maranello alternator

M1250

CONT 1130 kVA

THREE-PHASE SYNCHRONOUS GENERATOR

Datasheet for 4 poles -50Hz @ 1500rpm/ 60Hz @ 1800rpm

Ambient Temperature环境温度	40°C	Method of Cooling 冷却方式	Air cooling风冷
Temperature Rise 温升	125°C	Direction of Rotation 旋转方向	Clockwise顺时针
Insulation Class 绝缘等级	H	Maximum Over-speed 最高转速	2250r/min
Power Factor功率因数	0.8	Degree of Protection / Enclosure 防护等级	IP23
Excitation 励磁方式	Brushless无刷	Altitude 海拔	1000m
Winding Pitch 绕组节距	2/3	Stator winding 定子绕组	双层叠绕绕组 DLL
Pole极数	4	Number of Terminal 终端数量	6
Duty工作制	S1- Continuous	Rotor 转子	With damping cage带阻尼
Waveform 电话干扰因数	TIF<50		THF<2%
Waveform distortion 波形畸变率	BS EN 61000-6-2&BS EN 61000-6-4,VDE 0875G,VDE0874N		
Radio interference 无线电干扰	Noload<1.5%,Non-distorting balanced linear load<5%		

AVR MODEL AVR型号	Standard 标配	Selection 选配		PMG		
	MX341B	MX321		MX341B	MX321	
Voltage Regulation - in steady state condition 电压调节	±0.5	±0.5		±0.5	±0.5	
Short Circuit Current Capacity 短路电流容量	4480A					

Electrical Characteristic

Frequency频率	Hz	50				60			
Voltage (series star)电压 Y	V	380/220	400/231	415/240	440/254	416/240	440/254	460/266	480/277
Voltage (parallel star)电压 YY	V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Voltage (series delta)电压 Δ	V	220	230	240	254	240	254	266	277
Rated power at Class H (125° C) temperature rise	kVA	1090	1130	1130	1025	1204	1274	1332	1390
额定功率在H(125℃)温升	kW	872	904	904	820	963.2	1019.2	1065.6	1112
Efficiency at Class H (P.F.=0.8)绝缘等级H (P.F.=0.8)效率	4/4%	94.8	94.8	94.9	95.1	94.8	94.8	94.9	94.9
	3/4%	95.3	95.3	95.3	95.2	95.1	95.1	95.2	95.2
	2/4%	95.3	95.3	95.2	94.9	95	95	95	95
Efficiency at Class H (P.F.=1.0)绝缘等级H (P.F.=1.0)效率	4/4%	95.9	95.9	96	96.2	95.9	95.9	96	96
	3/4%	96.3	96.3	96.4	96.3	96.1	96.2	96.2	96.2
	2/4%	96.3	96.3	96.2	96	96	96.1	96.1	96.1
Reactances (%) at Class H 绝缘等级H考核时的电抗									
Direct axis synchronous reactance unsaturated 直轴同步电抗	Xd	2.57	2.4	2.23	1.8	2.88	2.73	2.61	2.5
Direct axis transient reactance saturated 直轴瞬态电抗	X'd	0.13	0.12	0.12	0.09	0.15	0.14	0.13	0.13
Direct axis subtransient reactance saturated 直轴瞬变电抗	X"d	0.1	0.09	0.08	0.07	0.11	0.1	0.1	0.09
Quadrature axis synchronous reactance unsaturated 交轴同步电抗	Xq	2.14	2	1.86	1.5	2.4	2.27	2.17	2.08
Quadrature axis subtransient reactance saturated 交轴起始瞬态电抗	X"q	0.24	0.23	0.22	0.17	0.27	0.26	0.25	0.24
Leakage reactance漏抗	X1	0.07	0.06	0.06	0.05	0.07	0,07	0.07	0.06
Negative sequence reactance saturated负序电抗饱和	X2	0.17	0.16	0.15	0.12	0.19	0.19	0.17	0.16
Zero sequence reactance unsaturated 零序电抗不饱和	X0	0.03	0.03	0.02	0.02	0.03	0.03	0.03	0.03
Short-circuit ratio 短路比	Kcc	0.3891	0.4167	0.4484	0.5556	0.3472	0.3663	0.3831	0.4000

