

DATASHEET ALTERNATOR

Alternator ref. KH04830T
Alternator type KH04830TO4D



-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)	1300	1320	1358	1420	1200	1040
Nominal Rating(KW)	1040	1056	1086	1136	960	832
Efficiency 100%	96	95.9	95.9	95.8	96.2	96.2

-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	<40
Unbalanced load acceptance ratio (%)	100
Number of wires	12
Total Harmonic Distortion in no-load DHT (%)	24
Wave form : CEI=FHT	<2
Total Harmonic Distortion, on linear load DHT (%)	15
Technology	Brushless
L-L Harmonic Maximum - Single (%)	<3
Deviation Factor (%)	6
Shaft Current	<80
Main Stator Capacitance to ground (mfd)	0.05

Reactances

Direct axis synchro reactance unsaturated (Xd) (%)	391
Direct axis transient reactance saturated (X'd) (%)	15.4
Direct axis subtransient reactance saturated (X''d) (%)	7.2
Quadra axis synchro reactance unsaturated (Xq) (%)	181
Quadra axis subtransient reactance saturated (X''q) (%)	16.5
Zero sequence reactance unsaturated (Xo) (%)	4.06
Negative sequence reactance saturated (X2) (%)	11.8

Short circuit ratio

Short circuit ratio (Kcc)	0.38
Subtransient time constant (T''d) (ms)	18

3.351412E+10-C

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

DATASHEET ALTERNATOR

Alternator ref. KH04830T
Alternator type KH04830TO4D



Short circuit transient time constant (T'd) (ms)	271
Open circuit time constant (T'do) (ms)	8900
Subtransient time constant (T''q) (ms)	20
Leakage stator reactance (Xa)(%)	4.1
Stator Resistance (Ra)(%)	0.094
Armature time constant (Ta) (ms)	26
No load excitation current (io) (A)	1.2
Full load excitation current (ic) (A)	3.9
Full load excitation voltage (uc) (V)	41.5
Heat rejection (W)	43333
No load losses (W)	17775
Stator resistance (for 20°C ambient) (Ω)	0.0058
Rotor resistance (for 20°C ambient) (Ω)	2.8
Exciter resistance - stator/inductor (for 20° ambient) (Ω)	10.63
Exciter resistance - rotor/armature (for 20° ambient) (Ω)	0.13
Recovery time (Delta U = 20% transient) (ms)	200
Engine start (Delta U = 20% perm. or 30% trans.) (kVA)	3460.7
Transient dip (4/4 load) - PF : 0,8 AR (%)	14

Additional electrical characteristics-

Winding X1, X2 auxiliary resistance (for 20° ambient) (Ω)	0.677
Auxiliary winding X1, X2 excitation voltage at no load (V)	183
Auxiliary winding X1, X2 excitation voltage on load (V)	195
Winding Z1, Z2 auxiliary resistance (for 20° ambient) (Ω)	
Auxiliary winding Z1, Z2 excitation voltage at no load (V)	

-MECHANICAL CHARACTERISTICS-

Number of bearing	1
Overspeed (rpm)	2250
Coupling	Direct

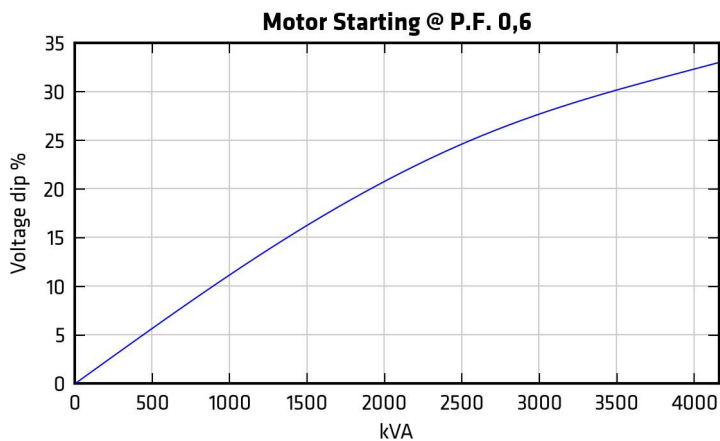
DATASHEET ALTERNATOR

Alternator ref. KH04830T
Alternator type KH04830TO4D

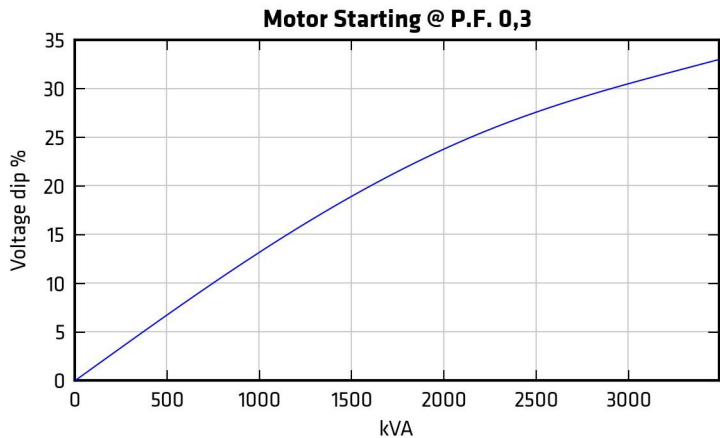


-TECHNICAL CURVES-

Motor starting curve locked rotor (0,6PF)



