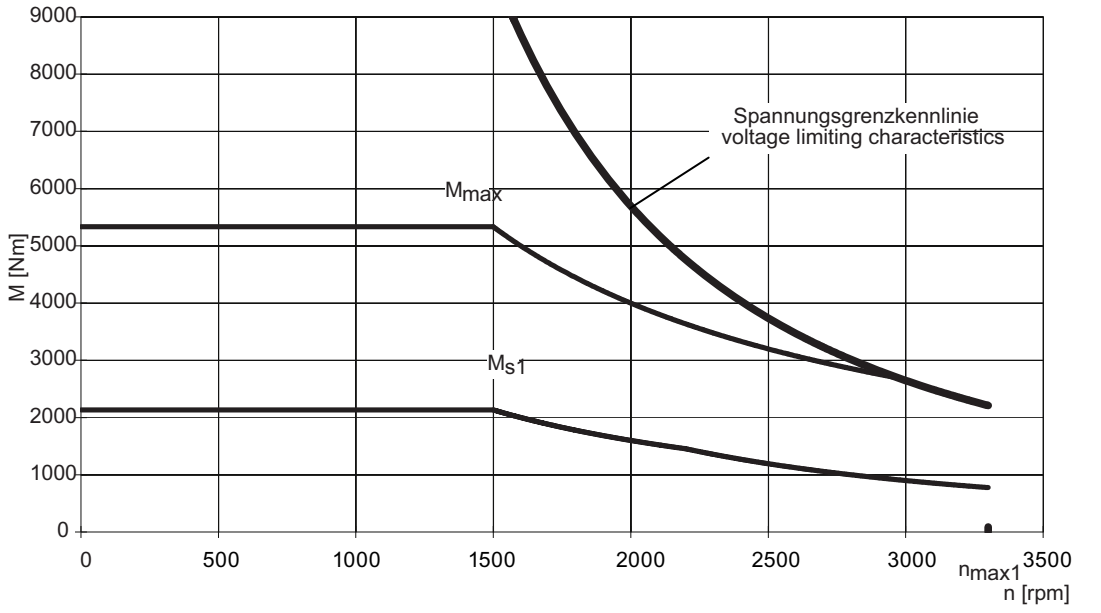
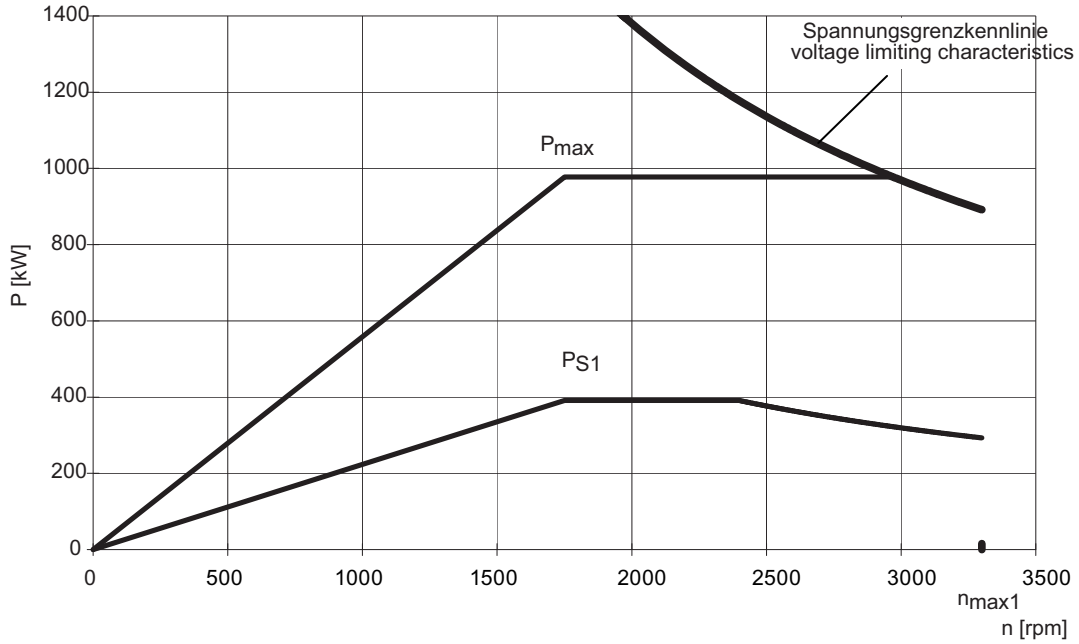
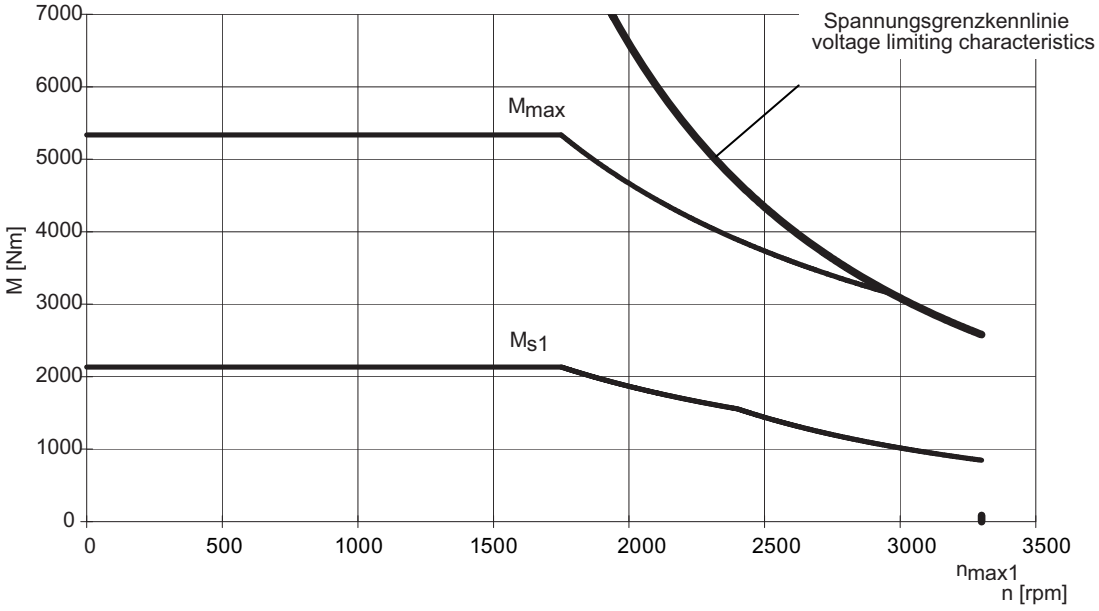



Tabella 4- 639 SINAMICS, 3 AC 690 V, Active Line Module, (ALM), 1PH8288-□□W2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $n_{max1}$ [giri/min] | $n_{max2}$ [giri/min] | $n_{max3}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_2$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 391 | 2134 | 375 | 3300 | - | - | - | 2400 | 5334 | 938 | 2134 | 375 |
| 1500 | 335 | 2134 | 375 | | | | | 2800 | | | | |



# 4.2 Motori sincroni

## 4.2.1 Dati tecnici

Nelle tabelle sono descritti i dati tecnici di ciascuna versione del motore attraverso tre punti di misurazione.

Questi tre punti di misurazione corrispondono anche ai dati che sono stampati sulla targhetta dei dati del motore, nonché ai dati che sono elencati nei Cataloghi PM 21, NC 61 o D31 per la scelta e l'ordinazione.

### 4.2.1.1 Spiegazione delle abbreviazioni_sincrono

Tabella 4- 640 Spiegazione delle abbreviazioni

| Abbreviazione | Unità | Descrizione |
|---|---|---|
| $P_N$ | kW | Potenza nominale |
| $M_N$ | Nm | Coppia nominale |
| $I_N$ | A | Corrente nominale |
| $U_N$ | V | Tensione nominale |
| $f_N$ | Hz | Frequenza nominale |
| $n_N$ | 1/min (giri/min) | N. di giri nominale |
| $M_0$ | Nm | Coppia (S1) con numero di giri zero |
| $I_0$ | A | Corrente (S1) con $M_0$ |
| η | - | Rendimento massimo con campo di giri S1 (nel campo $n_{ott}$) |
| J | $kgm^2$ | Momento d'inerzia |
| $T_{th}$ | min | Costante di tempo termica |
| P_raffr | kW | Potenza dissipata da dissipare con raffreddamento ad acqua |
| m | kg | Peso |
| $n_{max}$ | 1/min (giri/min) | Numero di giri massimo consentito con cuscinetto "Standard o per numero di giri elevato" |
| $n_{max,Br}$ | 1/min (giri/min) | Numero di giri massimo consentito con cuscinetto "Advanced Lifetime" o freno di arresto integrato |
| $n_{max,Inv}$ | 1/min (giri/min) | Numero di giri operativo massimo consentito sulla base della tensione indotta nel motore e resistenza dielettrca del Motor Module (limita il campo senza attivazione della protezione VPM) |
| $n_{ott}$ | 1/min (giri/min) | Numero di giri con punto di esercizio ottimale |
| $P_{ott}$ | kW | Potenza massima possibile (S1) nel punto di esercizio ottimale con numero di giri $n_{ott}$ |
| $M_{max}$ | Nm | Coppia massima consentita per un breve intervallo per processi dinamici |
| $I_{max}$ | A | Corrente massima consentita per un breve intervallo con $M_{max}$ |

### 4.2.1.2 Altezza dell'asse 132 - Ventilazione forzata

Tabella 4- 641 1PH8 Altezza d'asse 132 Ventilazione forzata (dati di base)

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | $M_o$ [Nm] | $I_o$ [A] | J [kgm²] | η | $T_{th}$ [min] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8131-2□F□□ | SLM/BLM 400 V | 15,7 | 100 | 29 | 388 | 50,0 | 1500 | 105 | 30 | 0,0446 | 0,944 | 10 | 85 |
| Collegamento a stella | ALM 400 V | 18,0 | 98 | 29 | 415 | 58,3 | 1750 | 105 | 30 | | 0,947 | | |
| | SLM/BLM/ALM 480 V | 19,9 | 95 | 29 | 449 | 66,7 | 2000 | 105 | 30 | | 0,948 | | |
| 1PH8131-2□L□□ | SLM/BLM 400 V | 25,0 | 96 | 44 | 371 | 83,3 | 2500 | 105 | 48 | | 0,948 | | |
| Collegamento a stella | ALM 400 V | 27,7 | 95 | 44 | 415 | 93,3 | 2800 | 105 | 48 | | 0,949 | | |
| | SLM/BLM/ALM 480 V | 29,5 | 94 | 43 | 449 | 100 | 3000 | 105 | 48 | | 0,951 | | |
| 1PH8133-2□F□□ | SLM/BLM 400 V | 19,9 | 127 | 44 | 316 | 50,0 | 1500 | 131 | 45 | 0,0600 | 0,948 | | 103 |
| Collegamento a stella | ALM 400 V | 23,1 | 126 | 43 | 366 | 58,3 | 1750 | 131 | 45 | | 0,950 | | |
| | SLM/BLM/ALM 480 V | 26,2 | 125 | 43 | 415 | 66,7 | 2000 | 131 | 45 | | 0,951 | | |
| 1PH8133-2□L□□ | SLM/BLM 400 V | 31,7 | 121 | 55 | 371 | 83, 3 | 2500 | 131 | 59 | | 0,948 | | |
| Collegamento a stella | ALM 400 V | 35,2 | 120 | 54 | 415 | 93, 3 | 2800 | 131 | 59 | | 0,952 | | |
| | SLM/BLM/ALM 480 V | 37,4 | 119 | 54 | 449 | 100 | 3000 | 131 | 59 | | 0,952 | | |
| 1PH8135-2□F□□ | SLM/BLM 400 V | 23,7 | 151 | 43 | 383 | 50,0 | 1500 | 158 | 44 | 0,0750 | 0,952 | | 120 |
| Collegamento a stella | ALM 400 V | 27,2 | 149 | 42 | 415 | 58,3 | 1750 | 158 | 44 | | 0,952 | | |
| | SLM/BLM/ALM 480 V | 30,2 | 144 | 42 | 449 | 66,7 | 2000 | 158 | 44 | | 0,953 | | |
| 1PH8135-2□G□□ | SLM/BLM 400 V | 31,4 | 150 | 59 | 356 | 66,7 | 2000 | 158 | 63 | | 0,953 | | |
| Collegamento a stella | ALM 400 V | 35,6 | 148 | 59 | 407 | 76, 7 | 2300 | 158 | 63 | | 0,953 | | |
| | SLM/BLM/ALM 480 V | 40,2 | 145 | 58 | 449 | 88,3 | 2650 | 158 | 63 | | 0,952 | | |
| 1PH8137-2□F□□ | SLM/BLM 400 V | 30,6 | 195 | 60 | 356 | 50,0 | 1500 | 203 | 62 | 0,0885 | 0,952 | | 136 |
| Collegamento a stella | ALM 400 V | 35,6 | 194 | 59 | 412 | 58,3 | 1750 | 203 | 62 | | 0,953 | | |
| | SLM/BLM/ALM 480 V | 40,0 | 191 | 59 | 449 | 66,7 | 2000 | 203 | 62 | | 0,954 | | |
| 1PH8137-2□L□□ | SLM/BLM 400 V | 48,4 | 185 | 83 | 371 | 83,3 | 2500 | 203 | 89 | | 0,954 | | |
| Collegamento a stella | ALM 400 V | 53,4 | 182 | 82 | 415 | 93,3 | 2800 | 203 | 89 | | 0,953 | | |
| | SLM/BLM/ALM 480 V | 56,9 | 181 | 81 | 449 | 100 | 3000 | 203 | 89 | | 0,953 | | |
| 1PH8137-2□M□□ | SLM/BLM 400 V | 57,5 | 183 | 104 | 370 | 100 | 3000 | 203 | 115 | | 0,953 | | |
| Collegamento a stella | ALM 400 V | 62,2 | 180 | 102 | 405 | 110 | 3300 | 203 | 115 | | 0,952 | | |
| | SLM/BLM/ALM 480 V | 66,7 | 177 | 100 | 440 | 120 | 3600 | 203 | 115 | | 0,950 | | |

### 4.2.1.3 Altezza d'asse 160 - Ventilazione forzata

Tabella 4- 642 1PH8 Altezza d'asse 160 Ventilazione forzata (dati di base)

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | $M_o$ [Nm] | $I_o$ [A] | J [kgm²] | η | $T_{th}$ [min] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8165-2□F□□ | SLM/BLM 400 V | 61 | 390 | 119 | 340 | 100 | 1500 | 440 | 126 | 0,216 | 0,940 | 10 | 218 |
| Collegamento a stella | ALM 400 V | 69 | 375 | 115 | 395 | 117 | 1750 | 440 | 126 | | 0,943 | | |
| | SLM/BLM/ALM 480 V | 74 | 355 | 110 | 445 | 133 | 2000 | 440 | 126 | | 0,946 | | |
| 1PH8165-2□L□□ | SLM/BLM 400 V | 84 | 320 | 148 | 370 | 167 | 2500 | 440 | 188 | | 0,955 | | |
| Collegamento a stella | ALM 400 V | 87 | 300 | 138 | 410 | 187 | 2800 | 440 | 188 | | 0,959 | | |
| | SLM/BLM/ALM 480 V | 89 | 285 | 131 | 440 | 200 | 3000 | 440 | 188 | | 0,960 | | |
| 1PH8167-2□F□□ | SLM/BLM 400 V | 69 | 435 | 133 | 345 | 100 | 1500 | 500 | 143 | 0,244 | 0,940 | | 240 |
| Collegamento a stella | ALM 400 V | 77 | 420 | 128 | 400 | 117 | 1750 | 500 | 143 | | 0,943 | | |
| | SLM/BLM/ALM 480 V | 82 | 395 | 123 | 450 | 133 | 2000 | 500 | 143 | | 0,946 | | |
| 1PH8167-2□L□□ | SLM/BLM 400 V | 95 | 360 | 177 | 350 | 167 | 2500 | 500 | 230 | | 0,955 | | |
| Collegamento a stella | ALM 400 V | 98 | 335 | 164 | 385 | 187 | 2800 | 500 | 230 | | 0,959 | | |
| | SLM/BLM/ALM 480 V | 99 | 315 | 155 | 410 | 200 | 3000 | 500 | 230 | | 0,960 | | |

### 4.2.1.4 Altezza d'asse 180 - Ventilazione forzata

Tabella 4- 643 1PH8 AH 180 Ventilazione forzata (dati di base)

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | $M_o$ [Nm] | $I_o$ [A] | J [kgm²] | η | $T_{th}$ [min] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8184-2□C□□ | SLM/BLM 400 V | 33 | 450 | 80 | 278 | 47,0 | 700 | 480 | 84 | 0,460 | 0,932 | 18 | 330 |
| Collegamento a stella | ALM 400 V | 38 | 454 | 80 | 316 | 53,0 | 800 | 480 | 84 | | 0,926 | | |
| | SLM/BLM/ALM 480 V | 46 | 439 | 78 | 390 | 67,0 | 1000 | 480 | 84 | | 0,937 | | |
| 1PH8184-2□D□□ | SLM/BLM 400 V | 46 | 439 | 106 | 285 | 67,0 | 1000 | 480 | 115 | | 0,937 | | 330 |
| Collegamento a stella | ALM 400 V | 53 | 440 | 106 | 327 | 77,0 | 1150 | 480 | 115 | | 0,942 | | |
| | SLM/BLM/ALM 480 V | 62 | 439 | 106 | 382 | 90,0 | 1350 | 480 | 115 | | 0,946 | | |
| 1PH8184-2□F□□ | SLM/BLM 400 V | 70 | 446 | 148 | 308 | 100 | 1500 | 480 | 157 | | 0,951 | | 330 |
| Collegamento a stella | ALM 400 V | 82 | 447 | 150 | 359 | 117 | 1750 | 480 | 157 | | 0,954 | | |
| | SLM/BLM/ALM 480 V | 86 | 411 | 138 | 404 | 133 | 2000 | 480 | 157 | | 0,957 | | |
| 1PH8186-2□C□□ | SLM/BLM 400 V | 44 | 600 | 108 | 269 | 47,0 | 700 | 640 | 115 | 0,600 | 0,924 | 21 | 400 |
| Collegamento a stella | ALM 400 V | 50 | 597 | 108 | 306 | 53,0 | 800 | 640 | 115 | | 0,931 | | |
| | SLM/BLM/ALM 480 V | 62 | 592 | 108 | 379 | 67,0 | 1000 | 640 | 115 | | 0,941 | | |
| 1PH8186-2□D□□ | SLM/BLM 400 V | 62 | 592 | 148 | 275 | 67,0 | 1000 | 640 | 157 | | 0,943 | | 400 |
| Collegamento a stella | ALM 400 V | 71 | 590 | 148 | 315 | 77,0 | 1150 | 640 | 157 | | 0,948 | | |
| | SLM/BLM/ALM 480 V | 83 | 587 | 146 | 368 | 90,0 | 1350 | 640 | 157 | | 0,952 | | |
| 1PH8186-2□F□□ | SLM/BLM 400 V | 93 | 592 | 215 | 282 | 100 | 1500 | 640 | 229 | | 0,952 | | 405 |
| Collegamento a stella | ALM 400 V | 109 | 595 | 215 | 328 | 117 | 1750 | 640 | 229 | | 0,955 | | |
| | SLM/BLM/ALM 480 V | 115 | 549 | 200 | 370 | 133 | 2000 | 640 | 229 | | 0,956 | | |

### 4.2.1.5 Altezza d'asse 225 - Ventilazione forzata

Tabella 4- 644 1PH8 AH 225 Ventilazione forzata (dati di base)

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | $M_o$ [Nm] | $I_o$ [A] | J [kgm²] | η | $T_{th}$ [min] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8224-2□C□□ Collegamento a stella | SLM/BLM 400 V | 48 | 655 | 120 | 256 | 47,0 | 700 | 708 | 128 | 1,28 | 0,961 | 23 | 580 |
| | ALM 400 V | 55 | 657 | 120 | 292 | 53,0 | 800 | 708 | 128 | | 0,962 | | |
| | SLM/BLM/ALM 480 V | 68 | 649 | 118 | 363 | 67,0 | 1000 | 708 | 128 | | 0,965 | | |
| 1PH8224-2□D□□ Collegamento a stella | SLM/BLM 400 V | 68 | 649 | 170 | 254 | 67,0 | 1000 | 708 | 183 | | 0,964 | | |
| | ALM 400 V | 78 | 648 | 170 | 292 | 77,0 | 1150 | 708 | 183 | | 0,965 | | |
| | SLM/BLM/ALM 480 V | 91 | 644 | 168 | 342 | 90,0 | 1350 | 708 | 183 | | 0,965 | | |
| 1PH8224-2□F□□ Collegamento a stella | SLM/BLM 400 V | 101 | 643 | 235 | 271 | 100 | 1500 | 708 | 256 | | 0,965 | | |
| | ALM 400 V | 117 | 638 | 235 | 315 | 117 | 1750 | 708 | 256 | | 0,965 | | |
| | SLM/BLM/ALM 480 V | 118 | 563 | 210 | 355 | 133 | 2000 | 708 | 256 | | 0,963 | | |
| 1PH8226-2□C□□ Collegamento a stella | SLM/BLM 400 V | 64 | 873 | 170 | 238 | 47,0 | 700 | 944 | 183 | 1,66 | 0,963 | 26 | 700 |
| | ALM 400 V | 73 | 871 | 170 | 271 | 53,0 | 800 | 944 | 183 | | 0,965 | | |
| | SLM/BLM/ALM 480 V | 91 | 869 | 170 | 338 | 67,0 | 1000 | 944 | 183 | | 0,967 | | |
| 1PH8226-2□D□□ Collegamento a stella | SLM/BLM 400 V | 91 | 869 | 215 | 265 | 67,0 | 1000 | 944 | 233 | | 0,967 | | |
| | ALM 400 V | 104 | 864 | 215 | 304 | 77,0 | 1150 | 944 | 233 | | 0,967 | | |
| | SLM/BLM/ALM 480 V | 121 | 856 | 215 | 356 | 90,0 | 1350 | 944 | 233 | | 0,968 | | |
| 1PH8226-2□F□□ Collegamento a stella | SLM/BLM 400 V | 134 | 853 | 295 | 288 | 100 | 1500 | 944 | 320 | | 0,967 | | |
| | ALM 400 V | 156 | 851 | 295 | 335 | 117 | 1750 | 944 | 320 | | 0,966 | | |
| | SLM/BLM/ALM 480 V | 157 | 750 | 260 | 378 | 133 | 2000 | 944 | 320 | | 0,964 | | |
| 1PH8228-2□C□□ Collegamento a stella | SLM/BLM 400 V | 80 | 1091 | 200 | 254 | 47,0 | 700 | 1180 | 213 | 2,02 | 0,965 | 28 | 810 |
| | ALM 400 V | 91 | 1086 | 198 | 290 | 53,0 | 800 | 1180 | 213 | | 0,967 | | |
| | SLM/BLM/ALM 480 V | 113 | 1079 | 198 | 361 | 67,0 | 1000 | 1180 | 213 | | 0,968 | | |
| 1PH8228-2□D□□ Collegamento a stella | SLM/BLM 400 V | 113 | 1079 | 265 | 271 | 67,0 | 1000 | 1180 | 284 | | 0,968 | | |
| | ALM 400 V | 129 | 1071 | 260 | 311 | 77,0 | 1150 | 1180 | 284 | | 0,969 | | |
| | SLM/BLM/ALM 480 V | 151 | 1068 | 260 | 364 | 90,0 | 1350 | 1180 | 284 | | 0,968 | | |
| 1PH8228-2□F□□ Collegamento a stella | SLM/BLM 400 V | 168 | 1070 | 395 | 270 | 100 | 1500 | 1180 | 427 | | 0,967 | | |
| | ALM 400 V | 195 | 1064 | 390 | 314 | 117 | 1750 | 1180 | 427 | | 0,966 | | |
| | SLM/BLM/ALM 480 V | 196 | 936 | 345 | 355 | 133 | 2000 | 1180 | 427 | | 0,964 | | |

### 4.2.1.6 Fattori di sovraccarico per modi operativi intermittenti (S6) e funzionamento breve (S2)

I fattori di sovraccarico per i modi operativi intermittenti (S6) nonché per il funzionamento breve (S2) sono forniti in base alla curva caratteristica S1 (funzionamento continuo) di ciascun motore.

Tabella 4- 645 Fattori di sovraccarico S6/S2 motore sincrono ventilazione forzata

| Tipo di motore | Fattori di sovraccarico | | | |
|---|---|---|---|---|
| | S6 - 60 % | S6 - 40 % | S6 - 25 % | S2 - 30 min |
| 1PH813□-2□□0/1 | 1,20 | 1,35 | 1,40 | 1,15 |
| 1PH816□-2□□0/1 | 1,20 | 1,35 | 1,40 | 1,15 |
| 1PH818□-2□□0/1 | 1,10 | 1,20 | 1,25 | 1,07 |
| 1PH822□-2□□0/1 | 1,10 | 1,25 | 1,30 | 1,30 |

### 4.2.1.7 Altezza dell'asse 132 - Raffreddamento ad acqua

Tabella 4- 646 1PH8 Altezza d'asse 132 Raffreddamento ad acqua (dati di base)

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | $M_o$ [Nm] | $I_o$ [A] | η | J [kgm²] | $T_{th}$ [min] | P_raffr [kW] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8131-2□F2□ Collegamento a stella | SLM/BLM 400 V | 17,6 | 112 | 40 | 326 | 50,0 | 1500 | 115 | 41 | 0,946 | 0,0446 | 5 | 1,6 | 102 |
| | ALM 400 V | 20,4 | 112 | 40 | 377 | 58,3 | 1750 | 115 | 41 | 0,947 | | | 1,8 | |
| | SLM/BLM/ALM 480 V | 23,2 | 111 | 39 | 427 | 66,7 | 2000 | 115 | 41 | 0,948 | | | 1,9 | |
| 1PH8131-2□L2□ Collegamento a stella | SLM/BLM 400 V | 28,5 | 109 | 57 | 359 | 83,3 | 2500 | 115 | 60 | 0,948 | | | 2,3 | |
| | ALM 400 V | 31,7 | 108 | 56 | 400 | 93,3 | 2800 | 115 | 60 | 0,949 | | | 2,5 | |
| | SLM/BLM/ALM 480 V | 33,6 | 107 | 56 | 427 | 100 | 3000 | 115 | 60 | 0,950 | | | 2,7 | |
| 1PH8133-2□F2□ Collegamento a stella | SLM/BLM 400 V | 23,1 | 147 | 42 | 371 | 50,0 | 1500 | 155 | 43 | 0,947 | 0,0600 | | 2,1 | 120 |
| | ALM 400 V | 26,4 | 144 | 42 | 415 | 58,3 | 1750 | 155 | 43 | 0,948 | | | 2,4 | |
| | SLM/BLM/ALM 480 V | 29,0 | 139 | 41 | 449 | 66,7 | 2000 | 155 | 43 | 0,949 | | | 2,5 | |
| 1PH8133-2□G2□ Collegamento a stella | SLM/BLM 400 V | 30,6 | 146 | 57 | 383 | 66,7 | 2000 | 155 | 61 | 0,950 | | | 2,5 | |
| | ALM 400 V | 34,9 | 145 | 57 | 415 | 76,7 | 2300 | 155 | 61 | 0,951 | | | 2,8 | |
| | SLM/BLM/ALM 480 V | 39,1 | 141 | 57 | 449 | 88,3 | 2650 | 155 | 61 | 0,952 | | | 3,1 | |
| 1PH8135-2□F2□ Collegamento a stella | SLM/BLM 400 V | 29,7 | 189 | 57 | 384 | 50,0 | 1500 | 196 | 59 | 0,950 | | | 2,7 | 138 |
| | ALM 400 V | 34,1 | 186 | 56 | 415 | 58,3 | 1750 | 196 | 59 | 0,951 | | | 3,1 | |
| | SLM/BLM/ALM 480 V | 37,9 | 181 | 56 | 449 | 66,7 | 2000 | 196 | 59 | 0,952 | | | 3,2 | |
| 1PH8135-2□G2□ Collegamento a stella | SLM/BLM 400 V | 39,0 | 186 | 81 | 346 | 66,7 | 2000 | 196 | 85 | 0,952 | 0,0750 | | 3,1 | |
| | ALM 400 V | 44,3 | 184 | 80 | 395 | 76,7 | 2300 | 196 | 85 | 0,953 | | | 3,5 | |
| | SLM/BLM/ALM 480 V | 50,5 | 182 | 79 | 452 | 88,3 | 2650 | 196 | 85 | 0,954 | | | 4,0 | |
| 1PH8137-2□F2□ Collegamento a stella | SLM/BLM 400 V | 32,7 | 208 | 58 | 371 | 50,0 | 1500 | 226 | 60 | 0,951 | 0,0885 | | 2,9 | 153 |
| | ALM 400 V | 37,0 | 202 | 58 | 415 | 58,3 | 1750 | 225 | 60 | 0,952 | | | 3,3 | |
| | SLM/BLM/ALM 480 V | 40,6 | 194 | 57 | 449 | 66,7 | 2000 | 226 | 60 | 0,953 | | | 3,4 | |
| 1PH8137-2□G2□ Collegamento a stella | SLM/BLM 400 V | 44,4 | 212 | 85 | 371 | 66,7 | 2000 | 226 | 90 | 0,954 | | | 3,6 | |
| | ALM 400 V | 50,8 | 210 | 84 | 424 | 76,7 | 2300 | 226 | 90 | 0,956 | | | 4,1 | |
| | SLM/BLM/ALM 480 V | 56,8 | 205 | 83 | 449 | 88,3 | 2650 | 226 | 90 | 0,954 | | | 4,5 | |
| 1PH8138-2□F2□ Collegamento a stella | SLM/BLM 400 V | 44,9 | 286 | 118 | 316 | 50,0 | 1500 | 290 | 120 | 0,958 | | | 4,0 | 156 |
| | ALM 400 V | 52,4 | 286 | 118 | 366 | 58,3 | 1750 | 290 | 120 | 0,959 | | | 4,7 | |
| | SLM/BLM/ALM 480 V | 59,7 | 285 | 118 | 416 | 66,7 | 2000 | 290 | 120 | 0,960 | | | 4,8 | |
| 1PH8138-2□G2□ Collegamento a stella | SLM/BLM 400 V | 59,3 | 283 | 131 | 374 | 66,7 | 2000 | 290 | 133 | 0,960 | | | 4,7 | |
| | ALM 400 V | 67,7 | 281 | 130 | 415 | 76,7 | 2300 | 290 | 133 | 0,961 | | | 5,4 | |
| | SLM/BLM/ALM 480 V | 76,3 | 275 | 130 | 449 | 88,3 | 2650 | 290 | 133 | 0,962 | | | 6,1 | |

### 4.2.1.8 Altezza d'asse 160 - Raffreddamento ad acqua

Tabella 4- 647 1PH8 Altezza d'asse 160 Raffreddamento ad acqua (dati di base)

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | $M_o$ [Nm] | $I_o$ [A] | η | J [kgm²] | $T_{th}$ | P_raffr [kW] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8164-2□F2□ Collegamento a stella | SLM/BLM 400 V | 59 | 375 | 111 | 380 | 100 | 1500 | 440 | 118 | 0,940 | 0,175 | 5 | 4,7 | 224 |
| | ALM 400 V | 67 | 365 | 108 | 440 | 117 | 1750 | 440 | 118 | 0,943 | | | 5,3 | |
| | SLM/BLM/ALM 480 V | 70 | 330 | 105 | 500 | 133 | 2000 | 440 | 118 | 0,946 | | | 5,6 | |
| 1PH8164-2□L2□ Collegamento a stella | SLM/BLM 400 V | 88 | 335 | 165 | 355 | 167 | 2500 | 440 | 205 | 0,955 | | | 6,2 | |
| | ALM 400 V | 93 | 315 | 156 | 395 | 187 | 2800 | 440 | 205 | 0,959 | | | 6,5 | |
| | SLM/BLM/ALM 480 V | 96 | 305 | 150 | 420 | 200 | 3000 | 440 | 205 | 0,960 | | | 6,7 | |
| 1PH8166-2□F2□ Collegamento a stella | SLM/BLM 400 V | 74 | 475 | 148 | 355 | 100 | 1500 | 550 | 159 | 0,940 | 0,216 | | 6,0 | 257 |
| | ALM 400 V | 85 | 460 | 143 | 410 | 117 | 1750 | 550 | 159 | 0,943 | | | 6,6 | |
| | SLM/BLM/ALM 480 V | 89 | 425 | 138 | 465 | 133 | 2000 | 550 | 159 | 0,946 | | | 7,2 | |
| 1PH8166-2□L2□ Collegamento a stella | SLM/BLM 400 V | 102 | 390 | 188 | 380 | 167 | 2500 | 550 | 240 | 0,955 | | | 7,1 | |
| | ALM 400 V | 109 | 375 | 177 | 420 | 187 | 2800 | 550 | 240 | 0,959 | | | 7,5 | |
| | SLM/BLM/ALM 480 V | 110 | 350 | 169 | 450 | 200 | 3000 | 550 | 240 | 0,960 | | | 7,7 | |
| 1PH8168-2□F2□ Collegamento a stella | SLM/BLM 400 V | 84 | 530 | 169 | 355 | 100 | 1500 | 620 | 179 | 0,940 | 0,244 | 5 | 6,7 | 279 |
| | ALM 400 V | 94 | 510 | 164 | 410 | 117 | 1750 | 620 | 179 | 0,943 | | | 7,5 | |
| | SLM/BLM/ALM 480 V | 100 | 480 | 157 | 465 | 133 | 2000 | 620 | 179 | 0,946 | | | 8,0 | |
| 1PH8168-2□L2□ Collegamento a stella | SLM/BLM 400 V | 119 | 455 | 225 | 355 | 167 | 2500 | 520 | 240 | 0,955 | | | 8,3 | |
| | ALM 400 V | 123 | 420 | 210 | 395 | 187 | 2800 | 520 | 240 | 0,959 | | | 8,6 | |
| | SLM/BLM/ALM 480 V | 125 | 395 | 197 | 420 | 200 | 3000 | 520 | 240 | 0,960 | | | 8,8 | |

### 4.2.1.9 Altezza dell'asse 180 - Raffreddamento ad acqua

Tabella 4- 648 1PH8 Altezza dell'asse 180 Raffreddamento ad acqua (Dati di base)

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | $M_o$ [Nm] | $I_o$ [A] | η | J [kgm²] | $T_{th}$ [min] | P_raffr [kW] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8184-2□C2□ Collegamento a stella | SLM/BLM 400 V | 42 | 573 | 100 | 303 | 47,0 | 700 | 590 | 103 | 0,919 | 0,45 | 13 | 3,8 | 330 |
| | ALM 400 V | 48 | 573 | 102 | 342 | 53,0 | 800 | 590 | 103 | 0,926 | | | 4,4 | |
| | SLM/BLM/ALM 480 V | 60 | 573 | 102 | 423 | 67,0 | 1000 | 590 | 103 | 0,937 | | | 5,6 | |
| 1PH8184-2□D2□ Collegamento a stella | SLM/BLM 400 V | 61 | 583 | 140 | 313 | 67,0 | 1000 | 600 | 143 | 0,937 | | | 5,7 | 330 |
| | ALM 400 V | 70 | 581 | 140 | 386 | 77,0 | 1150 | 600 | 143 | 0,942 | | | 6,5 | |
| | SLM/BLM/ALM 480 V | 82 | 580 | 140 | 417 | 90,0 | 1350 | 600 | 143 | 0,946 | | | 7,7 | |
| 1PH8184-2□F2□ Collegamento a stella | SLM/BLM 400 V | 90 | 573 | 190 | 334 | 100 | 1500 | 600 | 196 | 0,951 | | | 8,5 | 330 |
| | ALM 400 V | 103 | 562 | 186 | 386 | 117 | 1750 | 600 | 196 | 0,954 | | | 9,7 | |
| | SLM/BLM/ALM 480 V | 110 | 525 | 176 | 434 | 133 | 2000 | 600 | 196 | 0,957 | | | 10,4 | |
| 1PH8184-2□L2□ Collegamento a stella | SLM/BLM 400 V | 127 | 485 | 260 | 328 | 167 | 2500 | 530 | 278 | 0,957 | | | 12,0 | 332 |
| | ALM 400 V | 140 | 461 | 250 | 375 | 193 | 2900 | 530 | 278 | 0,956 | | | 13,2 | |
| | SLM/BLM/ALM 480 V | 142 | 424 | 230 | 405 | 213 | 3200 | 530 | 278 | 0,954 | | | 13,4 | |
| 1PH8186-2□C2□ Collegamento a stella | SLM/BLM 400 V | 58 | 791 | 142 | 295 | 47,0 | 700 | 800 | 143 | 0,924 | 0,60 | 14 | 5,3 | 400 |
| | ALM 400 V | 66 | 788 | 142 | 335 | 53,0 | 800 | 800 | 143 | 0,931 | | | 6,1 | |
| | SLM/BLM/ALM 480 V | 82 | 783 | 140 | 415 | 67,0 | 1000 | 800 | 143 | 0,941 | | | 7,6 | |
| 1PH8186-2□D2□ Collegamento a stella | SLM/BLM 400 V | 80 | 764 | 190 | 300 | 67,0 | 1000 | 800 | 196 | 0,943 | | | 7,5 | 400 |
| | ALM 400 V | 92 | 764 | 190 | 345 | 77,0 | 1150 | 800 | 196 | 0,948 | | | 8,6 | |
| | SLM/BLM/ALM 480 V | 107 | 757 | 190 | 400 | 90,0 | 1350 | 800 | 196 | 0,952 | | | 10,1 | |
| 1PH8186-2□F2□ Collegamento a stella | SLM/BLM 400 V | 119 | 758 | 275 | 305 | 100 | 1500 | 800 | 285 | 0,952 | | | 11,2 | 405 |
| | ALM 400 V | 138 | 753 | 275 | 355 | 117 | 1750 | 800 | 285 | 0,955 | | | 13,0 | |
| | SLM/BLM/ALM 480 V | 154 | 735 | 265 | 400 | 133 | 2000 | 800 | 285 | 0,956 | | | 14,6 | |
| 1PH8186-2□L2□ Collegamento a stella | SLM/BLM 400 V | 168 | 642 | 370 | 305 | 167 | 2500 | 720 | 405 | 0,957 | | | 15,9 | 405 |
| | ALM 400 V | 178 | 586 | 340 | 345 | 193 | 2900 | 720 | 405 | 0,955 | | | 16,8 | |
| | SLM/BLM/ALM 480 V | 183 | 546 | 315 | 375 | 213 | 3200 | 720 | 405 | 0,953 | | | 17,3 | |

### 4.2.1.10 Altezza dell'asse 225 - Raffreddamento ad acqua

Tabella 4- 649 1PH8 Altezza d'asse 225 Raffreddamento ad acqua (dati di base)

| Motor | Module | $P_N$ [kW] | $M_n$ [Nm] | $I_N$ [A] | $U_N$ [V] | $f_n$ [Hz] | $n_N$ [1/min] | $M_o$ [Nm] | $I_o$ [A] | η | J [kgm²] | $T_{th}$ [min] | P_raffr [kW] | m [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1PH8224-2□C2□ Collegamento a stella | SLM/BLM 400 V | 72 | 982 | 180 | 275 | 47 | 700 | 1007 | 183 | 0,947 | 1,28 | 16 | 6,7 | 580 |
| | ALM 400 V | 81 | 967 | 178 | 310 | 53 | 800 | 1007 | 183 | 0,952 | | | 7,6 | |
| | SLM/BLM/ALM 480 V | 101 | 964 | 178 | 385 | 67 | 1000 | 1007 | 183 | 0,957 | | | 9,6 | |
| 1PH8224-2□D2□ Collegamento a stella | SLM/BLM 400 V | 101 | 964 | 255 | 275 | 67 | 1000 | 1007 | 262 | 0,956 | | | 9,6 | |
| | ALM 400 V | 115 | 955 | 250 | 310 | 77 | 1150 | 1007 | 262 | 0,959 | | | 10,9 | |
| | SLM/BLM/ALM 480 V | 135 | 955 | 250 | 365 | 90 | 1350 | 1007 | 262 | 0,961 | | | 12,8 | |
| 1PH8224-2□F2□ Collegamento a stella | SLM/BLM 400 V | 151 | 961 | 355 | 290 | 100 | 1500 | 1007 | 367 | 0,962 | | | 14,4 | |
| | ALM 400 V | 175 | 955 | 355 | 335 | 117 | 1750 | 1007 | 367 | 0,963 | | | 16,7 | |
| | SLM/BLM/ALM 480 V | 186 | 888 | 330 | 380 | 133 | 1350 | 1007 | 367 | 0,964 | | | 17,7 | |
| 1PH8224-2□L2□ Collegamento a stella | SLM/BLM 400 V | 182 | 695 | 365 | 320 | 167 | 2500 | 885 | 460 | 0,961 | | | 17,3 | |
| | ALM 400 V | 191 | 629 | 335 | 370 | 193 | 2900 | 885 | 460 | 0,958 | | | 18,1 | |
| | SLM/BLM/ALM 480 V | 196 | 585 | 310 | 400 | 213 | 3200 | 885 | 460 | 0,954 | | | 18,5 | |
| 1PH8226-2□C2□ Collegamento a stella | SLM/BLM 400 V | 95 | 1296 | 255 | 255 | 47 | 700 | 1330 | 260 | 0,952 | 1,66 | 18 | 8,9 | 700 |
| | ALM 400 V | 108 | 1289 | 255 | 287 | 53 | 800 | 1330 | 260 | 0,956 | | | 10,2 | |
| | SLM/BLM/ALM 480 V | 134 | 1280 | 255 | 357 | 67 | 1000 | 1330 | 260 | 0,960 | | | 12,7 | |
| 1PH8226-2□D2□ Collegamento a stella | SLM/BLM 400 V | 135 | 1289 | 325 | 285 | 67 | 1000 | 1330 | 330 | 0,960 | | | 12,8 | |
| | ALM 400 V | 155 | 1287 | 325 | 325 | 77 | 1150 | 1330 | 330 | 0,962 | | | 14,8 | |
| | SLM/BLM/ALM 480 V | 180 | 1273 | 320 | 380 | 90 | 1350 | 1330 | 330 | 0,964 | | | 17,2 | |
| 1PH8226-2□F2□ Collegamento a stella | SLM/BLM 400 V | 201 | 1280 | 445 | 305 | 100 | 1500 | 1330 | 454 | 0,965 | | | 19,2 | |
| | ALM 400 V | 233 | 1271 | 440 | 355 | 117 | 1750 | 1330 | 454 | 0,965 | | | 22,3 | |
| | SLM/BLM/ALM 480 V | 248 | 1184 | 410 | 390 | 133 | 2000 | 1330 | 454 | 0,965 | | | 23,7 | |
| 1PH8226-2□L2□ Collegamento a stella | SLM/BLM 400 V | 228 | 871 | 400 | 360 | 167 | 2500 | 1170 | 532 | 0,962 | | | 21,7 | |
| | ALM 400 V | 238 | 784 | 365 | 413 | 193 | 2900 | 1170 | 532 | 0,958 | | | 22,6 | |
| | SLM/BLM/ALM 480 V | 245 | 731 | 340 | 460 | 213 | 3200 | 1170 | 532 | 0,954 | | | 23,1 | |
| 1PH8228-2□C2□ Collegamento a stella | SLM/BLM 400 V | 121 | 1651 | 305 | 305 | 47 | 700 | 1680 | 306 | 0,955 | 2,02 | 19 | 11,4 | 810 |
| | ALM 400 V | 138 | 1647 | 305 | 315 | 53 | 800 | 1680 | 306 | 0,958 | | | 13,1 | |
| | SLM/BLM/ALM 480 V | 172 | 1642 | 300 | 390 | 67 | 1000 | 1680 | 306 | 0,961 | | | 16,4 | |
| 1PH8228-2□D2□ Collegamento a stella | SLM/BLM 400 V | 169 | 1614 | 395 | 290 | 67 | 1000 | 1680 | 408 | 0,962 | | | 16,1 | |
| | ALM 400 V | 194 | 1611 | 395 | 330 | 77 | 1150 | 1660 | 408 | 0,964 | | | 18,5 | |
| | SLM/BLM/ALM 480 V | 226 | 1599 | 395 | 395 | 90 | 1350 | 1660 | 408 | 0,965 | | | 21,6 | |
| 1PH8228-2□F2□ Collegamento a stella | SLM/BLM 400 V | 251 | 1598 | 590 | 285 | 100 | 1500 | 1680 | 612 | 0,964 | | | 23,9 | |
| | ALM 400 V | 289 | 1577 | 580 | 335 | 117 | 1750 | 1680 | 612 | 0,965 | | | 27,6 | |
| | SLM/BLM/ALM 480 V | 310 | 1480 | 550 | 380 | 133 | 2000 | 1680 | 612 | 0,964 | | | 29,6 | |
| 1PH8228-2□L2□ Collegamento a stella | SLM/BLM 400 V | 270 | 1031 | 570 | 300 | 167 | 2500 | 1400 | 762 | 0,963 | | | 25,7 | |
| | ALM 400 V | 283 | 932 | 520 | 345 | 193 | 2900 | 1400 | 762 | 0,958 | | | 26,8 | |
| | SLM/BLM/ALM 480 V | 291 | 868 | 485 | 380 | 213 | 3200 | 1400 | 762 | 0,958 | | | 27,5 | |

### 4.2.1.11 Fattori di sovraccarico per modi operativi intermittenti (S6) e funzionamento breve (S2)

I fattori di sovraccarico per i modi operativi intermittenti (S6) nonché per il funzionamento breve (S2) sono forniti in base alla curva caratteristica S1 (funzionamento continuo) di ciascun motore.

Tabella 4- 650 Fattori di sovraccarico S6/S2 motore sincrono raffreddamento ad acqua

| Tipo di motore | Fattori di sovraccarico | | | |
|---|---|---|---|---|
| | S6 - 60 % | S6 - 40 % | S6 - 25 % | S2 - 30 min |
| 1PH813□-2□□2 | 1,10 | 1,20 | 1,50 | 1,07 |
| 1PH816□-2□□2 | 1,10 | 1,20 | 1,50 | 1,07 |
| 1PH818□-2□□2 | 1,10 | 1,20 | 1,50 | 1,07 |
| 1PH822□-2□□2 | 1,10 | 1,20 | 1,50 | 1,07 |

## 4.2.2 Curve caratteristiche ventilazione forzata

### 4.2.2.1 Altezza dell'asse 132 - Ventilazione forzata

Tabella 4- 651 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8131-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 15,7 | 100 | 29 | 17 | 2000 | 4500 | 4500 | 2550 | 220 | 74 | 105 | 30 |

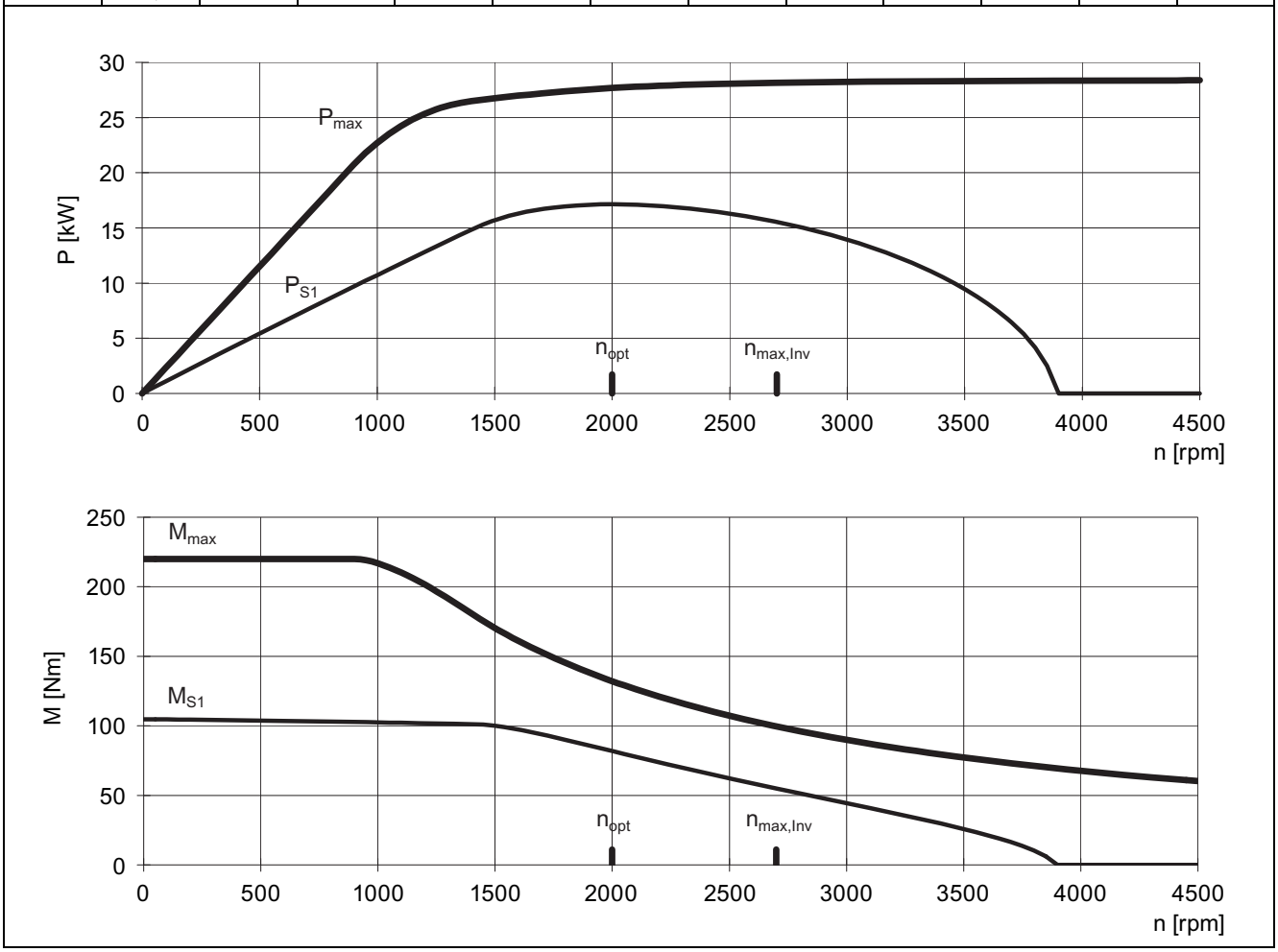
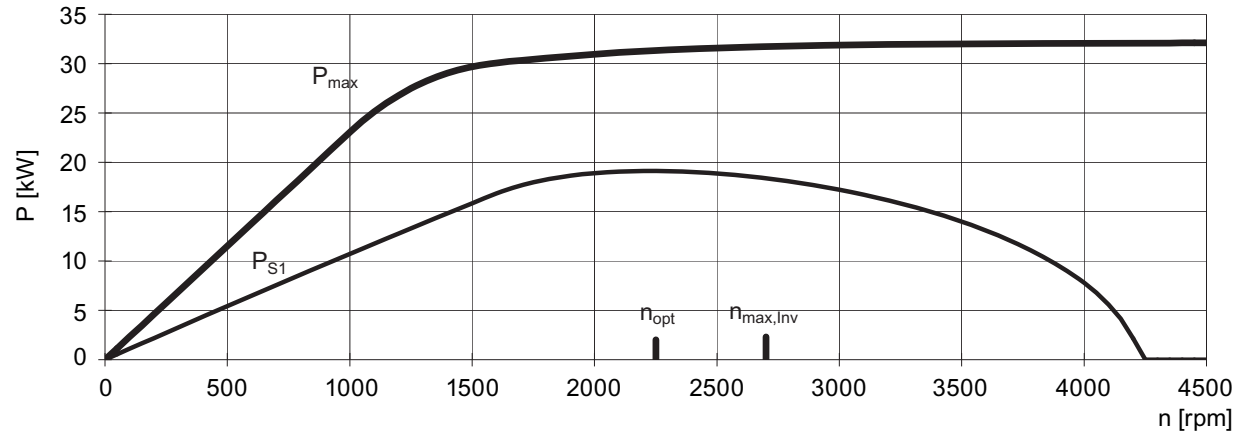


Tabella 4- 652 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8131-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 18,0 | 98 | 29 | 19 | 2250 | 4500 | 4500 | 2550 | 220 | 74 | 105 | 30 |
| 1500 | 15,7 | 100 | 29 | | | | | | | | | |



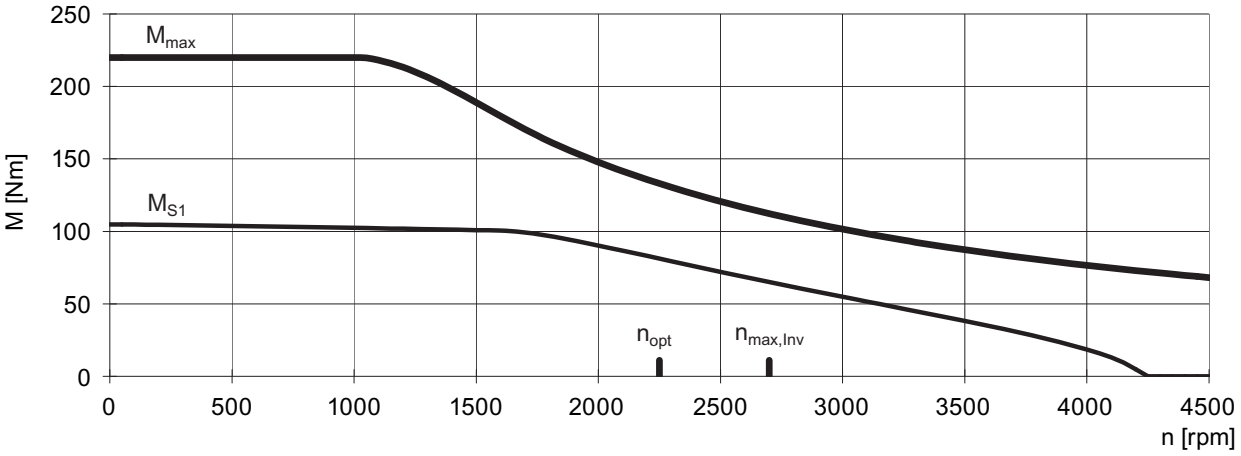



Tabella 4- 653 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8131-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 19,9 | 95 | 29 | 21 | 2400 | 4500 | 4500 | 2550 | 220 | 74 | 105 | 30 |

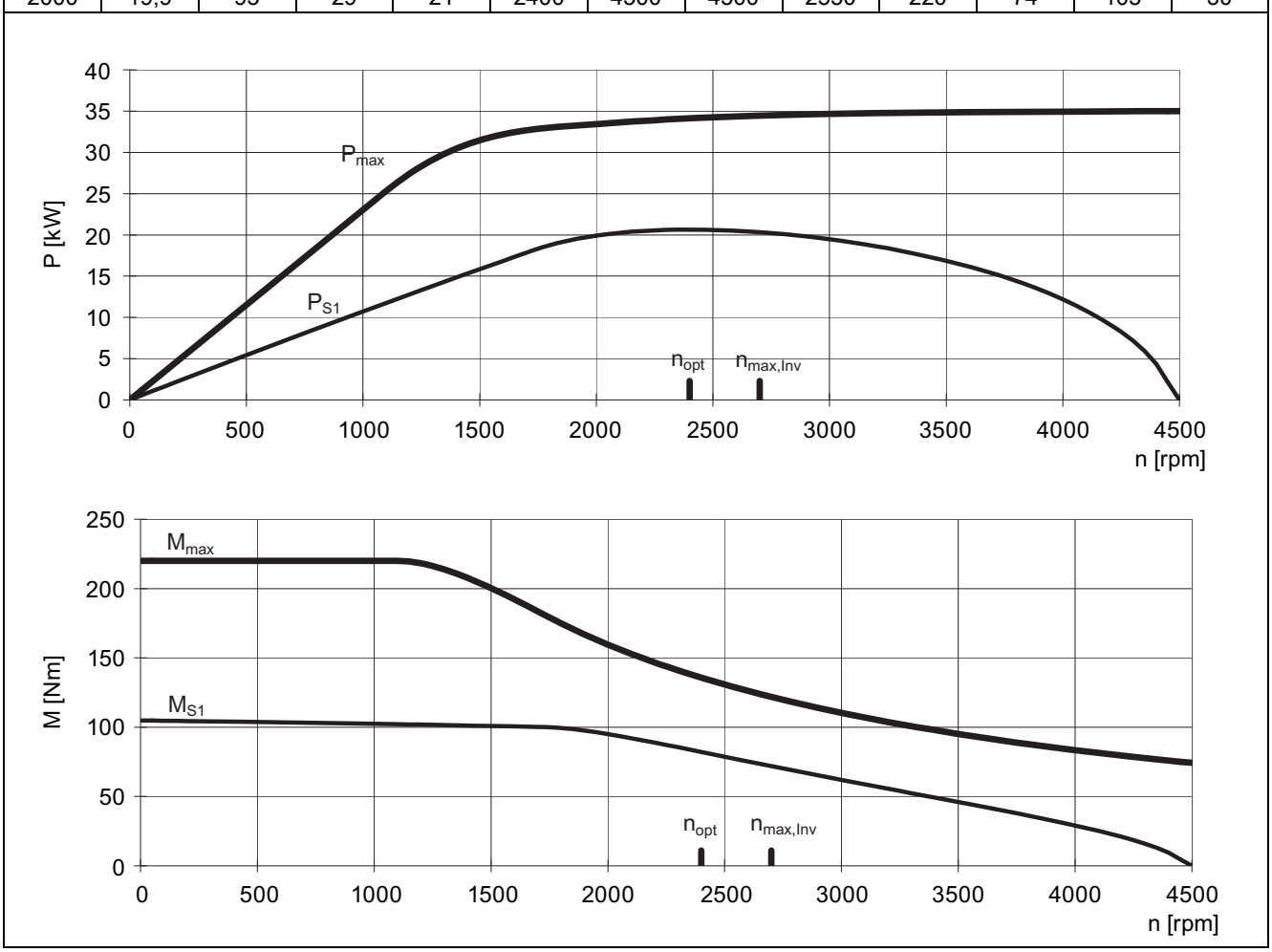
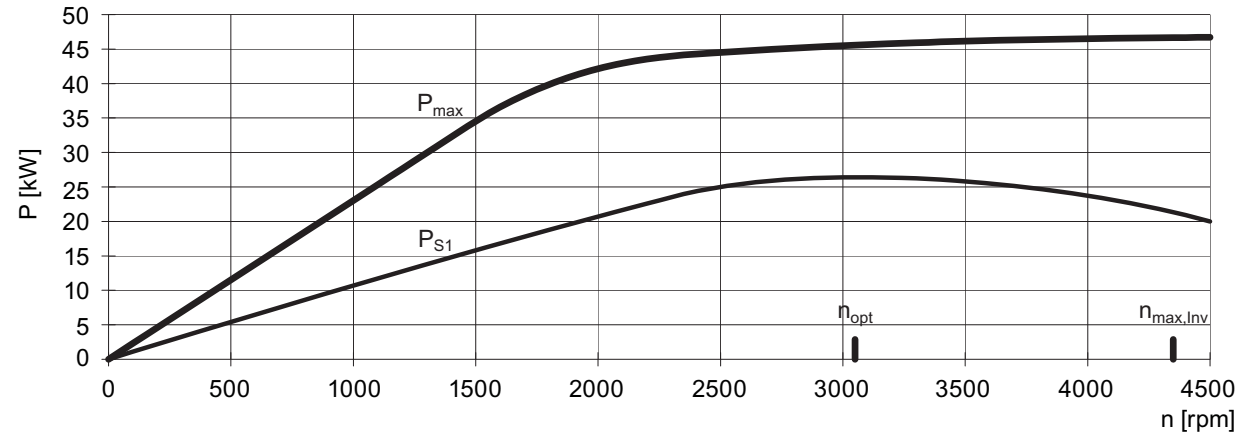


Tabella 4- 654 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8131-□□L□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 25,0 | 96 | 44 | 26 | 3050 | 4500 | 4500 | 4050 | 220 | 117 | 105 | 48 |



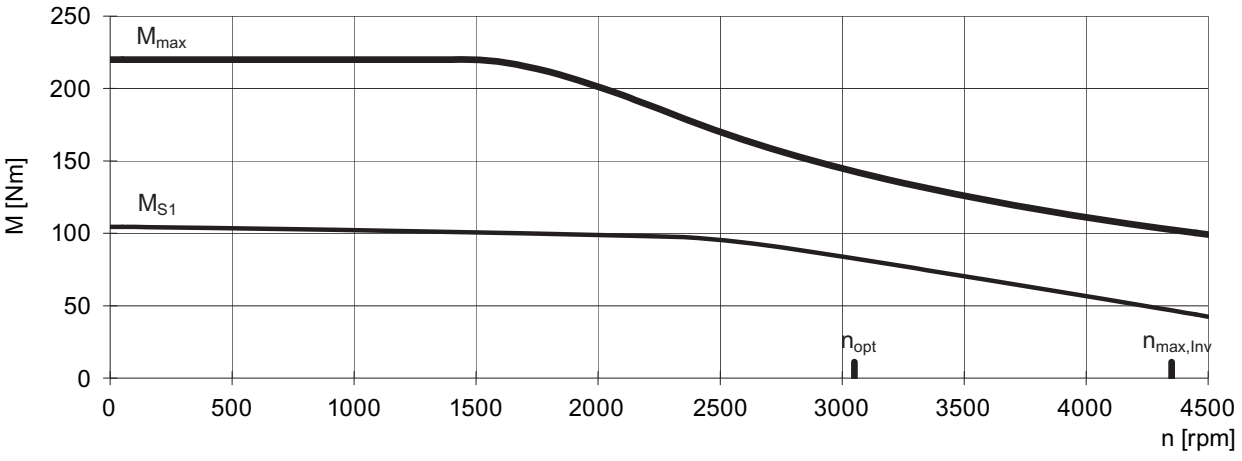
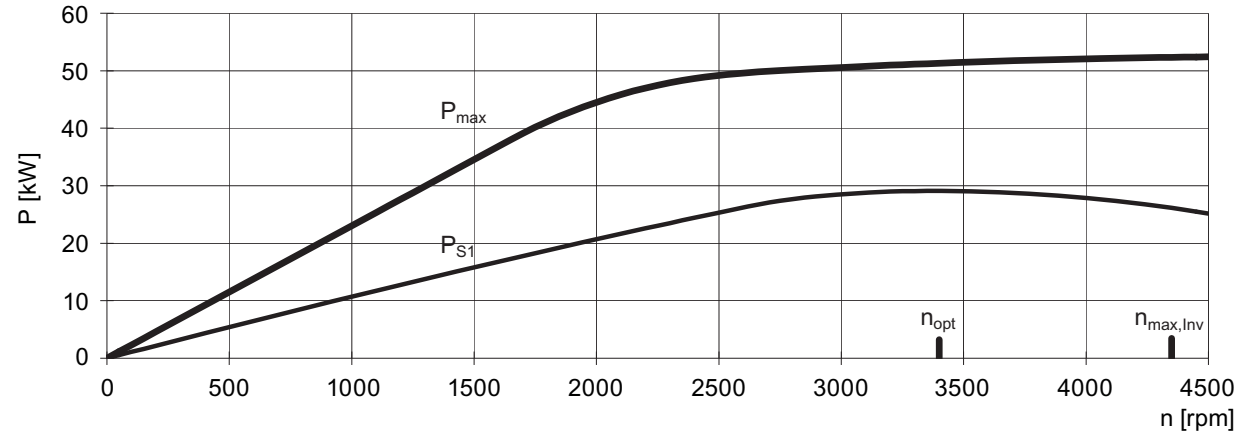



Tabella 4- 655 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8131-□□L□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2800 | 27,7 | 95 | 44 | 29 | 3400 | 4500 | 4500 | 4050 | 220 | 117 | 105 | 48 |
| 2500 | 25,0 | 96 | 44 | | | | | | | | | |



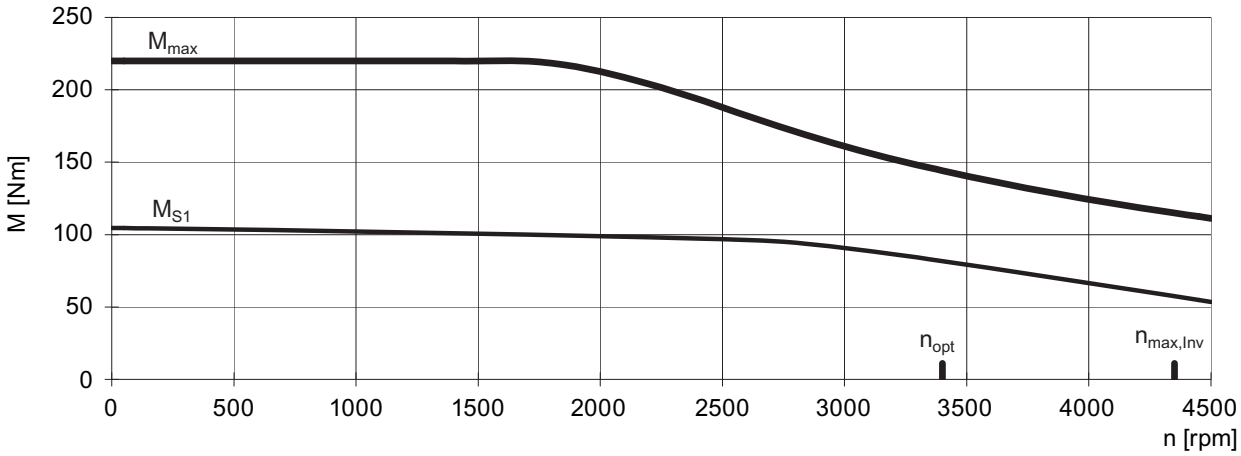



Tabella 4- 656 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8131-□□L□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3000 | 29,5 | 94 | 43 | 31 | 3600 | 4500 | 4500 | 4050 | 220 | 117 | 105 | 48 |

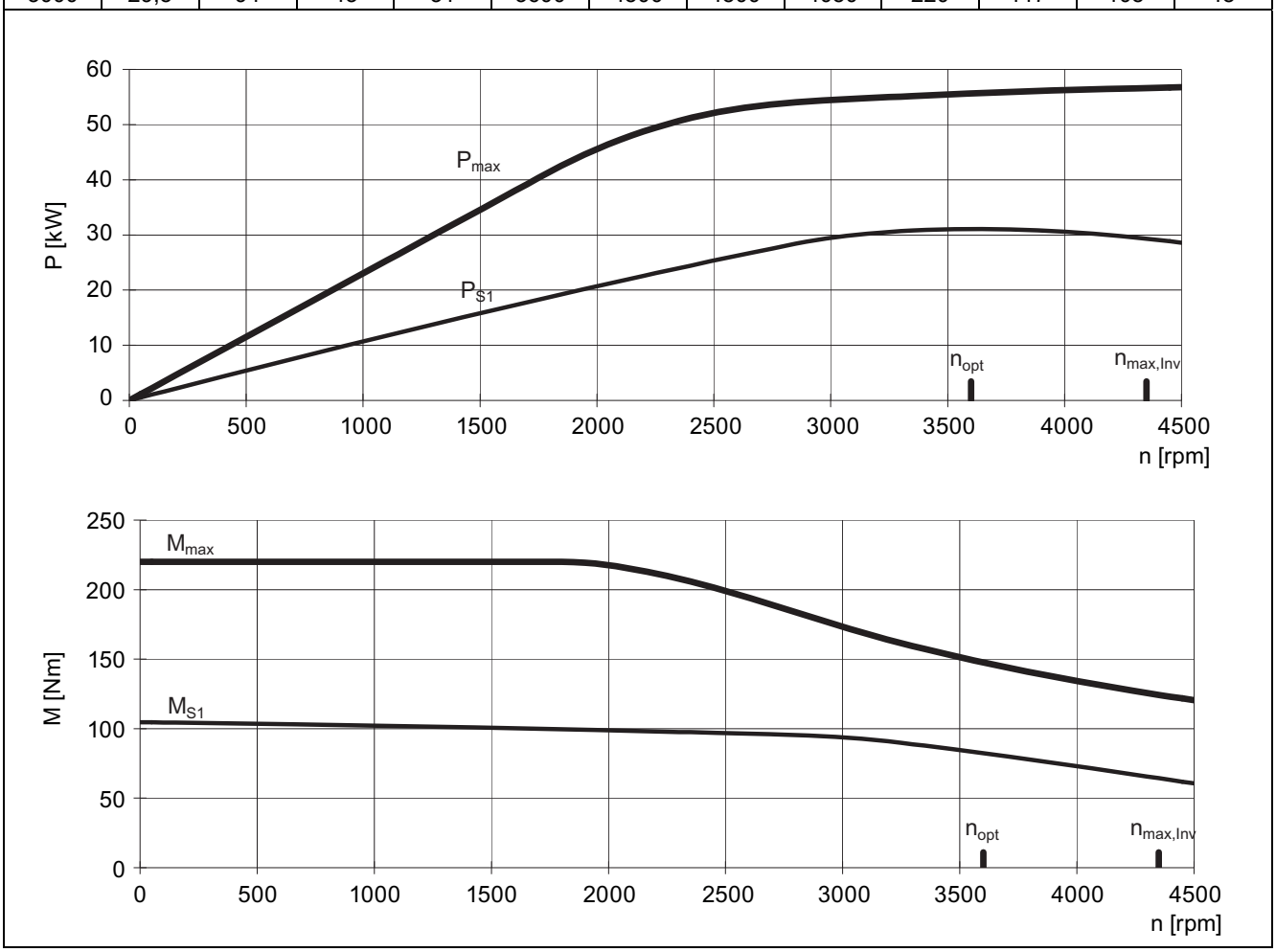


Tabella 4- 657 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8133-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 19,9 | 127 | 44 | 26 | 2300 | 4500 | 4500 | 3050 | 310 | 124 | 131 | 45 |

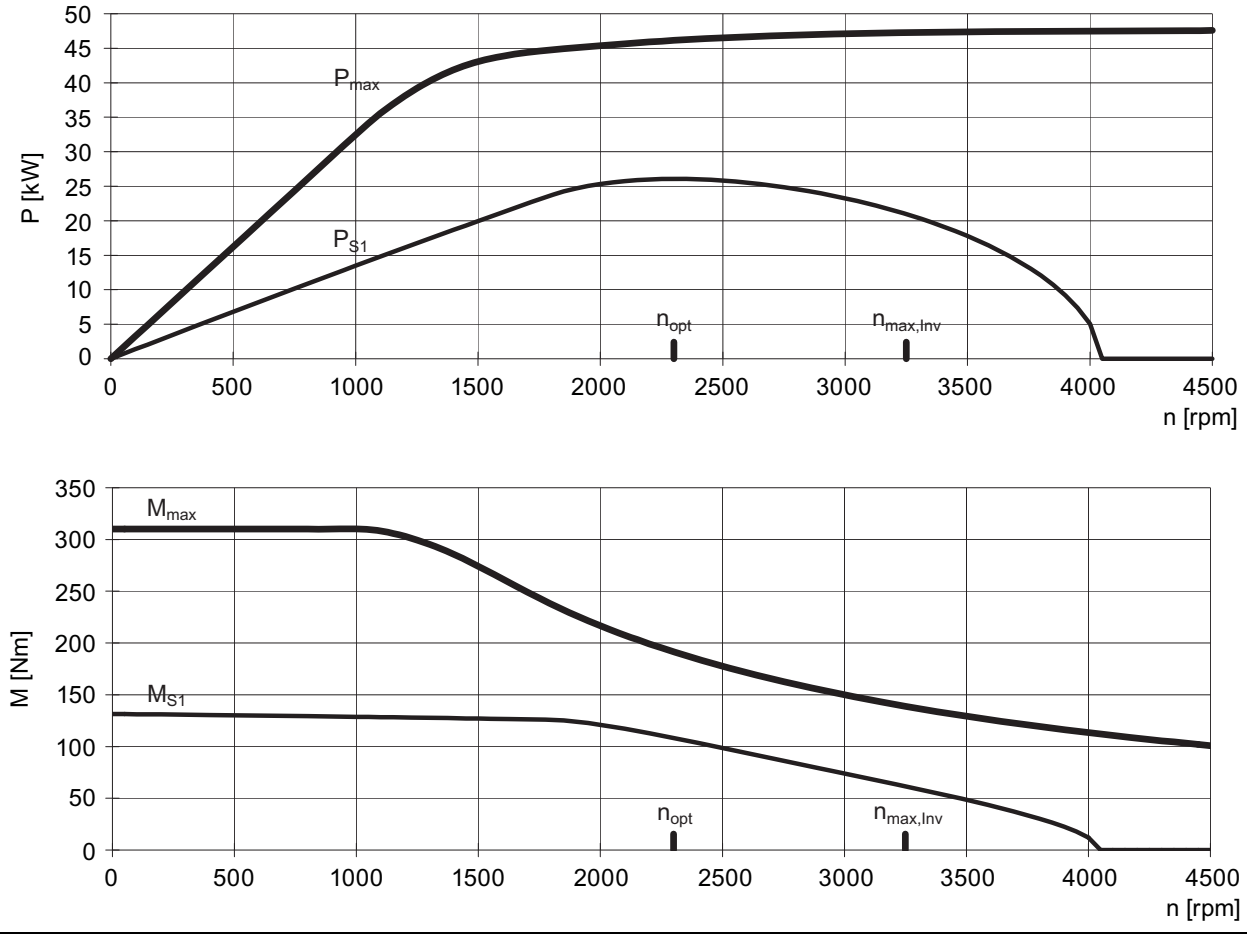
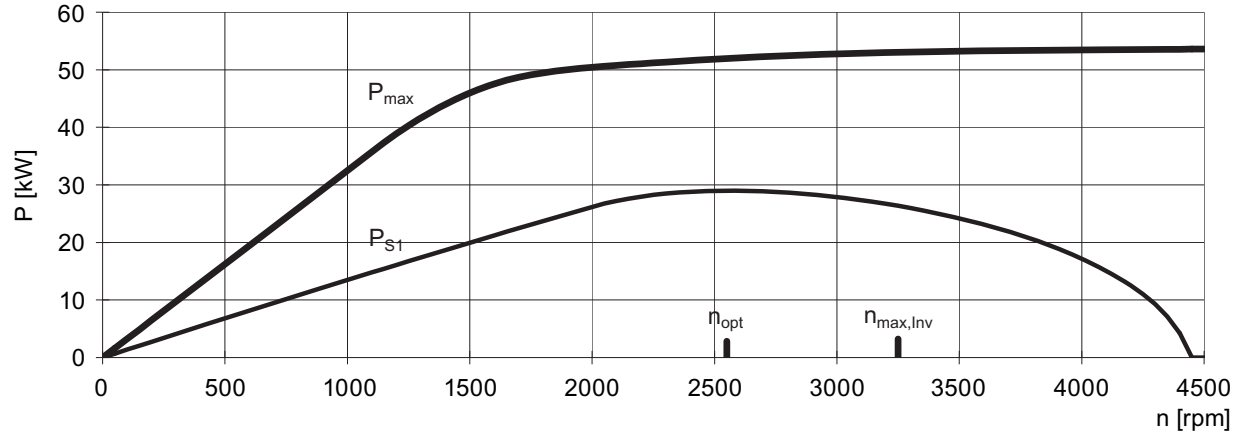


Tabella 4- 658 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8133-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 23,1 | 126 | 43 | 29 | 2550 | 4500 | 4500 | 3050 | 310 | 124 | 131 | 45 |
| 1500 | 19,9 | 127 | 44 | | | | | | | | | |



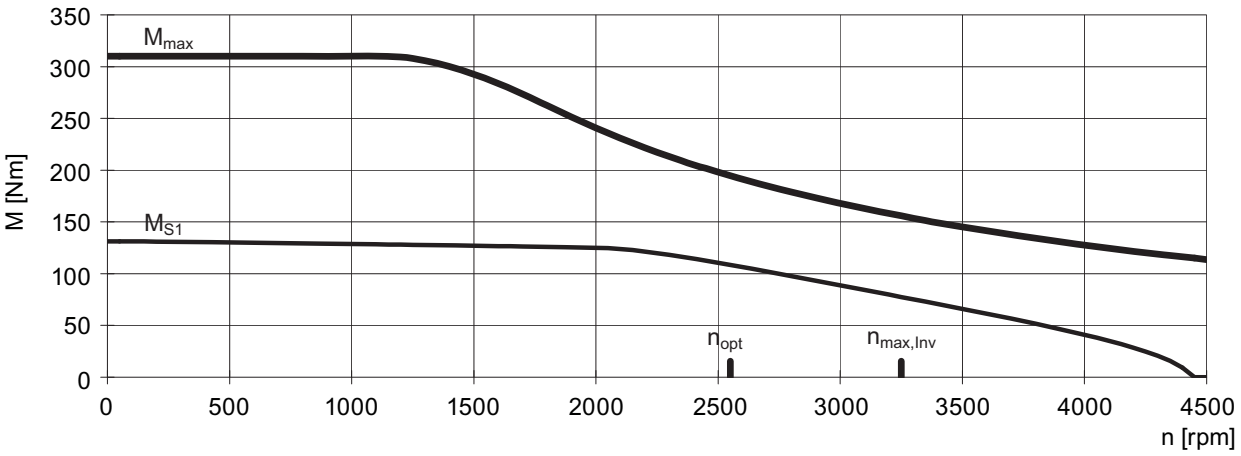
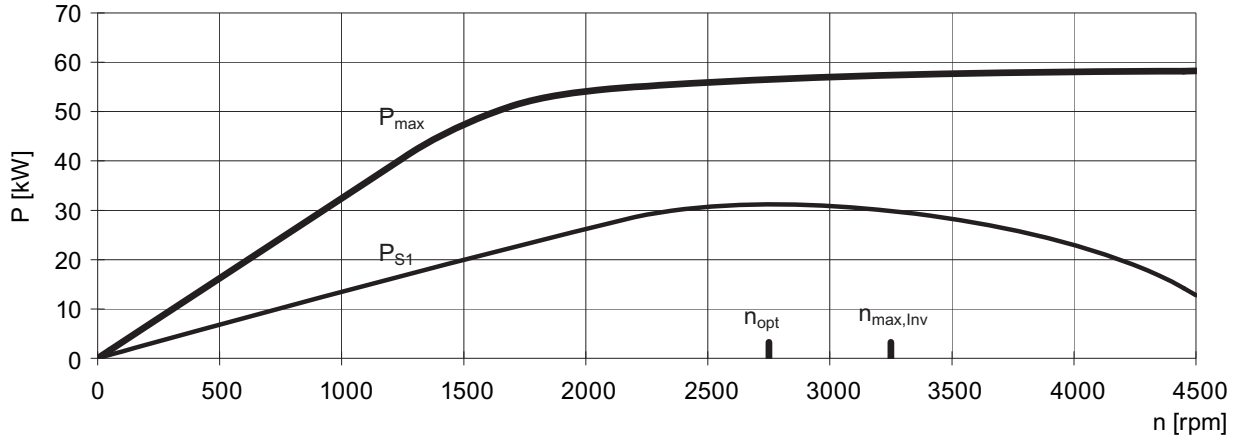



Tabella 4- 659 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8133-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 26,2 | 125 | 43 | 31 | 2750 | 4500 | 4500 | 3050 | 310 | 124 | 131 | 45 |



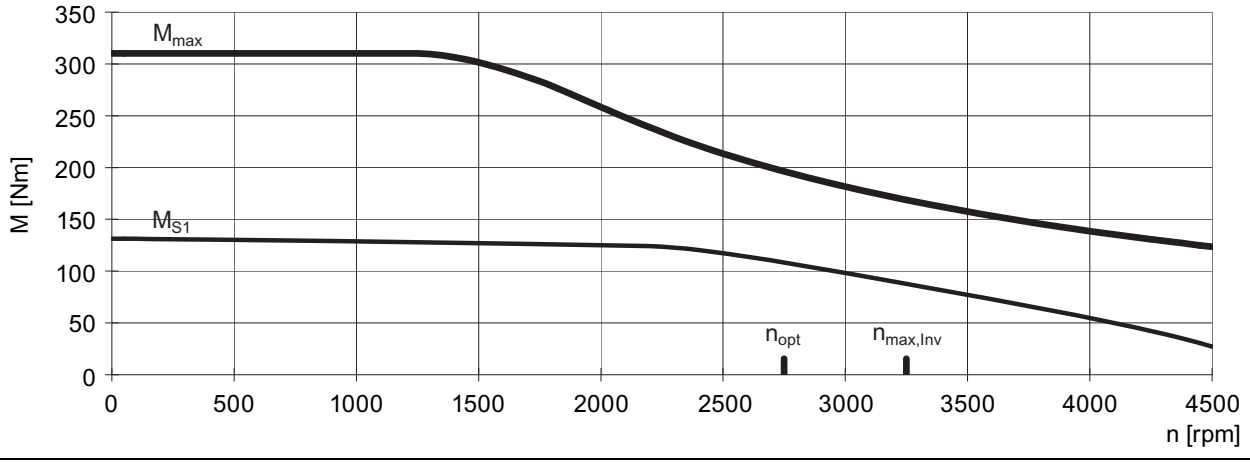



Tabella 4- 660 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8133-□□L□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 31,7 | 121 | 55 | 33 | 2950 | 4500 | 4500 | 3950 | 310 | 162 | 131 | 59 |

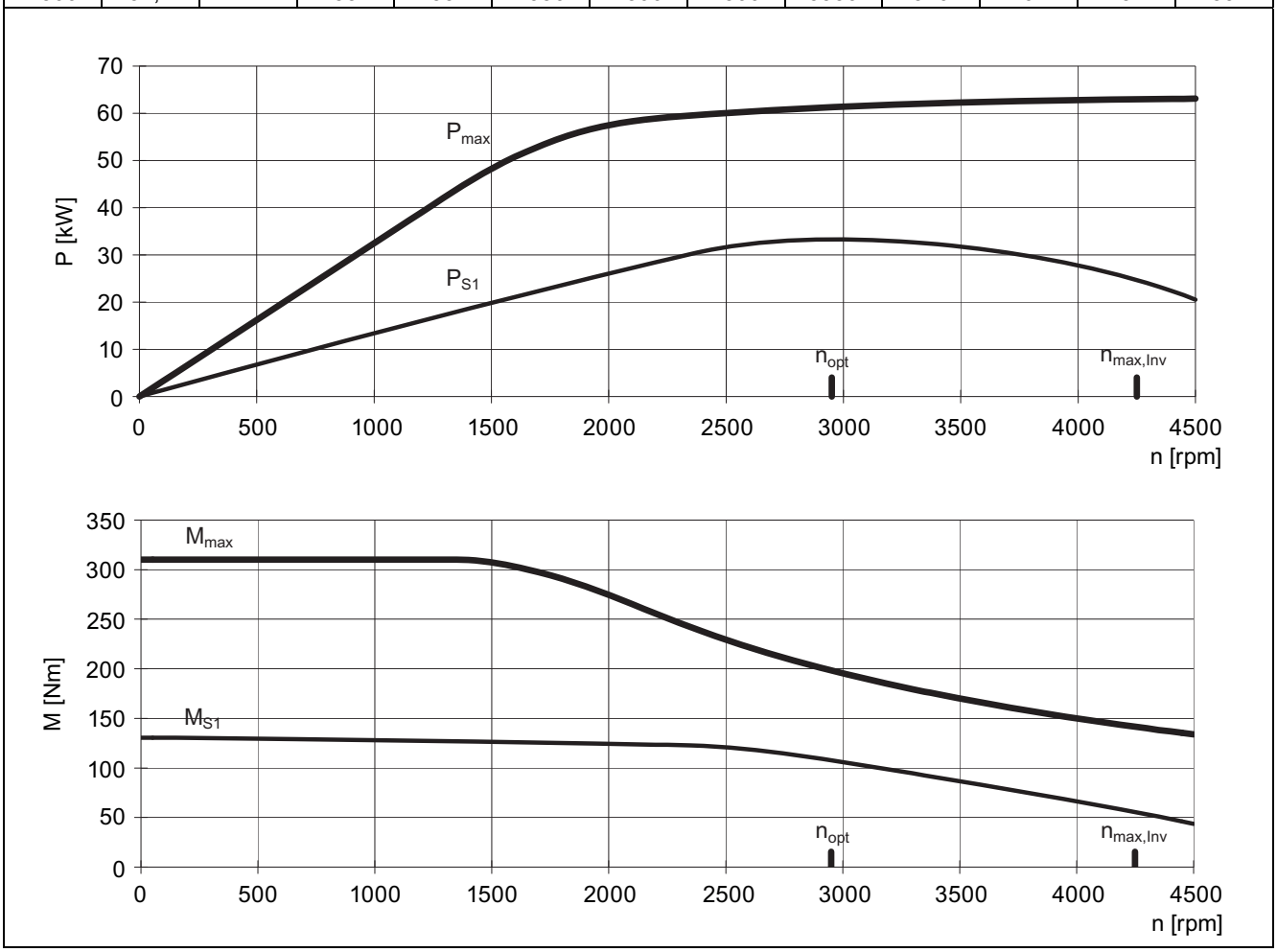
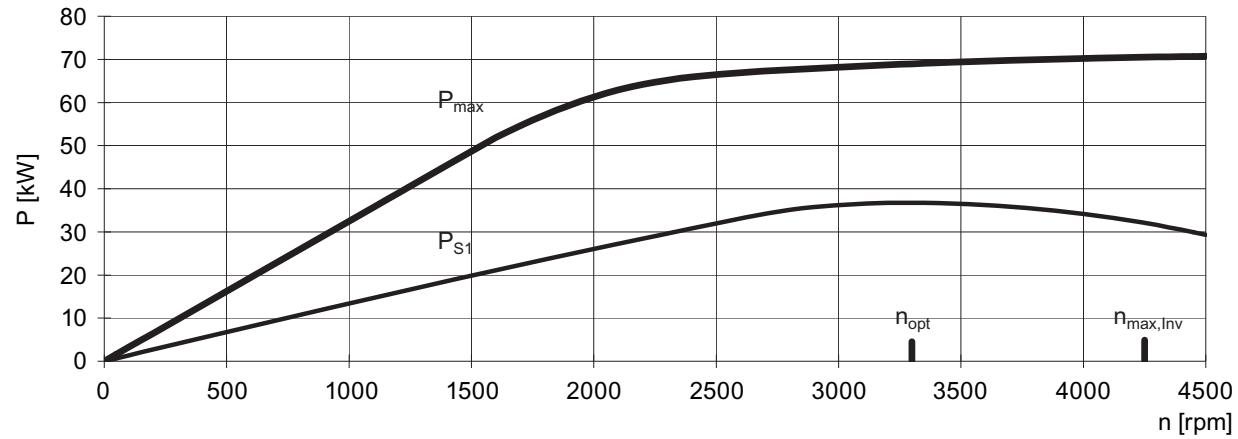


Tabella 4- 661 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8133-□□L□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2800 | 35,2 | 120 | 54 | 37 | 3300 | 4500 | 4500 | 3950 | 310 | 162 | 131 | 59 |
| 2500 | 31,7 | 121 | 55 | | | | | | | | | |



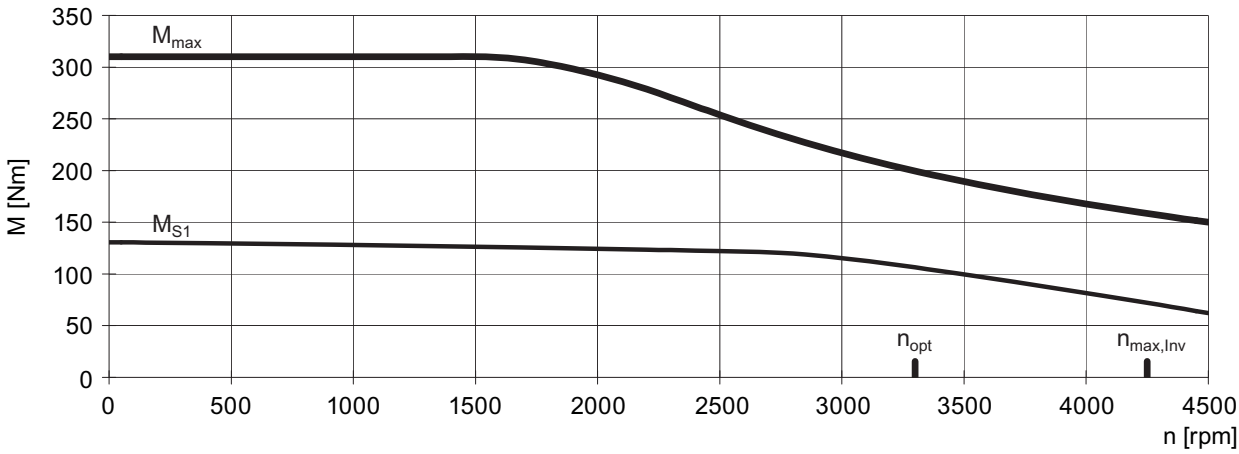
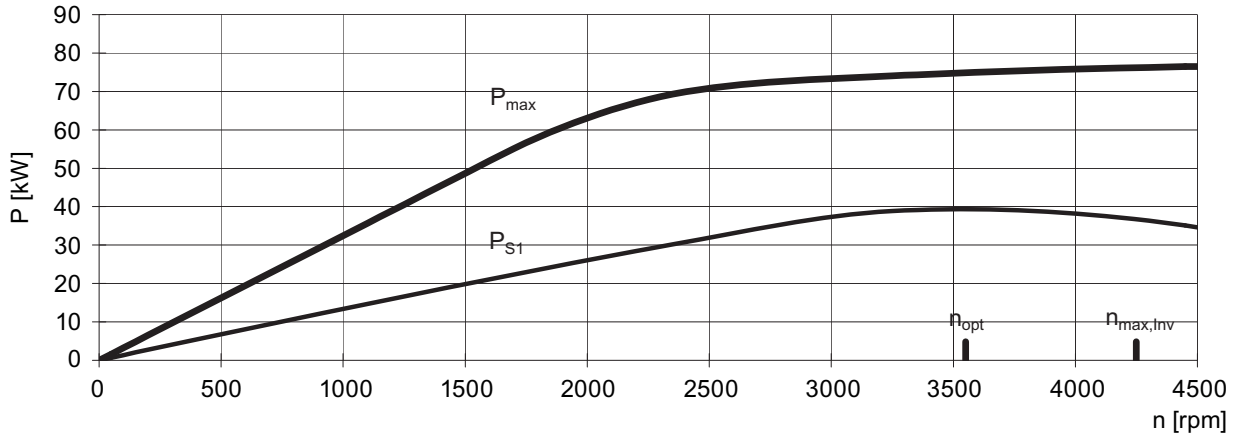



Tabella 4- 662 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8133-□□L□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3000 | 37,4 | 119 | 54 | 39 | 3550 | 4500 | 4500 | 3950 | 310 | 162 | 131 | 59 |



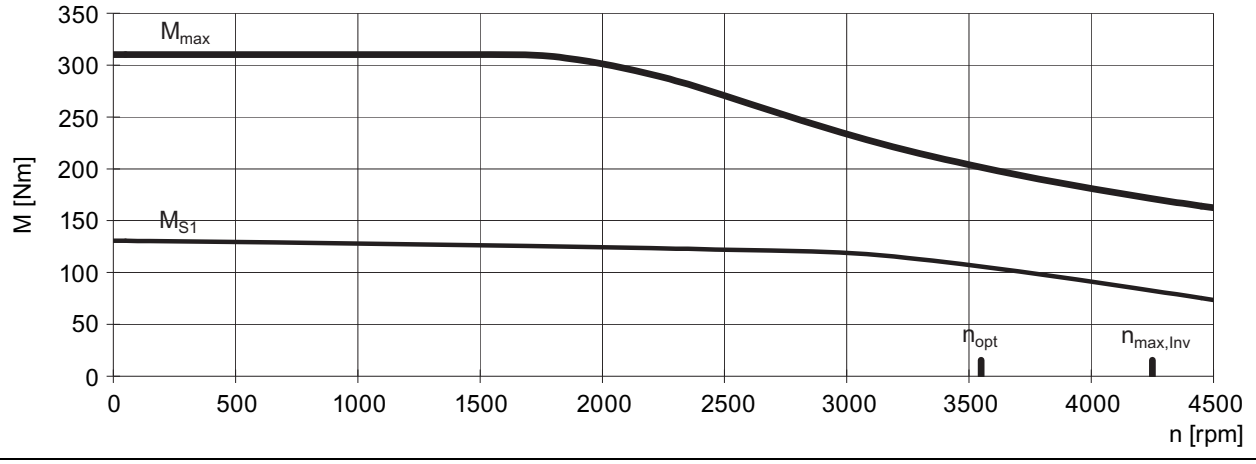



Tabella 4- 663 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8135-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 23,7 | 151 | 43 | 26 | 1900 | 4500 | 4500 | 2450 | 390 | 127 | 158 | 44 |

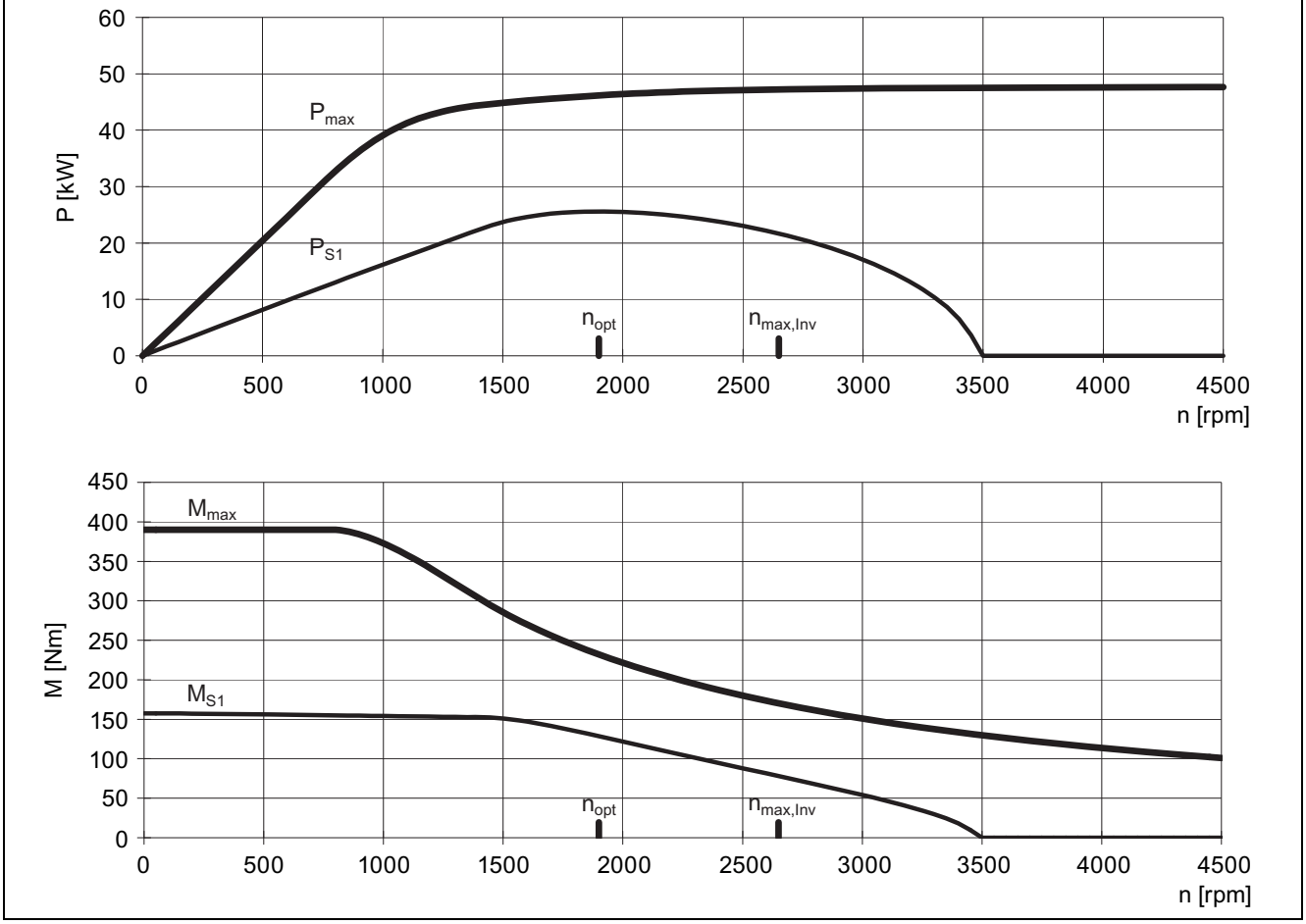
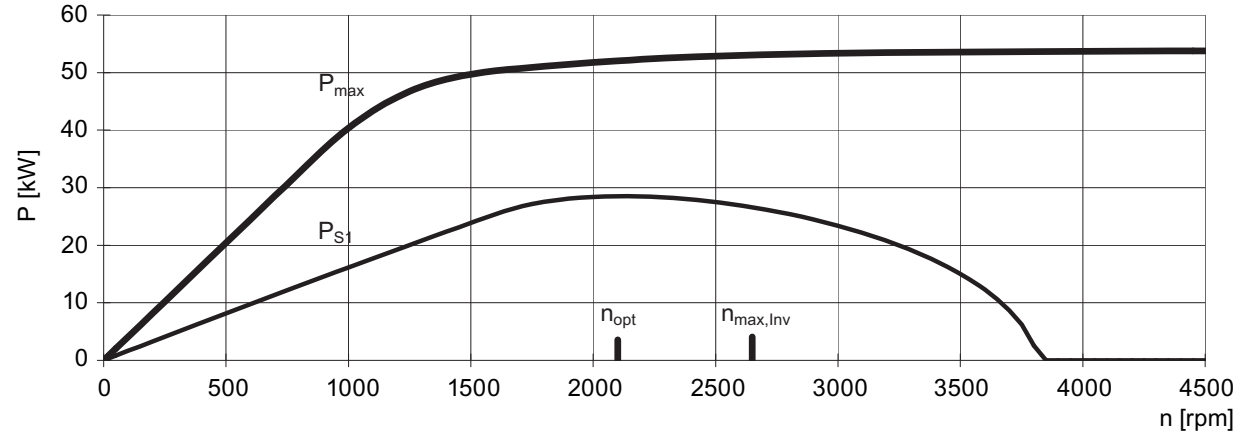


Tabella 4- 664 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8135-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 27,2 | 149 | 42 | 29 | 2100 | 4500 | 4500 | 2450 | 390 | 127 | 158 | 44 |
| 1500 | 23,7 | 151 | 43 | | | | | | | | | |



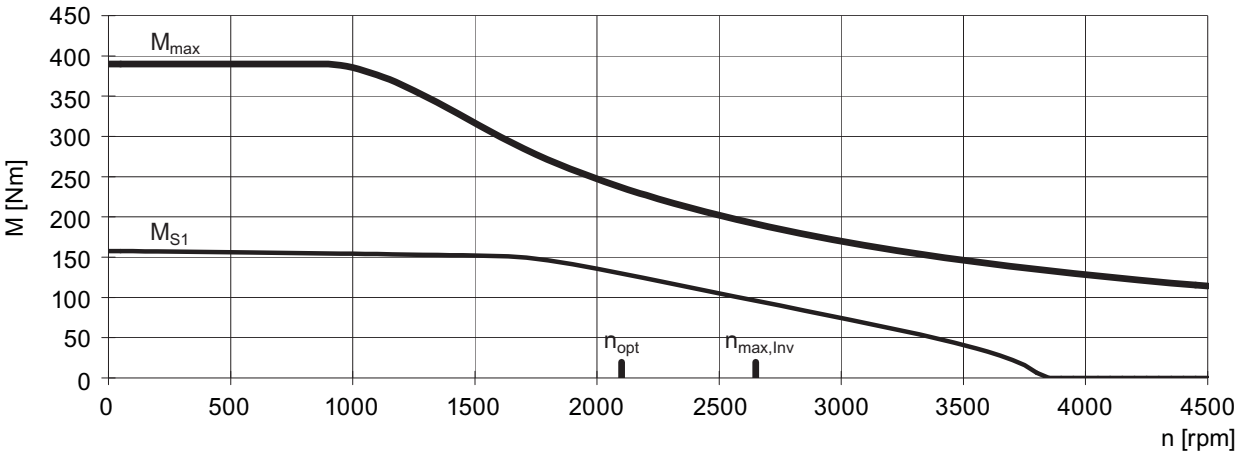



Tabella 4- 665 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8135-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 30,2 | 144 | 42 | 31 | 2300 | 4500 | 4500 | 2450 | 390 | 127 | 158 | 44 |

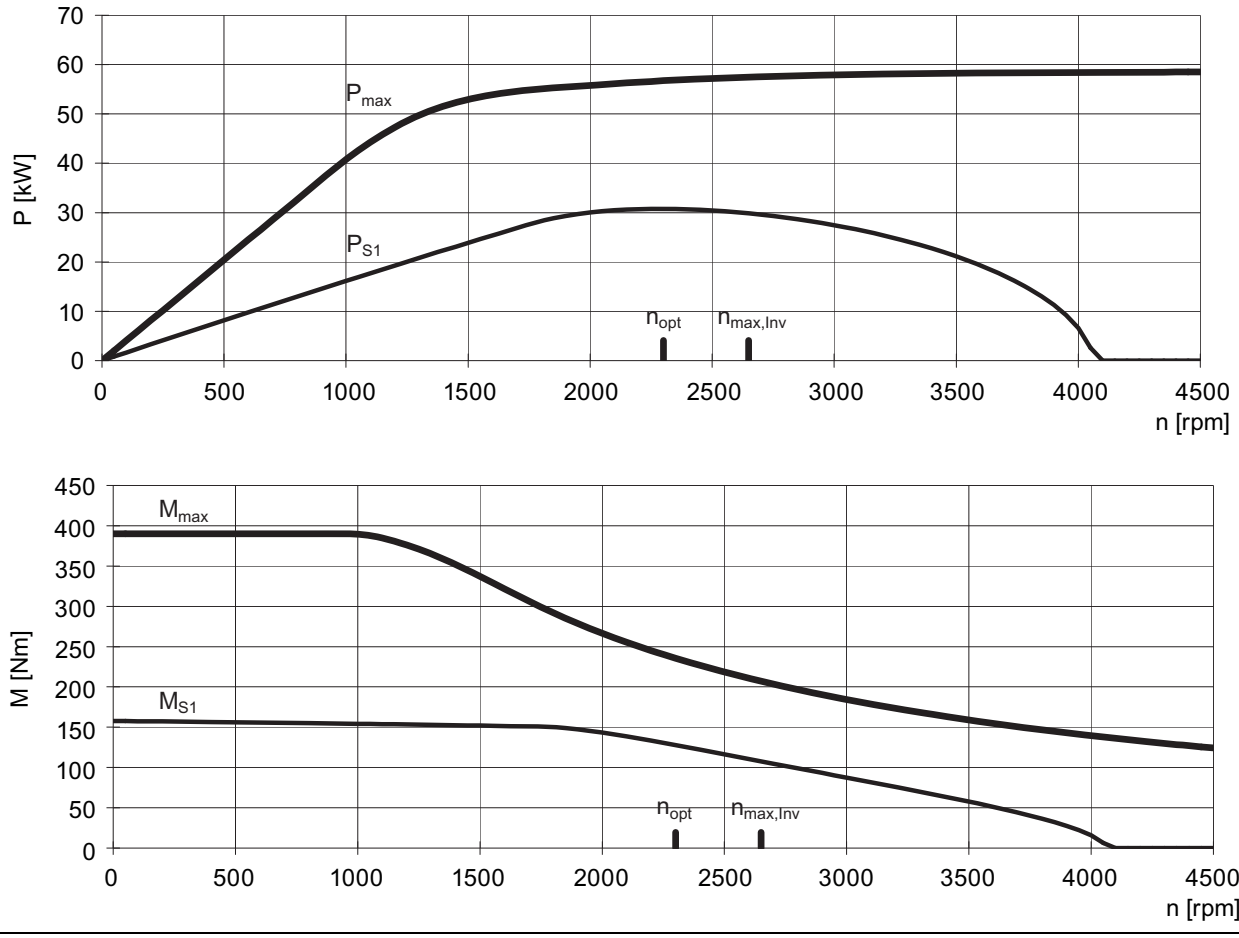
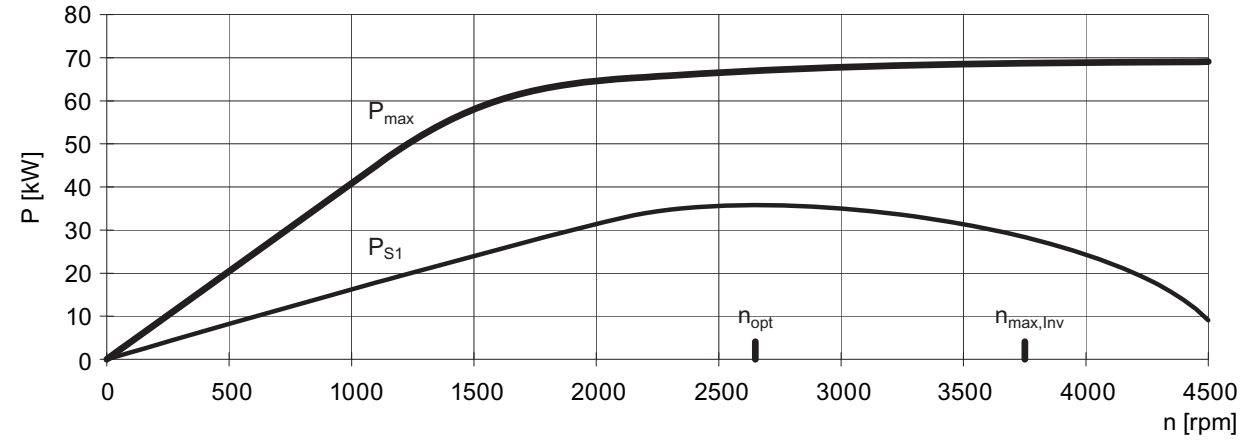


Tabella 4- 666 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8135-□□G□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 31,4 | 150 | 59 | 36 | 2650 | 4500 | 4500 | 3500 | 390 | 179 | 158 | 63 |



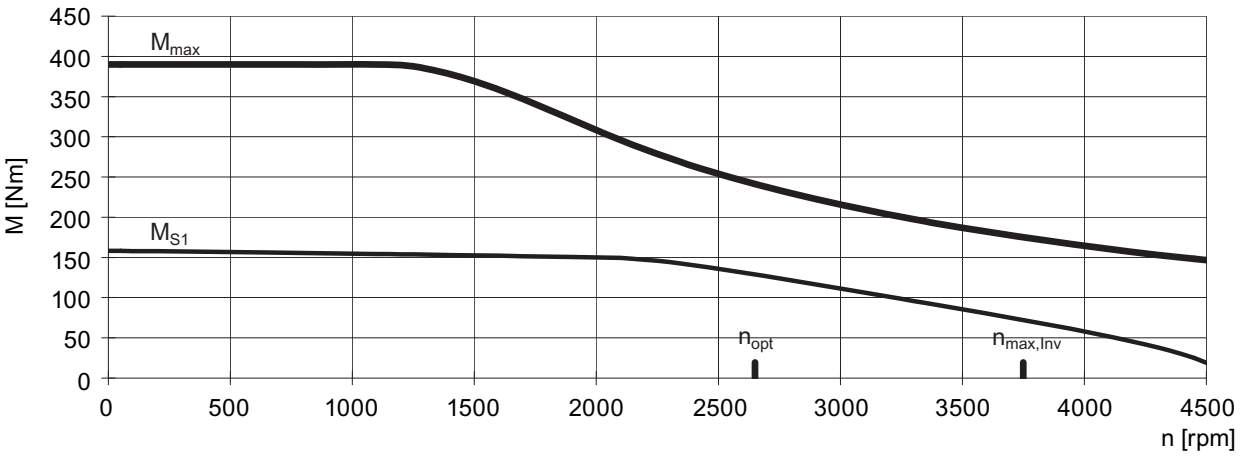
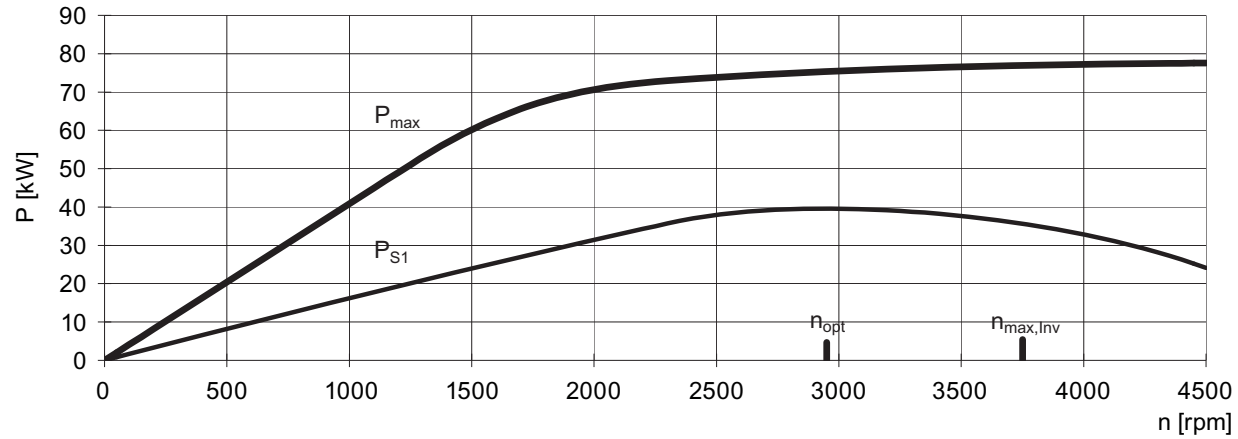



Tabella 4- 667 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8135-□□G□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 35,6 | 148 | 59 | 40 | 2950 | 4500 | 4500 | 3500 | 390 | 179 | 158 | 63 |
| 2000 | 31,4 | 150 | 59 | | | | | | | | | |



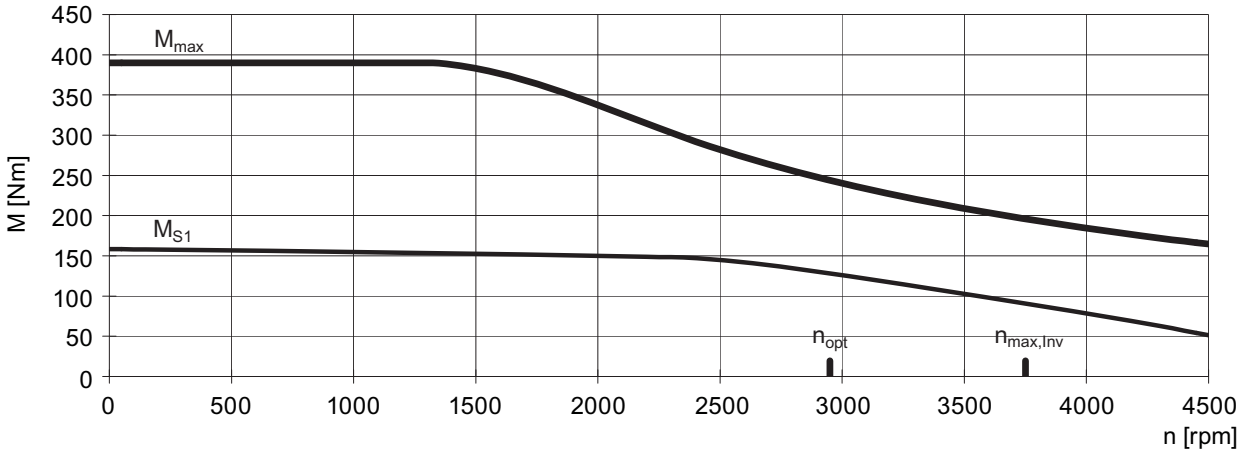
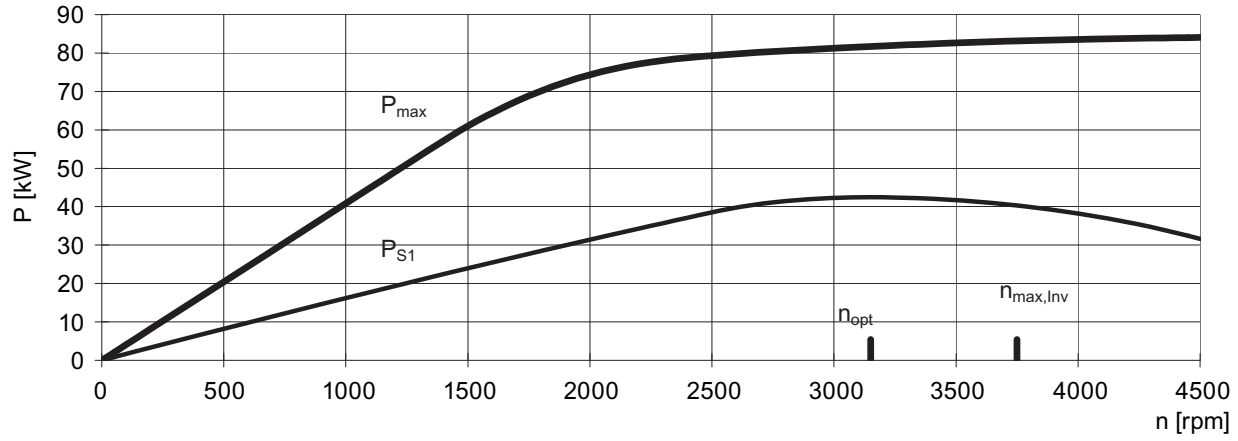



Tabella 4- 668 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8135-□□G□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 40,2 | 145 | 58 | 42 | 3150 | 4500 | 4500 | 3500 | 390 | 179 | 158 | 63 |



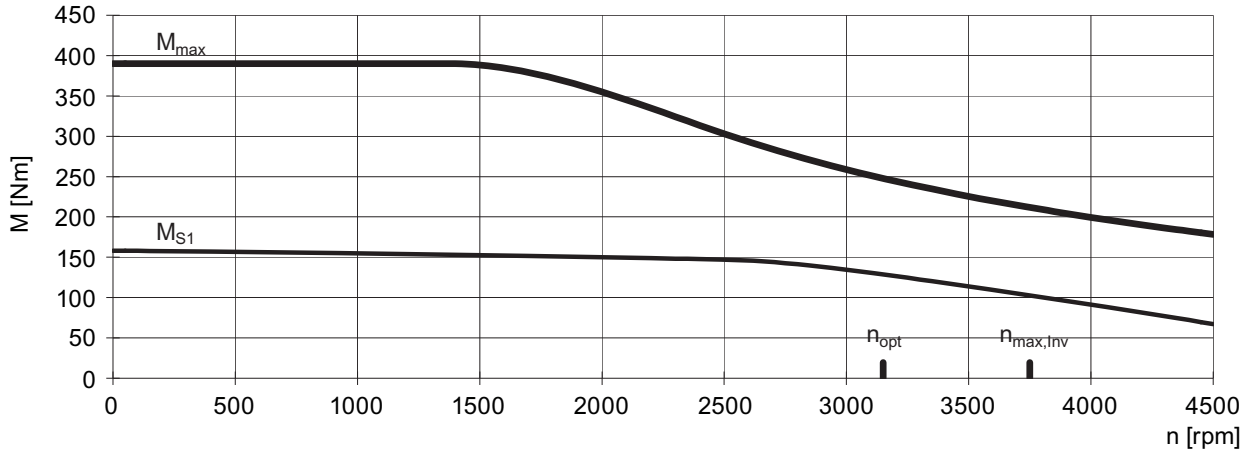



Tabella 4- 669 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8137-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 30,6 | 195 | 60 | 36 | 2100 | 4500 | 4500 | 2700 | 460 | 163 | 203 | 62 |

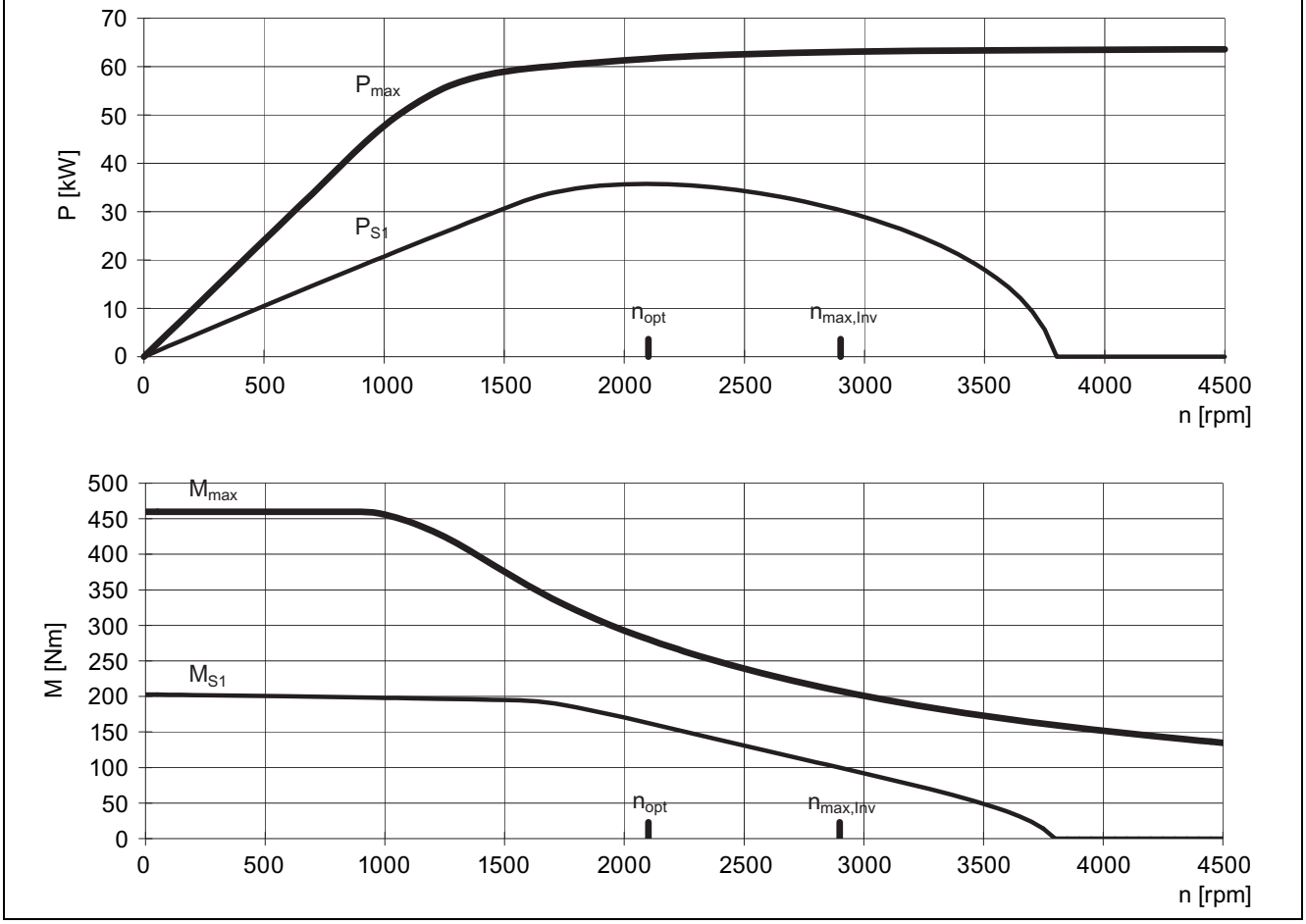
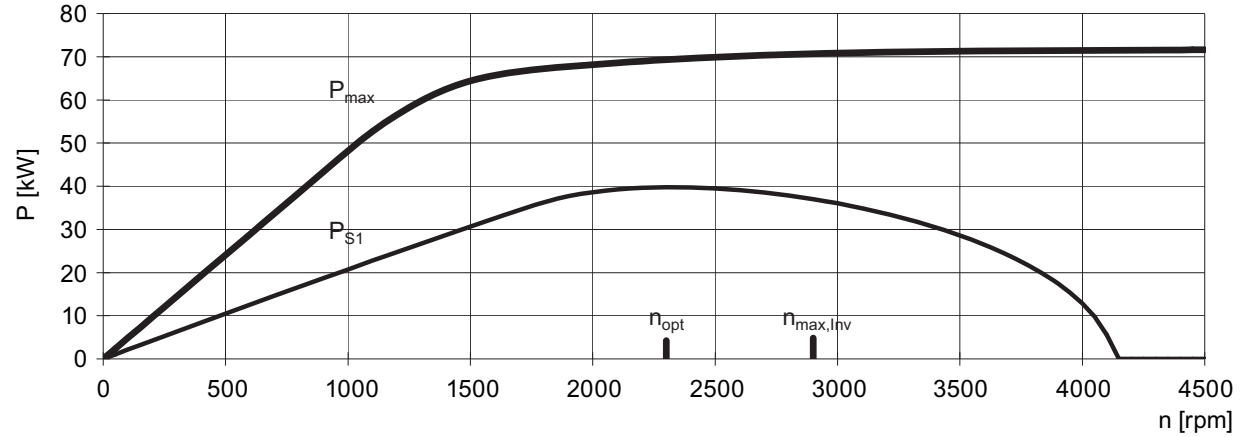


Tabella 4- 670 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8137-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 35,6 | 194 | 59 | 40 | 2300 | 4500 | 4500 | 2700 | 460 | 163 | 203 | 62 |
| 1500 | 30,6 | 195 | 60 | | | | | | | | | |



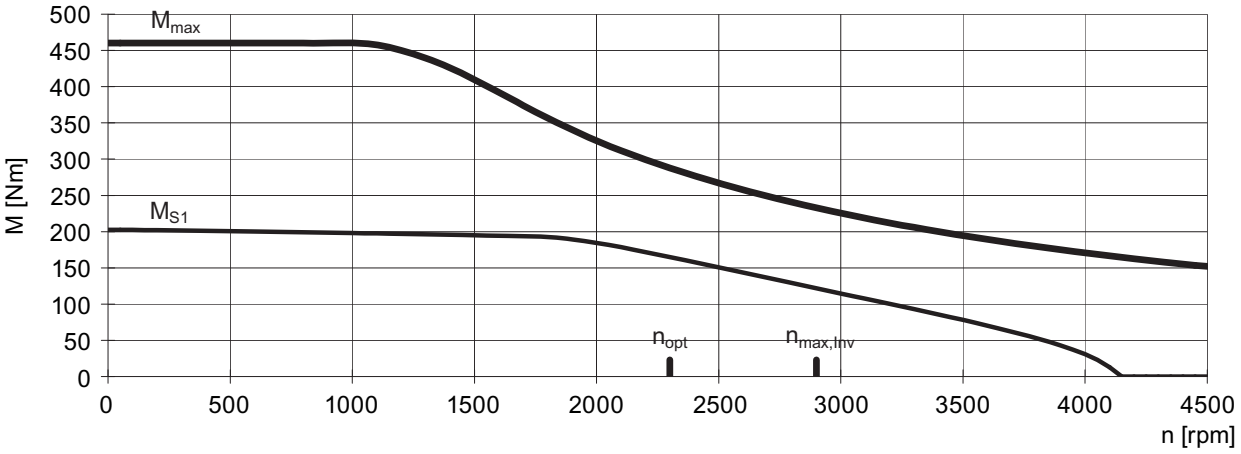
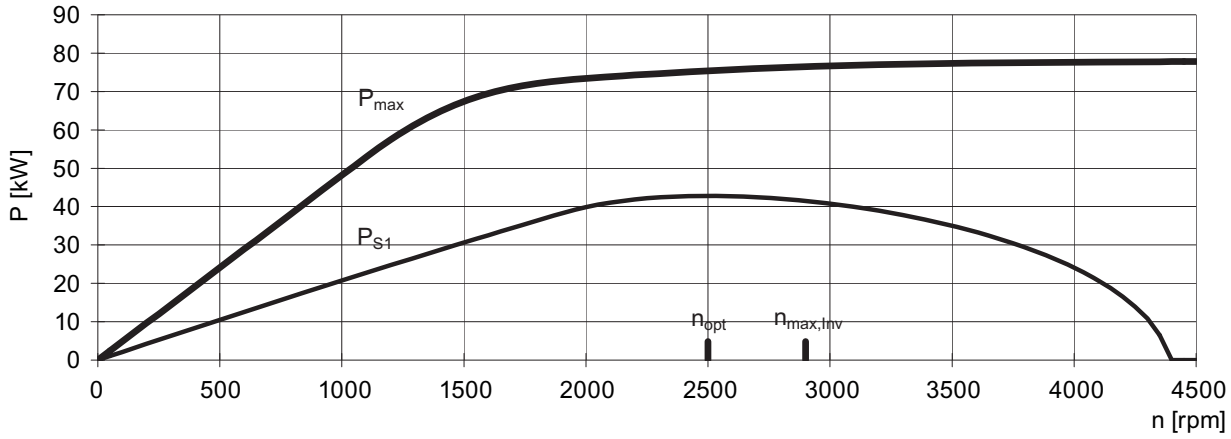



