DATASHEET ALTERNATOR

Alternator ref. KH02450T
Alternator type KH02450TN4N

-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 No
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)	500	500	550	570	465	400
Nominal Rating(KW)	400	400	440	456	372	320
Efficiency 100%	94.5	94.5	94.3	94.2	94.6	94.8

-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 (%)	70
Number of wires	12
Total Harmonic Distortion in no-load DHT (%)	<2
Wave form : CEI=FHT	<2
Total Harmonic Distortion, on linear load DHT (%)	<2
Technology	Without collar or brush
L-L Harmonic Maximum - Single (%)	18
Deviation Factor (%)	3
Shaft Current	
Main Stator Capacitance to ground (mdf)	

Reactances

Direct axis synchro reactance unsaturated (Xd) (%)	307
Direct axis transcient reactance saturated (X'd) (%)	15.9
Direct axis subtranscient reactance saturated (X''d) (%)	11.1
Quadra axis synchro reactance unsaturated (Xq) (%)	156
Quadra axis subtranscient reactance saturated (X"q) (%)	14.7
Zero sequence reactance unsaturated (Xo) (%)	0.6
Negative sequence reactance saturated (X2) (%)	12.95

Short circuit ratio

Short circuit ratio (Kcc)	0.411
Subtranscient time constant (T"d) (ms)	10

DATASHEET ALTERNATOR

Alternator ref. KH02450T
Alternator type KH02450TN4N

Short circuit transcient time constant (T'd) (ms)	100
Open circuit time constant (T'do) (ms)	1930
Subtranscient time constant (T"q) (ms)	10
Leakage stator reactance (Xa)(%)	0.79
Stator Resistance (Ra)(%)	0.014
Armature time constant (Ta) (ms)	15
No load excitation current (io) (A)	0.99
Full load excitation current (ic) (A)	3.59
Full load excitation voltage (uc) (V)	61.3
Heat rejection (W)	23152.85
No load losses (W)	6551.63
Stator resistance (for 20°C ambient) (Ω)	0.00456
Rotor resistance (for 20°C ambient) (Ω)	0.97253
Exciter resistance - stator/inductor (for 20° ambient) (Ω)	17.404
Exciter resistance - rotor/armature (for 20° ambient) (Ω)	0.128
Recovery time (Delta U = 20% transcient) (ms)	500
Engine start (Delta U = 20% perm. or 30% trans.) (kVA)	996.49
Transcient dip (4/4 load) - PF : 0,8 AR (%)	15

Additional electrical characteristics-

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

-MECHANICAL CHARACTERISTICS-

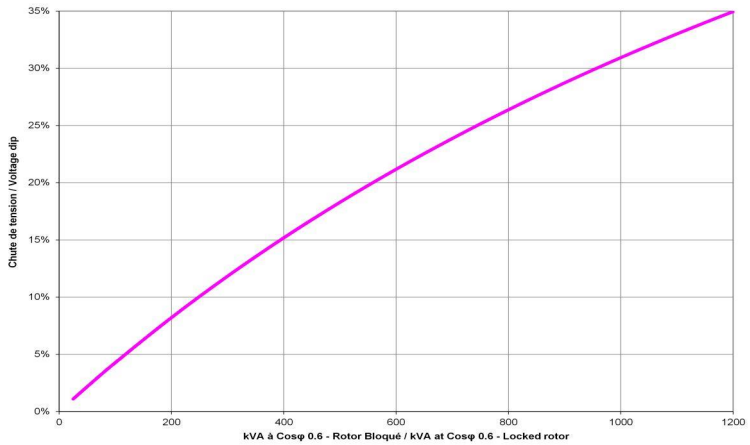
Number of bearing	1
Overspeed (rpm)	2250
Coupling	Direct

