DATASHEET ALTERNATOR

Alternator ref. KH05794T
Alternator type KH05794TO4D

-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)	2360	2383.6	2478	2596	2150	1817.2
Nominal Rating(KW)	1888	1906.9	1982.4	2076.8	1720	1453.8
Efficiency 100%	96.2	96.1	96.1	96	96.4	96.7

-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	<50
Unbalanced load acceptance ratio (%)	8
Number of wires	6
Total Harmonic Distortion in no-load DHT (%)	<3.5
Wave form : CEI=FHT	<2
Total Harmonic Distortion, on linear load DHT (%)	<3.5
Technology	Brushless
L-L Harmonic Maximum - Single (%)	3
Deviation Factor (%)	2
Shaft Current	
Main Stator Capacitance to ground (mdf)	0.0003

Reactances

Direct axis synchro reactance unsaturated (Xd) (%)	344.3
Direct axis transcient reactance saturated (X'd) (%)	26.8
Direct axis subtranscient reactance saturated (X''d) (%)	13.8
Quadra axis synchro reactance unsaturated (Xq) (%)	182.8
Quadra axis subtranscient reactance saturated (X"q) (%)	14.22
Zero sequence reactance unsaturated (Xo) (%)	2.54
Negative sequence reactance saturated (X2) (%)	13.99

Short circuit ratio

Short circuit ratio (Kcc)	0.386
Subtranscient time constant (T"d) (ms)	14.162

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Short circuit transcient time constant (T'd) (ms)	235.108
Open circuit time constant (T'do) (ms)	2628.05
Subtranscient time constant (T"q) (ms)	19
Leakage stator reactance (Xa)(%)	11.27
Stator Resistance (Ra)(%)	0.972
Armature time constant (Ta) (ms)	29.133
No load excitation current (io) (A)	1.24
Full load excitation current (ic) (A)	4.2
Full load excitation voltage (uc) (V)	44.4
Heat rejection (W)	75446.56
No load losses (W)	20356.3
Stator resistance (for 20°C ambient) (Ω)	0.00066
Rotor resistance (for 20°C ambient) (Ω)	0.41906
Exciter resistance - stator/inductor (for 20° ambient) (Ω)	8.708
Exciter resistance - rotor/armature (for 20° ambient) (Ω)	0.01
Recovery time (Delta U = 20% transcient) (ms)	500
Engine start (Delta U = 20% perm. or 30% trans.) (kVA)	2172.28
Transcient dip (4/4 load) - PF : 0,8 AR (%)	18.89

Additional electrical characteristics-

Winding X1, X2 auxiliary resistance (for 20° ambient) (Ω)	0.109
Auxiliary winding X1, X2 excitation voltage at no load (V)	98.7
Auxiliary winding X1, X2 excitation voltage on load (V)	98.7
Winding Z1, Z2 auxiliary resistance (for 20° ambient) (Ω)	0.154
Auxiliary winding Z1, Z2 excitation voltage at no load (V)	0
Auxiliary winding Z1, Z2 excitation voltage on load (V)	0

-MECHANICAL CHARACTERISTICS-

Number of bearing	1
Overspeed (rpm)	2250
Coupling	Direct

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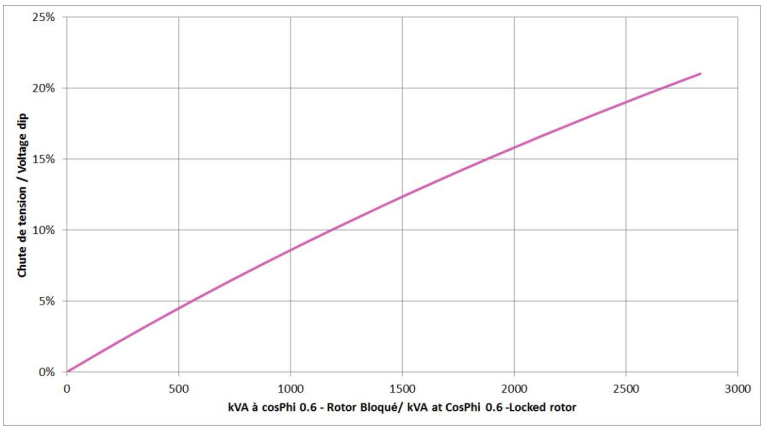
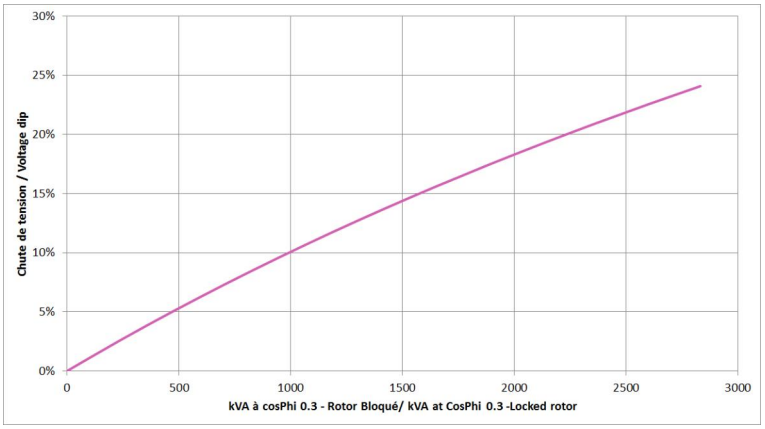
-TECHNICAL CURVES-

