



**M1100**

CONT 1000 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	
	MX341B	MX321	PMG 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	3900A		

#### Electrical Characteristic

Frequency 频率	Hz	50				60			
		380/220	400/231	415/240	440/254	416/240	440/254	460/266	480/277
Voltage ( series star )电压 Y	V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Voltage ( parallel star )电压 YY	V	220	230	240	254	240	254	266	277
Voltage ( series delta )电压 Δ	V	950	1000	1000	910	1083	1145	1197	1250
Rated power at Class H (125 °C) temperature rise 额定功率在H(125 °C)温升	kVA	760	800	800	728	866.4	916	957.6	1000
Efficiency at Class H (P.F.=0.8)绝缘等级H (P.F.=0.8)效率	4/4%	94.1	94.2	94.3	94.8	94	94.1	94.2	94.2
	3/4%	94.9	95	95	95	94.7	94.8	94.9	94.9
	2/4%	95	95	95	94.7	94.7	94.8	94.8	94.8
Efficiency at Class H (P.F.=1.0)绝缘等级H (P.F.=1.0)效率	4/4%	95.4	95.4	95.6	96	95.2	95.3	95.4	95.5
	3/4%	96	96	96	96.1	95.8	95.9	96	96
	2/4%	96.1	96.1	96	95.9	95.8	95.9	95.9	95.9

#### Reactances (%) at Class H 绝缘等级H考核时的电抗

		2.62	2.49	2.31	1.87	2.99	2.82	2.7	2.59
Direct axis synchronous reactance unsaturated 直轴同步电抗	X <sub>d</sub>	0.13	0.13	0.12	0.1	0.15	0.14	0.14	0.13
Direct axis transient reactance saturated 直轴瞬态电抗	X' <sub>d</sub>	0.1	0.09	0.08	0.07	0.11	0.1	0.1	0.1
Direct axis subtransient reactance saturated 直轴瞬变电抗	X'' <sub>d</sub>	2.18	2.07	1.92	1.56	2.49	2.35	2.25	2.16
Quadrature axis synchronous reactance unsaturated 交轴同步电抗	X <sub>q</sub>	0.25	0.24	0.22	0.18	0.28	0.27	0.26	0.25
Quadrature axis subtransient reactance saturated 交轴起始瞬态电抗	X'' <sub>q</sub>	0.06	0.06	0.06	0.05	0.07	0.07	0.07	0.06
Leakage reactance 漏抗	X <sub>l</sub>	0.17	0.16	0.15	0.12	0.2	0.19	0.18	0.17
Negative sequence reactance saturated 负序电抗饱和	X <sub>2</sub>	0.03	0.03	0.02	0.02	0.03	0.03	0.03	0.03
Zero sequence reactance unsaturated 零序电抗不饱和	X <sub>0</sub>	0.3817	0.4016	0.4329	0.5348	0.3344	0.3546	0.3704	0.3861
Short-circuit ratio 短路比	K <sub>cc</sub>								

Short-circuit transient time constant (sec.) 瞬变时间常数 (秒)	T' <sub>d</sub>	0.097							
Subtransient time constant (sec.) 超瞬变时间常数 (秒。)	T'' <sub>d</sub>	0.014							
Open circuit time constant (sec.) 开路时间常数	T' <sub>do</sub>	3.18							
Armature time constant (sec.) 电枢时间常数	T <sub>a</sub>	0.034							
Stator Winding Resistance (20°C) 定子绕组电阻(20°C)	ohm	0.0024							
Rotor Winding Resistance (20°C) 转子绕组电阻(20°C)	ohm	1.92							
Exciter Stator Resistance (20°C) 励磁机定子电阻(20°C)	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 <sup>3</sup> /sec	2.18m <sup>3</sup> /s 4619cfm				2.63m <sup>3</sup> /s 5573cfm			