Short-circuit transient time constant (sec.)瞬变时间常数（秒）	T'd	0.103							
Subtransient time constant (sec.) 超瞬变时间常数（秒。）	T"d	0.014							
Open circuit time constant (sec.)开路时间常数	T'do	3.38							
Armature time constant (sec.)电枢时间常数	Tα	0.035							
Stator Winding Resistance (20℃)定子绕组电阻(20℃)	ohm	0.0018							
Rotor Winding Resistance (20℃)转子绕组电阻(20℃)	ohm	2.16							
Exciter Stator Resistance (20℃)励磁机定子电阻(20℃)	ohm	17.5							
Exciter Rotor Phase resistance 励磁机转子相电阻	ohm	0.063							
No load excitation current空载励磁电流	io (A)	0.6	0.63	0.71	0.65	0.56	0.6	0.62	0.63
Full load excitation current满载励磁电流	ic(A)	2.6	2.7	2.8	2.7	2.7	2.7	2.8	2.8
Cooling air requirement空气冷却要求	m^3/sec	2.18m3/s 4619cfm				2.63m3/s 5573cfm			

Mechanical Characteristic

Configuration 结构	Single Bearing 单轴承	Double Bearing 双轴承
Type of Construction 结构形式	B2-SAE	IM B34
Total Weight - kgs 总重量-公斤	2350	2335
Weight wound stator - kgs 定子重量-公斤	1100	1100
Weight wound rotor - kgs 转子重量-公斤	993	945
Inertia (J) [kgm2] 转动惯量（J）[kgm2）	23.9182kgm2	23.375kgm2
Drive end bearing / Lubrication 驱动端轴承/润滑		BALL.6224-2RS(ISO)
Non-drive end bearing / Lubrication非驱动端轴承/润滑	BALL.6317-2RS(ISO)	BALL.6317-2RS(ISO)
Packing crate size 包装尺寸（cm）	178X97X133	186X97X133

