



ALTERNATOR E1X13S A/2

three-phase brushless synchronous alternator with AVR - 2 poles

Technical Data Sheet

E1X13S A/2

COMMON DATA

Rated Power at 50Hz	kVA	8	
Rated Power at 60Hz	kVA	10	
Rated Power Factor		0.8	
Nominal Temperature	°C	40	
Control System		self excited	
Execution		brushless	
Regulation Type		AVR	
Insulation Class		H	
Protection		IP21	
Maximum Overspeed	rpm	4500	
Overload		110% of rated power for one hour in a cycle of 6 hours	
Air Flow Requirement	m ³ /min	8.5 at 50Hz	10.2 at 60Hz
R.F.I. Suppression		Standard EN55011	

REGULATION DATA

AVR	HVR11	HVR30
Sensing	single-phase	three-phase
Voltage Regulation	±1%	±1%
Sustained Short Circuit	> 300% of rated current	

WINDING DATA

Stator Winding	Double layer with auxiliary winding	
Rotor Winding	with damping cage	
Winding Pitch	2/3	
Number of Leads of Stator	12	
Stator Winding Resistance	1.53 at 20°C	
Rotor Winding Resistance	8.56 at 20°C	
Exciter Stator Resistance	16.5 at 20°C	
Exciter Rotor Resistance	2.15 at 20°C	
THD at full load	<3%	
THD at no load	<3%	
Excitation at no load	A _{dc}	0.19
Excitation at full load	A _{dc}	1.03

STANDARD

References	EN60034-1 ISO8528-3 EN55011
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ELECTRICAL DATA

Frequency		50Hz - 3000rpm				60Hz - 3600rpm			
Voltage Series Star	V	380/220	400/230	415/240	440/254	415/240	440/254	460/266	480/277
Rated Power in Class H (125°C/40°C)	kVA	8	8	8	6.5	9	10	10	10
	kW	6.4	6.4	6.4	5.2	7.2	8	8	8
Rated Power in Class F (105°C/40°C)	kVA	7.5	7.5	7.5	6	8.2	9.2	9.2	9.2
	kW	6	6	6	4.8	6.56	7.36	7.36	7.36
Rated Power Standby (150°C/40°C)	kVA	8.8	8.8	8.8	7	9.8	11	11	11
	kW	7.04	7.04	7.04	5.6	7.84	8.8	8.8	8.8
Rated Power Standby (163°C/27°C)	kVA	9.1	9.1	9	7.3	10.2	11.4	11.4	11.4
	kW	7.28	7.28	7.2	5.84	8.16	9.12	9.12	9.12

EFFICIENCY IN CL. H

4/4		80.2%						80.6%
3/4		80.4%						80.7%
2/4		77.0%						77.4%
1/4		73.0%						73.4%

REACTANCES AND TIME CONSTANTS

pcc		0.44							
X _d - dir. axis synchronous		410%	370%	344%	248%	445%	440%	403%	370%
X' _d - dir. axis transient		35.5%	32.0%	29.7%	21.5%	38.5%	38.1%	34.8%	32.0%
X'' _d - dir. axis subtransient		14.4%	13.0%	12.1%	8.7%	15.7%	15.5%	14.2%	13.0%
X _q - quad. axis reactance		244%	220%	204%	148%	265%	262%	240%	220%
T' _{do} - O.C. field time constant		310ms							
T' _d - Transient time constant		27ms							
T'' _d - Sub-transient time constant		7.5ms							

MECHANICAL DATA

Bearing non drive end				6305-2Z-C3
Bearing drive end (B3/B14 form)				6208-2Z-C3
Weight of generator	in B2	kg		60.7
	in B3/B14	kg		56.6
	in B3/B9	kg		\