Motor starting curve locked rotor (0,6PF)



Motor starting curve locked rotor (0,3PF)



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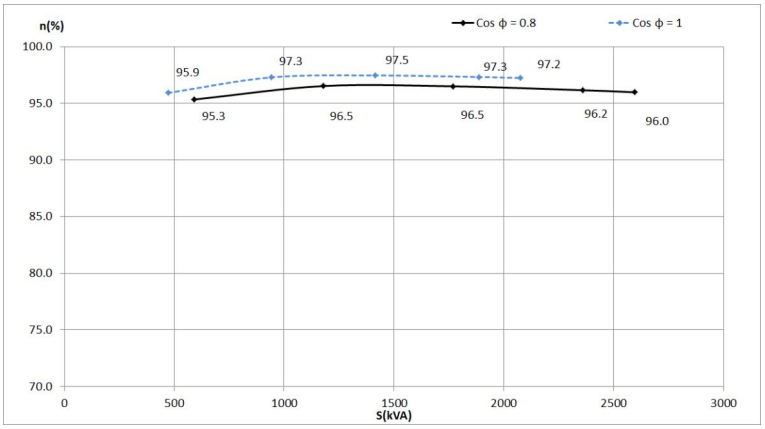
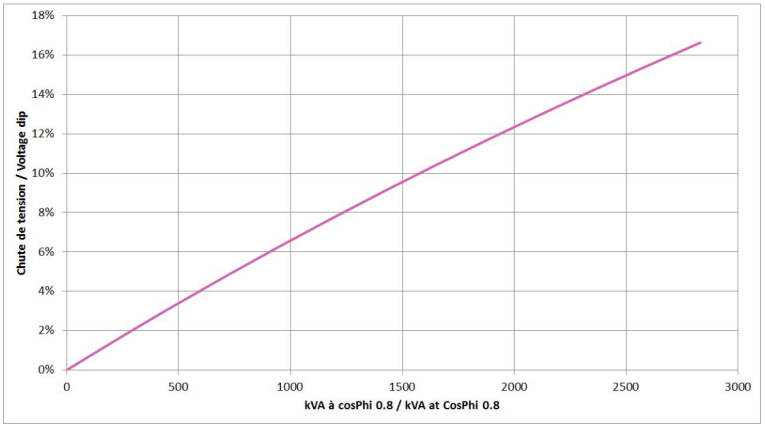
Efficiencies curve (by excitation system)



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 delta : current value x 1.732
- Parallel star : current value x 2

Influence due to short-circuit

Curves are based on a three-phase short-circuit. For the other types of short-circuit, use the following multiplication factors :