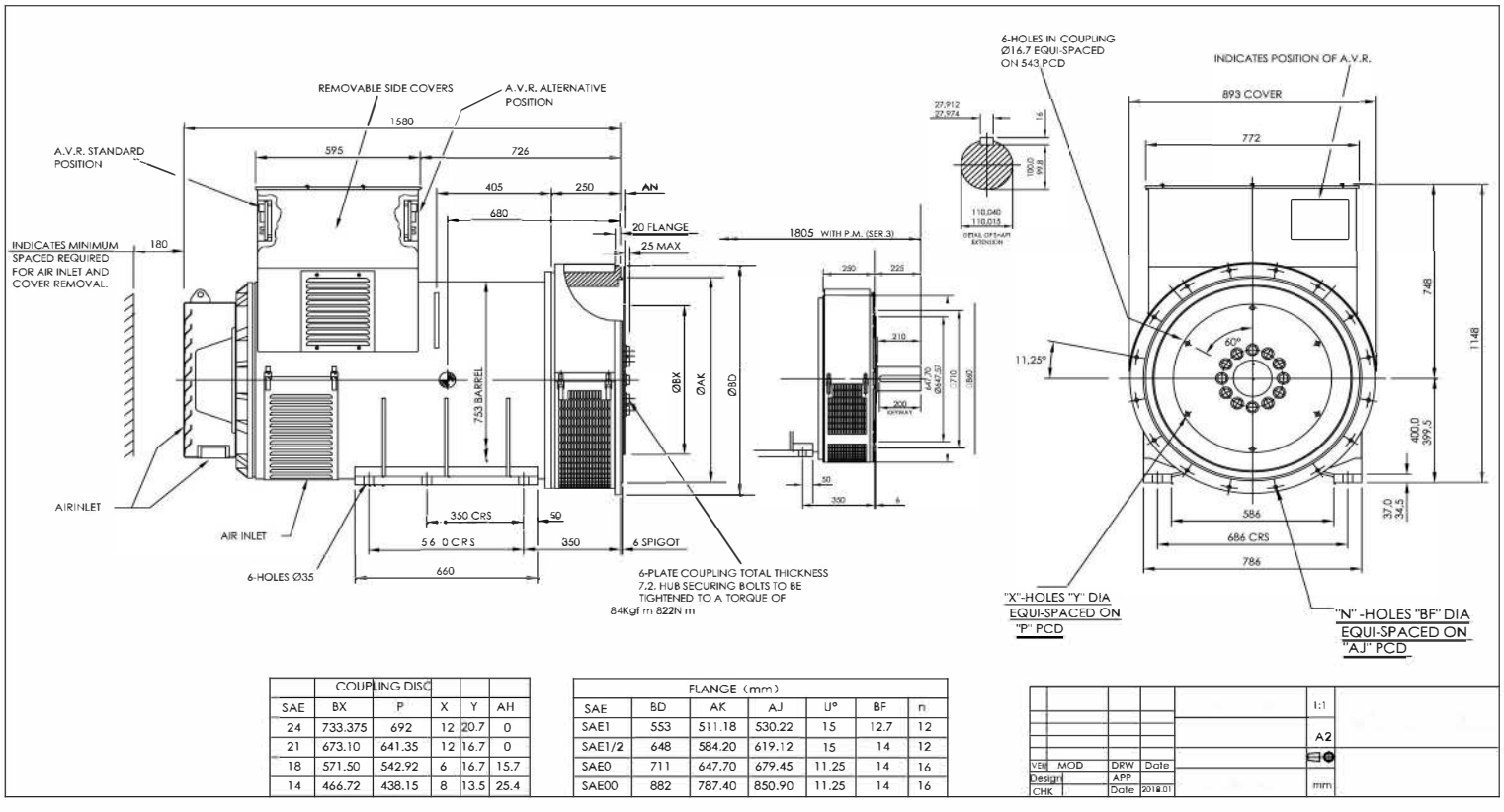
Winding 312 / 0.8 Power Factor

RATINGS

温升等级		F级温升 - 105/40°C				H级温升 - 125/40°C				备载 - 150/40°C				备载 - 163/27°C			
50 Hz	星形（V）	380	400	415	440	380	400	415	440	380	400	415	440	380	400	415	440
	三角形（V）	220	230	240	254	220	230	240	254	220	230	240	254	220	230	240	254
	视在功率（kVA）	999	1035	1035	939	1090	1130	1130	1025	1125	1165	1165	1055	1145	1185	1185	1075
	有功功率（kW）	799	828	828	751	872	904	904	820	900	932	932	844	916	948	948	860
	效率（%）	94.8	94.9	95.0	95.3	94.6	94.7	94.8	95.1	94.5	94.6	94.7	95.1	94.4	94.5	94.7	95.1
	有功功率输入	843	872	872	788	922	955	954	862	952	985	984	887	970	1003	1001	904

60 Hz	星形（V）	416	440	460	480	416	440	460	480	416	440	460	480	416	440	460	480
	三角形（V）	240	254	266	277	240	254	266	277	240	254	266	277	240	254	266	277
	视在功率（kVA）	1104	1167	1220	1274	1204	1274	1332	1390	1243	1315	1375	1435	1257	1329	1390	1450
	有功功率（kW）	883	934	976	1019	963	1019	1066	1112	994	1052	1100	1148	1006	1063	1112	1160
	效率（%）	94.8	94.9	94.9	95.0	94.6	94.7	94.7	94.7	94.5	94.6	94.6	94.7	94.5	94.5	94.6	94.6
	有功功率输入	932	984	1028	1073	1018	1076	1125	1174	1052	1112	1163	1212	1064	1125	1175	1226

DIMENSIONS



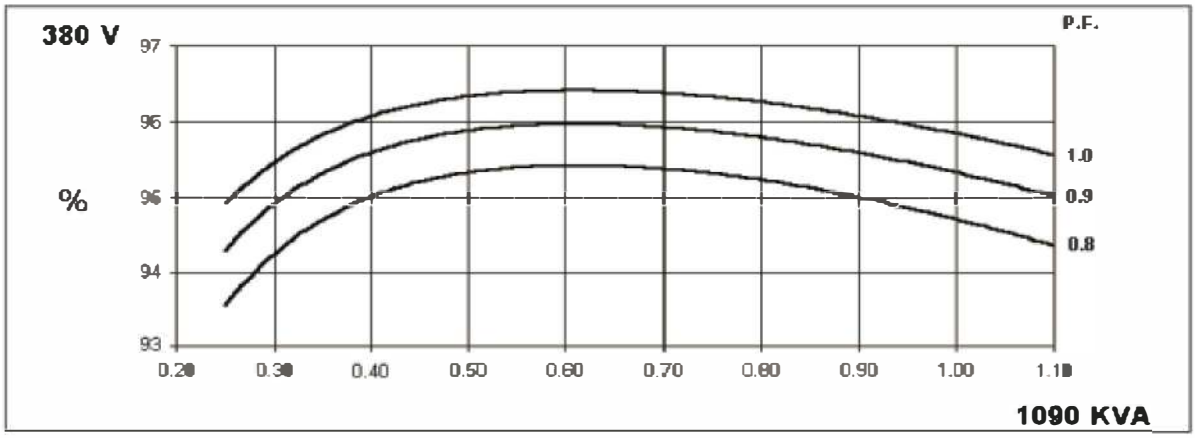
	COUPLING DISC				
SAE	BX	P	X	Y	AH
24	733.375	692	12	20.7	0
21	673.10	641.35	12	16.7	0
18	571.50	542.92	6	16.7	15.7
14	466.72	438.15	8	13.5	25.4

