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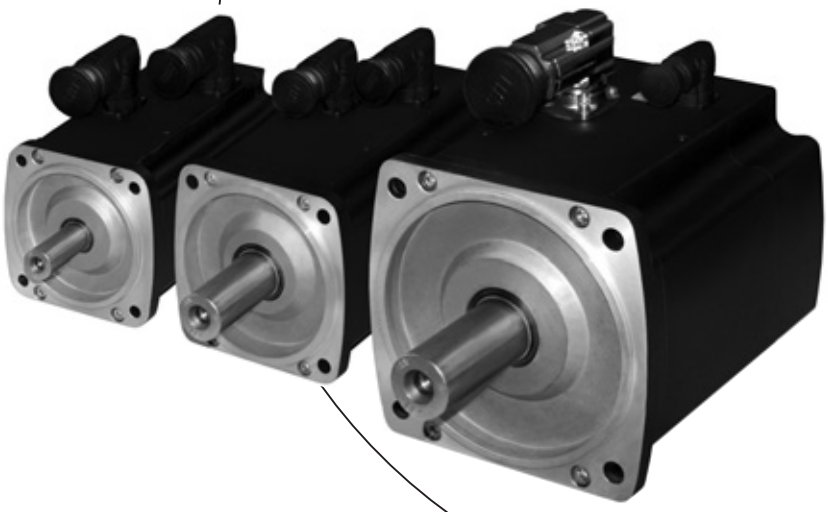

be in motion be in motion

Three-phase synchronous motors

DSC 45–100

Table of contents

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Issue 04/2012

1. Three-phase synchronous motors DSC 45-100, 540V

With its DSC 45-100 series, Baumüller is making the torque motor servo-ready. In developing this series, the focus was on improving ratings in order to achieve a higher torque density while also drastically reducing the volume of the unit. The typical servo speed range of up to 4000 min^{-1} is, however, still covered.
The motors feature a smooth housing surface is extremely easy to mount and offer a high degree of protection.

1.1. General technical data

Version:	IM B5	Horizontal mounting acc. to EN 60034-7
	IM V1	Vertical mounting, shaft end at the bottom acc. to EN 60034-7
	IM V3	Vertical mounting, shaft end at the top acc. to EN 60034-7 (Note: In the case of IP64 shaft ends, protection against the ingress of water and dust must be ensured.)
Degree of protection:	IP64	Standard: without shaft seal ring, with opposing plugs fitted and fully enclosed terminal boxes
	IP65	Option: with shaft seal ring, with opposing plugs fitted and fully enclosed terminal boxes
	IP65	Without consideration of shaft bushing with opposing plugs fitted and fully enclosed terminal boxes
	IP67	Without consideration of the shaft bushing for IC410 and IC 3W7, fitted with mating connectors, not for motors with terminal box
Connection	Main connection	8-pole appliance socket or terminal box
	Encoder connection	Socket 12 - or 17-pole, socket 9-pole for EnDat 2.2
	Brake	Connection in the main connection
	Temperature sensor	Standard in the main connection and optional in the encoder socket
Temperature sensor	KTY84 - 130	Linear temperature sensor for the analysis in the controller
Cooling type	IC 410	Size 045-100 surface-cooled without fan
	IC 416	Size 056-100 surface-cooled with fan
	IC 3W7	Size 071-100 water-cooled machine
Temperature rise	$\Delta\vartheta$ = 105 K	Insulation class F acc. to EN 60034
Environmental conditions for running	Class 3K3/3Z12 as per DIN EN 60721-3-3:1995, however: temperature range 0-40 °C	Represents 0 to 40 °C at 5 % to 85 % rel. humidity and an absolute humidity of 1 g/m³ to 25 g/m³ and an installation height up to approx. 1,400 m.
Environmental conditions for long-term storage	Class 1K2/1M1 DIN EN 60721-3-1:1995, however: temperature range -15-60 °C	Represents -15 to 60 °C at 5 % to 85 % rel. humidity and an absolute humidity of 1 g/m³ to 25 g/m³; at temperatures below 3 °C you should drain the cooling water
Environmental conditions for transport	Class 2K2/2M1 DIN EN 60721-3-2:1995, however: temperature range -15-60 °C	Represents -15 to 60 °C at 5 % to 85 % rel. humidity and an absolute humidity of 1 g/m³ to 25 g/m³; at temperatures below 3 °C you should drain the cooling water
Paint	Black matt	RAL 9005
Bearings	D end	Standard: Ball bearings. Optional: Roller bearings (for size 56-100)
	ND end	Ball bearings, locating bearings
Bearing service life	L_{10h} 20.000h	Approximate value, rolling-contact bearings with long-term grease lubrication
Balance quality	A	Acc. to DIN EN 60034-14 (VDE 0530 Part 14): 2004-09
	B	On request (for ball bearing only)
True running	N	Standard: Normal acc. to DIN 42955
	R	Optional: Reduced acc. to DIN 42955

Vibration-resistant up to	Radial 3 g	10 Hz to 100 Hz acc. to EN 60068-2-6
	Axial 0.5g	10 Hz to 100 Hz acc. to EN 60068-2-6
Flange	as per standard IEC standard	Centralization diameter: tolerance j6
Shaft end	Cylindrical	Smooth acc. to DIN 748 (also available with key DIN 6885)
		Centralization with female thread as per DIN 332 Form D
Holding brake	Option	Zero play permanent magnet brake
Speed actual value encoder	Resolver	Standard, see Chapter 3.3
	Sincos encoder	Optional, see Chapter 3.3
Approvals	CE; c UL us	Standard

1.2. Definition of ratings

1.2.1. Definitions of power ratings for air-cooled machines

The power ratings (torques) listed in the table apply to continuous operation (S1) at the rated speed and a maximum ambient temperature of 40°C, for machines installed below 1,000 m a.m.s.l.
If motors are to be operated at an ambient temperature of more than 40°C, or altitudes above 1,000 m a.m.s.l., the required list power rating P_L (list torque M_r) is calculated from the product of factors k_1 and k_2 (specified in the table below) and the required power rating P (torque M).

Ambient temperature	40°C	45°C	50°C	55°C	60°C
Correction factor k_1	1	1.06	1.13	1.22	1.34
Altitude a.m.s.l. up to	1.000 m	2.000 m	3.000 m	4.000 m	5.000 m
Correction factor k_2	1	1.07	1.16	1.27	1.55

Design changes may be necessary in the case of ambient temperatures above 40°C and installation of motors in an enclosure: For this reason, it is imperative that the manufacturer is contacted.

If, in the case of an increasing site altitude above 1.000 m, the ambient temperature decreases by approx. 10°C
per 1.000 m increase, no power correction is necessary (note the minimum operating temperature).

1.2.2. Definitions of power ratings for water-cooled machines

The power ratings (torques) that appear in the list apply to permanent operation S1 at nominal speed, provided the cooling circuit requirements for water-cooled motors are met!

The reduction factors included in the table below must be considered when operating DST motors with higher coolant inlet temperatures:

Coolant inlet temperature	25	30	35	40	45
Percentage of list performance (torque)	100 %	97 %	95 %	92 %	89 %

1.3. Water cooling

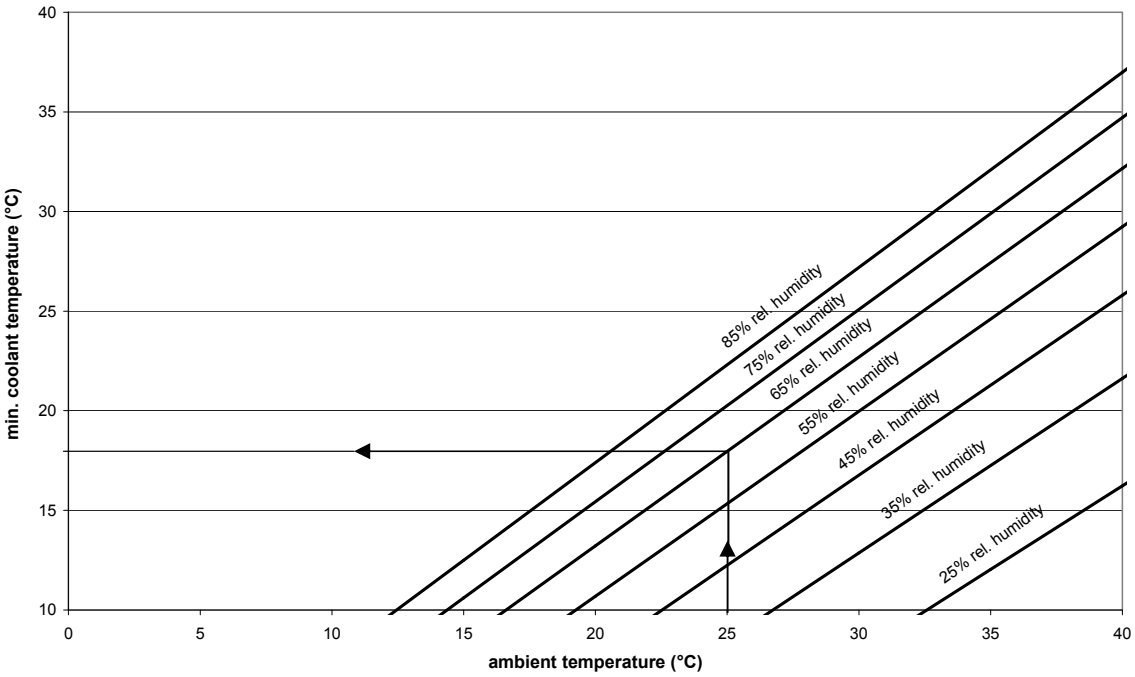
1.3.1. Coolant consistency

The coolant must satisfy the following specifications:

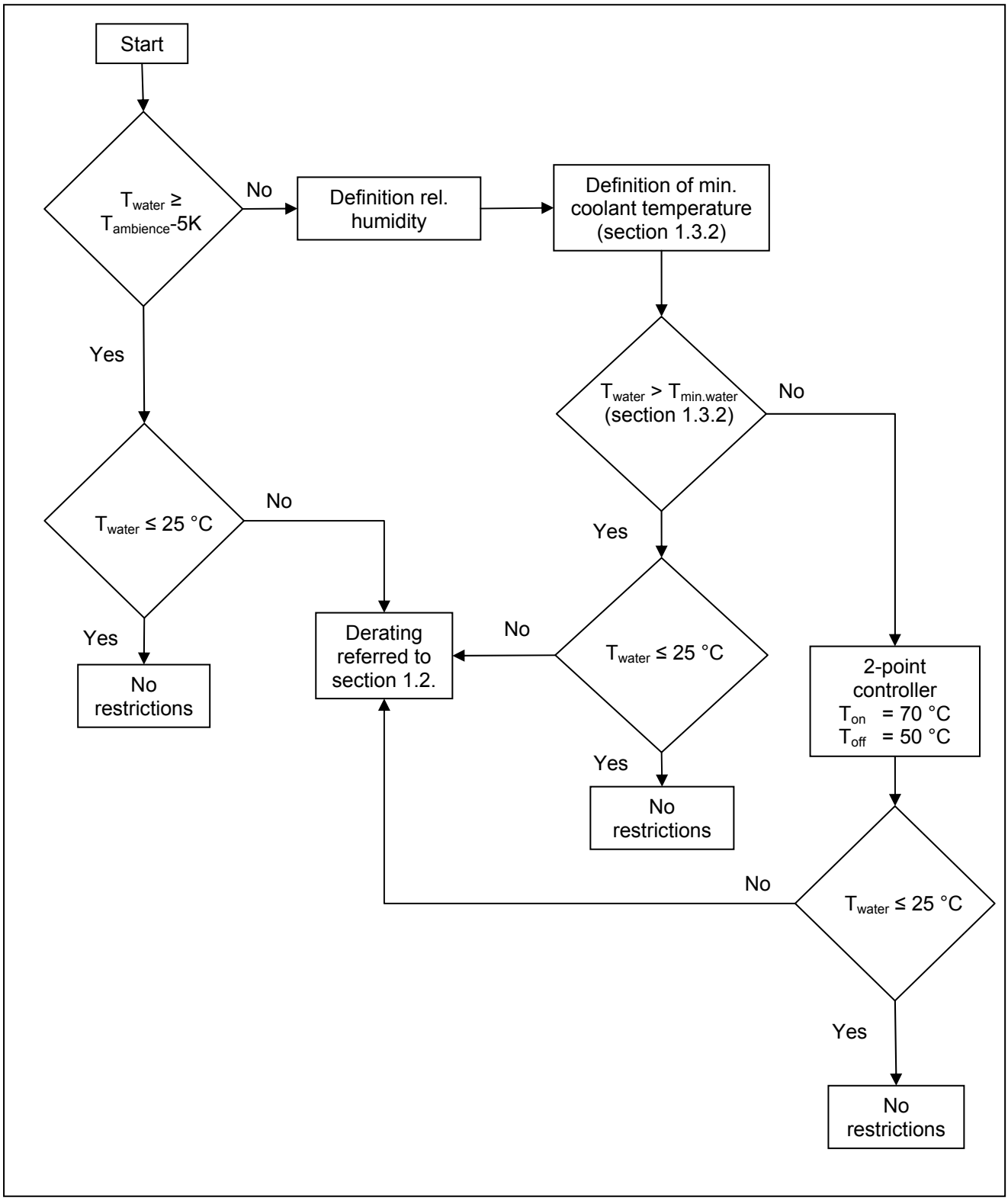
Conditions	Unit	Value
Maximum permitted system pressure	bar	6
Temperature of coolant - for motor	° C	10 to 25
pH value (at 20° C)	---	6.5 to 9
Overall hardness	mmol/l	1.43 to 2.5
Chloride - Cl^-	mg/l	< 200
Sulphate - SO_4^{2-}	mg/l	< 200
Oil	mg/l	< 1
Permitted particle size of solid foreign objects, particles (e.g. sand)	mm	< 0.1

Clean water that is free of dirt and suspended matter must be used as a coolant.

1.3.2. Min. coolant temperature against ambient temperature and humidity



The allowed coolant temperature depends on relative humidity and ambient temperature. For example with an ambient temperature of 25 °C and a relative humidity of 65% the minimum coolant temperature is 18 °C. Because these are limiting values on practical side a coolant temperature greater than 18 °C should be used. If this minimum coolant temperature will be under run the two- point controller of Baumüller drive must be used to avoid condensation.



Note:
The supply of cooling fluid must be interrupted to prevent condensation when storing for an extended period. In addition, at ambient temperatures < 3°C and if the motor has not run for an extended period, drain the cooling fluid to prevent damage caused by frost. When using anti-freeze you need to consult the manufacturer.

1.3.3. Specifications for required coolant volume flows

Motor type	Volume flow [l/min]	Pressure decrease ± 15 % [bar]	Heating [K]	Max. coolant pressure [bar]	Connection (G internal thread)
DSC071K64W	5	0,33	3	6	stainless steel tube Ø8x1
DSC071S64W	5	0,4	5	6	stainless steel tube Ø8x1
DSC071M64W	5	0,5	6	6	stainless steel tube Ø8x1

Motor type	Volume flow [l/min]	Pressure decrease ± 15 % [bar]	Heating [K]	Max. coolant pressure [bar]	Connection (G internal thread)
DSC100K64W	5	0,34	3	6	stainless steel tube Ø8x1
DSC100S64W	5	0,4	5	6	stainless steel tube Ø8x1
DSC100M64W	5	0,46	7	6	stainless steel tube Ø8x1

Sufficient quantities of additives for corrosion and germ protection must be mixed in. The additive type and dosage are based on recommendations from the additive manufacturer and the prevailing ambient conditions.

1.3.4. Materials in the motor that make contact with the product

The following materials that make contact with the medium are used in the motor:

Cooling system: stainless steel

Water connections: According to standard, the motors are supplied with a stainless steel tube Ø8x1 without additional connection technology. The water connection with the John Guest - quick connector SM 040 808 S can be optionally provided (dia 8 by dia 8). Please include this option including the order code when ordering.

1.4. Winding insulation and heating

The insulation is resistant to gases and vapours from combustible materials and satisfies requirements relating to humidity protection and tropical insulation.

The motors are designed for an operation on converters with intermediate link voltages of up to 540V + 10%. Higher intermediate link voltages of up to ≤ 800V are possible, if voltage spikes on the motor terminals are limited to <1200V by suitable filters in the motor supply line.

1.5. Explanation of motor data

n_N	Rated speed [rpm]
M_0	Nominal torque [Nm] with speeds ≥ 1 [rpm] without time limit
I_0	nominal current [A] with speeds ≥ 1 [rpm] without time limit, I_0 is the r.m.s. value
$M_{0,max}$	Maximum static torque [Nm] with maximum current [A] and speed = 0, momentarily
$I_{0,max}$	Static current [A] at $M_{o,\ max}$; I_{0max} is the effective value
P_N	Rated output [kW] with M_N and n_N (see Performance definition)
M_N	Rated torque [Nm]
I_N	Rated effective current [A]
$k_{E\ /\ cold}$	Voltage constant (EMF) to [V per 1000 rpm]
f_N	Rated frequency [Hz]
J	Rotor inertia incl. resolver without holding brake [kgm²]
m	Motor mass [kg]

When the converter is operating, the specified rated outputs and torques at the rated speed are achieved with a clocking frequency of ≥ 4 kHz in the power divider. We recommend a cycle frequency of > 6 kHz.
All converters scheduled for use must have the option of field weakening as a mandatory requirement.

The ***sizemaXX*** drive configurator is available at *www.baumueller.de* for designing the motors and the overall drive system.

1.6. Type key

DSC	G	100	S	64	U	20	5

DC link voltage:	5	540 V
Rated speed class:	E.g., 20	2000 min^{-1}
Cooling	U	Without fan
	O	With fan
:	W	Water cooling
Degree of protection:	64	IP64
	65	IP 65
Length:	K	
	S	
	M	
Size:	045	
	056	
	071	
	100	
Holding brake:	-	With
	G	Without
Motor type:	DSC	Three-phase synchronous compact

2. Technical data

2.1. DSC045

3 AC 400 V mains voltage for converters with unregulated supply

Motor type	Nom. speed	Stand-still torque[1)]	Stand-still current[1)]	max. static torque	Max. static current	Rated out-put[1)]	Rated torque[1)]	Rated current[1)]	Voltage constant	Rated fre-quency	Rotor inertia (motor)[2)]	Weight[3)]
	n_N min^{-1}	M_0 Nm	I_0 A	$M_{0.max}$ Nm	$I_{0.max}$ A	P_N kW	M_N Nm	I_N A	$k_{E/cold}$ $V/_{10001/min}$	f_N Hz	J $kgcm^2$	m kg
DSC045K64U20-5	2000	2,7	1,3	8,5	4,8	0,5	2,5	1,3	141,8	166,7	1,4	4,0
DSC045S64U20-5	2000	4,5	2,0	17,0	8,7	0,9	4,1	1,9	153,9	166,7	2,3	5,5
DSC045M64U20-5	2000	6,2	2,6	25,5	12,2	1,1	5,4	2,3	161,3	166,7	3,2	7,0
DSC045K64U30-5	3000	2,7	1,9	8,5	6,8	0,7	2,3	1,7	99,6	250,0	1,4	4,0
DSC045S64U30-5	3000	4,5	2,7	17,0	11,9	1,1	3,5	2,2	110,7	250,0	2,3	5,5
DSC045M64U30-5	3000	6,2	3,7	25,5	17,6	1,3	4,2	2,6	113,3	250,0	3,2	7,0
DSC045K64U40-5	4000	2,7	2,4	8,5	8,7	0,8	2,0	1,9	77,8	333,3	1,4	4,0
DSC045S64U40-5	4000	4,5	3,5	17,0	15,3	1,2	2,8	2,4	86,3	333,3	2,3	5,5
DSC045M64U40-5	4000	6,2	4,7	25,5	22,6	1,0	2,5	2,2	88,4	333,3	3,2	7,0

[1)] Coil overtemperature Δ T < 105K; direct flange mounting (mounting plate 250 x 250 x 10 mm)

[2)] Rotor inertia moment with PE brake: +1.0 kgcm²

[3)] Weight with PE brake: +1.0 kg

2.2. DSC056

DSC 056..64 U.. (without fan)

3 AC 400 V mains voltage for converters with unregulated supply

Motor type	Nom. speed	Stand-still torque[1)]	Stand-still current[1)]	max. static torque	Max. static current	Rated out-put[1)]	Rated torque[1)]	Rated current[1)]	Voltage constant	Rated fre-quency	Rotor inertia (motor)[2)]	Weight[3)]
	n_N min^{-1}	M_0 Nm	I_0 A	$M_{0.max}$ Nm	$I_{0.max}$ A	P_N kW	M_N Nm	I_N A	$k_{E/cold}$ $V/_{10001/min}$	f_N Hz	J $kgcm^2$	m kg
DSC056K64U10-5	1000	6,2	1,6	16,0	4,9	0,6	6,1	1,6	258,5	83,3	4,4	7,0
DSC056S64U10-5	1000	10,5	2,4	32,0	8,5	1,0	9,8	2,2	297,7	83,3	7,5	9,5
DSC056M64U10-5	1000	14,3	3,1	48,0	12,0	1,5	14,0	3,0	315,6	83,3	10,6	12,0
DSC056K64U20-5	2000	6,2	3,0	16,0	8,9	1,2	5,8	2,8	142,1	166,7	4,4	7,0
DSC056S64U20-5	2000	10,5	4,4	32,0	15,7	1,9	8,9	3,8	161,2	166,7	7,5	9,5
DSC056M64U20-5	2000	14,3	5,7	48,0	22,6	2,6	12,3	5,0	167,9	166,7	10,6	12,0
DSC056K64U30-5	3000	6,2	4,2	16,0	12,8	1,7	5,4	3,8	99,6	250,0	4,4	7,0
DSC056S64U30-5	3000	10,5	6,3	32,0	22,7	2,4	7,7	4,8	111,9	250,0	7,5	9,5
DSC056M64U30-5	3000	14,3	8,2	48,0	32,3	3,0	9,4	5,6	117,5	250,0	10,6	12,0
DSC056K64U40-5	4000	6,2	5,4	16,0	16,3	2,0	4,8	4,3	78,4	333,3	4,4	7,0
DSC056S64U40-5	4000	10,5	8,1	32,0	29,0	2,7	6,4	5,2	87,3	333,3	7,5	9,5

[1)] Coil overtemperature ∆ T < 105K; direct flange mounting (mounting plate 450 x 400 x 30 mm)

[2)] Rotor inertia moment with PE brake: +2.9 kgcm²

[3)] Weight with PE brake: +2.0 kg

DSC 056..64 O.. (with fan)

3 AC 400 V mains voltage for converters with unregulated supply

Motor type	Nom. speed	Stand-still torque[1)]	Stand-still current[1)]	max. static torque	Max. static current	Rated out-put[1)]	Rated torque[1)]	Rated current[1)]	Voltage constant	Rated fre-quency	Rotor inertia (motor)[2)]	Weight[3)]
	n_N min^{-1}	M_0 Nm	I_0 A	$M_{0.max}$ Nm	$I_{0.max}$ A	P_N kW	M_N Nm	I_N A	$k_{E/cold}$ $V/_{10001/min}$	f_N Hz	J $kgcm^2$	m kg
DSC056K64O10-5	900	7,2	1,9	16,0	4,9	0,7	7,2	1,9	258,5	75,0	4,4	10,0
DSC056S64O10-5	900	13,8	3,1	32,0	8,5	1,3	13,5	3,1	297,7	75,0	7,5	12,5
DSC056M64O10-5	900	21,0	4,5	48,0	12,0	1,9	20,5	4,4	315,6	75,0	10,6	15,0
DSC056K64O20-5	1900	7,2	3,5	16,0	8,9	1,4	7,1	3,4	142,1	158,3	4,4	10,0
DSC056S64O20-5	1900	13,8	5,6	32,0	15,7	2,6	13,2	5,6	161,2	158,3	7,5	12,5
DSC056M64O20-5	1800	21,0	8,4	48,0	22,6	3,8	20,0	8,1	167,9	150,0	10,6	15,0
DSC056K64O30-5	2800	7,2	4,9	16,0	12,8	2,1	7,0	4,8	99,6	233,3	4,4	10,0
DSC056S64O30-5	2800	13,8	8,3	32,0	22,7	3,8	12,8	7,8	111,9	233,3	7,5	12,5
DSC056M64O30-5	2600	21,0	12	48,0	32,3	5,3	19,5	11,3	117,5	216,7	10,6	15,0
DSC056K64O40-5	3700	7,2	6,3	16,0	16,3	2,6	6,8	6,0	78,4	308,3	4,4	10,0
DSC056S64O40-5	3700	13,8	10,7	32,0	29,0	4,7	12,2	9,7	87,3	308,3	7,5	12,5

[1)] Coil overtemperature ∆ T < 105K; direct flange mounting (mounting plate 450 x 400 x 30 mm)

[2)] Rotor inertia moment with PE brake: +2.9 kgcm²

[3)] Weight with PE brake: +2.0 kg

2.3. DSC071

DSC071..64 U.. (without fan)

3 AC 400 V mains voltage for converters with unregulated supply

Motor type	Nom. speed	Stand-still torque[1)]	Stand-still current[1)]	max. static torque	Max. static current	Rated out-put[1)]	Rated torque[1)]	Rated current[1)]	Voltage constant	Rated fre-quency	Rotor inertia (motor)[2)]	Weight[3)]
	n_N min^{-1}	M_0 Nm	I_0 A	$M_{0.max}$ Nm	$I_{0.max}$ A	P_N kW	M_N Nm	I_N A	$k_{E/cold}$ $V/_{10001/min}$	f_N Hz	J $kgcm^2$	m kg
DSC071K64U10-5	1000	12,0	3,2	28,0	8,7	1,2	11,5	3,0	259,6	83,3	12,6	11,5
DSC071S64U10-5	1000	21,5	4,8	56,0	15,0	2,2	20,9	4,7	302,9	83,3	21,8	16,5
DSC071M64U10-5	1000	28,7	6,0	84,0	21,3	2,8	26,9	5,7	319,5	83,3	31,1	21,5
DSC071K64U20-5	2000	12,0	5,9	28,0	16,3	2,3	11,0	5,5	139,8	166,7	12,6	11,5
DSC071S64U20-5	2000	21,5	9,2	56,0	28,5	4,0	19,0	8,1	159,8	166,7	21,8	16,5
DSC071M64U20-5	2000	28,7	11,4	84,0	40,2	5,1	24,1	9,7	169,8	166,7	31,1	21,5
DSC071K64U30-5	3000	12,0	8,4	28,0	23,3	3,1	10,0	7,0	98,2	250,0	12,6	11,5
DSC071S64U30-5	3000	21,5	13,6	56,0	42,5	5,0	15,9	10,3	106,5	250,0	21,8	16,5
DSC071M64U30-5	3000	28,7	16,4	84,0	58,2	6,2	19,8	11,6	117,3	250,0	31,1	21,5
DSC071K64U40-5	4000	12,0	11,2	28,0	31,3	3,6	8,7	8,3	73,2	333,3	12,6	11,5
DSC071S64U40-5	4000	21,5	16,8	56,0	52,7	4,8	11,4	9,3	86,5	333,3	21,8	16,5

[1)] Coil overtemperature ∆ T < 105K; direct flange mounting (mounting plate 450 x 400 x 30 mm³)

[2)] Rotor inertia moment with PE brake: +7.9 kgcm²

[3)] Weight with PE brake: +3.0 kg

DSC071..64 O.. (with fan)

3 AC 400 V mains voltage for converters with unregulated supply

Motor type	Nom. speed	Stand-still torque[1)]	Stand-still current[1)]	max. static torque	Max. static current	Rated out-put[1)]	Rated torque[1)]	Rated current[1)]	Voltage constant	Rated fre-quency	Rotor inertia (motor)[2)]	Weight[3)]
	n_N min^{-1}	M_0 Nm	I_0 A	$M_{0.max}$ Nm	$I_{0.max}$ A	P_N kW	M_N Nm	I_N A	$k_{E/cold}$ $V/_{10001/min}$	f_N Hz	J $kgcm^2$	m kg
DSC071K64O10-5	1000	15,7	4,2	28,0	8,7	1,6	15,3	4,1	259,6	83,3	12,6	15,0
DSC071S64O10-5	900	29,0	6,5	56,0	15,0	2,7	28,7	6,5	302,9	75,0	21,8	20,0
DSC071M64O10-5	900	40,0	8,5	84,0	21,3	3,6	38,5	8,2	319,5	75,0	31,1	25,0
DSC071K64O20-5	2000	15,7	7,8	28,0	16,3	3,1	14,9	7,4	139,8	166,7	12,6	15,0
DSC071S64O20-5	1800	29,0	12,4	56,0	28,5	5,2	27,8	12,0	159,8	150,0	21,8	20,0
DSC071M64O20-5	1800	40,0	16,0	84,0	40,2	7,0	37,0	14,9	169,8	150,0	31,1	25,0
DSC071K64O30-5	2900	15,7	11,0	28,0	23,3	4,4	14,4	10,2	98,2	241,7	12,6	15,0
DSC071S64O30-5	2800	29,0	18,6	56,0	42,5	7,5	25,5	16,5	106,5	233,3	21,8	20,0
DSC071M64O30-5	2700	40,0	23,1	84,0	58,2	10,0	35,5	20,6	117,3	225,0	31,1	25,0
DSC071K64O40-5	3900	15,7	14,8	28,0	31,3	5,6	13,8	13,2	73,2	325,0	12,6	15,0
DSC071S64O40-5	3600	29,0	22,9	56,0	51,4	8,6	22,7	18,1	86,5	300,0	21,8	20,0

[1)] Coil overtemperature ∆ T < 105K; direct flange mounting (mounting plate 450 x 400 x 30 mm)

[2)] Rotor inertia moment with PE brake: +7.9 kgcm²

[3)] Weight with PE brake: +3.0 kg

DSC071..64 W.. (water cooled)

3 AC 400 V mains voltage for converters with unregulated supply

Motor type	Nom. speed	Stand-still torque[1)]	Stand-still current[1)]	max. static torque	Max. static current	Rated out-put[1)]	Rated torque[1)]	Rated current[1)]	Voltage constant	Rated fre-quency	Rotor inertia (motor)[2)]	Weight[3)]
	n_N min^{-1}	M_0 Nm	I_0 A	$M_{0.max}$ Nm	$I_{0.max}$ A	P_N kW	M_N Nm	I_N A	$k_{E/cold}$ $V/_{10001/min}$	f_N Hz	J $kgcm^2$	m kg
DSC071K64W10-5	900	20	5,4	27	8,6	1,84	20	5,4	260	75	12,6	11,7
DSC071S64W10-5	750	39	9,1	55	14,7	3	39	9,1	303	62,5	21,8	16,1
DSC071M64W10-5	800	58	12,8	82	20,9	4,8	57	12,7	320	66,6	31,1	20,4
DSC071K64W20-5	1800	20	10	27	15,9	3,6	19	9,9	140	150	12,6	11,7
DSC071S64W20-5	1600	39	17,3	55	27,8	6,4	38	17	160	133,3	21,8	16,1
DSC071M64W20-5	1600	58	24,1	82	39,3	9,5	57	23,6	170	133,3	31,1	20,4
DSC071K64W30-5	2700	20	14,2	27	22,7	5,4	19	13,9	98,2	225	12,6	11,7
DSC071S64W30-5	2400	39	25,9	55	41,8	9,5	38	25,2	107	200	21,8	16,1
DSC071M64W30-5	2400	58	34,8	82	57	14	56	33,6	117	200	31,1	20,4
DSC071K64W40-5	3600	20	19,1	27	30,4	7	19	18,1	73,2	300	12,6	11,7
DSC071S64W40-5	3100	39	31,9	55	51	12	37	30,5	86,5	258,3	21,8	16,1

[1)] Coil overtemperature ∆ T < 105K; direct flange mounting (mounting plate 450 x 400 x 30 mm)

[2)] Rotor inertia moment with PE brake: +7.9 kgcm²

[3)] Weight with PE brake: +3.0 kg

2.4. DSC100

DSC100..64 U.. (without fan)

3 AC 400 V mains voltage for converters with unregulated supply

Motor type	Nom. speed	Stand-still torque[1)]	Stand-still current[1)]	max. static torque	Max. static current	Rated out-put[1)]	Rated torque[1)]	Rated current[1)]	Voltage constant	Rated fre-quency	Rotor inertia (motor)[2)]	Weight[3)]
	n_N min^{-1}	M_0 Nm	I_0 A	$M_{0.max}$ Nm	$I_{0.max}$ A	P_N kW	M_N Nm	I_N A	$k_{E/cold}$ $V/_{10001/min}$	f_N Hz	J $kgcm^2$	m kg
DSC100K64U10-5	1000	23,5	6,9	42,0	14,5	2,3	22,0	6,5	231,1	83,3	45,8	18,5
DSC100S64U10-5	1000	43,5	9,9	84,0	22,6	4,2	40,5	9,2	295,0	83,3	73,5	25,7
DSC100M64U10-5	1000	59,5	13,1	126,0	32,8	5,8	55,0	12,1	303,8	83,3	101,2	33,0
DSC100K64U20-5	2000	23,5	13,4	42,0	28,2	4,0	19,0	10,8	118,9	166,7	45,8	18,5
DSC100S64U20-5	2000	43,5	19,5	84,0	44,7	7,5	36,0	16,2	149,7	166,7	73,5	25,7
DSC100M64U20-5	2000	59,5	25,0	126,0	63,0	10,0	48,0	20,3	158,5	166,7	101,2	33,0
DSC100K64U30-5	3000	23,5	19,0	42,0	40,0	4,9	15,5	12,5	83,6	250,0	45,8	18,5
DSC100S64U30-5	3000	43,5	27,7	84,0	63,3	9,4	30,0	19,5	105,7	250,0	73,5	25,7

[1)] Coil overtemperature ∆ T < 105K; direct flange mounting (mounting plate 450 x 400 x 30 mm)

If you are using a DSC100..64U.. with absolute value signal encoders, you need to reduce the torques by 1.0 Nm (DSC 100 K), 2.0 Nm (DSC 100 S) or 3.0 Nm (DSC 100 M).

[2)] Rotor inertia moment with PE brake: +17.6 kgcm²

[3)] Weight with PE brake: +6.0 kg

DSC100..64 O.. (with fan)

3 AC 400 V mains voltage for converters with unregulated supply

Motor type	Nom. speed	Stand-still torque[1)]	Stand-still current[1)]	max. static torque	Max. static current	Rated out-put[1)]	Rated torque[1)]	Rated current[1)]	Voltage constant	Rated fre-quency	Rotor inertia (motor)[2)]	Weight[3)]
	n_N min^{-1}	M_0 Nm	I_0 A	$M_{0.max}$ Nm	$I_{0.max}$ A	P_N kW	M_N Nm	I_N A	$k_{E/cold}$ $V/_{10001/min}$	f_N Hz	J $kgcm^2$	m kg
DSC100K64O10-5	1000	27,0	8,1	42,0	14,5	2,7	26,0	7,8	231,1	83,3	45,8	22,4
DSC100S64O10-5	900	53,0	12,5	84,0	22,6	5,0	52,5	12,2	295,0	75,0	73,5	29,6
DSC100M64O10-5	900	78,0	17,5	126,0	33,0	6,9	73,5	16,4	303,8	75,0	101,2	36,9
DSC100K64O20-5	2000	27,0	15,6	42,0	28,2	5,2	25,0	14,5	118,9	166,7	45,8	22,4
DSC100S64O20-5	1800	53,0	24,5	84,0	45,0	8,7	46,0	21,0	149,7	150,0	73,5	29,6
DSC100M64O20-5	1800	78,0	33,5	126,0	63,0	12,7	67,5	29,0	158,5	150,0	101,2	36,9
DSC100K64O30-5	3000	27,0	22,5	42,0	40,0	7,2	23,0	19,0	83,6	250,0	45,8	22,4
DSC100S64O30-5	2800	53,0	34,5	84,0	63,3	11,0	38,0	24,5	105,7	233,3	73,5	29,6

[1)] Coil overtemperature ∆ T < 105K; direct flange mounting (mounting plate 450 x 400 x 30 mm)

[2)] Rotor inertia moment with PE brake: +17.6 kgcm²

[3)] Weight with PE brake: +6.0 kg

DSC100..64 W.. (water cooled)

3 AC 400 V mains voltage for converters with unregulated supply

Motor type	Nom. speed	Stand-still torque[1)]	Stand-still current[1)]	max. static torque	Max. static current	Rated out-put[1)]	Rated torque[1)]	Rated current[1)]	Voltage constant	Rated fre-quency	Rotor inertia (motor)[2)]	Weight[3)]
	n_N min^{-1}	M_0 Nm	I_0 A	$M_{0.max}$ Nm	$I_{0.max}$ A	P_N kW	M_N Nm	I_N A	$k_{E/cold}$ $V/_{10001/min}$	f_N Hz	J $kgcm^2$	m kg
DSC100K64W10-5	1000	34	10,5	42	14,5	3,5	33	10,3	231	83,3	45,8	21,2
DSC100S64W10-5	850	69	17	85	22,8	6,1	68	16,6	295	70,8	73,2	29,2
DSC100M64W10-5	850	105	25,5	125	33,2	9,3	105	25	304	70,8	101,2	37,2
DSC100K64W20-5	2000	34	20,4	42	28,3	6,8	32	19,5	119	166,6	45,8	21,2
DSC100S64W20-5	1800	69	33,4	84	44,9	13	67	32	150	150	73,2	29,2
DSC100M64W20-5	1700	105	48,9	125	64	18	100	46,7	158	141,6	101,2	37,2
DSC100K64W30-5	3000	34	29	42	40,2	10	32	27,2	83,6	250	45,8	21,2
DSC100S64W30-5	2600	69	47,4	84	64	18	66	44,4	106	216,6	73,2	29,2

[1)] Coil overtemperature Δ T < 105K; direct flange mounting (mounting plate 450 x 400 x 30 mm)

[2)] Rotor inertia moment with PE brake: +17.6 kgcm²

[3)] Weight with PE brake: +6.0 kg

2.5. Radial force diagrams

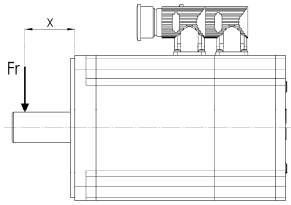
All bearings are designed for a service life of 20,000 h L_{10h}. The load values specified below may thereby not be exceeded. The permissible radial forces F_R are valid only for the horizontal installation of the motor without additional axial forces.
Furthermore, the specified average speeds must be adhered to reach the grease consumption period of 20,000 h under the following conditions:

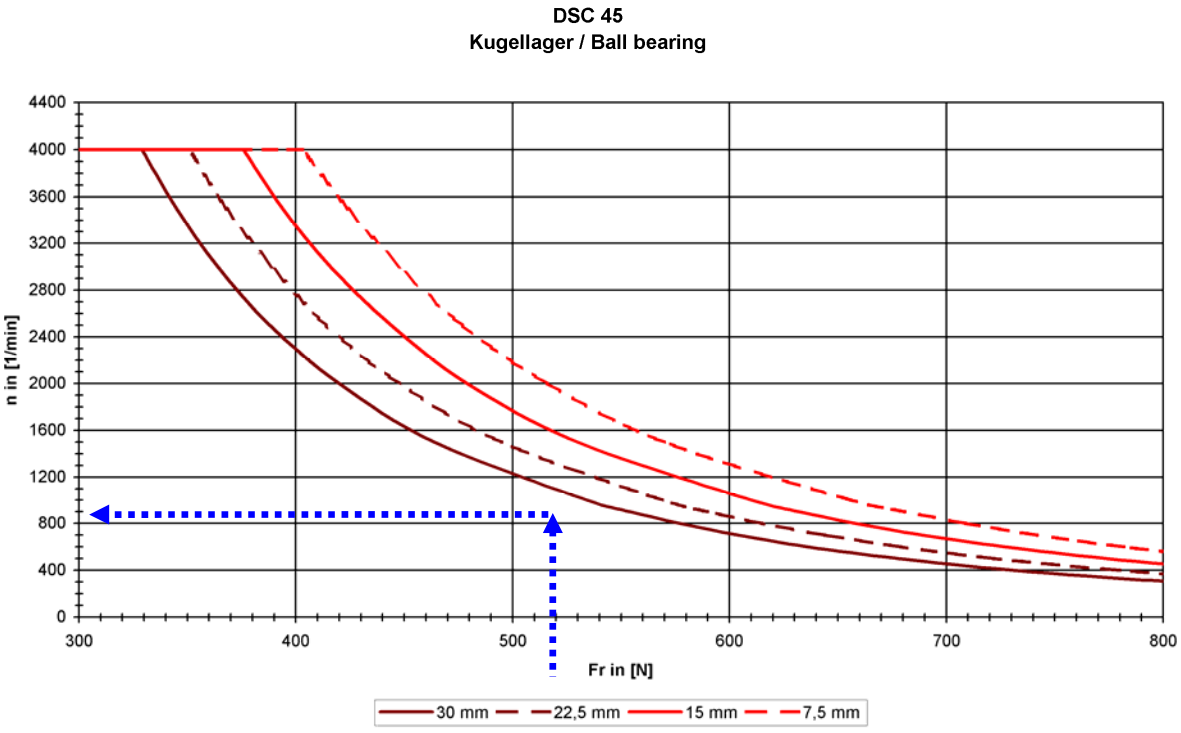
- low-vibration applications
- horizontal installation
- oscillatory bearing motion in which at least one pivot angle of 180° is performed
- Continuous bearing temperatures <120° C.

Axial loading on the motor shaft is generally not permitted.
No axial forces may develop when mounting clutches, pulleys, etc. on the motor shaft!

2.5.1. Sample diagram

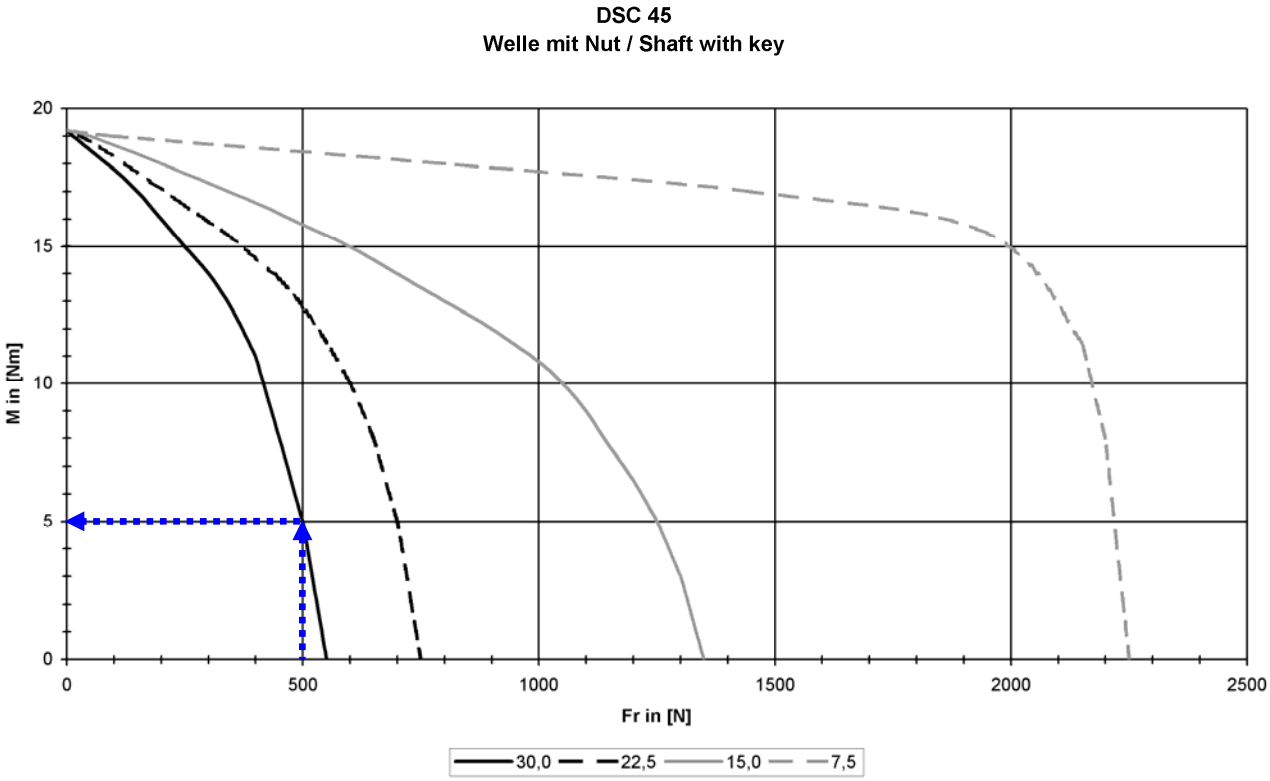
Sample diagrams:
Driving forces x = 30 mm from the shaft shoulder
Bearing service life 20,000 h, shaft with parallel key groove





Explanation of the sample chart:

The potential maximum speed of the bearing can be calculated via radial force Fr of the application in characteristic "ball bearing".
At a radial force of 500 N with a driving force point of x = 30 mm from the shaft shoulder, a maximum speed of 1200 rpm results.

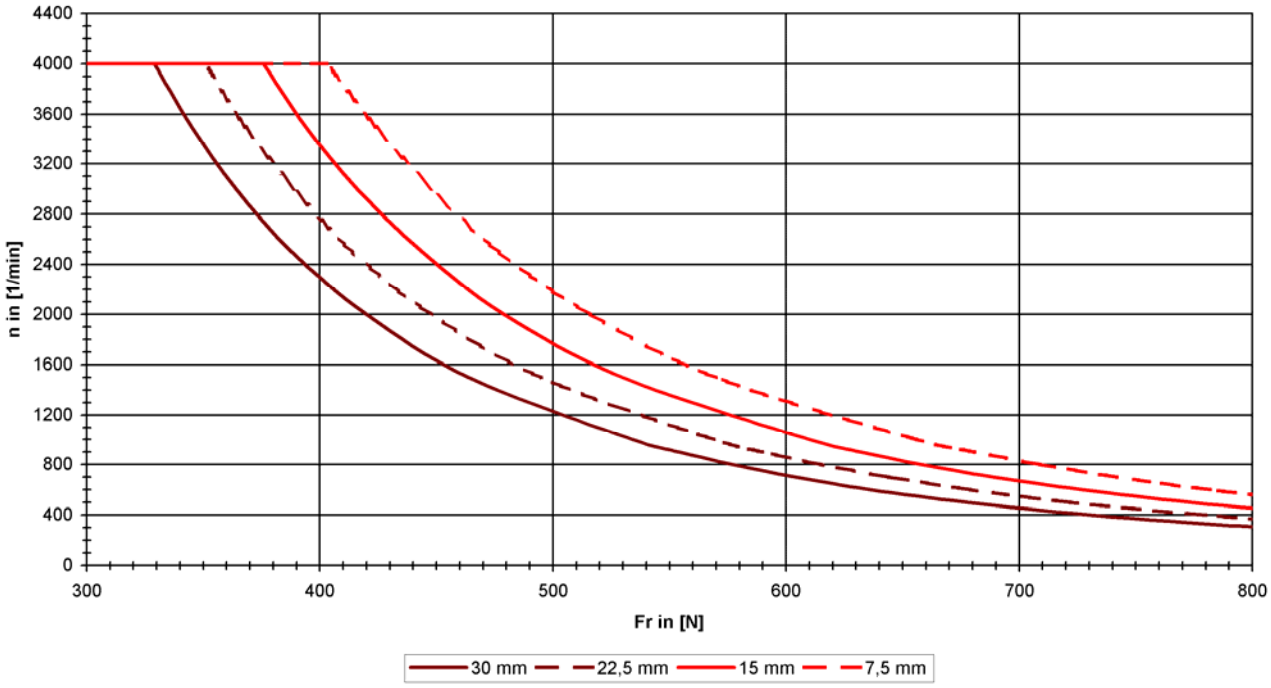


Explanation of the sample chart:

The maximum torque to be still transmitted results from the characteristic "shaft".
At a centrifugal force of 500 N with a driving force point of x = 30 mm from the shaft shoulder, a torque to be still transmitted of 5Nm results.

