maranello alternator

M2750

CONT 2500 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	9540A					

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	N/A	240	254	266	277
Rated power at Class H (125° C) temperature rise	kVA	2500	2575	2575	N/A	2750	2937.5	3000	3090
额定功率在H(125℃)温升	kW	2000	2060	2060	N/A	2200	2350	2400	2472
Efficiency at Class H (P.F.=0.8)绝缘等级H (P.F.=0.8)效率	4/4%	95.9	96	96.1	N/A	95.9	96	96	96.1
	3/4%	96.4	96.5	96.6	N/A	96.4	96.4	96.4	96.4
	2/4%	96.4	96.4	96.5	N/A	96.2	96.2	96.2	96.2
Efficiency at Class H (P.F.=1.0)绝缘等级H (P.F.=1.0)效率	4/4%	96.8	96.9	97	N/A	96.8	96.8	96.9	97
	3/4%	97.2	97.3	97.3	N/A	97.3	97.3	97.2	97.2
	2/4%	97.2	97.2	97.2	N/A	96.9	96.9	97	97
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	3.71	3.45	3.2	N/A	4.3	4.1	3.89	3.74
Direct axis transient reactance saturated 直轴瞬态电抗	X'd	0.21	0.19	0.18	N/A	0.24	0.23	0.22	0.21
Direct axis subtransient reactance saturated 直轴瞬变电抗	X"d	0.15	0.14	0.13	N/A	0.17	0.16	0.15	0.15
Quadrature axis synchronous reactance unsaturated 交轴同步电抗	Xq	2.37	2.2	2.06	N/A	2.8	2.64	2.5	2.41
Quadrature axis subtransient reactance saturated 交轴起始瞬态电抗	X"q	0.28	0.26	0.24	N/A	0.33	0.31	0.31	0.28
Leakage reactance漏抗	X1	0.03	0.03	0.03	N/A	0.04	0.04	0.04	0.04
Negative sequence reactance saturated负序电抗饱和	X2	0.2	0.19	0.17	N/A	0.24	0.22	0.22	0.21
Zero sequence reactance unsaturated 零序电抗不饱和	X0	0.03	0.03	0.02	N/A	0.04	0.04	0.04	0.04
Short-circuit ratio 短路比	Kcc	0.2695	0.2899	0.3125	N/A	0.2326	0.2439	0.2571	0.2674

Short-circuit transient time constant (sec.)瞬变时间常数（秒）	T'd	0.165
Subtransient time constant (sec.) 超瞬变时间常数（秒。）	T"d	0.01
Open circuit time constant (sec.)开路时间常数	T'do	2.92
Armature time constant (sec.)电枢时间常数	Tα	0.02
Stator Winding Resistance (20℃)定子绕组电阻(20℃)	ohm	0.00061
Rotor Winding Resistance (20℃)转子绕组电阻(20℃)	ohm	1.97
Exciter Stator Resistance (20℃)励磁机定子电阻(20℃)	ohm	16
Exciter Rotor Phase resistance 励磁机转子相电阻	ohm	0.06

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)	3.2	3.2	3.6	3.2	3.4	3.3	3.4	3.5
Cooling air requirement空气冷却要求	m^3/sec	2.69m3/s 5200cfm				3.45m3/s 7300cfm			