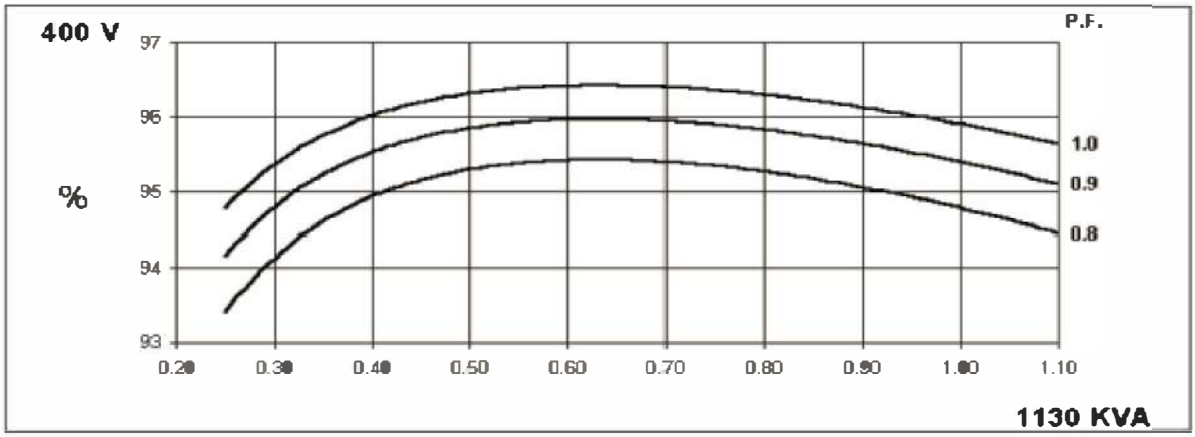
FLANGE (mm)						
SAE	BD	AK	AJ	U°	BF	n
SAE1	553	511.18	530.22	15	12.7	12
SAE1/2	648	584.20	619.12	15	14	12
SAE0	711	647.70	679.45	11.25	14	16
SAE00	882	787.40	850.90	11.25	14	16

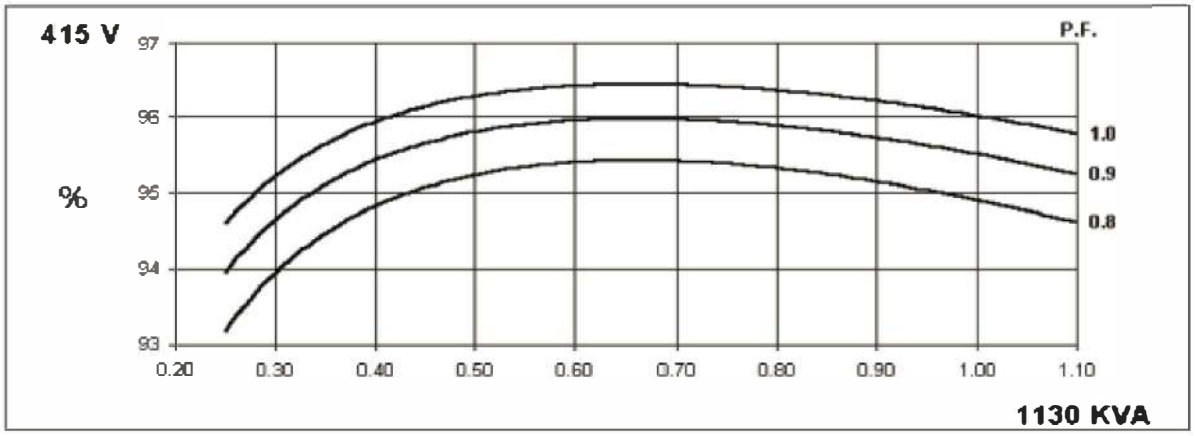
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					A2
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Design		APP			mm
CHK		Date	2018.01		