Tabella 4- 671 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8137-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 40,0 | 191 | 59 | 43 | 2500 | 4500 | 4500 | 2700 | 460 | 163 | 203 | 62 |



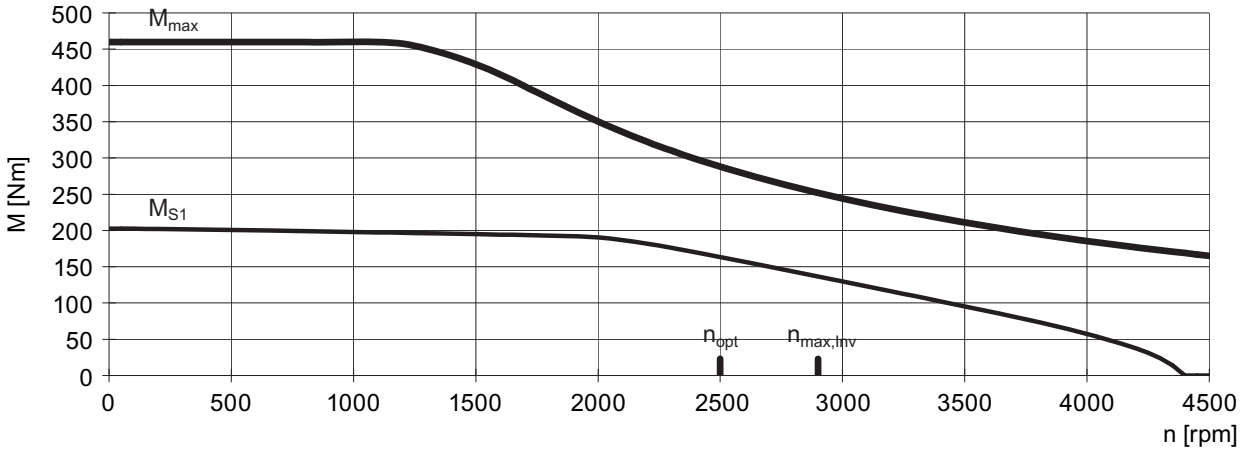



Tabella 4- 672 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8137-□□L□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 48,4 | 185 | 83 | 50 | 2950 | 4500 | 4500 | 3900 | 460 | 235 | 203 | 89 |

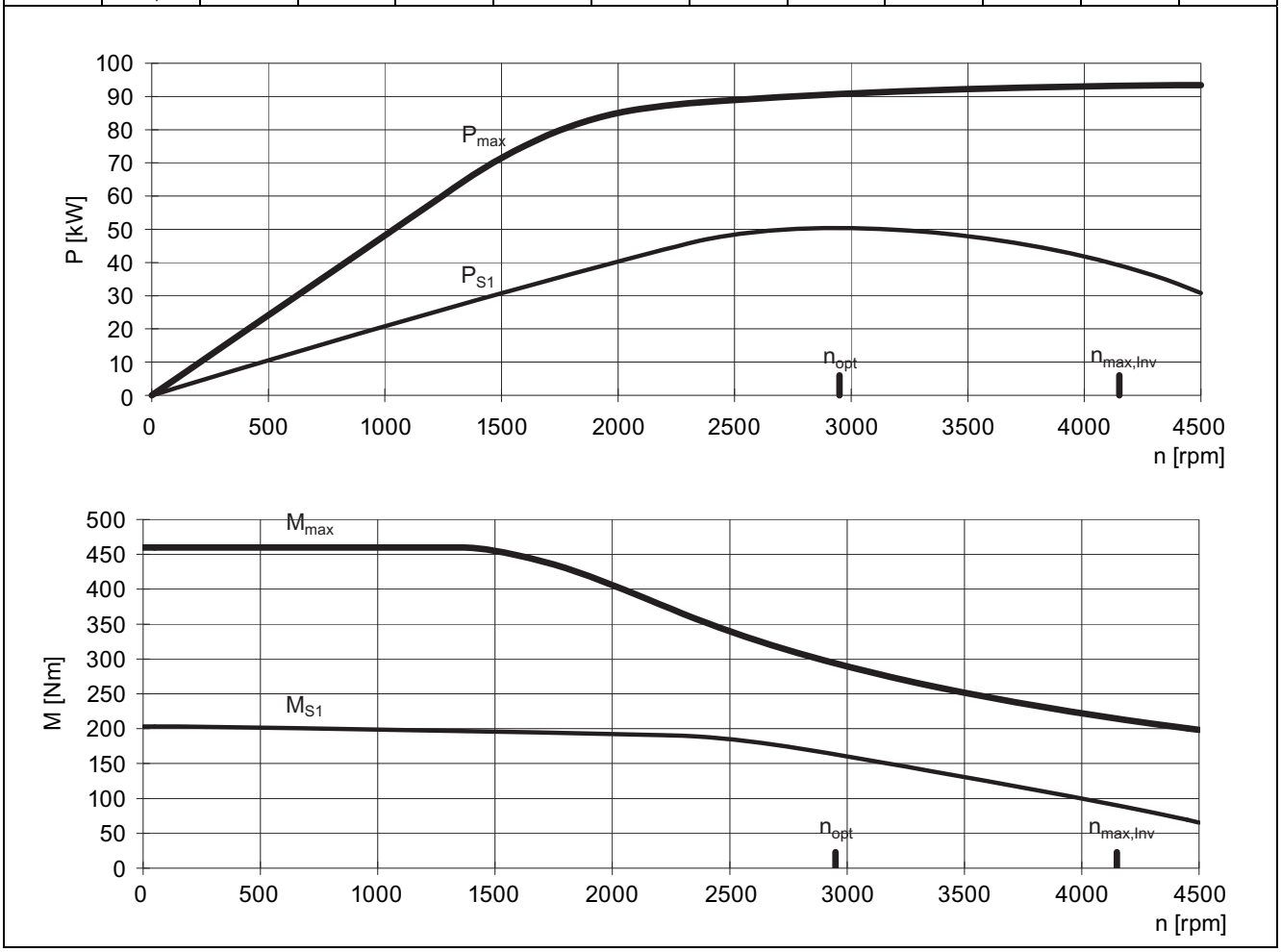
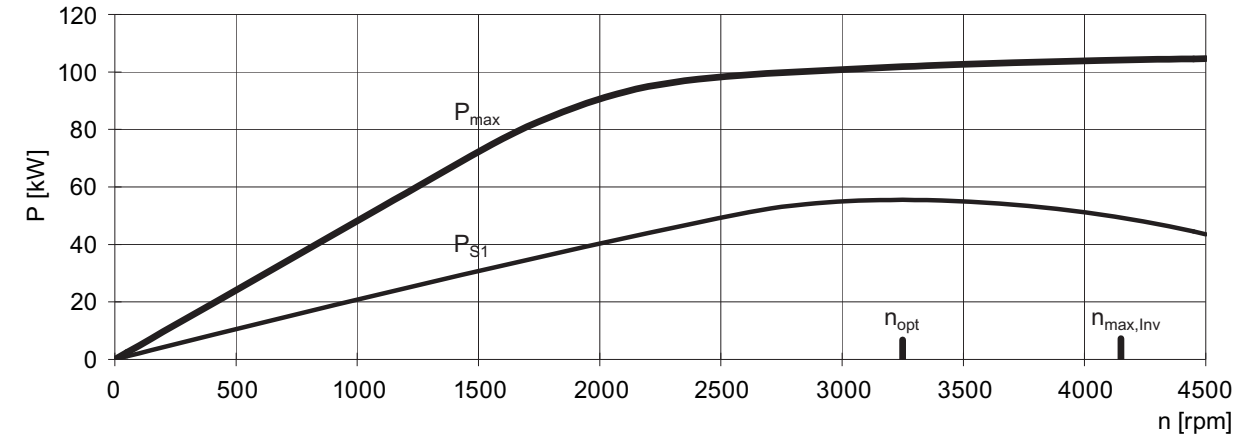


Tabella 4- 673 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8137-□□L□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2800 | 53,4 | 182 | 82 | 55 | 3250 | 4500 | 4500 | 3900 | 460 | 235 | 203 | 89 |
| 2500 | 48,4 | 185 | 83 | | | | | | | | | |



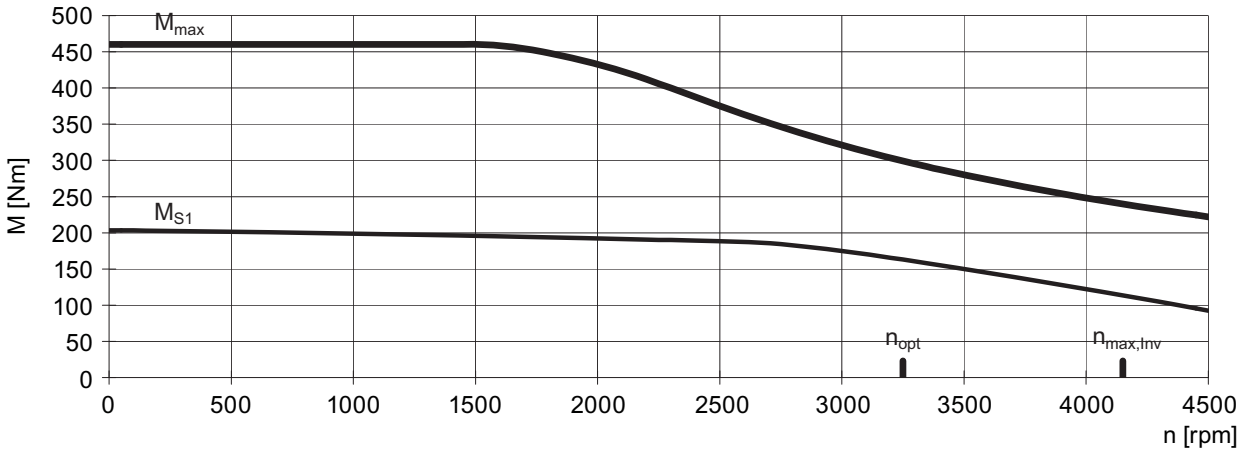
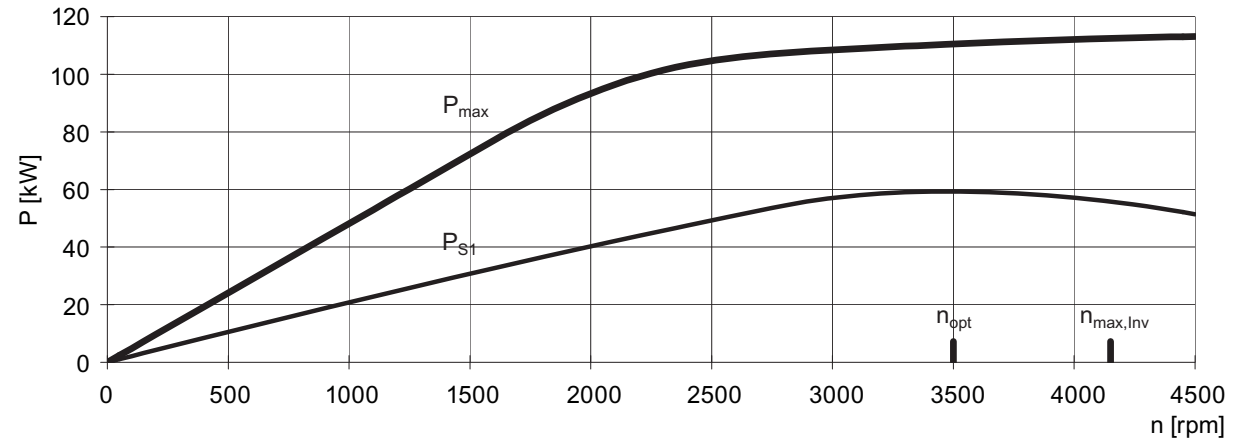



Tabella 4- 674 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8137-□□L□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3000 | 56,9 | 181 | 81 | 59 | 3500 | 4500 | 4500 | 3900 | 460 | 235 | 203 | 89 |



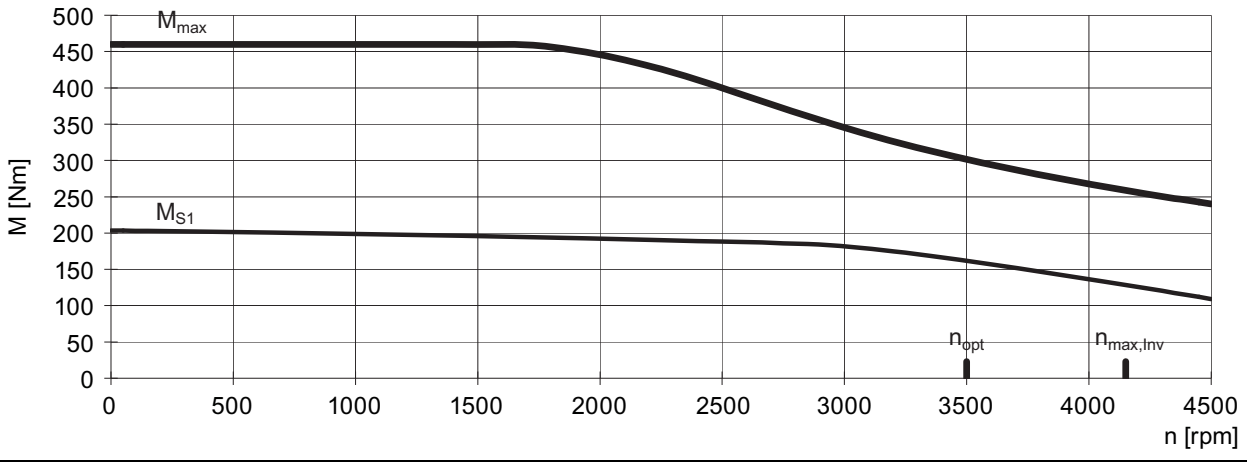



Tabella 4- 675 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8137-□□M□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3000 | 57,5 | 183 | 104 | 62 | 3650 | 4500 | 4500 | > 4500 | 460 | 303 | 203 | 115 |

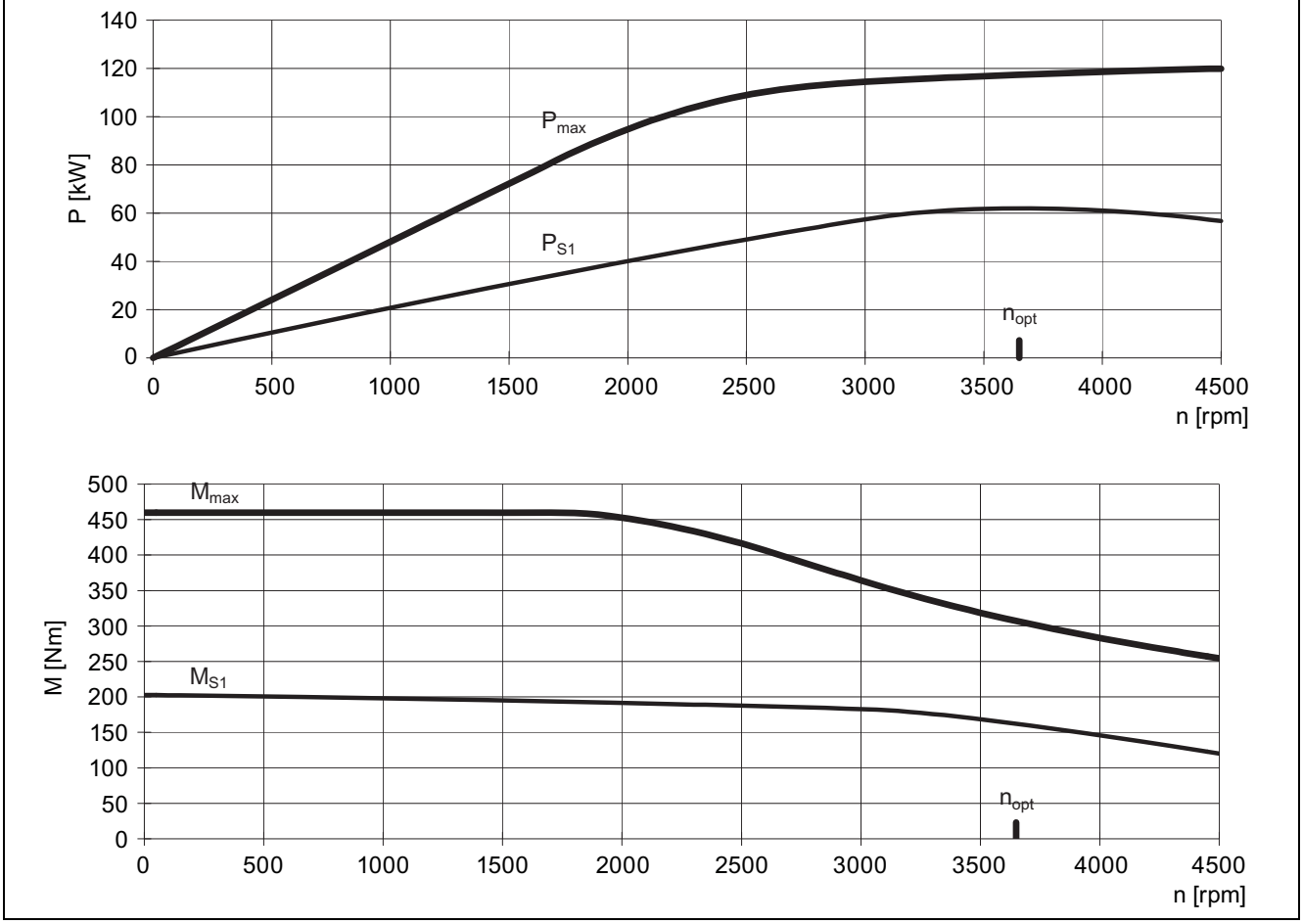
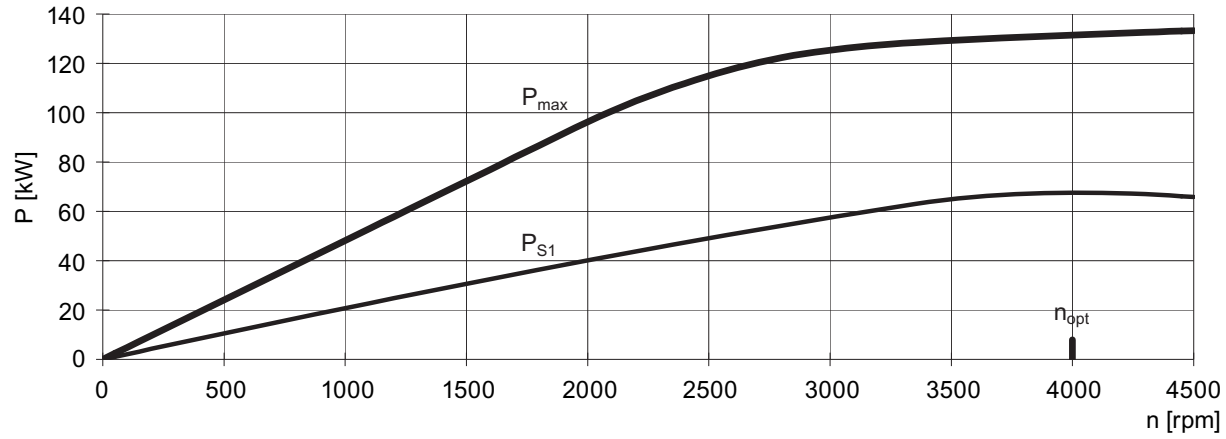


Tabella 4- 676 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8137-□□M□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3300 | 62,2 | 180 | 102 | 68 | 4000 | 4500 | 4500 | > 4500 | 460 | 303 | 203 | 115 |
| 3000 | 57,5 | 183 | 104 | | | | | | | | | |



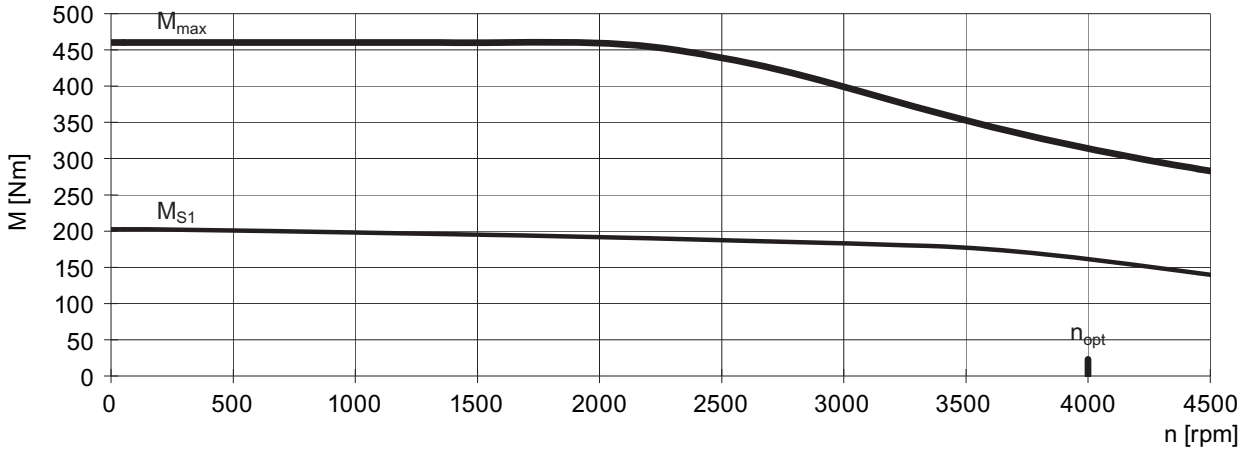
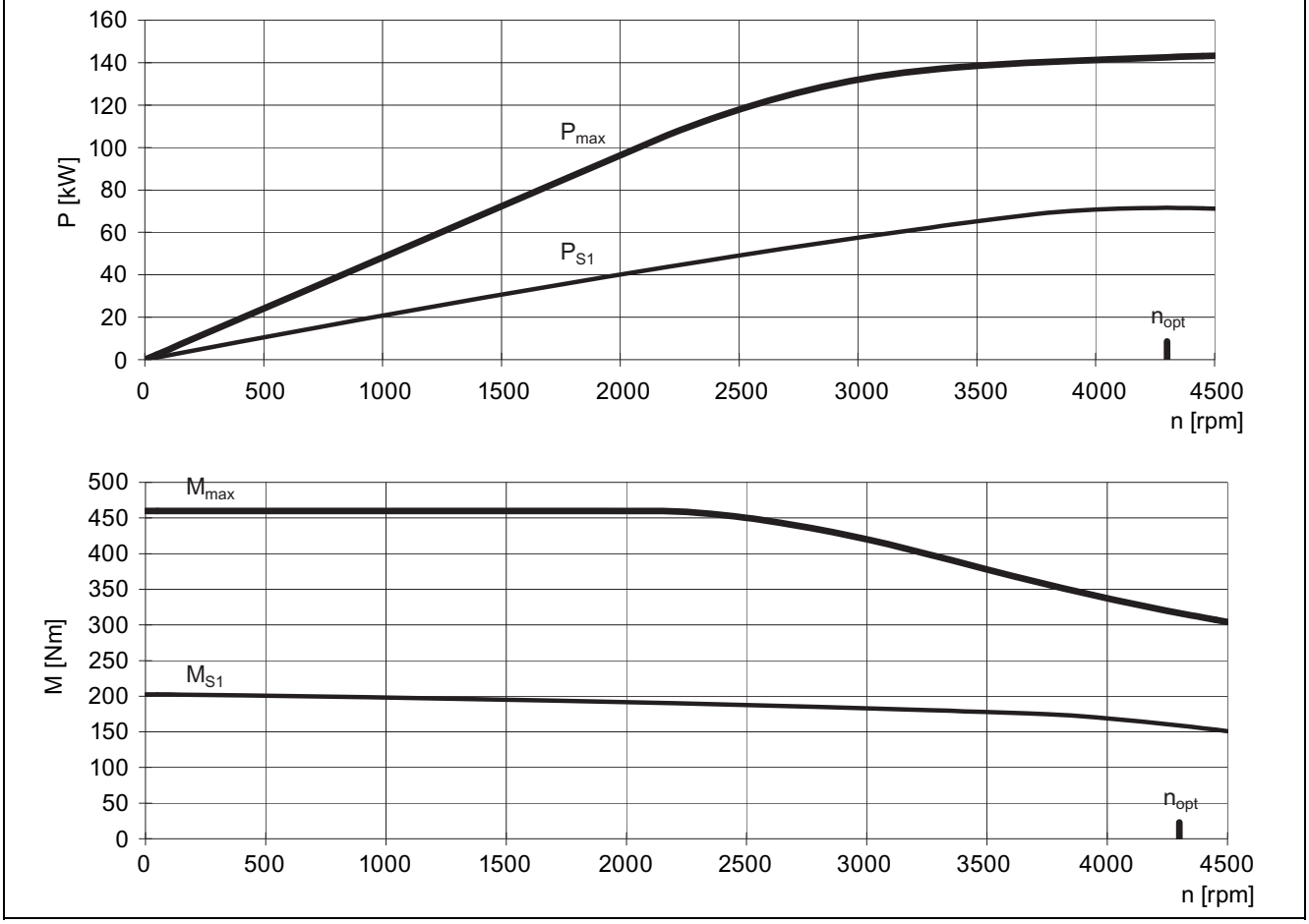



Tabella 4- 677 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8137-□□M□□

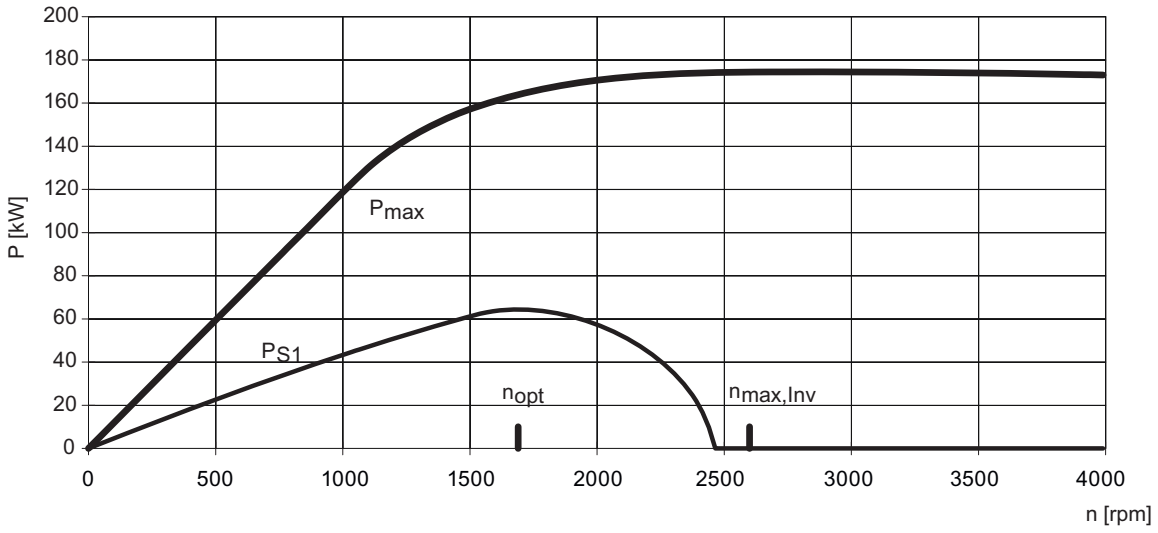
| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3600 | 66,7 | 177 | 100 | 72 | 4300 | 4500 | 4500 | > 4500 | 460 | 303 | 203 | 115 |



### 4.2.2.2 Altezza d'asse 160 - Ventilazione forzata

Tabella 4- 678 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8165-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 61,0 | 390 | 119 | 64,4 | 1690 | 4000 | 4000 | 2600 | 1135 | 367 | 440 | 126 |



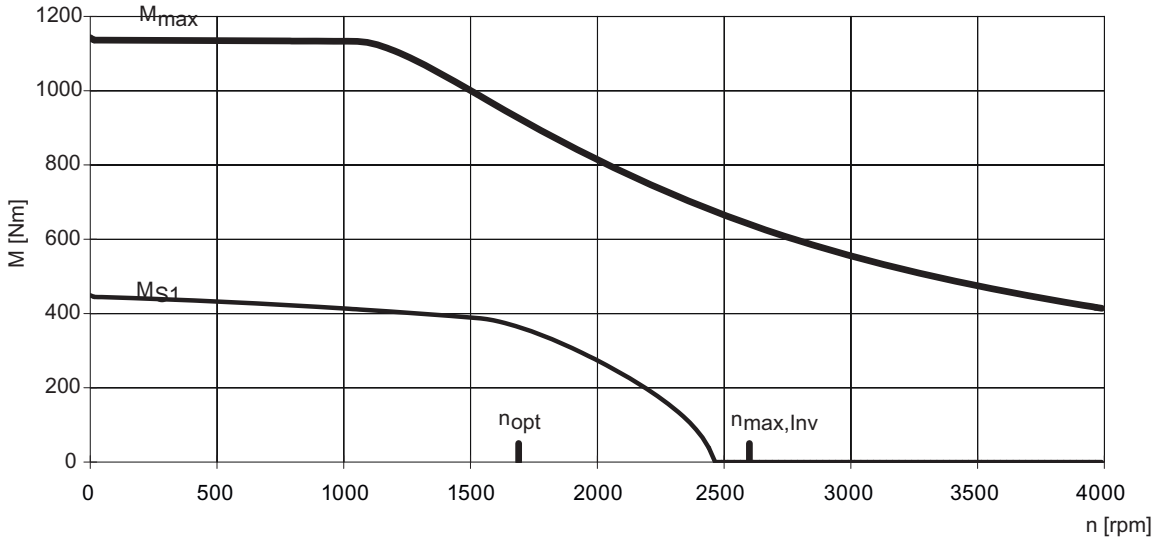
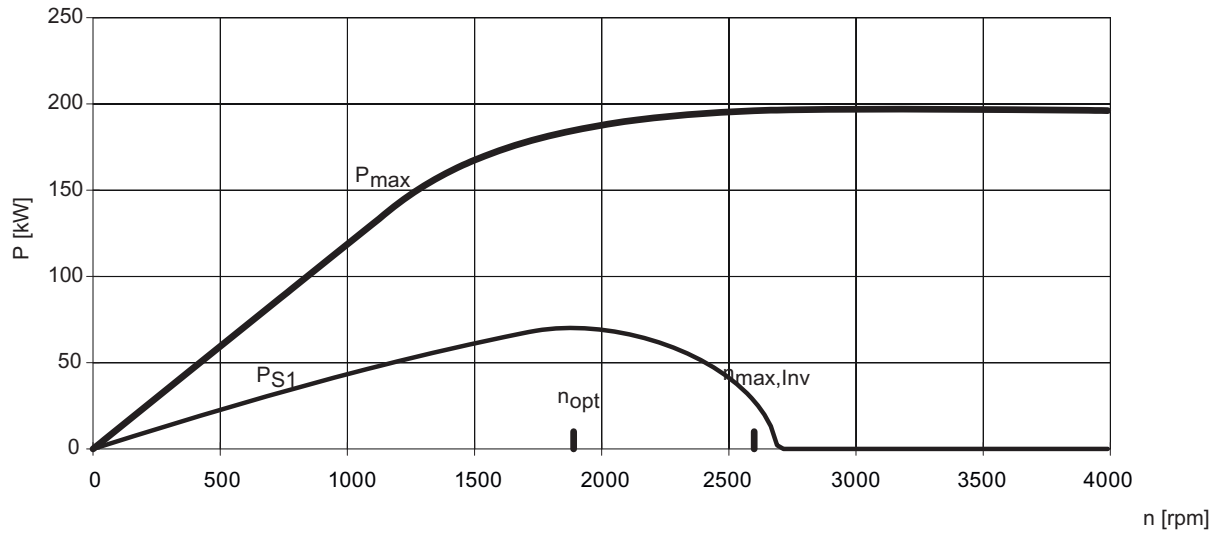



Tabella 4- 679 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8165-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 69,0 | 375 | 115 | 70,1 | 1890 | 4000 | 4000 | 2600 | 1135 | 367 | 440 | 126 |
| 1500 | 61,0 | 390 | 119 | | | | | | | | | |



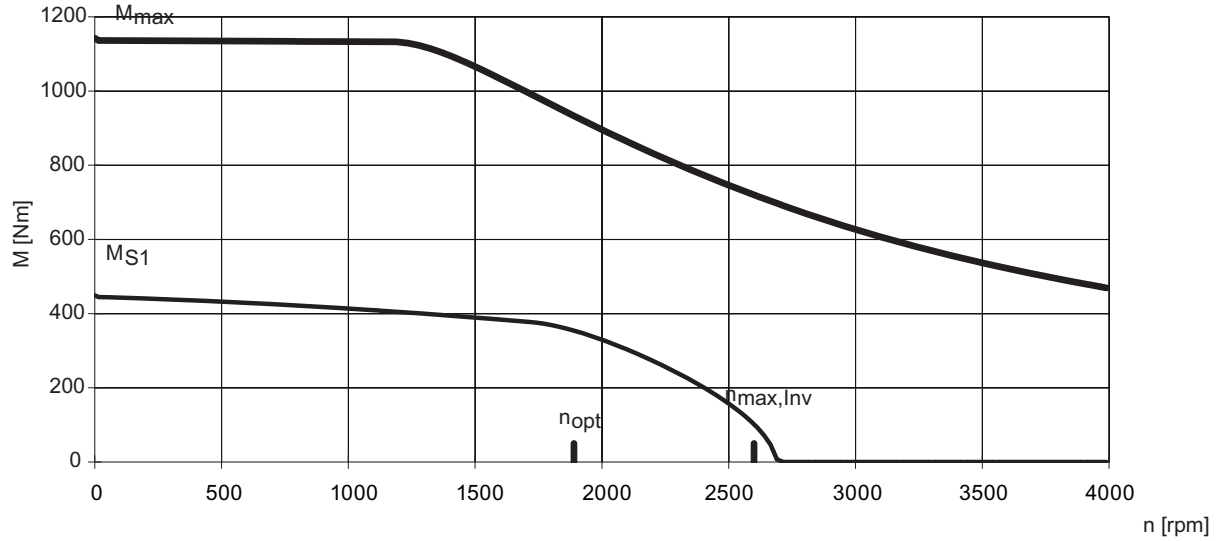
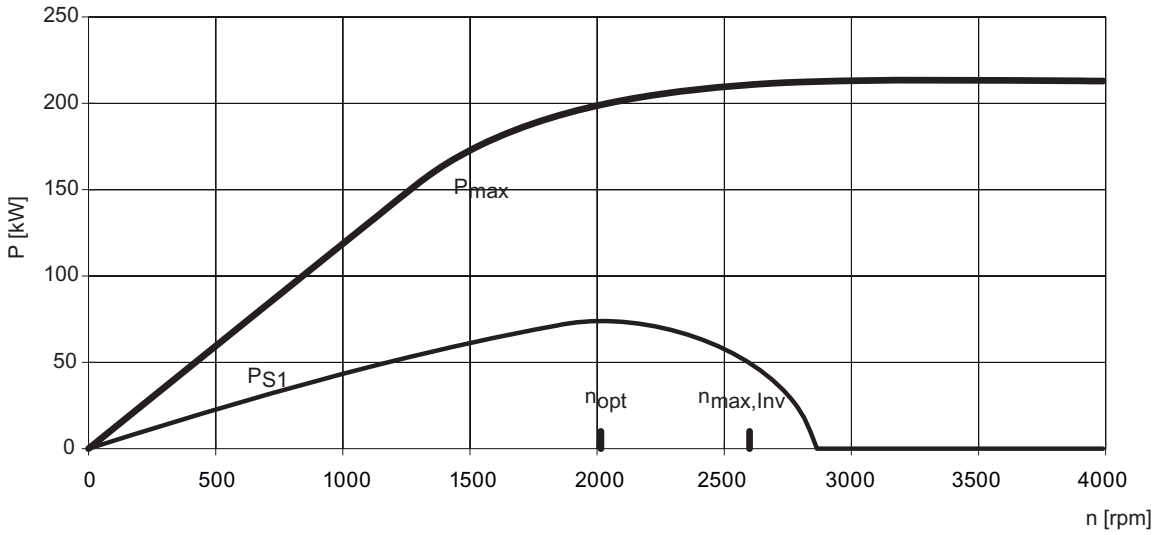



Tabella 4- 680 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8165-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 74,0 | 355 | 110 | 73,9 | 2015 | 4000 | 4000 | 2600 | 1135 | 367 | 440 | 126 |



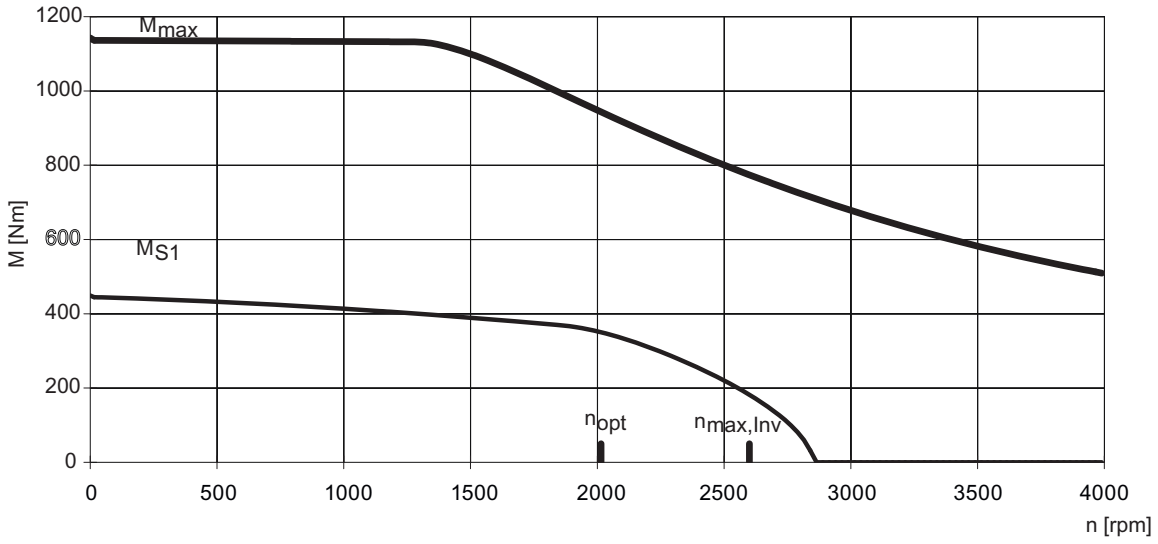
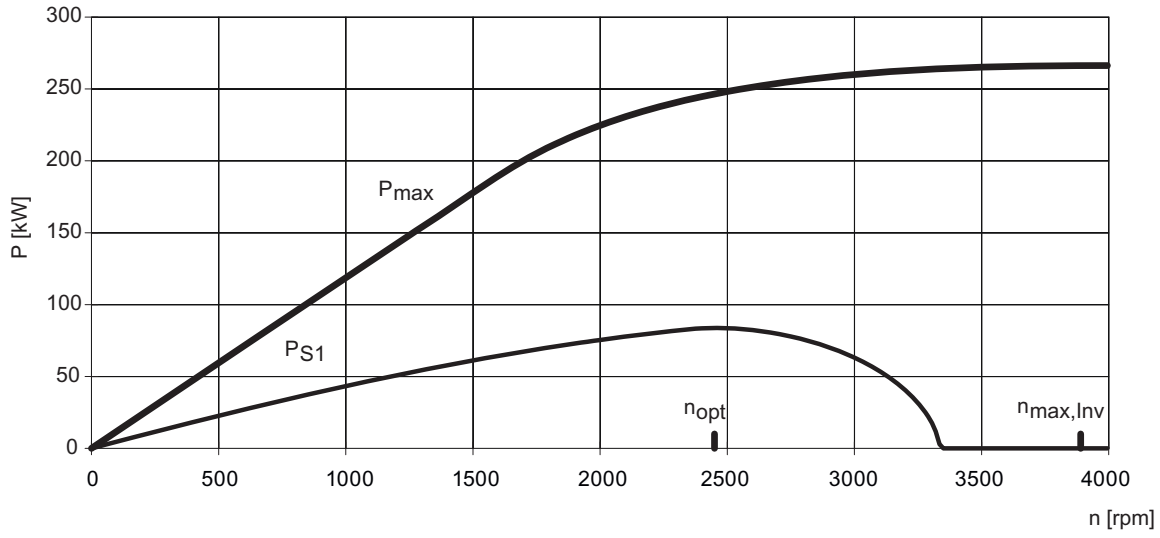



Tabella 4- 681 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8165-□□L□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 84,0 | 320 | 148 | 83,7 | 2450 | 4000 | 4000 | 3900 | 1135 | 551 | 440 | 188 |



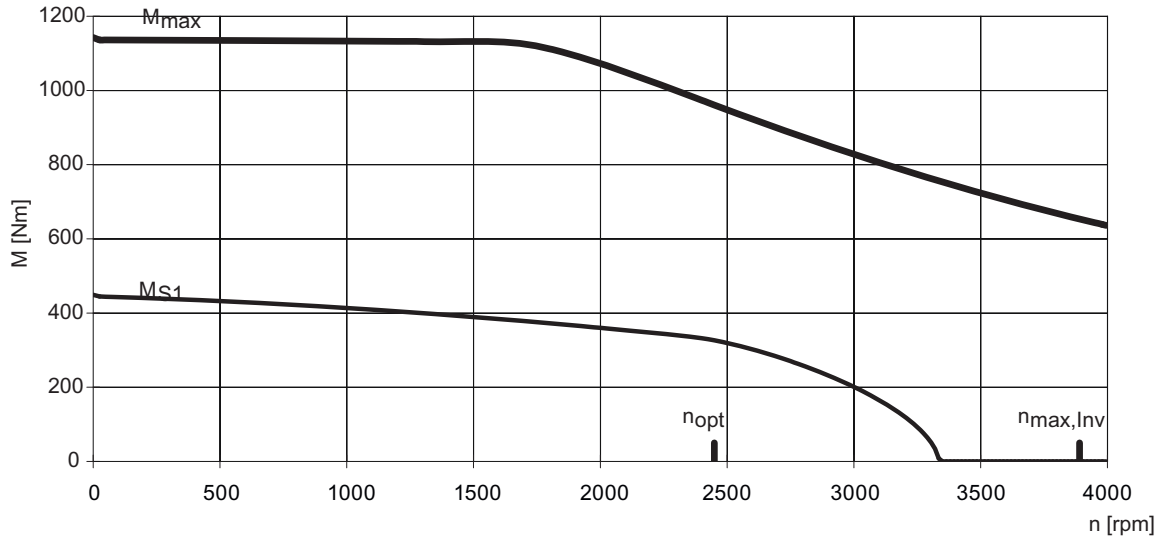
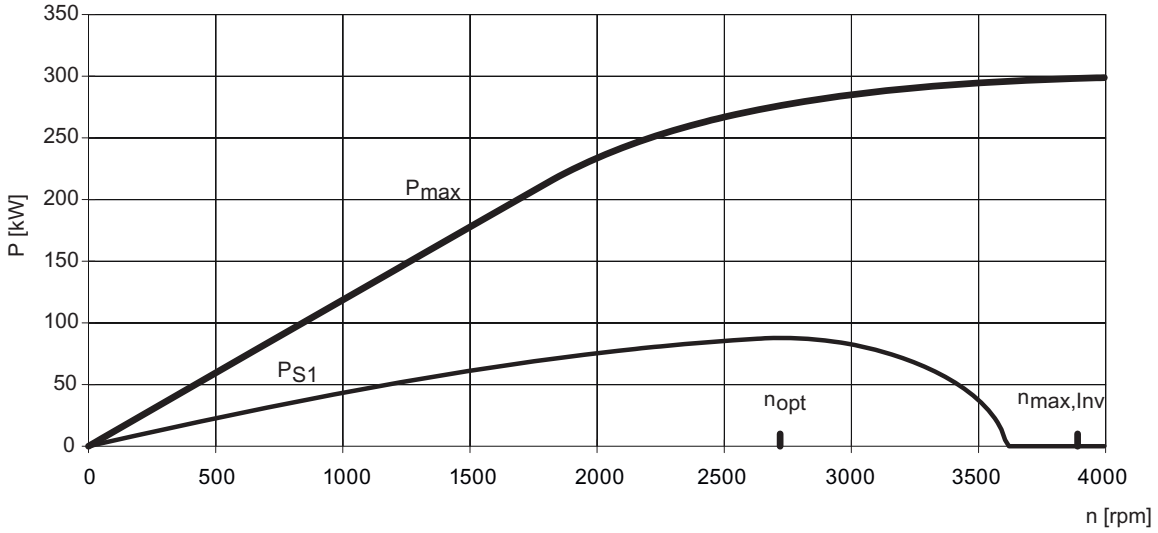



Tabella 4- 682 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8165-□□L□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2800 | 87,0 | 300 | 138 | 87,8 | 2720 | 4000 | 4000 | 3900 | 1135 | 551 | 440 | 188 |
| 2500 | 84,0 | 320 | 148 | | | | | | | | | |



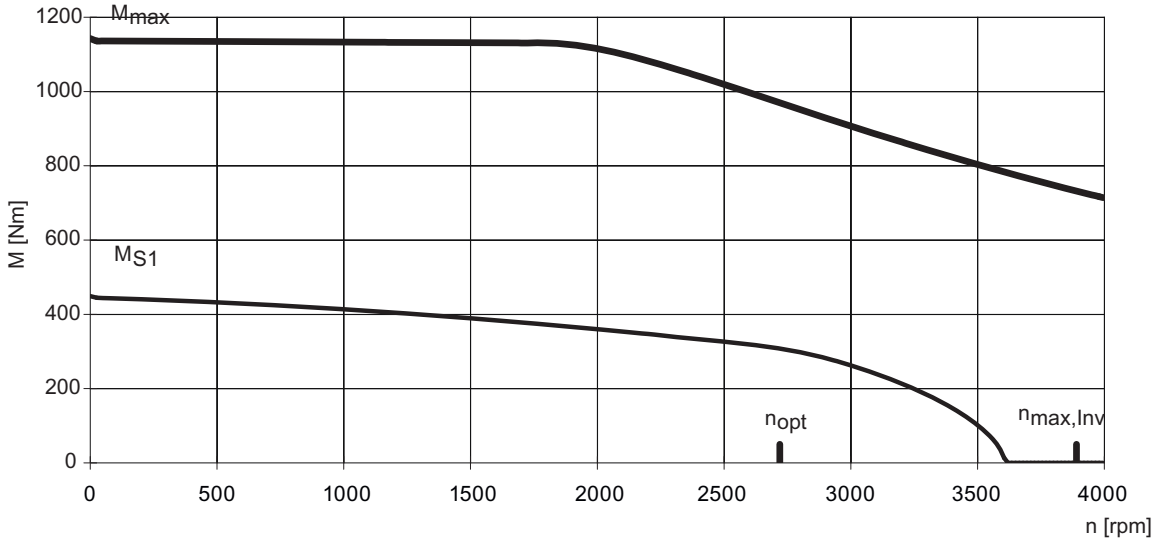
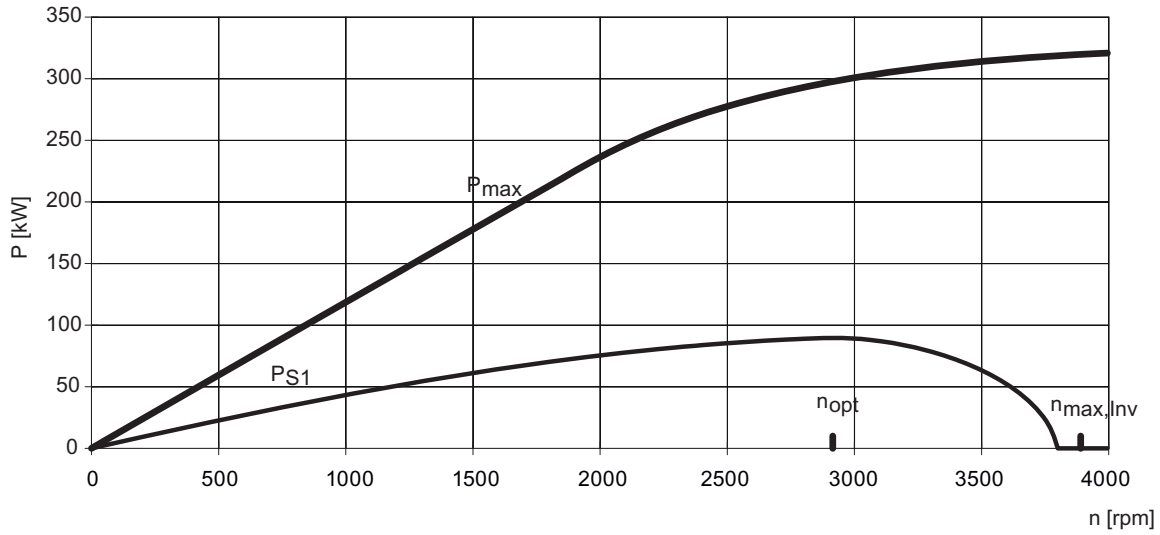



Tabella 4- 683 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8165-□□L□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3000 | 89,0 | 285 | 131 | 89,6 | 2915 | 4000 | 4000 | 3900 | 1135 | 551 | 440 | 188 |



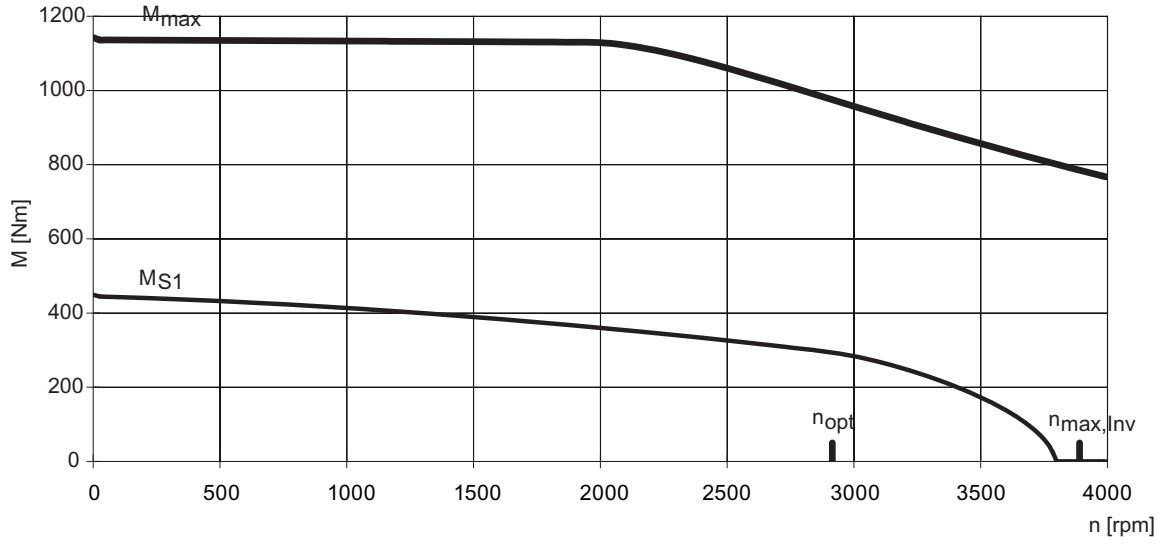
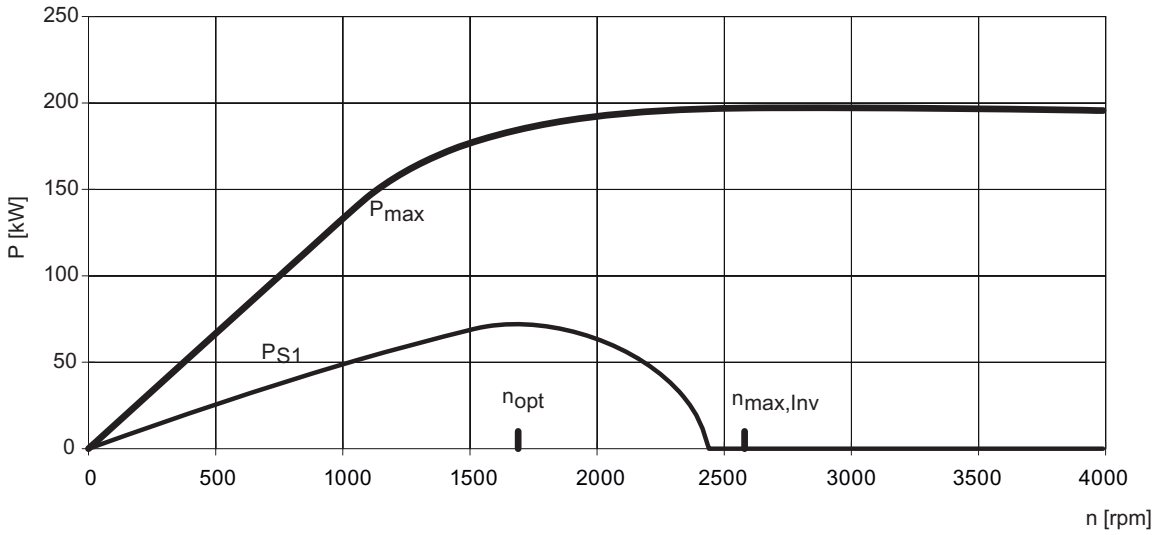



Tabella 4- 684 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8167-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 69,0 | 435 | 133 | 72,0 | 1690 | 4000 | 4000 | 2600 | 1280 | 413 | 500 | 143 |



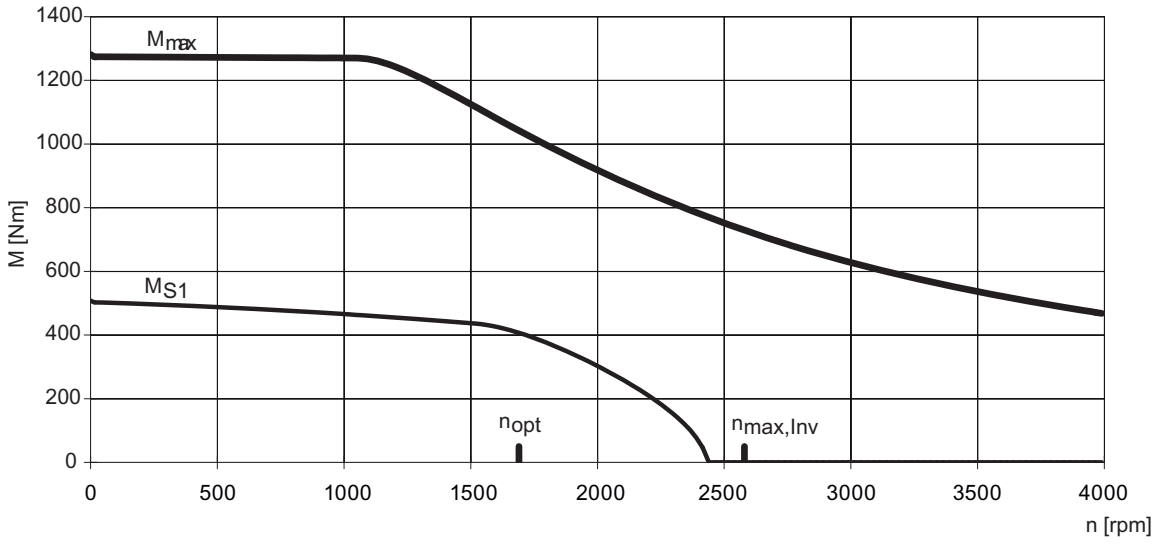
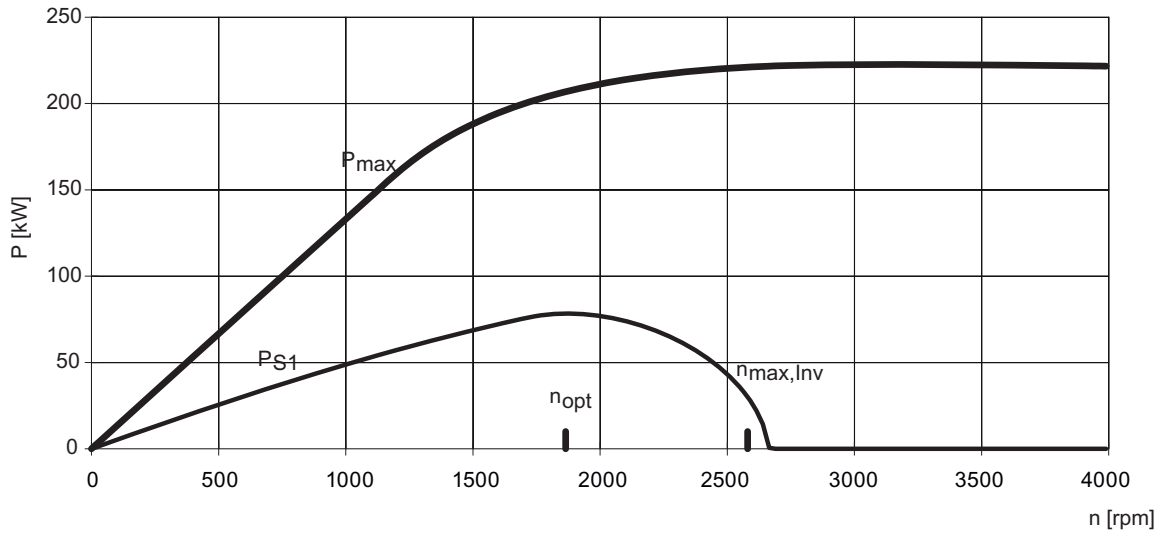



Tabella 4- 685 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8167-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 77,0 | 420 | 128 | 78,3 | 1865 | 4000 | 4000 | 2600 | 1280 | 413 | 500 | 143 |
| 1500 | 69,0 | 435 | 133 | | | | | | | | | |



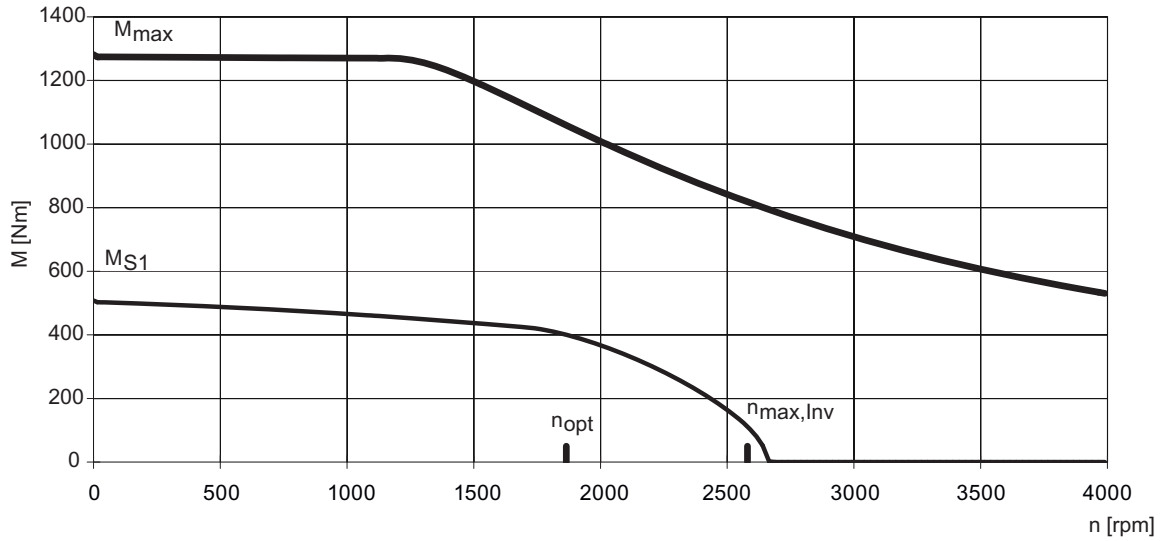
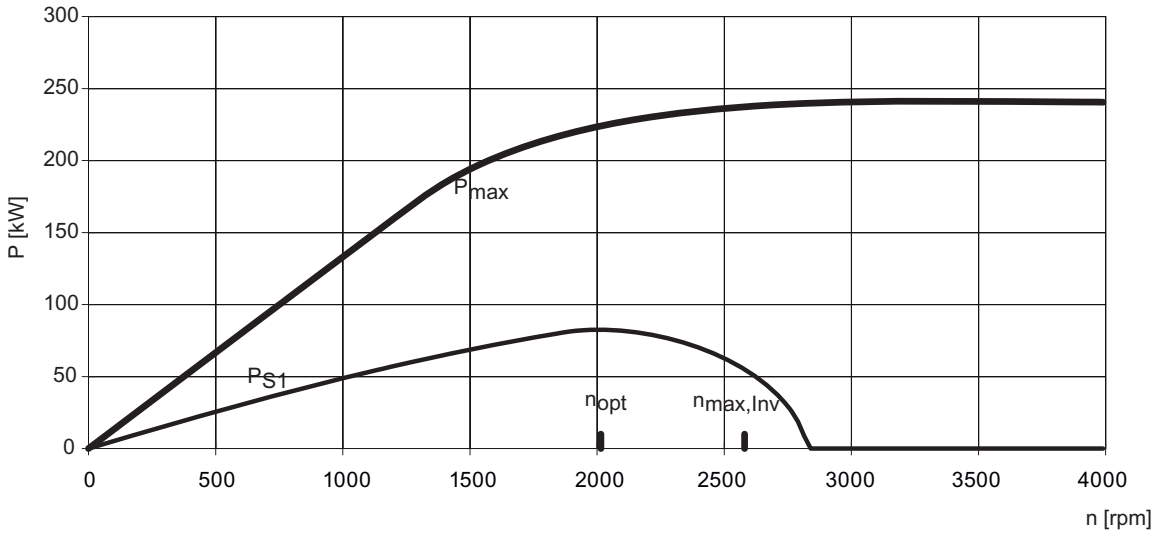



Tabella 4- 686 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8167-□□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 82,0 | 395 | 123 | 82,5 | 2015 | 4000 | 4000 | 2600 | 1280 | 413 | 500 | 143 |



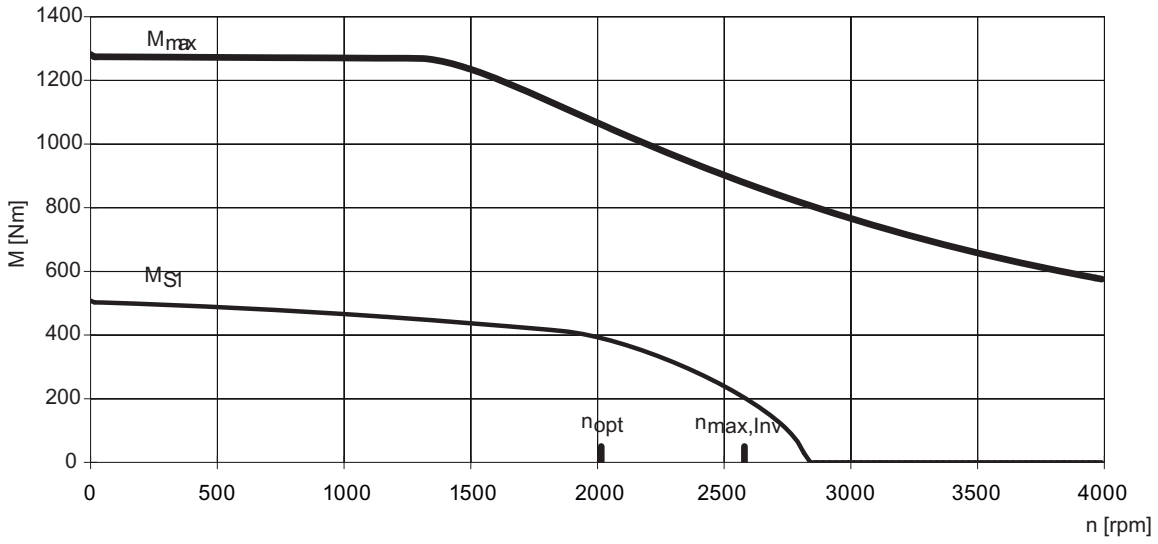
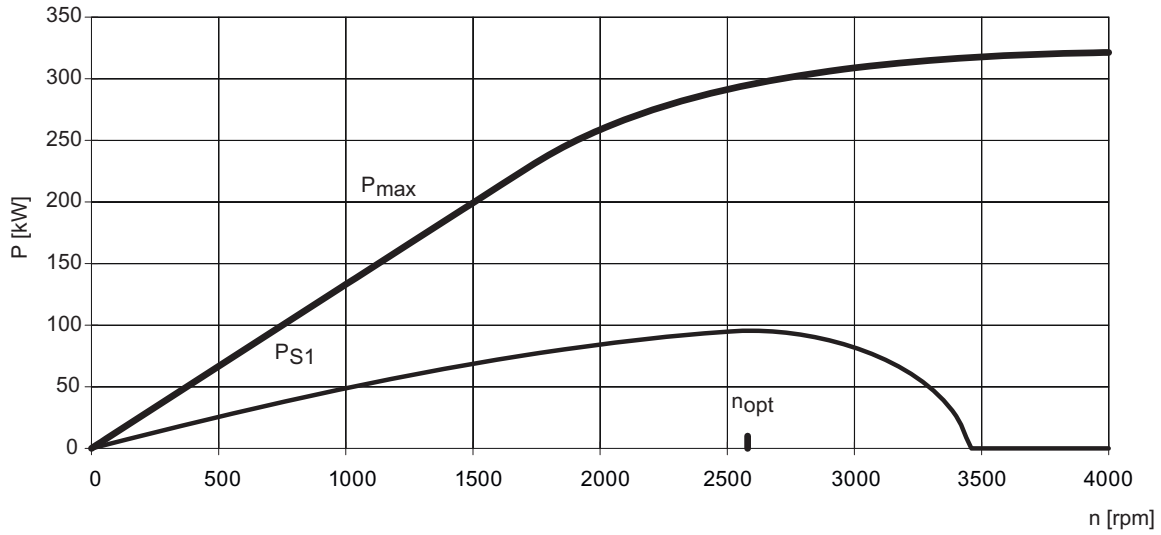



Tabella 4- 687 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8167-□□L□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 95,0 | 360 | 177 | 95,5 | 2580 | 4000 | 4000 | >4000 | 1280 | 661 | 500 | 230 |



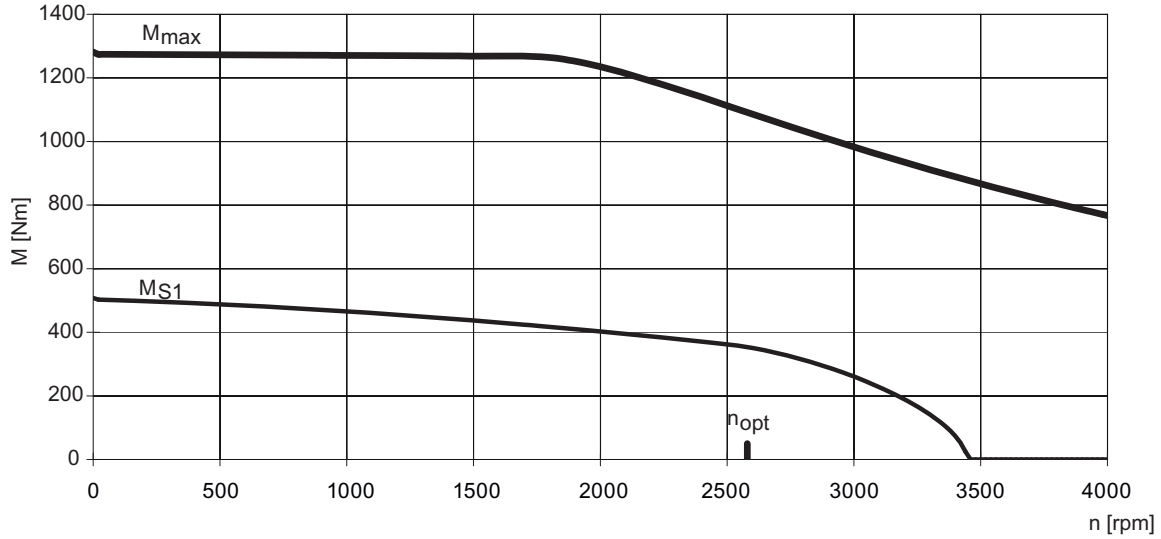
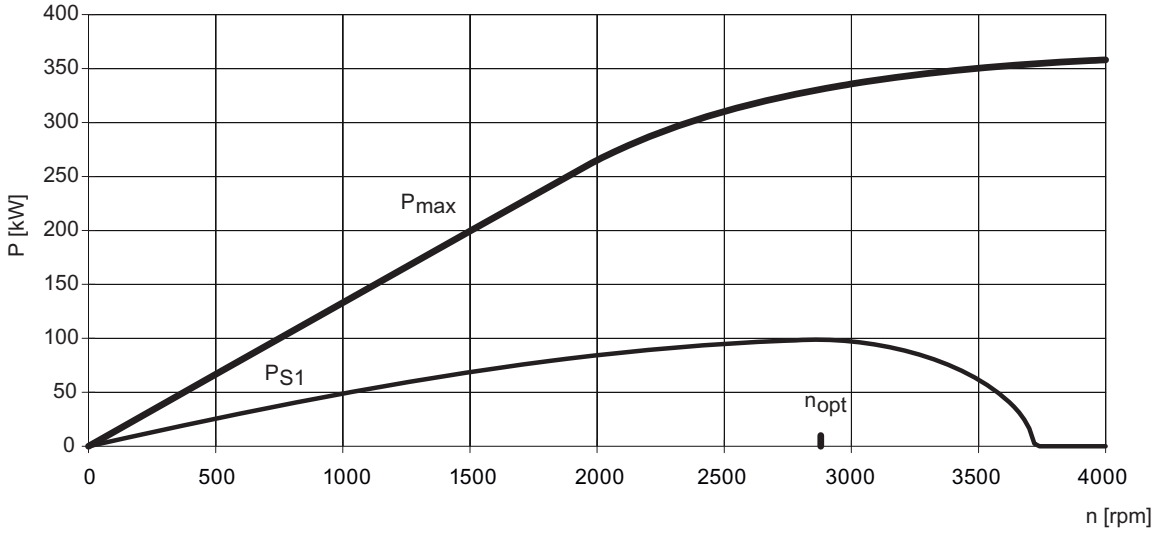



Tabella 4- 688 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8167-□□L□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2800 | 98,0 | 335 | 164 | 98,6 | 2880 | 4000 | 4000 | >4000 | 1280 | 661 | 500 | 230 |
| 2500 | 95,0 | 360 | 177 | | | | | | | | | |



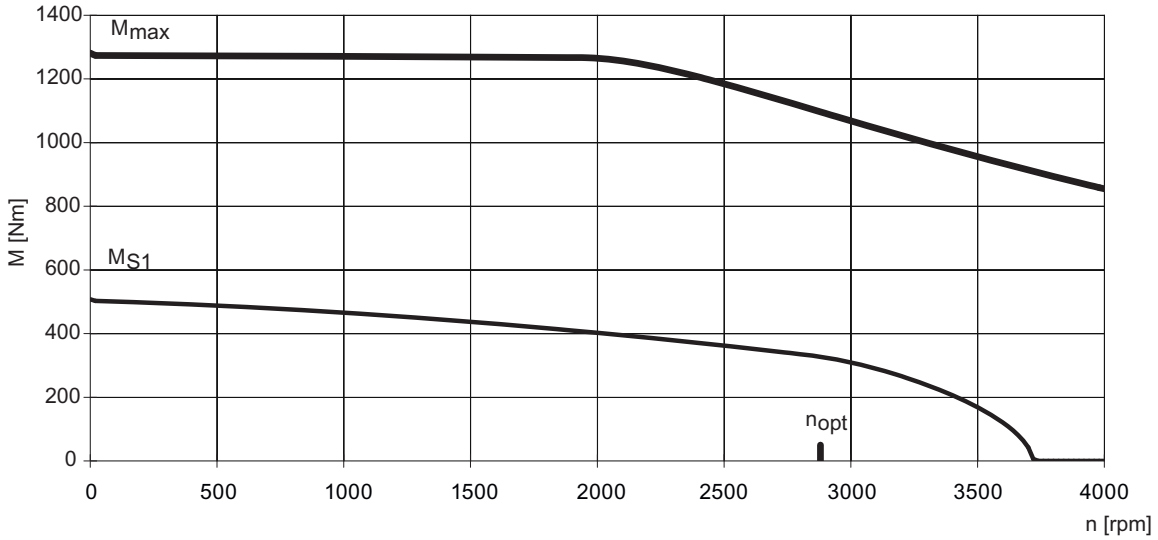
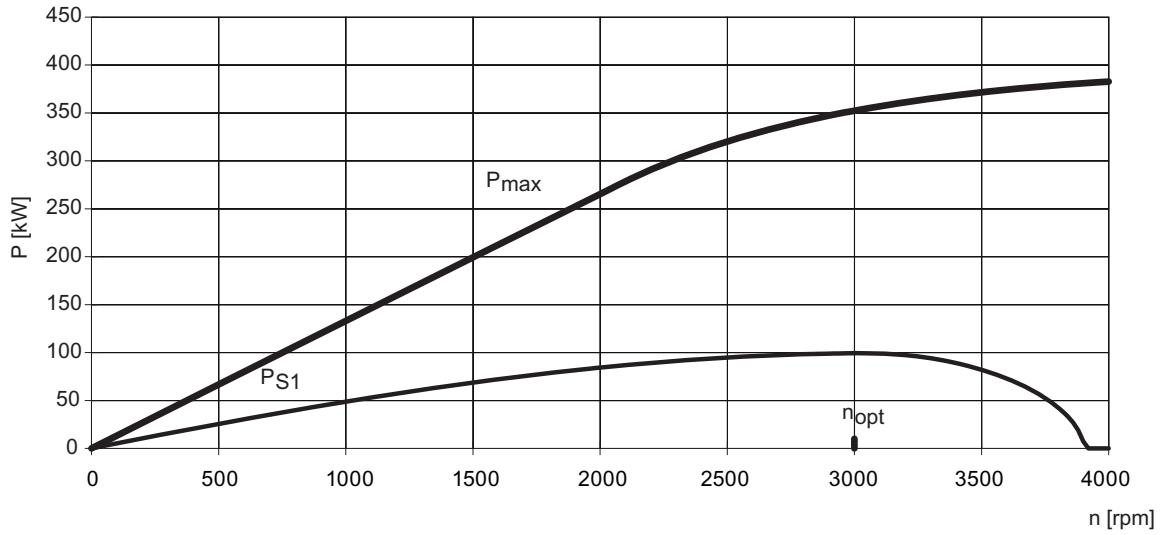
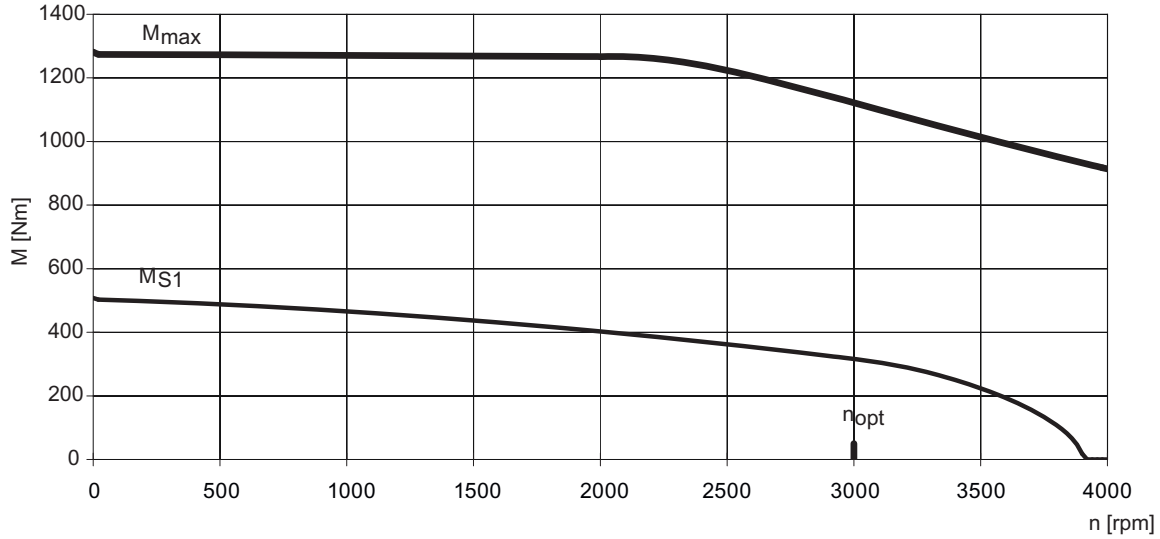



Tabella 4- 689 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8167-□□L□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3000 | 99,0 | 315 | 155 | 99,3 | 3000 | 4000 | 4000 | >4000 | 1280 | 661 | 500 | 230 |



### 4.2.2.3 Altezza d'asse 180 - Ventilazione forzata

Tabella 4- 690 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-2□C□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 33 | 450 | 80 | 37 | 1050 | 3800 | 3500 | 1450 | 1450 | 260 | 480 | 84 |

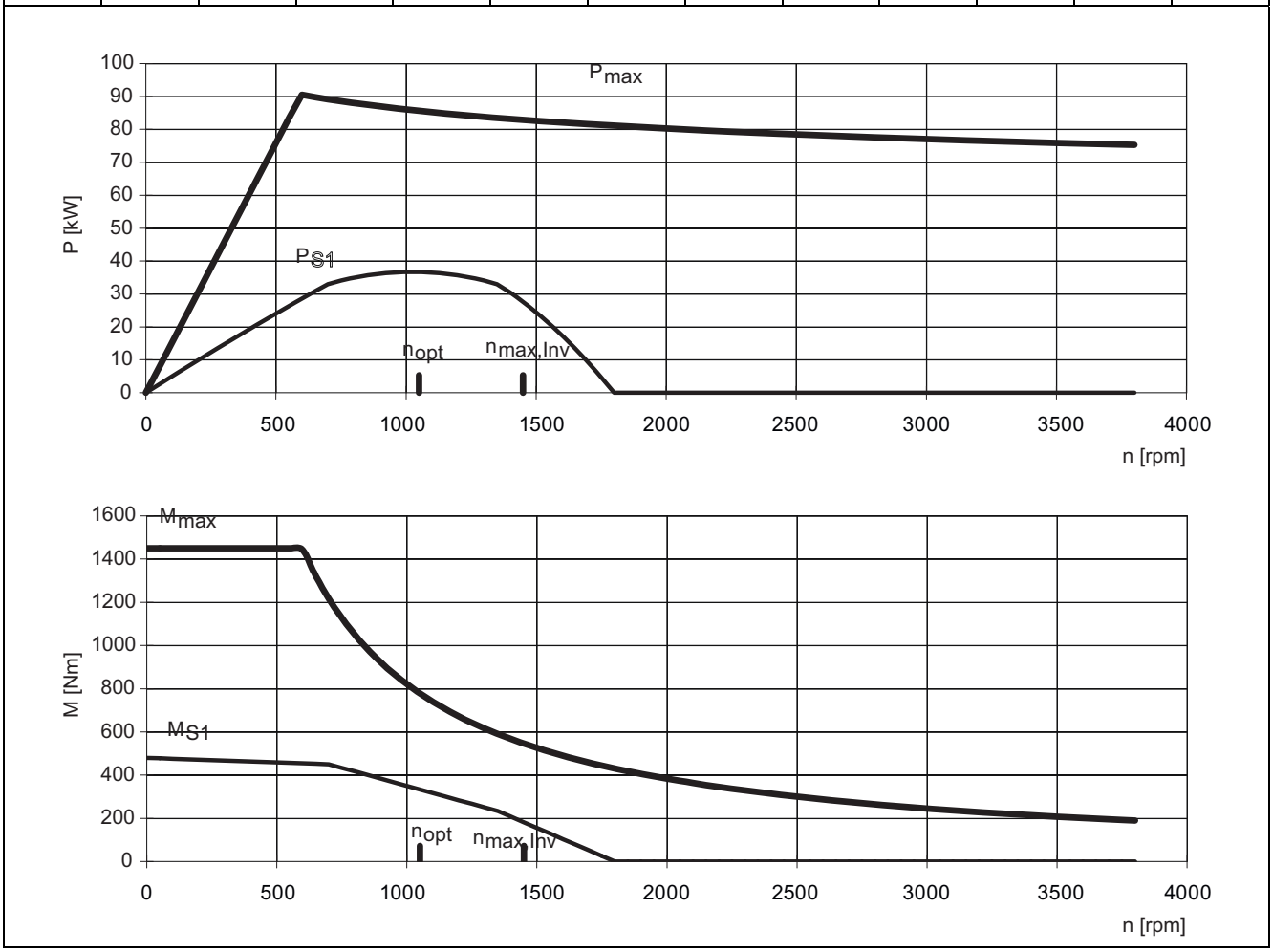
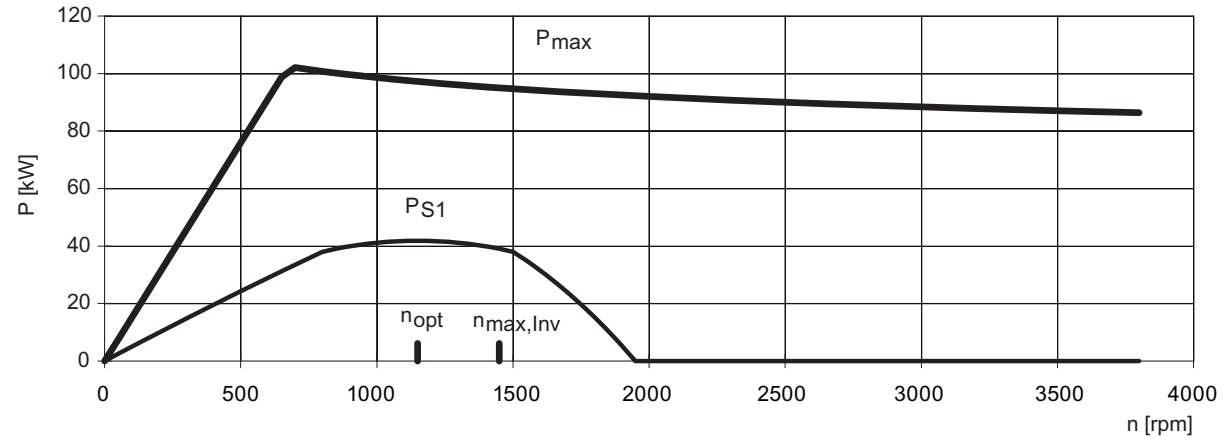


Tabella 4- 691 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-2□C□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 38 | 454 | 80 | 42 | 1150 | 3800 | 3500 | 1450 | 1450 | 260 | 480 | 84 |
| 700 | 33 | 450 | 80 | | | | | | | | | |



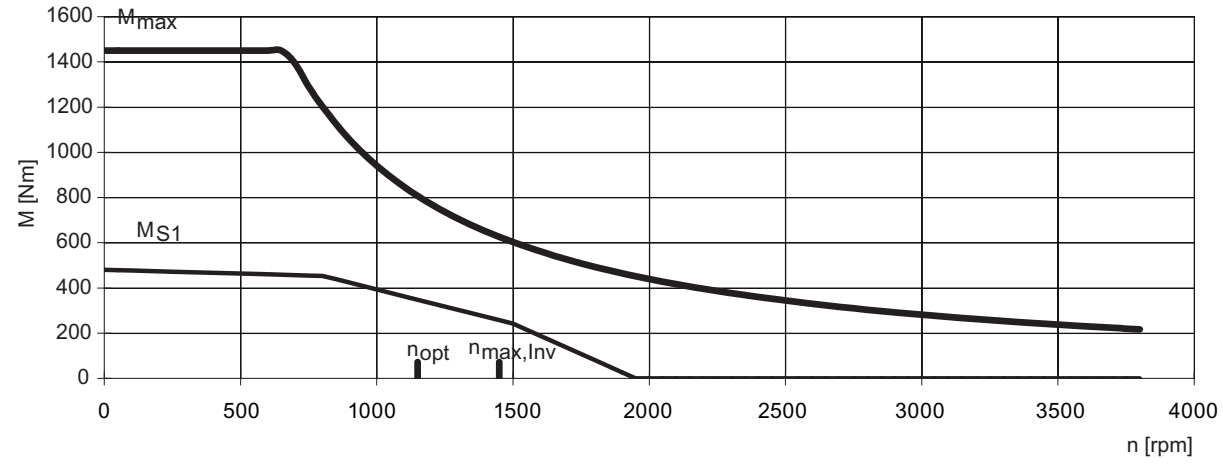



Tabella 4- 692 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-2□C□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 46 | 439 | 78 | 49 | 1300 | 3800 | 3500 | 1450 | 1450 | 260 | 480 | 84 |

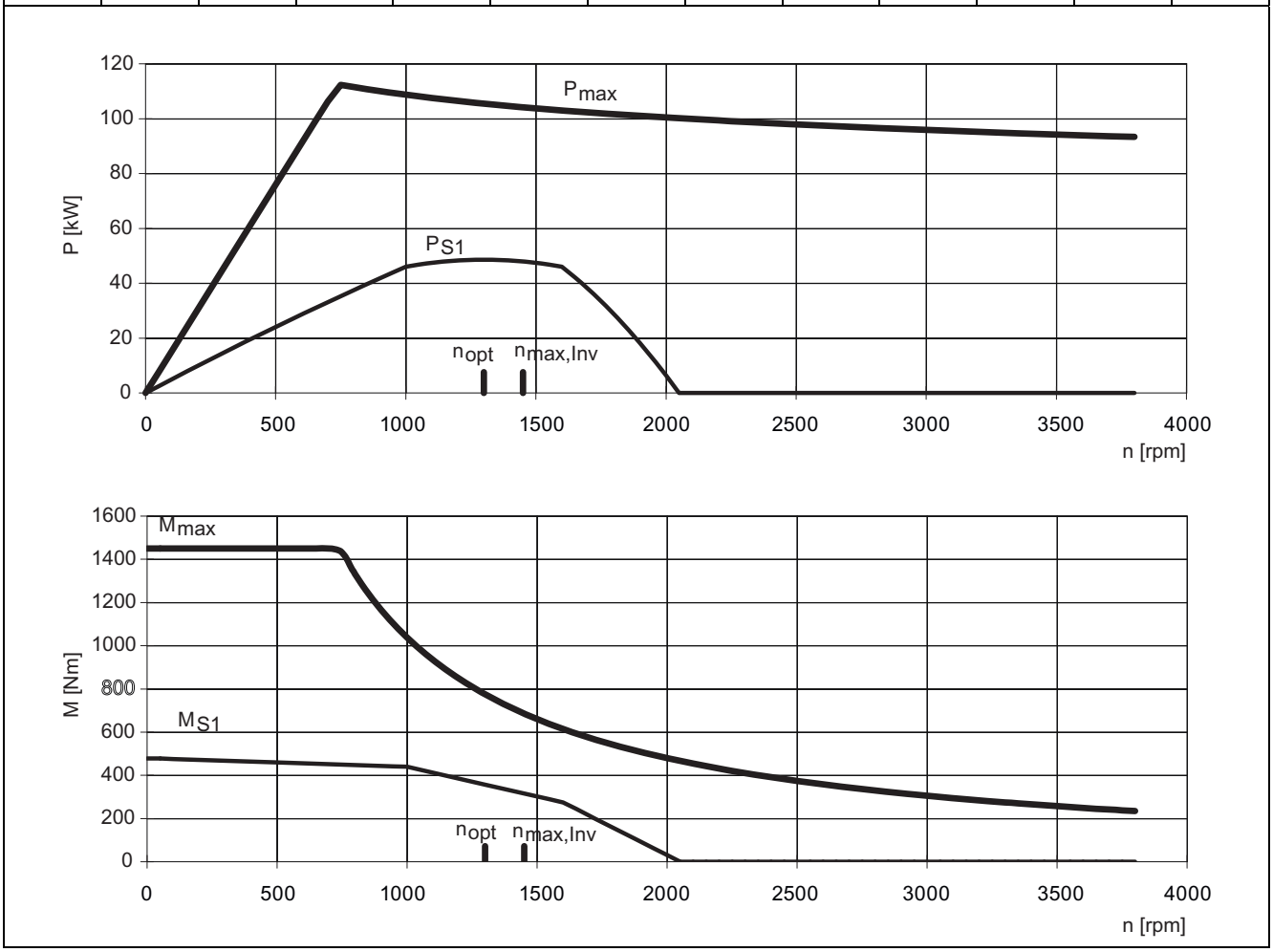
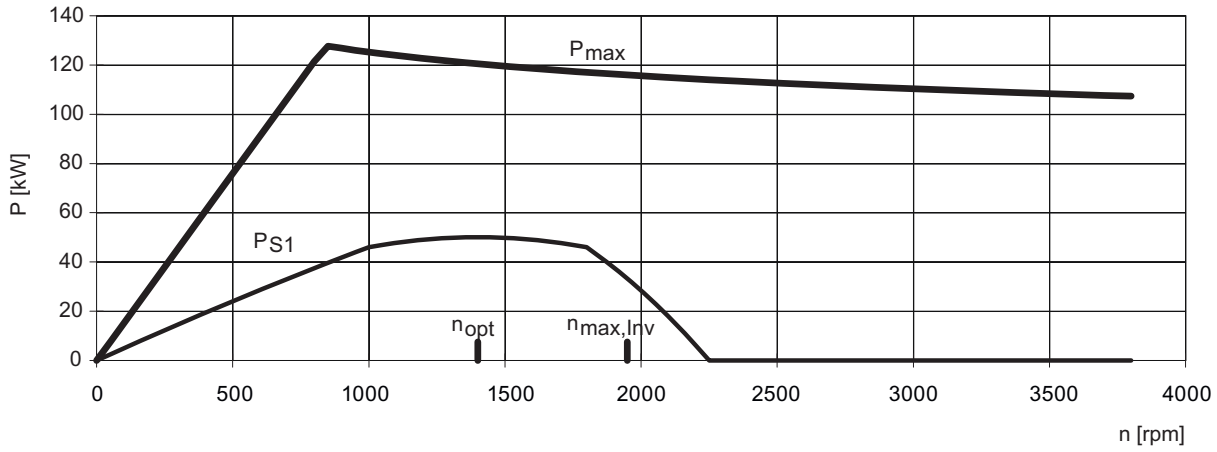


Tabella 4- 693 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-2□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 46 | 439 | 106 | 50 | 1400 | 3800 | 3500 | 1950 | 1450 | 355 | 480 | 115 |



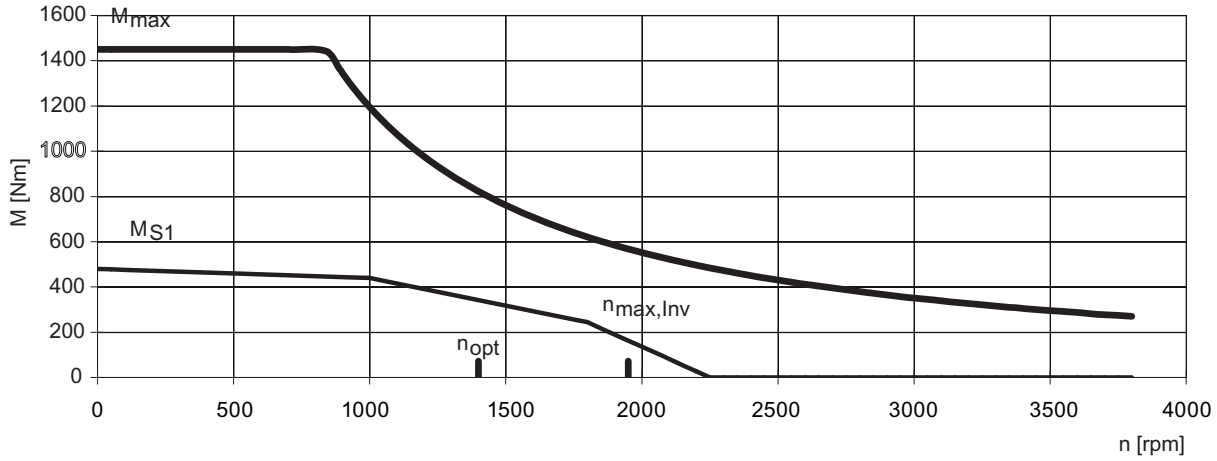
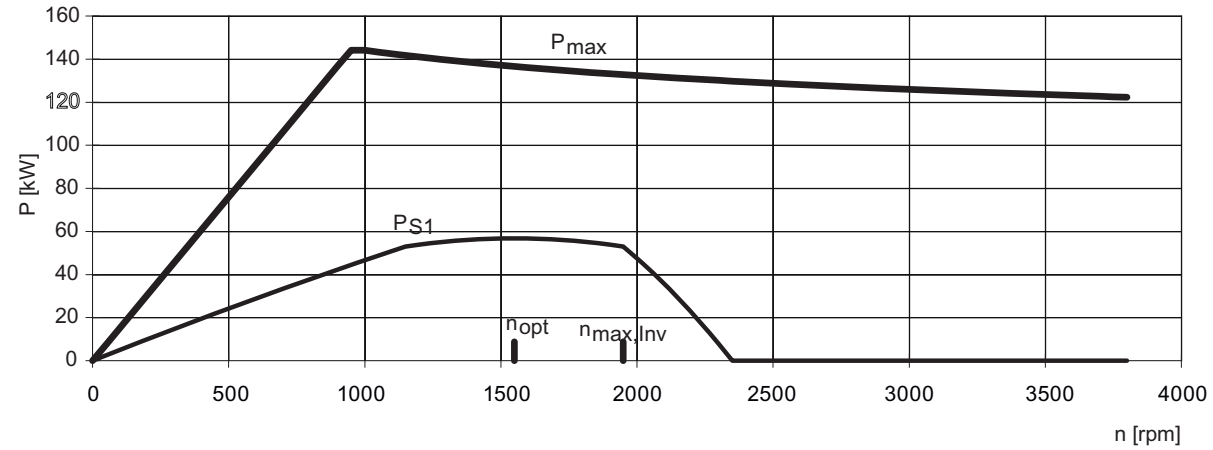



Tabella 4- 694 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-2□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 53 | 440 | 106 | 57 | 1550 | 3800 | 3500 | 1950 | 1450 | 355 | 480 | 115 |
| 1000 | 46 | 439 | 106 | | | | | | | | | |



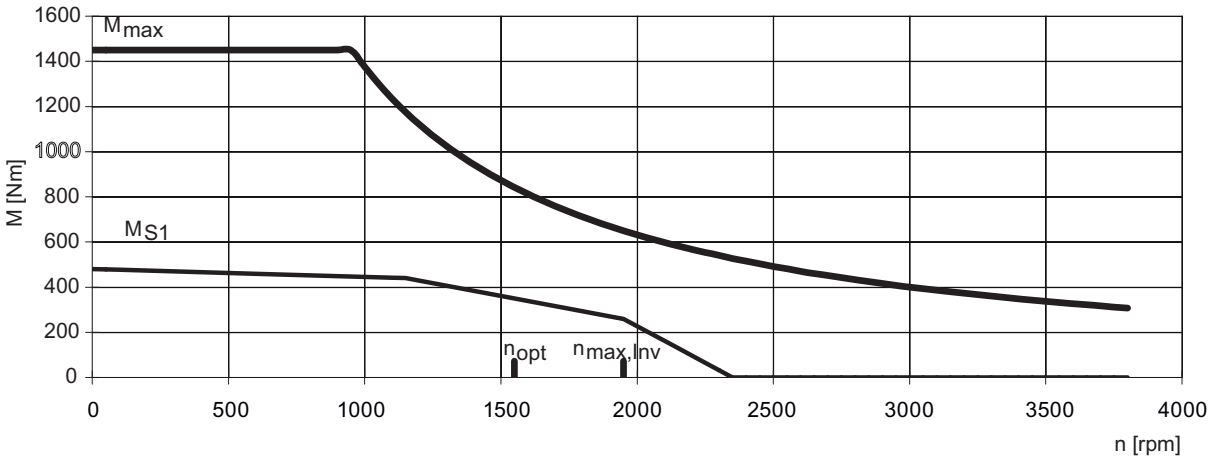
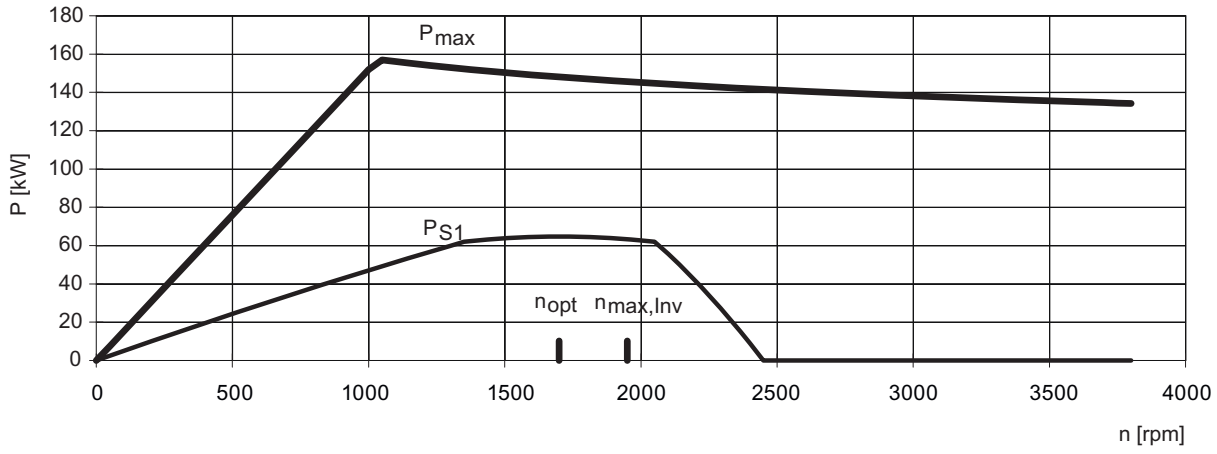



Tabella 4- 695 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-2□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 62 | 439 | 106 | 65 | 1700 | 3800 | 3500 | 1950 | 1450 | 355 | 480 | 115 |



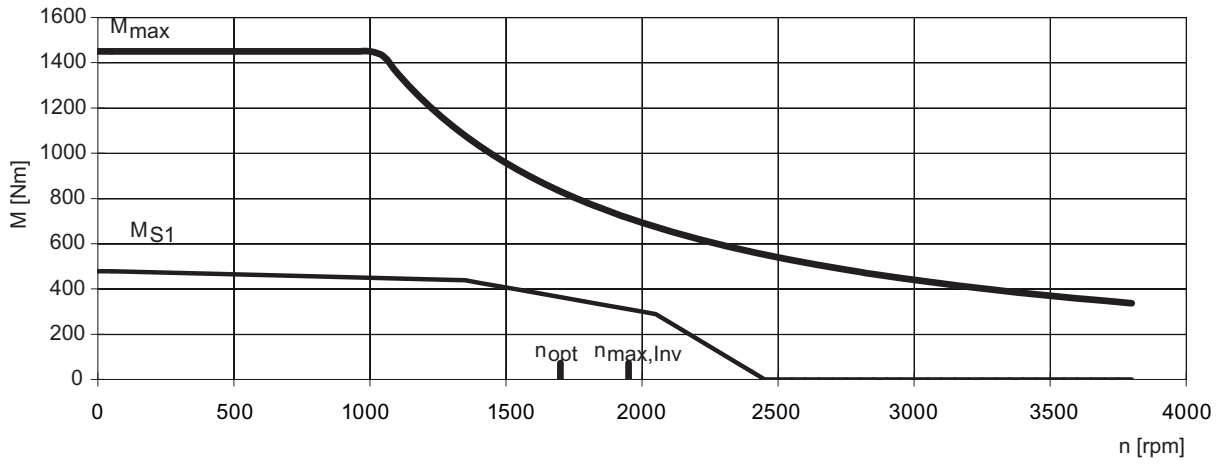



Tabella 4- 696 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-2□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 70 | 446 | 148 | 73 | 1900 | 3800 | 3500 | 2700 | 1450 | 490 | 480 | 157 |

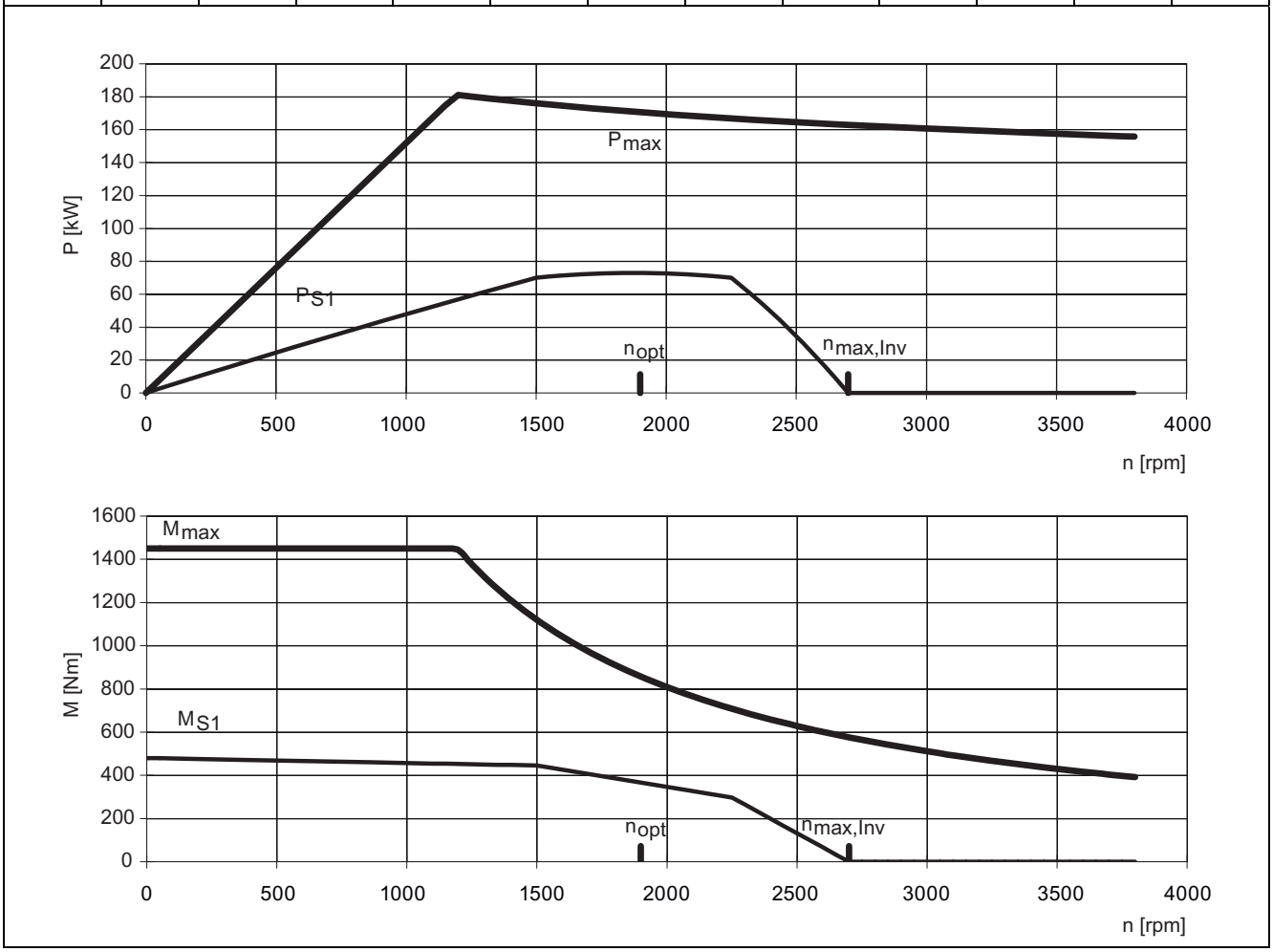
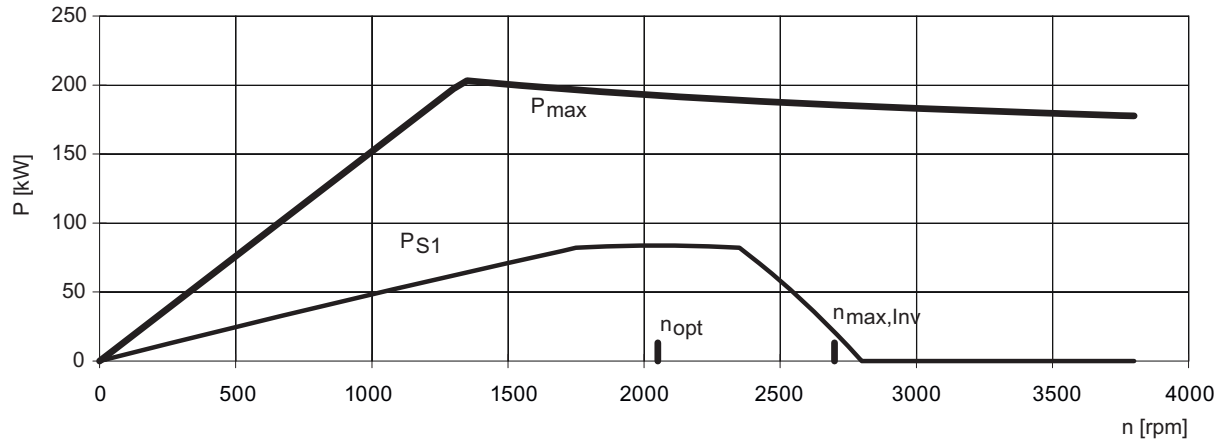


Tabella 4- 697 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-2□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 82 | 447 | 150 | 84 | 2050 | 3800 | 3500 | 2700 | 1450 | 490 | 480 | 157 |
| 1500 | 70 | 446 | 148 | | | | | | | | | |



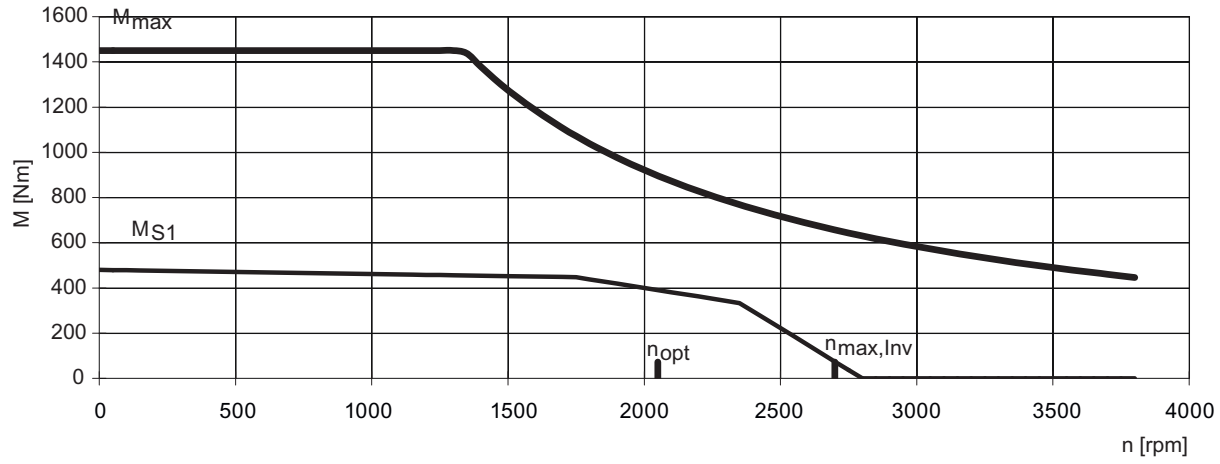



Tabella 4- 698 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-2□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 86 | 411 | 138 | 87 | 2250 | 3800 | 3500 | 2700 | 1450 | 490 | 480 | 157 |

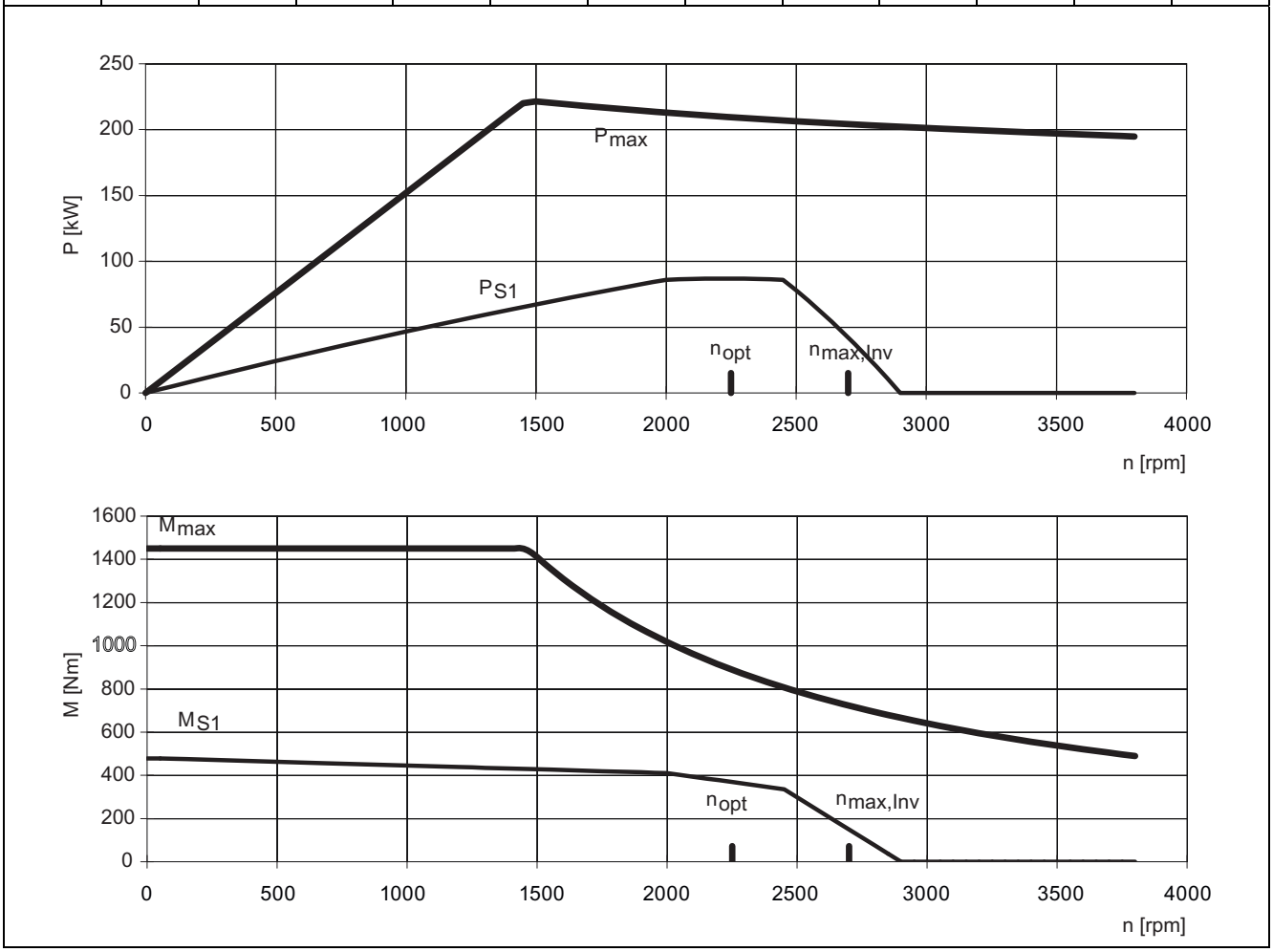
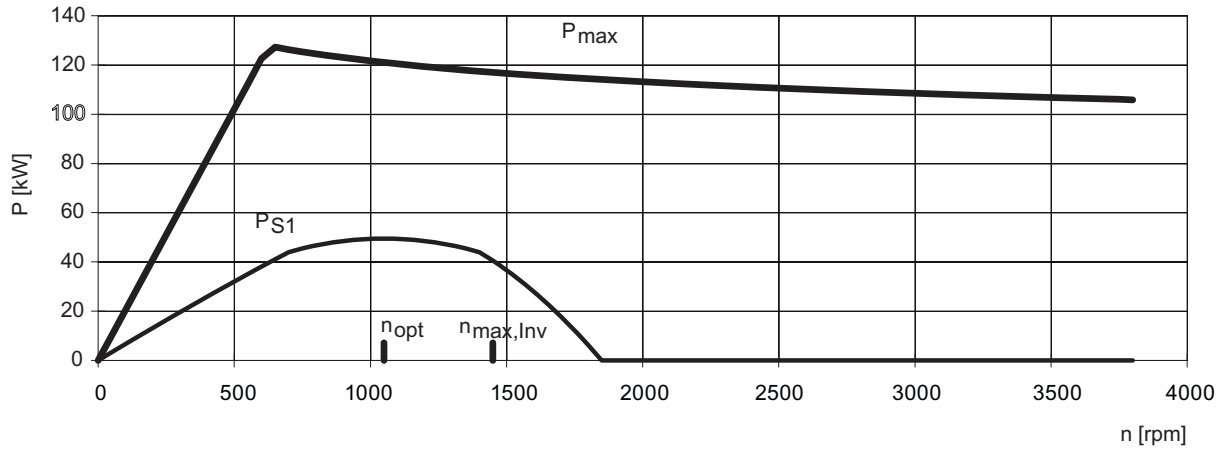


Tabella 4- 699 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-2□C□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 44 | 600 | 108 | 49 | 1050 | 3800 | 3500 | 1450 | 1950 | 358 | 640 | 115 |



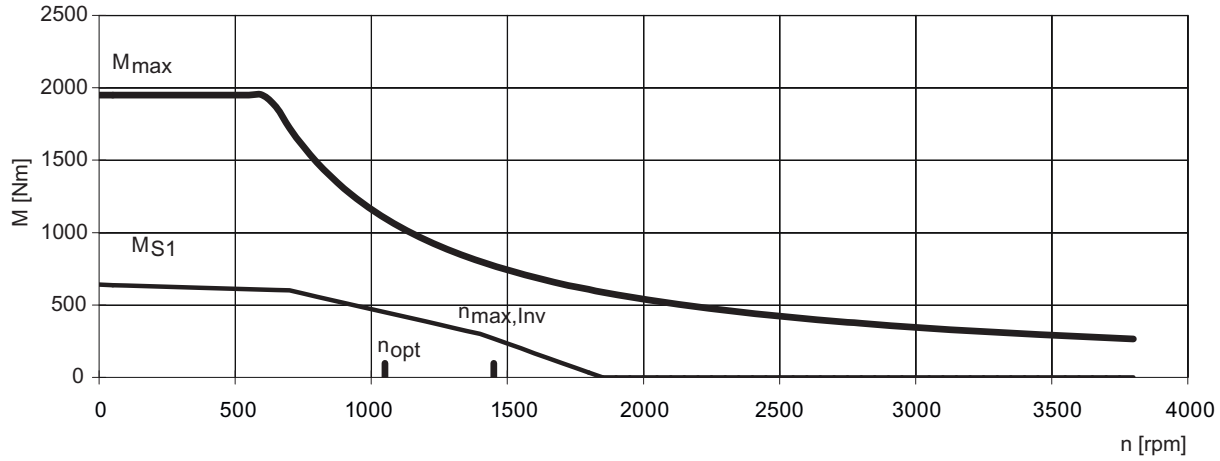
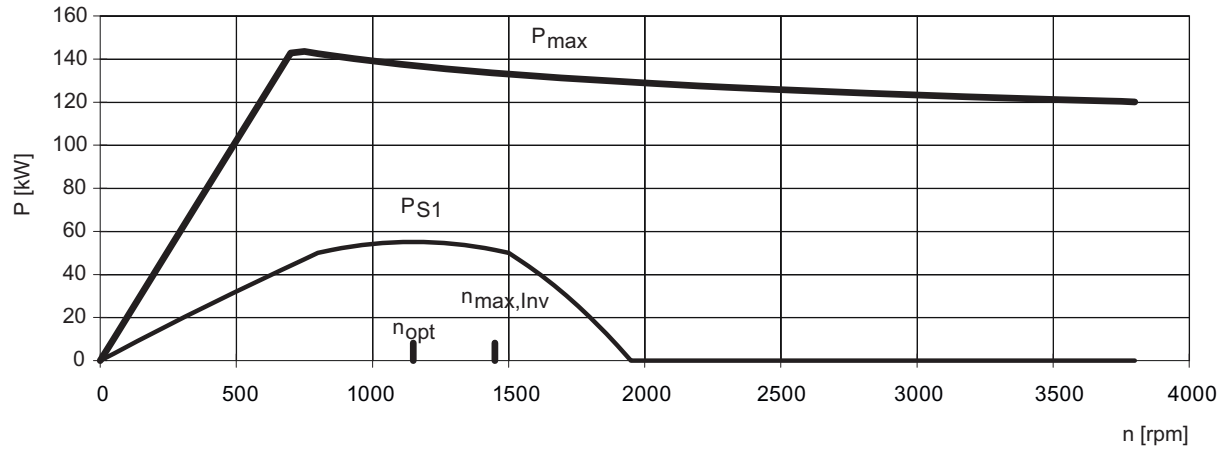



Tabella 4- 700 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8186-2□C□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 50 | 597 | 108 | 55 | 1150 | 3800 | 3500 | 1450 | 1950 | 358 | 640 | 115 |
| 700 | 44 | 600 | 108 | | | | | | | | | |



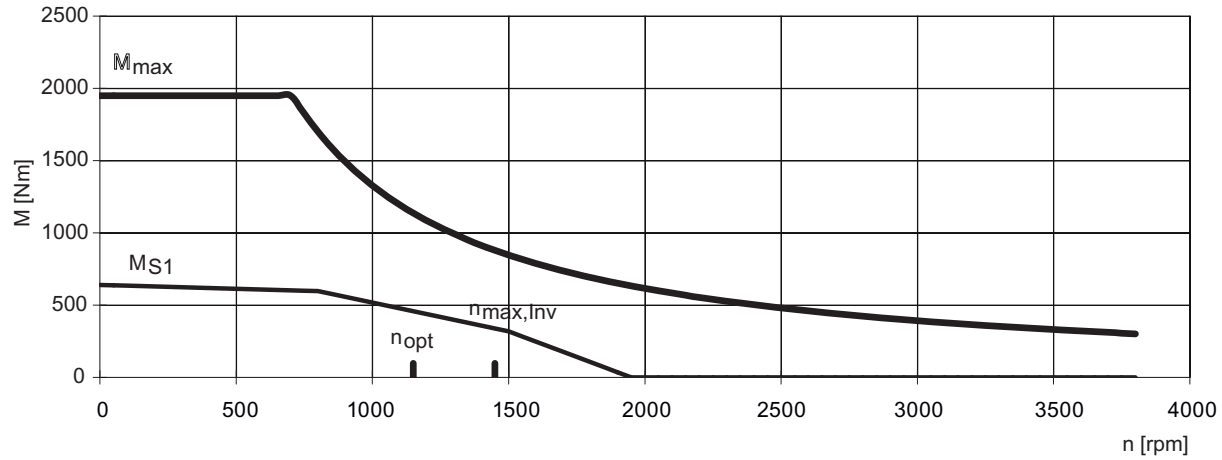
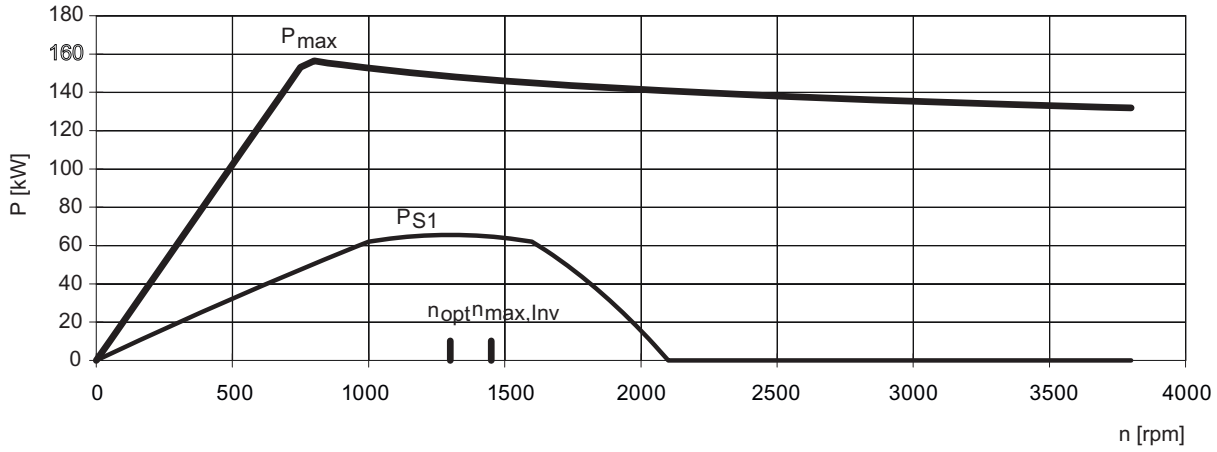



Tabella 4- 701 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-2□C□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 62 | 592 | 108 | 65 | 1300 | 3800 | 3500 | 1450 | 1950 | 358 | 640 | 115 |



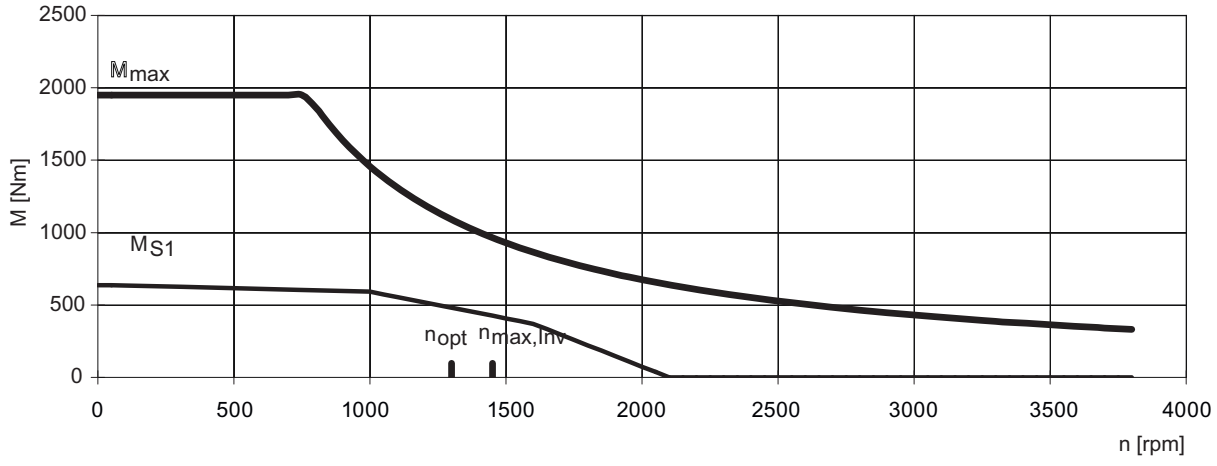



Tabella 4- 702 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-2□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 62 | 592 | 148 | 69 | 1450 | 3800 | 3500 | 2050 | 1950 | 490 | 640 | 157 |