Mechanical Characteristic

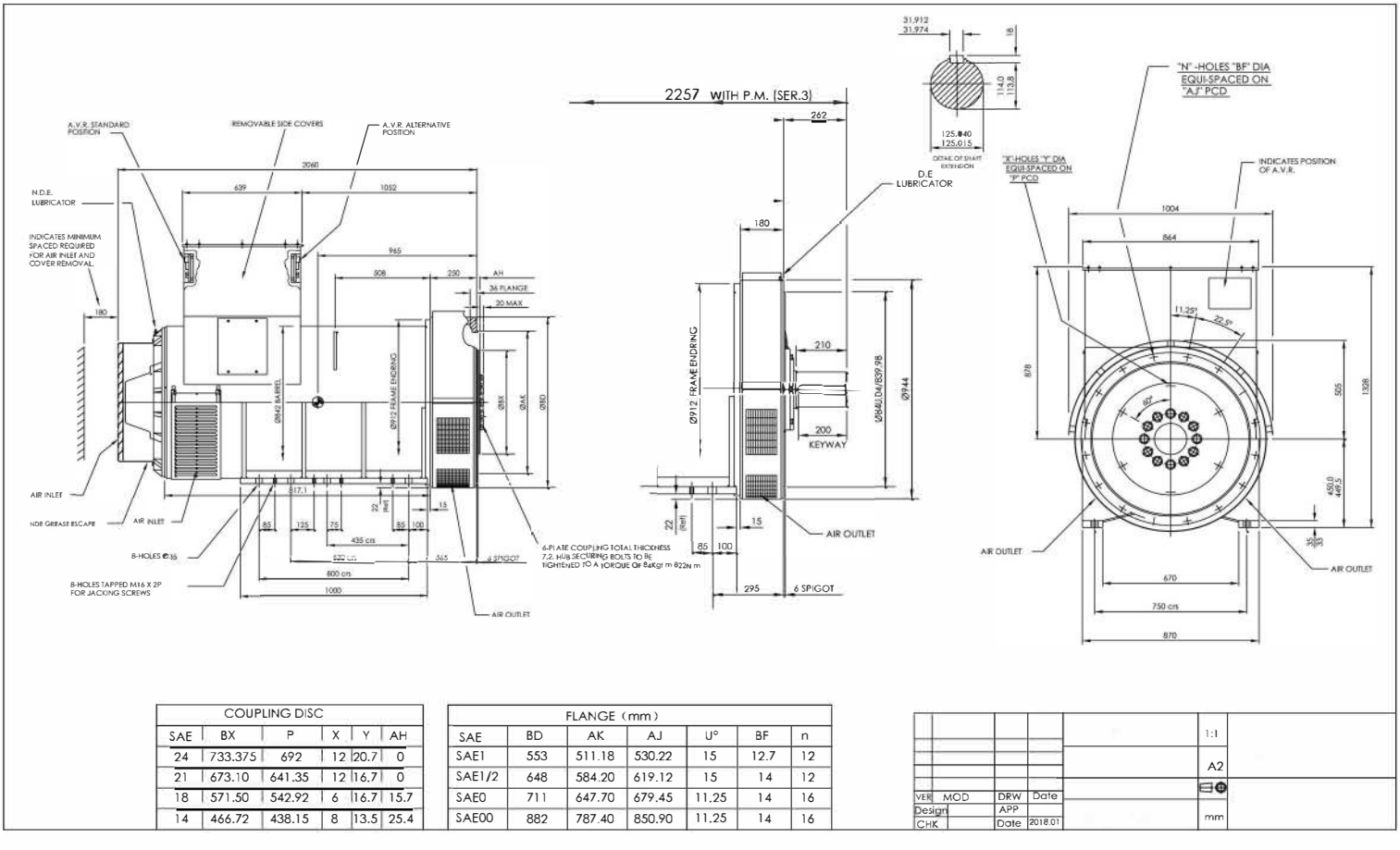
Configuration 结构	Single Bearing 单轴承	Double Bearing 双轴承
Type of Construction 结构形式	B2-SAE	IM B34
Total Weight - kgs 总重量-公斤	4350	4300
Weight wound stator - kgs 定子重量-公斤	2166	2166
Weight wound rotor - kgs 转子重量-公斤	1825	1798
Inertia (J) [kgm2] 转动惯量（J）[kgm2）	56.5427kgm2	53.2468kgm2
Drive end bearing / Lubrication 驱动端轴承/润滑		BALL.6228-2RS(ISO)
Non-drive end bearing / Lubrication非驱动端轴承/润滑	BALL.6319-2RS(ISO)	BALL.6319-2RS(ISO)
Packing crate size 包装尺寸（cm）	234X101X159	244X101X159