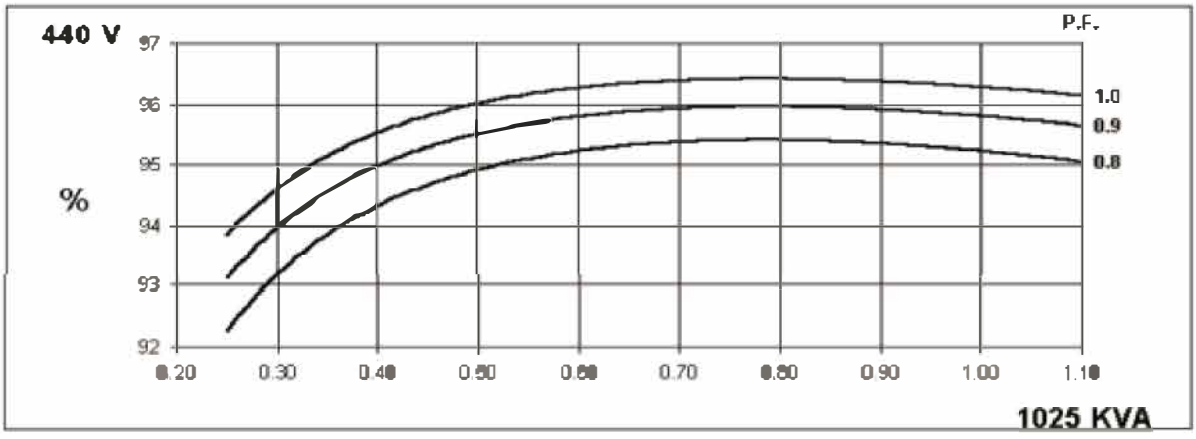
50 Hz

THREE PHASE EFFICIENCY CURVES





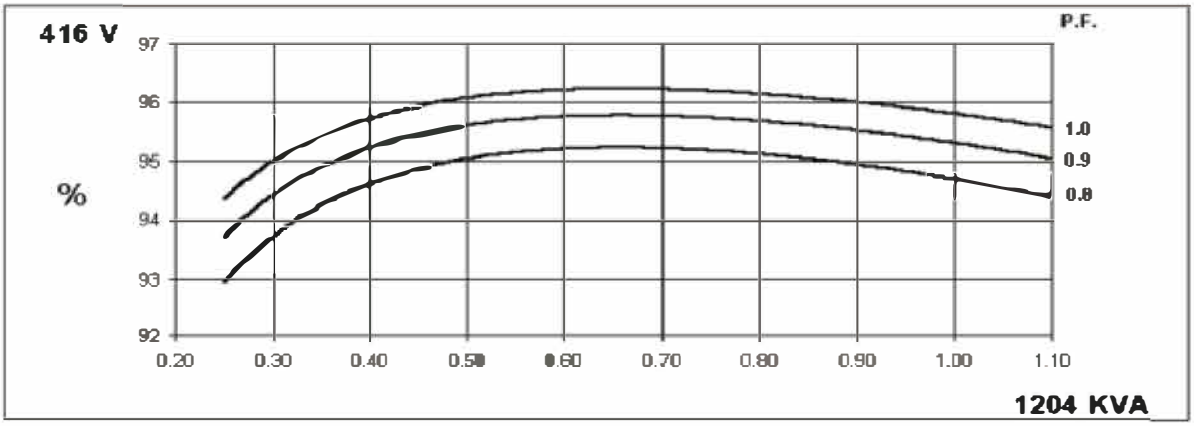


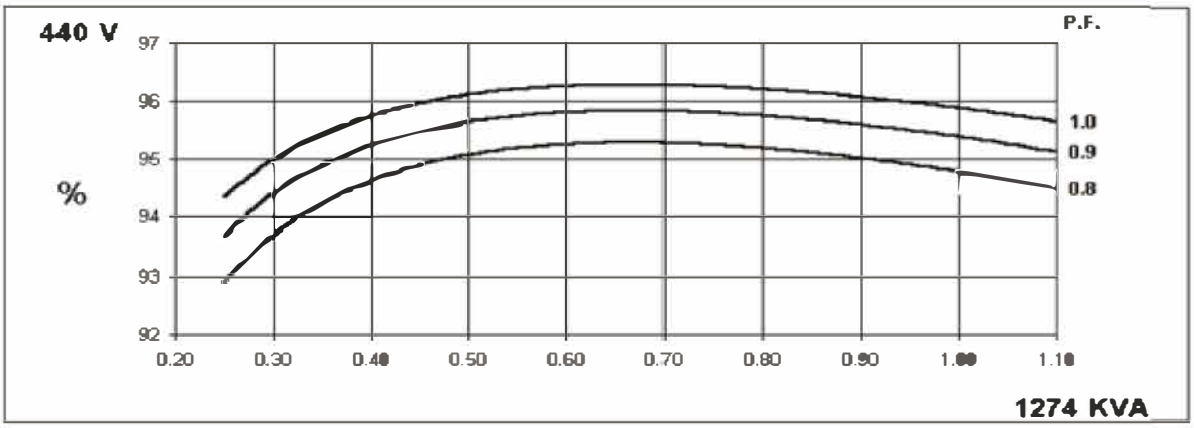


