

# DATASHEET ALTERNATOR

Alternator ref. KH03850T  
Alternator type KH03850TO4D



## -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	
Winding pitch		2/3	

### 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)	1500	1530	1552	1650	1350	1200
Nominal Rating(KW)	1200	1224	1242	1320	1080	960
Efficiency 100%	96.20	96.10	96.20	96.10	96.30	96.30

## -ELECTRICAL CHARACTERISTICS-

Voltage regulation at established rating (+/- %)	0.50
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 (%)	2,5
Wave form : CEI=FHT	<2
Total Harmonic Distortion, on linear load DHT (%)	3,0
Technology	Brushless
L-L Harmonic Maximum - Single (%)	<3
Deviation Factor (%)	6
Shaft Current	<80
Main Stator Capacitance to ground (mfd)	0.02

### Reactances

Direct axis synchro reactance unsaturated (Xd) (%)	273.50
Direct axis transient reactance saturated (X'd) (%)	22
Direct axis subtransient reactance saturated (X''d) (%)	11.10
Quadra axis synchro reactance unsaturated (Xq) (%)	174.70
Quadra axis subtransient reactance saturated (X''q) (%)	24.30
Zero sequence reactance unsaturated (Xo) (%)	4.26
Negative sequence reactance saturated (X2) (%)	15.90

### Short circuit ratio

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Short circuit ratio (Kcc)	0.38
Reactance desaturation coef	1.23
Exciter time constant (Te)	0.0140
Subtransient time constant (T''d) (ms)	21
Short circuit transient time constant (T'd) (ms)	250
Open circuit time constant (T'do) (ms)	9500
Subtransient time constant (T''q) (ms)	21
Leakage stator reactance (Xa)(%)	3.40
Stator Resistance (Ra)(%)	0.1070
Armature time constant (Ta) (ms)	27
No load excitation current (io) (A)	0.70
Full load excitation current (ic) (A)	3.20
Full load excitation voltage (uc) (V)	41.30
Heat rejection (W)	47401
No load losses (W)	21300
Stator resistance (for 20°C ambient) (Ω)	0.0057
Rotor resistance (for 20°C ambient) (Ω)	3.05
Exciter resistance - stator/inductor (for 20° ambient) (Ω)	12.90
Exciter resistance - rotor/armature (for 20° ambient) (Ω)	0.12
Recovery time (Delta U = 20% transient) (ms)	200
Engine start (Delta U = 20% perm. or 30% trans.) (kVA)	3820.50
Transient dip (4/4 load) - PF : 0,8 AR (%)	14.40

## Additional electrical characteristics-

## -MECHANICAL CHARACTERISTICS-

Number of bearing	1
Overspeed (rpm)	2250
Coupling	Direct

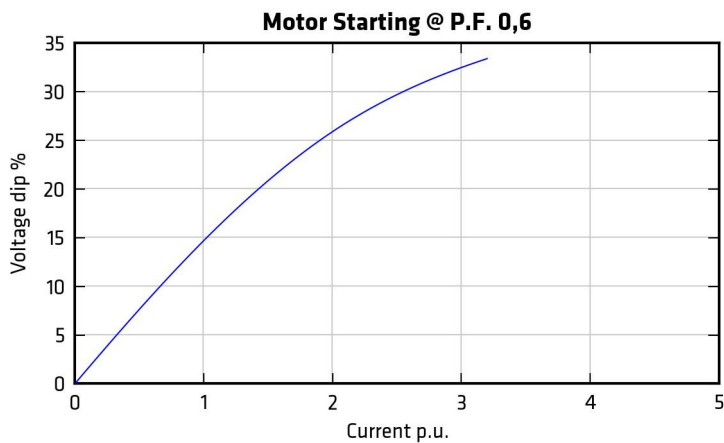
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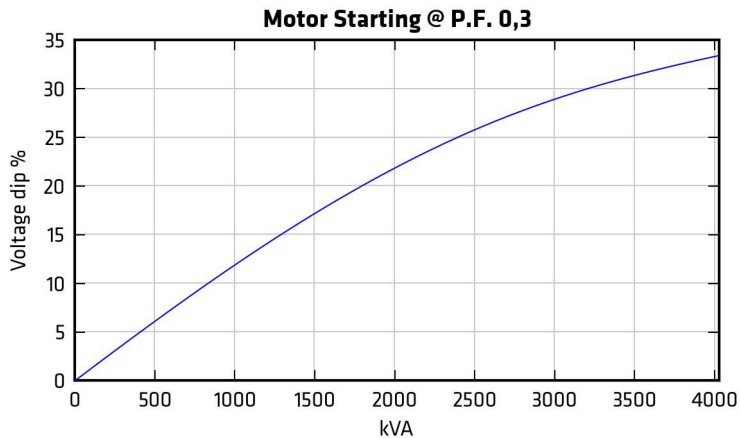