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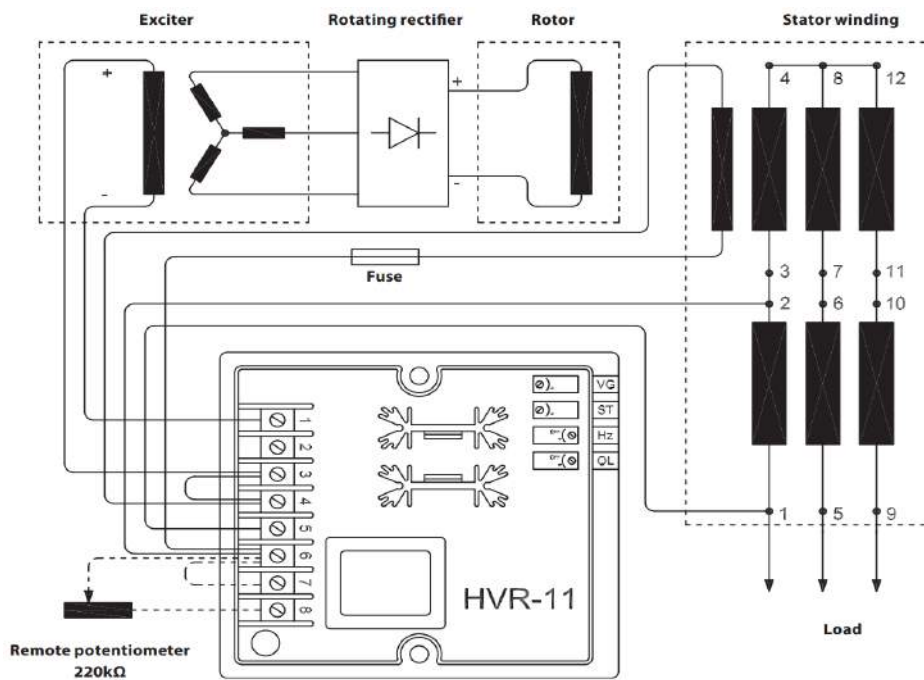
MOMENT OF INERZIA

B3/B9	kg·m ²	\
SAE 7½	kg·m ²	0.055
B2	kg·m ²	0.057

POWER VARIATION ACCORDING TO TEMPERATURE AND ALTITUDE

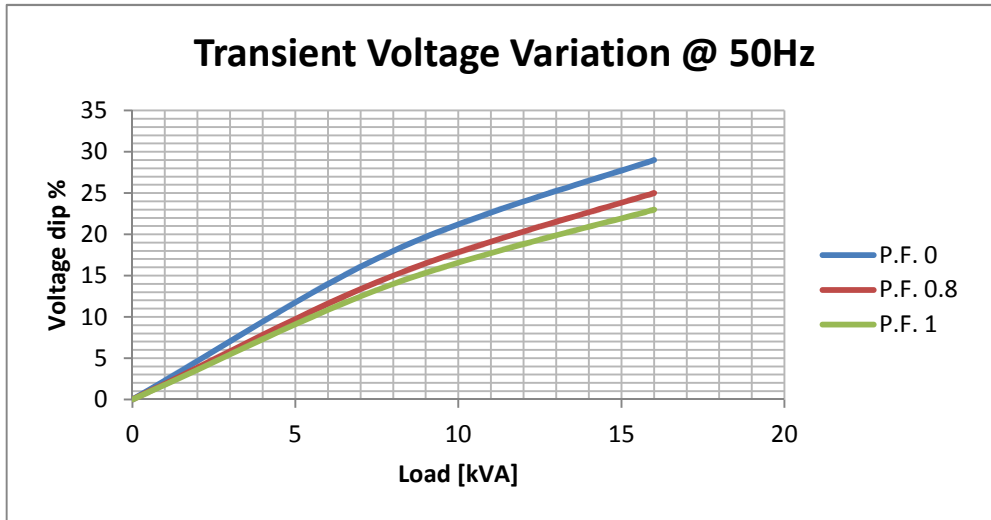
Altitude	Ambient temperature				
	25°C	40°C	45°C	50°C	55°C
< 1000m	1.09	1	0.96	0.93	0.91
1000m - 1500m	1.01	0.96	0.92	0.89	0.87
1500m - 2000m	0.96	0.91	0.87	0.84	0.83
2000m - 3000m	0.9	0.85	0.81	0.78	0.76

WIRING DIAGRAM

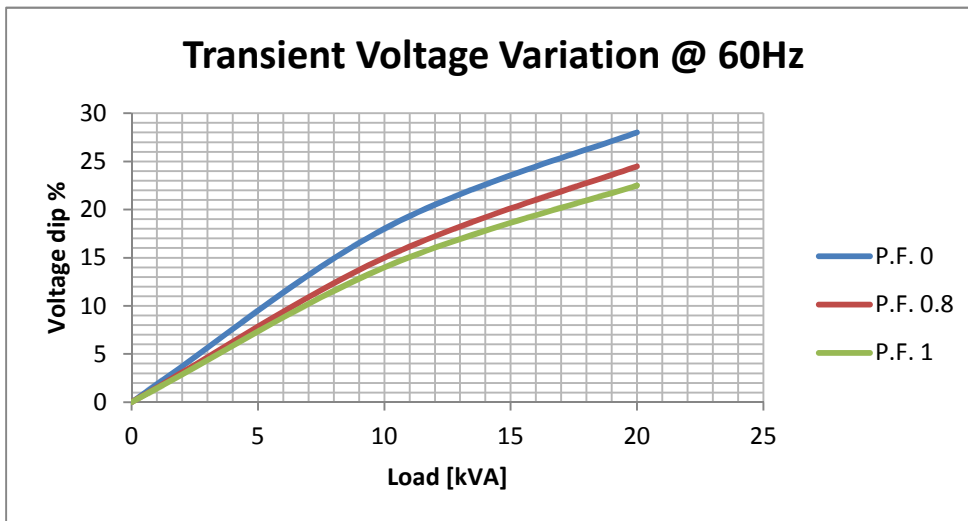


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TRANSIENT VOLTAGE VARIATION 50Hz