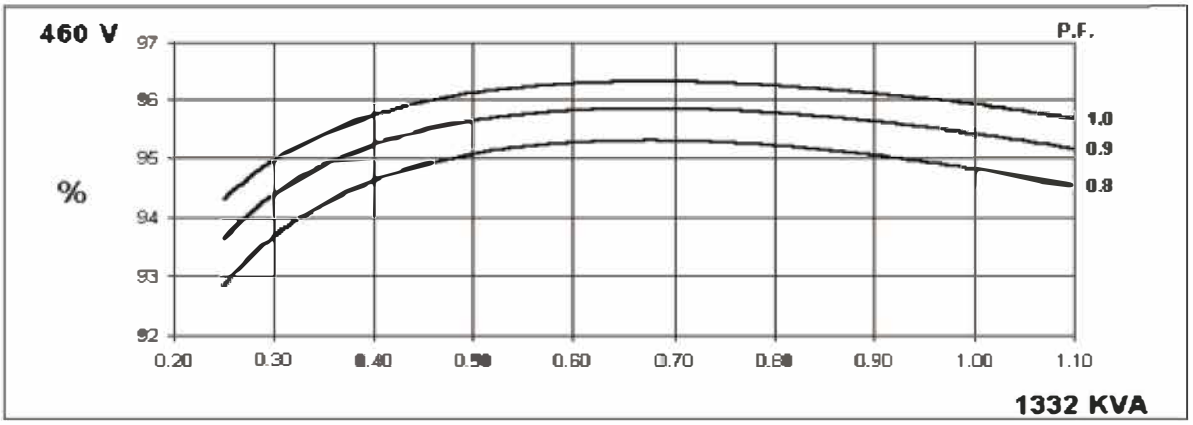
60 Hz

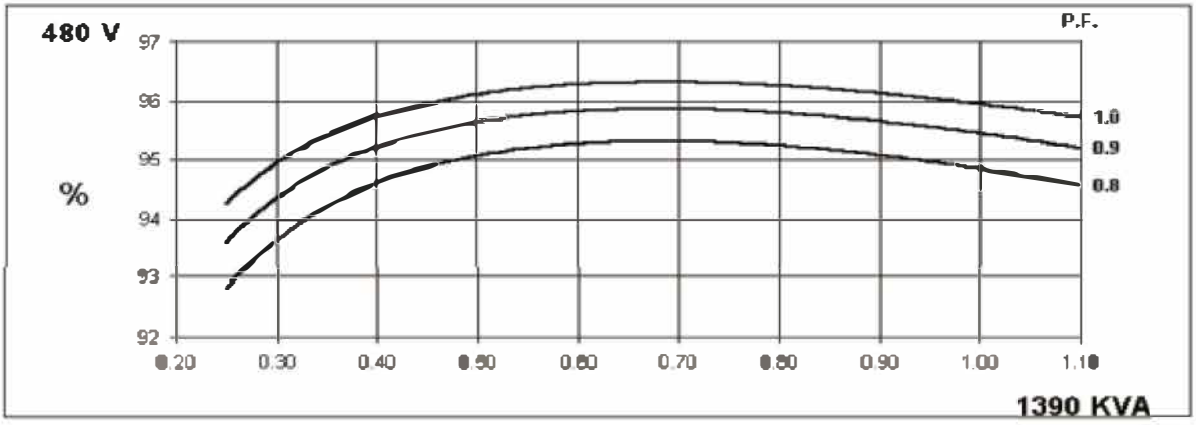
Winding 312

THREE PHASE EFFICIENCY CURVES



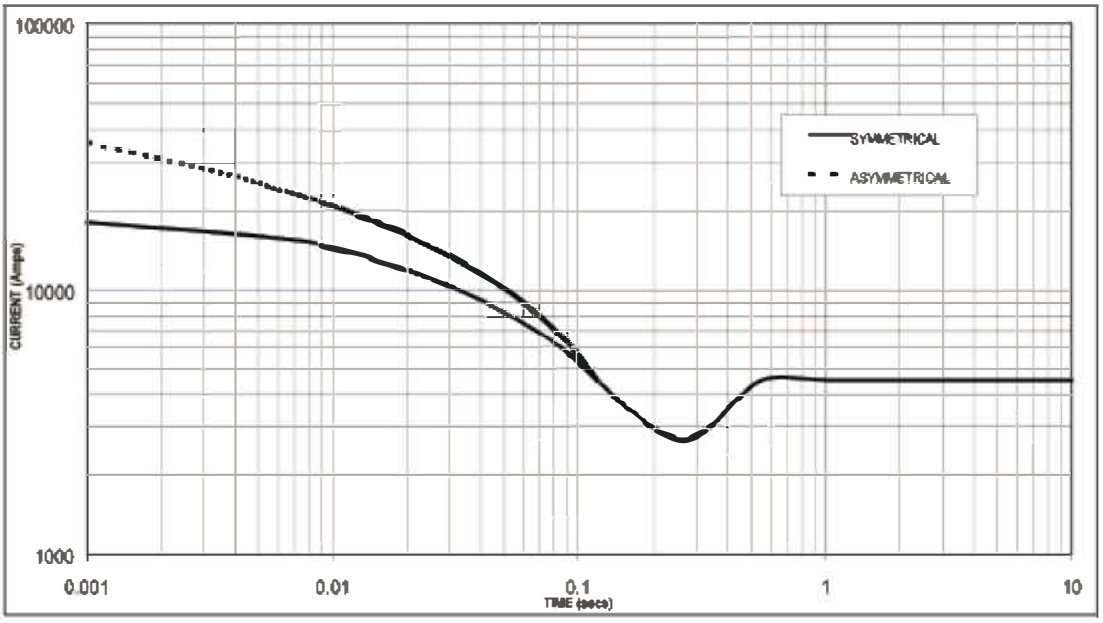