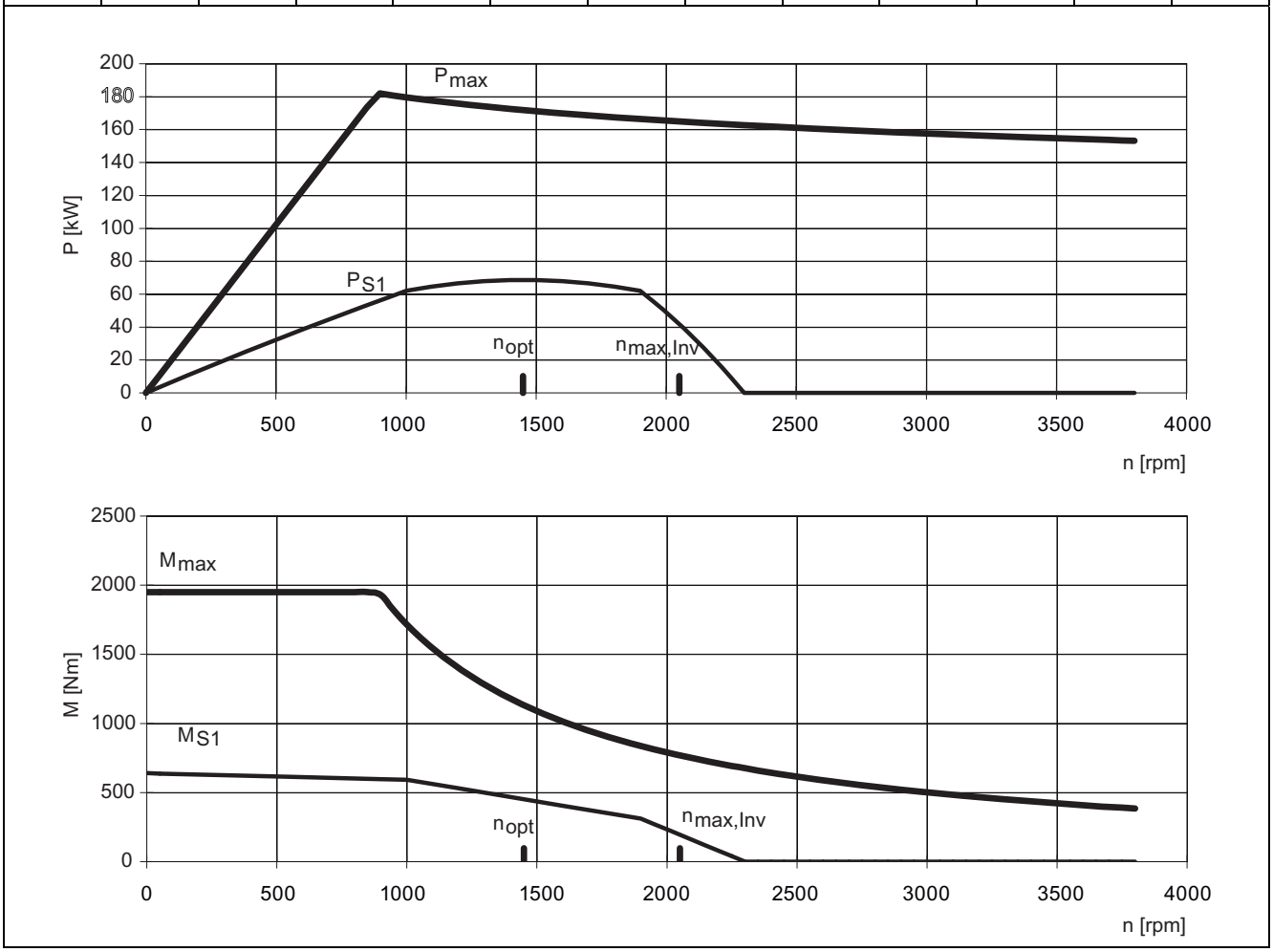
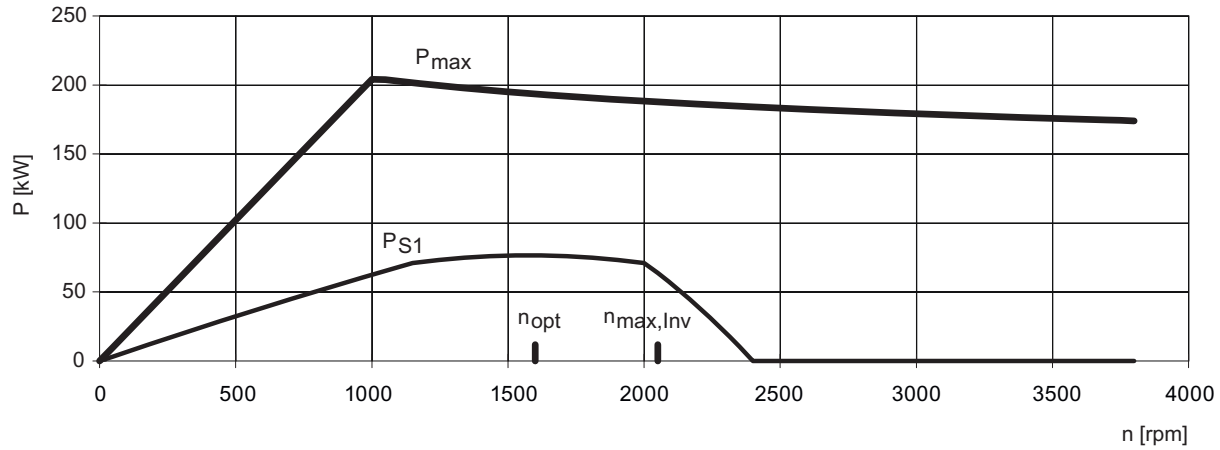


Tabella 4- 703 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8186-2□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 71 | 590 | 148 | 77 | 1600 | 3800 | 3500 | 2050 | 1950 | 490 | 640 | 157 |
| 1000 | 62 | 592 | 148 | | | | | | | | | |



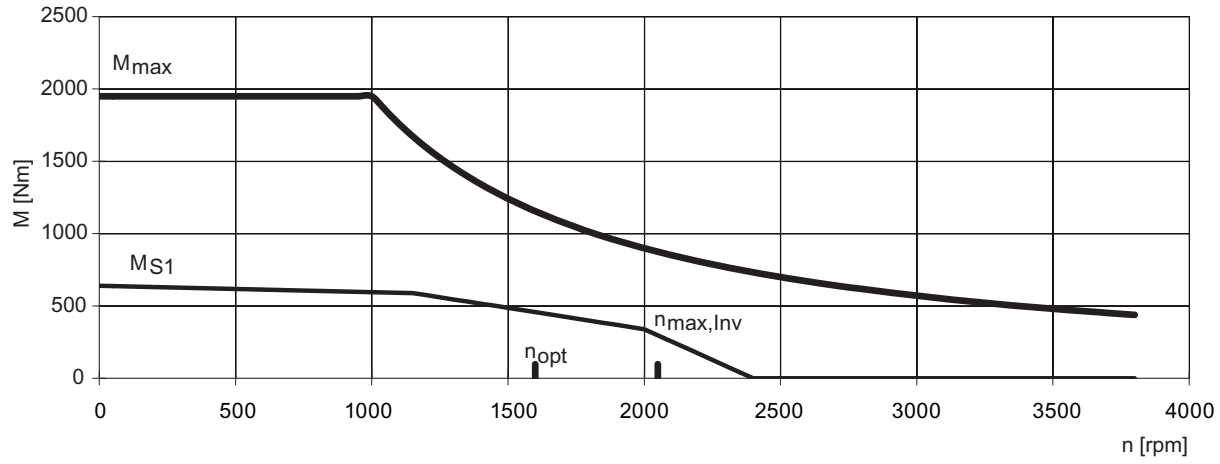



Tabella 4- 704 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-2□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 83 | 587 | 146 | 87 | 1750 | 3800 | 3500 | 2050 | 1950 | 490 | 640 | 157 |

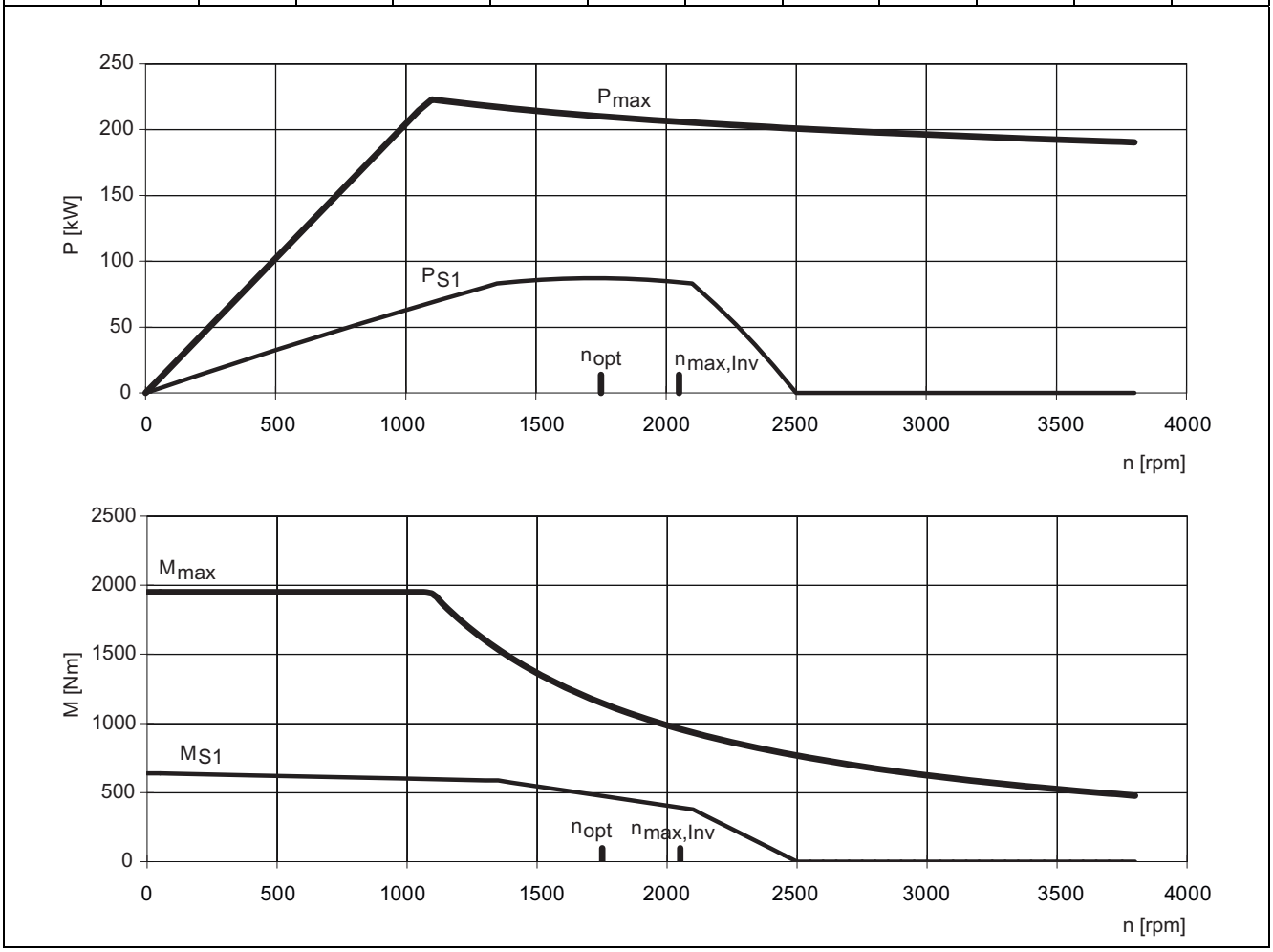
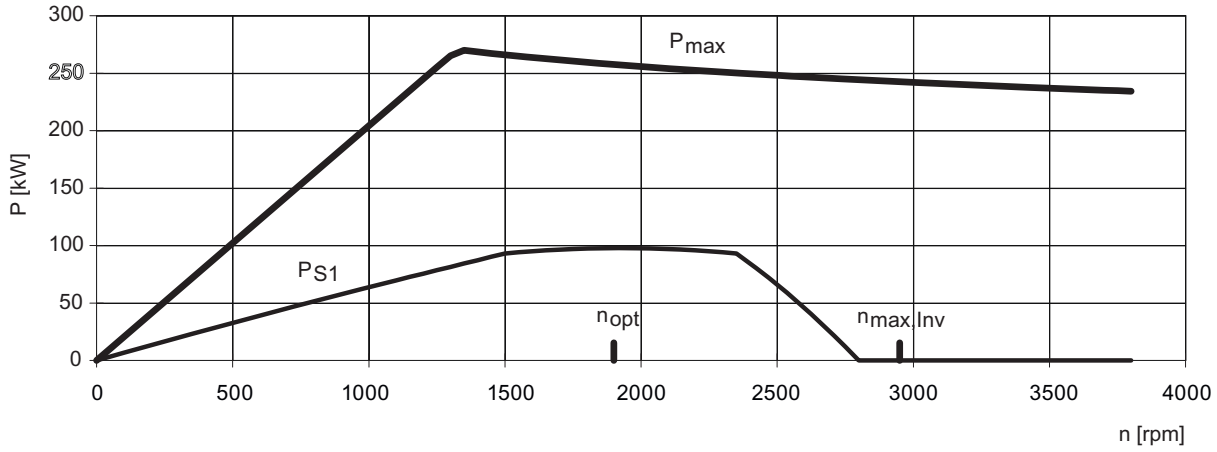


Tabella 4- 705 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-2□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 93 | 592 | 215 | 98 | 1900 | 3800 | 3500 | 2950 | 1950 | 720 | 640 | 229 |



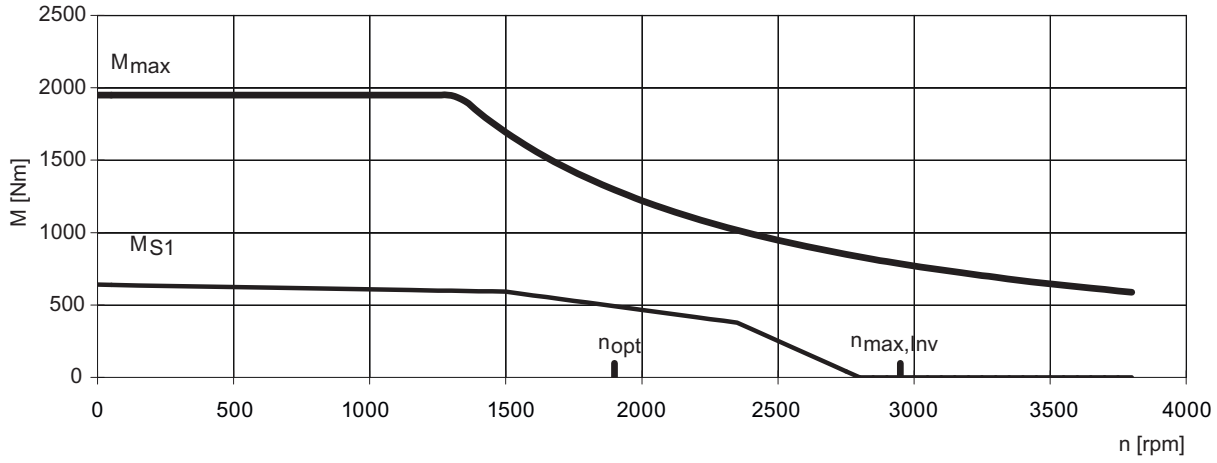
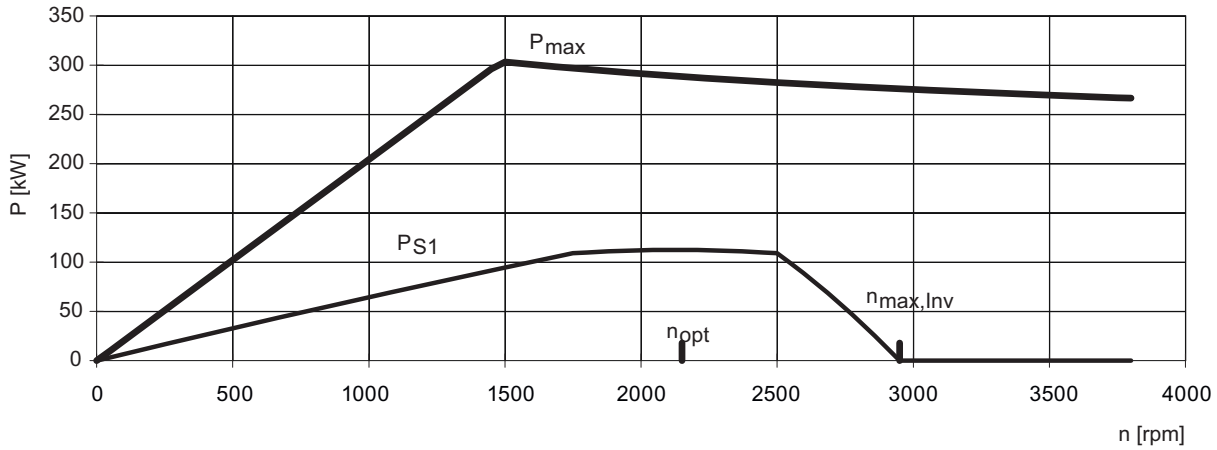



Tabella 4- 706 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8186-2□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 109 | 595 | 215 | 112 | 2150 | 3800 | 3500 | 2950 | 1950 | 720 | 640 | 229 |
| 1500 | 93 | 592 | 215 | | | | | | | | | |



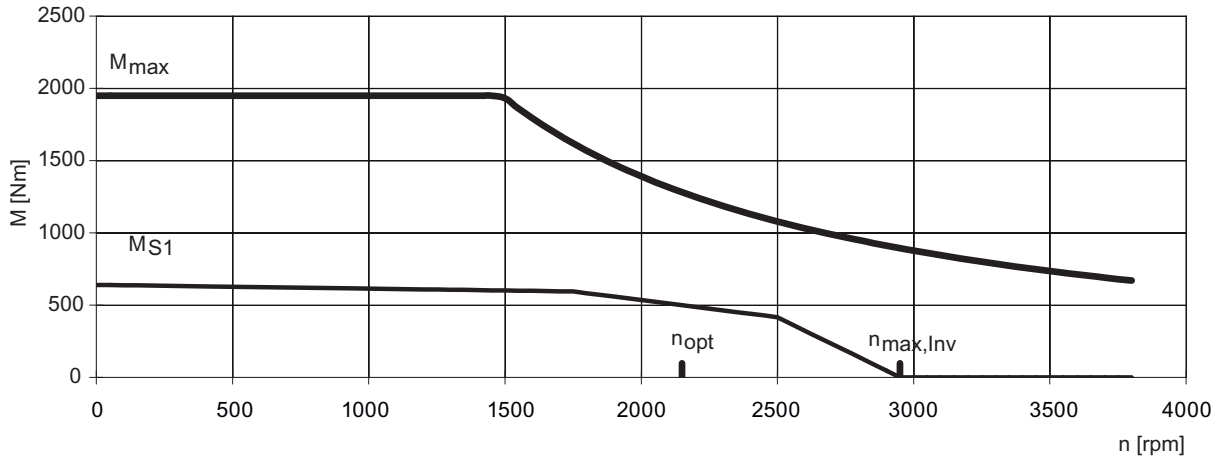
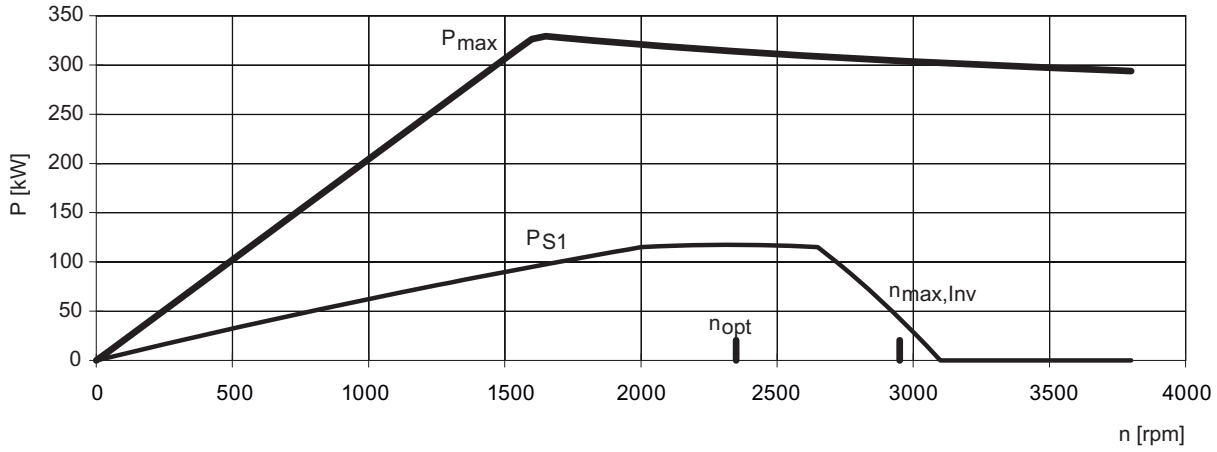
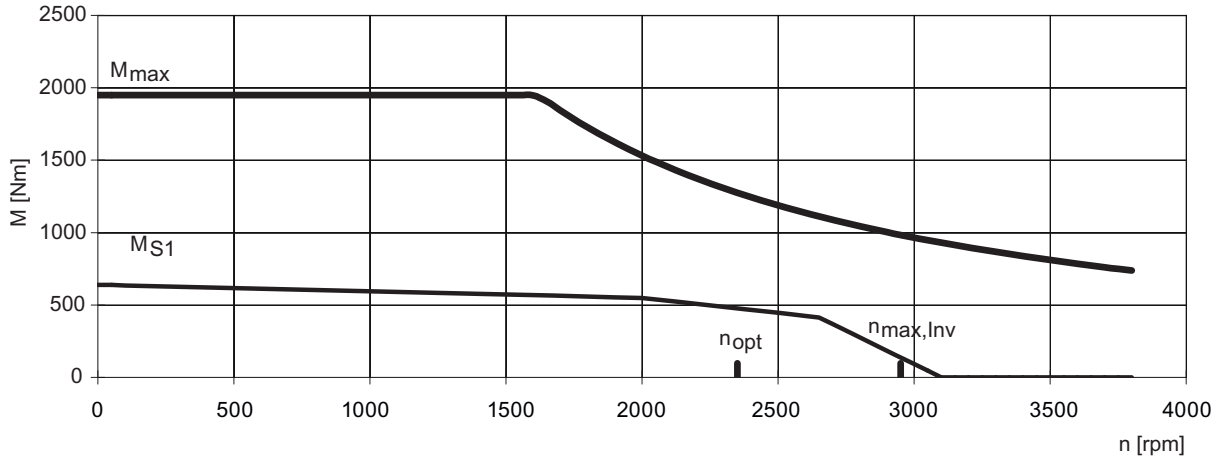



Tabella 4- 707 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-2□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 115 | 549 | 200 | 117 | 2350 | 3800 | 3500 | 2950 | 1950 | 720 | 640 | 229 |



### 4.2.2.4 Altezza d'asse 225 - Ventilazione forzata

Tabella 4- 708 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-2□C□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 48 | 655 | 120 | 52 | 950 | 3500 | 3100 | 1450 | 2400 | 450 | 708 | 128 |

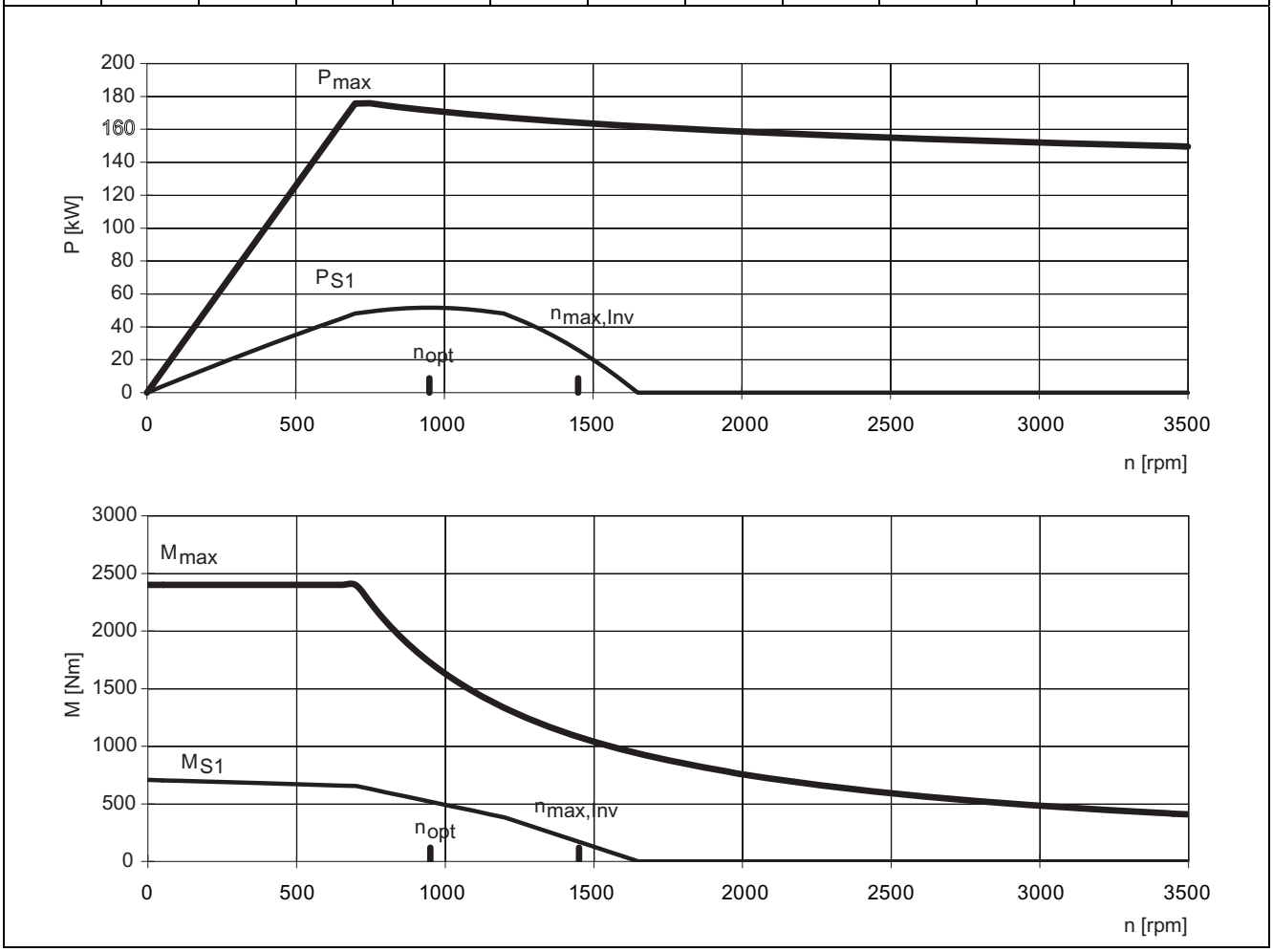
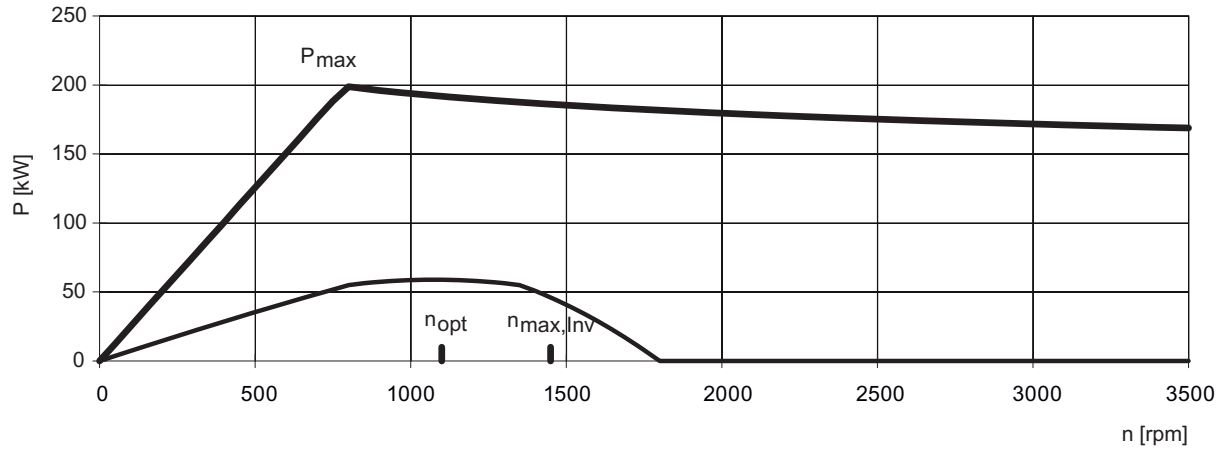


Tabella 4- 709 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-2□C□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 55 | 657 | 120 | 59 | 1100 | 3500 | 3100 | 1450 | 2400 | 450 | 708 | 128 |
| 700 | 48 | 655 | 120 | | | | | | | | | |



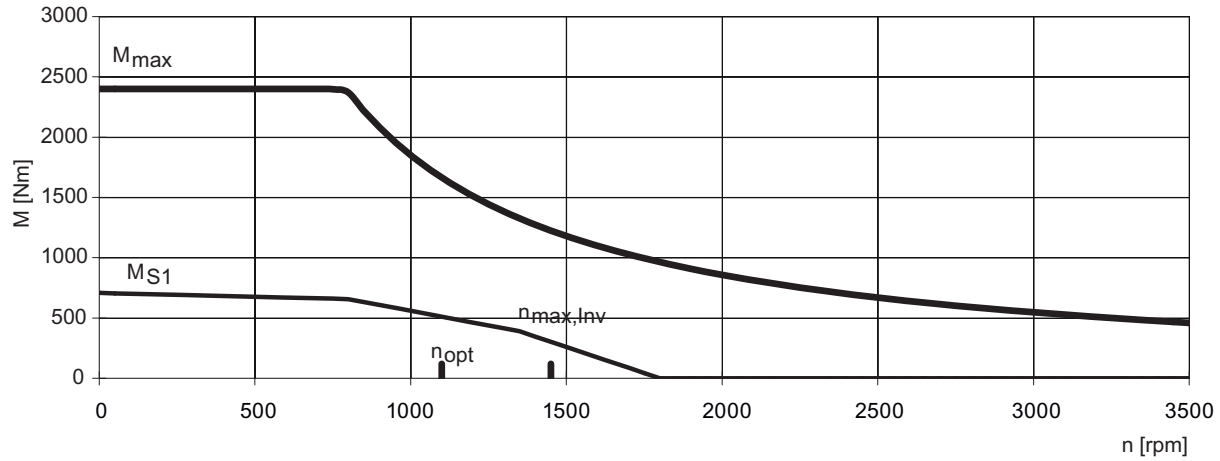



Tabella 4- 710 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-2□C□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 68 | 649 | 118 | 70 | 1250 | 3500 | 3100 | 1450 | 2400 | 450 | 708 | 128 |

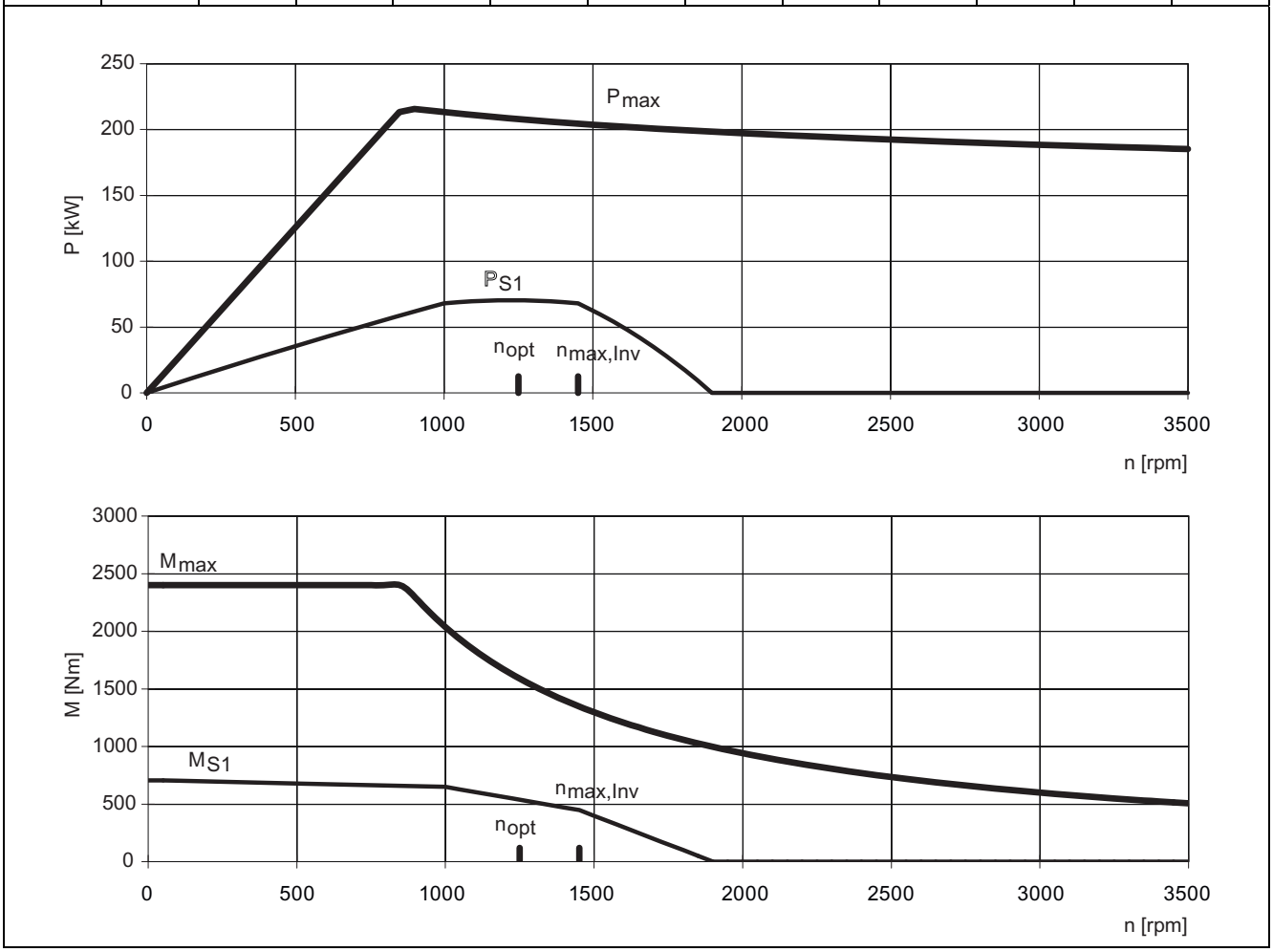
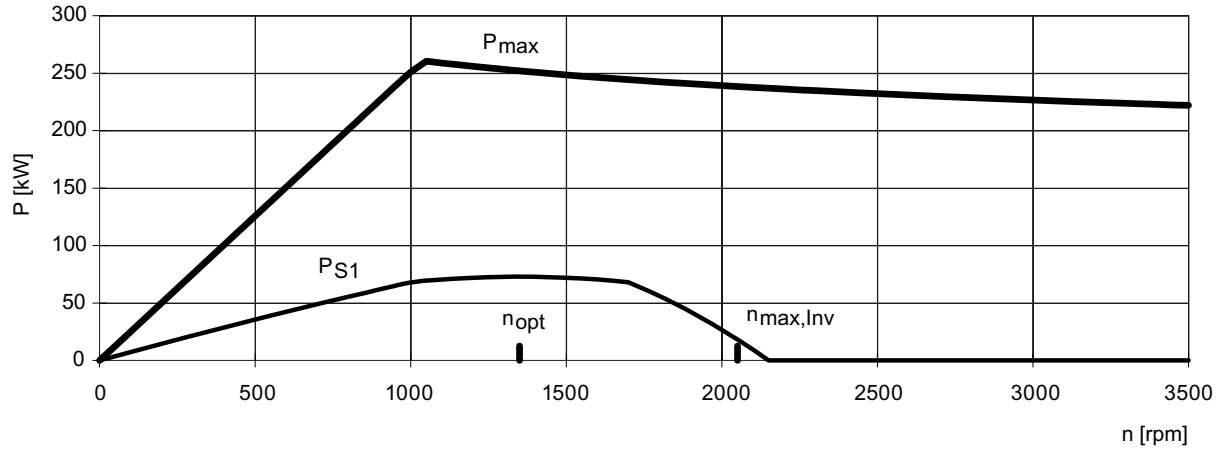


Tabella 4- 711 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-2□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 68 | 649 | 170 | 73 | 1350 | 3500 | 3100 | 2050 | 2400 | 640 | 708 | 183 |



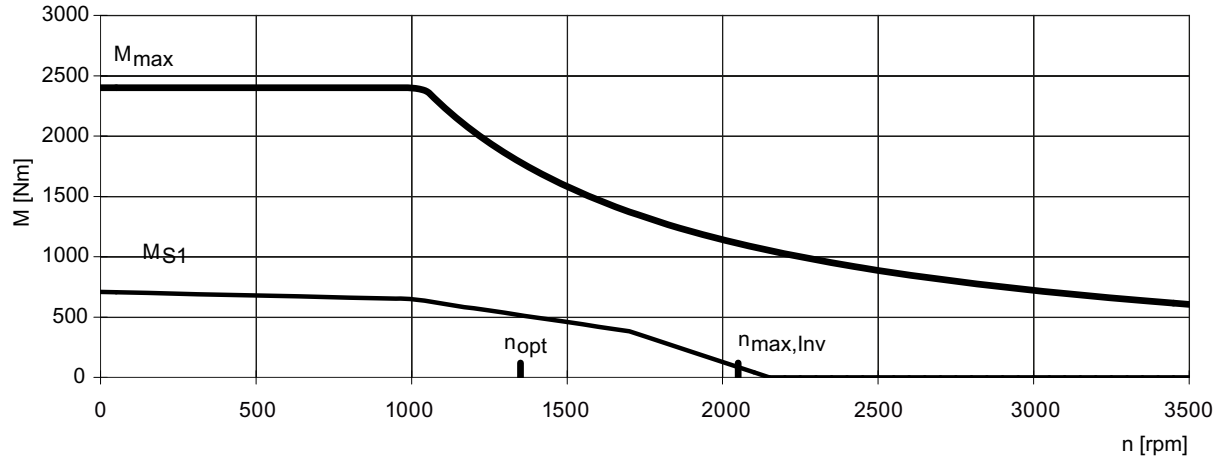
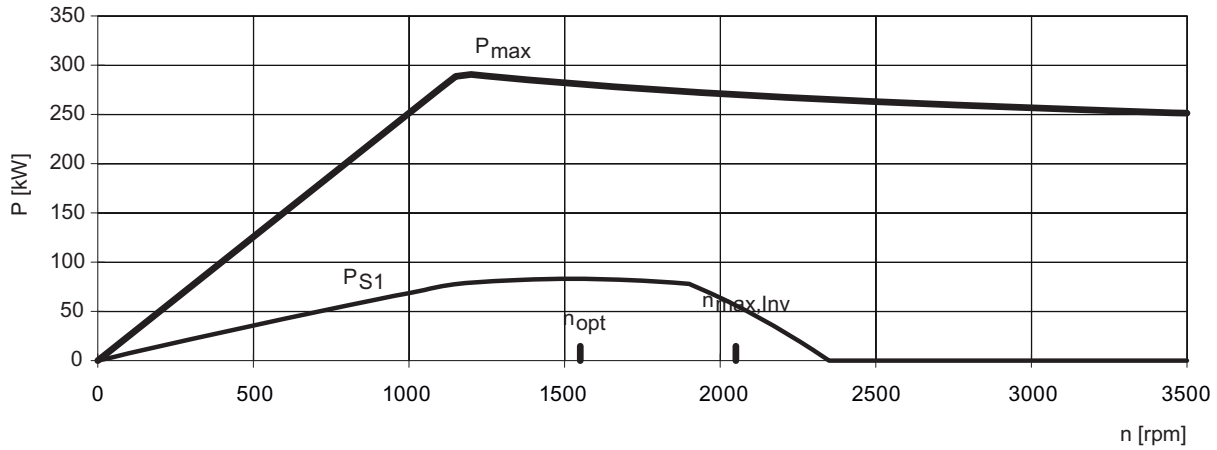



Tabella 4- 712 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-2□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 78 | 648 | 170 | 83 | 1550 | 3500 | 3100 | 2050 | 2400 | 640 | 708 | 183 |
| 1000 | 68 | 649 | 170 | | | | | | | | | |



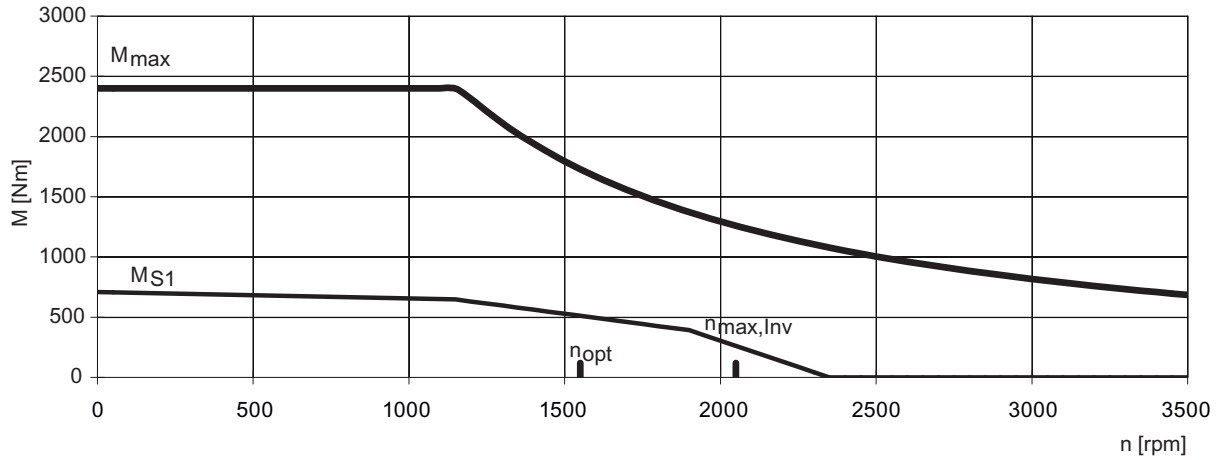
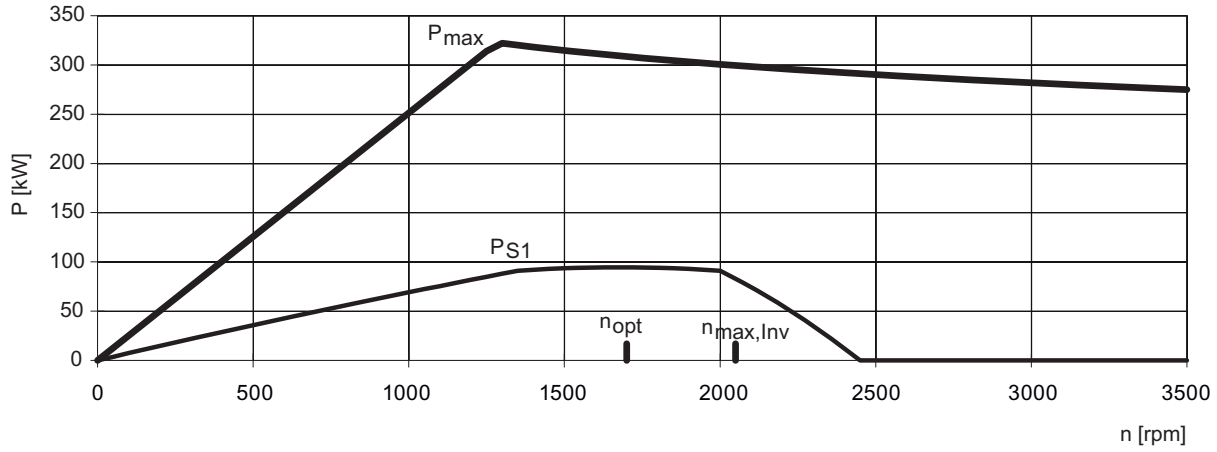



Tabella 4- 713 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-2□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 91 | 643 | 168 | 94 | 1700 | 3500 | 3100 | 2050 | 2400 | 640 | 708 | 183 |



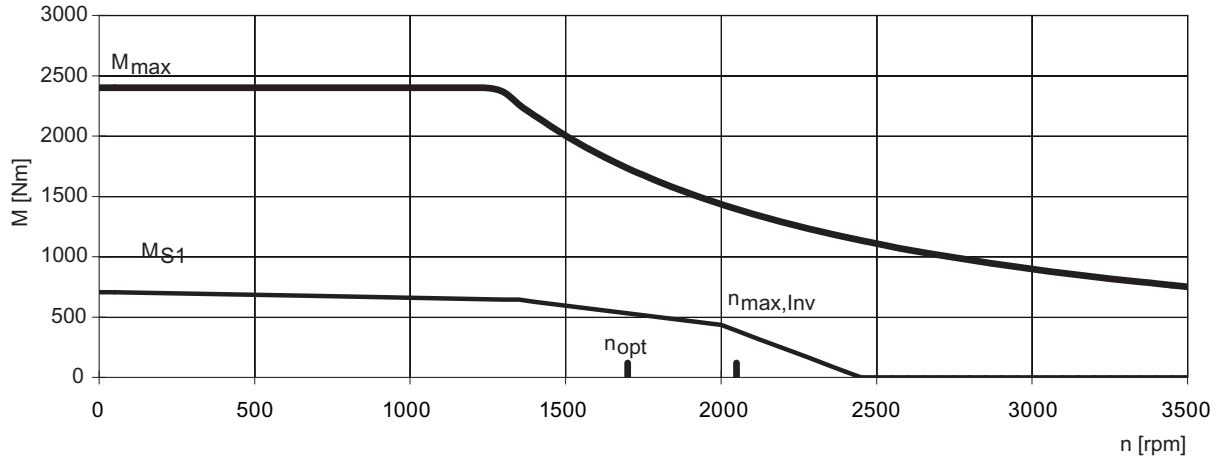



Tabella 4- 714 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-2□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 101 | 643 | 235 | 105 | 1850 | 3500 | 3100 | 2900 | 2400 | 900 | 708 | 256 |

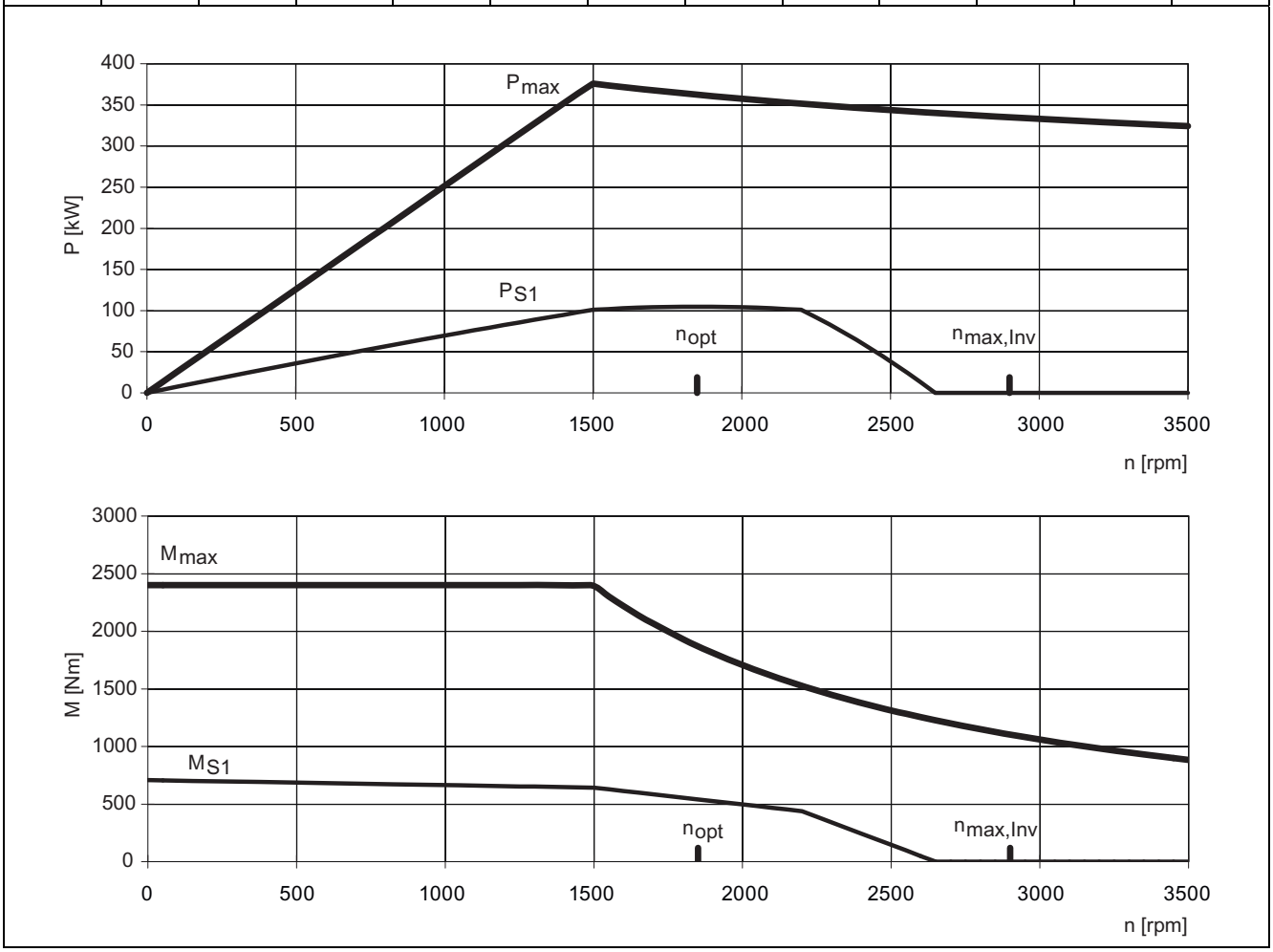
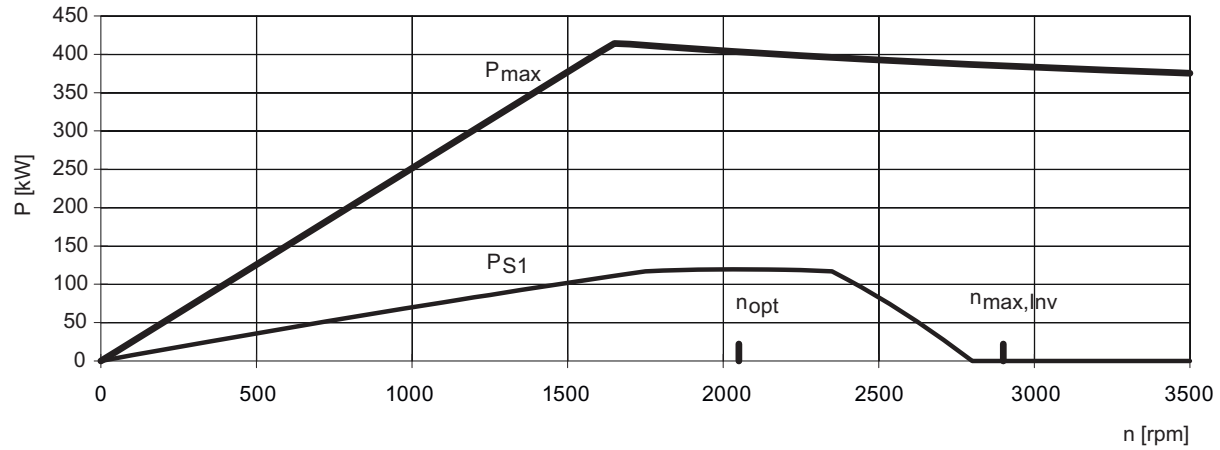


Tabella 4- 715 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-2□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 117 | 638 | 235 | 120 | 2050 | 3500 | 3100 | 2900 | 2400 | 900 | 708 | 256 |
| 1500 | 101 | 643 | 235 | | | | | | | | | |



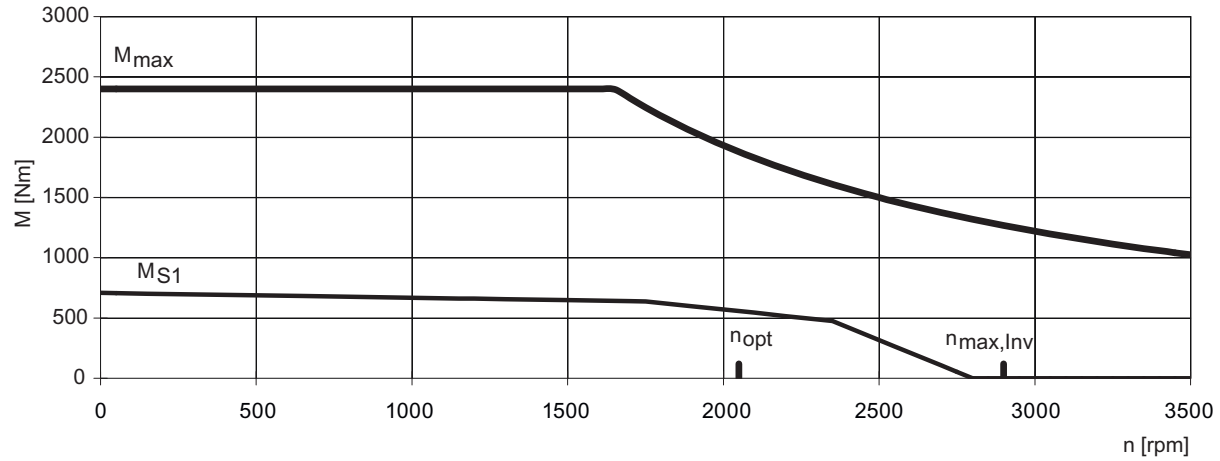



Tabella 4- 716 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-2□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 118 | 563 | 210 | 119 | 2250 | 3500 | 3100 | 2900 | 2400 | 900 | 708 | 256 |

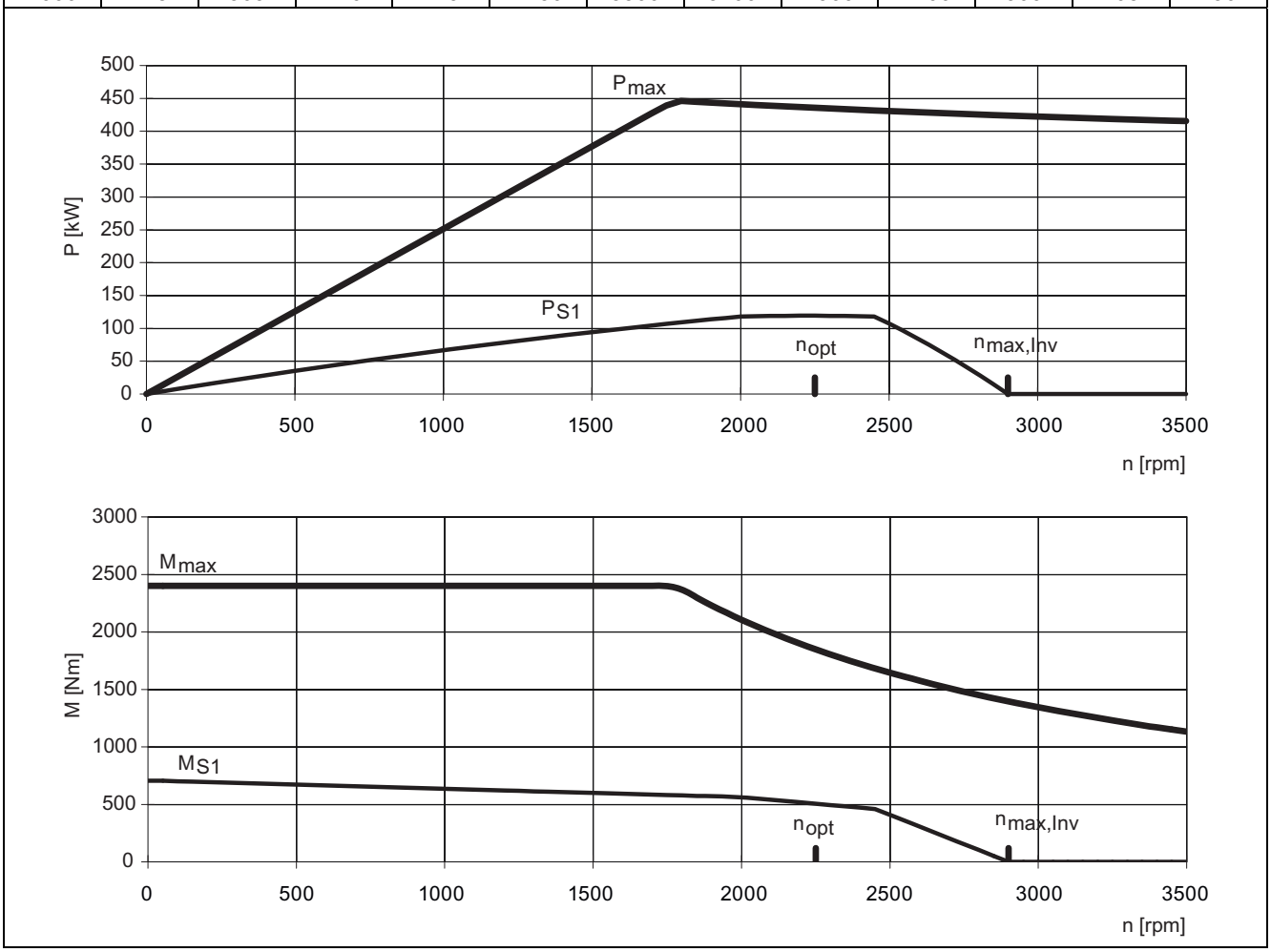
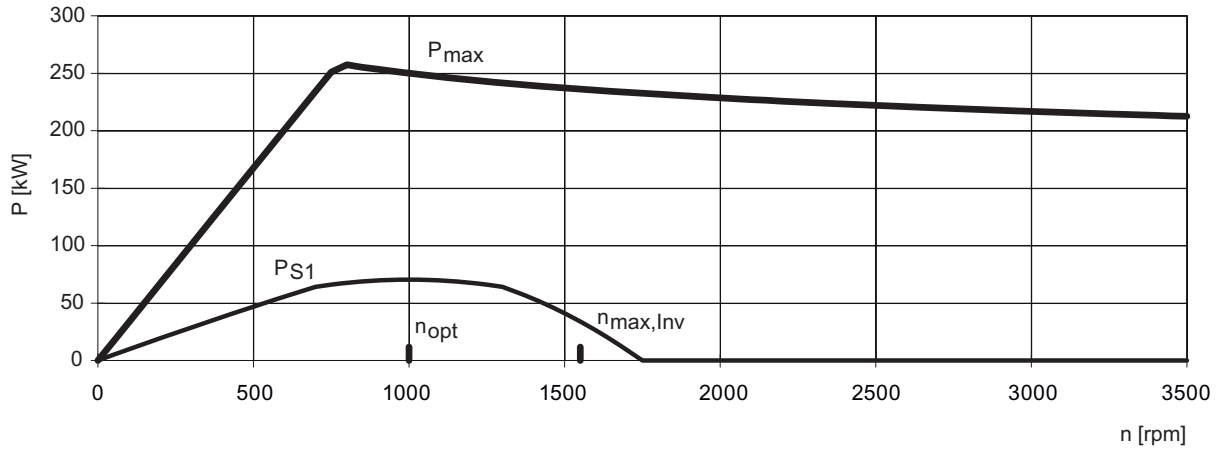


Tabella 4- 717 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-2□C□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 64 | 873 | 170 | 70 | 1000 | 3500 | 3100 | 1550 | 3200 | 640 | 944 | 183 |



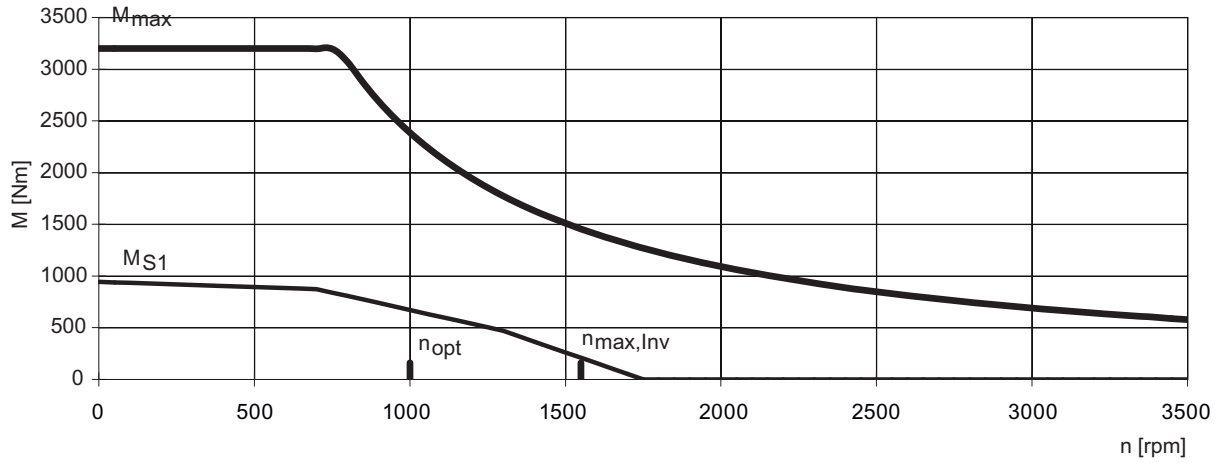
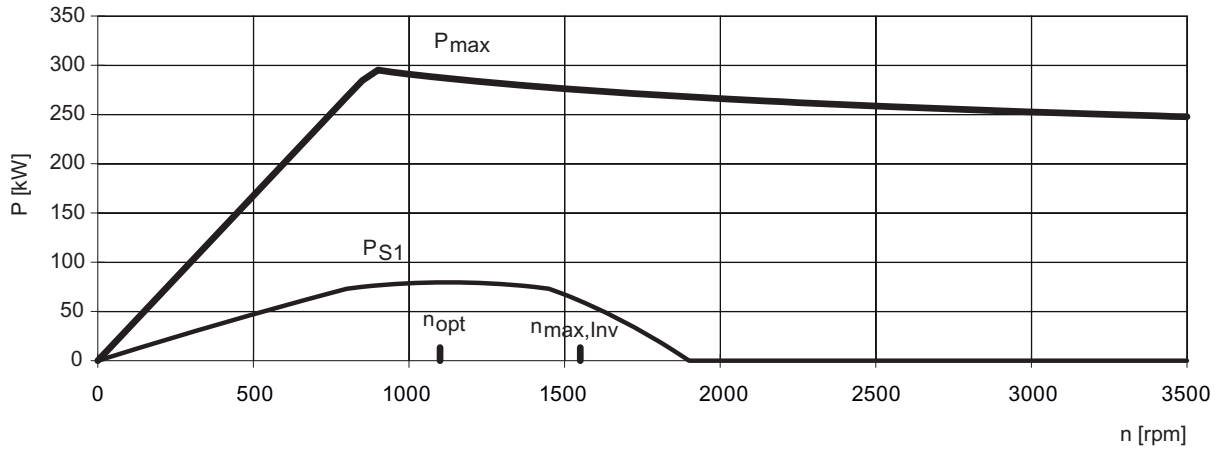



Tabella 4- 718 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-2□C□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 73 | 872 | 170 | 80 | 1100 | 3500 | 3100 | 1550 | 3200 | 640 | 944 | 183 |
| 700 | 64 | 873 | 170 | | | | | | | | | |



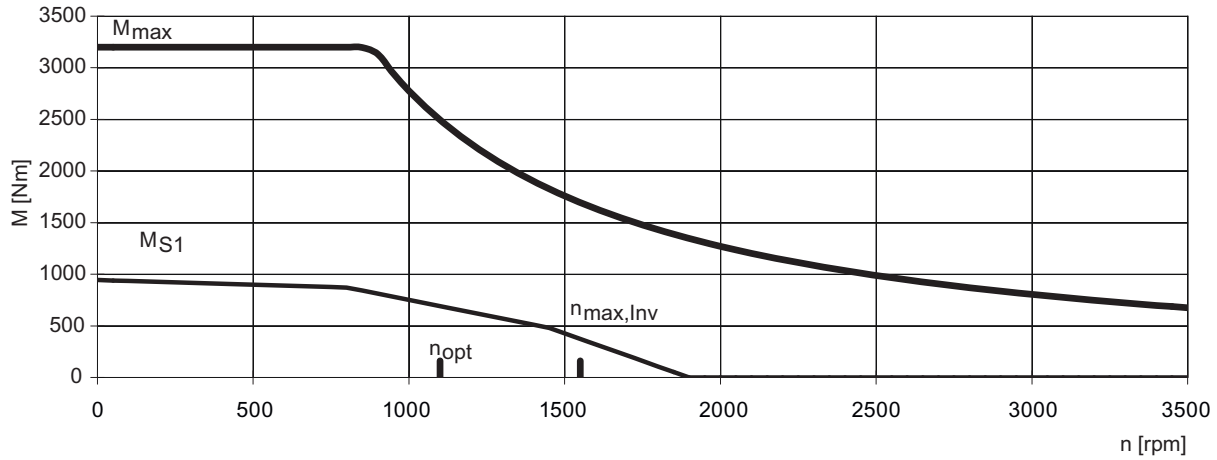
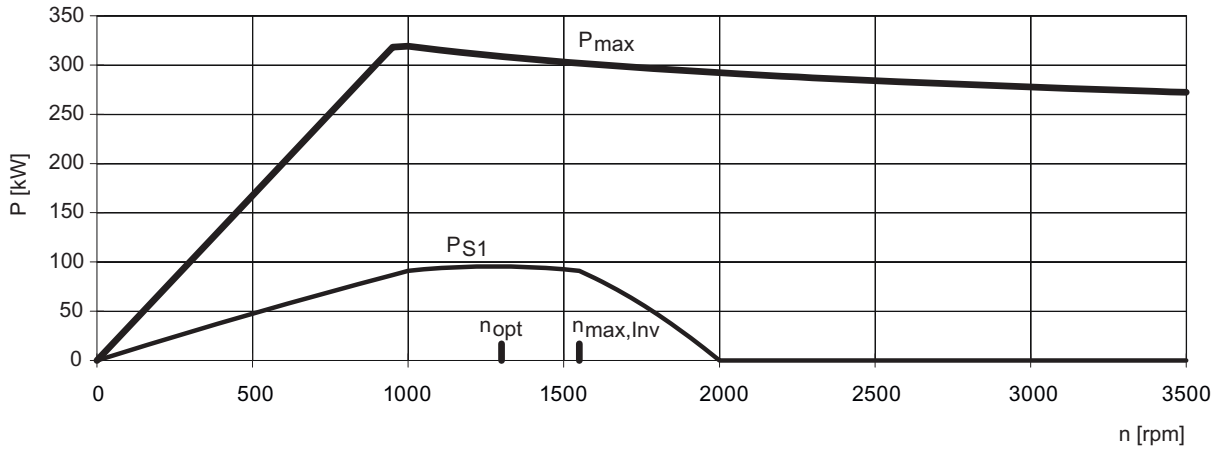



Tabella 4- 719 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-2□C□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 91 | 869 | 170 | 95 | 1300 | 3500 | 3100 | 1550 | 3200 | 640 | 944 | 183 |



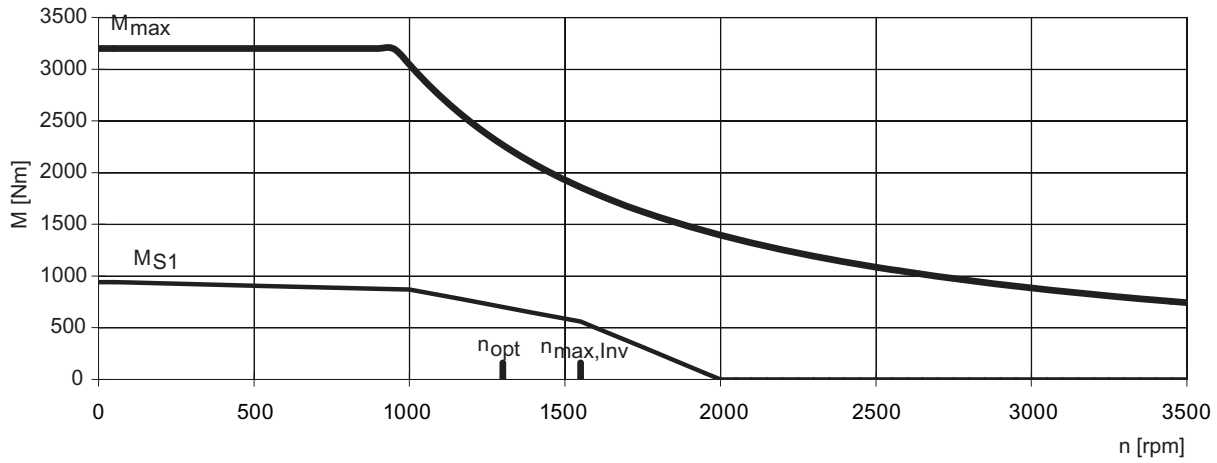



Tabella 4- 720 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-2□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 91 | 869 | 215 | 97 | 1350 | 3500 | 3100 | 1950 | 3200 | 820 | 944 | 233 |

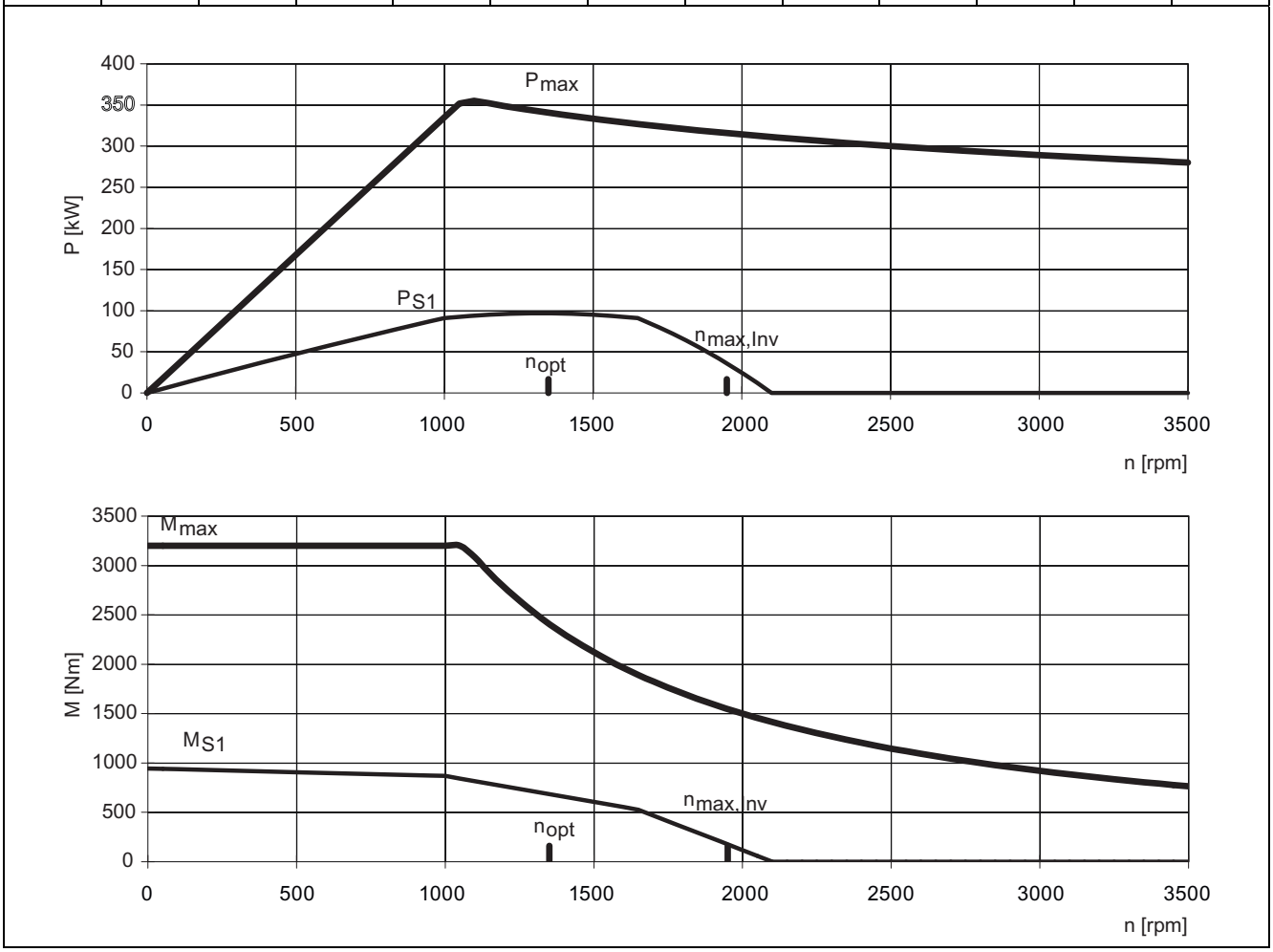
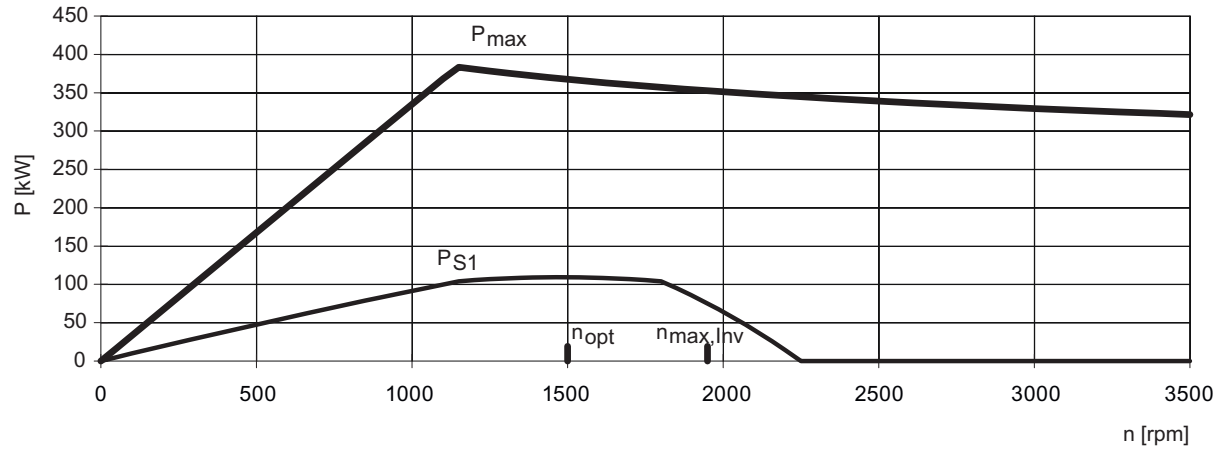


Tabella 4- 721 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-2□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 104 | 863 | 215 | 109 | 1500 | 3500 | 3100 | 1950 | 3200 | 820 | 944 | 233 |
| 1000 | 91 | 869 | 215 | | | | | | | | | |



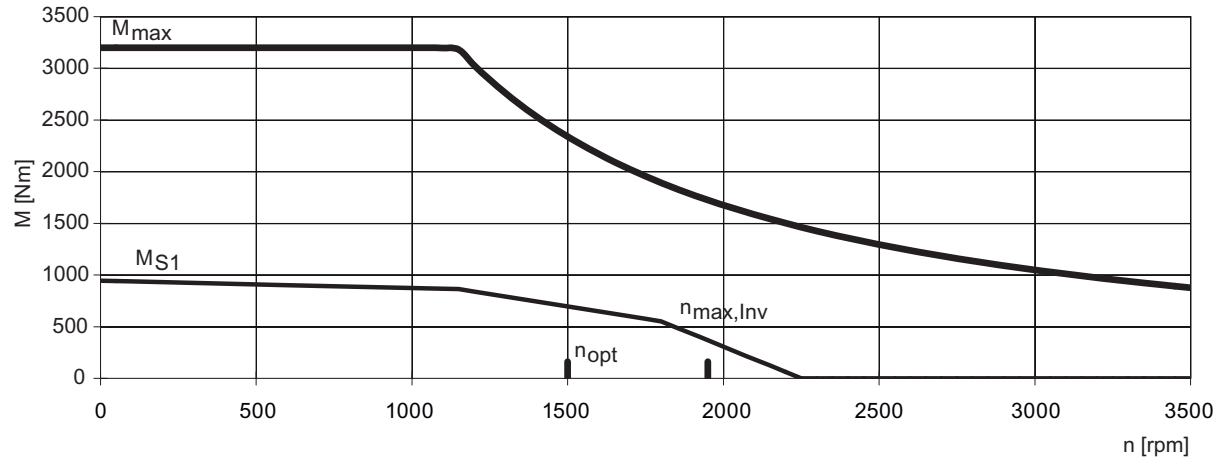
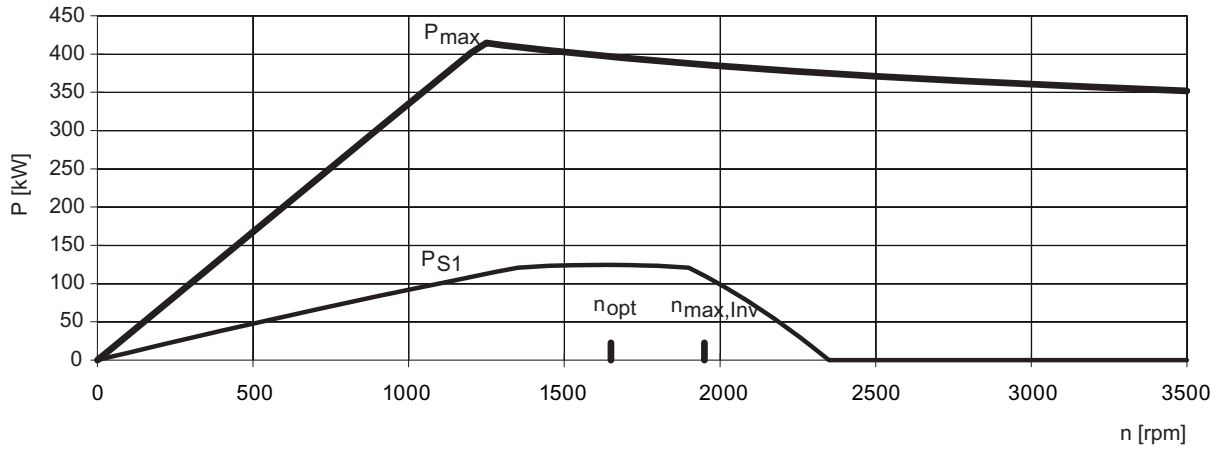



Tabella 4- 722 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-2□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 121 | 855 | 215 | 124 | 1650 | 3500 | 3100 | 1950 | 3200 | 820 | 944 | 233 |



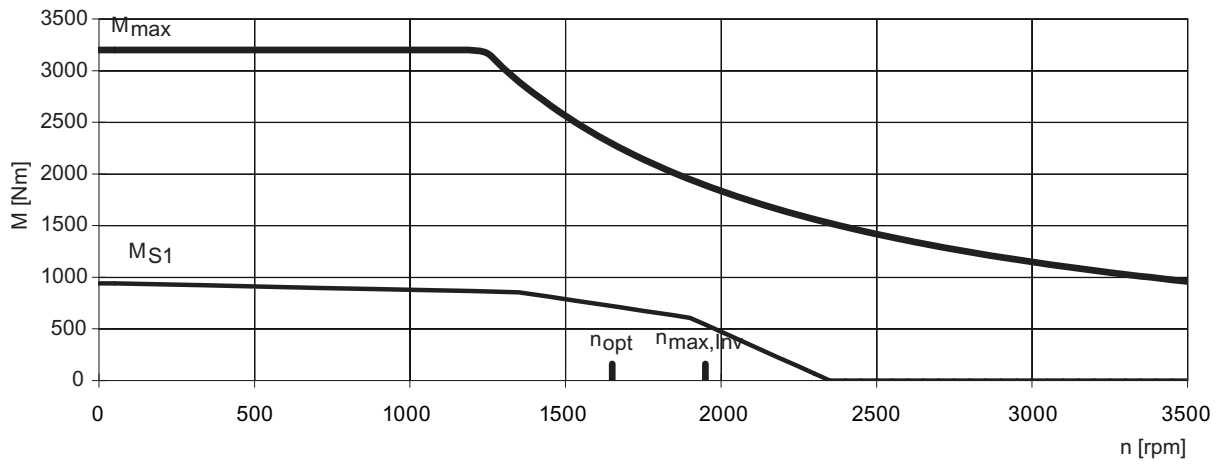
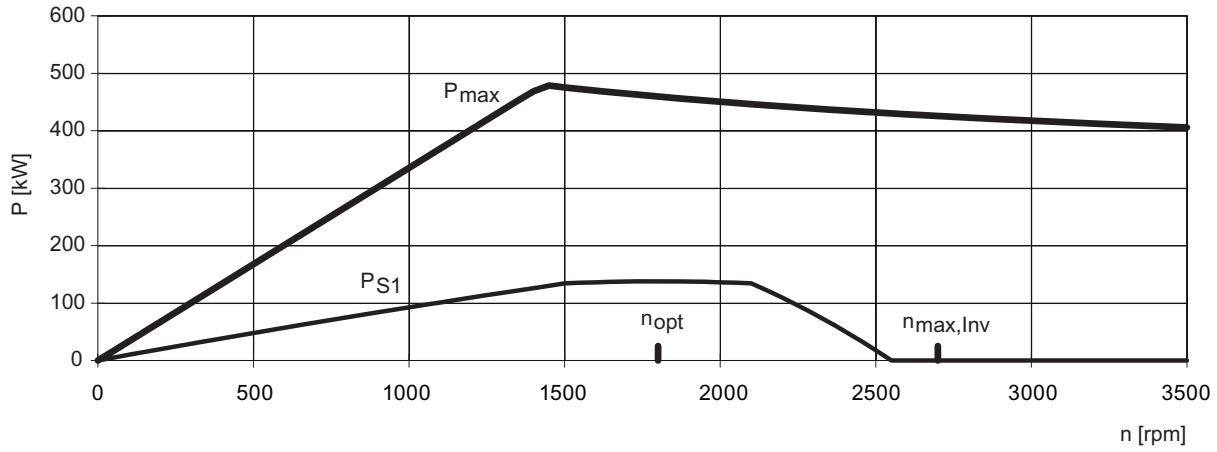



Tabella 4- 723 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-2□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 134 | 853 | 295 | 138 | 1800 | 3500 | 3100 | 2700 | 3200 | 1120 | 944 | 320 |



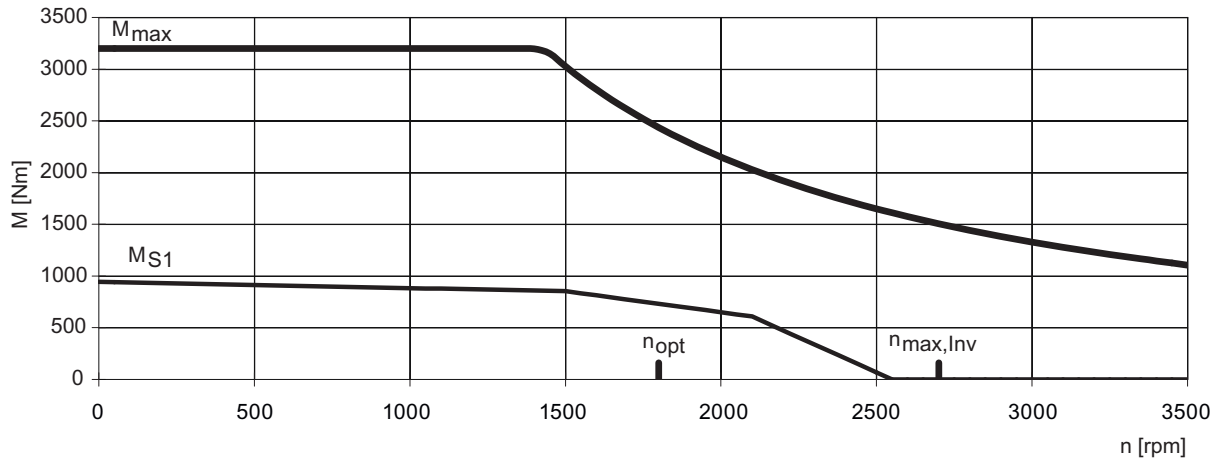
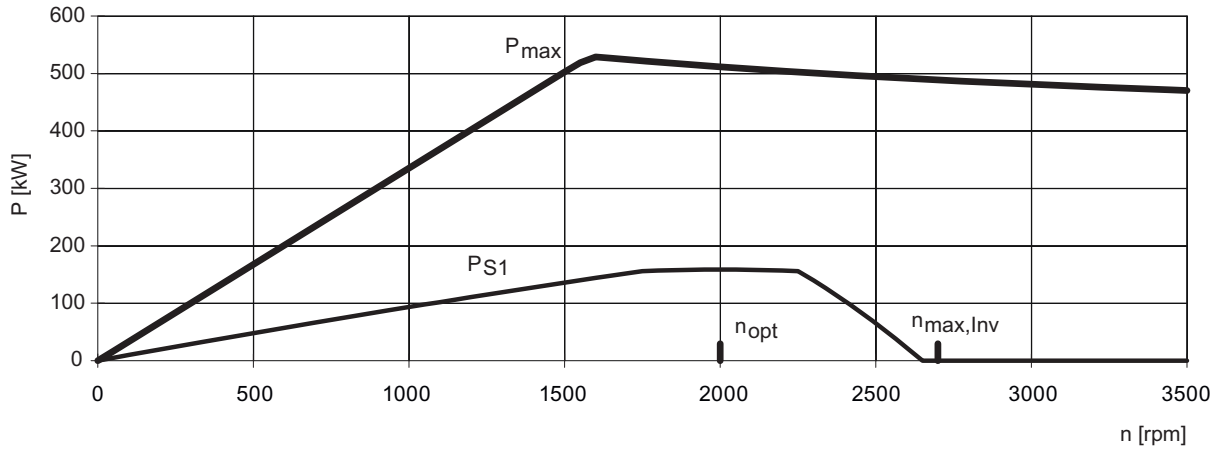



Tabella 4- 724 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-2□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 156 | 851 | 295 | 158 | 2000 | 3500 | 3100 | 2700 | 3200 | 1120 | 944 | 320 |
| 1500 | 134 | 853 | 295 | | | | | | | | | |



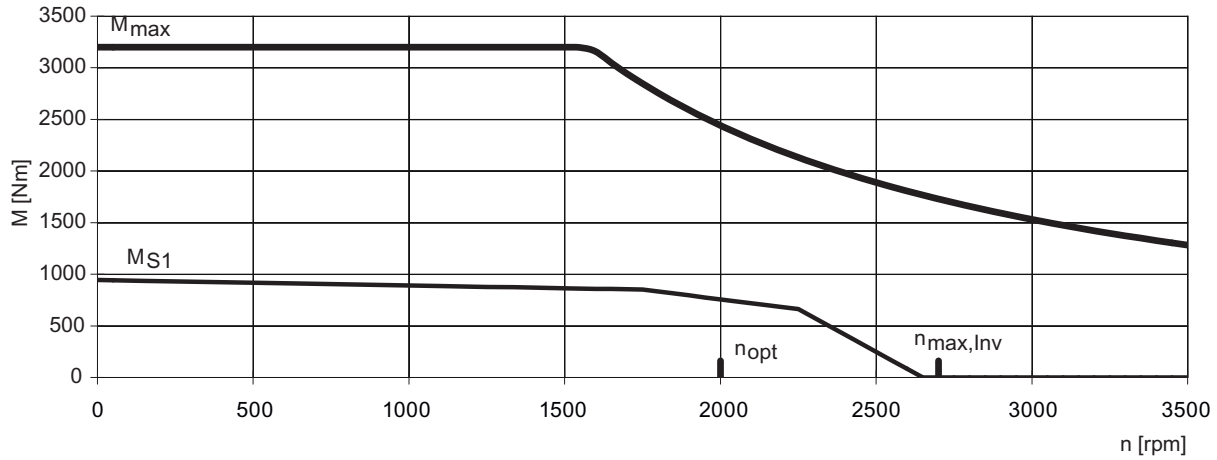
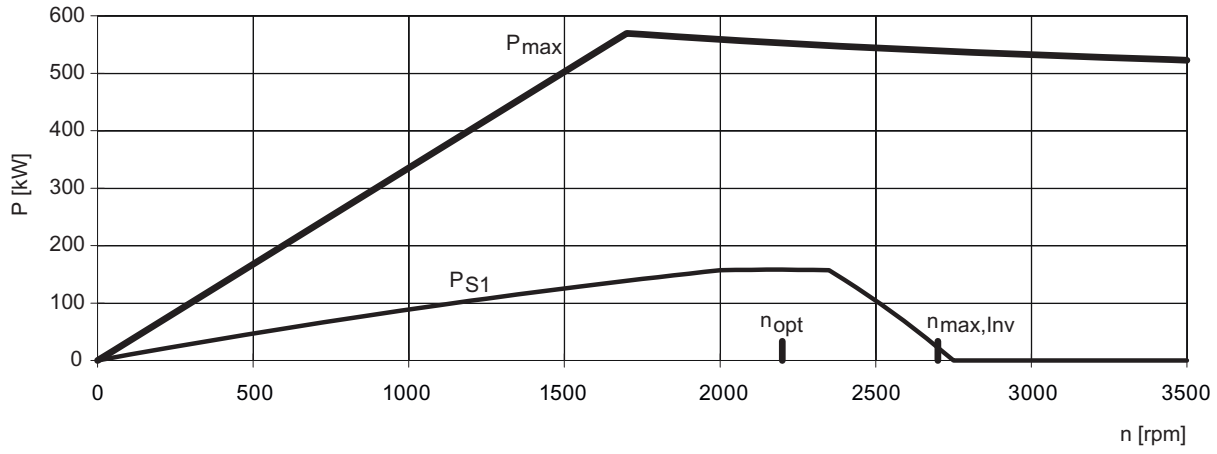



Tabella 4- 725 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-2□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 157 | 750 | 260 | 158 | 2200 | 3500 | 3100 | 2700 | 3200 | 1120 | 944 | 320 |



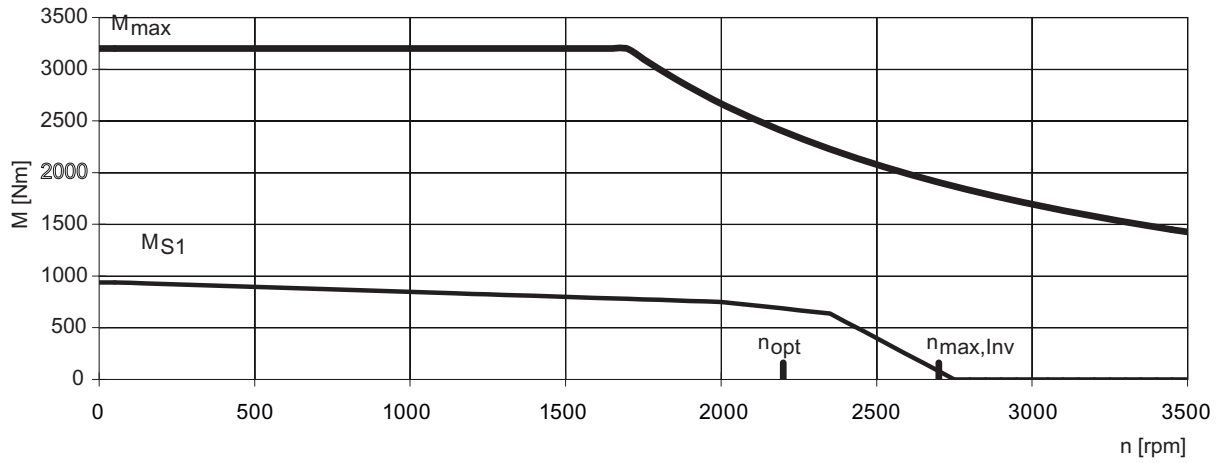
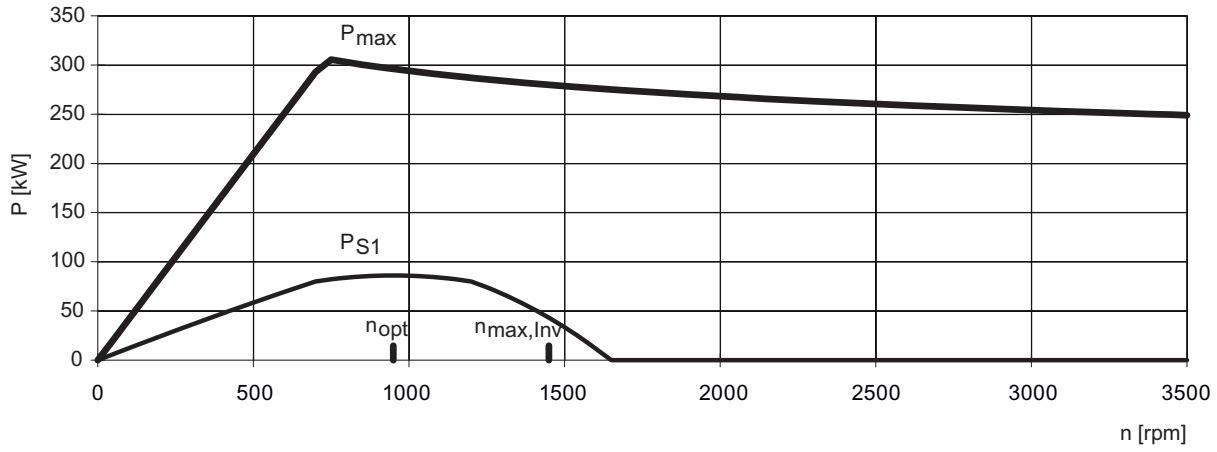



Tabella 4- 726 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-2□C□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 80 | 1092 | 200 | 86 | 950 | 3500 | 3100 | 1450 | 4000 | 750 | 1180 | 213 |



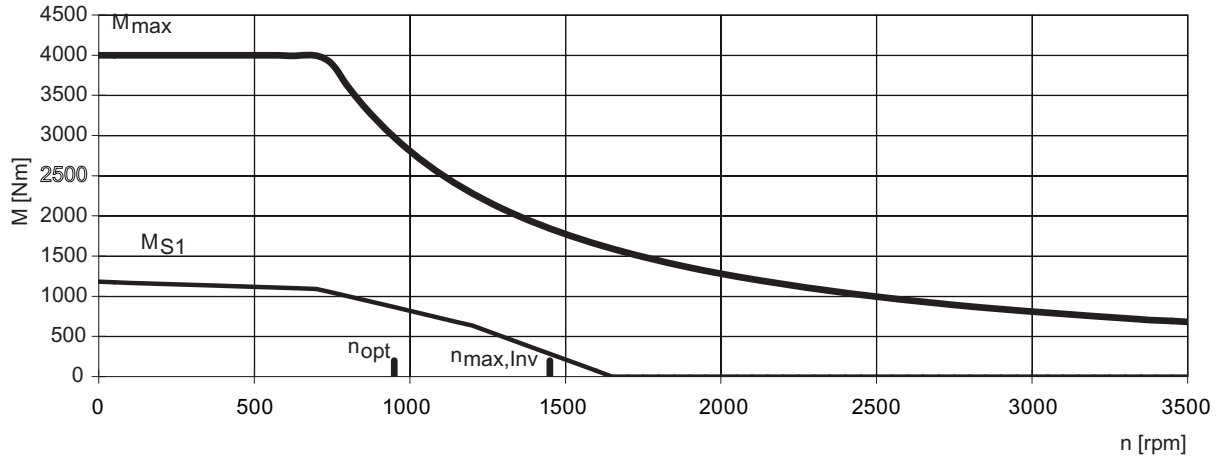
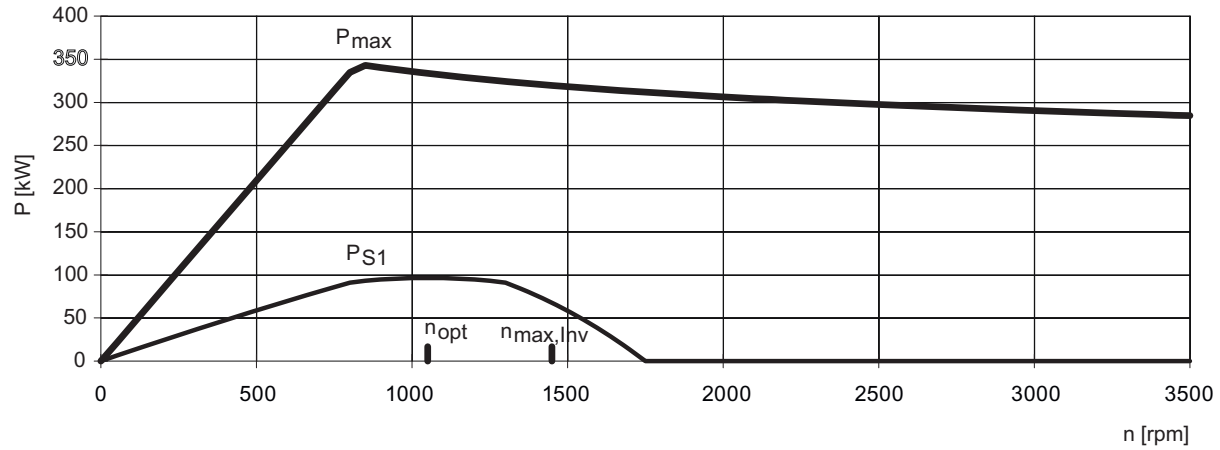



Tabella 4- 727 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-2□C□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 91 | 1086 | 198 | 96 | 1050 | 3500 | 3100 | 1450 | 4000 | 750 | 1180 | 213 |
| 700 | 80 | 1092 | 200 | | | | | | | | | |



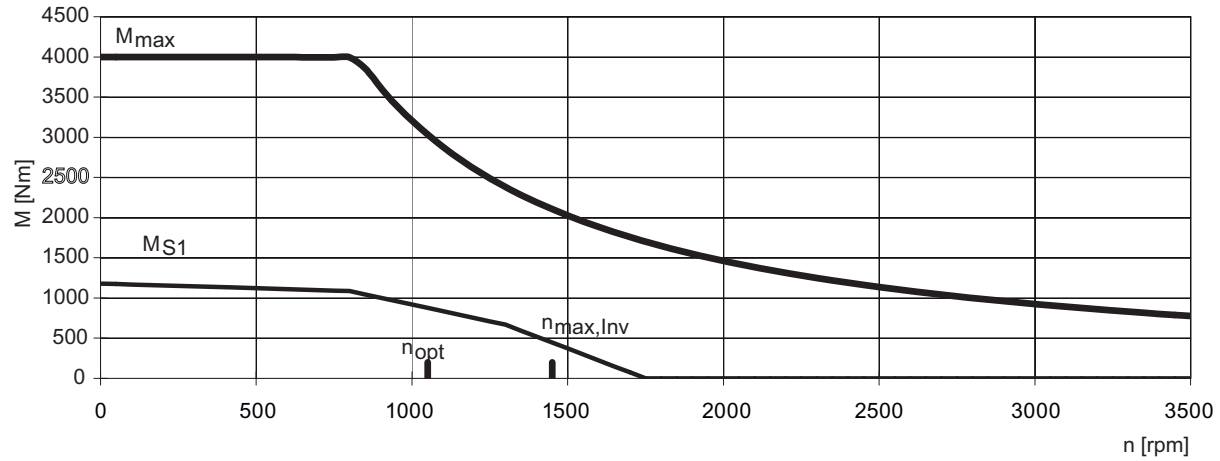



Tabella 4- 728 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-2□C□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 113 | 1079 | 198 | 116 | 1200 | 3500 | 3100 | 1450 | 4000 | 750 | 1180 | 213 |

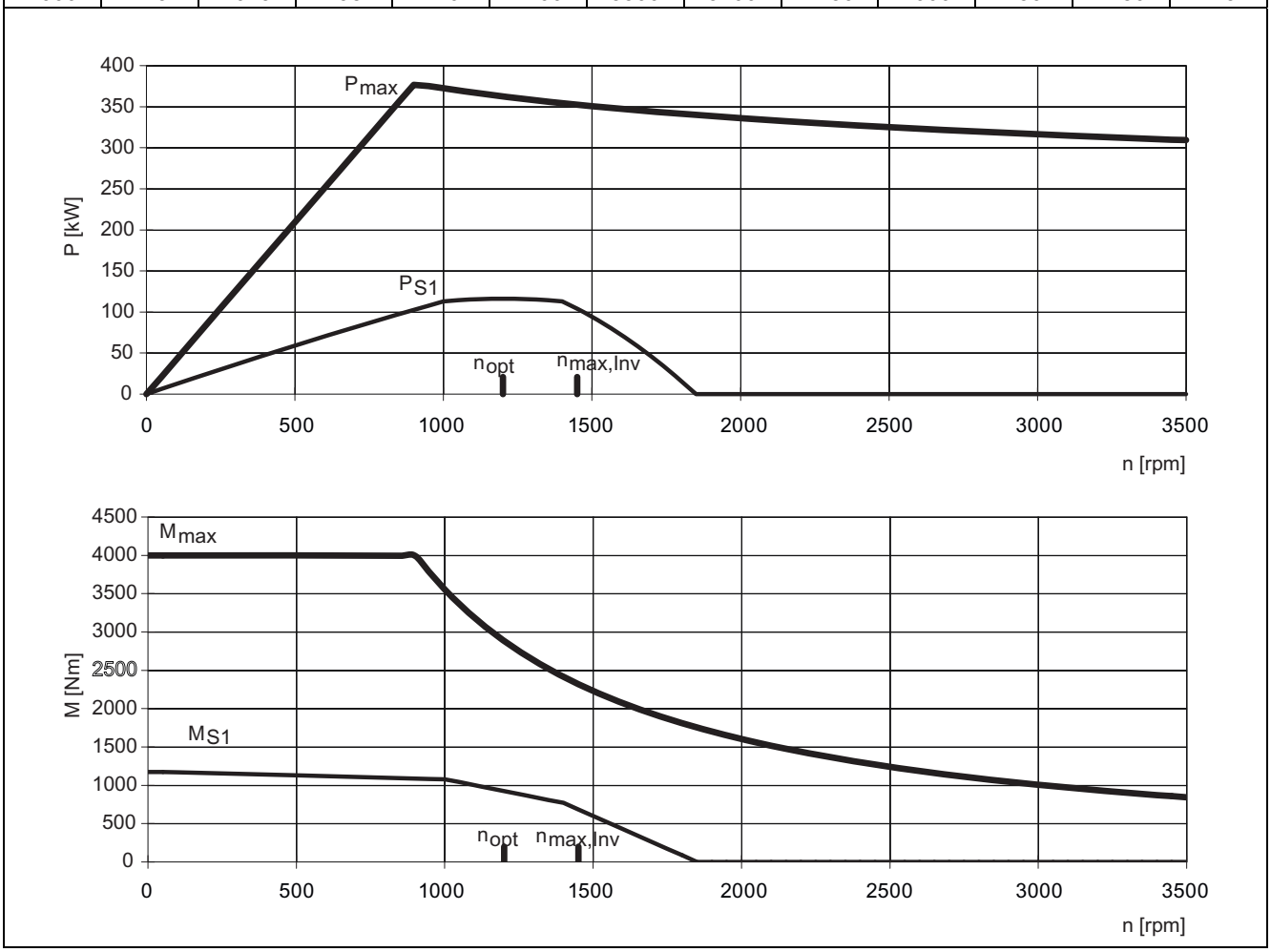
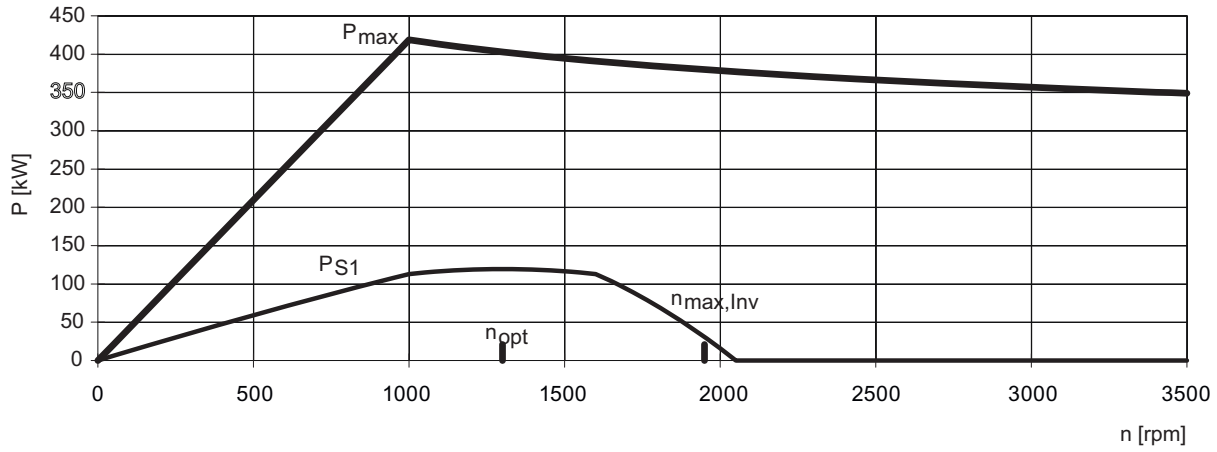


Tabella 4- 729 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-2□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 113 | 1079 | 265 | 119 | 1300 | 3500 | 3100 | 1950 | 4000 | 1000 | 1180 | 284 |



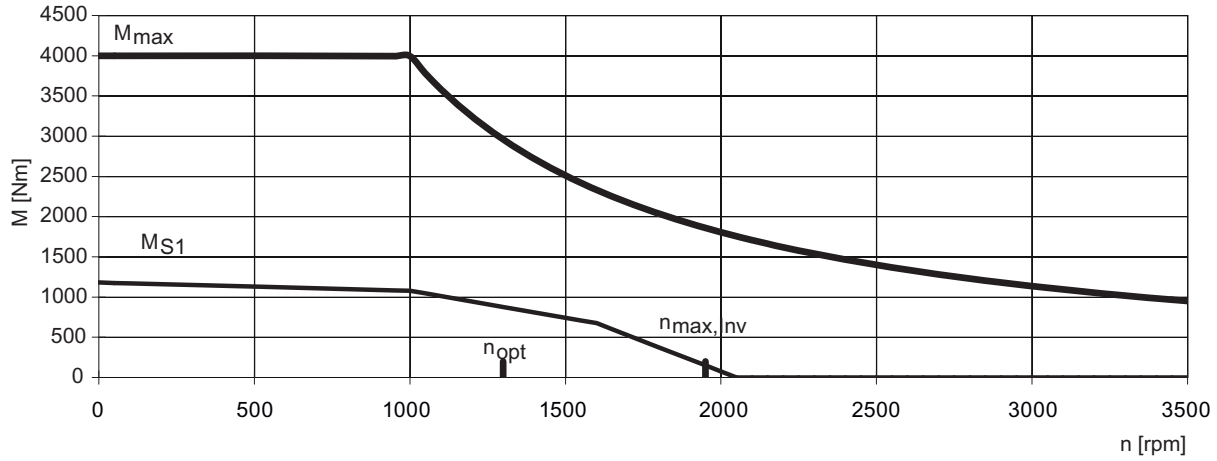
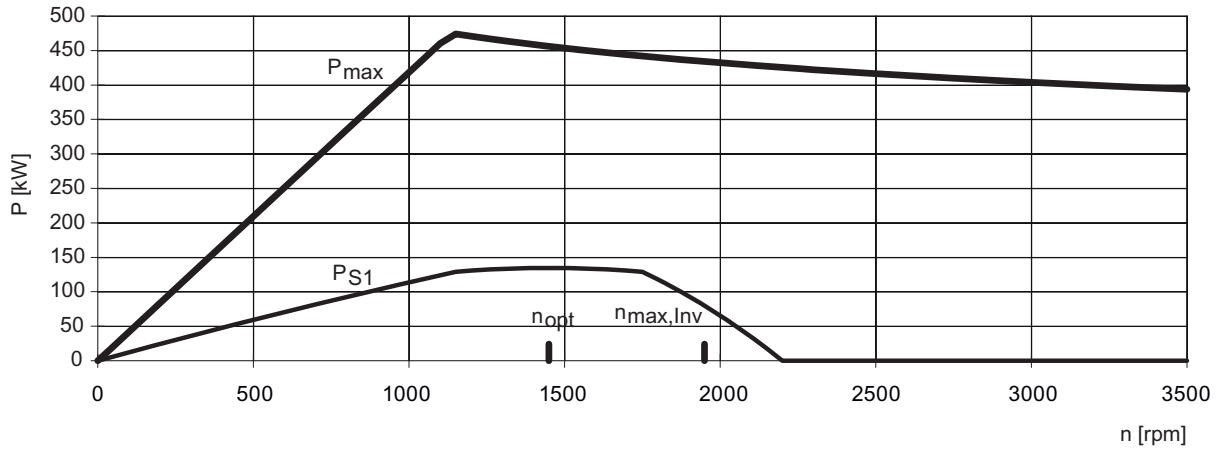



Tabella 4- 730 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-2□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 129 | 1071 | 260 | 135 | 1450 | 3500 | 3100 | 1950 | 4000 | 1000 | 1180 | 284 |
| 1000 | 113 | 1079 | 265 | | | | | | | | | |



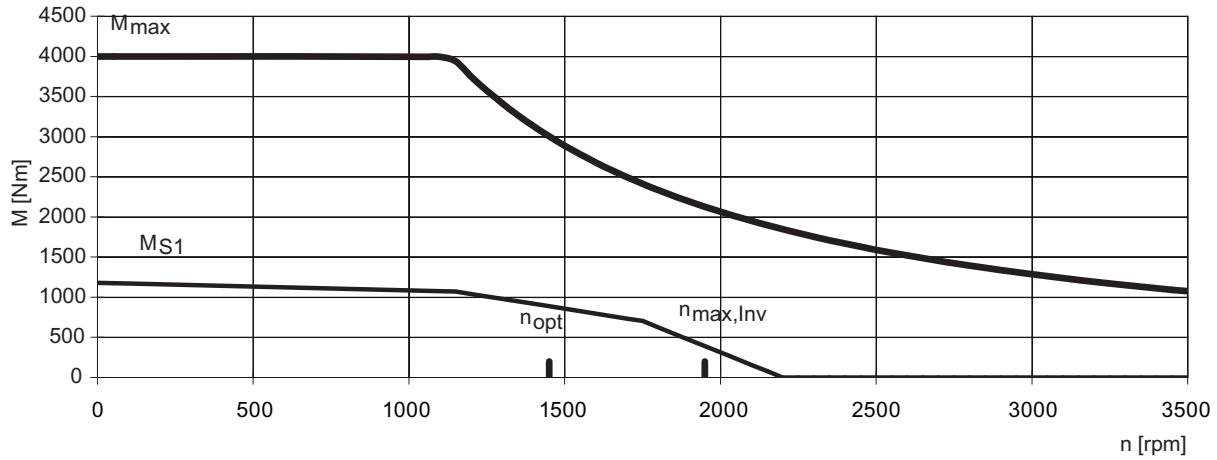
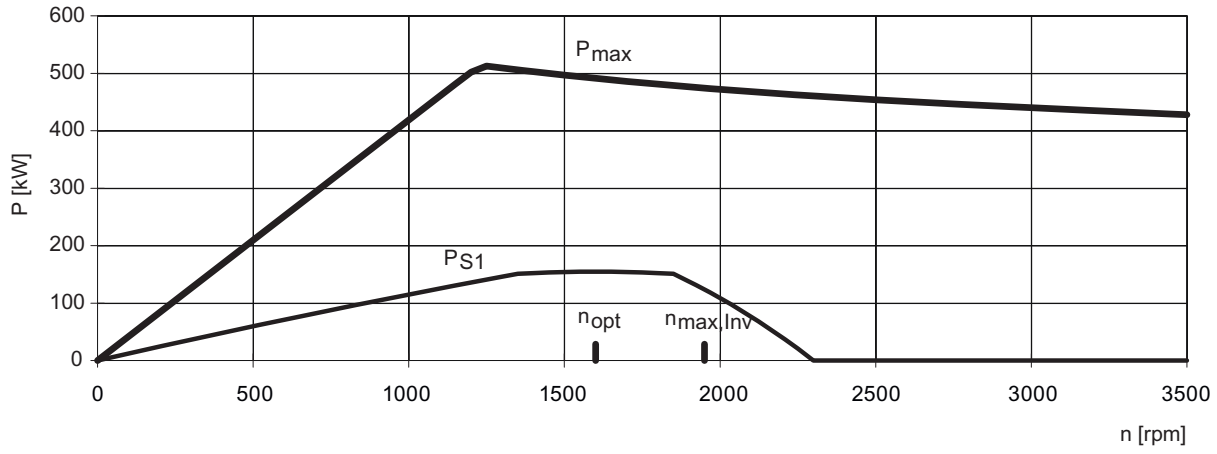



Tabella 4- 731 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-2□D□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 151 | 1068 | 260 | 155 | 1600 | 3500 | 3100 | 1950 | 4000 | 1000 | 1180 | 284 |



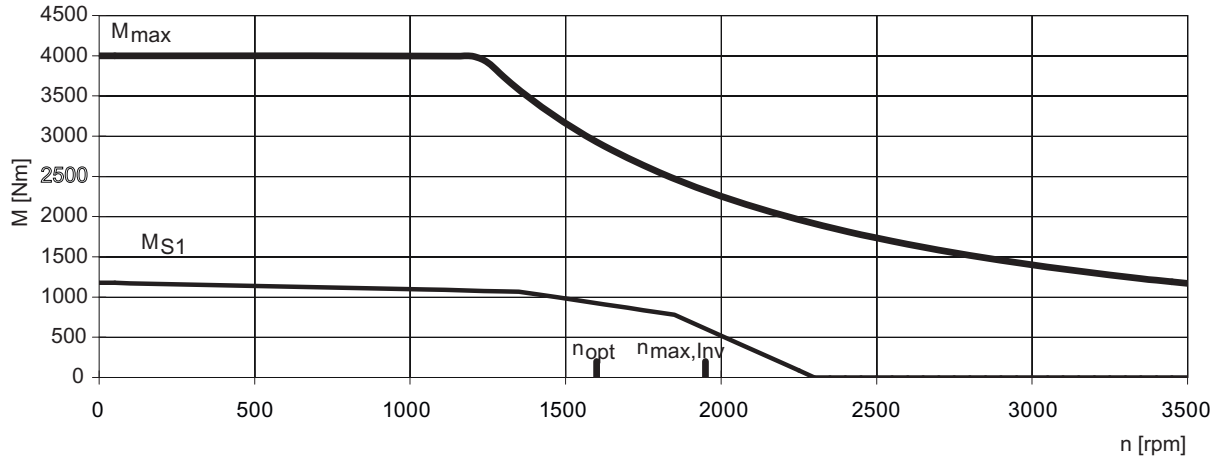



Tabella 4- 732 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-2□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 168 | 1070 | 395 | 174 | 1850 | 3500 | 3100 | 2900 | 4000 | 1500 | 1180 | 427 |

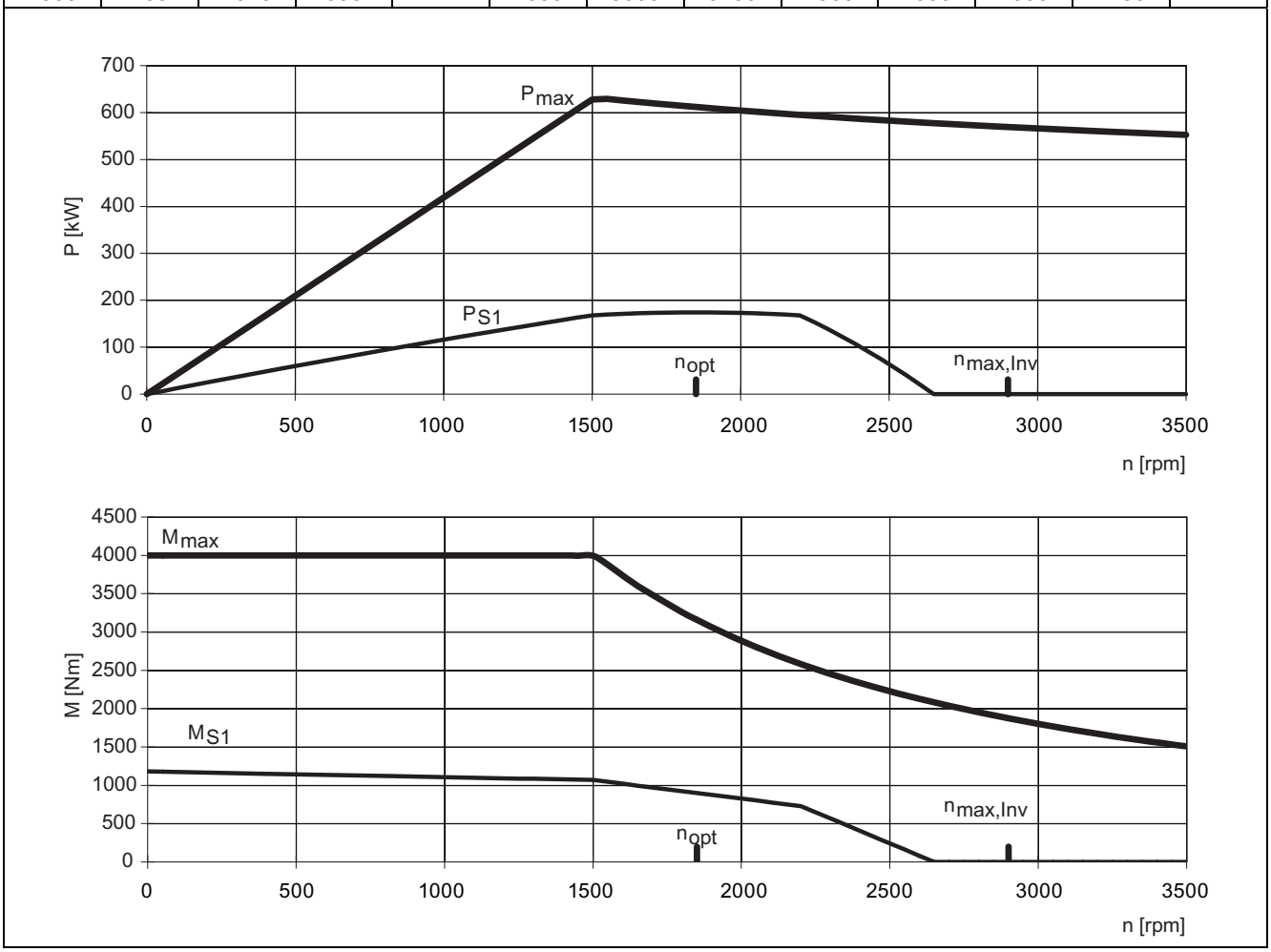
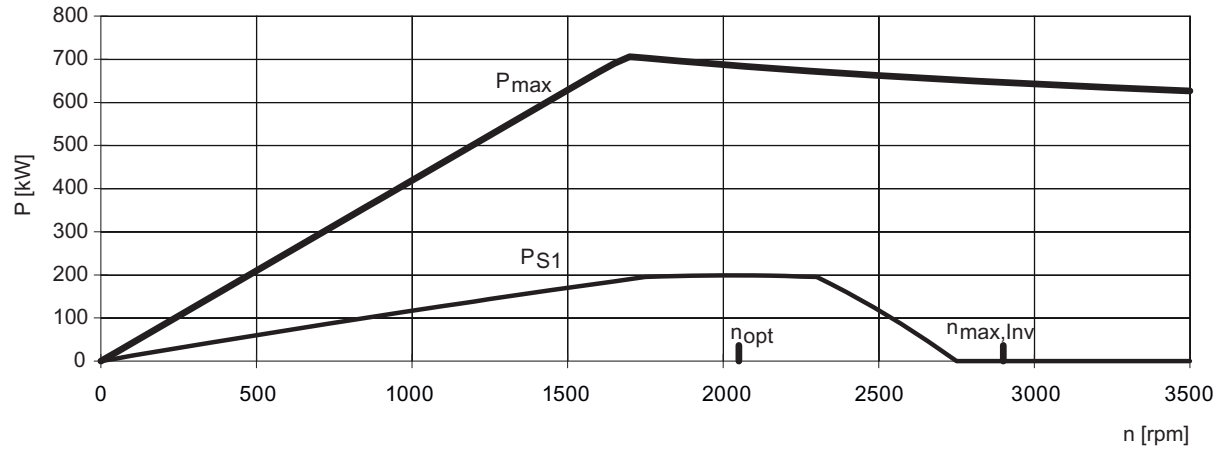


Tabella 4- 733 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-2□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 195 | 1064 | 390 | 199 | 2050 | 3500 | 3100 | 2900 | 4000 | 1500 | 1180 | 427 |
| 1500 | 168 | 1070 | 395 | | | | | | | | | |