#### Mechanical Characteristic

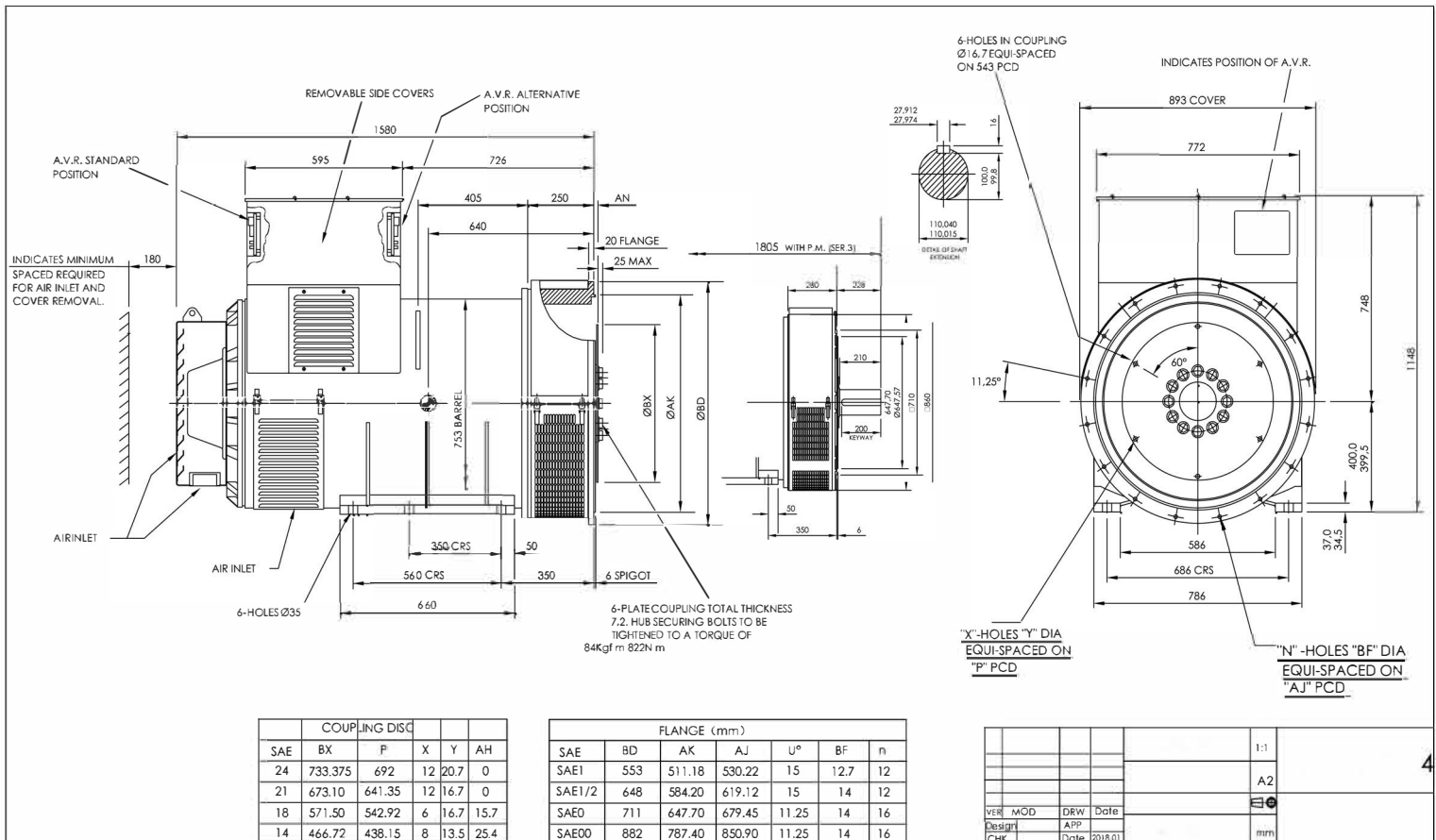
Configuration 结构	Single Bearing 单轴承	Double Bearing 双轴承
Type of Construction 结构形式	B2-SAE	IM B34
Total Weight - kgs 总重量-公斤	2120	2105
Weight wound stator - kgs 定子重量-公斤	1010	1010
Weight wound rotor - kgs 转子重量-公斤	885	841
Inertia (J) [kgm <sup>2</sup> ] 转动惯量 (J) [kgm <sup>2</sup> ]	20.611kgm <sup>2</sup>	20.068kgm <sup>2</sup>
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			
<b>50</b> 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)		871	917	917	834	950	1000	1000	910	980	1030	1030	938	1000	1050	1050	955
有功功率 (kW)		697	734	734	667	760	800	800	728	784	824	824	750	800	840	840	764
效率 (%)		94.5	94.5	94.6	95.0	94.2	94.2	94.4	94.8	94.1	94.1	94.3	94.8	94.0	94.0	94.2	94.7
有功功率输入		737	776	775	702	807	849	847	768	833	876	874	792	851	894	892	807
<b>60</b> 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)		990	1049	1097	1146	1083	1145	1197	1250	1118	1180	1236	1290	1130	1195	1250	1305
有功功率 (kW)		792	839	878	917	866	916	958	1000	894	944	989	1032	904	956	1000	1044
效率 (%)		94.3	94.4	94.5	94.5	94.1	94.2	94.2	94.3	93.9	94.0	94.1	94.2	93.9	94.0	94.1	94.1
有功功率输入		840	889	929	970	921	972	1017	1060	953	1004	1051	1096	963	1017	1063	1109