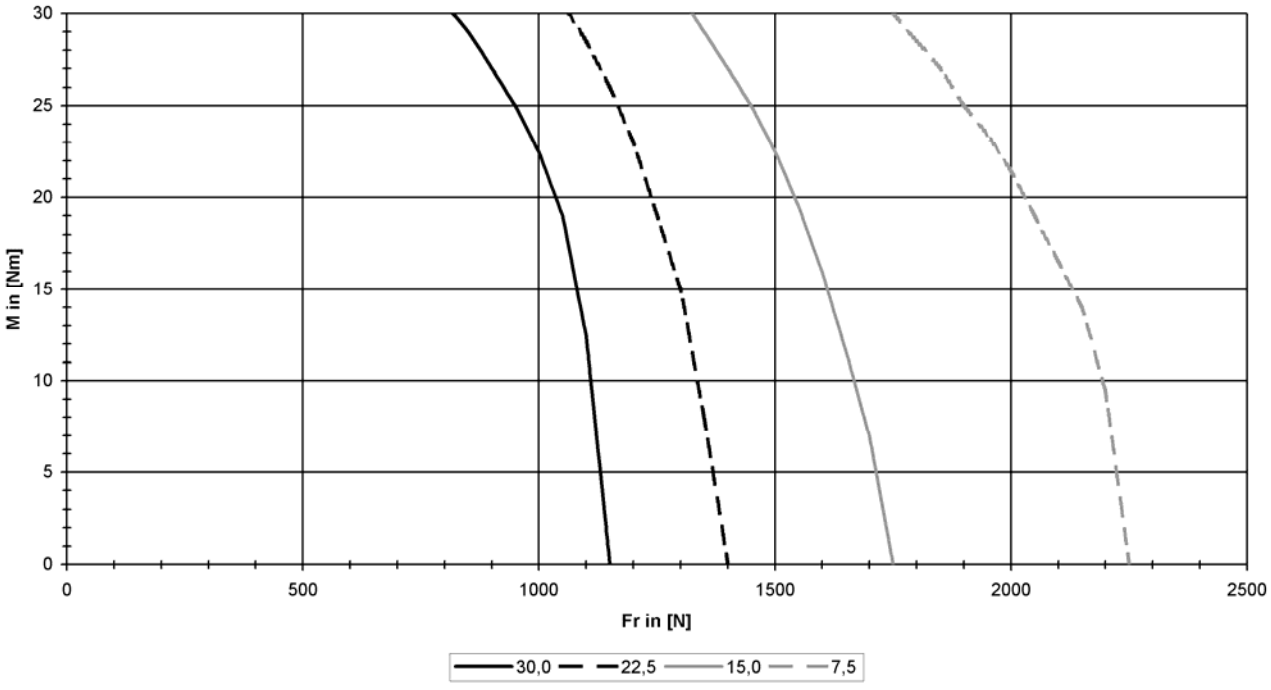
2.5.2. Diagram DSC045

DSC 45
Kugellager / Ball bearing

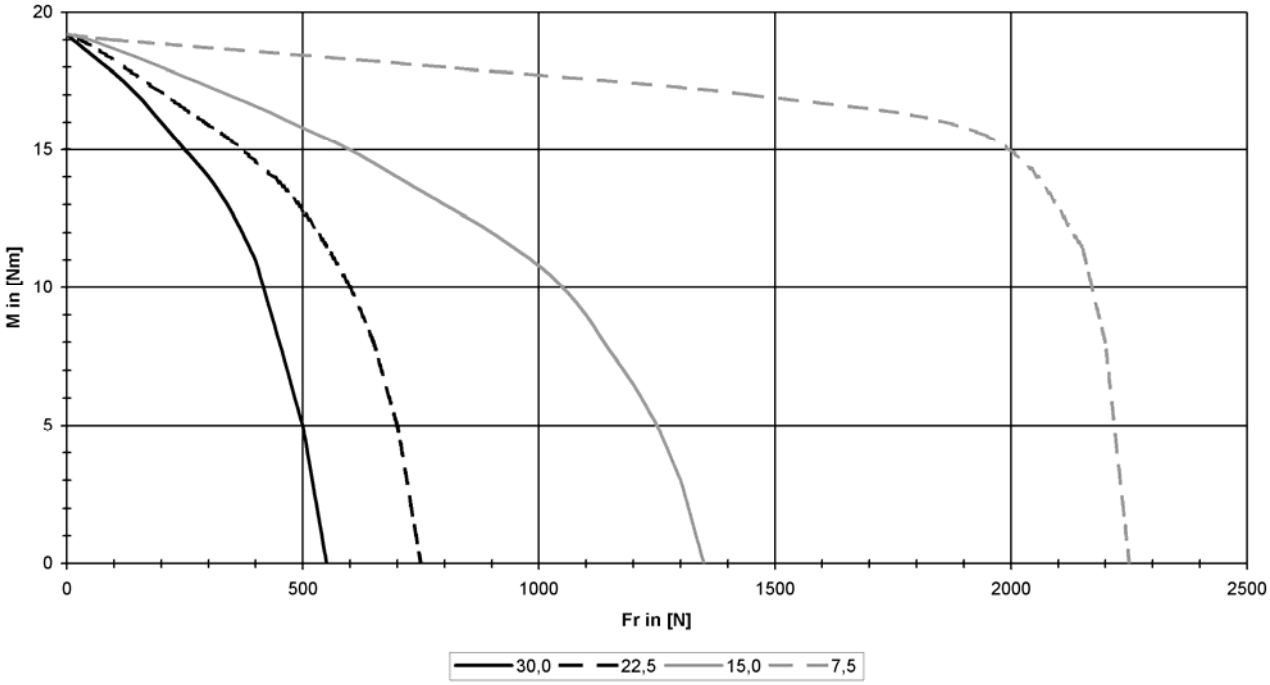


Note: 20,000h grease consumption duration at $n_{effective} \leq$ 4,000 rpm

DSC 45
glatte Welle / Shaft without key

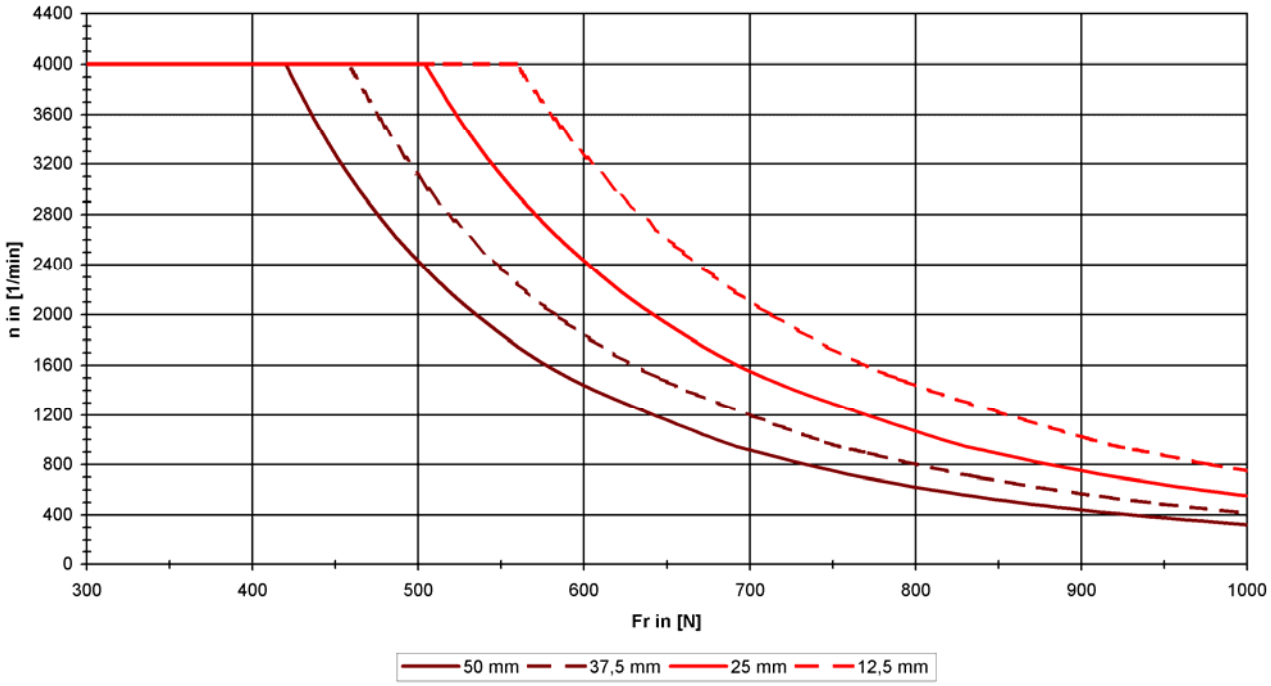


DSC 45
Welle mit Nut / Shaft with key



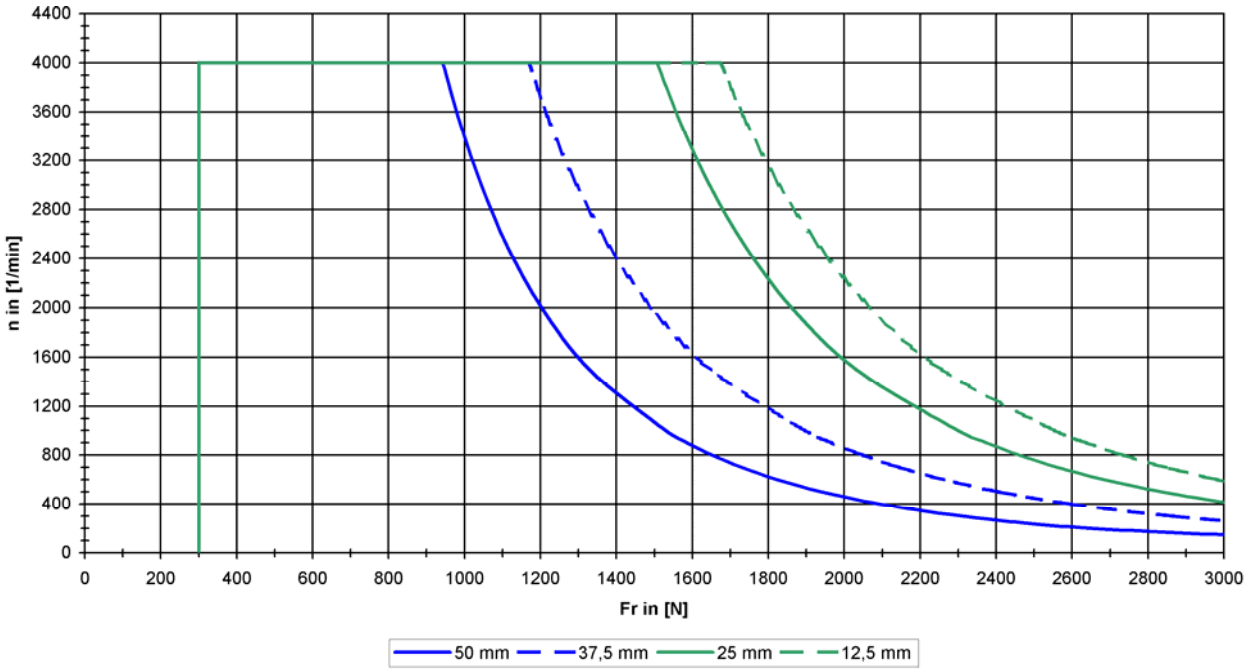
2.5.3. Diagram DSC056

DSC 56
Kugellager / Ball bearing



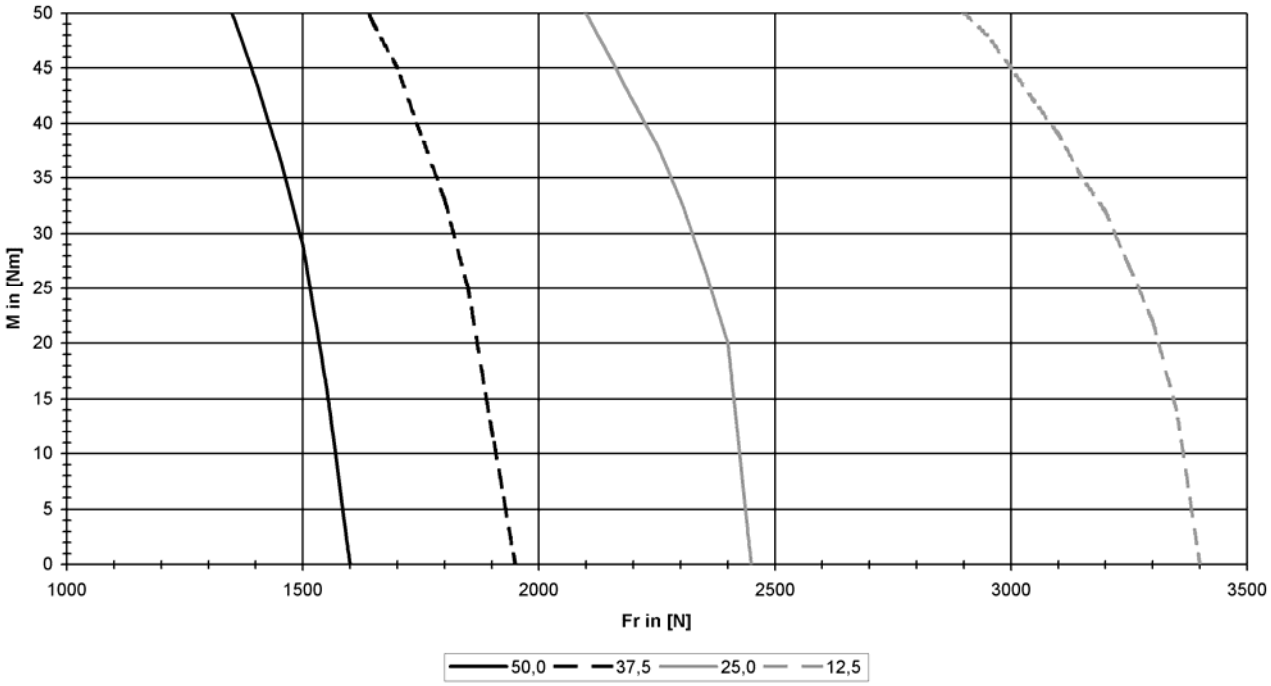
Note: 20,000h grease consumption duration at $n_{effective} \leq$ 4,000 rpm

DSC 56
Rollenlager / Roller bearing

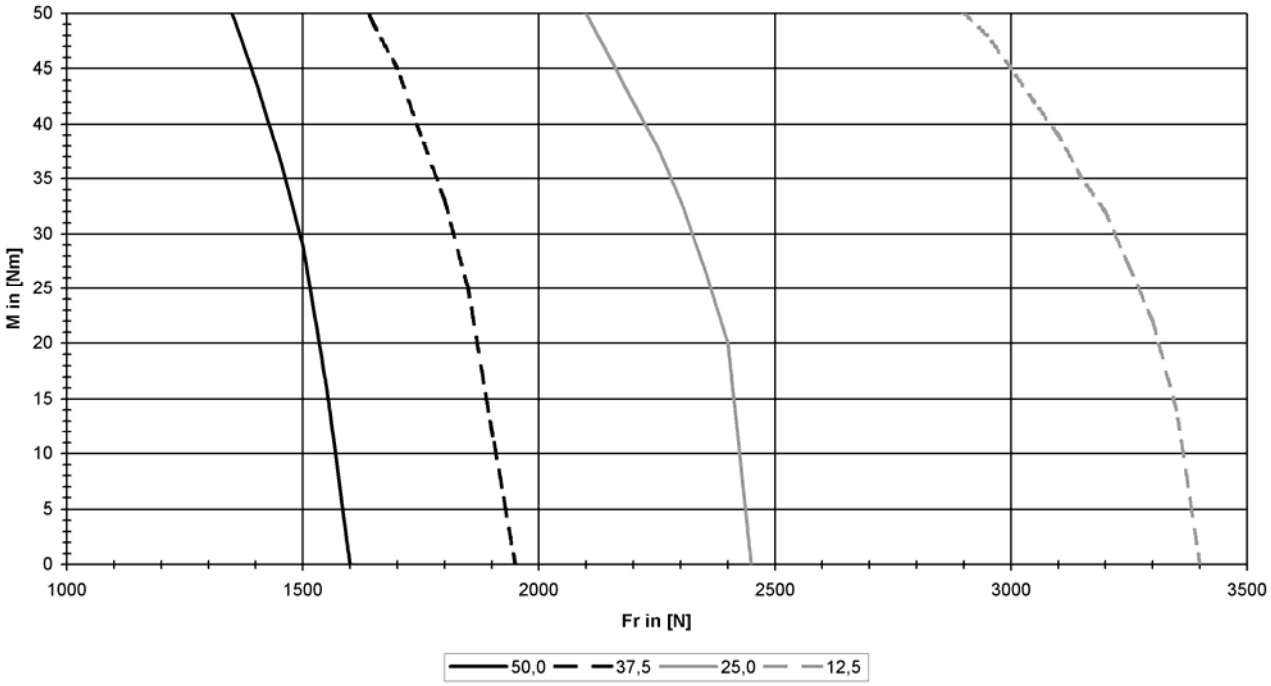


Note: 20,000 grease consumption duration at $n_{effective} \leq$1,500 rpm

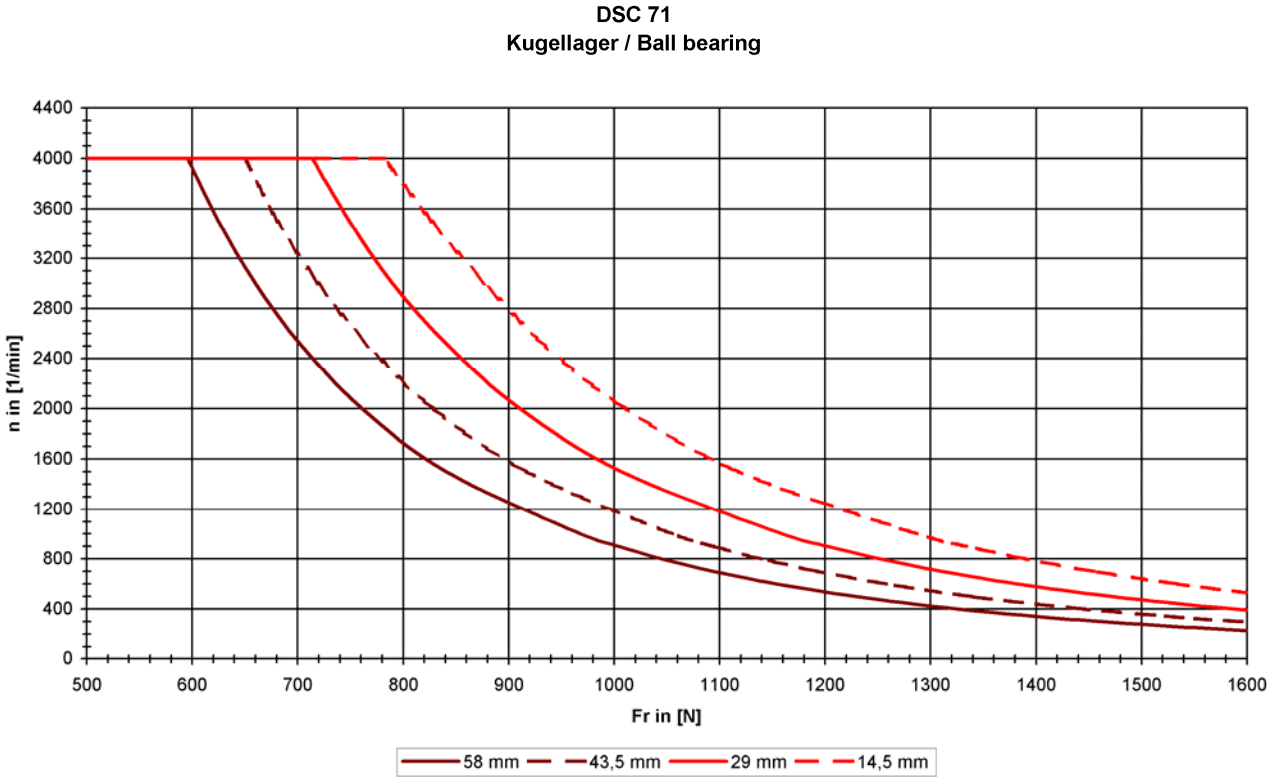
DSC 56
glatte Welle / Shaft without key



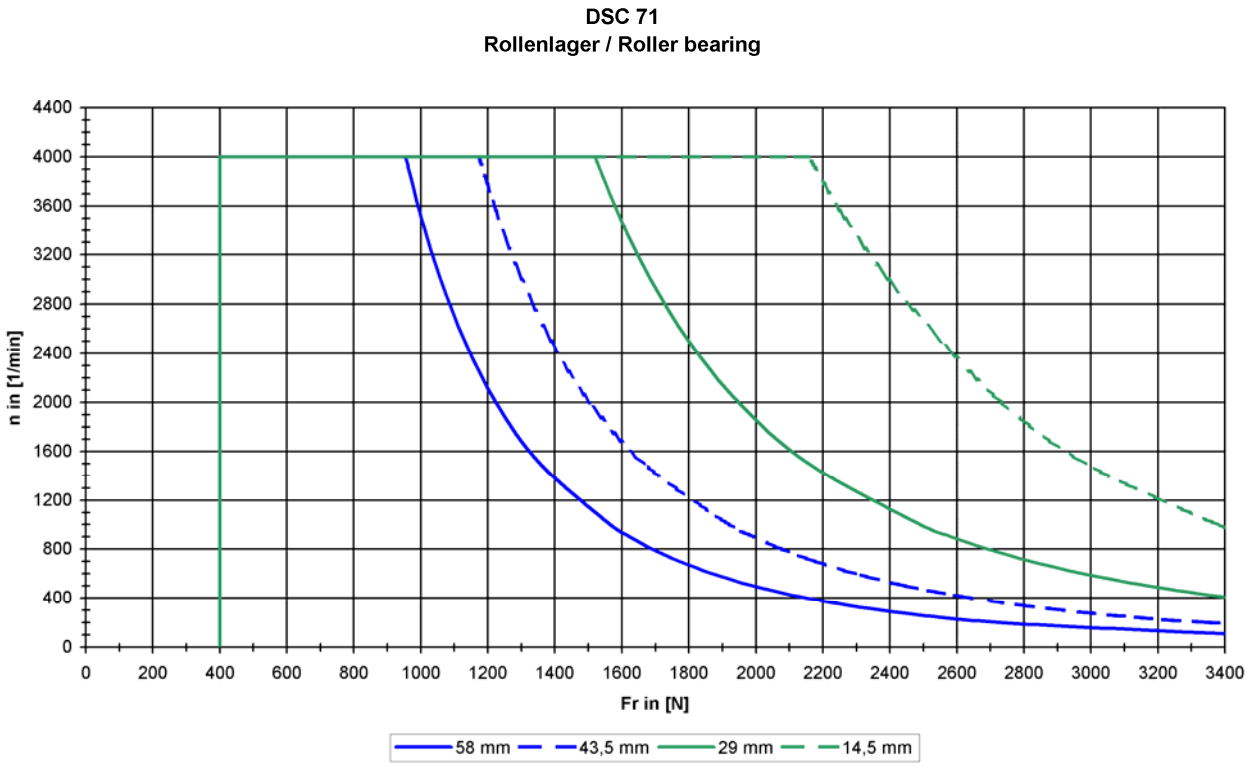
DSC 56
Welle mit Nut / Shaft with key



2.5.4. Diagram DSC071

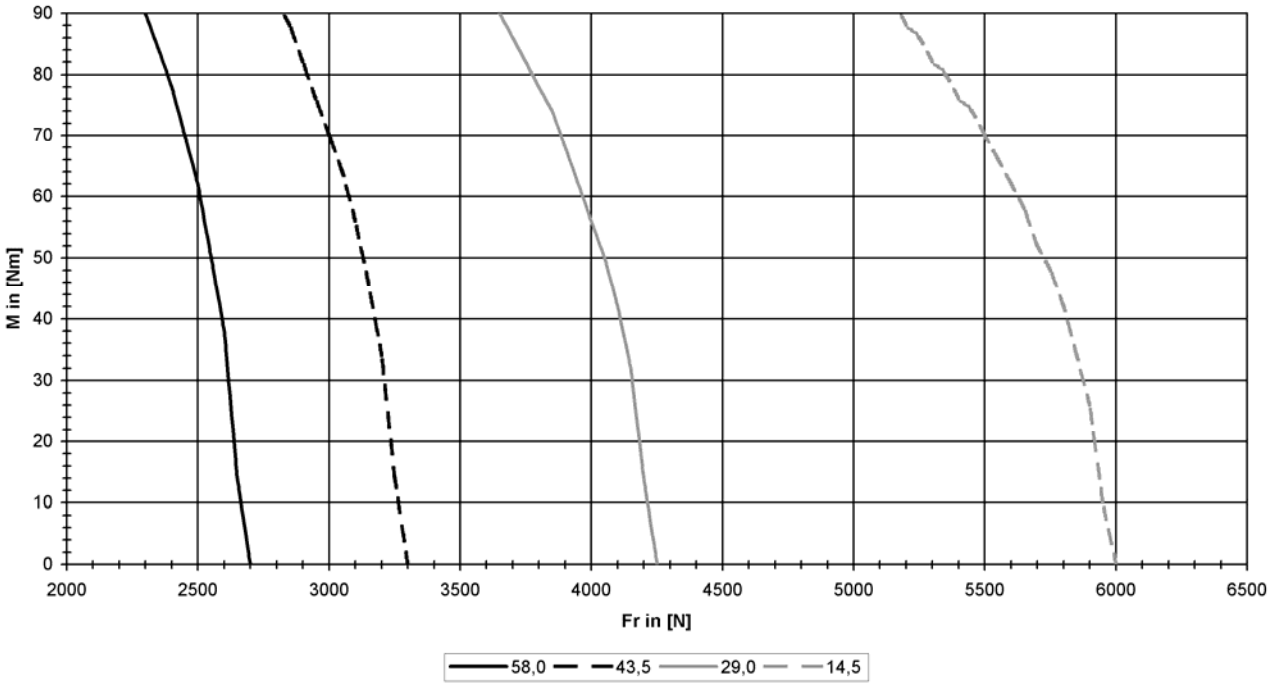


Note: 20,000h grease consumption duration at $n_{effective} \leq$ 4,000 rpm

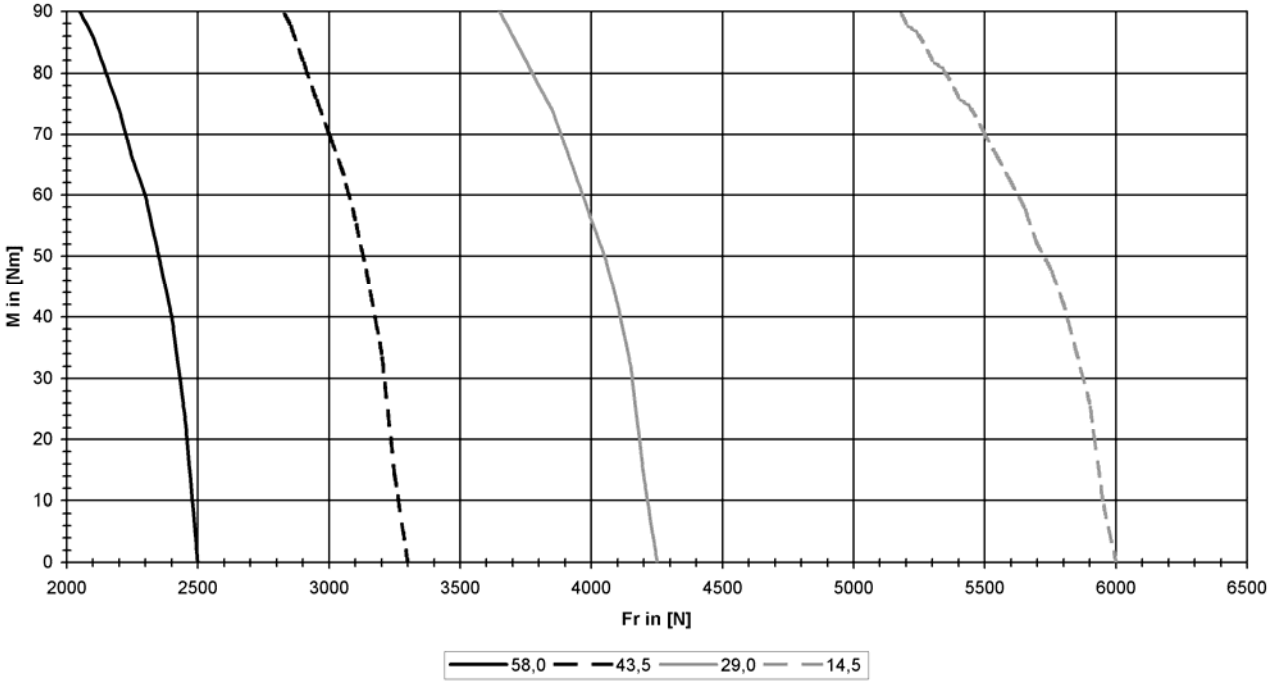


Note: 20,000 grease consumption duration at $n_{effective} \leq$1,150 rpm

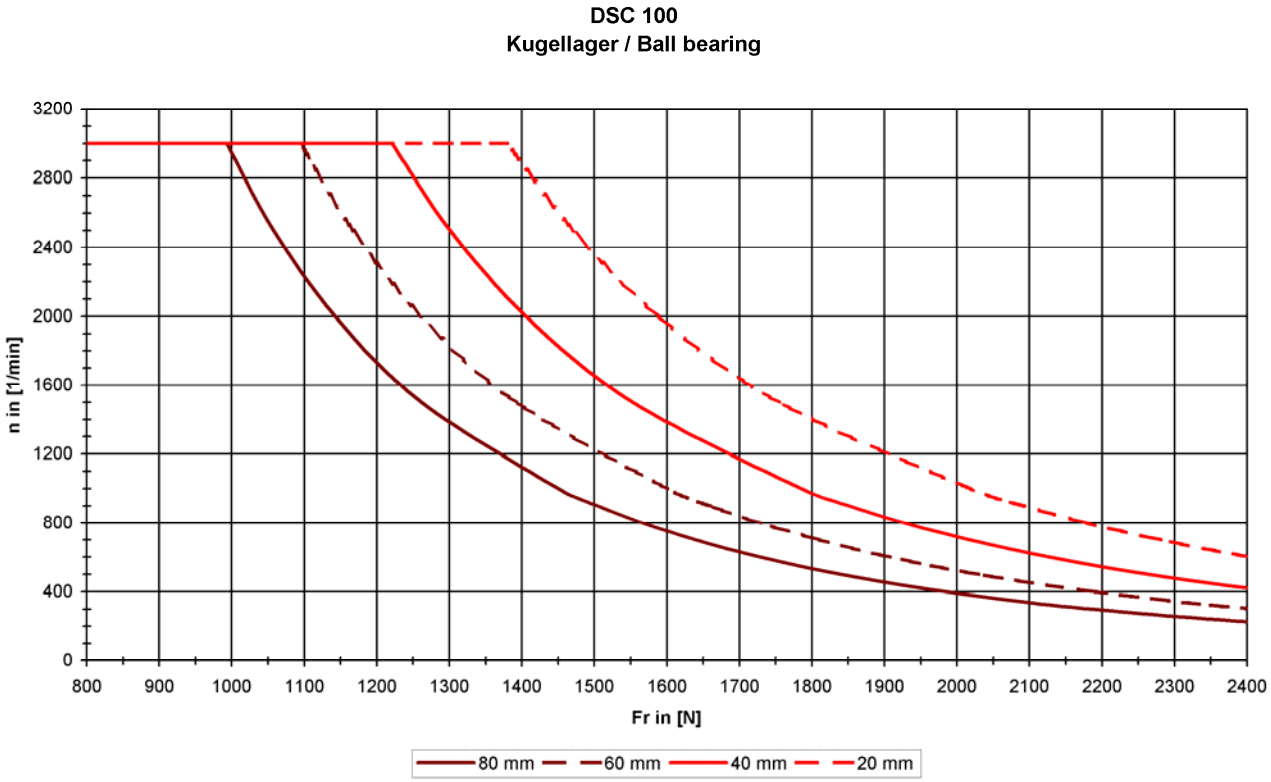
DSC 71
glatte Welle / Shaft without key



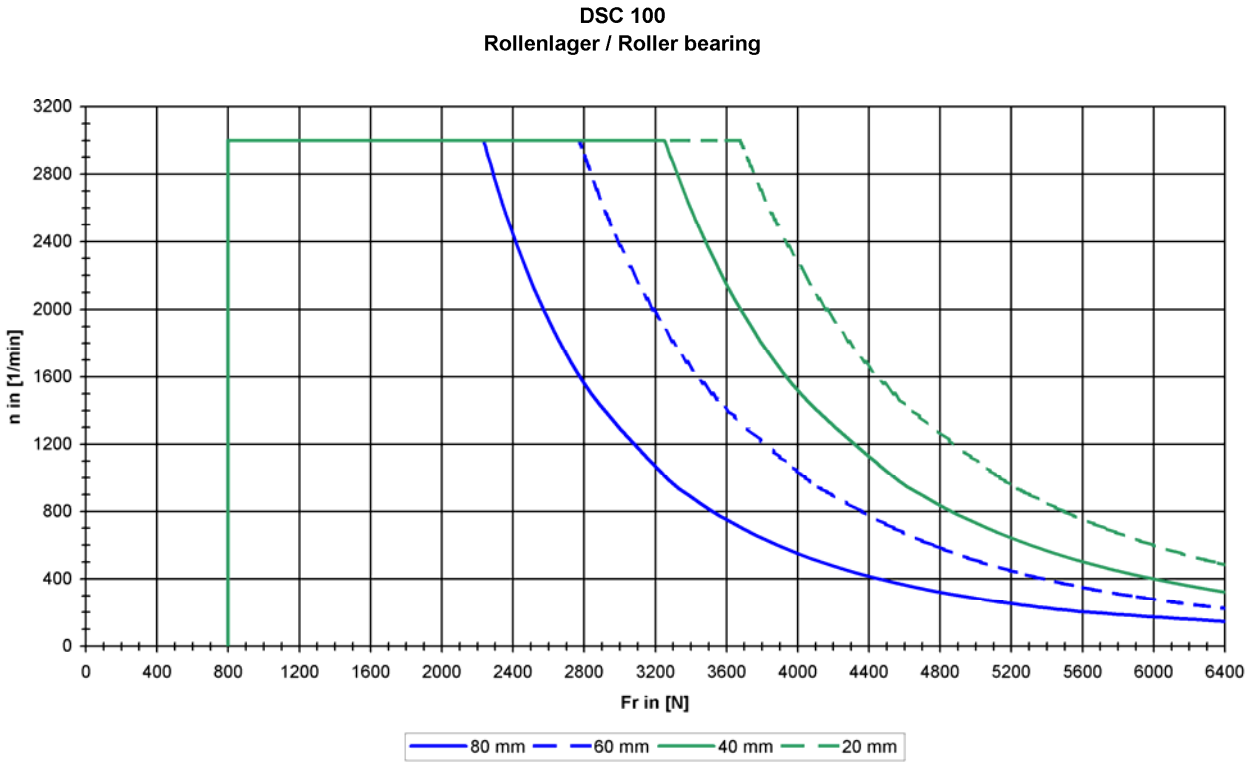
DSC 71
Welle mit Nut / Shaft with key



2.5.5. Diagram DSC100

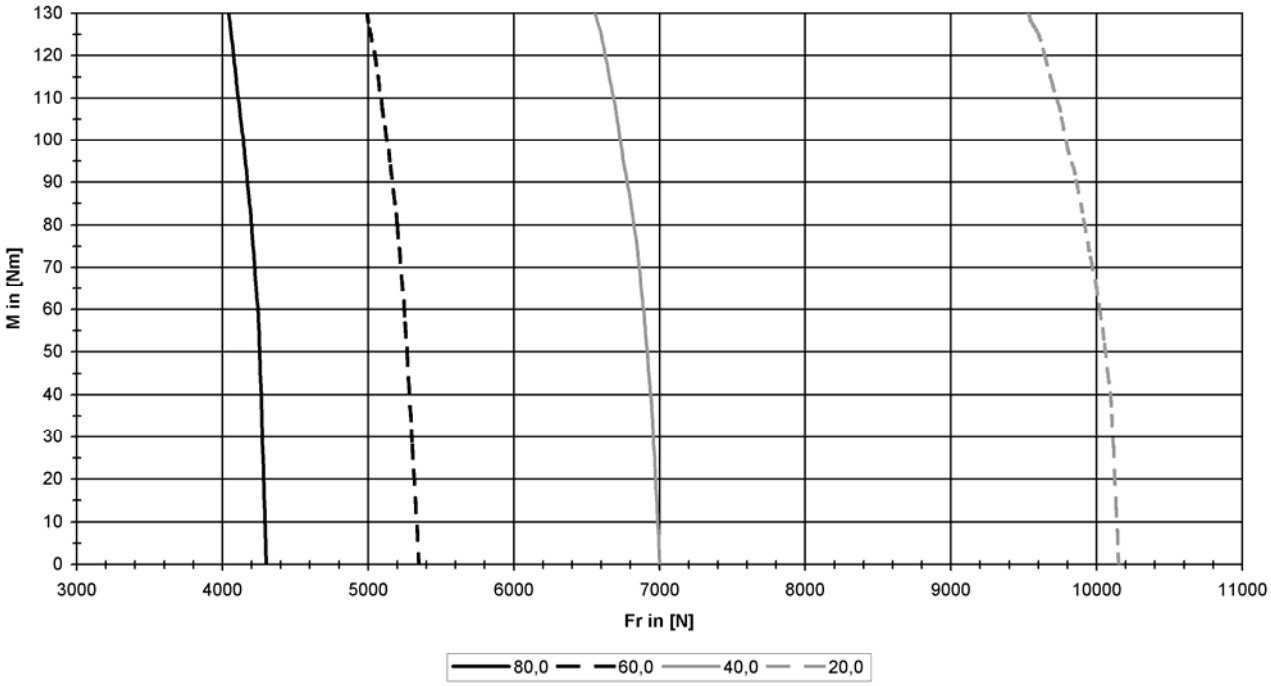


Note: 20,000h grease consumption duration at $n_{effective}$ ≤ 3,000 rpm

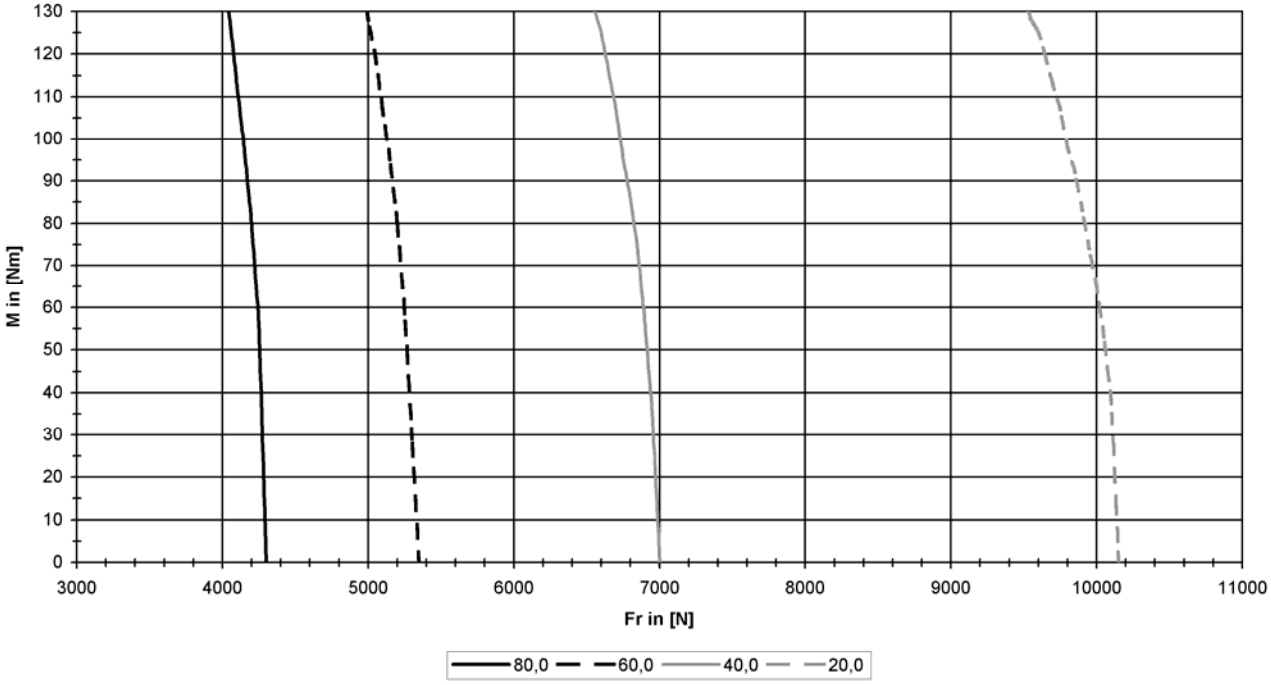


Note: 20,000 grease consumption duration at $n_{effective}$ ≤850 rpm

DSC 100
glatte Welle / Shaft without key



DSC 100
Welle mit Nut / Shaft with key



3. Motor components (options)

3.1. Holding brake

The motors can be optionally equipped with a holding brake. The holding brake is a backlash-free permanent magnetic brake. The brakes work according to the closed current principle, i.e. the brake is applied when switched off (or at a failure of the operating voltage). The brakes are designed for an operating voltage of 24 VDC. The specifications by the brake manufacturer apply at room temperature.

The motors are available with the following holding brakes:

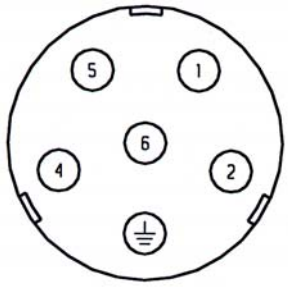
Motor type	DSCG045	DSCG056	DSCG071	DSCG100
Minimal static holding torque [Nm] at 120 °C.	10	20	45	105
Nominal dynamic holding torque [Nm] at 120 °C.	8	18	25	45
Maximum switching energy [J] per braking from n = 3,000 rpm	270	320	1400	2800
Connection values [V] (+6 % / -10 %)	24	24	24	24
Power consumption [W]	18	20	28	50
Moment of inertia [$kgcm^2$]	0,6	2,9	7,9	17,6
Switching time On [ms] Ventilation; with basic air gap	40	65	100	200
Switching time Off [ms] Braking; with basic air gap	20	30	40	50

All brakes are not fail safe brakes in the sense that a torque reduction cannot occur due to uninfluenceable malfunction factors. Depending on the application, the relevant accident prevention regulations, as well as basic health and safety requirements of Annex I of the Machinery Directive and the harmonized European standards must be observed.
For emergency stops or power failures, approximately 2,000 brake processes can be performed.
(Condition: maximum external inertia = motor inertia and n_{max} type-related;
Max. braking / hour <20; evenly distributed).

3.2. Fan

Motor type	DSC056..O			DSC071/100..O		
Rated voltage [V]	115	230		115	230	
Rated frequency [Hz]	60	50	60	60	50	60
Rated current [A]	0,40	0,19	0,16	0,48	0,22	0,20
Rated speed [rpm]	3350	2765	3280	2645	2435	2350
Power rating [W]	46	45	37	55	50	46
Connection	6 - pole plug					
Protection type	IP65					

Fan connection

		Pin	Signal
		1 2 ⏚	Phase U Neutral conductor N Protective conductor

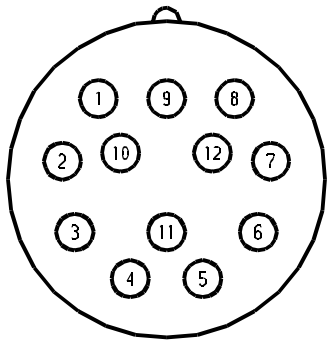
View on the contact side of the receptacle

3.3. Encoder

3.3.1. Resolver

Pole pair number	1
Transmission ratio	0,5 ± 0,05
Frequency	5 kHz
Nominal input voltage	4 V_{rms}
Effective input power at no-load speed	112 mW
Current consumption at no-load speed	40 mA
Max. output voltage at no-load speed	2 V_{eff}
Voltage constant	35 mV/°
Rotor resistance	48 Ω ± 10%
Stator resistance	31 Ω ± 10%
Rotor impedance at no-load speed	70 + j 74Ω ± 15%
Rotor impedance with short circuit	62 + j 66Ω ± 15%
Stator impedance at no-load speed with minimum coupling	108 + j 206Ω ± 15%
Stator impedance with short circuit and maximum coupling	97 + j 183Ω ± 15%
Phase shift	8° ± 3°
Zero voltage	15 mV
Angle error in relation to $(\Delta\varphi_{max}+\Delta\varphi_{min})/2$	± 6’
Shock (11 ms)	≤ 1.000 m/s²
Vibration (55 - 2000Hz)	≤ 500 m/s²

Resolver connection



View on the contact side of the receptacle

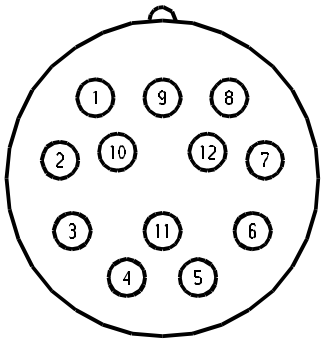
Pin	Signal	Option for allocation KTY on encoder socket
1	cos –	cos –
2	-	-
3	-	-
4	-	-
5	sin –	sin –
6	sin +	sin +
7	-	K –
8	cos +	cos +
9	-	K +
10	Ref +	Ref +
11	-	-
12	Ref –	Ref –

NOTE:
Use only at low demands on the true running characteristics of the motor.
The specifications are information by the encoder manufacturer.

3.3.2. SINCOS SEK/SEL 52 (Sick - Stegmann)

	SEK52 / SEL52	
Number of sine, cosine periods per revolution	16	
Measuring step for the interpolation of the sine, cosine periods such as 12 bit in angular seconds	20	
Number of absolute resolved revolutions	1	4096
Code type for the absolute value	binary	
Error limits for evaluating the sine, cosine periods, integral non-linearity in angular seconds	+/- 288	
Non-linearity within a sine, cosine, differential non-linearity in angular seconds at nominal position +/- 0.1 mm	+/- 72	
Operating speed until the absolute position can be formed (rpm)	6000	
Max. operating speed (rpm)	12000	10000
Output signal	serial RS 485 asynchronous, half duplex	
Operating voltage range (V)	7....12	
max. no-load operating current (mA)	50	
Shock according to DIN EN 60068-2-27	100g / 10 ms	
Vibration according to EN 60068-2-6	50g / 10…2000 Hz	

SEK / SEL 52 connection



View on the contact side of the receptacle

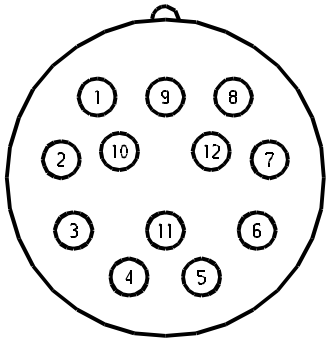
Pin	Signal	Option for allocation KTY on encoder socket
1	ref cos	ref cos
2	+ 485	+ 485
3	-	K +
4	-	K –
5	sin	sin
6	ref sin	ref sin
7	– 485	– 485
8	cos	cos
9	-	-
10	GND	GND
11	-	-
12	+ U	+ U

NOTE:
This encoder is a component susceptible to ESD.
The technical data is specification from the encoder manufacturer.

3.3.3. SINCOS SRS/SRM 50 (Sick - Stegmann)

	SRS 50/SRM 50	
Number of sine and cosine periods per revolution	1024	
Number of steps per revolution	32768	
Number of absolute completed revolutions	1	4096
Code type for the absolute value	Binary	
Output frequency of the sine and cosine signals (kHz)	0 ... 200	
Tolerances when evaluating the 1024/128 signals; integral nonlinearity (arc seconds)	+/- 45	
Nonlinearity within a sine or cosine period; differential nonlinearity (arc seconds)	+/- 7	
Maximum speed at which the absolute position can be defined (rpm)	6000	
Maximum operating speed (rpm)	12000	
Output signals; 2 x 90° offset sinusoidal signals (V_{SS})	1	
Output signal	Serial RS 485, asynchronous, half-duplex	
Operating voltage range (V)	7 ... 12	
Operating current without load (mA)	80	
Shock as per DIN EN 60068-2-27	100 g, 10 ms	
Vibration as per DIN EN 60068-2-6	20 g, 10…2000 Hz	

SRS/SRM 50 connection



View on the contact side of the receptacle

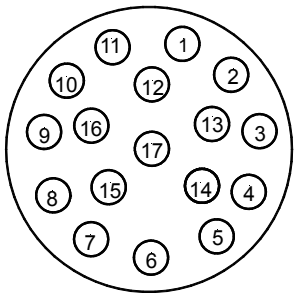
Pin	Signal	Option for allocation KTY on encoder socket
1	ref cos	ref cos
2	+ 485	+ 485
3	-	K +
4	-	K –
5	sin	sin
6	ref sin	ref sin
7	– 485	– 485
8	cos	cos
9	-	-
10	Gnd	Gnd
11	-	-
12	+ U	+ U

NOTE:
This encoder is a component susceptible to ESD.
The technical data is specification from the encoder manufacturer.

3.3.4. ECN1313 / EQN1325 (Heidenhain)

	ECN 1313 / EQN 1325	
Number of sine and cosine periods per revolution	2048	
System accuracy in arc seconds	± 20	
Number of absolute completed revolutions	1	4096 (12 bits)
Code type for the absolute value	EnDat 2.1	
Sampling limit frequency or limit frequency (kHz)	0 ... 200	
Position values/revolution	8192 (13 bits)	
Maximum speed at which the absolute position can be defined (rpm)	12,000	
Maximum operating speed (rpm)	12,000	
Power supply (V)	5 V ± 5%	
Current consumption without load (mA)	≤ 150	≤ 250
Shock 6ms as per DIN EN 60068-2-27	≤2000 m/s²	
Vibration 55-2000Hz as per DIN EN 60068-2-6	≤300 m/s² up to +100 °C ≤150 m/s² up to +115 °C	

ECN1313/EQN1325 connection



Pin	Signal	Option for allocation KTY on encoder socket
1	U_p	U_p
2	-	-
3	-	-
4	0V	0V
5	-	K +
6	-	K –
7	U_p	U_p
8	Clock	Clock
9	Clock inv.	Clock inv.
10	0V	0V
11	-	-
12	B +	B +
13	B –	B –
14	Data	Data
15	A +	A +
16	A –	A –
17	Data inv.	Data inv.

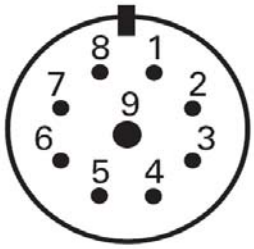
View on the contact side of the receptacle

NOTE:
This encoder is a component susceptible to ESD.
The technical data is specification from the encoder manufacturer.

3.3.5. ECN1325 / EQN1337 (Heidenhain)

	ECN 1325 / EQN 1337	
Number of lines	2048	
System accuracy in arc seconds	± 20	
Number of absolute completed revolutions	1	4096 (12 bits)
Code type for the absolute value	EnDat 2.2	
Position values/revolution	33554432 (25 bits)	
Maximum speed at which the absolute position can be defined (rpm)	12,000	
Maximum operating speed (rpm)	12,000	
Power supply (V)	3.6…14	
Current consumption without load (mA)	≤ 160	≤ 200
Shock 6ms as per DIN EN 60068-2-27	≤2000 m/s²	
Vibration 55-2000Hz as per DIN EN 60068-2-6	≤300 m/s² up to +100 °C ≤150 m/s² up to +115 °C	

ECN1325/EQN1337 connection



Pin	Signal
1	Clock
2	Clock inv.
3	U_p
4	0V
5	Data
6	Data inv.
7	Sensor U_p
8	Sensor 0V
9	-

View on the contact side of the receptacle

NOTE:
This encoder is a component susceptible to ESD.
The technical data is specification from the encoder manufacturer.

3.4. Encoder cables for b maXX 4000

General Information

A prefabricated encoder cable is used for all encoder systems. The connection at the motor end consists of a 12-pole circular signal connector on resolvers and Hyperface® – encoders, a 17-pole circular signal connector on ECN1313/EQN1325 and a 9-pole circular signal connector on ECN1325/EQN1337. The connection at the controller side consists of a 15-pole D-Sub connector.

The dragable cable is suitable for mobile applications such as drag chains, for example. Unlike non-dragable cables made from PVC, the cable sheath is made from durable PU (suitable for environments where acids and bases are present).

3.4.1. Technical data

Technical description - non-dragable for resolver/ SinCos Hiperface®-interface / SinCos - and TTL - incremental encoder

- LiYCY, 5x (2x0.14mm²) + 2 x 0.5mm² copper strand, twisted pairs
- PVC sheath, grey; inscription with Baumüller logo, black
- 1st side: 12-pole circular signal plug connector with 12 socket contacts
- 2nd side: 15-pole D-Sub plug connector with pin contacts and locking screws 4-40UNC
- Outer diameter 9.0 mm (+/- 0.3mm)
- Bending radius: $r \geq 60$ mm (fixed routing), $r \geq 135$ mm (flexible use)
- Nominal voltage: $250V_{AC}$

Technical description - dragable for resolver/ SinCos Hiperface®-interface / SinCos - and TTL - incremental encoder

- Li12YC11Y, 5x (2x0.14mm²) + 2 x 0.5mm² copper strand, twisted pairs
- PU sheath, black; inscription with Baumüller logo, white
- 1st side: 12-pole circular signal plug connector with 12 socket contacts
- 2nd side: 15-pole D-Sub plug connector with pin contacts and locking screws 4-40UNC
- Outer diameter 9.0 mm (+/- 0.3mm)
- Bending radius: $r \geq 70$ mm (fixed routing), $r \geq 100$ mm (flexible use)
- Nominal voltage: $300V_{AC}$

Technical description - non-dragable for EnDat® 2.1-interface

- LiYCY, 5x (2x0.14mm²) + 2 x 0.5mm² copper strand, twisted pairs
- PVC sheath, grey; inscription with Baumüller logo, black
- 1st side: 17-pole circular signal plug connector with 17 socket contacts
- 2nd side: 15-pole D-Sub plug connector with pin contacts and locking screws 4-40UNC
- Outer diameter 9.0 mm (+/- 0.3mm)
- Bending radius: $r \geq 60$ mm (fixed routing), $r \geq 135$ mm (flexible use)
- Nominal voltage: $250V_{AC}$

Technical description - dragable for EnDat® 2.1-interface

- Li12YC11Y, 5x (2x0.14mm²) + 2 x 0.5mm² copper strand, twisted pairs
- PU sheath, black; inscription with Baumüller logo, white
- 1st side: 17-pole circular signal plug connector with 17 socket contacts
- 2nd side: 15-pole D-Sub plug connector with pin contacts and locking screws 4-40UNC
- Outer diameter 9.0 mm (+/- 0.3mm)
- Bending radius: $r \geq 70$ mm (fixed routing), $r \geq 100$ mm (flexible use)
- Nominal voltage: $300V_{AC}$

Technical description - dragable for EnDat® 2.2-interface

- PUR sheath, 1x(4x0.14mm²) + (4x0.34mm²)
- 1 twisted foursome 0.14mm^2, 4 wires 0.34mm^2, copper, tin-plated
- Total shield CuSn, inscription Heidenhain
- 1st side: 9-pole circular signal plug connector with 8 socket contacts
- 2nd side: 15-pole D-Sub plug connector with pin contacts and locking screws 4-40UNC
- Outer diameter 6.0 mm
- Bending radius: $r \geq 20$ mm (fixed routing), $r \geq 75$ mm (flexible use)
- Dielectric strength wire/wire and wire/shield: 0.5kV at 50Hz, 1 minute

3.4.2. Application references

- **Operating temperature of encoder cable resolver/ SinCos Hiperface®-interface / SinCos - and TTL - incremental encoder / EnDat® 2.1**

	Dragable	Not dragable
Limit temperature	on the surface	on the surface
Static use/minimal movement	- 40 °C to + 80 °C	- 30 °C to + 80 °C
Permanent movement	- 30 °C to + 80 °C	- 5 °C to + 70 °C

- **Operating temperature of encoder cable EnDat® 2.2**

	Dragable
Limit temperature	on the surface
Static use/minimal movement	- 40 °C to + 80 °C
Permanent movement	- 10 °C to + 80 °C

- **Routing of cable on motor**

The cables must not touch the surface of the motor.

3.4.3. Order information for encoder cables

Encoder cables for resolver/ SinCos Hiperface®-interface / SinCos - and TTL - incremental encoder - prefabricated cables with connector

Not dragable, prefabricated
Cable 5 x (2x0.14mm^2) + 2 x 0.5 mm^2 with plug connector

Length in m	Item Number
1	243601
2	211338
3	219333
4	231166
5	209879
6	220197
7	216455
8	220429
10	210052
15	215716
20	218568
25	218569
30	217094
35	216444
40	217095
45	217567
50	217568
55	217569
60	217570
70	232088

Dragable, prefabricated
Cable 5 x (2x0.14mm^2) + 2 x 0.5 mm^2 with plug connector

Length in m	Item Number
3	246658
4	243379
5	239540
6	242954
8	239541
10	239542
15	239543
20	239544
25	239545
30	239546
35	239547
40	240520
45	240521
50	240522
55	244033
60	245484

Encoder cables for EnDat® 2.1- prefabricated cables with plug connector

Not dragable, prefabricated
Cable 5 x (2x0.14mm^2) + 2 x 0.5 mm^2 with plug connector

Length in m	Item Number
2	383152
3	383923
5	393885
7	389445
8	380138
9	389446
10	393886
15	388505
20	388418
25	393887
30	393888
35	387958
40	382006
50	388419
70	384473
90	387391

Dragable, prefabricated
Cable 5 x (2x0.14mm^2) + 2 x 0.5 mm^2 with plug connector

Length in m	Item Number
2	393889
3	369864
5	394014
7	389807
8	393890
9	389808
10	393891
15	393892
17	371494
20	393893
25	393894
30	380358
35	391216
40	382005
50	378022

Encoder cables for EnDat® 2.2 - prefabricated cables with plug connector

Dragable, prefabricated
cable 1x4x0.14 + 4x0.34 PUR Ø 6mm with plug connector

Length in m	Item Number
2	434056
3	434057
5	434058
10	434059
15	434060
20	434061
25	434062
50	434063

3.5. Encoder cables for b maXX 5000

A prefabricated encoder cable is used for all encoder systems. The connection at the motor end consists of a 12-pole circular signal connector on resolvers and Hyperface® encoder, a 17-pole circular signal connector on ECN1313/EQN1325. The connection at the controller side consists of a 26-pole D-Sub connector.

3.5.1. Technical data

Technical description - dragable for resolver

- Li9YC, 1 x (2 x 0,25) + Li9Y, 2 x (2x0,25) + Li9YC11Y, 1 x (2 x 0,34), copper strand, twisted pairs
- PUR sheat, green; inscription with Baumüller Nürnberg and encoder cable Resolver
- 1st side: 12-pole circular signal plug connector with 12 socket contacts
- 2nd side: 26-pole D-Sub plug connector with pin contacts and locking screws 4-40UNC
- Outer diameter 7.3 mm (+/- 0.3mm)
- Bending radius: $r \geq 4 \times D$ (fixed routing), $r \geq 10 \times D$ (flexible use)

Technical description - dragable for SinCos Hiperface®-interface und SinCos - and TTL - incremental encoder

- Li9YC, 3 x (2 x 0,25) , + Li9Y, 3 x (2 x 0,25) + Li9YC11Y, 1 x (2x0,34), copper strand, twisted pairs
- PUR sheat, green; inscription with Baumüller Nürnberg and encoder cable Hyperface or Incremental
- 1st side: 12-pole circular signal plug connector with 12 socket contacts
- 2nd side: 26-pole D-Sub plug connector with pin contacts and locking screws 4-40UNC
- Outer diameter 9.6 mm (+/- 0.3mm)
- Bending radius: $r \geq 4 \times D$ (fixed routing), $r \geq 10 \times D$ (flexible use)

Technical description – dragable for EnDat® 2.1-interface

- Li9YC, 3 x (2 x 0,25) , + Li9Y, 3 x (2 x 0,25) + Li9YC11Y, 1 x (2x0,34), copper strand, twisted pairs
- PUR sheat, green; inscription with Baumüller Nürnberg and encoder cable Endat 2.1
- 1st side: 17-pole circular signal plug connector with 17 socket contacts
- 2nd side: 26-pole D-Sub plug connector with pin contacts and locking screws 4-40UNC
- Outer diameter 9.6 mm (+/- 0.3mm)
- Bending radius: $r \geq 4 \times D$ (fixed routing), $r \geq 10 \times D$ (flexible use)

3.5.2. Application references

- **Operating temperature of encoder cable resolver/ SinCos Hiperface®-interface / SinCos - and TTL - incremental encoder / EnDat® 2.1**

Limit temperature	on the surface
Static use/minimal movement	- 40 °C to + 80 °C
Permanent movement	- 20 °C to + 60 °C

- **Routing of cable on motor**

The cables must not touch the surface of the motor.