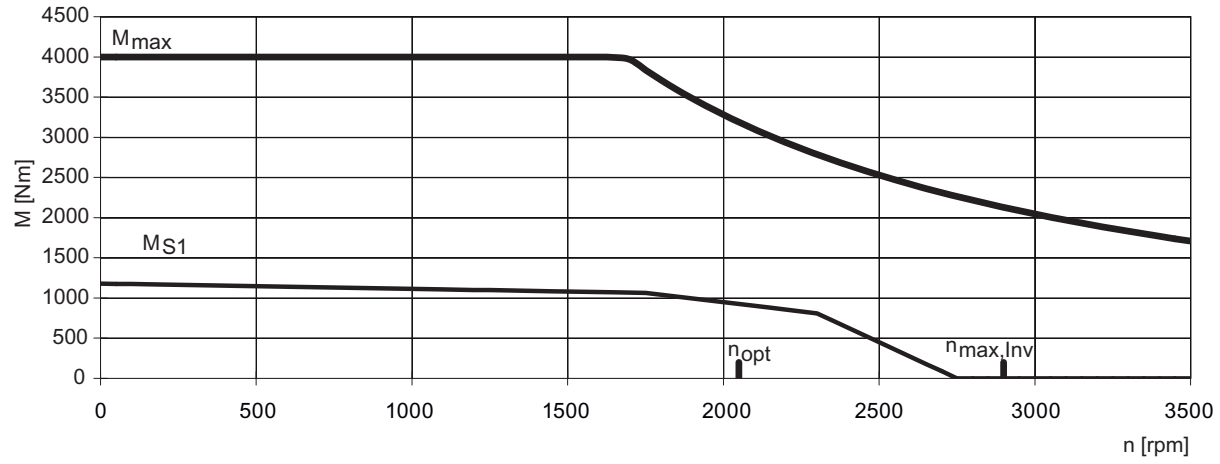
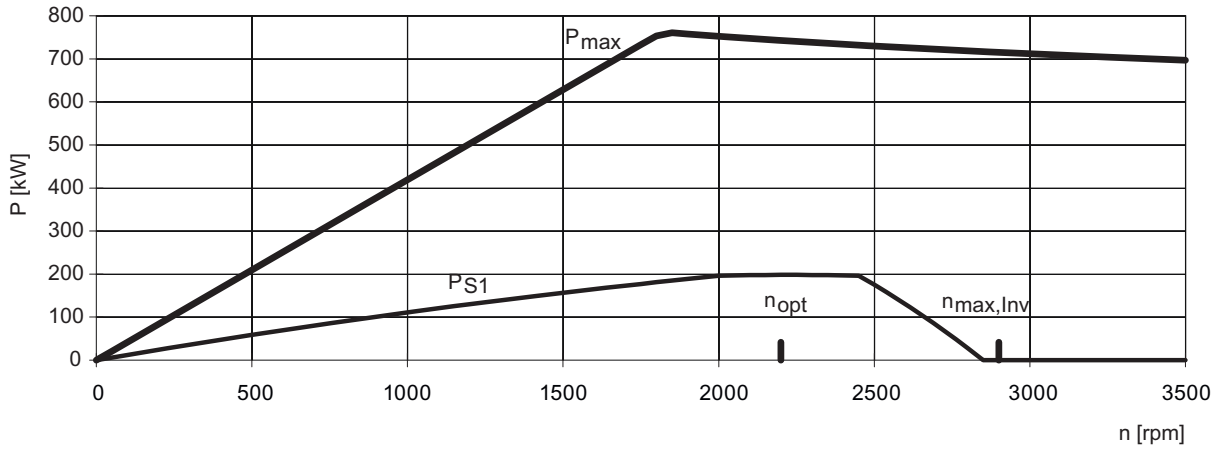
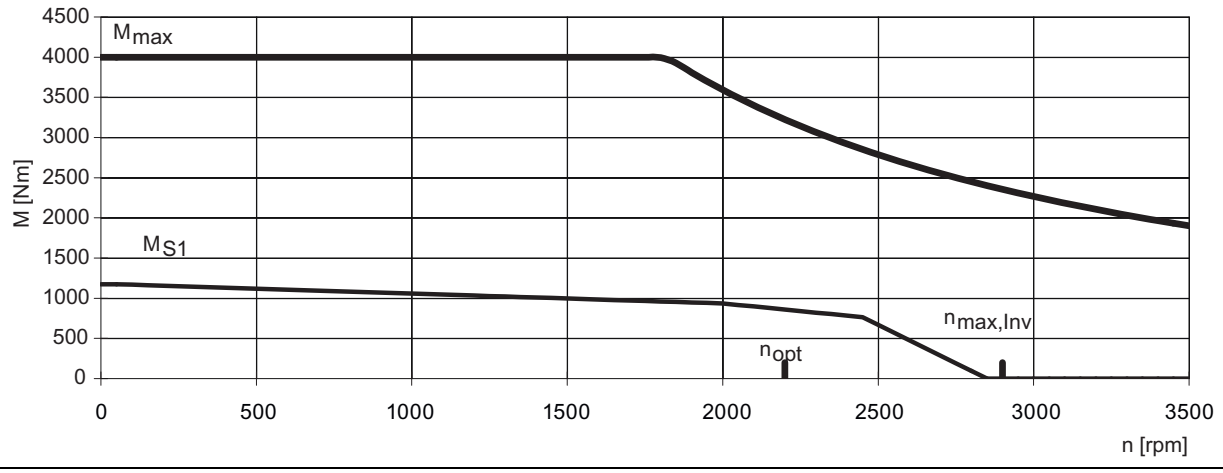



Tabella 4- 734 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-2□F□□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 196 | 936 | 345 | 198 | 2200 | 3500 | 3100 | 2900 | 4000 | 1500 | 1180 | 427 |



## 4.2.3 Curve caratteristiche raffreddamento ad acqua

### 4.2.3.1 Altezza dell'asse 132 - Raffreddamento ad acqua

Tabella 4- 735 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8131-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 17,6 | 112 | 40 | 23 | 2500 | 4500 | 4500 | 3150 | 220 | 90 | 115 | 41 |

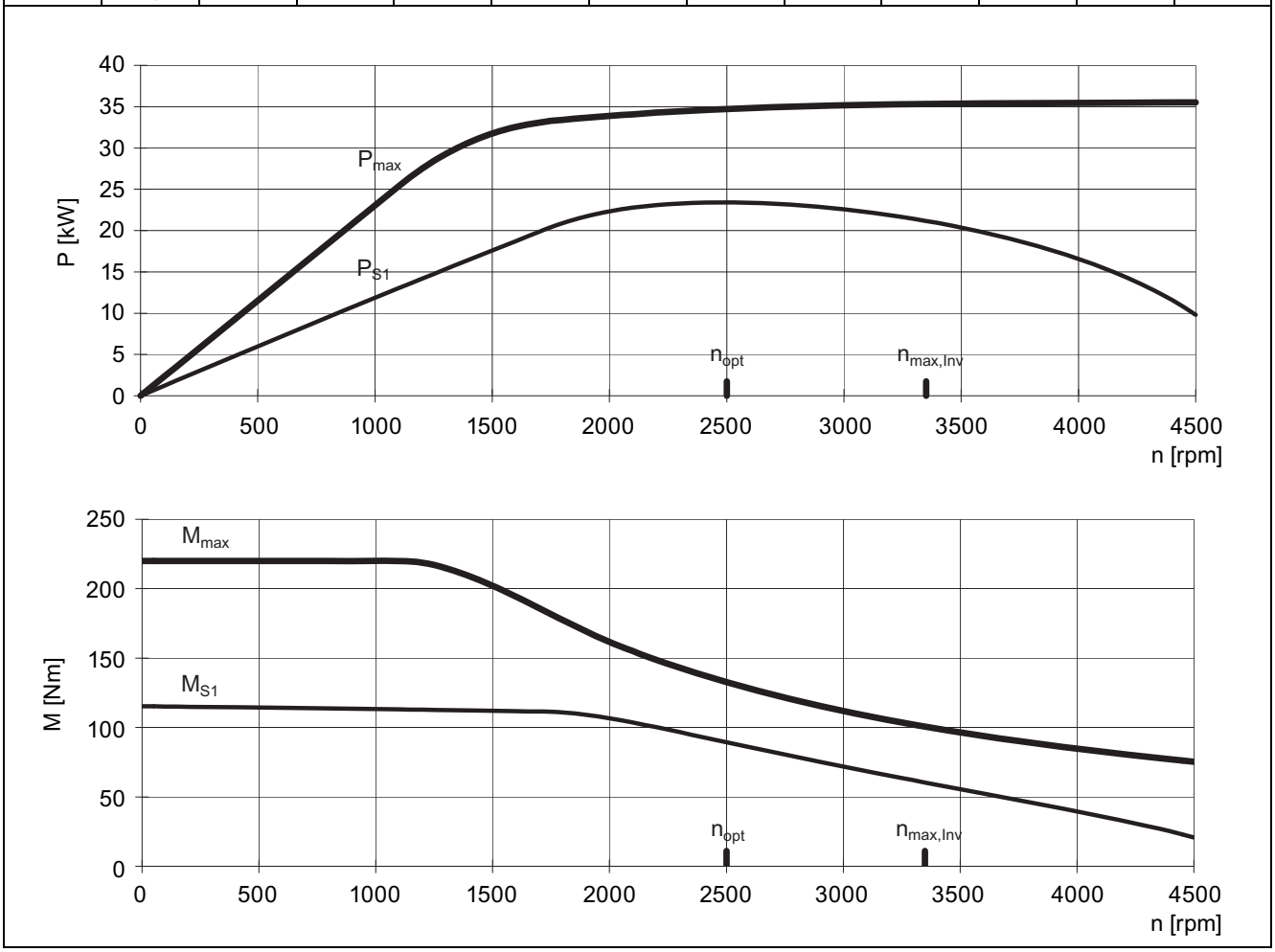
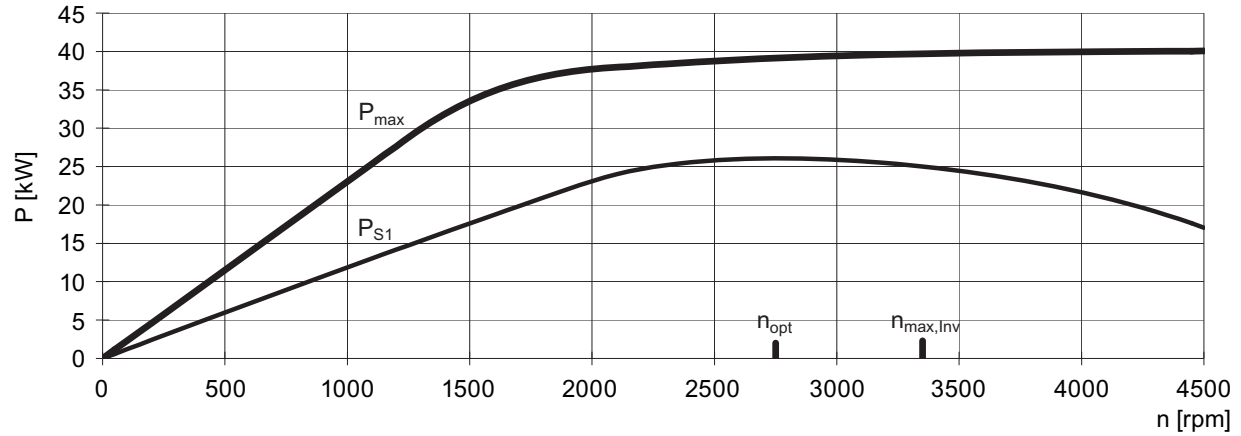


Tabella 4- 736 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8131-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 20,4 | 112 | 40 | 26 | 2750 | 4500 | 4500 | 3150 | 220 | 90 | 115 | 41 |
| 1500 | 17,6 | 112 | 40 | | | | | | | | | |



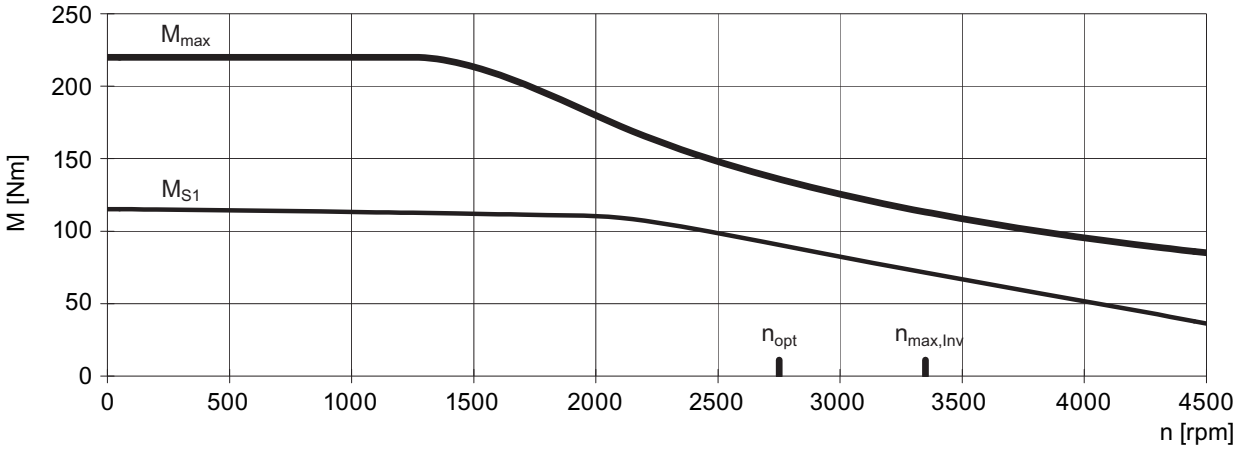
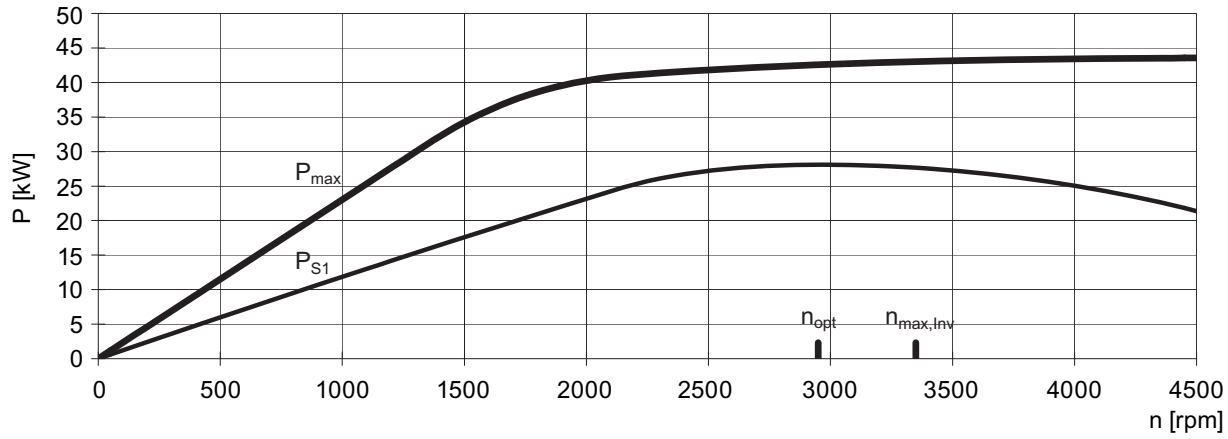



Tabella 4- 737 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8131-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 23,2 | 111 | 39 | 28 | 2950 | 4500 | 4500 | 3150 | 220 | 90 | 115 | 41 |



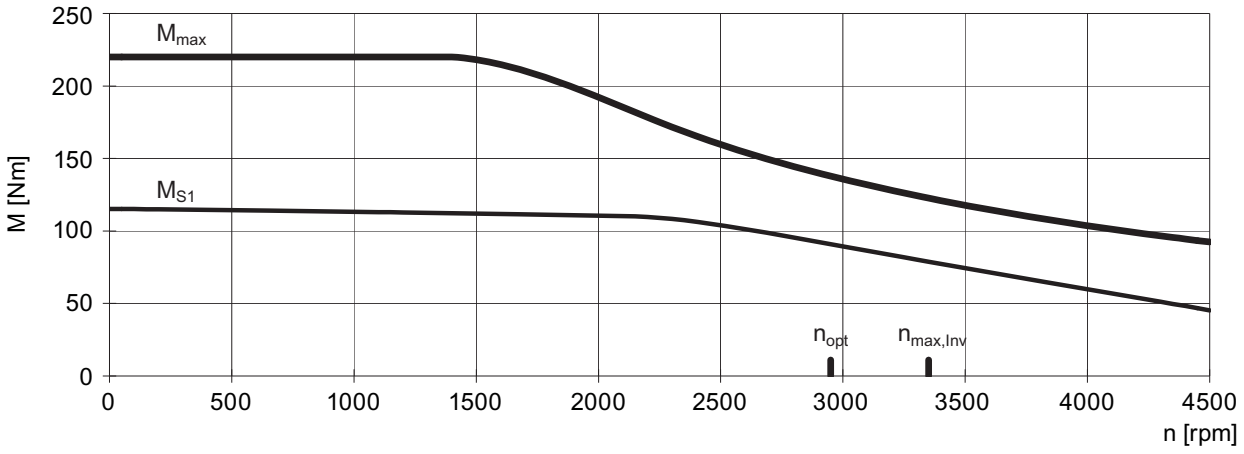



Tabella 4- 738 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8131-□□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 28,5 | 109 | 57 | 34 | 3550 | 4500 | 4500 | > 4500 | 220 | 133 | 115 | 60 |

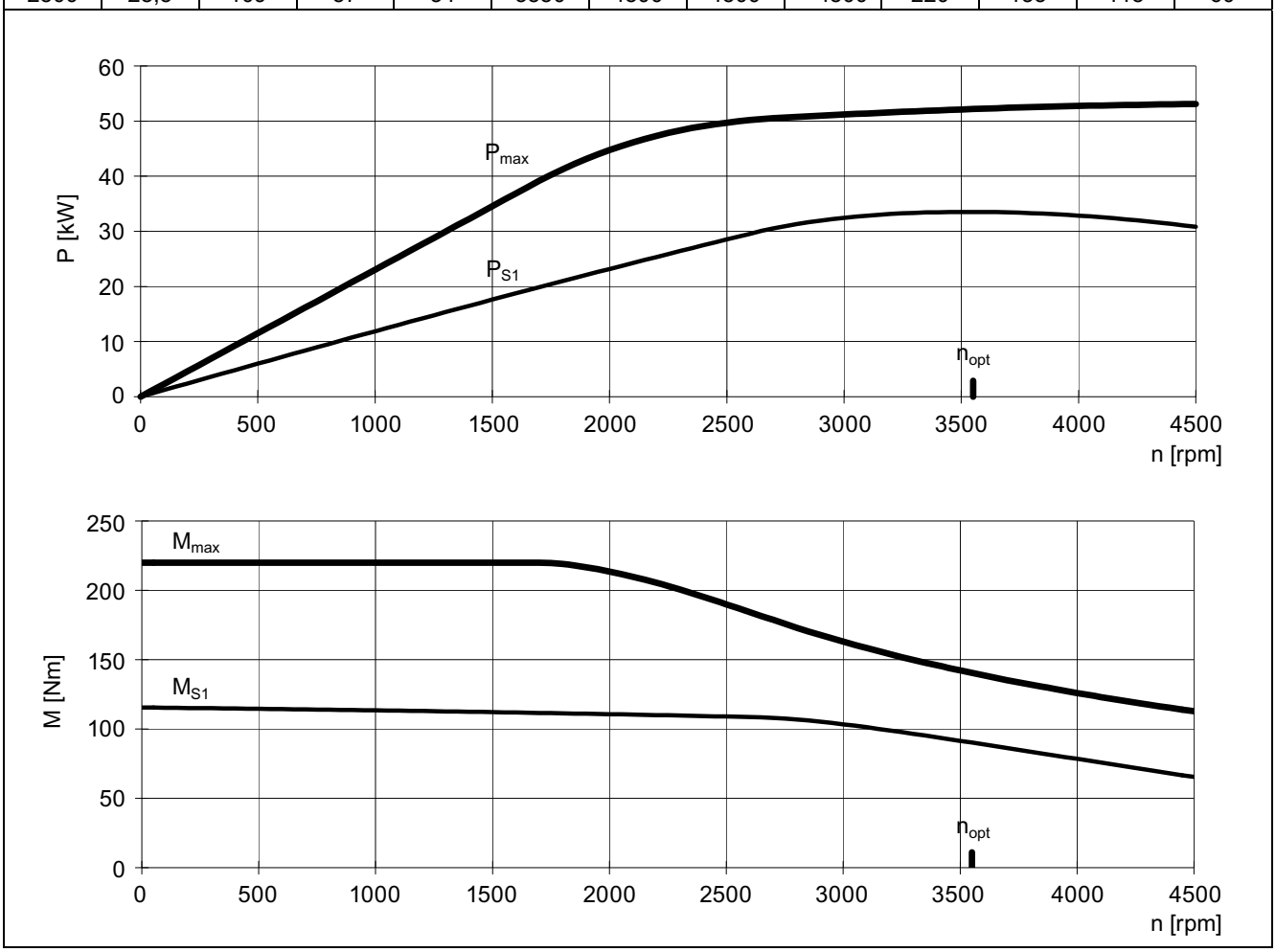
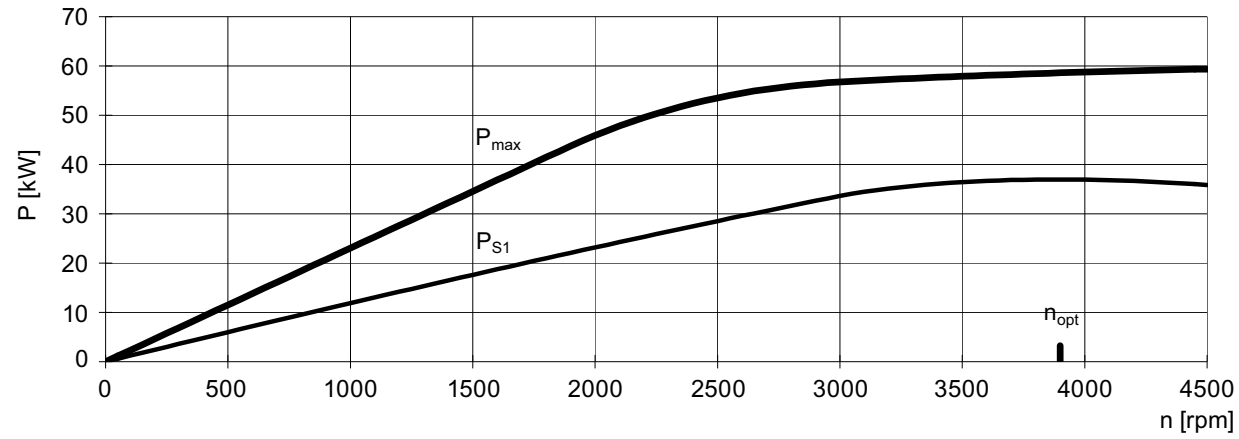


Tabella 4- 739 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8131-□□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2800 | 31,7 | 108 | 56 | 37 | 3900 | 4500 | 4500 | > 4500 | 220 | 133 | 115 | 60 |
| 2500 | 28,5 | 109 | 57 | | | | | | | | | |



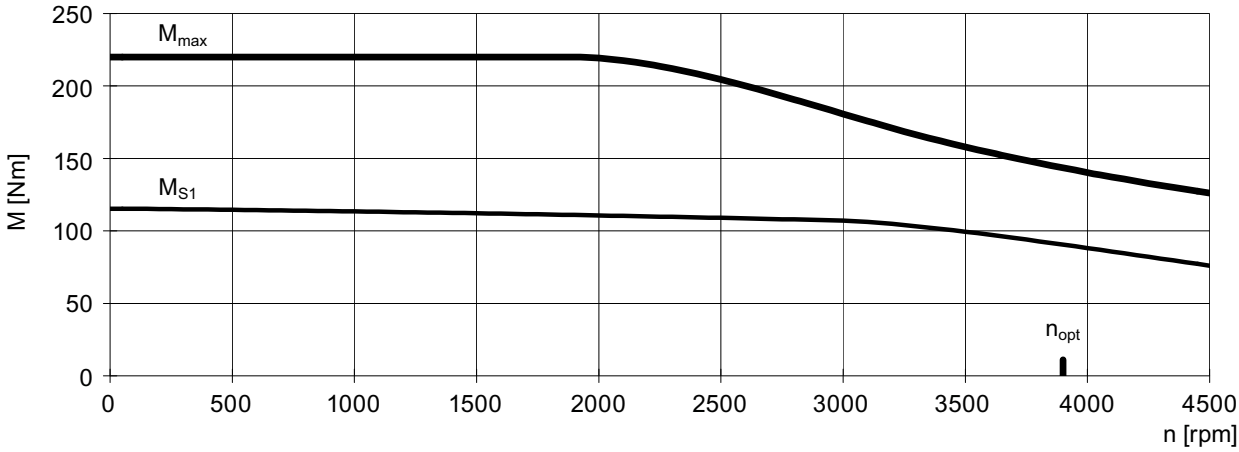



Tabella 4- 740 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8131-□□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3000 | 33,6 | 107 | 56 | 39 | 4150 | 4500 | 4500 | > 4500 | 220 | 133 | 115 | 60 |

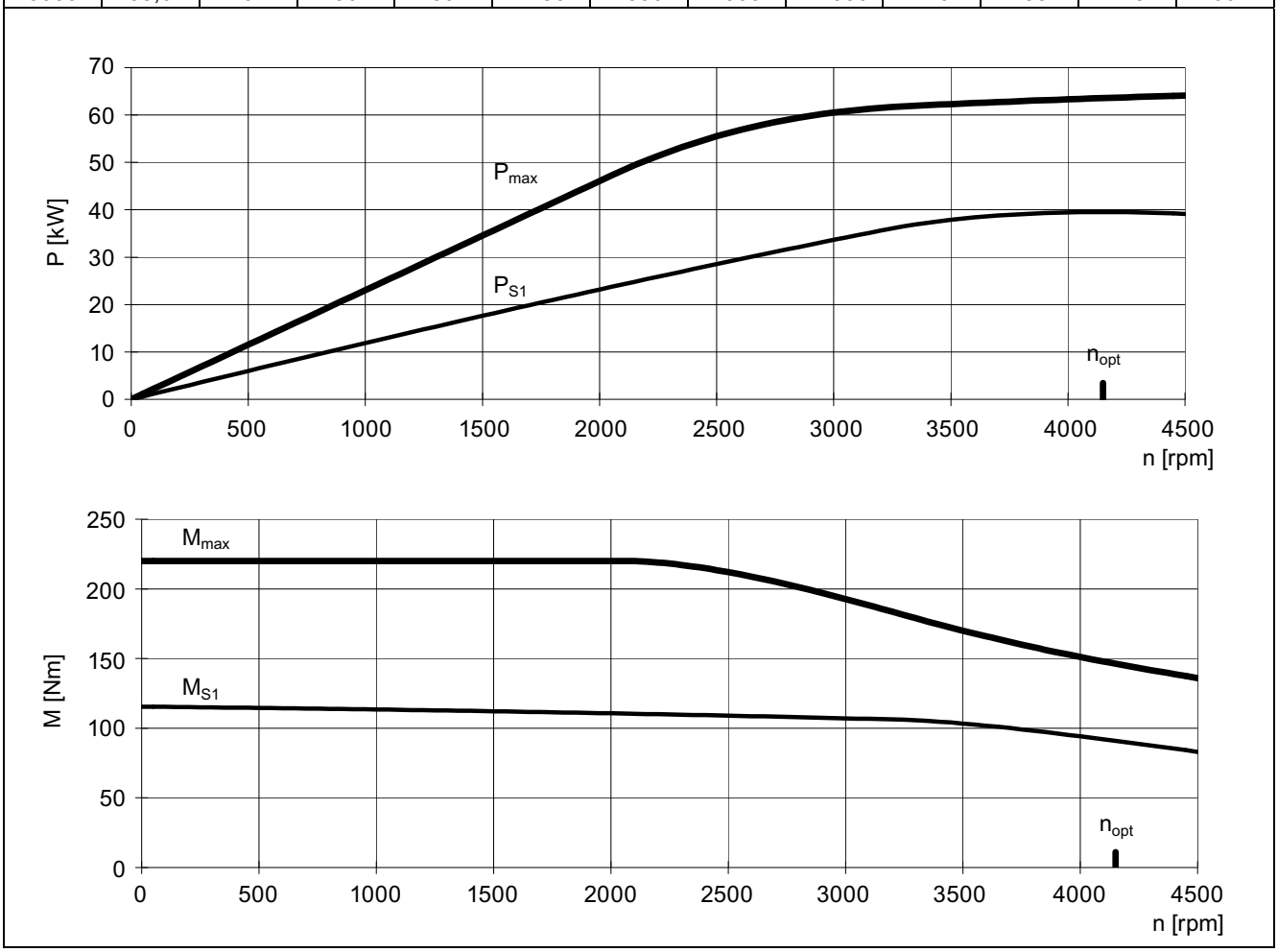


Tabella 4- 741 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8133-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 23,1 | 147 | 42 | 25 | 2000 | 4500 | 4500 | 2450 | 310 | 100 | 155 | 43 |

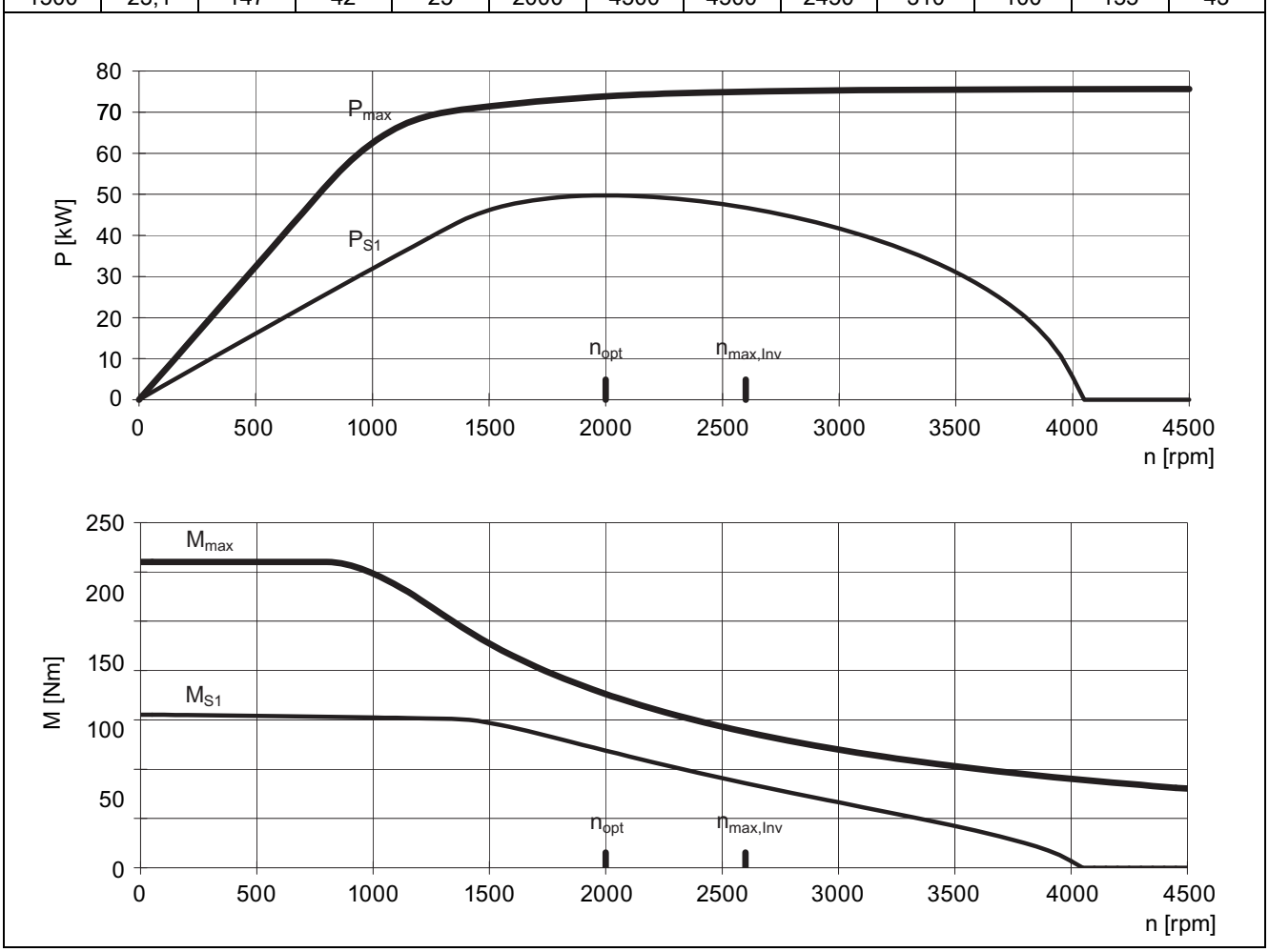
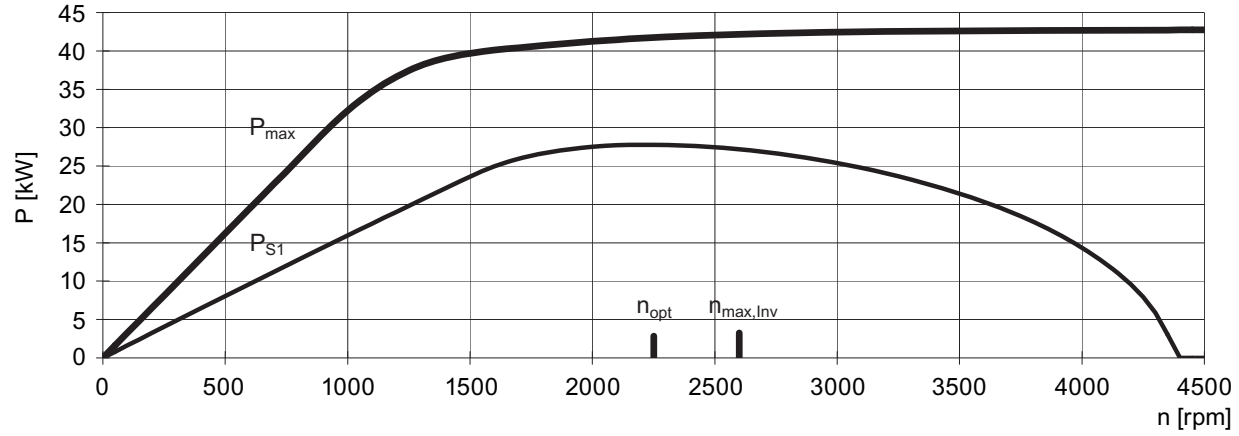


Tabella 4- 742 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8133-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 26,4 | 144 | 42 | 28 | 2250 | 4500 | 4500 | 2450 | 310 | 100 | 155 | 43 |
| 1500 | 23,1 | 147 | 42 | | | | | | | | | |



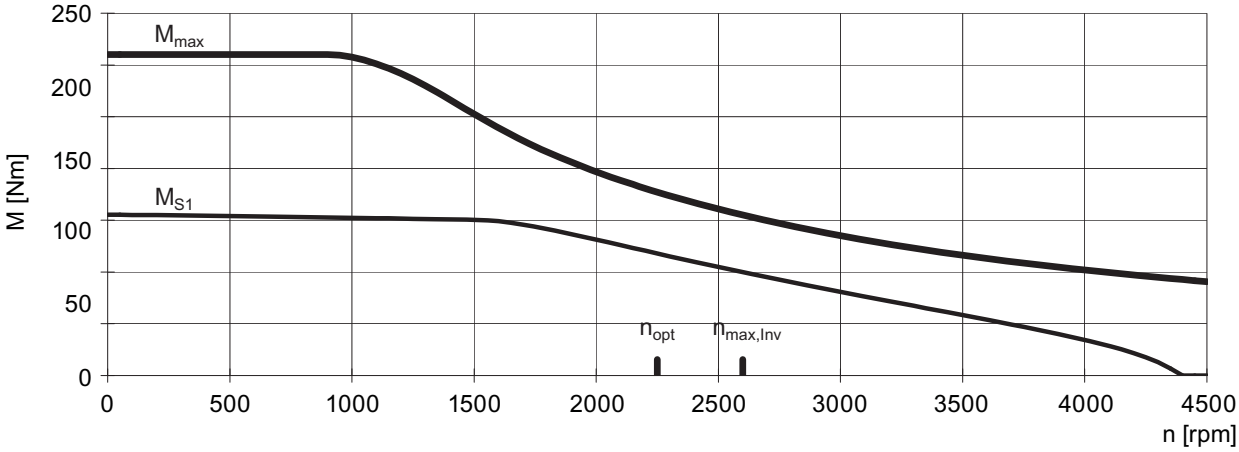
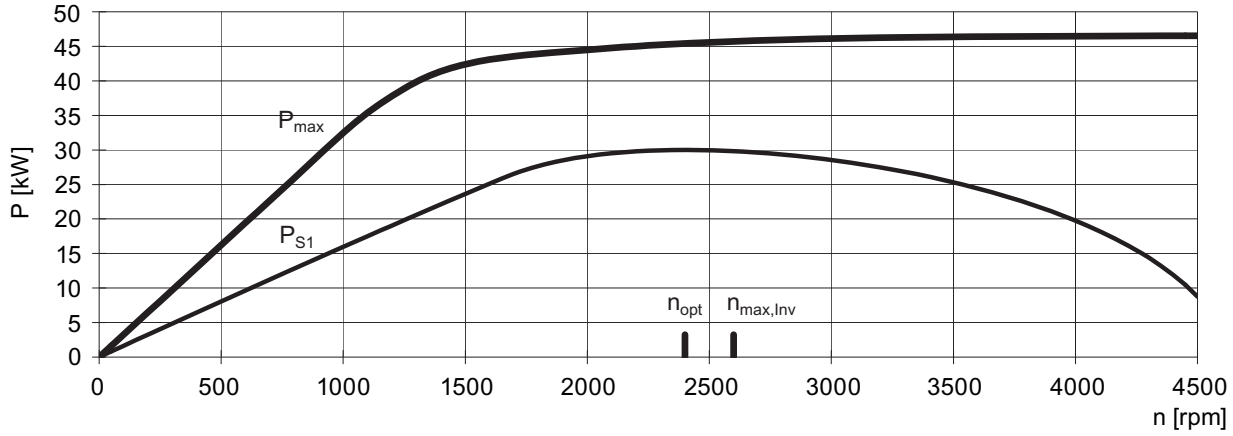



Tabella 4- 743 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8133-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 29,0 | 139 | 41 | 30 | 2400 | 4500 | 4500 | 2450 | 310 | 100 | 155 | 43 |



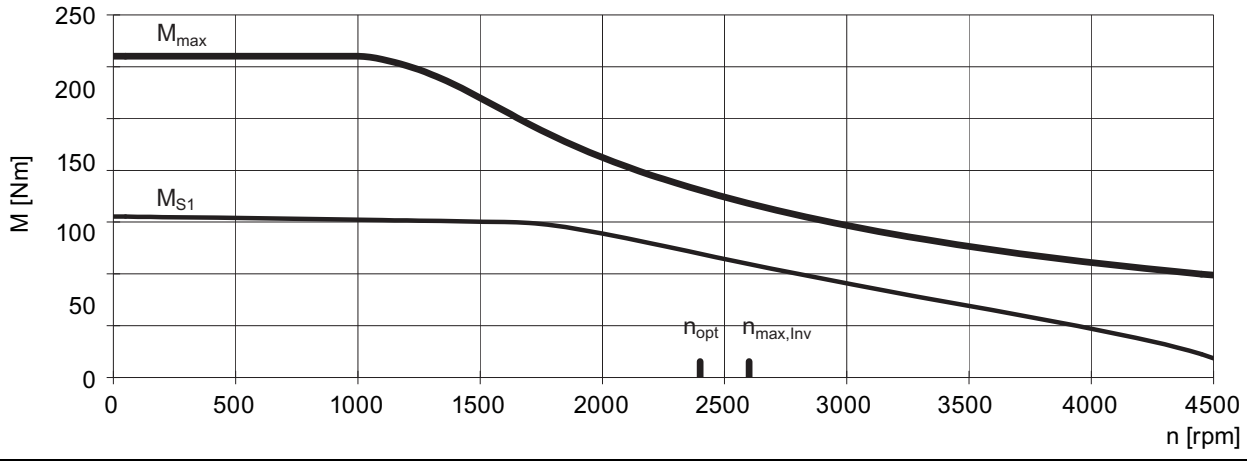



Tabella 4- 744 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8133-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 30,6 | 146 | 57 | 34 | 2750 | 4500 | 4500 | 3450 | 310 | 140 | 155 | 61 |

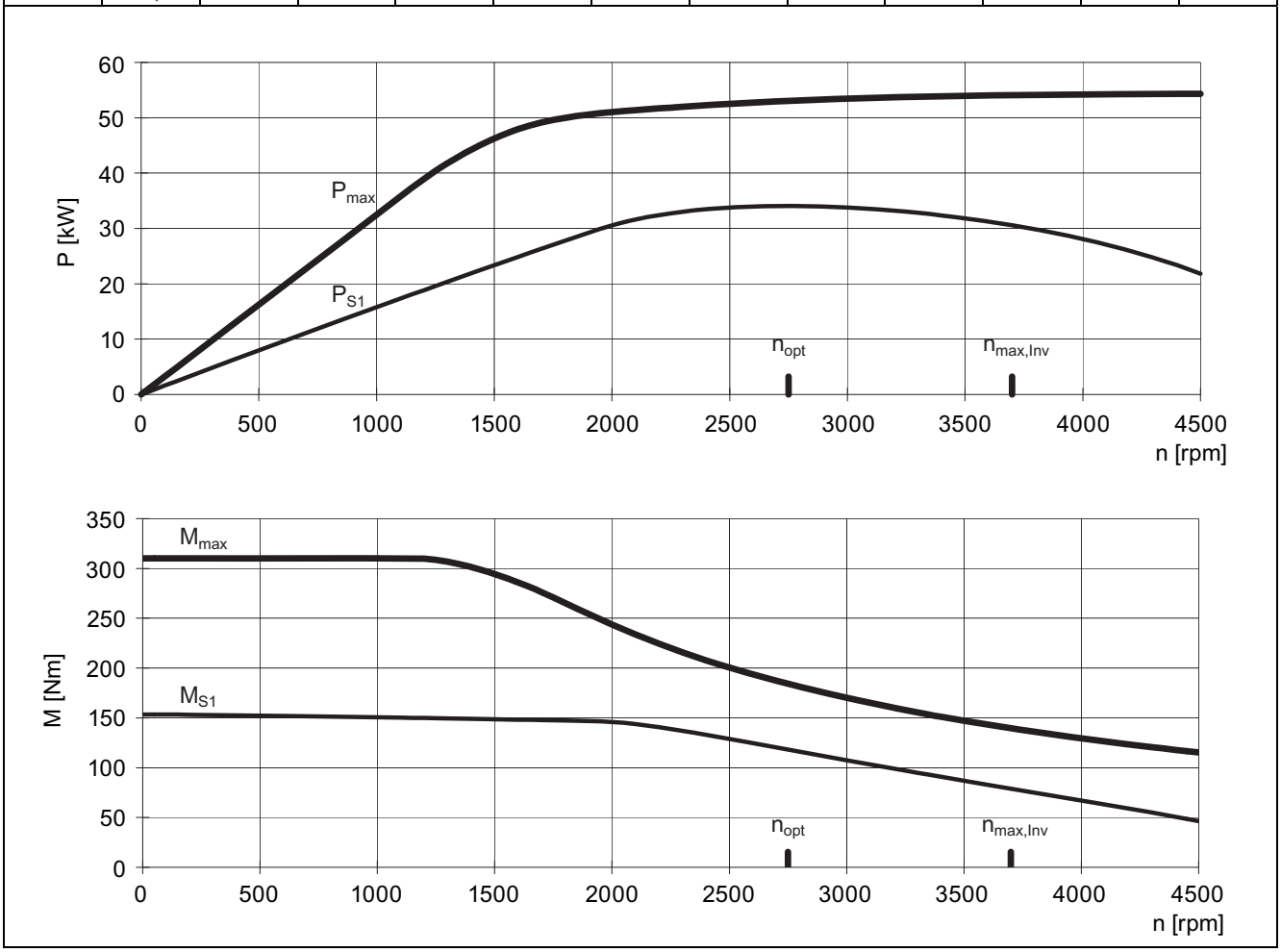
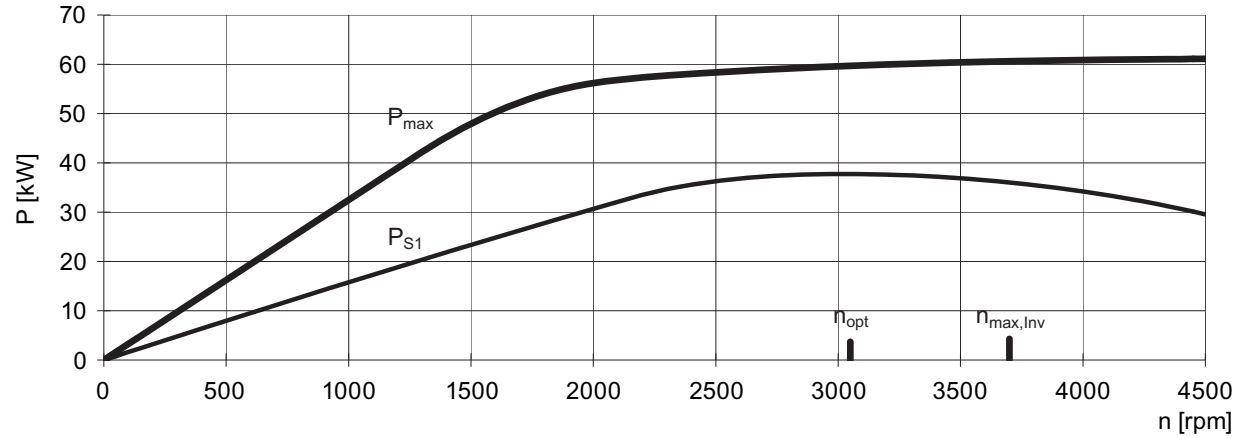


Tabella 4- 745 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8133-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 34,9 | 145 | 57 | 38 | 3050 | 4500 | 4500 | 3450 | 310 | 140 | 155 | 61 |
| 2000 | 30,6 | 146 | 57 | | | | | | | | | |



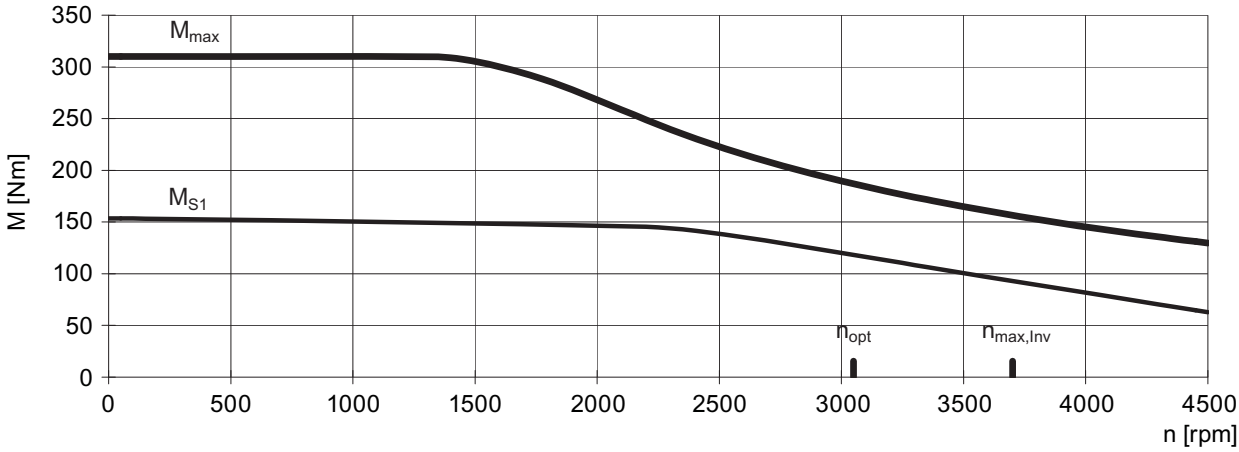



Tabella 4- 746 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8133-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 39,1 | 141 | 57 | 41 | 3250 | 4500 | 4500 | 3450 | 310 | 140 | 155 | 61 |

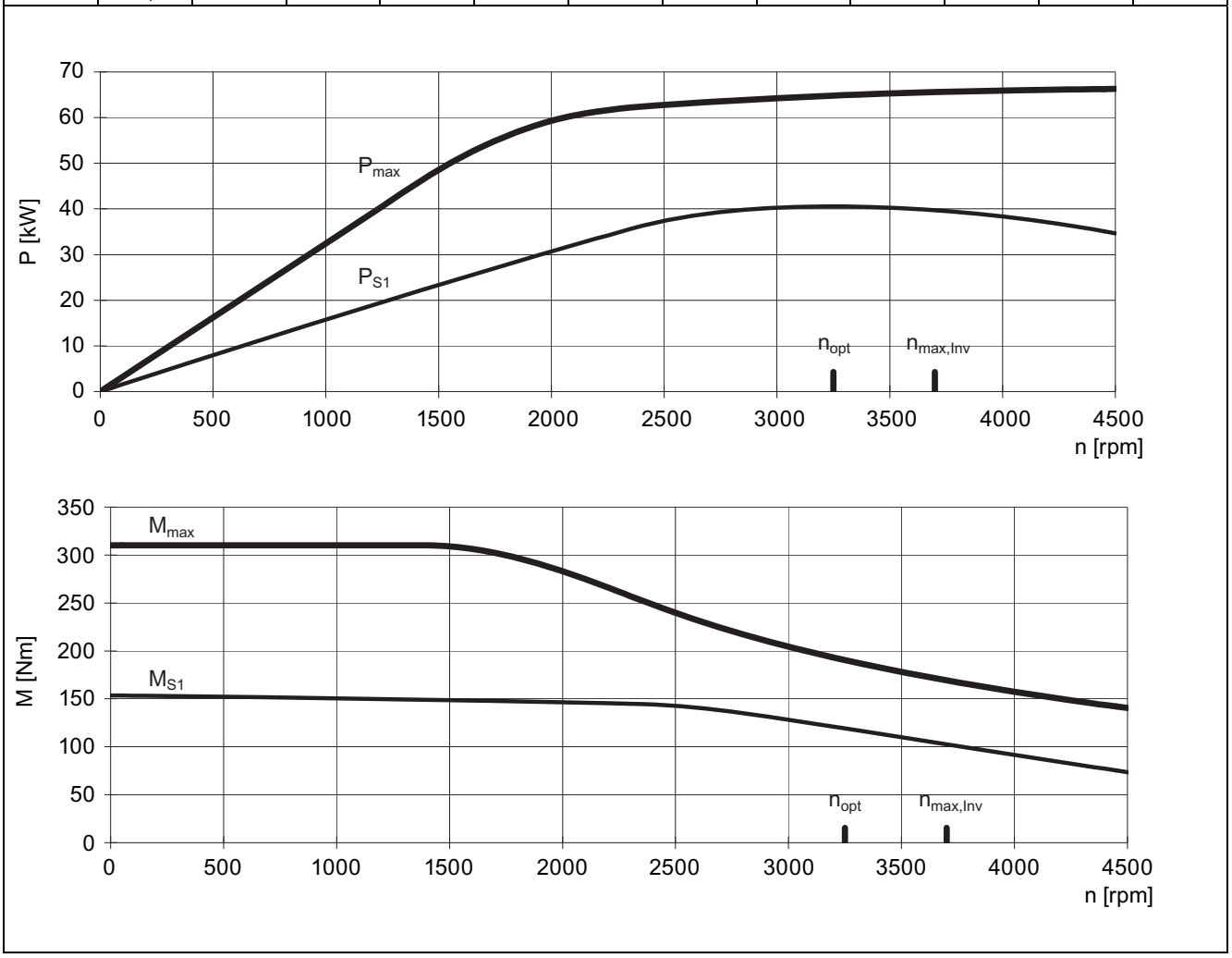


Tabella 4- 747 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8135-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 29,7 | 189 | 57 | 34 | 2150 | 4500 | 4500 | 2650 | 390 | 135 | 196 | 59 |

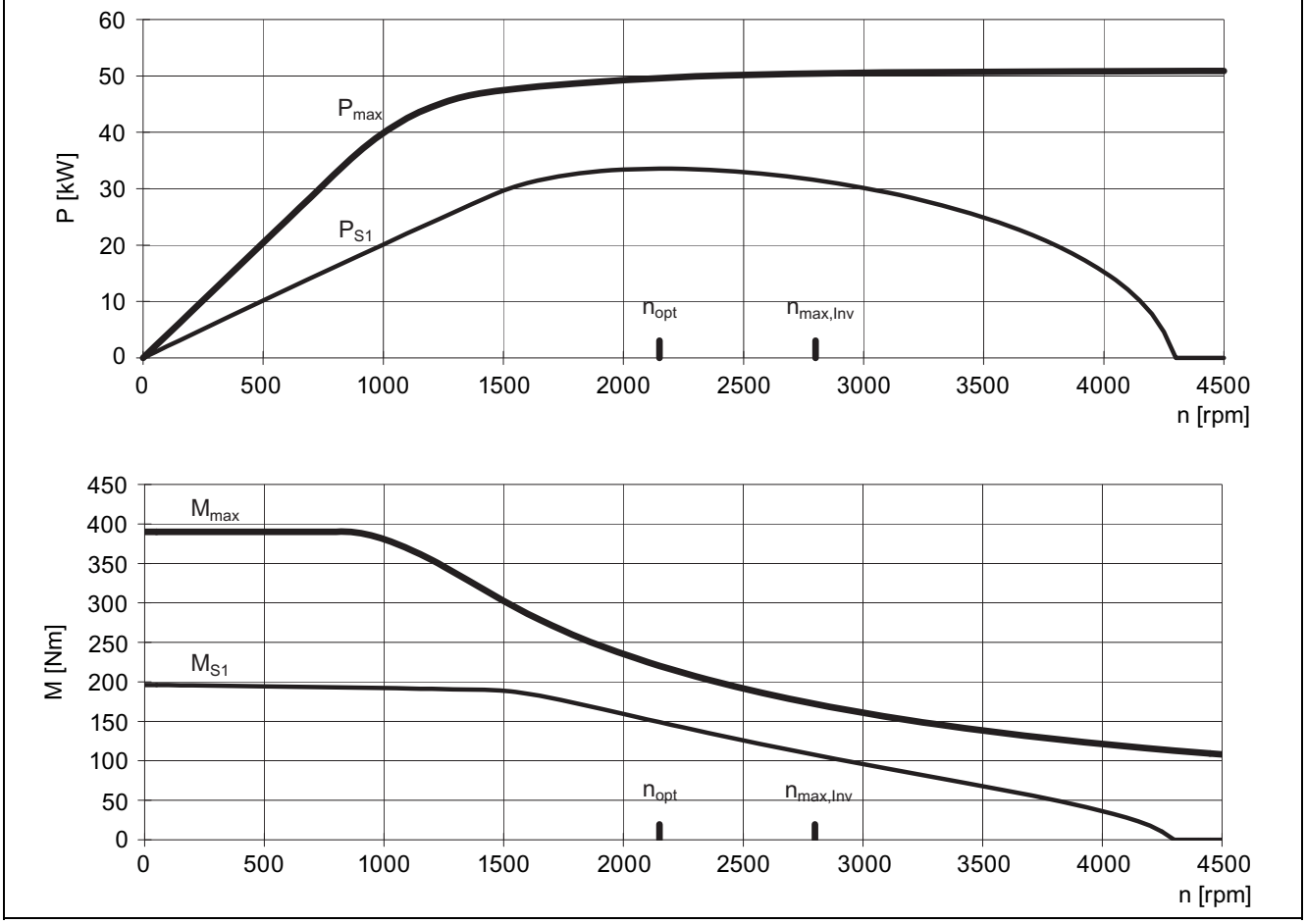
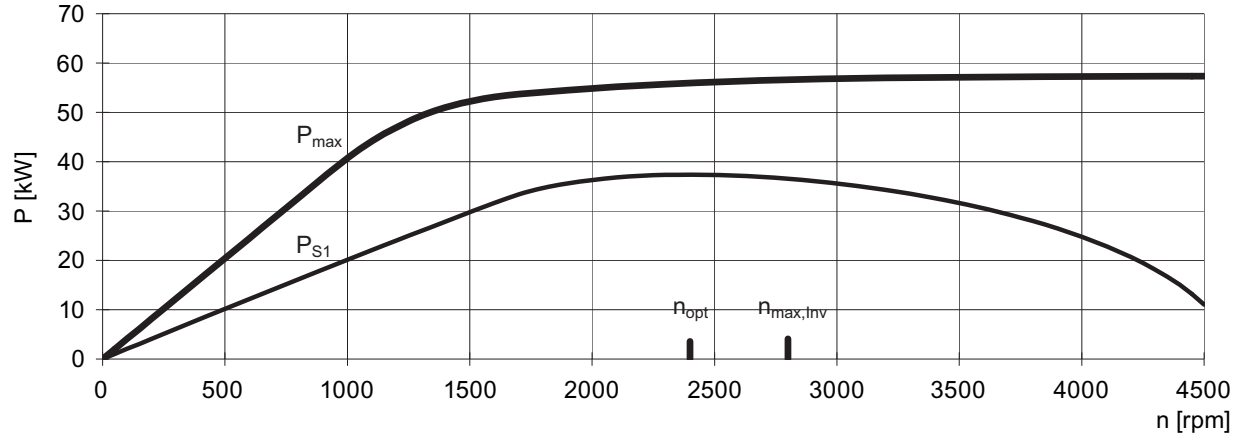


Tabella 4- 748 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8135-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 34,1 | 186 | 56 | 37 | 2400 | 4500 | 4500 | 2650 | 390 | 135 | 196 | 59 |
| 1500 | 29,7 | 189 | 57 | | | | | | | | | |



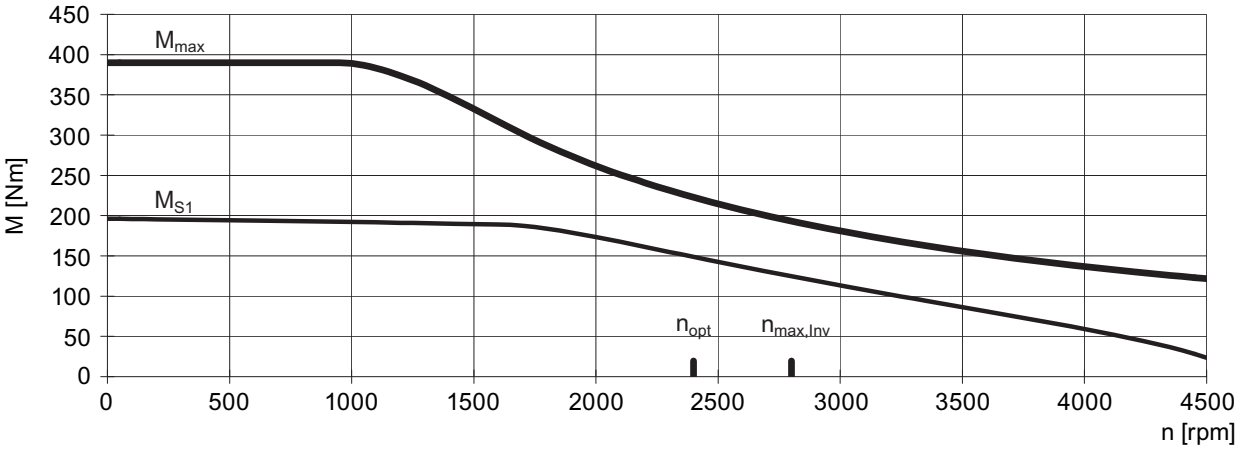



Tabella 4- 749 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8135-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 37,9 | 181 | 56 | 40 | 2550 | 4500 | 4500 | 2650 | 390 | 135 | 196 | 59 |

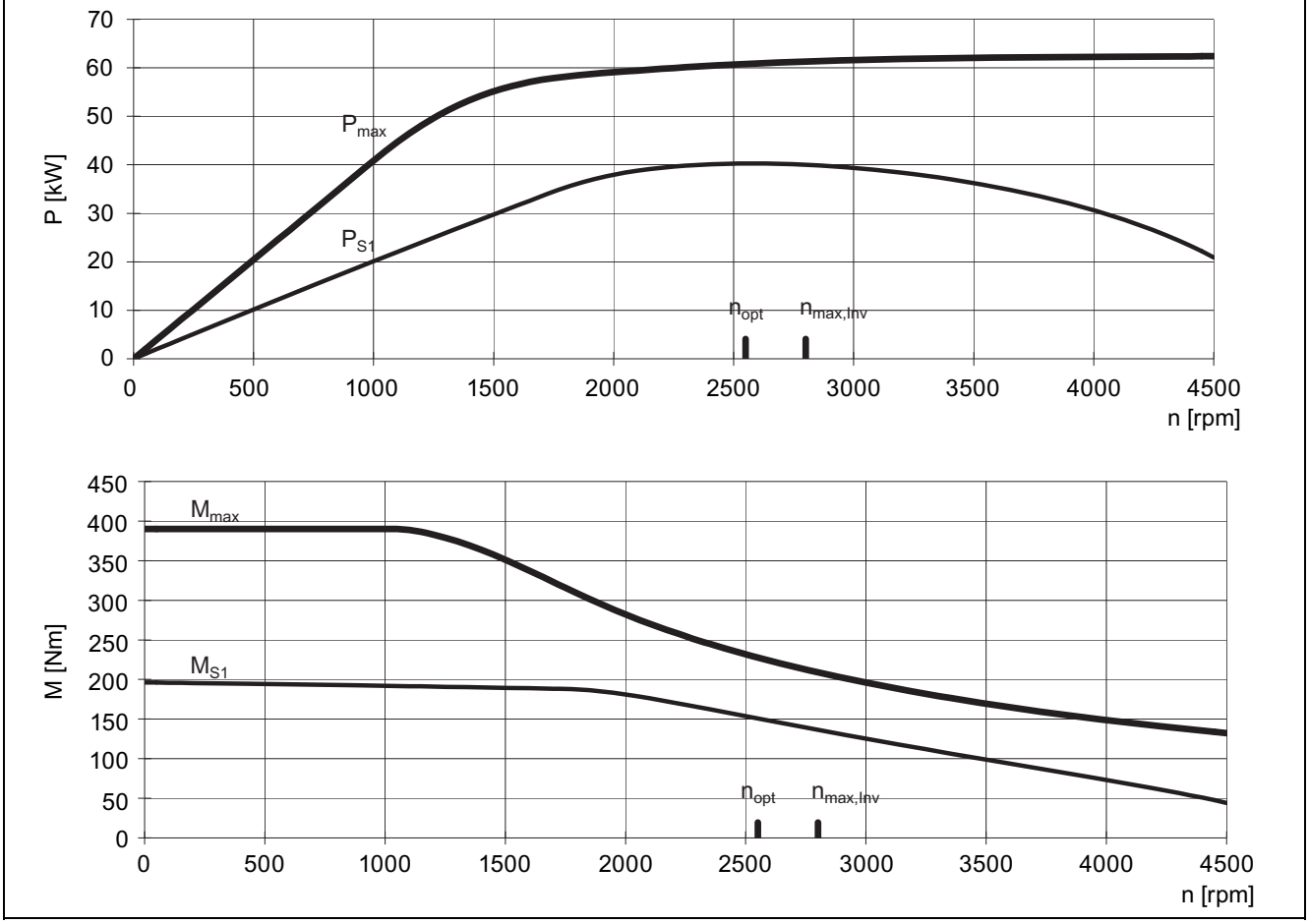
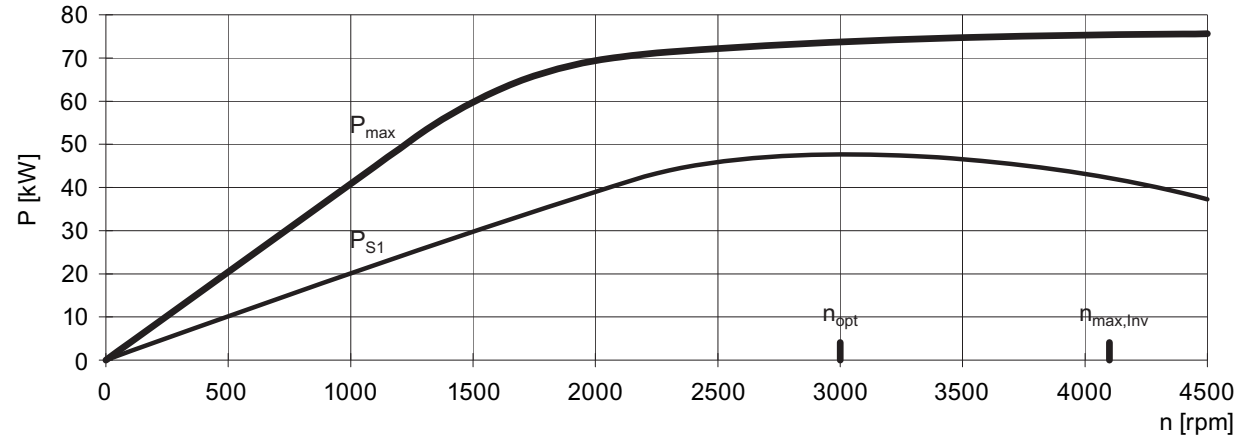


Tabella 4- 750 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8135-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 39,0 | 186 | 81 | 48 | 3000 | 4500 | 4500 | 3800 | 390 | 196 | 196 | 85 |



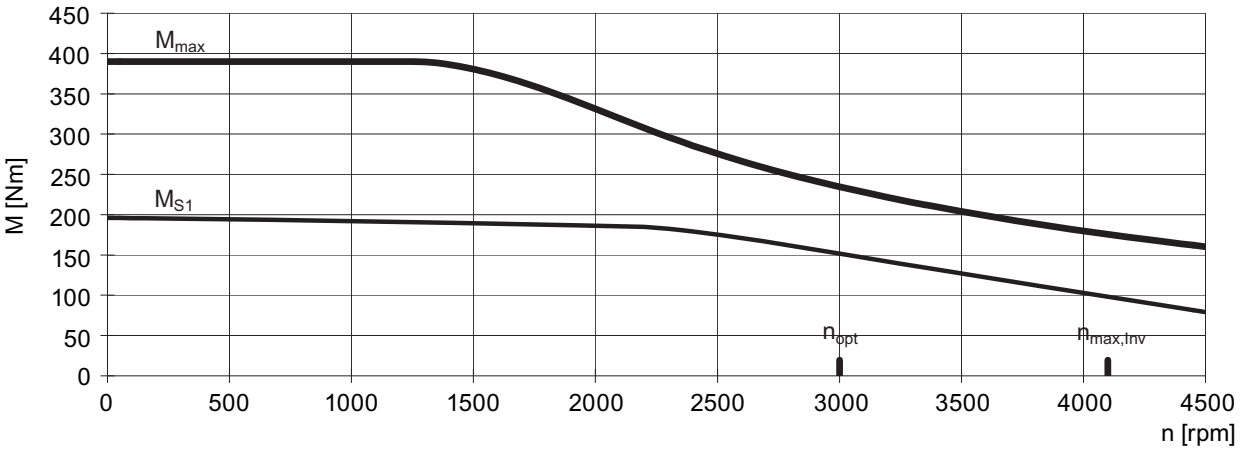
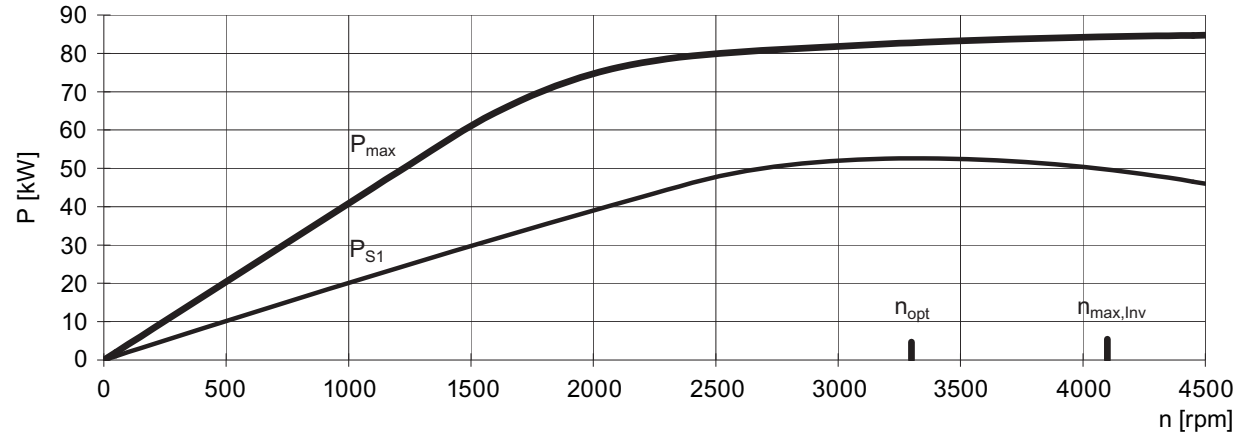



Tabella 4- 751 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8135-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 44,3 | 184 | 80 | 53 | 3300 | 4500 | 4500 | 3800 | 390 | 196 | 196 | 85 |
| 2000 | 39,0 | 186 | 81 | | | | | | | | | |



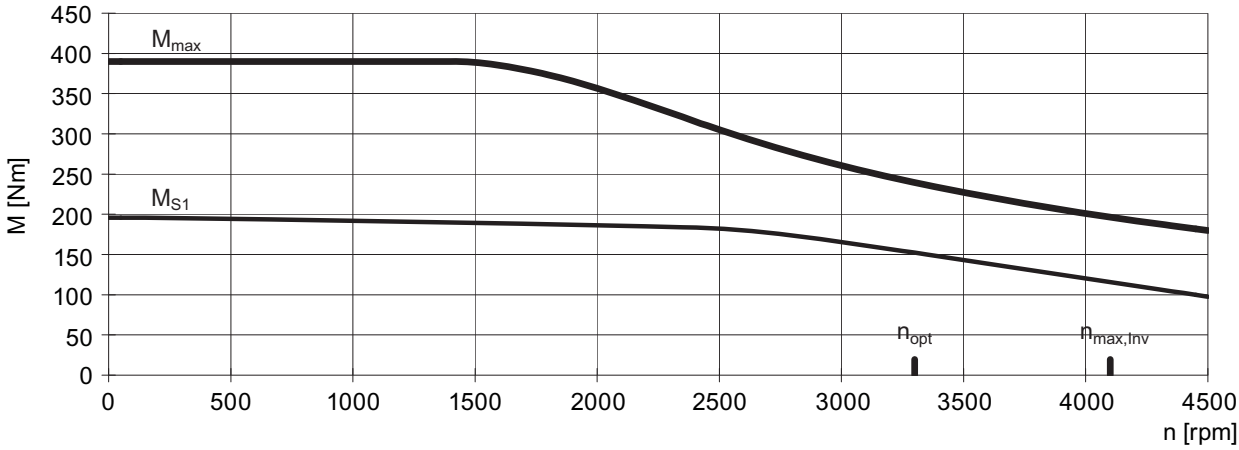
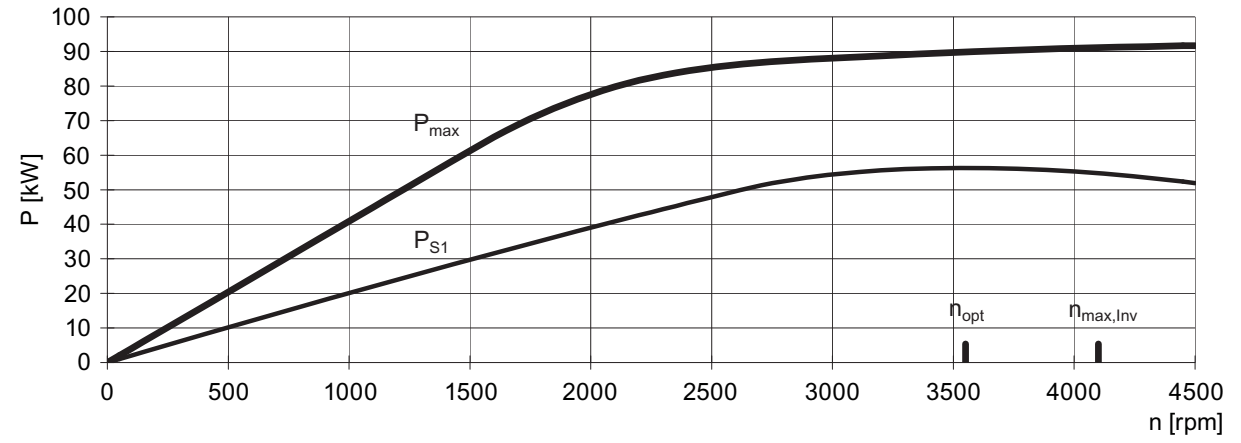



Tabella 4- 752 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8135-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 50,5 | 182 | 79 | 56 | 3550 | 4500 | 4500 | 3800 | 390 | 196 | 196 | 85 |



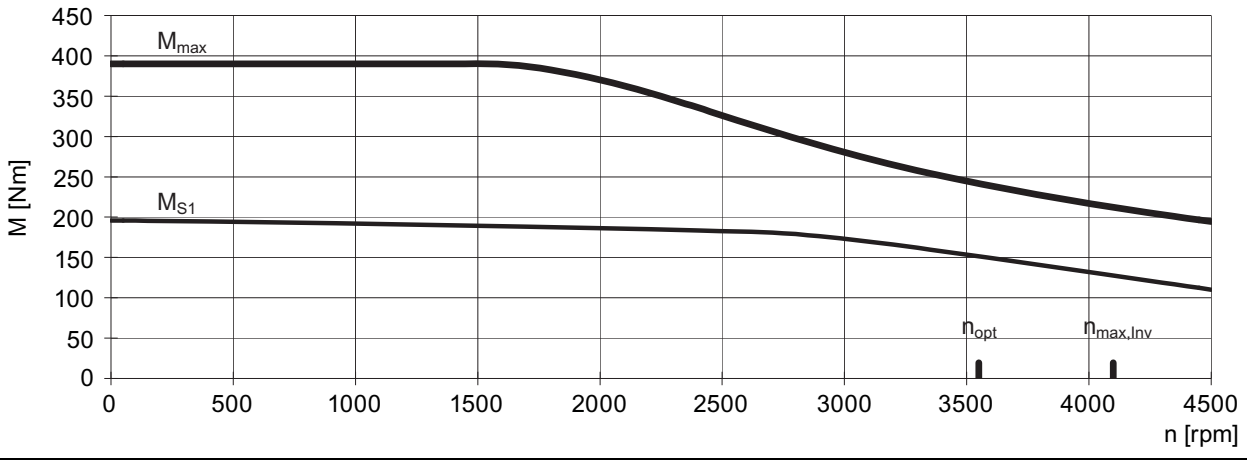



Tabella 4- 753 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8137-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 32,7 | 208 | 58 | 35 | 1950 | 4500 | 4500 | 2350 | 460 | 141 | 226 | 60 |

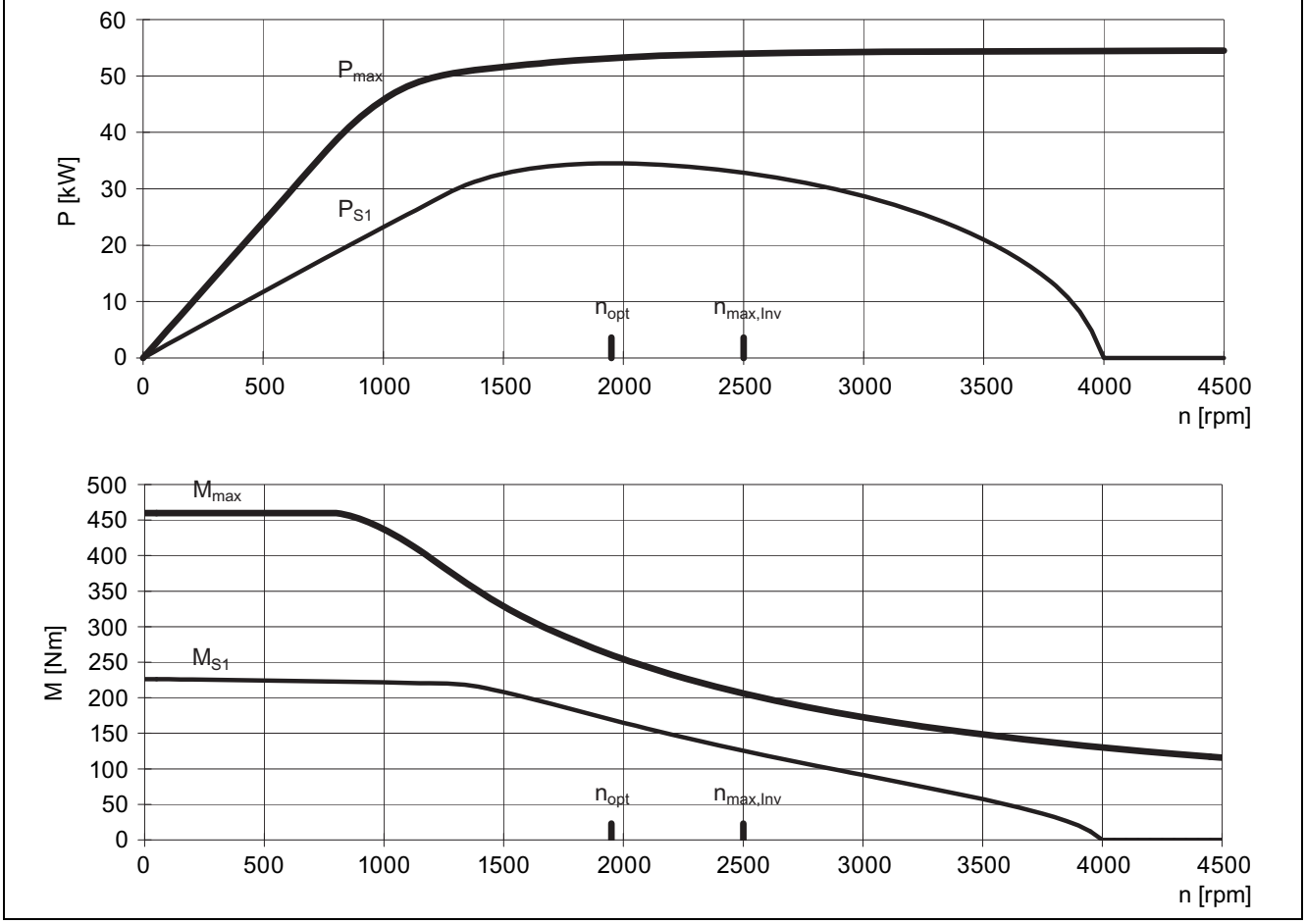
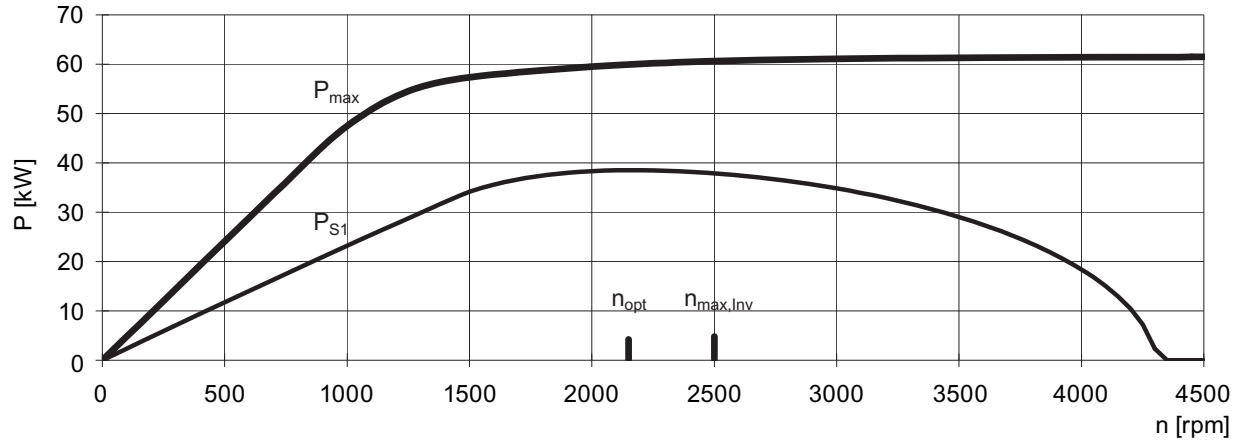


Tabella 4- 754 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8137-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 37,0 | 202 | 58 | 38 | 2150 | 4500 | 4500 | 2350 | 460 | 141 | 226 | 60 |
| 1500 | 34,1 | 217 | 58 | | | | | | | | | |



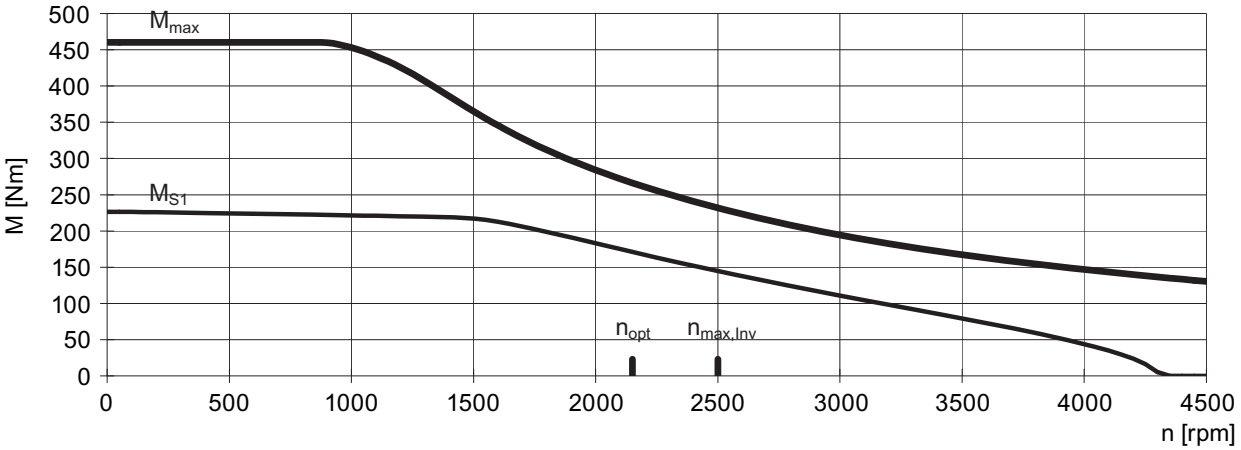
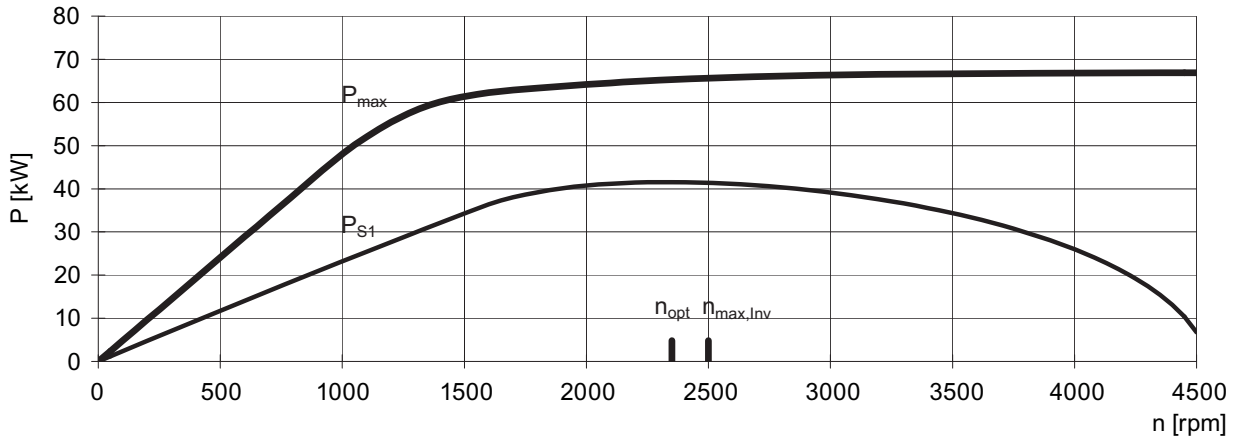



Tabella 4- 755 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8137-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 40,6 | 194 | 57 | 41 | 2350 | 4500 | 4500 | 2350 | 460 | 141 | 226 | 60 |



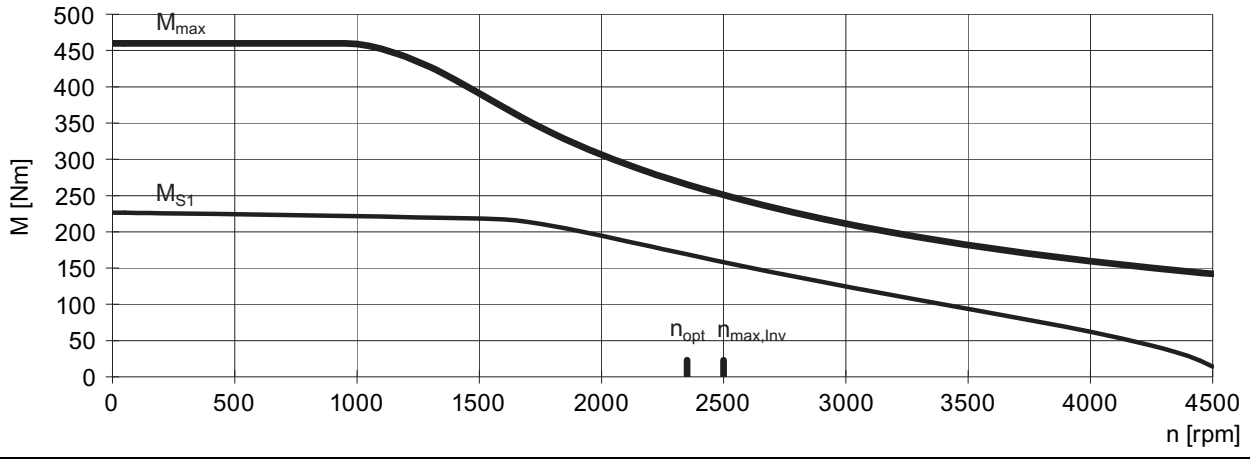
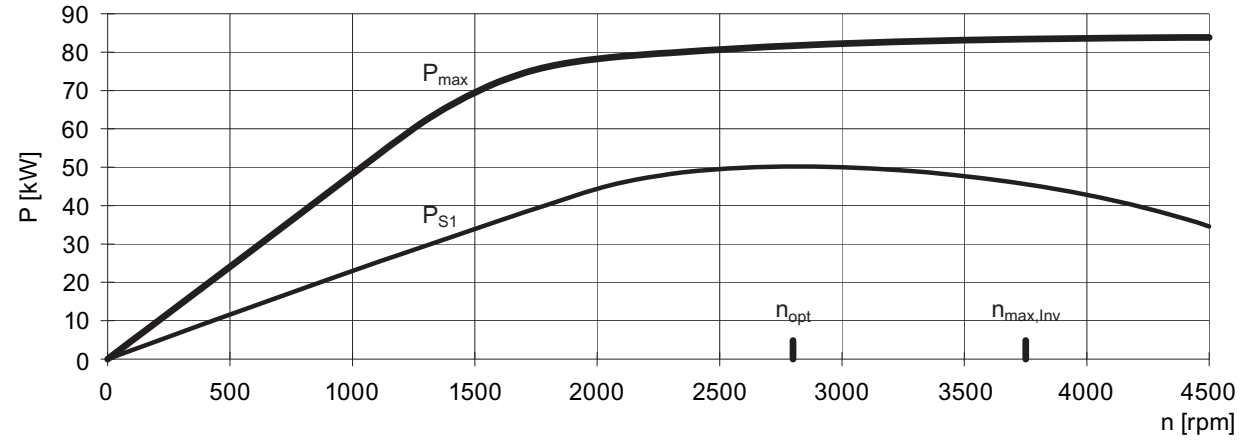



Tabella 4- 756 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8137-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 44,4 | 212 | 85 | 50 | 2800 | 4500 | 4500 | 3500 | 460 | 212 | 226 | 90 |



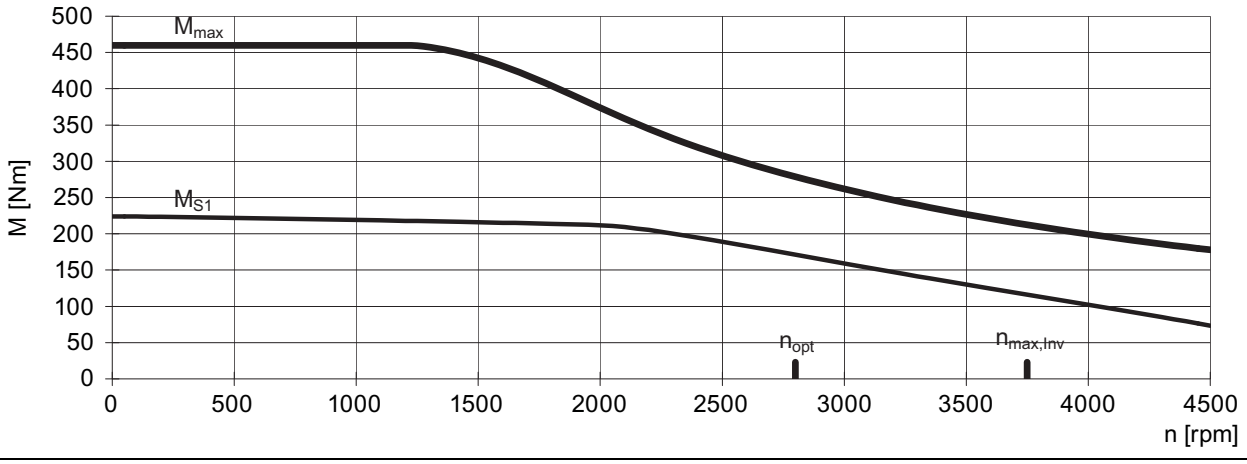
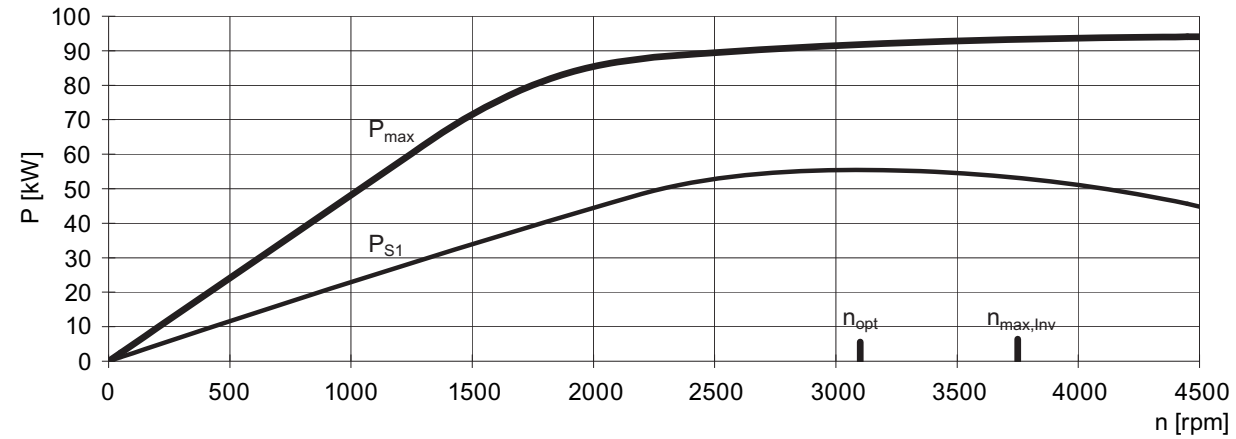



Tabella 4- 757 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8137-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 50,5 | 210 | 84 | 56 | 3100 | 4500 | 4500 | 3500 | 460 | 212 | 226 | 90 |
| 2000 | 44,4 | 212 | 85 | | | | | | | | | |



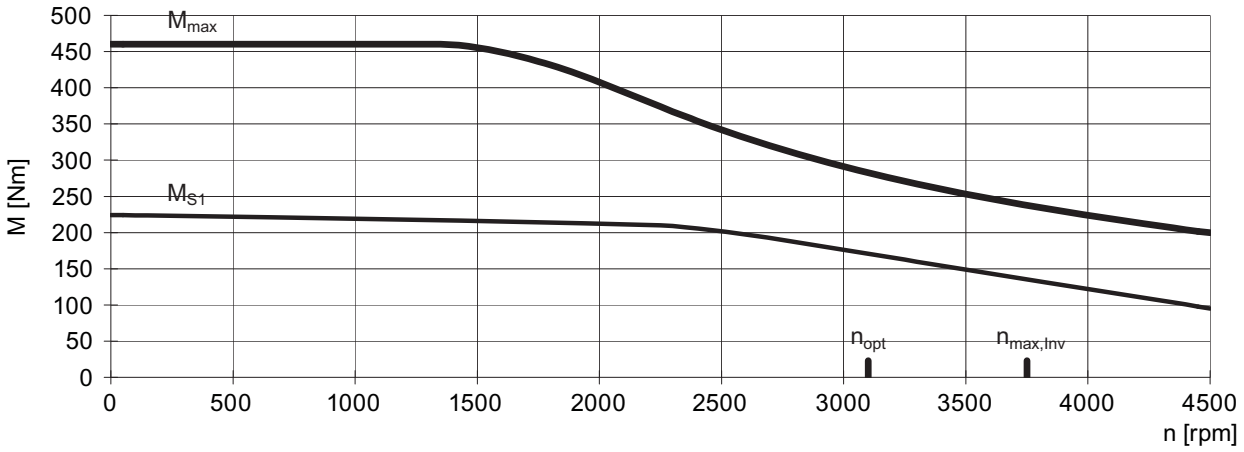
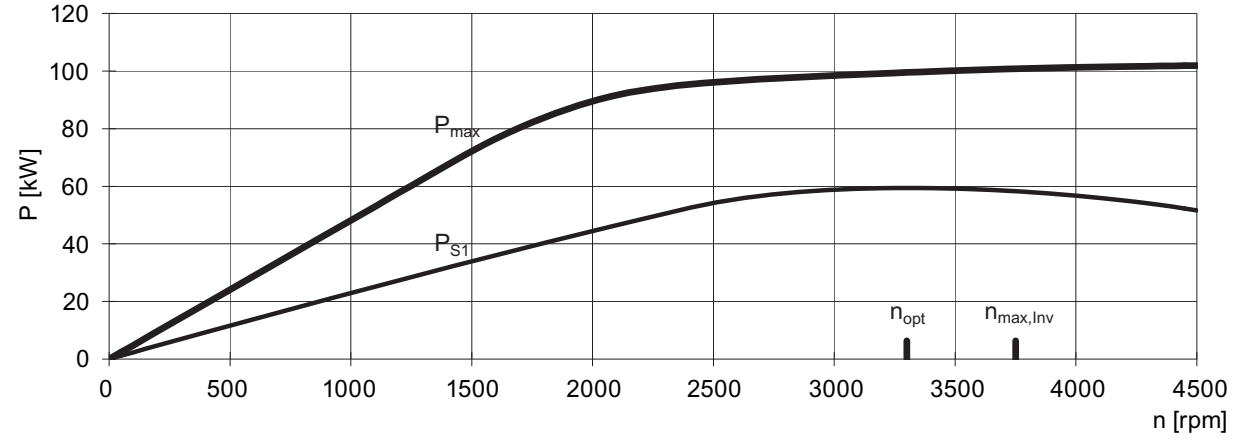



Tabella 4- 758 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8137-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 56,8 | 205 | 83 | 60 | 3300 | 4500 | 4500 | 3500 | 460 | 212 | 226 | 90 |



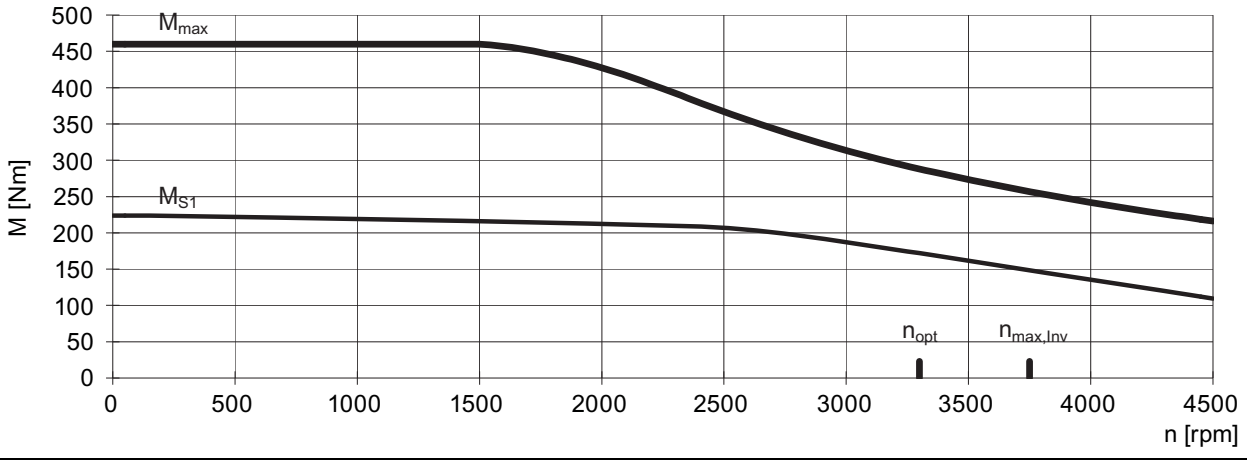



Tabella 4- 759 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8138-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 44,9 | 286 | 118 | 68 | 4200 | 4500 | 4500 | 3500 | 460 | 212 | 290 | 120 |

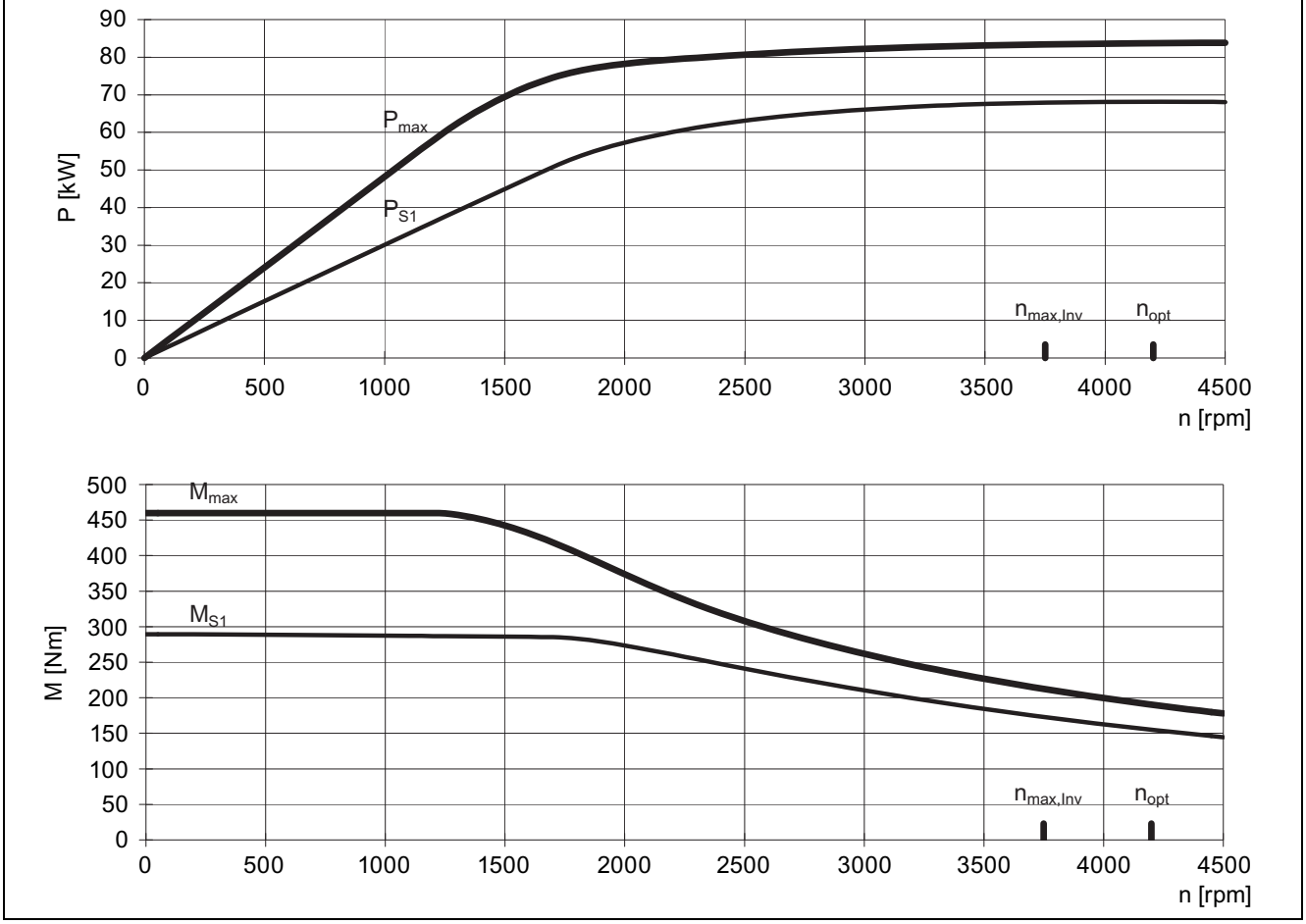
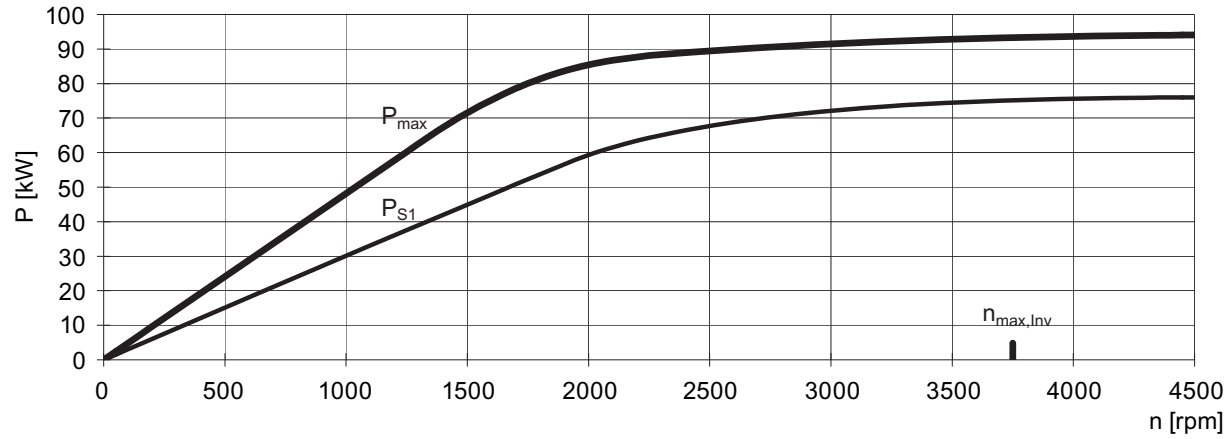


Tabella 4- 760 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8138-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 52,4 | 286 | 118 | 76 | 4550 | 4500 | 4500 | 3500 | 460 | 212 | 290 | 120 |
| 1500 | 44,9 | 286 | 118 | | | | | | | | | |



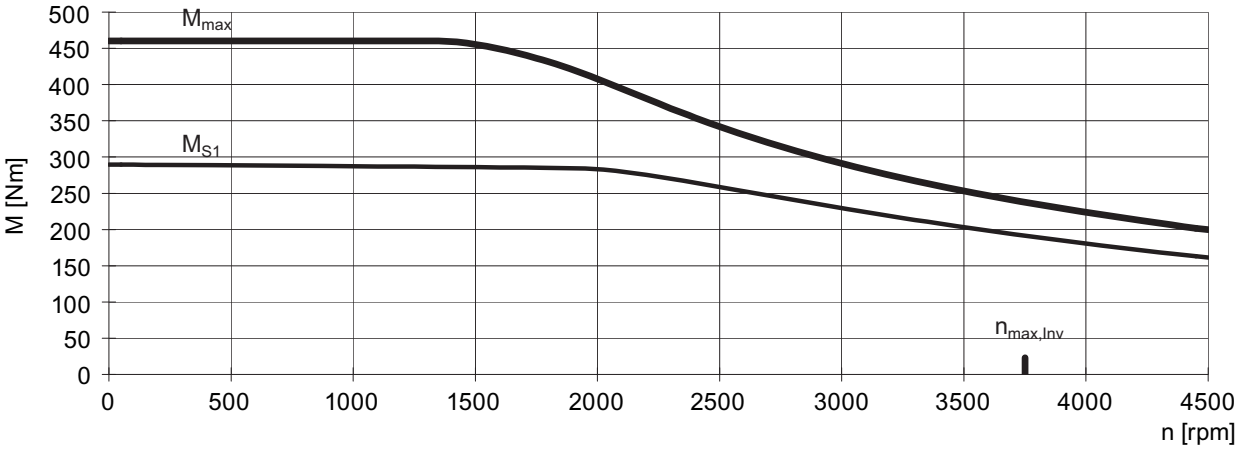



Tabella 4- 761 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8138-□□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 59,7 | 285 | 118 | 82 | 4800 | 4500 | 4500 | 3500 | 460 | 212 | 290 | 120 |

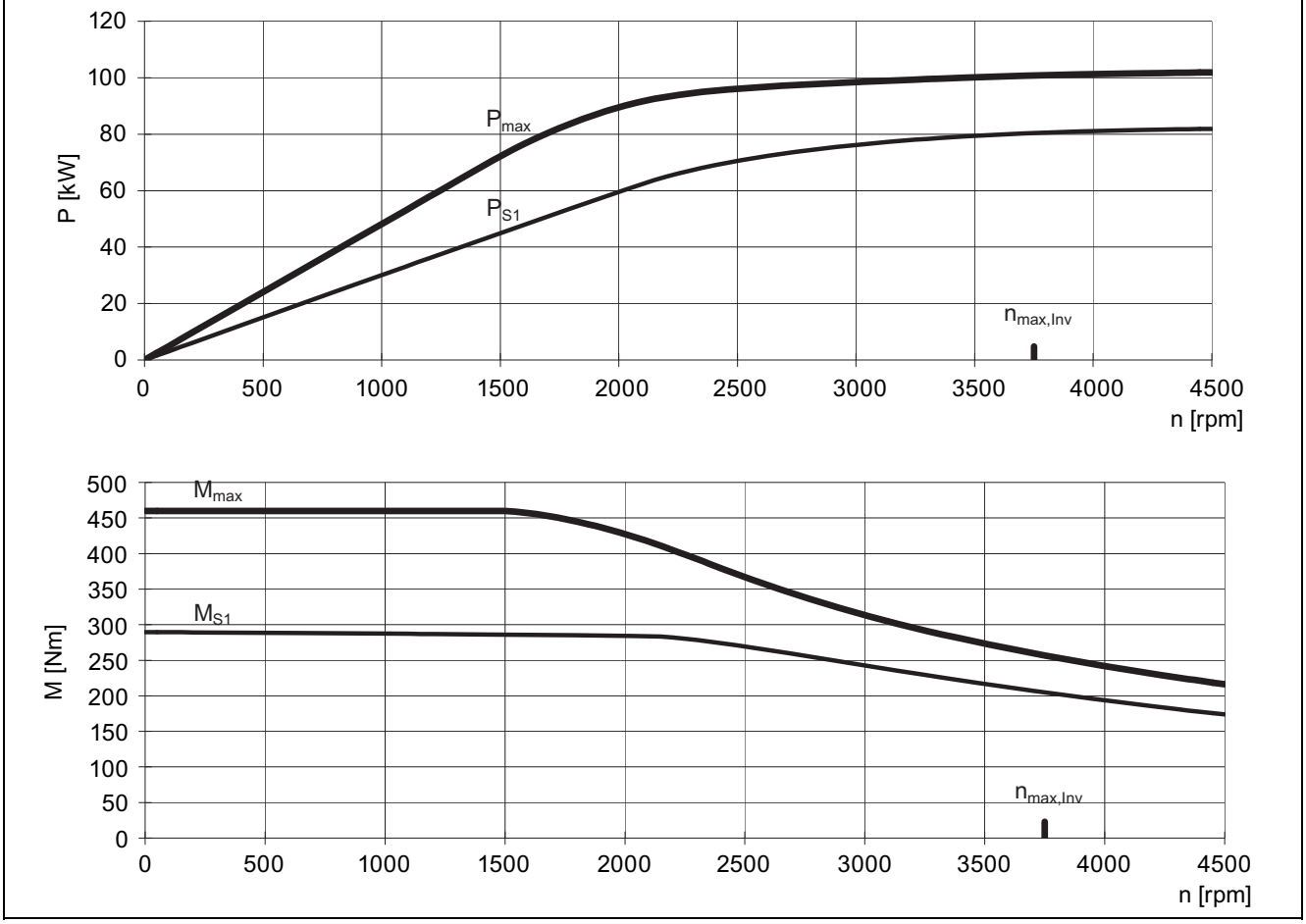
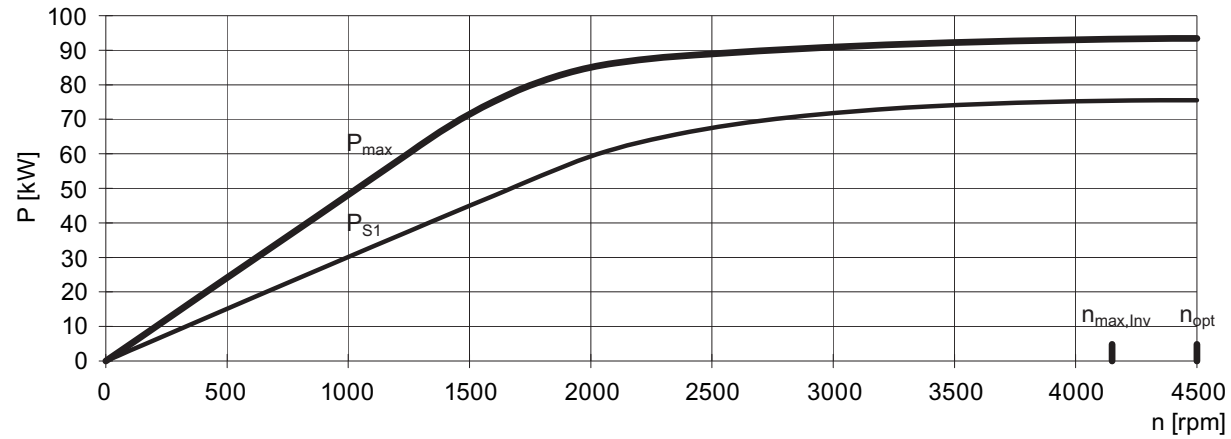


Tabella 4- 762 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8138-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 59,3 | 283 | 131 | 76 | 4500 | 4500 | 4500 | 3900 | 460 | 235 | 290 | 133 |



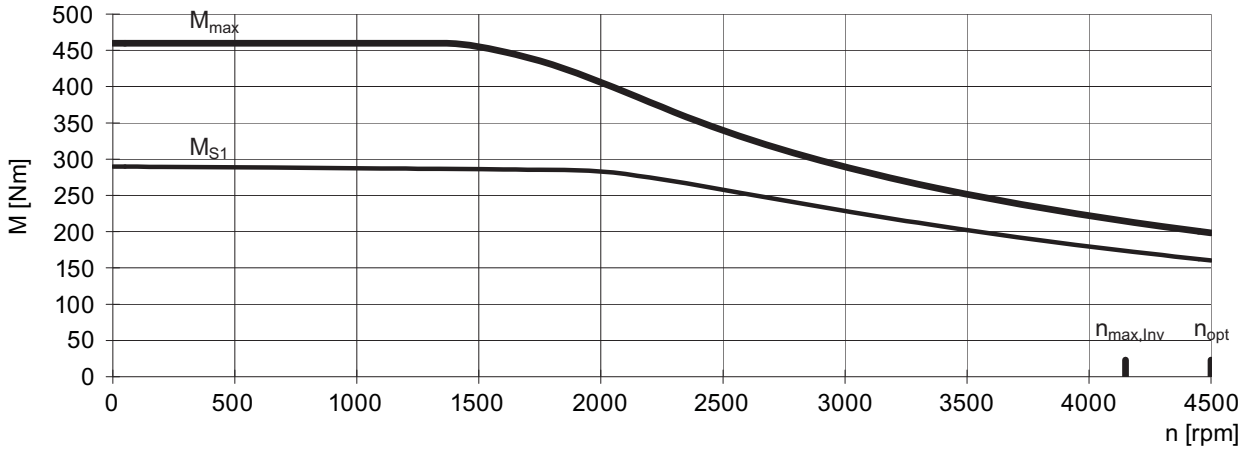



Tabella 4- 763 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8138-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2300 | 67,7 | 281 | 130 | 84 | 4500 | 4500 | 4500 | 3900 | 460 | 235 | 290 | 133 |
| 2000 | 59,7 | 285 | 131 | | | | | | | | | |

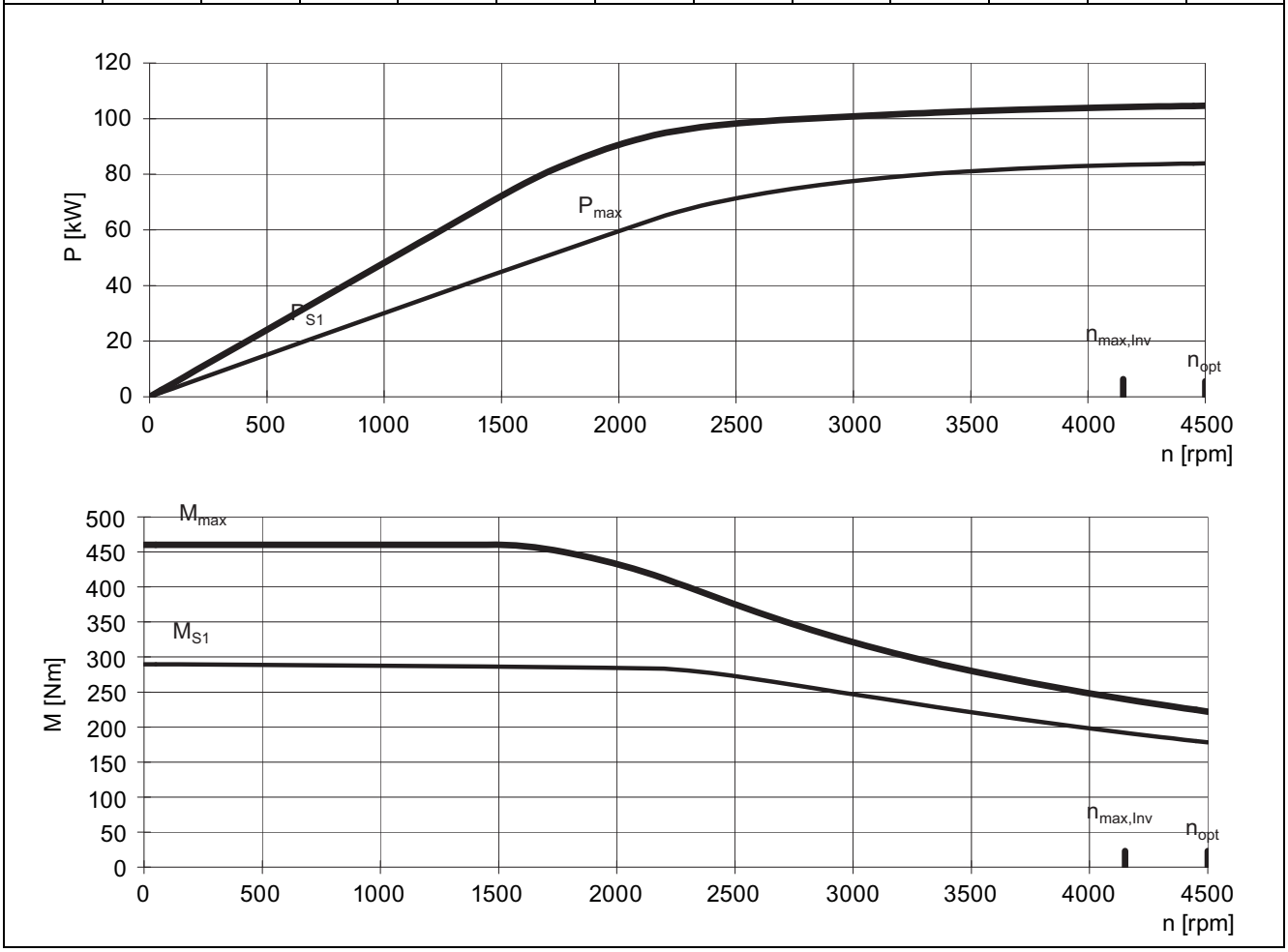
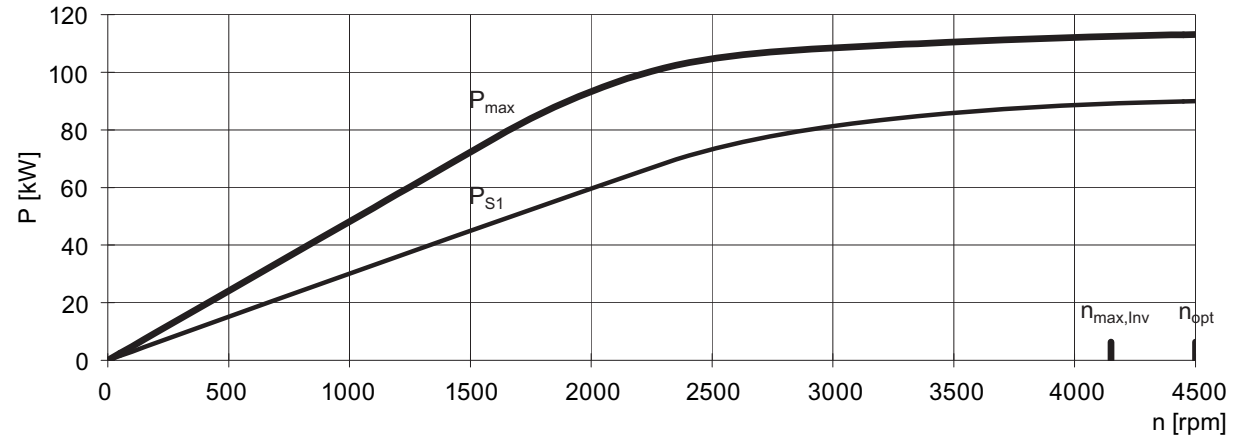
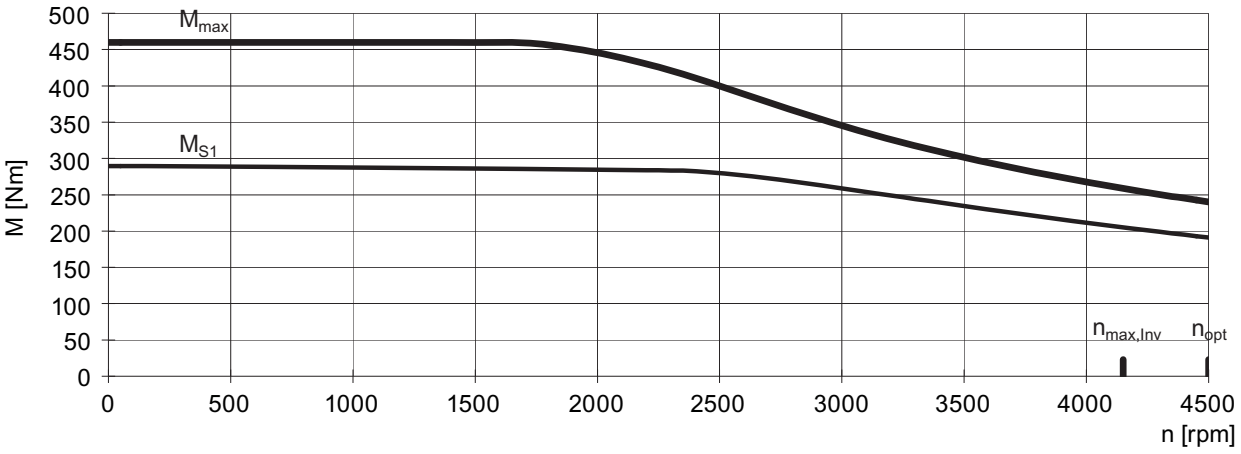


Tabella 4- 764 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8138-□□G2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2650 | 76,3 | 275 | 130 | 91 | 4500 | 4500 | 4500 | 3900 | 460 | 235 | 290 | 133 |

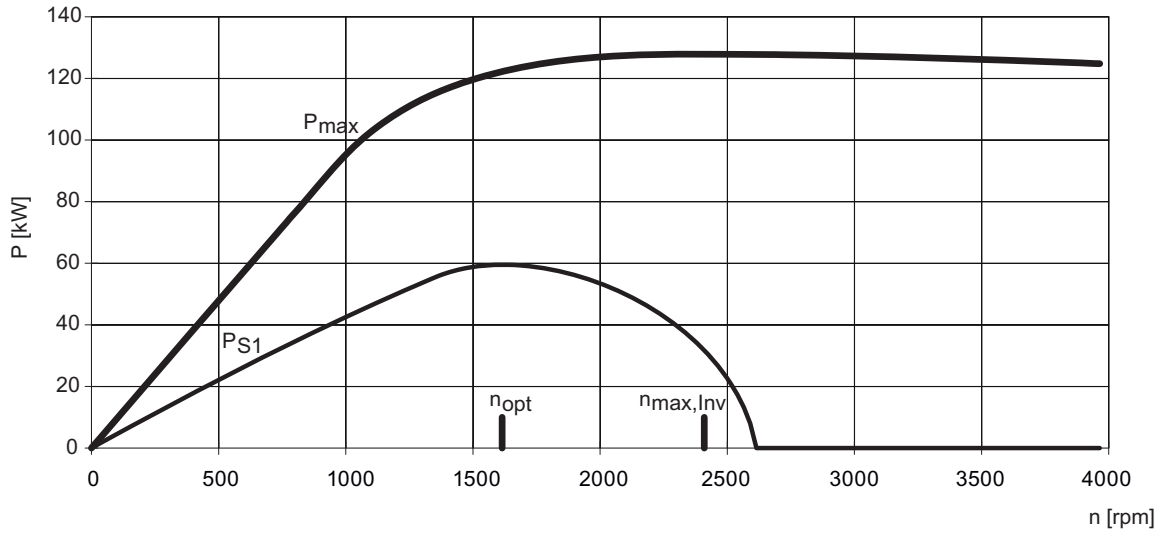


### 4.2.3.2 Altezza d'asse 160 - Raffreddamento ad acqua

Tabella 4- 765 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8164-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 59,0 | 375 | 111 | 59,5 | 1615 | 4000 | 4000 | 2400 | 915 | 276 | 440 | 118 |



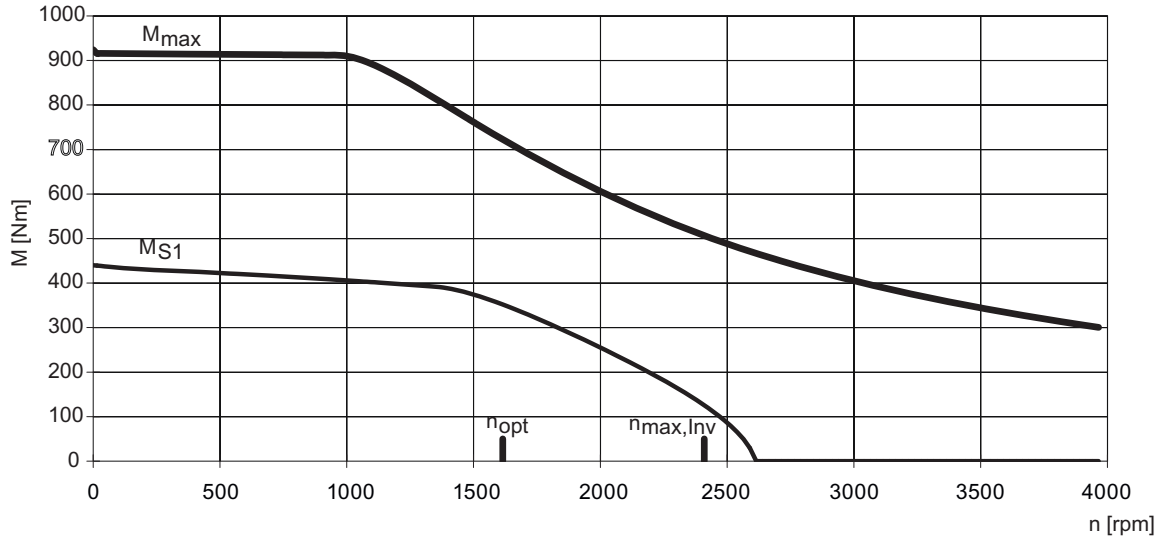
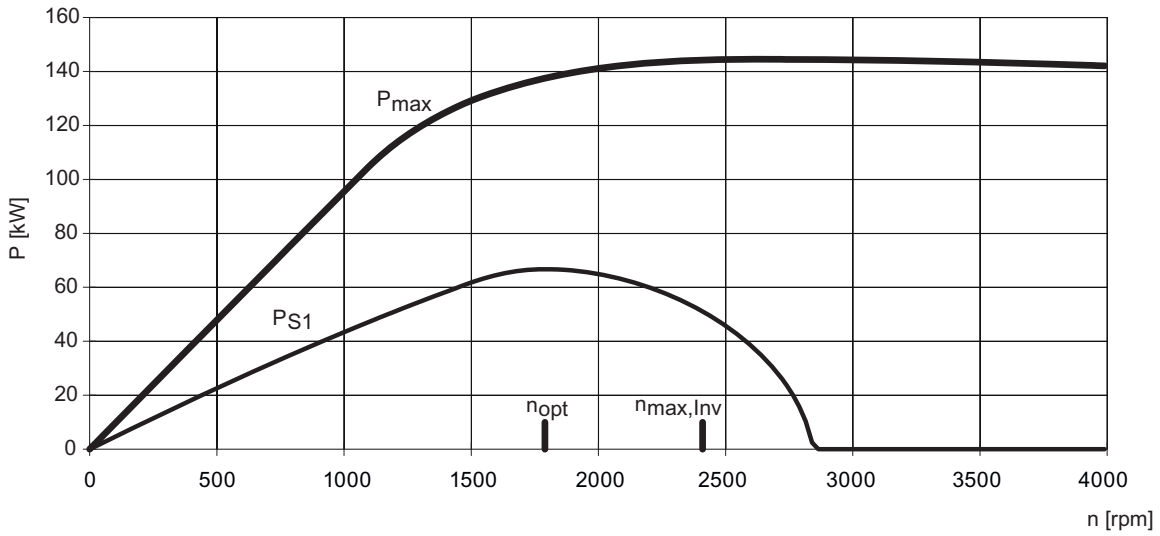



