

Modello: BDT4M25 - 20 kVA Serie Industriale BAUDOUIN

50
Hz

50 Hz



Raffreddamento: Acqua

T

Trifase



Diesel



Foto Indicativa / Indicative Picture

Caratteristiche

Modello Gruppo Elettrogeno	BDT4M25
Potenza PRP (kVA)	20
Potenza LTP (kVA)	22
Modello Motore	4M06G25/5
Marca Motore	BAUDOUIN
Alimentazione	Diesel
Raffreddamento	Acqua
Cilindrata (cc)	2300
Capacità Serbatoio Standard (l)	50.00
Capacità Batterie	50
Quadro Automatico	A1
Quadro Manuale	M1M
Cofanatura Insonorizzata	SK20
Frequenza	50 Hz
Tensione	400/230 V + N
Giri al Minuto	1500

Norme di riferimento

I Gruppi Elettrogeni coelmo sono marcati CE e rispettano le normative:
(Condizioni ambientali di riferimento 1.000 mbar, 25 C°, 30% di Umidità relativa. Potenza riferita alla ISO 3046)

- Potenza: ISO 8528
- Direttive Macchine : 2006/42/CE - 89/392CEE - 98/37/CE
- Bassa Tensione : 2006/95/CE - 73/23/CEE - 93/68/CEE
- Compatibilità Elettromagnetica : 2004/108/CE - 89/336/CEE - 93/68/CEE
- Emissioni per motori non stradali : 2002/88/CE - 97/68/CE (*)
- Emissioni Acustica : 2005/88/CE - 2000/14/CE (**)

* Solo per impiego non stazionario

** Solo per versione insonorizzata

Allestimento base

- Serbatoio
- Batterie d'avviamento
- Termostato alta temperatura motore
- Pressostato bassa pressione olio
- Elettrovalvola motore
- Liquidi di primo riempimento

Documentazione

- Manuale di uso e manutenzione
- Schemi elettrici
- Dichiarazione CE
- Rapporto di collaudo (a richiesta)

Optional Disponibili

- Relè e/o modulo differenziale
- Serbatoio maggiorato
- Vasca raccolta perdite
- Sistema di travaso automatico
- Marmitta catalitica
- Pompa travaso gasolio manuale
- Pompa manuale estrazione olio
- Basamento saldato
- Antivibranti rinforzati
- Serbatoio in acciaio
- Quadro manuale
- Quadro automatico
- Quadro di parallelo
- Carrello traino lento
- Carrello omologato su strada
- Controllo allarmi e stati da remoto
- Messa in servizio
- Telegestione

Modello: BDT4M25 - 20 kVA Serie Industriale BAUDOUIN

■ Motore

Motore diesel quattro tempi con raffreddamento ad acqua. Un efficiente sistema di raffreddamento assicura prestazioni eccellenti in qualsiasi condizione ambientale. Il basso rapporto potenza elettrica/cilindrata garantisce un ampio margine di potenza disponibile.

Modello	4M06G25/5
Marca	BAUDOUIN
Alimentazione	Diesel
Numero di Cilindri	4
Cilindrata (cc)	2300
Regolatore di Giri	Elettronico
Aspirazione	NA
Portata Aria Ventiatore (m3/h)	3780
Portata Aria per la Combustione (m3/h)	86
Portata Gas di Scarico (m3/h)	293
Temperatura Massima Gas di Scarico (°C)	700
Alesaggio (mm)	89
Corsa (mm)	92
Coppa Olio (l)	9.50
Giri al Minuto	1500
Consumo a 2/4 del Carico (l/h)	3.20
Consumo a 3/4 del Carico (l/h)	4.50
Consumo a 4/4 del Carico (l/h)	6.10

■ Tipi di Aspirazione

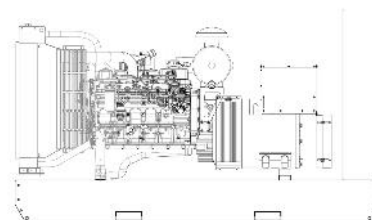
NA	=	Turbo Compresso
TC	=	Turbo Compresso Aria/Aria
TCA/A	=	Turbo Compresso Acqua/Aria
W/A	=	

■ Alternatore

Realizzato secondo gli standard internazionali IEC 34-1, autoregolato, autoeccitato, autoventilato, classe di isolamento "H", precisione di regolazione (con carico da 0 a 100%) di +/- 1 %.

