DATASHEET ALTERNATOR

Alternator ref. KH03544T
Alternator type KH03544TO4D

-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)	750	760	777	825	690	600
Nominal Rating(KW)	600	608	622	660	552	480
Efficiency 100%	95.1	95	95	94.8	95.3	95.4

-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 (%)	25
Wave form : CEI=FHT	<2
Total Harmonic Distortion, on linear load DHT (%)	22
Technology	Brushless
L-L Harmonic Maximum - Single (%)	<3
Deviation Factor (%)	6
Shaft Current	<80
Main Stator Capacitance to ground (mdf)	0.005

Reactances

Direct axis synchro reactance unsaturated (Xd) (%)	175.9
Direct axis transcient reactance saturated (X'd) (%)	13.8
Direct axis subtranscient reactance saturated (X''d) (%)	7.5
Quadra axis synchro reactance unsaturated (Xq) (%)	122.1
Quadra axis subtranscient reactance saturated (X"q) (%)	12.3
Zero sequence reactance unsaturated (Xo) (%)	2.28
Negative sequence reactance saturated (X2) (%)	10.4

Short circuit ratio

Short circuit ratio (Kcc)	0.59
Subtranscient time constant (T"d) (ms)	15

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Short circuit transcient time constant (T'd) (ms)	180
Open circuit time constant (T'do) (ms)	3700
Subtranscient time constant (T"q) (ms)	14
Leakage stator reactance (Xa)(%)	2.2
Stator Resistance (Ra)(%)	0.075
Armature time constant (Ta) (ms)	71
No load excitation current (io) (A)	0.7
Full load excitation current (ic) (A)	4.3
Full load excitation voltage (uc) (V)	38.1
Heat rejection (W)	30915
No load losses (W)	6658
Stator resistance (for 20°C ambient) (Ω)	0.008
Rotor resistance (for 20°C ambient) (Ω)	1.592
Exciter resistance - stator/inductor (for 20° ambient) (Ω)	8.85
Exciter resistance - rotor/armature (for 20° ambient) (Ω)	0.05
Recovery time (Delta U = 20% transcient) (ms)	200
Engine start (Delta U = 20% perm. or 30% trans.) (kVA)	2150
Transcient dip (4/4 load) - PF : 0,8 AR (%)	14.7

Additional electrical characteristics-

Winding X1, X2 auxiliary resistance (for 20° ambient) (Ω)	0.3
Auxiliary winding X1, X2 excitation voltage at no load (V)	190
Auxiliary winding X1, X2 excitation voltage on load (V)	224
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

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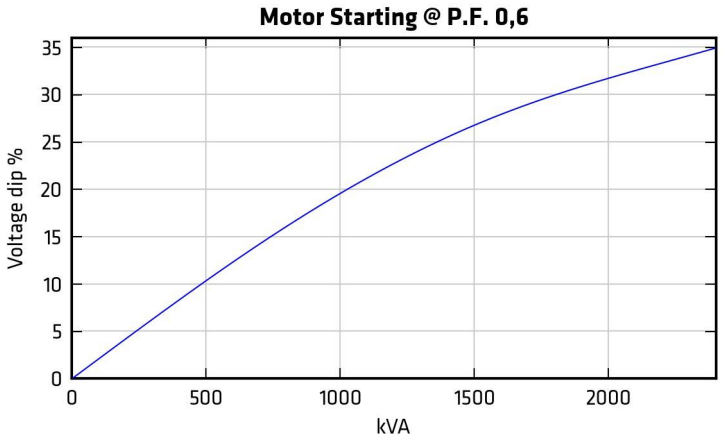
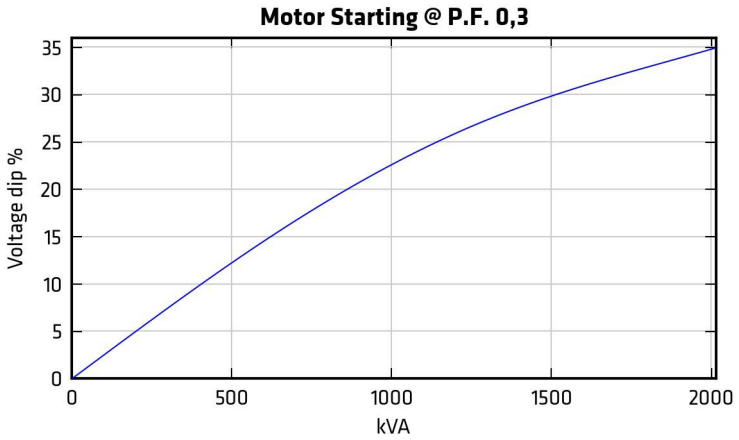
-TECHNICAL CURVES-