## -TECHNICAL CURVES-

### Motor starting curve locked rotor (0,6PF)



### Motor starting curve locked rotor (0,3PF)

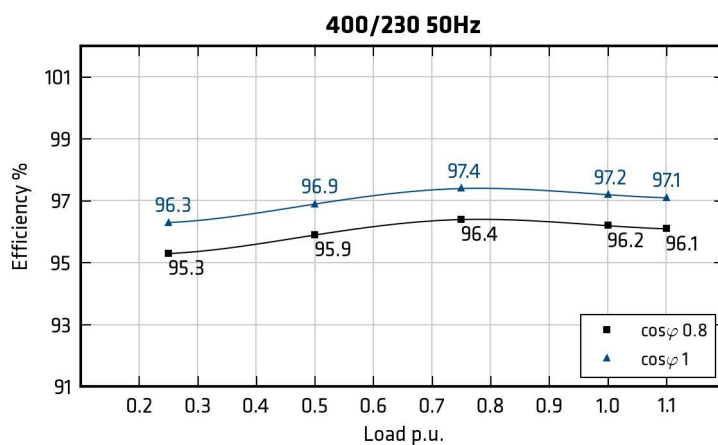


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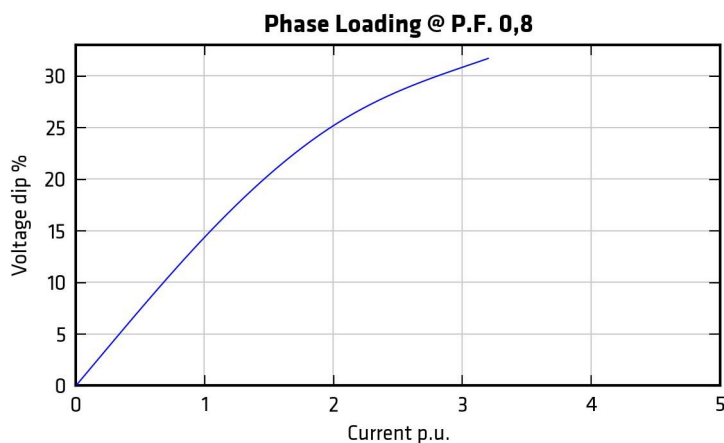
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## Efficiencies curve (by excitation system)



## Loading curve (by excitation system)

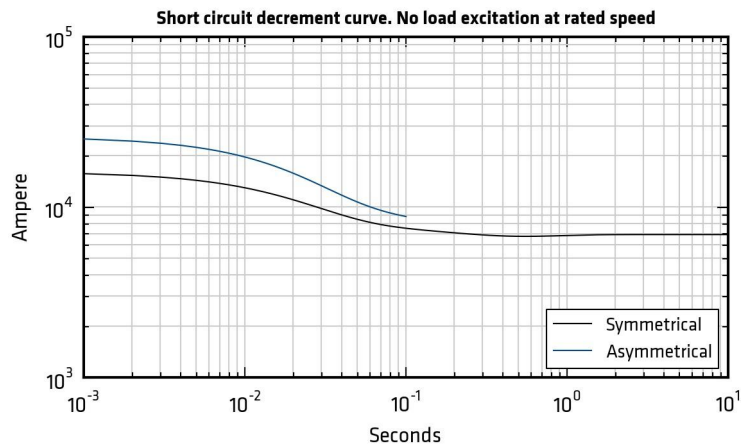


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## Short circuit curve at no load and rated speed



### Influence due to connection

Curves shown are for star (Y) connection

For other connections, use the following multiplication factors :

- Series 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.

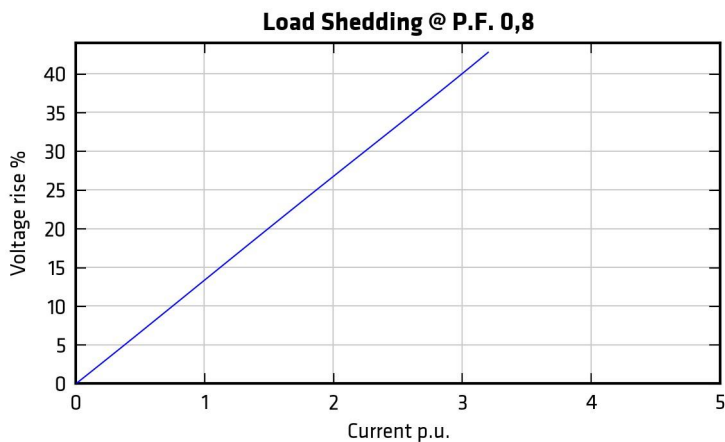
	3-phase	2-phase L/L	1-phase L/N
Instantané / Instantaneous (max)	1x	0.87x	1.3x
Minimum	1x	1.8x	3.2x
Sustained / Permanent	1x	1.5x	2.5x
Durée maximale/ Maximum duration (*)	20 sec.	10 sec.	4 sec.