Tabella 4- 766 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8164-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 67,0 | 365 | 108 | 66,7 | 1790 | 4000 | 4000 | 2400 | 915 | 276 | 440 | 118 |
| 1500 | 59,0 | 375 | 111 | | | | | | | | | |



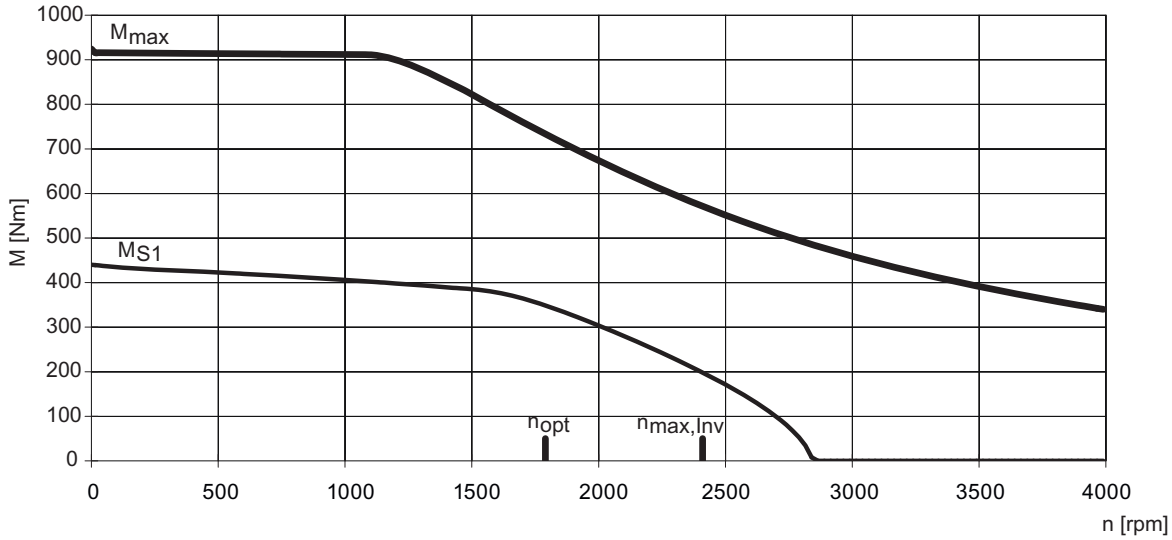
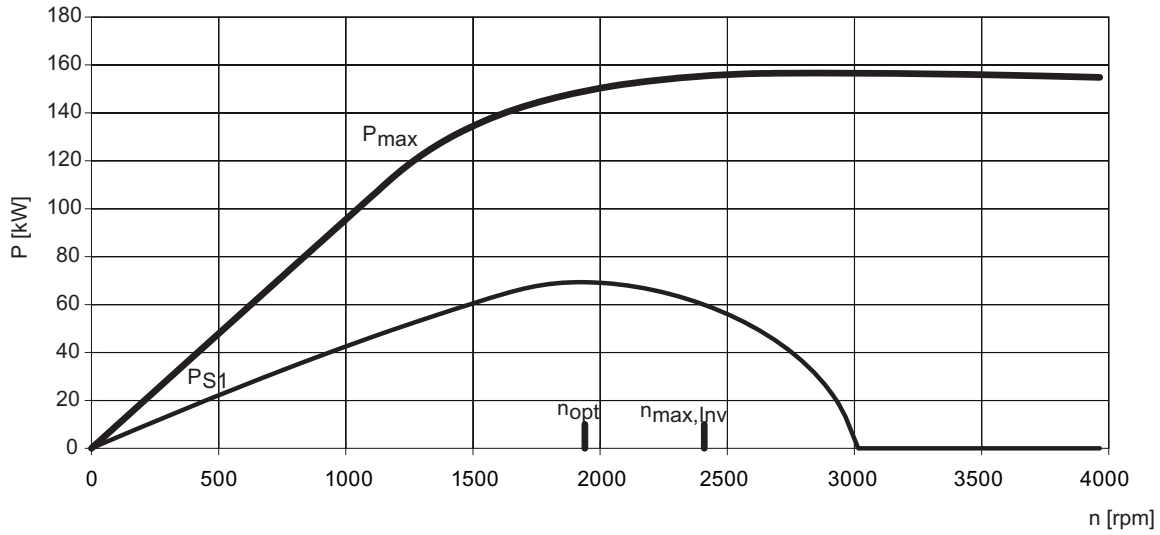



Tabella 4- 767 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8164-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 70,0 | 330 | 105 | 69,3 | 1940 | 4000 | 4000 | 2400 | 915 | 276 | 440 | 118 |



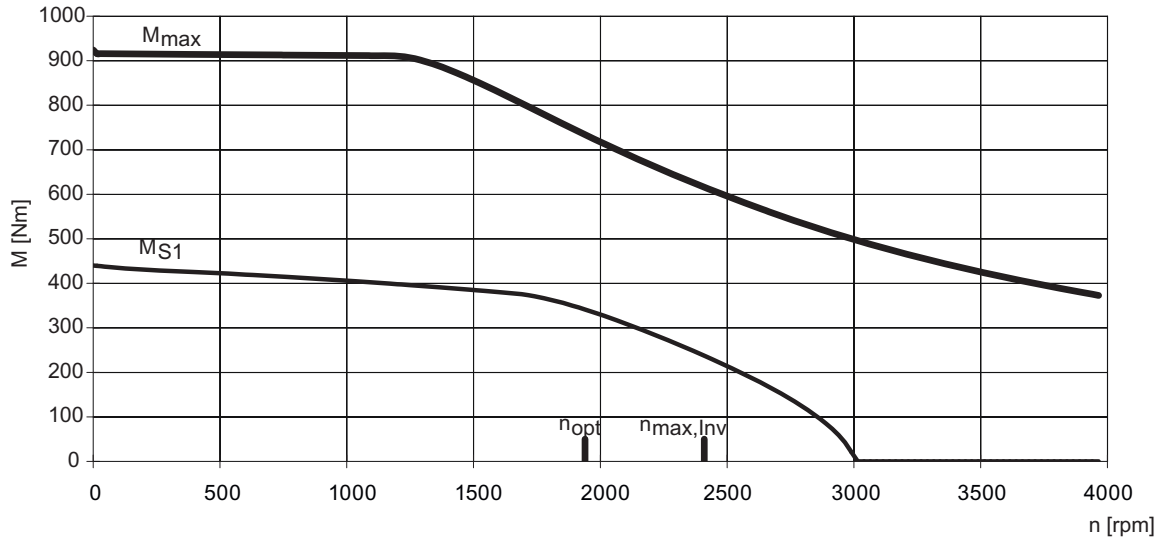
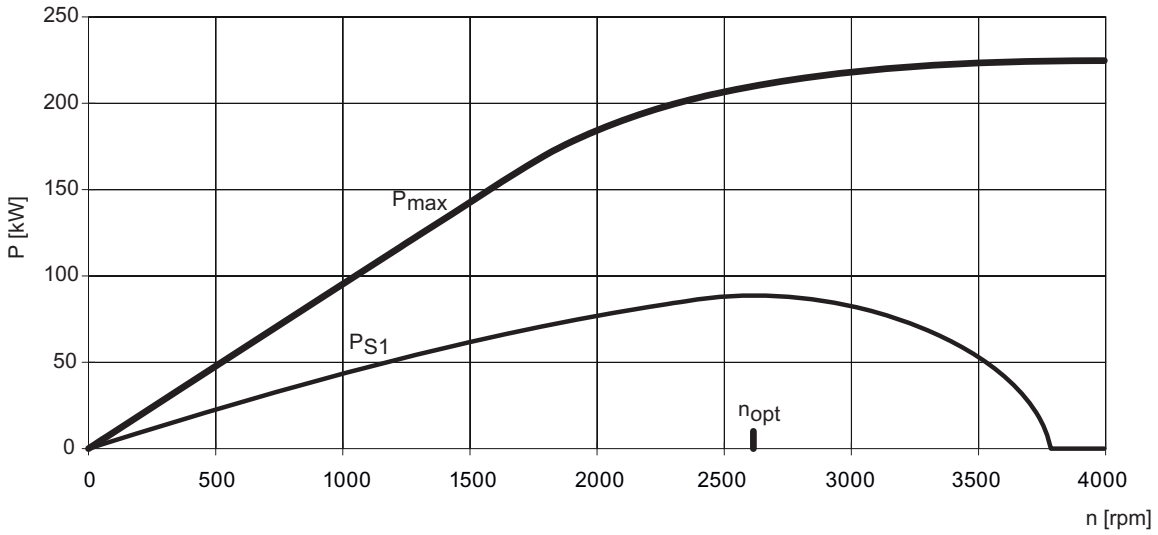



Tabella 4- 768 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8164-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 88,0 | 335 | 165 | 88,7 | 2615 | 4000 | 4000 | >4000 | 915 | 472 | 440 | 205 |



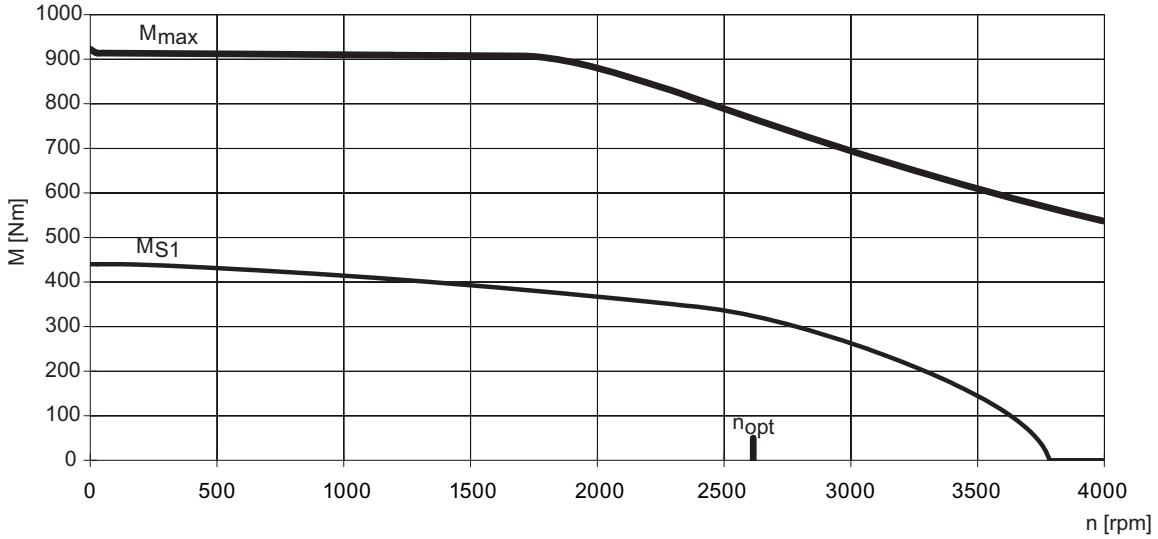
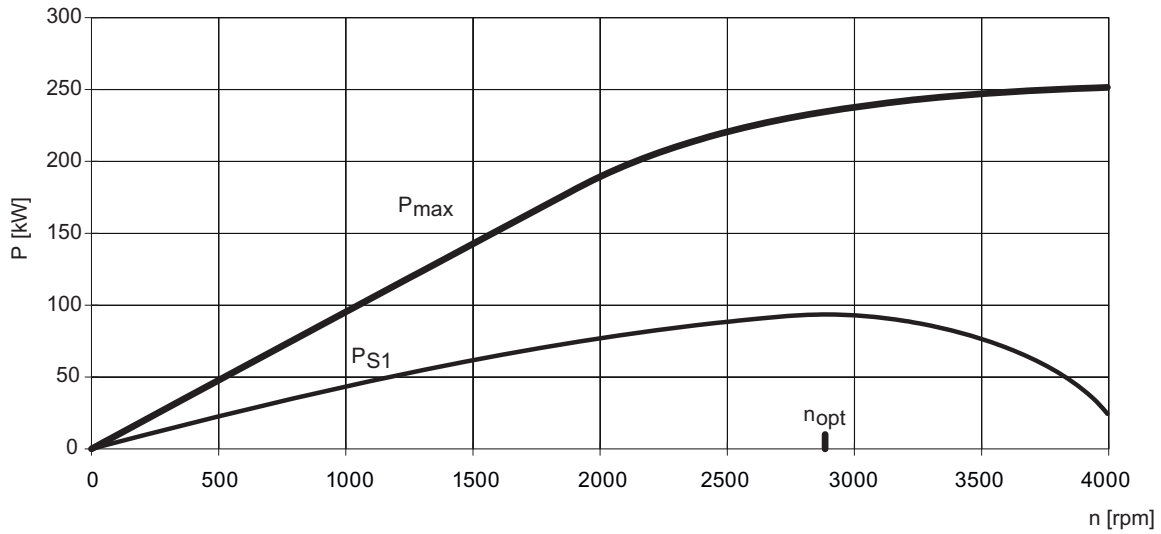



Tabella 4- 769 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8164-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2800 | 93,0 | 315 | 156 | 93,5 | 2885 | 4000 | 4000 | >4000 | 915 | 472 | 440 | 205 |
| 2500 | 88,0 | 335 | 165 | | | | | | | | | |



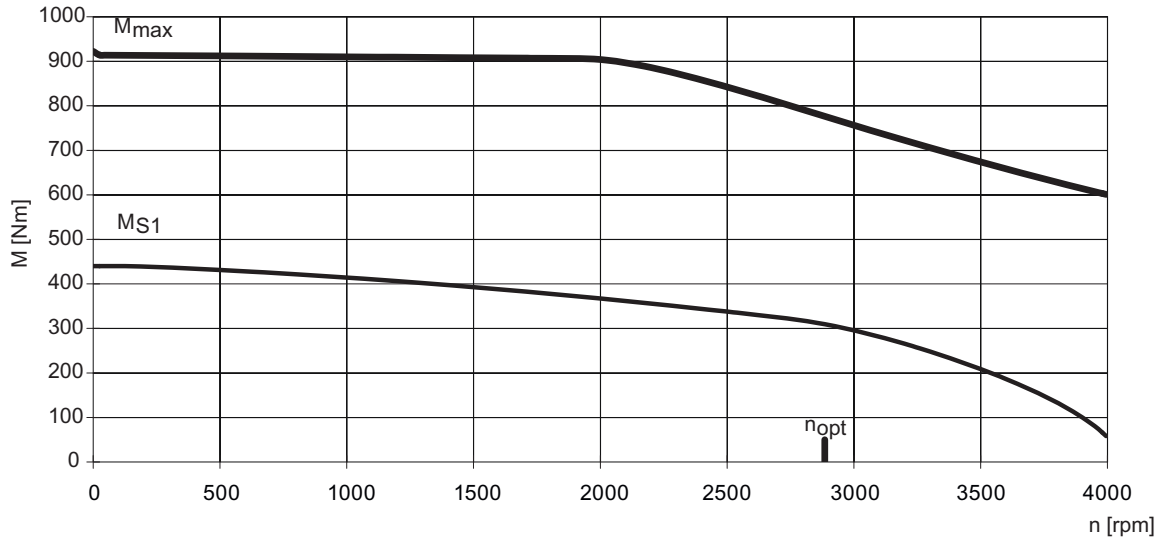
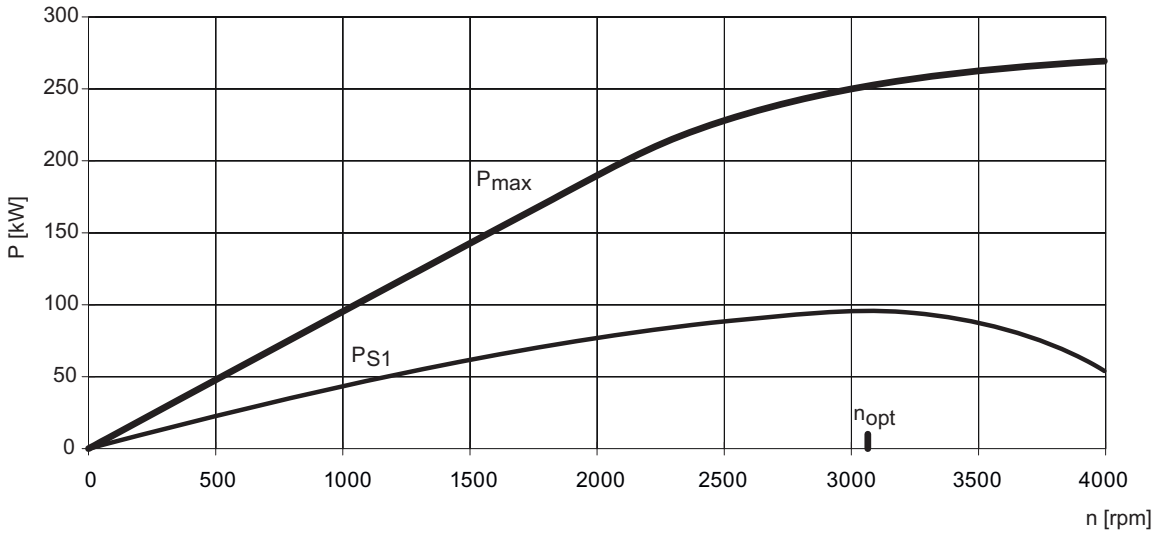



Tabella 4- 770 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8164-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3000 | 96,0 | 305 | 150 | 95,8 | 3065 | 4000 | 4000 | >4000 | 915 | 472 | 440 | 205 |



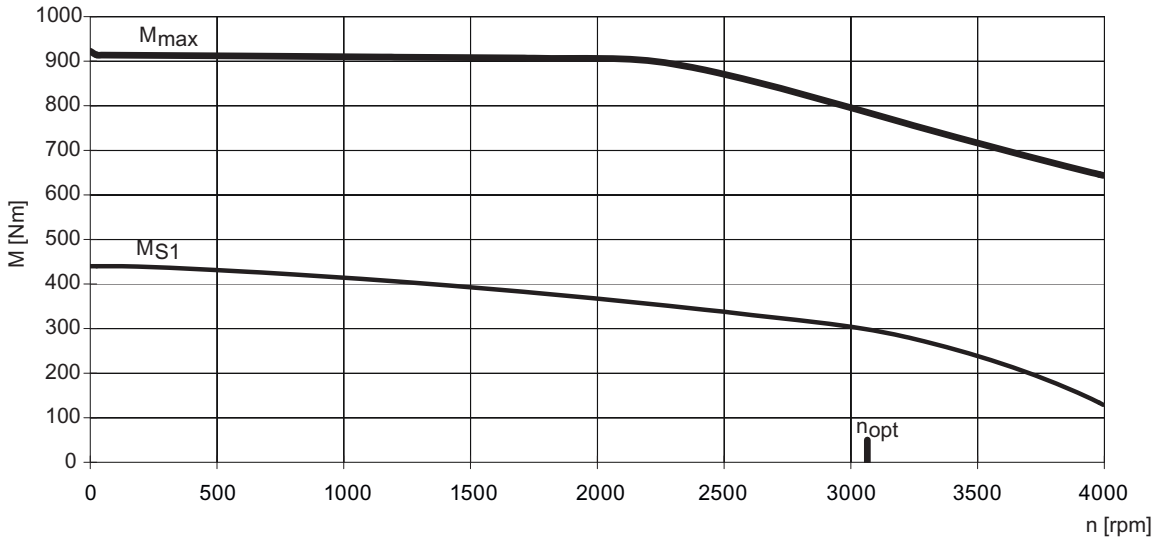
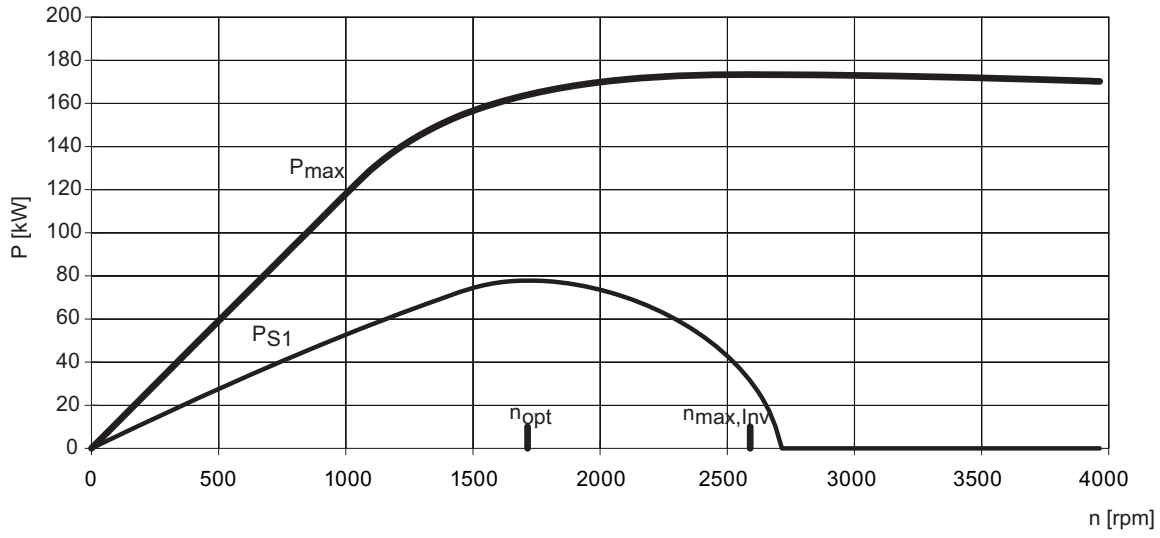



Tabella 4- 771 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8166-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 74,0 | 475 | 148 | 77,8 | 1715 | 4000 | 4000 | 2600 | 1135 | 367 | 550 | 159 |



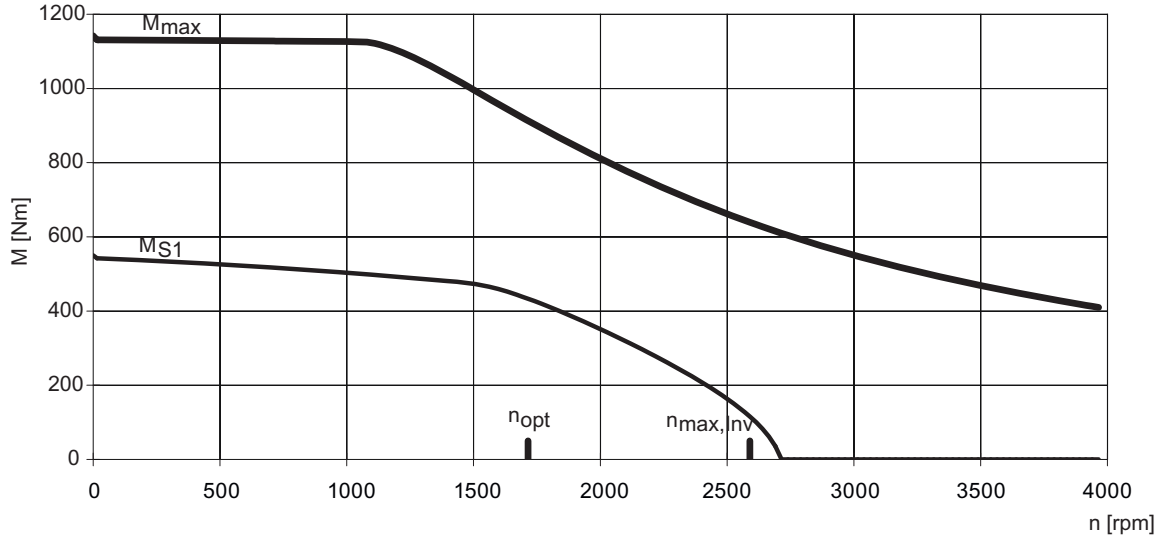
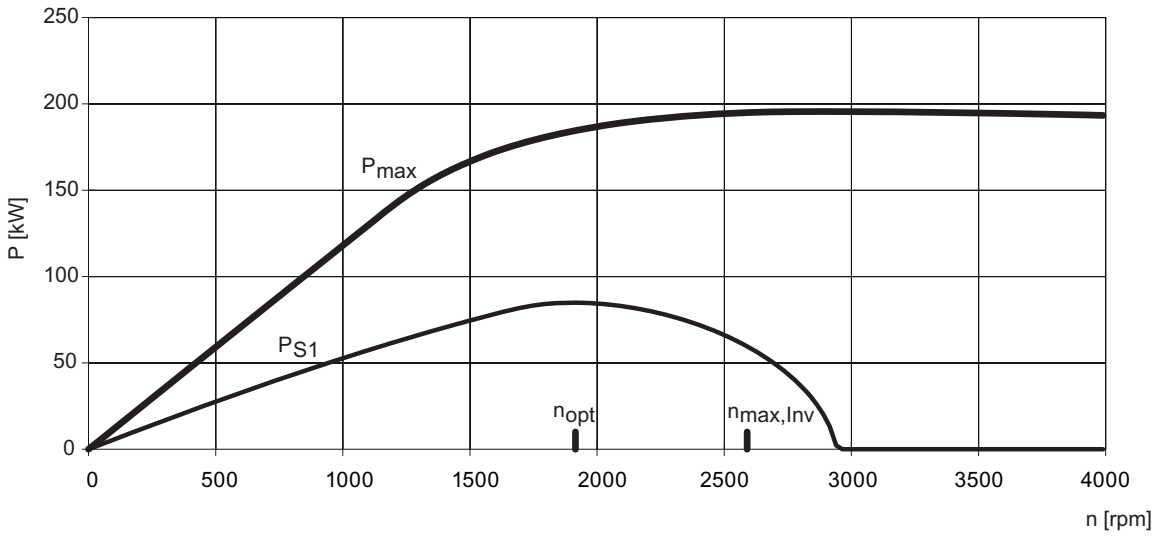



Tabella 4- 772 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8166-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 85,0 | 460 | 143 | 84,8 | 1915 | 4000 | 4000 | 2600 | 1135 | 367 | 550 | 159 |
| 1500 | 74,0 | 475 | 148 | | | | | | | | | |



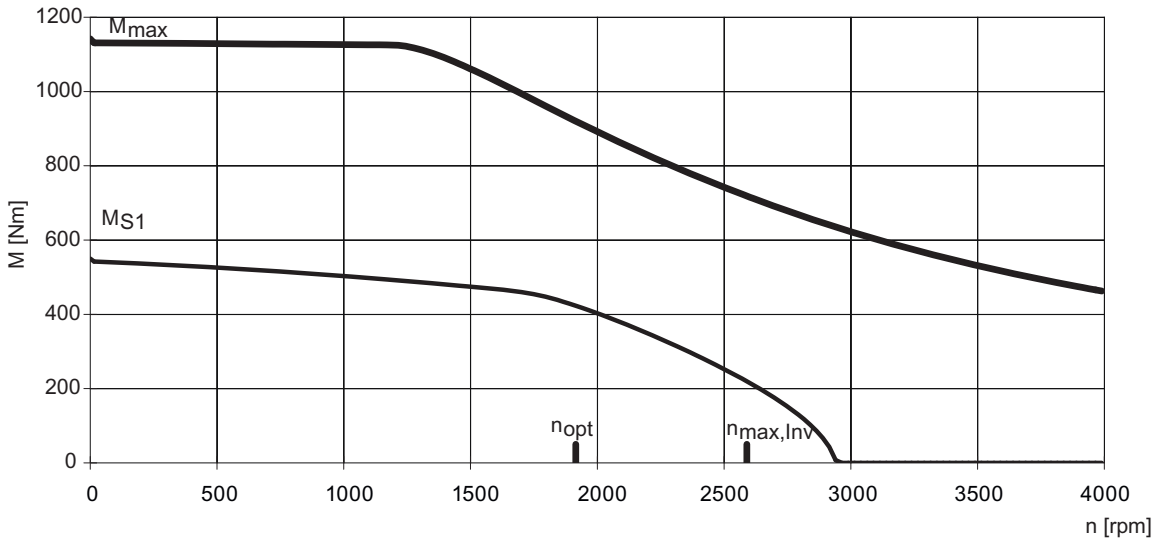
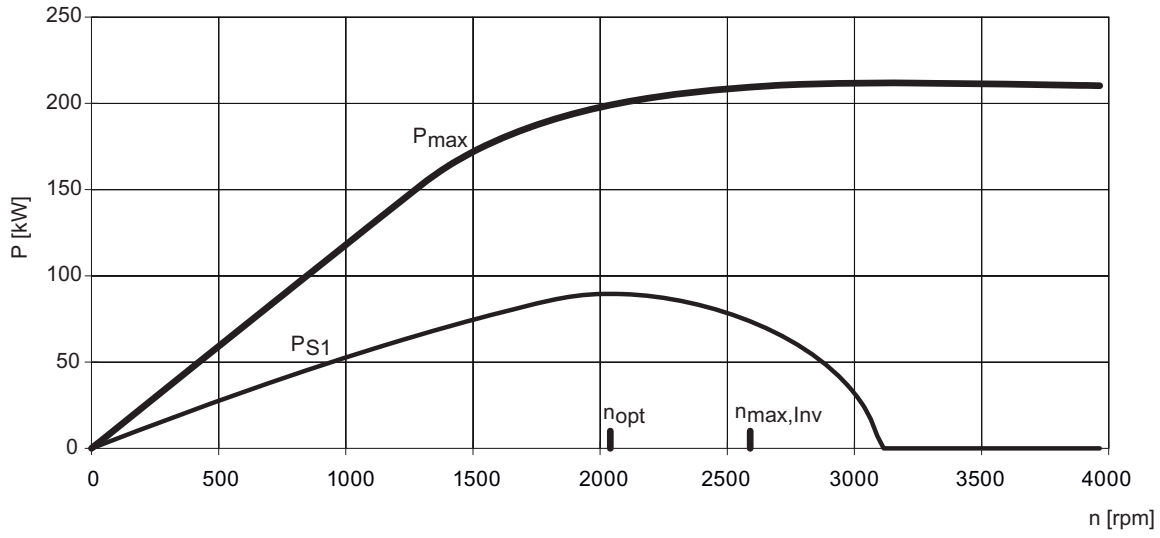



Tabella 4- 773 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8166-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 89,0 | 425 | 138 | 89,5 | 2040 | 4000 | 4000 | 2600 | 1135 | 367 | 550 | 159 |



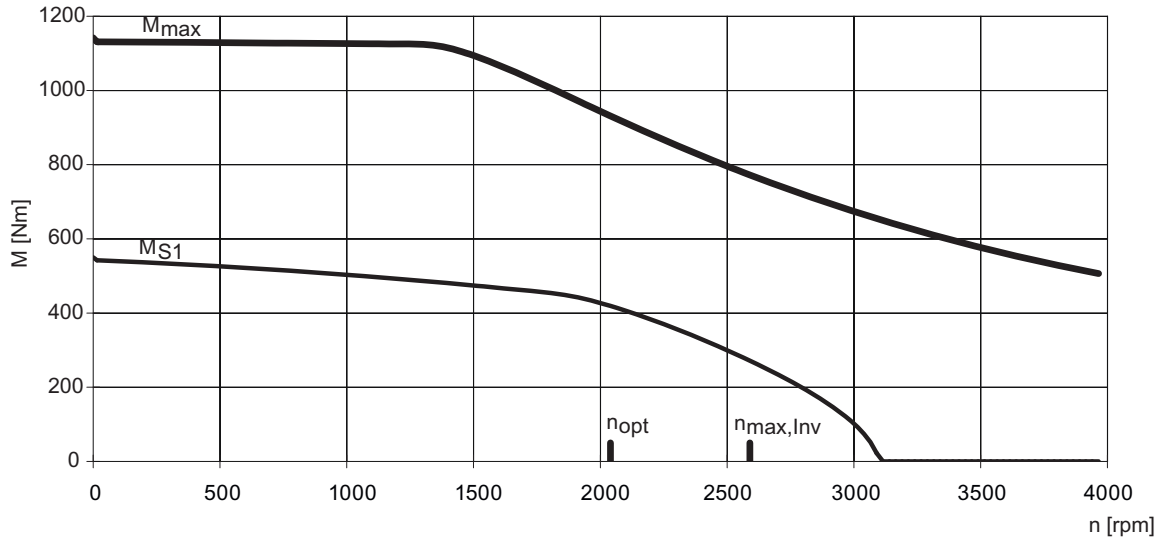
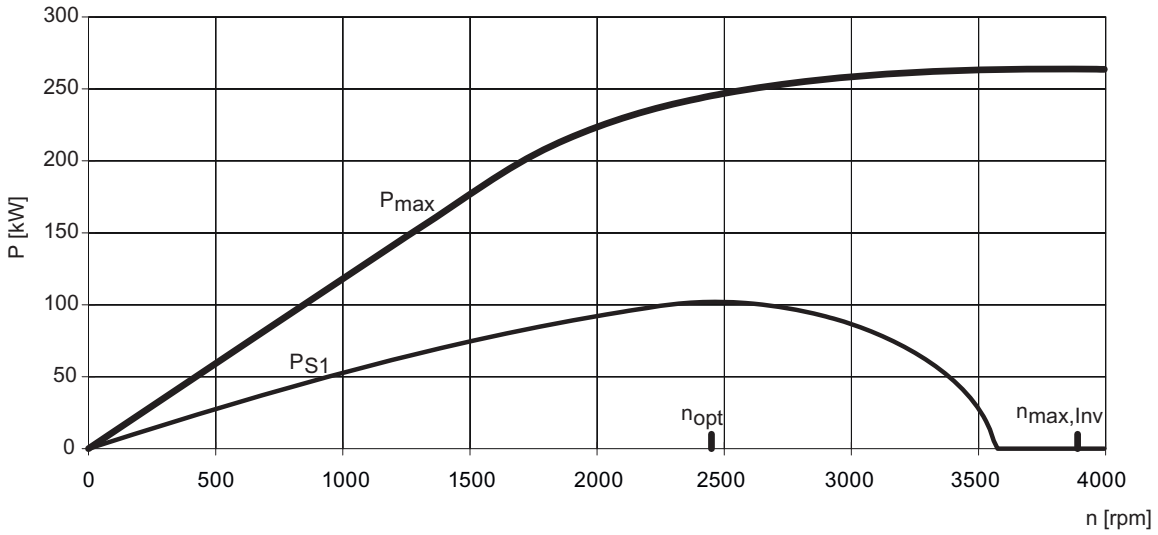



Tabella 4- 774 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8166-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 102,0 | 390 | 188 | 102,0 | 2450 | 4000 | 4000 | 3900 | 1135 | 551 | 550 | 240 |



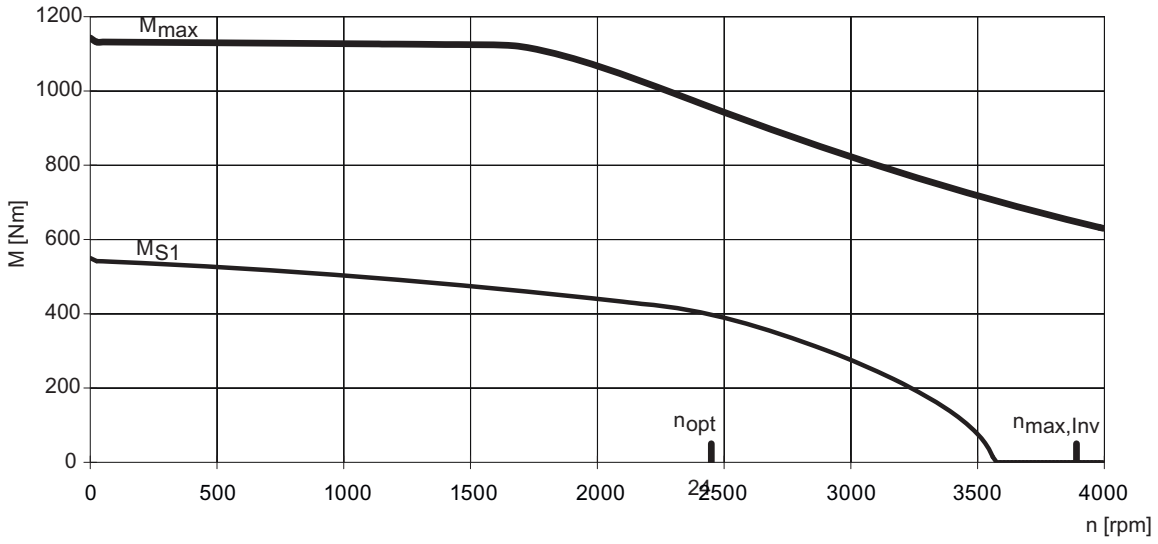
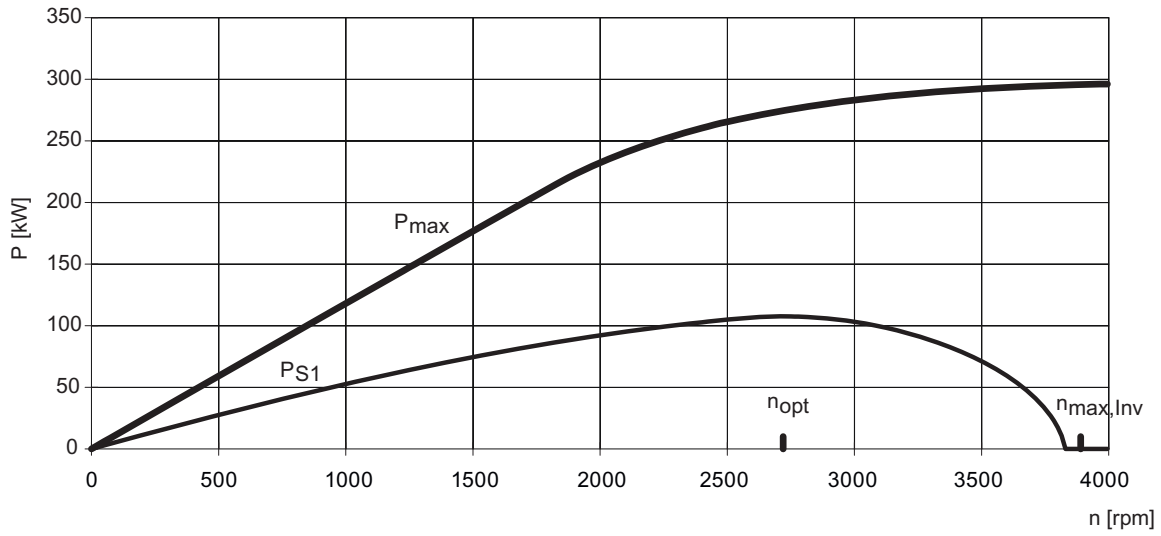



Tabella 4- 775 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8166-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2800 | 109,0 | 375 | 177 | 107,6 | 2720 | 4000 | 4000 | 3900 | 1135 | 551 | 550 | 240 |
| 2500 | 102,0 | 390 | 188 | | | | | | | | | |



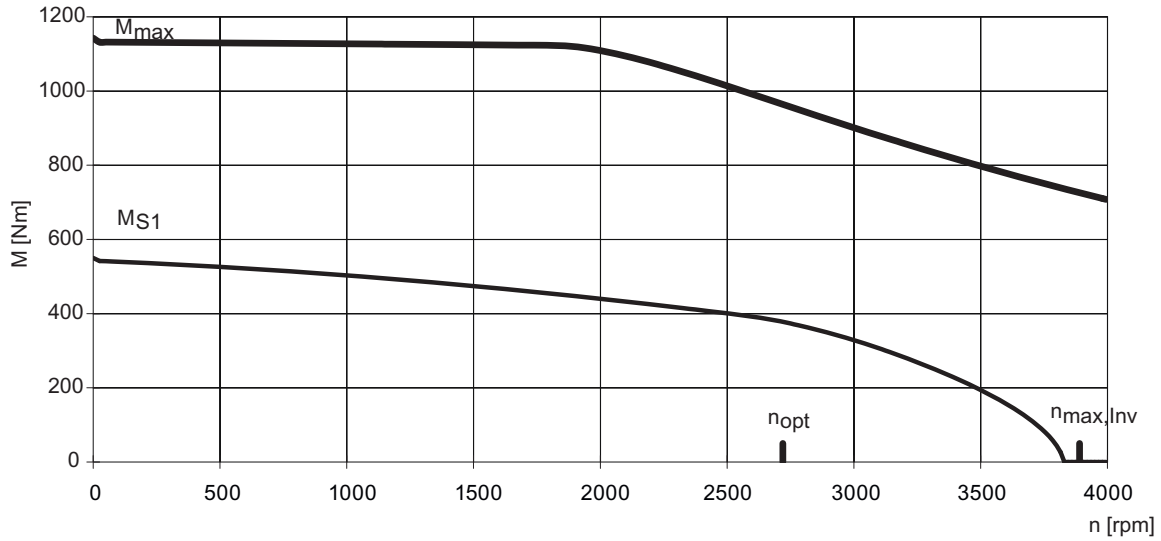
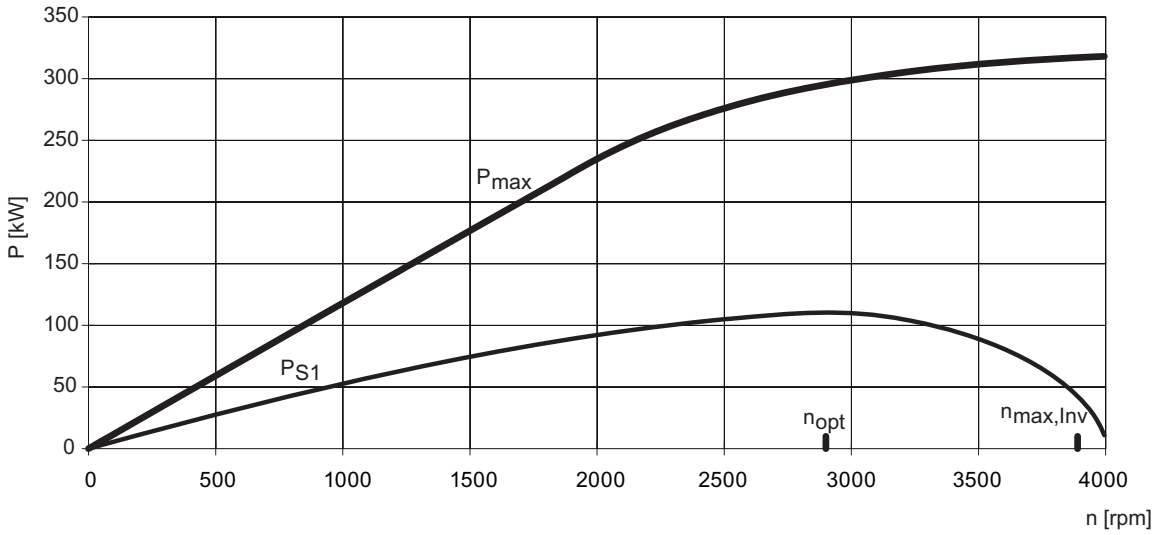



Tabella 4- 776 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8166-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3000 | 110,0 | 350 | 169 | 110,4 | 2900 | 4000 | 4000 | 3900 | 1135 | 551 | 550 | 240 |



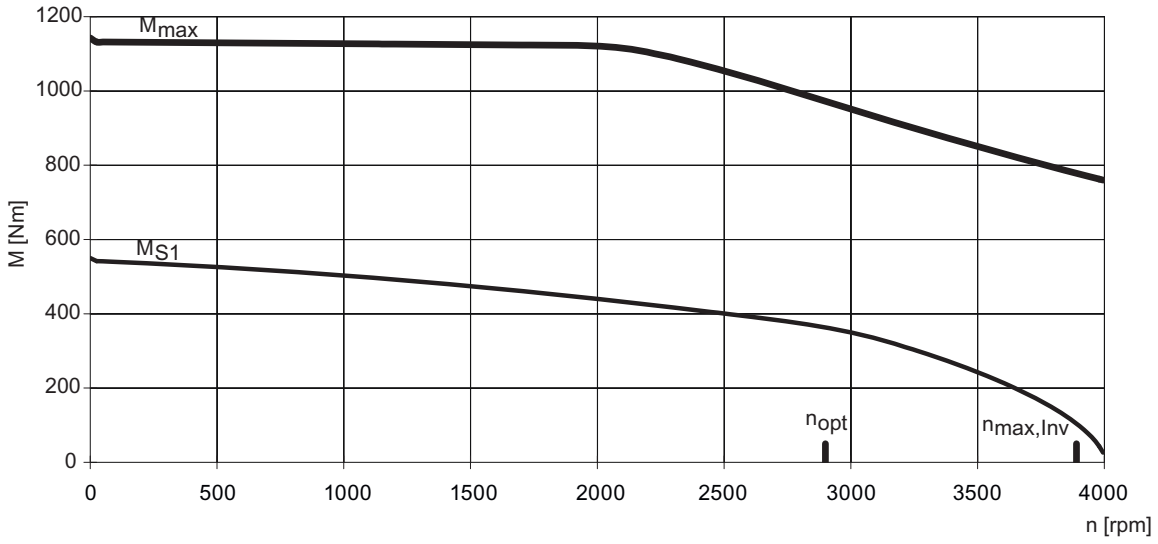
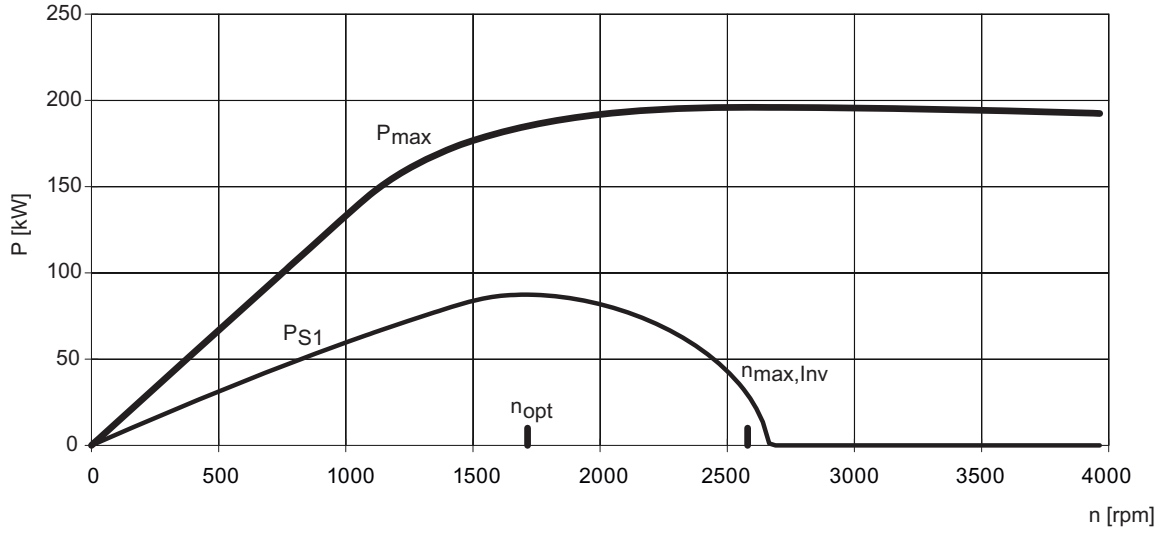



Tabella 4- 777 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8168-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 84,0 | 530 | 169 | 87,4 | 1715 | 4000 | 4000 | 2600 | 1280 | 413 | 620 | 179 |



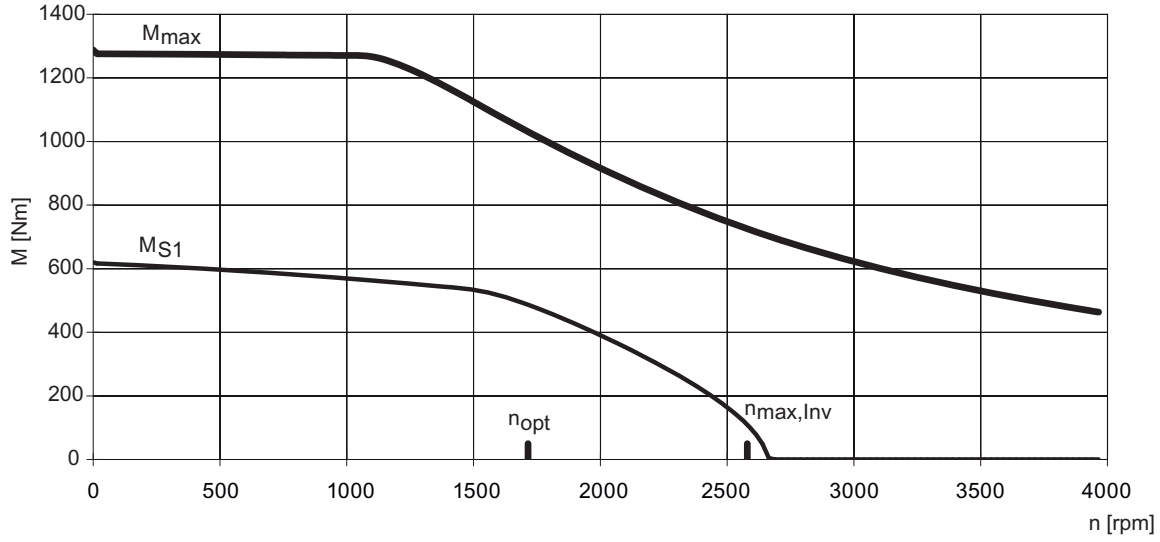
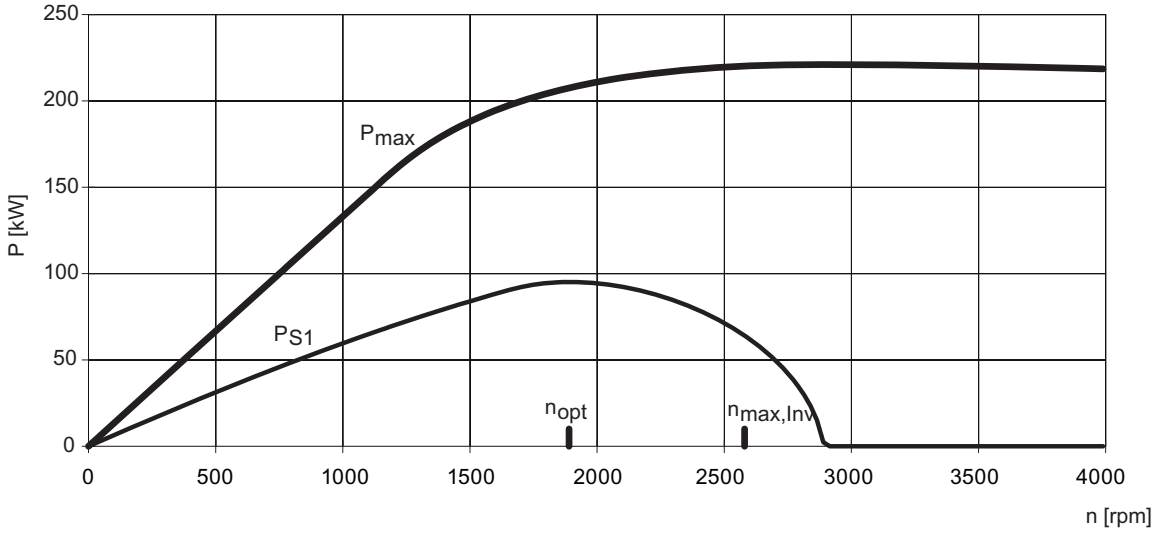



Tabella 4- 778 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8168-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 94,0 | 510 | 164 | 95,1 | 1890 | 4000 | 4000 | 2600 | 1280 | 413 | 620 | 179 |
| 1500 | 84,0 | 530 | 169 | | | | | | | | | |



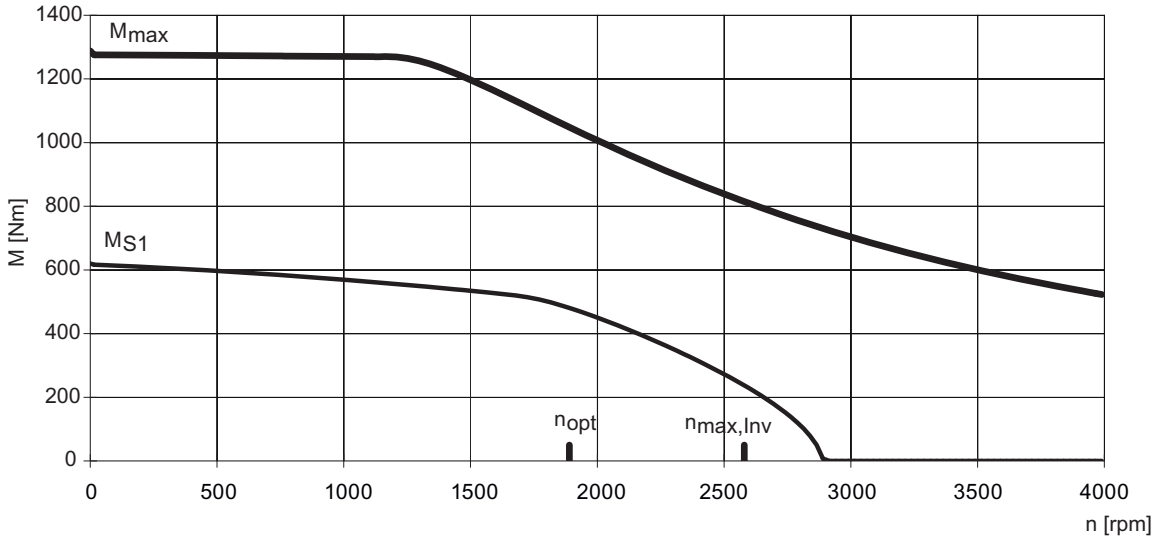
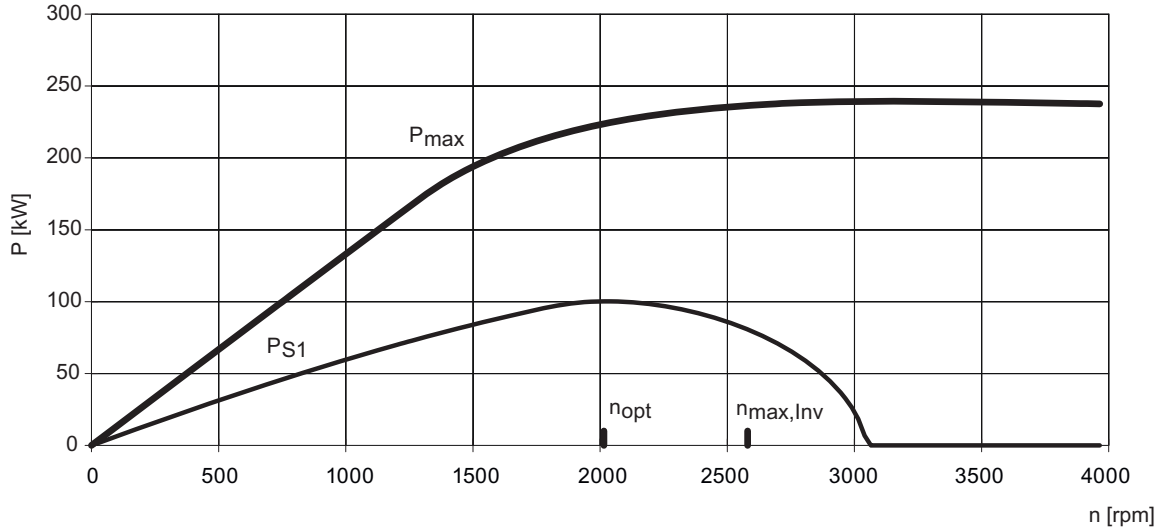



Tabella 4- 779 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8168-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 100,0 | 480 | 157 | 100,2 | 2015 | 4000 | 4000 | 2600 | 1280 | 413 | 620 | 179 |



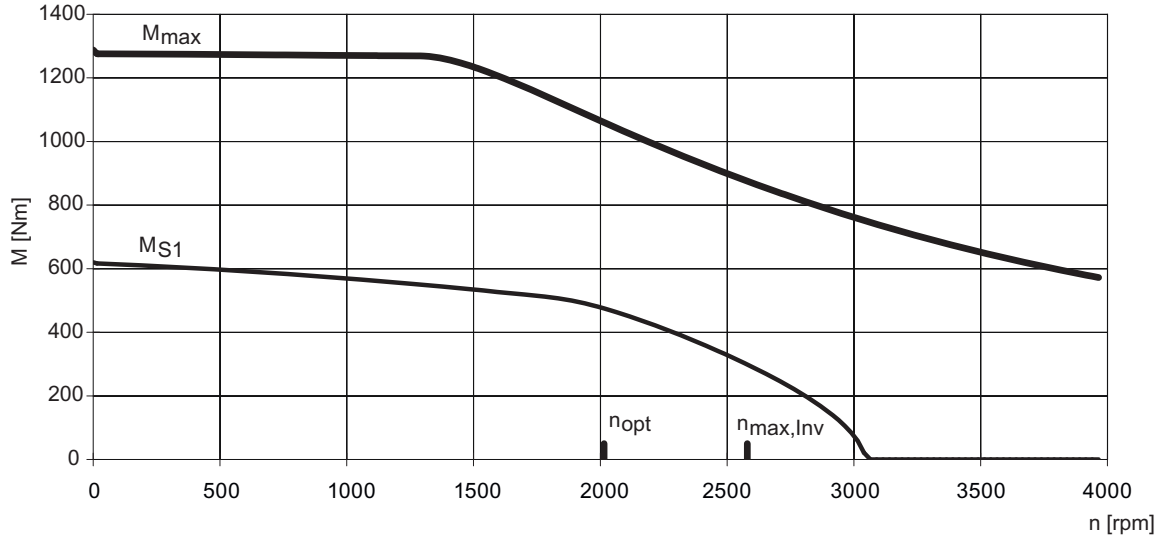
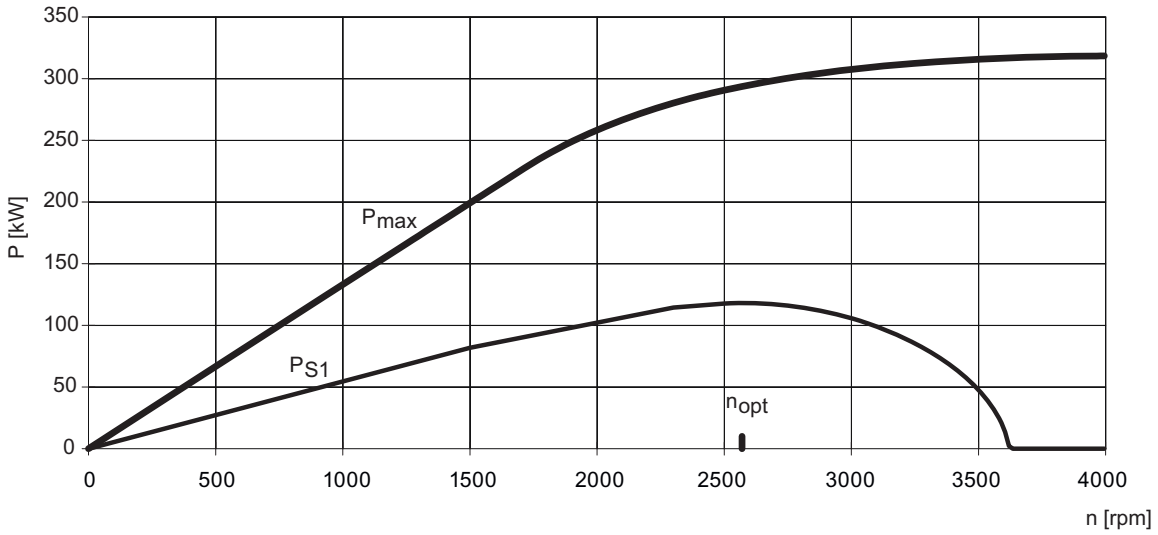



Tabella 4- 780 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8168-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 119,0 | 455 | 225 | 118,1 | 2570 | 4000 | 4000 | >4000 | 1280 | 661 | 520 | 240 |



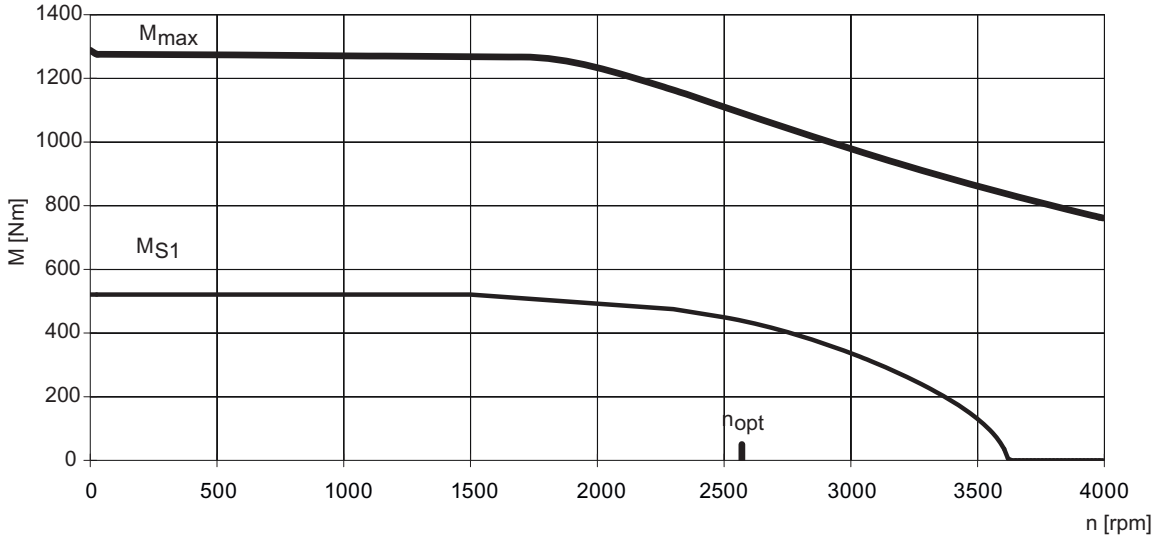
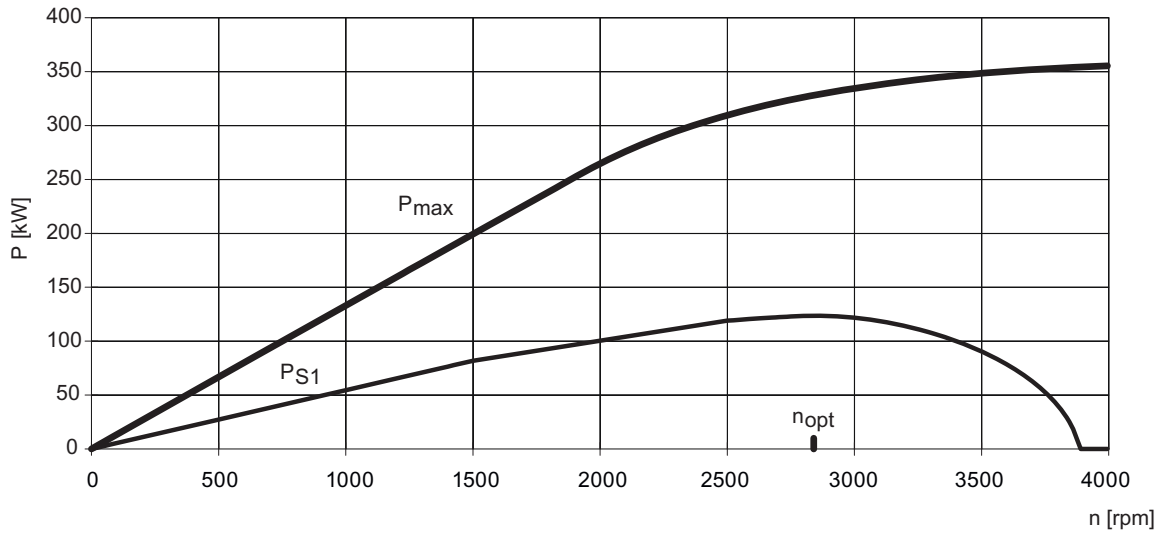



Tabella 4- 781 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8168-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2800 | 123,0 | 420 | 210 | 123,5 | 2840 | 4000 | 4000 | >4000 | 1280 | 661 | 520 | 240 |
| 2500 | 119,0 | 455 | 225 | | | | | | | | | |



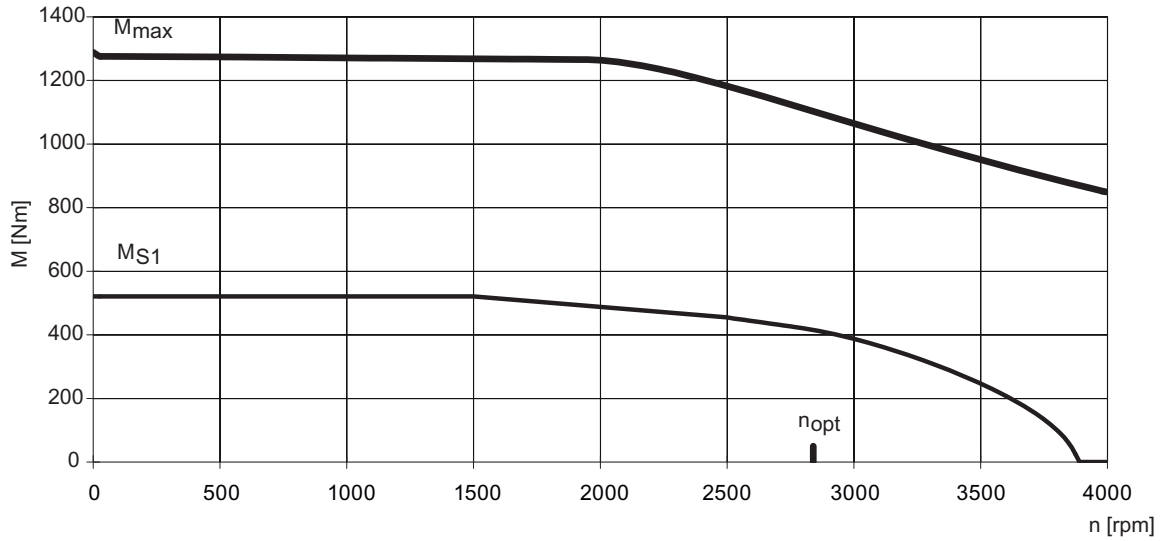
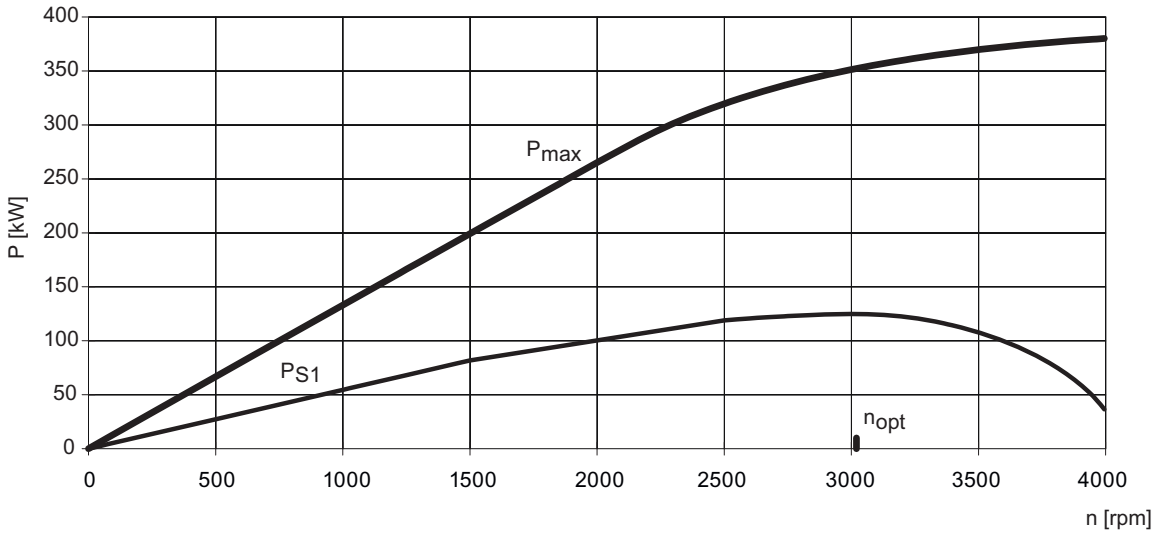
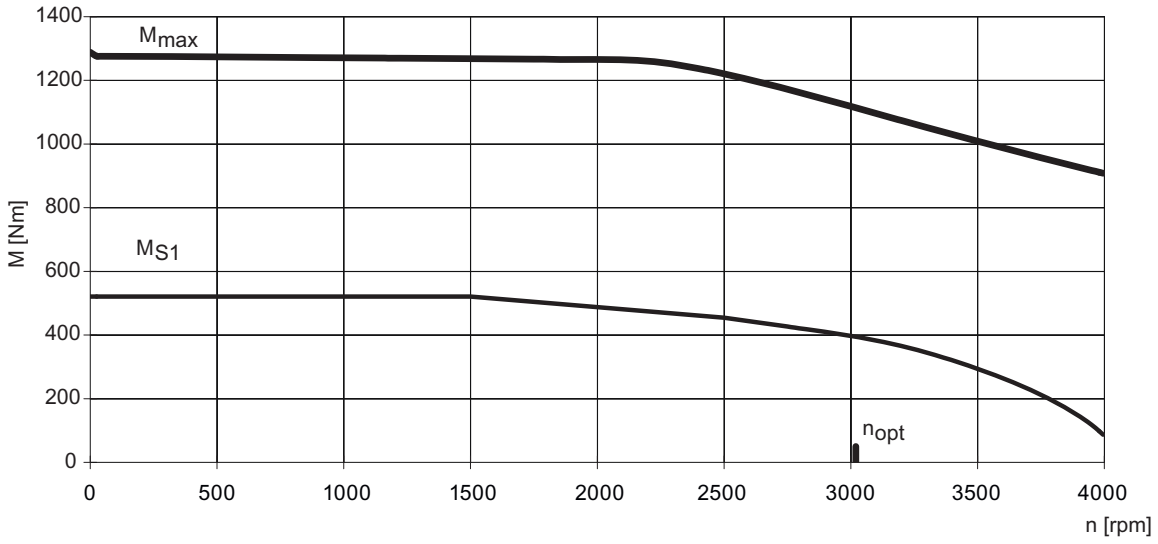



Tabella 4- 782 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8168-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3000 | 125,0 | 395 | 197 | 124,8 | 3020 | 4000 | 4000 | >4000 | 1280 | 661 | 520 | 240 |



### 4.2.3.3 Altezza dell'asse 180 - Raffreddamento ad acqua

Tabella 4- 783 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-2□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 42 | 573 | 100 | 61 | 1150 | 3800 | 3500 | 1450 | 1450 | 260 | 590 | 103 |

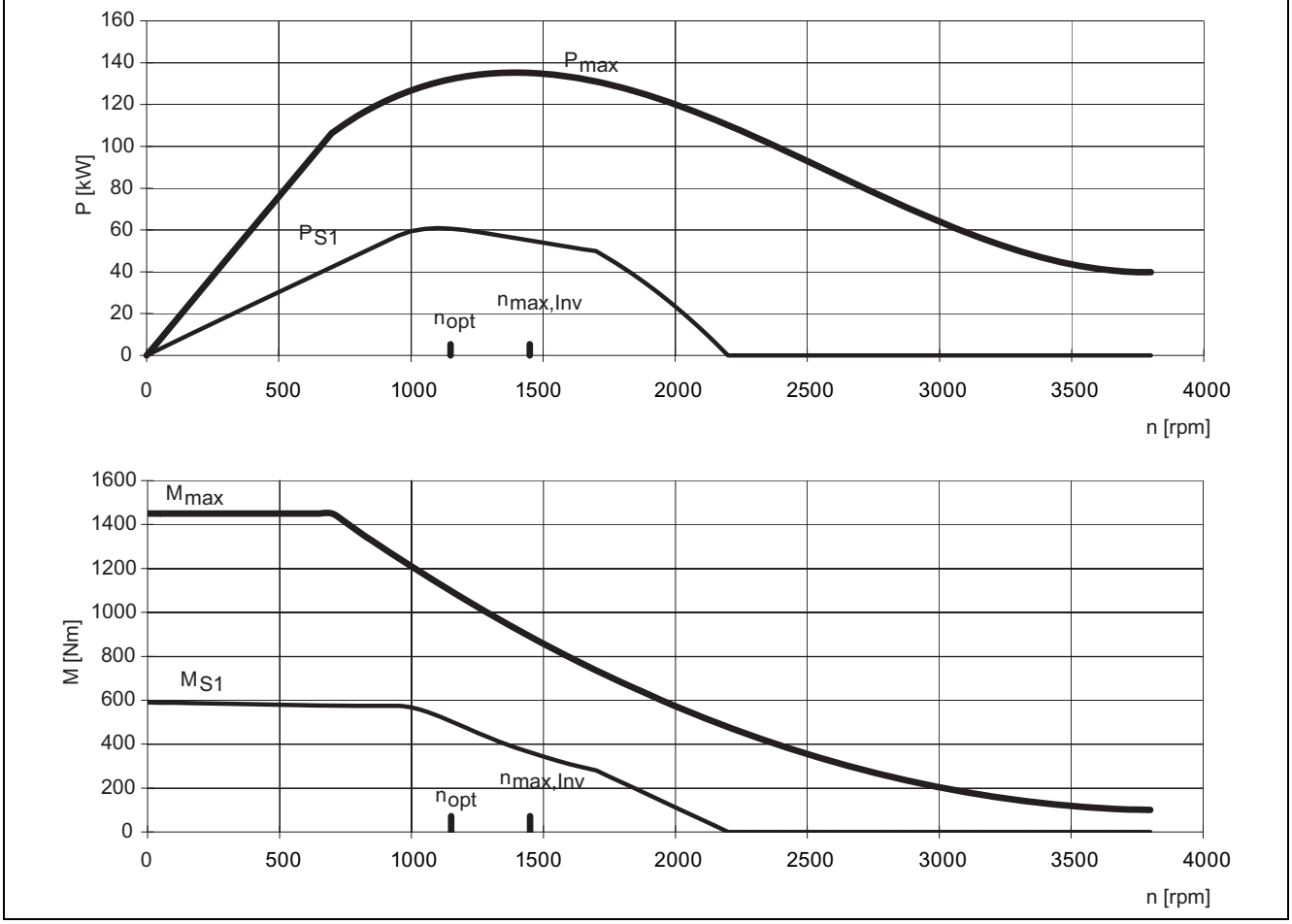


Tabella 4- 784 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-2□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 48 | 573 | 102 | 68 | 1250 | 3800 | 3500 | 1450 | 1450 | 260 | 590 | 103 |

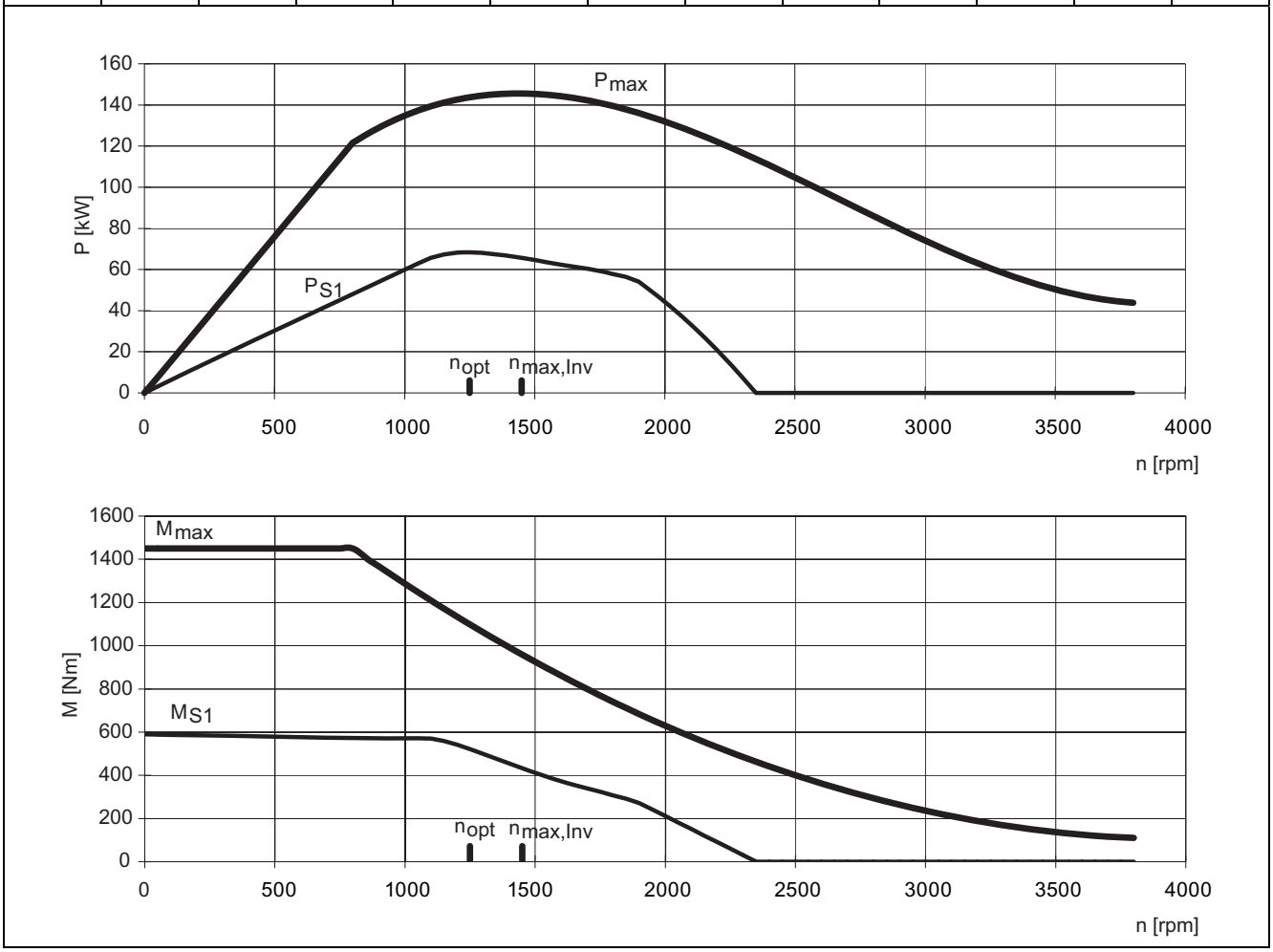


Tabella 4- 785 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-2□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 60 | 573 | 102 | 74 | 1400 | 3800 | 3500 | 1450 | 1450 | 260 | 590 | 103 |

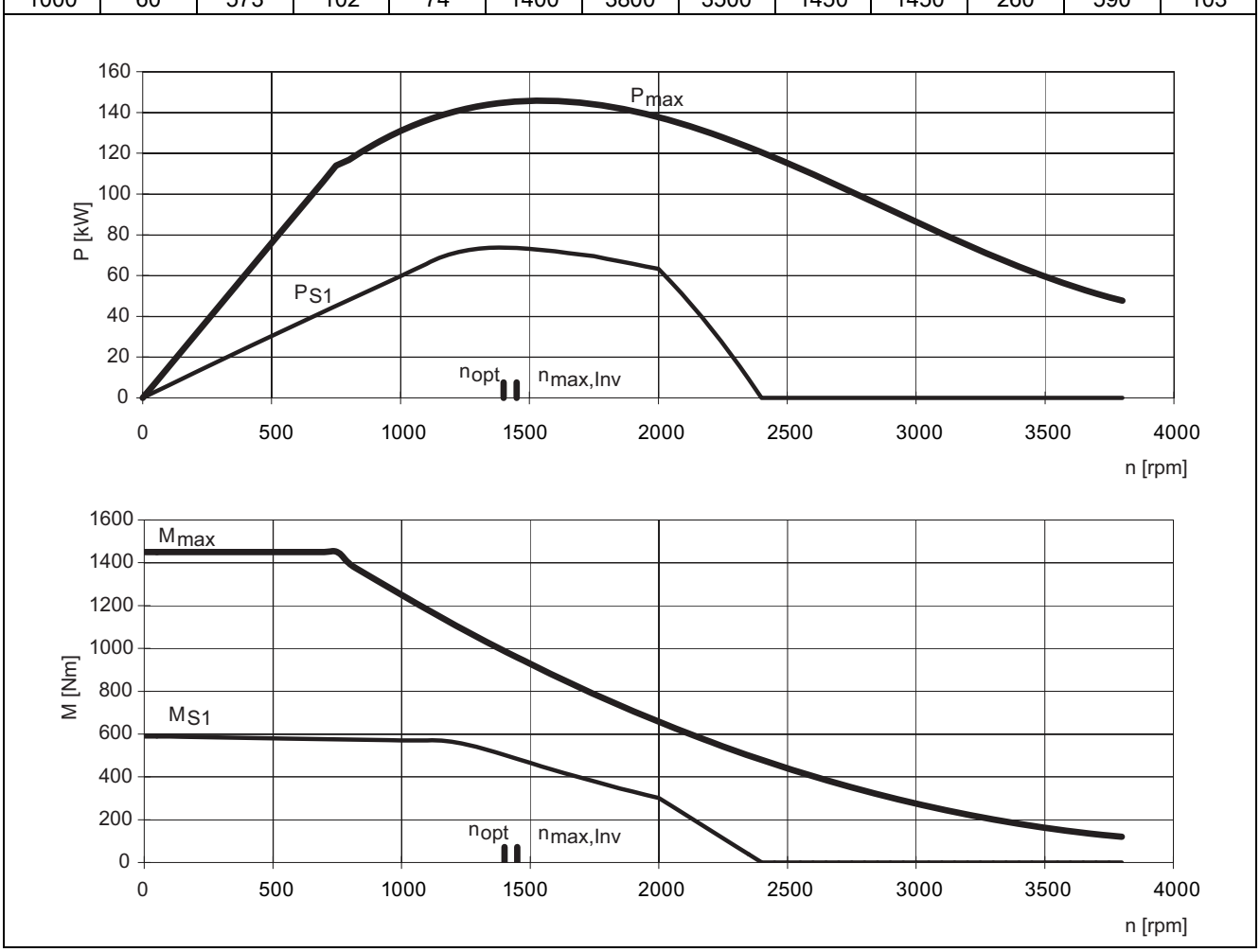


Tabella 4- 786 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-2□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 61 | 583 | 140 | 84 | 1500 | 3800 | 3500 | 1950 | 1450 | 355 | 600 | 143 |

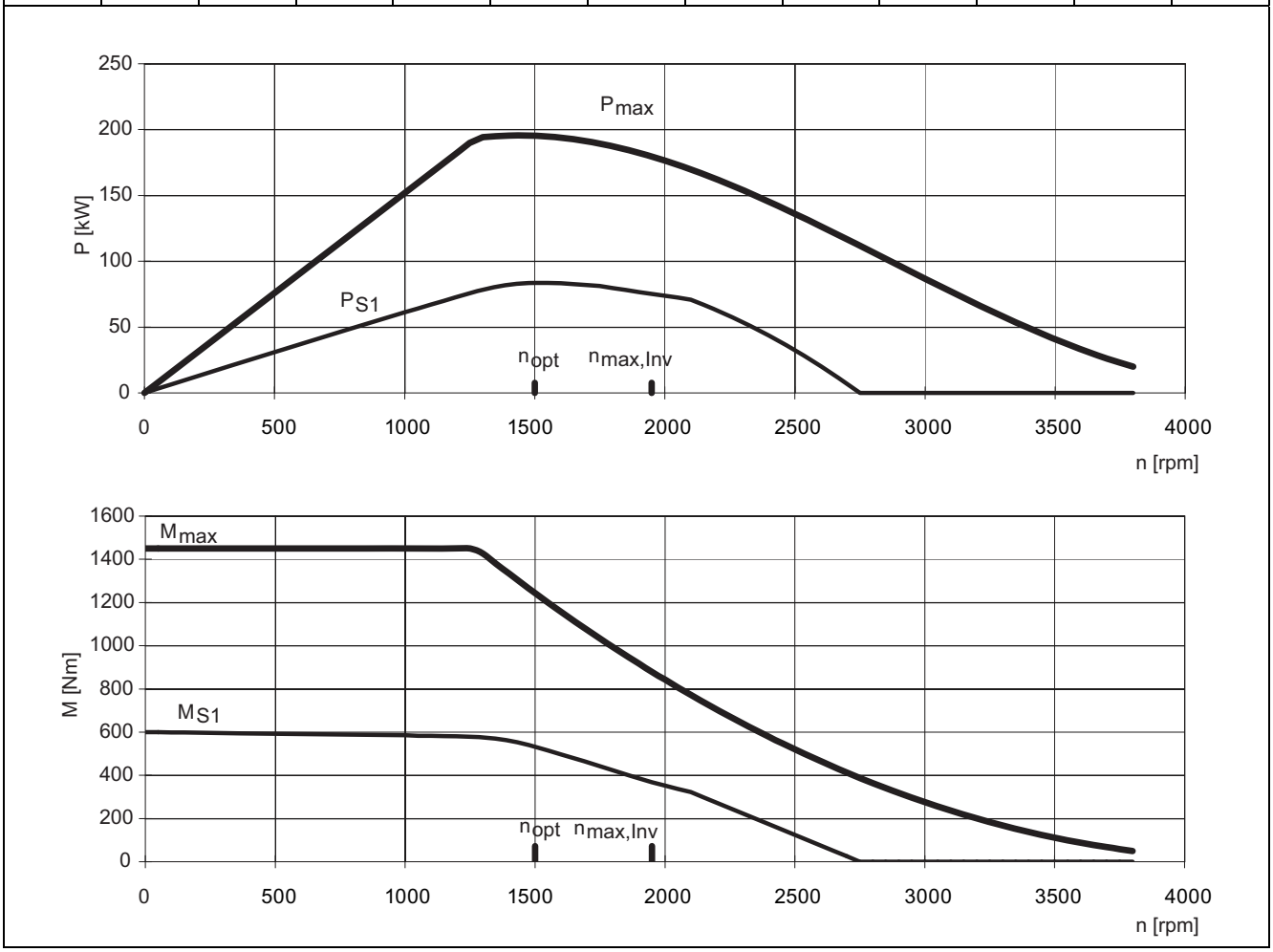
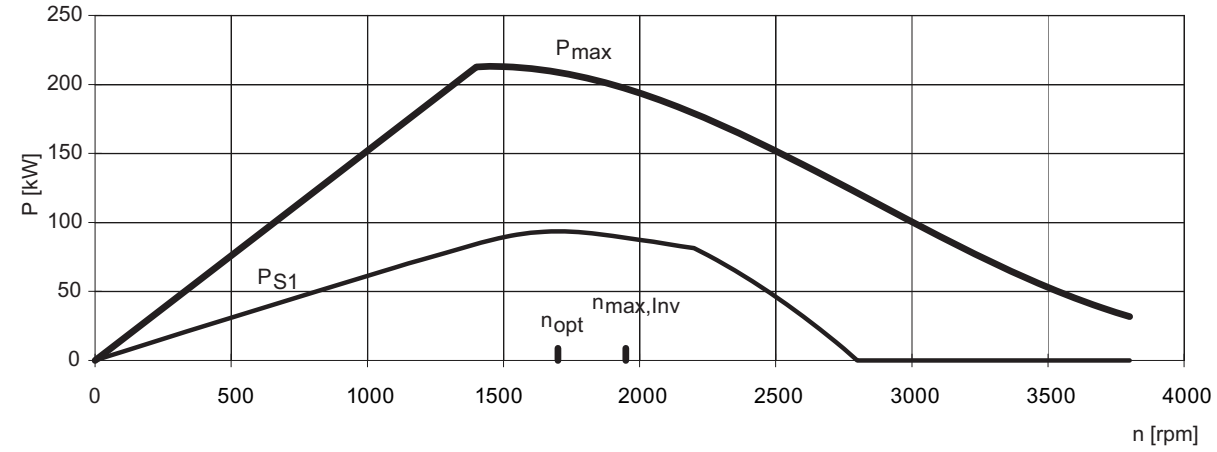


Tabella 4- 787 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-2□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 70 | 581 | 140 | 94 | 1700 | 3800 | 3500 | 1950 | 1450 | 355 | 600 | 143 |



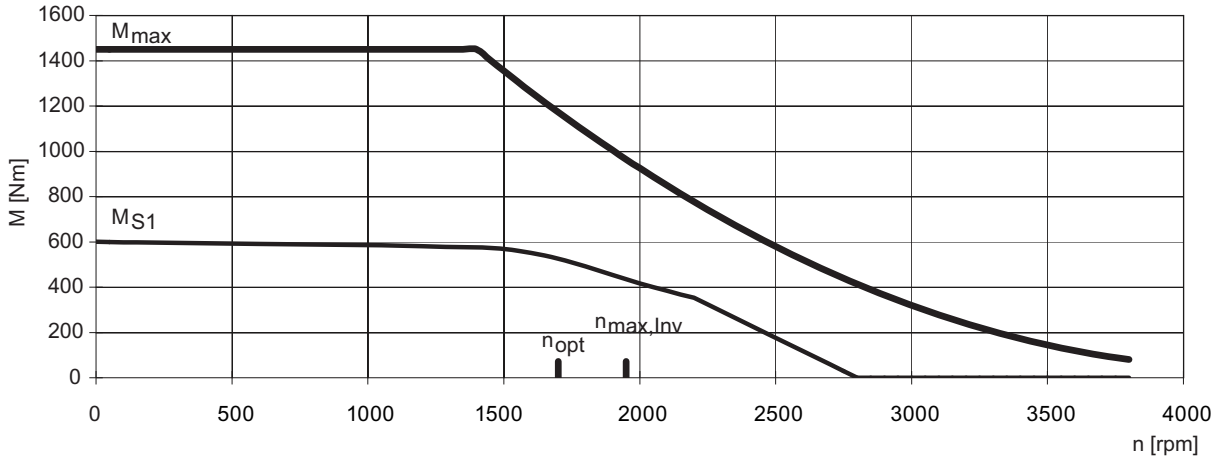



Tabella 4- 788 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-2□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 82 | 580 | 140 | 100 | 1800 | 3800 | 3500 | 1950 | 1450 | 355 | 600 | 143 |

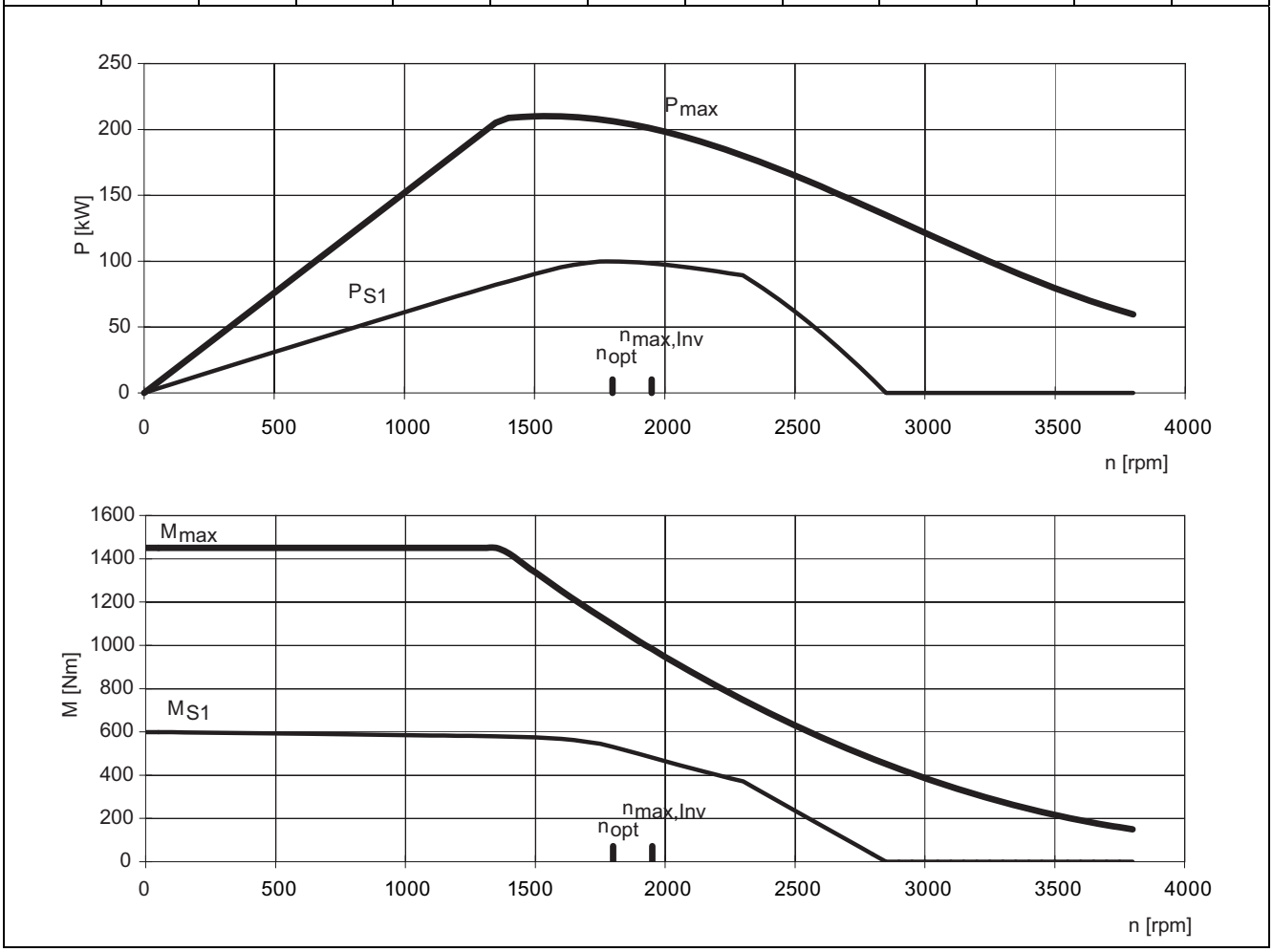
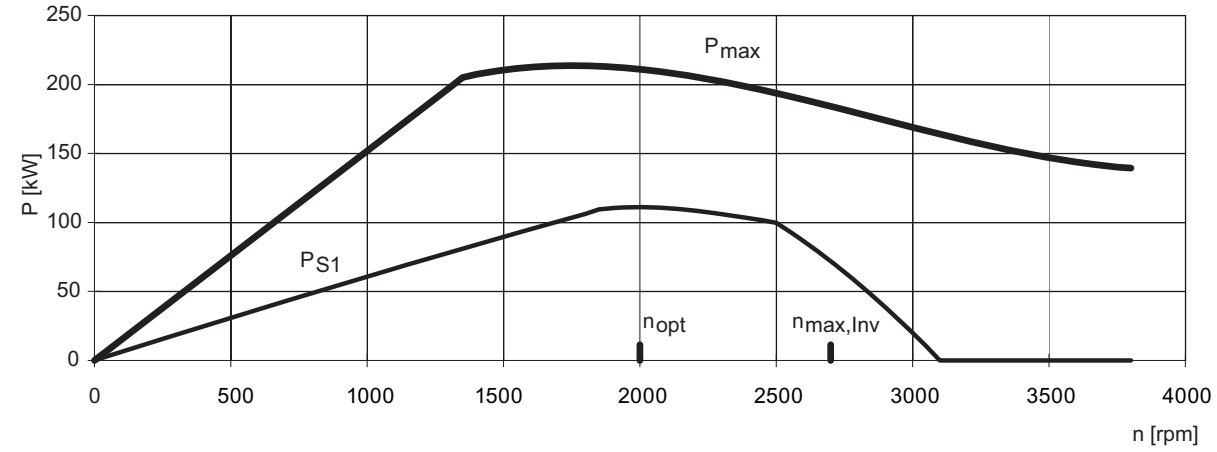


Tabella 4- 789 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 90 | 573 | 190 | 111 | 2000 | 3800 | 3500 | 2700 | 1450 | 490 | 600 | 196 |



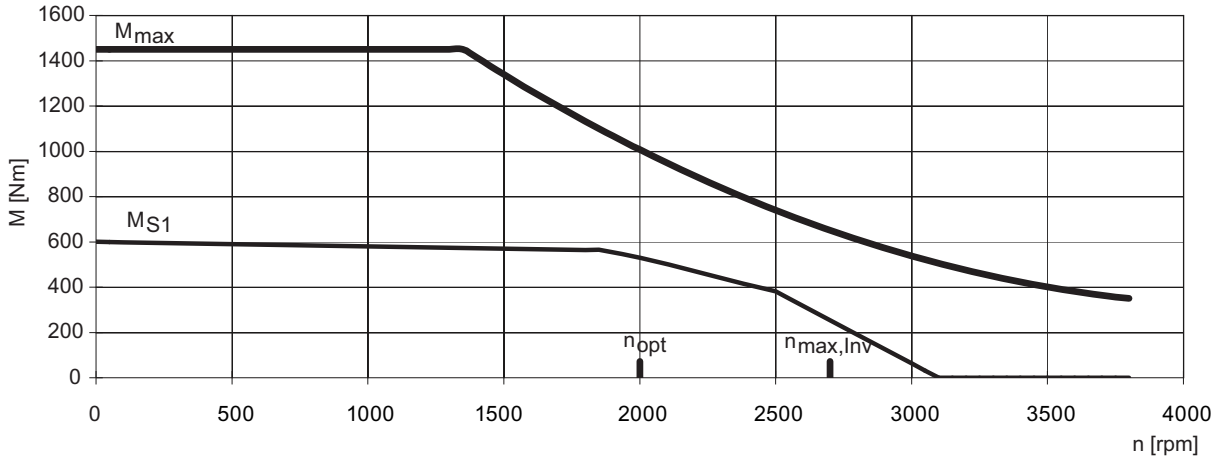



Tabella 4- 790 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 103 | 562 | 186 | 120 | 2150 | 3800 | 3500 | 2700 | 1450 | 490 | 600 | 196 |

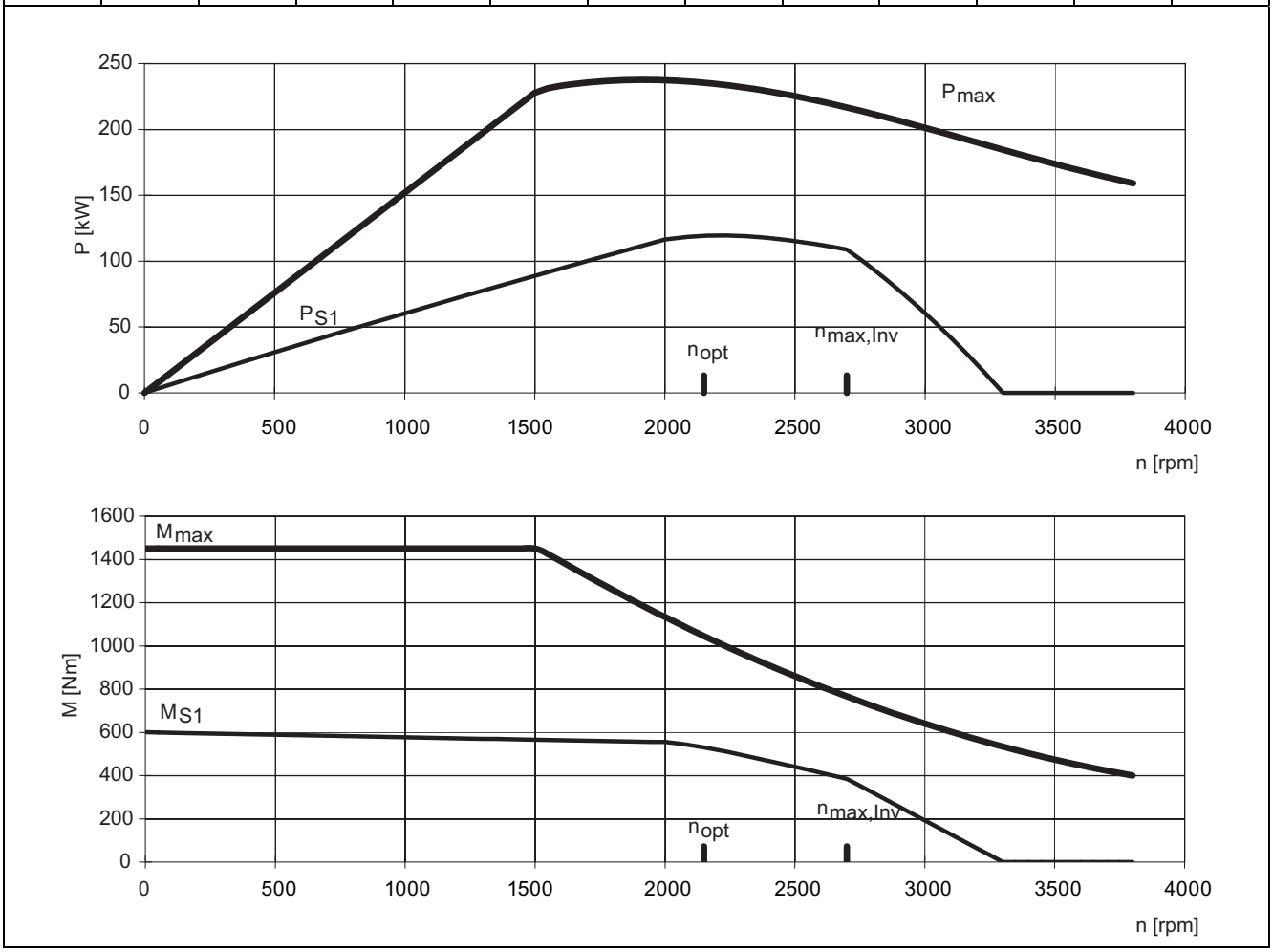
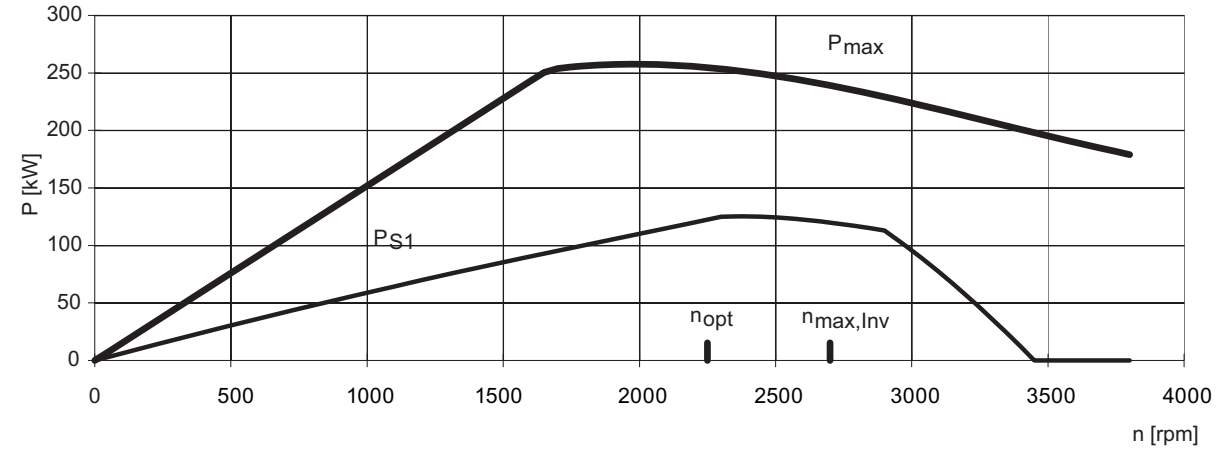


Tabella 4- 791 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 110 | 525 | 176 | 125 | 2250 | 3800 | 3500 | 2700 | 1450 | 490 | 600 | 196 |



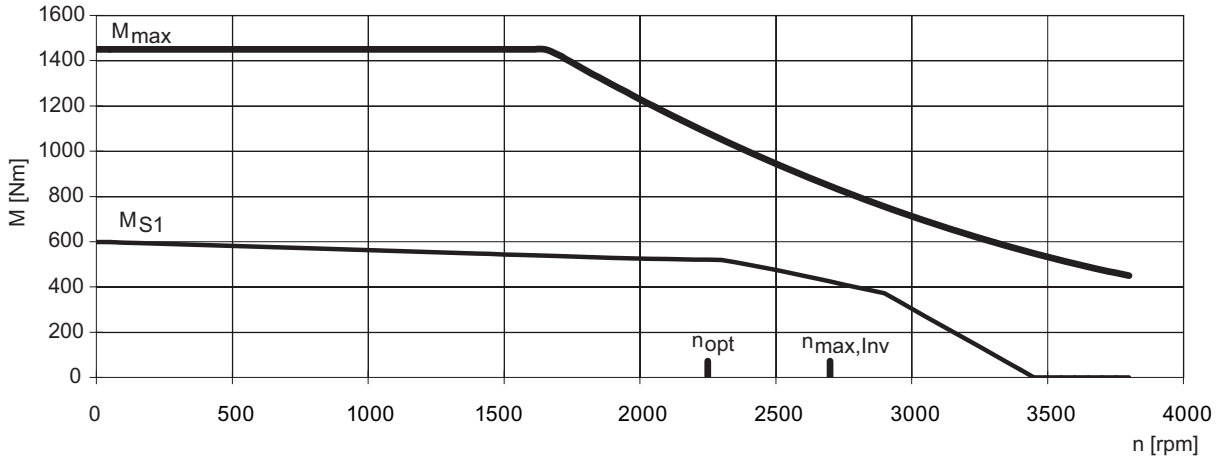



Tabella 4- 792 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8184-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 127 | 485 | 260 | 127 | 3800 | 3800 | 3500 | >3800 | 1450 | 780 | 530 | 278 |

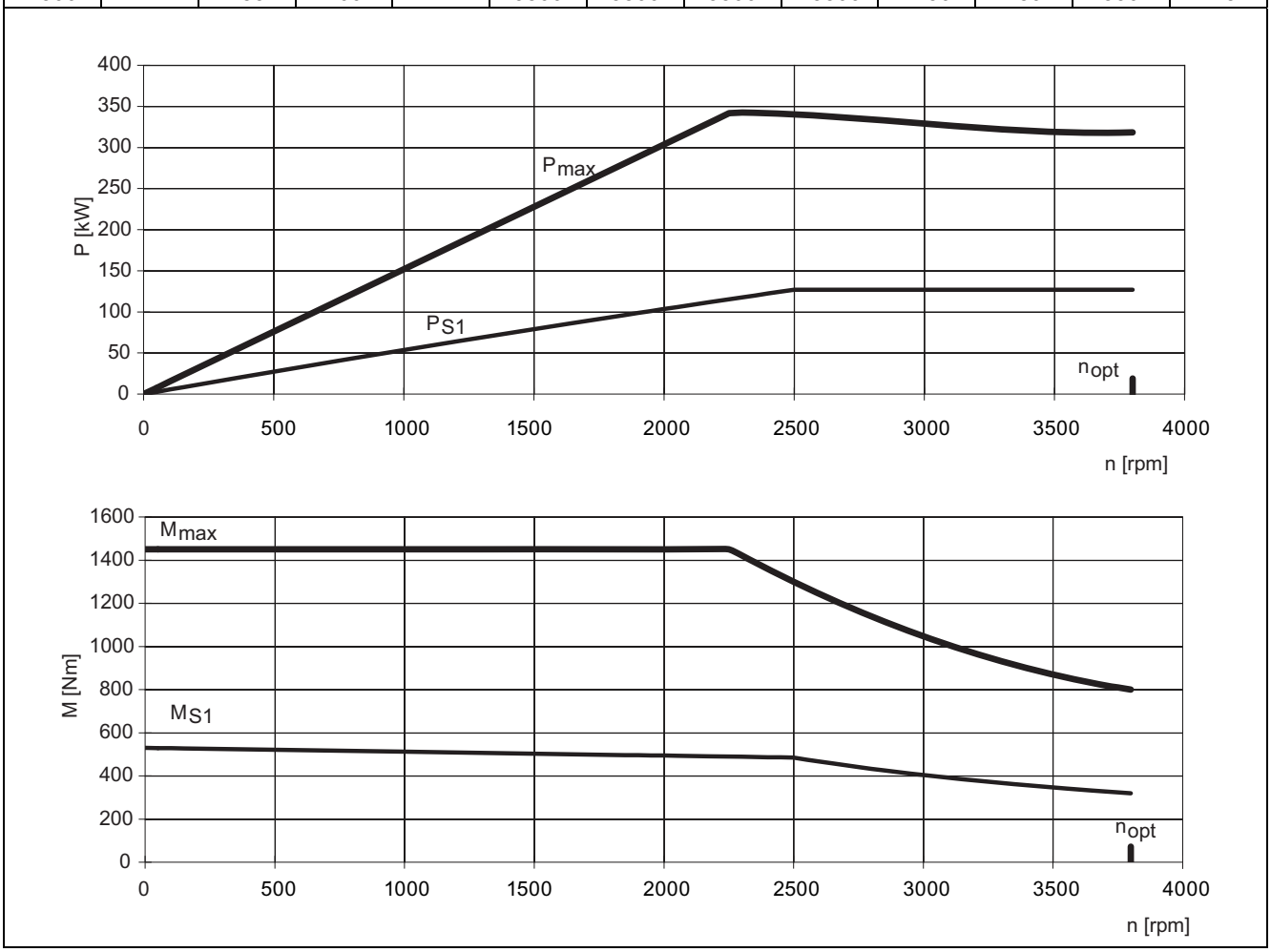
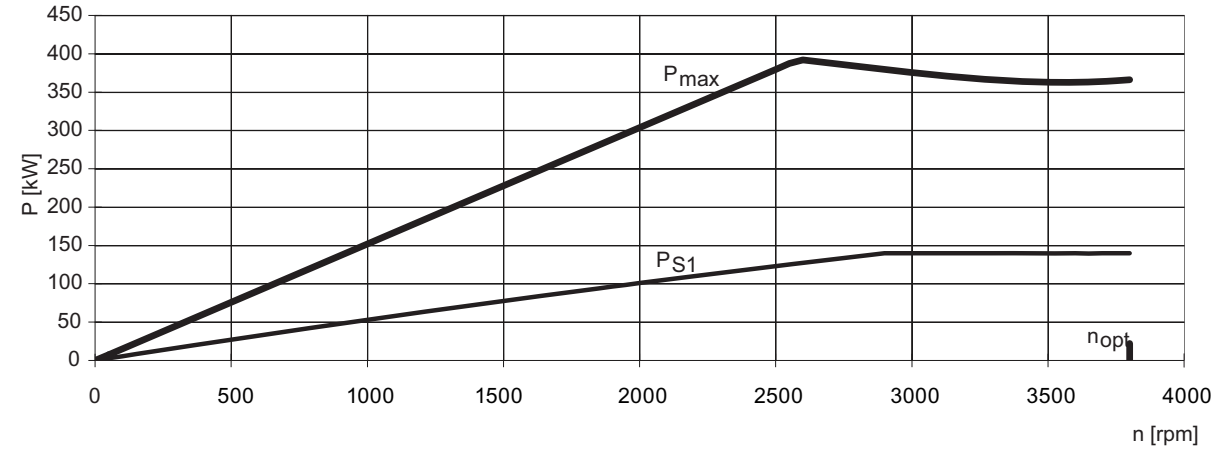


Tabella 4- 793 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8184-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 140 | 461 | 250 | 140 | 3800 | 3800 | 3500 | >3800 | 1450 | 780 | 530 | 278 |



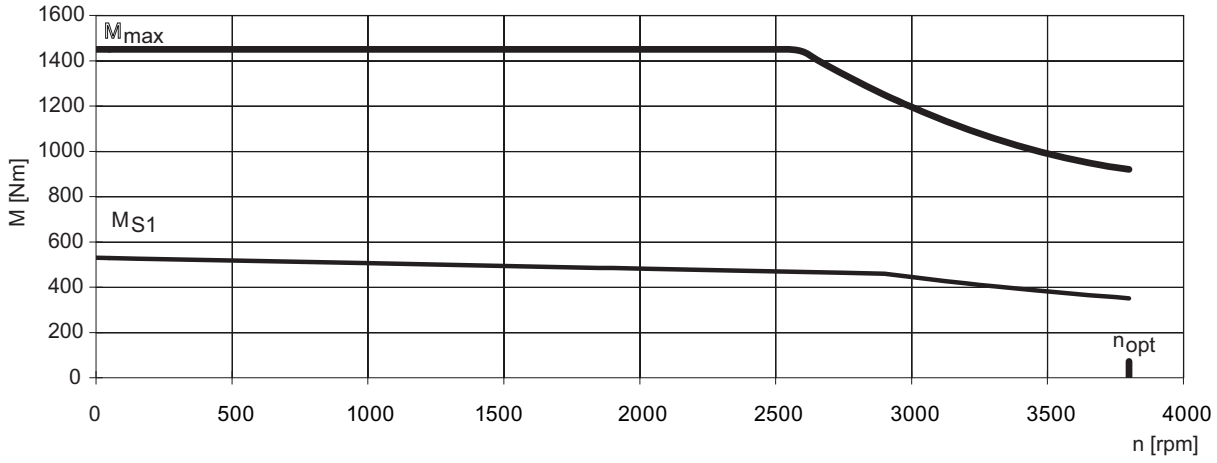



Tabella 4- 794 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8184-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3200 | 142 | 424 | 230 | 142 | 3800 | 3800 | 3500 | >3800 | 1450 | 780 | 530 | 278 |

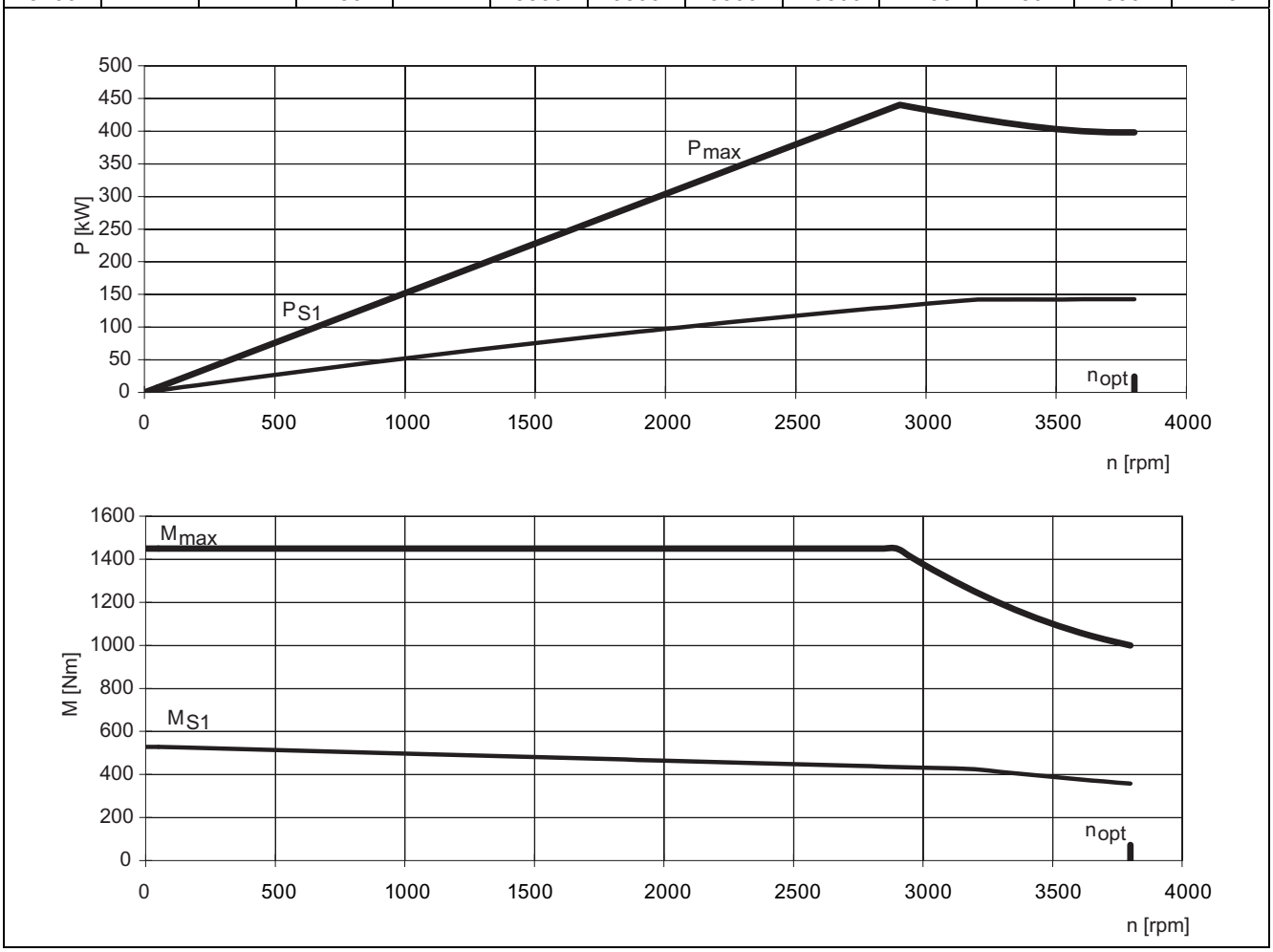
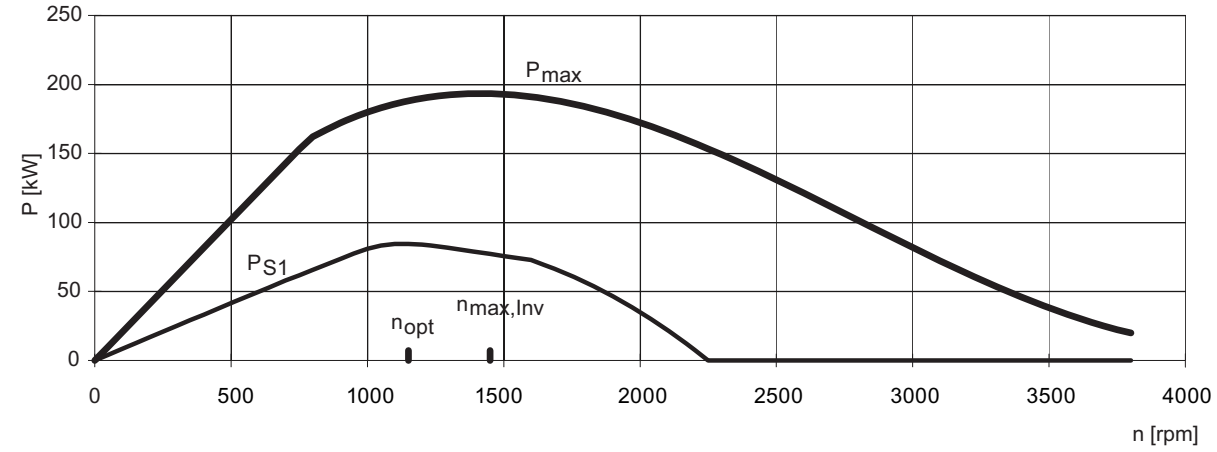


Tabella 4- 795 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-2□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 58 | 791 | 142 | 84 | 1150 | 3800 | 3500 | 1450 | 1950 | 358 | 800 | 143 |



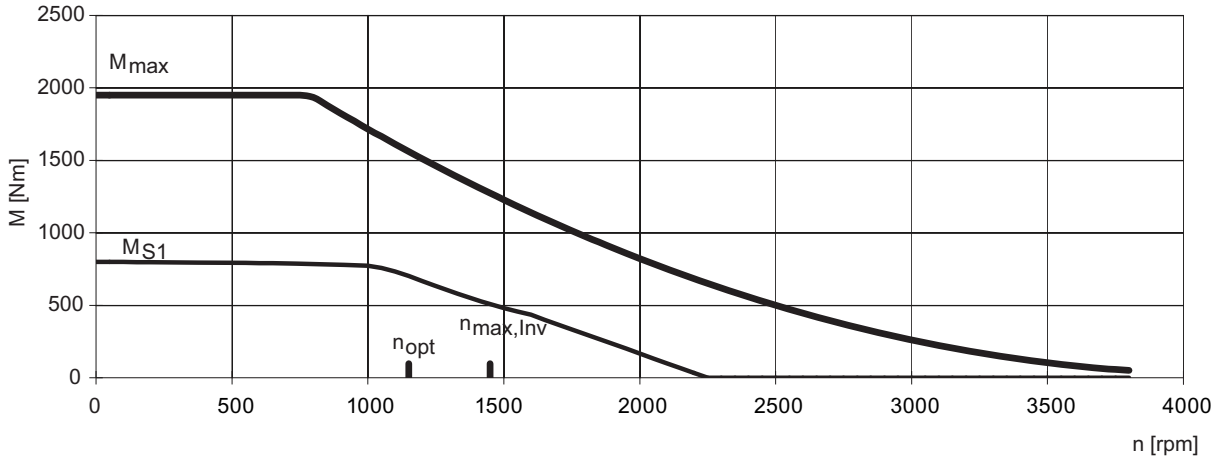



Tabella 4- 796 SINAMICS, 3 AC 400 V, Servo Control, (Active Line Module), 1PH8186-2□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 66 | 788 | 142 | 95 | 1250 | 3800 | 3500 | 1450 | 1950 | 358 | 800 | 143 |

