DATASHEET ALTERNATOR

Alternator ref. KH05520T
Alternator type KH05520TO4D

-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)	1400	1420	1470	1520	1280	1120
Nominal Rating(KW)	1120	1136	1176	1216	1024	896
Efficiency 100%	96.2	96.1	96.1	96	96.4	96.5

-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 (%)	26
Wave form : CEI=FHT	<2
Total Harmonic Distortion, on linear load DHT (%)	17
Technology	Brushless
L-L Harmonic Maximum - Single (%)	<3
Deviation Factor (%)	6
Shaft Current	<80
Main Stator Capacitance to ground (mdf)	0.05

Reactances

Direct axis synchro reactance unsaturated (Xd) (%)	359.3
Direct axis transcient reactance saturated (X'd) (%)	15.1
Direct axis subtranscient reactance saturated (X''d) (%)	7.1
Quadra axis synchro reactance unsaturated (Xq) (%)	120.3
Quadra axis subtranscient reactance saturated (X"q) (%)	15.8
Zero sequence reactance unsaturated (Xo) (%)	3.74
Negative sequence reactance saturated (X2) (%)	9.93

Short circuit ratio

Short circuit ratio (Kcc)	0.29
Subtranscient time constant (T"d) (ms)	22

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Short circuit transcient time constant (T'd) (ms)	310
Open circuit time constant (T'do) (ms)	9500
Subtranscient time constant (T"q) (ms)	22
Leakage stator reactance (Xa)(%)	3.6
Stator Resistance (Ra)(%)	0.081
Armature time constant (Ta) (ms)	32
No load excitation current (io) (A)	0.8
Full load excitation current (ic) (A)	3.3
Full load excitation voltage (uc) (V)	35.5
Heat rejection (W)	44241
No load losses (W)	18970
Stator resistance (for 20°C ambient) (Ω)	0.0046
Rotor resistance (for 20°C ambient) (Ω)	2.886
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% transcient) (ms)	200
Engine start (Delta U = 20% perm. or 30% trans.) (kVA)	3657.5
Transcient dip (4/4 load) - PF : 0,8 AR (%)	14.2

Additional electrical characteristics-

Winding X1, X2 auxiliary resistance (for 20° ambient) (Ω)	0.4
Auxiliary winding X1, X2 excitation voltage at no load (V)	163
Auxiliary winding X1, X2 excitation voltage on load (V)	183
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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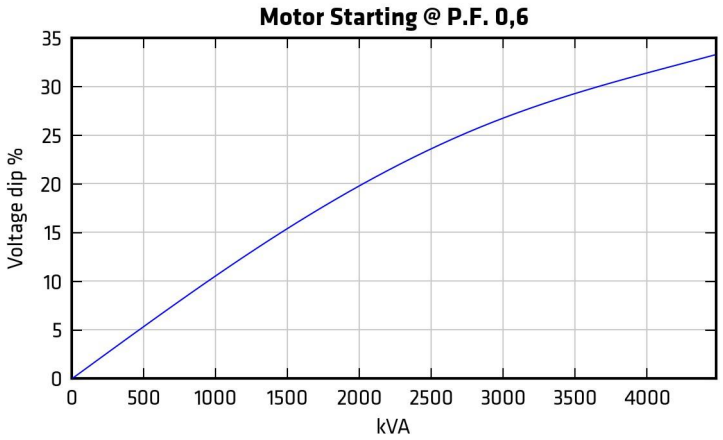
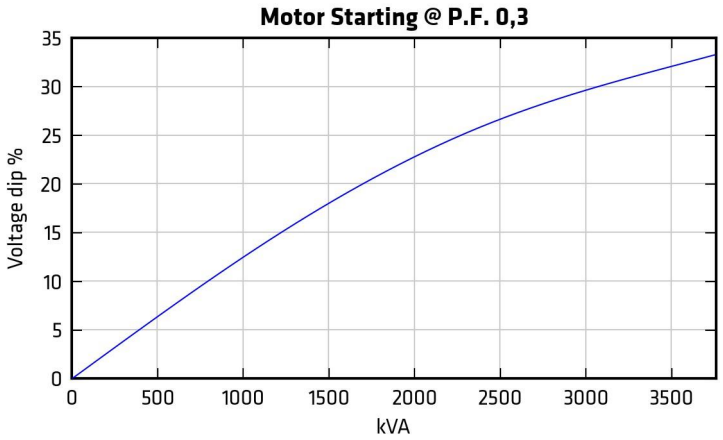
-TECHNICAL CURVES-