3.5.3. Order information for encoder cables

Encoder cable - prefabricated with plug

For resolver

Length in m	Item Number
1	429914
2	429915
3	429916
5	429917
7	429918
10	429919
15	429920
20	429921
25	429922
30	429923
35	429924
40	429925
50	429926
75	429927

For SinCos Hiperface® - interface

Length in m	Item Number
1	429958
2	429959
3	429960
5	429961
7	429962
10	429963
15	429964
20	429965
25	429966
30	429967
35	429968
40	429969
50	429970
75	429971

For SinCos - and TTL - incremental encoder

Length in m	Item Number
1	430015
2	430016
3	430017
5	430018
7	430019
10	430020
15	430021
20	430022
25	430023
30	430024
35	430025
40	430026
50	430027
75	430028

For SinCos EnDat® 2.1 - interface

Length in m	Item Number
1	429986
2	429987
3	429988
5	429989
7	429990
10	429991
15	429992
20	429993
25	429994
30	429995
35	429996
40	429997
50	429998
75	429999

3.6. Motor cables

The motor cables are highly flexible trailing cables with overall shielding. They comply with VDE, UL and CSA regulations. The control cables are integrated as star quads. The brake control and the temperature sensor are connected via the main connector. The cables are particularly suited for the optimum use of cable racks thanks to their small cross-section, low weight, and non-impeding surface. As a result, they can be used efficiently in trailing chains. The overall shielding with an optical coverage of more than 85% makes the cable non-critical from an EMC perspective.

3.6.1. Technical data

- Sheath resistance to media such as coolants and machine and gearbox oils
- Abrasion resistance thanks to a special surface in cable racks and trailing chains
- Highly flexible trailing cable, minimum bending radius for flexible use: 12 x D
- Non-blocking sheath surface with satin finish
- Shield made of tinned copper braid with optical coverage of ≥ 85%
- Core insulation made from TPE or polyester, sheath material: Halogen-free PUR
- Cable is CFC and silicone-free
- Behavior in the event of fire: Fire-inhibiting, halogen-free
- Cable color RAL 1028, melon yellow
- Label features Baumüller logo and VDE, UL and CSA marks

Rated voltage
- Uo/U 600/1.000 V (power cores)
- U 24 V DC (control cores)

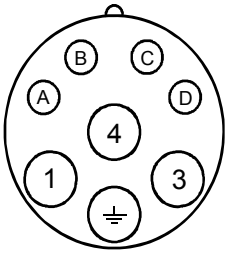
Core labeling
- Power cores U, VV, WWW
- Colored control cable pairs as star quads in red, white, black, yellow

Assignment of pairs: (note the polarity)
- Red – black (brake)
- white – yellow (temperature)

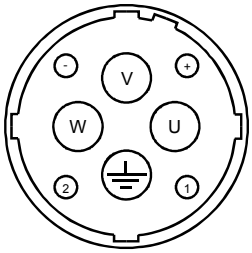
3.6.2. Main connection via connector

Note:
The connector size is determined by the standstill current I_0 of the motor used.
Motors with a standstill current of ≤ 20A feature a size 1 main connector.
For standstill currents of 20 A< I_0 ≤ 36 A, a size 1.5 main connector is used.
A terminal box must be used at a I_0 > 36A.

Poles of the female main connectors:

		Pin	Signal	Color/labeling
Size 1 I_0 ≤ 20 A		1	Phase U	U
		⏚	PE	Green/yellow
		3	Phase V	V V
		4	Phase W	W W W
		A	B+	Red
		B	B-	Black
		C	K+	White
		D	K-	Yellow

View of contact side of female connector

		Pin	Signal	Color/labeling
Size 1.5 $I_0 \leq 36$ A		U V W ⏚ + - 1 2	Phase U Phase V Phase W PE B+ B- K- K+	U V V W W W green / yellow Red Black White Yellow

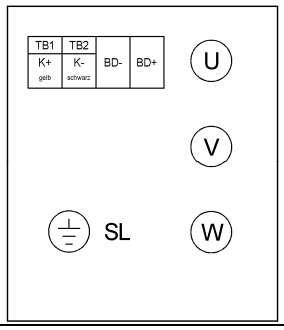
View of contact side of female connector

Cable cross-section [2]	**Rated current [A]** [1) 2)]	**Connector 540 V Size** [2]	**Cable diameter** [2] **[mm]**
4×1,5 mm² + 4×0,75 mm²	15	1	11,7 – 12,3
4×2,5 mm² + 4×0,75 mm²	20	1	12,7 – 14,6
4×4 mm² + 4×0,75 mm²	28	1,5	14,2 – 15,4
4×6 mm² + 4×0,75 mm²	36	1,5	16,6 – 17,9
4x10 mm² + 4x0,75 mm²	50	1,5	20,5 – 21,5

1) Current carrying capacity acc. to Table 5, laying type C or E VDE 0113/EN 60204 Part 1 issue 1997) Ambient temperature 40 °C

2) Deviating regulations apply for cULus approved motors.

3.6.3. Main connection via terminal boxes



Connection diagram

U V W	Power connection
K+ / K-	Temperature sensor
BD+ / BD-	Brake
SL	Earth wire

3.6.4. Application notes

Operating temperature
The cables can be operated within a temperature range of between -20 °C and +80 °C.

Cable laying at the motor
The cables must not touch the motor surface.

Smallest permissible bending radii
12x outer cable diameter.

3.6.5. Ordering data for main connection cables

Rated current: 15 A
Cable 4 x 1.5 mm² + 4 x 0.75 mm²
With connector size 1

Length in m	Article number
5	324781
7	324782
10	324783
15	324784
20	324785
25	324786
30	324787
35	324788
40	324789
50	324790
75	324791
100	324792

Rated current: 20 A
Cable 4 x 2.5 mm² + 4x 0.75 mm²
With connector size 1

Length in m	Article number
5	414840
7	380967
10	413410
15	414841
20	414842
25	414843
30	414846
35	414848
40	414849
50	414850
75	414851
100	414852

Rated current: 21 A
Cable 4 x 2.5 mm² + 4x 0.75 mm²
With connector size 1.5

Length in m	Article number
5	326577
7	326578
10	326579
15	326580
20	326581
25	326582
30	326583
35	326584
40	326585
50	326586
75	326587
100	326588

Rated current: 28 A
Cable 4 x 4 mm² + 4x 0.75 mm²
With connector size 1.5

Length in m	Article number
5	326589
7	326591
10	326592
15	326593
20	326594
25	326596
30	326597
35	326598
40	326599

Rated current: 36 A
Cable 4 x 6 mm² + 4x 0.75 mm²
With connector size 1.5

Length in m	Article number
5	326600
7	326601
10	326602
15	326603
20	326604
25	326605
30	326606
35	326607
40	326608

Rated current: 50 A
Cable 4 x 10 mm² + 4x 0.75 mm²
With connector size 1.5

Length in m	Article number
5	326609
7	326610
10	326611
15	326612
20	326613
25	326614
30	326615
35	326616
40	326617

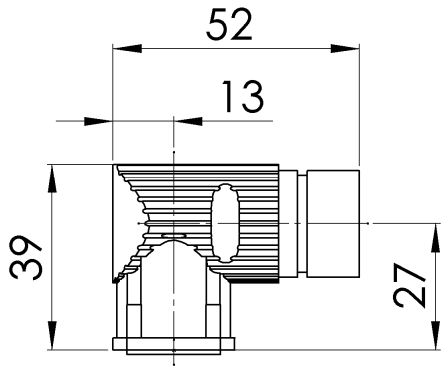
Mating plug

Type	Article number
Size 1 for 4x1.5mm^2 o. 4x2.5mm^2	261740
Size 1.5 for 4x2.5mm^2 o. 4x4mm^2	326574
Size 1.5 for 4x6mm^2 o. 4x10mm^2	326569

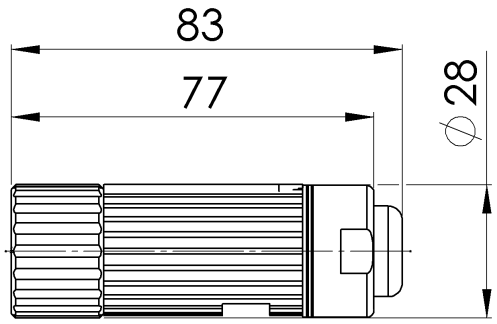
Deviating regulations apply for c UL us approved motors.

3.7. Dimensional drawings for equipment socket and plug for mains power and encoder

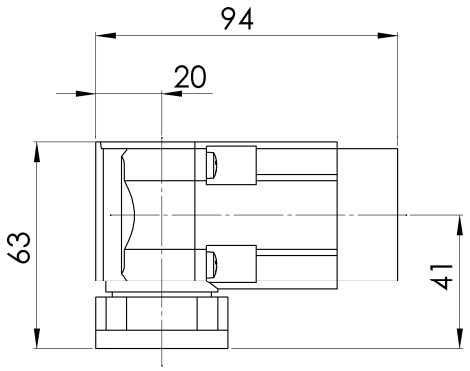
Rotatable connector for main connection
(Size 1 for current intensity I_0 up to 20 A)



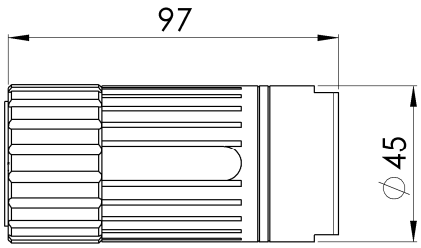
Mating plug for main connection
(Size 1 for current intensity I_0 up to 20 A)



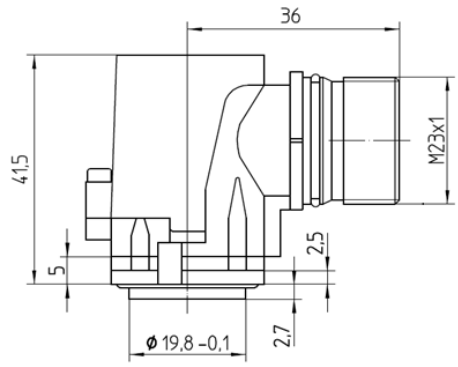
Rotatable connector for main connection
(Size 1.5 for current intensity I_0 up to 36 A)



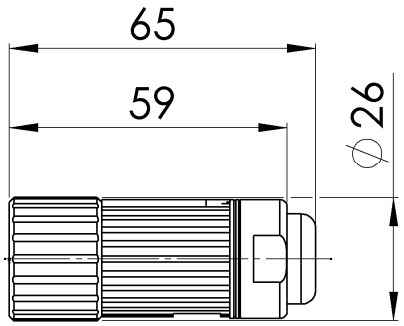
Mating plug for main connection
(Size 1.5 for current intensity I_0 up to 36 A)



Socket for ECN1325/EQN1337 encoder
(Mating plug cannot be supplied separately)

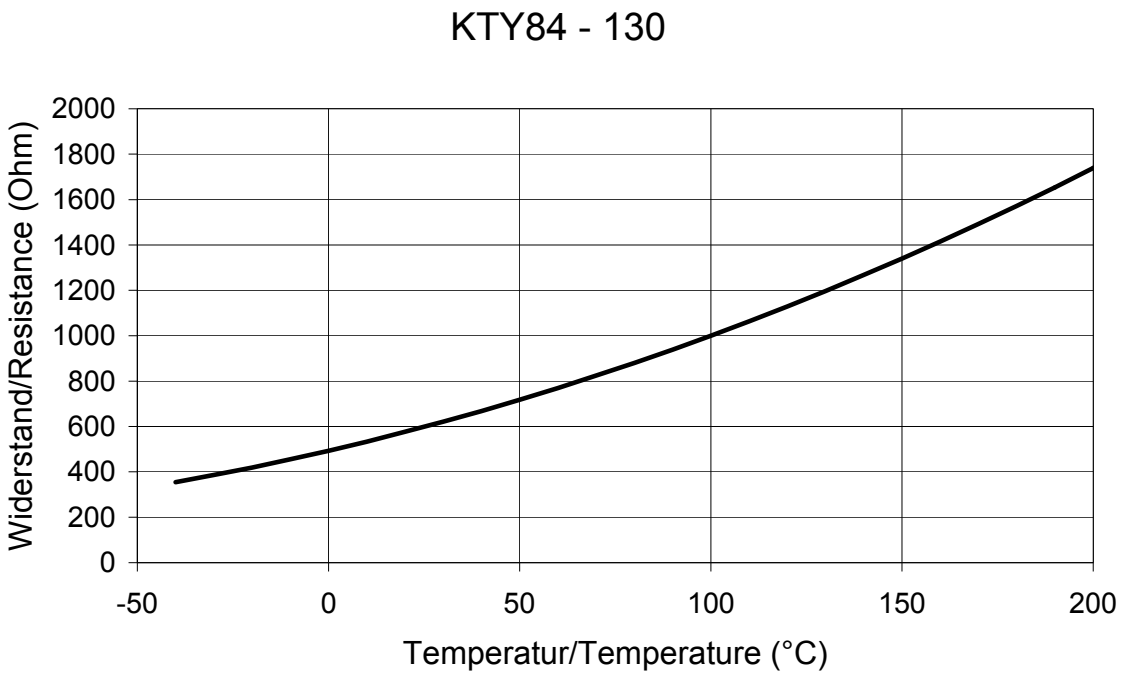


Mating plug for encoder
(Not for ECN1325 and EQN1337)



3.8. Temperature sensor

The temperature sensor is connected via the main connection. Optionally, connection via the encoder box is possible. The respective execution must be marked in the order code.



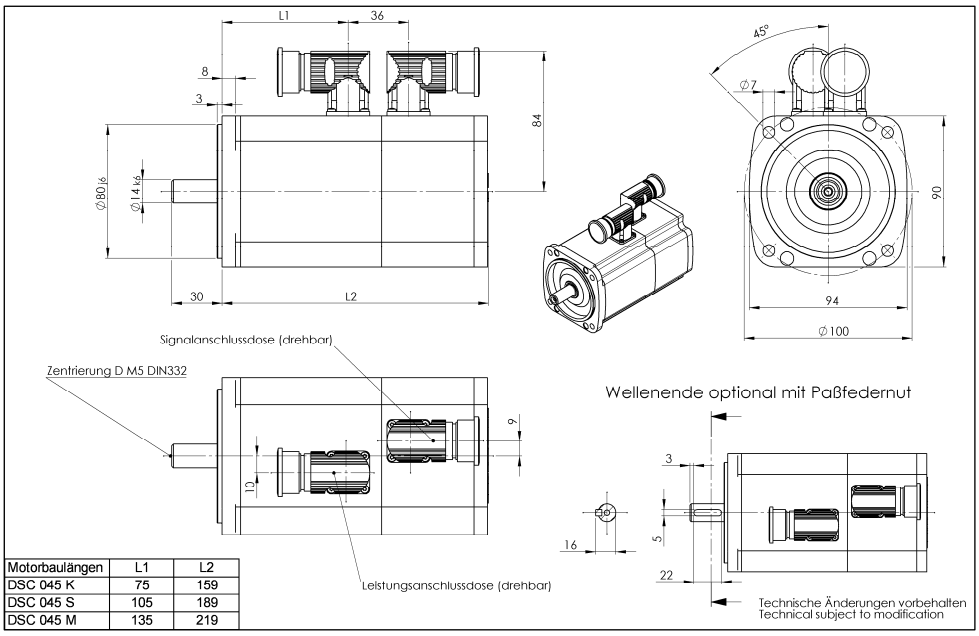
The motor temperature is continuously monitored using temperature sensor type KTY84-130.
The resistance shown above results, when the sensor is supplied with a measuring current of 2 mA.

Note: The KTY is a polarized resistor and an electrostatic sensitive device.

4. Dimension drawings

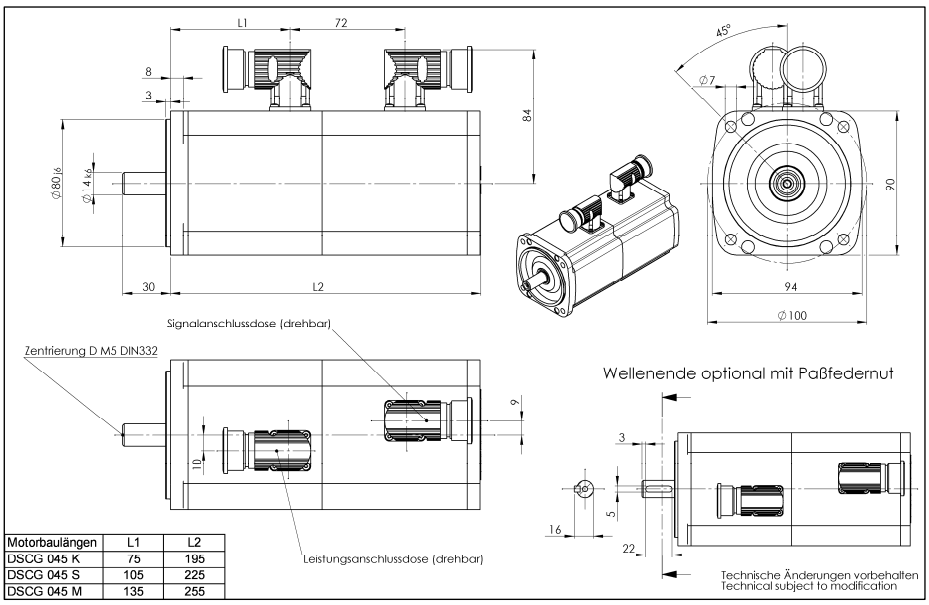
4.1. Dimension drawings DSC045

Dimension drawing DSC045..64U..5
Version IM B5



Motorbaulängen	L1	L2
DSC 045 K	75	159
DSC 045 S	105	189
DSC 045 M	135	219

Dimension drawing DSCG045..64U..5
Version IM B5

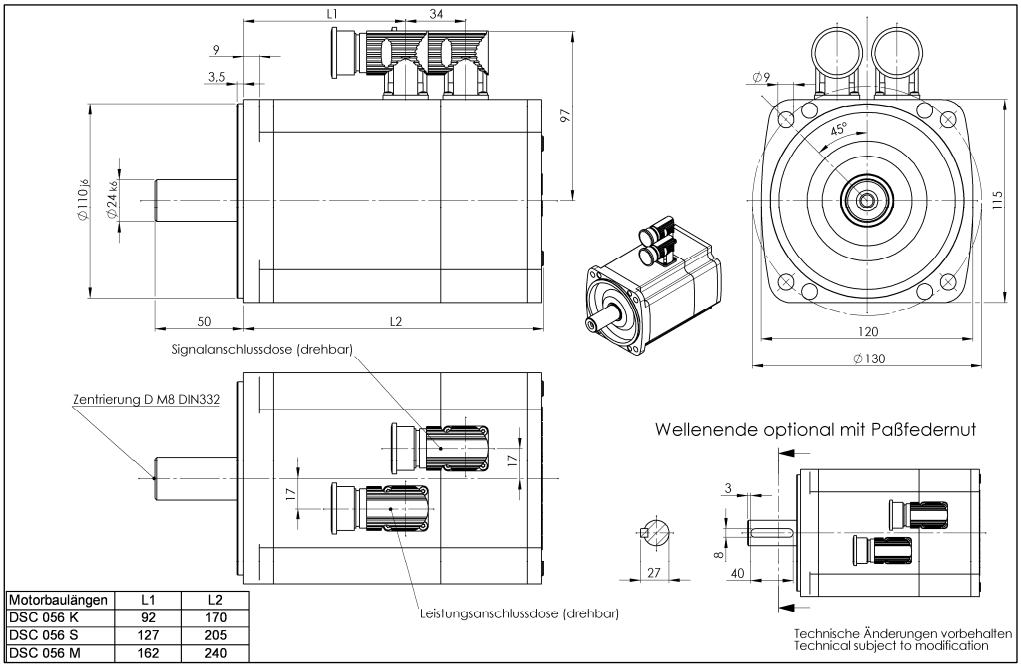


Motorbaulängen	L1	L2
DSCG 045 K	75	195
DSCG 045 S	105	225
DSCG 045 M	135	255

Note: If using a SRM50 sensor, the dimension L2 extends by 12mm.

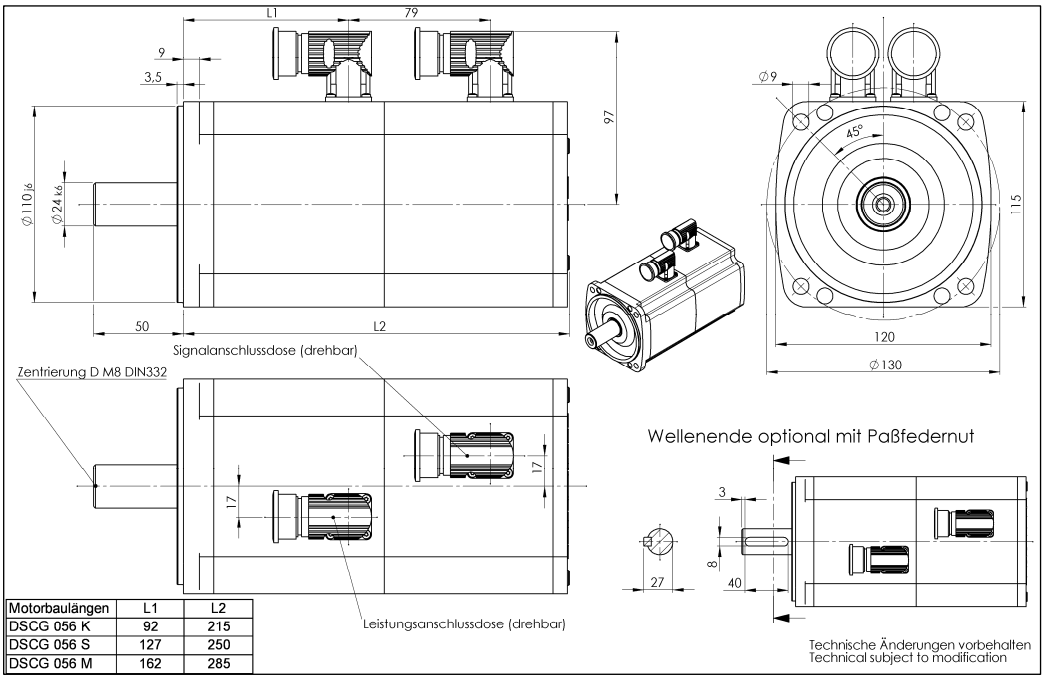
4.2. Dimension drawings DSC056

Dimension drawing DSC056..64U..5
Version IM B5



Motorbaulängen	L1	L2
DSC 056 K	92	170
DSC 056 S	127	205
DSC 056 M	162	240

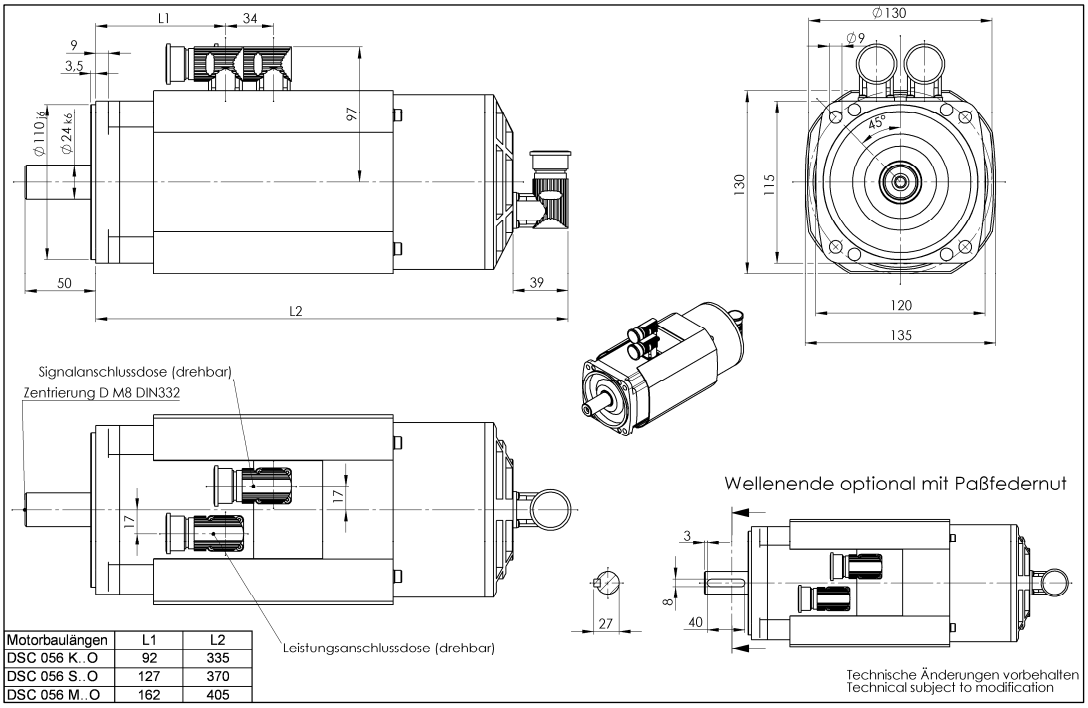
Dimension drawing DSCG056..64U..5
Version IM B5



Motorbaulängen	L1	L2
DSCG 056 K	92	215
DSCG 056 S	127	250
DSCG 056 M	162	285

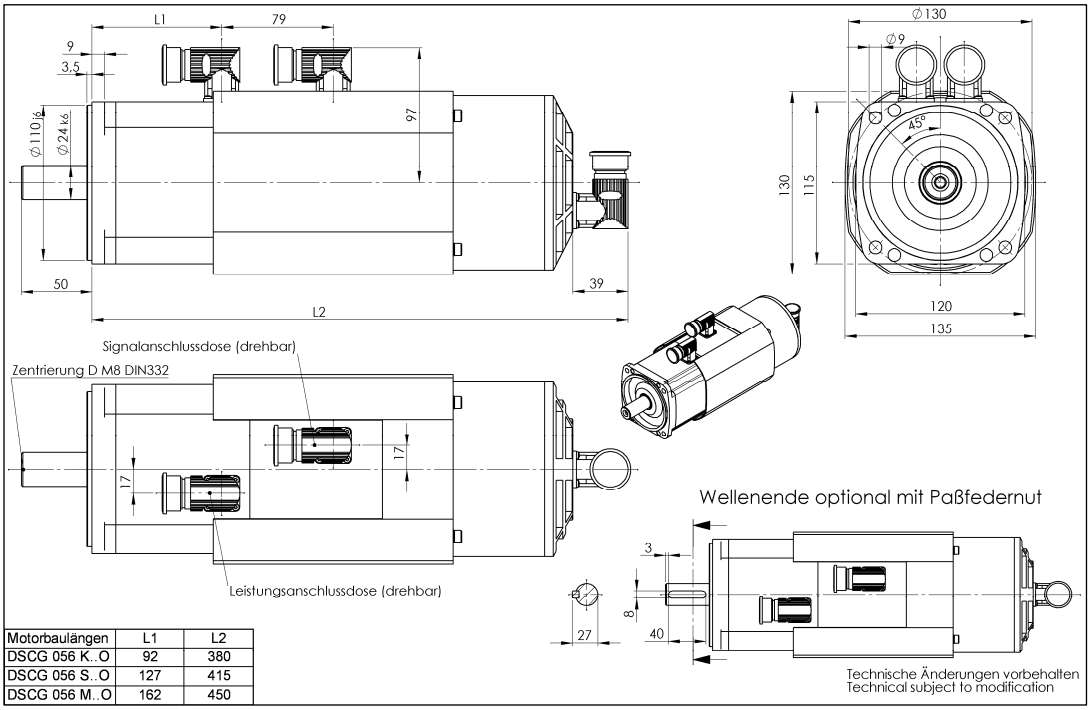
Note:
If using a SRM50 sensor, the dimension L2 for the unventilated variant extends by 12mm.

Dimension drawing DSC056..64O..5
Version IM B5



Motorbaulängen	L1	L2
DSC 056 K..O	92	335
DSC 056 S..O	127	370
DSC 056 M..O	162	405

Dimension drawing DSCG056..64O..5
Version IM B5

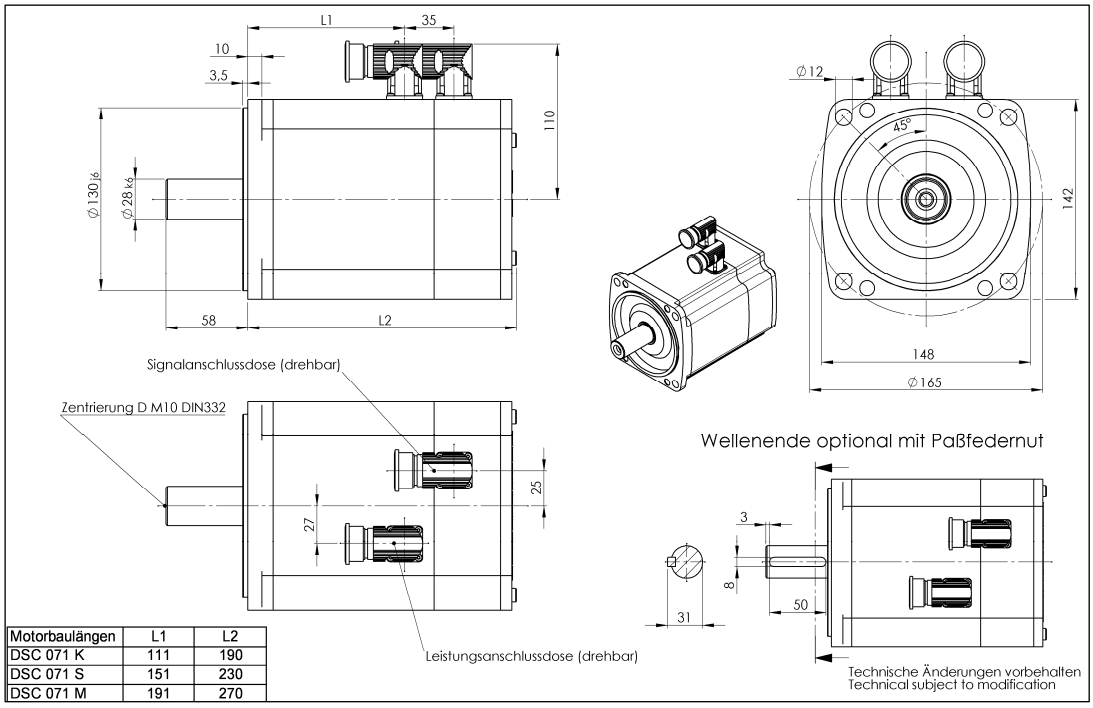


Motorbaulängen	L1	L2
DSCG 056 K..O	92	380
DSCG 056 S..O	127	415
DSCG 056 M..O	162	450

4.3. Dimension drawings DSC071

Dimension drawing DSC071..64U..5

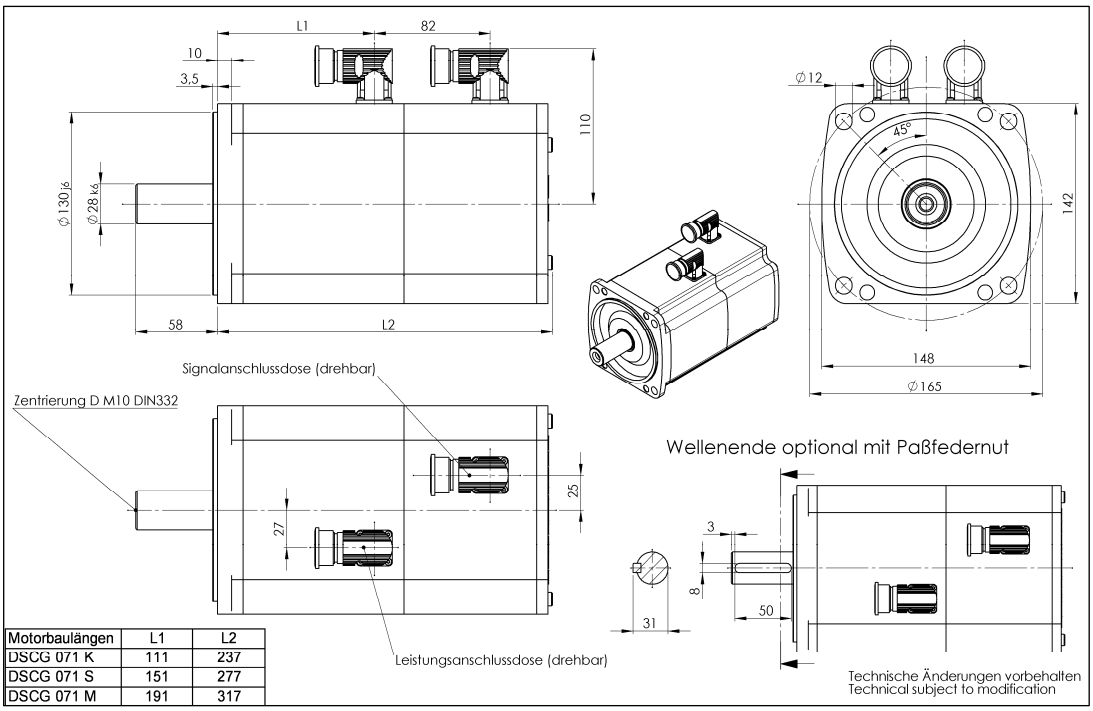
Version IM B5



Motorbaulängen	L1	L2
DSC 071 K	111	190
DSC 071 S	151	230
DSC 071 M	191	270

Dimension drawing DSCG071..64U..5

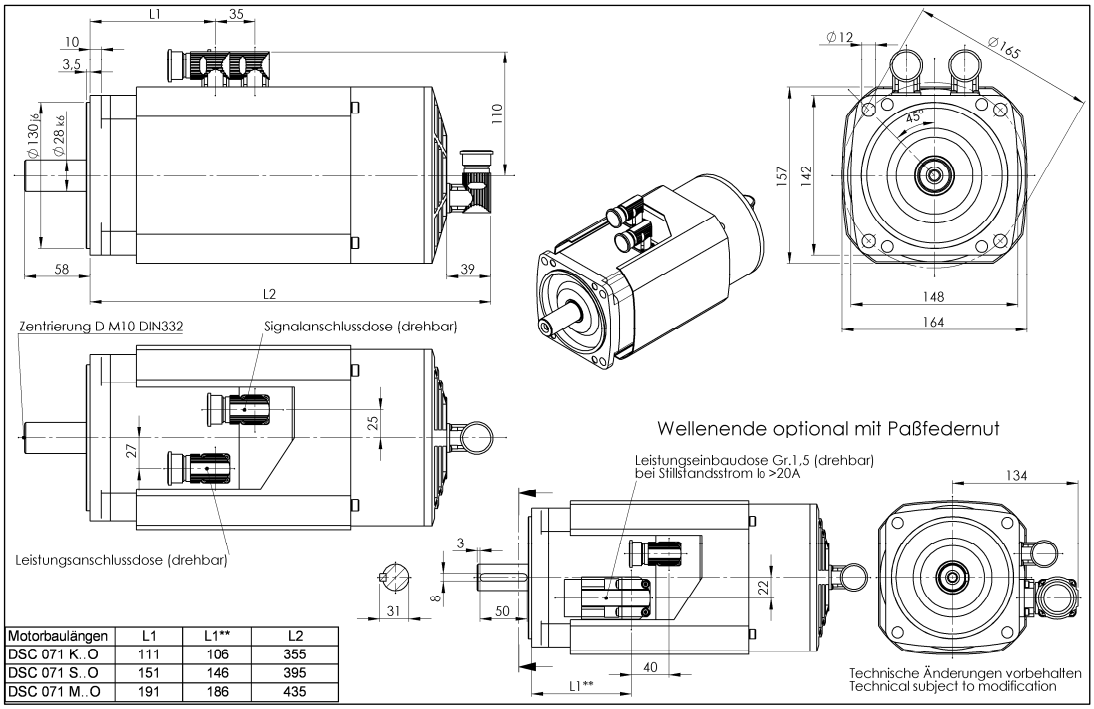
Version IM B5



Motorbaulängen	L1	L2
DSCG 071 K	111	237
DSCG 071 S	151	277
DSCG 071 M	191	317

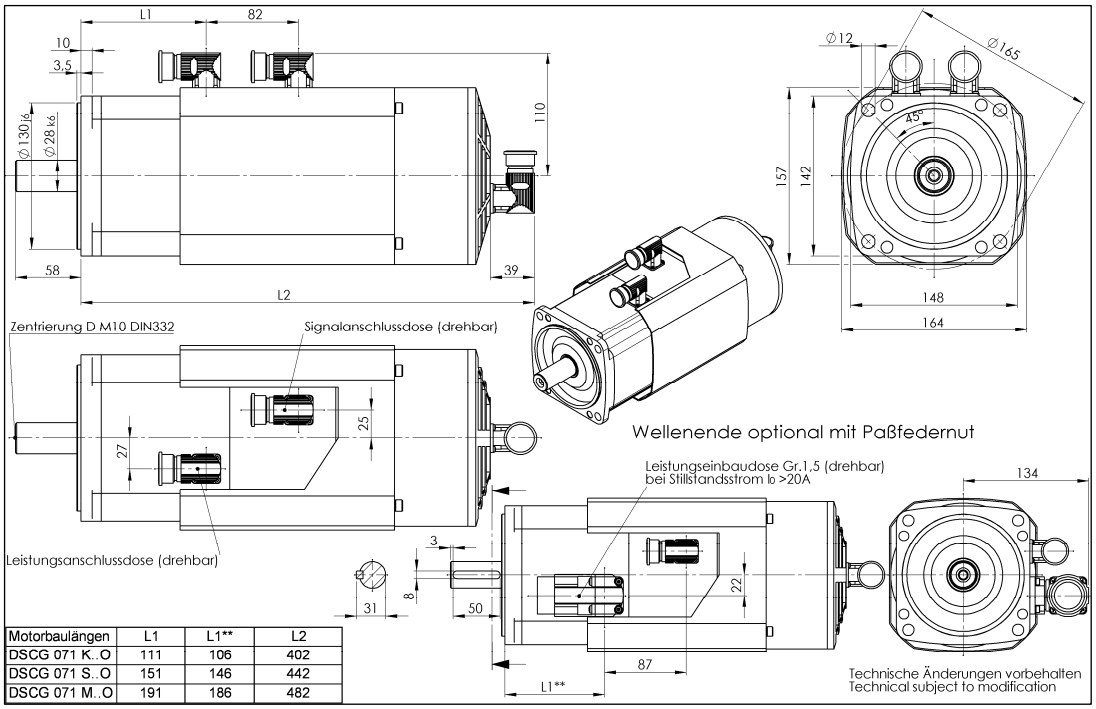
Note:
If using a SRM50 sensor, the dimension L2 for the unventilated variant extends by 10mm.

Dimension drawing DSC071..64O..5
Version IM B5



Motorbaulängen	L1	L1**	L2
DSC 071 K..O	111	106	355
DSC 071 S..O	151	146	395
DSC 071 M..O	191	186	435

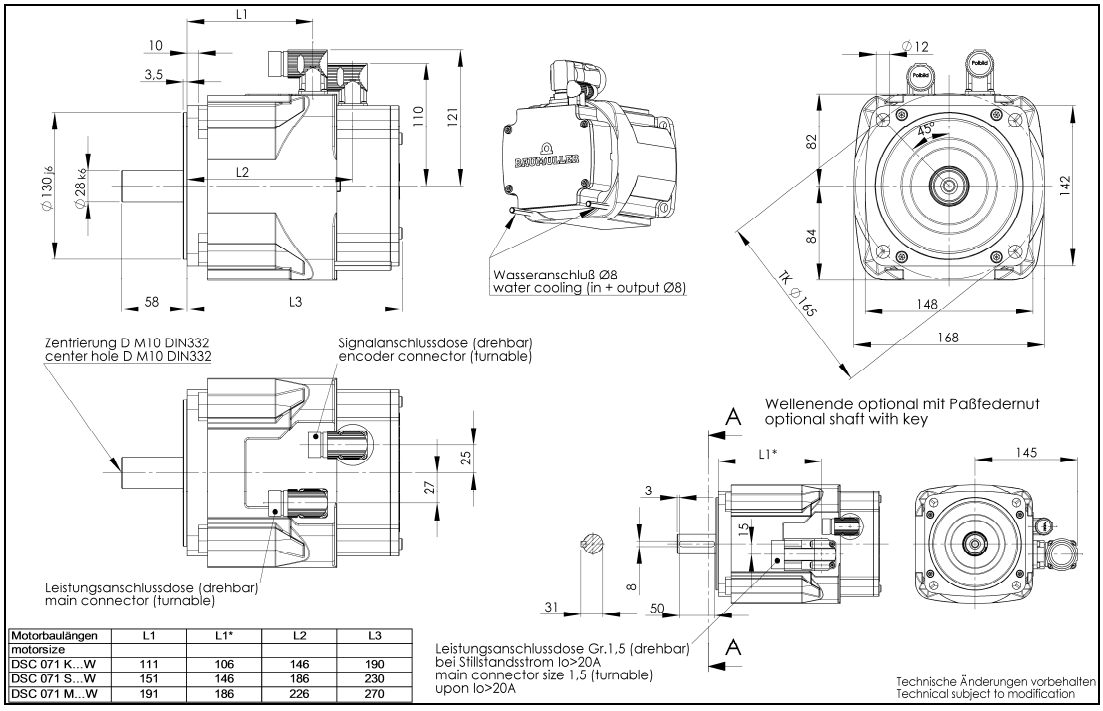
Dimension drawing DSCG071..64O..5
Version IM B5



Motorbaulängen	L1	L1**	L2
DSCG 071 K..O	111	106	402
DSCG 071 S..O	151	146	442
DSCG 071 M..O	191	186	482

Dimension drawing DSC071..64W..5

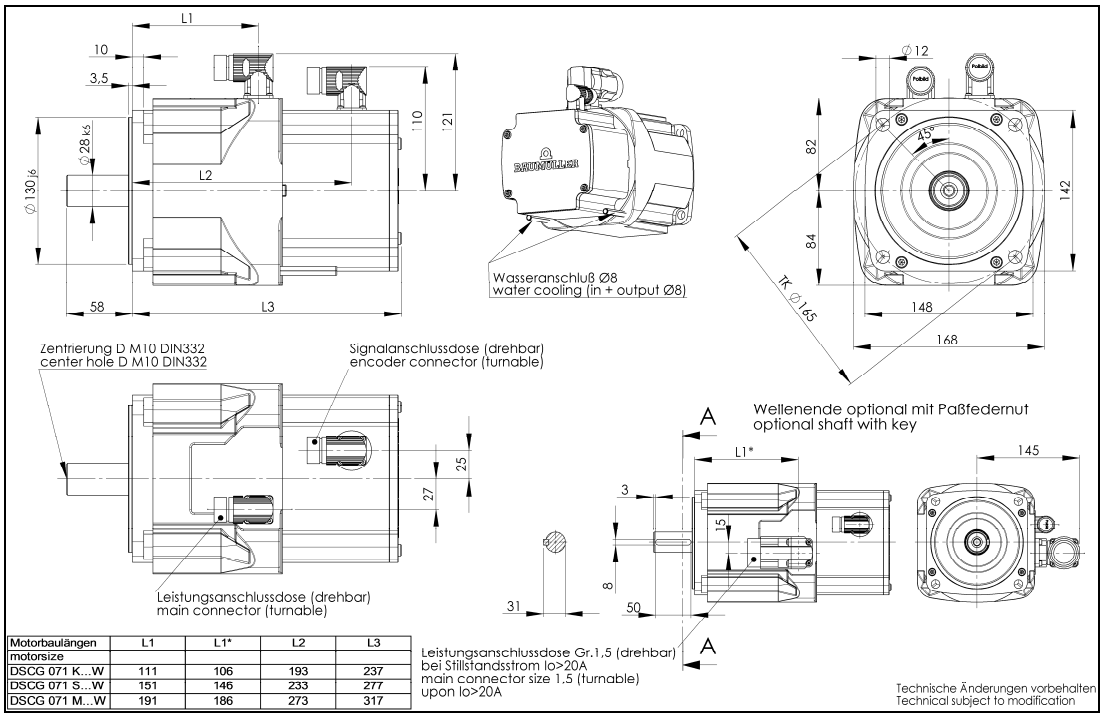
Version IM B5



Motorbaulängen	L1	L1*	L2	L3
motorsize				
DSC 071 K...W	111	106	146	190
DSC 071 S...W	151	146	186	230
DSC 071 M...W	191	186	226	270

Dimension drawing DSCG071..64W..5

Version IM B5

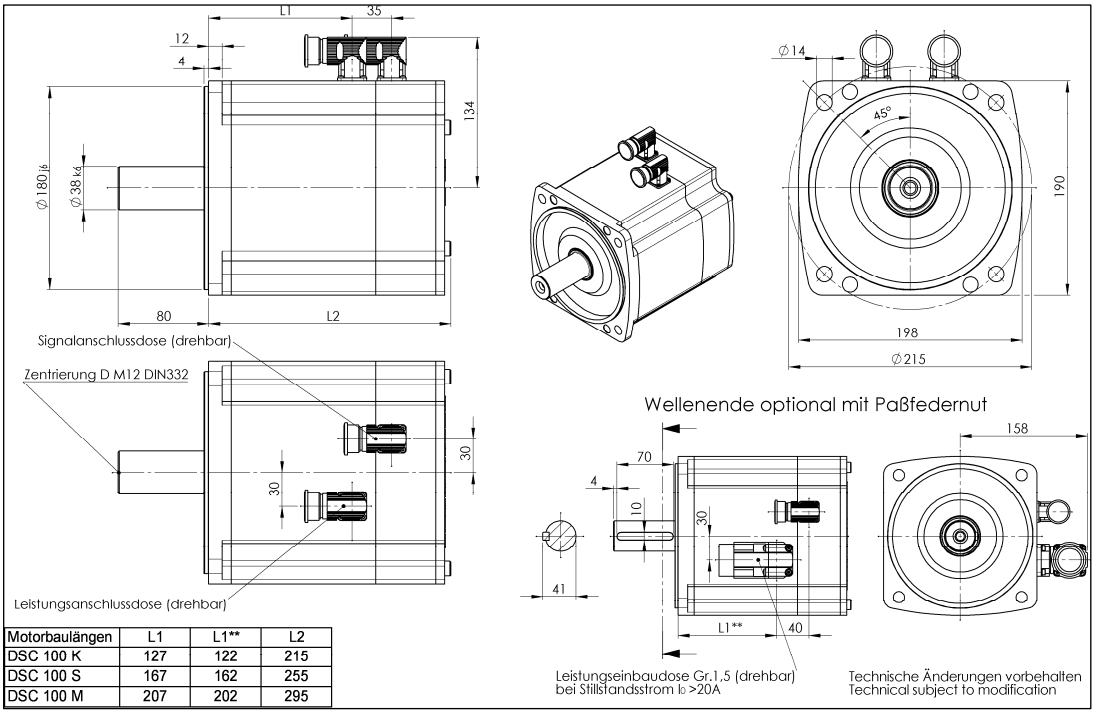


Motorbaulängen	L1	L1*	L2	L3
motorsize				
DSCG 071 K...W	111	106	193	237
DSCG 071 S...W	151	146	233	277
DSCG 071 M...W	191	186	273	317

4.4. Dimension drawings DSC100

Dimension drawing DSC100..64U..5

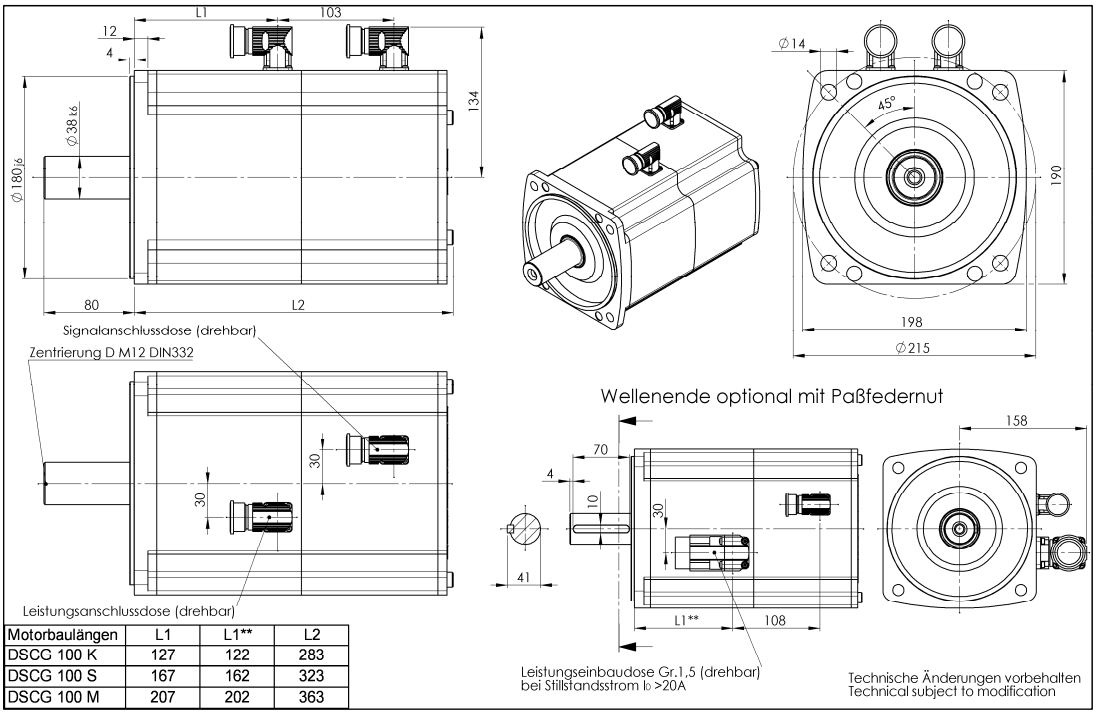
Version IM B5



Motorbaulängen	L1	L1**	L2
DSC 100 K	127	122	215
DSC 100 S	167	162	255
DSC 100 M	207	202	295

Dimension drawing DSCG100..64U..5

Version IM B5

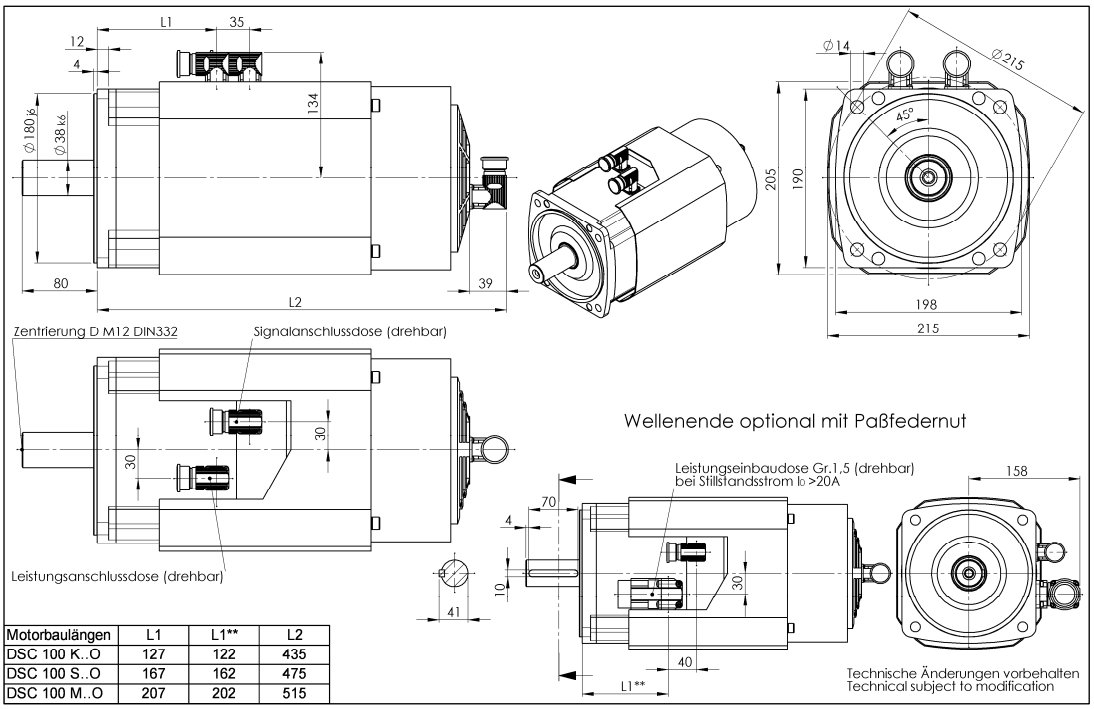


Motorbaulängen	L1	L1**	L2
DSCG 100 K	127	122	283
DSCG 100 S	167	162	323
DSCG 100 M	207	202	363

Note:
If using a SRM50 sensor, the dimension L2 for the unventilated variant extends by 7mm.