Winding 312 / 0.8 Power Factor

RATINGS

Class - Temp Rise		Cont. F - 105/40° C				Cont. H - 125/40° C				Standby - 150/40° C				Standby - 163/27° C			
50HZ	Star (V)	380	400	415	440	380	400	415	440	380	400	415	440	380	400	415	440
	kVA	2325	2395	2395	N/A	2500	2575	2575	N/A	2625	2705	2705	N/A	2700	2780	2780	N/A
	kW	1860	1916	1916	N/A	2000	2060	2060	N/A	2100	2164	2164	N/A	2160	2224	2224	N/A
	Efficiency (%)	96.1	96.2	96.3	N/A	95.9	96	96.1	N/A	95.9	95.9	96	N/A	95.8	95.9	96	N/A
	kW Input	1935	1992	1990	N/A	2086	2146	2144	N/A	2190	2257	2254	N/A	2255	2319	2317	N/A
60HZ	Star (V)	416	440	460	480	416	440	460	480	416	440	460	480	416	440	460	480
	kVA	2560	2730	2790	2875	2750	2937.5	3000	3090	2888	3085	3150	3245	2970	3172	3240	3338
	kW	2048	2184	2232	2300	2200	2350	2400	2472	2310	2468	2520	2596	2376	2538	2592	2670
	Efficiency (%)	96	96.1	96.2	96.2	95.9	96	96.1	96.1	95.8	95.9	96	96	95.8	95.9	95.9	95.9
	kW Input	2133	2273	2320	2391	2294	2448	2497	2572	2412	2574	2625	2704	2480	2646	2703	2785

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

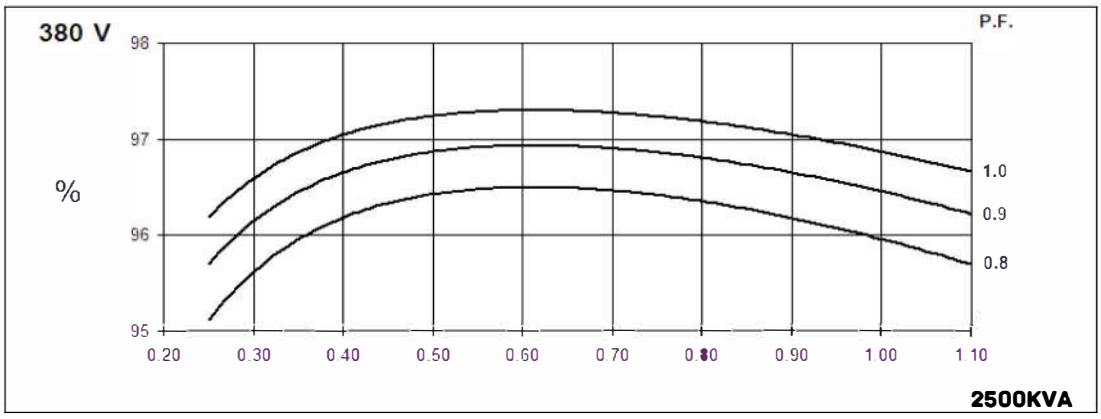
FLANGE (mm)						
SAE	BD	AK	AJ	U°	BF	n
SAE1	553	511.18	530.22	15	12.7	12
SAE1/2	648	584.20	619.12	15	14	12
SAE0	711	647.70	679.45	11.25	14	16
SAE00	882	787.40	850.90	11.25	14	16