Motor starting curve locked rotor (0,6PF)



Motor starting curve locked rotor (0,3PF)



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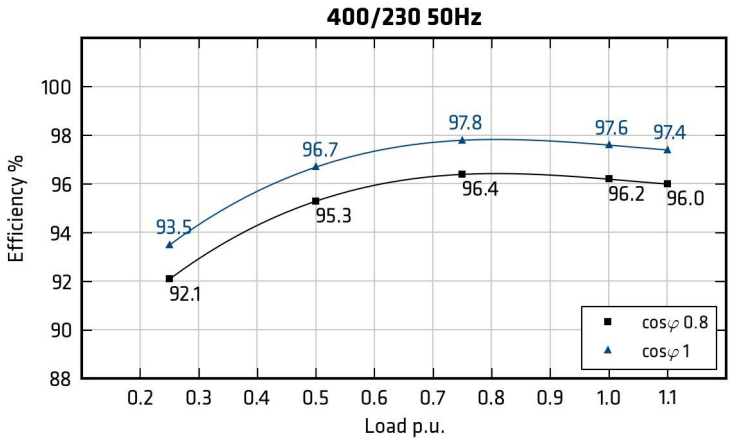
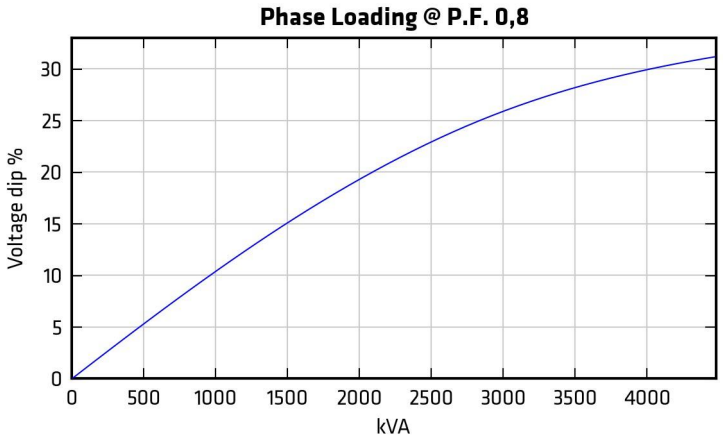
Efficiencies curve (by excitation system)



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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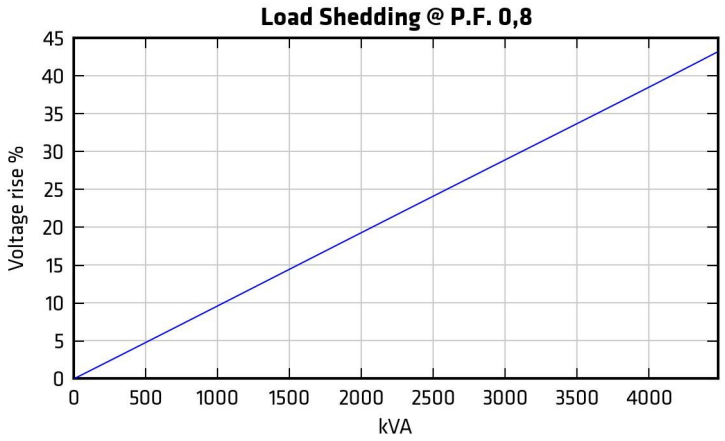
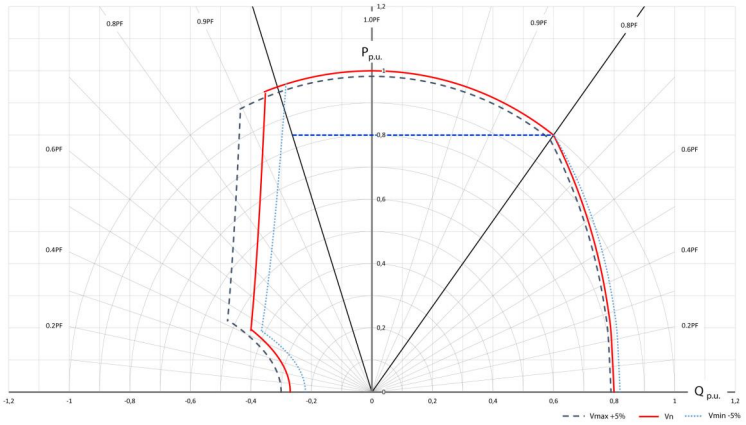
Rejection curve (by excitation system)



