



TA450-1500N

THREE-PHASE SYNCHRONOUS ALTERNATOR

CONT 1900 kVA

50 Hz / 60 Hz

Rated output at 400 V / 50 Hz, Class H (125/40 °C) continuous

THREE-PHASE SYNCHRONOUS GENERATOR

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

Ambient Temperature环境温度	40 ℃	Method of Cooling 冷却方式		Air cooling风冷	
Temperature Rise 温升	125 ℃	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	6250A				

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	1840	1900	1900	1865	2070	2210	2255	2300
额定功率在H(125 ℃)温升	kW	1472	1520	1520	1492	1656	1768	1804	1840
Efficiency at Class H (P.F.=0.8)绝缘等级H (P.F.=0.8)效率	4/4%	95.7	95.8	96	96.1	95.7	95.8	95.9	95.9
	3/4%	96.4	96.5	96.6	96.6	96.2	96.3	96.4	96.4
	2/4%	96.3	96.4	96.4	96.3	96	96.1	96.1	96.2
Efficiency at Class H (P.F.=1.0)绝缘等级H (P.F.=1.0)效率	4/4%	96.7	96.7	96.8	97	96.6	96.6	96.7	96.8
	3/4%	97.2	97.3	97.4	97.4	97	97.1	97.1	97.3
	2/4%	97.2	97.2	97.2	97.2	96.8	96.9	96.9	96.9

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	3.18	2.96	2.75	2.4	3.84	3.67	3.42	3.21
Direct axis transient reactance saturated 直轴瞬态电抗	X'd	0.19	0.18	0.17	0.15	0.23	0.22	0.21	0.19
Direct axis subtransient reactance saturated 直轴瞬变电抗	X''d	0.14	0.13	0.12	0.11	0.17	0.16	0.15	0.14
Quadrature axis synchronous reactance unsaturated 交轴同步电抗	Xq	2.04	1.9	1.76	1.54	2.47	2.36	2.2	2.06
Quadrature axis subtransient reactance saturated 交轴起始瞬态电抗	X''q	0.29	0.27	0.25	0.22	0.35	0.33	0.31	0.29
Leakage reactance漏抗	X1	0.04	0.03	0.03	0.03	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	0.15	0.24	0.23	0.22	0.2
Zero sequence reactance unsaturated 零序电抗不饱和	X0	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03
Short-circuit ratio 短路比	Kcc	0.3145	0.3378	0.3636	0.4167	0.2604	0.2725	0.2924	0.3115