Dimension drawing DSC100..64O..5

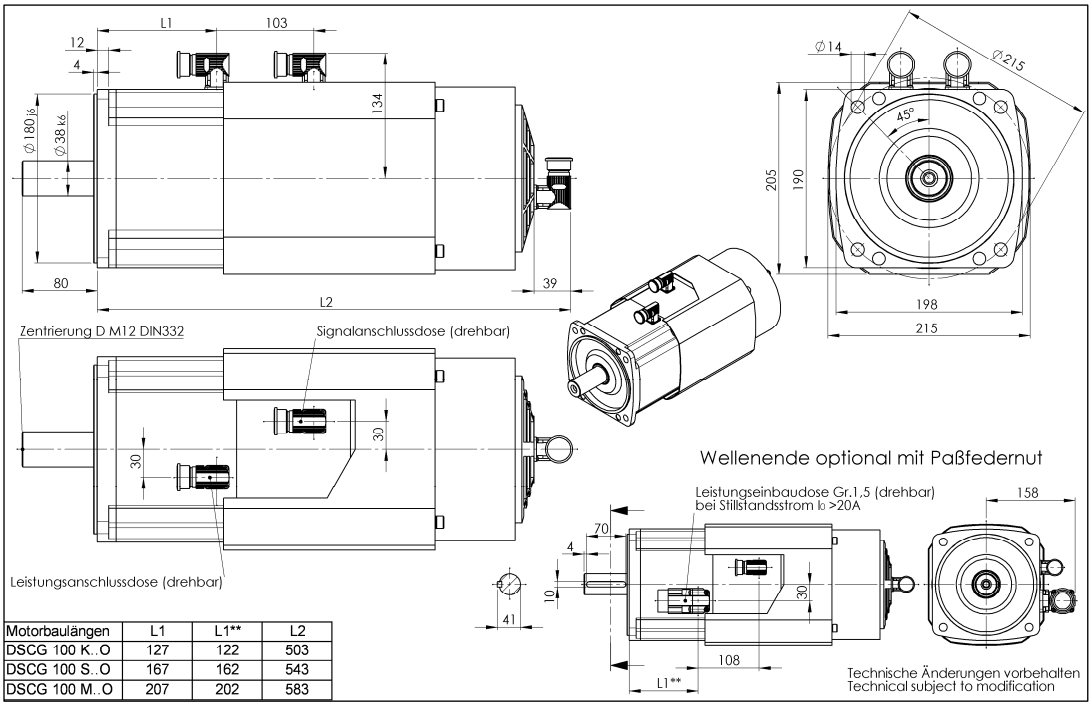
Version IM B5



Motorbaulängen	L1	L1**	L2
DSC 100 K..O	127	122	435
DSC 100 S..O	167	162	475
DSC 100 M..O	207	202	515

Dimension drawing DSCG100..64O..5

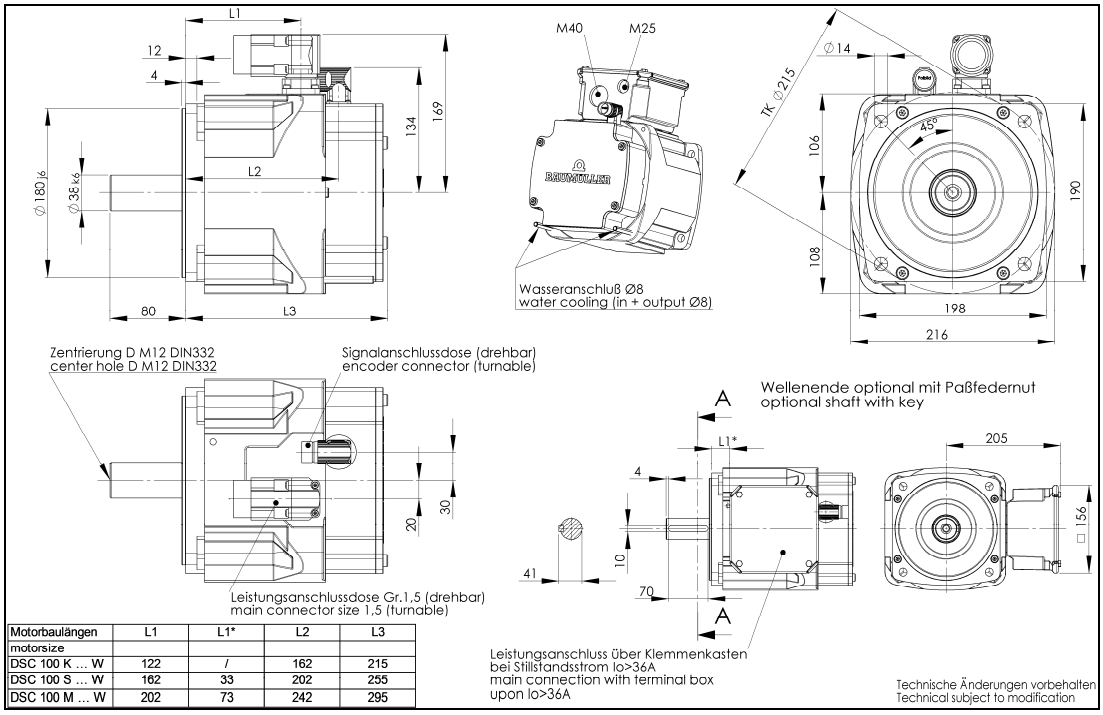
Version IM B5



Motorbaulängen	L1	L1**	L2
DSCG 100 K..O	127	122	503
DSCG 100 S..O	167	162	543
DSCG 100 M..O	207	202	583

Dimension drawing DSC100..64W..5

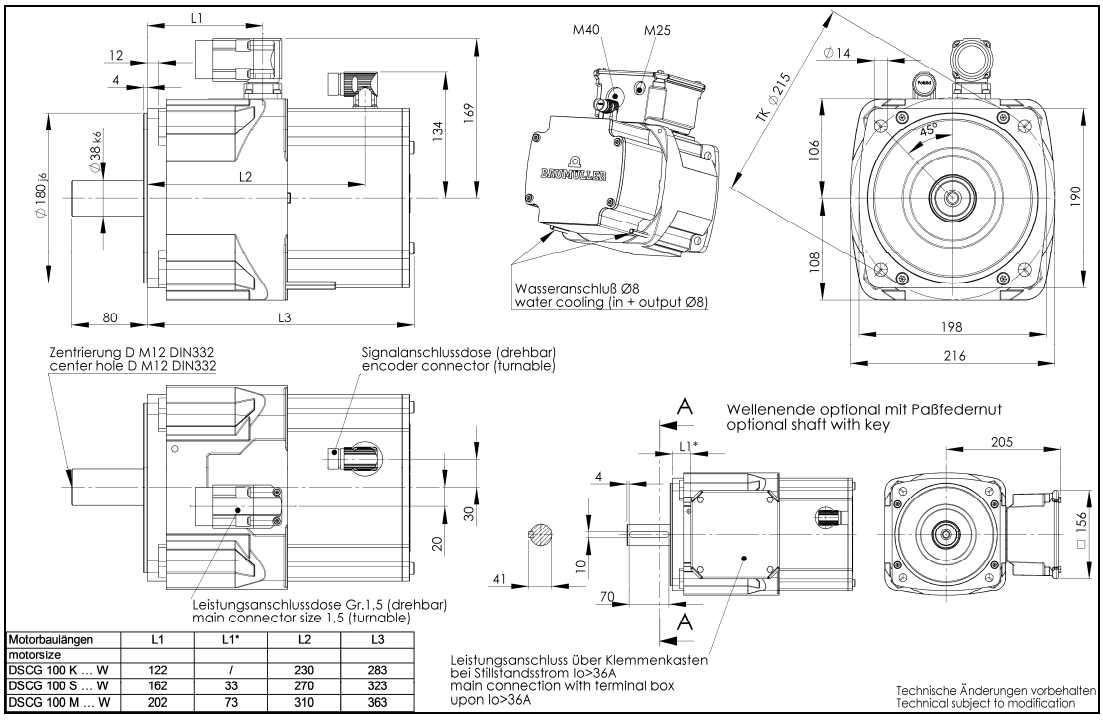
Version IM B5



Motorbaulängen	L1	L1*	L2	L3
motorsize				
DSC 100 K … W	122	/	162	215
DSC 100 S … W	162	33	202	255
DSC 100 M … W	202	73	242	295

Dimension drawing DSCG100..64W..5

Version IM B5

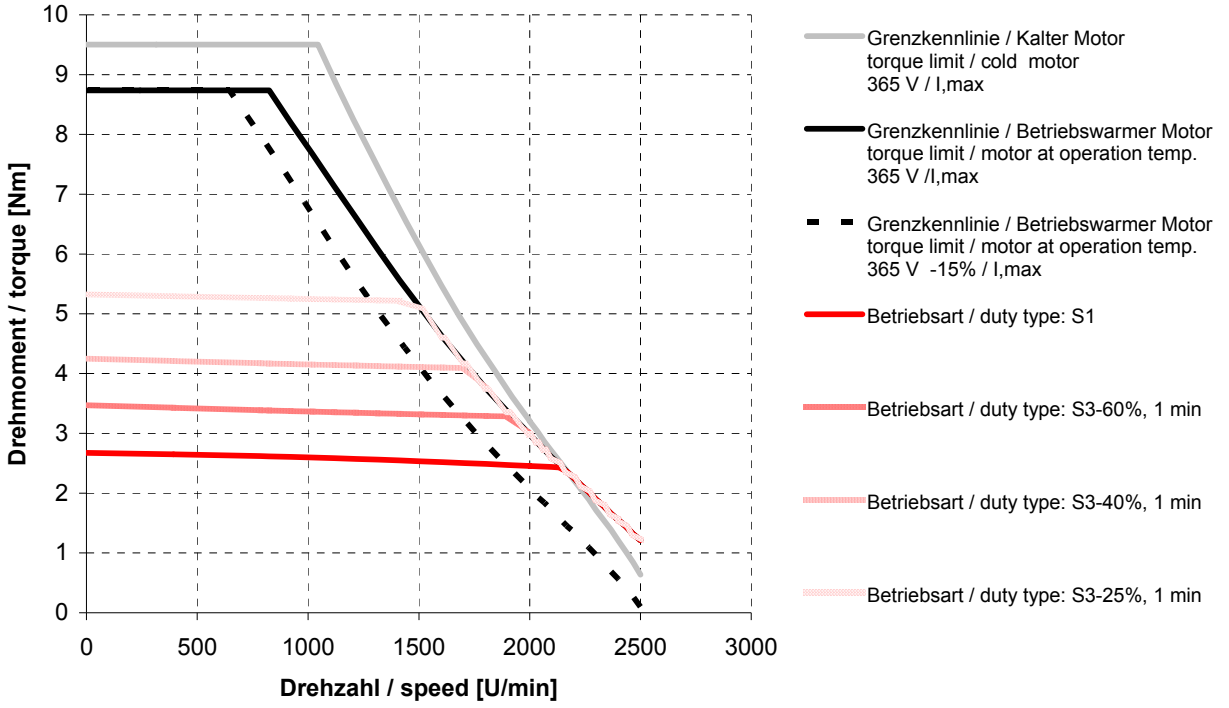


Motorbaulängen	L1	L1*	L2	L3
motorsize				
DSCG 100 K … W	122	/	230	283
DSCG 100 S … W	162	33	270	323
DSCG 100 M … W	202	73	310	363