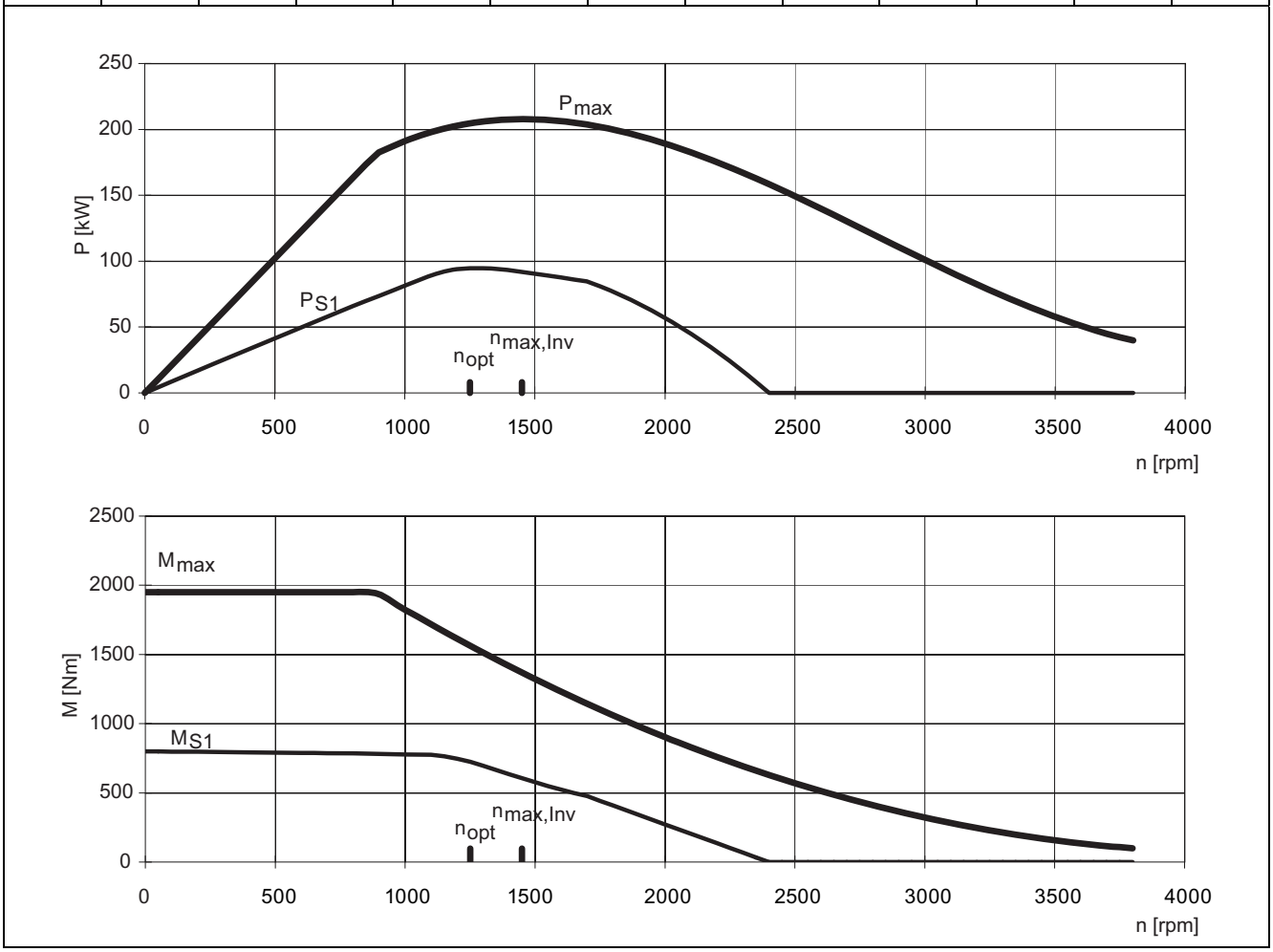
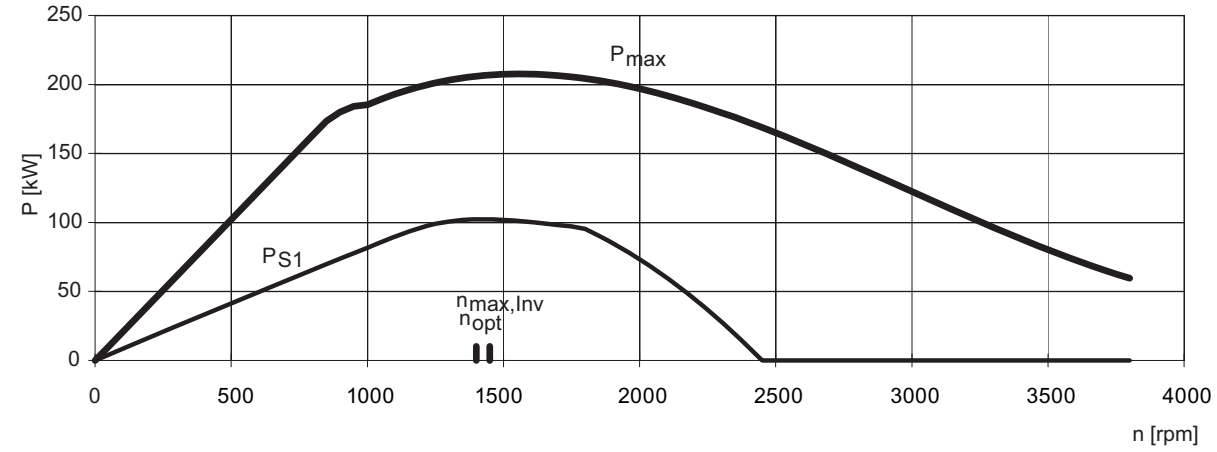


Tabella 4- 797 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-2□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 82 | 783 | 141 | 102 | 1400 | 3800 | 3500 | 1450 | 1950 | 358 | 800 | 143 |



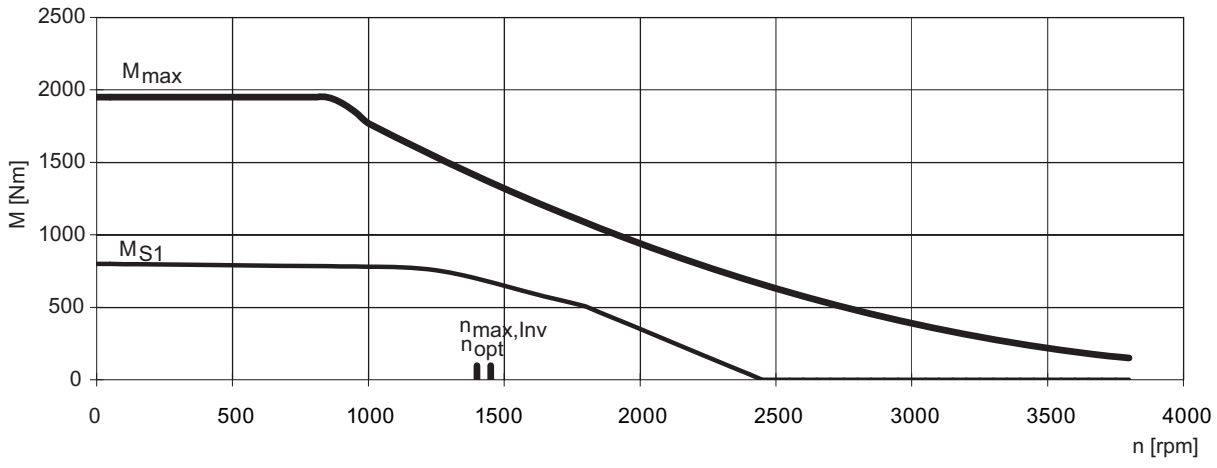



Tabella 4- 798 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-2□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 80 | 764 | 190 | 114 | 1550 | 3800 | 3500 | 2050 | 1950 | 490 | 800 | 196 |

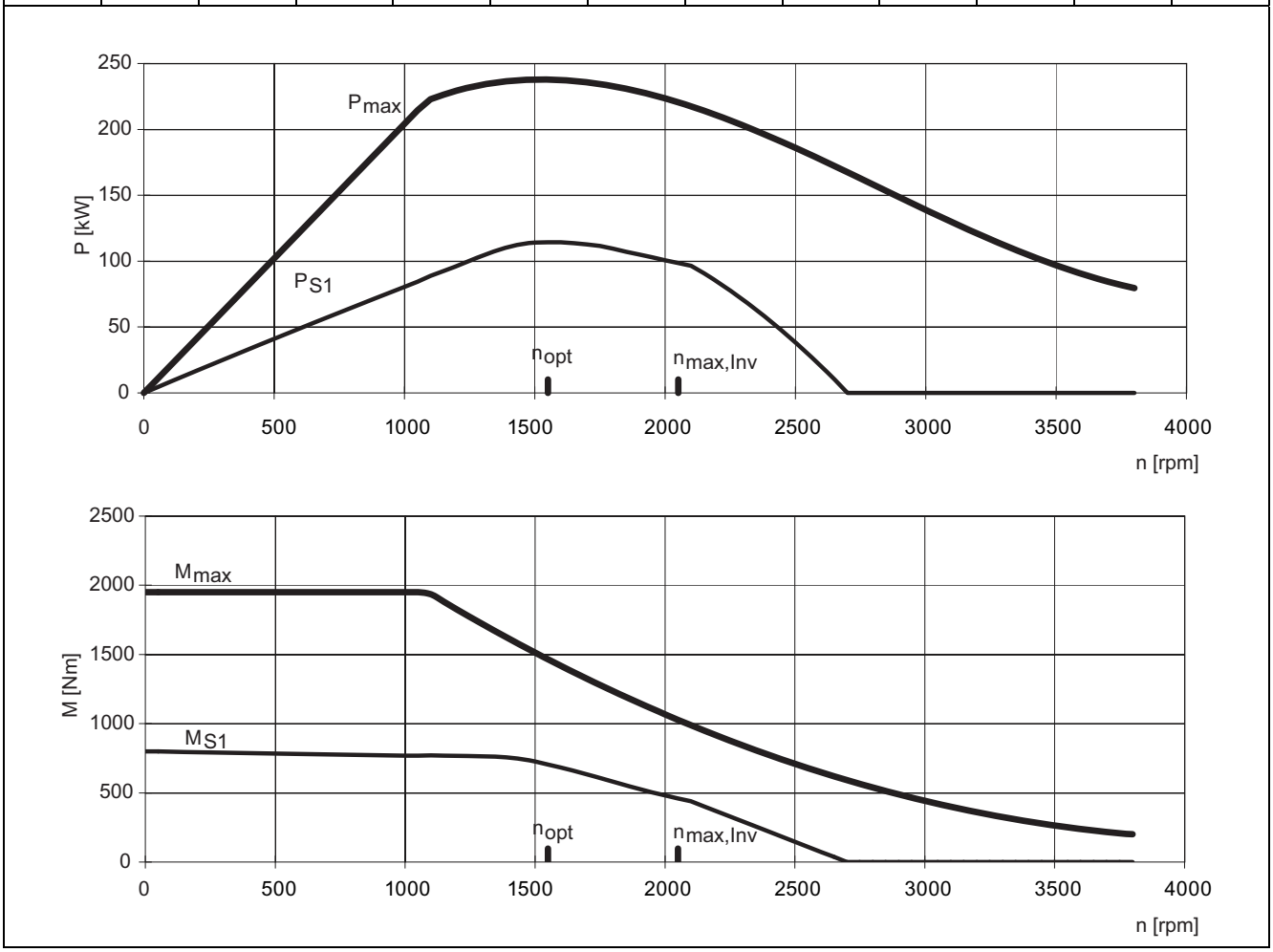
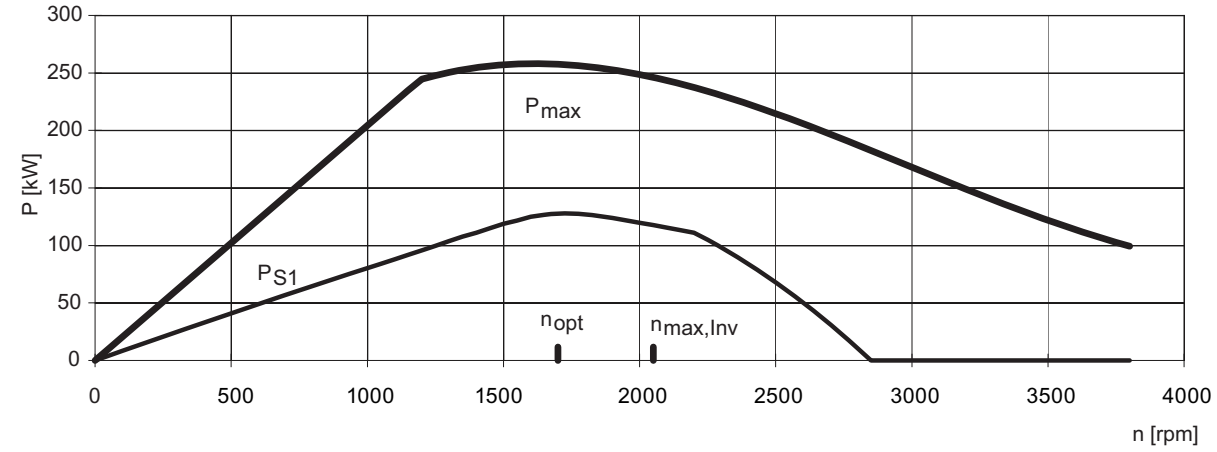


Tabella 4- 799 SINAMICS, 3 AC 400 V, Servo Control, (Active Line Module), 1PH8186-2□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 92 | 764 | 190 | 128 | 1700 | 3800 | 3500 | 2050 | 1950 | 490 | 800 | 196 |



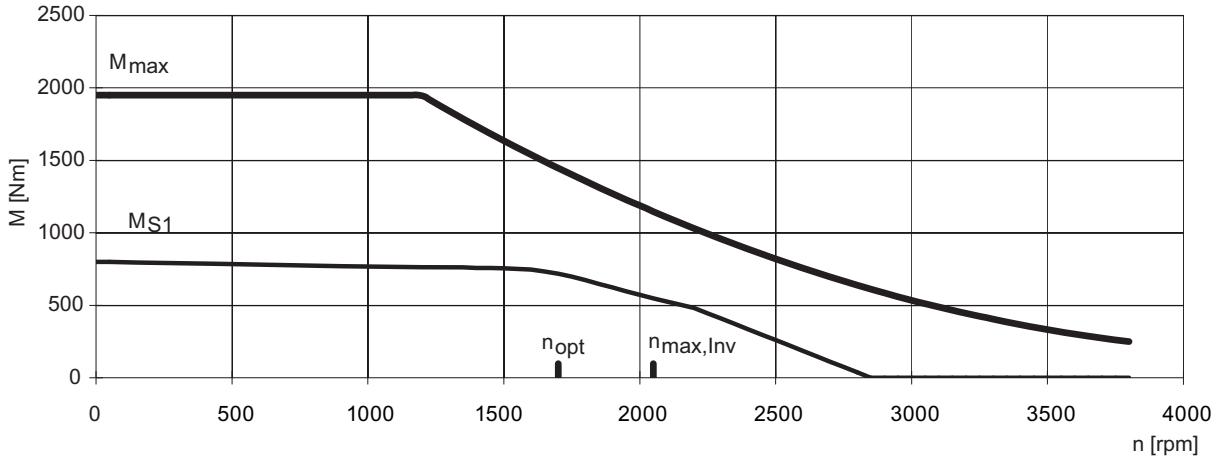



Tabella 4- 800 S SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-2□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 107 | 757 | 190 | 136 | 1850 | 3800 | 3500 | 2050 | 1950 | 490 | 800 | 196 |

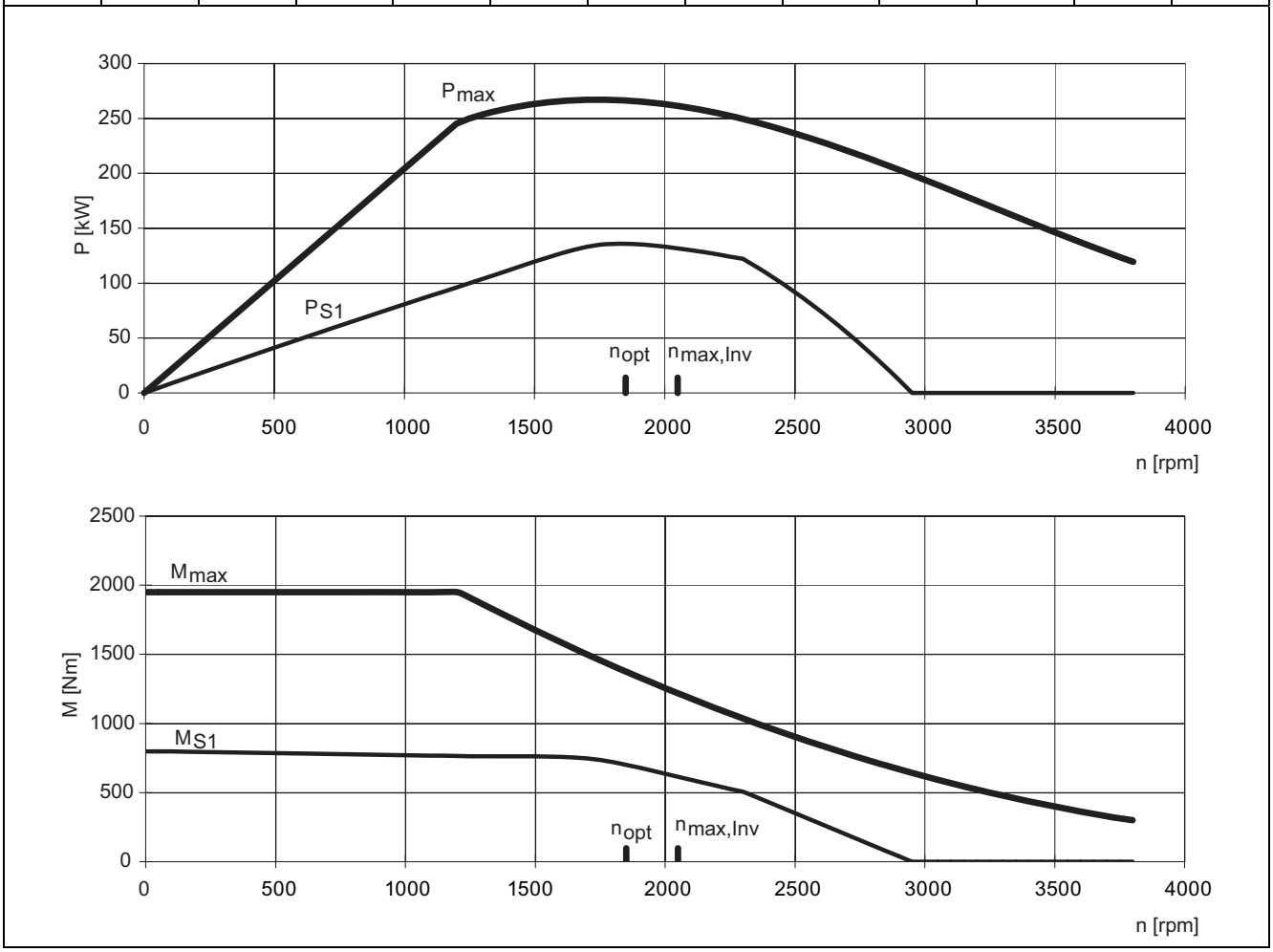
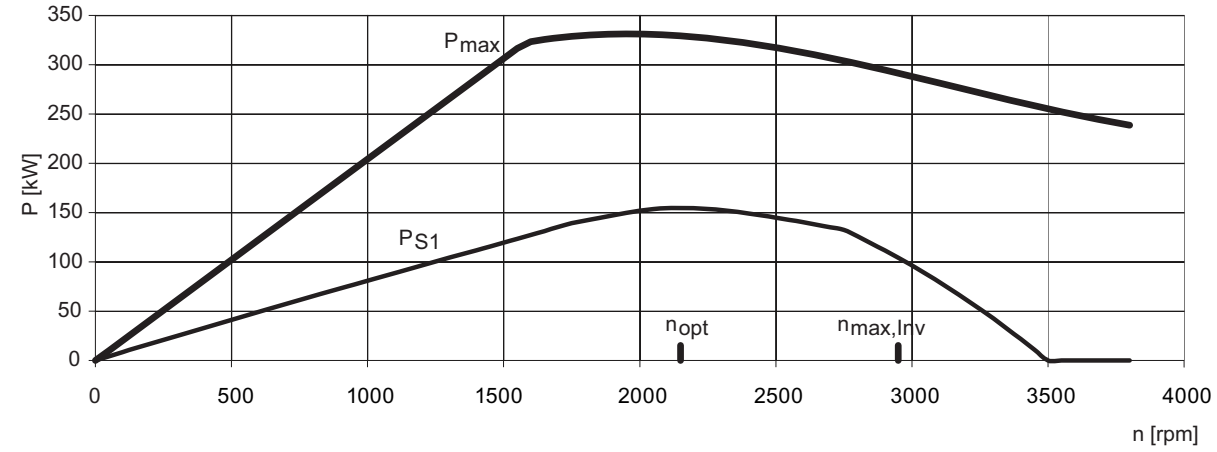


Tabella 4- 801 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 119 | 758 | 275 | 155 | 2150 | 3800 | 3500 | 2950 | 1950 | 720 | 800 | 285 |



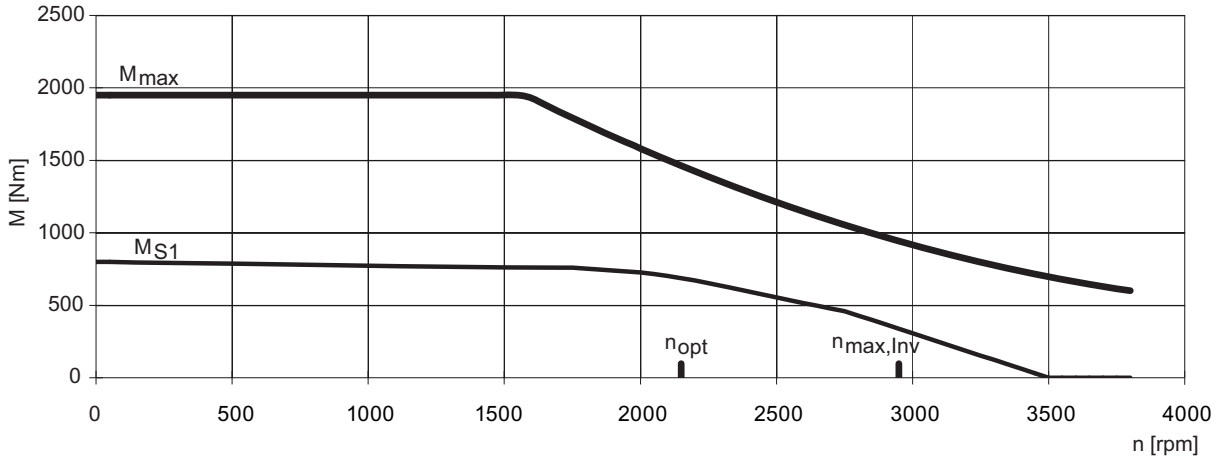



Tabella 4- 802 SINAMICS, 3 AC 400 V, Servo Control, (Active Line Module), 1PH8186-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 138 | 753 | 275 | 165 | 2400 | 3800 | 3500 | 2950 | 1950 | 720 | 800 | 285 |

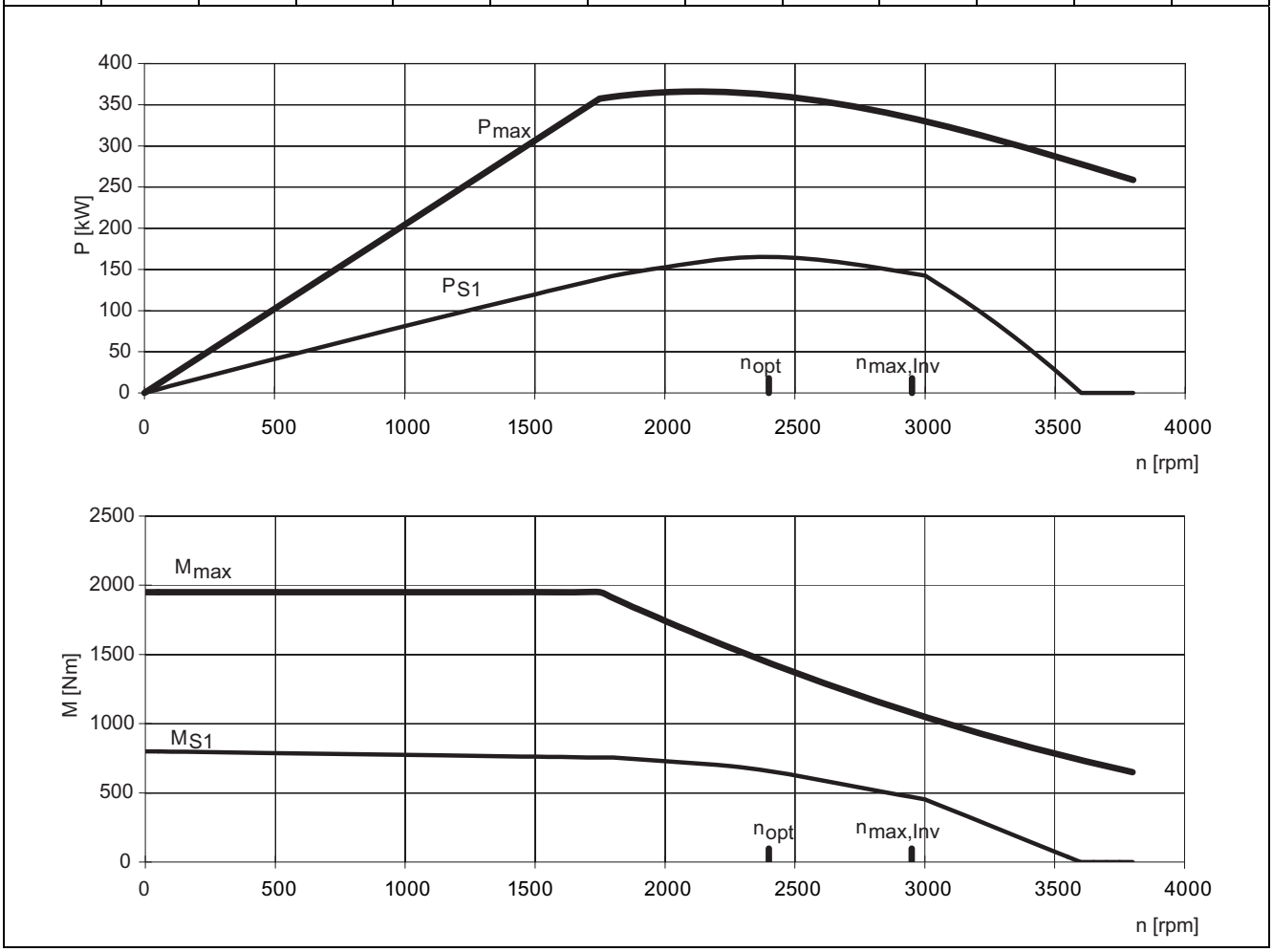
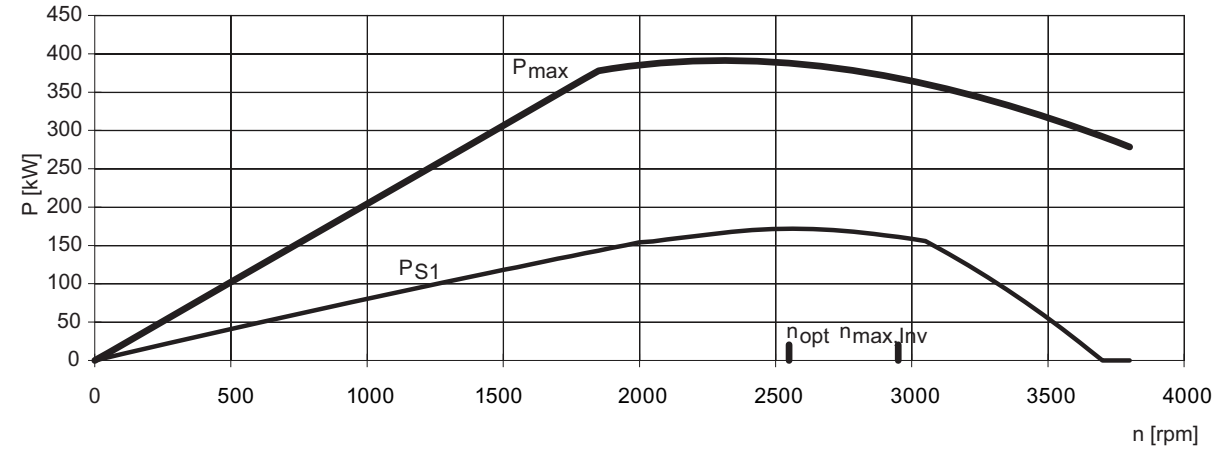


Tabella 4- 803 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 154 | 735 | 265 | 172 | 2550 | 3800 | 3500 | 2950 | 1950 | 720 | 800 | 285 |



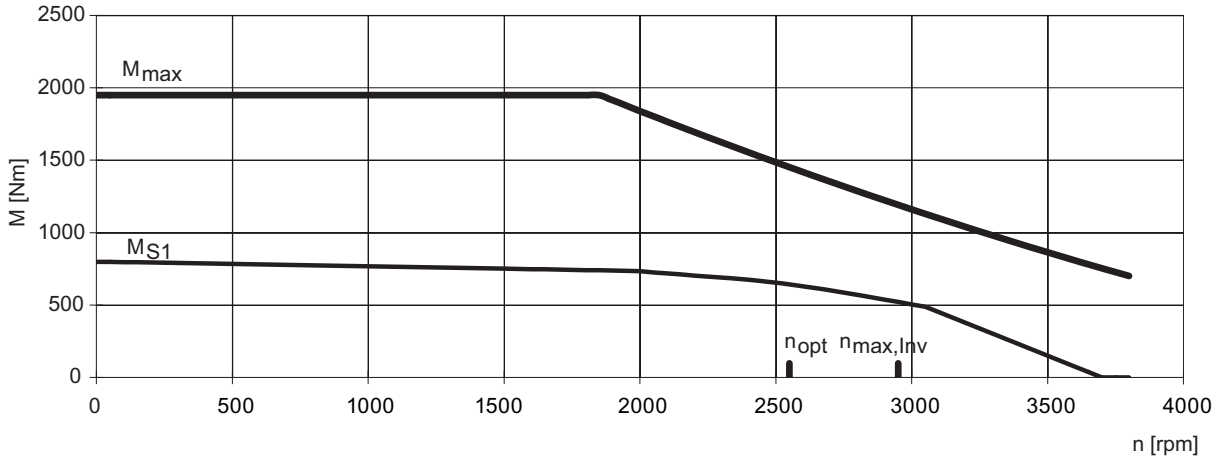



Tabella 4- 804 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8186-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 168 | 642 | 370 | 168 | 3800 | 3800 | 3500 | >3800 | 1950 | 1125 | 720 | 405 |

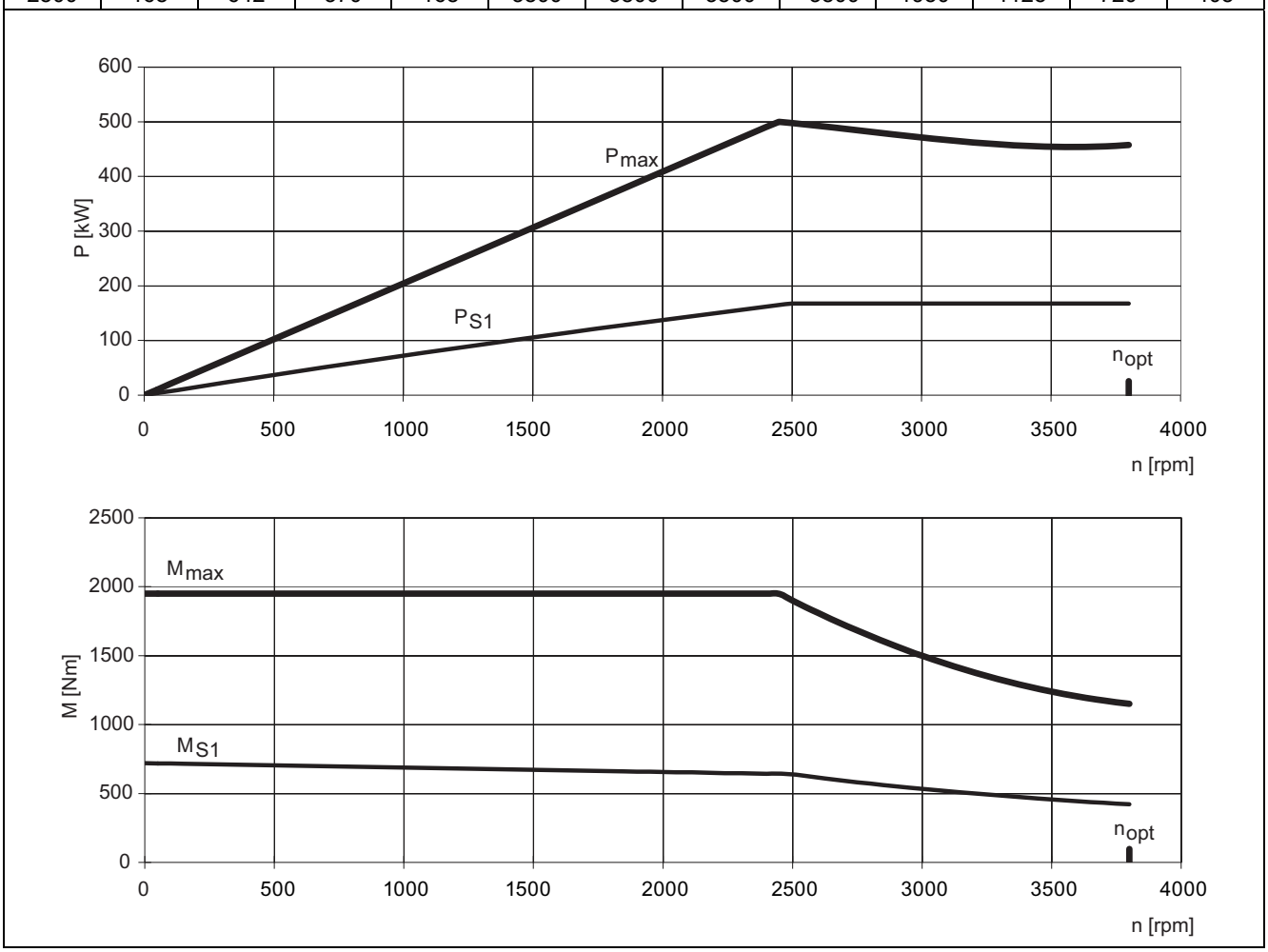
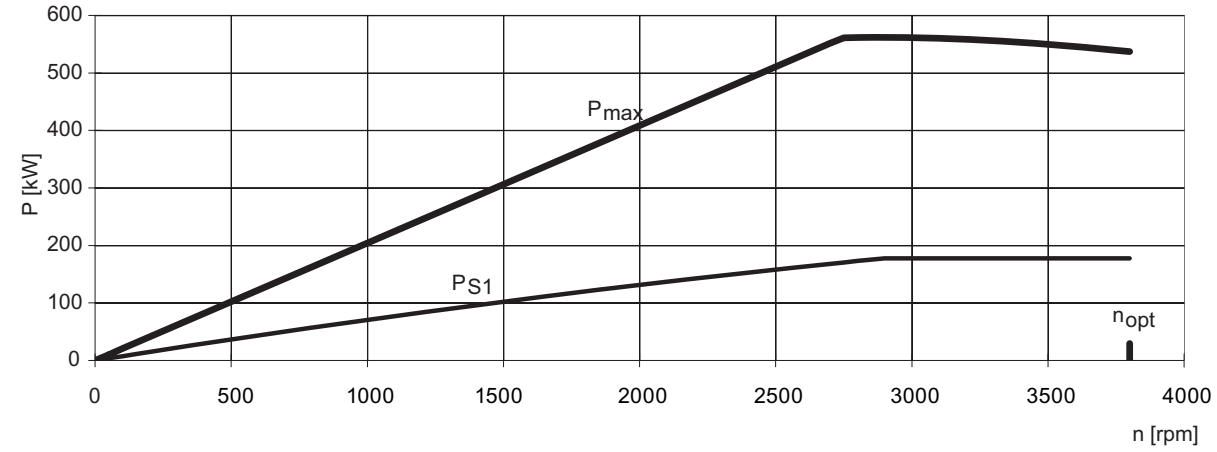


Tabella 4- 805 SINAMICS, 3 AC 400 V, Servo Control, (Active Line Module), 1PH8186-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 178 | 586 | 340 | 178 | 3800 | 3800 | 3500 | >3800 | 1950 | 1125 | 720 | 405 |



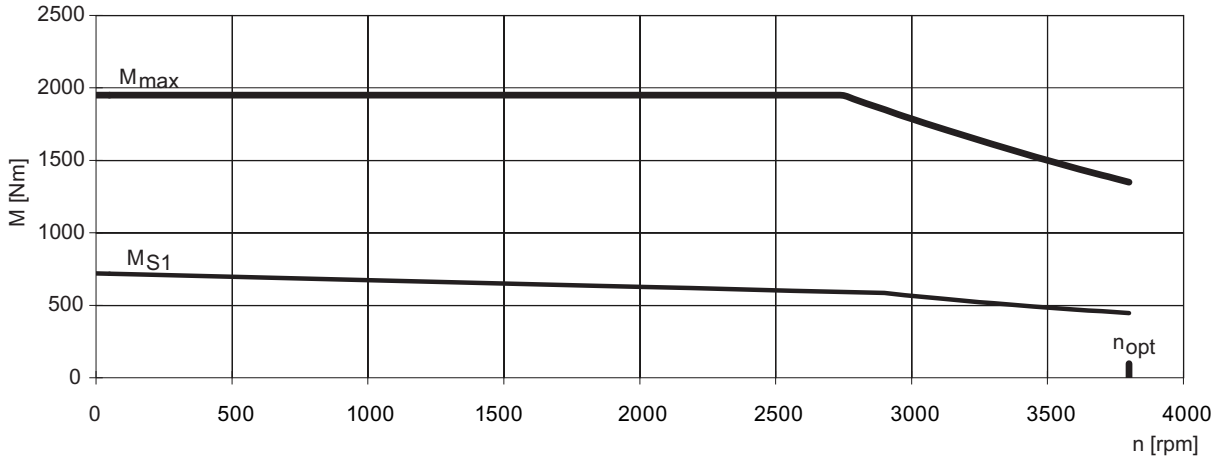
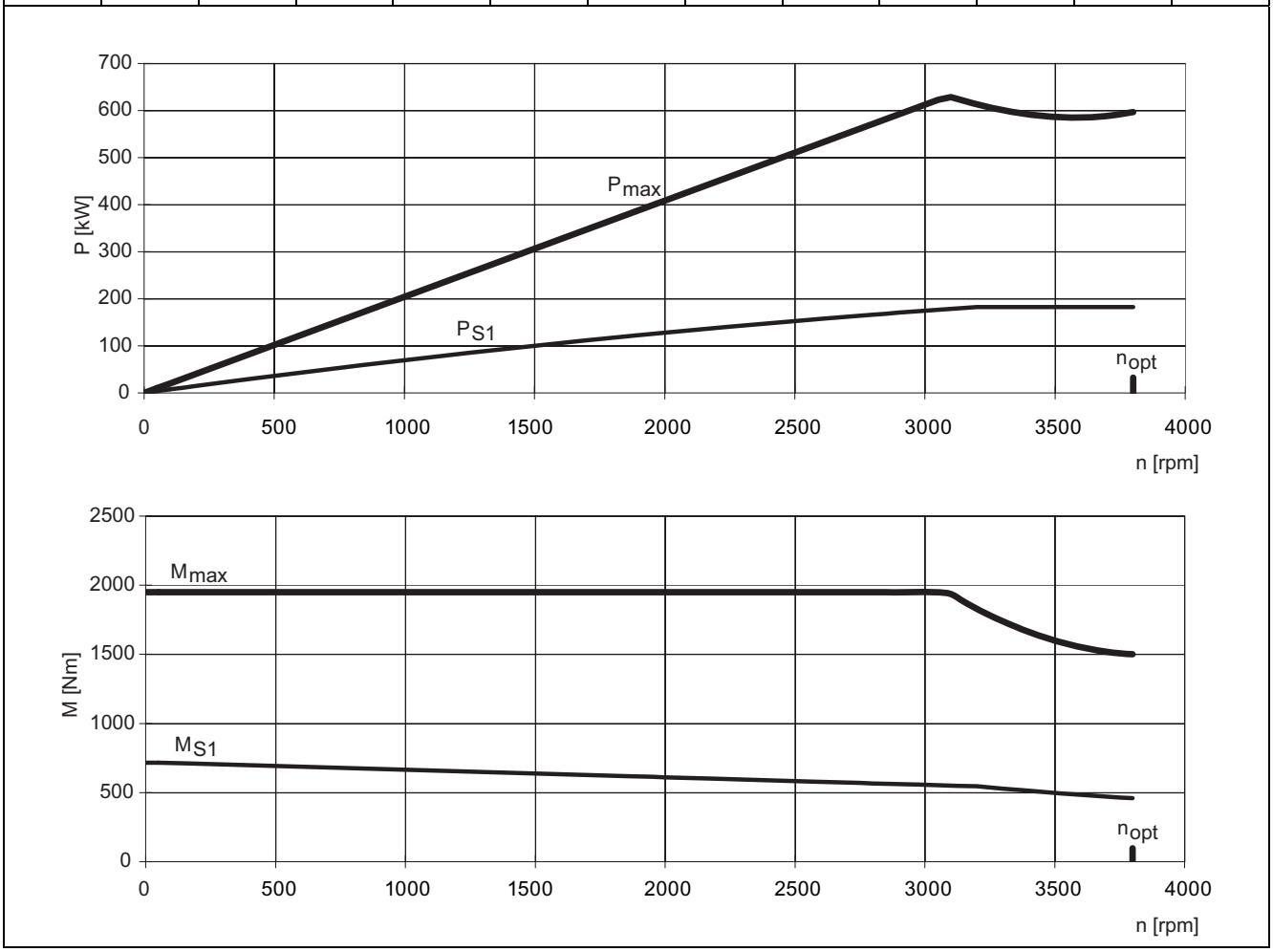



Tabella 4- 806 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8186-2□L2□

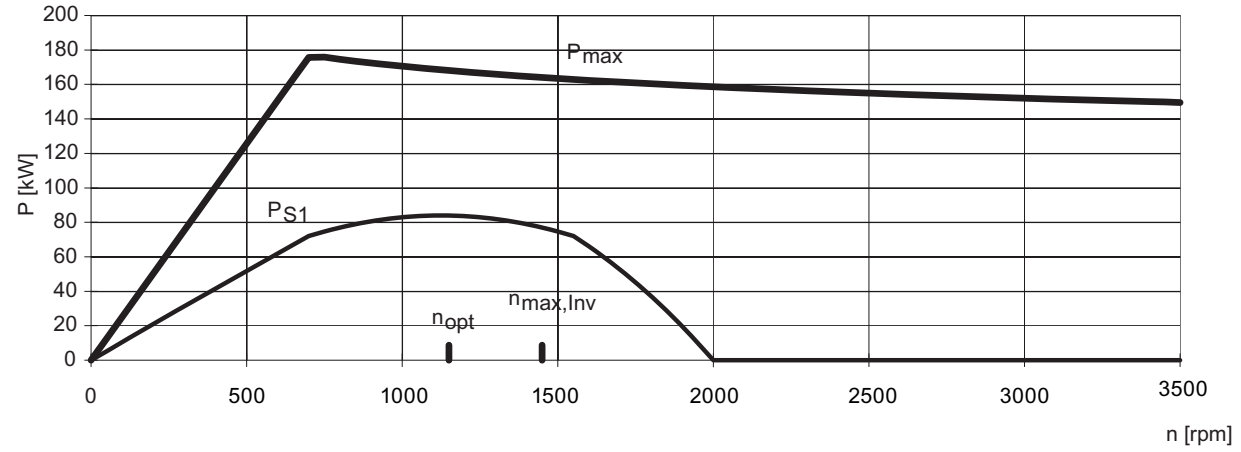
| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, Br}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3200 | 183 | 546 | 315 | 183 | 3800 | 3800 | 3500 | >3800 | 1950 | 1125 | 720 | 405 |



### 4.2.3.4 Altezza dell'asse 225 Raffreddamento ad acqua

Tabella 4- 807 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-2□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 101 | 964 | 178 | 107 | 1300 | 3500 | 3100 | 1450 | 2400 | 450 | 1007 | 183 |



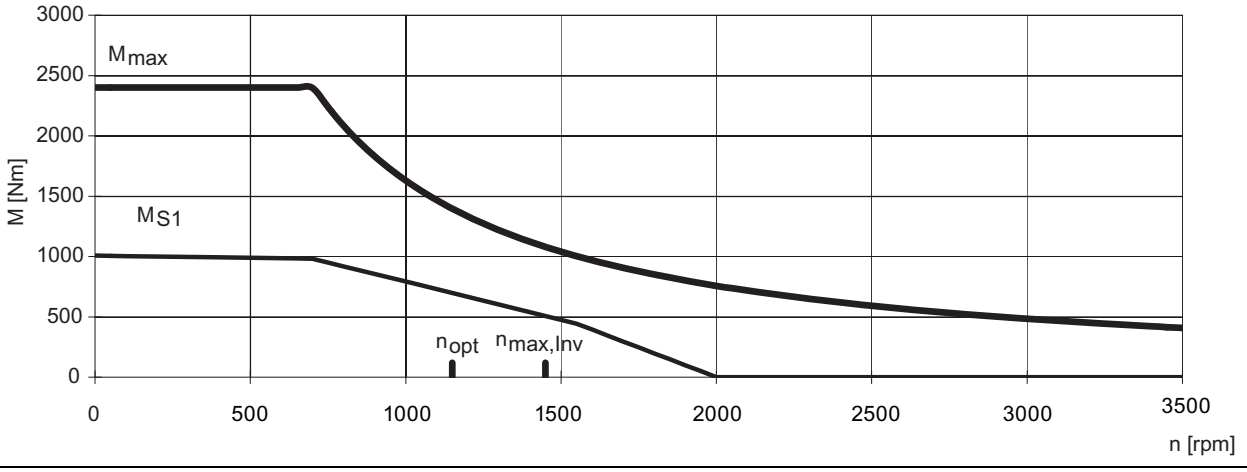
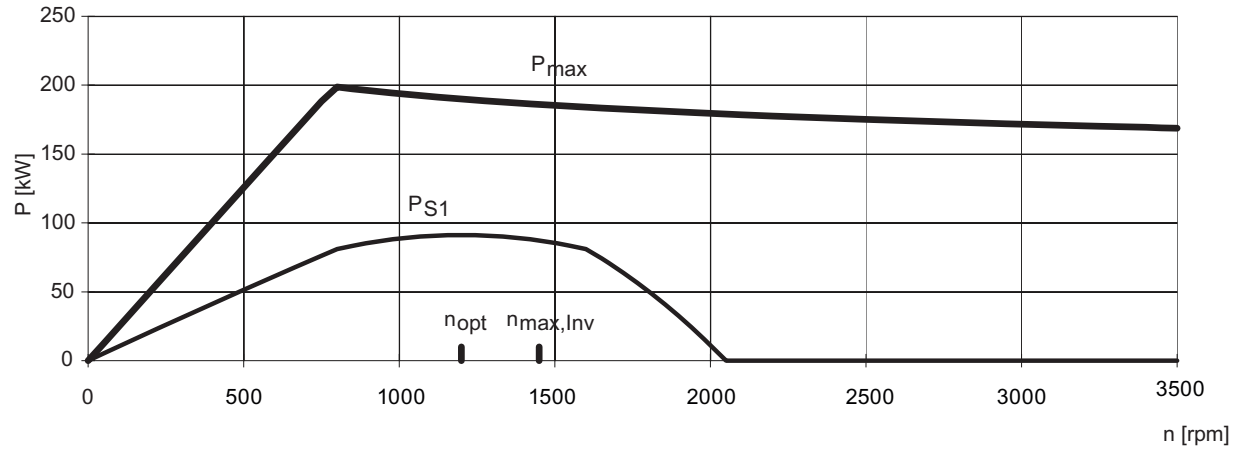



Tabella 4- 808 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-2□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 81 | 967 | 178 | 91 | 1200 | 3500 | 3100 | 14500 | 2400 | 450 | 1007 | 183 |
| 700 | 72 | 982 | 180 | | | | | | | | | |



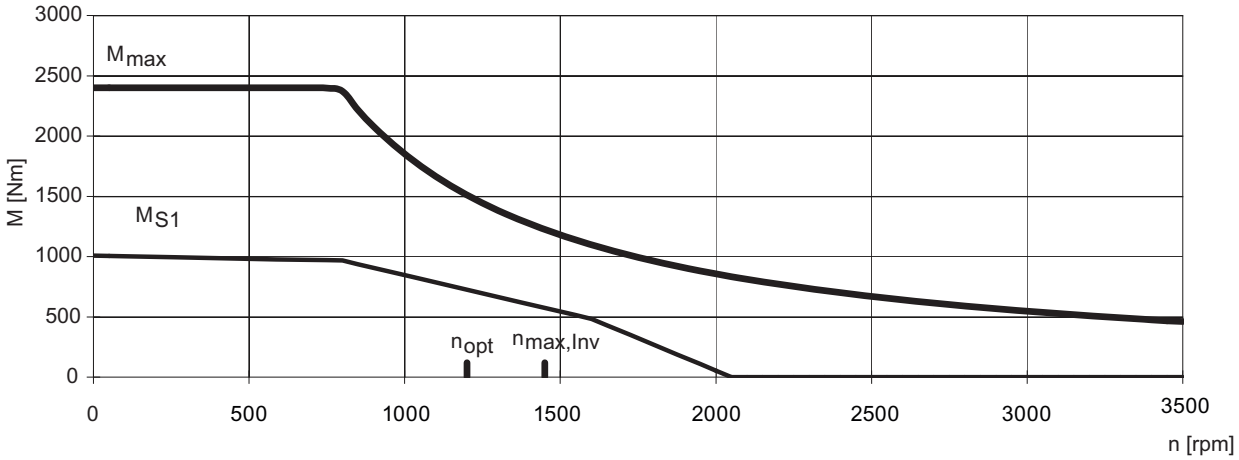



Tabella 4- 809 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-2□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 101 | 964 | 178 | 107 | 1300 | 3500 | 3100 | 1450 | 2400 | 450 | 1007 | 183 |

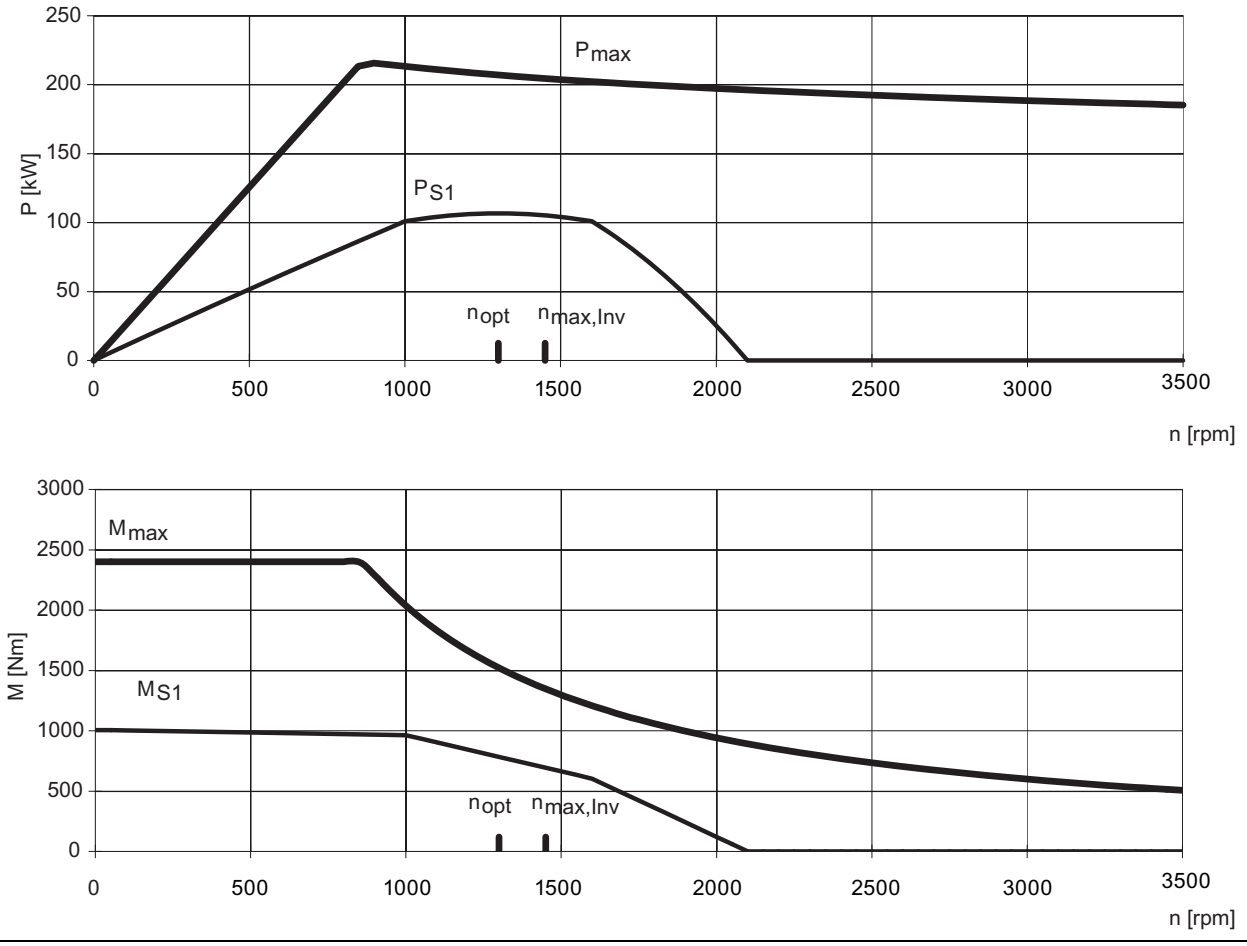


Tabella 4- 810 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-2□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 101 | 964 | 255 | 111 | 1400 | 3500 | 3100 | 2050 | 2400 | 640 | 1007 | 262 |

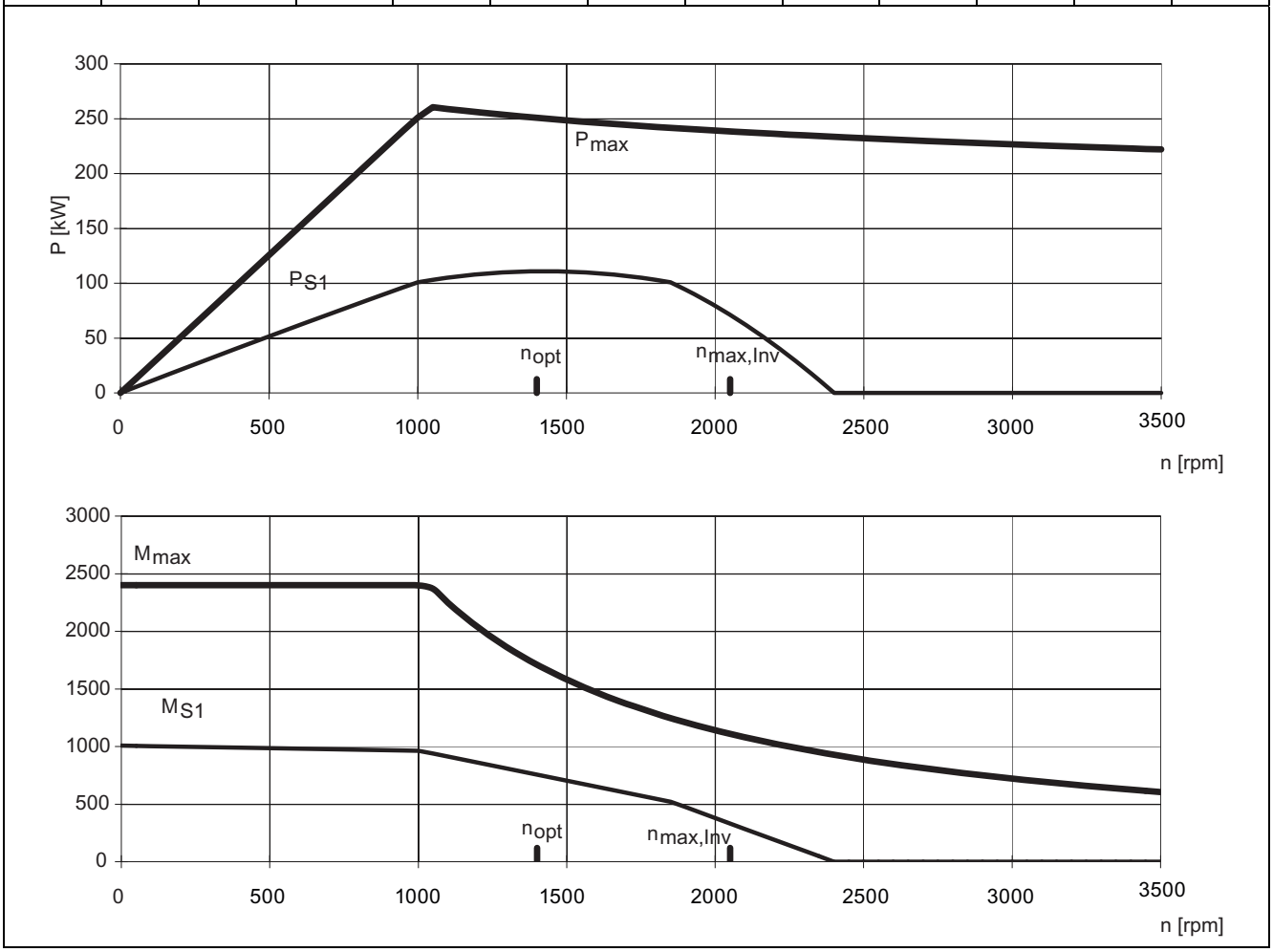
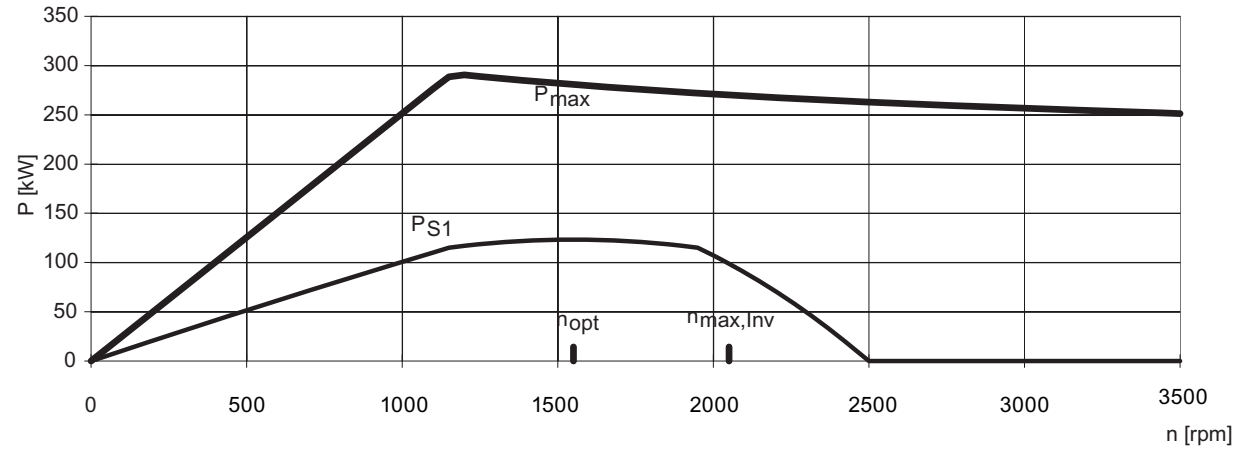


Tabella 4- 811 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-2□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 115 | 955 | 250 | 123 | 1550 | 3500 | 3100 | 2050 | 2400 | 640 | 1007 | 262 |
| 1000 | 101 | 964 | 255 | | | | | | | | | |



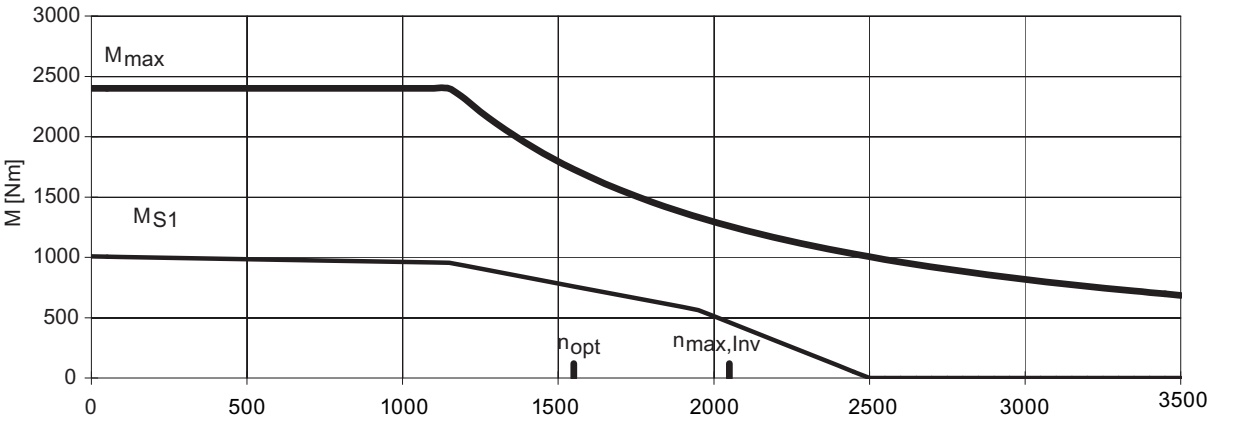



Tabella 4- 812 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-2□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 135 | 955 | 250 | 140 | 1700 | 3500 | 3100 | 2050 | 2400 | 6740 | 1007 | 262 |

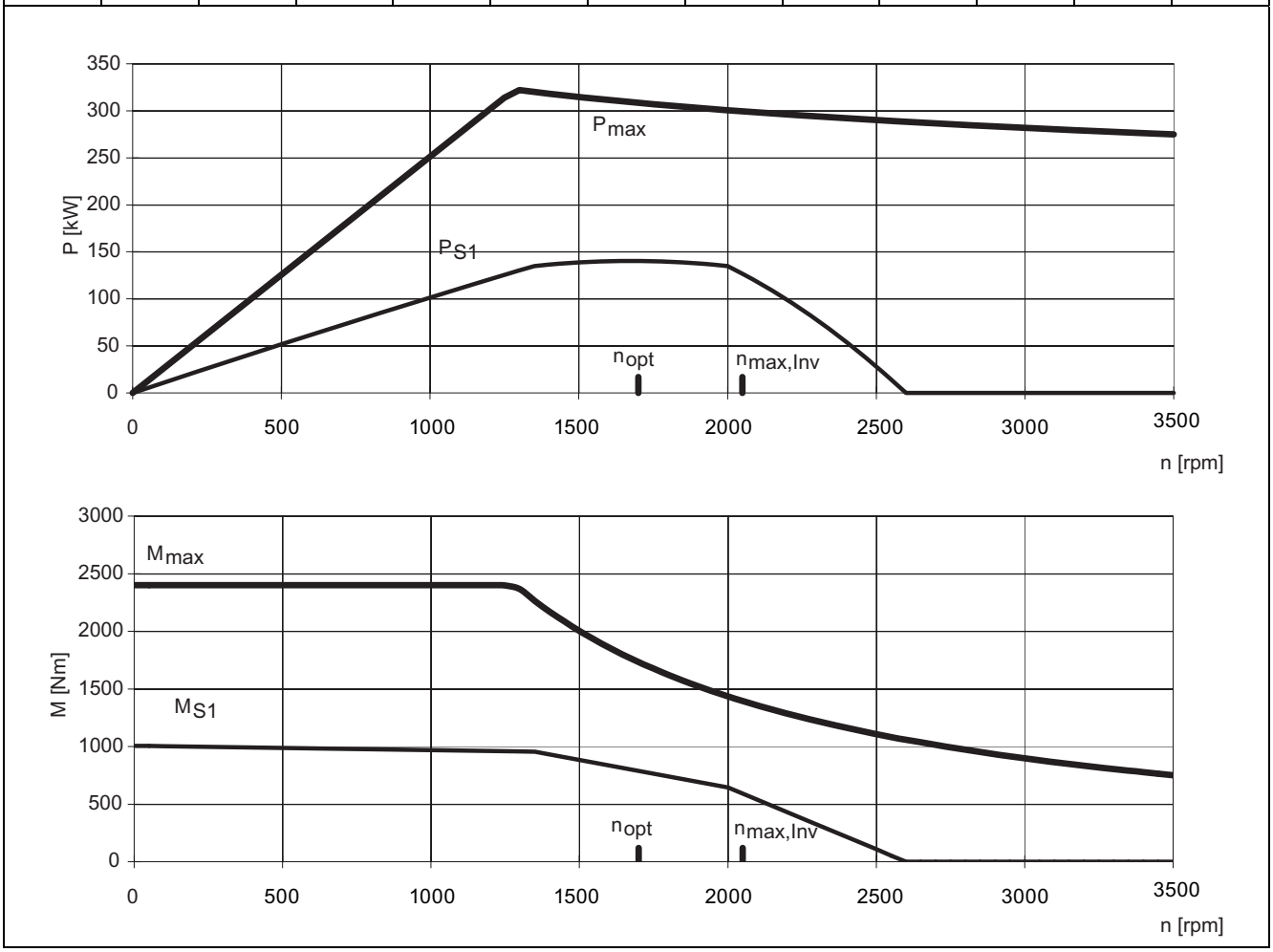
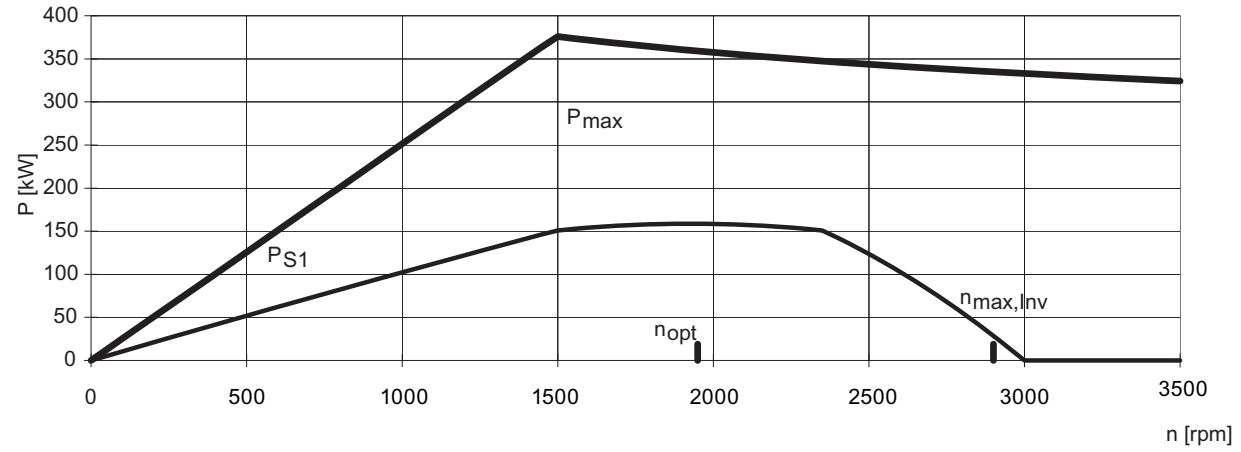


Tabella 4- 813 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 151 | 961 | 355 | 159 | 1950 | 3500 | 3100 | 2900 | 2400 | 900 | 1007 | 367 |



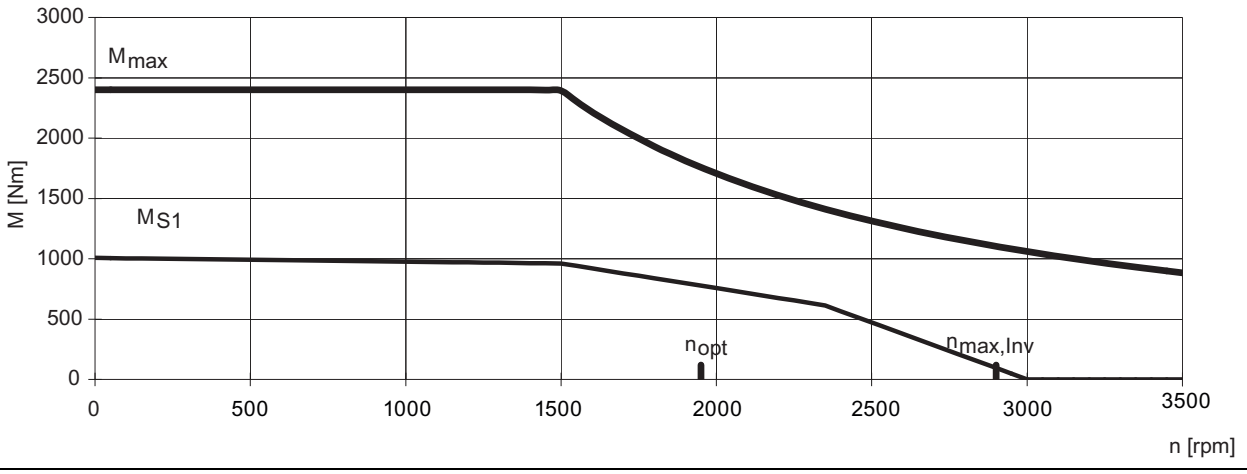
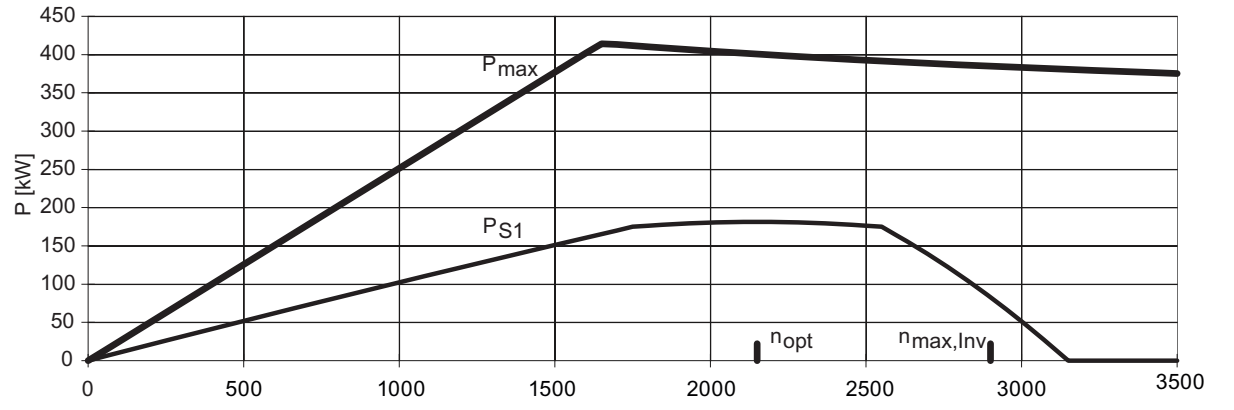



Tabella 4- 814 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 175 | 955 | 355 | 181 | 2150 | 3500 | 3100 | 2900 | 2400 | 900 | 1007 | 367 |
| 1500 | 151 | 961 | 355 | | | | | | | | | |



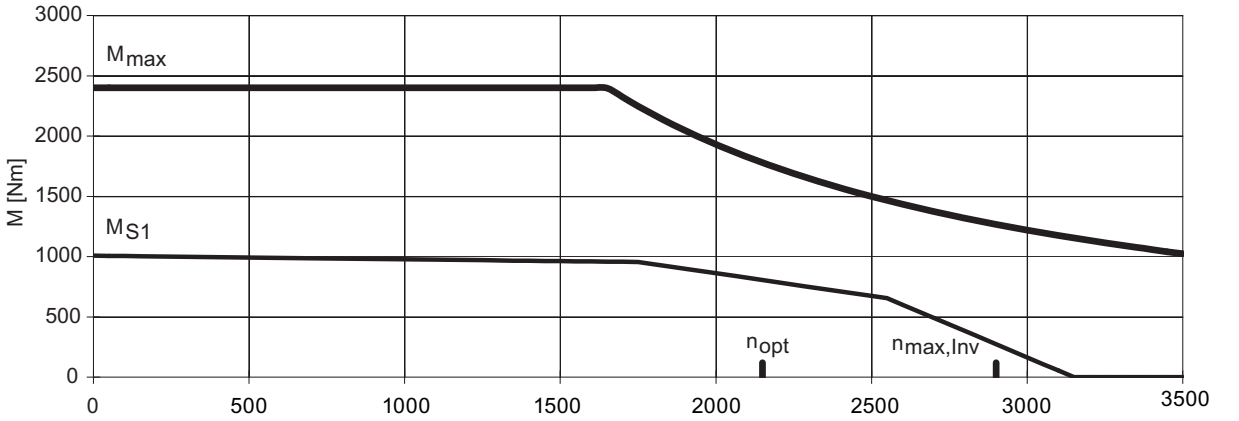



Tabella 4- 815 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 186 | 888 | 330 | 190 | 2350 | 3500 | 3100 | 2900 | 2400 | 900 | 1007 | 367 |

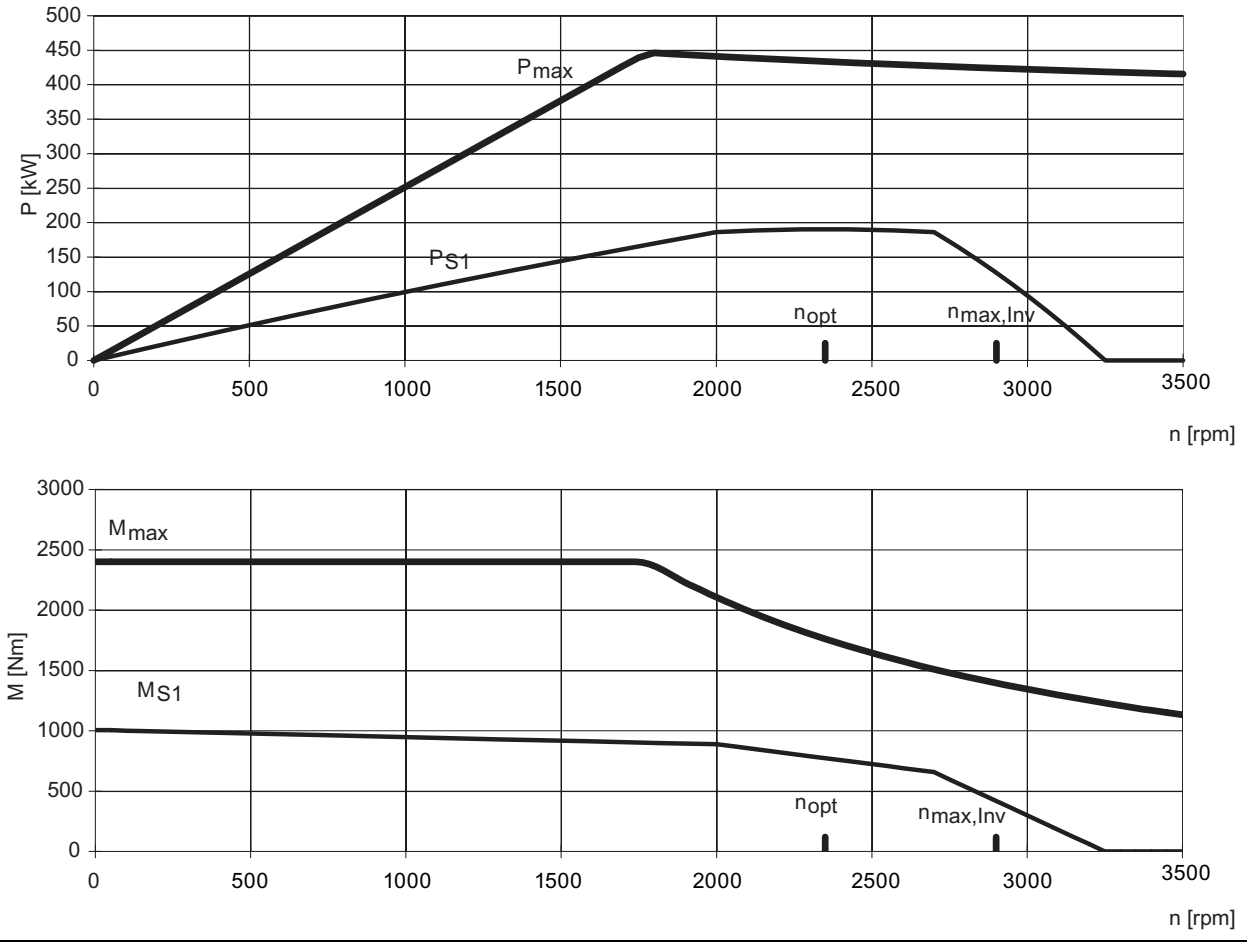
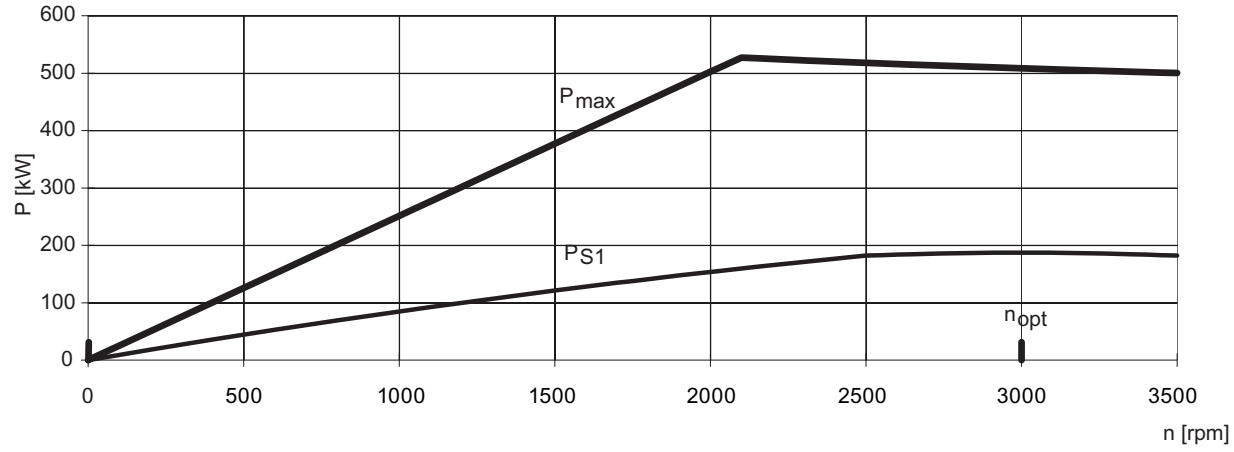


Tabella 4- 816 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8224-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 182 | 695 | 365 | 187 | 3000 | 3500 | 3100 | >3500 | 2400 | 1280 | 885 | 460 |



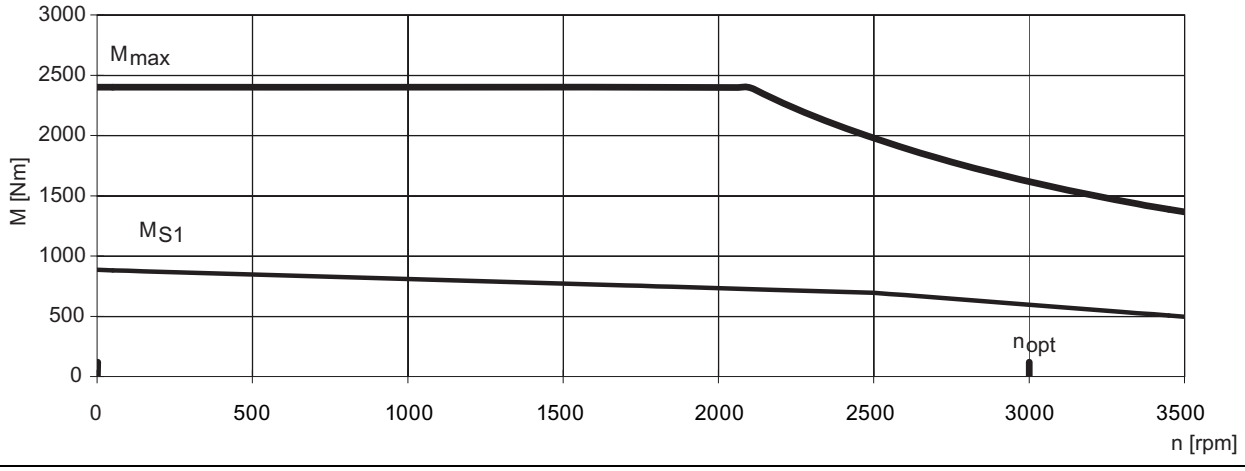
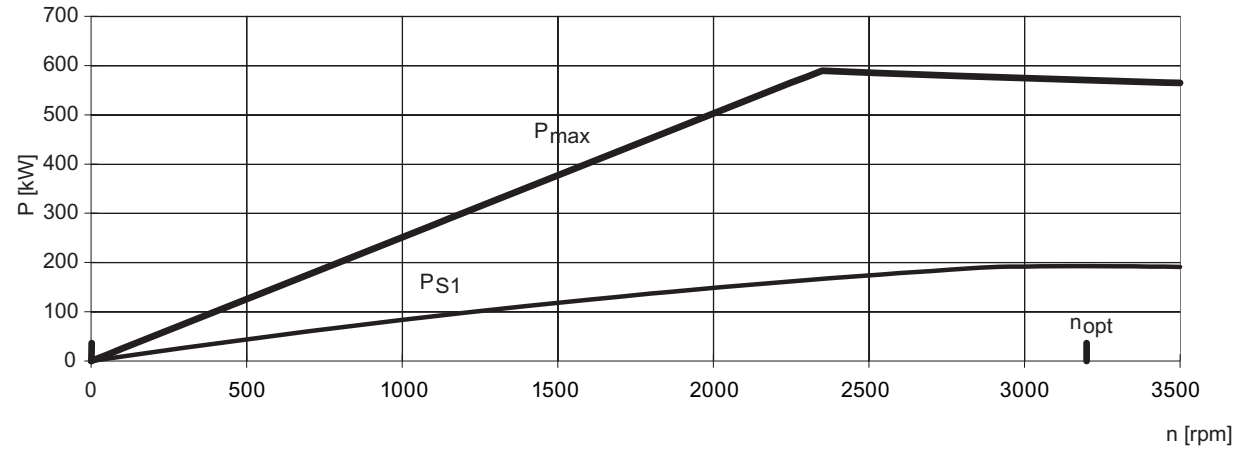



Tabella 4- 817 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8224-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 191 | 629 | 335 | 193 | 3200 | 3500 | 3100 | >3500 | 2400 | 1280 | 885 | 460 |
| 2500 | 182 | 695 | 365 | | | | | | | | | |



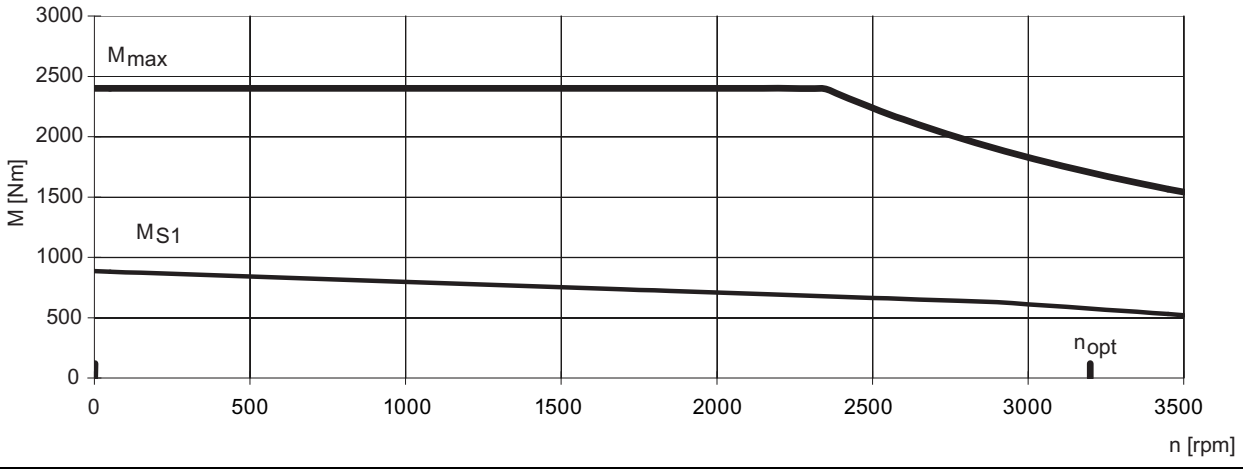



Tabella 4- 818 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8224-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3200 | 196 | 585 | 310 | 196 | 3350 | 3500 | 3100 | >3500 | 2400 | 1280 | 885 | 460 |

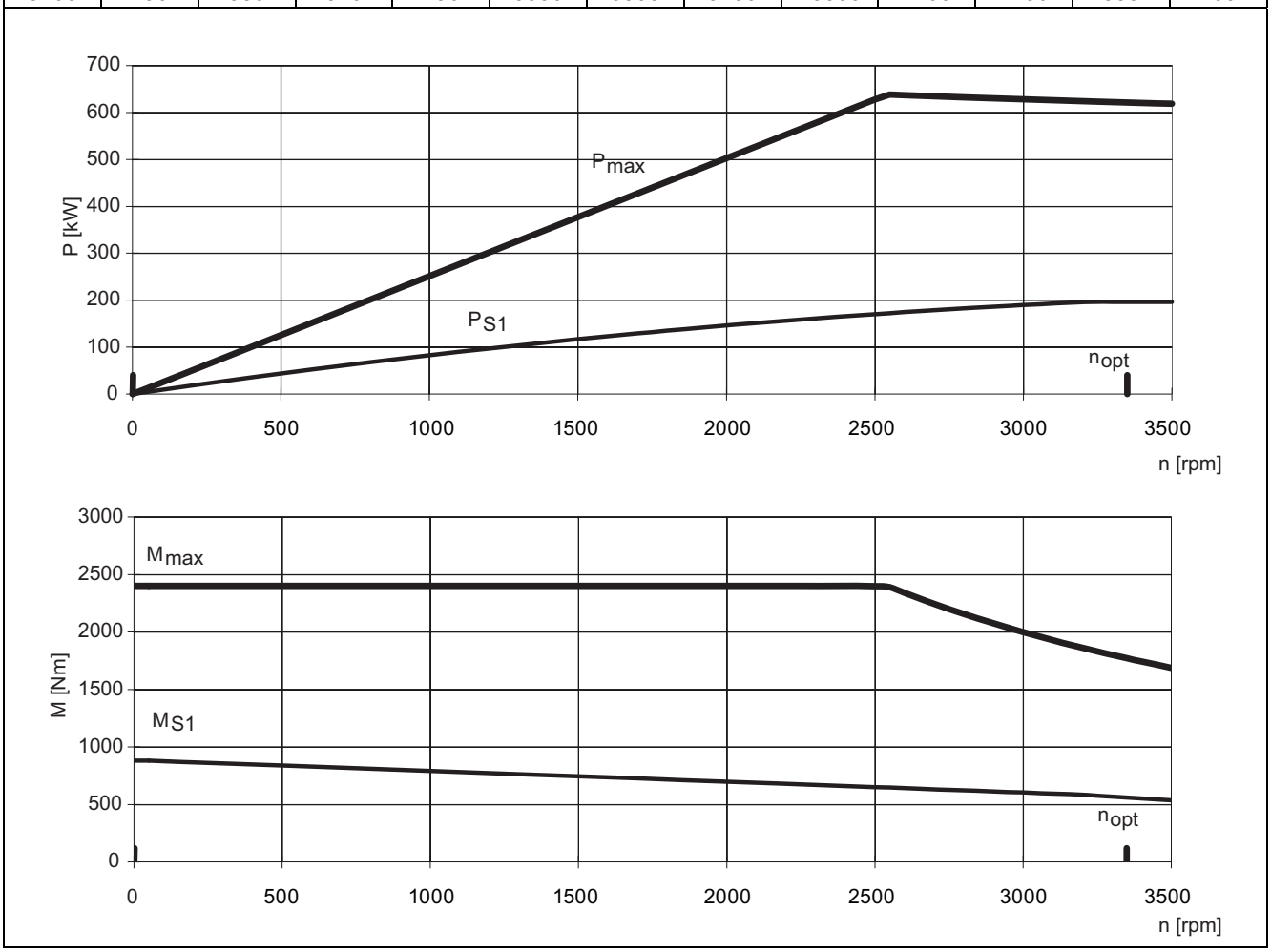
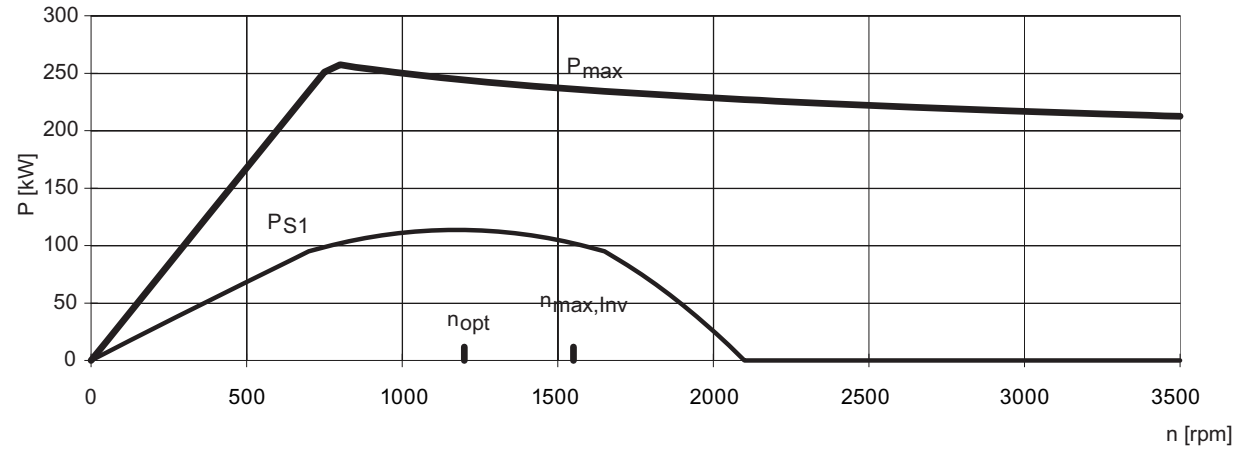


Tabella 4- 819 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-2□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 95 | 1296 | 255 | 114 | 1200 | 3500 | 3100 | 1550 | 3200 | 640 | 1330 | 260 |



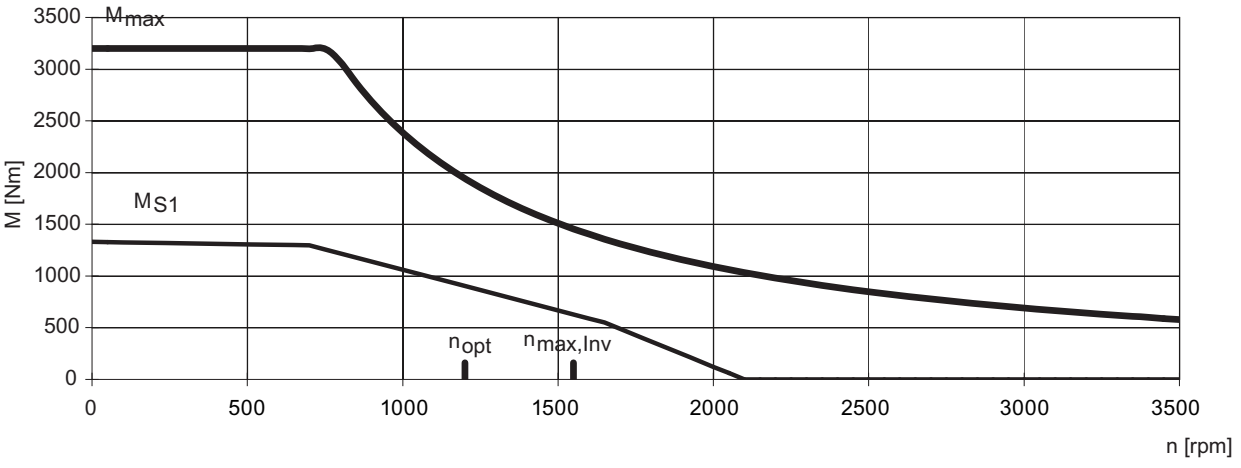
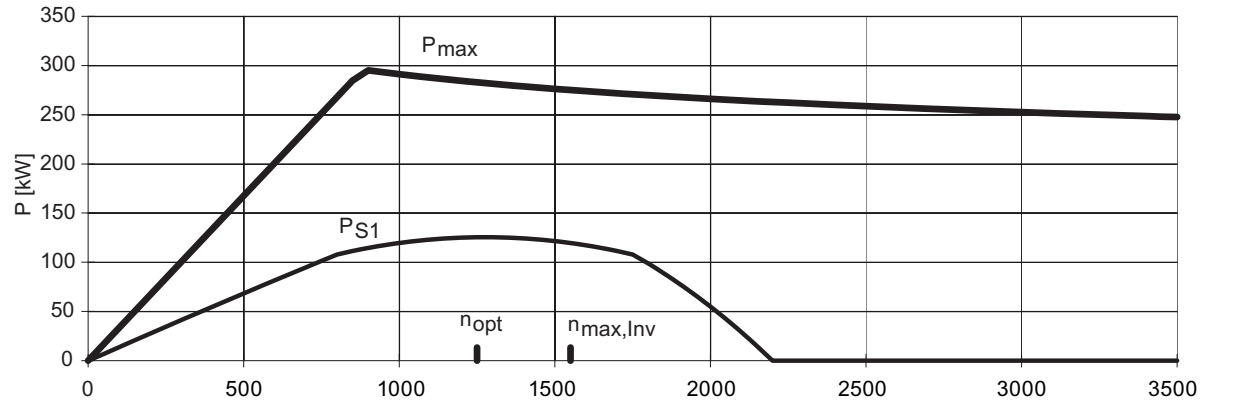



Tabella 4- 820 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-2□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 108 | 1289 | 255 | 125 | 1250 | 3500 | 3100 | 1550 | 3200 | 640 | 1330 | 260 |
| 700 | 95 | 1296 | 255 | | | | | | | | | |



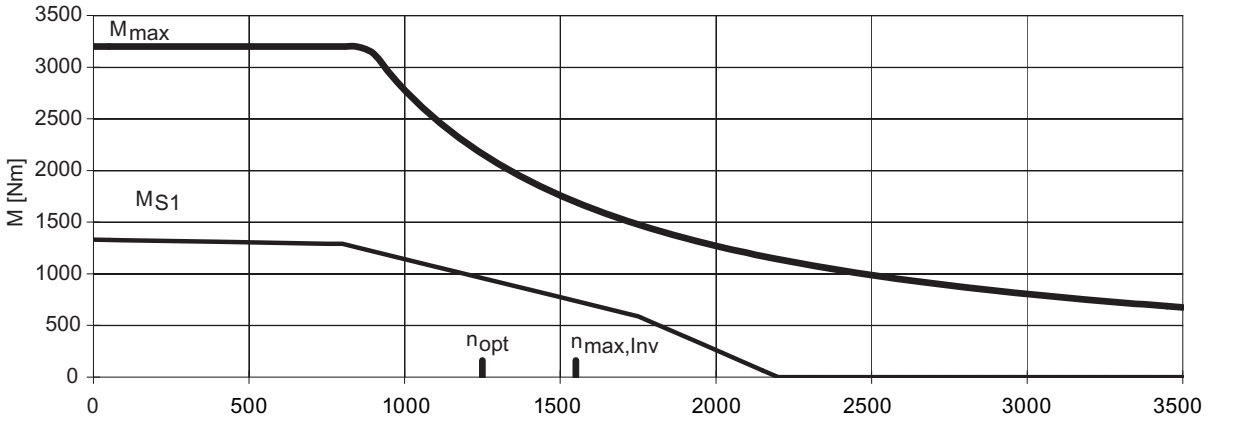



Tabella 4- 821 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-2□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 134 | 1280 | 255 | 145 | 1400 | 3500 | 3100 | 1550 | 3200 | 640 | 1330 | 260 |

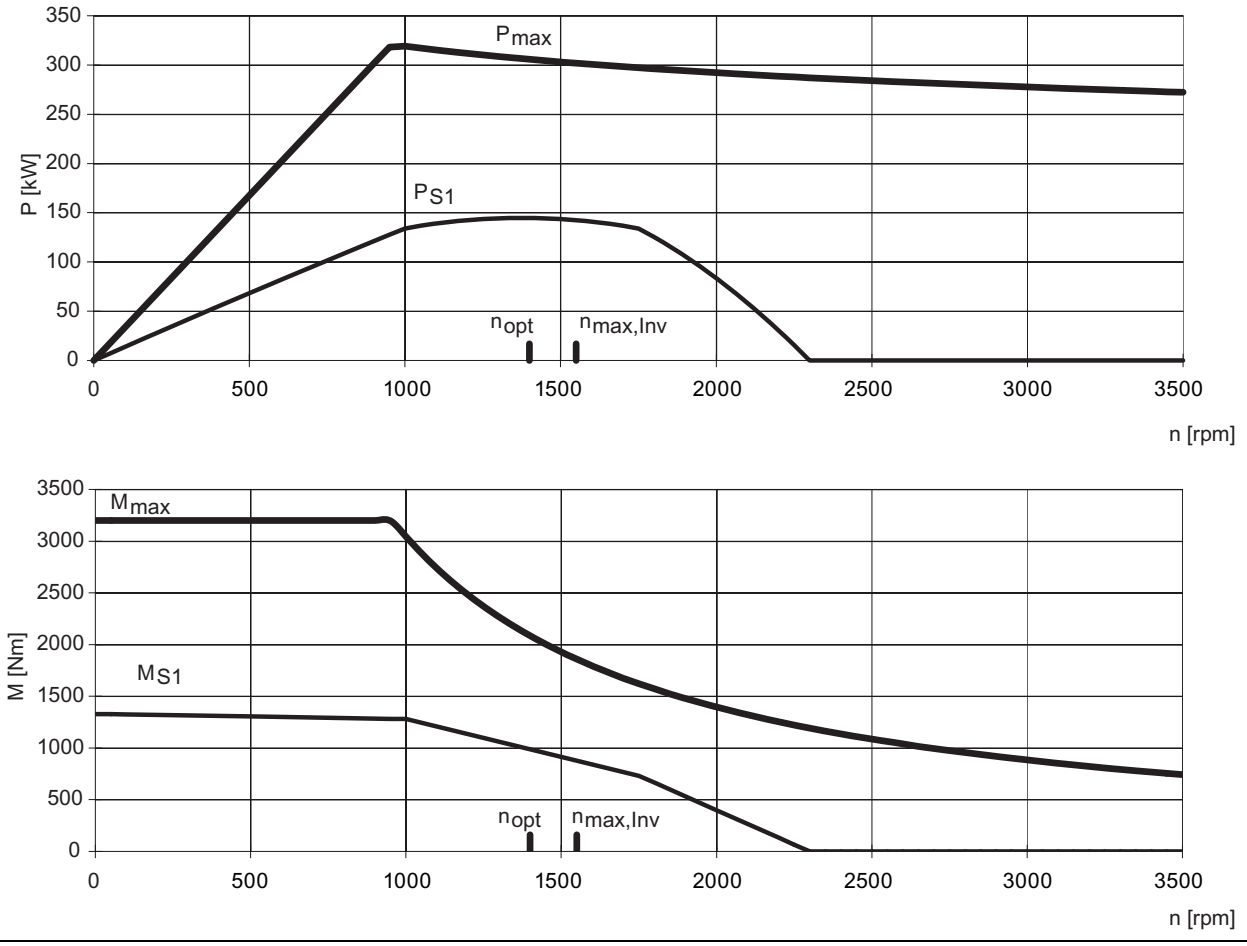


Tabella 4- 822 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-2□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 135 | 1289 | 325 | 148 | 1450 | 3500 | 3100 | 1950 | 3200 | 820 | 1330 | 330 |

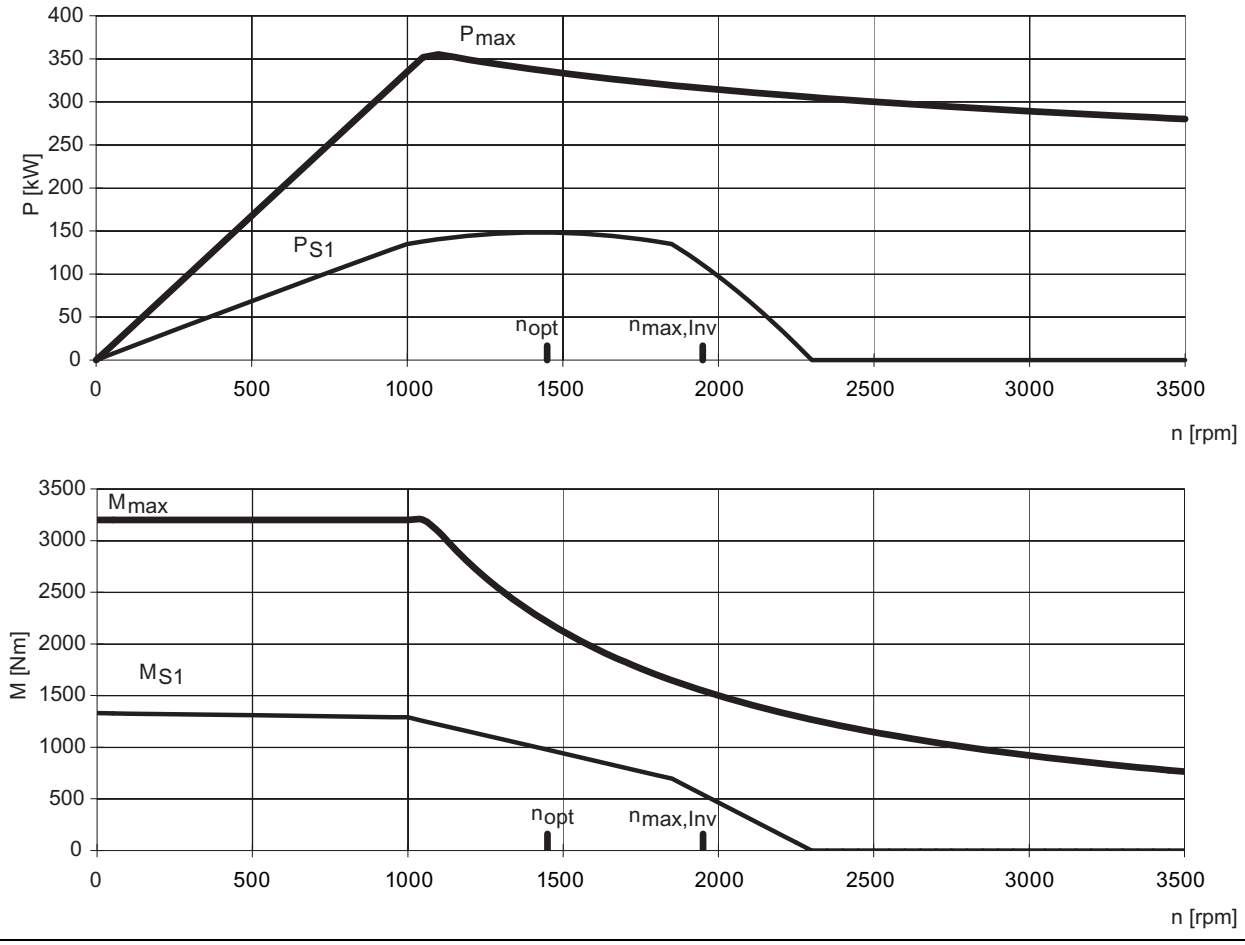
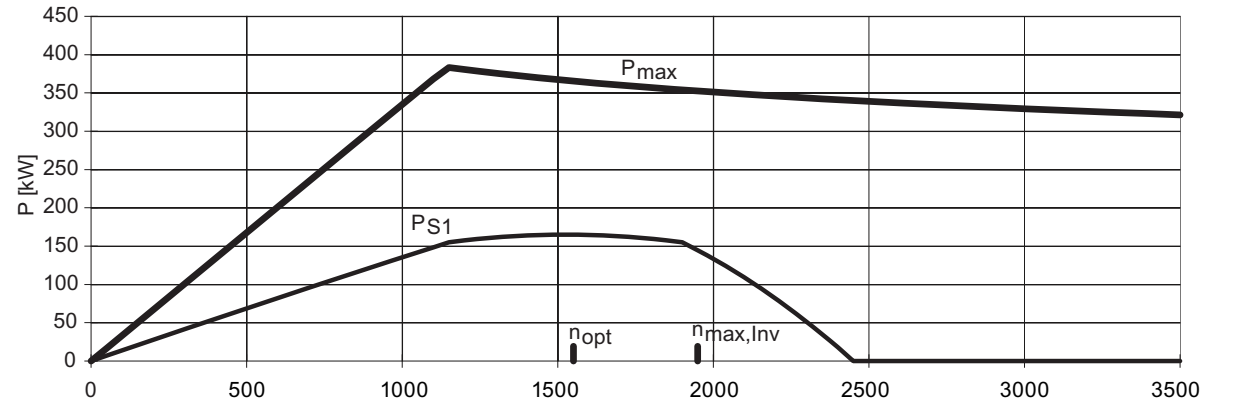


Tabella 4- 823 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-2□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 155 | 1287 | 325 | 165 | 1550 | 3500 | 3100 | 1950 | 3200 | 820 | 1330 | 330 |
| 1000 | 135 | 1289 | 325 | | | | | | | | | |



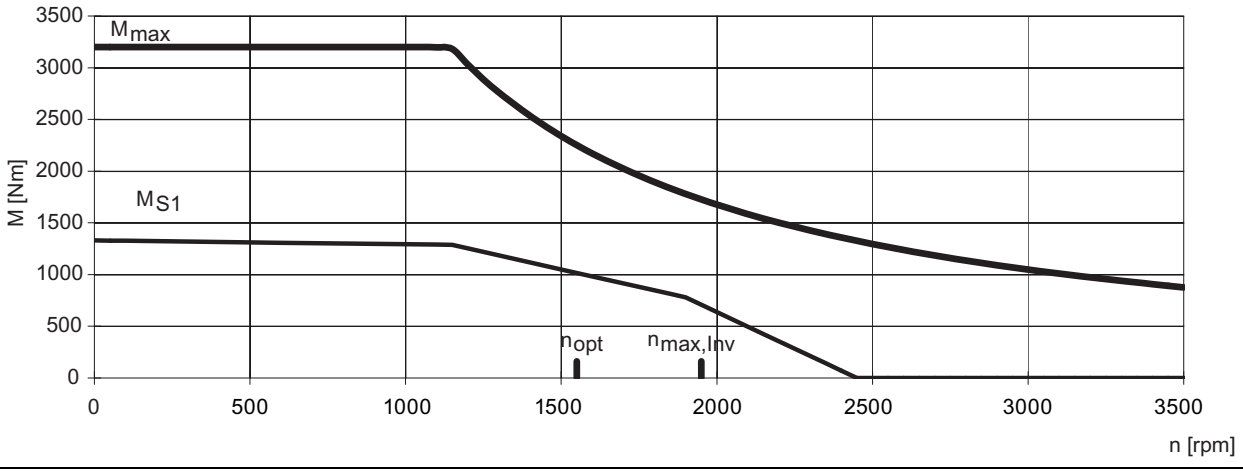



Tabella 4- 824 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-2□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 180 | 1273 | 320 | 187 | 1650 | 3500 | 3100 | 1950 | 3200 | 820 | 1330 | 330 |

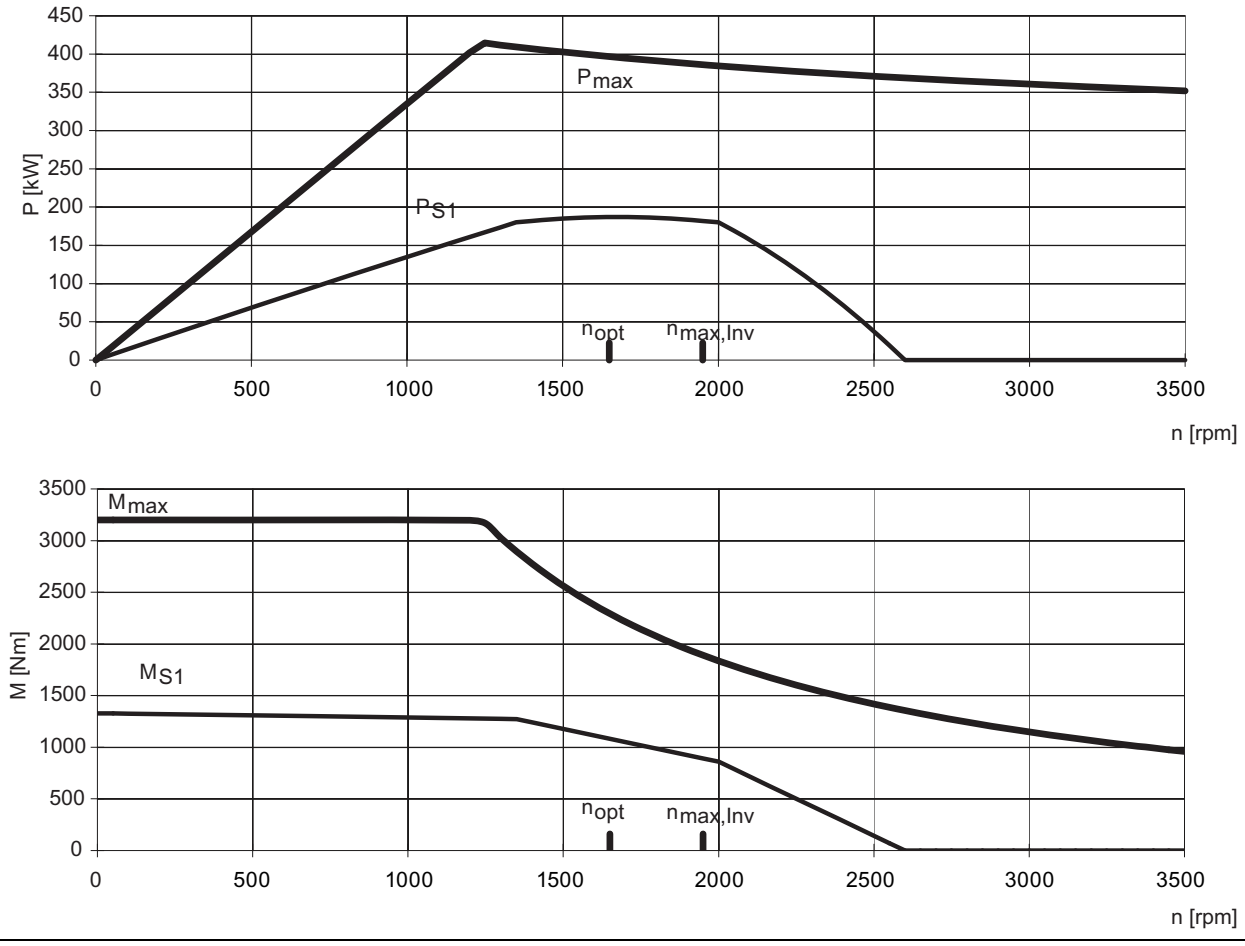


Tabella 4- 825 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 201 | 1280 | 445 | 209 | 1850 | 3500 | 3100 | 2700 | 3200 | 1120 | 1330 | 454 |

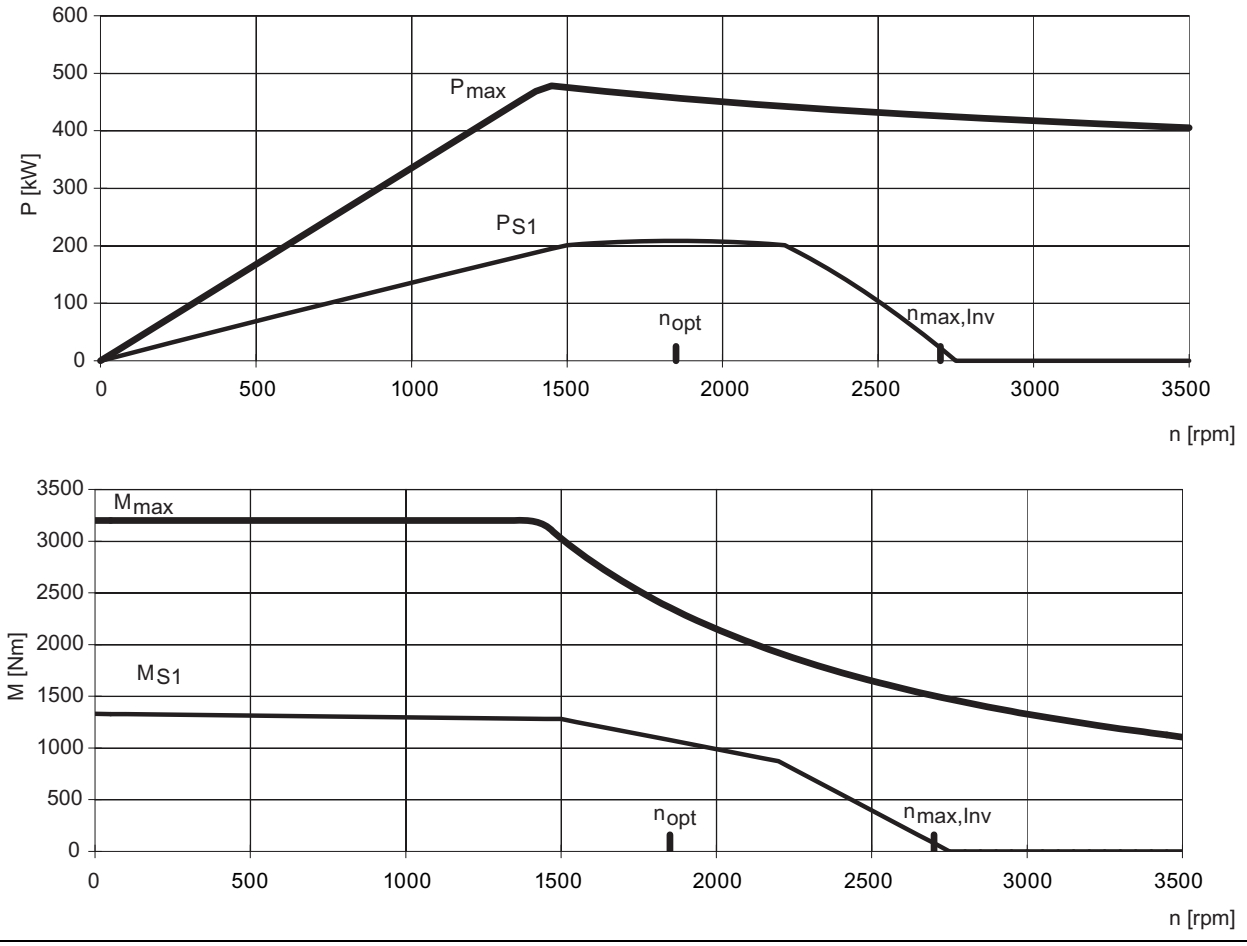
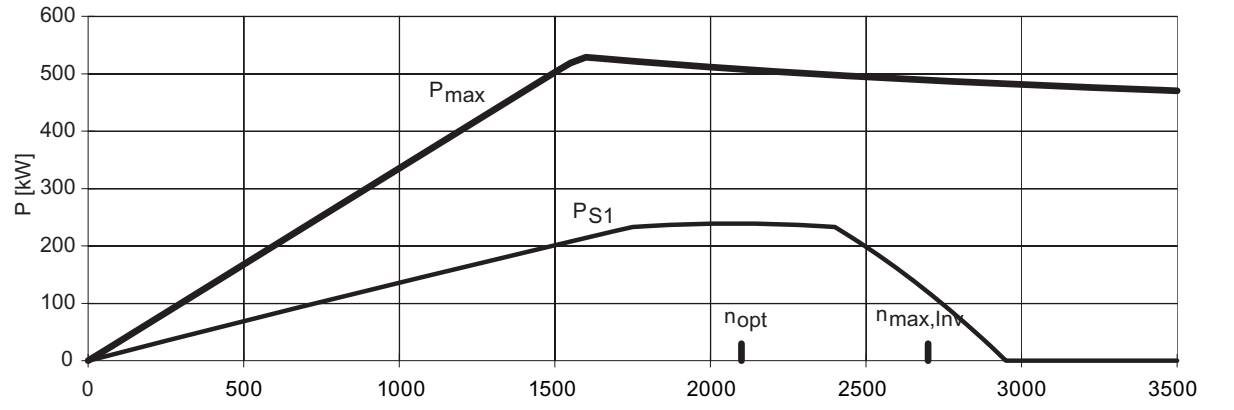


Tabella 4- 826 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 233 | 1271 | 440 | 239 | 2100 | 3500 | 3100 | 2700 | 3200 | 1120 | 1330 | 454 |
| 1500 | 201 | 1280 | 445 | | | | | | | | | |



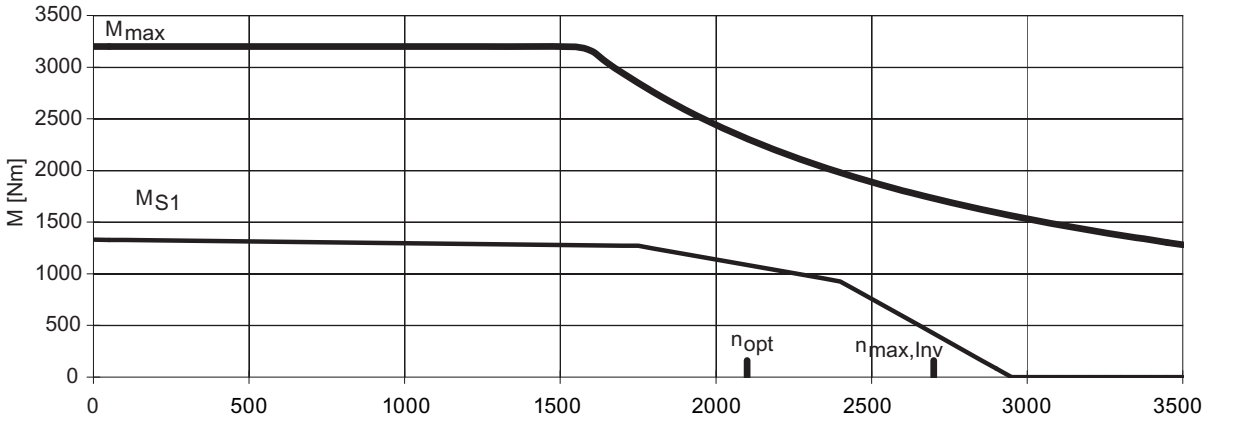



Tabella 4- 827 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 248 | 1184 | 410 | 252 | 2300 | 3500 | 3100 | 2700 | 3200 | 1120 | 1330 | 454 |

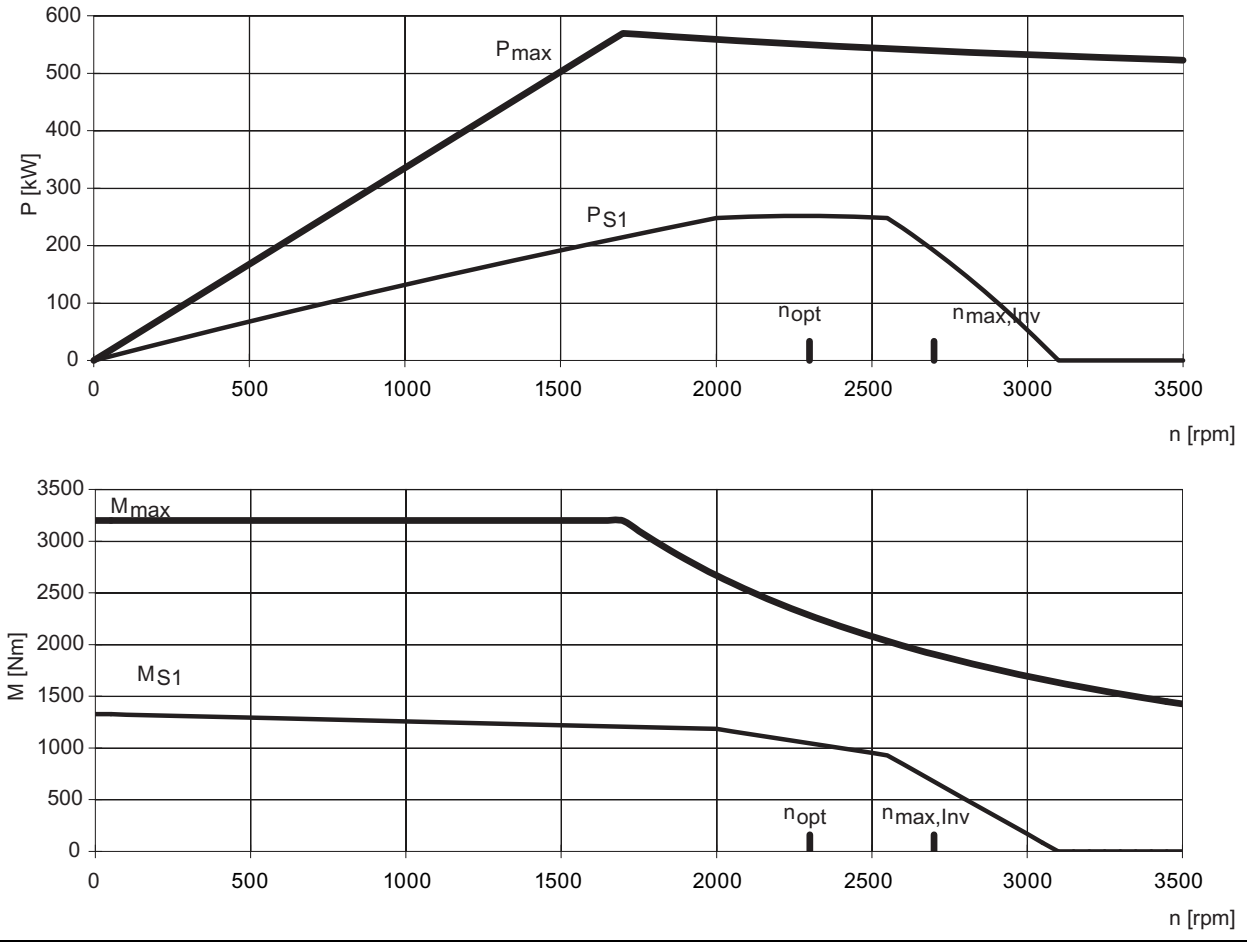


Tabella 4- 828 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8226-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 228 | 871 | 400 | 235 | 3000 | 3500 | 3100 | >3500 | 3200 | 1500 | 1170 | 532 |

