

DATASHEET ALTERNATOR

Alternator ref. KH01180T
Alternator type KH01180TO4D



-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)	225		237	250	207	180
Nominal Rating(KW)	180		190	200	166	144
Efficiency 100%	93		92.8	92.6	93.2	93.3

-ELECTRICAL CHARACTERISTICS-

Voltage regulation at established rating (+/- %) 1
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 (%) 26
Wave form : CEI=FHT <2
Total Harmonic Distortion, on linear load DHT (%) 28
Technology Without collar or brush
L-L Harmonic Maximum - Single (%) <3
Deviation Factor (%) 6
Shaft Current <80
Main Stator Capacitance to ground (mfd) 0.005

Reactances

Direct axis synchro reactance unsaturated (Xd) (%) 198.7
Direct axis transient reactance saturated (X'd) (%) 10.5
Direct axis subtransient reactance saturated (X''d) (%) 5.6
Quadra axis synchro reactance unsaturated (Xq) (%) 109.7
Quadra axis subtransient reactance saturated (X''q) (%) 19.1
Zero sequence reactance unsaturated (Xo) (%) 2.69
Negative sequence reactance saturated (X2) (%) 13.2

Short circuit ratio

Short circuit ratio (Kcc) 0.45

DATASHEET ALTERNATOR

Alternator ref. KH01180T
Alternator type KH01180TO4D

KOHLER[®]

Subtranscient time constant (T''d) (ms)	13
Short circuit transcient time constant (T'd) (ms)	83
Open circuit time constant (T'do) (ms)	1100
Subtranscient time constant (T''q) (ms)	23
Leakage stator reactance (Xa)(%)	3.6
Stator Resistance (Ra)(%)	0.024
Armature time constant (Ta) (ms)	18
No load excitation current (io) (A)	0.67
Full load excitation current (ic) (A)	3
Full load excitation voltage (uc) (V)	47.1
Heat rejection (W)	13548
No load losses (W)	3100
Stator resistance (for 20°C ambient) (Ω)	0.008
Rotor resistance (for 20°C ambient) (Ω)	4.449
Exciter resistance - stator/inductor (for 20° ambient) (Ω)	15.28
Exciter resistance - rotor/armature (for 20° ambient) (Ω)	0.685
Recovery time (Delta U = 20% transcient) (ms)	200
Engine start (Delta U = 20% perm. or 30% trans.) (kVA)	155
Transcient dip (4/4 load) - PF : 0,8 AR (%)	13.9

Additional electrical characteristics-

Winding X1, X2 auxiliary resistance (for 20° ambient) (Ω)	0.778
Auxiliary winding X1, X2 excitation voltage at no load (V)	179
Auxiliary winding X1, X2 excitation voltage on load (V)	188

-MECHANICAL CHARACTERISTICS-

Number of bearing	1
Overspeed (rpm)	2250
Coupling	Direct

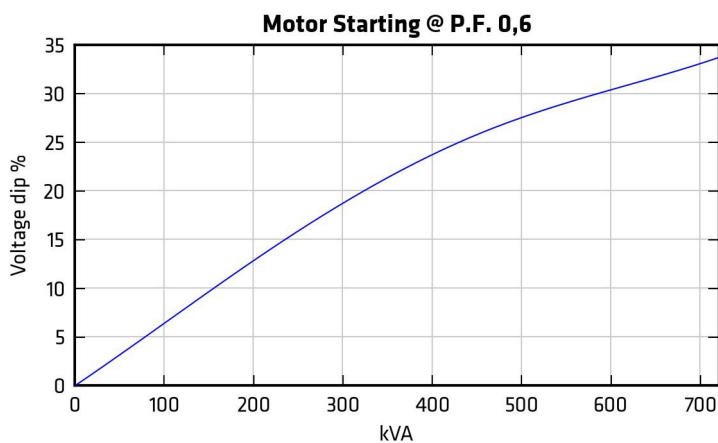
DATASHEET ALTERNATOR

Alternator ref. KH01180T
Alternator type KH01180TO4D

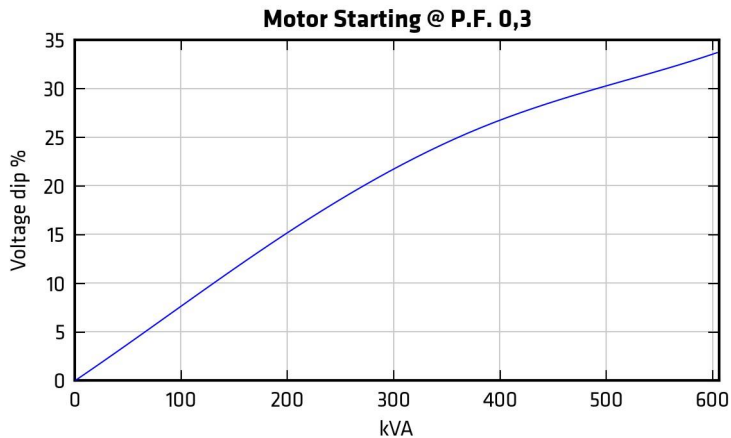


-TECHNICAL CURVES-

Motor starting curve locked rotor (0,6PF)