Motor starting curve locked rotor (0,6PF)



Motor starting curve locked rotor (0,3PF)



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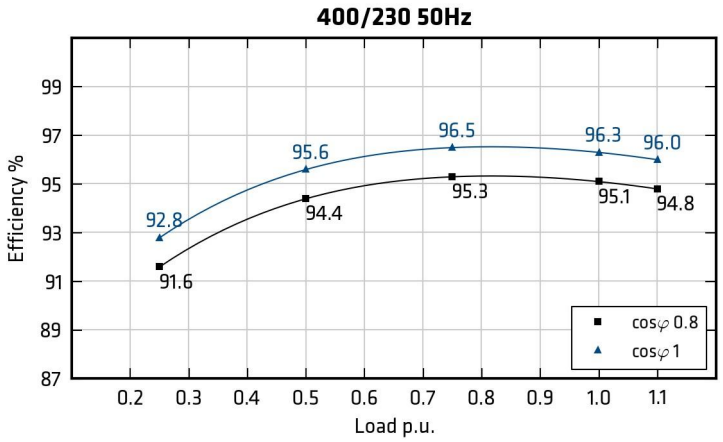
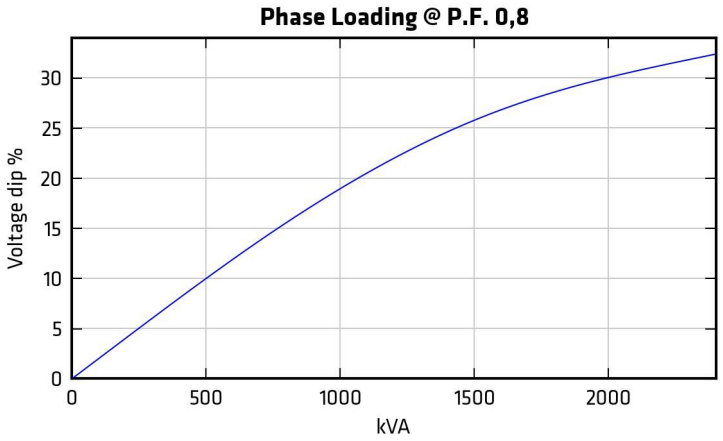
Efficiencies curve (by excitation system)



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 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.

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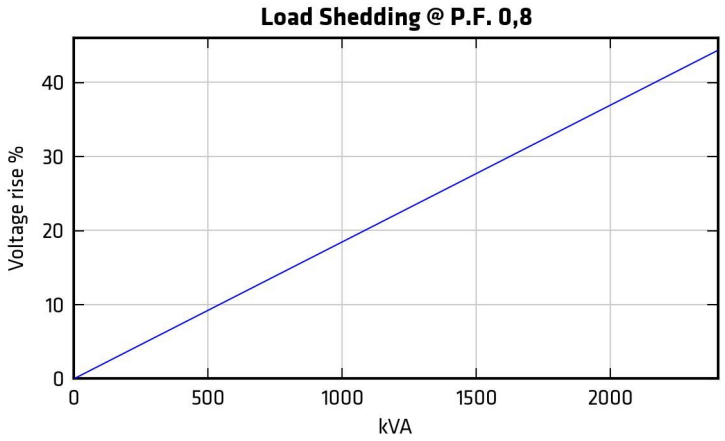
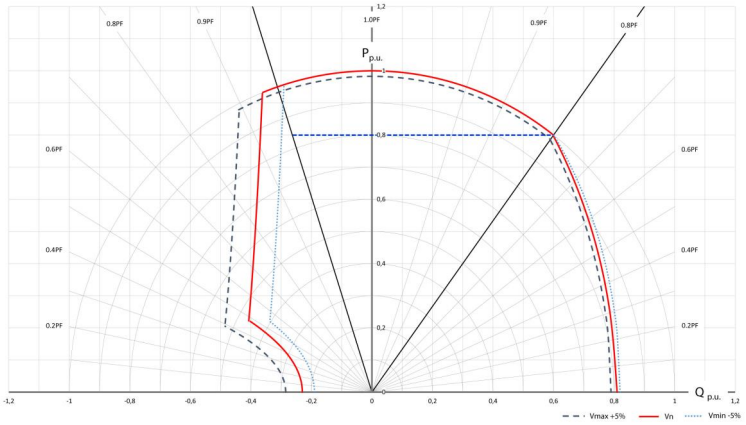
Rejection curve (by excitation system)