Motor starting curve locked rotor (0,3PF)

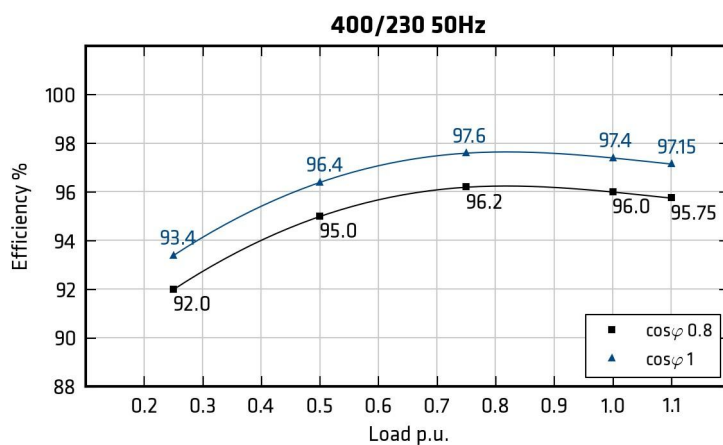


DATASHEET ALTERNATOR

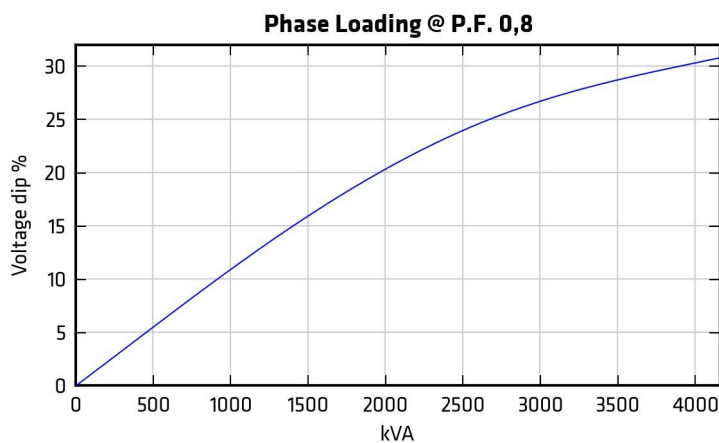
Alternator ref. KH04830T
Alternator type KH04830TO4D



Efficiencies curve (by excitation system)



Loading curve (by excitation system)



DATASHEET ALTERNATOR

Alternator ref. KH04830T
Alternator type KH04830TO4D

KOHLER[®]

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 to Parallel star : current value x 2
- Series to Series delta : current value x 1.72
- Series star to Parallel delta : current value x 3.44

Influence due to short-circuit

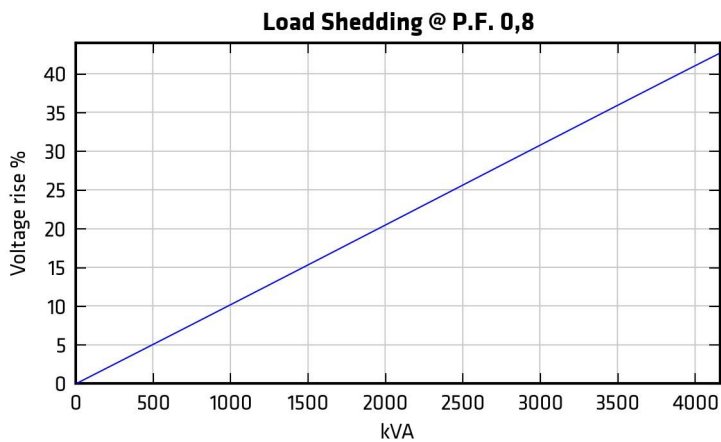
The indicated coefficient have to be used to correct the three phase short circuit curves values as a function of the type of short circuit voltage.

DATASHEET ALTERNATOR

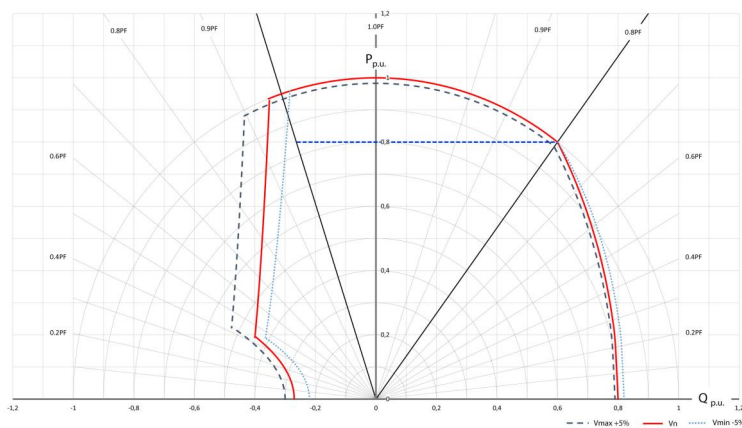
Alternator ref. KH04830T
Alternator type KH04830TO4D