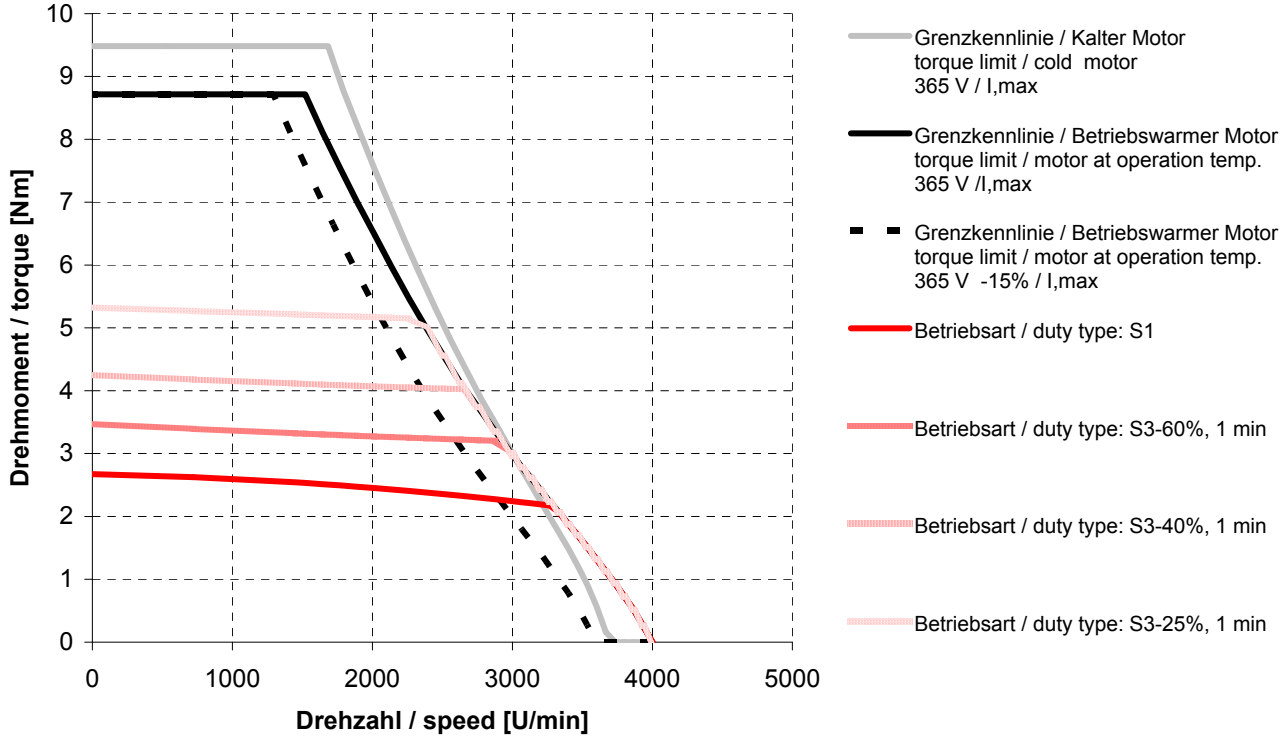
5. Motor characteristic curves

5.1. Characteristic curves DSC045

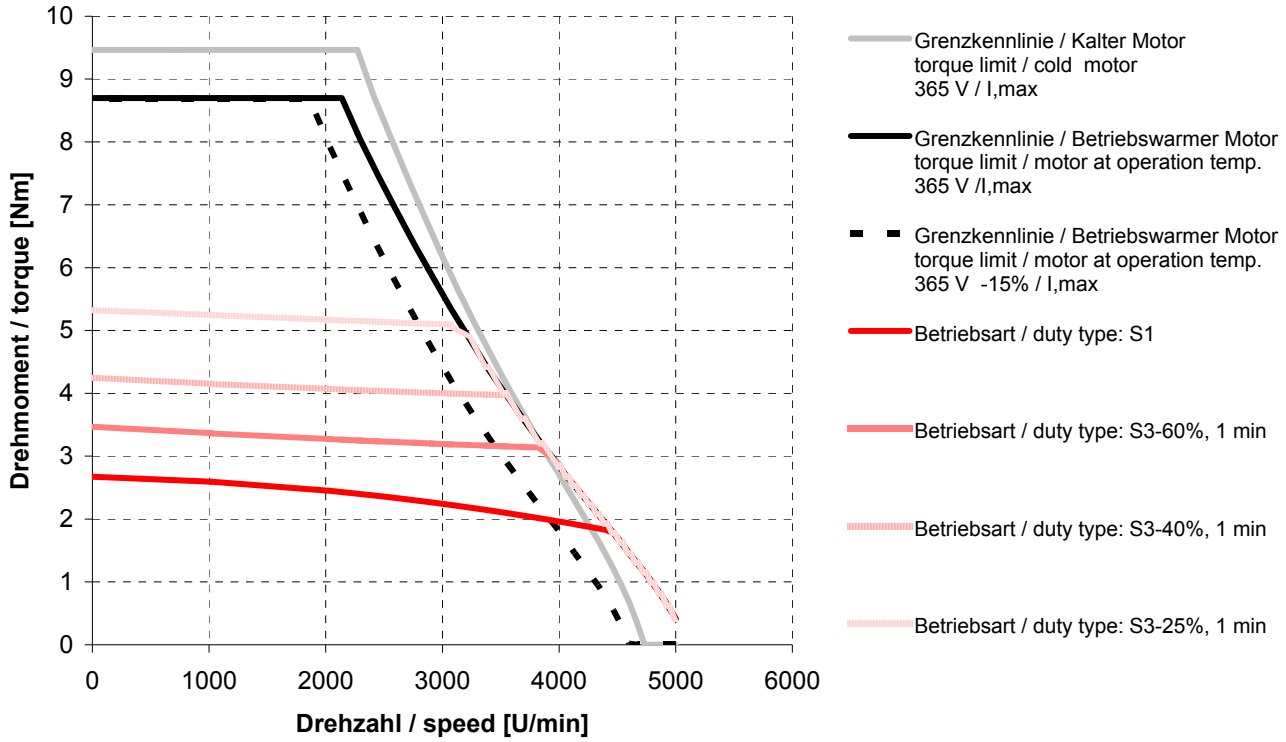
DSC045K64U20-5



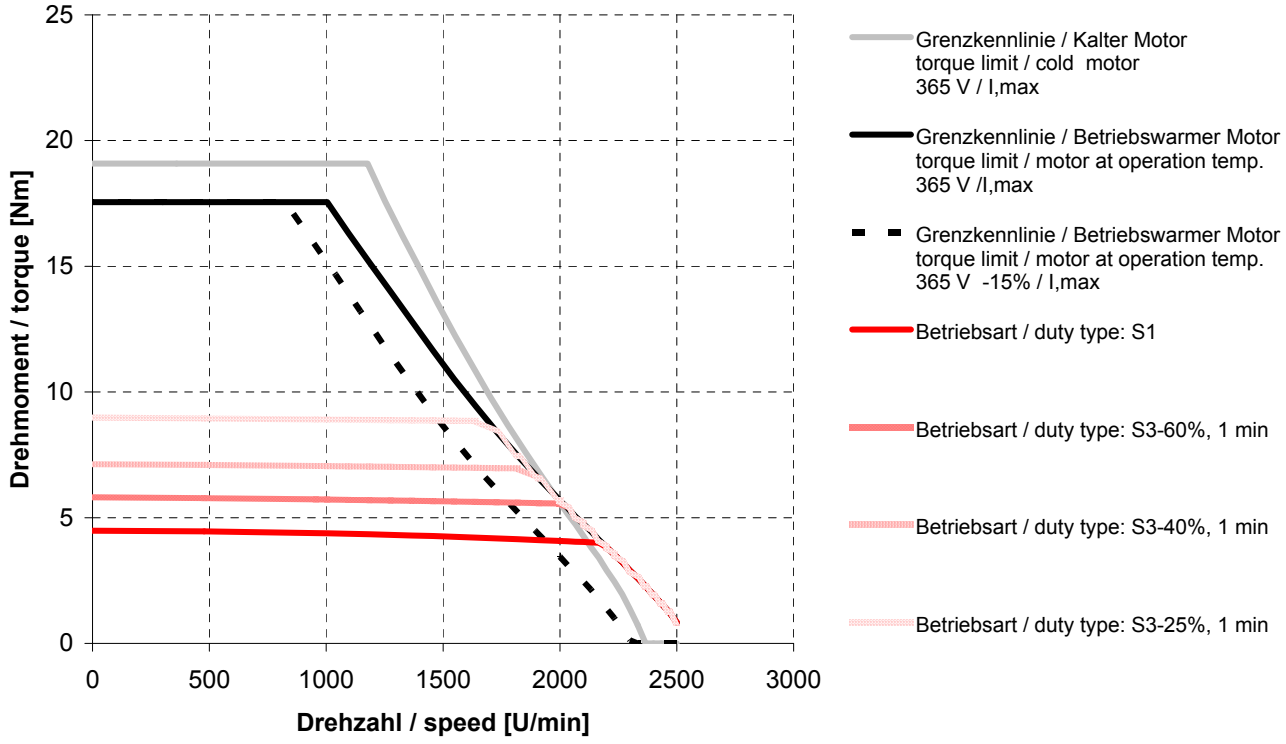
DSC045K64U30-5



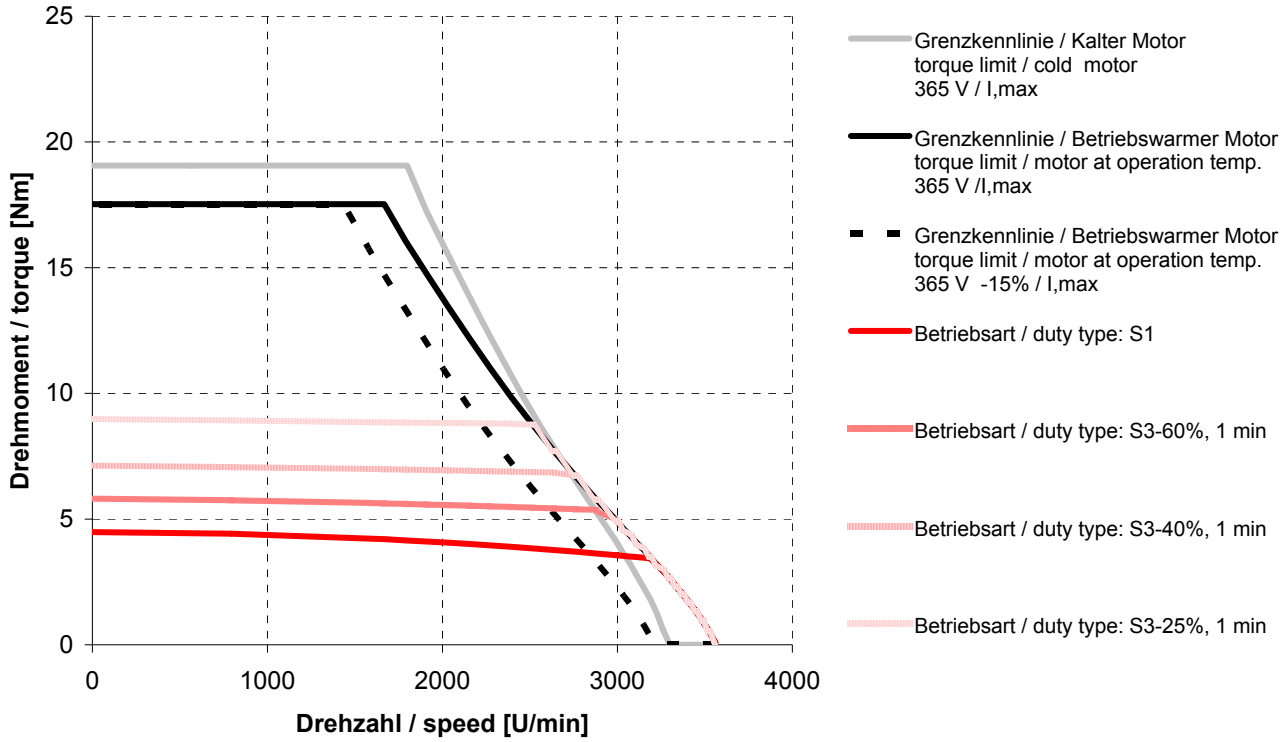
DSC045K64U40-5



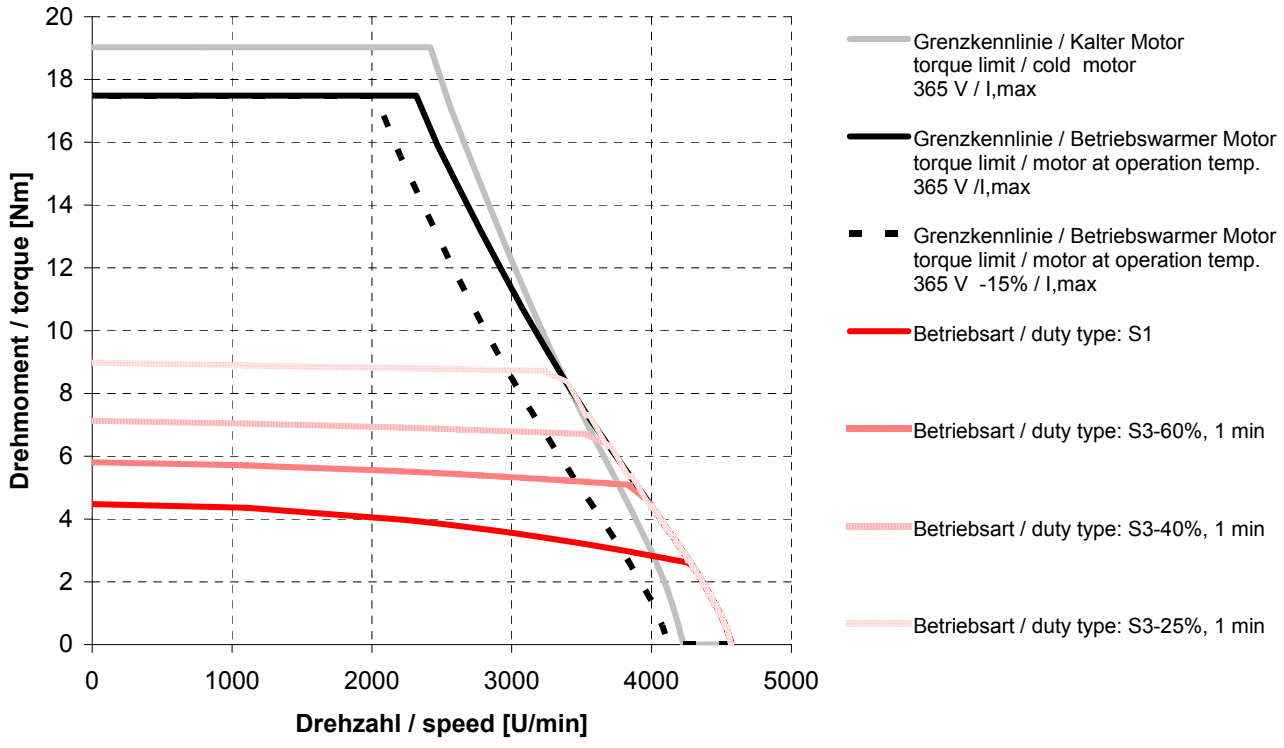
DSC045S64U20-5



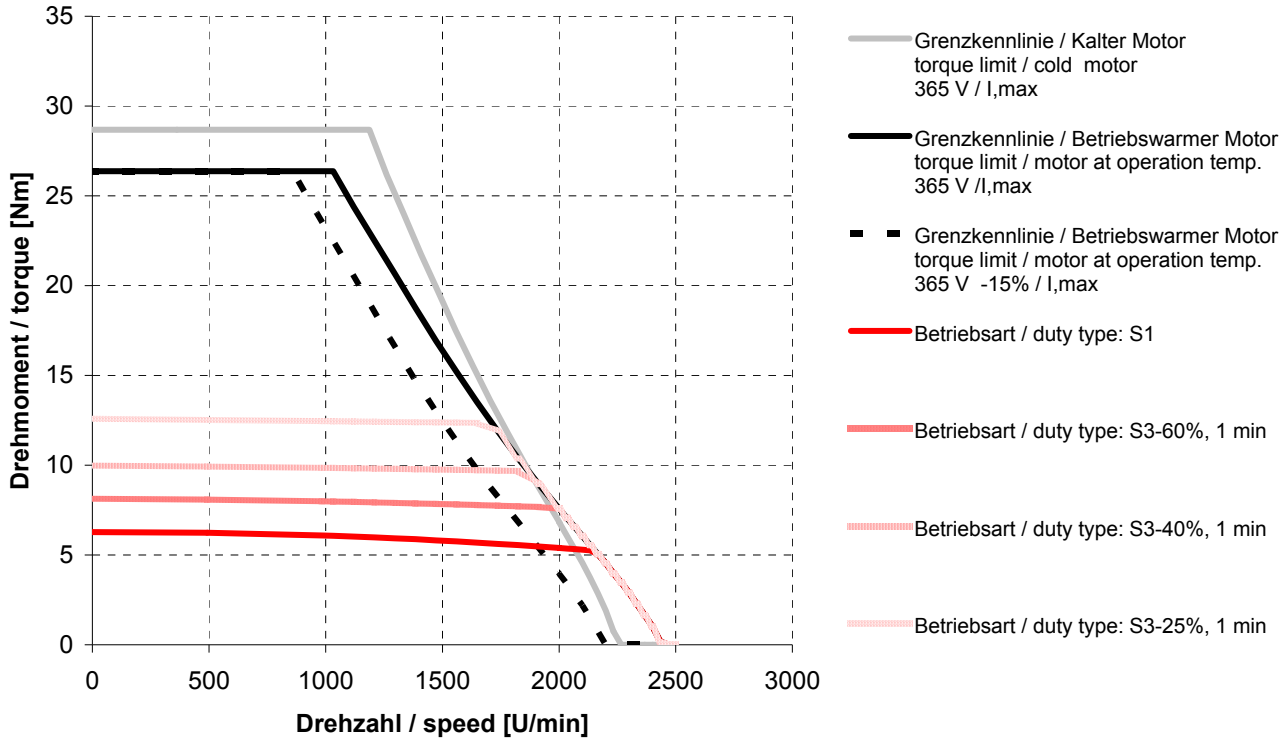
DSC045S64U30-5



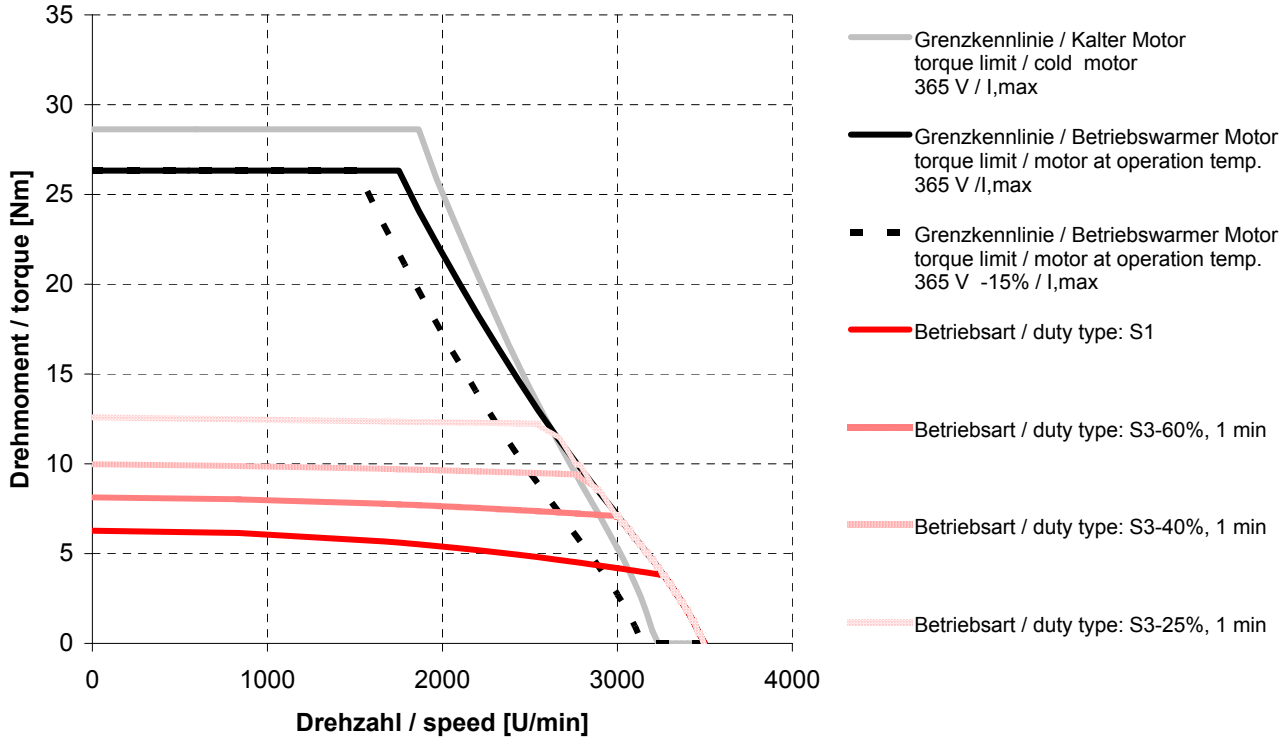
DSC045S64U40-5



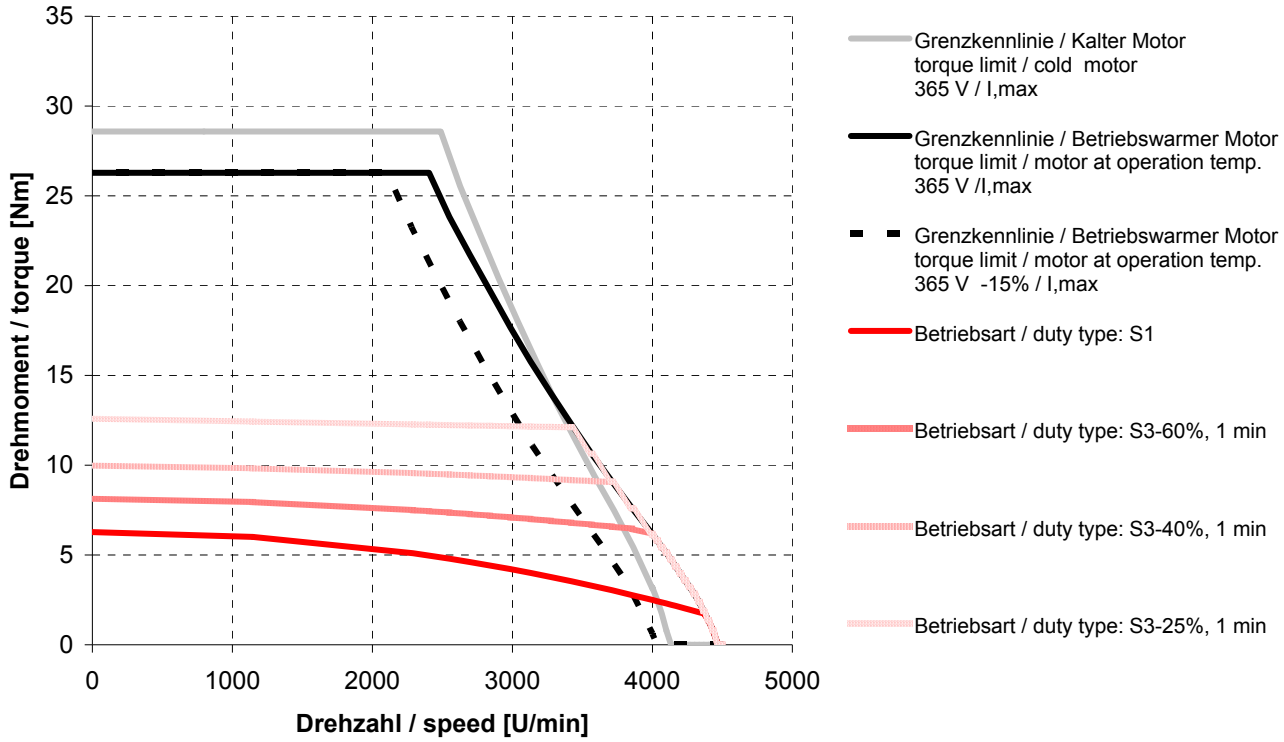
DSC045M64U20-5



DSC045M64U30-5



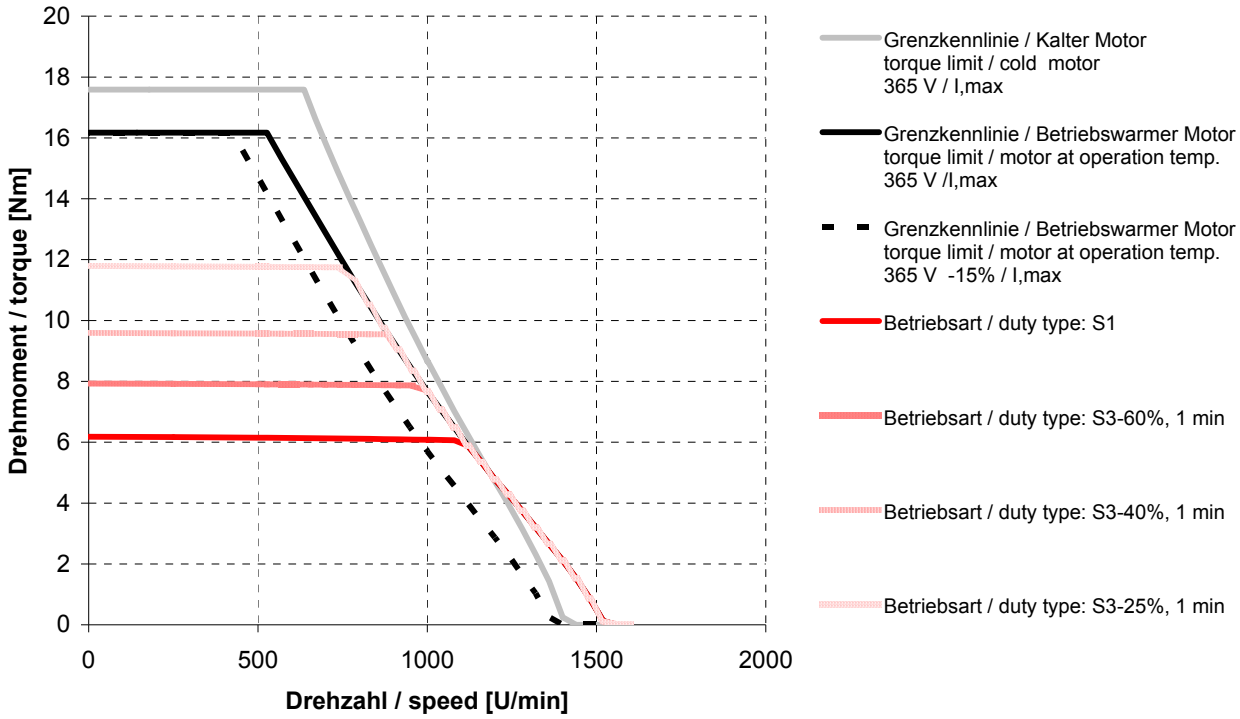
DSC045M64U40-5



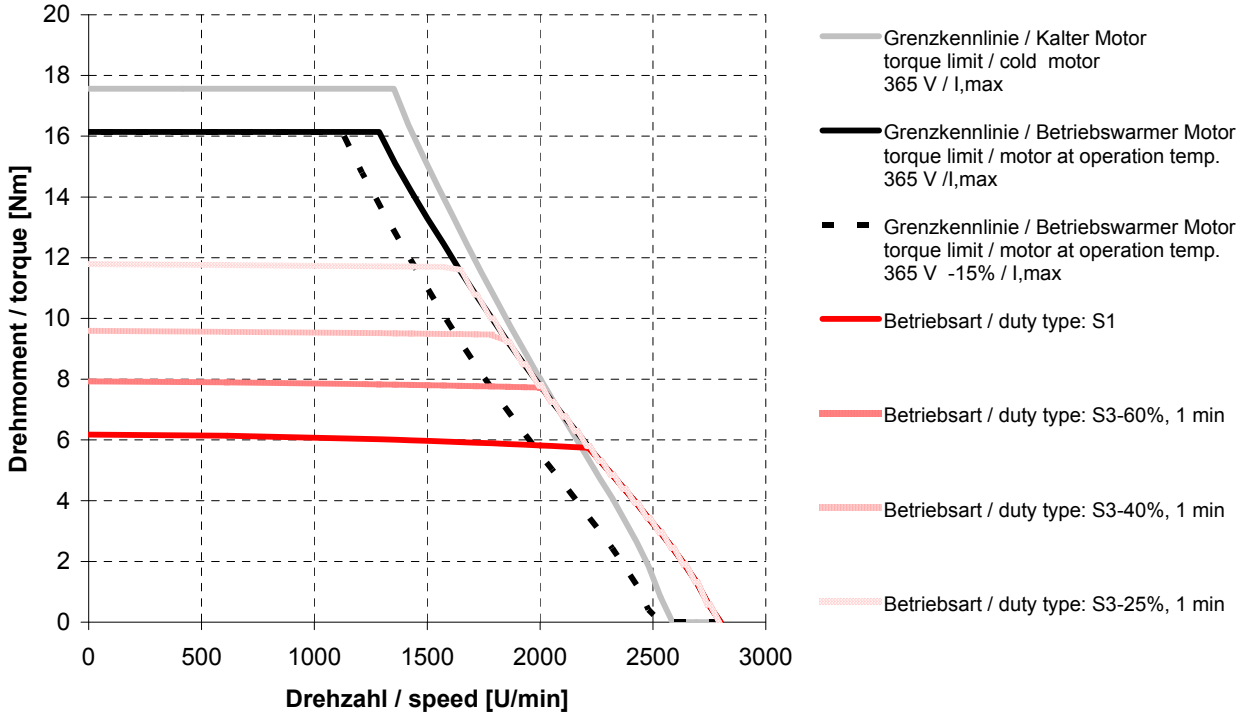
5.2. Characteristic curves DSC056

5.2.1. DSC056..64U..

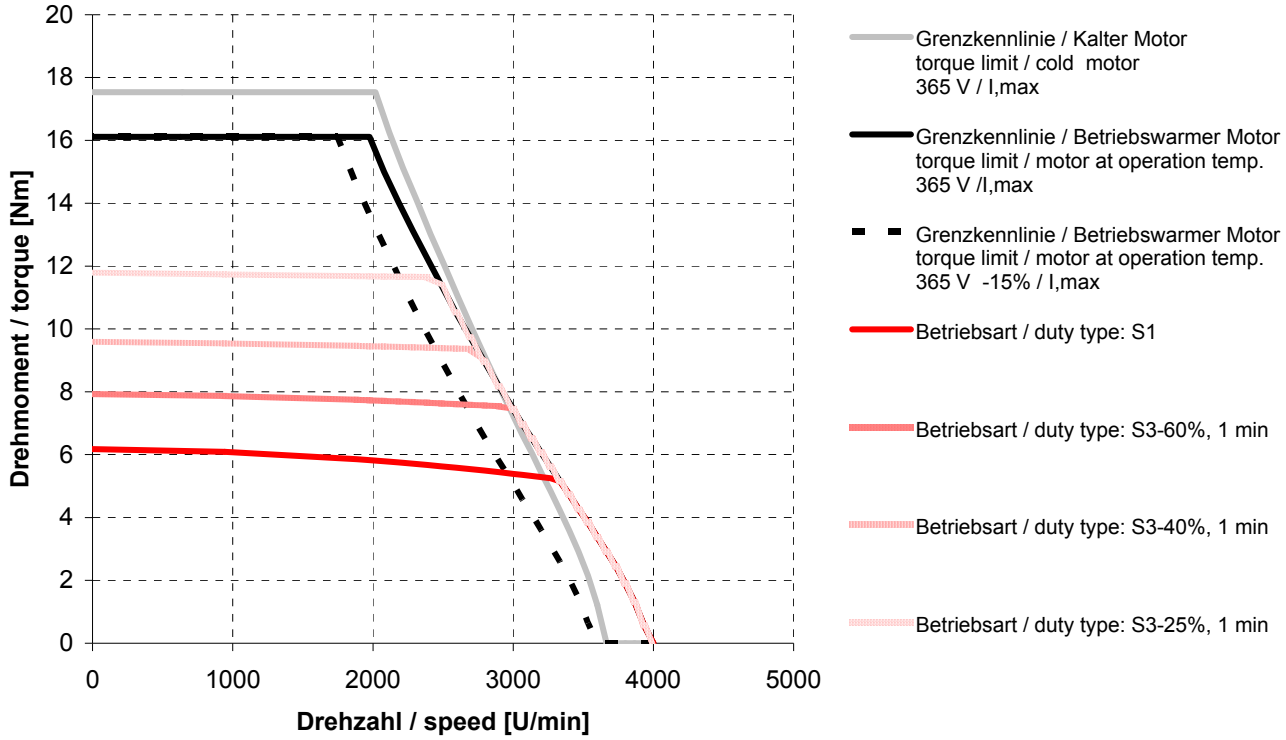
DSC056K64U10-5



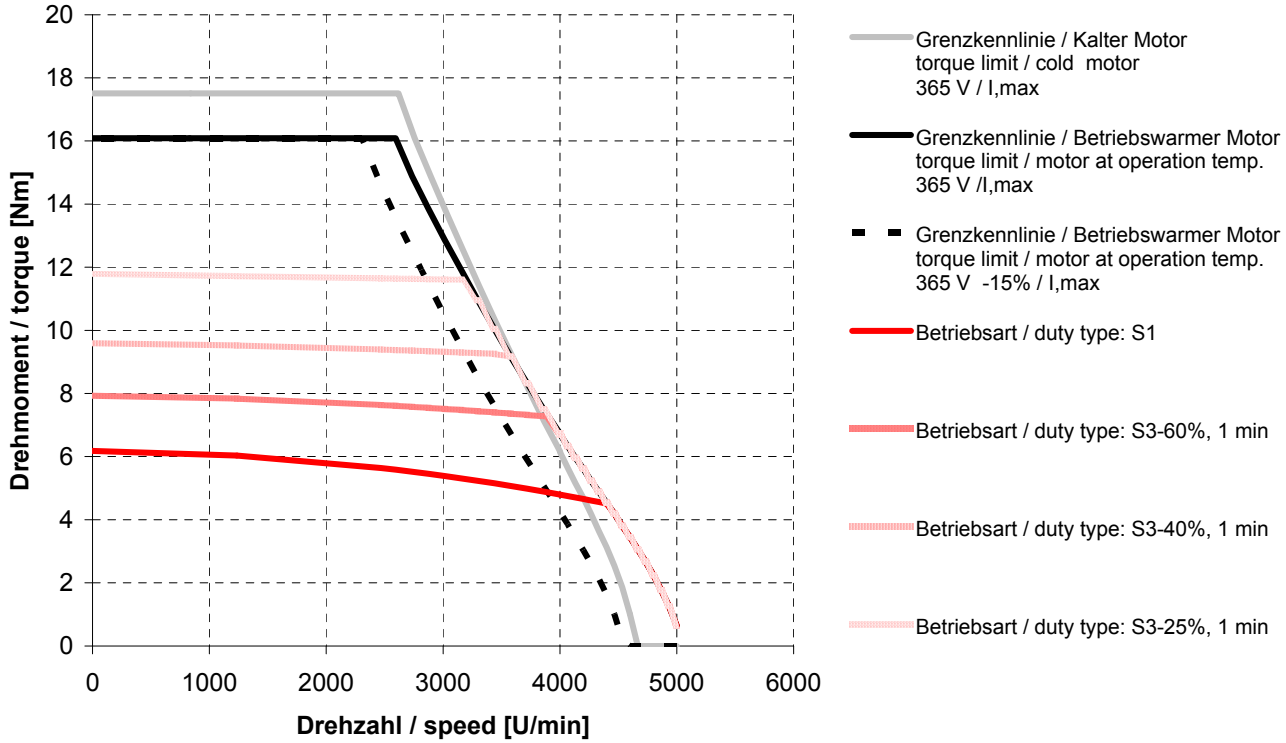
DSC056K64U20-5



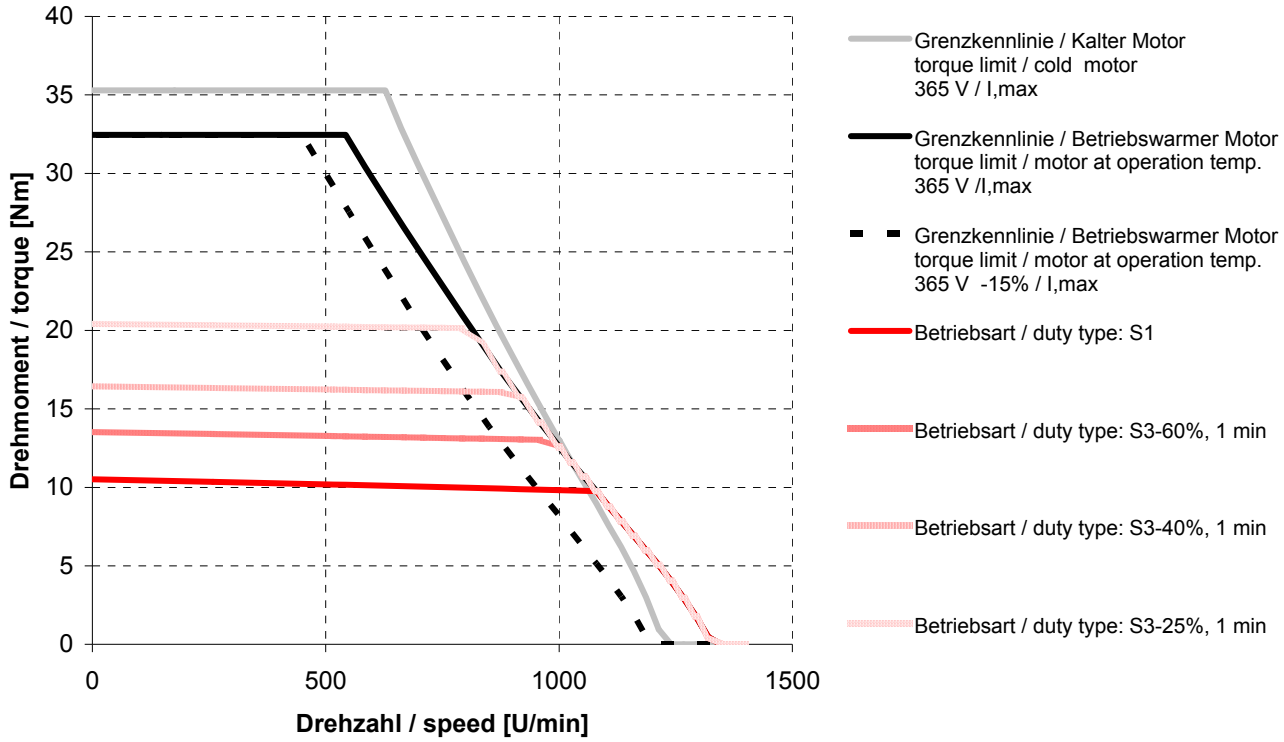
DSC056K64U30-5



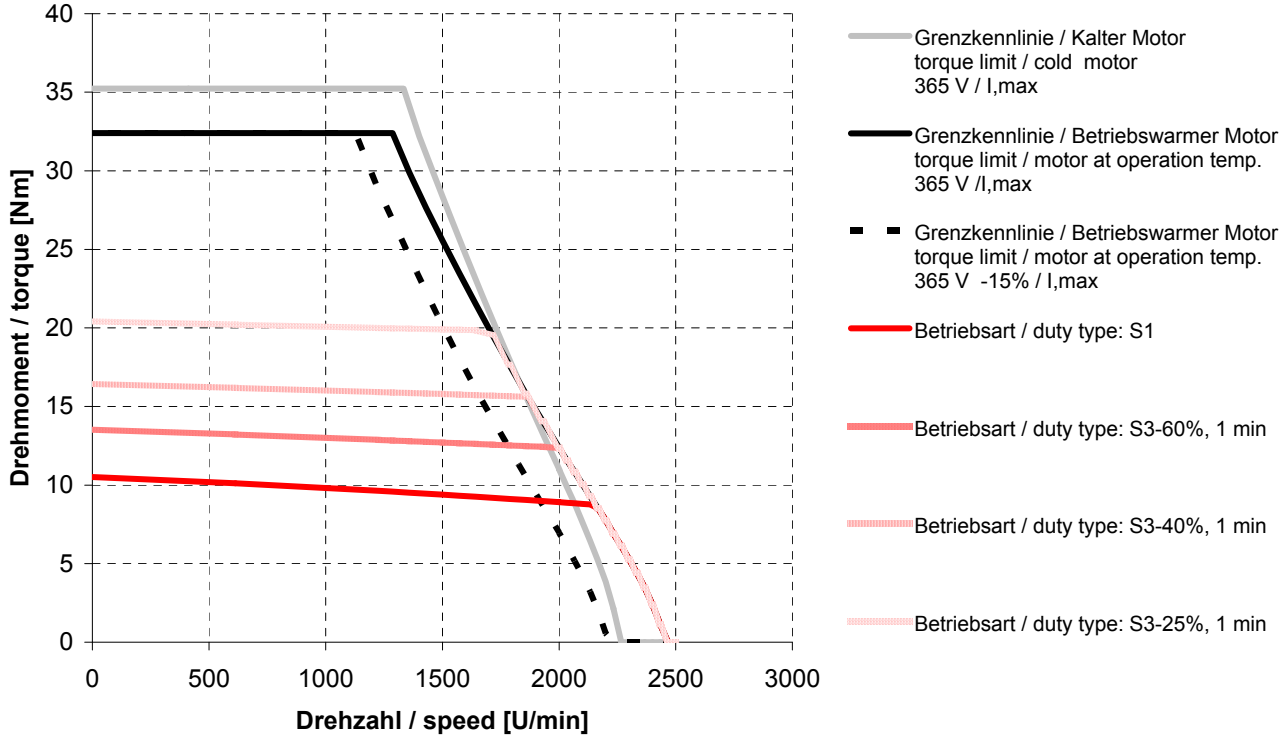
DSC056K64U40-5



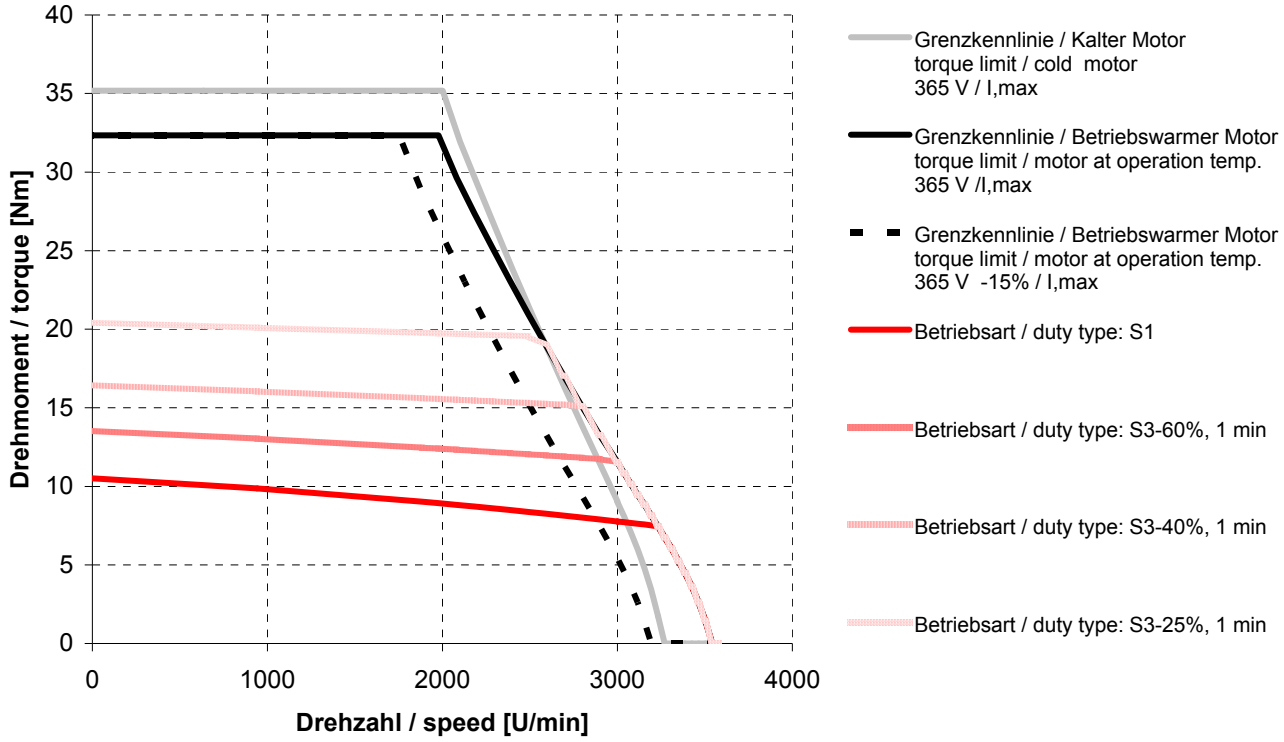
DSC056S64U10-5



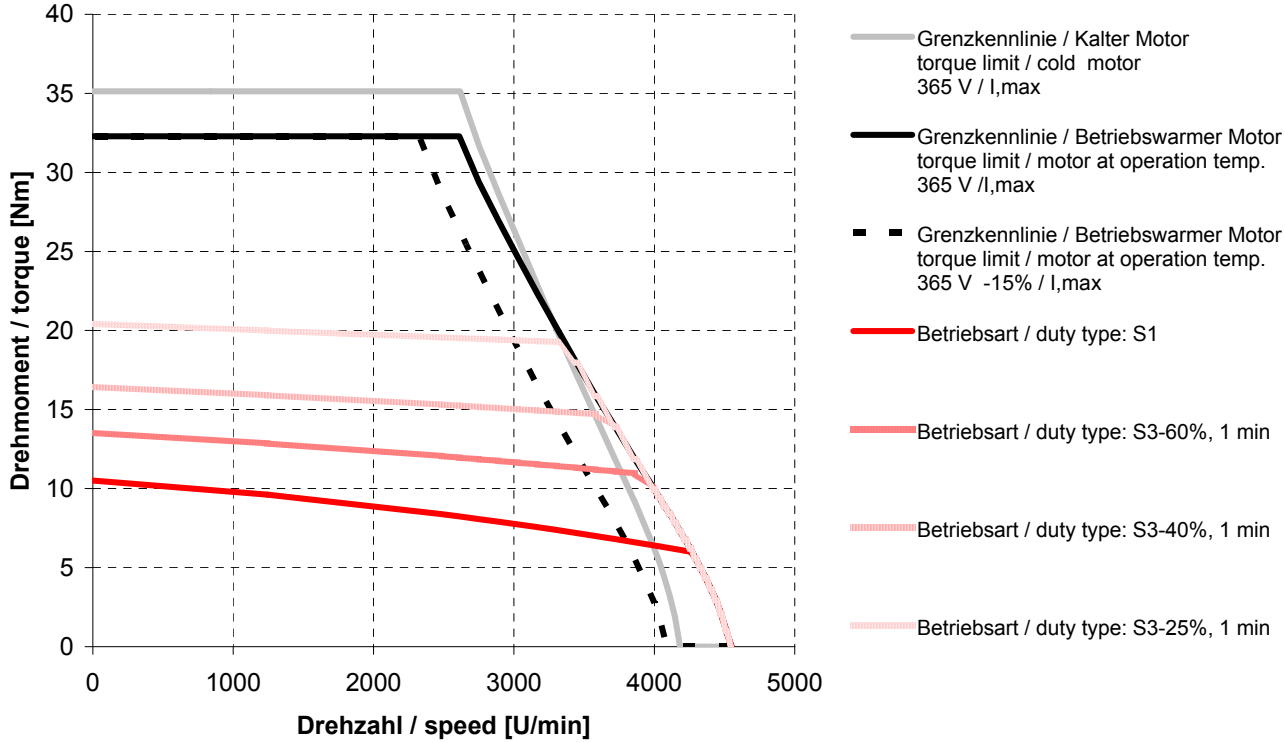
DSC056S64U20-5



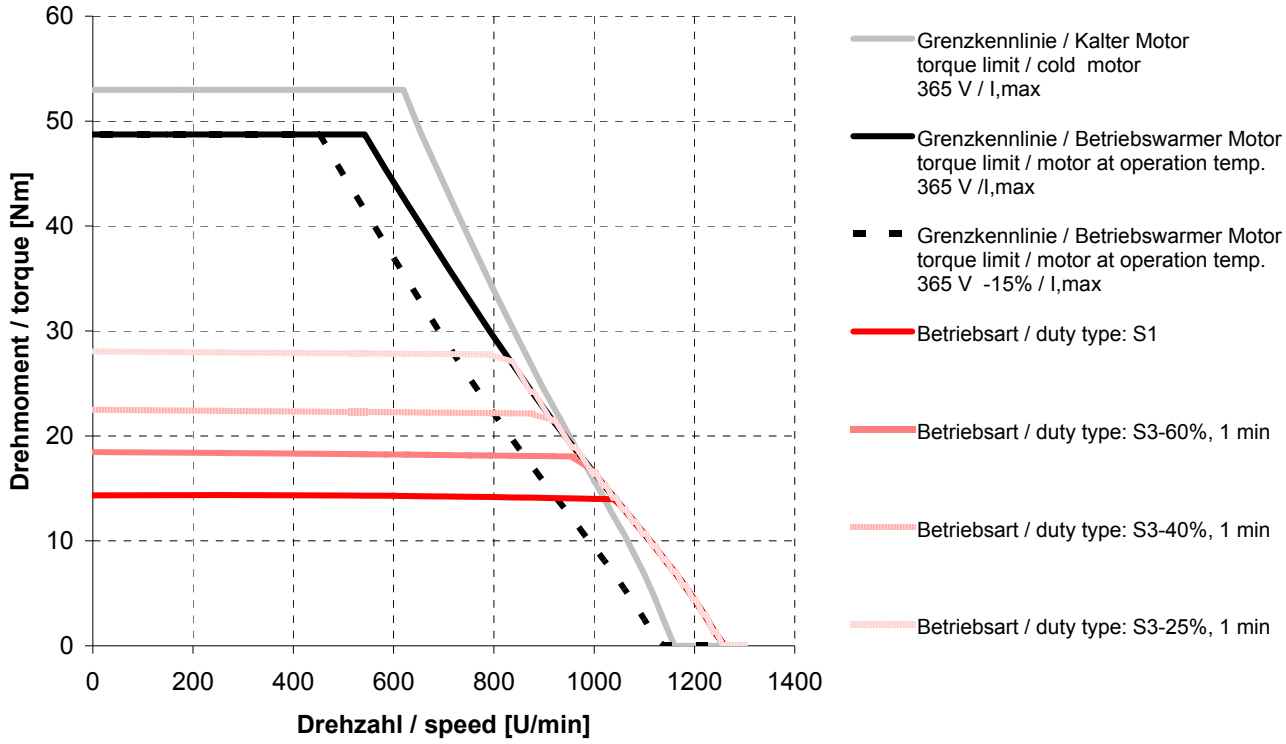
DSC056S64U30-5



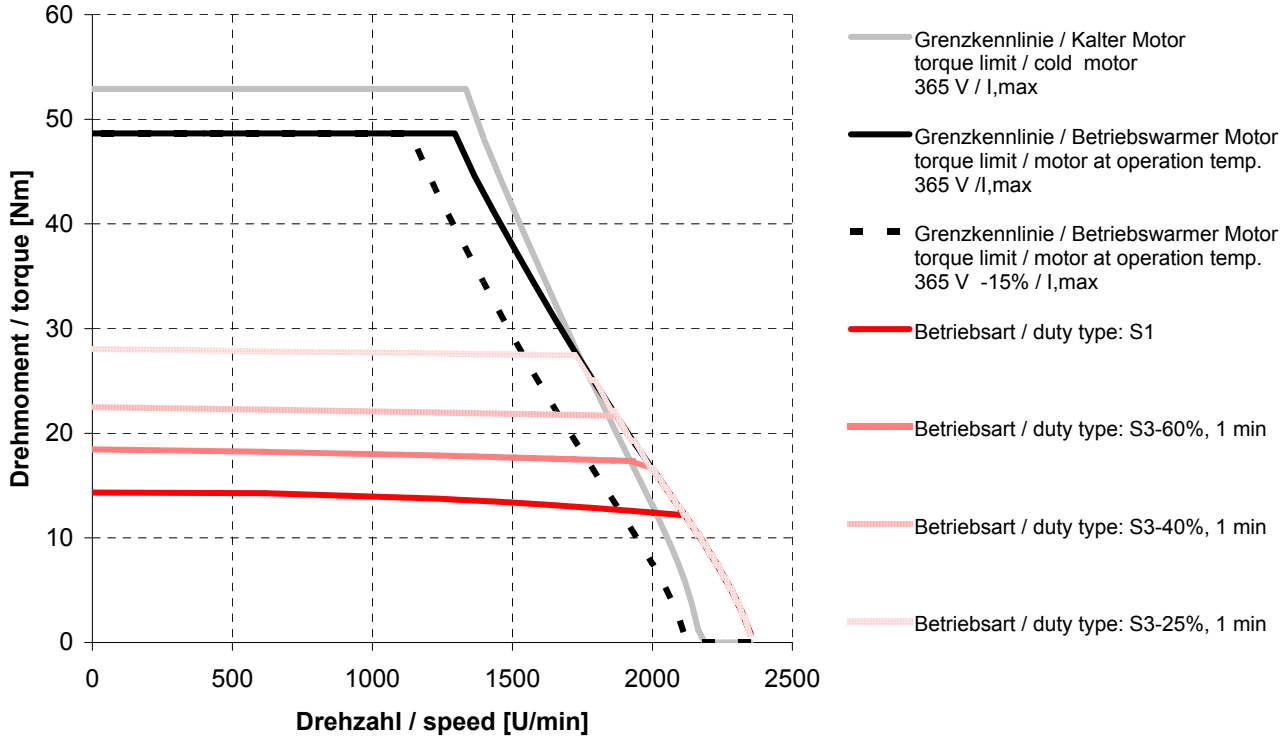
DSC056S64U40-5



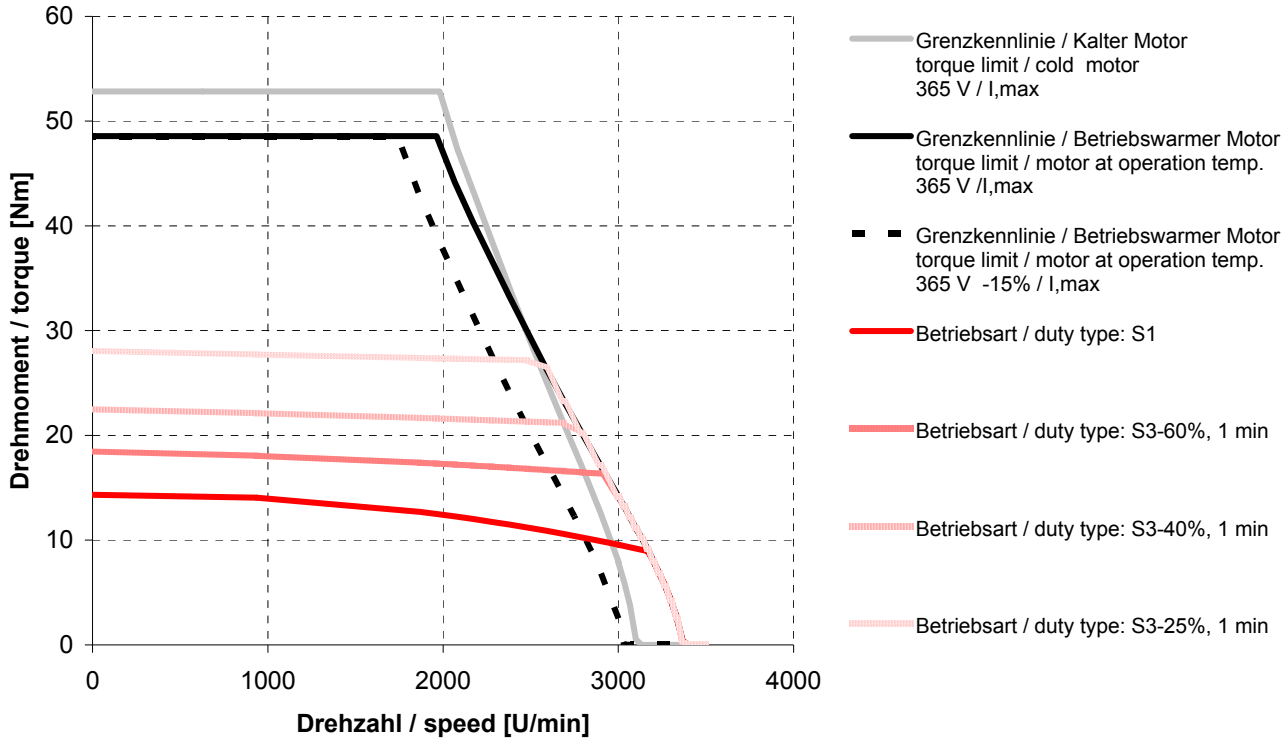
DSC056M64U10-5



DSC056M64U20-5

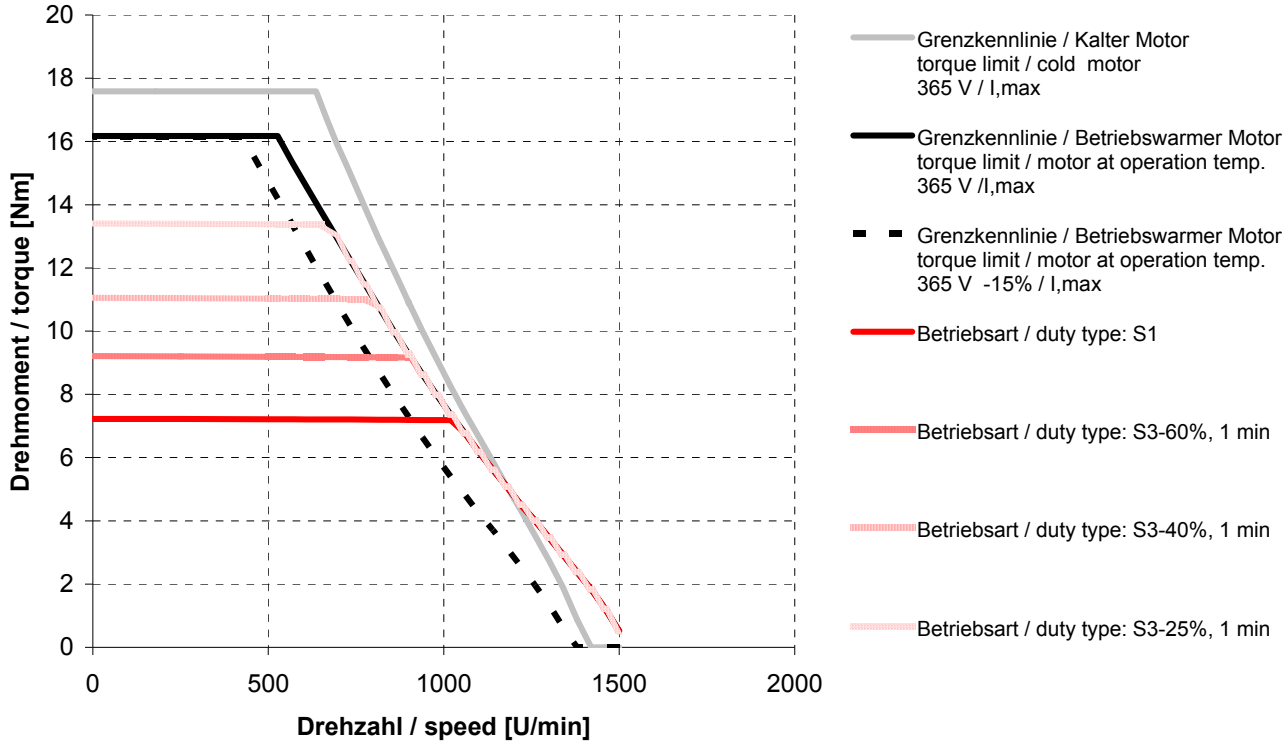


DSC056M64U30-5

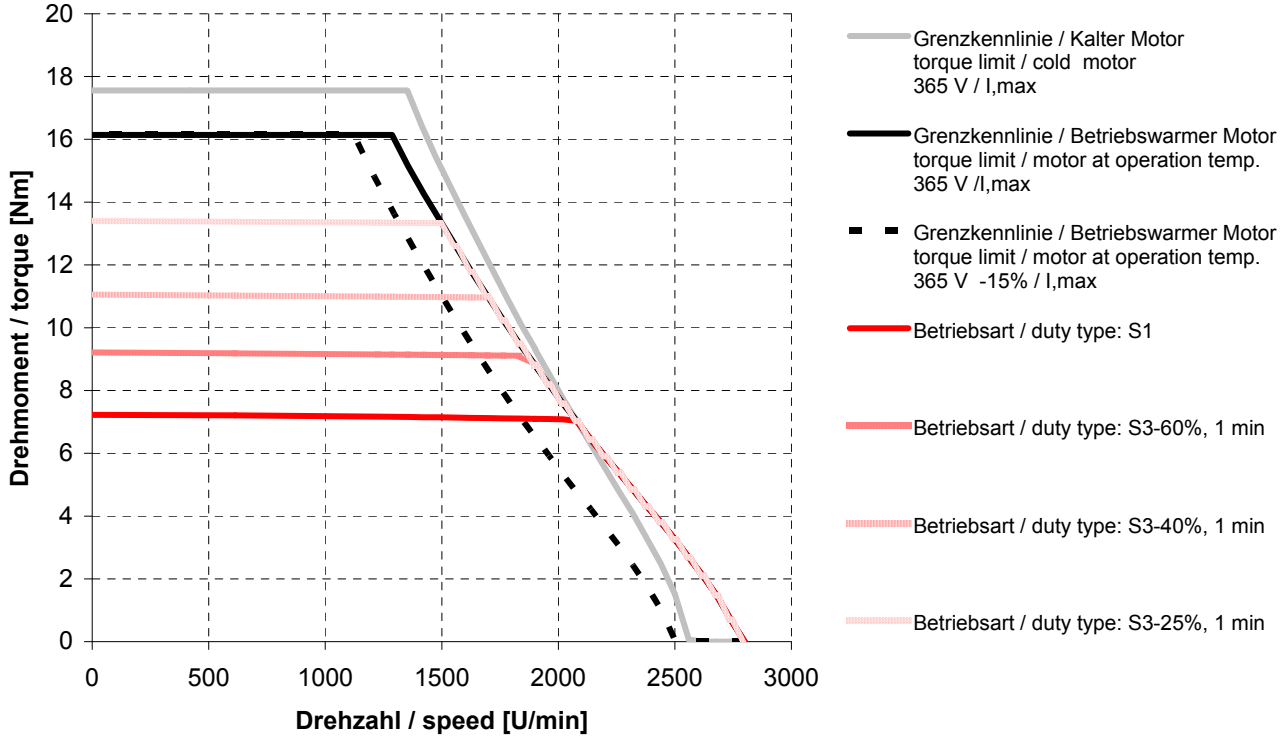


5.2.2. DSC056..64O..

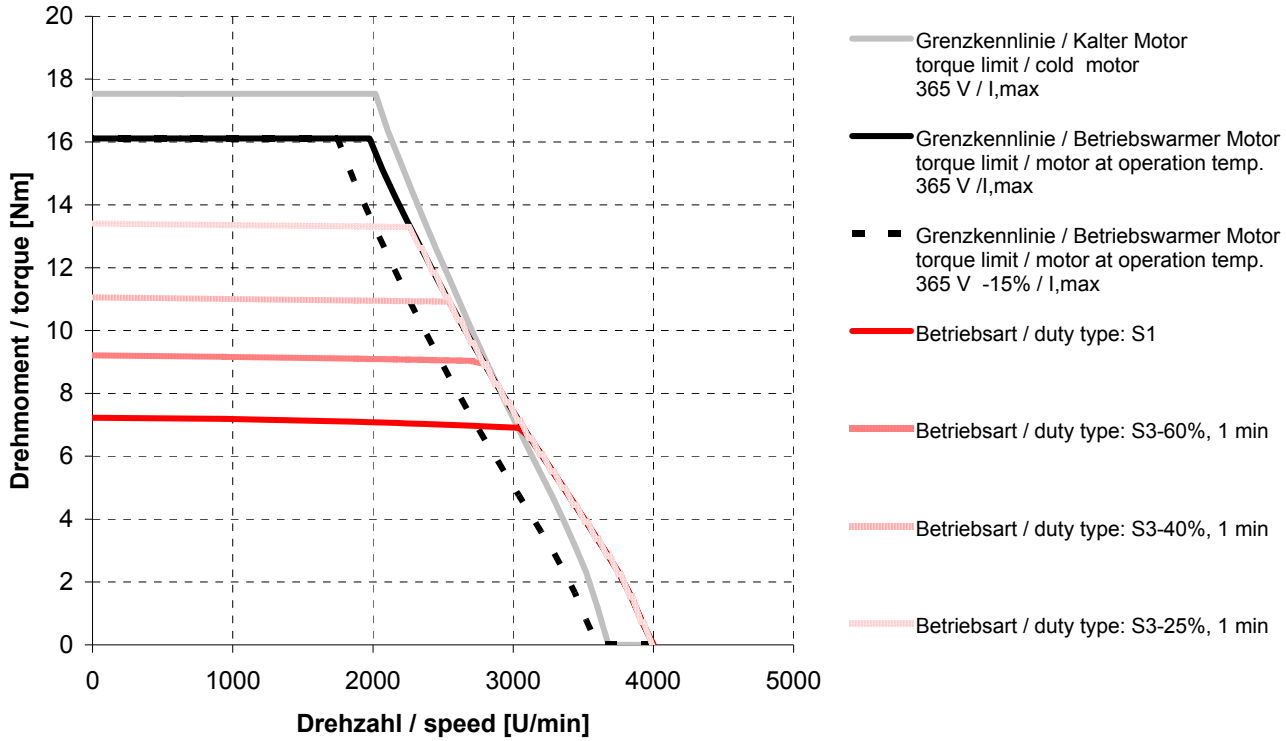
DSC056K64O10-5



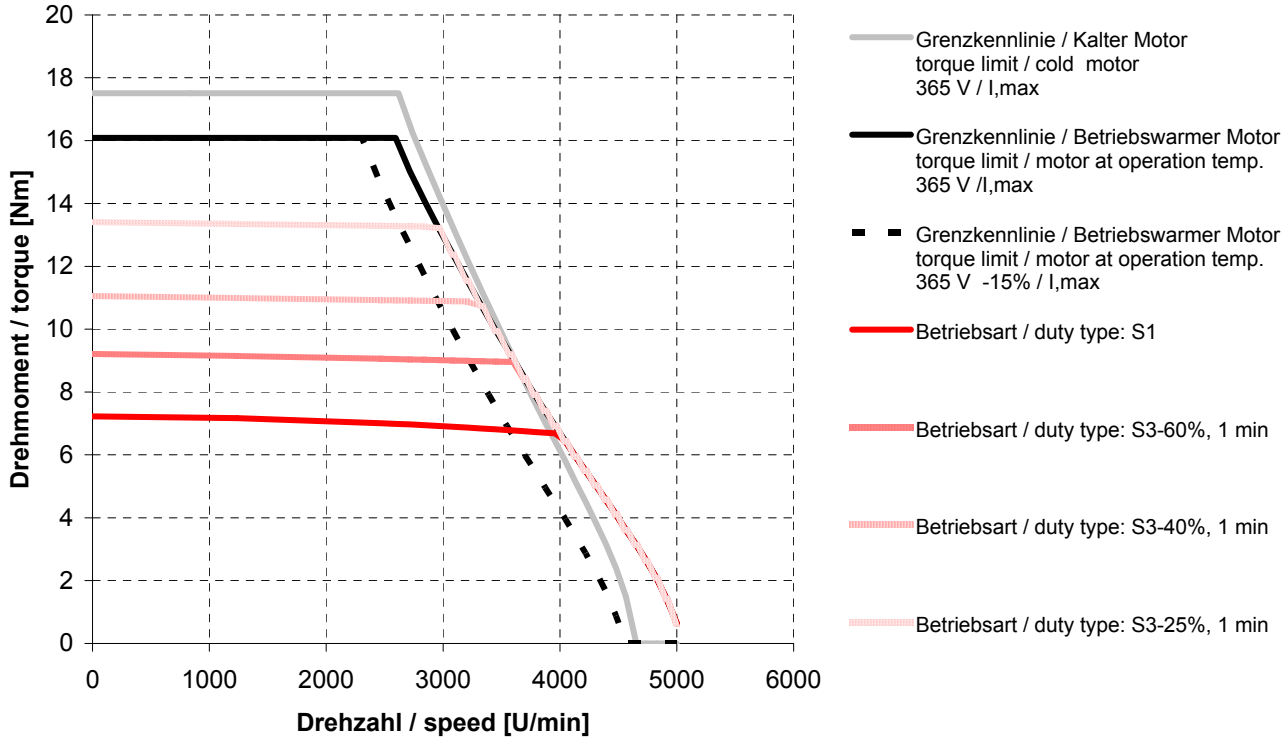
DSC056K64O20-5



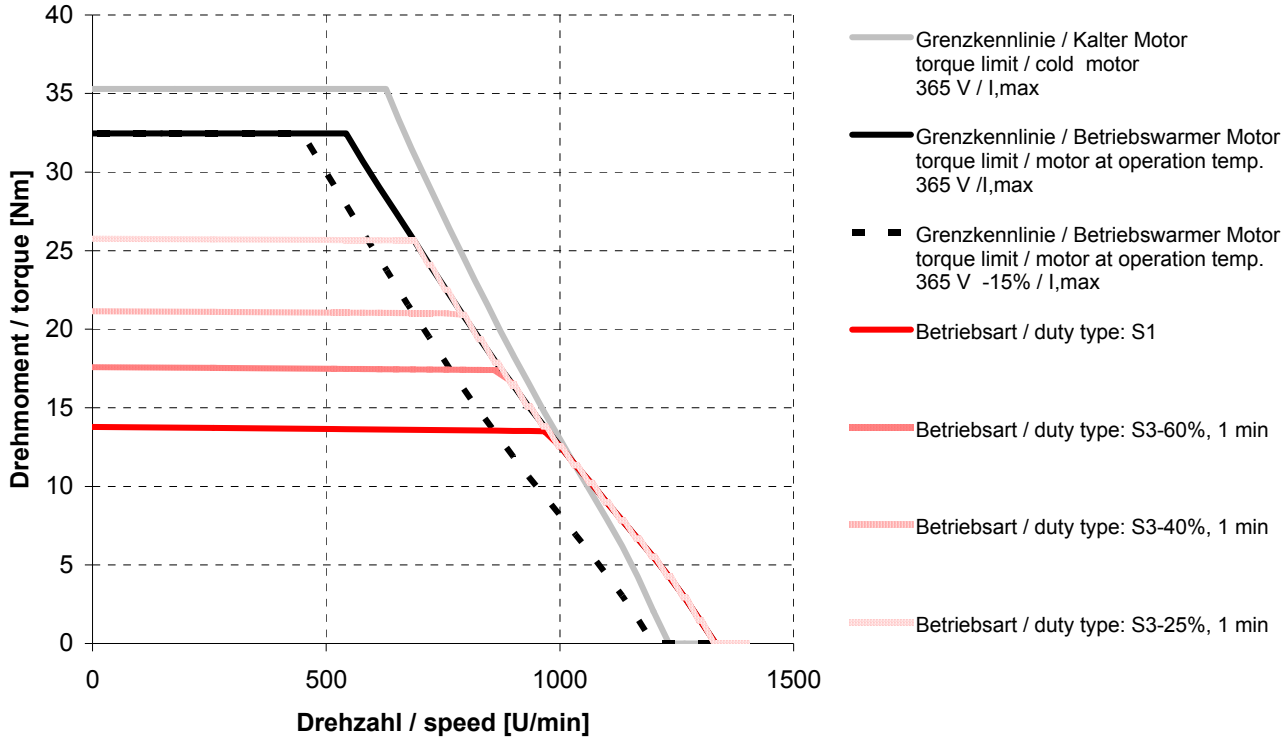
DSC056K64O30-5



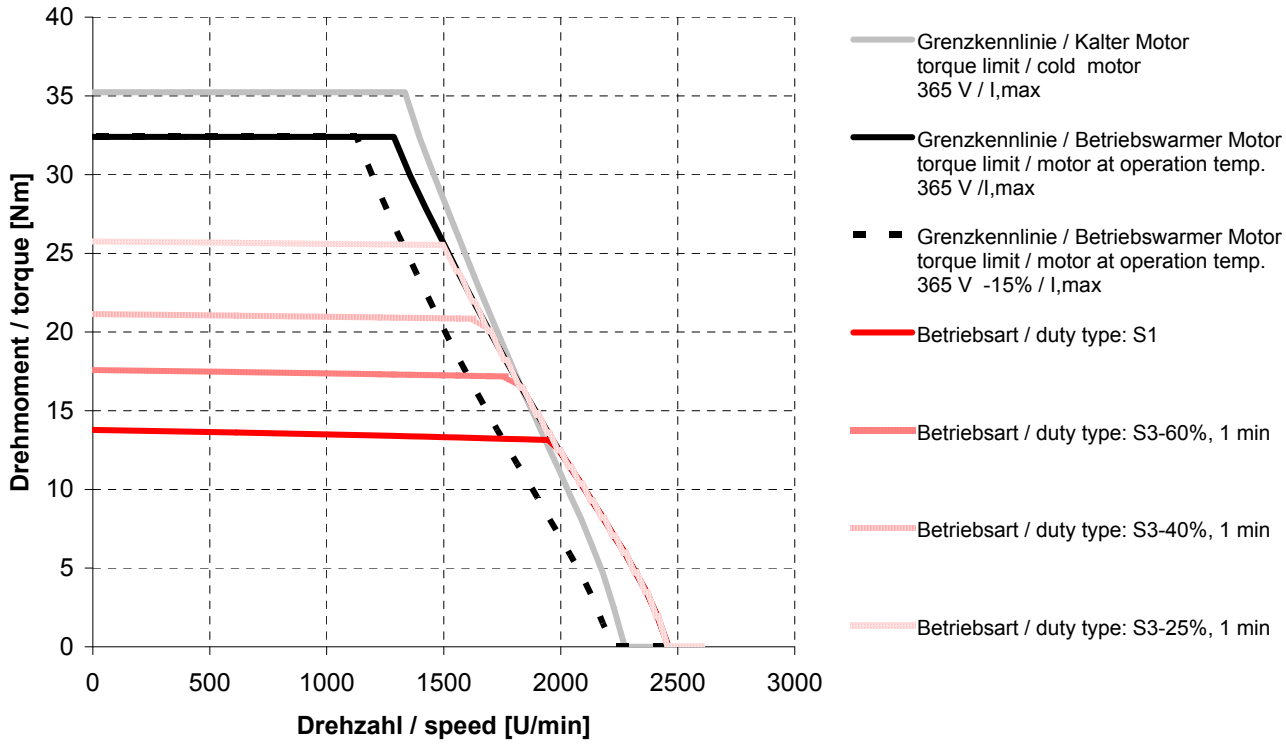
DSC056K64O40-5



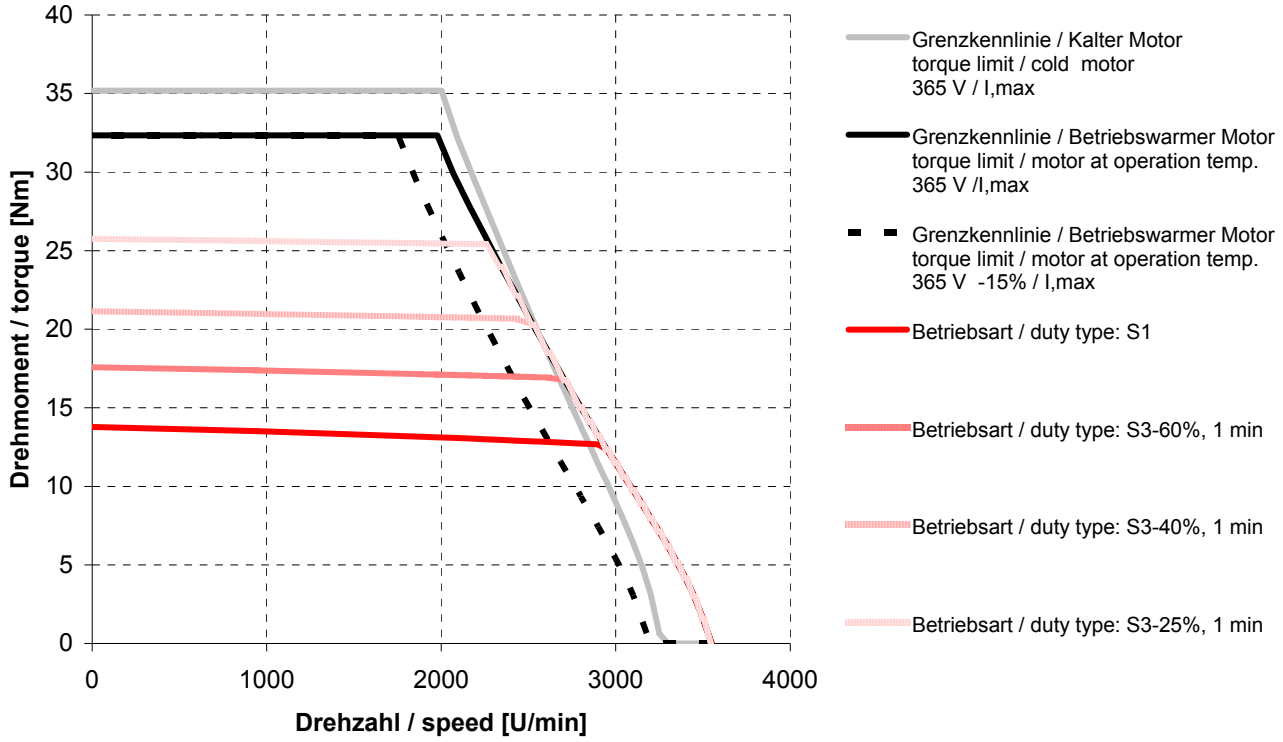
DSC056S64O10-5



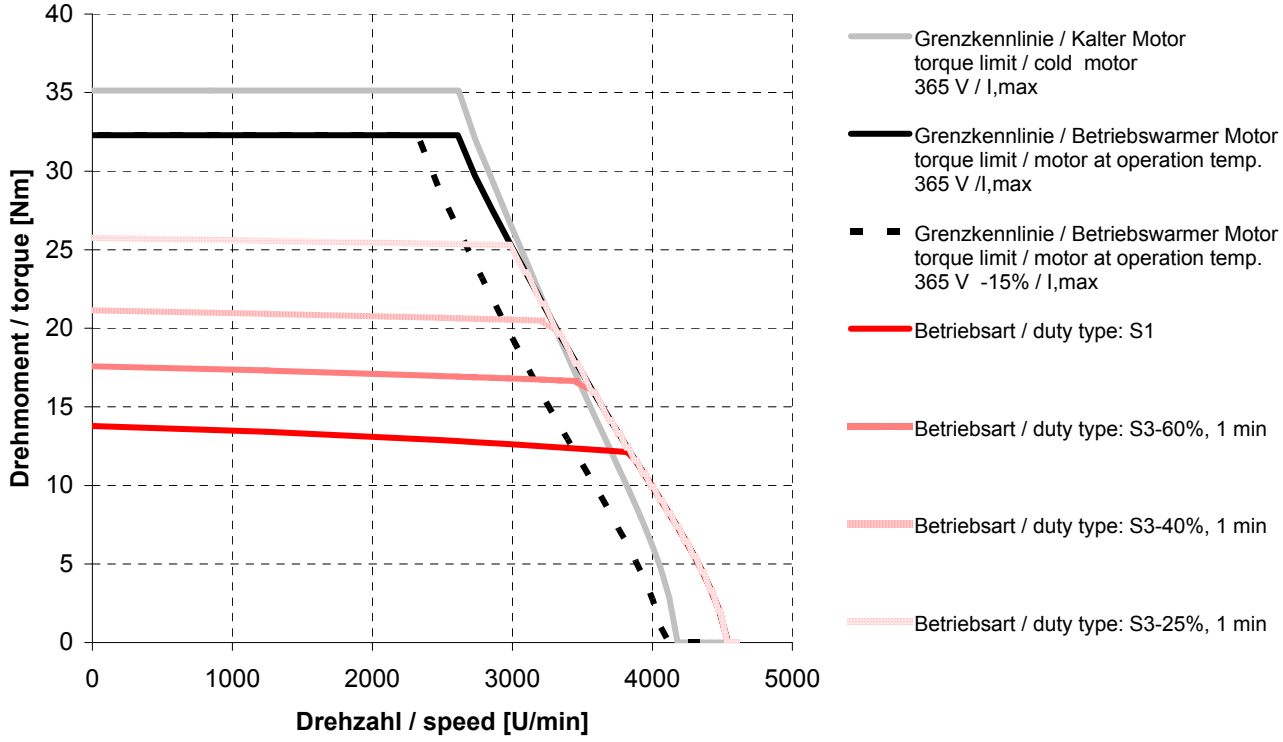
DSC056S64O20-5



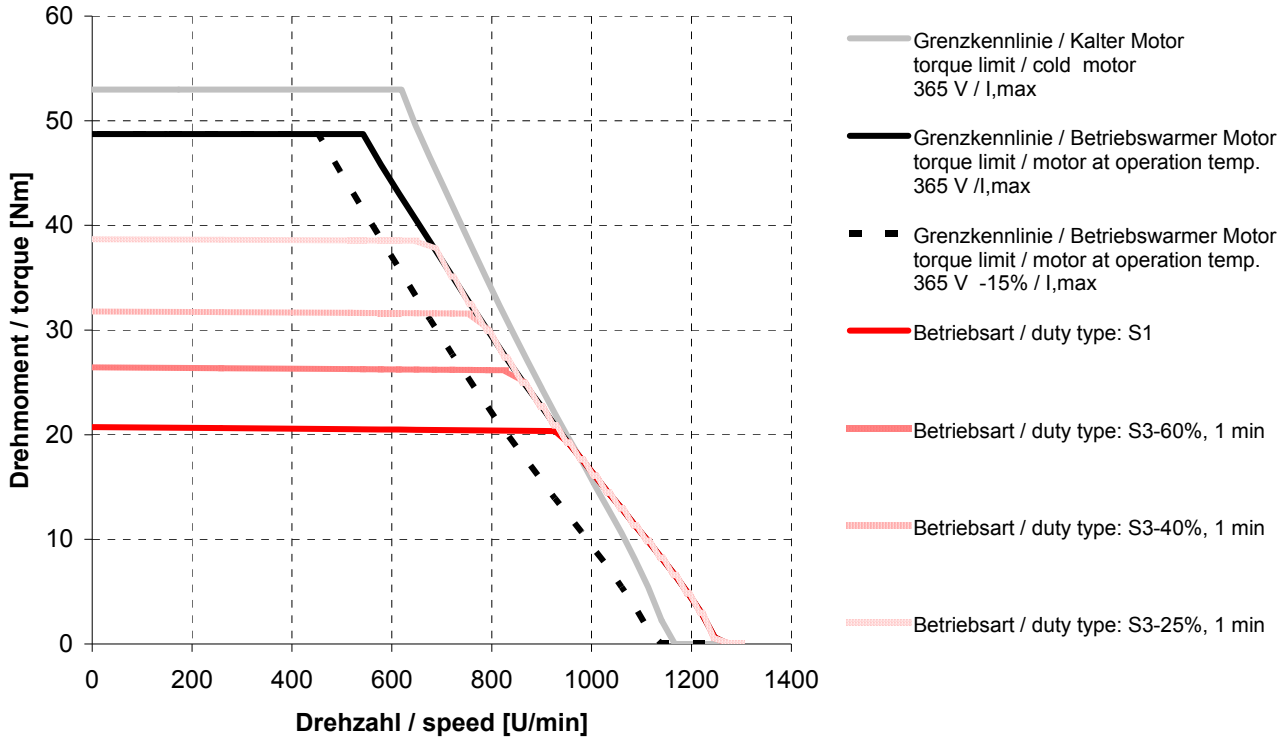
DSC056S64O30-5



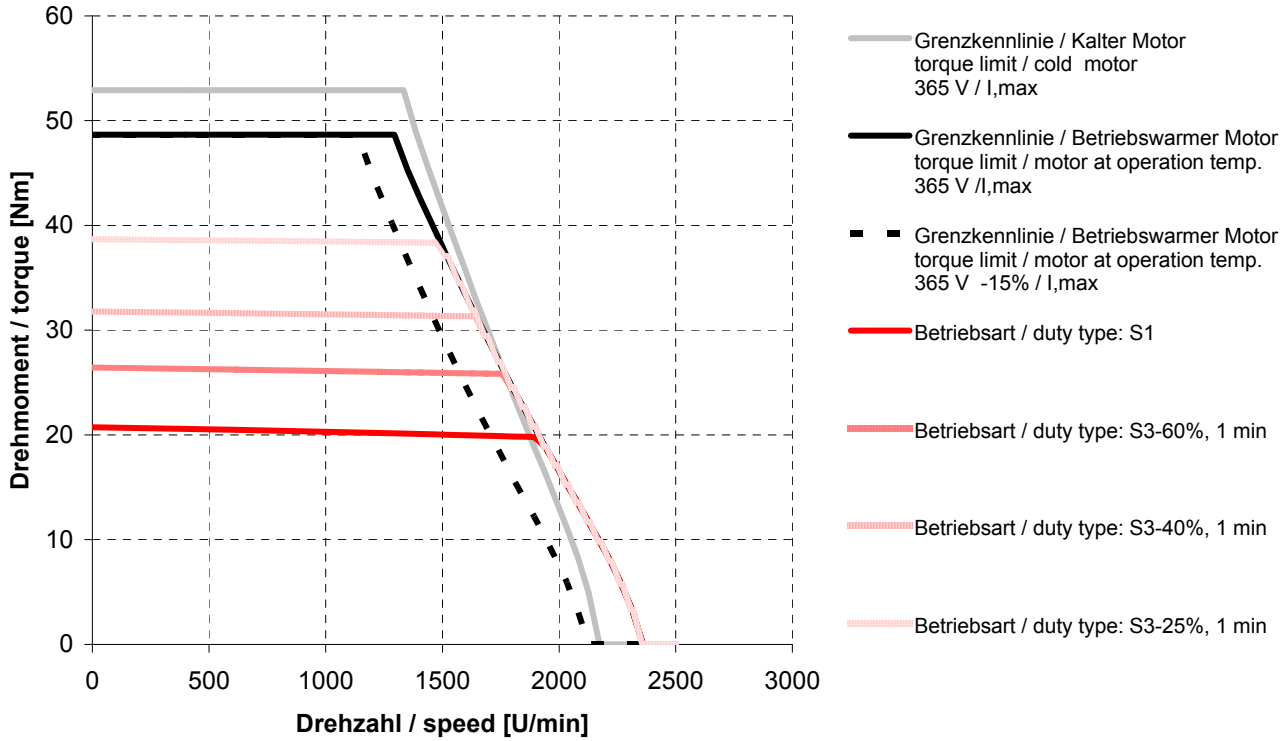
DSC056S64O40-5



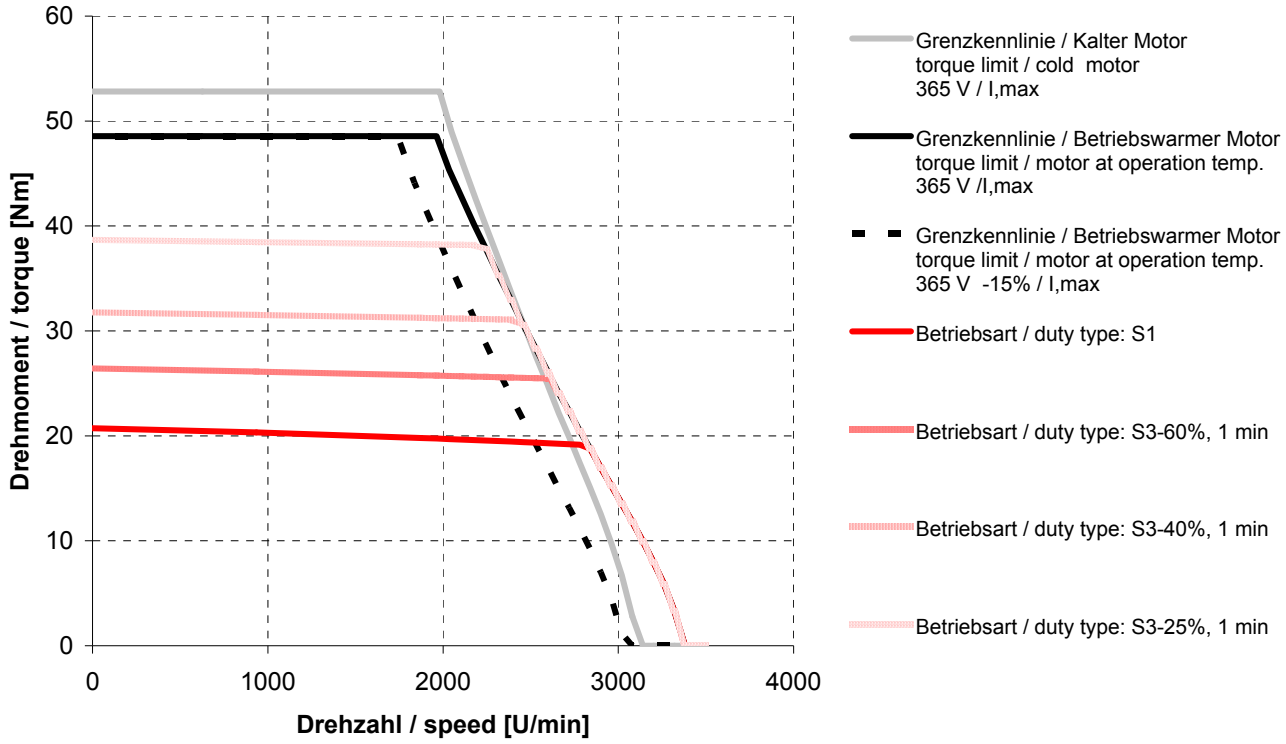
DSC056M64O10-5



DSC056M64O20-5



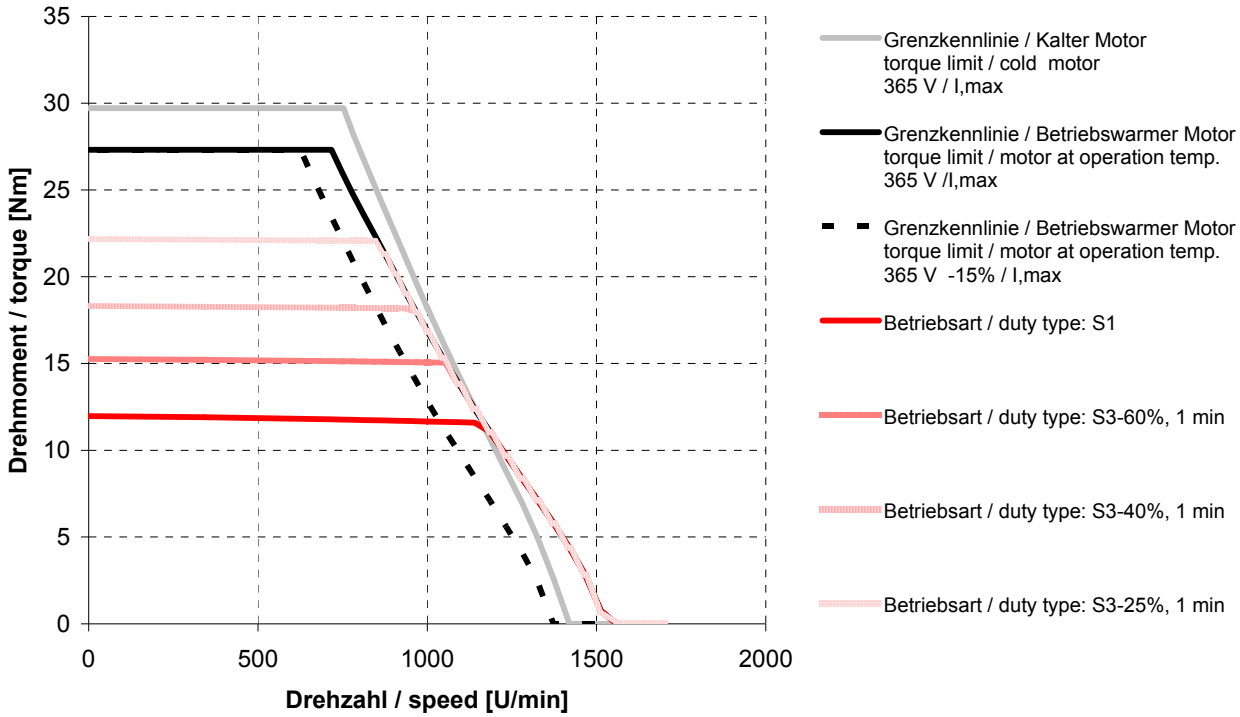
DSC056M64O30-5



5.3. Characteristic curves DSC071

5.3.1. DSC071..64U..

DSC071K64U10-5



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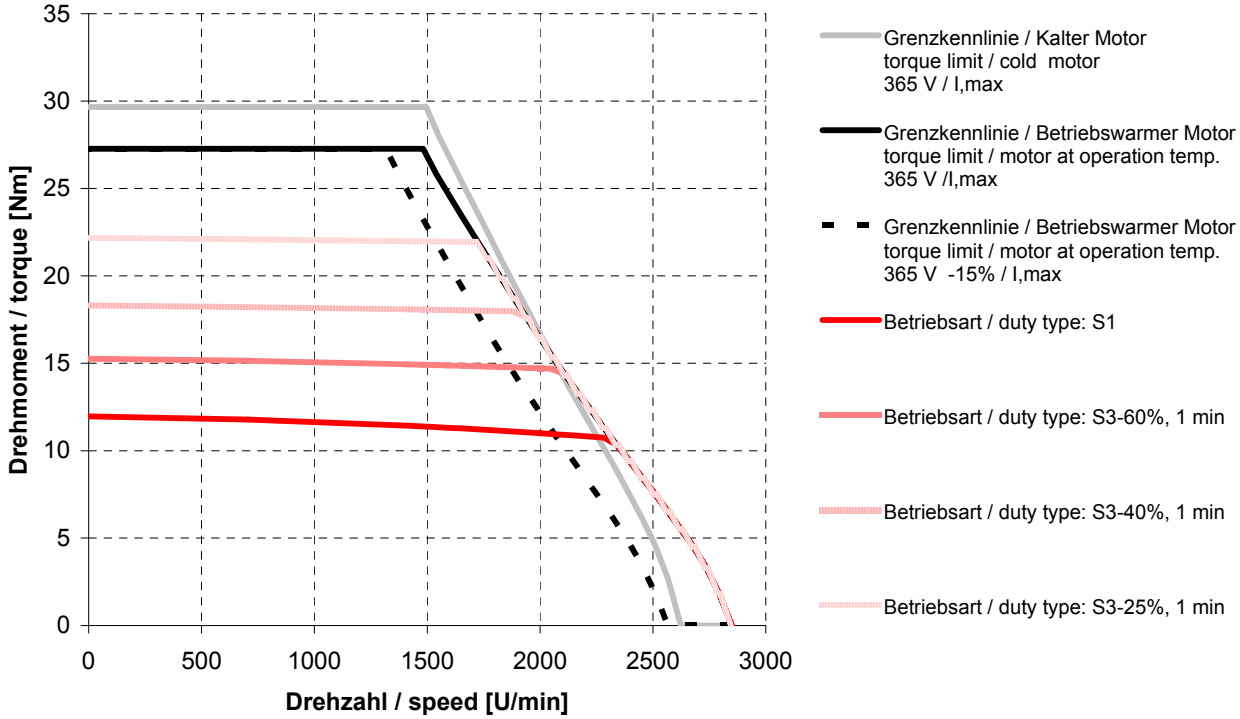

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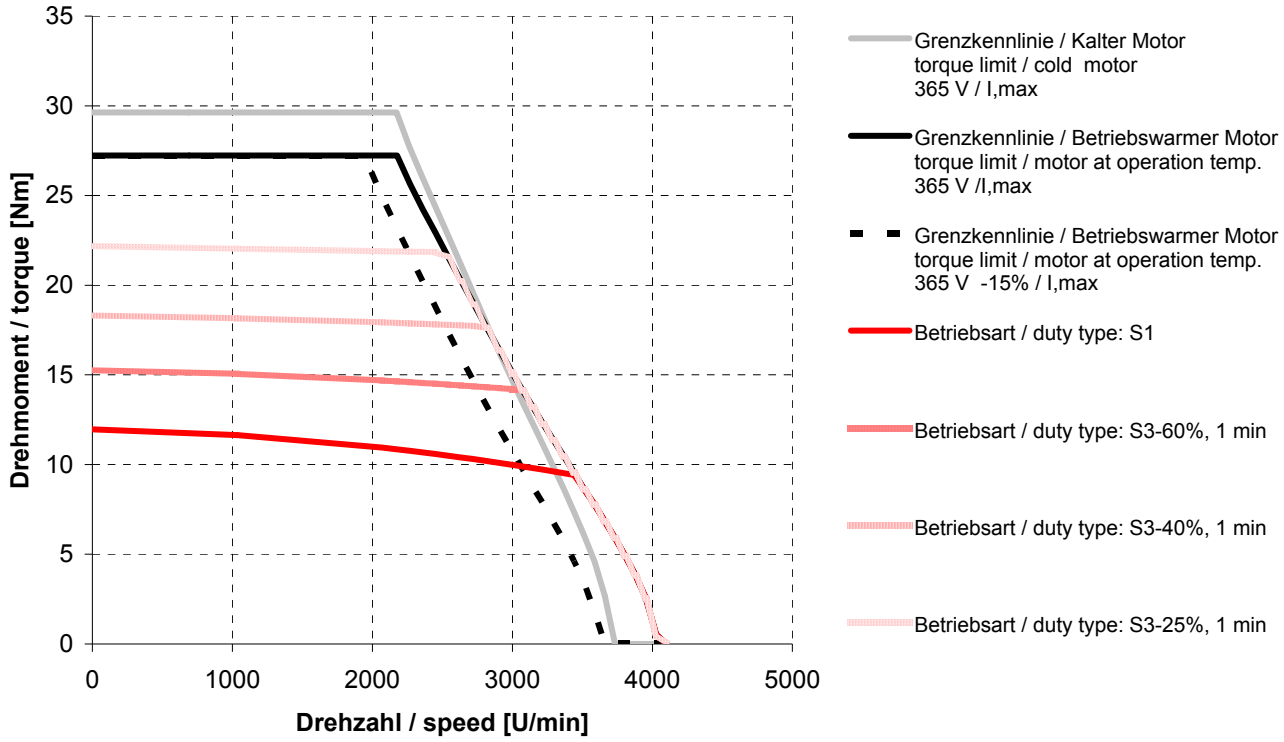