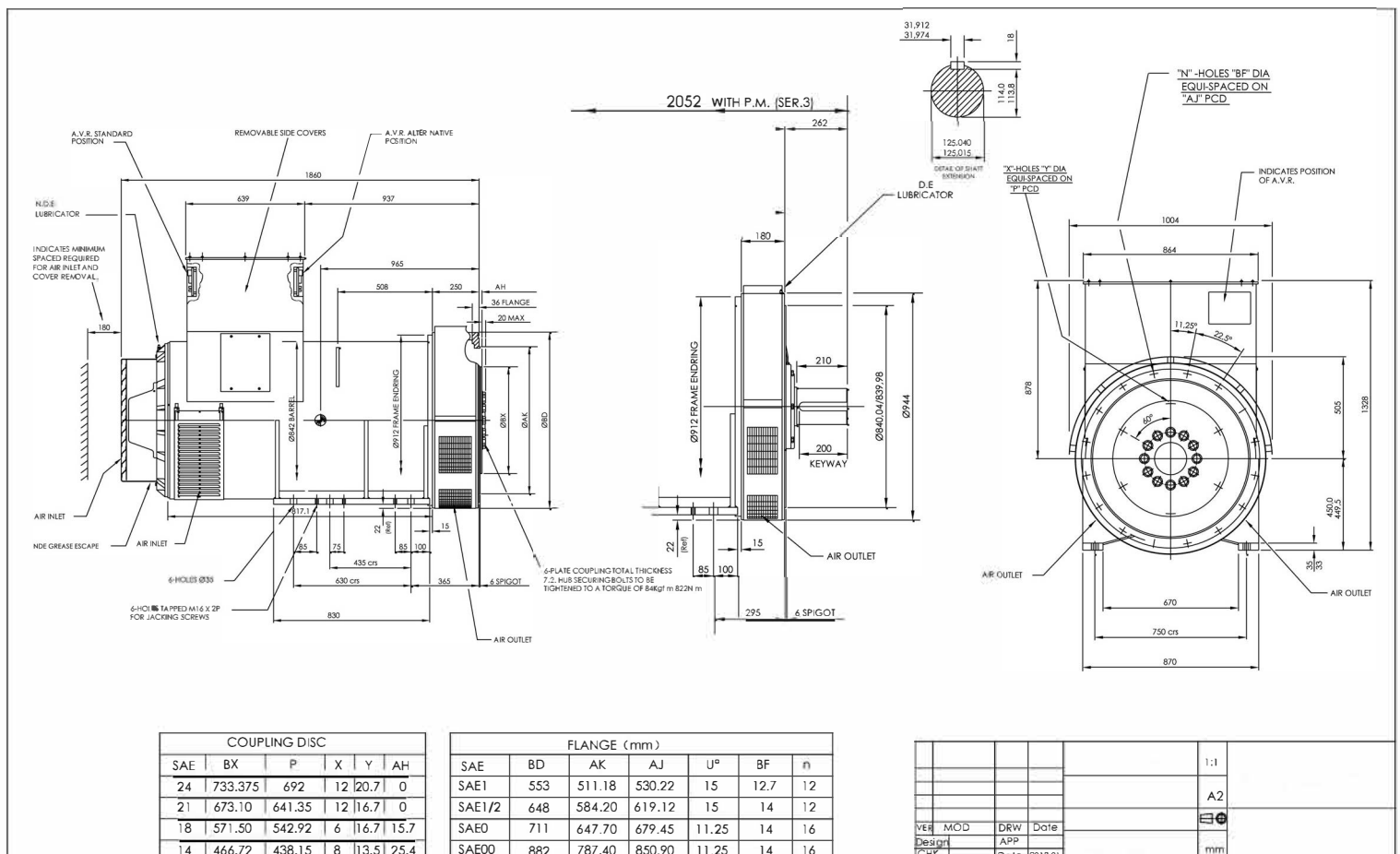
Short-circuit transient time constant (sec.)瞬变时间常数（秒）	T'd	0.149							
Subtransient time constant (sec.) 超瞬变时间常数（秒。）	T''d	0.02							
Open circuit time constant (sec.)开路时间常数	T'do	2.46							
Armature time constant (sec.)电枢时间常数	Ta	0.02							
Stator Winding Resistance (20℃)定子绕组电阻(20℃)	ohm	0.00093							
Rotor Winding Resistance (20℃)转子绕组电阻(20℃)	ohm	1.65							
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)	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	3585					3510			
Weight wound stator - kgs 定子重量-公斤	1741					1741			
Weight wound rotor - kgs 转子重量-公斤	1487					1423			
Inertia (J) [kgm2] 转动惯量（J）[kgm2)	45.49kgm2					44.48kgm2			
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）	215X101X159					225X101X159			