Rejection curve (by excitation system)



Capability curve (PQ diagram)



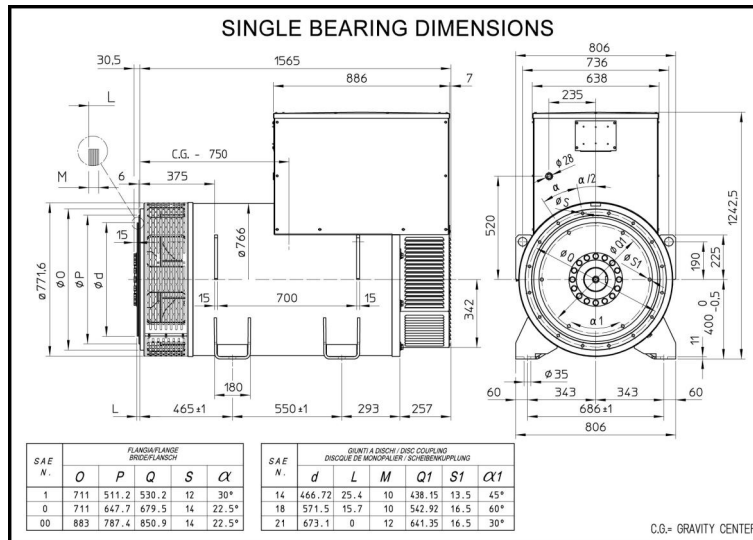
DATASHEET ALTERNATOR

Alternator ref. KH04830T
 Alternator type KH04830TO4D



DIMENSIONS-

Overall dimension drawing (Single bearing)

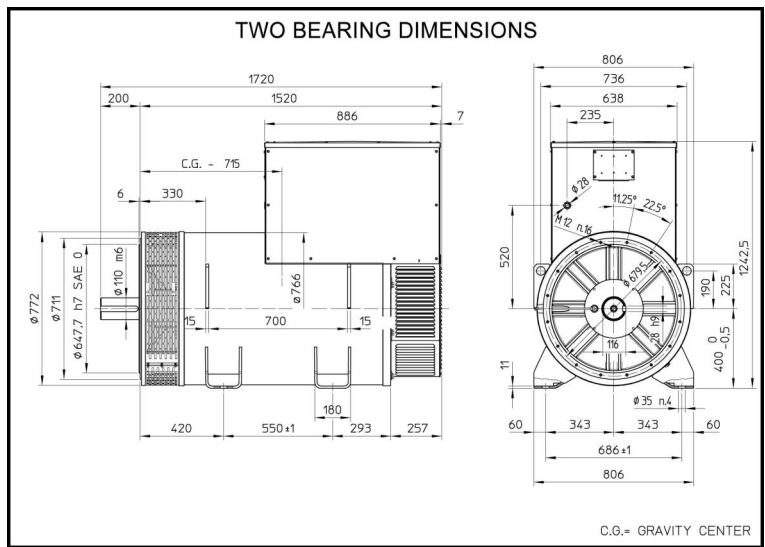


DATASHEET ALTERNATOR

Alternator ref. KH04830T
Alternator type KH04830TO4D



Overall dimension drawing (Two bearings)



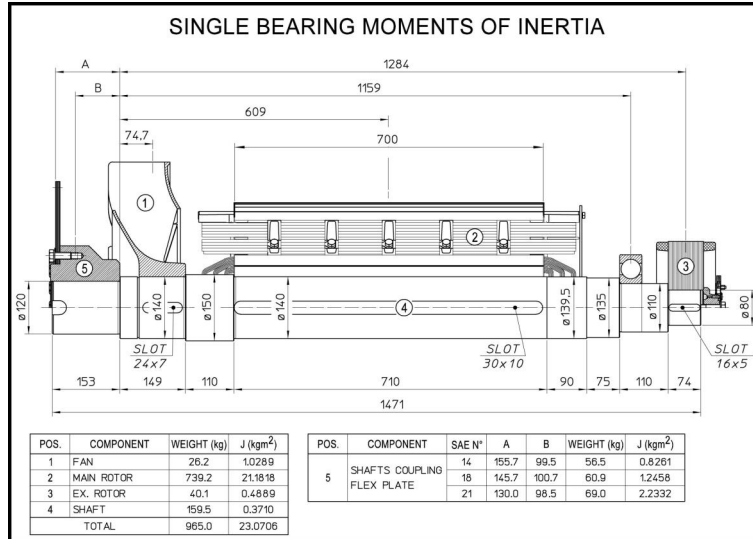
DATASHEET ALTERNATOR

Alternator ref. KH04830T
 Alternator type KH04830TO4D



-TORSIONAL ANALYSIS DATA-

Rotation part drawing for torsional vibration calculation (Single bearing)



DATASHEET ALTERNATOR

Alternator ref. KH04830T
 Alternator type KH04830TO4D



Rotation part drawing for torsional vibration calculation (Two bearings)