(*) Capacity for maintaining short circuit at 3 In for 10 s = YES

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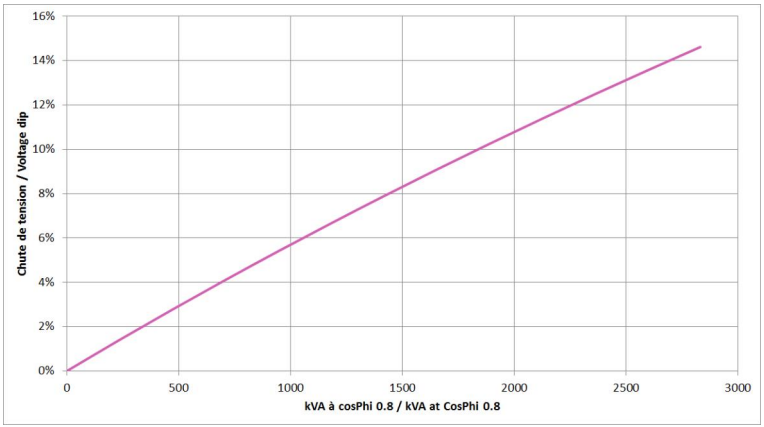
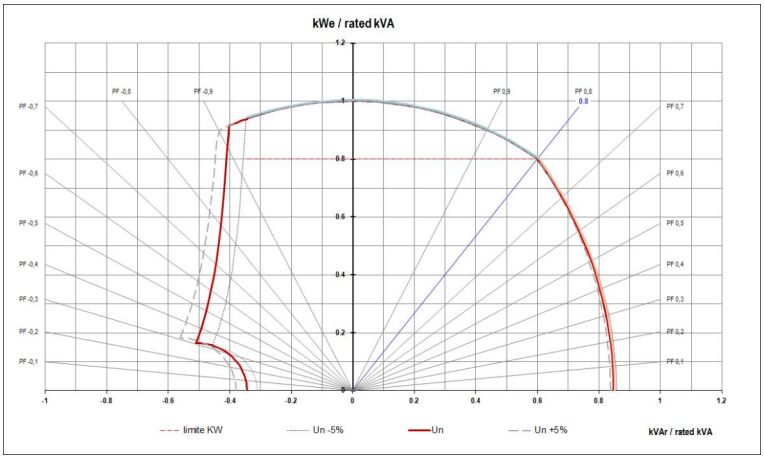
Rejection curve (by excitation system)



Capability curve (PQ diagram)



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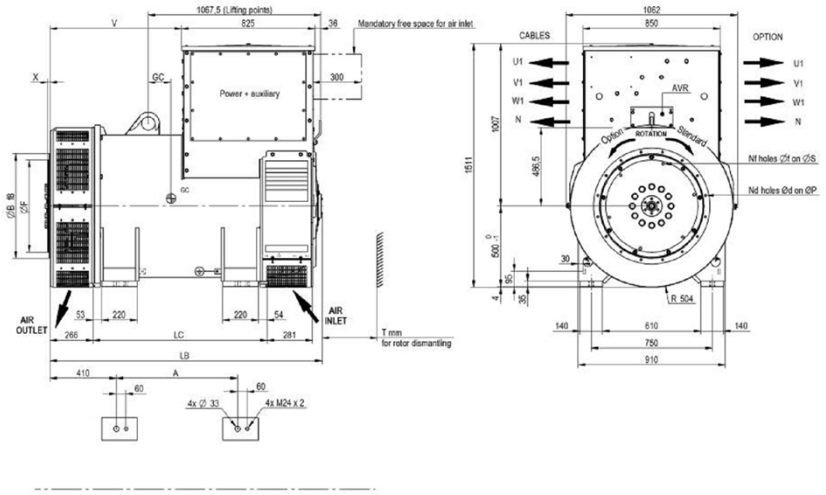
DIMENSIONS-

Overall dimension drawing (Single bearing)



Type	Flange/ Flexplates	ØB (mm)	Nd	Ød (mm)	ØP (mm)	ØF (mm)	Nf	Øf (mm)	ØS (mm)	Offset X	A (mm)	LC (mm)	LB (mm)	V (mm)	GC (mm)	Weight (kg)	(m
KH04404	SAE 0/18	647.7	16	14	679.5	571.5	6	18	542.9	15.8	750	1077	1683	814	166	3769	1
KH04404	SAE 00/18	787.4	16	14	850.9	571.5	6	18	542.9	15.8	750	1077	1683	814	173	3736	1
KH04404	SAE 00/21	787.4	16	14	850.9	673.1	12	18	641.3	0	750	1077	1683	814	173	3737	1
KH04404	SAE 00/24	787.4	16	14	850.9	733.4	12	21	692.1	0	750	1077	1683	814	172	3749	1
KH04406	SAE 0/18	647.7	16	14	679.5	571.5	6	18	542.9	15.8	750	1077	1683	814	166	3769	1
KH04406	SAE 00/18	787.4	16	14	850.9	571.5	6	18	542.9	15.8	750	1077	1683	814	173	3736	1
KH04406	SAE 00/21	787.4	16	14	850.9	673.1	12	18	641.3	0	750	1077	1683	814	173	3737	1
KH04406	SAE 00/24	787.4	16	14	850.9	733.4	12	21	692.1	0	750	1077	1683	814	172	3749	1
KH04974	SAE 0/18	647.7	16	14	679.5	571.5	6	18	542.9	15.8	750	1077	1683	814	186	4021	1
KH04974	SAE 00/18	787.4	16	14	850.9	571.5	6	18	542.9	15.8	750	1077	1683	814	192	3988	1
KH04974	SAE 00/21	787.4	16	14	850.9	673.1	12	18	641.3	0	750	1077	1683	814	192	3989	1
KH04974	SAE 00/24	787.4	16	14	850.9	733.4	12	21	692.1	0	750	1077	1683	814	191	4001	1
KH04976	SAE 0/18	647.7	16	14	679.5	571.5	6	18	542.9	15.8	750	1077	1683	814	186	4021	1
KH04976	SAE 00/18	787.4	16	14	850.9	571.5	6	18	542.9	15.8	750	1077	1683	814	192	3988	1
KH04976	SAE 00/21	787.4	16	14	850.9	673.1	12	18	641.3	0	750	1077	1683	814	192	3989	1
KH04976	SAE 00/24	787.4	16	14	850.9	733.4	12	21	692.1	0	750	1077	1683	814	191	4001	1
KH05794	SAE 0/18	647.7	16	14	679.5	571.5	6	18	542.9	15.8	950	1277	1883	1014	56	4467	1
KH05794	SAE 00/18	787.4	16	14	850.9	571.5	6	18	542.9	15.8	950	1277	1883	1014	62	4434	1
KH05794	SAE 00/21	787.4	16	14	850.9	673.1	12	18	641.3	0	950	1277	1883	1014	62	4435	1
KH05794	SAE 00/24	787.4	16	14	850.9	733.4	12	21	692.1	0	950	1277	1883	1014	61	4447	1
KH06521	SAE 0/18	647.7	16	14	679.5	571.5	6	18	542.9	15.8	950	1277	1883	1014	101	4657	1
KH06521	SAE 00/18	787.4	16	14	850.9	571.5	6	18	542.9	15.8	950	1277	1883	1014	107	4624	1
KH06521	SAE 00/21	787.4	16	14	850.9	673.1	12	18	641.3	0	950	1277	1883	1014	107	4625	1
KH06521	SAE 00/24	787.4	16	14	850.9	733.4	12	21	692.1	0	950	1277	1883	1014	106	4637	1