RATINGS

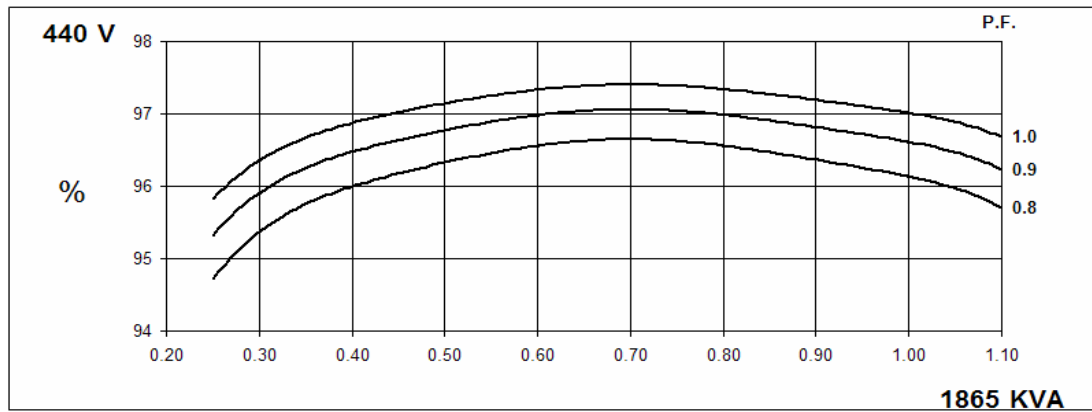
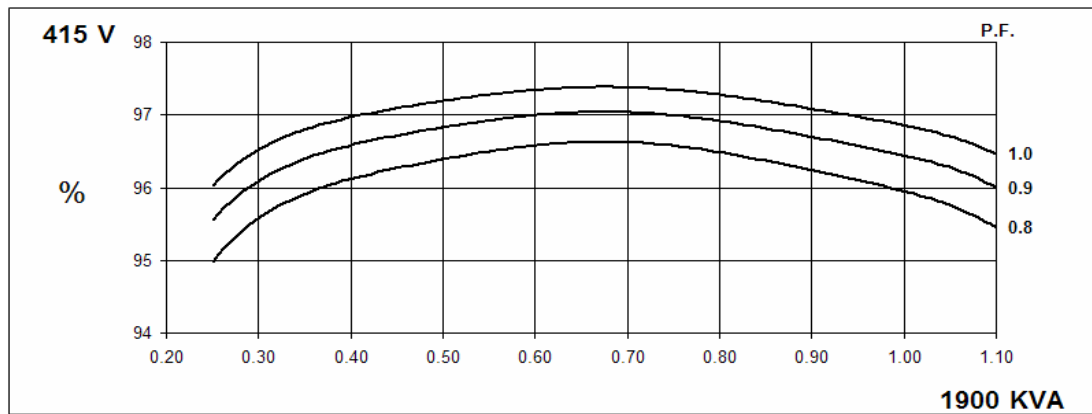
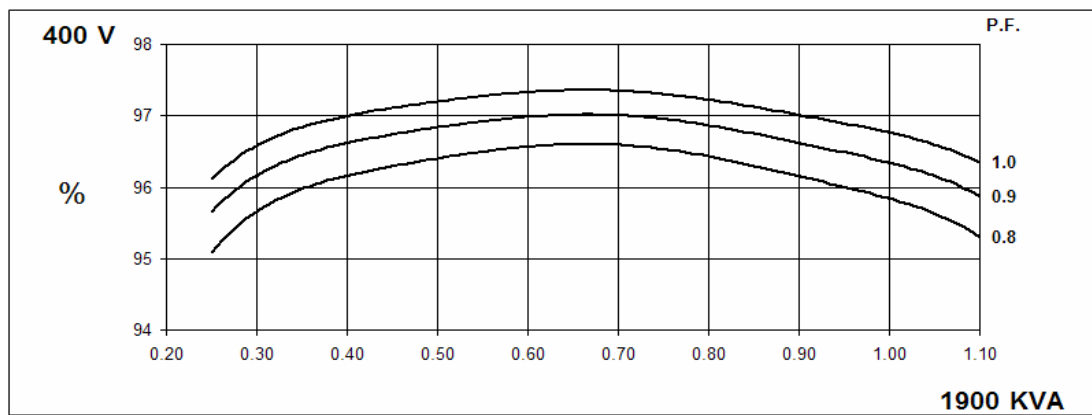
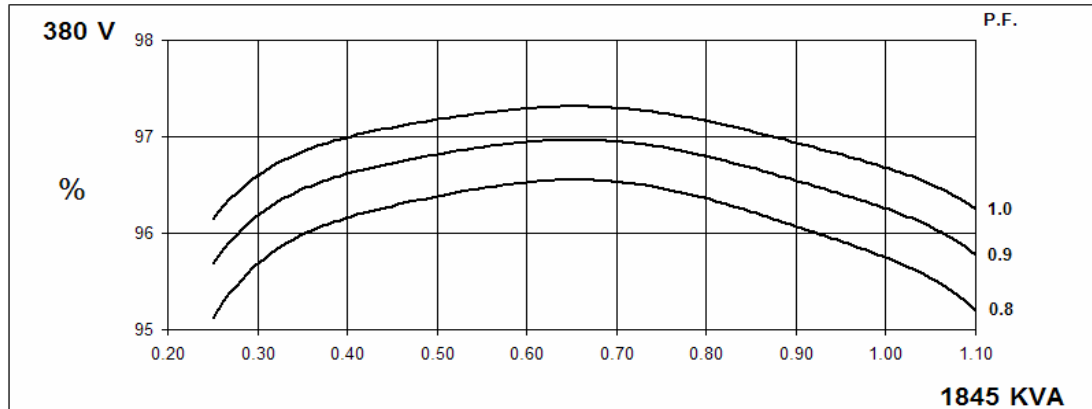
60Hz	Star (V)	416	440	460	480	416	440	460	480	416	440	460	480	416	440	460	480
	kVA	1935	2055	2100	2140	2070	2210	2255	2300	2155	2300	2345	2395	2215	2365	2415	2465
	kW	1548	1644	1680	1712	1656	1768	1804	1840	1724	1840	1876	1916	1772	1892	1932	1972
	Efficiency (%)	95.8	95.9	96.0	96.1	95.7	95.8	95.9	95.9	95.6	95.7	95.8	95.9	95.5	95.6	95.7	95.8
	kW Input	1616	1714	1750	1781	1730	1846	1881	1919	1803	1923	1958	1998	1855	1979	2019	2058