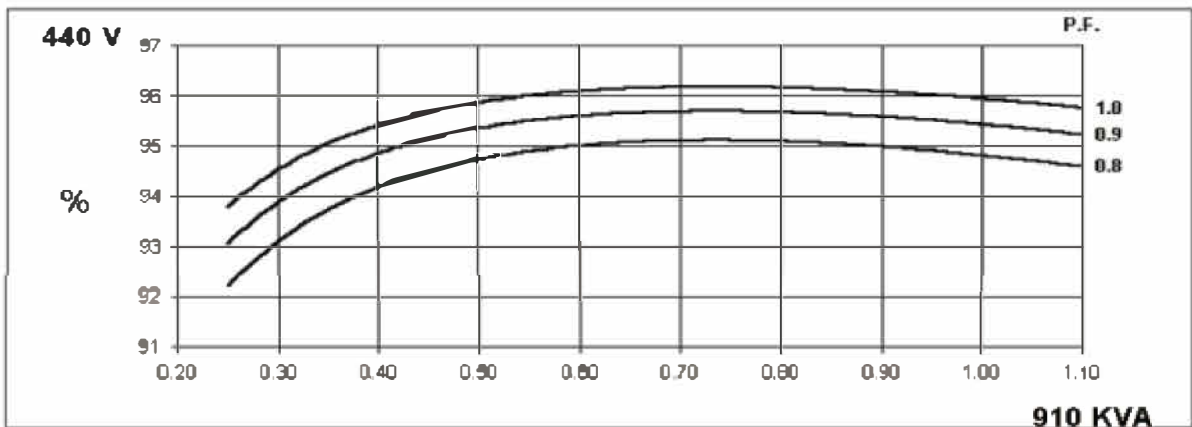
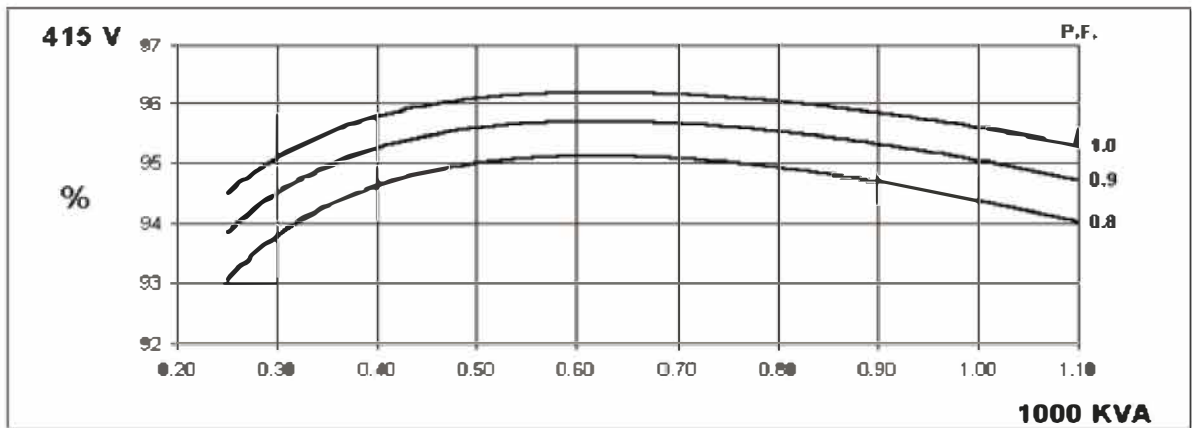
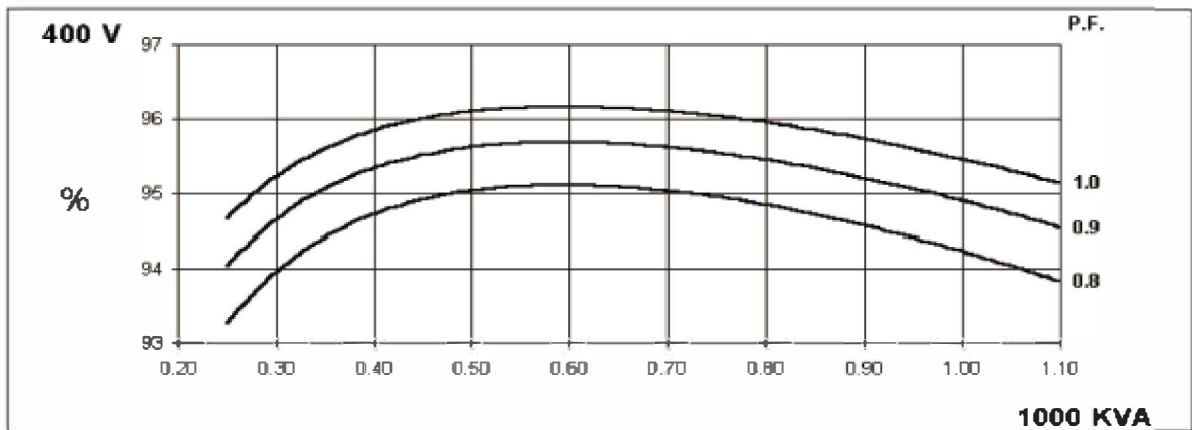
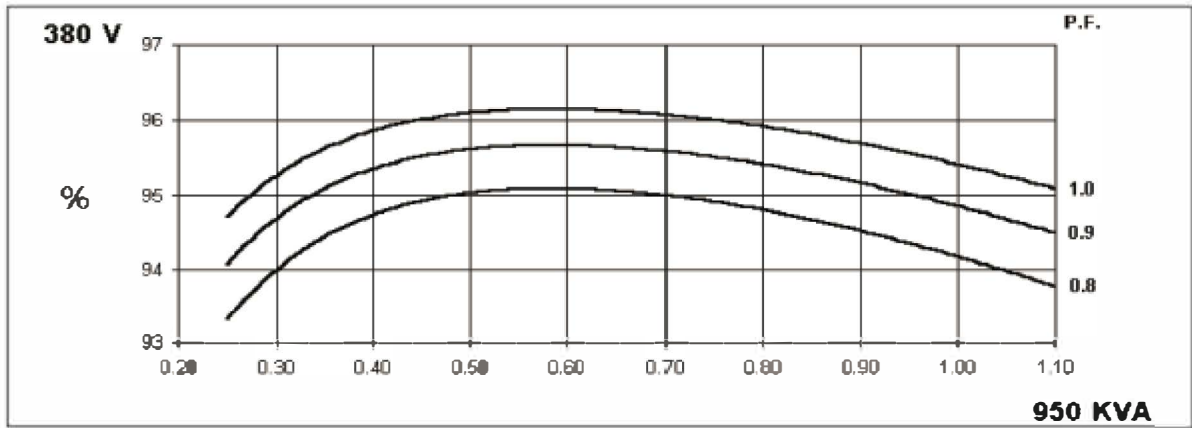
## DIMENSIONS