DATASHEET ALTERNATOR

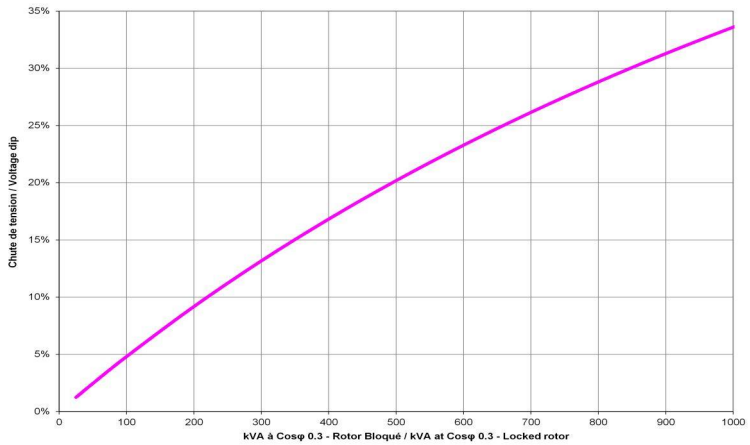
Alternator ref. KH02450T
Alternator type KH02450TN4N

-TECHNICAL CURVES-

Motor starting curve locked rotor (0,6PF)



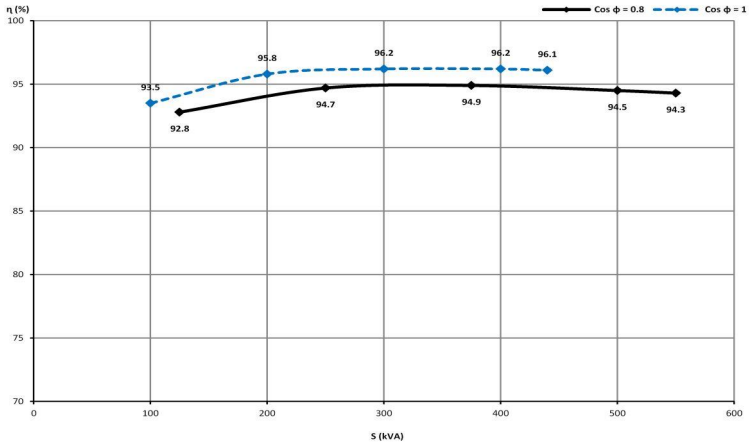
Motor starting curve locked rotor (0,3PF)



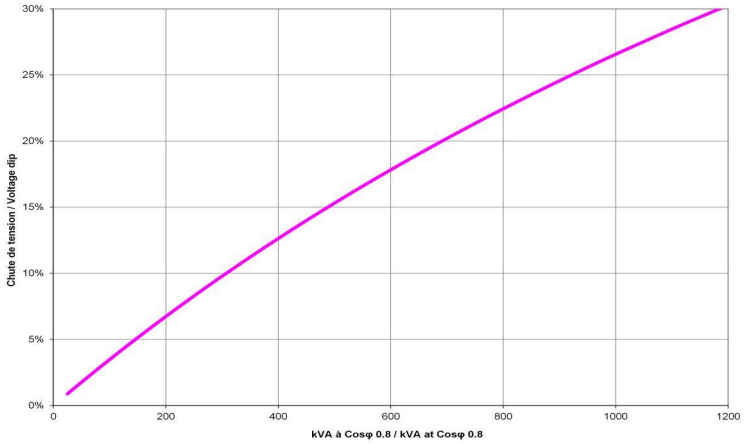
DATASHEET ALTERNATOR

Alternator ref. KH02450T
Alternator type KH02450TN4N

Efficiencies curve (by excitation system)



Loading curve (by excitation system)



DATASHEET ALTERNATOR

Alternator ref. KH02450T
Alternator type KH02450TN4N

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

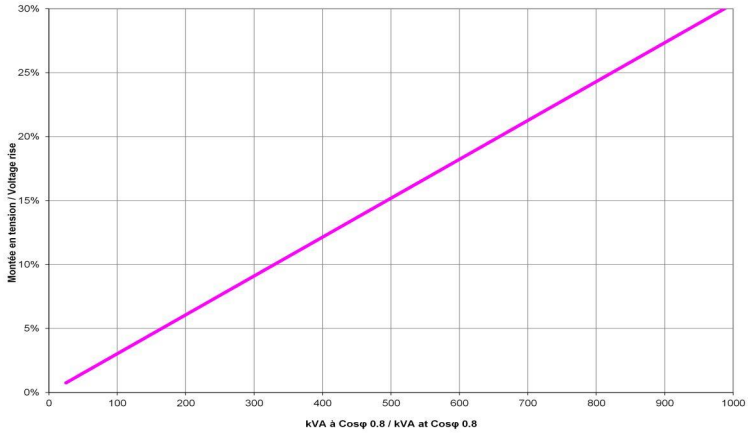
Curves are based on a three-phase short-circuit. For the other types of short-circuit, use the following multiplication factors :