Numero di Poli	4
Eccitazione	Brushless con regolatore elettronico
Numero di Terminali	6
IP	23
Fase	Trifase
Cos Phi	0.8
Rendimento	0.87
Tensione	400/230 V + N

■ Dimensioni



Disegno a scopo illustrativo / Drawing for illustrative purpose

	Aperta	Insonorizzata
Lunghezza (mm)	1450	1750
Larghezza (mm)	730	730
Altezza (mm)	1100	1243
Peso (kg)	548	658

	Model : 4M06G25/5	Date : 23/08/22
	PowerKit Engine Datasheet	Page : 1 / 4

Ratings

RPM	Gross Engine Output				Net Engine Output *			
	PRP		ESP		PRP		ESP	
	kWm	BHP	kWm	BHP	kWm	BHP	kWm	BHP
1500	23	31	25	34	22	30	24	32

1 kWm = 1,34102 BHP

* When the engine is used with a cooling system using an electrically driven fan, net engine output data may change and quoted figures should be used for reference only

Basic data

Engine model	4M06G25/5
N° of Cylinders / Valves	4 / 8
Cylinders arrangement	In line
Bore x Stroke (mm)	89 × 92
Displacement (L)	2.3
Thermodynamic Cycle	Diesel 4 stroke
Mean Piston Speed (m/s)	4.6
BMEP @ ESP (Bar)	8.69
Cooling System	Liquid (water + 50% antifreeze)
Injection System	Direct
Fuel System	Mechanical Pump
Aspiration	Natural
Compression ratio	17.5 : 1
Flywheel housing	SAE 4
Flywheel	7.5"
N° of teeth on flywheel ring gear	104
Inertia of flywheel (kg•m ²)	0.24
Inertia of crankshaft (kg•m ²)	0.039
Emission standard	N/A
Overall Dimensions with radiator (Length x Width x Height) (mm)	1085 × 560 × 766
Engine dry weight without radiator and without radiator pipes (kg)	243
Engine dry weight with radiator and radiator pipes (kg)	261
Engine wet weight with radiator (includes oil, coolant) (kg)	280.1

DPK-TDS-EN-4M06-0061-22-08-23 Moteurs Baudouin reserve the right to modify these specifications, without notice. Document not contractual.

	Model : 4M06G25/5	Date : 23/08/22
	PowerKit Engine Datasheet	Page : 2 / 4

Air intake system

Air intake temperature rise (°C)	≤ 5
Air intake restriction clean filter (mBar)	≤ 35
Air intake restriction dirty filter (mBar)	≤ 60
Recommended air flow @ PRP (m³/min)	1.44
Recommended air flow @ ESP (m³/min)	1.44
Min. diameter of intake pipe (mm)	50

Aftercooling system

Aftercooler system type	N/A
Max. intake temperature @ 25°C ambient temperature (°C)	N/A
Max. difference between intake temperature and ambient temperature (°C)	N/A
Max. intake pressure drop of aftercooler (mBar)	N/A

Lubrication system

Oil capacity Low / High (L)	7.1 / 9.5
Oil pressure in normal condition idle speed (Bar)	≥ 1
Oil pressure in normal condition at 1500 Rpm @ PRP (Bar)	2 - 5
Lowest oil pressure alarm (shutdown) (Bar)	1
Max. oil temperature (°C)	115
Oil flow at 1500 Rpm (L/min)	22
Oil fuel consumption ratio based on engine fuel consumption data	≤ 0.4 %
Total system capacity (including filters) (L)	11.5

Heat balance test data (with ambient temperature 25.3 °C)

Total heat dissipation @ ESP (kJ/s)	48
- Heat Rejection to Jacket Water @ ESP (kJ/s)	18.4
- Heat Rejection to AfterCooler @ ESP (kJ/s)	N/A
- Radiated Heat to Ambient @ ESP (kJ/s)	3.5
- Heat Rejected to Exhaust @ ESP (kJ/s)	26.1

Exhaust system

Max. exhaust back pressure (mBar)	80
Max. exhaust temperature before turbocharger (°C)	700
Max. exhaust temperature after turbocharger (°C)	N/A
Exhaust flow @ PRP (m³/min)	4.88
Exhaust flow @ ESP (m³/min)	5.32
Min. diameter of exhaust pipe (mm)	50
Max. bending moment of exhaust gas exit flange (Nm)	10

