

DATASHEET ALTERNATOR

Alternator ref. KH04404T
Alternator type KH04404TO4D



-GENERAL CHARACTERISTICS-

Voltage Type (V) 400/230 Altitude (m) 0-1000
Number of Phase Three phase AVR Regulation Yes
Number of pole 4 Indication of protection IP23

Capacity for maintaining short circuit at 3 In for 10 s Yes
Winding type Standard

Efficiency & Power

Frequency (Hz) 50 Hz Nominal voltage (V) 400

	Class H				Class F	Class B
	125°C/ 40°C continuous	130°C/ 25°C standby	150°C/ 40°C standby	163°C/ 27°C standby	105°C/ 40°C continuous	80°C/ 40°C continuous
Nominal Rating(Kva)	1860	1878.6	1953	2046	1694.5	1432.2
Nominal Rating(KW)	1488	1502.9	1562.4	1636.8	1355.6	1145.8
Efficiency 100%	96	96	95.9	95.8	96.3	96.6

-ELECTRICAL CHARACTERISTICS-

Voltage regulation at established rating (+/- %) 0.5
Insulation class H
T° class (H/125°), continuous 40°C H / 125°K
T° class (H/163°C), standby 27°C H / 163°K
Wave form : NEMA=TIF <50
Unbalanced load acceptance ratio (%) 8
Number of wires 6
Total Harmonic Distortion in no-load DHT (%) <3.5
Wave form : CEI=FHT <2
Total Harmonic Distortion, on linear load DHT (%) <3.5
Technology Brushless
L-L Harmonic Maximum - Single (%) 3
Deviation Factor (%) 2
Shaft Current
Main Stator Capacitance to ground (mfd) 0.0003

Reactances

Direct axis synchro reactance unsaturated (Xd) (%) 366.9
Direct axis transient reactance saturated (X'd) (%) 29.5
Direct axis subtransient reactance saturated (X''d) (%) 15.6
Quadra axis synchro reactance unsaturated (Xq) (%) 195.4
Quadra axis subtransient reactance saturated (X''q) (%) 16.11
Zero sequence reactance unsaturated (Xo) (%) 2.33
Negative sequence reactance saturated (X2) (%) 15.86

Short circuit ratio

Short circuit ratio (Kcc) 0.354
Subtransient time constant (T''d) (ms) 14.568

3.351412E+10-H

The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever

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Short circuit transient time constant (T'd) (ms)	222.661
Open circuit time constant (T'do) (ms)	2412.09
Subtransient time constant (T''q) (ms)	20.1
Leakage stator reactance (Xa)(%)	13.12
Stator Resistance (Ra)(%)	1.195
Armature time constant (Ta) (ms)	28.933
No load excitation current (io) (A)	1.16
Full load excitation current (ic) (A)	4.22
Full load excitation voltage (uc) (V)	42.4
Heat rejection (W)	62292.09
No load losses (W)	15090.75
Stator resistance (for 20°C ambient) (Ω)	0.00103
Rotor resistance (for 20°C ambient) (Ω)	0.35111
Exciter resistance - stator/inductor (for 20° ambient) (Ω)	8.265
Exciter resistance - rotor/armature (for 20° ambient) (Ω)	0.013
Recovery time (Delta U = 20% transient) (ms)	500
Engine start (Delta U = 20% perm. or 30% trans.) (kVA)	1556.79
Transient dip (4/4 load) - PF : 0,8 AR (%)	20.16

Additional electrical characteristics-

Winding X1, X2 auxiliary resistance (for 20° ambient) (Ω)	0.117
Auxiliary winding X1, X2 excitation voltage at no load (V)	98.8
Auxiliary winding X1, X2 excitation voltage on load (V)	98.8
Winding Z1, Z2 auxiliary resistance (for 20° ambient) (Ω)	0.177
Auxiliary winding Z1, Z2 excitation voltage at no load (V)	0
Auxiliary winding Z1, Z2 excitation voltage on load (V)	0

-MECHANICAL CHARACTERISTICS-

Number of bearing	1
Overspeed (rpm)	2250
Coupling	Direct

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-TECHNICAL CURVES-

Motor starting curve locked rotor (0,6PF)

Motor starting curve locked rotor (0,3PF)

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Efficiencies curve (by excitation system)

Loading curve (by excitation system)

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Short circuit curve at no load and rated speed

Influence due to connection

Curves shown are for star (Y) connection

For other connections, use the following multiplication factors :

- Series delta : current value x 1.732
- Parallel star : current value x 2

Influence due to short-circuit

Curves are based on a three-phase short-circuit. For the other types of short-circuit, use the following multiplication factors :

(*) Capacity for maintaining short circuit at $3 I_n$ for 10 s = YES

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Rejection curve (by excitation system)

Capability curve (PQ diagram)

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DIMENSIONS-

Overall dimension drawing (Single bearing)

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Overall dimension drawing (Two bearings)

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-TORSIONAL ANALYSIS DATA-

Rotation part drawing for torsional vibration calculation (Single bearing)

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Rotation part drawing for torsional vibration calculation (Two bearings)