DATASHEET ALTERNATOR

Alternator ref. KH00590T
Alternator type KH00590TO4N

-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)	80	80	85	88	73	64
Nominal Rating(KW)	64	64	68	70.4	58.4	51.2
Efficiency 100%	89.9	89.9	89.6	89.5	90.2	90.5

-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 (%) 100
Number of wires 12
Total Harmonic Distortion in no-load DHT (%) <3.5
Wave form : CEI=FHT <2
Total Harmonic Distortion, on linear load DHT (%) <5
Technology Brushless
L-L Harmonic Maximum - Single (%) 18
Deviation Factor (%) 3
Shaft Current
Main Stator Capacitance to ground (mdf)

Reactances

Direct axis synchro reactance unsaturated (Xd) (%) 333
Direct axis transcient reactance saturated (X'd) (%) 13.4
Direct axis subtranscient reactance saturated (X''d) (%) 8
Quadra axis synchro reactance unsaturated (Xq) (%) 170
Quadra axis subtranscient reactance saturated (X"q) (%) 18.2
Zero sequence reactance unsaturated (Xo) (%) 0.5
Negative sequence reactance saturated (X2) (%) 13.14

Short circuit ratio

Short circuit ratio (Kcc) 0.515
Subtranscient time constant (T"d) (ms) 10

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Short circuit transcient time constant (T'd) (ms)	100
Open circuit time constant (T'do) (ms)	2475
Subtranscient time constant (T"q) (ms)	10
Leakage stator reactance (Xa)(%)	0.67
Stator Resistance (Ra)(%)	0.033
Armature time constant (Ta) (ms)	15
No load excitation current (io) (A)	1.11
Full load excitation current (ic) (A)	3.84
Full load excitation voltage (uc) (V)	26.3
Heat rejection (W)	7149.48
No load losses (W)	2019
Stator resistance (for 20°C ambient) (Ω)	0.06707
Rotor resistance (for 20°C ambient) (Ω)	2.06624
Exciter resistance - stator/inductor (for 20° ambient) (Ω)	7.261
Exciter resistance - rotor/armature (for 20° ambient) (Ω)	0.79
Recovery time (Delta U = 20% transcient) (ms)	500
Engine start (Delta U = 20% perm. or 30% trans.) (kVA)	204.83
Transcient dip (4/4 load) - PF : 0,8 AR (%)	13

Additional electrical characteristics-

Winding X1, X2 auxiliary resistance (for 20° ambient) (Ω)	0
Auxiliary winding X1, X2 excitation voltage at no load (V)	0
Winding Z1, Z2 auxiliary resistance (for 20° ambient) (Ω)	0.656
Auxiliary winding Z1, Z2 excitation voltage at no load (V)	13.1

-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 In 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)