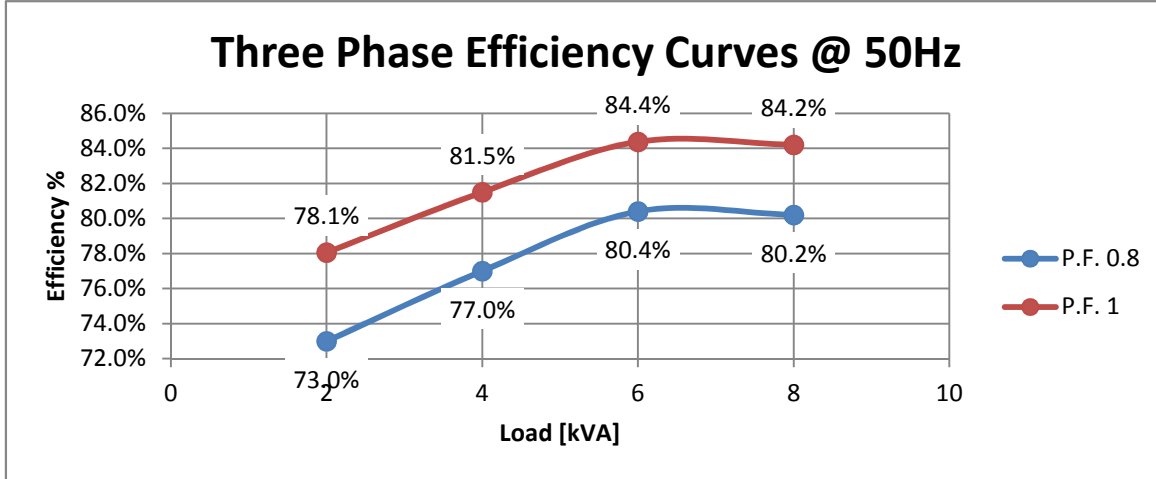


TRANSIENT VOLTAGE VARIATION 60Hz

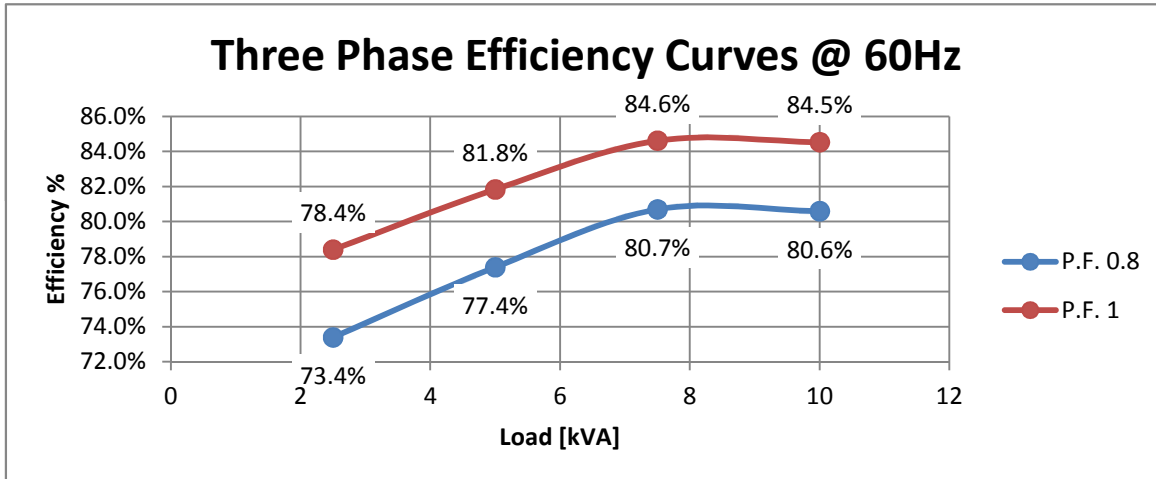


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EFFICIENCY 50Hz



EFFICIENCY 60Hz



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