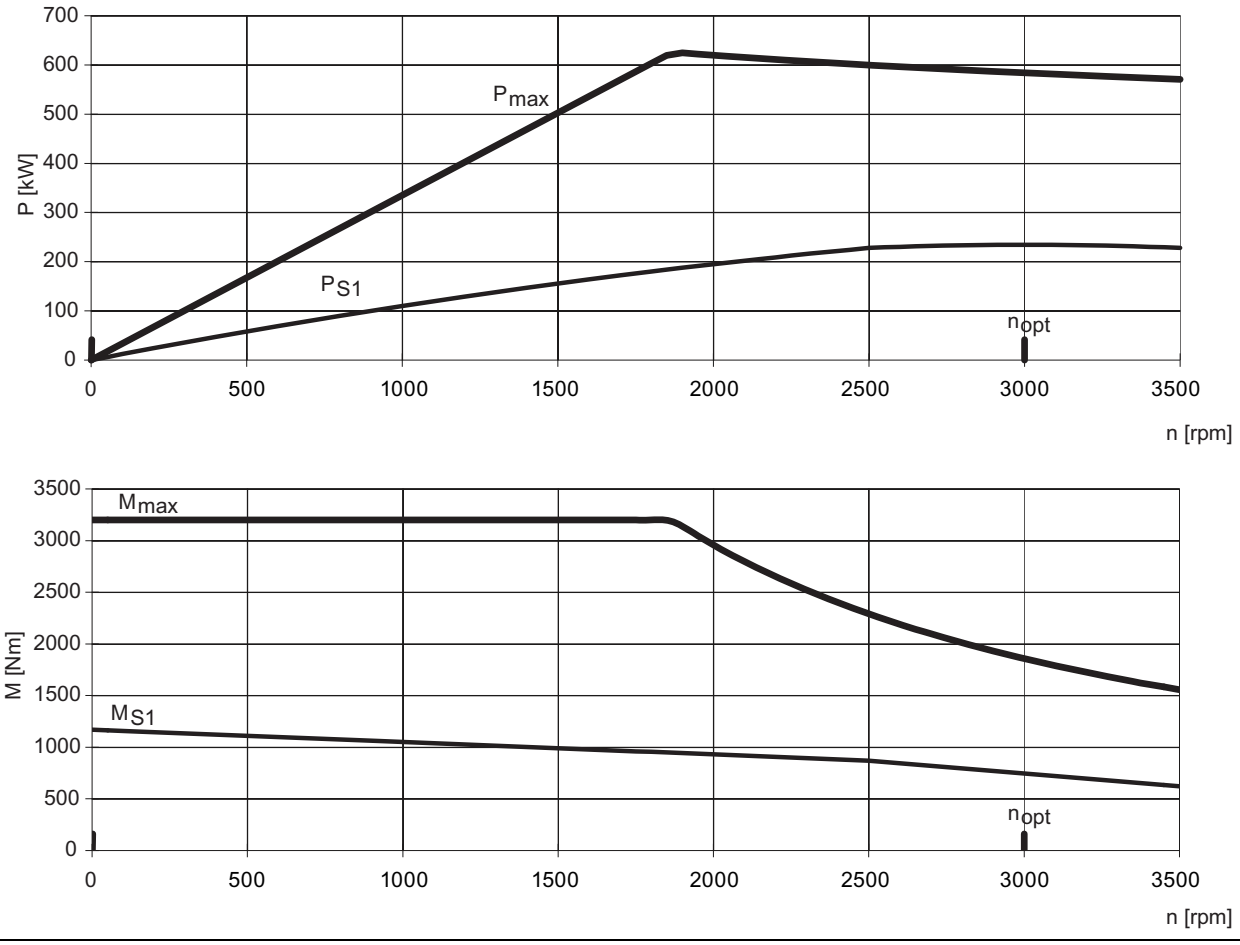
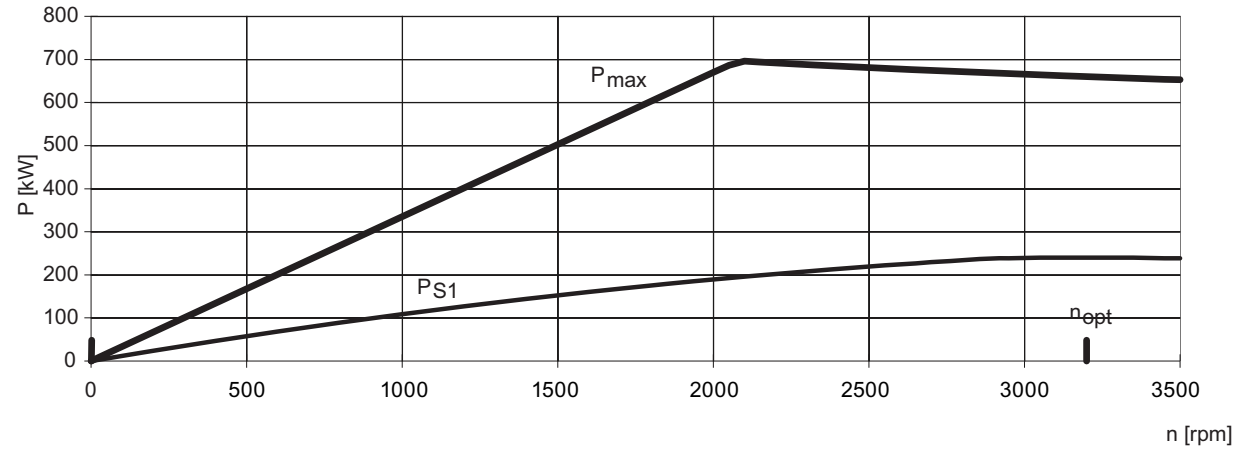


Tabella 4- 829 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8226-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 238 | 784 | 365 | 240 | 3200 | 3500 | 3100 | >3500 | 3200 | 1500 | 1170 | 532 |
| 2500 | 228 | 871 | 400 | | | | | | | | | |



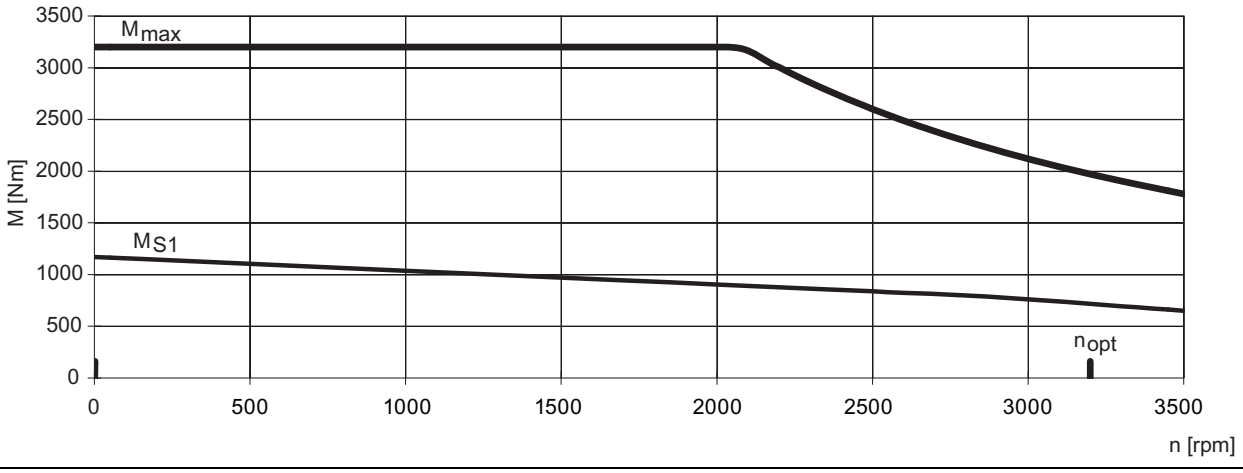
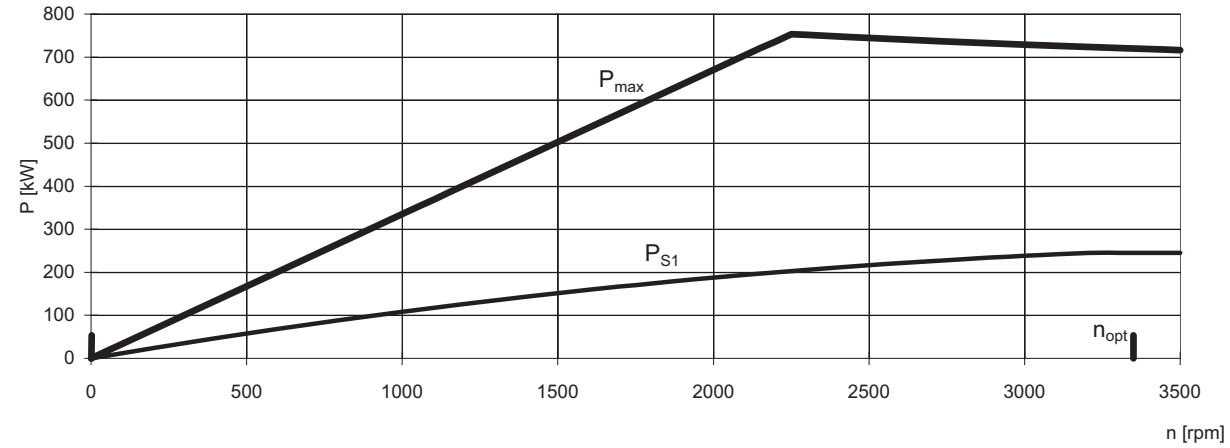



Tabella 4- 830 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8226-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3200 | 245 | 731 | 340 | 245 | 3350 | 3500 | 3100 | >3500 | 3200 | 1500 | 1170 | 532 |



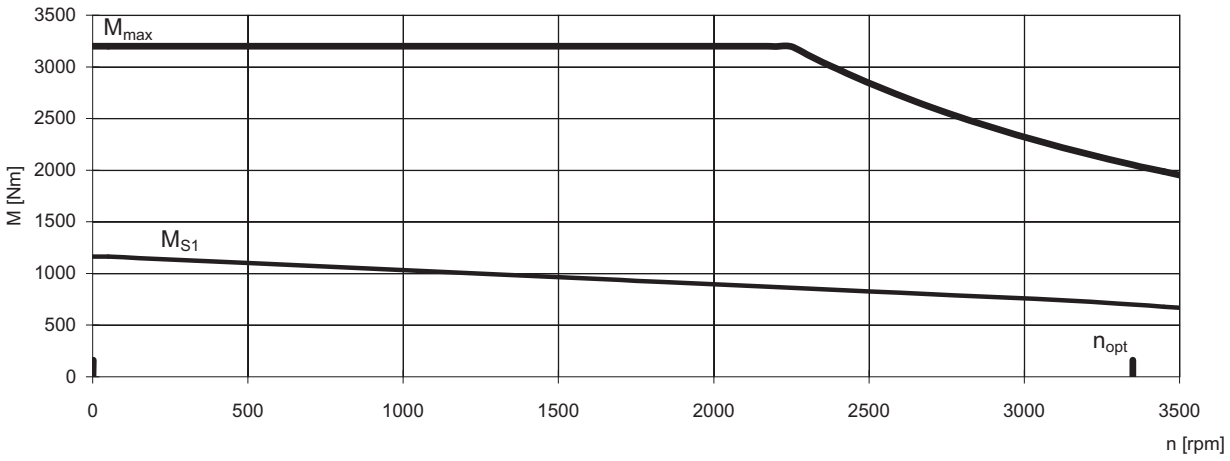



Tabella 4- 831 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-2□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 121 | 1651 | 305 | 141 | 1150 | 3500 | 3100 | 1450 | 4000 | 750 | 1680 | 306 |

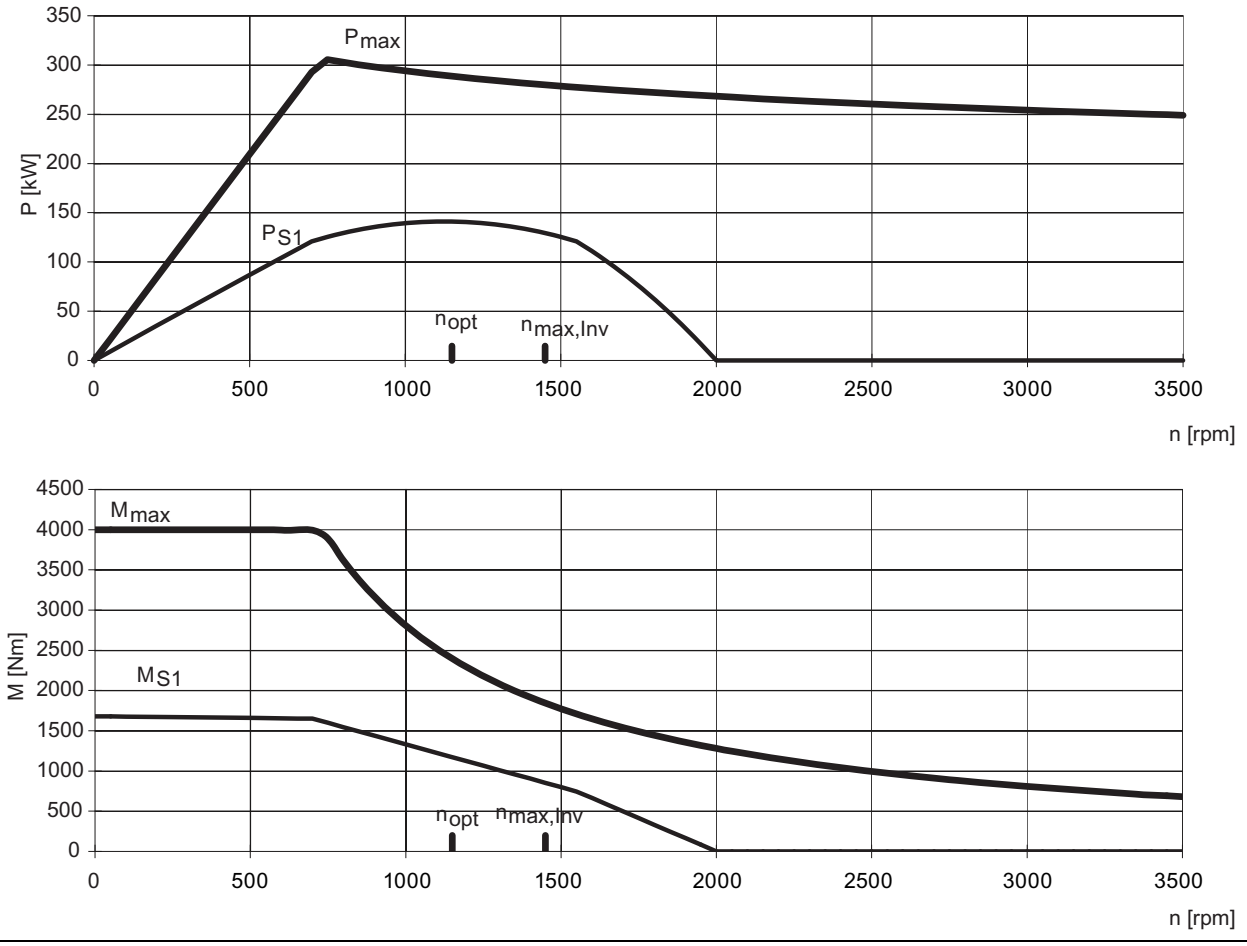
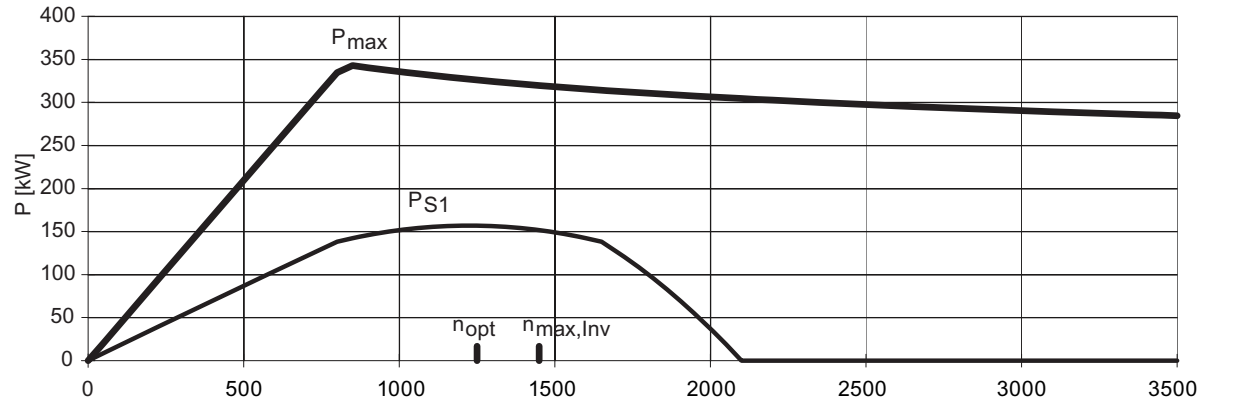


Tabella 4- 832 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-2□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 138 | 1647 | 305 | 157 | 1250 | 3500 | 3100 | 1450 | 4000 | 750 | 1680 | 306 |
| 700 | 121 | 1651 | 305 | | | | | | | | | |



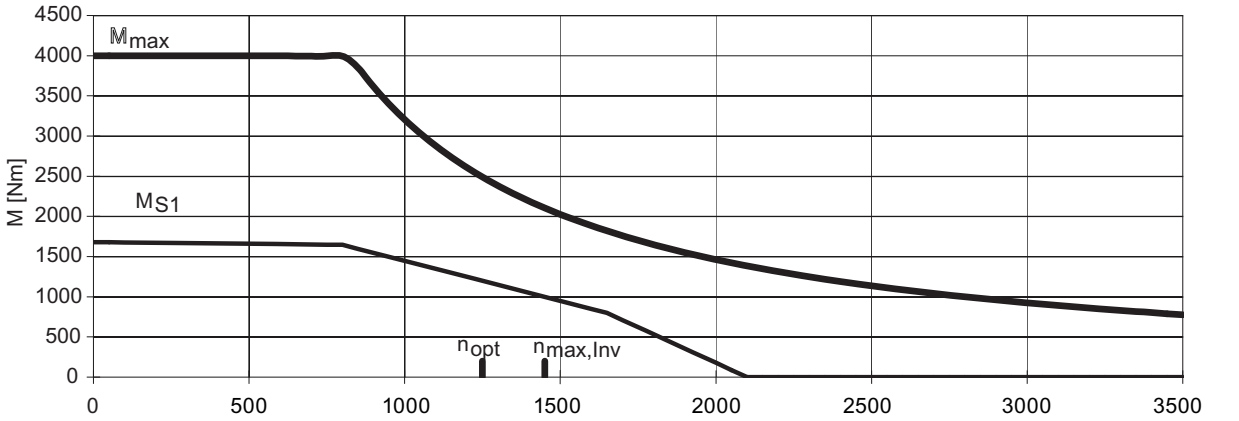



Tabella 4- 833 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-2□C2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 172 | 1642 | 300 | 184 | 1350 | 3500 | 3100 | 1450 | 4000 | 750 | 1680 | 306 |

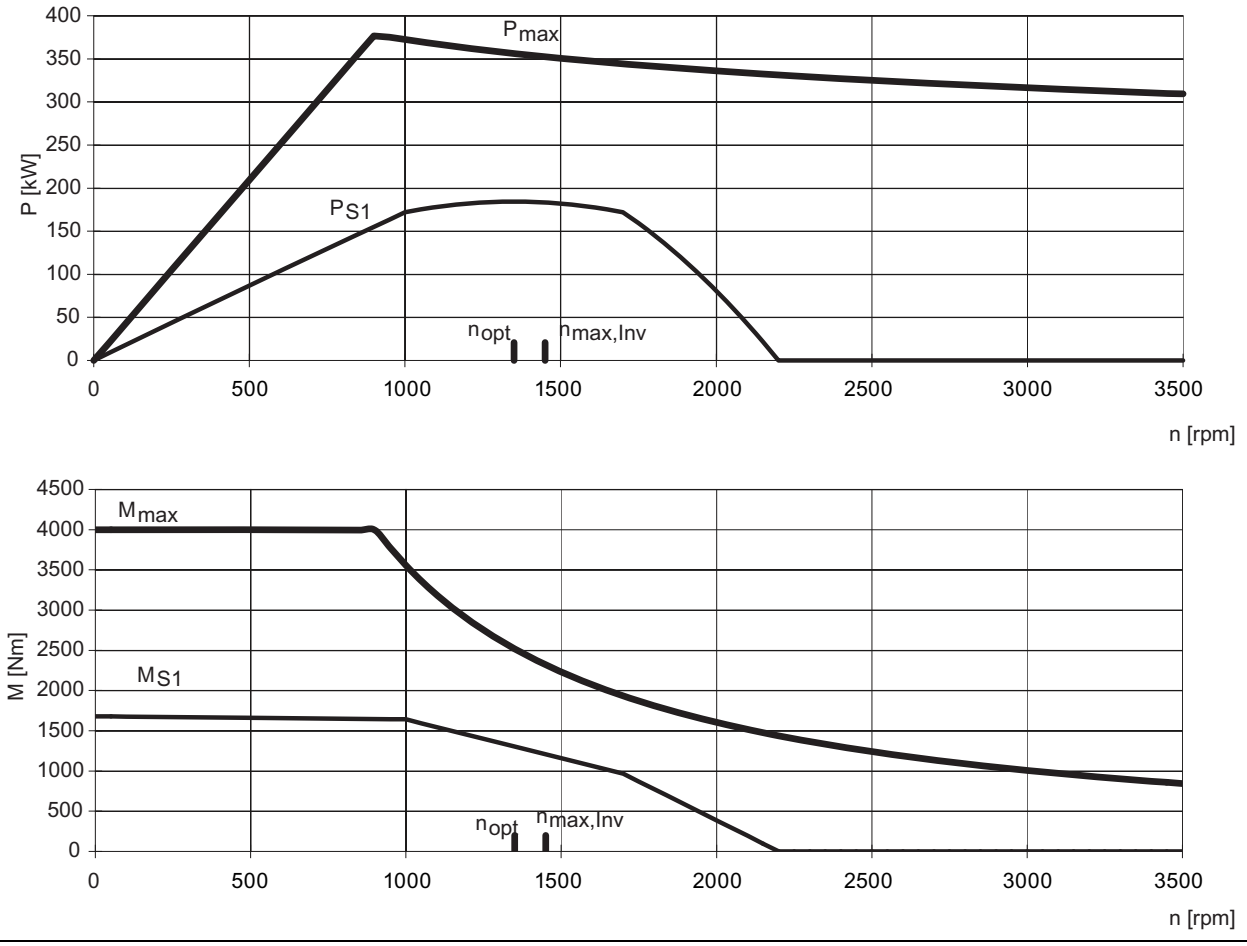


Tabella 4- 834 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-2□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 169 | 1614 | 395 | 184 | 1400 | 3500 | 3100 | 1950 | 4000 | 1000 | 1680 | 408 |

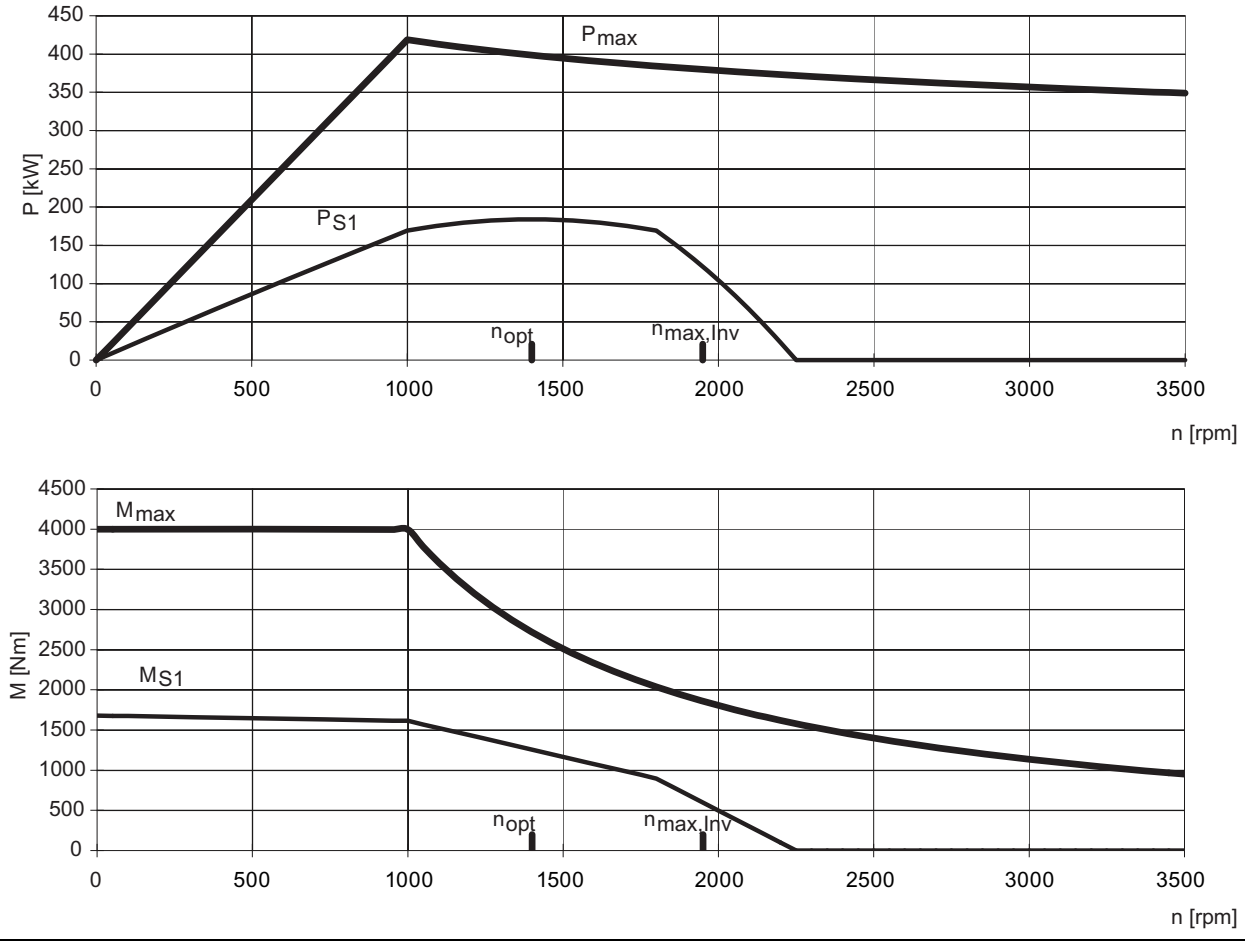


Tabella 4- 835 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-2□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 194 | 1611 | 395 | 205 | 1500 | 3500 | 3100 | 1950 | 4000 | 1000 | 1680 | 408 |
| 1000 | 169 | 1614 | 395 | | | | | | | | | |

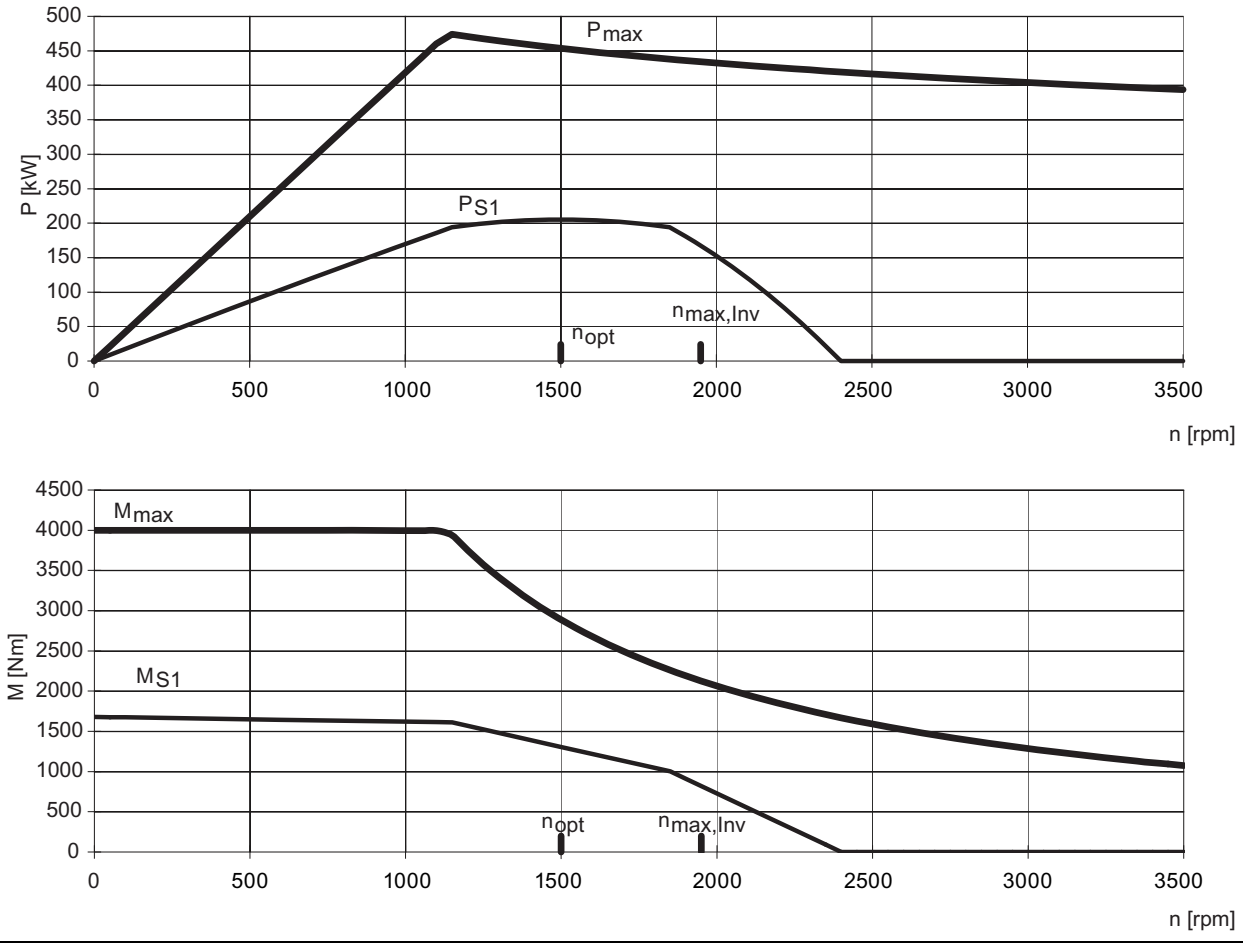


Tabella 4- 836 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-2□D2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 226 | 1599 | 395 | 235 | 1700 | 3500 | 3100 | 1950 | 4000 | 1000 | 1680 | 408 |

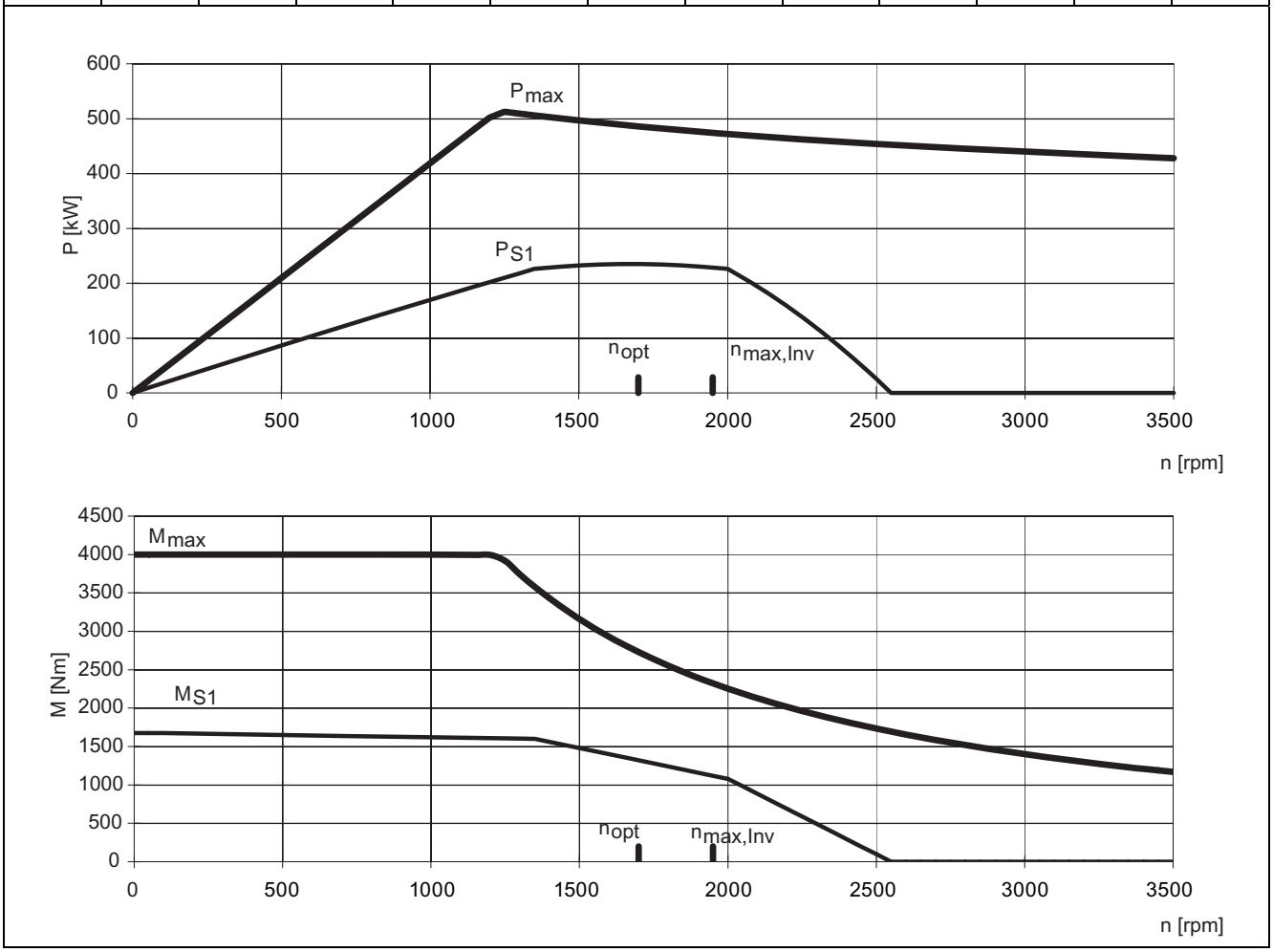


Tabella 4- 837 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 251 | 1598 | 590 | 264 | 1900 | 3500 | 3100 | 2900 | 4000 | 1500 | 1680 | 612 |

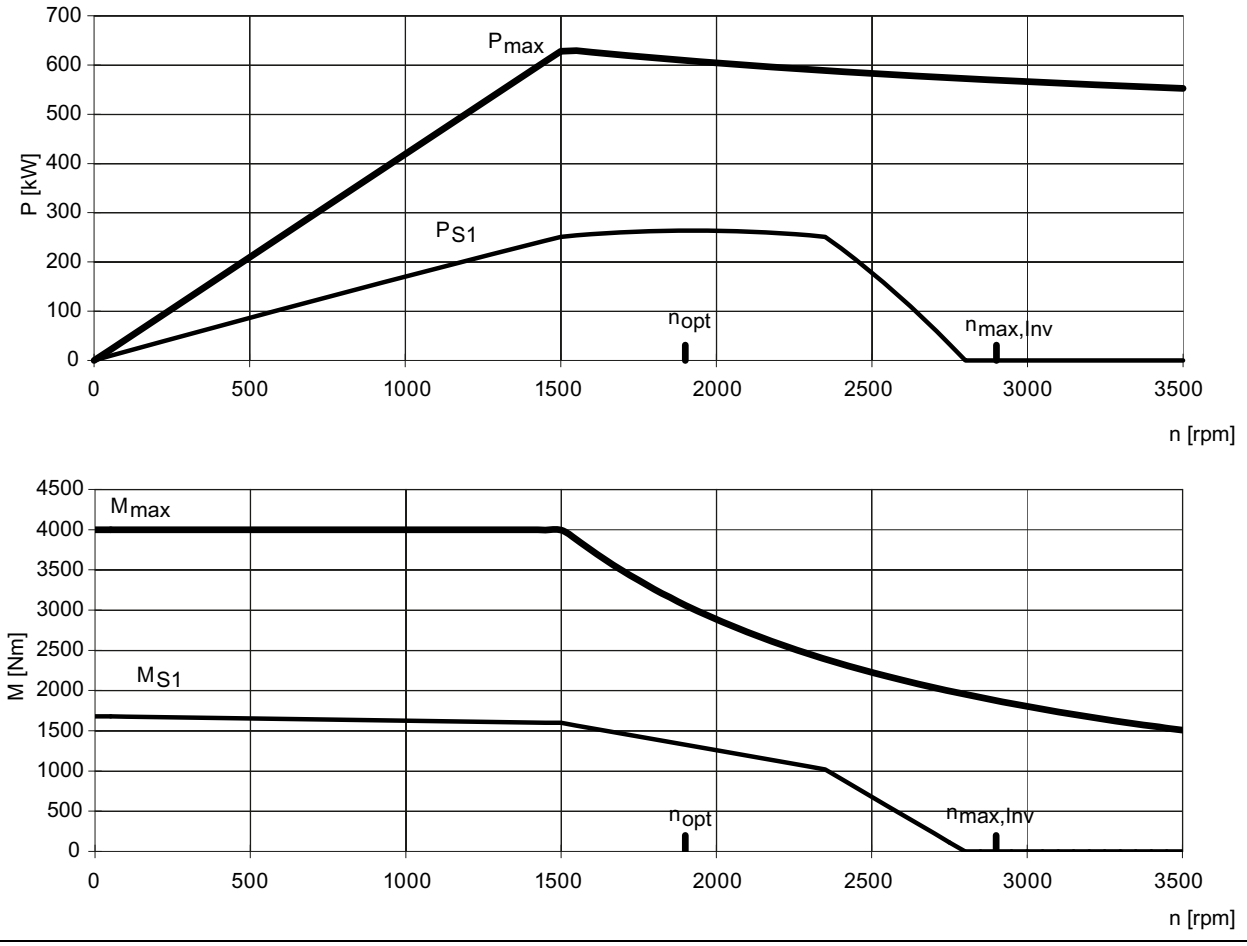
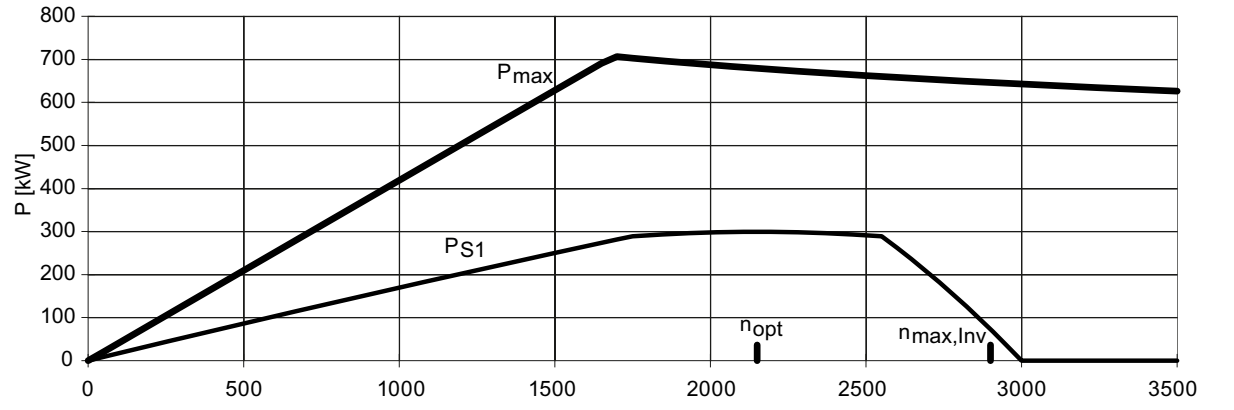


Tabella 4- 838 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 289 | 1577 | 580 | 299 | 2150 | 3500 | 3100 | 2900 | 4000 | 1500 | 1680 | 612 |
| 1500 | 251 | 1598 | 590 | | | | | | | | | |



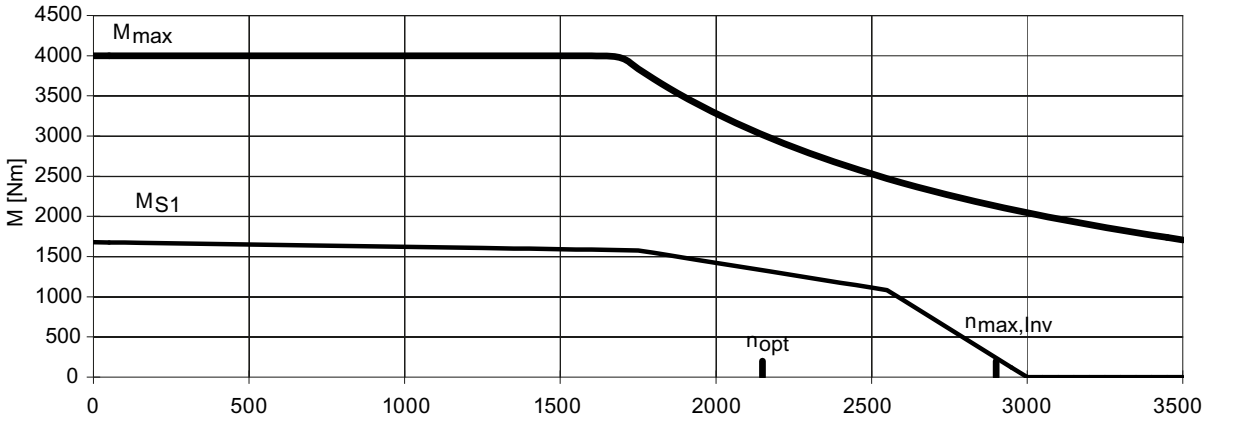



Tabella 4- 839 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-2□F2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 310 | 1480 | 550 | 318 | 2400 | 3500 | 3100 | 2900 | 4000 | 15000 | 1680 | 612 |

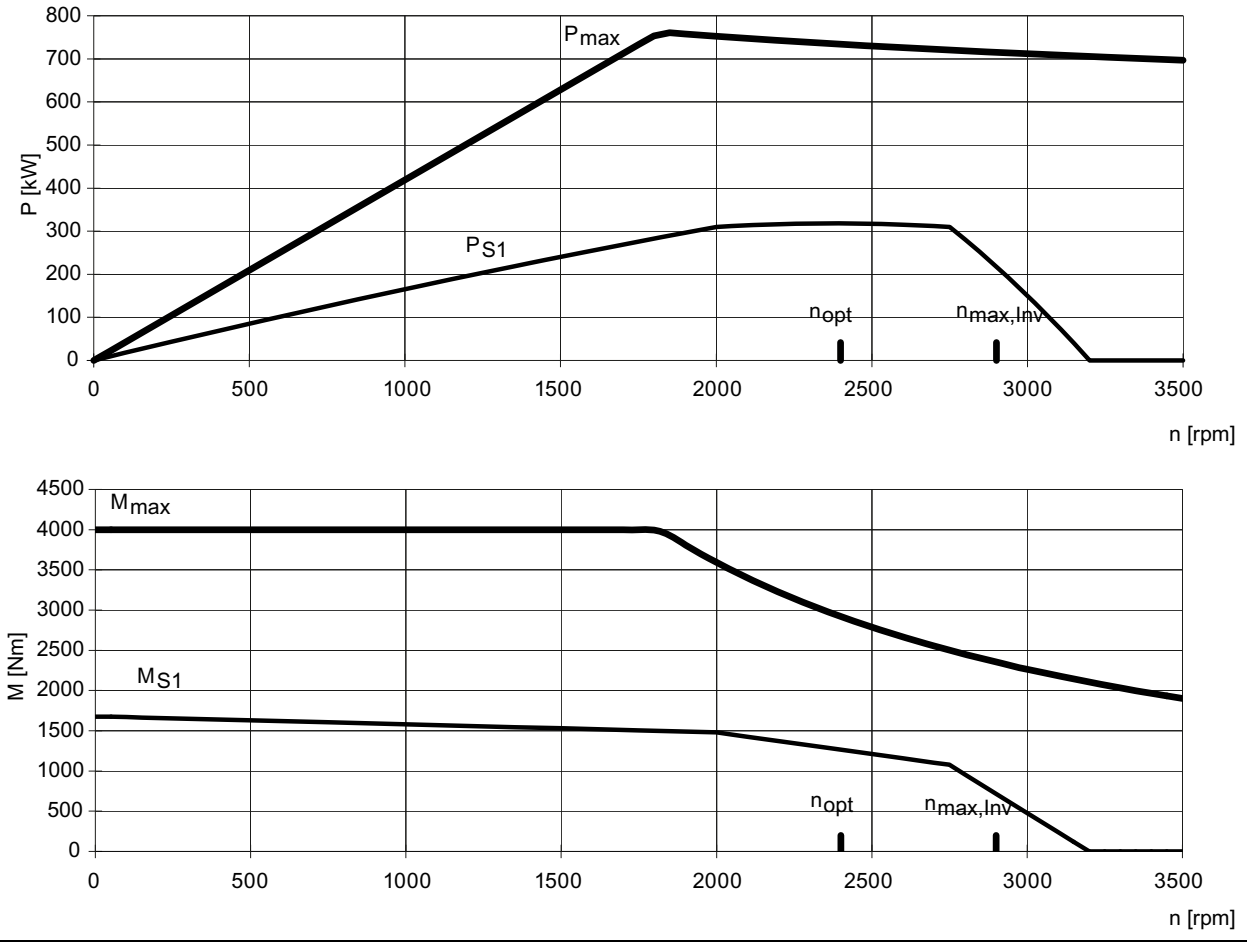


Tabella 4- 840 SINAMICS, 3 AC 400 V, Smart/Basic Line Module, (SLM/BLM), 1PH8228-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2500 | 270 | 1031 | 570 | 278 | 3000 | 3500 | 3100 | >3500 | 4000 | 2250 | 1400 | 762 |

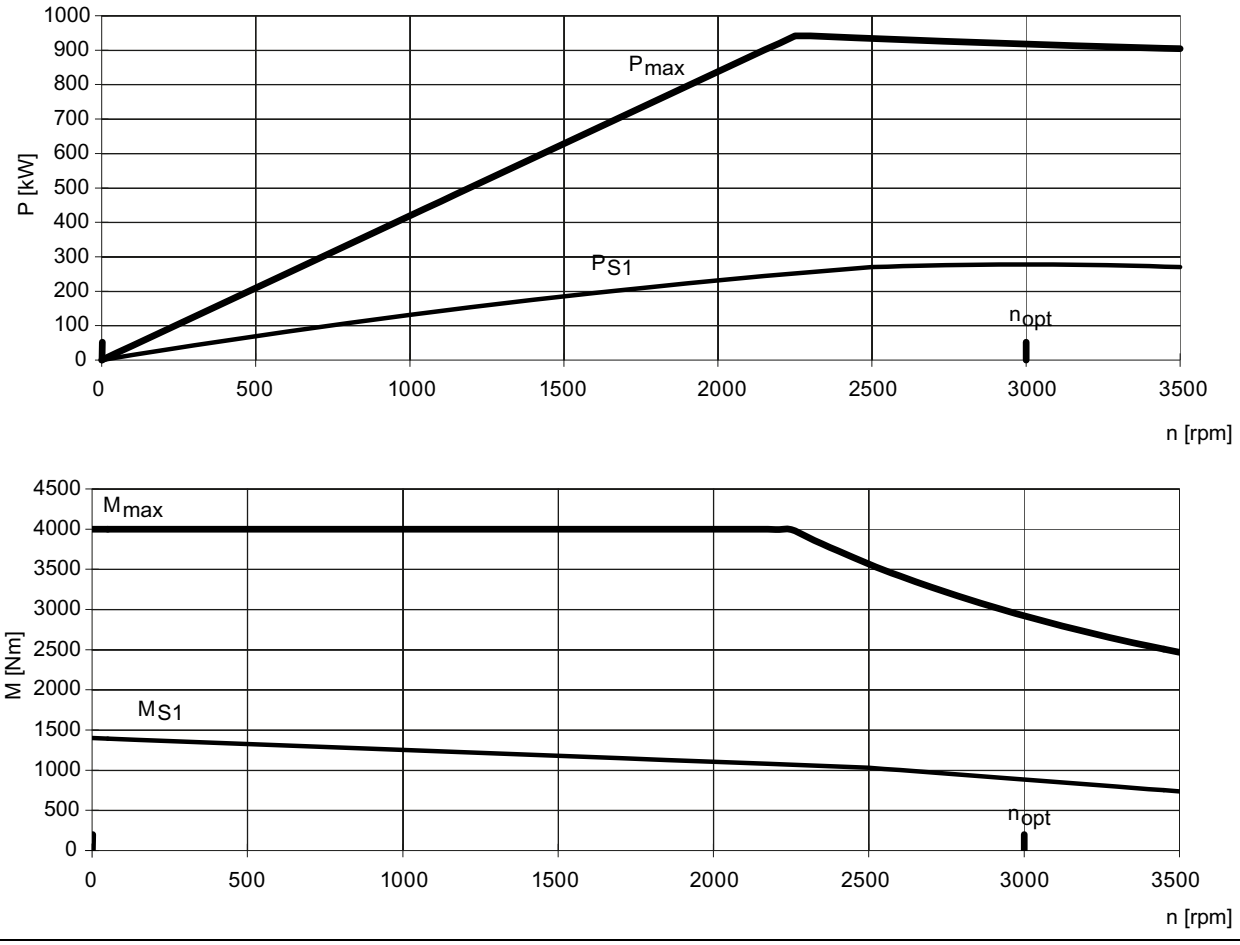
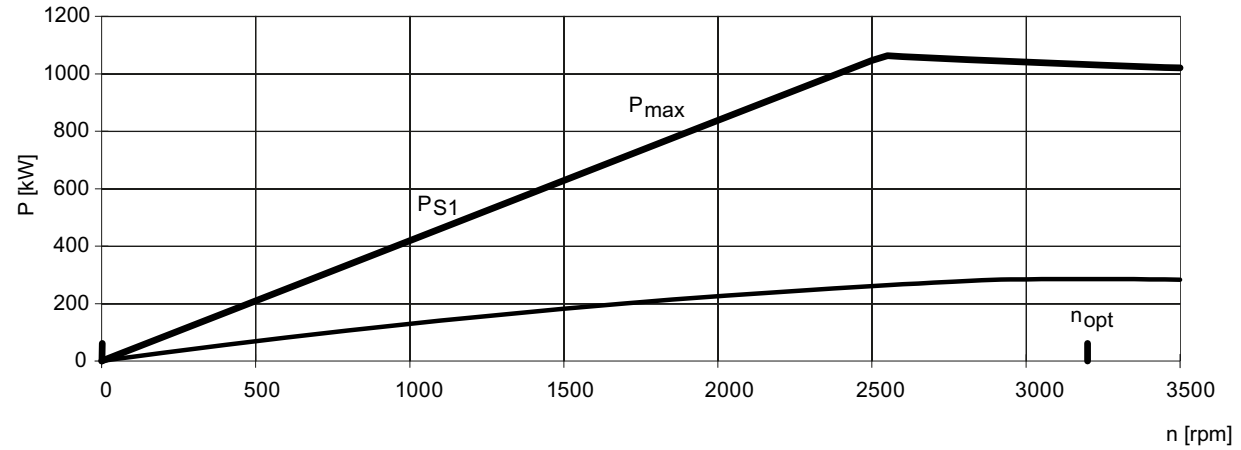


Tabella 4- 841 SINAMICS, 3 AC 400 V, Active Line Module, (ALM), 1PH8228-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2900 | 283 | 932 | 520 | 286 | 3200 | 3500 | 3100 | >3500 | 4000 | 2250 | 1400 | 762 |
| 2500 | 270 | 1031 | 570 | | | | | | | | | |



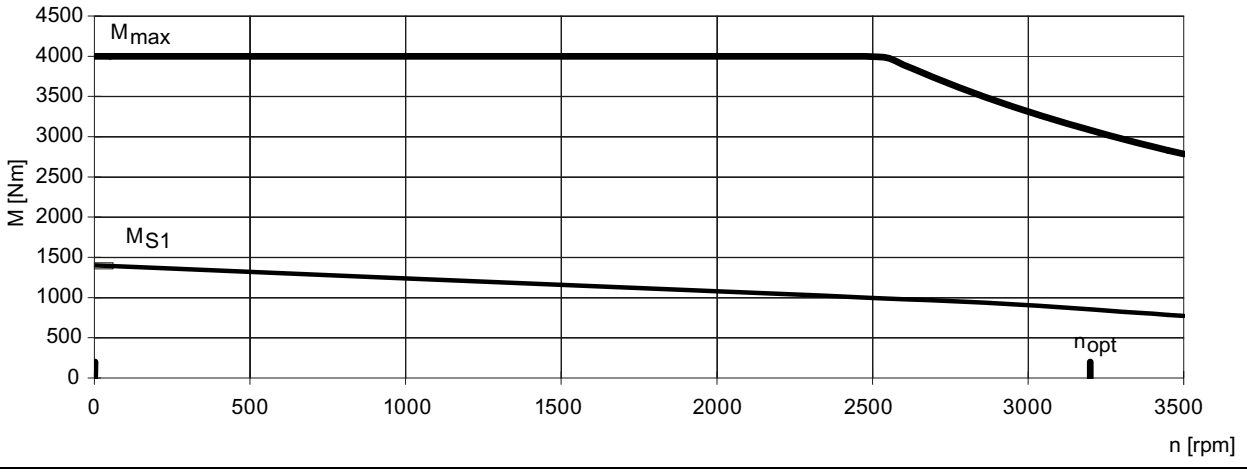
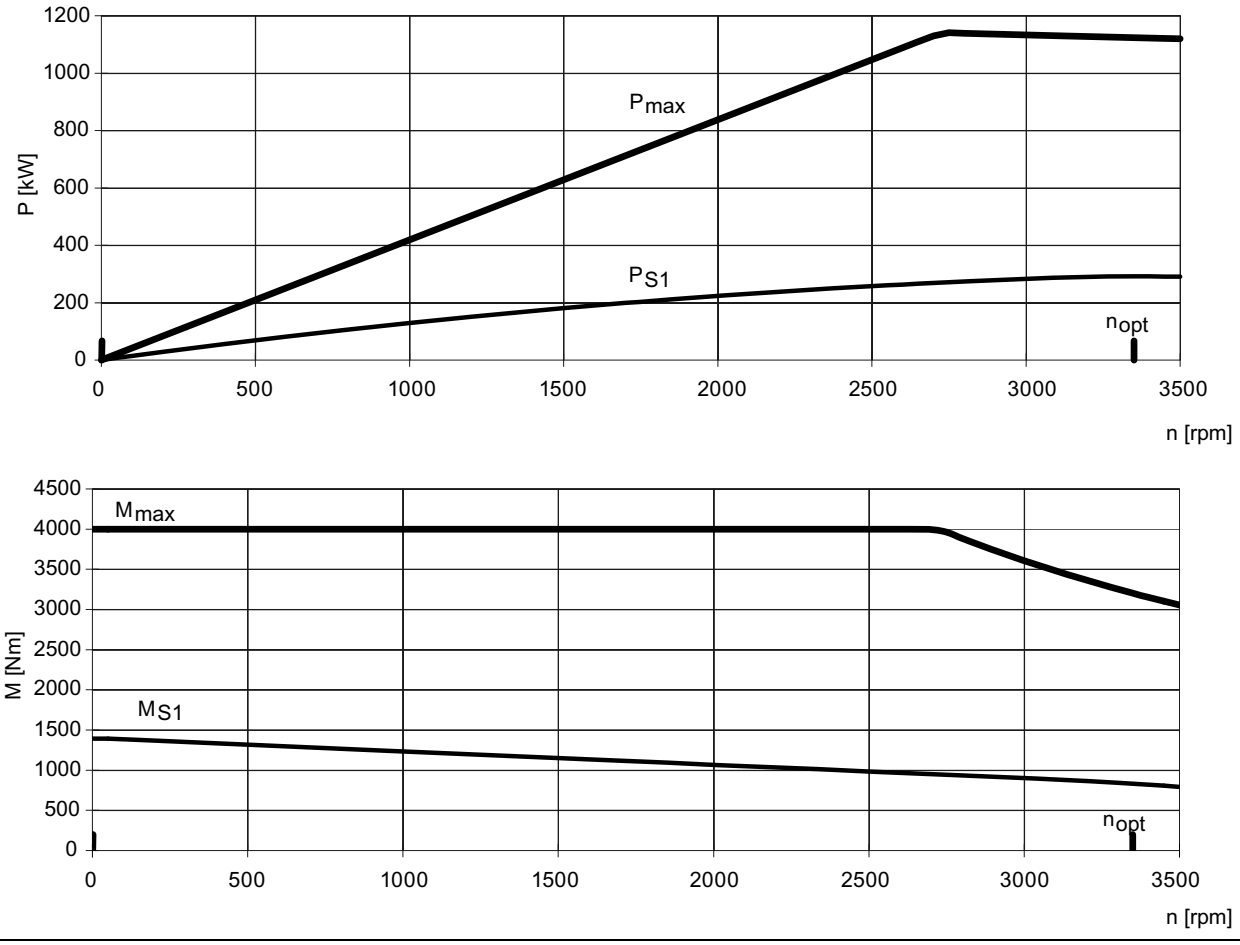



Tabella 4- 842 SINAMICS, 3 AC 480 V, Smart/Basic/Active Line Module, (SLM/BLM/ALM), 1PH8228-2□L2□

| $n_N$ [giri/min] | $P_N$ [kW] | $M_N$ [Nm] | $I_N$ [A] | $P_{ott}$ [kW] | $n_{ott}$ [giri/min] | $n_{max}$ [giri/min] | $n_{max, fr}$ [giri/min] | $n_{max, Inv}$ [giri/min] | $M_{max}$ [Nm] | $I_{max}$ [A] | $M_0$ [Nm] | $I_0$ [A] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3200 | 291 | 868 | 485 | 291 | 3350 | 3500 | 3100 | >3500 | 4000 | 2250 | 1400 | 762 |



# Componenti del motore

# 5

## 5.1 Protezione termica del motore

Tabella 5- 1 Caratteristiche e dati tecnici

| Modello | KTY 84 |
|---|---|
| Resistenza al freddo (20°C) | circa 580 Ω |
| Resistenza al caldo (100°C) | circa 1000 Ω |
| Collegamento | tramite il cavo di segnale |
| Temperatura di intervento | Preallarme < 150 °C<br>Allarme/disinserzione a max. 170 °C ± 5 °C |

La variazione di resistenza è proporzionale alla variazione della temperatura degli avvolgimenti. L'andamento delle temperature viene controllato durante la regolazione.

Il segnale di preallarme nel circuito del convertitore SINAMICS può essere valutato esternamente.

I sovraccarichi momentanei elevati richiedono misure aggiuntive di protezione, in funzione del tempo di accoppiamento termico del sensore.

I fili di collegamento per il sensore di temperatura sono inseriti nello stesso cavo dei fili di collegamento per l'encoder.

**⚠AVVERTENZA**

Se l'operatore intende eseguire un'ulteriore prova ad alta tensione, le estremità dei cavi dei sensori di temperatura vanno cortocircuitate prima della prova! L'applicazione della tensione di prova ad un solo morsetto del sensore di temperatura provocherebbe la distruzione del sensore stesso.

**⚠AVVERTENZA**

Per i casi di carico termicamente critici, ad es. elevato sovraccarico a motore fermo, non è più disponibile una protezione sufficiente. Sarà quindi opportuno prevedere un ulteriore elemento di protezione, ad es. un relè per sovraccarico termico.

**Nota**

Il sensore di temperatura è montato sul connettore del segnale con l'encoder di velocità.

Se si ordina il motore 1PH8 senza encoder (possibile solo con l'esecuzione asincrona), il sensore di temperatura deve essere collegato tramite l'ingresso cavi aggiuntivo M16 x 1,5.

Il sensore di temperatura di riserva (opzione A25 con altezza dell'asse 80 ... 160) nonché la catena di termistori per l'allarme e la disinserzione (opzione A12) sono montati nella morsettiera su una barra di morsetti di segnale.

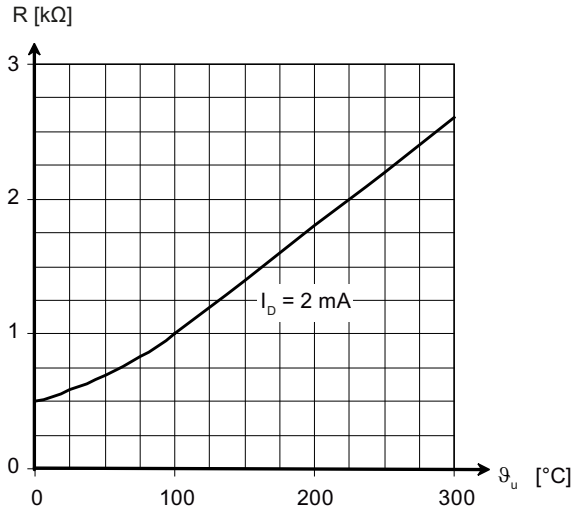



Figura 5-1 Andamento della resistenza in relazione alla temperatura rilevata dal sensore KTY 84

# 5.2 Encoder

## 5.2.1 Panoramica encoder

La scelta dell'encoder viene definita nel codice di ordinazione (MLFB) del motore alla 9.posizione indicando le lettere corrispondenti.

**Nota**

La lettera da indicare alla 9.posizione del codice di ordinazione (MLFB) è diversa per i motori con o senza DRIVE-CLiQ.

Tabella 5- 2 Tipi di encoder per motori senza DRIVE-CLiQ

| Tipo di encoder | 9. Posizione del numero di ordinazione (MLFB) |
|---|---|
| Senza encoder | A |
| Encoder assoluto EnDat 2048 S/R (encoder AM2048S/R) | E |
| Encoder incrementale HTL 1024 S/R (Encoder HTL 1024S/R) | H |
| Encoder incrementale HTL 2048 S/R (Encoder HTL 2048S/R) | J |
| Encoder incrementale sen/cos 1 Vpp 2048 S/R con le tracce C e D (Encoder IC 2048S/R) | M |
| Encoder incrementale sen/cos 1 Vpp 512 S/R senza le tracce C e D (Encoder IN 512S/R) | T |
| Encoder incrementale sen/cos 1 Vpp 256 S/R senza le tracce C e D (Encoder IN 256S/R) | L |

Tabella 5- 3 Tipi di encoder per motori con DRIVE-CLiQ

| Tipo di encoder | 9. Posizione del numero di ordinazione (MLFB) |
|---|---|
| Encoder assoluto 22 bit singleturn singleturn+ 12 bit multiturn (Encoder AM 22DQ) | V |
| Encoder incrementale 22 bit con posizione di commutazione (Encoder IC 22DQ) | D |
| Encoder incrementale 20 bit senza posizione di commutazione (Encoder IN 20DQ) | U |
| Encoder incrementale 19 bit senza posizione di commutazione (Encoder IN 19DQ) | V |

## 5.2.2 Collegamento encoder per motori con interfaccia DRIVE-CLiQ

I motori con interfaccia DRIVE-CLiQ possiedono un Sensor Module interno che contiene una targhetta elettronica. In questo modo si semplifica la messa in servizio del sistema di azionamento SINAMICS S110 / S120, dato che tutti i parametri del motore vengono impostati automaticamente.

**⚠AVVERTENZA**

I moduli encoder con interfaccia DRIVE-CLiQ o Sensor Module contengono dati specifici del motore e dell'encoder e anche una targhetta elettronica. Questa può funzionare solo sul motore originale e non deve essere montata su altri motori o essere sostituita con moduli di altri motori.

I contatti dell'interfaccia DRIVE-CLiQ toccano direttamente componenti sensibili alle cariche elettrostatiche (ESD). I collegamenti non devono venire a contatto con le mani o con utensili che siano caricati elettrostaticamente.

## 5.2.3 Collegamento encoder per motori senza interfaccia DRIVE-CLiQ (a 12/17 poli)

I motori senza interfaccia DRIVE-CLiQ vengono collegati tramite il connettore flangiato a 12 o 17 poli.

## 5.2.4 Assegnazione dell'encoder in funzione del numero di giri massimo consentito

Possibili assegnazioni encoder della serie di motori 1PH8 in funzione del numero di giri massimo consentito:

Tabella 5- 4 Tipi di encoder per motori senza DRIVE-CLiQ

| **Tipo encoder** | | **senza encoder** | **AM2048 S/R** | **HTL1024 S/R** | **HTL2048 S/R** | **IC2048 S/R** | **IN512 S/R** | **IN256 S/R** |
|---|---|---|---|---|---|---|---|---|
| **9. Punto dati** | | **A** | **E** | **H** | **J** | **M** | **T** | **L** |
| **Giri $n_{max}$ consentiti (encoder) [$min^{-1}$]** | | **-** | **12000** | **9000** | **4600** | **12000** | **15000** | **23400** |
| **Motore + sistema cuscinetti** | **$n_{max}$ (motore) [$min^{-1}$]** | | | | | | | |
| 1PH808□-1□□□□-□□□1 | 10000 | ✓ | ✓ | ✓1) | ✓3) | ✓ | ✓ | - |
| 1PH808□-1□□□□-□L□1 | 15000 | ✓ | ✓2) | - | - | ✓2) | ✓ | ✓ |
| 1PH808□-1□□□□-□M□1 | 20000 | ✓ | - | - | - | ✓2) | ✓4) | ✓ |
| 1PH808□-1□□□□-□Q□1 | 5000 | ✓ | ✓ | ✓ | ✓3) | ✓ | ✓ | - |
| 1PH810□-1□□□□-□□□1 | 9000 | ✓ | ✓ | ✓ | ✓3) | ✓ | ✓ | - |
| 1PH810□-1□□□□-□L□1 | 12000 | ✓ | ✓ | - | - | ✓ | ✓ | ✓ |
| 1PH810□-1□□□□-□M□1 | 18000 | ✓ | - | - | - | ✓2) | ✓4) | ✓ |
| 1PH810□-1□□□□-□Q□1 | 5000 | ✓ | ✓ | ✓ | ✓3) | ✓ | ✓ | - |
| 1PH813□-1□□□□-□□□1 | 8000 | ✓ | ✓ | ✓ | ✓3) | ✓ | ✓ | - |
| 1PH813□-1□□□□-□L□1 | 10000 | ✓ | ✓ | - | - | ✓ | ✓ | ✓ |
| 1PH813□-1□□□□-□M□1 | 15000 | ✓ | - | - | - | ✓2) | ✓ | ✓ |
| 1PH813□-1□□□□-□Q□1 | 4500 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - |
| 1PH813□-2□□□□-□B□1 | 4500 | - | ✓ | - | - | ✓ | - | - |
| 1PH813□-2□□□□-□C□1 | 4500 | - | ✓ | - | - | ✓ | - | - |
| 1PH813□-2□□□□-□Q□1 | 4500 | - | ✓ | - | - | ✓ | - | - |
| 1PH816□-1□□□□-□□□1 | 6500 | ✓ | ✓ | ✓ | ✓3) | ✓ | ✓ | - |
| 1PH816□-1□□□□-□L□1 | 9000 | ✓ | ✓ | ✓ | - | ✓ | ✓ | ✓ |
| 1PH816□-1□□□□-□M□1 | 10000 | ✓ | ✓ | - | - | ✓ | ✓ | ✓ |
| 1PH816□-1□□□□-□Q□1 | 4000 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - |
| 1PH816□-2□□□□-□□□1 | 4000 | - | ✓ | - | - | ✓ | - | - |
| 1PH818□-1□□□□-□□□1 | 5000 | ✓ | ✓ | ✓ | ✓3) | ✓ | - | - |
| 1PH818□-1□□□□-□L□1 | 7500 | ✓ | ✓ | ✓ | - | ✓ | - | - |
| 1PH818□-2□□□□-□□□1 | 3800 | - | ✓ | - | - | ✓ | - | - |
| 1PH822□-1□□□□-□□□1 | 4500 | ✓ | ✓ | ✓ | ✓ | ✓ | - | - |
| 1PH8224-1□□□□-□L□1 | 5500 | ✓ | ✓ | ✓ | - | ✓ | - | - |

| Tipo encoder | | senza encoder | AM2048 S/R | HTL1024 S/R | HTL2048 S/R | IC2048 S/R | IN512 S/R | IN256 S/R |
|---|---|---|---|---|---|---|---|---|
| 9. Punto dati | | A | E | H | J | M | T | L |
| Giri $n_{max}$ consentiti (encoder) [$min^{-1}$] | | - | 12000 | 9000 | 4600 | 12000 | 15000 | 23400 |
| Motore + sistema cuscinetti | $n_{max}$ (motore) [$min^{-1}$] | | | | | | | |
| 1PH822□-2□□□□-□□□1 | 3500 | - | ✓ | - | - | ✓ | - | - |
| 1PH828□-1□□□□-□□□1 | 3300 | ✓ | ✓ | ✓ | ✓ | ✓ | - | - |

✓ Assegnazione possibile

1) Assegnazione motore/encoder limitata a 9000 $min^{-1}$

2) Assegnazione motore/encoder limitata a 12000 $min^{-1}$

3) Assegnazione motore/encoder limitata a 4600 $min^{-1}$

4) Assegnazione motore/encoder limitata a 15000 $min^{-1}$

Tabella 5- 5 Tipi di encoder per motori con DRIVE-CLiQ

| Tipo encoder | | AM22DQ[1)] | IC22DQ[1)] | IN20DQ[1)] | IN19DQ[1)] |
|---|---|---|---|---|---|
| 9. Punto dati | | F | D | U | V |
| Giri $n_{max}$ consentiti (encoder) [$min^{-1}$] | | 12000 | 12000 | 15000 | 23400 |
| Motore + sistema cuscinetti | $n_{max}$ (motore) [$min^{-1}$] | | | | |
| 1PH808□-1□□□□-□□□1 | 10000 | ✓ | ✓ | ✓ | - |
| 1PH808□-1□□□□-□L□1 | 15000 | ✓[2)] | ✓[2)] | ✓ | ✓ |
| 1PH808□-1□□□□-□M□1 | 20000 | - | ✓[2)] | ✓[3)] | ✓ |
| 1PH808□-1□□□□-□Q□1 | 5000 | ✓ | ✓ | ✓ | - |
| 1PH810□-1□□□□-□□□1 | 9000 | ✓ | ✓ | ✓ | - |
| 1PH810□-1□□□□-□L□1 | 12000 | ✓ | ✓ | ✓ | ✓ |
| 1PH810□-1□□□□-□M□1 | 18000 | - | ✓[2)] | ✓[3)] | ✓ |
| 1PH810□-1□□□□-□Q□1 | 5000 | ✓ | ✓ | ✓ | - |
| 1PH813□-1□□□□-□□□1 | 8000 | ✓ | ✓ | ✓ | - |
| 1PH813□-1□□□□-□L□1 | 10000 | ✓ | ✓ | ✓ | ✓ |
| 1PH813□-1□□□□-□M□1 | 15000 | - | ✓[2)] | ✓ | ✓ |
| 1PH813□-1□□□□-□Q□1 | 4500 | ✓ | ✓ | ✓ | - |
| 1PH813□-2□□□□-□B□1 | 4500 | ✓ | ✓ | - | - |
| 1PH813□-2□□□□-□C□1 | 4500 | ✓ | ✓ | - | - |
| 1PH813□-2□□□□-□Q□1 | 4500 | ✓ | ✓ | - | - |
| 1PH816□-1□□□□-□□□1 | 6500 | ✓ | ✓ | ✓ | - |
| 1PH816□-1□□□□-□L□1 | 9000 | ✓ | ✓ | ✓ | ✓ |
| 1PH816□-1□□□□-□M□1 | 10000 | ✓ | ✓ | ✓ | ✓ |
| 1PH816□-1□□□□-□Q□1 | 4000 | ✓ | ✓ | ✓ | - |
| 1PH816□-2□□□□-□□□1 | 4000 | ✓ | ✓ | - | - |
| 1PH818□-1□□□□-□□□1 | 5000 | ✓ | ✓ | - | - |
| 1PH818□-1□□□□-□L□1 | 7500 | ✓ | ✓ | - | - |
| 1PH818□-2□□□□-□□□1 | 3800 | ✓ | ✓ | - | - |
| 1PH822□-1□□□□-□□□1 | 4500 | ✓ | ✓ | - | - |
| 1PH8224-1□□□□-□L□1 | 5500 | ✓ | ✓ | - | - |
| 1PH822□-2□□□□-□□□1 | 3500 | ✓ | ✓ | - | - |
| 1PH828□-1□□□□-□□□1 | 3300 | ✓ | ✓ | - | - |

✓ Assegnazione possibile

1) non possibile in collegamento con l'avvolgimento "S" = stella/triangolo

2) Assegnazione motore/encoder limitata a 12000 $min^{-1}$

3) Assegnazione motore/encoder limitata a 15000 $min^{-1}$

## 5.2.5 Encoder incrementale HTL 1024 S/R o HTL 2048 S/R

### Funzione

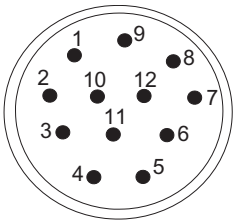
- Rilevamento del valore reale di velocità
- Sistema di misura incrementale indiretto per anello di regolazione della posizione
- Un impulso di zero (tacca di riferimento) al giro

Tabella 5- 6 Caratteristiche e dati tecnici

| Caratteristiche | Encoder incrementale HTL |
|---|---|
| Accoppiamento sul lato NDE | • con AH 80 ... 225: integrato nel motore<br>• con AH 280: montato sul motore |
| Tensione di esercizio | +10 ... +30 V |
| Corrente assorbita | max. 150 mA |
| Risoluzione incrementale (periodi per rotazione) | 1024 S/R o 2048 S/R |
| Segnali incrementali | HTL<br>Traccia A, traccia B, impulso di zero e segnale invertito |
| Errore angolare | ±1' |
| Numero di giri massimo consentito | • con 1024 S/R: 9000 $min^{-1}$<br>• con 2048 S/R: 4600 $min^{-1}$ |

### Collegamento

Tabella 5- 7 Assegnazione dei pin del connettore flangiato a 12 poli

| N. PIN | Segnale | |
|---|---|---|
| 1 | B* |  Vista lato connettore (pin) |
| 2 | +1R1 | |
| 3 | R | |
| 4 | R* | |
| 5 | A | |
| 6 | A* | |
| 7 | CTRL TACHO | |
| 8 | B | |
| 9 | not connected | |
| 10 | M-Encoder | |
| 11 | -1R2 | |
| 12 | P-Encoder | |

### Cavi

Controconnettore: 6FX2003-0SU12

Tabella 5- 8 Cavo confezionato per SINAMICS:

| 6FX | □ | 002 | - | 2AH00 | - | □□□ | 0 |
|---|---|---|---|---|---|---|---|
| | ↓<br>↓<br>5 MOTION-CONNECT®500<br>8 MOTION-CONNECT®800 | | | | | ↓ ↓ ↓<br>Lunghezza<br>lunghezza max. del cavo:<br>senza trasferimento del segnale invertito 150 m<br>con trasferimento del segnale invertito 300 m | |

Per ulteriori dati tecnici e per i codici relativi alle varie lunghezze consultare il catalogo al capitolo "Tecnica di collegamento MOTION-CONNECT"

## 5.2.6 Encoder incrementale IC 2048 S/R, IN 512 S/R e IN 256 S/R

### Funzione

- Sistema di misura angolare per commutazione
- Rilevamento del valore reale di velocità
- Sistema di misura incrementale indiretto per anello di regolazione della posizione
- Un impulso di zero (tacca di riferimento) al giro

| Caratteristiche | Encoder incrementale sen/cos 1 Vpp |
|---|---|
| Accoppiamento sul lato NDE | • con AH 80 ... AH 225: integrato nel motore<br>• con AH 280: montato sul motore |
| Tensione di esercizio | +5 V ± 5% |
| Corrente assorbita | max. 150 mA |
| Risoluzione incrementale (periodi per rotazione) | • 2048 S/R<br>• 512 S/R<br>• 256 S/R |
| Segnali incrementali | 1 Vpp |
| Errore angolare | ±40" |
| Numero di giri massimo consentito | • con 2048 S/R: 12000 $min^{-1}$<br>• con 512 S/R: 15000 $min^{-1}$<br>• con 256 S/R: 23400 $min^{-1}$ |

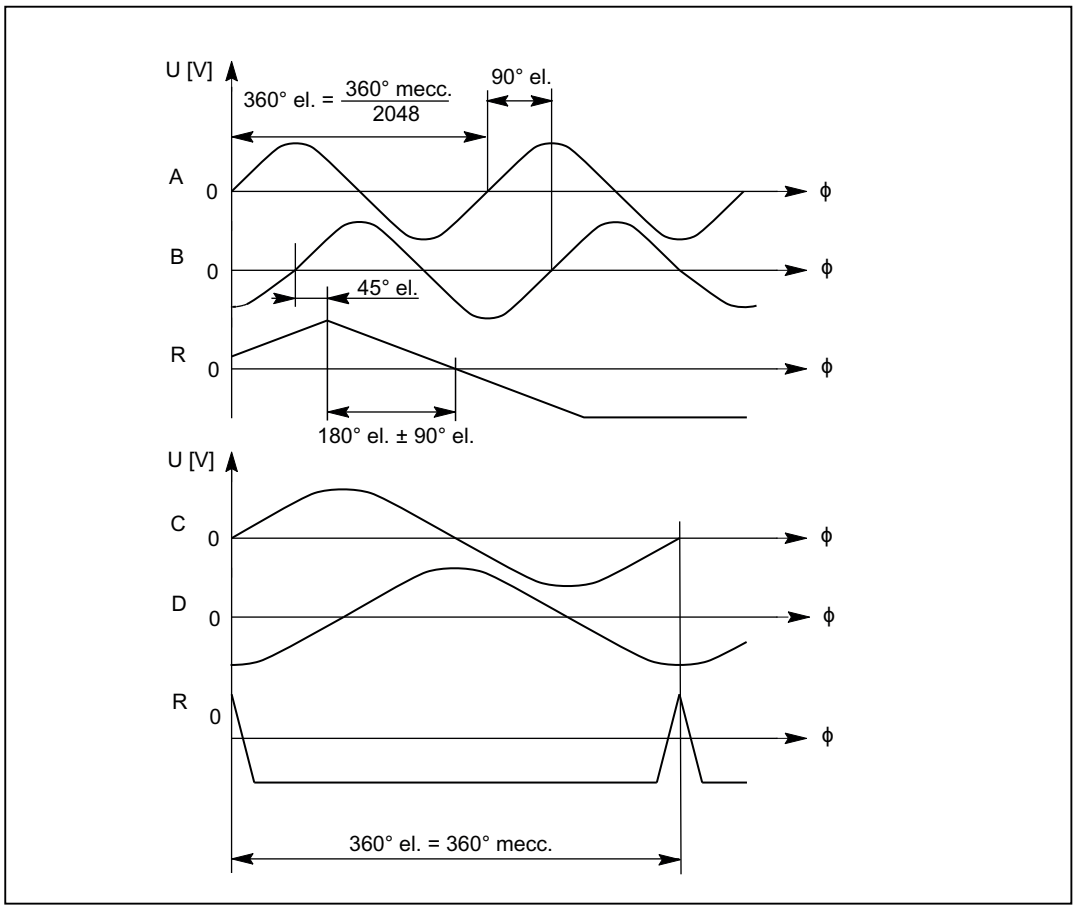
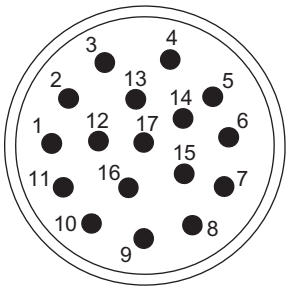



Figura 5-2 Sequenza dei segnali e assegnazione con rotazione positiva (rotazione destrorsa vista dal lato DE)

## Collegamento

Tabella 5- 9 Assegnazione dei pin del connettore flangiato a 17 poli

| N. PIN | Segnale | |
|---|---|---|
| 1 | A |  Vista lato connettore (pin) |
| 2 | A* | |
| 3 | R | |
| 4 | D* | |
| 5 | C | |
| 6 | C* | |
| 7 | M-Encoder | |
| 8 | +1R1 | |
| 9 | -1R2 | |
| 10 | P-Encoder | |
| 11 | B | |
| 12 | B* | |
| 13 | R* | |
| 14 | D | |
| 15 | 0 V Sense | |
| 16 | 5 V Sense | |
| 17 | not connected | |

## Cavi

Controconnettore: 6FX2003-0SU17

Tabella 5- 10 Cavo confezionato per SINAMICS

| 6FX | □ | 002 | - | 2CA31 | - | □□□ | 0 |
|---|---|---|---|---|---|---|---|
| | ↓<br>↓<br>5 MOTION-CONNECT®500<br>8 MOTION-CONNECT®800 | | | | | ↓↓↓<br>Lunghezza<br><br>lunghezza max. del cavo 100 m | |

Per ulteriori dati tecnici e per i codici relativi alle varie lunghezze consultare il catalogo al capitolo "Tecnica di collegamento MOTION-CONNECT"

## 5.2.7 Encoder assoluto AM 2048 S/R

### Funzione

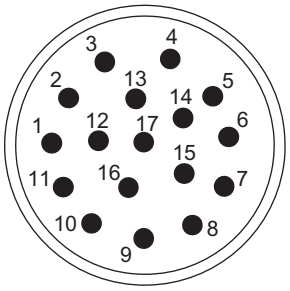
- Sistema di misura angolare per commutazione
- Rilevamento del valore reale di velocità
- Sistema di misura assoluto indiretto per anello di regolazione della posizione

Tabella 5- 11 Caratteristiche e dati tecnici

| Caratteristiche | Encoder assoluto (EnDat) |
|---|---|
| Accoppiamento sul lato NDE | • con AH 80 ... 225: integrato nel motore<br>• con AH 280: montato sul motore |
| Tensione di esercizio | +5 V ± 5% |
| Corrente assorbita | max. 300 mA |
| Risoluzione incrementale (periodi per rotazione) | 2048 S/R |
| Risoluzione assoluta (rotazione codificata) | 4096 |
| Segnali incrementali | 1 Vpp |
| Interfaccia seriale per posizione assoluta | EnDat |
| Errore angolare | ±40" |
| Numero di giri massimo consentito | con 2048 S/R: 12000 $min^{-1}$ |

## Collegamento

Tabella 5- 12 Assegnazione dei pin del connettore flangiato a 17 poli

| N. PIN | Segnale | |
|---|---|---|
| 1 | A |  Vista lato connettore (pin) |
| 2 | A* | |
| 3 | data | |
| 4 | not connected | |
| 5 | clock | |
| 6 | not connected | |
| 7 | M-Encoder | |
| 8 | +1R1 | |
| 9 | -1R2 | |
| 10 | P-Encoder | |
| 11 | B | |
| 12 | B* | |
| 13 | data* | |
| 14 | clock* | |
| 15 | 0 V Sense | |
| 16 | 5 V Sense | |
| 17 | not connected | |

## Cavi

Controconnettore: 6FX2003-0SU17

Tabella 5- 13 Cavo confezionato per SINAMICS

| 6FX | □ | 002 | - | 2EQ10 | - | □□□ | 0 |
|---|---|---|---|---|---|---|---|
| | ↓<br>↓<br>5 MOTION-CONNECT®500<br>8 MOTION-CONNECT®800 | | | | | ↓ ↓ ↓<br>Lunghezza<br>lunghezza max. del cavo 100 m | |

Per ulteriori dati tecnici e per i codici relativi alle varie lunghezze consultare il catalogo al capitolo "Tecnica di collegamento MOTION-CONNECT"

# 5.3 Freni di stazionamento (opzione)

## 5.3.1 Caratteristiche

### Funzionamento con freno di stazionamento su SINAMICS S

Il sistema di azionamento SINAMICS S dispone di vari tipi di comandi freni. Per una descrizione dettagliata delle singole funzioni e delle relative istruzioni di parametrizzazione consultare i seguenti manuali:

- SINAMICS S120 Manuale di guida alle funzioni (6SL3097-4AB00-0AP1), cap. 6.14
- SINAMICS S120/S150 Manuale delle liste (6SL3097-4AP00-0AP3), cap. 2.12

I rispettivi manuali dei prodotti forniscono tutte le informazioni sulla caricabilità di uscite freni/brake adapter delle singole parti di potenza SINAMICS. In alcuni casi può essere necessario il comando freni tramite elementi di contatto aggiuntivi.

Fare attenzione a parametrizzare correttamente i dati dei freni in SINAMICS. In particolare questo riguarda i valori di impostazione per:

- numero di giri massimo del motore (valore ridotto per l'opzione "Freno di stazionamento")
- tempi di apertura e chiusura del freno di stazionamento
- momento di inerzia del freno di stazionamento

I valori di impostazione corrispondenti sono riportati per ogni freno specifico nella tabella "Dati tecnici del freno di stazionamento".

### Principio di funzionamento del freno di stazionamento

Sui motori 1PH8 con le altezze d'asse 80, 100, 132, 160, 180 e 225 è possibile montare un freno sul lato DE del motore.

Questi freni sono dei dispositivi elettromagnetici previsti per il funzionamento a secco, per i quali viene utilizzata la forza di un campo elettromagnetico per vincere l'effetto frenante generato dalla forza dalle molle. Essi lavorano secondo il principio della corrente a riposo, cioè il freno a molle agisce in condizione di assenza di corrente e mantiene fermo l'azionamento. Con la circolazione di corrente il freno viene sbloccato e l'azionamento può ruotare.

In caso di caduta di tensione oppure di arresto di emergenza, l'azionamento viene frenato dalla sua velocità attuale fino ad arrestarsi.

#### Collegamento dei freni (deve essere reso disponibile lato impianto)

- Tensione alternata AC 230 V, 50 ... 60 Hz
- Tensione continua DC 24 V fino ad altezza d'asse 160

#### Temperatura ambiente

Il modulo di frenatura è progettato per una temperatura ambiente compresa tra -5 °C e +40 °C. Con temperature inferiori a -5 °C e lunghi tempi di inattività senza la presenza di ventilazione, non è da escludere la possibilità di congelamento del disco di attrito. In questo caso sono necessari provvedimenti da concordare con il costruttore.

**Nota**

Il numero di giri massimo di un motore con freno è limitato al numero di giri massimo del freno (vedi indicazione del numero di giri $n_{max, fr}$ nelle curve caratteristiche).

**Nota**

I dati per la scelta e l'ordinazione sono riportati nel capitolo 1.3.

I freni di stazionamento non sono omologati UL. I motori con freno applicato non recano pertanto il marchio cUR!

## Dati tecnici dei freni di stazionamento

| Altezza asse | Tipo di motore | Tipo di freno | Coppia di stazionamento | Numero di giri massimo | Momento d'inerzia | Peso | Corrente bobine | | Energia di commutazione ammessa | Momento di inerzia totale (arresto di emergenza) | Numero di giri (arresto di emergenza) | Numero di arresti di emergenza [1] | Tempo di apertura | Tempo di chiusura |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | nmax | Jfr. | mfr. | 230 V AC ±10% | 24 V DC ±10% | WE | $J_{tot}$ | n | z | | |
| | | | [Nm] | [$min^{-1}$] | [$kgm^2$] | [kg] | [A] | [A] | [kJ] | [$kgm^2$] | [1/min] | | [ms] | [ms] |
| 80 | 1PH808□ | Grandezza 13 | 56 | 5000 | 0,00093 | 10 | 0,8 | 4,1 | 2,2 | 0,0174 | 4800 | 2000 | 150 | 40 |
| 100 | 1PH810□ | Grandezza 19 | 60...150 | 5000 | 0,0048 | 21 | 1,0 | 4,7 | 7 | 0,063 | 4500 | 2000 | 500 | 60 |
| 132 | 1PH813□ | Grandezza 24 | 140...310 | 4500 | 0,0141 | 46 | 1,3 | 6,3 | 15,5 | 0,218 | 3600 | 2000 | 650 | 100 |
| 160 | 1PH816□ | Grandezza 29 | 280...500 | 4000 | 0,0266 | 66 | 1,4 | 6,7 | 24 | 0,456 | 3100 | 2000 | 750 | 150 |
| 180 | 1PH818□ | NFF-A 63 | 1000 | 3500 | 0,022 | 63 | 2,2 | - | 98 | 1,3 | 3000 | 2000 | 300 | 80 |
| 225 | 1PH822□ | NFF-A 100 | 1600 | 3100 | 0,051 | 88 | 2,7 | - | 210 | 3,9 | 2800 | 1200 | 300 | 100 |

1) max. 3 commutazioni all'ora

Figura 5-3 Dati tecnici del freno di stazionamento applicato (DE) con funzione di arresto di emergenza

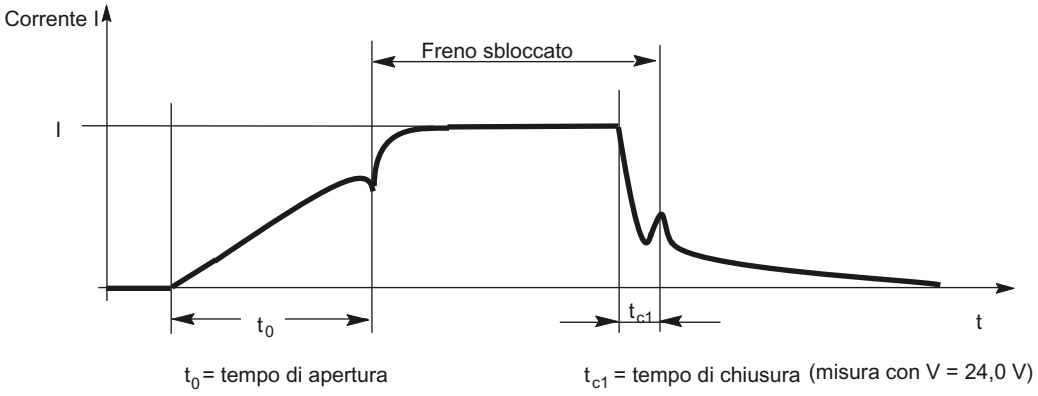



Figura 5-4 Tempi per il funzionamento di arresto

## Spiegazione dei concetti contenuti nella tabella

**Coppia di stazionamento [Nm]:** per i motori con altezze d'asse 100 ... 160 la coppia di stazionamento può essere regolata in modo continuo, per tutto il campo indicato, tramite un anello di taratura. La coppia frenante dinamica è pari a circa il 70 % della coppia di stazionamento impostata.

**N. di giri $n_{max}$ [$min^{-1}$]:** numero di giri massimo consentito.

**Energia di commutazione ammessa per singola manovra $W_E$ [kJ]:** energia di commutazione ammessa in caso di arresto di emergenza,
$W_E = J_{tot.} \times n^2/182{,}4 \times 10^{-3}$ (J in $kgm^2$, n in $min^{-1}$)

**Energia di commutazione permanente $W_{max}$ [MJ]:** energia di commutazione max. possibile del freno (in caso di arresto di emergenza) fino all'usura delle pastiglie $W_{max} = W_E \times z$.

**Numero di arresti di emergenza z:** il numero di arresti di emergenza indicato si riferisce alle condizioni specificate. Per altre condizioni può essere ricalcolato: numero degli arresti di emergenza $z = W_{max}/W_E$

**Corrente delle bobine [A]:** corrente necessaria per rilasciare il freno.

**Tempo di apertura [ms]:** tempo che intercorre fino all'apertura del freno (i valori indicati si riferiscono alla coppia frenante max. con tensione nominale).

**Tempo di chiusura [ms]:** tempo di collegamento fino alla chiusura del freno in base al grafico "Tempi per il funzionamento di arresto" (i valori si riferiscono alla coppia frenante max. con tensione nominale).

## Utilizzo conforme alle prescrizioni

La "unità di frenatura monodisco a molla" è prevista per il montaggio su motori sincroni e asincroni e per l'impiego in impianti artigianali o industriali. Non è ammesso l'impiego in aree a rischio di esplosione. Il freno monodisco a molla (sistema con apertura elettromagnetica) è dimensionato come freno di stazionamento. Sono possibili arresti di emergenza occasionali.

**ATTENZIONE**

Rispettare assolutamente i dati tecnici o quanto specificato nella tabella "Montaggio del freno di stazionamento per i motori 1PH8" per quanto riguarda il numero max. di commutazioni consentite all'ora e l'energia di frenatura massima, in particolare durante la messa a punto di macchine o impianti (funzionamento JOG manuale). La mancata osservanza può ridurre in modo irreversibile l'efficacia della frenatura e potrebbe pregiudicarne la funzionalità. Il modulo di frenatura può essere fornito con un meccanismo di rilascio manuale.

**ATTENZIONE**

Proteggersi da azionamenti involontari ed eventuali abusi. Il rilascio manuale meccanico deve assolutamente trovarsi in posizione centrale (vedi grafico "Unità di frenatura monodisco a molla") in quanto solo così si è certi che il freno sia completamente chiuso. In caso contrario non si può garantire la piena azione frenante dell'unità di frenatura monodisco a molla.

La staffa di sblocco manuale può essere tolta. Devono essere tenute in considerazione le prescrizioni specifiche dell'impianto, ad es. nella costruzione di elevatori, relative alla possibilità di utilizzare sbloccaggi manuali.
Le condizioni di funzionamento nominale si riferiscono alla norma DIN VDE 0580: 1994-10. Il grado di protezione è conforme alle DIN VDE 0470, parte 1. In caso di differenze occorre concordare con il costruttore eventuali provvedimenti.

**⚠ CAUTELA**

Il modulo di frenatura non è un freno di sicurezza, per questo è necessario osservare le prescrizioni di prevenzione infortunistica in base alle possibili applicazioni.

**ATTENZIONE**

Tutte le volte che si fa riferimento a provvedimenti particolari e ad accordi presi con il costruttore, questo dovrebbe già avvenire in fase di progettazione dell'impianto.

## 5.3.2 Montaggio del freno di stazionamento per altezze d'asse AH 80 ... AH 160

### Caratteristiche

I freni di stazionamento per motori con altezza d'asse 80, 100, 132 e 160 sono costituiti da moduli di frenatura (forniti dalla ditta Kendrion Binder Magnete) con cuscinetti, flangia ed estremità d'albero propri. Le dimensioni della flangia e dell'estremità dell'albero dell'unità di frenatura sono identiche a quelle del motore. Quando ad un motore deve essere montato un freno, il motore viene realizzato nell'esecuzione a flangia e con albero liscio (senza chiavetta). Sull'albero del motore viene quindi calettato l'albero dell'unità di frenatura. Esso può essere smontato con l'ausilio di un martinetto idraulico. Dopodichè l'unità di frenatura viene avvitata alla flangia del motore.

**Nota**

Per le forze radiali e assiali ammesse valgono i dati per l'esecuzione dei cuscinetti "Standard".

### Vedere anche

Diagramma delle forze radiali e assiali (Pagina 71)

### Modalità di funzionamento

L'unità di frenatura è un componente elettromagnetico con freno monodisco a molla integrato con apertura elettromagnetica per il funzionamento a secco, nel quale l'azione frenante è esercitata dalla forza antagonista della molla e viene interrotta elettromagneticamente.

Se necessario, l'azione frenante può anche essere interrotta con uno sblocco manuale aggiuntivo. Il modulo di frenatura è realizzato come freno montato esternamente, integrato di preferenza con albero guida sullo scudo del cuscinetto DE di motori elettrici.

### Smontaggio

L'involucro del magnete ⑦ con l'avvolgimento di eccitazione incapsulato ⑥ serve per contenere l'indotto ②, il disco di attrito ③ e la flangia ④, che viene fissata con le apposite viti cilindriche. Attraverso le molle di compressione inserite nell'involucro del magnete, che sono sostenute dai bulloni a pressione (grandezza 13) sull'anello di taratura ⑨, si esercita una forza assiale sul disco di attrito tramite l'indotto e in tal modo viene bloccato il disco di attrito tra la flangia fissa e l'indotto e viene applicata l'azione frenante (coppia). Il supporto della coppia tangenziale dell'indotto rispetto all'involucro del magnete è garantito dai perni di guida.

Applicando una tensione continua sull'avvolgimento dell'eccitatrice, la forza elettromagnetica risultante eccita l'indotto contro la forza delle molle di compressione, il disco di attrito viene rilasciato e in questo modo si annulla l'azione frenante.

Dato che il modulo di frenatura costituisce un sistema chiuso in se stesso, non vengono generate forze verso l'esterno.

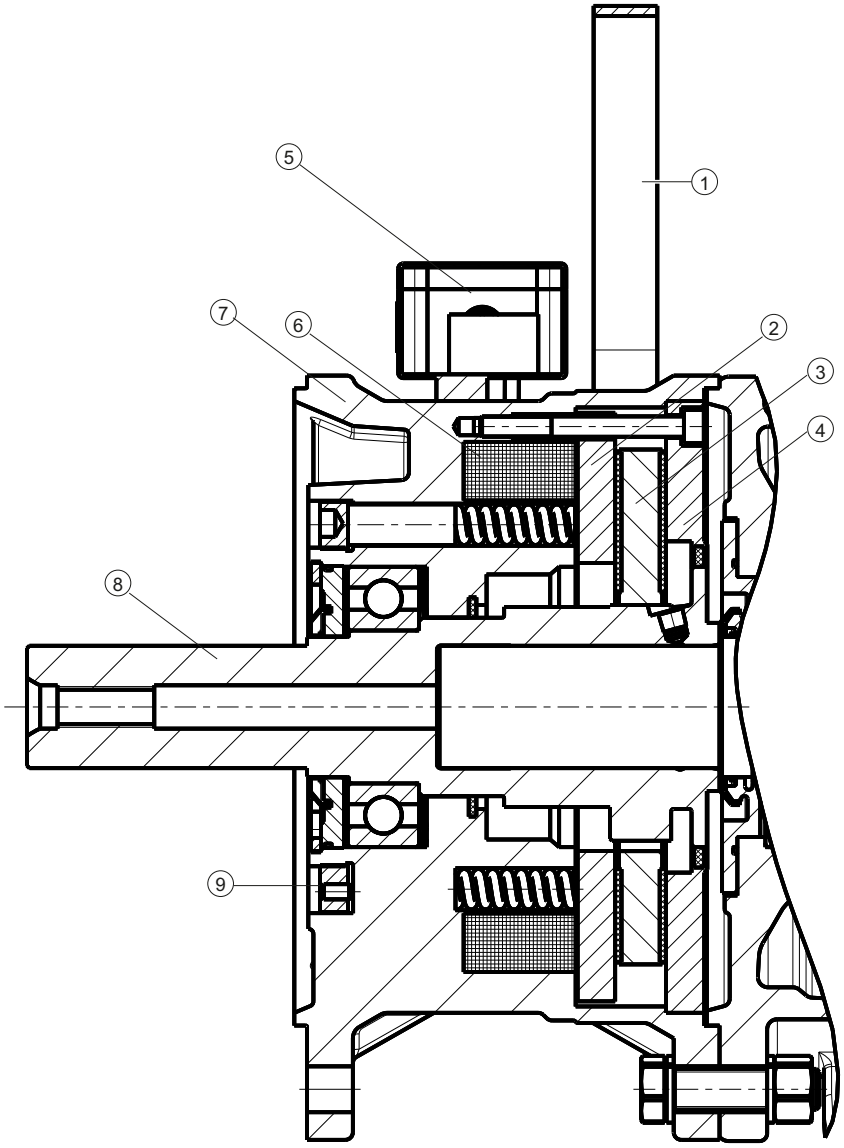
La trasmissione dell'azione frenante dal disco di attrito che si muove in direzione assiale all'albero guida ⑧ è realizzata dall'accoppiamento di forma del quadro incassato (grandezze 13, 19 e 24) o da una dentatura interna (grandezza 29) sull'albero guida accoppiato in modo fisso con l'albero motore.

Il cuscinetto a sfere situato tra l'involucro del magnete e l'albero guida ha una duplice funzione: in fase di montaggio del freno sulla flangia motore, consente il centraggio del freno sull'albero guida e quindi sull'albero motore, assorbendo così le forze trasversali che agiscono sull'albero guida in direzione radiale.

Il cuscinetto a sfere è ermetizzato in fabbrica. Come ulteriore protezione contro l'infiltrazione di impurità e per evitare al contempo la possibile penetrazione di grasso fino al disco di attrito in caso di guarnizione difettosa, è previsto un anello di tenuta che impedisce la penetrazione dall'esterno di sporcizia, grasso o olio nell'area circostante il disco di attrito, nonché la fuoriuscita di residui di usura provenienti dal disco stesso.

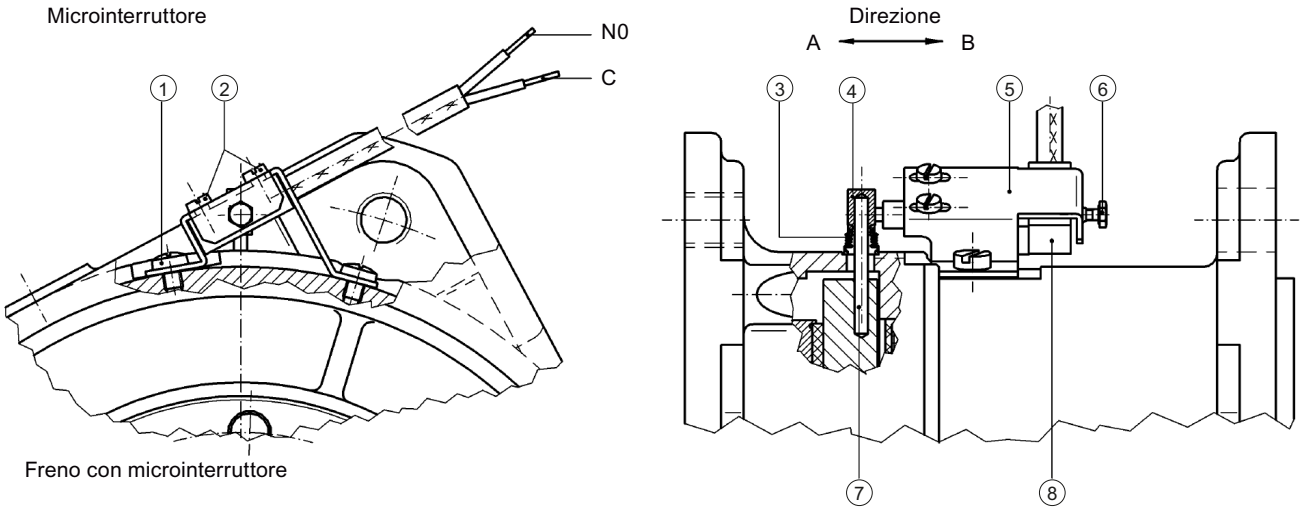
La tenuta ermetica sul lato azionamento tra la flangia e l'albero guida è assicurata dall'anello di tenuta. Il rilascio manuale opzionale ① permette di aprire meccanicamente a mano l'unità di frenatura monodisco a molla, ad es. in caso di interruzione di corrente. Il collegamento elettrico avviene direttamente nella morsettiera ⑤.

L'anello di taratura permette di regolare la coppia trasmissibile del modulo di frenatura.




① Rilascio manuale, opzionale
② Indotto
③ Disco di attrito
④ Flangia
⑤ Morsettiera
⑥ Avvolgimento
⑦ Carcassa
⑧ Albero
⑨ Anello di taratura (non presente per 1PH808)

Figura 5-5 Unità di frenatura monodisco a molla 77 500...B15




| | | | |
|---|---|---|---|
| ① | Vite a testa tonda appiattita (2x) | ⑤ | Staffa |
| ② | Vite a testa cilindrica (2x) | ⑥ | Vite a testa esagonale M2,5x8 (non compresa nella dotazione di fornitura) |
| ③ | Soffietto | ⑦ | Spina |
| ④ | Bulloni | ⑧ | Microinterruttore |

Figura 5-6 Microinterruttore integrato sull'unità di frenatura monodisco a molla 77 500...B15

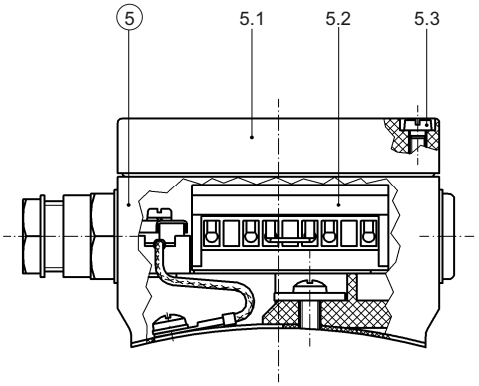
## Collegamento elettrico

**⚠AVVERTENZA**

L'unità di frenatura è un sistema funzionante a corrente continua. La variazione della tensione costante ammessa sul punto di collegamento dei componenti elettromagnetici è pari a +10% ... -10% della tensione nominale.

In linea di principio, per il collegamento occorre verificare quanto segue:

- I cavi di collegamento devono essere adattati al tipo di impiego, alle tensioni e alle intensità di corrente previste.
- I cavi di collegamento devono essere collegati a regola d'arte mediante viti, morsetti a vite o altri sistemi equivalenti che garantiscano la continuità del collegamento elettrico.
- I cavi di collegamento devono essere dotati di scarico di attorcigliamento, tiro e spinta nonché di protezione antipiegatura.
- Il conduttore di protezione (solo per la classe di sicurezza I) deve essere collegato al punto di messa a terra.
- Nella morsettiera non devono penetrare corpi estranei, impurità o umidità.
- I punti di ingresso dei cavi non necessari e le morsettiere devono essere chiusi in modo da garantire il grado di protezione previsto secondo EN 60529.




⑤ Morsettiera
5.1 Coperchio
5.2 Morsetto di collegamento o raddrizzatore
5.3 Vite di fissaggio del coperchio

Figura 5-7 Morsettiera freno di stazionamento ⑤ a scelta con morsetto o raddrizzatore

L'unità di frenatura monodisco a molla deve essere collegata alla tensione continua.

Il collegamento elettrico a una rete a corrente alternata avviene tramite un raddrizzatore a ponte o un raddrizzatore a semionda.

Per i freni con raddrizzatori integrati è possibile collegare l'unità di frenatura monodisco a molla direttamente alla tensione alternata.

L'assegnazione dei collegamenti è illustrata nella figura.

Per i freni con morsetto di collegamento, l'unità di frenatura deve essere collegata direttamente alla tensione continua. Il cavo di collegamento del cliente va collegato tramite un pressacavo a vite (M16 x 1,5) ai morsetti di collegamento o al raddrizzatore integrato.

Per poter collegare i singoli trefoli del cavo di collegamento al morsetto di collegamento o ai morsetti del raddrizzatore integrato occorre smontare il coperchio della morsettiera.

Tabella 5- 14 Raddrizzatore per il funzionamento con tensione alternata monofase nel collegamento elettrico tramite morsetto di collegamento (5.2)

| Modello | Tipo | Campo della tensione di ingresso nominale $U_1$ AC (40...60 Hz) | Tensione di uscita $U_2$ DC | Corrente d'uscita max. I DC | |
|---|---|---|---|---|---|
| | | [V] | [V] | Carico R [A] | Carico L [A] |
| 32 07332B40 | A semionda | 0...500 (±10%) | $U_1 \cdot 0{,}445$ | 1,6 | 2,0 |

Per i freni con raddrizzatori integrati, il raddrizzamento è svolto da un raddrizzatore a semionda o a ponte.

Con un opportuno cablaggio, il raddrizzatore integrato può essere commutato sul lato corrente alternata (tempo di collegamento $t_1$ normale) o sul lato corrente continua (tempo di collegamento $t_1$ breve).

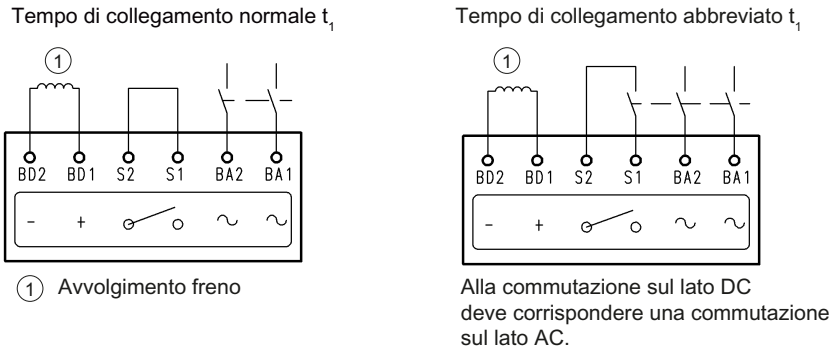


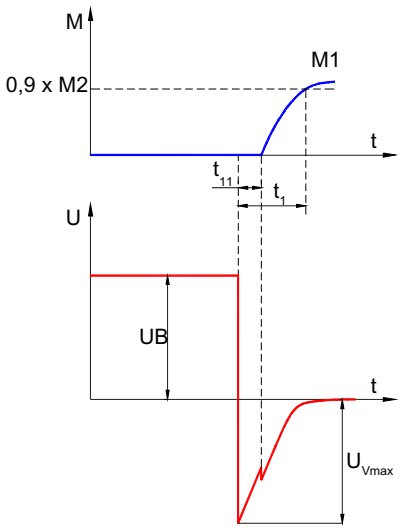

Figura 5-8 Assegnazione dei collegamenti del raddrizzatore

Eventuali ondulazioni della tensione dovute ad alimentazioni con clock possono, a seconda dell'ampiezza e della coppia, provocare ronzii o un comportamento del componente non conforme al funzionamento previsto.

L'utente o il costruttore del sistema deve garantire il funzionamento conforme mediante il comando elettrico.

## Collegamento alla corrente continua

L'andamento di principio della tensione alla disinserzione dell'avvolgimento dell'eccitatrice (bobina) (1.2) è illustrato dalla seguente curva.




$U_B$ Tensione di esercizio (tensione della bobina)

U Tensione di disinserzione

Figura 5-9 Andamento di principio della tensione alla disinserzione dell'avvolgimento dell'eccitatrice

**Nota**

Il picco di tensione $U_{Vmax}$ durante la disinserzione può raggiungere, senza circuito di protezione, diverse migliaia di Volt nell'ambito di millisecondi.

L'avvolgimento dell'eccitatrice (bobina) (1.2), i contatti di commutazione e i componenti elettronici possono subire dei danni.

Alla disinserzione possono formarsi scintille sull'interruttore.

Quando si effettua la disinserzione è pertanto opportuno ridurre la corrente mediante un circuito di protezione, il che contribuisce anche a limitare le tensioni.

Durante la disinserzione, la sovratensione massima ammessa non deve superare i 1500 V.

Nei raddrizzatori Kendrion Binder, il circuito di protezione per i componenti elettronici interni e per l'avvolgimento dell'eccitatrice (bobina) (1.2) è integrato. Il circuito di protezione non è invece integrato per i contatti esterni necessari per la commutazione lato corrente continua; se così fosse, infatti, la separazione galvanica del contatto esterno non sarebbe più possibile.

**Nota**

I componenti elettronici sensibili (ad esempio i componenti logici) e i contatti meccanici possono anche subire danni a causa delle tensioni più basse.

### Collegamento alla corrente alternata

**Nota**

Nella commutazione lato corrente continua, l'unità di frenatura deve essere impiegata con un circuito di protezione per evitare sovratensioni non ammesse. Per evitare che vengano danneggiati i contatti esterni (consumo, saldatura), occorre prevedere misure di protezione aggiuntive (ad es. varistori, dispositivi spegniscintille, ecc.).

Il collegamento diretto alla tensione alternata è possibile solo attraverso il raddrizzatore. A seconda del tipo di commutazione (lato corrente continua o lato corrente alternata) si ottengono tempi di collegamento diversi.

- Raddrizzamento a semionda

  Nel raddrizzamento a semionda si ottiene una tensione della bobina $U_2$ che è 0,445 volte più piccola della tensione di ingresso del raddrizzatore. I raddrizzatori a semionda hanno un'ondulazione residua che rispetto al raddrizzamento a ponte provoca, a seconda della grandezza del modulo, tempi di commutazione leggermente più brevi. Il raddrizzatore a semionda è pertanto preferibile (anche a causa delle tensioni della bobina più basse). Con grandezze costruttive più piccole possono però verificarsi dei ronzii nel modulo di frenatura.

- Commutazione lato corrente continua

  Nella commutazione lato corrente continua dell'unità di frenatura il contattore motore, ad es., è dotato di un contatto ausiliario supplementare che interrompe l'alimentazione di corrente all'unità di frenatura sul lato corrente continua.

## Collegamento elettrico di moduli di frenatura con microinterruttore

**Nota**

Rispettare le norme particolari sull'impiego dei microinterruttori, ad es. nella costruzione di elevatori.

**⚠ AVVERTENZA**

Il collegamento del motore deve essere tale che non possa verificarsi un avvio indesiderato del motore con microinterruttore chiuso.

Nei moduli di frenatura con microinterruttore per la sorveglianza dello stato operativo (aperto, chiuso) dell'unità di frenatura monodisco a molla, il microinterruttore deve essere integrato, ad esempio, nel circuito di comando integrato della macchina (ad es. motore).

Opportunamente integrato, il microinterruttore impedisce quindi l'avvio della macchina (ad es. del motore) contro l'unità di frenatura non aperta.

Il microinterruttore può essere richiesto in opzione al momento dell'ordinazione. Non è possibile il montaggio successivo.

Alla fornitura dell'unità di frenatura il microinterruttore viene già tarato in fabbrica.

## Apertura manuale dell'unità di frenatura

**⚠AVVERTENZA**

L'apertura manuale (funzionamento a impulsi) dell'unità di frenatura monodisco a molla, ad es. in occasione di interventi di manutenzione della macchina (ad es. il motore) o di interruzione dell'alimentazione di corrente regolare nel funzionamento con UPS, deve essere effettuata con particolare cautela, dato che nei sistemi di azionamento non bilanciati la coppia di carico attiva accelera l'azionamento.

L'utente deve garantire che non sussistano pericoli legati alla coppia di carico durante l'apertura e la chiusura dell'unità di frenatura nel funzionamento a impulsi.

L'unità di frenatura monodisco a molla può essere aperta "a mano" mediante un rilascio manuale meccanico integrato (accessorio). In caso di caduta dell'alimentazione di corrente regolare è tuttavia possibile aprire l'unità di frenatura elettricamente, utilizzando un gruppo di continuità (UPS) comunemente reperibile in commercio, ad es. batterie UPS. A questo scopo l'utente deve provvedere all'integrazione del gruppo di continuità attenendosi ai dati riportati sulla targhetta dei dati tecnici dell'unità di frenatura.

## Impostazione della coppia trasmissibile $M_4$

**Nota**

Nella regolazione dell'anello di taratura non si deve superare la coppia minima trasmissibile M4, come indicato nella tabella "Modifica della coppia trasmissibile".

La distanza modificata dell'anello di taratura E va in ogni caso inserita a forza nel fondo della tasca dell'involucro del magnete.

La coppia trasmissibile impostata teoricamente $M_4$ deve essere riportata dall'utente sulla targhetta dei dati tecnici del componente (campo libero per l'immissione del valore di coppia trasmissibile M4; vedere l'esempio di dati della targhetta).

L'utente deve accertarsi che l'anello di taratura, dopo aver impostato correttamente la coppia trasmissibile M4, venga fissato con il perno filettato. Deve essere rispettata la coppia di serraggio di $M_A$ = 3 Nm.

L'anello di taratura va ruotato in modo che il perno filettato possa essere posizionato tra i bulloni a pressione. Sono possibili scostamenti della coppia trasmissibile M4 compresi -5 % +15 %.

L'unità di frenatura viene fornita con la coppia trasmissibile $M_4$ impostata in fabbrica al valore standard come indicato nel foglio dati. La coppia trasmissibile impostata $M_4$ viene ricavata dalla targhetta dei dati nominali.

Tabella 5- 15 Modifica della coppia trasmissibile $M_4$ [%] per un percorso di movimento assiale dell'anello di taratura di 1 mm; coppia trasmissibile (valore standard) $M_4$

| | Grandezza 19 | Grandezza 24 | Grandezza 29 |
|---|---|---|---|
| Modifica della coppia trasmissibile $\Delta M_4$/mm [%] | Circa 15 | Circa 12 | Circa 14 |
| Coppia trasmissibile (valore standard) $M_4$ [Nm] | 150 | 310 | 500 |

## 5.3.3 Montaggio del freno di stazionamento per AH 180 e AH 225

### Caratteristiche

Per questi motori il freno (fornito dalla ditta Stromag) viene montato sulla piastra lato DE. A questo scopo l'albero del motore viene allungato tramite uno spezzone di albero calettato a caldo. La trasmissione della coppia avviene con una chiavetta secondo DIN 6885/1. Lo spezzone di albero può essere ulteriormente bloccato assialmente con una rondella a pressione ed una vite centrale (M20). Il freno di stazionamento non ha un proprio cuscinetto. Le forze di trasmissione vengono quindi assunte dal cuscinetto del motore. Le puleggie con cinghie non possono essere utilizzate per motivi di spazio ed a causa delle elevate forze radiali. Nella scelta del giunto per il collegamento della combinazione motore-freno, occorre prestare attenzione che adesso il diametro dell'estremità dell'albero è maggiore del diametro dell'albero del motore. Preferibilmente si dovrebbero utilizzare giunti a bulloni REVOLEX 2LF6337 per l'altezza d'asse 180 e 2LF6338 per l'altezza d'asse 225. Per i dati di ordinazione e le dimensioni consultare il Catalogo M 11 o D 81.1.

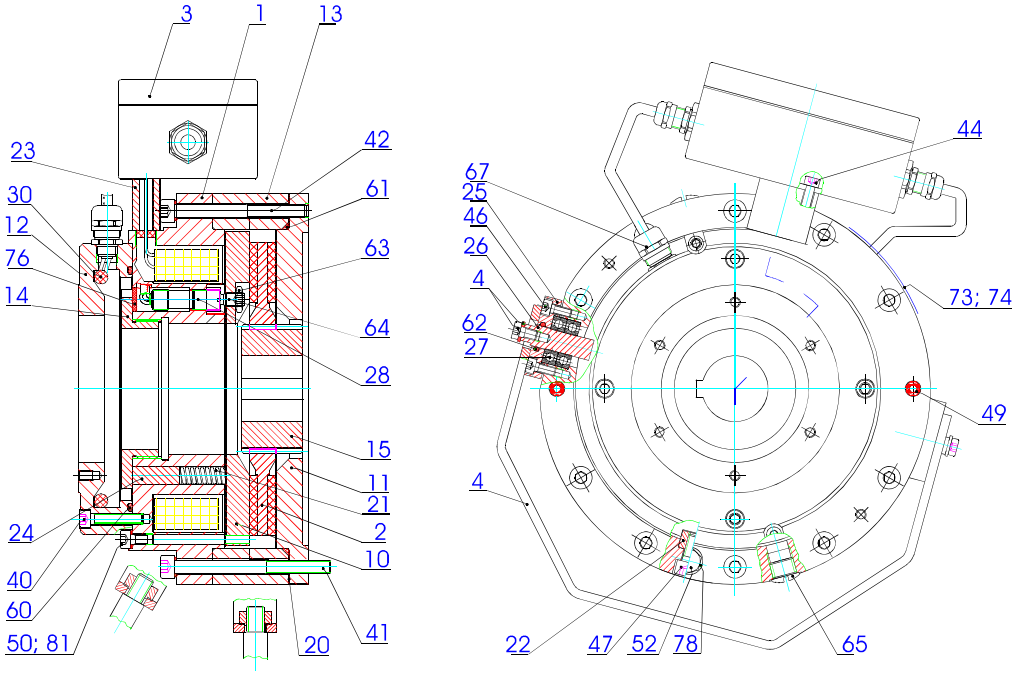
**Nota**

Per le forze radiali e assiali ammesse valgono i dati per l'esecuzione dei cuscinetti "Standard".

### Vedere anche

Forze radiali e forze assiali (Pagina 68)

## Struttura, principio di funzionamento e caratteristiche costruttive




| | | | |
|---|---|---|---|
| 1 | Corpo della bobina con bobina | 40 | Vite per flangia del tachimetro |
| 2 | Disco di attrito con ferodo | 41 | Vite di fissaggio |
| 3 | Morsettiera, completa | 42 | Vite a testa cilindrica |
| 4 | Sblocco manuale completo | 46 | Vite di fissaggio del coperchio dello sblocco manuale |
| 10 | Disco dell'indotto | 47 | Vite per chiocciola |
| 11 | Flangia del freno | 49 | Vite dello sblocco di emergenza |
| 12 | Flangia del tachimetro | 50 | Tappo a vite per lo sblocco di emergenza |
| 13 | Presa | 52 | Vite per lo sblocco manuale bloccabile |
| 14 | Collare | 60 | O-ring per tachimetro |
| 15 | Pignone | 61 | O-ring per flangia del freno |
| 20 | Spessore | 63 | Controdado per microinterruttore |
| 21 | Molle di compressione | 64 | Perno filettato (microinterruttore) |
| 22 | Chiocciole | 65 | Tappo a vite, misura del traferro |
| 23 | Distanziatore per morsettiera | 67 | Raccordo |
| 24 | Vite a molla | 73 | Targhetta dei dati tecnici |
| 25 | Coperchio dello sblocco manuale | 74 | Perno (fissaggio della targhetta dei dati tecnici) |
| 26 | Vite eccentrica | 76 | Incollatura |
| 27 | Cuscinetto a sfere scanalate | 78 | Rondella per posizione 52 |
| 28 | Microinterruttore | 81 | Anello di tenuta per posizione 50 |

Figura 5-10 Montaggio del freno di stazionamento AH 180 e AH 225

Il freno NFF è un freno bidisco elettromagnetico a molla che esercita l'azione frenante in assenza di corrente e viene rilasciato elettromagneticamente.

Il tipo di freno NFF soddisfa i requisiti più elevati di resistenza, robustezza e resistenza all'acqua marina. La costruzione e il collaudo dei freni vengono eseguiti secondo DIN VDE 0580.

Il freno viene avvitato al motore o a un altro componente della macchina con l'ausilio di viti cilindriche (viti di fissaggio posizione 41).

Il corpo della bobina contiene una bobina colata con una massa di resina artificiale della classe
termica 155 (F, max. temperatura limite 155 °C).

Quando la bobina è disinserita, le molle di compressione (21) esercitano pressione sul disco dell'ancora (10) in direzione assiale contro il disco di attrito con ferodo (2). Quest'ultimo viene bloccato tra il disco dell'indotto bloccato in rotazione (10) e la flangia del freno (11) e non può ruotare. L'effetto frenante viene trasmesso dal disco di attrito dentato con ferodo (2) attraverso il pignone (15) e una chiavetta all'albero.

Se alla bobina viene applicata la tensione continua nominale corrispondente al valore indicato sulla targhetta dei dati tecnici (73), il disco dell'indotto (10), per effetto della forza elettromagnetica, viene attratto contro le molle sul corpo della bobina (1). Il disco di attrito con ferodo (2) viene sbloccato e l'azione frenante viene interrotta. Il freno è sbloccato.

### Sblocco meccanico per mezzo della staffa di sblocco manuale

Tirando la staffa di sblocco manuale (4) di circa 30° verso la parte posteriore del freno, il disco dell'ancora (10) viene spinto in direzione assiale contro il corpo della bobina (1) e il disco di attrito con ferodo (2) è sbloccato.

| ⚠ CAUTELA |
| --- |
| Il rilascio di emergenza non deve essere utilizzato per il mantenimento del funzionamento provvisorio!! |

### Alimentazione di corrente e collegamento elettrico del freno

Il collegamento elettrico deve essere eseguito nel rispetto delle prescrizioni di installazione (ad es. DIN 92).

La bobina è progettata per il valore di tensione continua indicato sulla targhetta dei dati tecnici (ondulazione residua <0,5) e 100 % ED. La variazione di tensione ammessa è compresa tra +6 % e -10 % della tensione nominale.

Per proteggere la bobina o l'alimentatore, l'ingresso della bobina deve essere collegato con un varistore con il campo di tensione di esercizio corrispondente e la potenza necessaria.

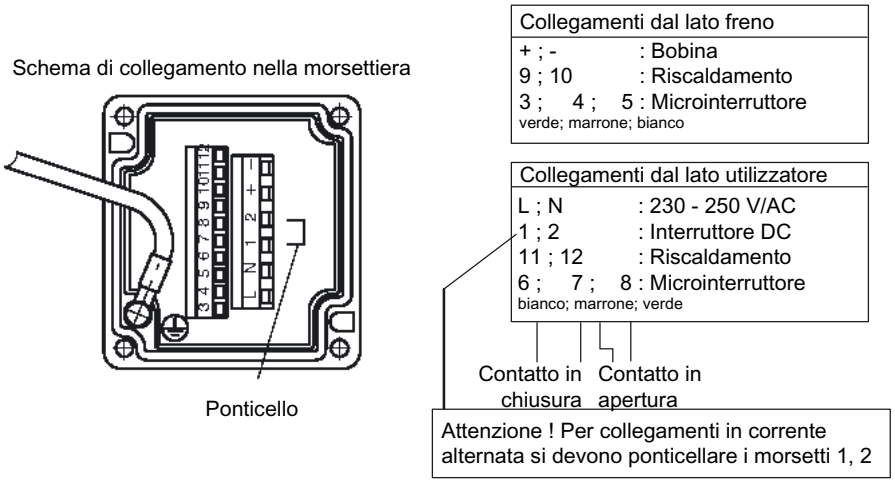



Figura 5-11 Possibilità di collegamento

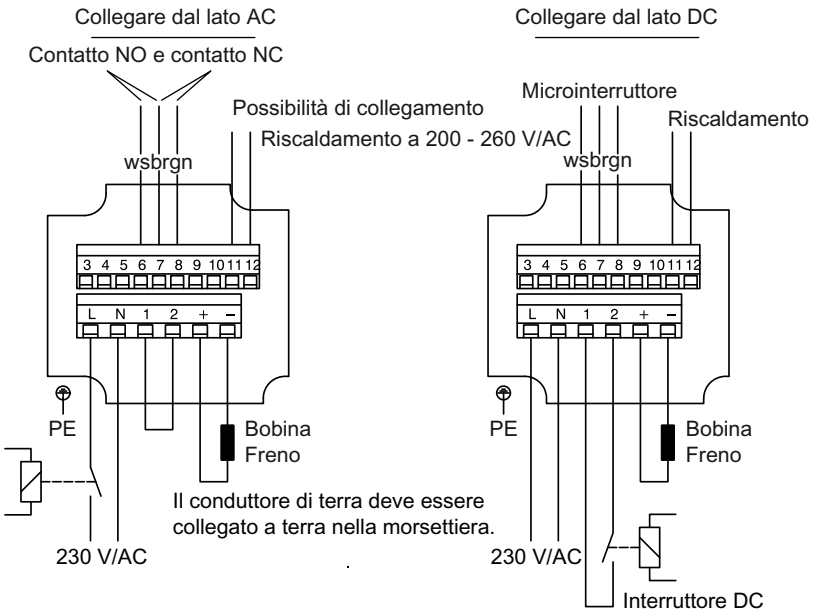



Figura 5-12 Possibilità di collegamento

## Esecuzione con microinterruttore

Se per un freno è necessaria la sorveglianza dello stato di commutazione, può essere impiegato un microinterruttore (28).