	Model : 4M06G25/5	Date : 23/08/22
	PowerKit Engine Datasheet	Page : 3 / 4

Cooling system with standard radiator version 2021

System designed for ambient temperature up to (°C) ¹	50
Radiator type	Mechanical
Fan type	Belt driven pusher
Min. inside diameter of coolant outlet pipe (mm)	35
Coolant capacity of radiator and pipes (L)	3.6
Coolant alarm (shutdown) temperature (°C)	105
Thermostat opening temperature / full open temperature (°C)	72 / 82
Max. additional restriction for external cooling circuit (Bar)	0.48
Coolant capacity of the engine (L)	5
Cooling fan airflow (m³/min)	63
Fan absorbed power (kW)	0,45
Additional restriction (for reference) - Duct allowance (Pa)	50

Fuel system

Governor	Electronic
Governor steady state speed stability at constant load (ISO 8528-5 Class G3) ²	≤ +/- 0.5 %
Max. restriction at fuel inlet (Bar)	0.5
Max. pressure at fuel inlet (Bar)	1.3
Max. fuel return restriction (Bar)	0.5
Max. fuel inlet temperature (°C)	50
Fuel supply flow (L/hr)	40.2
Min. internal diameter of inlet pipe (mm)	10
Min. internal diameter of return pipe (mm)	10

Electrical system

Electrical system voltage (negative to ground) (Vdc)	12
Starter power (kW)	3
Battery charger current (A)	35
Battery charger absorbed power (kW)	0,5
Max. electric resistance of starting circuit (Ω)	0.004
Min. sectional area of wire (mm²)	50
Min. cold start temperature without auxiliary starting device (°C) ³	- 5
Min. cold start temperature with auxiliary starting device (°C) ³	- 15

¹ The indicated value is based on the AOT value of 50°C for an engine tested at 100% of the ESP Power, reflecting temperature in an open condition, without an enclosure or container, without any airflow obstruction in the front of the radiator, without air recirculation, with free exhaust gas exit and with the engine thermostatic valve in its full open condition, without a closing plate present. The reference air restriction is equal to 50Pa. For the equivalent ATB (Air-to-Boil) performance in a customer or project basis, please consult Baudouin Application Engineering.

² This refers only to the frequency response of the engine and should not be confused with the performance class of the Generator Set, which is subject to additional contributing factors such as alternator selection and control settings.

³ Engines used in emergency standby application or applications that require immediate start under load, they must be equipped with coolant heaters. Baudouin recommend heaters installation to be executed by providing constant coolant circulation across all the engine components. Two heaters are required for V-type engines, one per each side.

	Model : 4M06G25/5	Date : 23/08/22
	PowerKit Engine Datasheet	Page : 4 / 4

Noise

Diesel engine noise (Acoustic power level) (dB(A))	105.9
Noise - upper side (dB(A))	90.5
Noise - right side (view from flywheel) (dB(A))	90.3
Noise - left side (view from flywheel) (dB(A))	92.3
Noise – front (radiator) side (dB(A))	93
Noise – rear (flywheel) side (dB(A))	93.9

Notes :

- Noise test made at 100% of the ESP power, at 1 mt. distance, on engine without radiator, without cooling fan and without silencer.
- Noise test refers to GB/T 1859 norm : "Reciprocating internal combustion engines. Measurement of emitted airborne noise. Engineering method and survey method".

Fuel consumption

Rating	gr/kWh	L/hr
100% ESP	238.9	7.1
100% PRP	224.2	6.1
75% PRP	218.5	4.5
50% PRP	230.7	3.2
25% PRP	289.8	2
Fuel consumption tolerance 3 %		

Ratings definitions

Emergency Standby Power (ESP)

Emergency Standby Power is the maximum power available for a varying load for the duration of a main power network failure. The average load factor over 24 hours of operation should not exceed 70% of the engine's ESP power rating. Typical operational hours of the engine is 200 hours per year, with a maximum usage of 500 hours per year. This includes an annual maximum of 25 hours per year at the ESP power rating. No overload capability is allowed. The engine is not to be used for sustained utility paralleling applications.

Prime Power (PRP)

Prime Power is the maximum power available for unlimited hours of usage in a variable load application. The average load factor should not exceed 70% of the engine's PRP power rating during any 24 hour period. An overload capability of 10% is available, however, this is limited to 1 hour within every 12 hour period.

- All ratings are based on operating conditions under ISO 8528-1, ISO 3046, DIN6271. Performance tolerance of $\pm 5\%$.
- Test conditions : 100 kPa, 25°C air inlet temperature, relative humidity of 30%, with fuel density 0.84 kg/L. Derating may be required for conditions outside these; please contact the factory for details.
- Power output curves are based on the engine operating with fuel system, water pump and lubricating oil pump; not included are battery charging alternator, fan and optional equipment.