**50  
Hz**

**Winding 312**

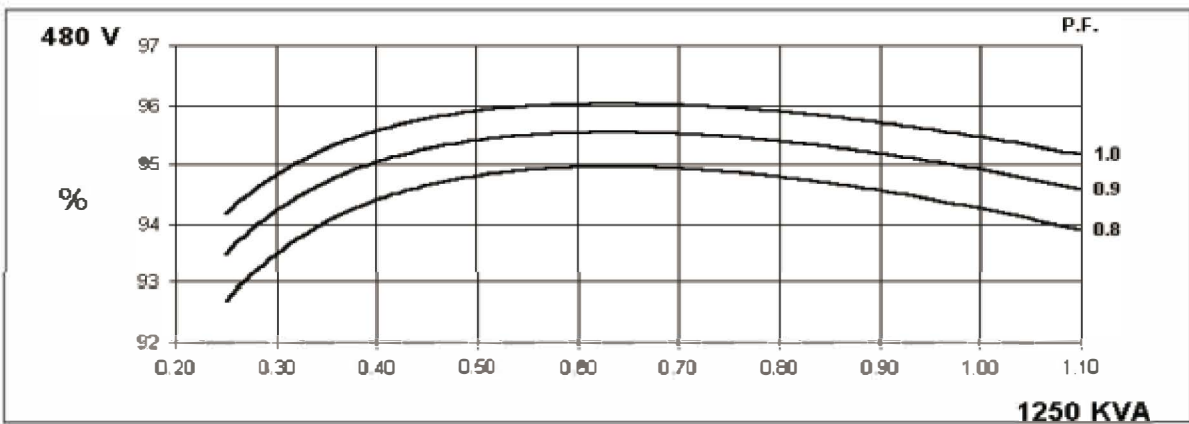
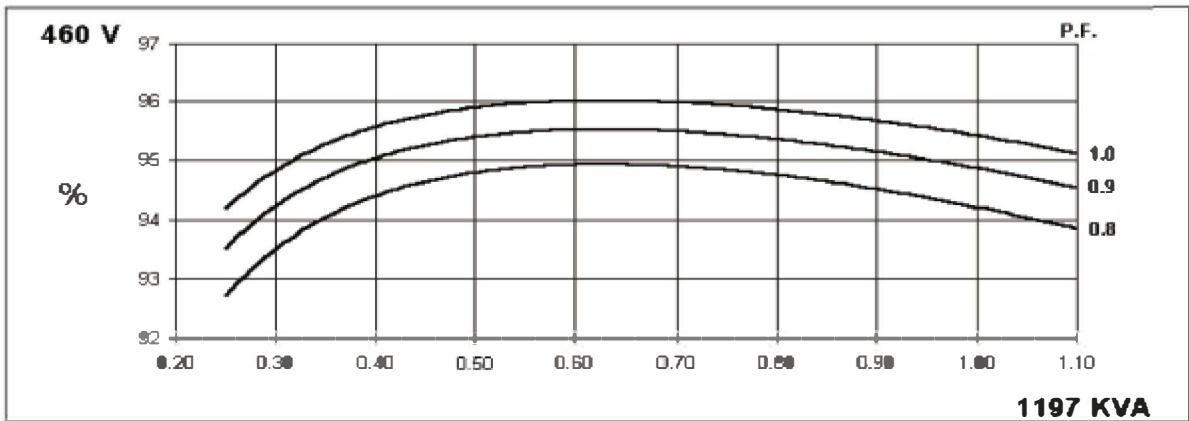