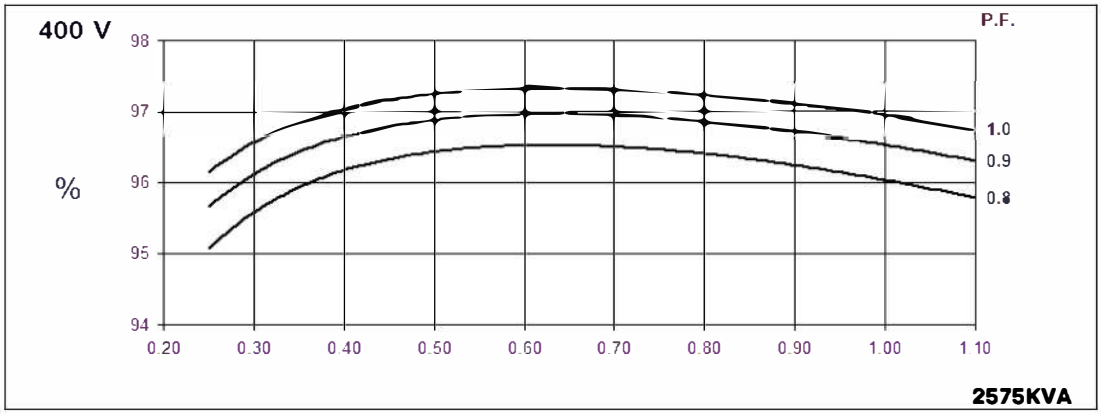
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Design		APP			mm
CHK		Date	2018.01		