DIMENSIONS



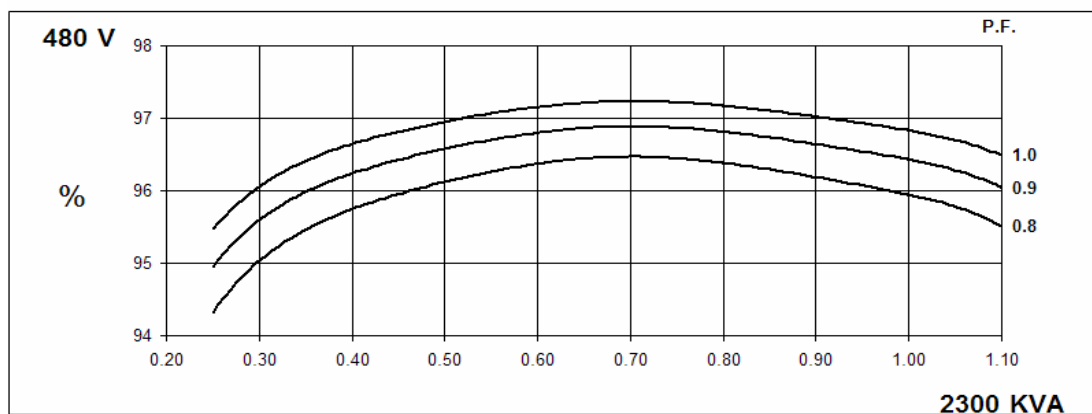
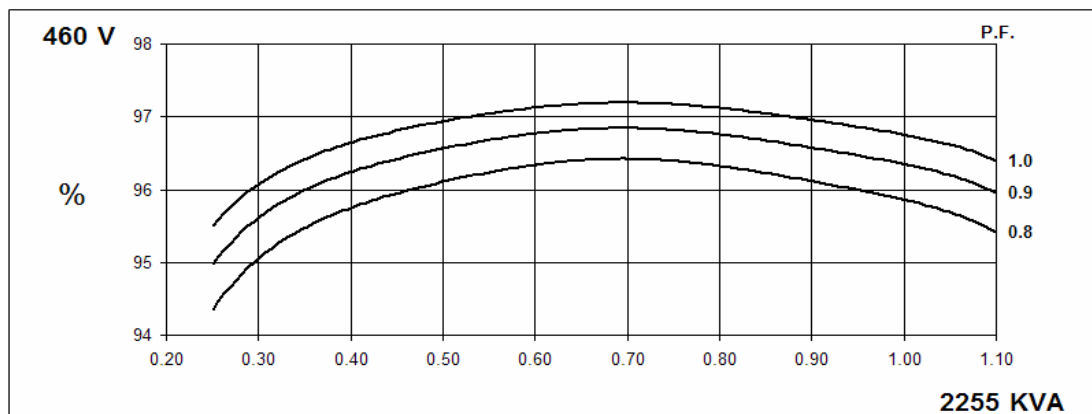
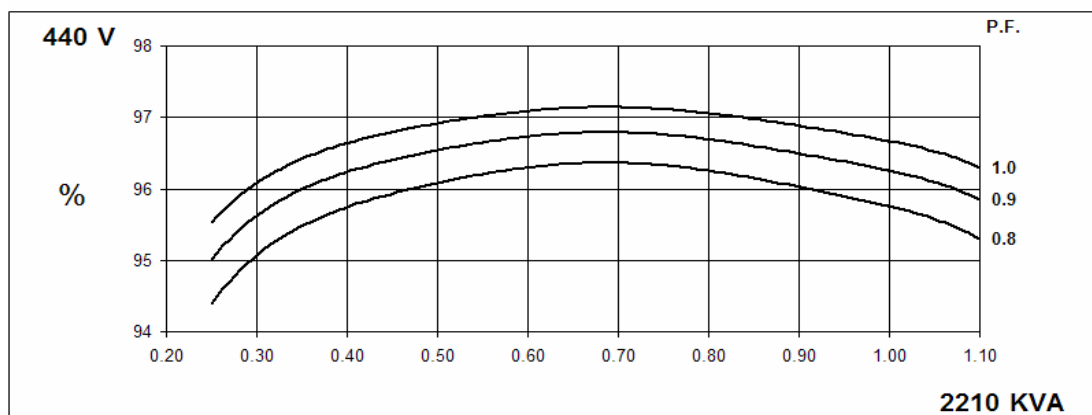
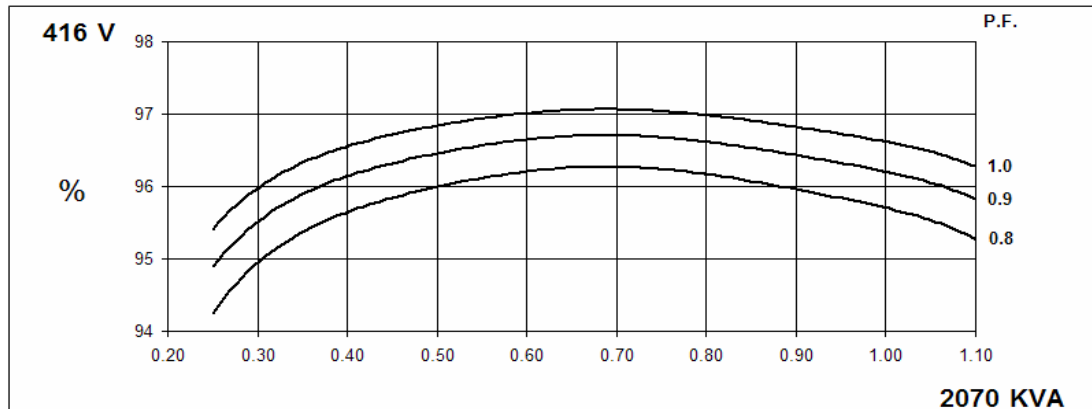
50
Hz