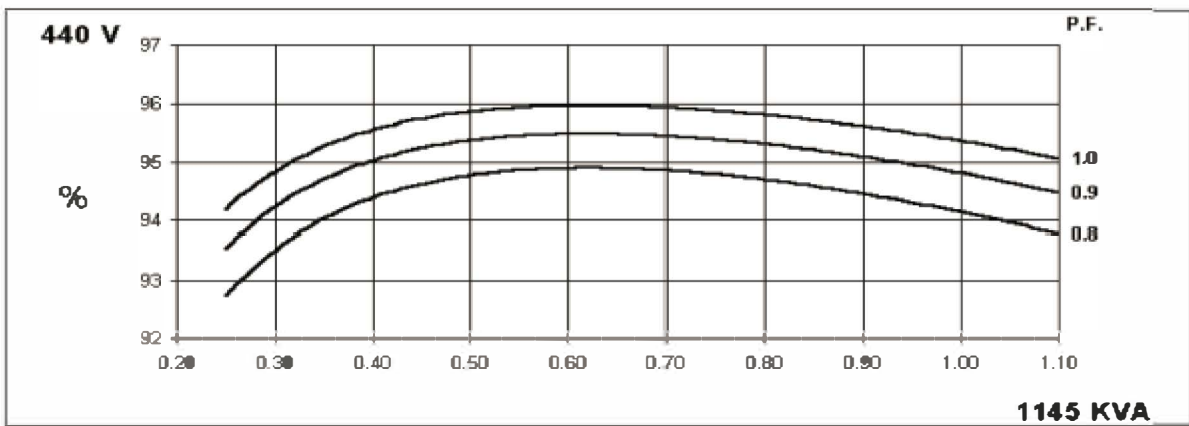
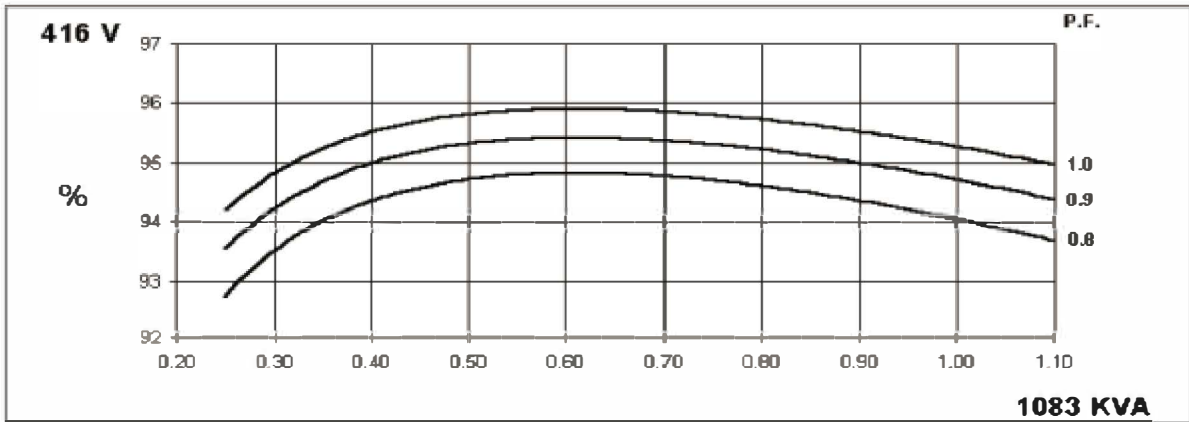
**THREE PHASE EFFICIENCY CURVES**