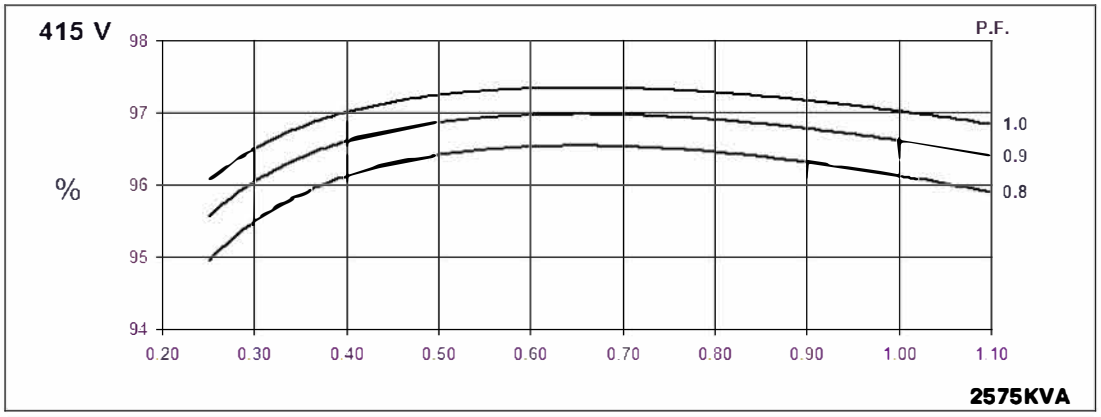
50 Hz

Winding 312

THREE PHASE EFFICIENCY CURVES

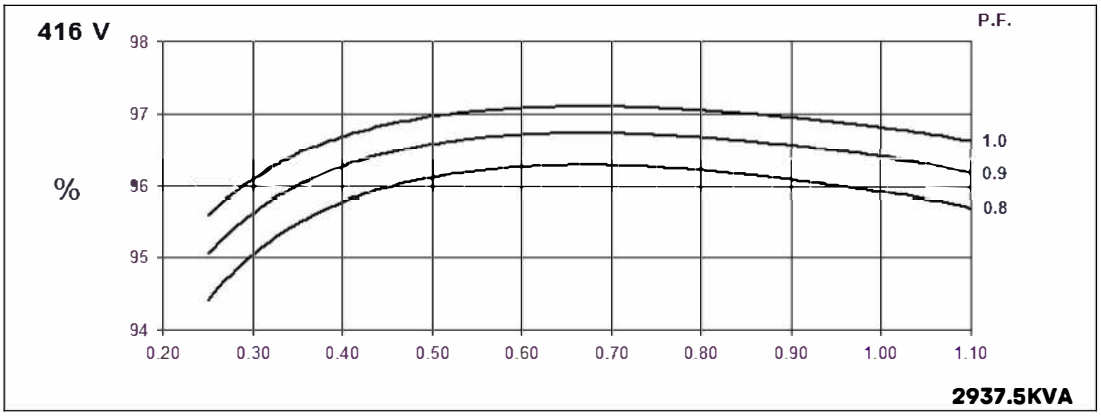


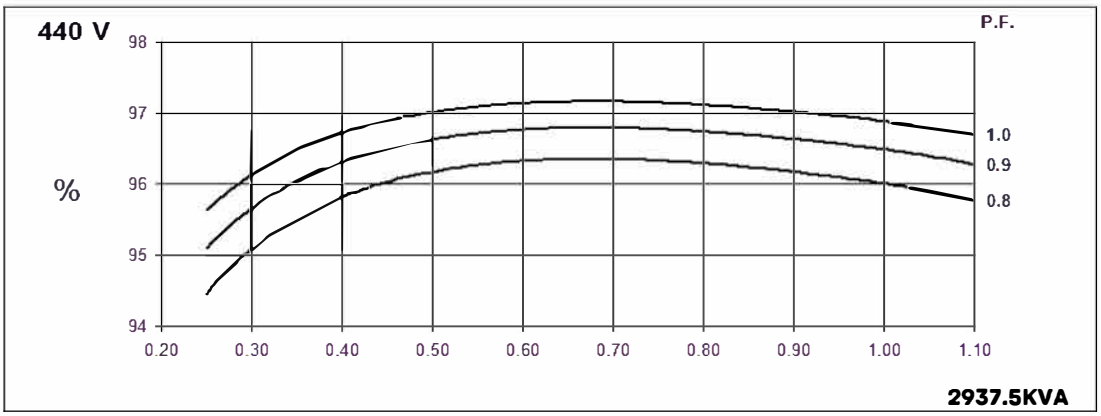


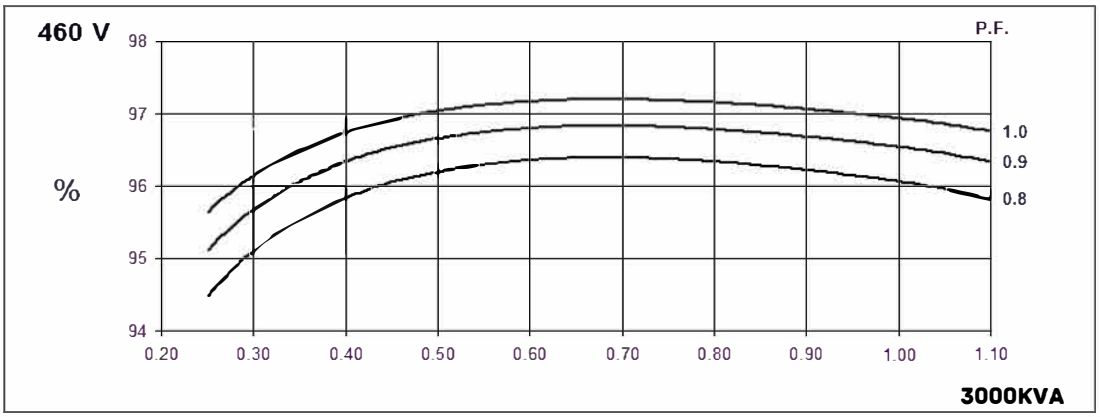


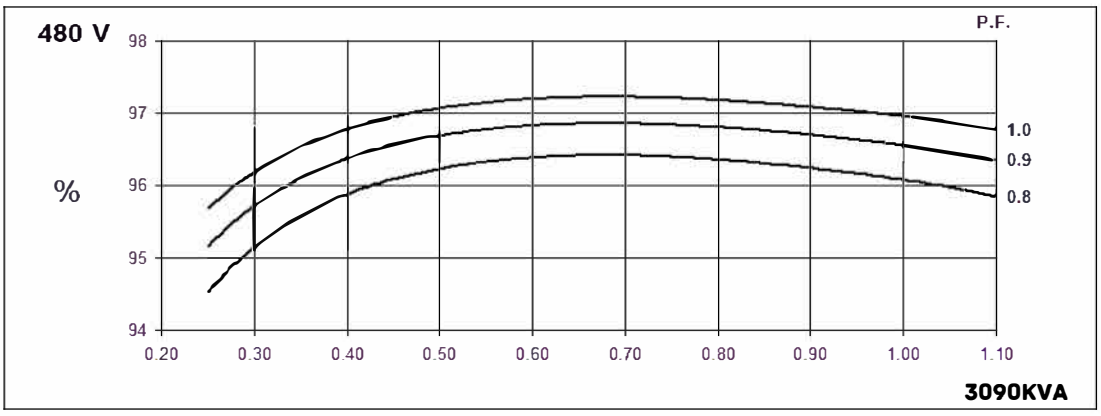