Se viene spinto contro il corpo della bobina dalla forza elettromagnetica della bobina oppure tramite rilascio di emergenza meccanico (1), il disco dell'indotto (10) aziona il microinterruttore (28) tramite il perno filettato (64).

Il microinterruttore (28) può essere integrato come contatto normalmente chiuso o normalmente aperto in un circuito di comando o di controllo elettrico.

# Tecnica di collegamento

# 6

## 6.1 Periferia di azionamento SINAMICS

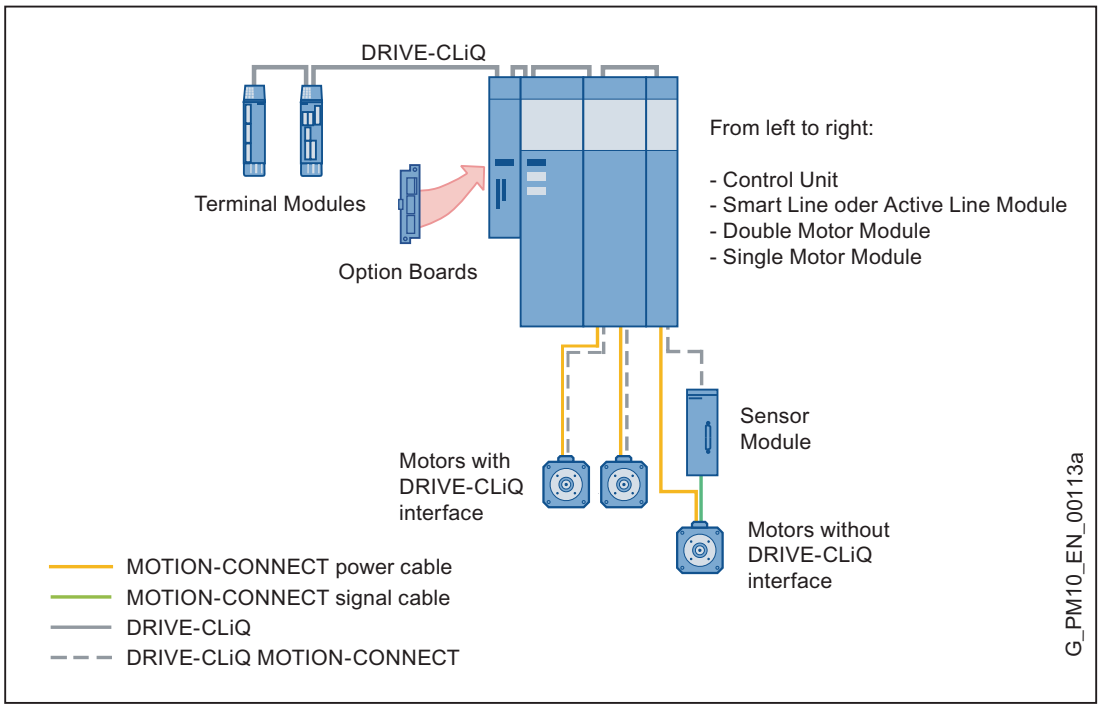



Figura 6-1 Panoramica del sistema SINAMICS S120

**⚠AVVERTENZA**

Prima di iniziare qualsiasi lavoro sul motore accertarsi che questo sia disinserito e protetto contro il riavviamento!

I motori non sono adatti al collegamento diretto alla rete.

# 6.2 Collegamento potenza

**⚠ CAUTELA**

Tenere conto del fabbisogno di corrente del motore in funzione dell'applicazione! Misurare i cavi di collegamento in modo adeguato, in conformità con IEC 60204-1 o IEC 60364-5-52.

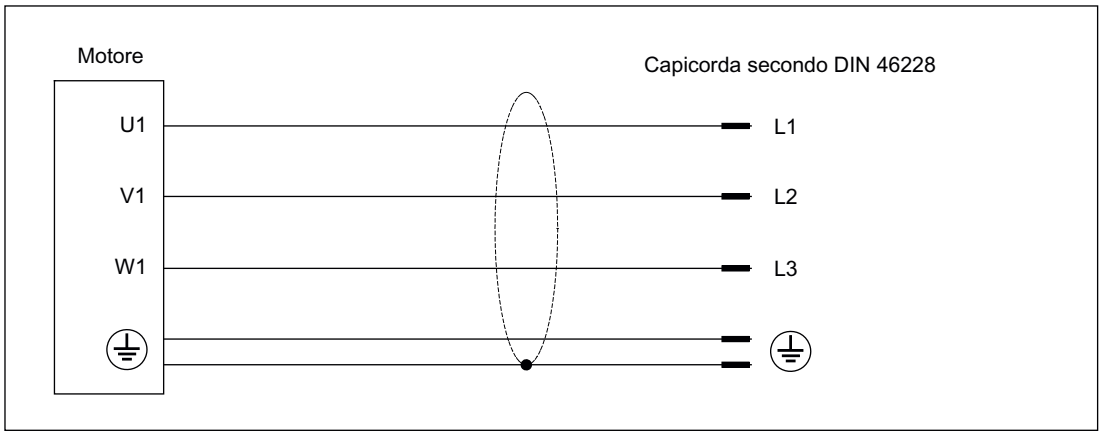



Figura 6-2 Cavo di potenza

## Collegamento della morsettiera

La definizione del tipo di morsettiera utilizzata e i dettagli per il collegamento di potenza dei cavi di rete si possono ricavare dalla seguente tabella. Lo schema elettrico per il collegamento dell'avvolgimento del motore viene fornito con la morsettiera.

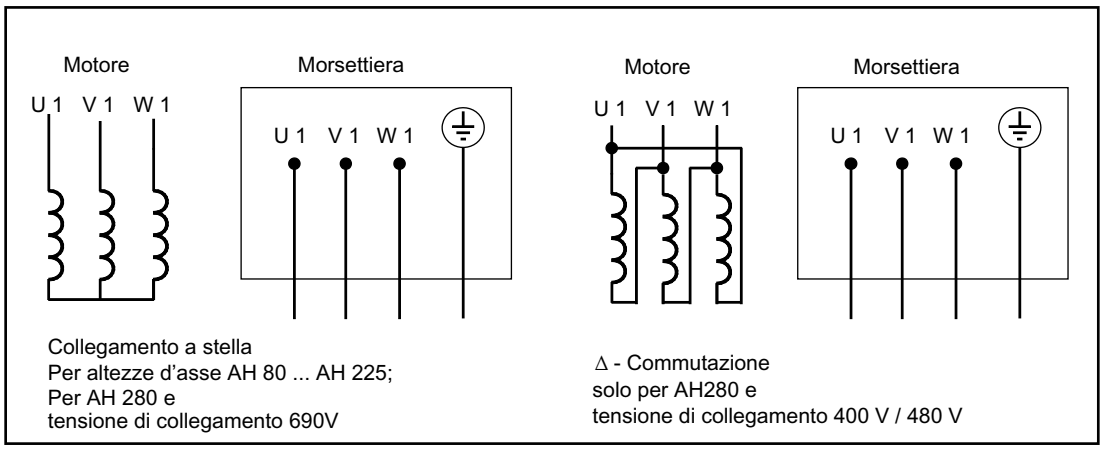



Figura 6-3 Schema elettrico

**Nota**

Il sensore di temperatura di riserva (opzione A25 con altezza dell'asse 80 ... 160) nonché la catena di termistori per l'allarme e la disinserzione (opzione A12) sono montati nella morsettiera su una barra di morsetti di segnale.

## Collegamento a stella/triangolo nella morsettiera (AH80 ... AH160)

Il collegamento a stella/triangolo può essere realizzato mediante circuito di protezione esterno oppure quale impostazione fissa nella morsettiera.

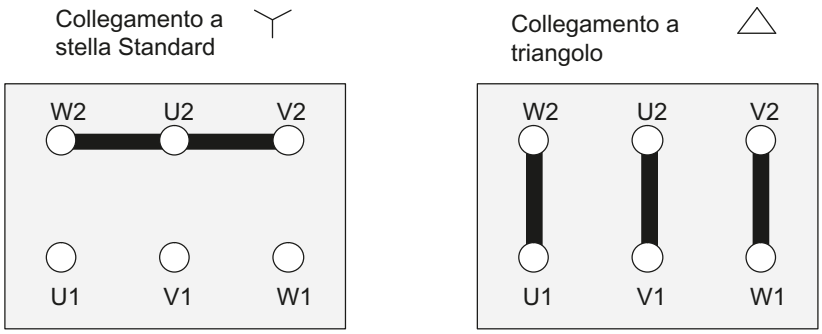



Figura 6-4 Collegamento fisso a stella/triangolo nella morsettiera

## Collegamento a stella/triangolo tramite circuito di protezione esterno

Per i motori asincroni è possibile scegliere tra i seguenti modi di funzionamento:

- Collegamento a stella
- Collegamento a triangolo

## Tecnica di collegamento per l'esecuzione della commutazione stella-triangolo

Nel motore asincrono sono quindi disponibili tutti i sei terminali di collegamento dei tre rami dell'avvolgimento per la commutazione tra i modi di funzionamento.

La commutazione avviene esternamente al mandrino tramite dispositivi di commutazione che non appartengono alla fornitura.

**Nota**

Durante la commutazione del tipo di circuito (stella-triangolo) deve essere anche commutato il set di dati per la regolazione del motore.

La commutazione deve avvenire solo con mandrino a vuoto e con gli impulsi del modulo di potenza bloccati.

Per informazioni sull'esecuzione circuitale della commutazione stella-triangolo vedere la figura seguente e il Manuale di guida alle funzioni SINAMICS S120 (FH1).

## Utilizzo del collegamento a stella

Il collegamento a stella offre vantaggi alle basse velocità di rotazione. La coppia massima con il collegamento a stella è all'incirca doppia rispetto a quella con il collegamento a triangolo. Tuttavia l'elevata richiesta di potenza reattiva del collegamento a stella comporta una chiara limitazione della coppia disponibile nel campo di velocità più elevato. Il collegamento a stella deve essere quindi utilizzato solo per lavorazioni, come ad esempio la sgrossatura, che richiedono una **coppia elevata a un basso numero di giri**

## Utilizzo del collegamento a triangolo

Il collegamento a triangolo nel campo a basso numero di giri fornisce una coppia massima inferiore a quella del collegamento a stella ma resta disponibile fino ad elevate velocità di rotazione. Il collegamento a triangolo deve essere quindi utilizzato per **tutte le lavorazioni nel campo di velocità medio-alto**.

## Schema di collegamento della commutazione Y/D

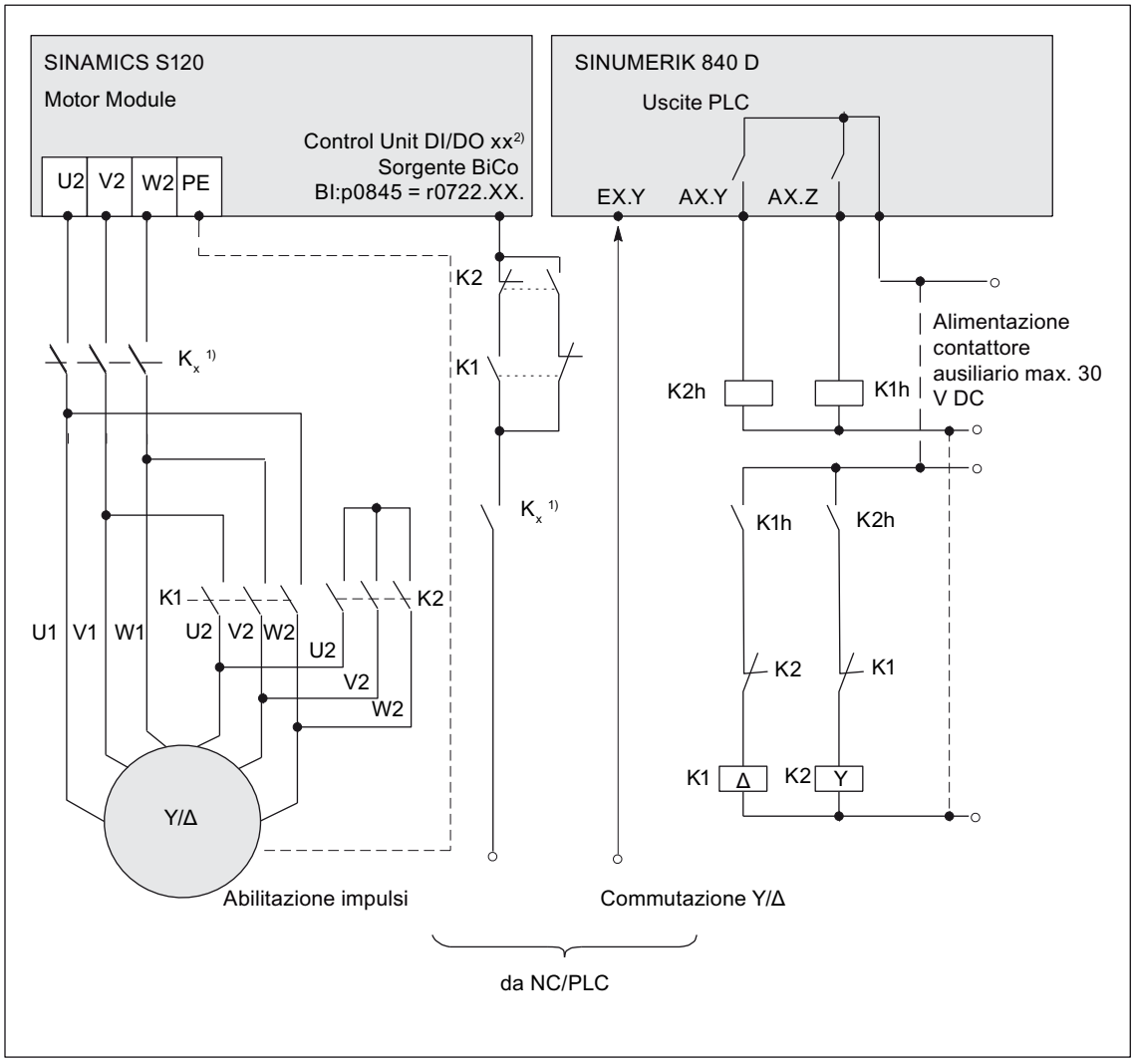



Figura 6-5 Schema di collegamento della commutazione Y/D con SINAMICS

1) Solo con l'apertura di K1 e K2 non è garantito un arresto operativo sicuro. Per motivi di sicurezza è pertanto consigliabile effettuare una separazione galvanica tramite il contattore $K_x$. Questo contattore deve essere inserito solo in assenza di corrente, ciò significa che l'abilitazione impulsi deve essere tolta 40 ms prima della disinserzione del contattore.

2) Il morsetto X3 del modulo di limitazione della tensione VPM va collegato a un ingresso digitale della Control Unit sul quale viene regolato anche l'elettromandrino 1PH8 associato. Qualora si utilizzino più VPM, ogni morsetto deve essere cablato su un proprio ingresso digitale della Control Unit.
In caso di cortocircuito dell'indotto (morsetto X3 che si è aperto), l'asse interessato deve essere mantenuto nello stato di blocco impulsi. Per fare questo l'ingresso digitale utilizzato viene interconnesso sul bit di controllo OFF2 (blocco impulsi) tramite p0845 = r0722.XX.
Per maggiori informazioni vedere il Manuale di guida alle funzioni SINAMICS S120.

## Capacità di carico di corrente dei cavi di potenza e di segnale

La capacità di carico di corrente dei cavi in rame con isolamento in PVC/PUR è valida per i tipi di posa B1, B2, C ed E alle condizioni di funzionamento continuo riportate nella tabella con una temperatura ambiente dell'aria di 40 °C. Per altre temperature ambiente, i valori devono essere ricavati utilizzando i fattori riportati nella tabella di "Fattori di derating".

Tabella 6- 1 Sezione dei cavi e capacità di carico di corrente

| Sezione | Capacità di carico di corrente effettiva AC 50/60 Hz o DC per tipo di posa | | | |
|---|---|---|---|---|
| [mm²] | B1 [A] | B2 [A] | C [A] | E [A] |
| **Elettronica (secondo EN 60204-1)** | | | | |
| 0,20 | - | 4,3 | 4,4 | 4,4 |
| 0,50 | - | 7,5 | 7,5 | 7,8 |
| 0,75 | - | 9 | 9,5 | 10 |
| **Potenza (secondo EN 60204-1)** | | | | |
| 0,75 | 8,6 | 8,5 | 9,8 | 10,4 |
| 1,00 | 10,3 | 10,1 | 11,7 | 12,4 |
| 1,50 | 13,5 | 13,1 | 15,2 | 16,1 |
| 2,50 | 18,3 | 17,4 | 21 | 22 |
| 4 | 24 | 23 | 28 | 30 |
| 6 | 31 | 30 | 36 | 37 |
| 10 | 44 | 40 | 50 | 52 |
| 16 | 59 | 54 | 66 | 70 |
| 25 | 77 | 70 | 84 | 88 |
| 35 | 96 | 86 | 104 | 110 |
| 50 | 117 | 103 | 125 | 133 |
| 70 | 149 | 130 | 160 | 171 |
| 95 | 180 | 165 | 194 | 207 |
| 120 | 208 | 179 | 225 | 240 |
| **Potenza (secondo IEC 60364-5-52)** | | | | |
| 150 | 239[1)] | 206[1)] | 259[1)] | 276[1)] |
| 185 | 274[1)] | 235[1)] | 296[1)] | 315[1)] |
| > 185 | I valori si devono desumere dalla norma | | | |

1) Valori estrapolati

Tabella 6- 2 Fattori di derating per i cavi di potenza e di segnale

| Temperatura ambiente dell'aria [°C] | Fattore di derating secondo EN 60204-1, tabella D1 |
|---|---|
| 30 | 1,15 |
| 35 | 1,08 |
| 40 | 1,00 |
| 45 | 0,91 |
| 50 | 0,82 |
| 55 | 0,71 |
| 60 | 0,58 |

## Correlazione tra morsettiera e sezione max. dei conduttori

Tabella 6- 3 Dati della morsettiera

| Tipo di morsettiera | Altezza d'asse | Ingresso del cavo (potenza) | Ingresso del cavo (segnali esterni) | Diametro esterno max. del cavo 2) [mm] | Numero di morsetti principali | Sezione max. per morsetto [mm²] | Corrente max. per morsetto [A] 3) |
|---|---|---|---|---|---|---|---|
| gk803 | AH80 | 1 x M25 x 1,5 | 1 x M16 x 1,5 1) | 20 | Fasi: 3 x M5<br>Messa a terra: 2 x M5 | 1 x 10 | 52 |
| gk806 | AH80 | 1 x M25 x 1,5 | 1 x M16 x 1,5 1) | 20 | Fasi: 6 x M5<br>Messa a terra: 2 x M5 | 1 x 10 | 52 |
| gk813 | AH100 | 1 x M32 x 1,5 | 1 x M16 x 1,5 1) | 24,2 | Fasi: 3 x M5<br>Messa a terra: 2 x M5 | 1 x 16 | 70 |
| gk823 | AH100 | 1 x M32 x 1,5 | 1 x M16 x 1,5 1) | 24,2 | Fasi: 3 x M5<br>Messa a terra: 2 x M5 | 1 x 16 | 70 |
| gk826 | AH100 | 1 x M32 x 1,5 | 1 x M16 x 1,5 1) | 24,2 | Fasi: 6 x M5<br>Messa a terra: 2 x M5 | 1 x 10 | 52 |
| gk833 | AH132 | 1 x M40 x 1,5 | 1 x M16 x 1,5 1) | 32 | Fasi: 3 x M6<br>Messa a terra: 2 x M6 | 1 x 35 | 110 |
| gk843 | AH132 | 1 x M50 x 1,5 | 1 x M16 x 1,5 1) | 38 | Fasi: 3 x M6<br>Messa a terra: 2 x M6 | 1 x 50 | 133 |
| gk846 | AH132 | 1 x M50 x 1,5 | 1 x M16 x 1,5 1) | 38 | Fasi: 6 x M6<br>Messa a terra: 2 x M6 | 1 x 25 | 88 |
| gk863 | AH160 | 1 x M50 x 1,5 | 1 x M16 x 1,5 1) | 38 | Fasi: 3 x M6<br>Messa a terra: 2 x M6 | 1 x 50 | 133 |
| gk873 | AH160 | 1 x M63 x 1,5 | 1 x M16 x 1,5 1) | 42,6 | Fasi: 3 x M6<br>Messa a terra: 2 x M6 | 1 x 50 | 133 |
| gk874 | AH160 | 1 x M63 x 1,5 | 1 x M16 x 1,5 1) | 42,6 | Fasi: 3 x M10<br>Messa a terra: 2 x M6 | 2 x 70 | 240 |
| 1XB7322-P05 | AH180 ... AH280 | 2 x M50 x 1,5 | 1 x M16 x 1,5 4) | 38 | Fasi: 3 x M12<br>Messa a terra: 4 x M6e | 2 x 50 | 210 |
| 1XB7422-P06 | AH180 ... AH280 | 2 x M63 x 1,5 | 1 x M16 x 1,5 4) | 53 | Fasi: 3 x M12<br>Messa a terra: 4 x M8 | 2 x 70 | 270 |

| Tipo di morsettiera | Altezza d'asse | Ingresso del cavo (potenza) | Ingresso del cavo (segnali esterni) | Diametro esterno max. del cavo [2] [mm] | Numero di morsetti principali | Sezione max. per morsetto [mm²] | Corrente max. per morsetto [A] [3] |
|---|---|---|---|---|---|---|---|
| 1XB7700-P02 | AH225 e AH280 | 3 x M75 x 1,5 | 1 x M16 x 1,5 [4] | 68 | Fasi: 3 x 2 x M12<br>Messa a terra: 3 x piastra dei morsetti | 3 x 150 | 700 |
| 1XB7712-P03 | AH225 e AH280 | 4 x M75 x 1,5 | 1 x M16 x 1,5 [4] | 68 | Fasi: 3 x 4 x M16<br>Messa a terra: 4 x M16 | 4 x 185 | 1150 |

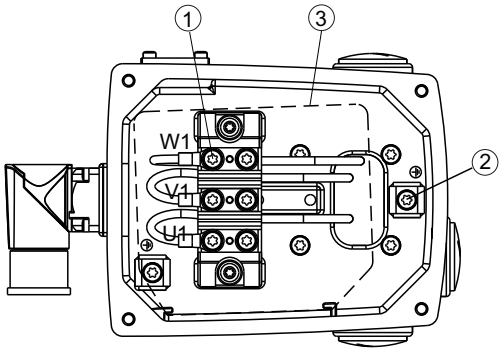
[1] Filetto M16 x 1,5 disposto a 90° rispetto alla connessione del cavo dei segnali; filetto solo per le opzioni A12, A25 ed esecuzione encoder A (senza encoder)

[2] A seconda dell'esecuzione dei pressacavi metrici (in base all'esecuzione del cavo MOTION-CONNECT e dei bocchettoni pressacavo delle ditte HUGRO o AGRO)

[3] Capacità di carico di corrente secondo EN 60204-1 e IEC 60364-5-52, tipo di posa E.

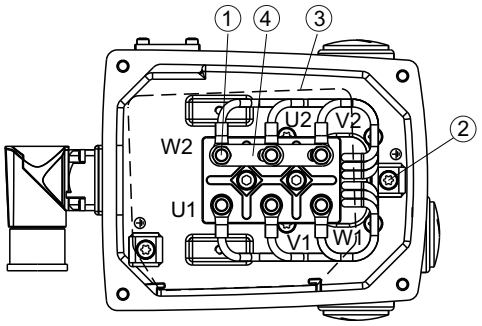
[4] Filettatura M16 x 1,5 in posizione opposta al collegamento del segnale (a lato della piastra di ingresso cavi); filettatura solo per l'opzione A12 e nell'esecuzione encoder A (senza encoder)

## Esecuzione della morsettiera



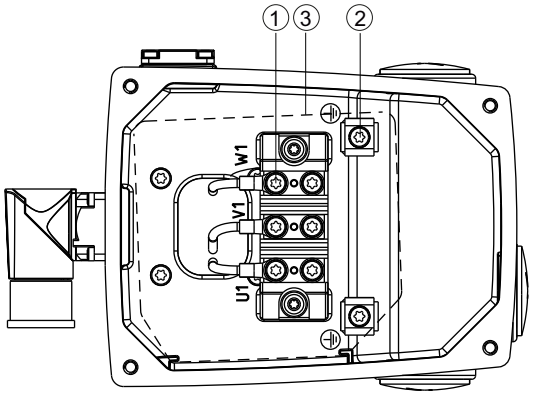

① Vite di collegamento M5
② Vite di messa a terra M5
③ Nastro isolante

Figura 6-6 Morsettiera gk803, a 3 poli (AH 80)



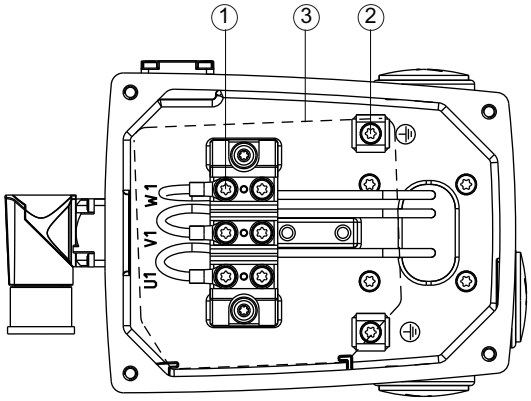

① Bullone di collegamento M5
② Vite di messa a terra M5
③ Nastro isolante
④ Ponticello

Figura 6-7 Morsettiera gk806, a 6 poli (AH 80) (commutabile stella-triangolo)



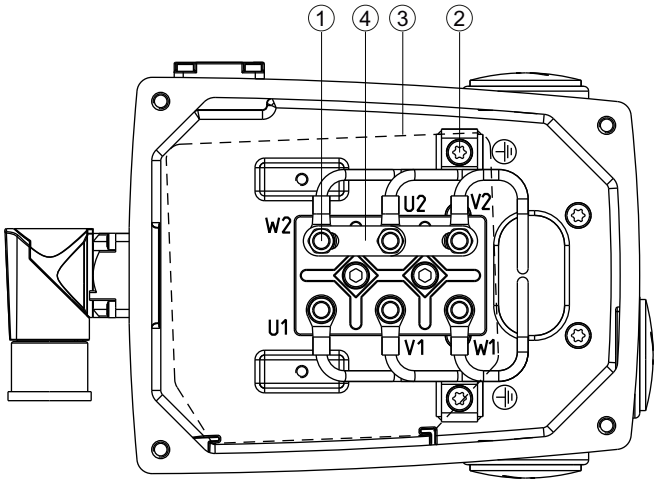

① Vite di collegamento M5
② Vite di messa a terra M5
③ Nastro isolante

Figura 6-8 Morsettiera gk813, a 3 poli (AH 100)




① Vite di collegamento M5
② Vite di messa a terra M5
③ Nastro isolante

Figura 6-9 Morsettiera gk823, a 3 poli (AH 100)




① Vite di collegamento M5
② Vite di messa a terra M5
③ Nastro isolante
④ Ponticello

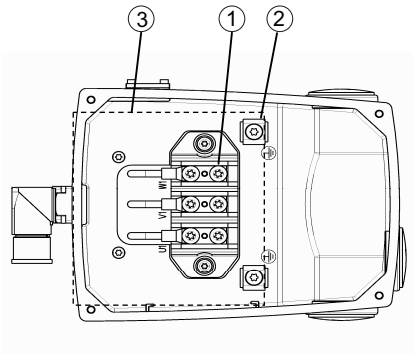
Figura 6-10 Morsettiera gk826, a 6 poli (AH 100) (commutabile stella-triangolo)

**Nota**

**Collegamento a stella/triangolo**

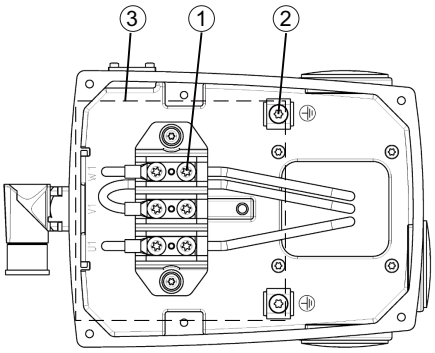
Il collegamento a stella/triangolo viene realizzato mediante circuito di protezione esterno oppure come impostazione fissa per AH 80 nella morsettiera gk806 e per AH 100 nella morsettiera gk826.

Impostazione standard: collegamento a stella tramite ponticelli



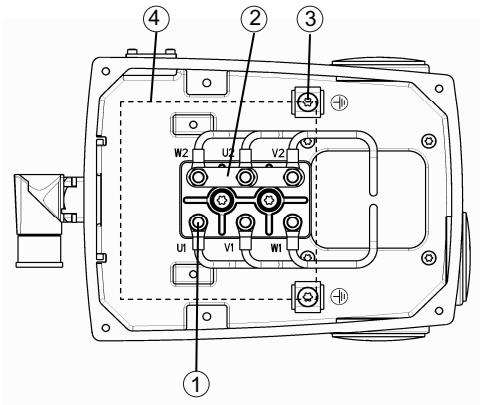

① Vite di fissaggio M6
② Vite di terra M6
③ Nastro isolante

Figura 6-11 Morsettiera gk833 (AH 132) e gk863 (AH 160), 3 poli



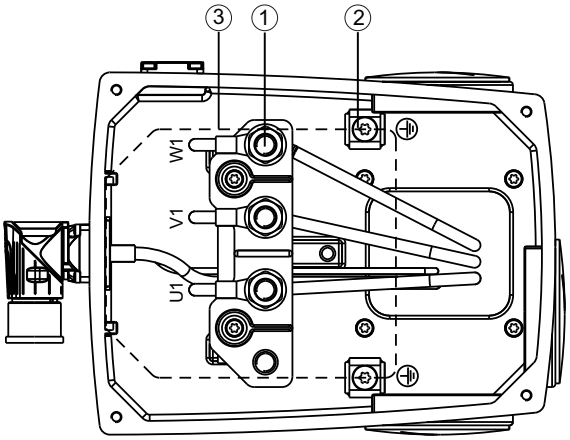

① Vite di fissaggio M6
② Vite di terra M6
③ Nastro isolante

Figura 6-12 Morsettiera gk843 (AH 132) e gk873 (AH 160), 3 poli



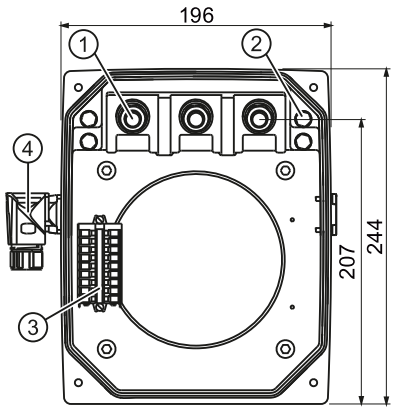

① Bullone di connessione M6
② Ponticello
③ Vite di terra M6
④ Nastro isolante

Figura 6-13 Morsettiera gk846 (AH 132) e gk876 (AH 160), a 6 poli (commutabile stella-triangolo)



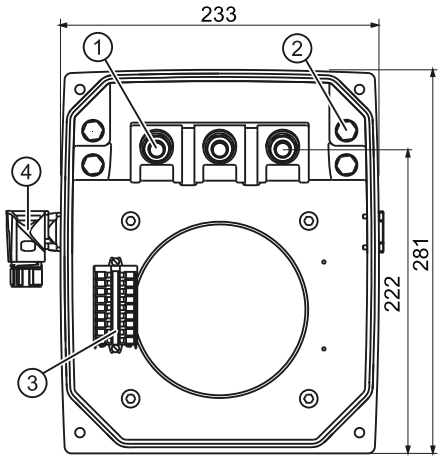

① Vite di collegamento M10
② Vite di terra M6
③ Nastro isolante

Figura 6-14 Morsettiera gk874 (AH 160), a 3 poli (solo per motori sincroni)



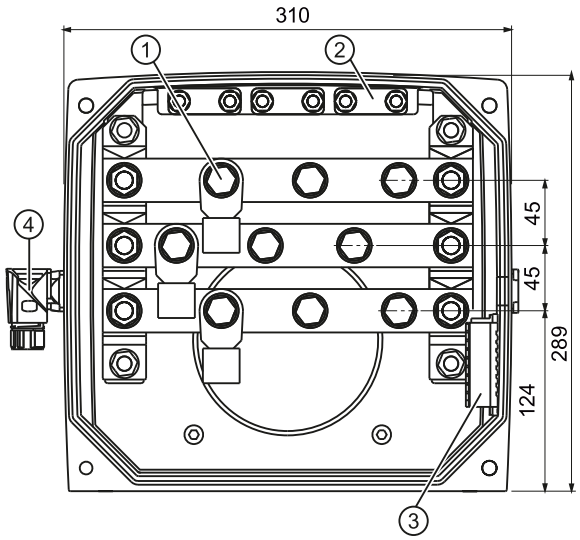

① Morsetto principale
② Morsetto di terra
③ Morsetto di collegamento del segnale
④ Collegamento del segnale

Figura 6-15 Morsettiera 1XB7322-P05 (AH 180 ... AH 280)



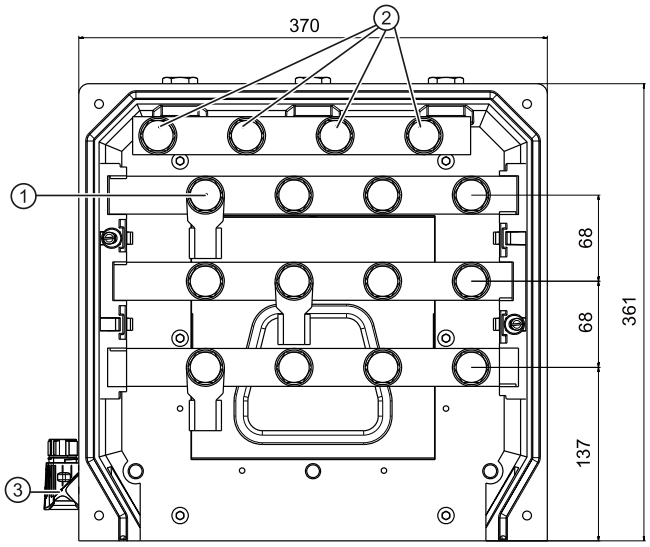

① Morsetto principale
② Morsetto di terra
③ Morsetto di collegamento del segnale
④ Collegamento del segnale

Figura 6-16 Morsettiera 1XB7422-P06 (AH 180 ... AH 280)




① Morsetto principale
② Morsetto di terra
③ Morsetto di collegamento del segnale
④ Collegamento del segnale

Figura 6-17 Morsettiera 1XB7700-P02 (AH 225 e AH 280)




① Morsetto principale
② Morsetto di terra
③ Morsetto di collegamento del segnale

Figura 6-18 Morsettiera 1XB7712-P03 (AH 225 e AH 280)

**Nota**

In caso di ordinazione di una versione speciale, il collegamento del segnale può discostarsi dalla disposizione standard.

Nell'esecuzione senza encoder di velocità, in questa posizione si trova un filetto di connessione M16 x 1,5.

## Collegamento connettore di potenza

- Utilizzare un connettore di grandezza 1,5
- Eseguire l'assegnazione dei pin del connettore secondo la figura "Connettore di potenza 1,5", collegare il conduttore di protezione

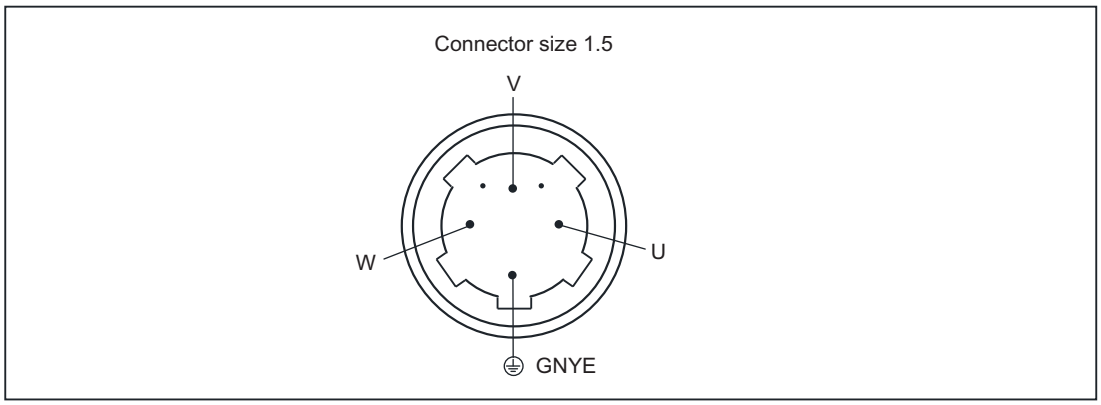



Figura 6-19 Connettore di potenza, grandezza 1,5 (vista sui pin)

- Utilizzare un connettore di grandezza 3
- Eseguire l'assegnazione dei pin del connettore secondo la figura "Connettore di potenza 3", collegare il conduttore di protezione

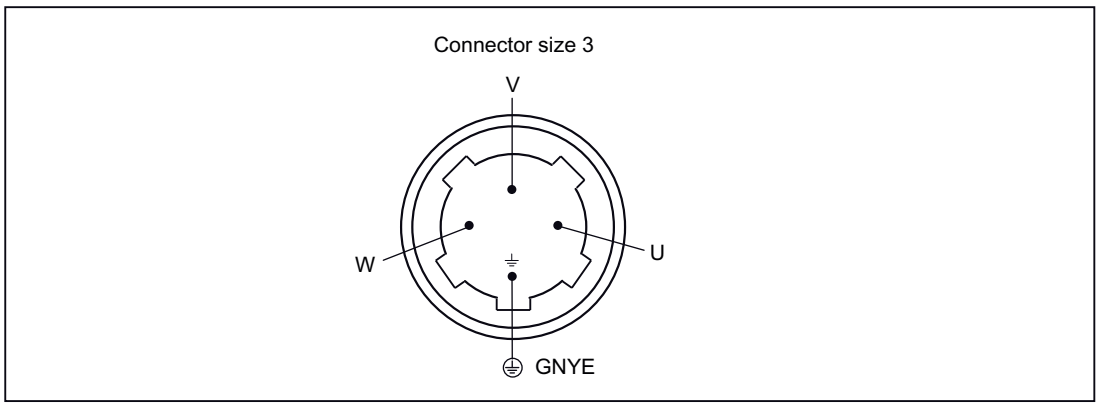



Figura 6-20 Connettore di potenza, grandezza 3 (vista sui pin)

# 6.3 Avvertenze per il collegamento

**Nota**

La compatibilità elettromagnetica del sistema è garantita solo per l'utilizzo di cavi di potenza schermati, il cui schermo è collegato a un'ampia superficie della morsettiera in metallo del motore (con pressacavo EMC in metallo) oppure tramite il connettore di potenza.

Occorre considerare le schermature nel progetto di messa a terra di protezione. I conduttori non collegati o i cavi a rischio di contatto devono essere collegati a terra. Se i cavi per il collegamento del freno compresi negli accessori SIEMENS non vengono utilizzati, i relativi conduttori e gli schermi dovranno essere collegati alla massa dell'armadio. (I cavi non collegati generano carichi capacitativi!)

Introdurre i cavi utilizzando allo scopo pressacavi EMC. I pressacavi devono essere avvitati negli appositi fori filettati della morsettiera.

Filetti non utilizzati devono essere muniti comunque di un tappo a vite metallico.

**⚠ AVVERTENZA**

Prima di iniziare qualsiasi lavoro sul motore e sul ventilatore, assicurarsi che questi siano disinseriti e protetti contro il riavviamento!

Rispettare i dati tecnici riportati sulla targhetta e lo schema elettrico presente nella morsettiera.
Dimensionare i cavi di collegamento in modo corretto.

## Equipotenzialità interna

Il collegamento equipotenziale tra il morsetto di terra nella custodia della morsettiera e la carcassa del motore si effettua con le viti di fissaggio della morsettiera. I punti di contatto sotto le teste delle viti devono essere sverniciati e protetti contro la corrosione.

Per la compensazione di potenziale tra il coperchio e la carcassa della morsettiera sono sufficienti le normali viti di fissaggio del coperchio.

## Cavi di collegamento per motore e potenza

- I cavi dei motori devono essere a conduttori intrecciati o cavi a tre conduttori con conduttore di terra in aggiunta. Le terminazioni dei conduttori devono essere spellate in modo tale che l'isolamento residuo sia bastante per il capicorda o il morsetto.
- I cavi di collegamento devono essere disposti nella morsettiera in modo tale che il conduttore di terra abbia una lunghezza adeguata e l'isolamento dei conduttori non venga danneggiato. Provvedere allo scarico di tiro dei cavi di collegamento.
- Prestare attenzione che vengano rispettate le distanze richieste per la circolazione dell'aria.
  - fino AH 160 almeno 4,5 mm
  - fino AH 180 almeno 10 mm

## Terminato il collegamento occorre controllare/verificare

- L'interno della morsettiera deve essere pulito e privo di resti di cavi
- Tutte le viti di bloccaggio devono essere avvitate a fondo
- Devono essere rispettate le distanze minime per la circolazione dell'aria
- Gli ingressi dei cavi devono essere protetti con guarnizioni in modo sicuro
- Gli ingressi non utilizzati devono essere tappati e gli elementi di chiusura avvitati a fondo
- Tutte le superfici di isolamento devono essere correttamente preparate

## Collegamento del conduttore di terra

La sezione del cavo di terra deve essere conforme alle prescrizioni, es. secondo le IEC/EN 60204-1.

Con AH 225 e AH 280 il conduttore di terra deve essere inoltre collegato allo scudo del motore. Sul punto di collegamento indicato per il conduttore di terra si trova a tal fine un morsetto, adatto per il collegamento di conduttori multifilo con capicorda o di cavi piatti con corrette terminazioni.

Per il collegamento occorre accertarsi che

- la superficie di contatto non sia isolata e sia protetta da un'idonea sostanza anticorrosiva, ad es. vaselina neutra,
- sotto la testa della vite siano disposte la rondella elastica e la rosetta,
- siano rispettati sia la profondità minima di avvitamento necessaria, sia la coppia di serraggio della vite.

Tabella 6- 4 Profondità di avvitamento e coppia di serraggio

| Vite | Profondità di avvitamento | Coppia di serraggio |
|---|---|---|
| M8 x 30 | > 8 mm | 20 Nm |

# 6.4 Dati per il collegamento del ventilatore esterno

Tabella 6- 5 Valori di collegamento del ventilatore esterno

| **Altezza d'asse AH** | **Motore del ventilatore: corrente assorbita max. [A]** | | | **Direzione del flusso d'aria** |
|---|---|---|---|---|
| **Ventilazione forzata** | **1 AC 230 V/50 Hz (±10%)** | **1 AC 230 V/60 Hz (±10%)** | **1 AC 265 V/60 Hz (±10%)** | |
| 80 | 0,33 | 0,25 | 0,32 | NDE --> DE |
| | 0,20 | 0,16 | 0,19 | DE --> NDE |
| **Ventilazione forzata** | **3 AC 400 V/50 Hz (±10%)** | **3 AC 400 V/60 Hz (±10%)** | **3 AC 480 V/60 Hz (±10%)** | |
| 100 | 0,12 | 0,09 | 0,12 | NDE --> DE |
| | 0,13 | 0,09 | 0,13 | DE --> NDE |
| 132 | 0,13 | 0,16 | 0,17 | NDE --> DE |
| | 0,21 | 0,19 | 0,23 | DE --> NDE |
| 160 | 0,17 | 0,22 | 0,22 | NDE --> DE |
| | 0,23 | 0,30 | 0,30 | DE --> NDE |
| **Ventilazione forzata (ventilatore EC)** | **1 AC 200 V ... 277 V/50 Hz, 60 Hz (±10%)** | | | |
| 180 | 1,45 ... 1,05 | | | NDE --> DE<br>DE --> NDE |
| 225 | 2,3 ... 1,6 | | | NDE --> DE<br>DE --> NDE |
| **Ventilazione forzata** | **3 AC 400 V/50 Hz (±10%)** | **3 AC 400 V/60 Hz (+5%, -10%)** | **3 AC 480 V/60 Hz (+5%, -10%)** | |
| 280 | 2,55 | 2,5 | 2,5 | NDE --> DE<br>DE --> NDE |

## Schema di collegamento

Il collegamento avviene attraverso le morsettiere del ventilatore esterno oppure, opzionalmente, attraverso il connettore di potenza. Il collegamento della ventola deve essere protetto con un salvamotore. Per i ventilatori EC è sufficiente un semplice interruttore magnetotermico.

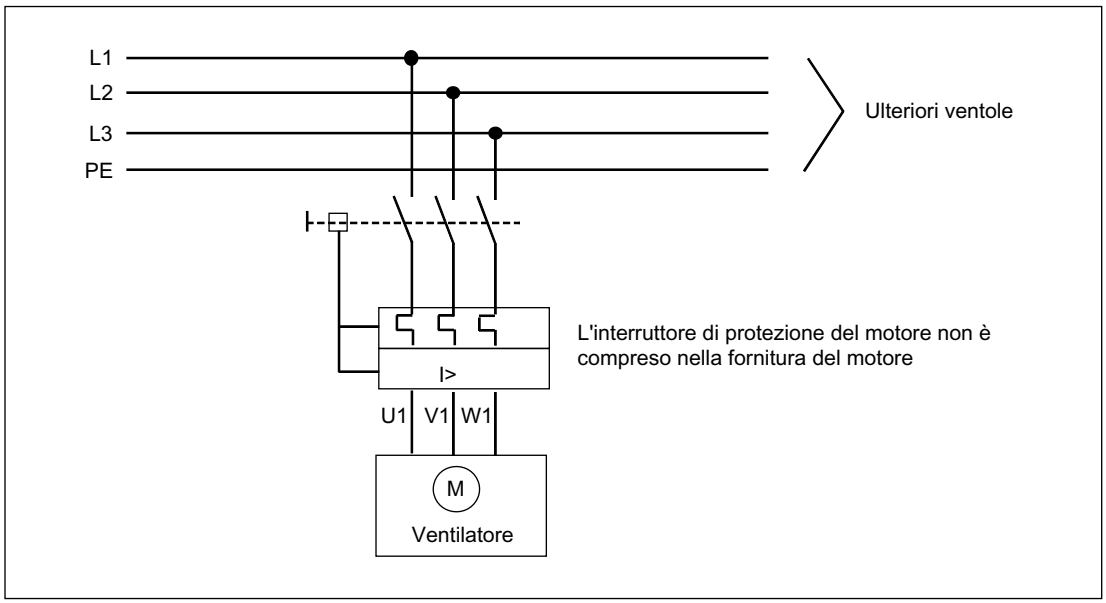



Figura 6-21 Schema di collegamento

## Collegamento tramite morsettiera

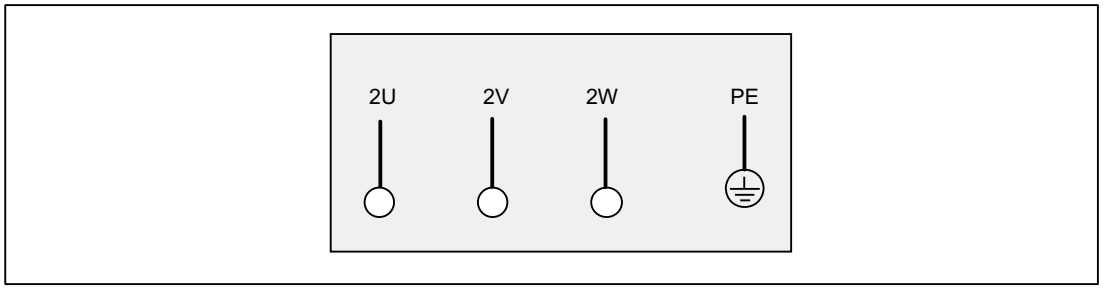



Figura 6-22 Morsettiera collegamento ventilatore esterno

## Collegamento tramite connettore di potenza

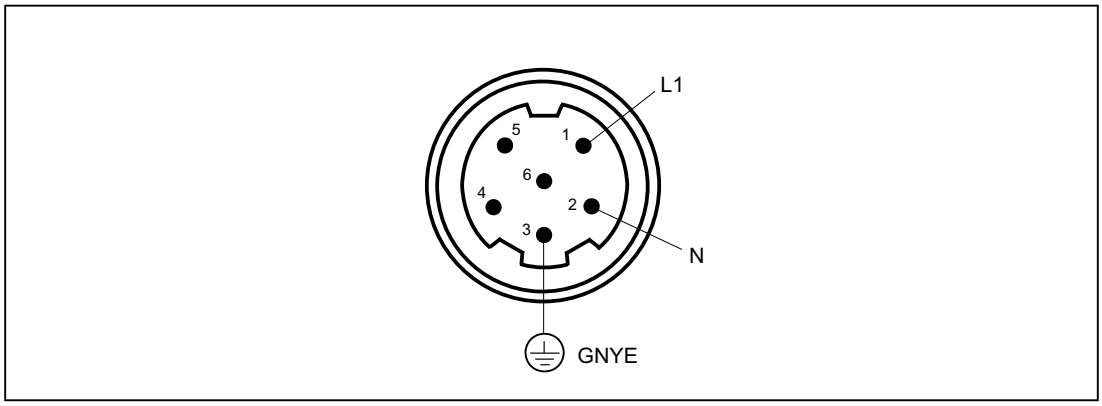



Figura 6-23 Collegamento ventilatore esterno, AH 80

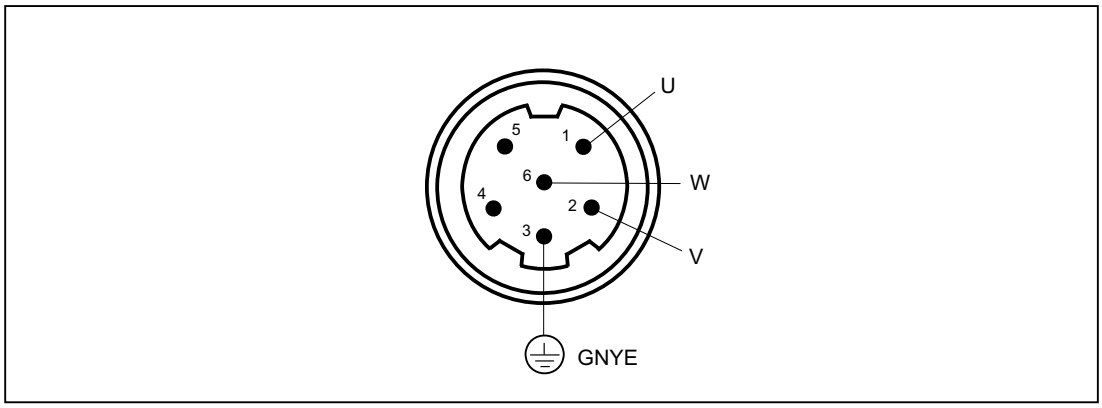



Figura 6-24 Collegamento ventilatore esterno, AH 100 ... AH 132

**Nota**

Il controconnettore non è compreso nella fornitura.

Numero di ordinazione controconnettore grandezza 1: 6FX2003-0LU00

**Nota**

Possono essere ordinati i cavi confezionati con i seguenti numeri di ordinazione: 6FX□002-5CA01-□□□0

## Ventilatori esterni EC con altezza d'asse 180 ... 280

Nei motori con raffreddamento ad aria della serie 1PH8 vengono montati ventilatori esterni EC della marca Ziehl-Abegg. Si tratta di gruppi ventilatore a numero di giri fisso eseguiti specialmente per questa serie di motori.

Per le altezze d'asse 180 e 225 vengono impiegati motori EC di grandezza costruttiva "B", per l'altezza d'asse 280 (opzione) di grandezza costruttiva "D".

**Nota**

I morsetti GND; 10V; D1; E1; A1 e A2 non sono attivi e sono quindi provvisti di isolatori.

| ATTENZIONE |
| --- |
| L'impiego in reti IT non è consentito. |

**Nota**

Per i ventilatori con motore EC il motore del ventilatore si avvia con un certo ritardo dopo l'inserzione della tensione di rete.

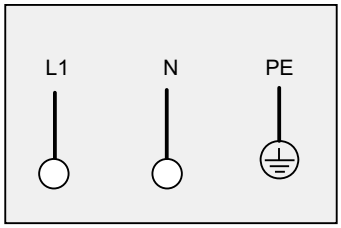



Figura 6-25 Collegamento nella morsettiera del ventilatore esterno (ventilatori esterni EC)

### Collegamento di ventilatori esterni (tipo 1PH818□, 1PH822□)

I ventilatori esterni sono collegati alla relativa morsettiera. In caso di necessità il ventilatore può essere ruotato di 90°.

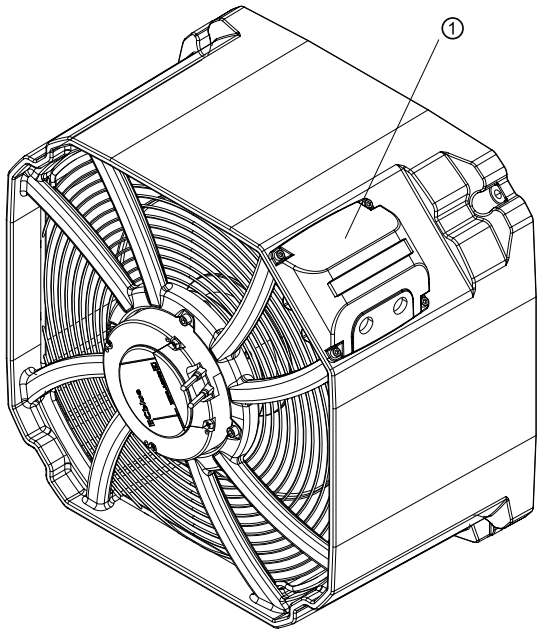
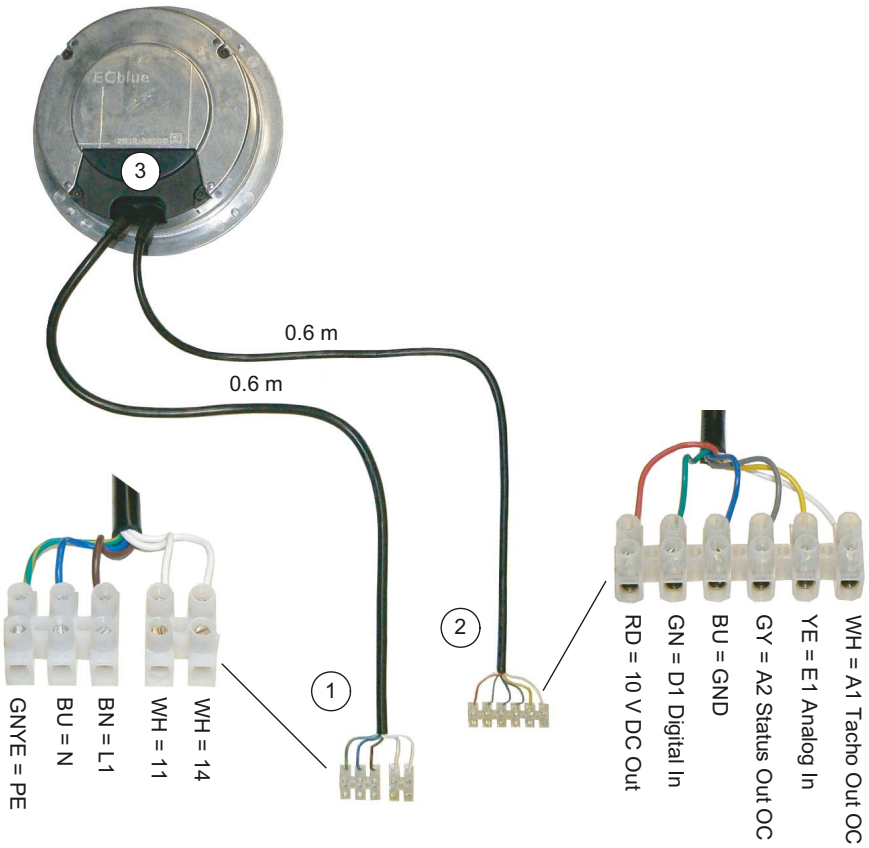



Figura 6-26 Morsettiera del ventilatore esterno ① (schema generale)

| ATTENZIONE |
| --- |
| **Rotazione del ventilatore esterno**<br>Se si ruota il ventilatore esterno di 90°, l'uscita dei cavi non deve essere rivolta verso l'alto. La presenza di acqua sui pressacavi a vite può provocare cortocircuiti.<br>Ruotare il coperchio della morsettiera di 180°. |

### Grandezza costruttiva "B"

Ventilatori con cavo di collegamento




① Collegamento a rete e relè: cavo isolato 18 AWG (lunghezza ca. 0,6 m)
② Collegamento a rete e relè: cavo isolato 22 AWG (lunghezza ca. 0,6 m)
③ Coperchio di collegamento

Figura 6-27 Ventilatore esterno EC grandezza costruttiva "B"

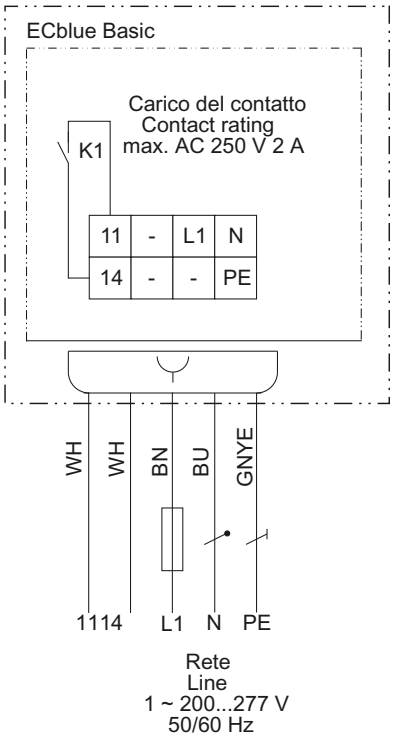
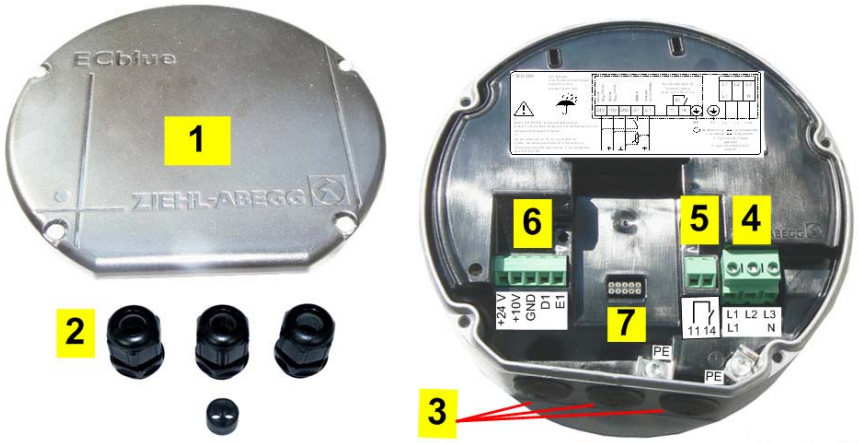



Figura 6-28 Carico del contatto uscita relè K1 (grandezza costruttiva "B")

**Grandezza costruttiva "D"** (opzione per 1PH828□)

Ventilatori con cassetta di connessione




① Coperchio carcassa controller
② Pressacavi + guarnizione di tenuta per due cavi (utilizzabile se necessario)
- Grandezza costruttiva "D": 3 x M16 + 1x guarnizione di tenuta con due fori 5 mm

③ Ingresso cavi con tappo in plastica
④ Collegamento di rete
⑤ Collegamento relè segnalazione guasti
⑥ Collegamento controllore
⑦ Slot per modulo aggiuntivo

Figura 6-29 Ventilatore esterno EC grandezza costruttiva "D"

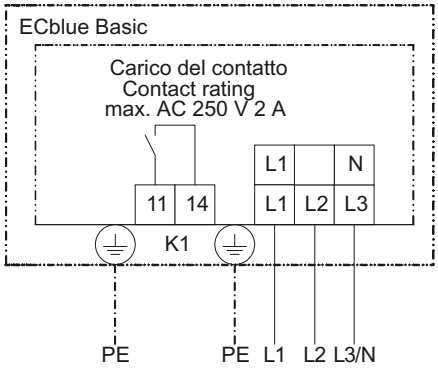



Figura 6-30 Carico del contatto uscita relè K1 (grandezza costruttiva "D")

**Nota**

**Uscita relè (K1)**

Una segnalazione guasti esterna è possibile tramite il contatto con separazione del potenziale del relè integrato.

Durante il funzionamento il relè si eccita, ovvero i collegamenti "11" e "14" sono ponticellati. In caso di guasto il relè si diseccita.

In caso di disinserzione tramite l'abilitazione (D1 = Digital In 1) il relè resta eccitato.

# 6.5 Collegamento del segnale

È preferibile collegare i sistemi trasduttore al SINAMICS tramite DRIVE-CLiQ.

A tale scopo sono disponibili i motori con interfaccia DRIVE-CLiQ. I motori con interfaccia DRIVE-CLiQ devono essere collegati direttamente al relativo Motor Module tramite i cavi MOTION-CONNECT DRIVE-CLiQ disponibili. Il collegamento del cavo MOTION-CONNECT DRIVE-CLiQ viene eseguito sul motore con grado di protezione IP67. L'interfaccia DRIVE-CLiQ alimenta il trasduttore motore tramite l'alimentatore integrato CC 24 V e trasmette direttamente alla Control Unit i segnali del trasduttore motore e della temperatura nonché i dati elettronici di targa, p. es. il numero di identificazione e i dati nominali (tensione, corrente, coppia) univoci. Per i diversi tipi di trasduttore il cablaggio viene solitamente effettuato tramite il cavo MOTION-CONNECT DRIVE CLiQ. Questi motori semplificano la messa in servizio e la diagnostica essendo possibile l'identificazione automatica del tipo di motore e del trasduttore.

### Collegamento dell'encoder nei motori con DRIVE-CLiQ

I motori con DRIVE-CLiQ possono essere collegati direttamente al relativo Module del motore attraverso i cavi MOTION-CONNECT DRIVE-CLiQ disponibili. I dati vengono trasmessi direttamente alla Control Unit.

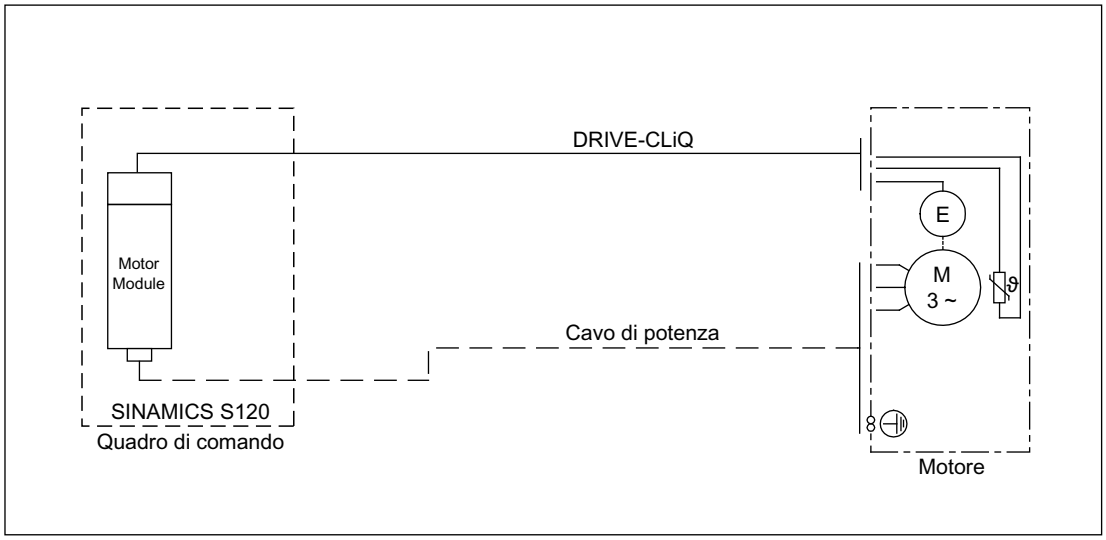



Figura 6-31 Collegamento dell'encoder nei motori con DRIVE-CLiQ

## Cavi nei motori con DRIVE-CLiQ

Per tutti i tipi di encoder viene utilizzato con DRIVE-CLiQ lo stesso cavo. Si devono utilizzare solo cavi confezionati di Siemens (MOTION-CONNECT).

Tabella 6- 6 Cavo confezionato

| 6FX | □ | 002 | - | □DC□□ | - | □□□ | 0 |
|---|---|---|---|---|---|---|---|
| | ↓ | | | | | ↓ ↓ ↓ | |
| | ↓ | | | | | Lunghezza | |
| | 5 MOTION-CONNECT®500 | | | | | lunghezza max. del cavo 100 m | |
| | 8 MOTION-CONNECT®800 | | | | | lunghezza max. del cavo 50 m | |

Per ulteriori dati tecnici e per i codici relativi alle varie lunghezze consultare il catalogo, capitolo "Tecnica di collegamento MOTION-CONNECT".

## Collegamento dell'encoder nei motori senza DRIVE-CLiQ

Nei motori senza interfaccia DRIVE-CLiQ, l'encoder di velocità e il sensore di temperatura vengono collegati tramite un connettore del segnale.

Per poter funzionare con un SINAMICS S120 i motori privi di interfaccia DRIVE-CLiQ richiedono un Sensor Module Cabinet-mounted (SMC) o un Sensor Module esterno (SME). Il motore viene collegato tramite il cavo di segnale all'SMC o all'SME. L'SMC o SME collegato al Motor Module tramite un cavo MOTION-CONNECT DRIVE-CLiQ.

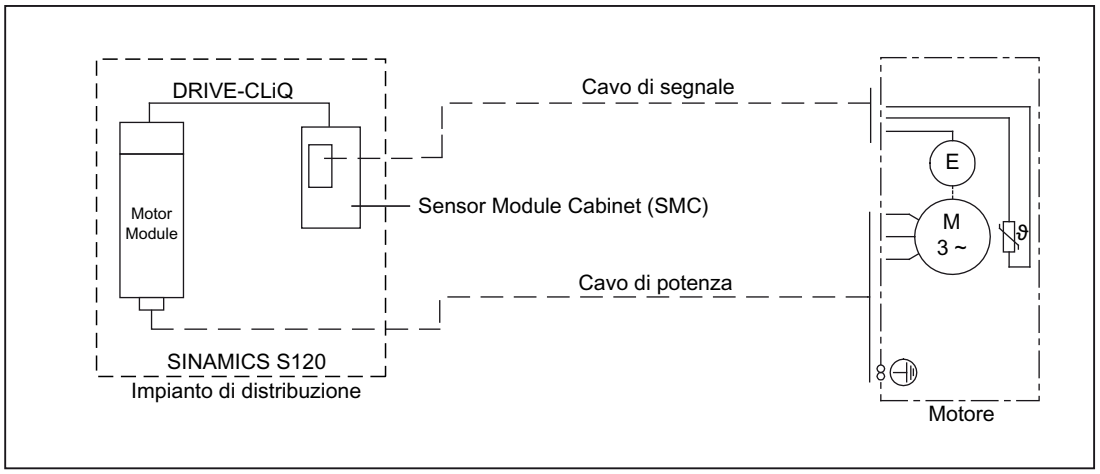



Figura 6-32 Collegamento dell'encoder nei motori senza DRIVE-CLiQ

## Cavi nei motori senza DRIVE-CLiQ

Si devono utilizzare solo cavi confezionati di Siemens (MOTION-CONNECT). Questi offrono, rispetto ai cavi confezionati propri, molti vantaggi relativi alla sicurezza di funzionamento, qualità e disponibilità.

Per i dati tecnici ed i codici relativi alle varie lunghezze consultare il catalogo PM 21N o NC 61, capitolo "Tecnica di collegamento MOTION-CONNECT".

# Avvertenze sull'uso dei motori

# 7

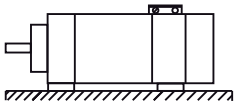
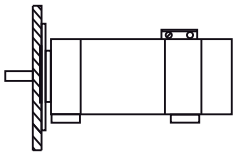
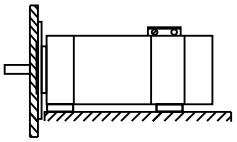
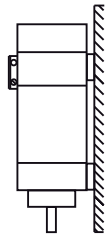
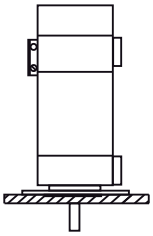
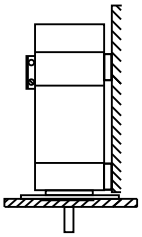
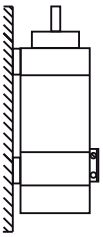
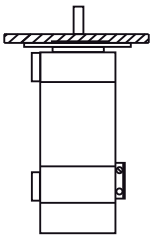
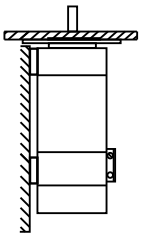
## 7.1 Trasporto / immagazzinaggio nel periodo precedente all'utilizzo

I motori vanno conservati in ambienti interni asciutti e a ridotta presenza di polvere e vibrazioni ($v_{eff}$ < 0,2 mm/s). È opportuno che l'immagazzinaggio dei motori a temperatura ambiente (da +5 °C a +40 °C) non abbia una durata superiore a 2 anni, di modo che venga mantenuto l'effetto dell'ingrassaggio dei cuscinetti.

Per il trasporto e l'immagazzinaggio rispettare le avvertenze riportate nelle istruzioni operative.

## 7.2 Forme costruttive

Tabella 7- 1 Denominazione delle forme costruttive

| Forma costruttiva | Denominazione | Forma costruttiva | Denominazione | Forma costruttiva | Denominazione |
|---|---|---|---|---|---|
|  | IM B3 |  | IM B5 |  | IM B35 |
|  | IM V5 |  | IM V1 |  | IM V15 |
|  | IM V6 |  | IM V3 |  | IM V35 |

## 7.3 Segnali di pericolo e avvertenze per il montaggio

**⚠ AVVERTENZA**

Questo motore è azionato elettricamente. Durante il funzionamento dei motori elettrici alcune parti si trovano necessariamente sotto tensione. Qualsiasi intervento improprio nell'utilizzo dei motori può quindi causare la morte o gravi lesioni personali o danni materiali. È perciò indispensabile osservare scrupolosamente tutti gli avvisi di pericolo indicati in questo capitolo e sullo stesso prodotto.

La manutenzione del motore può essere eseguita solo da **personale qualificato**.

Prima di qualsiasi intervento, il motore dovrà essere scollegato dalla rete e collegato a massa.

Si possono utilizzare solo i ricambi omologati dal costruttore.

È necessario inoltre rispettare rigorosamente gli intervalli di manutenzione e tutte le prescrizioni indicate nonché le procedure raccomandate per riparazioni o sostituzioni.

**⚠ AVVERTENZA**

Per il trasporto utilizzare tutti i ganci di sollevamento appositamente predisposti!

Occorre utilizzare un adeguato apparecchio di sollevamento. Una non corretta installazione, un'apparecchiatura o mezzi di supporto non idonei o difettosi possono provocare lesioni personali e danni materiali. Le apparecchiature di sollevamento e trasporto nonché i mezzi per il sollevamento di carichi devono corrispondere alle prescrizioni.

Tutte le operazioni devono essere eseguite sempre senza tensione nell'impianto!

Per ulteriori informazioni consultare obbligatoriamente le Istruzioni operative.

Il collegamento del motore deve essere conforme allo schema elettrico allegato.

Nella morsettiera occorre fare attenzione che i cavi di collegamento siano disposti correttamente e isolati rispetto al coperchio della morsettiera.

Nel caso di un motore con freno, dopo aver eseguito il montaggio, controllare che il freno funzioni perfettamente!

**⚠ CAUTELA**

Abbinamenti di materiali non adatti generano elettricità per attrito tra
ruota della cinghia e cinghia. Questa carica elettrostatica (alcuni kV) può scaricarsi tramite l'albero motore e l'encoder, il che provoca errori dei segnali dell'encoder (errori encoder).

Rimedio: utilizzare cinghie antistatiche (realizzate in una speciale miscela poliuretanica conduttiva)!

## 7.4 Frequenze proprie di montaggio

Il motore costituisce un sistema soggetto a vibrazioni con una frequenza propria che, per questi motori, è superiore ai giri massimi indicati.

Montandolo su una macchina di produzione si realizza un nuovo sistema anch'esso soggetto a vibrazioni con frequenze proprie modificate. Esse possono trovarsi entro la gamma di velocità del motore.

Questo può provocare oscillazioni indesiderate nella catena di azionamento.

**Nota**

L'installazione dei motori dovrà essere molto accurata e la base di appoggio dovrà avere una sufficiente rigidità. Un'ulteriore elasticità dei piani di appoggio può causare delle risonanze delle frequenze intrinseche di installazione alla velocità di esercizio e valori non consentiti per le vibrazioni.

L'altezza della frequenza intrinseca di installazione dipende da diversi fattori e viene influenzata dalle seguenti condizioni:

- elementi di trasmissione della forza (riduttore, cinghia, giunto, pignone ecc.)
- rigidità della macchina sulla quale è montato il motore
- rigidità del motore in corrispondenza dei piedi o della flangia del cliente
- Massa del motore
- massa della macchina o massa in corrispondenza del motore
- caratteristiche di smorzamento del motore e della macchina di produzione
- Tipo di montaggio, posizione di montaggio (IM B5, IM B3, IM B35, IM V1, ecc.)
- distribuzione della massa del motore, e cioè lunghezza costruttiva, altezza d'asse.

**Nota**

Per le altezze d'asse 80 ... 160, nelle versioni a ventilazione forzata, prima della messa in servizio occorre rimontare le coperture di plastica del basamento NDE rimosse per il serraggio del motore.

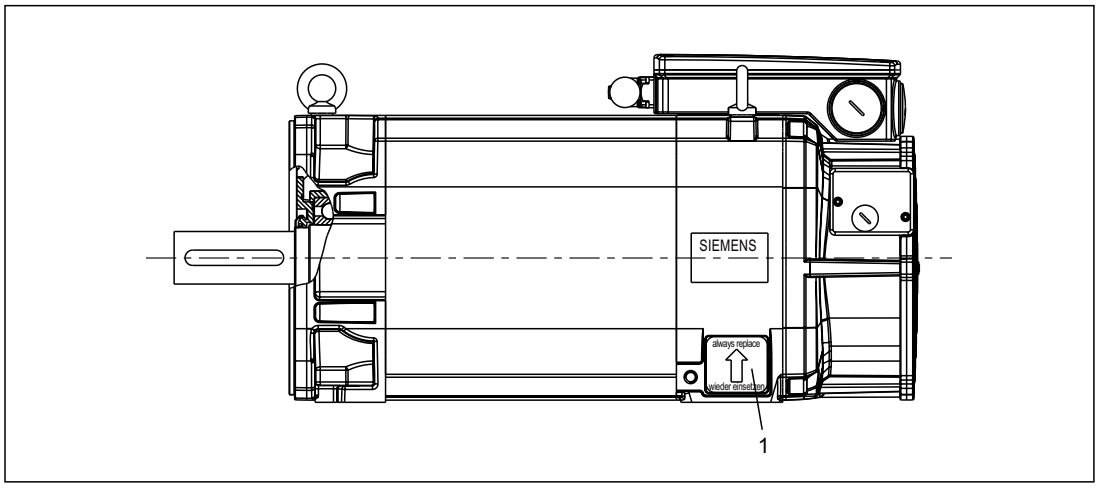



Figura 7-1 Coperchietto per il fissaggio su piedi (1) sul lato NDE (esempio)

## 7.5 Fissaggio e istruzioni di montaggio

Le fondazioni stabili, un allineamento preciso della macchina e una corretta equilibratura degli elementi che devono essere montati sull'estremità d'albero costituiscono il presupposto per un funzionamento silenzioso ed esente da vibrazioni.

Si devono rispettare le seguenti istruzioni di montaggio:

- In caso di macchine con elevate velocità di rotazione, dopo il montaggio di giunti o pulegge si raccomanda di ripetere in modo dinamico l'equilibratura dell'intera unità.
- Per il montaggio degli elementi di azionamento utilizzare solo gli strumenti adatti. Utilizzare la filettatura sull'estremità dell'albero.
- Evitare urti o pressione assiale in corrispondenza dell'estremità dell'albero.
- Soprattutto nel caso di motori con rotazione elevata, è indispensabile assicurare la stabilità di montaggio della flangia in modo da tenere la frequenza intrinseca della flangia elevata e comunque al di sopra della frequenza max. di rotazione.
- Per l'allineamento del motore si possono disporre sottili lamierini sotto i piedini per evitare distorsioni del motore. Il numero di spessori utilizzati deve essere il minore possibile.
- Per un fissaggio ed un trasferimento di coppia sicuri, devono essere utilizzate viti con classe di resistenza 8.8 secondo ISO 898-1.

**Nota**

Tutti i motori flangiati devono disporre di sospensioni stabili e devono essere supportati per elevate velocità ad indebolimento di campo tramite piedini con supporto (forma costruttiva flangiata dei piedini, vedere anche il capitolo "Valori limite di vibrazione").

Si può evitare il supporto dei piedini se vengono rispettate le seguenti condizioni:

- Per i motori flangiati è disponibile una sospensione stabile.

- Vengono rispettati i valori di vibrazione consentiti secondo DIN ISO 10816

- Limitazione dei giri massimi (vedere la tabella "Limitazione dei giri massimi")

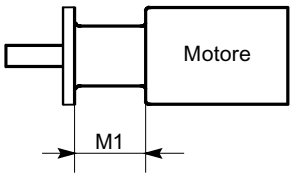
I motori che per la loro forma costruttiva vengono applicati con i piedini su pareti, devono essere fissati con un accoppiamento di forma adeguatamente dimensionato (ad es. fissaggio con prigionieri oppure con un profilato a parete).

Nella messa in servizio occorre assicurarsi che siano rispettati i valori di vibrazione ammessi secondo DIN ISO 10816.

Tabella 7- 2 Limitazione dei giri massimi

| Altezza asse [mm] | Giri max. ammessi [1/min] |
|---|---|
| 180 | 3000 |
| 225 | 2500 |
| 280 | 2000 |

Tabella 7- 3 Montaggio flangiato con perni filettati e dadi

| Altezza d'asse | M1 [mm] | |
|---|---|---|
| 180 | 32 |  |
| 225 | 45 | |
| 280 | 45 | |

**Nota**

Per le altezze d'asse AH 180 ... AH 280 il montaggio flangiato è possibile solo con perni filettati e dadi. Distanza M1 per l'inserimento del dado fra la flangia e la carcassa del motore secondo DIN 42948.

**⚠ CAUTELA**

Devono essere evitati ristagni di liquido sulla flangia sia in caso di montaggio verticale od orizzontale, in caso contrario si possono verificare danneggiamenti dei cuscinetti o del relativo grasso di lubrificazione.

**Nota**

Per le altezze dell'asse 80 ... 160, nelle versioni a ventilazione forzata, prima della messa in servizio occorre rimontare le coperture di plastica rimosse per il serraggio del motore.

**Nota**

I motori raffreddati ad aria devono essere posizionati in modo che il flusso d'aria fredda possa fluire e defluire senza impedimenti (vedere anche il capitolo "Raffreddamento").

## 7.6 Errore di allineamento

Per evitare o minimizzare gli errori di allineamento, è necessario utilizzare un accoppiamento di compensazione (vedere la figura).

È opportuno evitare un accoppiamento diretto e rigido del motore con le barre di trasmissione installate.

Se per motivi costruttivi fosse necessario obbligatoriamente un collegamento rigido, devono essere evitate le deviazioni dell'allineamento. In questo caso è necessario un controllo a livello di misurazione.

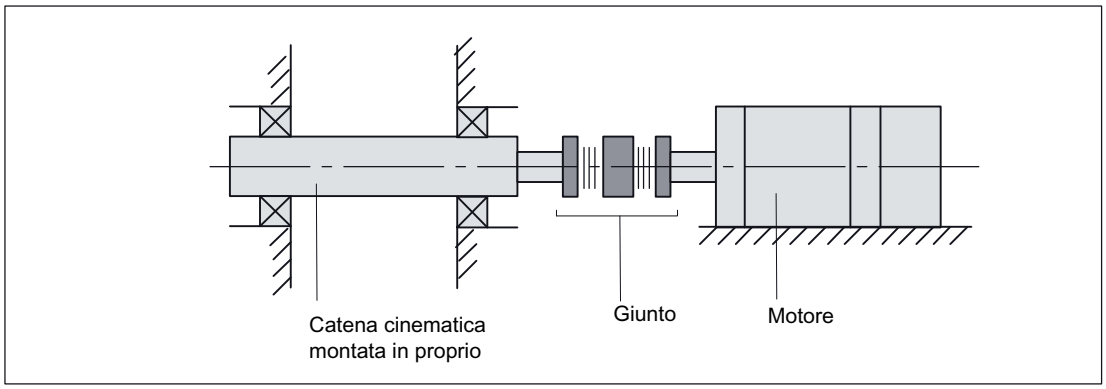



Figura 7-2 Barra di trasmissione installata con accoppiamento di compensazione

## 7.7 Volani

I volani grandi fissati sull'estremità d'albero del motore, modificano la reazione alle vibrazioni del motore e ne abbassano il campo delle velocità critiche.

Per ridurre al minimo/evitare l'effetto delle vibrazioni è necessario effettuare la migliore equilibratura possibile quando si montano direttamente volumi esterni.

È da evitare il funzionamento nel campo di risonanza.

## 7.8 Sollecitazione da vibrazioni

Le oscillazioni del sistema sul luogo di installazione, dovute agli elementi condotti, alle condizioni di montaggio, all'allineamento e all'installazione, nonché a vibrazioni provenienti dall'esterno, possono aumentare i valori di oscillazione sul motore.

In determinate circostanze può rendersi necessaria una completa equilibratura del rotore con l'elemento condotto.

Per garantire un funzionamento corretto e una lunga durata di vita, i valori di vibrazione specificati secondo ISO 10816 non devono essere superati nei punti di misura specificati del motore.

Tabella 7- 4 Valori di vibrazione radiale massimi consentiti per AH 80 ... 160[1)]

| Frequenza di oscillazione | Valori delle vibrazioni |
|---|---|
| < 6,3 Hz | Ampiezza di oscillazione s ≤ 0,16 mm |
| 6,3 ... 250 Hz | Velocità di vibrazione $v_{eff}$ ≤ 4,5 mm/s |
| > 250 Hz | Accelerazione di oscillazione a ≤ 10 m/s² |

Tabella 7- 5 Valori di vibrazione radiale massimi consentiti per AH 180 ... 280[1)]

| Frequenza di oscillazione | Valori delle vibrazioni |
|---|---|
| < 6,3 Hz | Ampiezza di oscillazione s ≤ 0,25 mm |
| 6,3 ... 63 Hz | Velocità di oscillazione $v_{eff}$ ≤ 7,1 mm/s |
| > 63 Hz | Accelerazione di oscillazione a ≤ 4,0 m/s² |

Tabella 7- 6 Valori di vibrazione assiale massimi consentiti per AH 80 ... AH 160[1)]

| Velocità di oscillazione | Accelerazione di oscillazione |
|---|---|
| $v_{eff}$ = 4,5 mm/s | $a_{peak}$ = 2,25 m/s² |

1) È necessario rispettare contemporaneamente i due valori

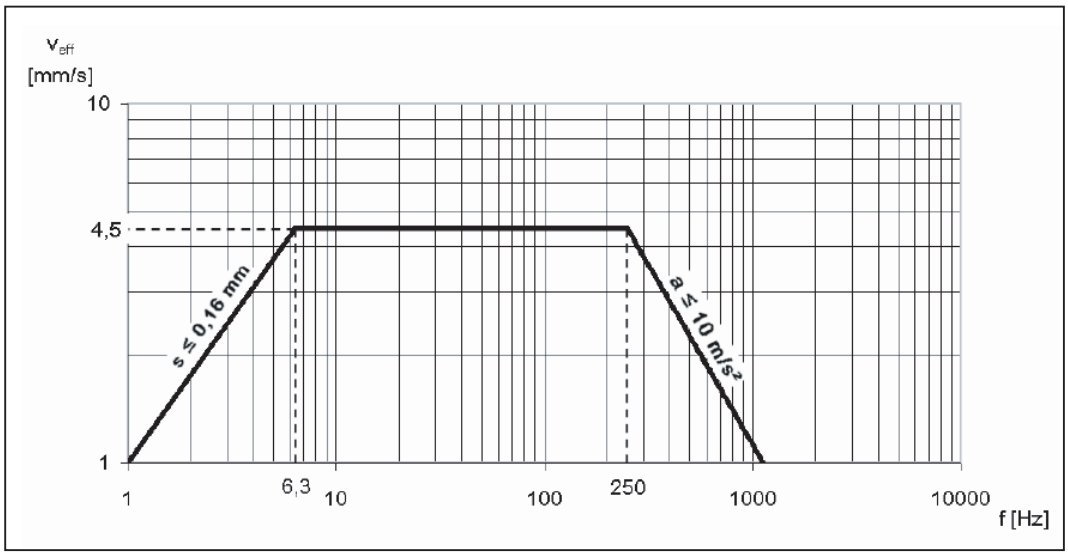



Figura 7-3 Velocità di oscillazione massima consentita con considerazione dell'ampiezza di oscillazione e dell'accelerazione di oscillazione per AH 80 ... AH 160

Tabella 7- 7 Valori di vibrazione assiale massimi consentiti per AH 180 ... AH 280[1)]

| Velocità di oscillazione | Accelerazione di oscillazione |
|---|---|
| $v_{eff}$ = 7,1 mm/s | $a_{peak}$ = 3,55 m/s² |

1) È necessario rispettare contemporaneamente i due valori

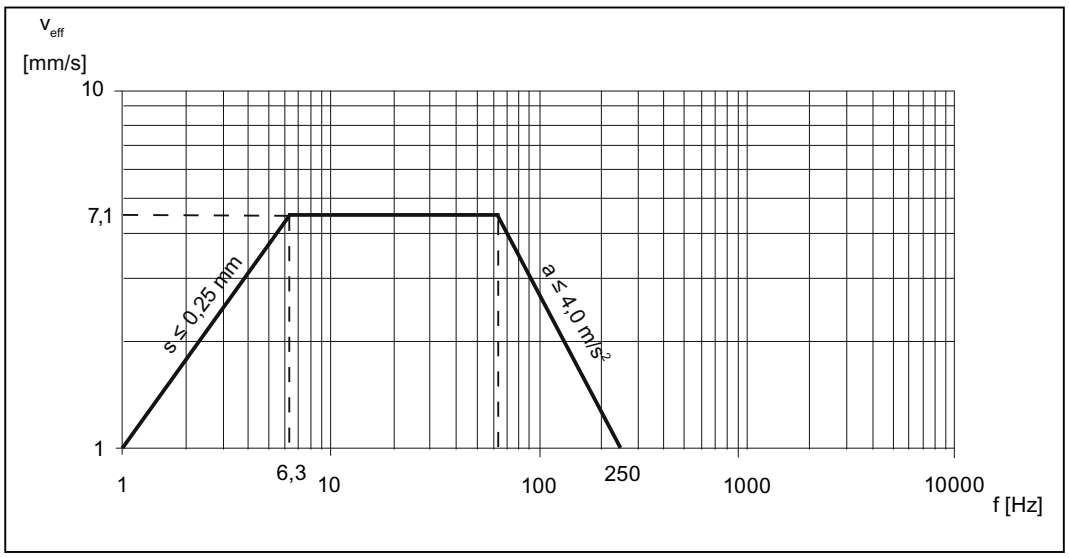



Figura 7-4 Velocità di oscillazione massima consentita con considerazione dell'ampiezza di oscillazione e dell'accelerazione di oscillazione per AH 180 ... AH 280

Per valutare la velocità di oscillazione, l'equipaggiamento di misura deve soddisfare i requisiti della norma ISO 2954. La valutazione dell'accelerazione di oscillazione deve avvenire come valore di picco su un arco di tempo nella gamma di frequenza da 10 a 2000 Hz.

Se si prevedono fonti di vibrazioni non trascurabili, superiori a 2000 Hz (ad es. frequenze di ingranamento), è necessario adeguare di conseguenza il campo di misura. I valori massimi ammessi non variano.

**Nota**

**Funzionamento continuo nell'ambito delle frequenze intrinseche**

Occorre evitare un funzionamento continuo del sistema alle frequenze intrinseche, perché ciò provoca generalmente un superamento dei valori di oscillazione ammessi e quindi un danno del sistema stesso. Per ridurre le vibrazioni, i motori montati sulla flangia si possono sorreggere con un supporto sul lato NDE.

**Nota**

La valutazione e le misurazioni (punti di misura, ...) delle vibrazioni avvengono conformemente alla norma ISO 10816-3.

## 7.9 Posa dei cavi in ambienti umidi

**Nota**

Se il motore è installato in un ambiente umido, i cavi di potenza e di segnale devono essere disposti come nella figura seguente.

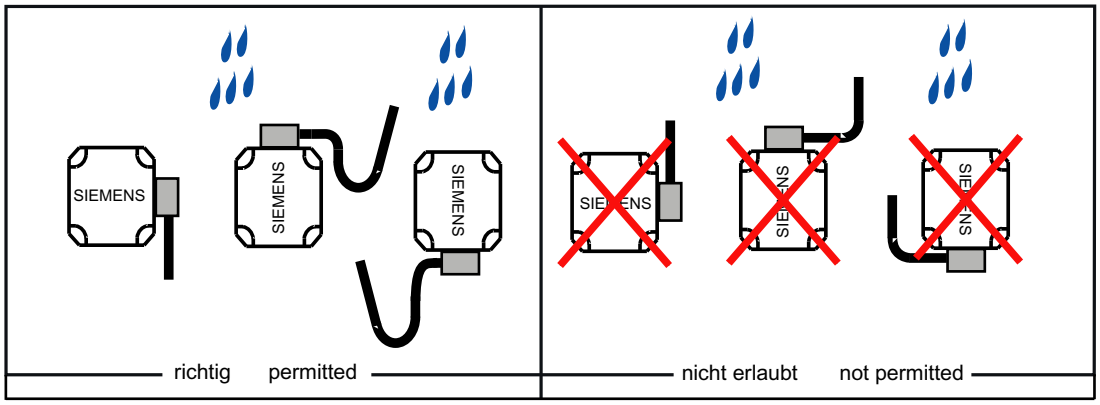



Figura 7-5 Schema di posa dei cavi in ambienti umidi

# 7.10 Montaggio di giunti rotanti con rotore su motori ad albero cavo 1PH8

## 7.10.1 Introduzione

I motori 1PH8 con albero cavo (13ª posizione del codice di ordinazione MLFB: "3") sono motori del mandrino principale per macchine utensili e centri di lavorazione e come tali sono provvisti di raffreddamento interno dell'utensile. Per la messa a disposizione del lubrorefrigerante nell'albero motore rotante è necessario un giunto rotante. All'estremità d'albero NDE è possibile applicare un giunto rotante con rotore. Oltre al lubrorefrigerante, appositi giunti rotanti possono permettere il passaggio di olio nebulizzato (lubrificazione in minima quantità), oli da taglio oppure anche, nello stato di fermo, aria compressa.

I giunti rotanti con rotore sono costituiti da un rotore con cuscinetto, uno statore, una carcassa con i collegamenti cavi e la guarnizione ad anello scorrevole. I giunti roranti con rotore sono facili da montare e da sostituire. Vengono avvitati nell'albero motore tramite la filettatura del rotore. Il vantaggio dei giunti rotanti consiste nel convogliamento del drenaggio tramite la carcassa e il collegamento di drenaggio integrato. Inoltre i giunti rotanti con rotore evitano la creazione di forze assiali sull'albero motore. Le forze assiali provocate dalla pressione del refrigerante vengono assorbite dal cuscinetto del giunto rotante.

A seconda dell'esecuzione dei giunti rotanti, gli anelli di tenuta sono applicati in modo stabile (guarnizione chiusa, ad es. DEUBLIN serie 1116 e 1108) o temporaneo (guarnizione apribile, ad es. DEUBLIN serie 902 e 1109). Con la guarnizione apribile le superfici di tenuta vengono separate quando non si ha alcuna pressione dei fluidi, ad es. in caso di cambio utensile. Il lubrorefrigerante passa dal tubo di alimentazione e dall'albero motore attraverso la guarnizione aperta. Questo drenaggio, così come il drenaggio derivante dall'usura degli anelli di tenuta, deve però essere convogliato tramite gli appositi tubi.

**Nota**

Per convogliare il drenaggio in modo sicuro, il tubo di drenaggio deve essere sempre orientato verso il basso in modo da evitare ritorni.

In caso contrario il giunto rotante e il motore possono essere sommersi e subire un'avaria!

### Esecuzione dell'albero cavo

Tabella 7- 8 Esecuzione dell'albero cavo

| | 1PH808□ | 1PH810□...1PH816□ |
|---|---|---|
| Filettatura su DE | M12 x 1,25-RH | M16 x 1,5-RH |
| Centratura su DE | ∅16H7 | ∅20H7 |
| Filettatura su NDE | M12 x 1,25-LH | M16 x 1,5-LH |
| Centratura su NDE | ∅14 + 0,008/-0,001 | ∅18 + 0,007/-0,003 |
| Giunto rotante | ∅8 | ∅11,5 |
| Superficie della chiave NDE | SW19 | SW27 |

## 7.10.2 Montaggio

Il giunto rotante per il lubrorefrigerante deve essere montato sulla centratura dell'albero NDE dell'albero motore. Il montaggio del giunto rotante avviene secondo le indicazioni del produttore.

**Nota**

Per il montaggio del giunto rotante, accertarsi che la filettatura venga avvitata saldamente all'estremità d'albero NDE e che il lubrorefrigerante non fuoriesca.

Durante il montaggio del giunto rotante occorre tenere conto delle specificità dei motori raffreddati ad aria e dei motori raffreddati ad acqua.

### Montaggio del giunto rotante per motori raffreddati ad acqua (11ª posizione del codice di ordinazione MLFB: 2)

Nei motori raffreddati ad acqua il giunto rotante può essere montato direttamente sul motore. Possono essere utilizzati giunti rotanti con collegamenti radiali o assiali.

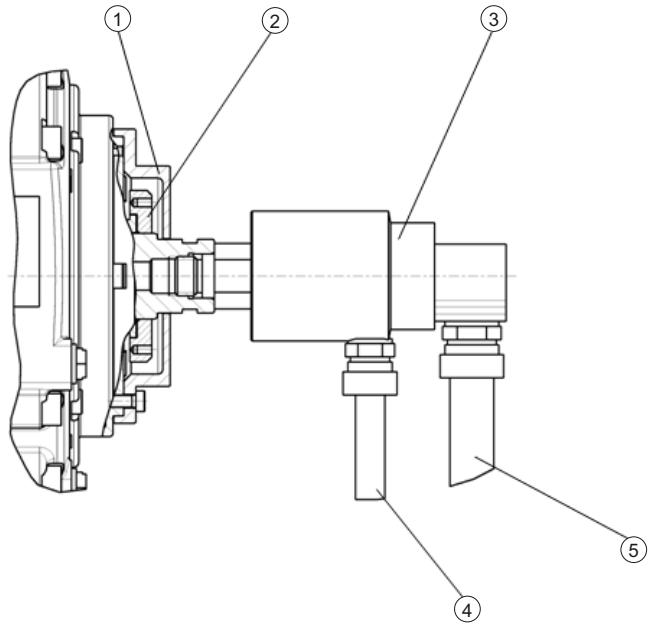
Operazioni di montaggio:

- Eventualmente eseguire un'equilibratura completa del motore tramite dischi di equilibratura esterni, dopodiché smontare il coperchio di tenuta ermetica.

  **Nota**

  Il coperchio di tenuta deve essere rimontato dopo l'equilibratura!

- Montare sul giunto rotante i tubi flessibili per mandata e drenaggio, eventualmente utilizzare dei gomiti.
- Avvitare il giunto rotante nell'estremità d'albero motore NDE e serrarlo con la coppia adeguata (utilizzare la chiave sull'estremità d'albero motore NDE come contrappunto).
- Posizionare il giunto rotante in modo che il collegamento di drenaggio si trovi nel punto più profondo (montaggio orizzontale).
- Posare il tubo di drenaggio sempre con pendenza verso il basso (min. 15°).
- Posare anche il tubo di mandata orientato verso il basso.
- Verificare manualmente che il rotore ruoti correttamente.
- Verificare la tenuta ermetica della struttura sotto pressione.




① Coperchio di tenuta
② Disco di equilibratura
③ Giunto rotante con rotore, ad es. DEUBLIN 1109-020-188
④ Tubo di drenaggio
⑤ Tubo di mandata

Figura 7-6 Giunto rotante motori raffreddati ad acqua

## Montaggio del giunto rotante per motori raffreddati ad aria (11ª posizione del codice MLFB: 0 o 1)

I motori raffreddati ad aria sono equipaggiati con una carcassa intermedia tra il motore e il ventilatore montato assialmente. La carcassa intermedia funge da alloggiamento del giunto rotante. È adatto per giunti rotanti di lunghezza max. di 120 mm (senza filettatura di collegamento del rotore e centraggio) e diametro max. di 55 mm. Per ragioni di ingombro, nei motori raffreddati ad aria si consiglia di utilizzare giunti rotanti con collegamenti radiali, ad es. DEUBLIN 1109-020-188. I giunti rotanti con collegamenti assiali non sono idonei! Prima di montare il giunto rotante occorre smontare il ventilatore con la carcassa intermedia. La carcassa intermedia deve essere provvista di una rientranza per i tubi di mandata del lubrorefrigerante e di drenaggio. La rientranza deve essere priva di bava e i tubi vanno protetti contro lo sfregamento.

Le aperture restanti tra la rientranza e i tubi devono essere richiuse in modo da evitare la fuoriuscita di aria di raffreddamento.

Oltre al tubo di drenaggio può essere necessario prevedere una condotta di ventilazione per compensare l'eventuale decompressione provocata dal ventilatore. A questo scopo un tubo flessibile va collegato al giunto rotante (tramite collegamento di ventilazione/drenaggio supplementare) e fatto uscire in alto dalla carcassa intermedia.

Operazioni di montaggio:

- Smontare ventilatore e carcassa intermedia dal motore.
- Eventualmente eseguire un'equilibratura completa del motore tramite dischi di equilibratura esterni, dopodiché smontare il coperchio di tenuta ermetica.

**Nota**

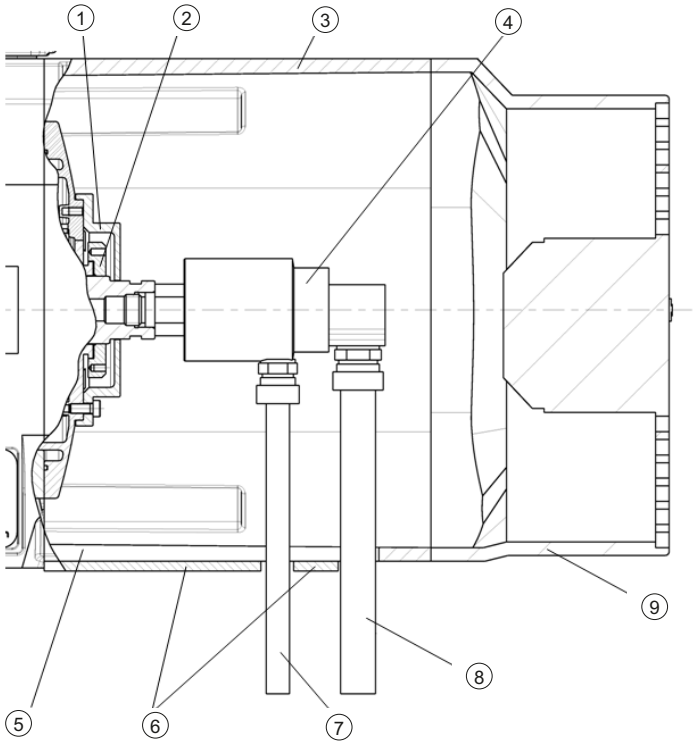
Il coperchio di tenuta deve essere rimontato dopo l'equilibratura!

- Montare sul giunto rotante i tubi flessibili per mandata e drenaggio, eventualmente utilizzare dei gomiti.

**Nota**

Utilizzare il giunto rotante con collegamenti radiali.

- Avvitare il giunto rotante nell'estremità d'albero motore NDE e serrarlo con la coppia adeguata (utilizzare la superficie della chiave sull'estremità d'albero motore NDE come contrappunto).
- Posizionare il giunto rotante in modo che il collegamento di drenaggio si trovi nel punto più profondo (montaggio orizzontale).
- Posare il tubo di drenaggio sempre con pendenza verso il basso (min. 15°).
- Posare anche il tubo di mandata orientato verso il basso.
- Eventualmente prevedere un tubo di ventilazione per la camera di drenaggio e condurlo verso l'esterno.
- Verificare manualmente che il rotore ruoti correttamente.
- Verificare la tenuta ermetica della struttura sotto pressione.
- Ricavare una rientranza nella carcassa intermedia per i tubi di mandata e di drenaggio.
- Spingere la carcassa intermedia con la rientranza sopra i tubi e avvitarla al motore.
- Avvitare il ventilatore alla carcassa intermedia.
- Chiudere le aperture restanti tra la rientranza e i tubi.




① Coperchio di tenuta
② Disco di equilibratura
③ Carcassa intermedia
④ Giunto rotante con rotore, ad es. DEUBLIN 1109-020-188
⑤ Rientranza
⑥ Calotta
⑦ Tubo di drenaggio
⑧ Tubo di mandata
⑨ Ventilatore

Figura 7-7 Giunto rotante di motori raffreddati ad aria

## Indicazioni di montaggio

- Non applicare protezioni antitorsione aggiuntive.
- Non collegare mai tubi direttamente al giunto rotante.
- Utilizzare sempre un tubo flessibile tra il giunto rotante e la tubazione fissa. A questo scopo posare il tubo flessibile a gomito e senza torsioni.
- Evitare ogni torsione dei tubi.
- Avvitare prima i tubi flessibili al giunto rotante, quindi il giunto rotante all'albero con la coppia impostata.

- Evitare le deformazioni dovute a lunghezze dei tubi errate e a materiale di montaggio non adatto.
- Mantenere sempre il giunto rotante e i tubi flessibili privi di tensione.
- Una volta montato, il giunto rotante deve poter ruotare leggermente.
- Mantenere i giunti rotanti privi di trucioli e bave.
- Posizionare il giunto rotante in modo che il collegamento di drenaggio si trovi nel punto più profondo (montaggio orizzontale).
- Posare il tubo di drenaggio sempre con pendenza verso il basso (min. 15°) e con grande sezione.
- Se il tubo di drenaggio è più alto del collegamento di drenaggio e se la guarnizione ad anello scorrevole è aperta, il giunto rotante ed eventualmente il motore vengono sommersi, il che può provocare un guasto.
- Posare anche il tubo di mandata con inclinazione verso il basso, in modo tale che con la guarnizione ad anello rotante aperta (ad es. in caso di cambio utensile o fermo) il lubrorefrigerante possa tornare nel tubo di mandata e non passare attraverso l'albero motore e il collegamento di drenaggio.
- Eseguire la filtrazione del lubrorefrigerante per evitare che particelle o trucioli possano raggiungere la guarnizione ad anello rotante e danneggiarla.

**Nota**

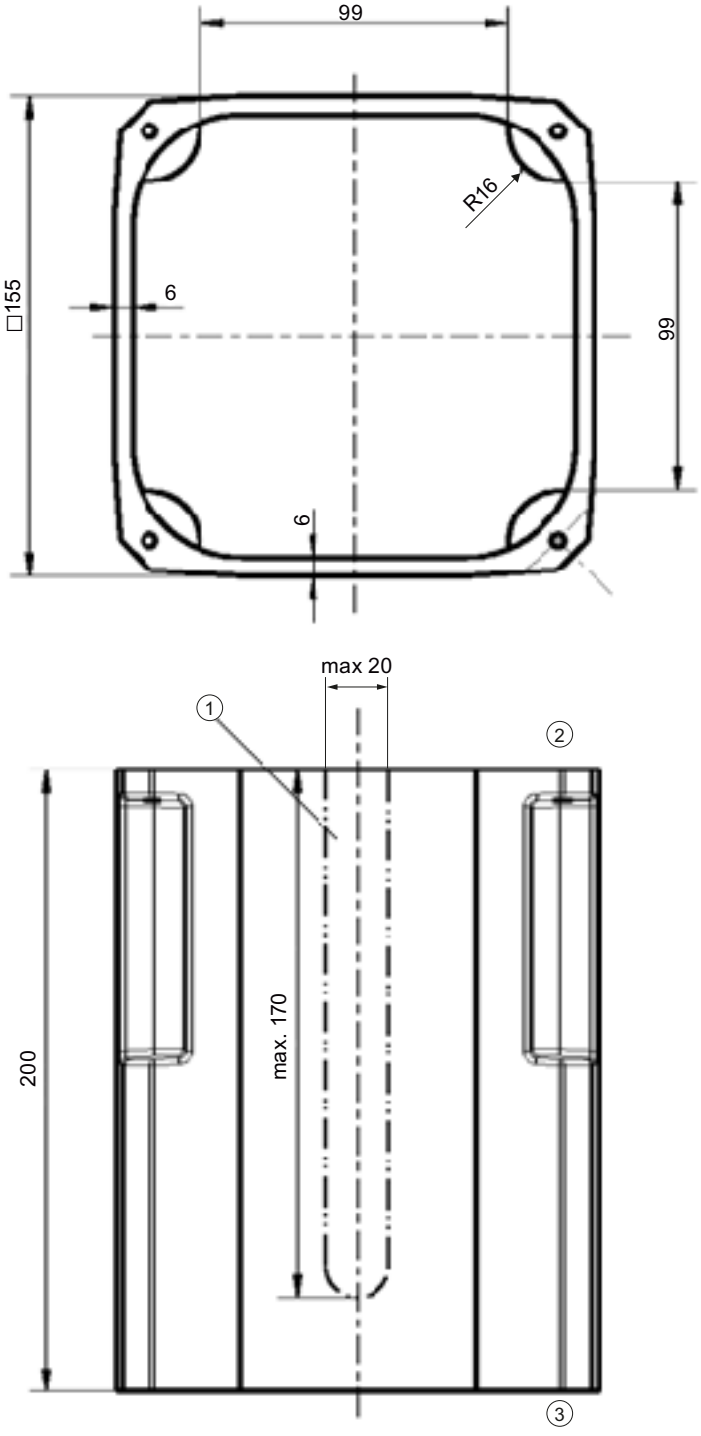
Per il montaggio del giunto rotante, accertarsi che la filettatura venga avvitata saldamente all'estremità d'albero NDE e che il lubrorefrigerante non fuoriesca.

- Controllare regolarmente l'ermeticità del giunto rotante e dei tubi flessibili.

**Nota**

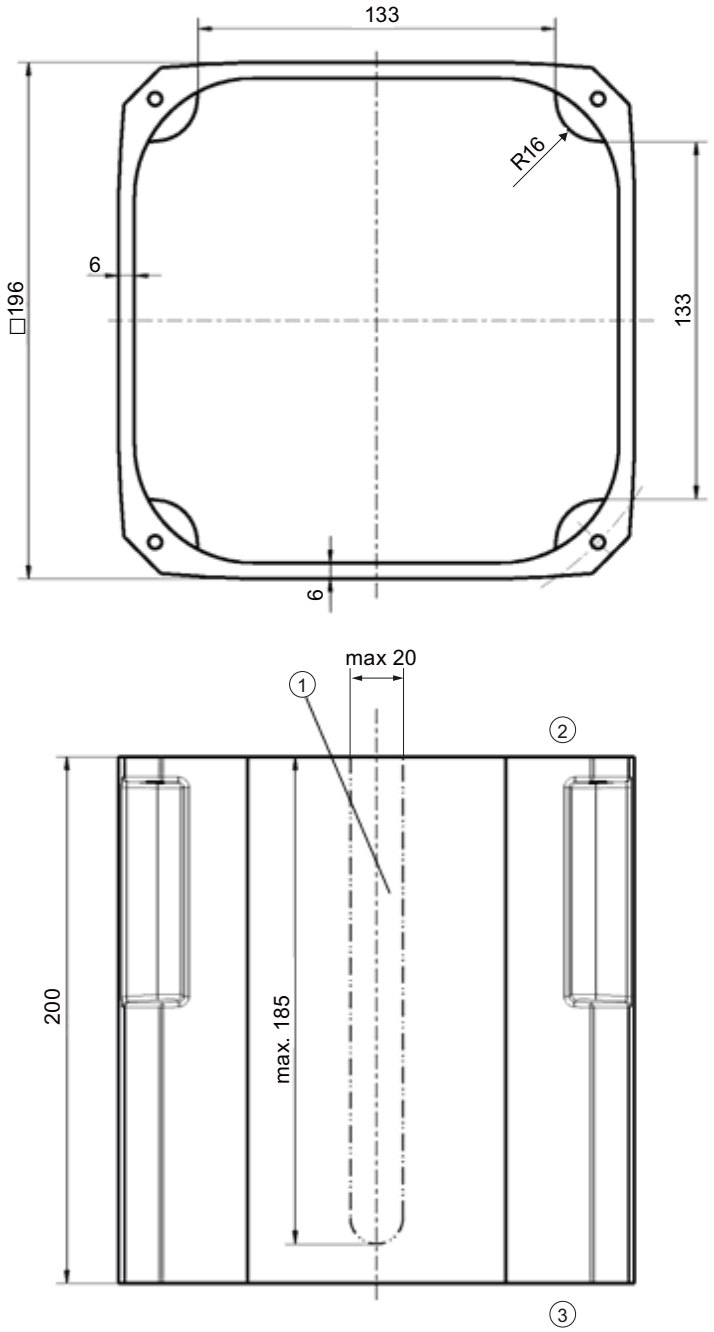
In caso di mancanza di ermeticità del giunto rotante e dei tubi flessibili, il motore può essere sommerso e subire un'avaria!

## Carcassa intermedia per motori raffreddati ad aria



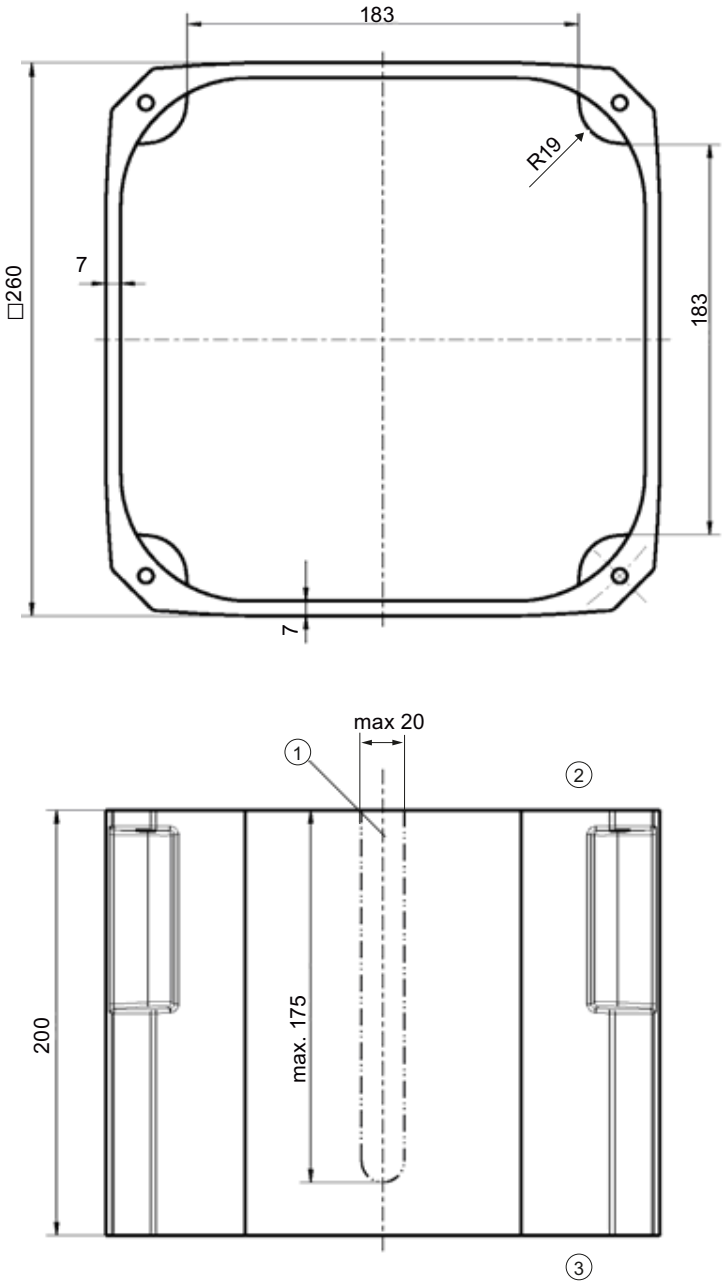

① Rientranza per tubi flessibili (da eseguire a carico del cliente)
② Lato del motore
③ Lato ventilatore

Figura 7-8 Carcassa intermedia AH80



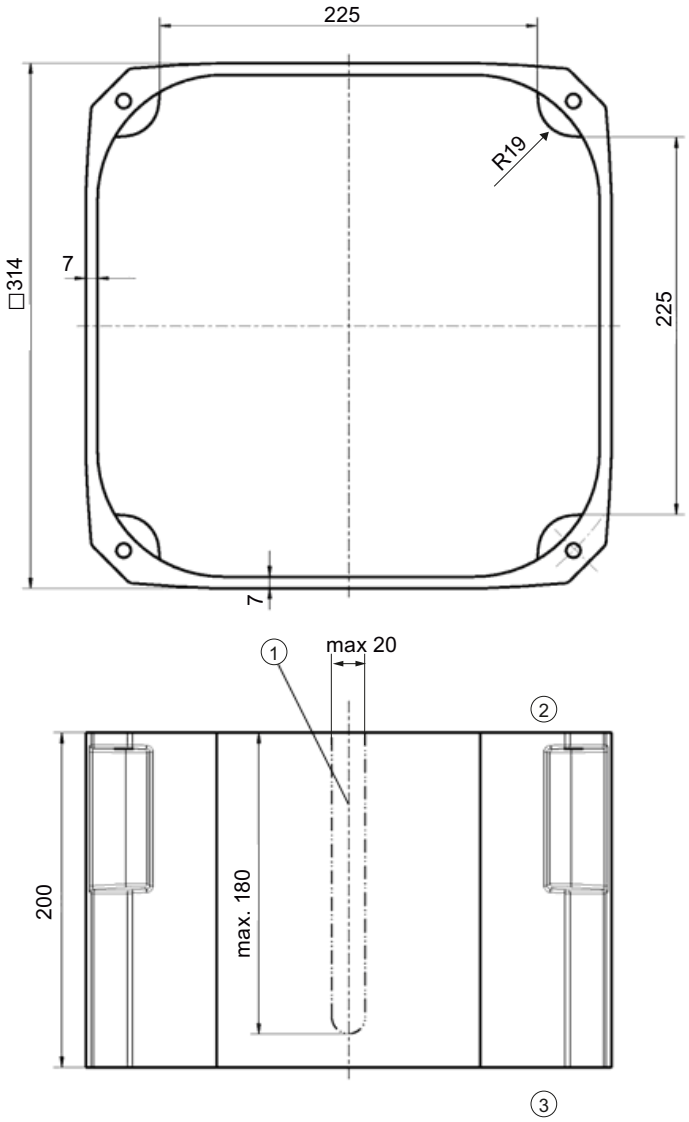

① Rientranza per tubi flessibili (da eseguire a carico del cliente)
② Lato del motore
③ Lato ventilatore

Figura 7-9 Carcassa intermedia AH100




① Rientranza per tubi flessibili (da eseguire a carico del cliente)
② Lato del motore
③ Lato ventilatore

Figura 7-10 Carcassa intermedia AH132




① Rientranza per tubi flessibili (da eseguire a carico del cliente)
② Lato del motore
③ Lato ventilatore

Figura 7-11 Carcassa intermedia AH160

# Disegni quotati

# 8

## 8.1 CAD CREATOR

### CAD CREATOR

Il CAD CREATOR, grazie all'interfaccia utente intuitiva, consente di creare rapidamente

- Disegni quotati
- dati CAD 2D/3D

e offre un supporto per realizzare la documentazione degli impianti a livello di informazioni specifiche di progettazione. Nella versione online sono attualmente disponibili i dati per i motori, gli azionamenti e i controllori CNC.

Per ulteriori informazioni consultare l'indirizzo Internet: http://www.siemens.com/cadcreator

**Motori**

- Motori sincroni 1FK7, 1FT7, 1FT6
- Motori sincroni integrati 1FE1
- Motori Torque completi 1FW3
- Motori Torque integrati 1FW6
- Motoriduttori 1FK7, 1FT7, 1FT6
- Motori sincroni/asincroni 1PH8
- Motori asincroni 1PH7, 1PH4, 1PL6, 1PM4, 1PM6
- Elettromandrini 2SP1
- Motori lineari 1FN3

**SINAMICS S120**

- Control Unit
- Power Module (Blocksize, Chassis)
- Line Module (Booksize, Chassis)
- Componenti lato rete
- Motor Module (Booksize, Chassis)
- Componenti del circuito intermedio
- Componenti di sistema aggiuntivi
- Componenti di potenza lato uscita
- Collegamento del sistema encoder
- Tecnica di collegamento MOTION-CONNECT

**SIMOTION**

- SIMOTION D
- SIMOTION C

**SINUMERIK solution line**

- Controllori
- Componenti operativi per controlli CNC

## Aggiornamento dei disegni quotati

**Nota**

La Siemens AG si riserva la facoltà di apportare, senza alcun preavviso, modifiche alle dimensioni della macchina, al fine di migliorare il prodotto. Quindi è possibile che i disegni quotati non siano aggiornati. I disegni quotati aggiornati possono essere richiesti gratuitamente al reparto di vendita della sede Siemens competente.

# Appendice

# A

## A.1 Definizione dei concetti

### Coppia nominale $M_N$

La coppia nominale è la coppia meccanica disponibile nell'albero, che può essere fornita nel rispetto delle condizioni termiche previste per il modo operativo secondo IEC 60034-1.

### Numero di giri nominale $n_N$

Si tratta del numero di giri in base al quale sono definiti la potenza nominale e la coppia nominale conformemente al modo operativo indicato secondo IEC 60034-1.

### Tensione nominale $U_N$

Tensione tra due fasi del motore per le quali sono definiti i dati nominali ($P_N$, $n_N$, ecc.). Per determinare la tensione nominale occorre considerare gli aspetti magnetici (saturazione del ferro) e termici.

### Corrente nominale $I_N$

Si tratta della corrente (valore di fase effettivo) che si manifesta con velocità nominale e coppia nominale e che può essere fornita nel rispetto delle condizioni termiche del modo operativo indicato secondo IEC 60034-1.

### Frequenza nominale $f_N$

Frequenza richiesta per i dati nominali ($P_N$, $n_N$, ecc.).

### Potenza nominale $P_N$

La potenza nominale è la potenza meccanica disponibile nell'albero, che può essere fornita nel rispetto delle condizioni termiche previste per il modo operativo secondo IEC 60034-1.

### Numero di giri per indebolimento di campo con potenza costante $n_2$

Numero di giri massimo raggiungibile per la potenza nominale in funzione del modo operativo secondo IEC 60034-1.

### Corrente a vuoto $I_\mu$

Si tratta della corrente (valore di fase effettivo) necessaria per azionare il motore a vuoto, con velocità nominale senza momento del carico. La corrente a vuoto determina la magnetizzazione del motore nella gamma della velocità base (numero ridotto di giri per indebolimento di campo).

### Velocità massima $n_{max}$

Il numero di giri massimo ammesso $n_{max}$ è determinato meccanicamente. Il numero di giri massimo $n_{max}$ non deve essere superato.

**⚠ CAUTELA**

Se il numero di giri $n_{max}$ viene superato possono verificarsi danni a cuscinetti, anelli di corto circuito, accoppiamenti stabili, ecc. Pertanto occorre accertarsi che il numero di giri impostato non superi il limite massimo, utilizzando un comando adeguato o attivando la sorveglianza del numero di giri nel sistema di azionamento.

Se $n_{S1} < n_{max}$, $n_{max}$ non deve essere superato in modo continuativo. Il numero di giri deve essere ridotto in funzione del ciclo di carico successivo, a meno che non venga definito un altro ciclo di carico (durata del ciclo 10 min):

### Coppia massima $M_{max}$

Coppia disponibile per brevi operazioni dinamiche (ad es. accelerazione).

### Corrente massima $I_{max}$

Si tratta della corrente (valore di fase effettivo) alla quale si generano il numero di giri nominale ($n_N$) e la coppia massima ($M_{max}$).

### Funzionamento S1 (funzionamento continuo)

Funzionamento con stato di carico costante, la cui durata è sufficiente per raggiungere la stabilità termica del motore.

### Funzionamento S6 (funzionamento intermittente)

Un funzionamento formato da una successione di cicli dello stesso tipo, ciascuno dei quali comprende un intervallo con carico del motore costante e un intervallo a vuoto. Salvo diversa indicazione, la durata dell'inserzione si riferisce a un ciclo di 10 min.

Tabella A- 1 Ad es.:

S6-40 % = 4 min sotto carico, 6 min con intervallo a vuoto
S6-60 % = 6 min sotto carico, 4 min con intervallo a vuoto

### Costante termica di tempo $T_{th}$

La costante termica di tempo descrive l'aumento di temperatura dell'avvolgimento del motore con un innalzamento repentino del carico alla coppia S1 consentita. Trascorso l'intervallo $T_{th}$ il motore ha raggiunto il 63% della sua temperatura di esercizio finale S1.

## A.2 Bibliografia

### Elenco delle pubblicazioni del manuale di progettazione

Un elenco aggiornato delle pubblicazioni, con le rispettive lingue disponibili, si trova in Internet all'indirizzo: www.siemens.com/motioncontrol/docu

### Cataloghi

| Sigla | Nome del catalogo |
|---|---|
| NC 61 | SINUMERIK & SINAMICS |
| NC 60 | SINUMERIK & SIMODRIVE |
| PM 21 | SIMOTION & SINAMICS |
| D 31 | SINAMICS e MOTORI per azionamenti monoasse |

### Documentazione elettronica

| Sigla | DOC ON CD |
|---|---|
| CD1 | Il sistema SINUMERIK<br>(con tutti i controlli SINUMERIK 840D/810D e SIMODRIVE 611D) |
| CD2 | Il sistema SINAMICS |

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