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

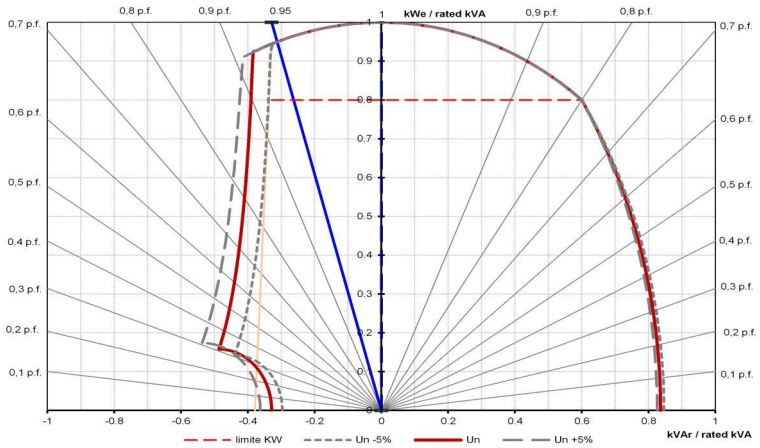
DATASHEET ALTERNATOR

Alternator ref. KH02450T
Alternator type KH02450TN4N

Rejection curve (by excitation system)



Capability curve (PQ diagram)

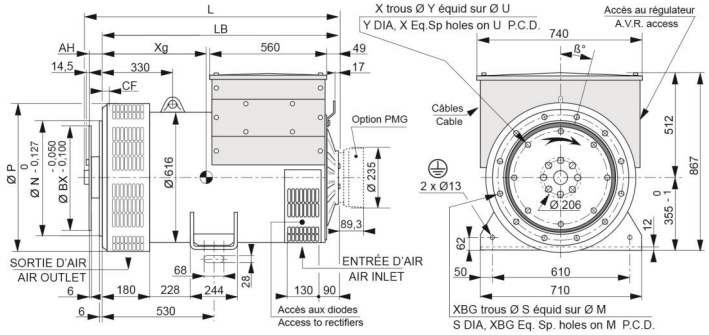


DATASHEET ALTERNATOR

Alternator ref. KH02450T
Alternator type KH02450TN4N

DIMENSIONS-

Overall dimension drawing (Single bearing)



Dimensions (mm)				
Type	L sans/without PMG	LB	Xg	Masse/Weight (kg)
ALT - KH01630	1041	996	437	976
ALT - KH01741	1101	1056	471	1113
ALT - KH02070	1101	1056	471	1113
ALT - KH02450	1201	1156	511	1240
ALT - KH02610	1201	1156	520	1289
ALT - KH02880	1221	1176	545	1372

Accouplement / Coupling			
Disque/Flex plate	11 1/2	14	18
Bride/Flange **S.A.E 1**	X	X	
Bride/Flange **S.A.E 1/2**		X	
Bride/Flange **S.A.E 0**		X	X

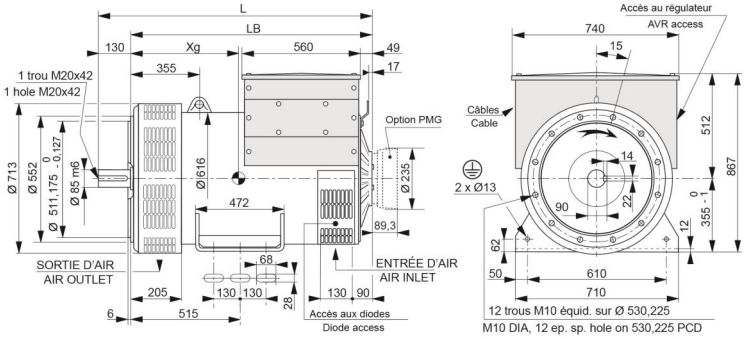
Bride / Flange (mm)							
S.A.E.	P	N	M	XBG	S	ß°	CF
1	713	511.175	530.225	12	12	15°	15
1/2	713	584.2	619.125	12	14	15°	22
0	713	647.7	679.45	16	14	11° 15'	42