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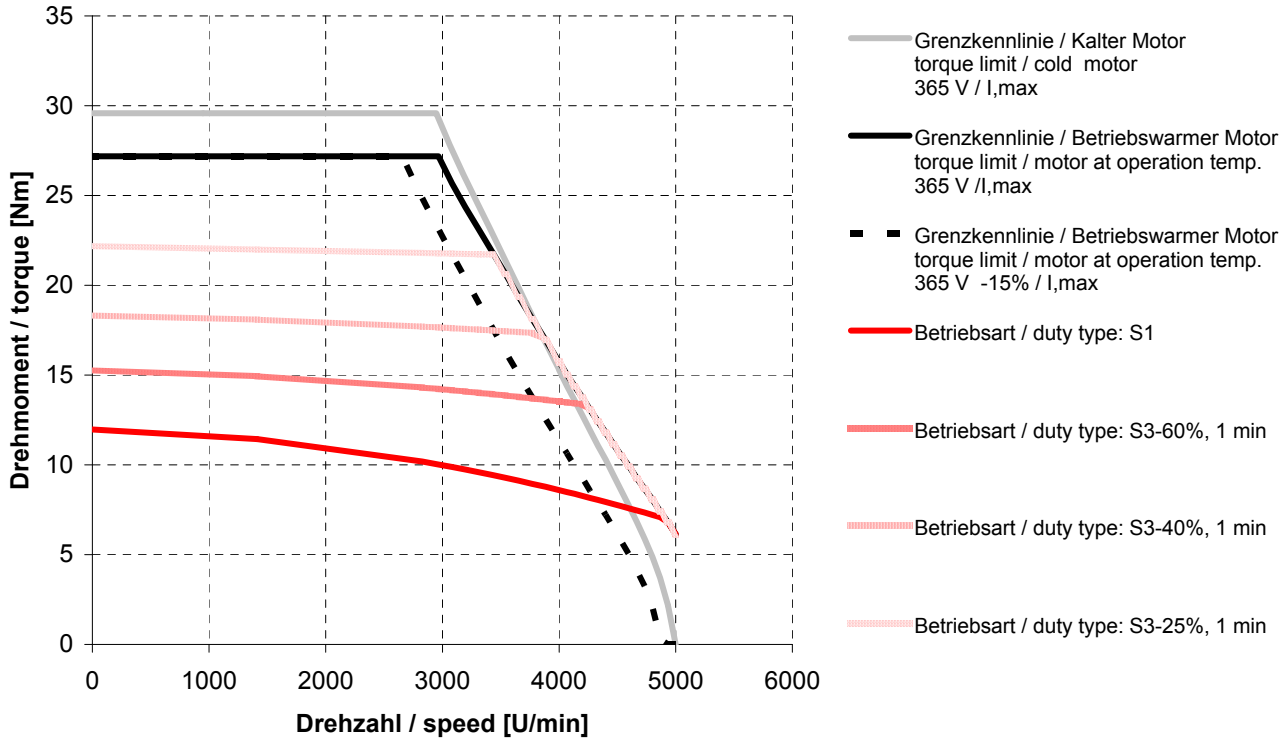

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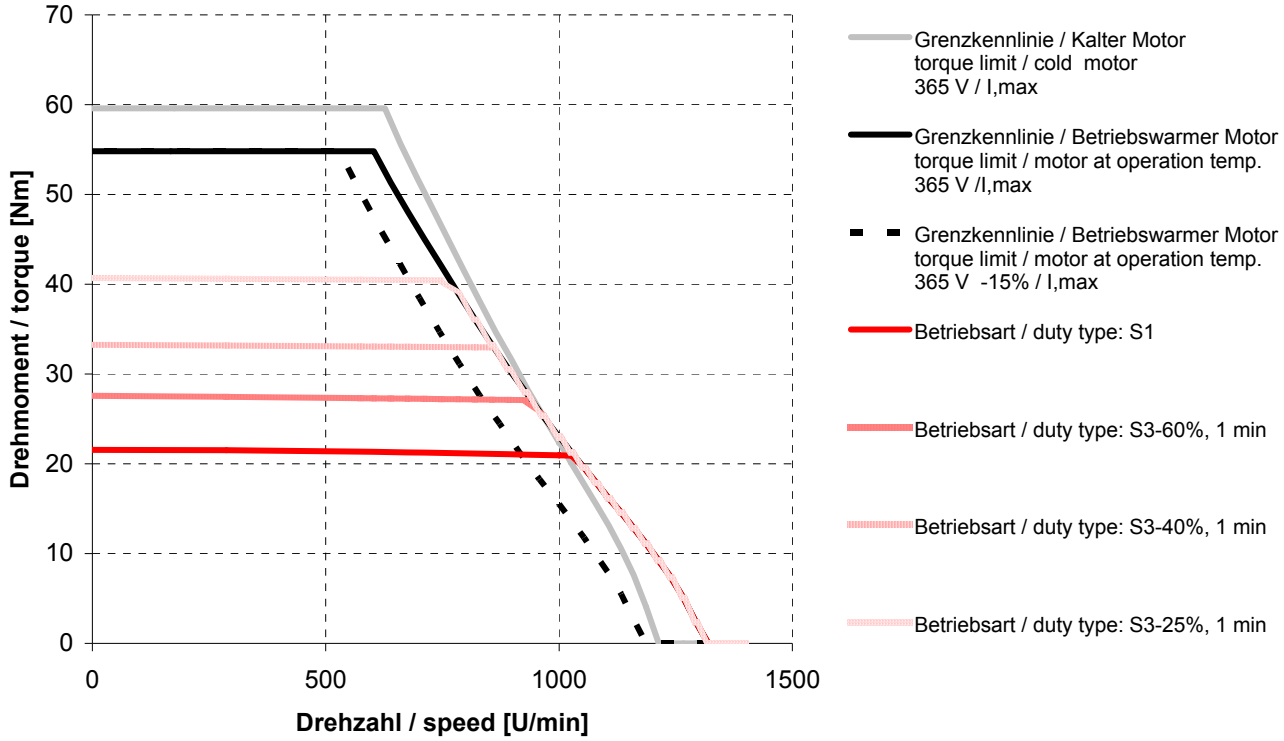

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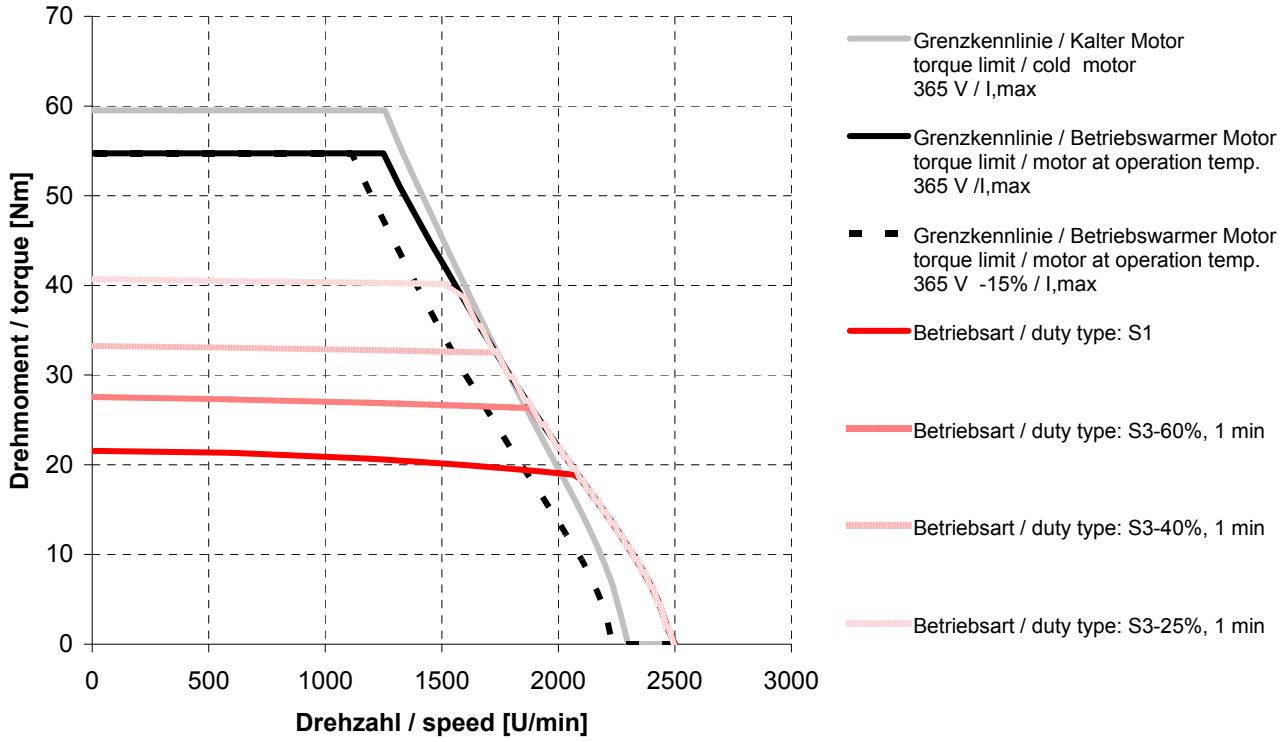

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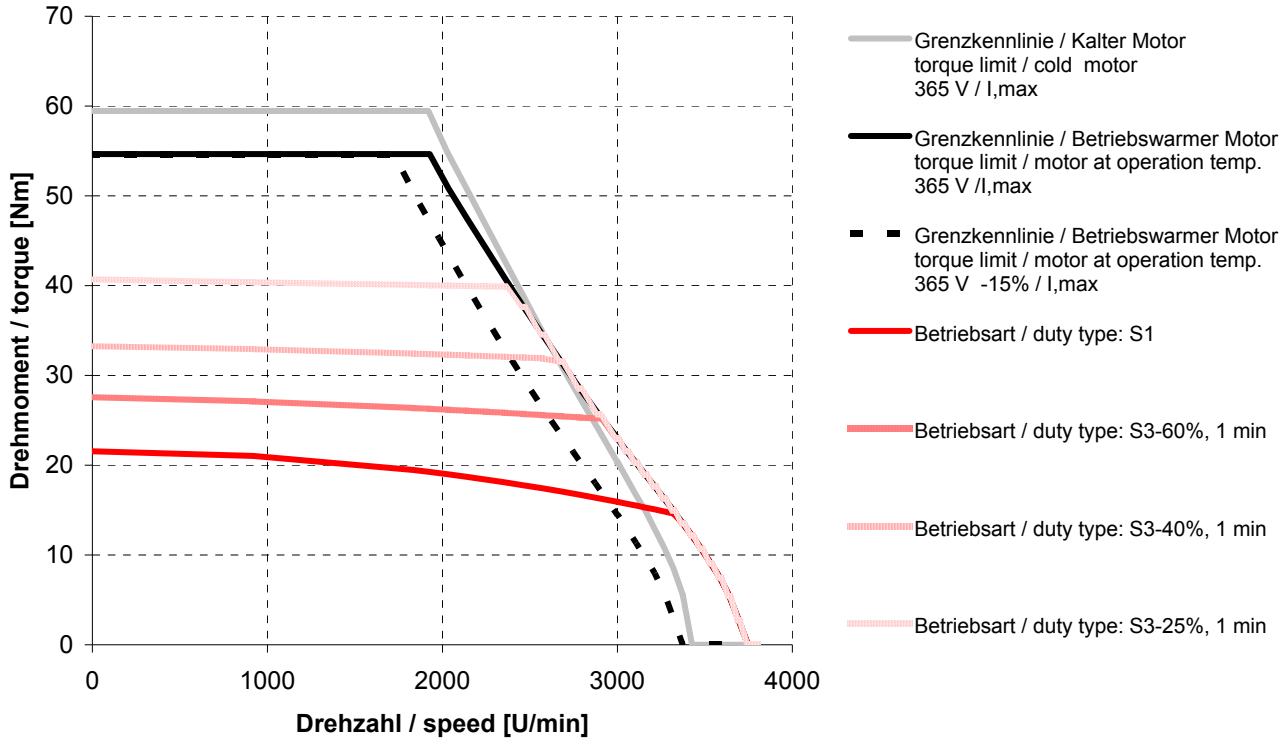

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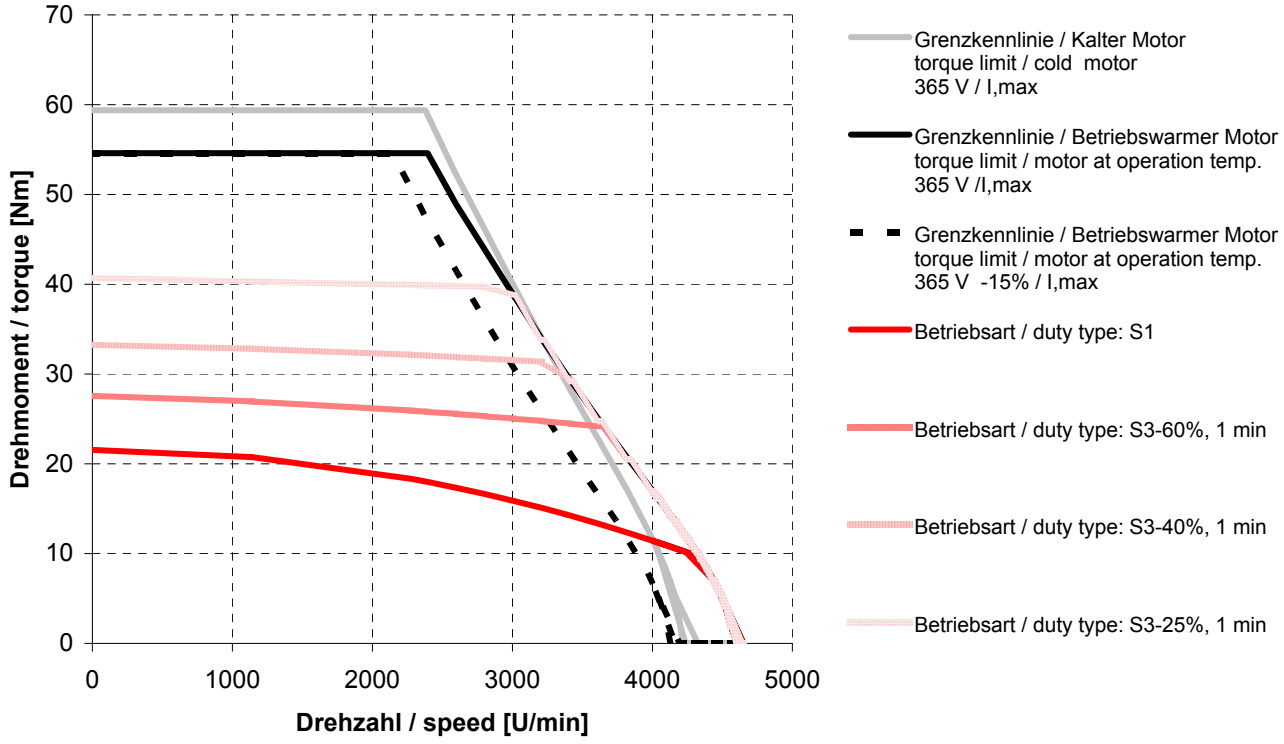

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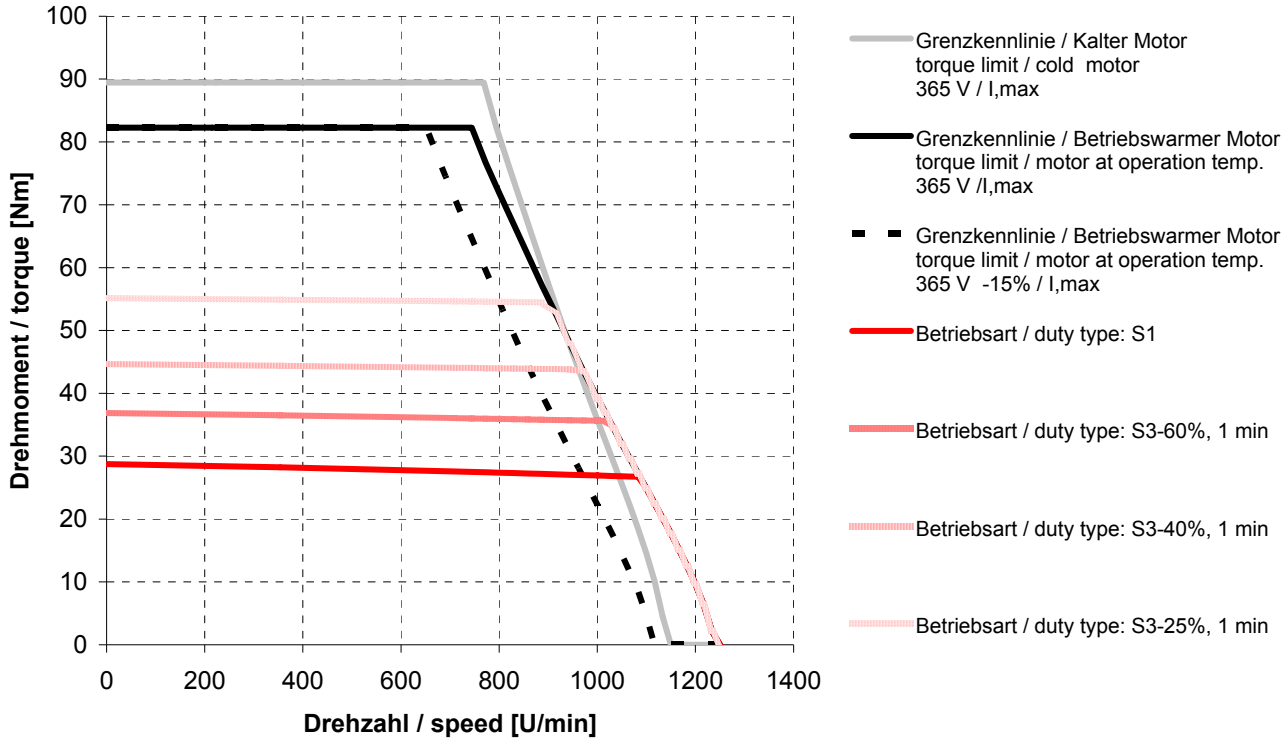

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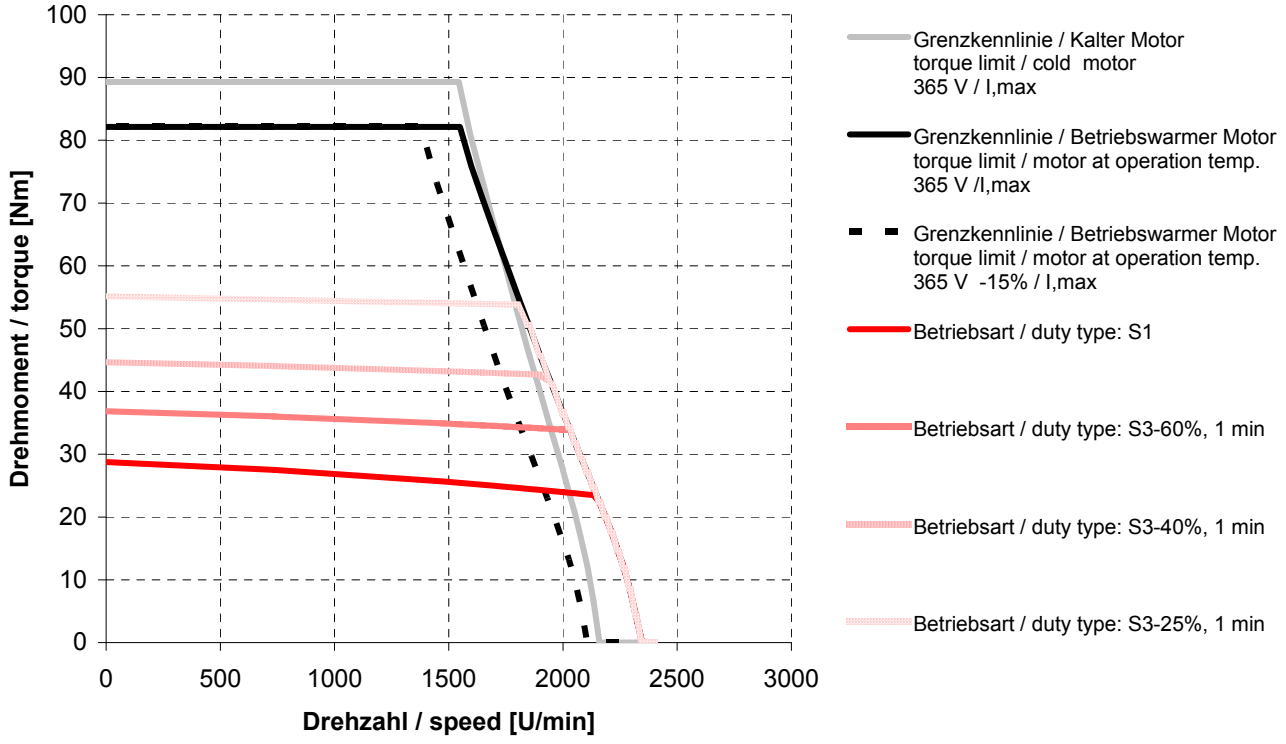

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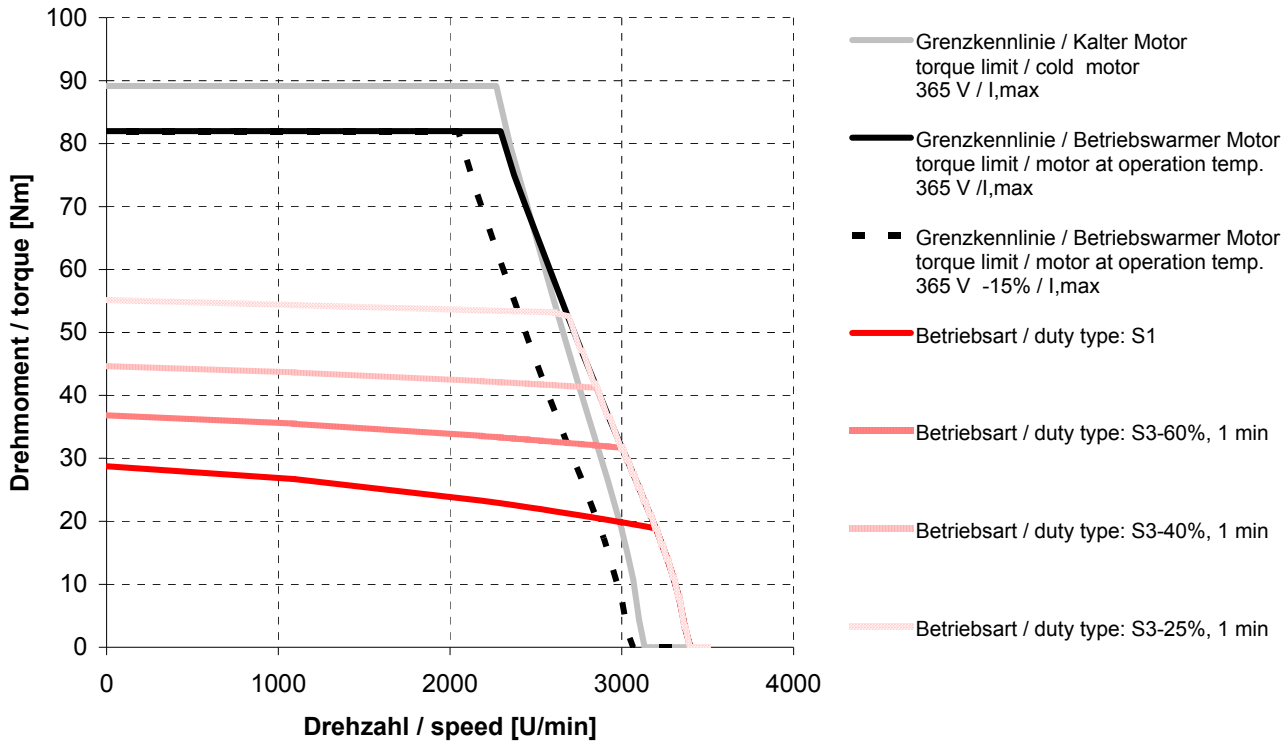
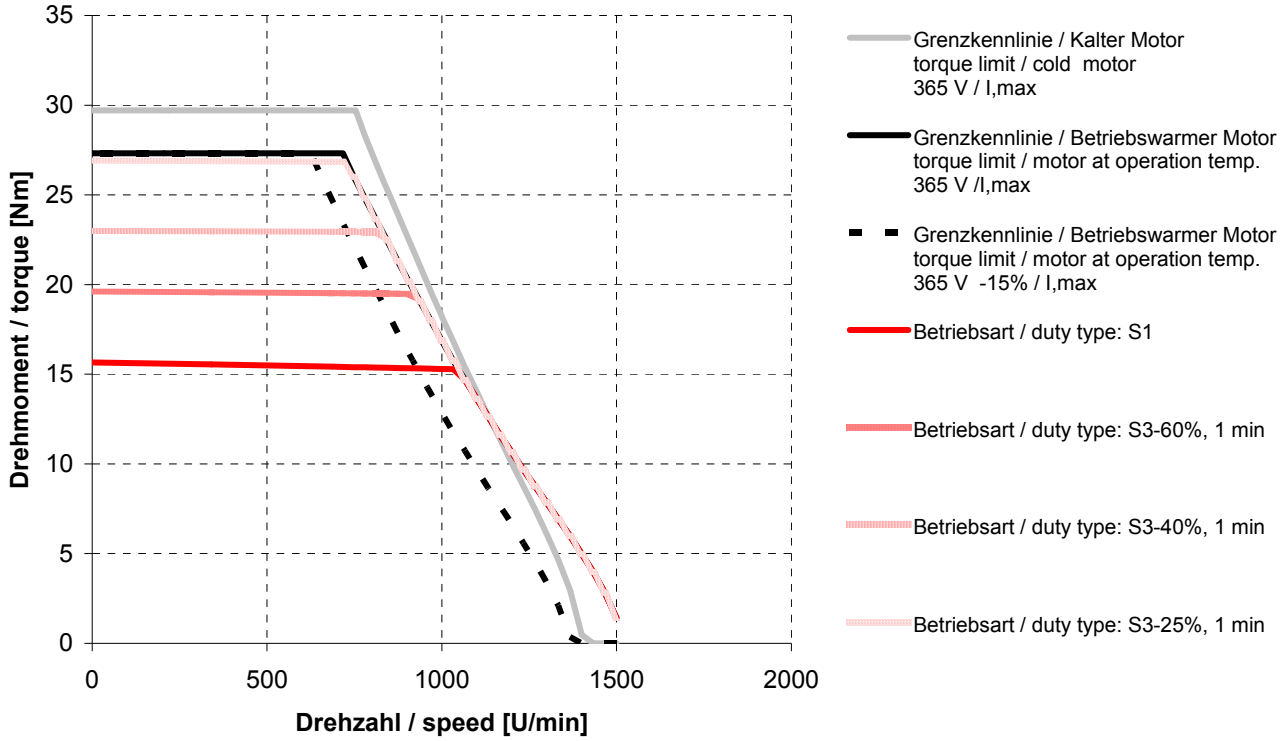

100
90
80
70
60
50
40
30
20
10
0
0
1000
2000
3000
4000
Drehmoment / torque [Nm]
Drehzahl / speed [U/min]
Grenzkennlinie / Kalter Motor
torque limit / cold motor
365 V / I,max
Grenzkennlinie / Betriebswarmer Motor
torque limit / motor at operation temp.
365 V /I,max
Grenzkennlinie / Betriebswarmer Motor
torque limit / motor at operation temp.
365 V -15% / I,max
Betriebsart / duty type: S1
Betriebsart / duty type: S3-60%, 1 min
Betriebsart / duty type: S3-40%, 1 min
Betriebsart / duty type: S3-25%, 1 min

5.3.2. DSC071..64O..

DSC071K64O10-5



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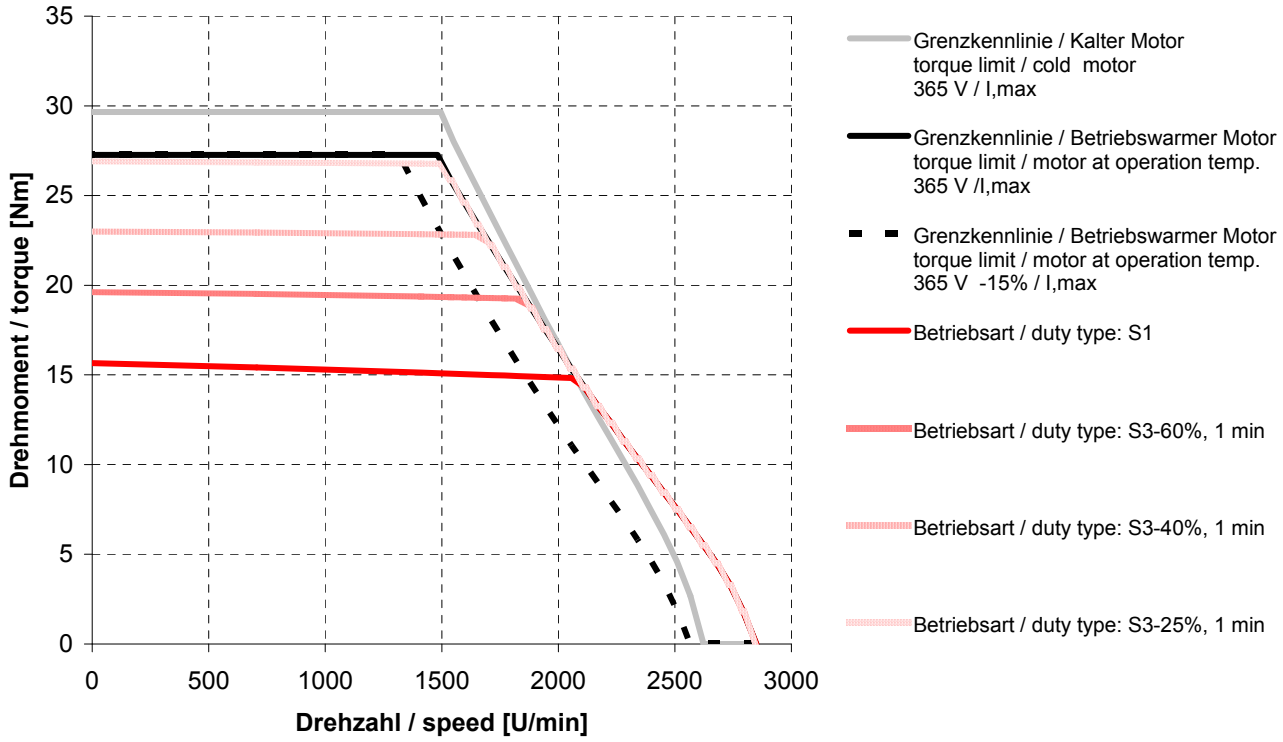

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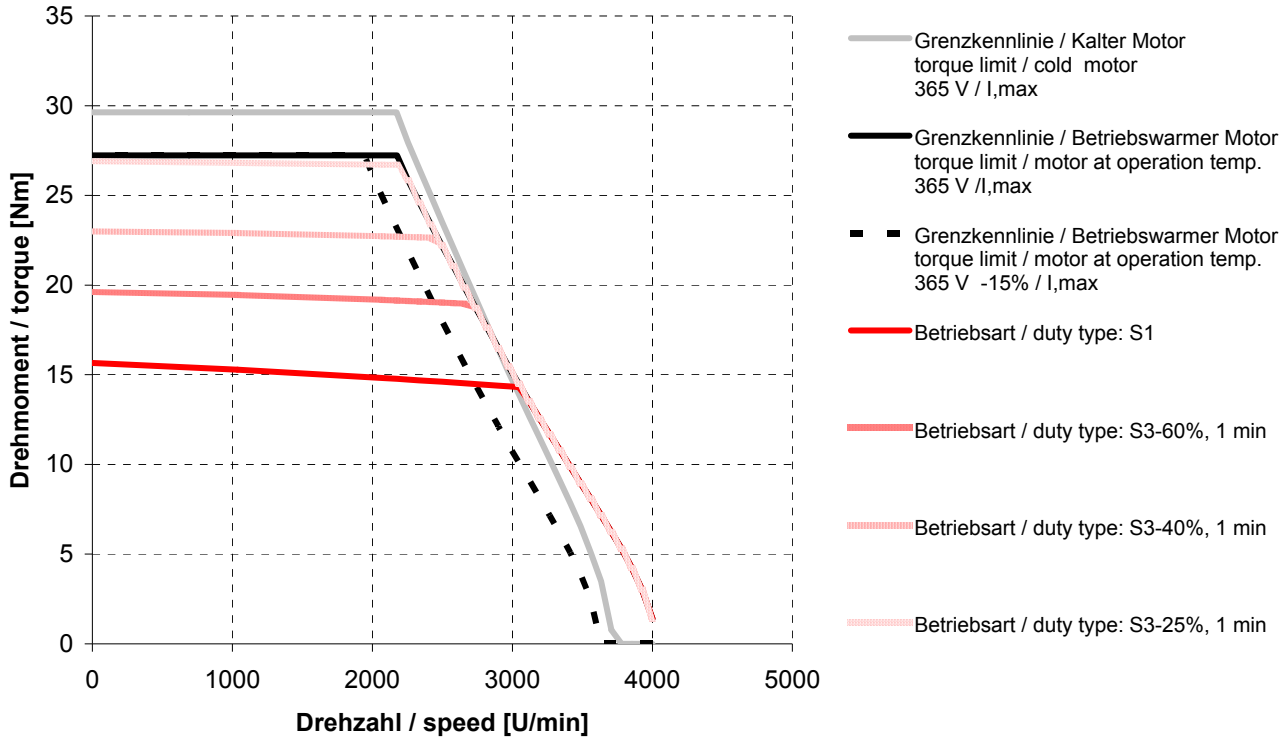

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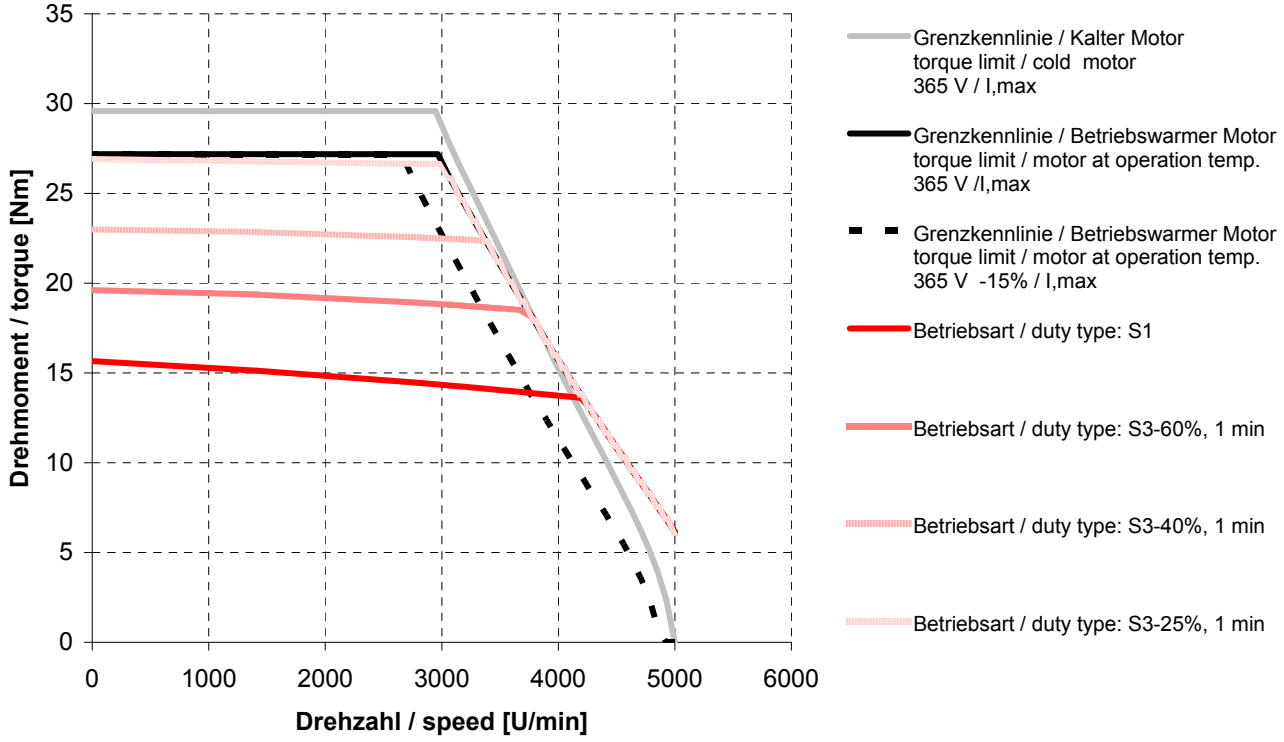

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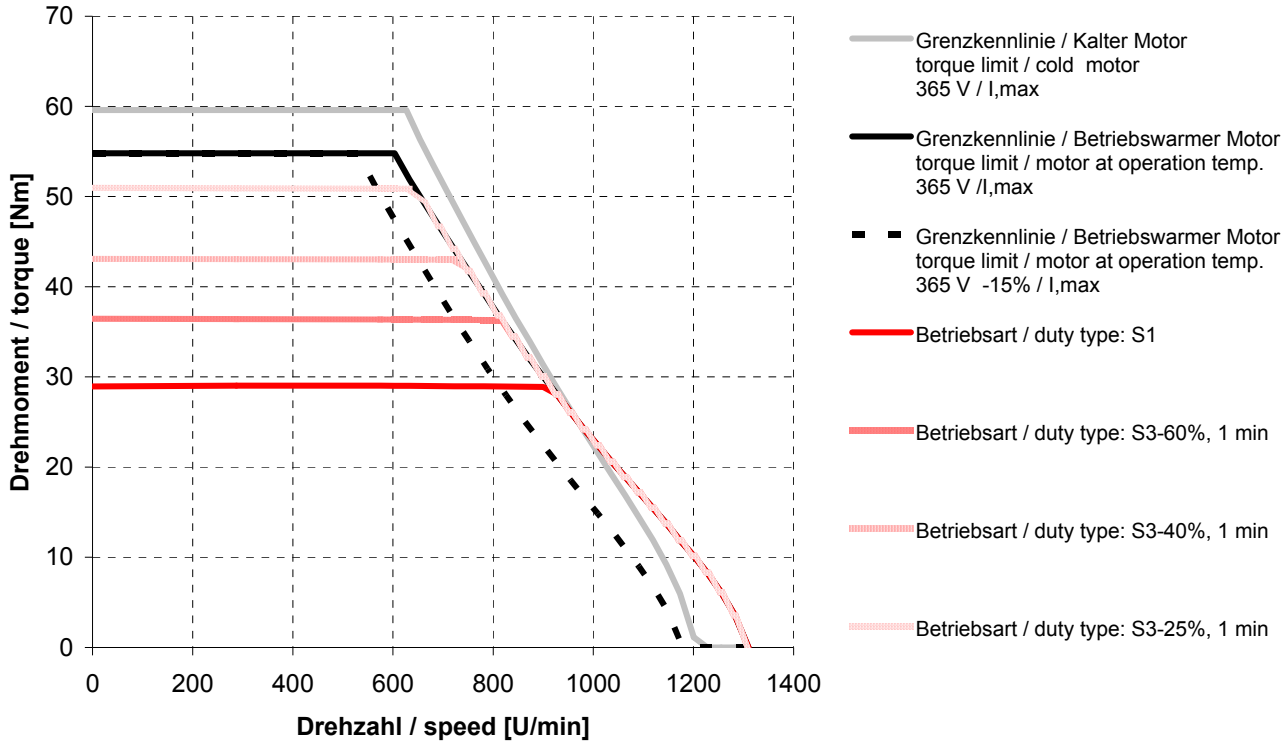

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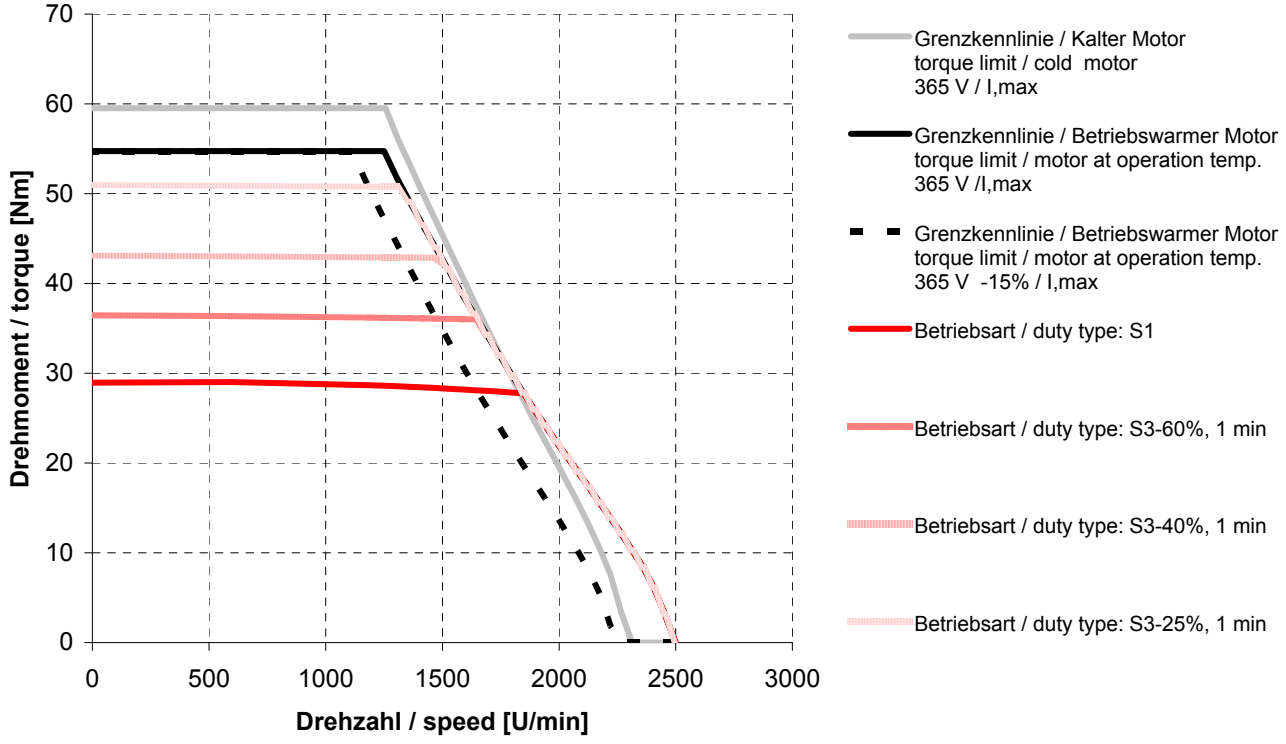

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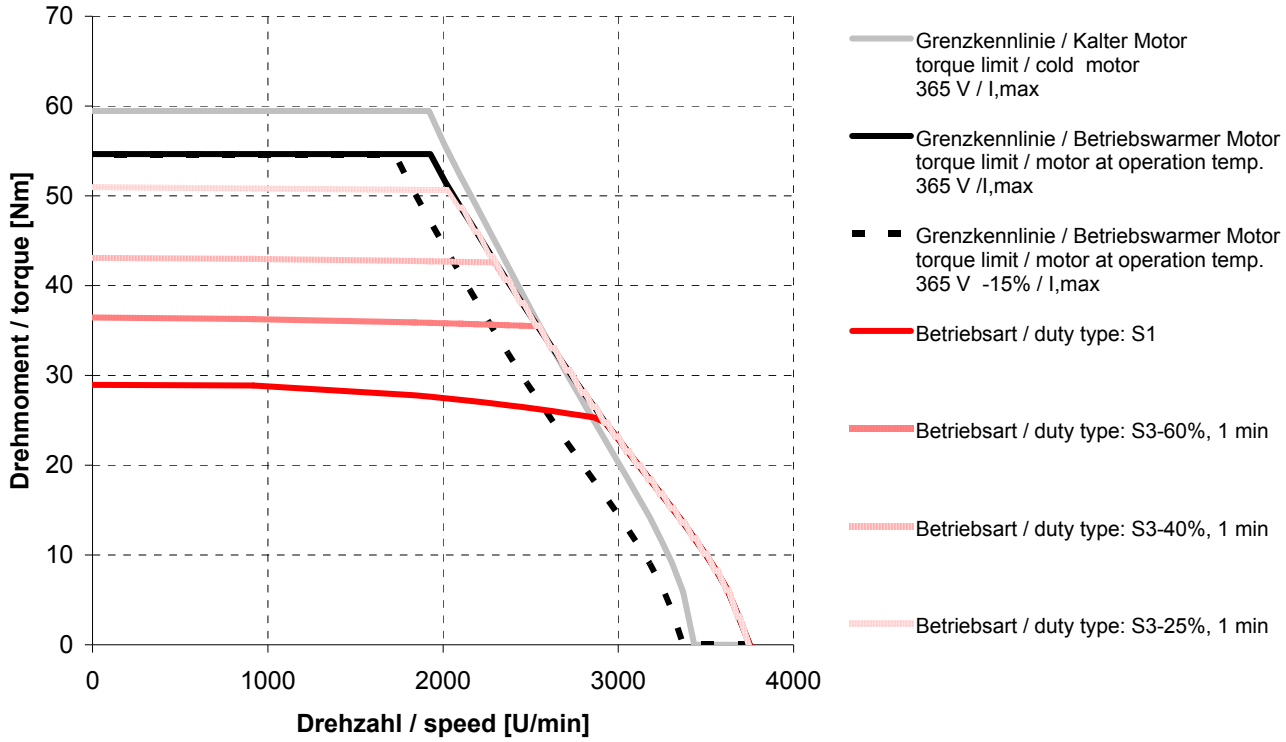

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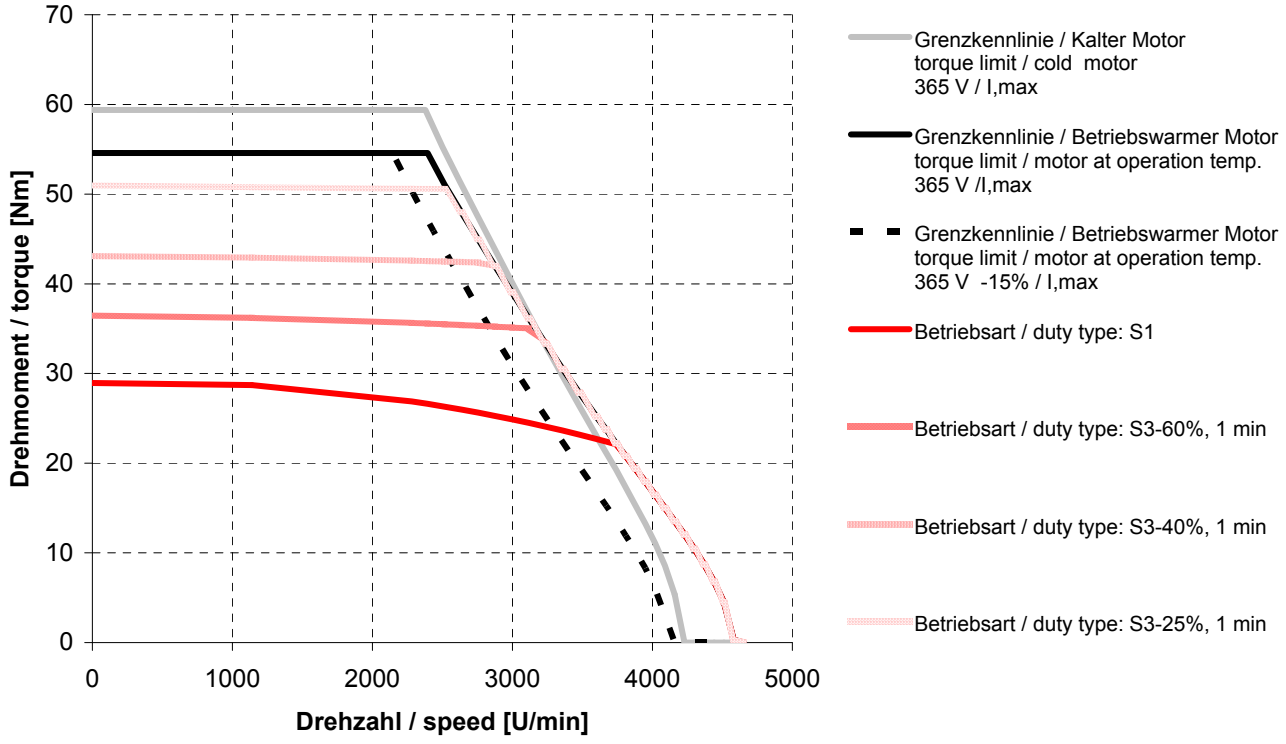

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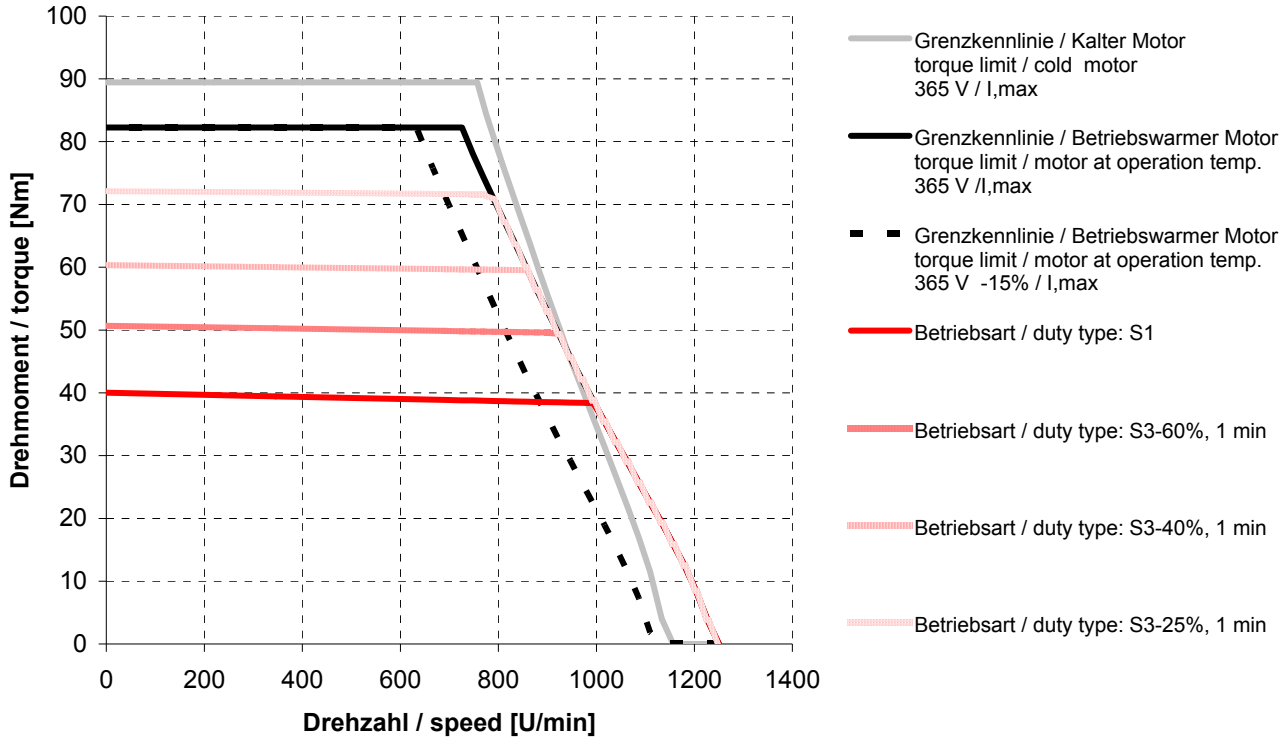

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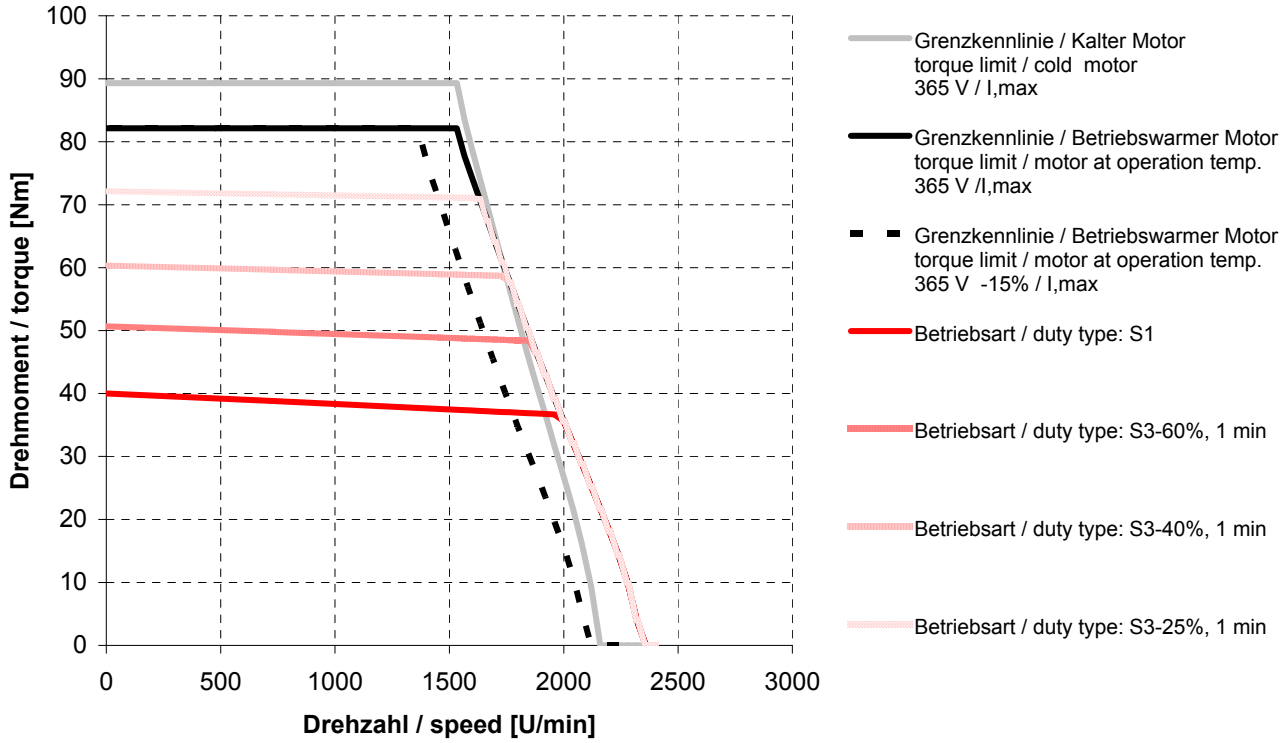