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Overall dimension drawing (Two bearings)

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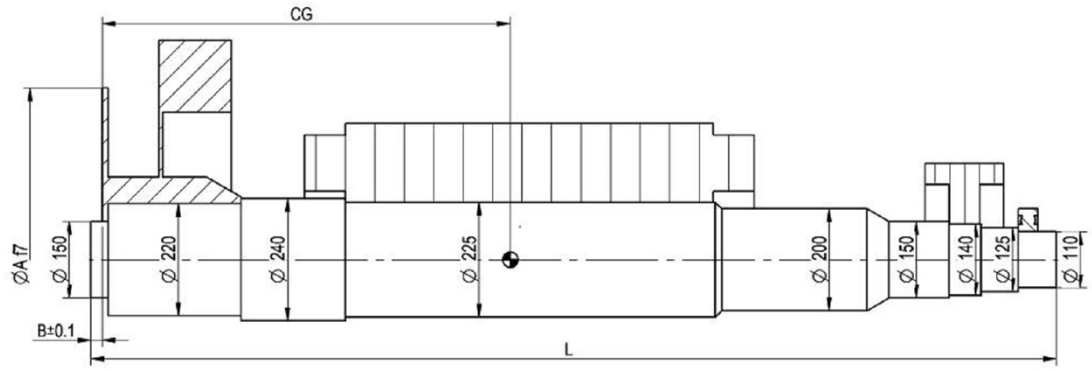
-TORSIONAL ANALYSIS DATA-

Rotation part drawing for torsional vibration calculation (Single bearing)



Type		SAE	ØA (mm)	B (mm)	L (mm)	CG (mm)	Weight (kg)	MR2 (kg.m²)
KH04405	KH04404	18	571.5	6	1689	702.6	1470	44.3
KH04405	KH04404	21	673.1	22	1689	686	1472	45
KH04407	KH04406	18	571.5	6	1689	702.6	1470	44.3
KH04407	KH04406	21	673.1	22	1689	686	1472	45
KH04975	KH04974	18	571.5	6	1689	724.7	1510	45.9
KH04975	KH04974	21	673.1	22	1689	708.1	1512	46.6
KH04977	KH04976	18	571.5	6	1689	724.7	1510	45.9
KH04977	KH04976	21	673.1	22	1689	708.1	1512	46.6
KH05795	KH05794	18	571.5	6	1889	792.2	1691	50.9
KH05795	KH05794	21	673.1	22	1889	775.6	1693	51.6
	KH06521	18	571.5	6	1889	818.9	1806	54.1
	KH06521	21	673.1	22	1889	802.2	1808	55
KH06933	KH06932	18	571.5	6	1889	842.9	1877	57.6
KH06933	KH06932	21	673.1	22	1889	826.2	1879	58.3

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Rotation part drawing for torsional vibration calculation (Two bearings)