Capability curve (PQ diagram)



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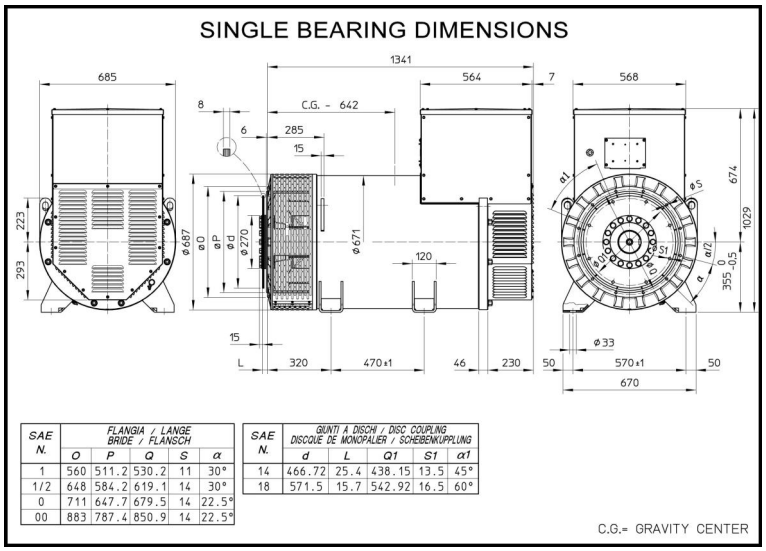
DIMENSIONS-

Overall dimension drawing (Single bearing)



SAE N.	FLANGIA / LANGE BRIDE / FLANSCH				
	O	P	Q	S	α
1	560	511.2	530.2	11	30°
1/2	648	584.2	619.1	14	30°
0	711	647.7	679.5	14	22.5°
00	883	787.4	850.9	14	22.5°

SAE N.	GIUNTI A DISCHI / DISC COUPLING DISCQUE DE MONOPALIER / SCHEIBENKUPPLUNG				
	d	L	Q1	S1	α1
14	466.72	25.4	438.15	13.5	45°
18	571.5	15.7	542.92	16.5	60°

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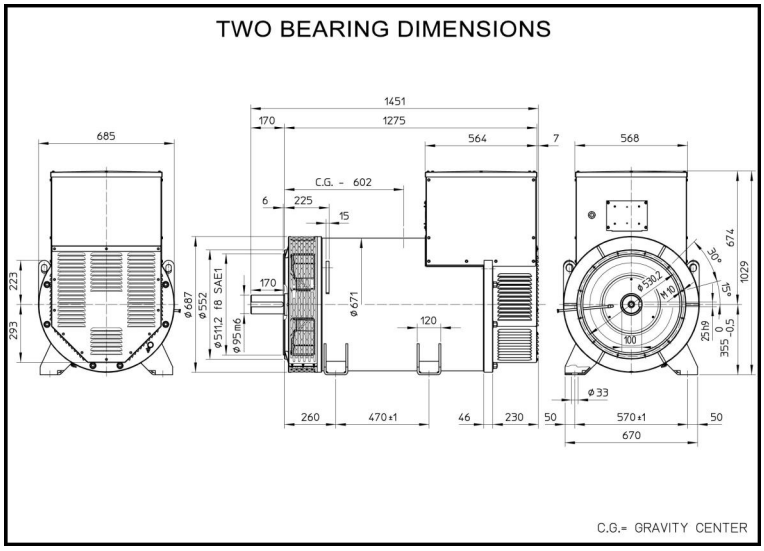
Overall dimension drawing (Two bearings)