60 Hz

THREE PHASE EFFICIENCY CURVES



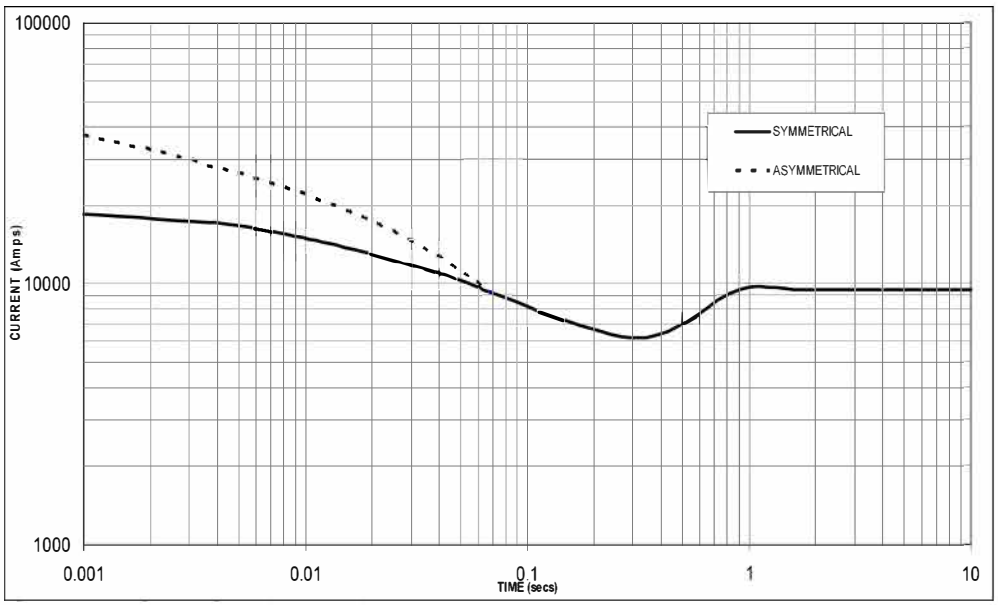






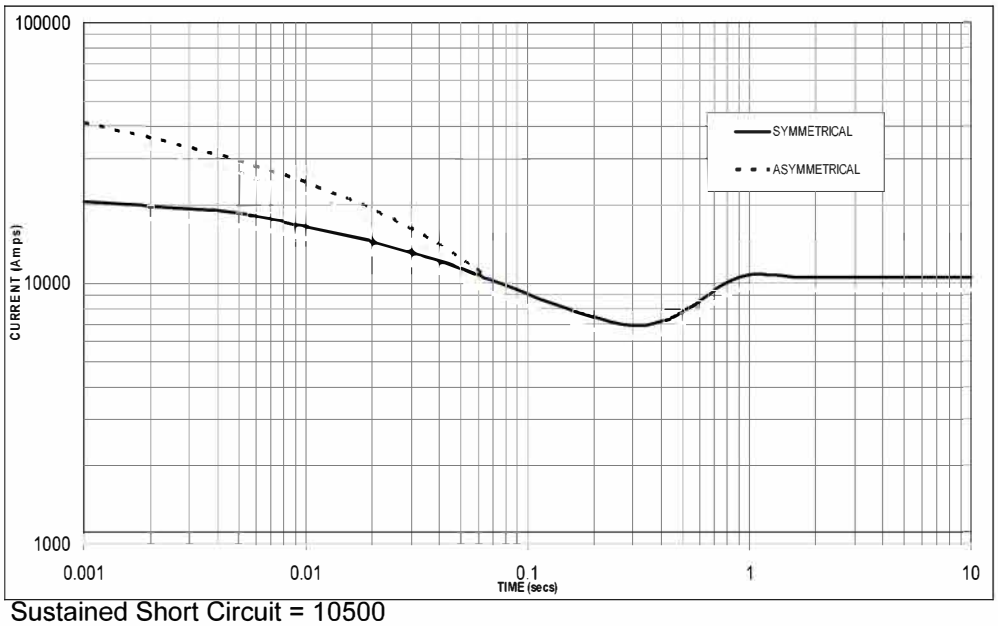
Three-phase Short Circuit Decrement Curve. No-load Excitation at Rated Speed
Based on star (wye) connection.