Motor starting curve locked rotor (0,3PF)

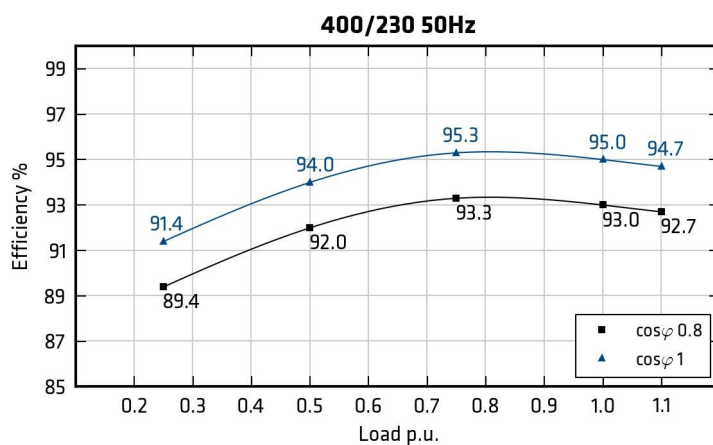


DATASHEET ALTERNATOR

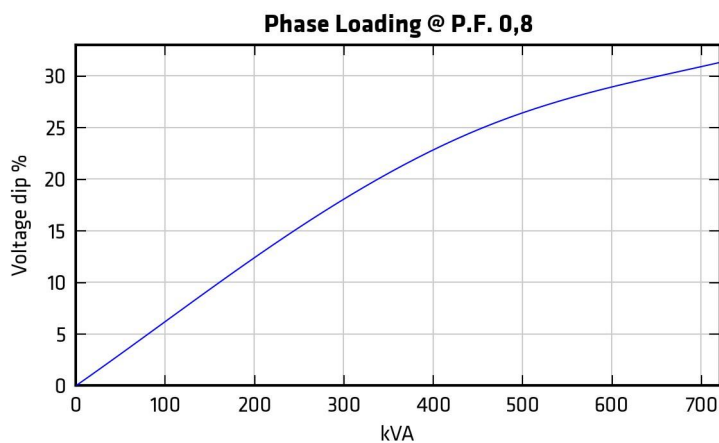
Alternator ref. KH01180T
Alternator type KH01180TO4D



Efficiencies curve (by excitation system)



Loading curve (by excitation system)



DATASHEET ALTERNATOR

Alternator ref. KH01180T
Alternator type KH01180TO4D

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

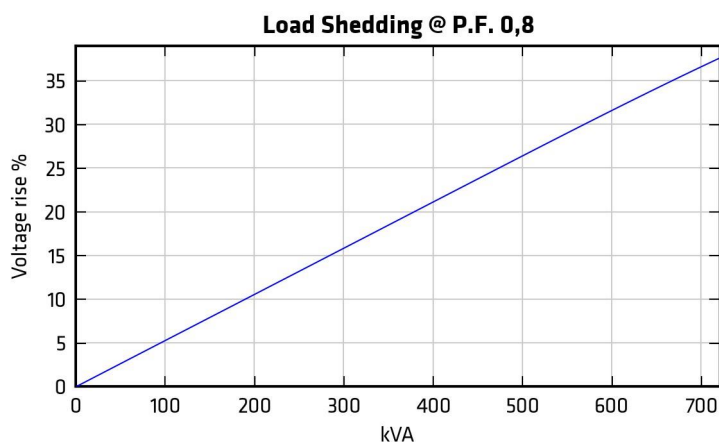
The indicated coefficient have to be used to correct the three phase short circuit curves values as a function of the type of short circuit voltage.

DATASHEET ALTERNATOR

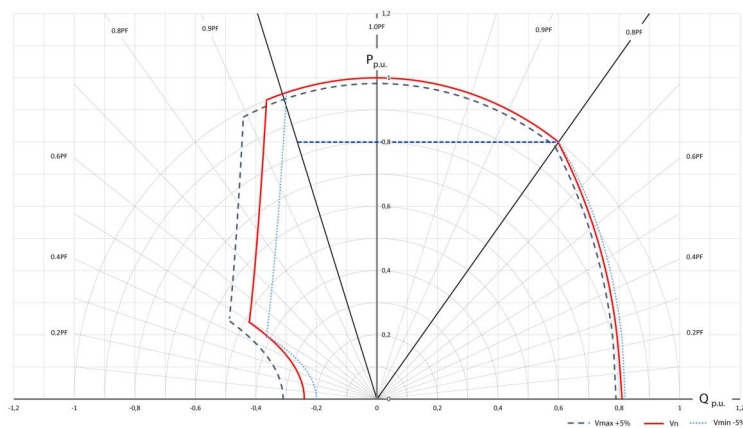
Alternator ref. KH01180T
Alternator type KH01180TO4D