Capability curve (PQ diagram)



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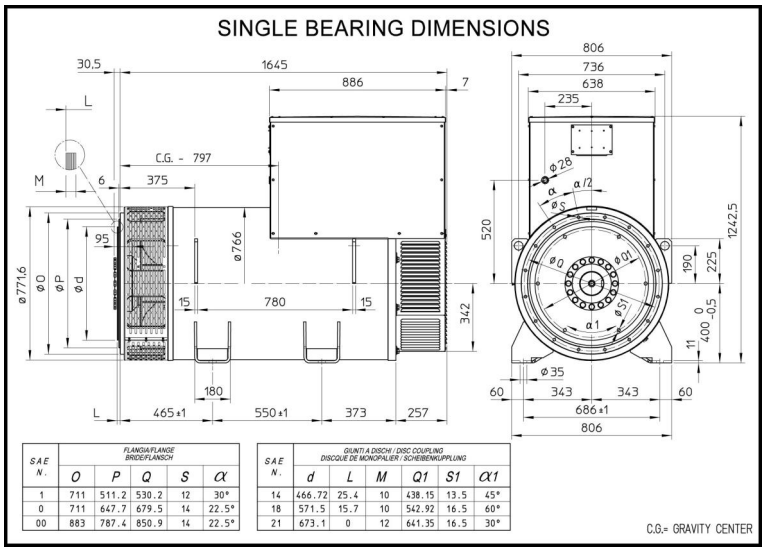
DIMENSIONS-

Overall dimension drawing (Single bearing)



SAE N.	FLANGIA/FLANGE BRIDE/FLANSCH O	P	Q	S	α
1	711	511.2	530.2	12	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 DISCOQUE DE MONOPALIER / SCHEIBENKUPPLUNG d	L	M	Q1	S1	α1
14	466.72	25.4	10	438.15	13.5	45°
18	571.5	15.7	10	542.92	16.5	60°
21	673.1	0	12	641.35	16.5	30°

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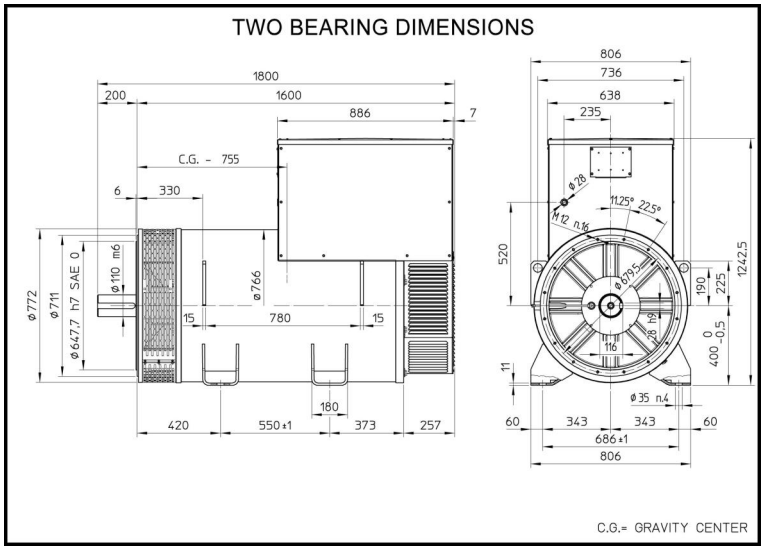
Overall dimension drawing (Two bearings)