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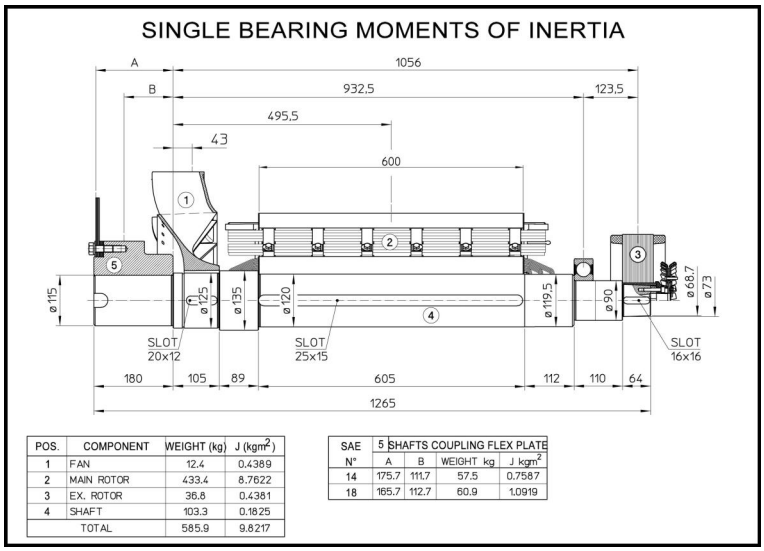
-TORSIONAL ANALYSIS DATA-

Rotation part drawing for torsional vibration calculation (Single bearing)



POS.	COMPONENT	WEIGHT (kg)	J (kgm^2)
1	FAN	12.4	0.4389
2	MAIN ROTOR	433.4	8.7622
3	EX. ROTOR	36.8	0.4381
4	SHAFT	103.3	0.1825
TOTAL		585.9	9.8217

SAE	5 SHAFTS COUPLING FLEX PLATE			
N°	A	B	WEIGHT kg	J kgm^2
14	175.7	111.7	57.5	0.7587
18	165.7	112.7	60.9	1.0919

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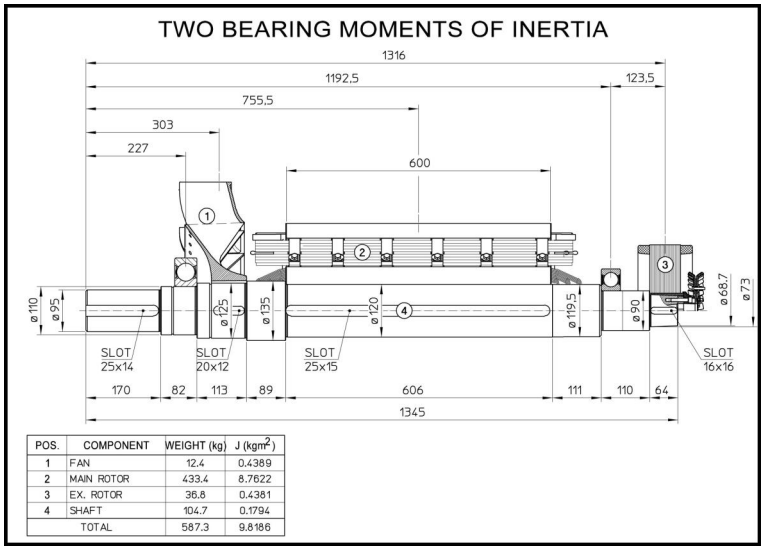
Rotation part drawing for torsional vibration calculation (Two bearings)



POS.	COMPONENT	WEIGHT (kg)	J (kgm^2)
1	FAN	12.4	0.4389
2	MAIN ROTOR	433.4	8.7622
3	EX. ROTOR	36.8	0.4361
4	SHAFT	104.7	0.1794
TOTAL		587.3	9.8186