**60  
Hz**

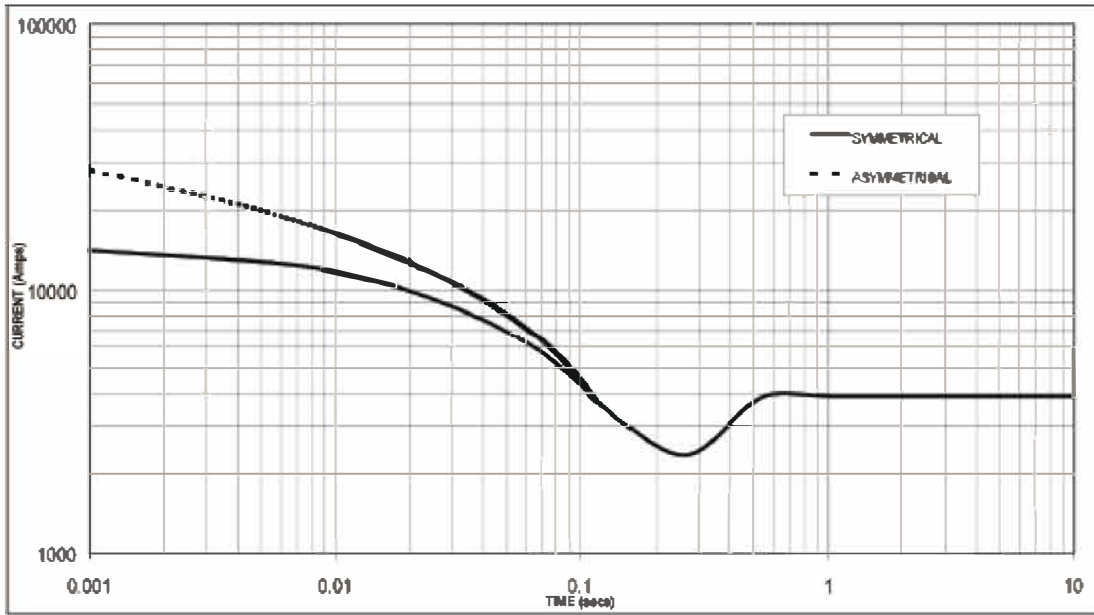
**Winding 312**

**THREE PHASE EFFICIENCY CURVES**



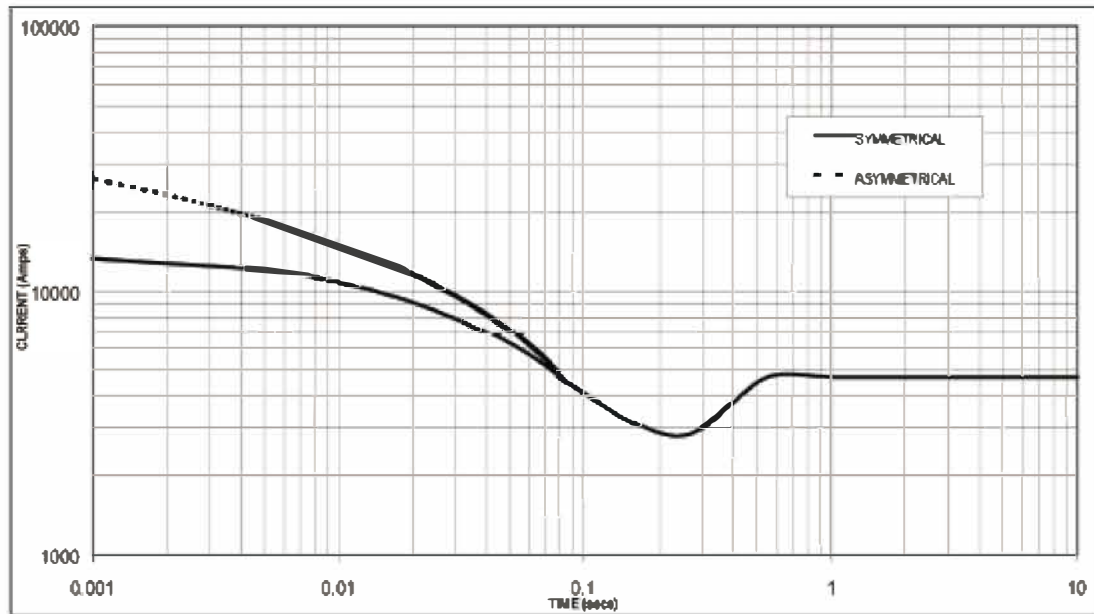
**Three-phase Short Circuit Decrement Curve. No-load Excitation at Rated Speed  
Based on star (wye) connection.**

**50  
Hz**



**60  
Hz**

Sustained Short Circuit = 3900 Amps



Sustained Short Circuit = 4660 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**

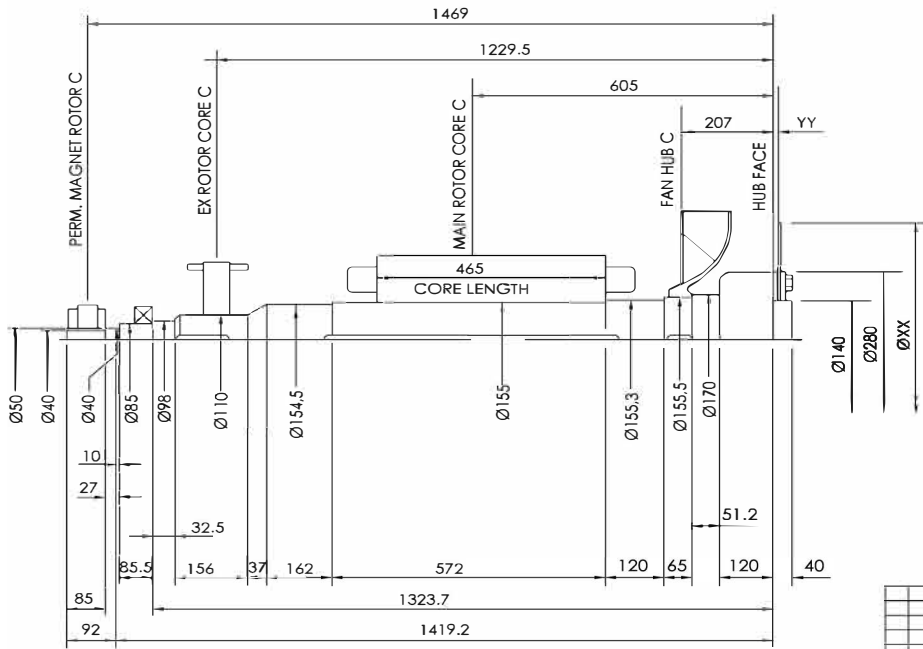
The following multiplication factor should be used to convert the values calculated in accordance with NOTE 1 to those applicable to the various types of short circuit :

	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 <sup>2</sup>
EX. ROTOR	51.6	0.859
MAIN ROTOR	580.095	18.0228
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	884.706	20.611

COUPLING SAE No	COUPLING DIMEN's		COUPLING ASSEMBLY WEIGHT kg	COUPLING DISC J kgm <sup>2</sup>
	XX	YY		
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

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