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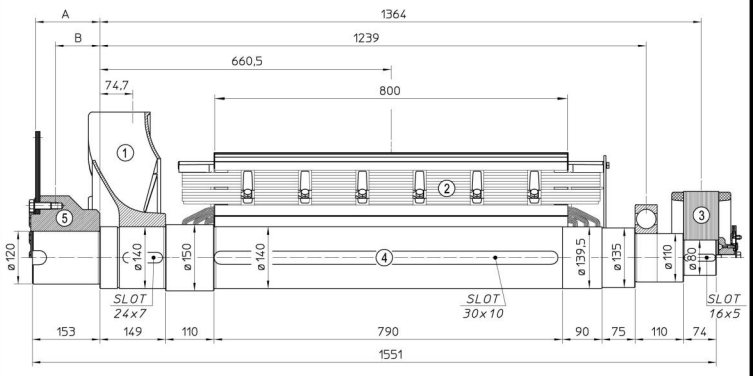
-TORSIONAL ANALYSIS DATA-

Rotation part drawing for torsional vibration calculation (Single bearing)

SINGLE BEARING MOMENTS OF INERTIA



POS.	COMPONENT	WEIGHT (kg)	J (kgm^2)
1	FAN	26.2	1.0289
2	MAIN ROTOR	841.2	24.0977
3	EX. ROTOR	40.1	0.4889
4	SHAFT	168.9	0.3937
TOTAL		1076.4	26.0092

POS.	COMPONENT	SAE N°	A	B	WEIGHT (kg)	J (kgm^2)
5	SHAFTS COUPLING FLEX PLATE	14	155.7	99.5	56.5	0.8261
		18	145.7	100.7	60.9	1.2458
		21	130	98.5	69.0	2.2332

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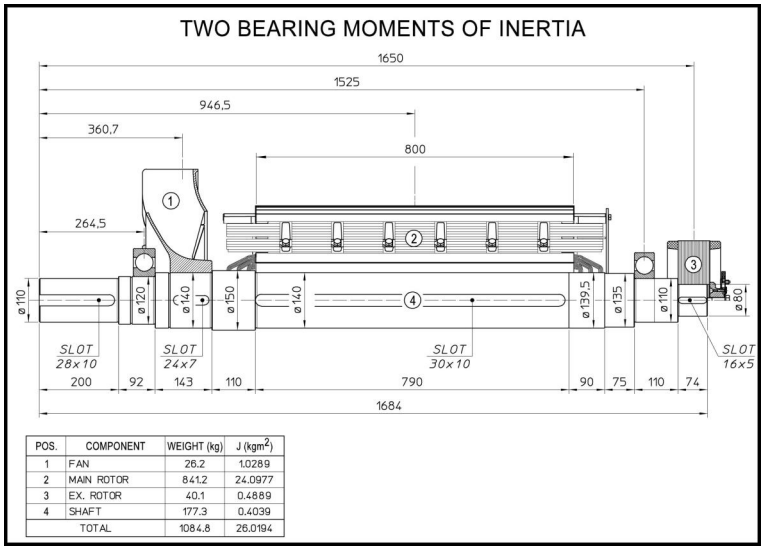
Rotation part drawing for torsional vibration calculation (Two bearings)



POS.	COMPONENT	WEIGHT (kg)	J (kgm^2)
1	FAN	26.2	1.0289
2	MAIN ROTOR	841.2	24.0977
3	EX. ROTOR	40.1	0.4889
4	SHAFT	177.3	0.4039
TOTAL		1084.8	26.0194