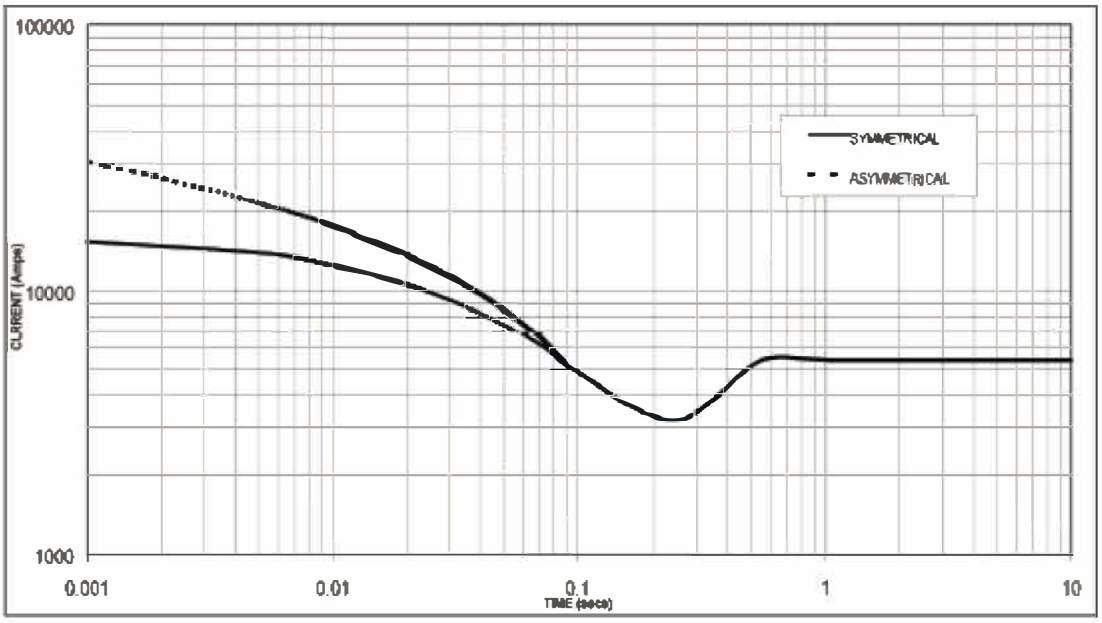
Three-phase Short Circuit Decrement Curve. No-load Excitation at Rated Speed
Based on star (wye) connection.