50 Hz



Sustained Short Circuit = 9540 Amps

60 Hz



Sustained Short Circuit = 10500 Amps

Note 1

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

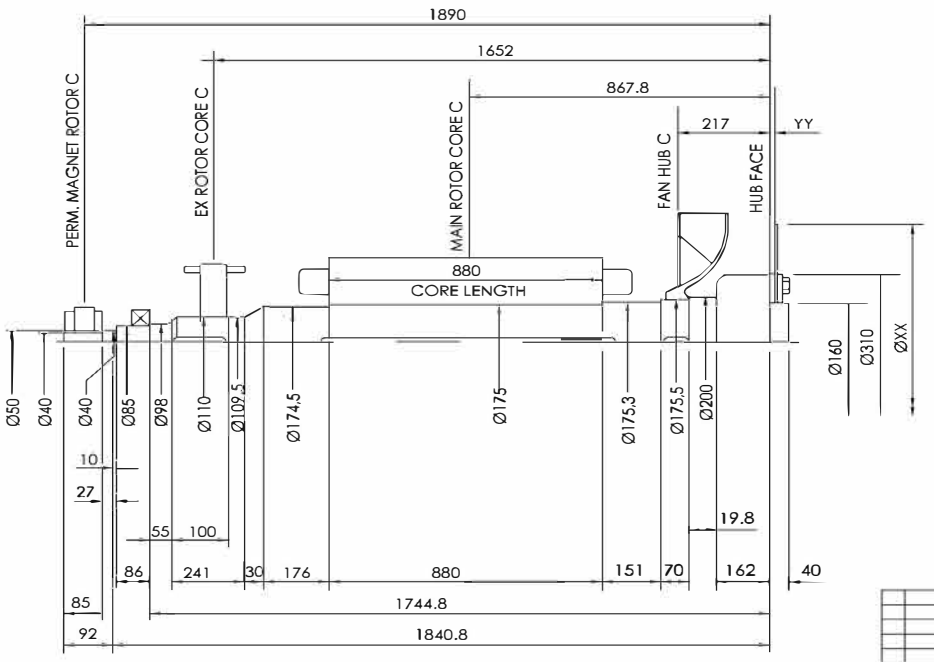
The following multiplication factor should be used to convert the values calculated in accordance with NOTE 1 to those applicable to the various types of short circuit :

	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	1334.21	51.818
FAN	28.8	1.652
SHAFT	347.844	1.3098
HUB	53.533	0,8846
P.M.EX.ROTOR	6.97	0.019
P.M. STUB SHAFT	0.929	0,0003
TOTAL	1823.886	56.5427

COUPLING SAE No	COUPLING DIMEN's XX	COUPLING DIMEN's YY	COUPLING ASSEMBLY WEIGHT kg	COUPLING DISC J kgm^2
18	572	16	24.5	0,59
21	673	0	23.1	1.135
24	733	0	26.84	1.598

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



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