Rejection curve (by excitation system)



Capability curve (PQ diagram)



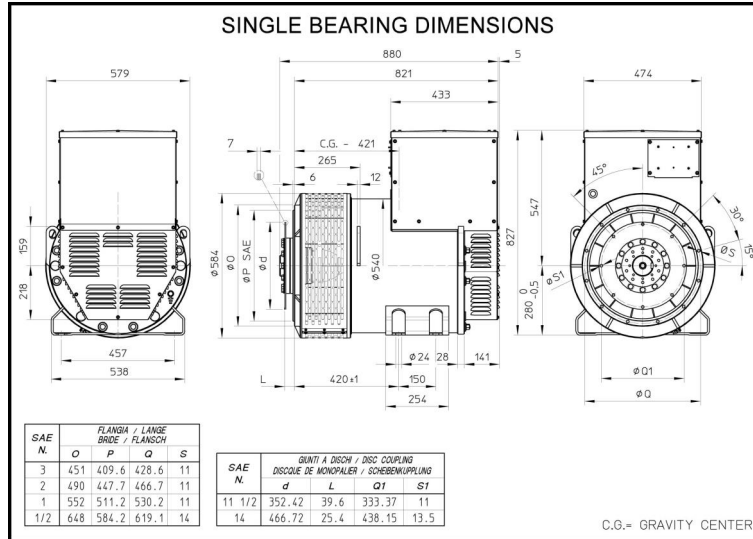
DATASHEET ALTERNATOR

Alternator ref. KH01180T
 Alternator type KH01180TO4D



DIMENSIONS-

Overall dimension drawing (Single bearing)

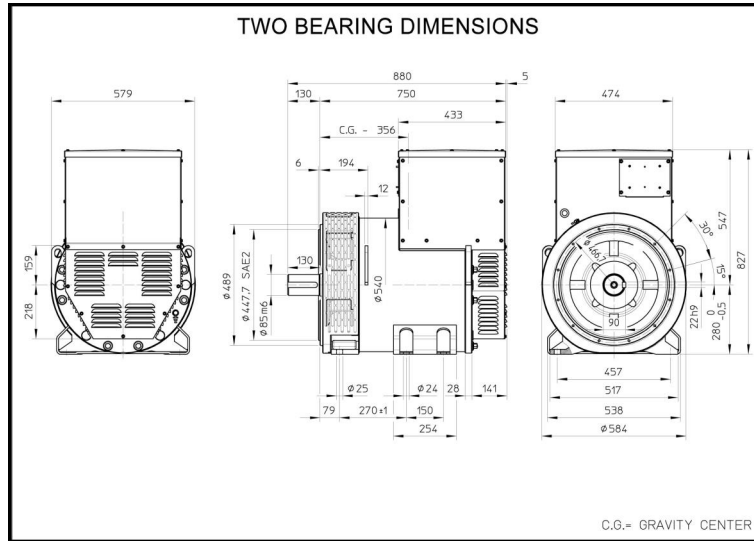


DATASHEET ALTERNATOR

Alternator ref. KH01180T
Alternator type KH01180TO4D



Overall dimension drawing (Two bearings)



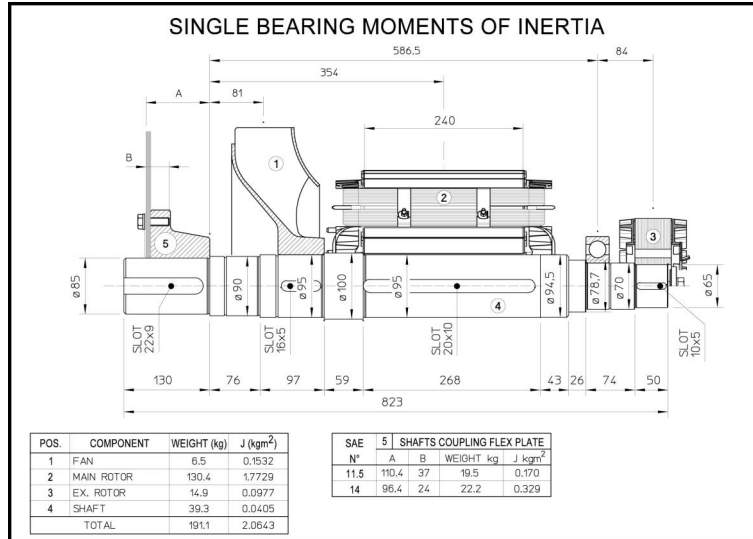
DATASHEET ALTERNATOR

Alternator ref. KH01180T
 Alternator type KH01180TO4D



-TORSIONAL ANALYSIS DATA-

Rotation part drawing for torsional vibration calculation (Single bearing)



DATASHEET ALTERNATOR

Alternator ref. KH01180T
 Alternator type KH01180TO4D



Rotation part drawing for torsional vibration calculation (Two bearings)

