

# DATASHEET ALTERNATOR

Alternator ref. KH00462T  
 Alternator type KH00462TO4N



## -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)	32	32	34	35	29	25
Nominal Rating(KW)	25.6	25.6	27.2	28	23.2	20
Efficiency 100%	87.5	87.6	87.1	86.9	88.1	88.7

## -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	6
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 (mfd)	

### Reactances

Direct axis synchro reactance unsaturated (Xd) (%)	279
Direct axis transient reactance saturated (X'd) (%)	16.2
Direct axis subtransient reactance saturated (X''d) (%)	8.1
Quadra axis synchro reactance unsaturated (Xq) (%)	142
Quadra axis subtransient reactance saturated (X''q) (%)	11.5
Zero sequence reactance unsaturated (Xo) (%)	0.6
Negative sequence reactance saturated (X2) (%)	9.82

### Short circuit ratio

Short circuit ratio (Kcc)	0.437
Subtransient time constant (T''d) (ms)	5

3.351413E+10-E

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)	50
Open circuit time constant (T'do) (ms)	861
Subtransient time constant (T''q) (ms)	5
Leakage stator reactance (Xa)(%)	0.81
Stator Resistance (Ra)(%)	0.085
Armature time constant (Ta) (ms)	8
No load excitation current (io) (A)	0.59
Full load excitation current (ic) (A)	2.22
Full load excitation voltage (uc) (V)	33
Heat rejection (W)	3629.43
No load losses (W)	784.63
Stator resistance (for 20°C ambient) (Ω)	0.42584
Rotor resistance (for 20°C ambient) (Ω)	0.66989
Exciter resistance - stator/inductor (for 20° ambient) (Ω)	15.639
Exciter resistance - rotor/armature (for 20° ambient) (Ω)	0.225
Recovery time (Delta U = 20% transient) (ms)	500
Engine start (Delta U = 20% perm. or 30% trans.) (kVA)	80.85
Transient dip (4/4 load) - PF : 0,8 AR (%)	14

## 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)	0.645
Auxiliary winding Z1, Z2 excitation voltage at no load (V)	5.8

## -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)