THREE PHASE EFFICIENCY CURVES



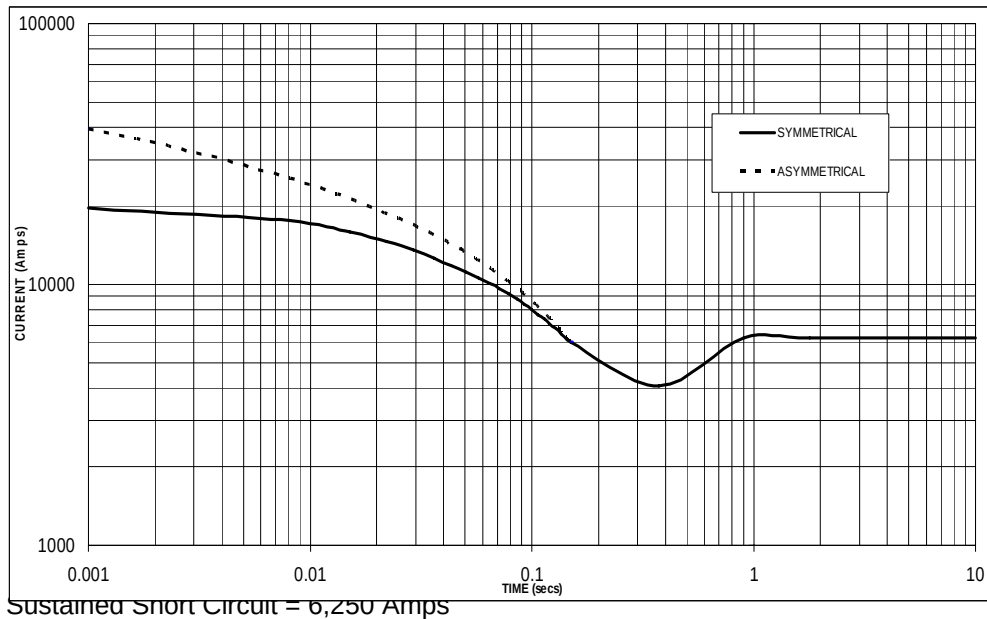
60
Hz

THREE PHASE EFFICIENCY CURVES

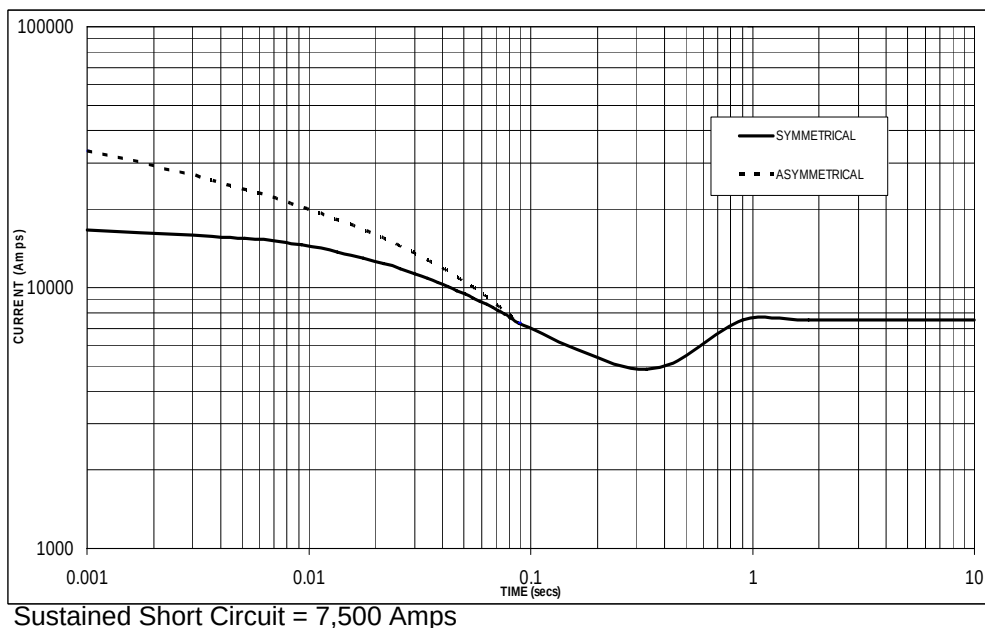


Three-phase Short Circuit Decrement Curve. No-load Excitation at Rated Speed Based on star (wye) connection.