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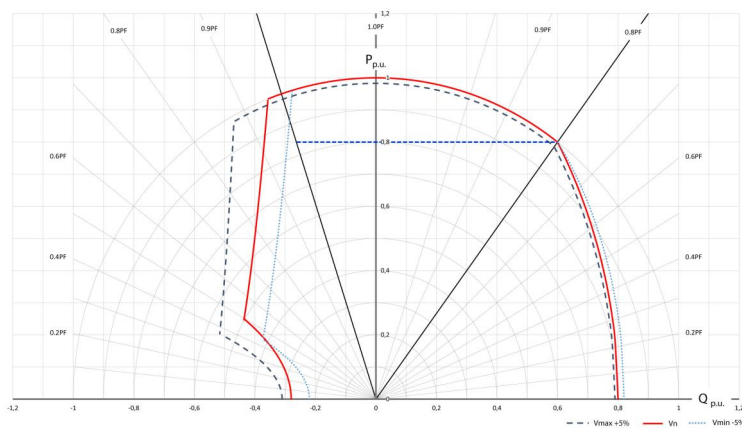
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## Rejection curve (by excitation system)



## Capability curve (PQ diagram)



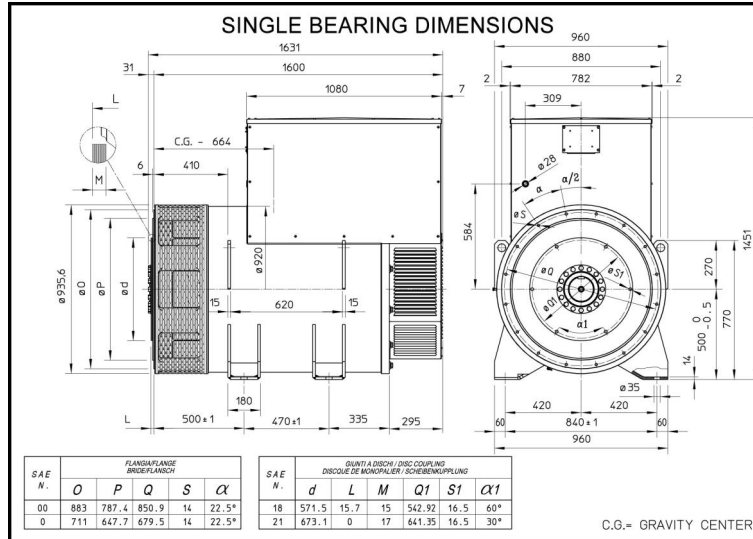
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## DIMENSIONS-

### Overall dimension drawing (Single bearing)

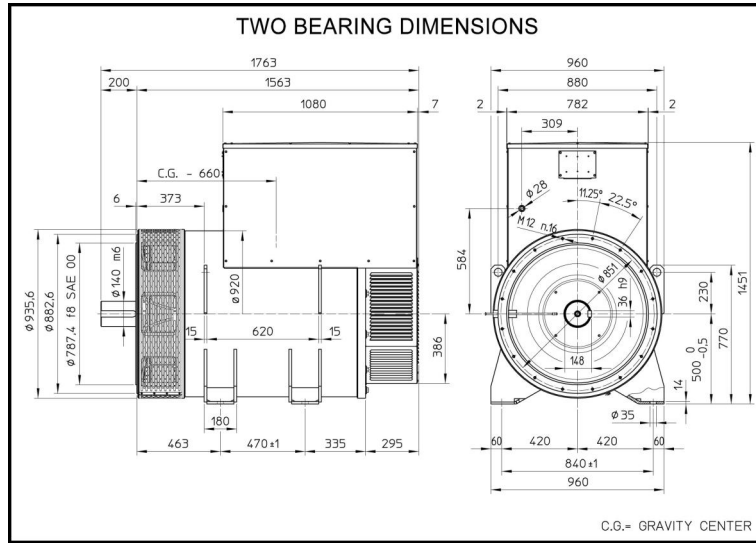


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## Overall dimension drawing (Two bearings)





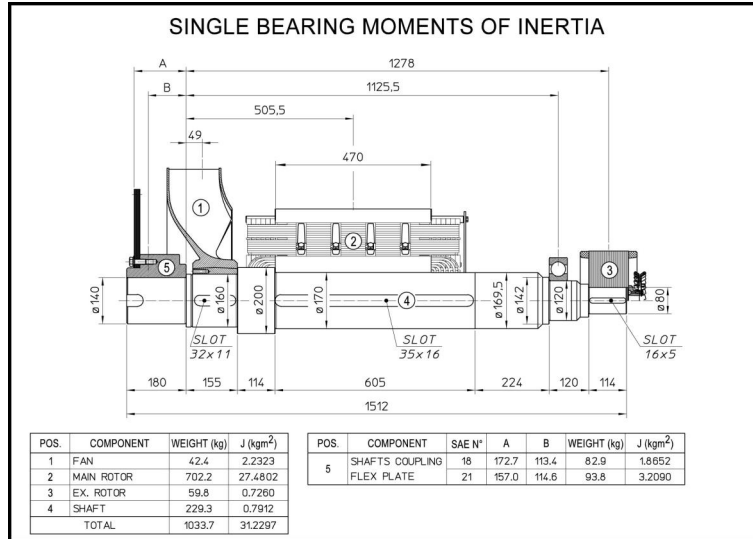
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## -TORSIONAL ANALYSIS DATA-

### Rotation part drawing for torsional vibration calculation (Single bearing)



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## Rotation part drawing for torsional vibration calculation (Two bearings)