Disque / Flex plate (mm)					
S.A.E.	BX	U	X	Y	AH
11 1/2	352.42	333.38	8	11	39.6
14	466.72	438.15	8	14	25.4
18	571.5	542.92	6	17	15.7

DATASHEET ALTERNATOR

Alternator ref. KH02450T
Alternator type KH02450TN4N

Overall dimension drawing (Two bearings)



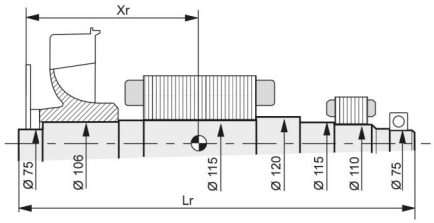
Dimensions (mm)				
Type	L sans / without PMG	LB	Xg	Masse / Weight (kg)
ALT - KH01630	1151	1021	457	996
ALT - KH01741	1211	1081	491	1126
ALT - KH02070	1211	1081	491	1126
ALT - KH02450	1311	1181	531	1253
ALT - KH02610	1311	1181	531	1302
ALT - KH02880	1331	1201	565	1392

DATASHEET ALTERNATOR

Alternator ref. KH02450T
Alternator type KH02450TN4N

-TORSIONAL ANALYSIS DATA-

Rotation part drawing for torsional vibration calculation (Single bearing)



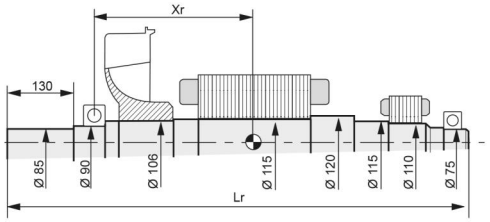
Centre de gravité : Xr (mm), Longueur du rotor Lr (mm), Masse : M (kg), Moment d'inertie : J (kgm²) : (4J = MD²)
Centre of gravity: Xr (mm), Rotor length: Lr (mm), Weight: M (kg), Moment of inertia: J (kgm²): (4J = MD²)

	Disque/Flex plate S.A.E. 11 1/2				Disque/Flex plate S.A.E. 14				Disque/Flex plate S.A.E. 18			
Type	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J
ALT - KH01630	432.5	1029	387	5.99	418.3	1029	387	6.12	408.5	1029	387	6.38
ALT - KH01741	470	1089	442	6.90	456	1089	442	7.03	446	1089	442	7.29
ALT - KH02070	470	1089	442	6.90	456	1089	442	7.03	446	1089	442	7.29
ALT - KH02450	510	1189	495	7.61	496	1189	495	7.74	486	1189	495	8
ALT - KH02610	521	1189	514	8.01	507	1189	514	8.14	497	1189	514	8.40
ALT - KH02880	542	1209	547	8.52	528	1209	547	8.65	518	1209	547	8.91

DATASHEET ALTERNATOR

Alternator ref. KH02450T
Alternator type KH02450TN4N

Rotation part drawing for torsional vibration calculation (Two bearings)



Centre de gravité : Xr (mm), Longueur du rotor Lr (mm), Masse : M (kg), Moment d'inertie : J (kgm²) : (4J = MD²)
Centre of gravity: Xr (mm), Rotor length: Lr (mm), Weight: M (kg), Moment of inertia: J (kgm²): (4J = MD²)

	Disque/Flex plate S.A.E. 11 1/2				Disque/Flex plate S.A.E. 14				Disque/Flex plate S.A.E. 18			
Type	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J
ALT -KH01630	432.5	1029	387	5.99	418.3	1029	387	6.12	408.5	1029	387	6.38
ALT -KH01741	470	1089	442	6.90	456	1089	442	7.03	446	1089	442	7.29
ALT -KH02070	470	1089	442	6.90	456	1089	442	7.03	446	1089	442	7.29
ALT -KH02450	510	1189	495	7.61	496	1189	495	7.74	486	1189	495	8
ALT -KH02610	521	1189	514	8.01	507	1189	514	8.14	497	1189	514	8.40
ALT -KH02880	542	1209	547	8.52	528	1209	547	8.65	518	1209	547	8.91