50
Hz



60
Hz



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

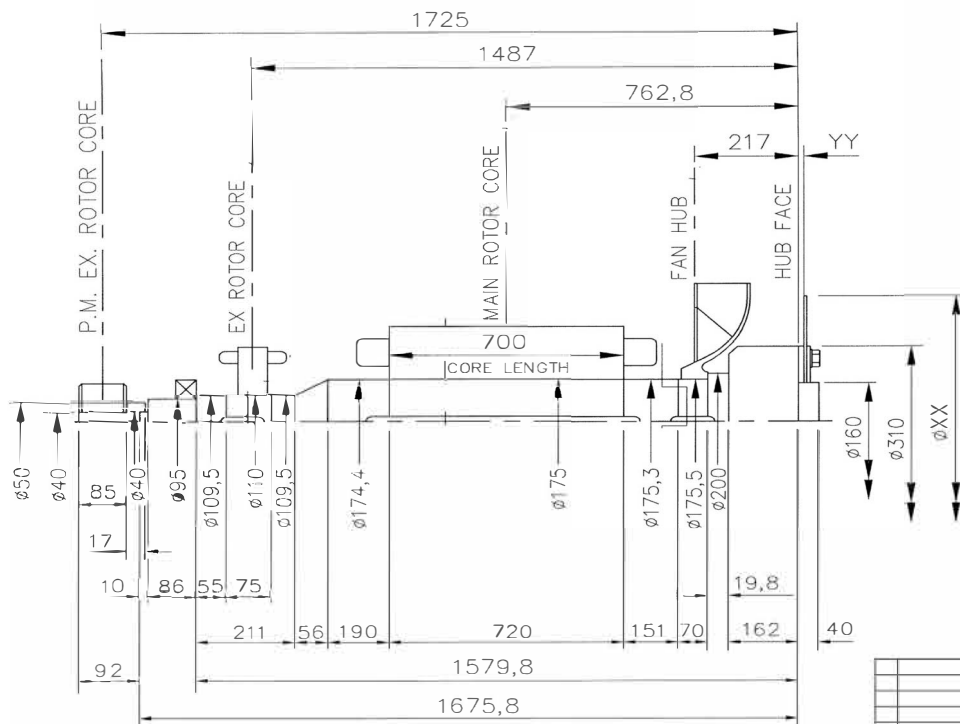
The following multiplication factor should be used to convert the values calculated in accordance with NOTE 1 to those applicable to the various types of short circuit :

	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	WR ² kgm ²
EX. ROTOR	51,600	0,8590
MAIN ROTOR	1056,084	41,0301
FAN	28,800	1,6520
SHAFT	288,406	1,0724
HUB	53,533	0,8846
P.MAG. ROTOR	6,970	0,0190
STUB SHAFT	0,929	0,0003
TOTAL	1486,322	45,5174

COUPLING SAE No	COUPLING DIMEN's		COUPLING ASSEMBLY WEIGHT kg	COUPLING DISC WR ² kg m ²
	XX	YY		
18	572	16	24,5	0,590
21	673	00	23,1	1,135
24	733	00	26,84	1,598

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



TEREX
DIESEL

TEREX ALTERNATOR | TA450-1500N | CONT 1900 kVA (400 V / 50 Hz, Class H)

Deri OSB District, Tanen Street, Deri OSB Site No. 8, Tuzla, Istanbul
+90 216 634 34 06 | info@terexdiesel.com | www.terexdiesel.com