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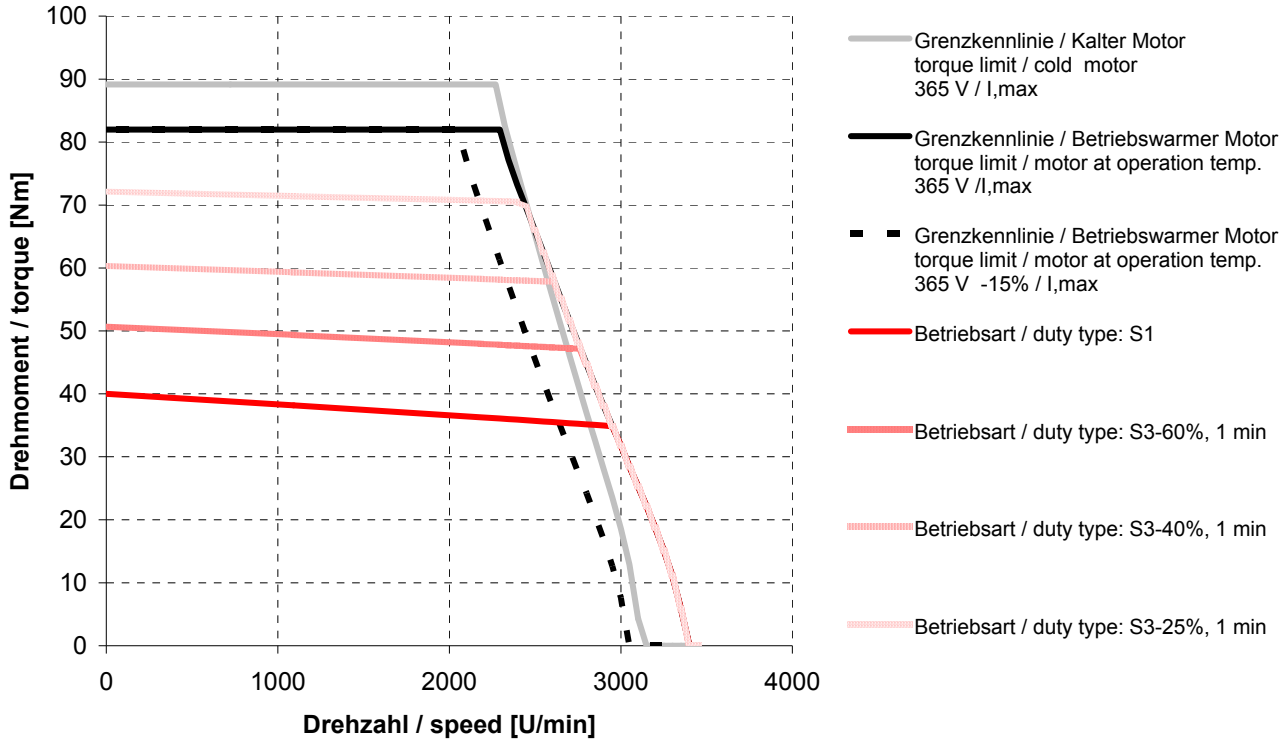
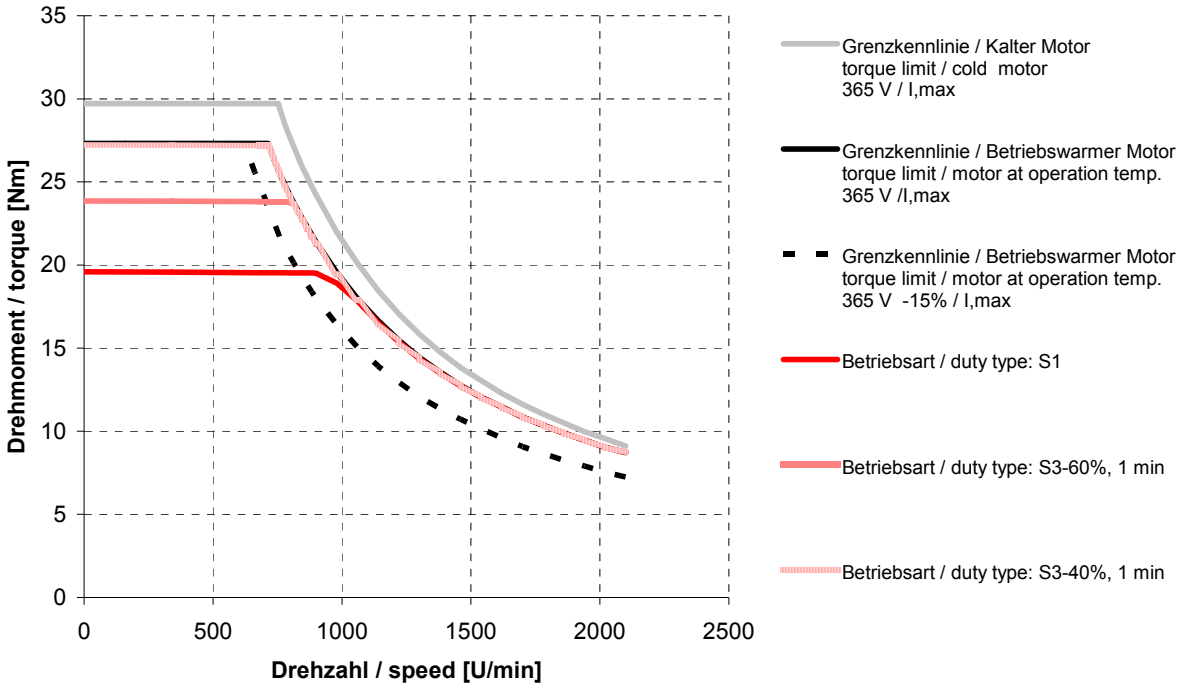


5.3.3. DSC071..64W..

DSC071K64W10-5



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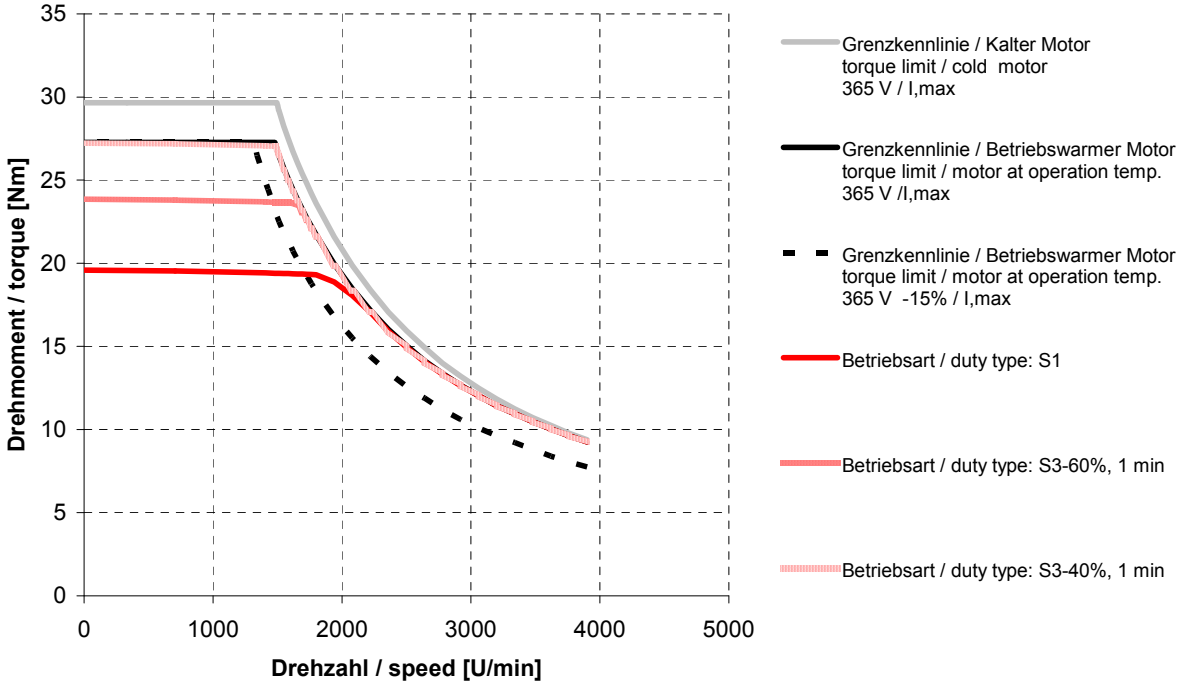

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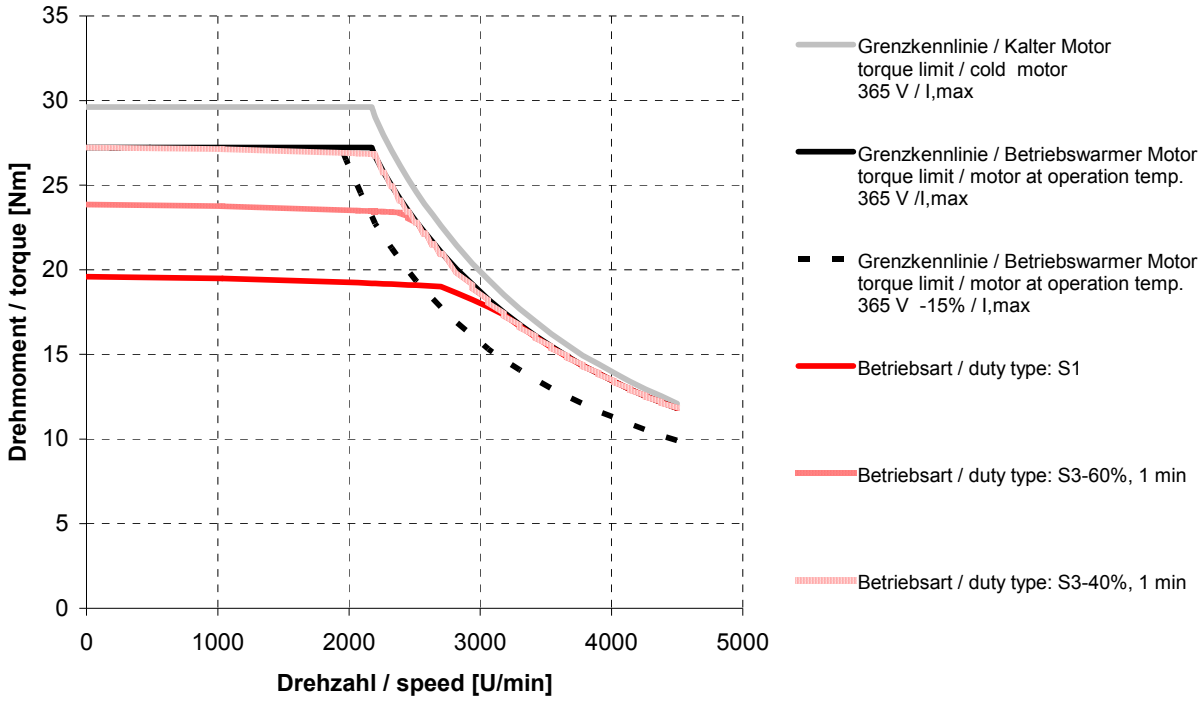

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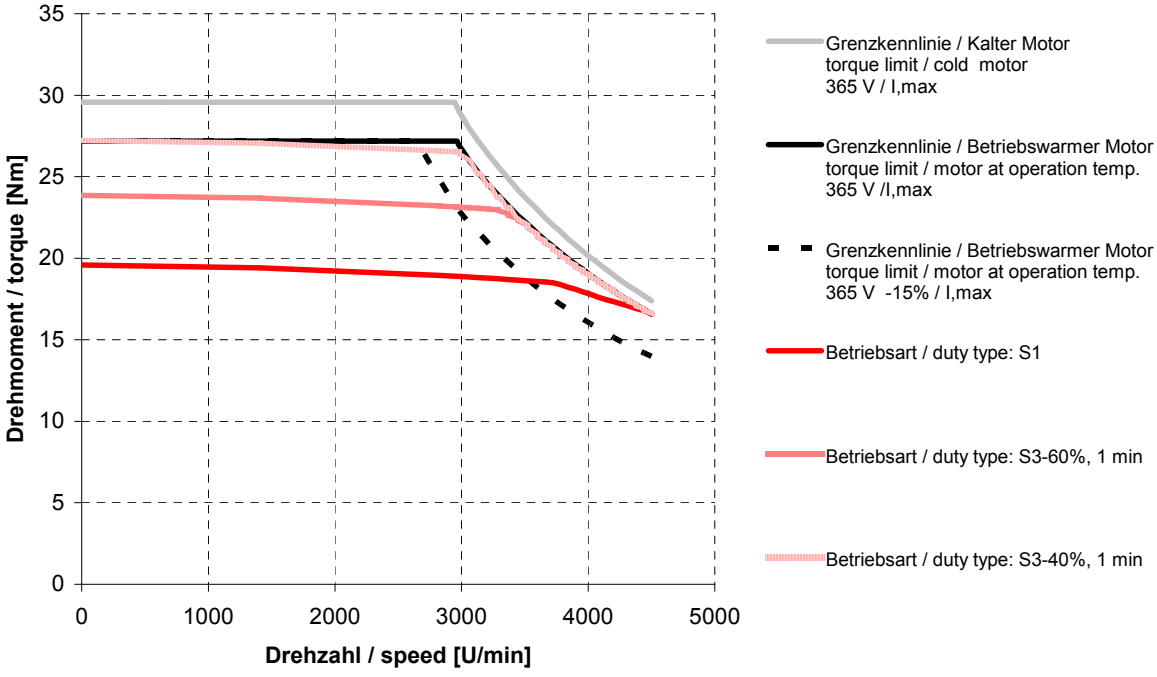

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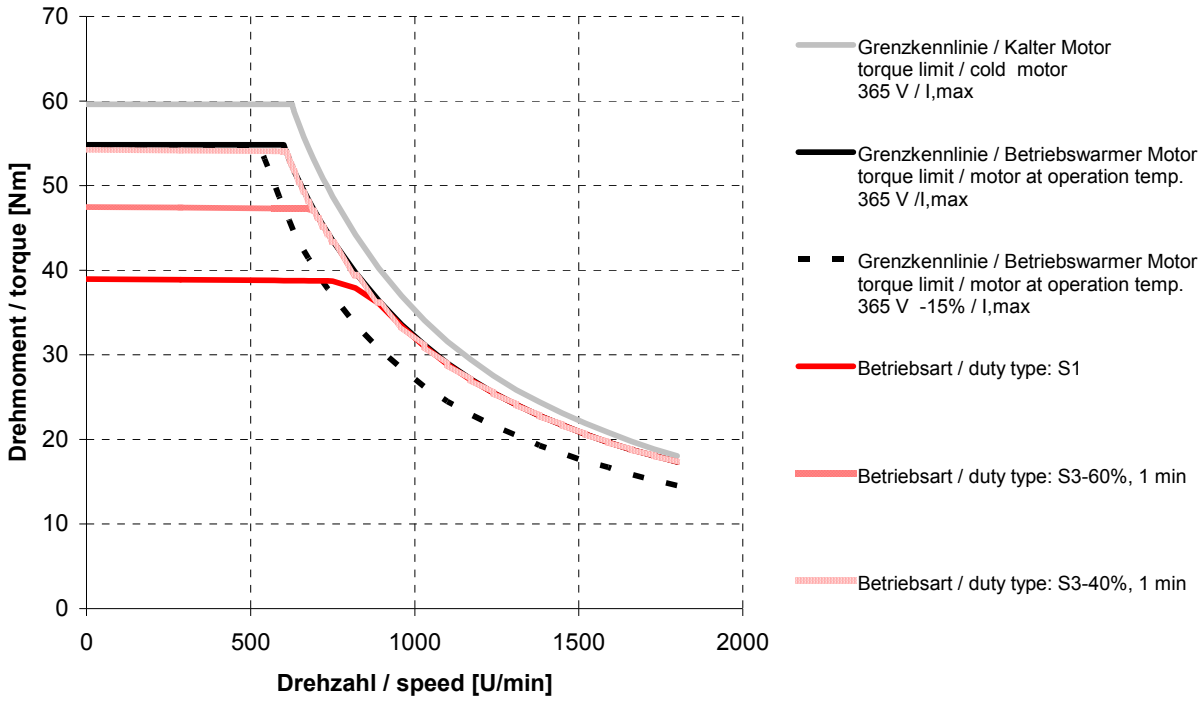

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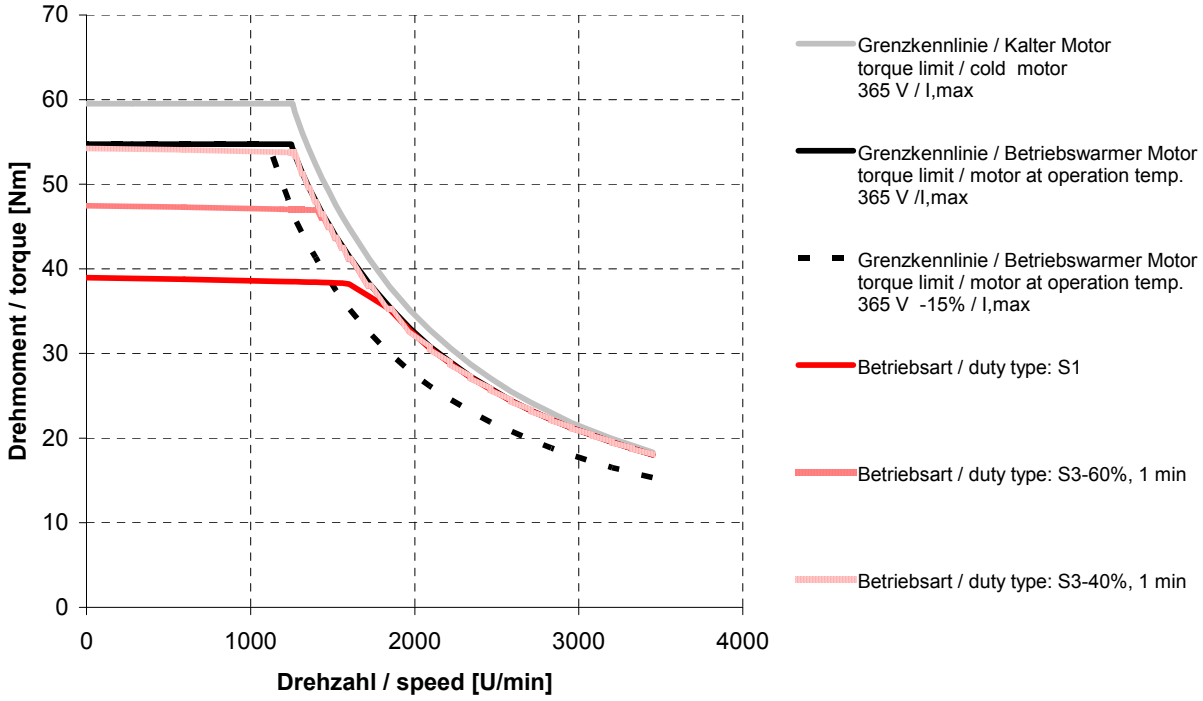

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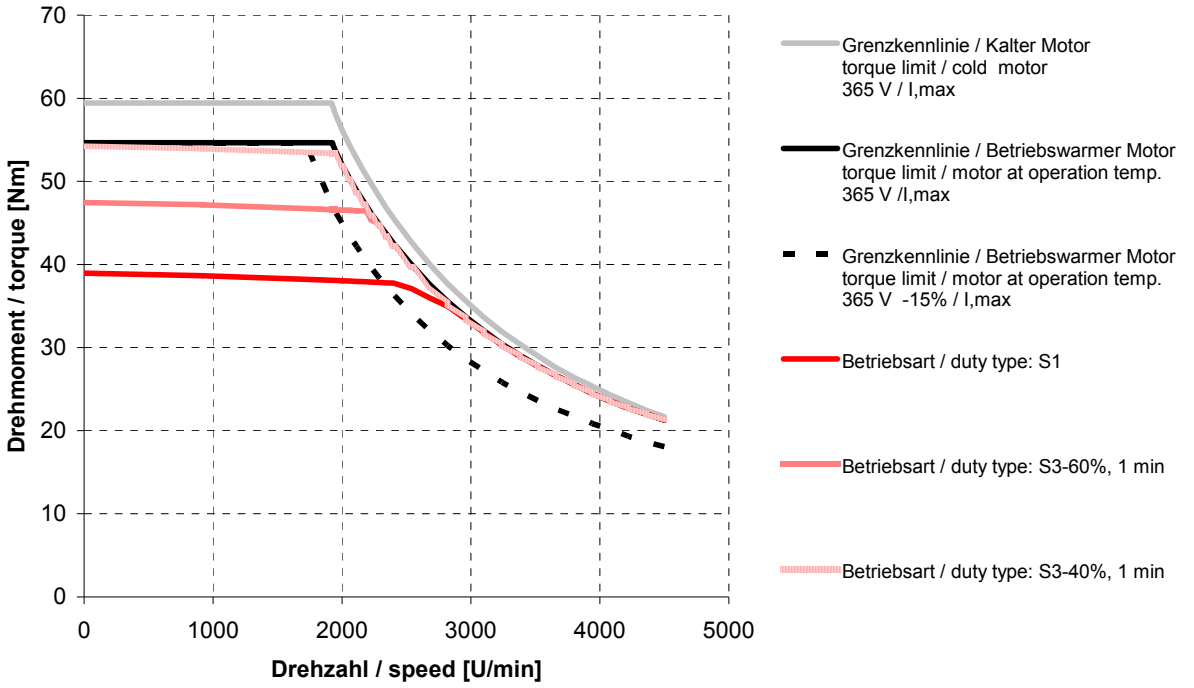

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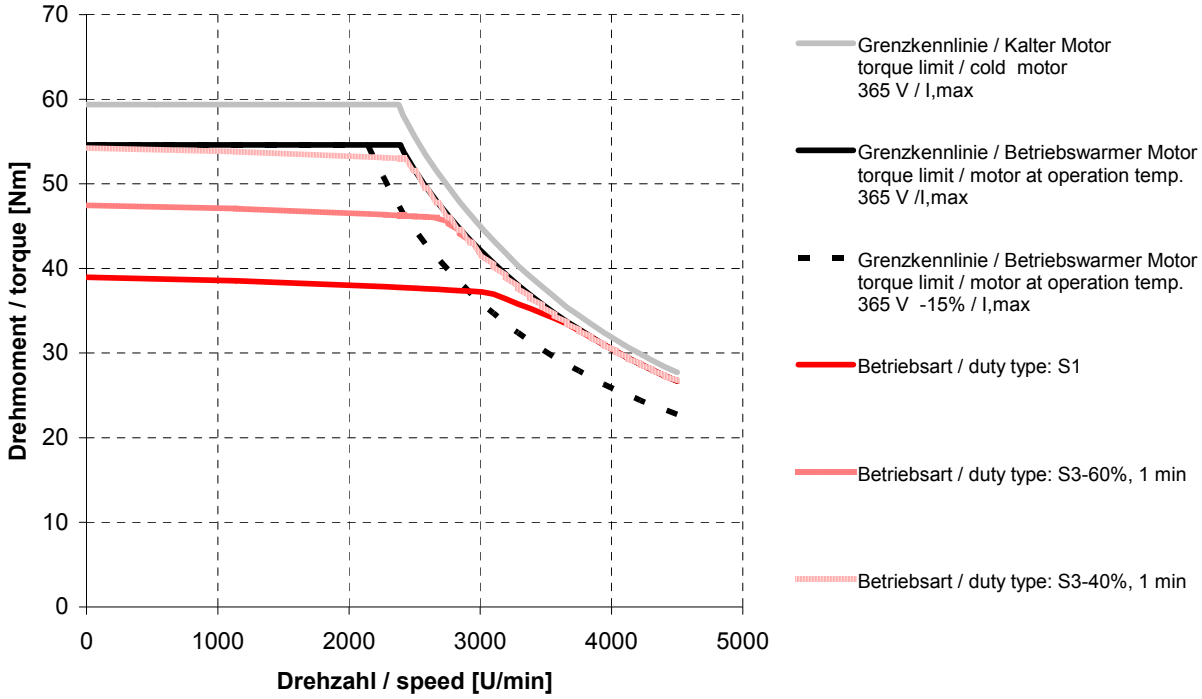

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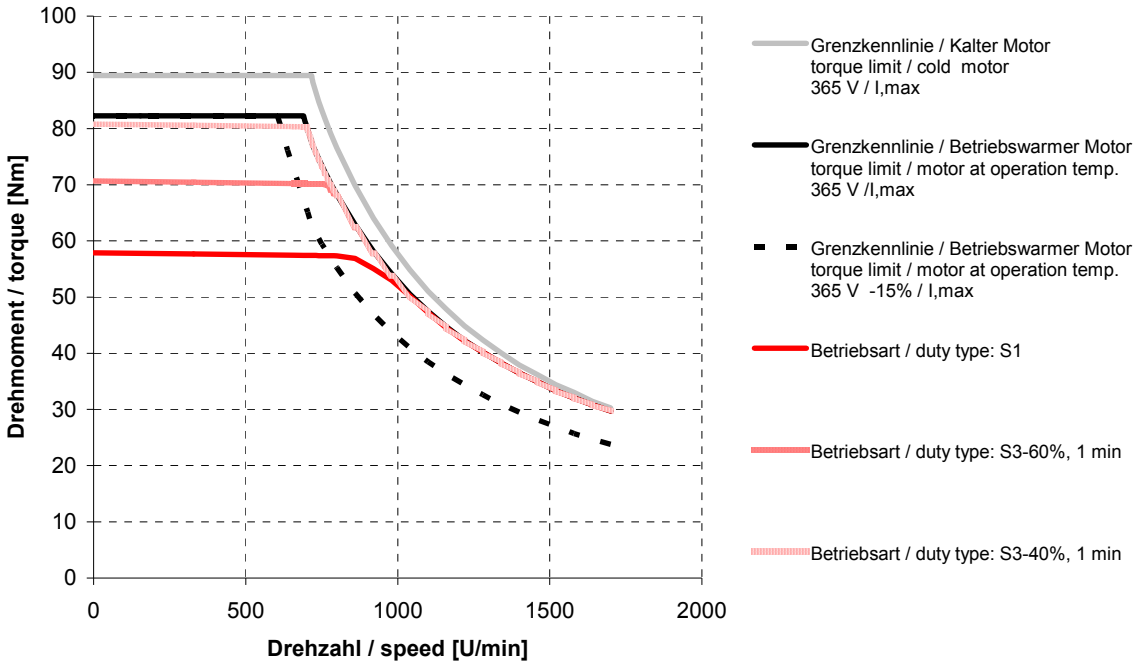

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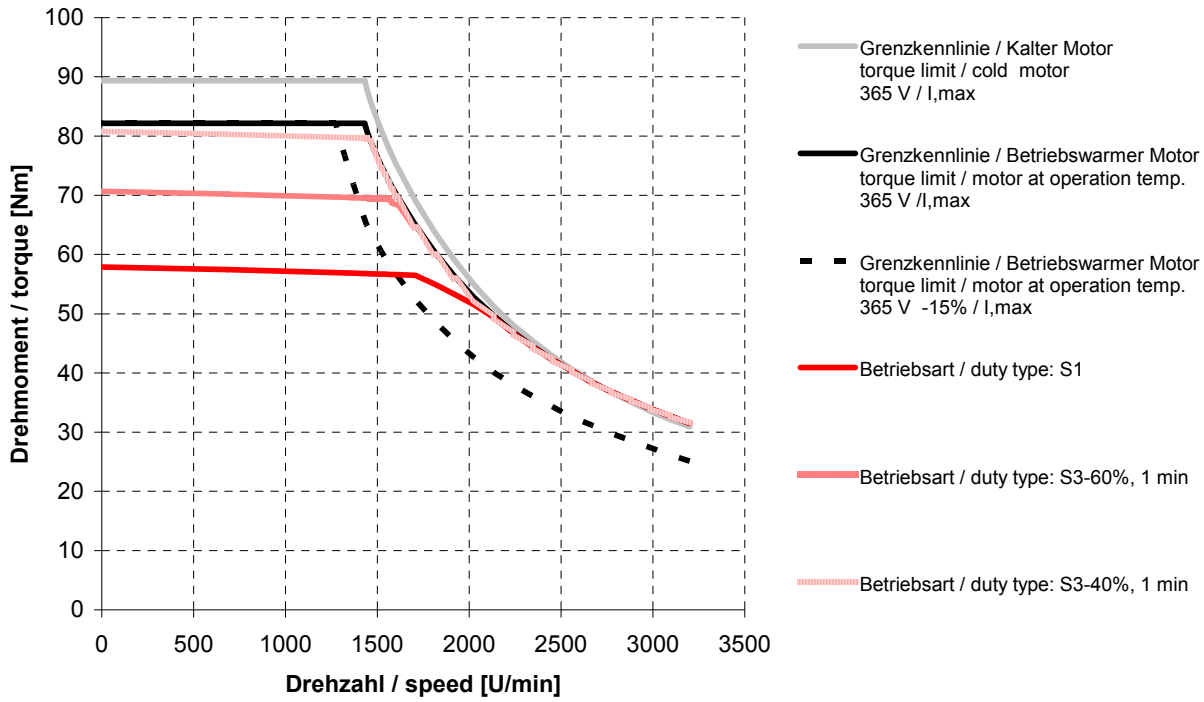

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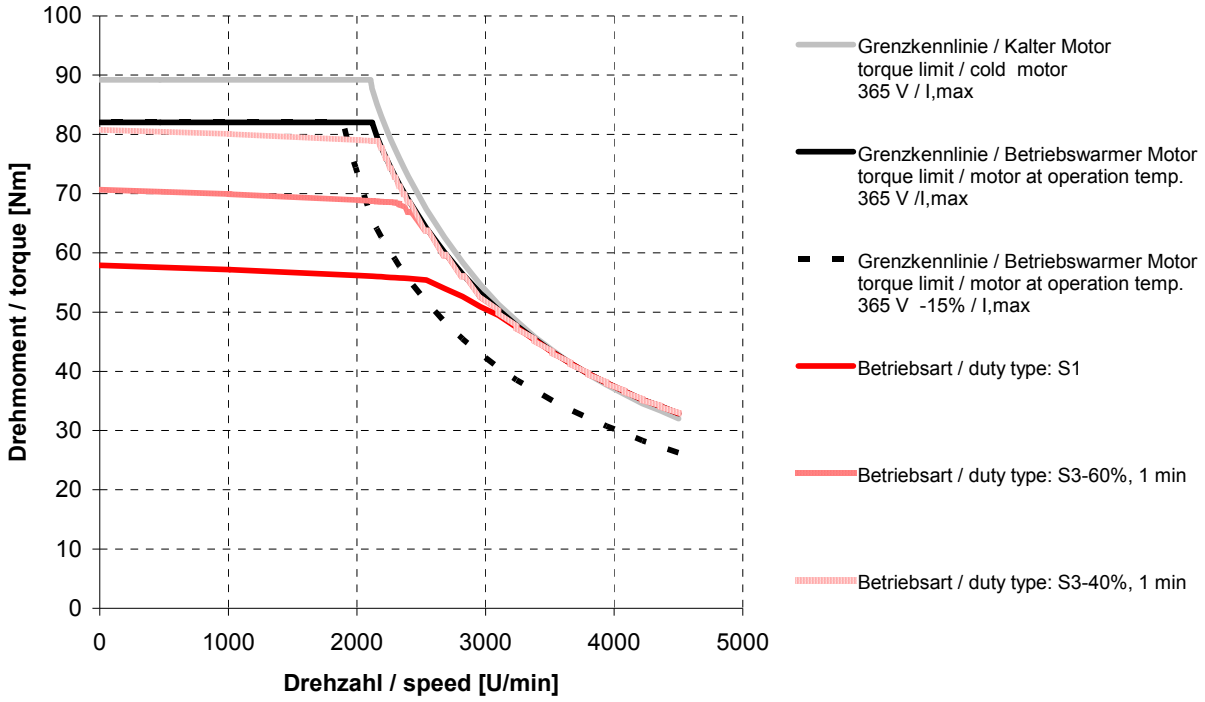
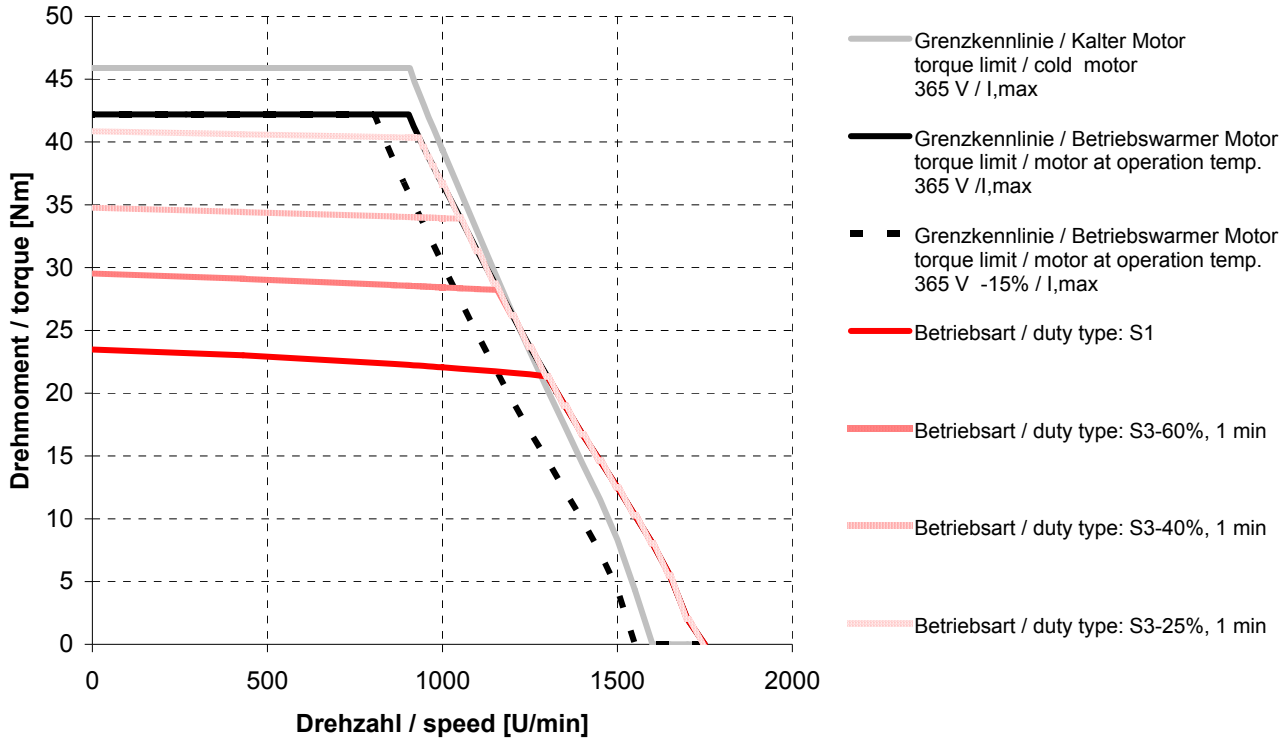


5.4. Characteristic curves DSC100

5.4.1. DSC100..64U..

DSC100K64U10-5



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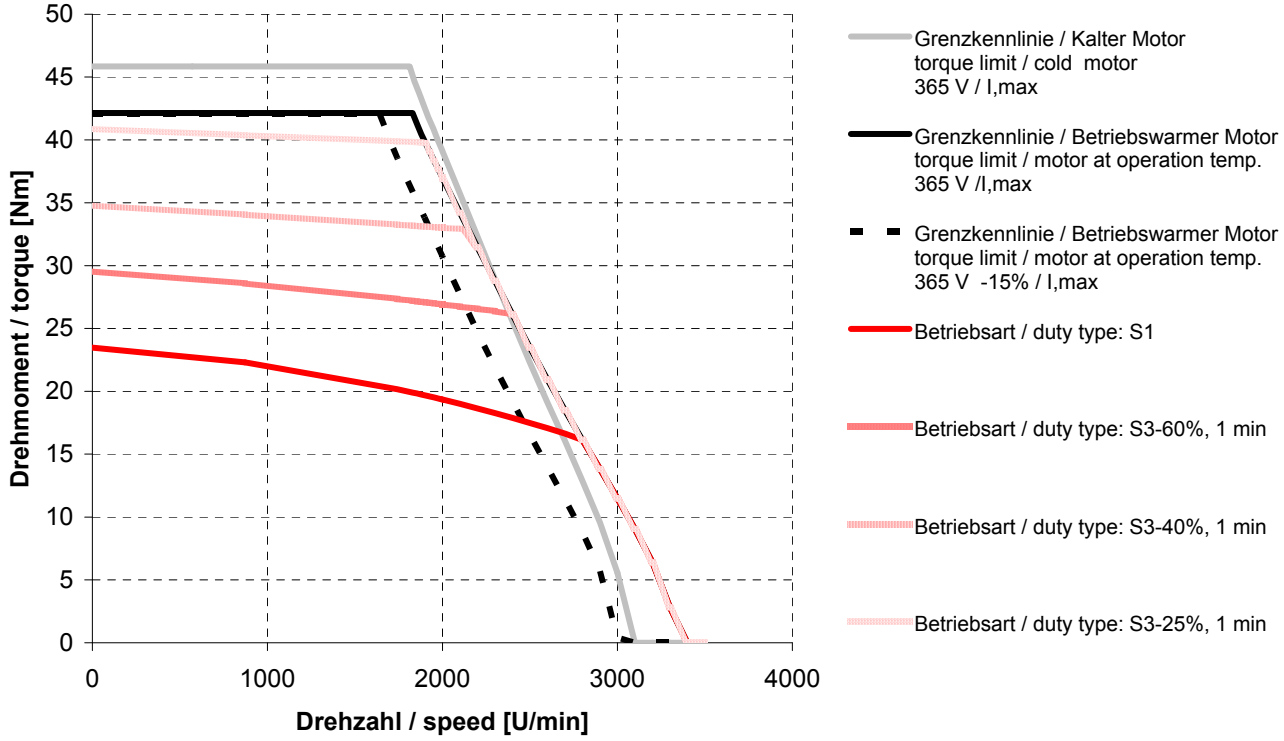

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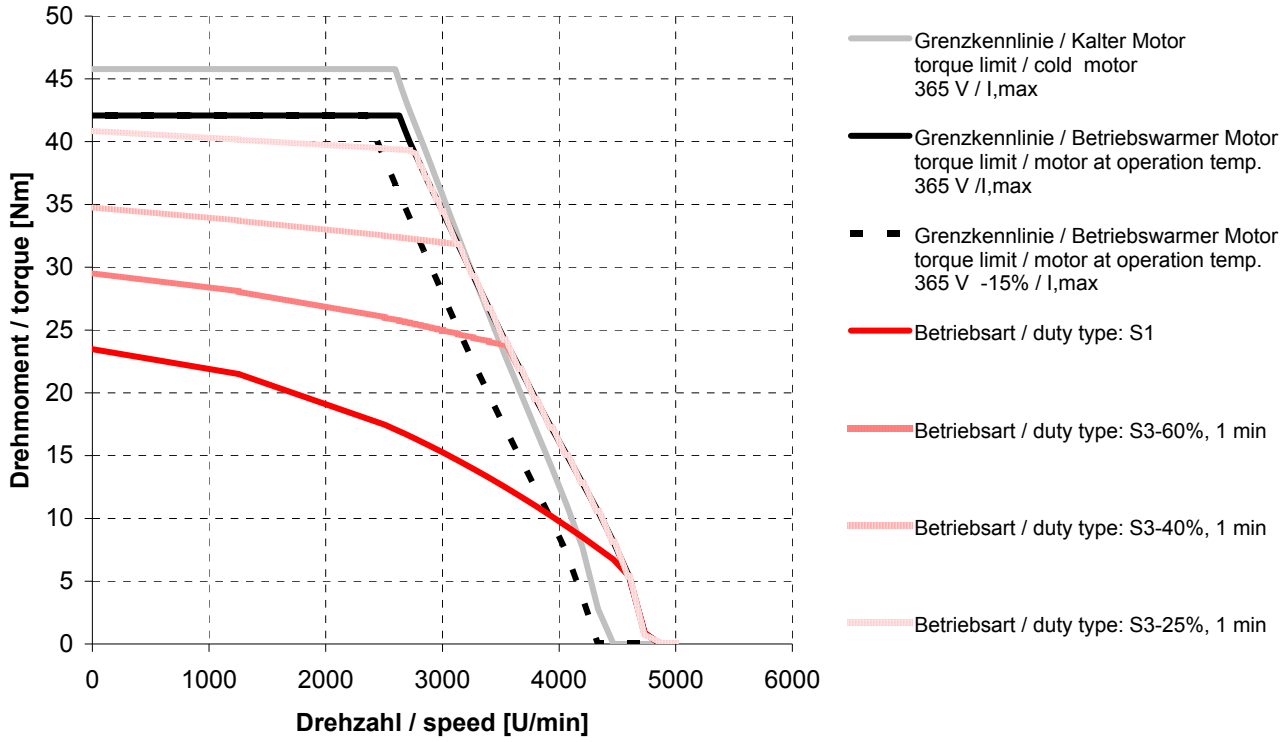

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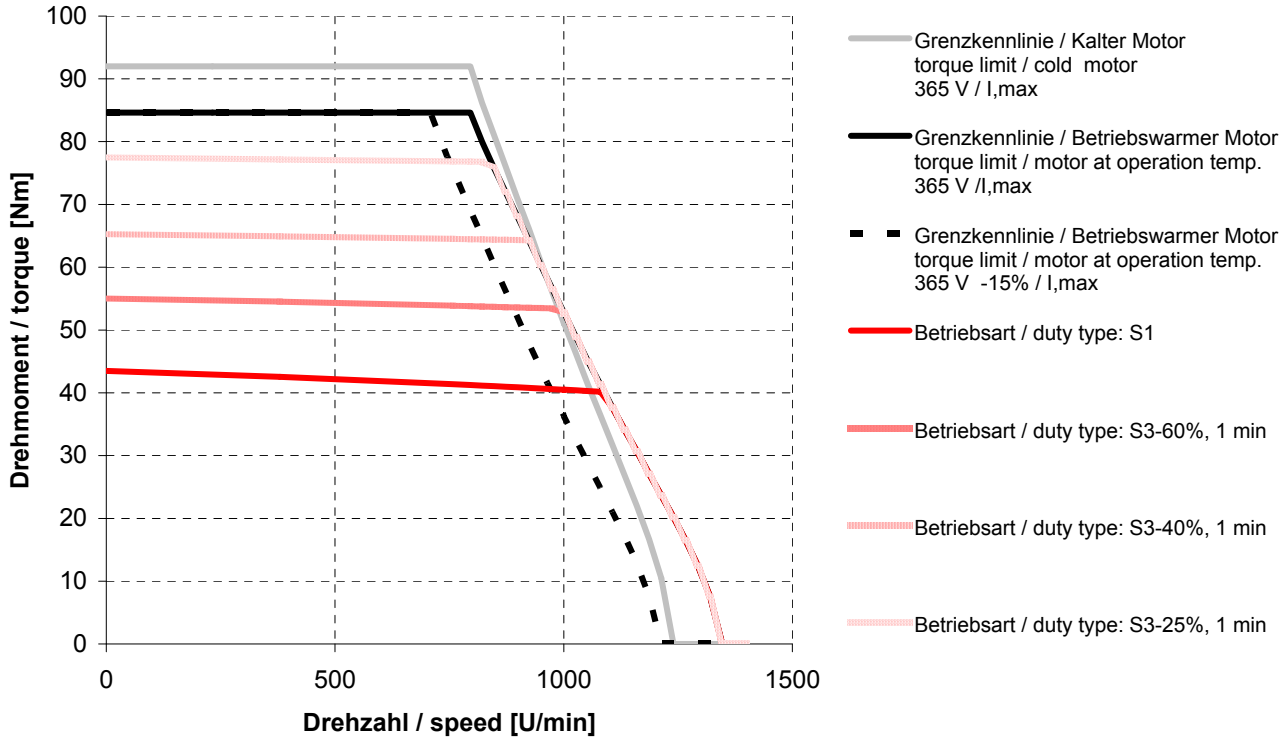

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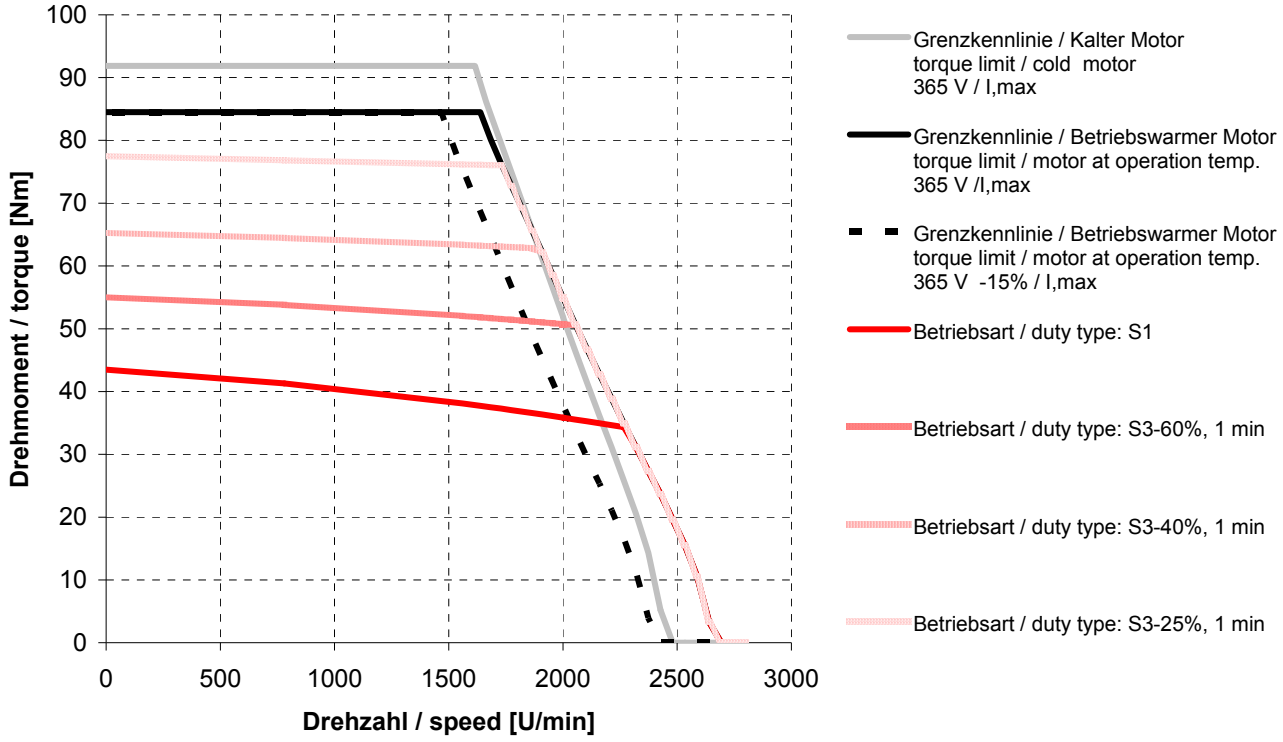

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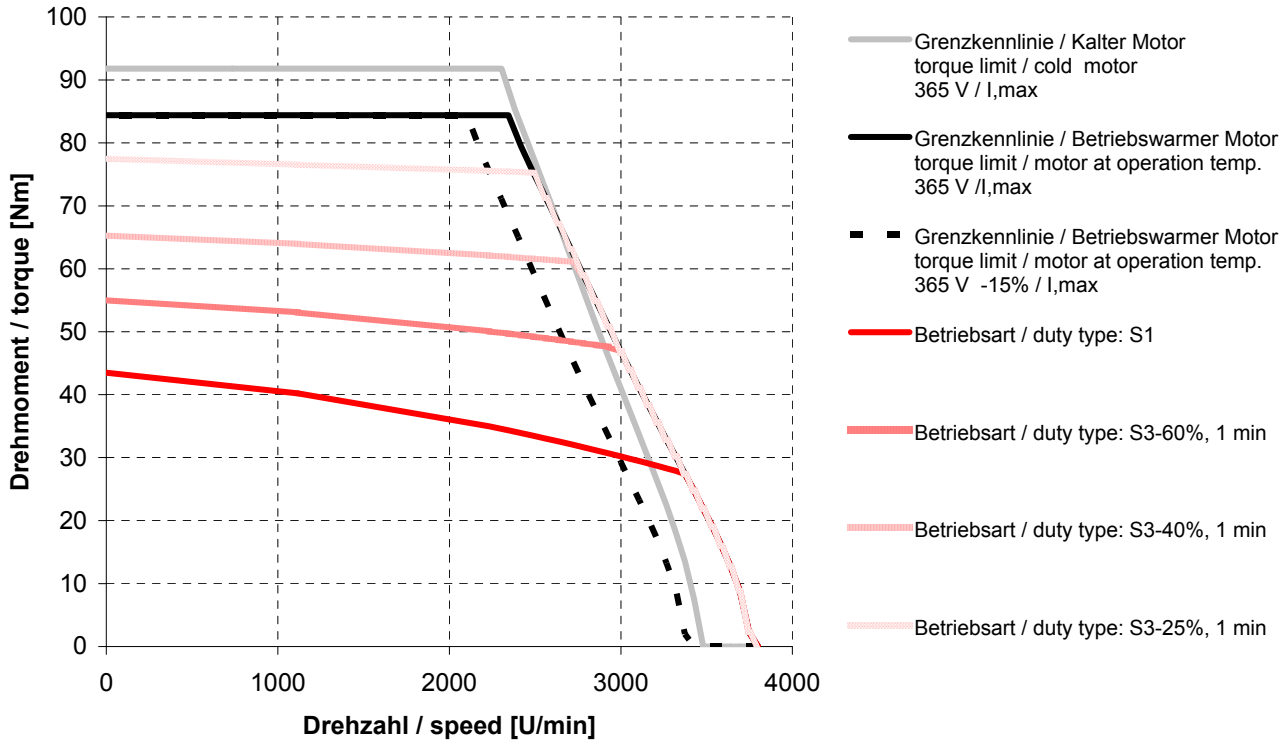

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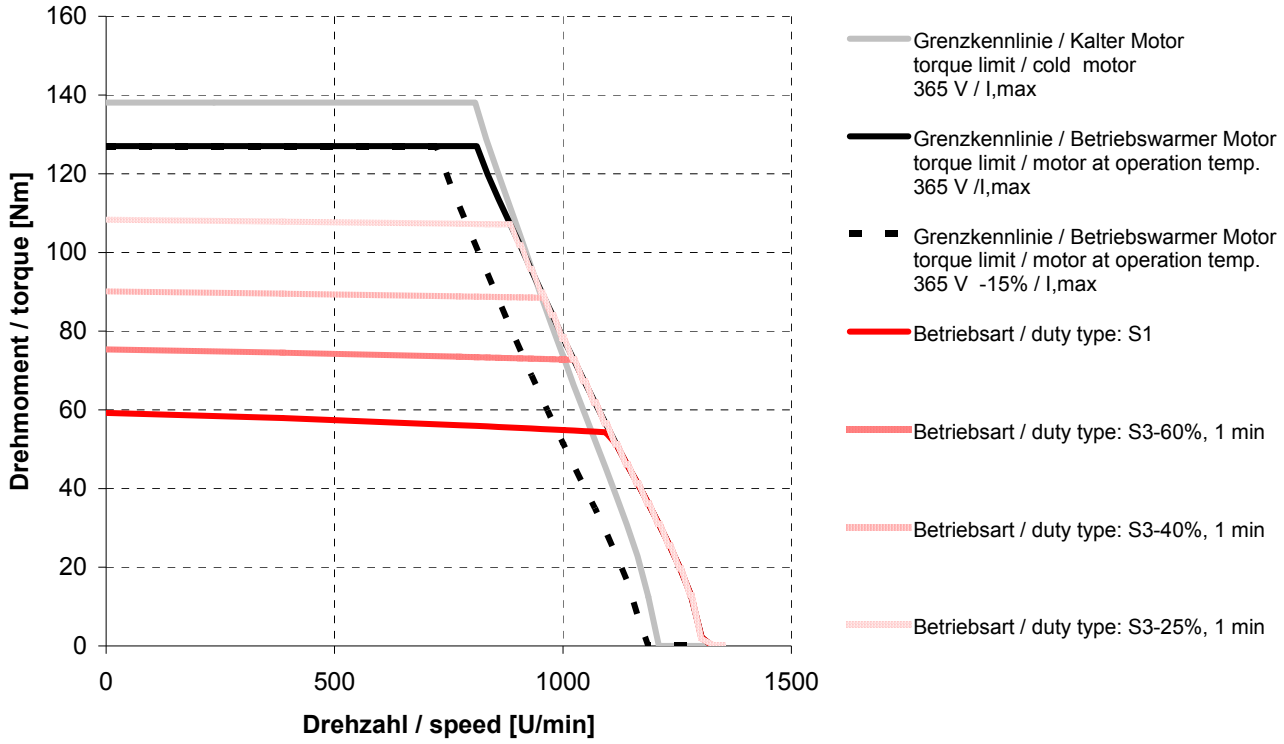

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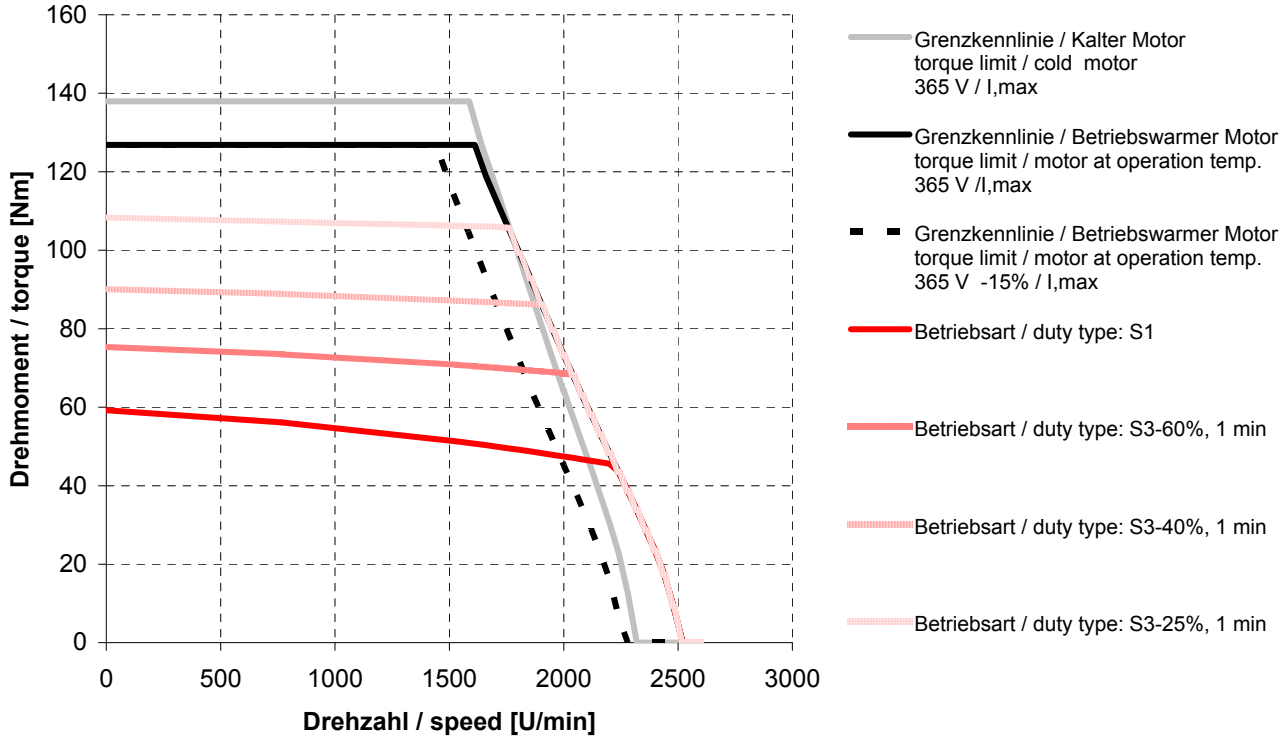
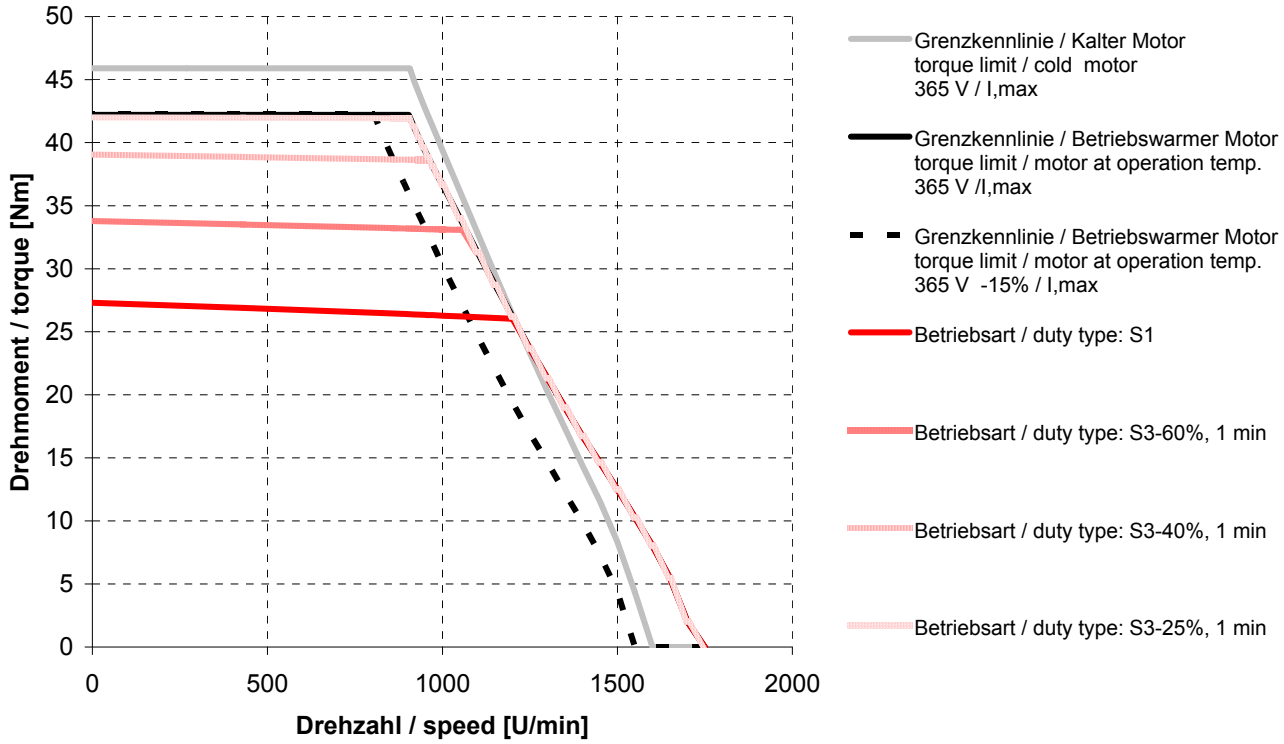