50 Hz



Sustained Short Circuit = 4480 Amps

60 Hz



Sustained Short Circuit = 5630 Amps

Note 1 Amps

The following multiplication factors should be used to adjust the values from curve between time 0.001 seconds and the minimum current point in respect of nominal operating voltage :

50Hz		60Hz	
Voltage	Factor	Voltage	Factor
380v	x 1.00	416v	x 1.00
400v	x 1.05	440v	x 1.06
415v	x 1.09	460v	x 1.10
440v	x 1.16	480v	x 1.15

The sustained current value is constant irrespective of voltage level

Note 2

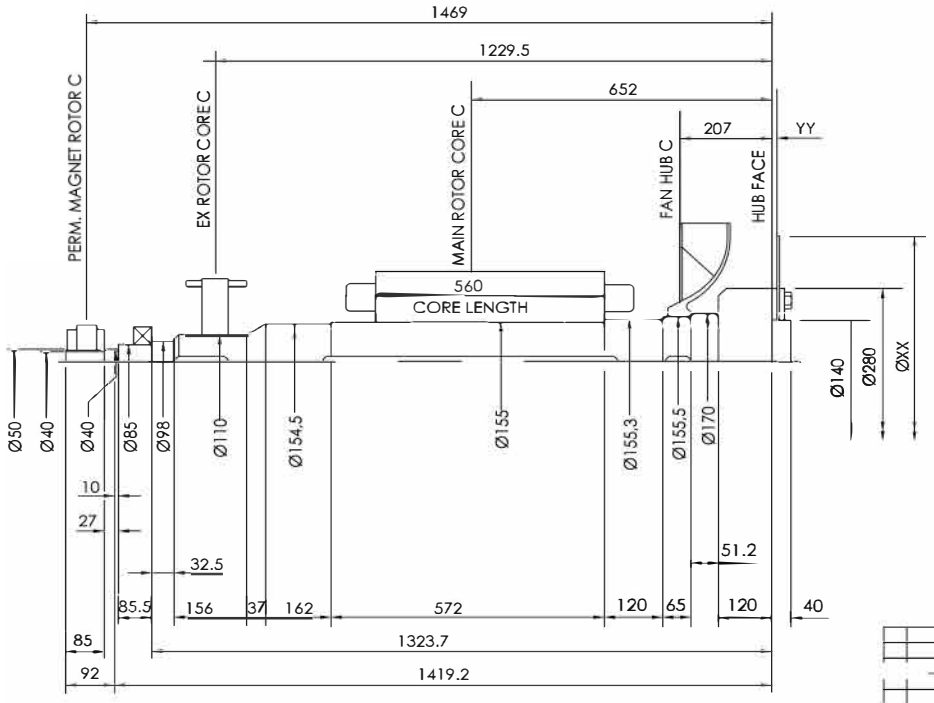
The following multiplication factor should be used to convert the values calculated in accordance with NOTE 1 to those applicable to the various types of short circuit :

	3-phase	2-phase L-L	1-phase L-N
Instantaneous	x 1.00	x 0.87	x 1.30
Minimum	x 1.00	x 1.80	x 3.20
Sustained	x 1.00	x 1.50	x 2.50
Max. sustained duration	10 sec.	5 sec.	2 sec.

All other times are unchanged

Note 3

Curves are drawn for Star (Wye) connected machines.



COMPONENT	Wt kg	J kgm^2
EX. ROTOR	51.6	0,859
MAIN ROTOR	688.031	21.33
FAN	16.1	0,6762
SHAFT	191.914	0,5514
HUB	37.098	0,4823
P.M.EX.ROTOR	6.97	0.019
P.M. STUB SHAFT	0.929	0,0003
TOTAL	992.642	23.9182

COUPLING SAE No	COUPLING DIMEN's XX	COUPLING DIMEN's YY	COUPLING ASSEMBLY WEIGHT kg	COUPLING DISC J kgm^2
14	467	25	25	0,265
16	518	16	24.3	0,403
18	572	16	24.4	0,535
21	673	0	24.25	1.053
24	733	0	28	1.602

				1:1
VER	MOD	DRW	Date	
Design		APP		
CHK		Date	2018.01	mm



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