5.4.2. DSC100..64O..

DSC100K64O10-5



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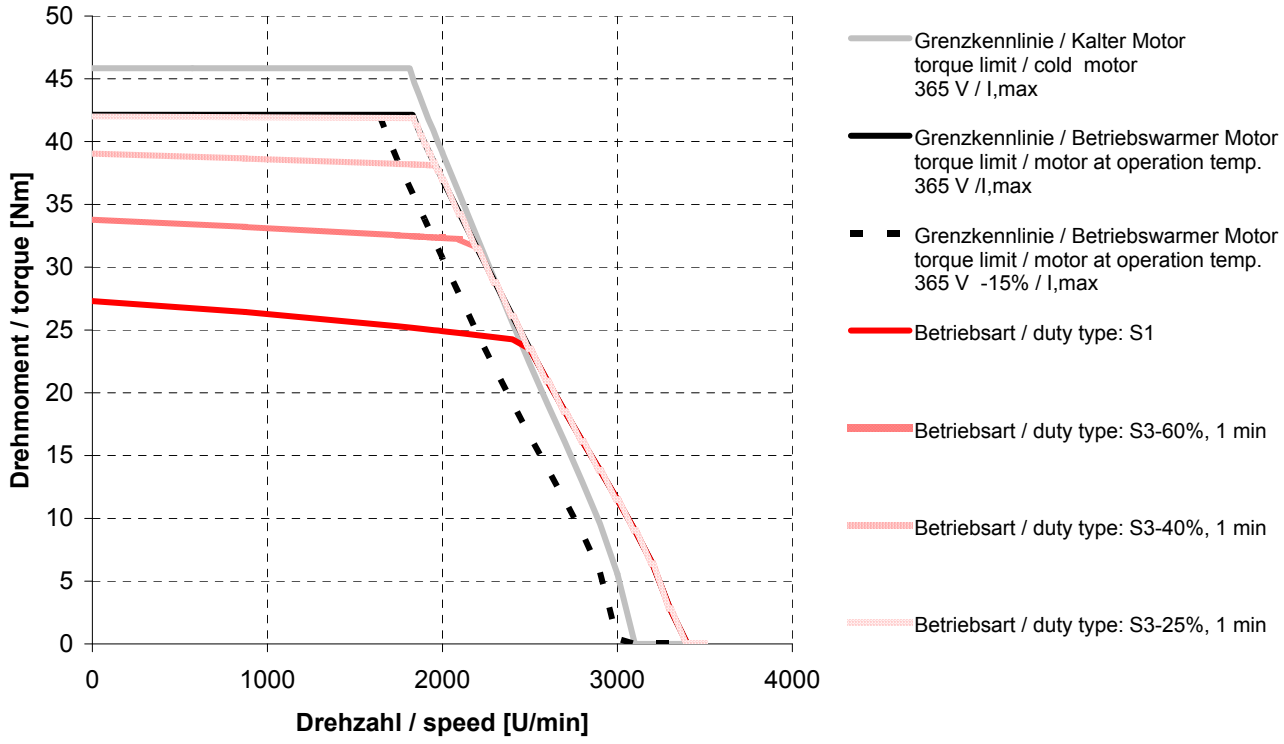

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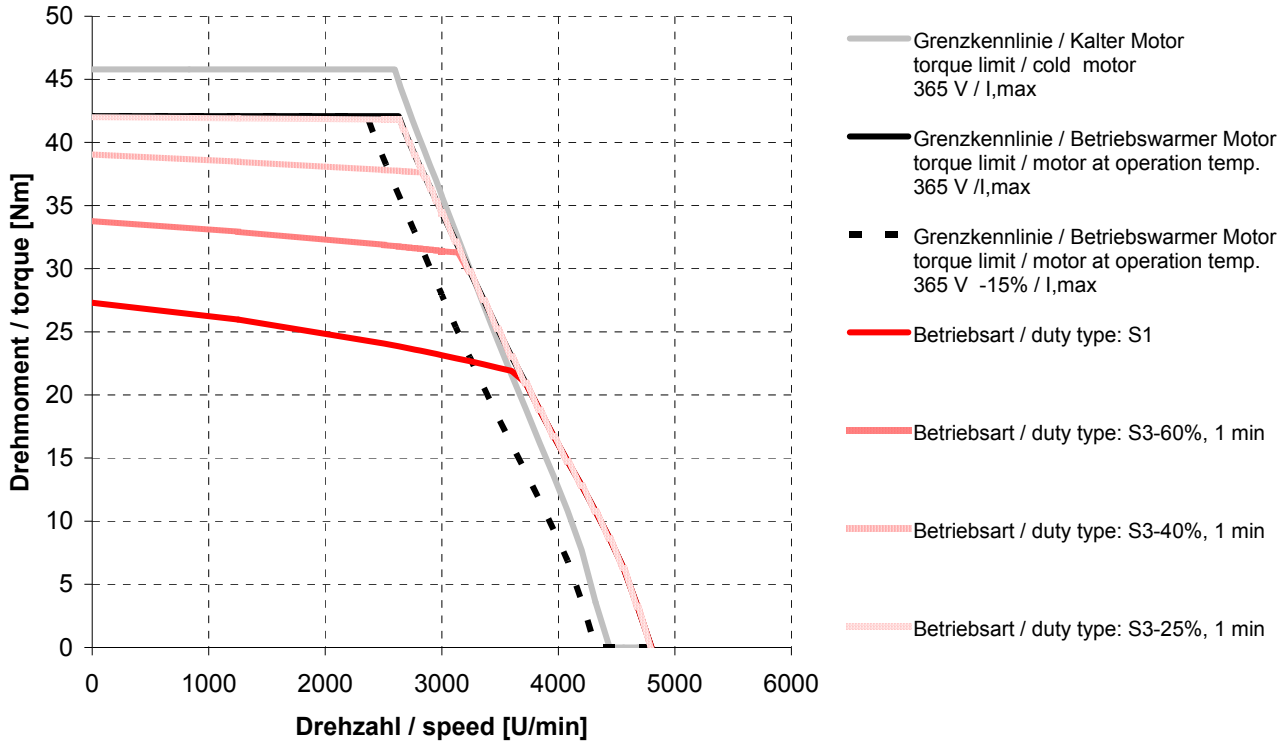

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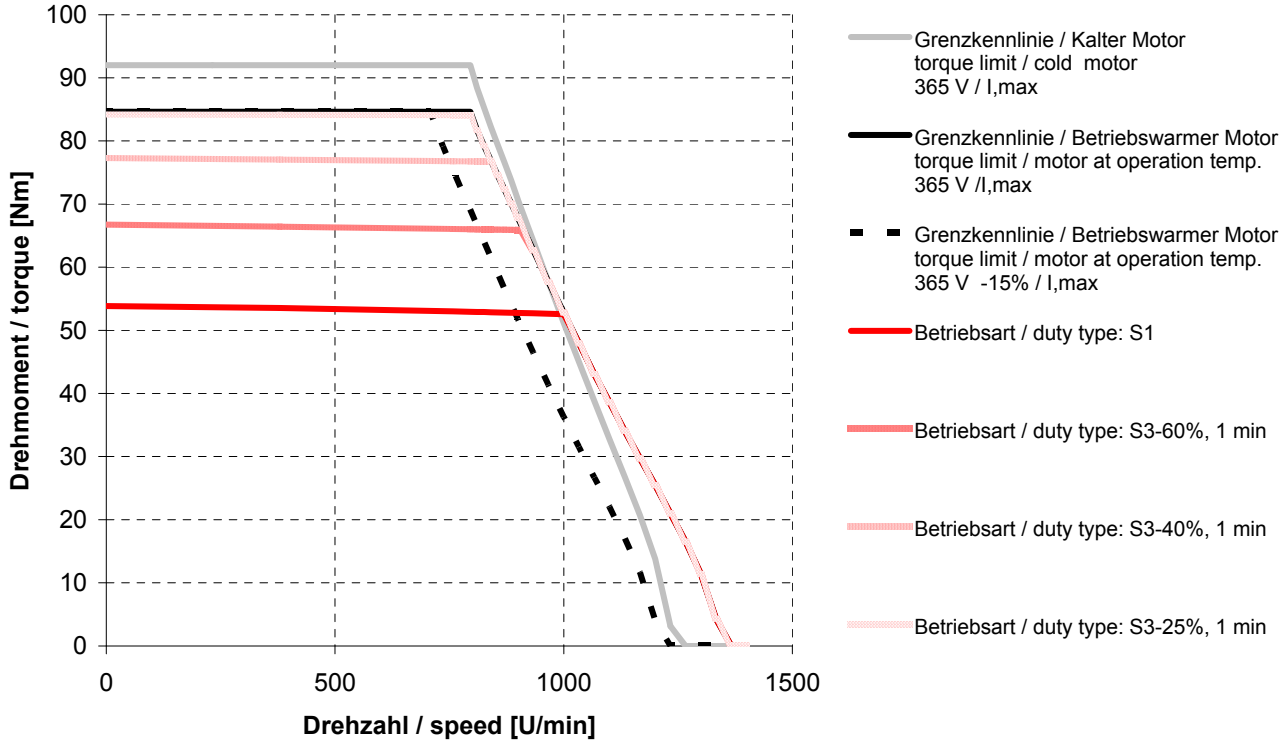

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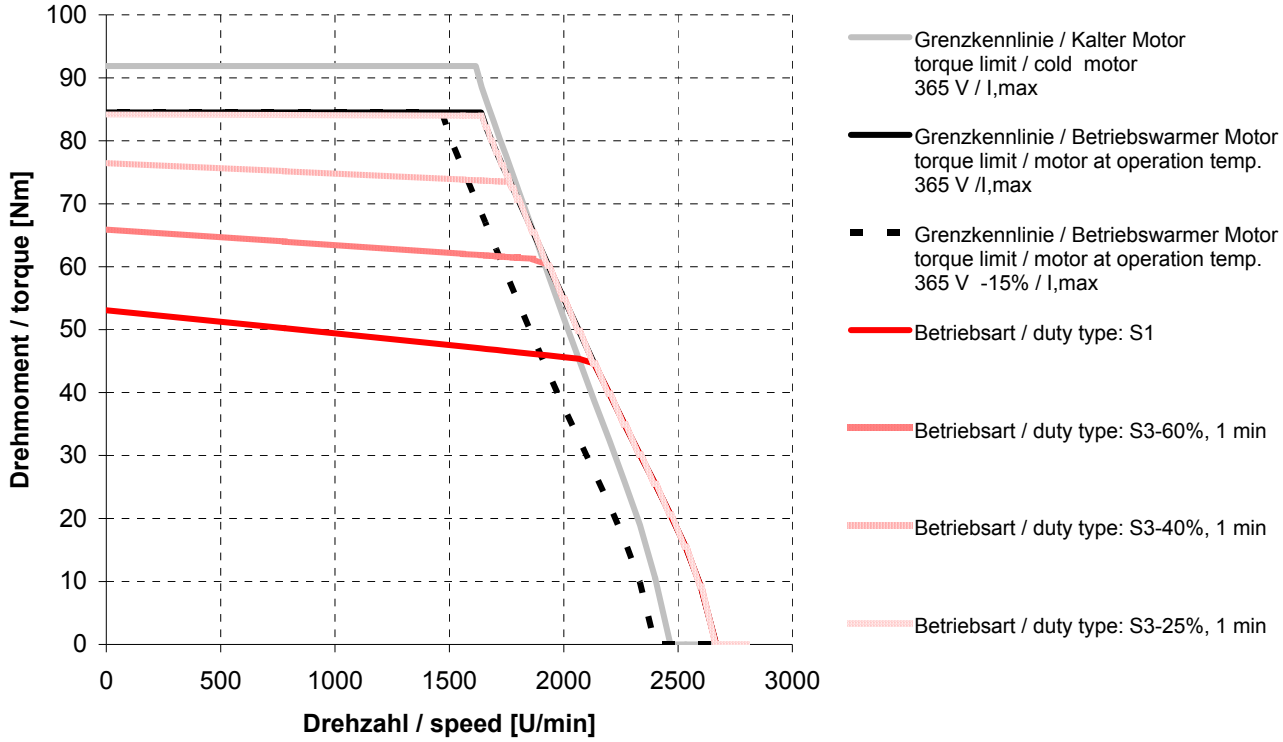

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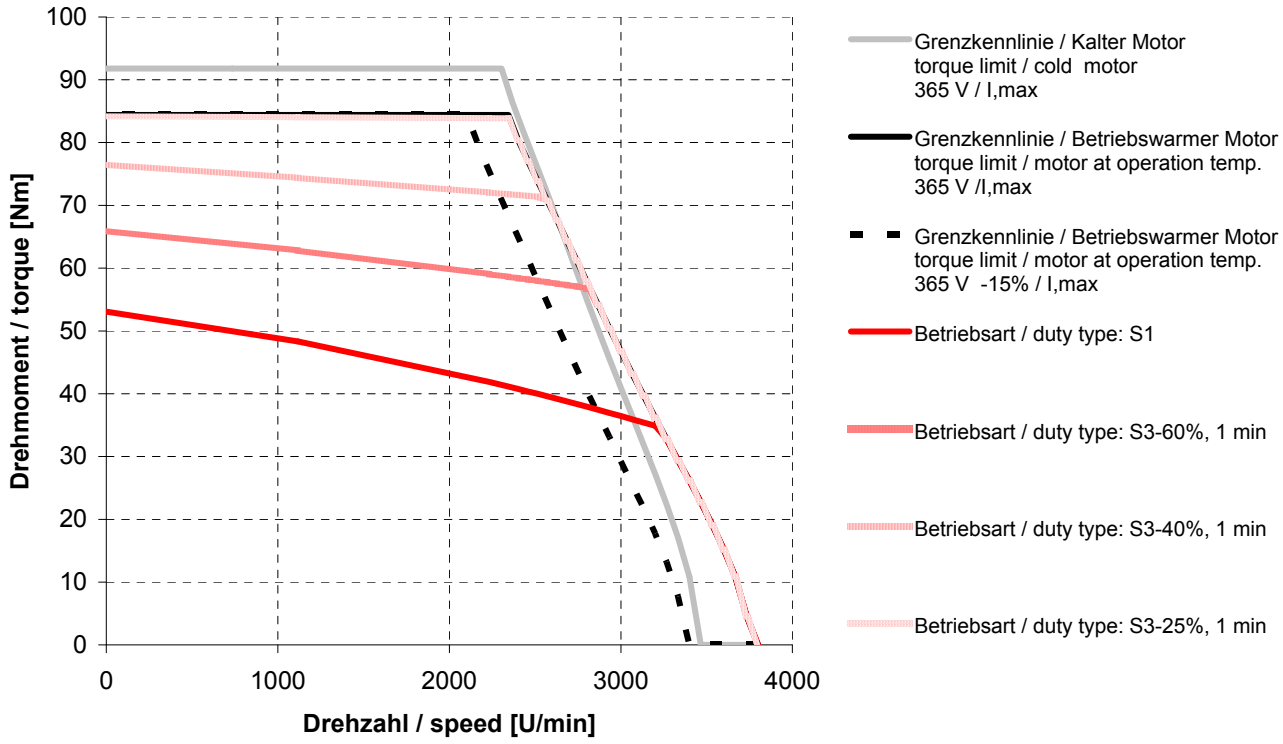

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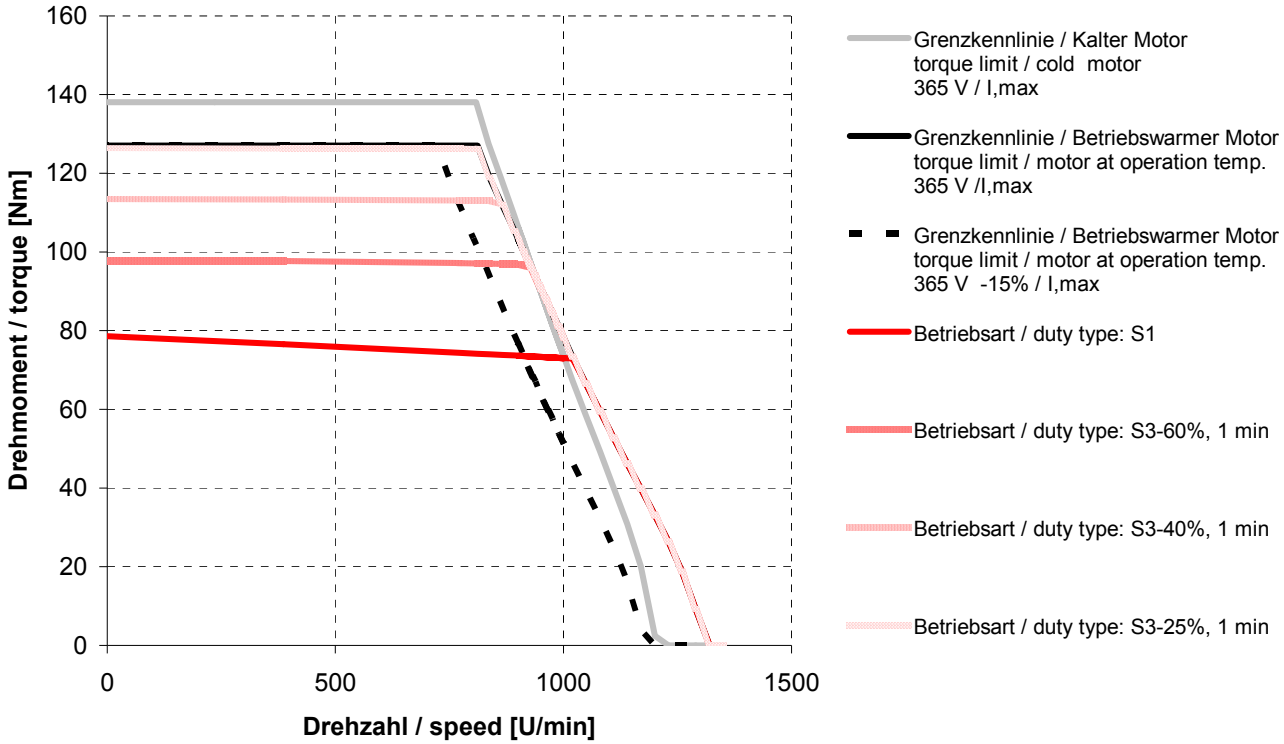

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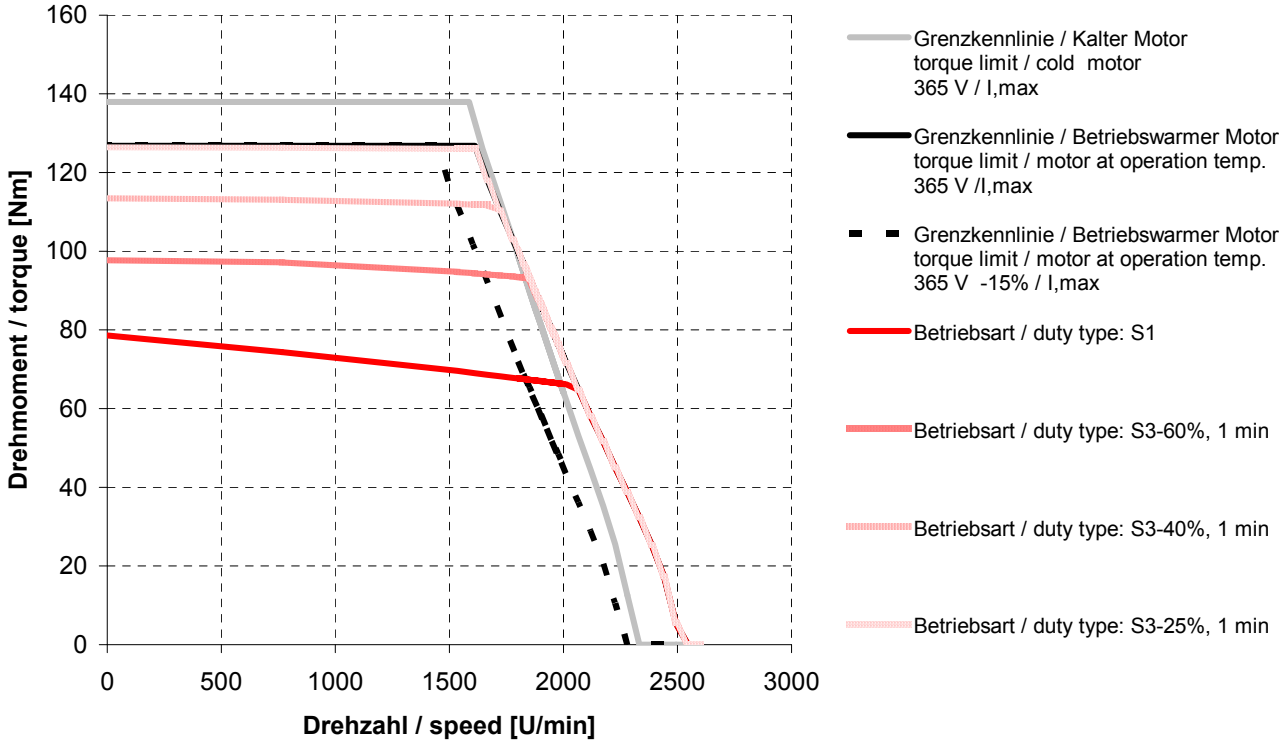

5.4.3. DSC100..64W..

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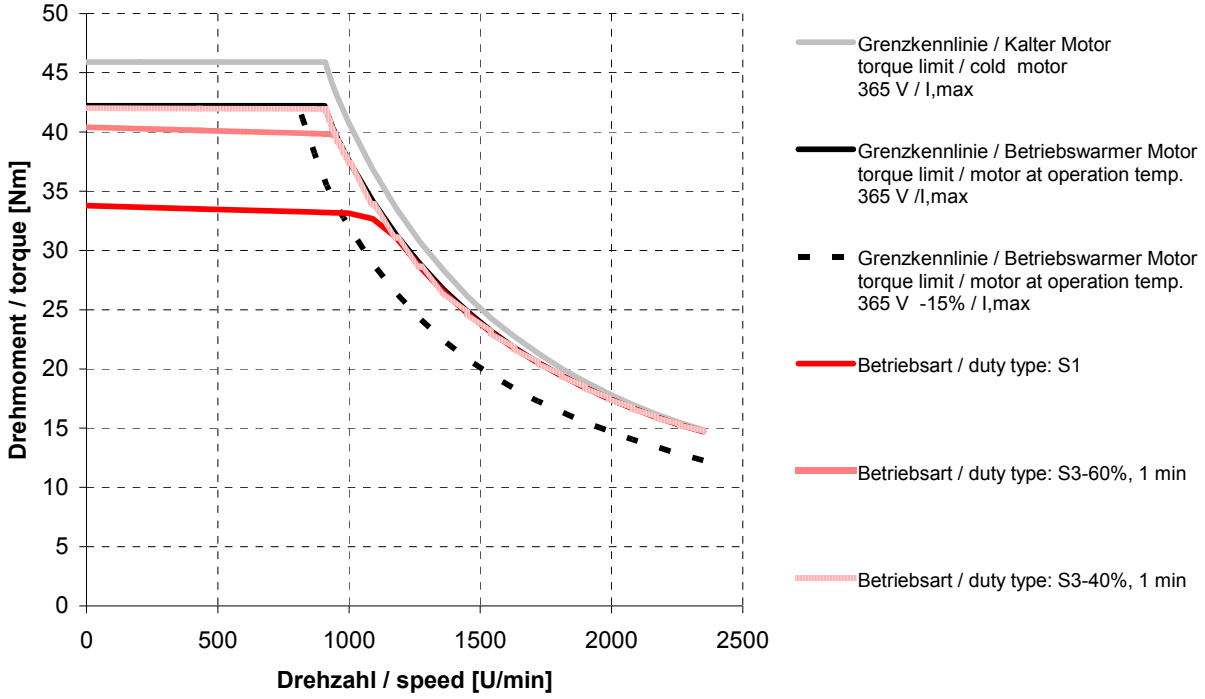

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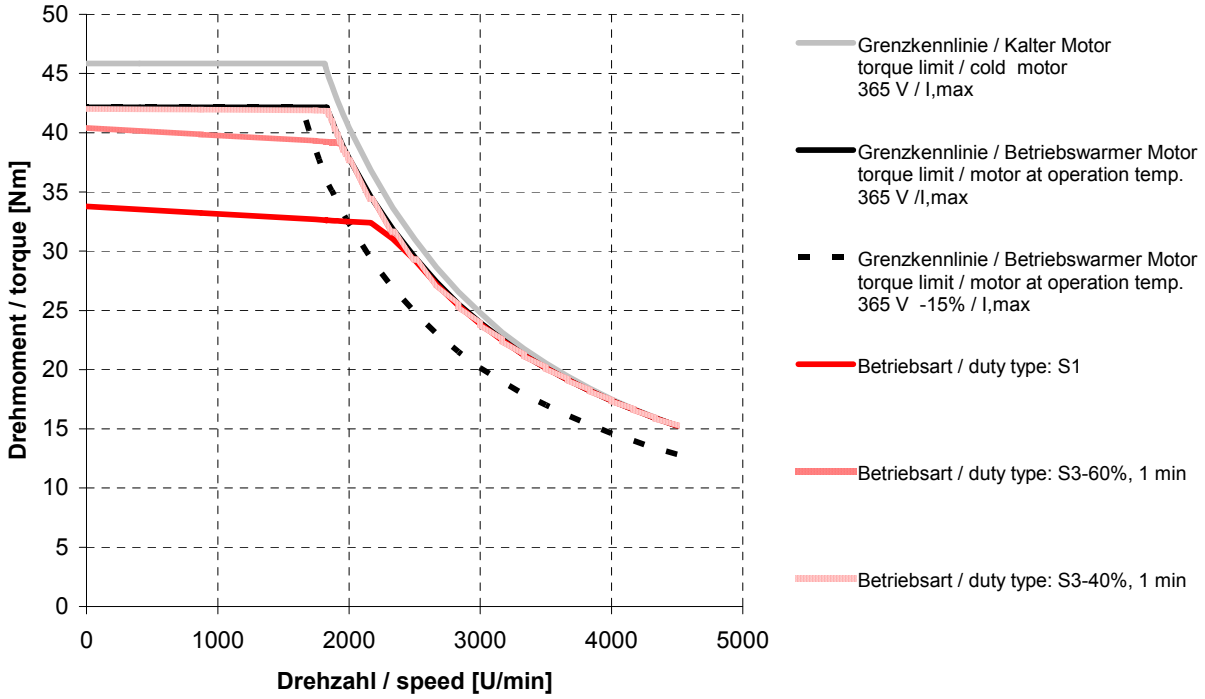

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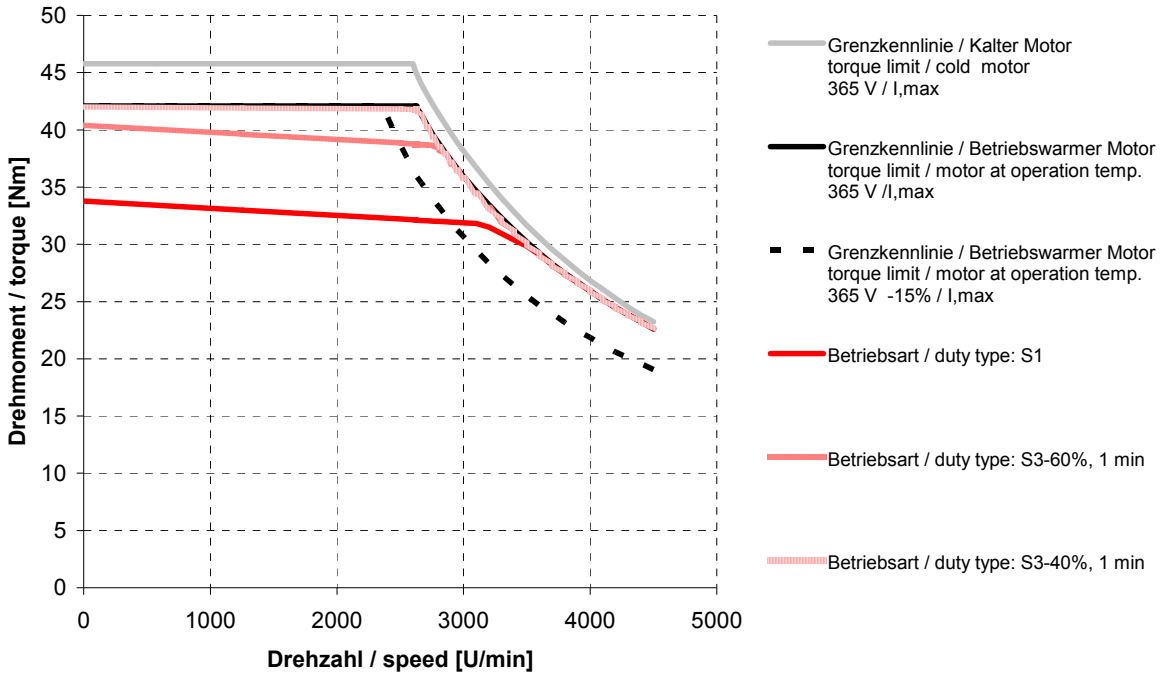

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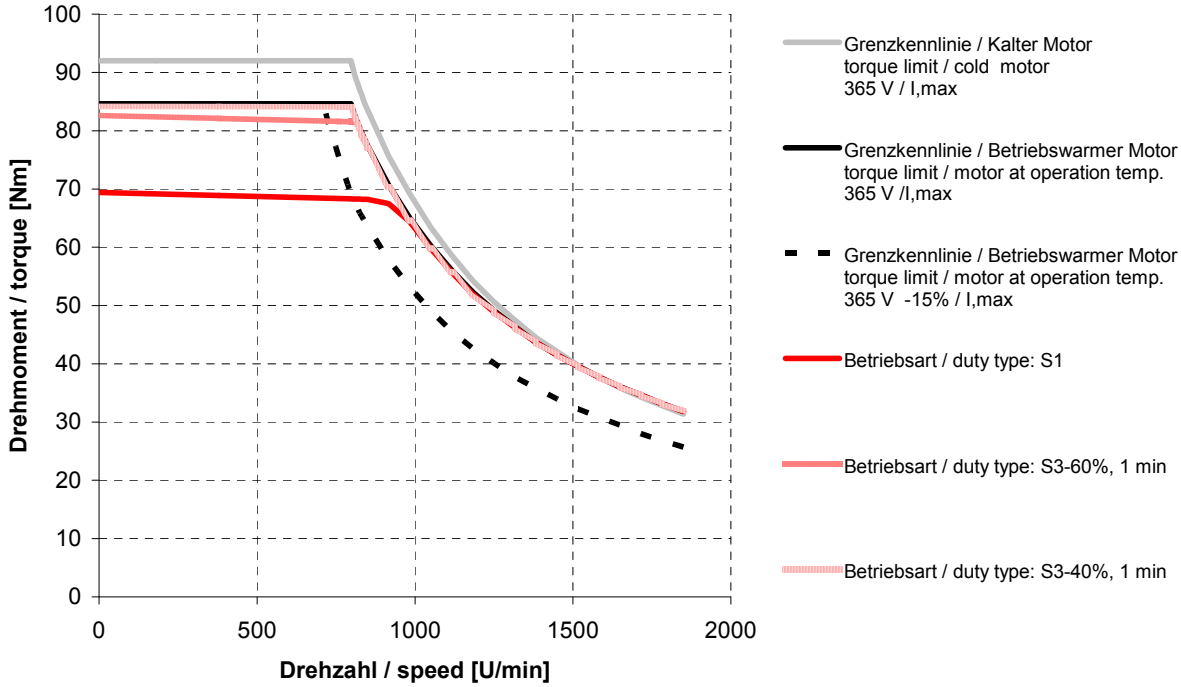

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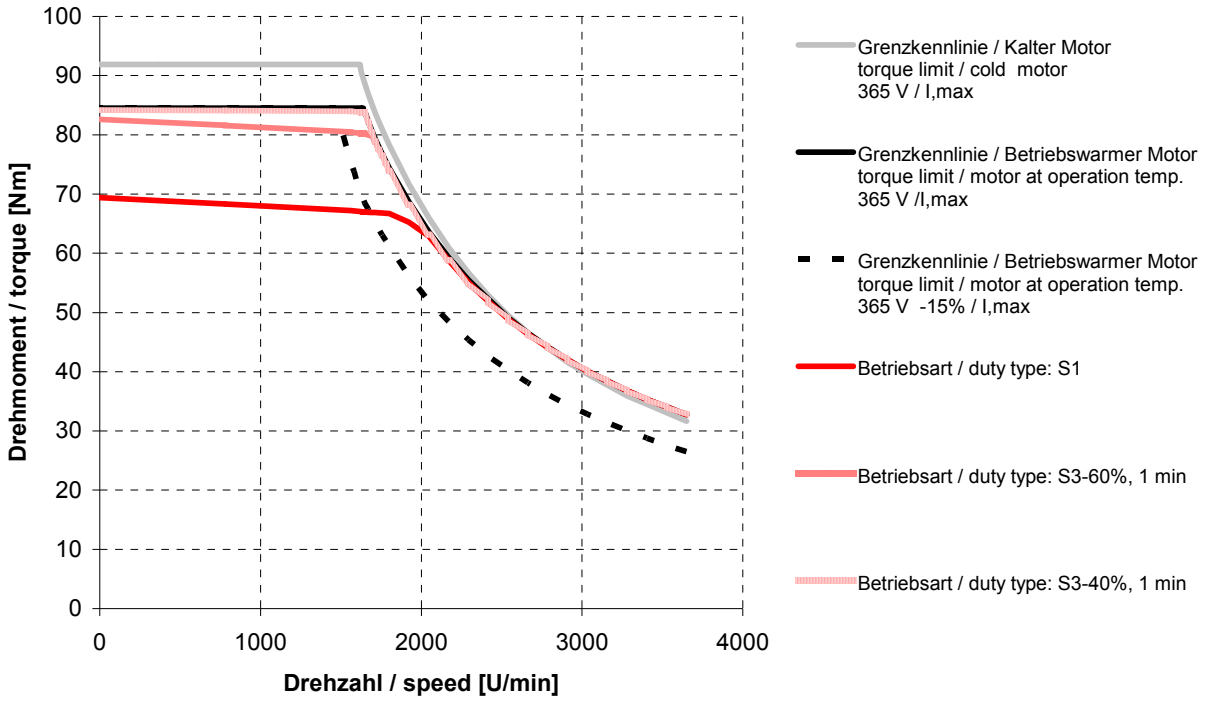

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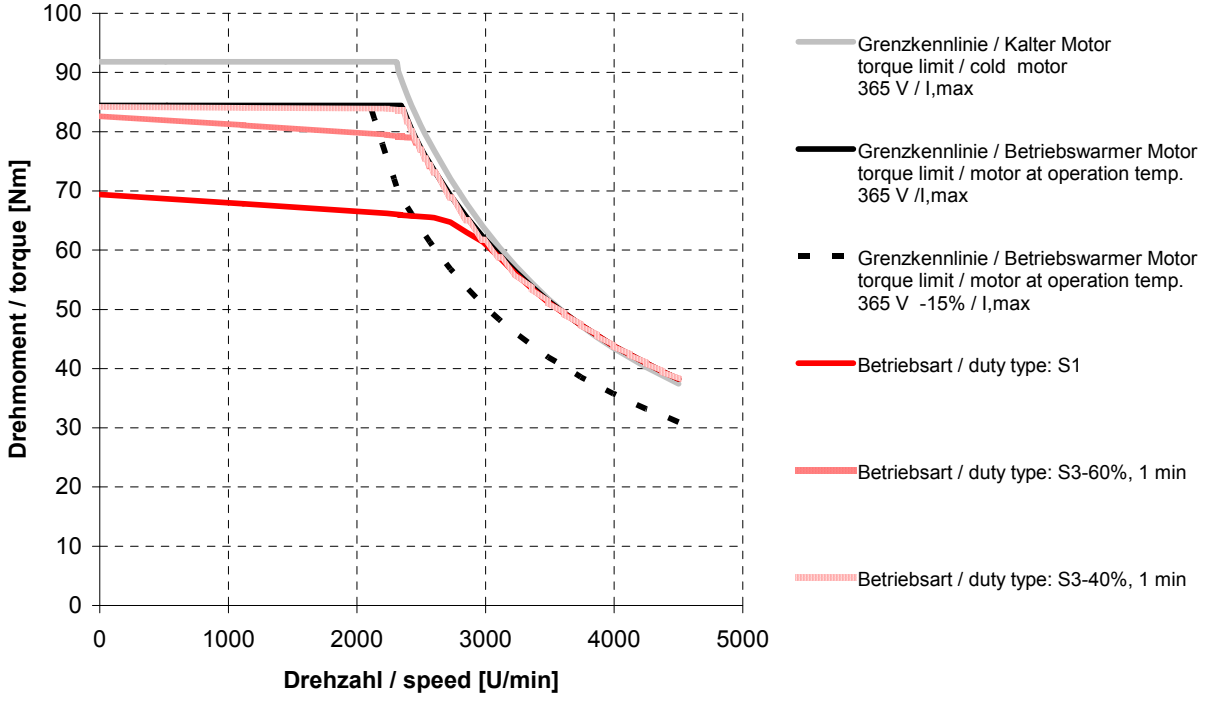

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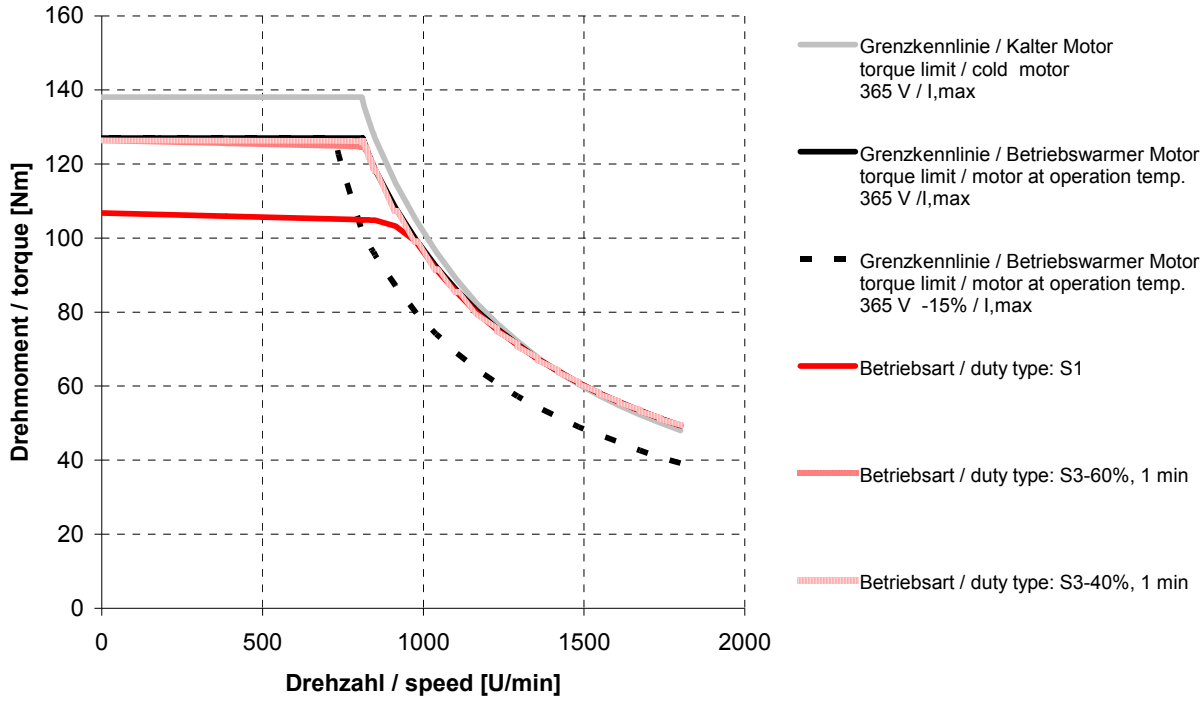

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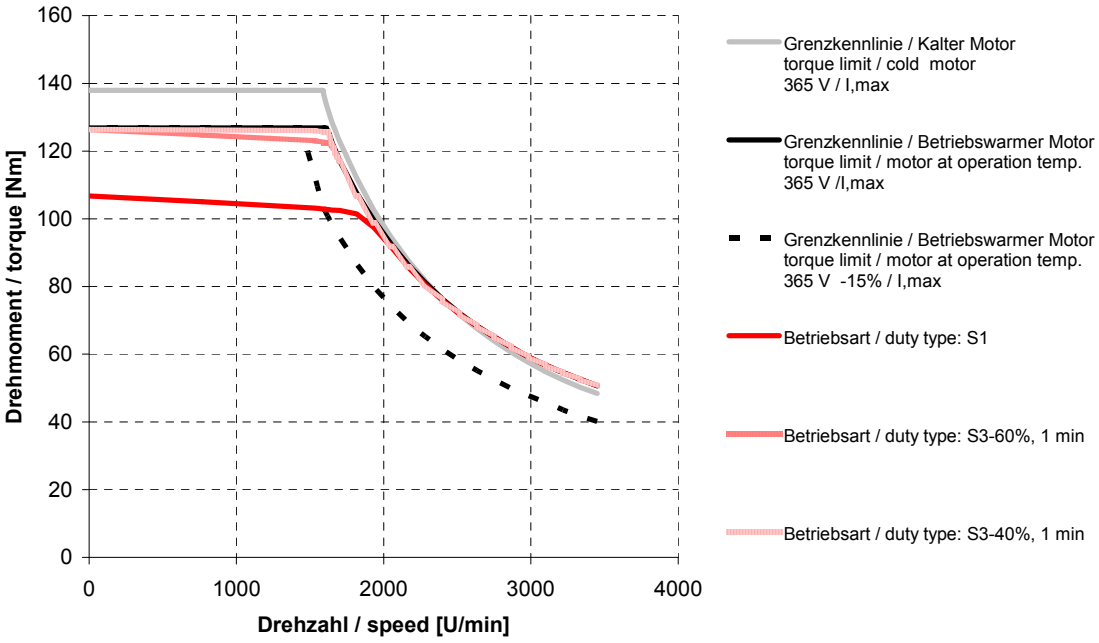

6. Commissioning and maintenance instructions

For information on commissioning the motors, please request a copy of our commissioning and maintenance instructions, quotion number 00682.

7. Declaration of Conformity

This chapter contains general information on EC Directives, the CE marking and the Declaration of Conformity.

7.1. What is an EC Directive?

EC Directives stipulate specific requirements. The Directives are compiled by the corresponding organisations within the EU and transposed by all EU member states into national law to guarantee free trade within the European Union.

An EC Directive only outlines basic minimum requirements. More detailed requirements are included in standards to which the Directive makes direct reference.

7.2. What does the CE marking signify?

a) The CE marking symbolises conformity to all the obligations incumbent on manufacturers for the product by virtue of the Community Directives providing for its affixing.

b) The CE marking affixed to industrial products symbolises the fact that the natural or legal person having affixed or been responsible for affixing the said marking has verified that the product conforms to all Community provisions for total harmonisation which apply to it and has been the subject of the appropriate conformity evaluation procedures.

Council Decision 93/465/EEC, appendix I B. a) + c)

We affix the CE marking to the device and include it in the documentation as soon as we have established that the product fulfils the requirements outlined in the relevant Directives.

If this Baumüller product is used in your machine as specified, you can assume that the product satisfies the requirements stipulated in 2006/95/EC.

Correct installation is a decisive factor in ensuring that this product complies with 89/336/EEC (EMC Directive). Since you are installing the product yourself, you are also responsible for ensuring compliance with 89/336/EEC.

We will provide you with assistance in the form of EMC information, which can be found in the corresponding technical instructions. Once you have satisfied all the requirements outlined in this documentation and the technical instructions, you can assume (or "suppose") that the product meets all the requirements stipulated in the EMC Directive.

Please remember to observe all binding national, local and system-specific regulations as well.

In order for you to operate your machine within the EU, the following must be available:

- Mark of conformity (CE symbol)
- Declaration(s) of Conformity relating to the relevant Directive(s) for the machine

7.3. Definition of terms in the Declaration of Conformity

A Declaration of Conformity based on this documentation is a declaration that the electrical equipment brought into circulation meets all the basic health and safety regulations that currently apply.

By including the Declaration of Conformity in this chapter, Baumüller Nürnberg GmbH declares that the product complies with all the relevant basic health and safety regulations from the Directives and standards listed in the Declaration of Conformity.

7.4. Declaration of Conformity

CE

*

EG-Konformitätserklärung
gemäß

- **Richtlinie 2006/95/EG**
  (betreffend elektrische Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen)

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Hiermit erklären wir, dass die nachfolgend genannten Produkte aufgrund ihrer Konzeption, Konstruktion und Bauart in der von uns in Verkehr gebrachten Ausführung den Anforderungen der oben genannten Richtlinie einschließlich der zum Zeitpunkt der Erklärung geltenden Änderungen entsprechen.

Hinweise:

1. Bei Umbau oder Änderungen am Produkt verliert diese Erklärung mit sofortiger Wirkung ihre Gültigkeit.

2. Diese Erklärung bescheinigt die Übereinstimmung mit der genannten Richtlinie, stellt aber keine Zusicherung von darüber hinaus gehenden Produkteigenschaften dar.

Angewandte harmonisierte Normen:

- DIN EN 60034-1:2005-04
  Drehende elektrische Maschinen – Teil 1:
  Bemessung und Betriebsverhalten
- DIN EN 60034-5:2007-09
  Drehende elektrische Maschinen – Teil 5:
  Schutzarten aufgrund der Gesamtkonstruktion von drehenden elektrischen Maschinen (IP-Code) – Einteilung
- DIN EN 60034-6:1996-08
  Drehende elektrische Maschinen – Teil 6:
  Einteilung der Kühlverfahren (IC-Code)

(Wird fortgesetzt auf der nächsten Seite ...)

EU-Declaration of Conformity
according

- **Directive 2006/95/EC**
  (relating to electrical equipment designed for use within certain voltage limits)

Manufacturer

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We declare, that the products referred to in the following conform in their concept, construction and design as lauched by us to the above mentioned directive and their respective changes which were valid at the point of declaration.

Notes:

1. By modifying or alternating the device(s) this declaration immediately becomes invalid.

2. This declaration confirms the compliance with the directive listed, but it is no covenant of any further product properties.

Applied harmonised standards:

- DIN EN 60034-1:2005-04
  Rotating electrical machines – Part 1:
  Rating and performance
- DIN EN 60034-5:2007-09
  Rotating electrical machines – Part 5:
  Degree of protection provided by the integral design of rotating electrical machines (IP-Code) – Classification
- DIN EN 60034-6:1996-08
  Rotating electrical machines – Part 6:
  Methods of cooling (IC-Code)

(To be continued on the next page ...)

(... Fortsetzung von der vorherigen Seite)

- DIN EN 60034-9:2008-01
  Drehende elektrische Maschinen – Teil 9:
  Geräuschgrenzwerte
- DIN EN 60034-14:2008-03
  Drehende elektrische Maschinen – Teil 14:
  Mechanische Schwingungen von bestimmten Maschinen mit einer Achshöhe von 56 mm und höher – Messung, Bewertung und Grenzwerte der Schwingstärke
- DIN EN 61800-5-1:2008-04
  Elektrische Leistungsantriebssysteme mit einstellbarer Drehzahl – Teil 5-1:
  Anforderungen an die Sicherheit – Elektrische, thermische und energetische Anforderungen

(... continued from the previous page)

- DIN EN 60034-9:2008-01
  Rotating electrical machines – Part 9:
  Noise limits
- DIN EN 60034-14:2008-03
  Rotating electrical machines – Part 14:
  Mechanical vibration of certain machines with shaft heights 56 mm and higher – Measurement, evaluation and limits of vibration severity
- DIN EN 61800-5-1:2008-04
  Adjustable speed electrical power drive systems – Part 5-1:
  Safety requirements – Electrical, thermal and energy

Produkt / Product (x): optionaler Buchstabe / optional character {x, y}: alternative Buchstaben oder Zahlen / alternative characters	**Jahr der erstmaligen CE-Kennzeichnung / Year of first CE marking**
DSC045XXXXXX-X	**2006**
DSC056XXXXXX-X	**2006**
DSC071XXXXXX-X	**2006**
DSC100XXXXXX-X	**2006**

Nürnberg, 29.03.2012

i.A. Siegfried Seidler

Entwicklungsleiter Motoren
Head of Development Motors

ppa. Wilhelm Bruckner

Produktionsleitung Servomotoren
Production Manager Servo Motors

8. Product configuration

8.1. Configuration options

		Size			
		45	56	71	100
Motor length	K	✓	✓	✓	✓
	S	✓	✓	✓	✓
	M	✓	✓	✓	✓
Protection type	IP64	✓	✓	✓	✓
	IP65	✓	✓	✓	✓
Cooling type	IC410	✓	✓	✓	✓
	IC416	-	✓	✓	✓
	IC3W7	-	-	✓	✓
Speed	1000	-	✓	✓	✓
	2000	✓	✓	✓	✓
	3000	✓	✓	✓	✓
	4000	✓	✓	✓	-
Encoder options	Resolver	✓	✓	✓	✓
	SEK/SEL52	✓	✓	✓	✓
	SRS/SRM50	✓	✓	✓	✓
	ECN1313/EQN1325	✓	✓	✓	✓
	ECN1325/EQN1337	✓	✓	✓	✓
	Smooth shaft end	✓	✓	✓	✓
	with parallel key	✓	✓	✓	✓
Shaft option	with brake	✓	✓	✓	✓
	without brake	✓	✓	✓	✓
Brake	Plug	✓	✓	✓	✓
	Terminal box	-	-	-	✓
Main connection **(with / without KTY allocation)**	Ball bearing	✓	✓	✓	✓
	Roller bearing	-	✓	✓	✓
Bearing (A-side)	A	✓	✓	✓	✓
	B (with ball bearing)	✓	✓	✓	✓
Vibration level	N	✓	✓	✓	✓
	R	✓	✓	✓	✓
True running	BPE - series	✓	✓	✓	✓
	BPN - series	✓	✓	✓	✓

Note: Please also note the information in the documentation for the product configuration, since the above overview is not a complete set of regulations and combination options can be excluded.

8.2. Product configuration

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Title ☐ Mr. ☐ Mrs. ☐ Dr. ☐ Prof.

Name _____

Company _____

Department _____

Country _____

Number, street _____

Town/city, postcode _____

Telephone _____

Fax _____

E-mail _____

Configure your individual servo motor

Size:	☐ 45	☐ 56	☐ 71	☐ 100					
Length:	☐ K	☐ S	☐ M						
Protection type:	☐ IP 64	☐ IP 65							
Cooling type:	☐ IC410 - non-cooled	☐ IC416 - surface cooled	☐ IC 3W7 - water-cooled						
Rated speed class:	☐ 1000 U/min	☐ 2000 U/min	☐ 3000 U/min	☐ 4000 U/min					
Encoder type:	☐ Resolver	☐ SEK52	☐ SEL52	☐ SRS50	☐ SRM50				
	☐ ECN1313	☐ EQN1325	☐ ECN1325	☐ EQN1337	☐ without encoder				
Shaft option:	☐ smooth	☐ with parallel key							
Brake:	☐ with brake	☐ without brake							
Main connection:	☐ Plug	☐ Terminal box							
Main connection outlet*	☐ pivot-fitted	☐ Left hand	☐ right hand						
	☐ DE – side	☐ NDE – side							
Encoder connection outlet: *	☐ pivot-fitted	☐ Left hand	☐ right hand						
	☐ DE – side	☐ NDE – side							
Bearing A- side:	☐ Ball bearing	☐ Roller bearing							
Vibration level:	☐ A	☐ W							
True running:	☐ N	☐ R							
Gear box mounting:	☐ Without	☐ with BPE	☐ with BPEF	☐ with BPEA					
	☐ with BPN	☐ with BPNF	☐ with BPNA						

* With A side facing the shaft end

Notes:

_____

_____

_____

_____

_____

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