



ALTERNATOR E1X13S C/4

three-phase brushless synchronous alternator with AVR - 4 poles

Technical Data Sheet

E1X13S C/4

COMMON DATA

Rated Power at 50Hz	kVA	10
Rated Power at 60Hz	kVA	12
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	2250
Overload		110% of rated power for one hour in a cycle of 6 hours
Air Flow Requirement	m ³ /min	4.5 at 50Hz 5.4 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	1.35 at 20°C	
Rotor Winding Resistance	7.22 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}	0.54
Excitation at full load	A _{dc}	1.51

STANDARD

References	EN60034-1 ISO8528-3 EN55011
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ELECTRICAL DATA

Frequency		50Hz - 1500rpm				60Hz - 1800rpm			
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	10	10	10	9	10.8	11.5	12	12
	kW	8	8	8	7.2	8.64	9.2	9.6	9.6
Rated Power in Class F (105°C/40°C)	kVA	9.2	9.2	9.2	8	10	10.5	11	11
	kW	7.36	7.36	7.36	6.4	8	8.4	8.8	8.8
Rated Power Standby (150°C/40°C)	kVA	11	11	11	8.8	11.5	12.5	13	13
	kW	8.8	8.8	8.8	7.04	9.2	10	10.4	10.4
Rated Power Standby (163°C/27°C)	kVA	11.4	11.4	11.4	9	12	13	13.5	13.5
	kW	9.12	9.12	9.12	7.2	9.6	10.4	10.8	10.8

EFFICIENCY IN CL. H

4/4		84.4%						84.6%
3/4		84.5%						85.0%
2/4		81.2%						81.4%
1/4		77.0%						78.0%

REACTANCES AND TIME CONSTANTS

pcc		0.81						
X _d - dir. axis synchronous	244%	220%	204%	164%	265%	251%	240%	220%
X' _d - dir. axis transient	19.9%	18.0%	16.7%	13.4%	21.7%	20.5%	19.6%	18.0%
X'' _d - dir. axis subtransient	8.4%	7.6%	7.1%	5.7%	9.2%	8.7%	8.3%	7.6%
X _q - quad. axis reactance	132%	119%	111%	89%	143%	136%	130%	119%
T' _{do} - O.C. field time constant	335ms							
T' _d - Transient time constant	27ms							
T'' _d - Sub-transient time constant	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	76.5
	in B3/B14	kg	72.4
	in B3/B9	kg	\

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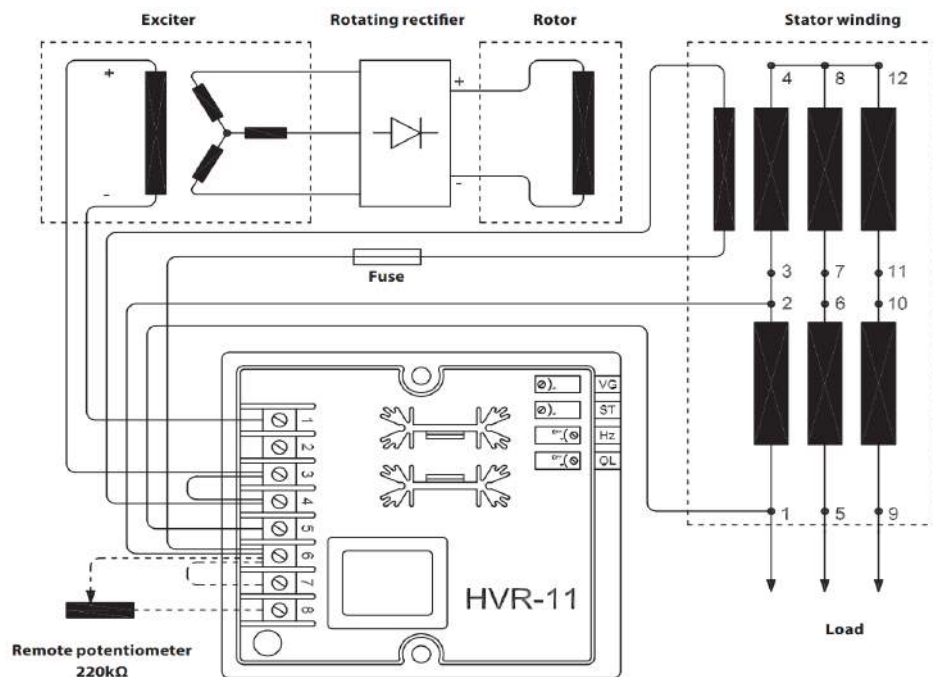
MOMENT OF INERZIA

B3/B9	kg·m ²	\
SAE 7½	kg·m ²	0.073
B2	kg·m ²	0.072

POWER VARIATION ACCORDING TO TEMPERATURE AND ALTITUDE

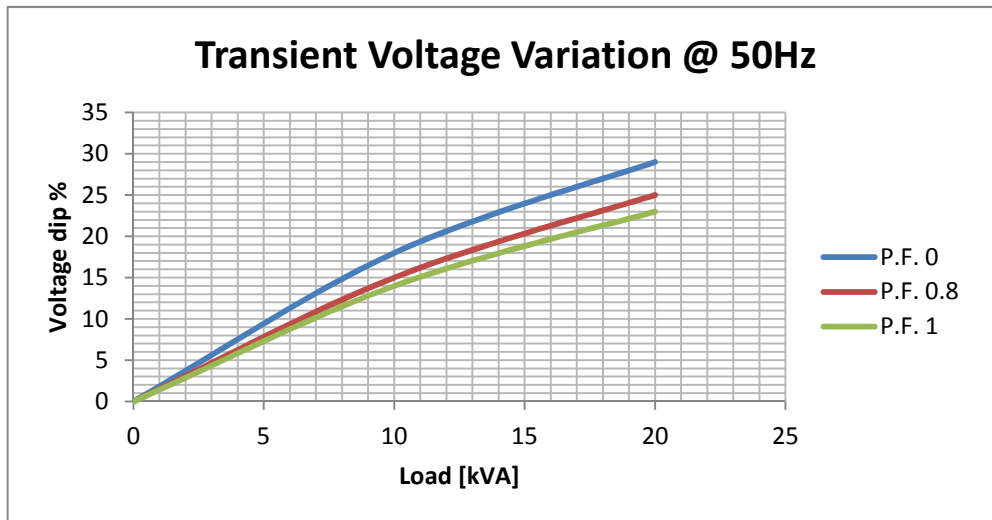
Altitude	Ambient temperature				
	25°C	40°C	45°C	50°C	55°C
< 1000m	1.09	1	0.96	0.93	0.91
1000m - 1500m	1.01	0.96	0.92	0.89	0.87
1500m - 2000m	0.96	0.91	0.87	0.84	0.83
2000m - 3000m	0.9	0.85	0.81	0.78	0.76

WIRING DIAGRAM

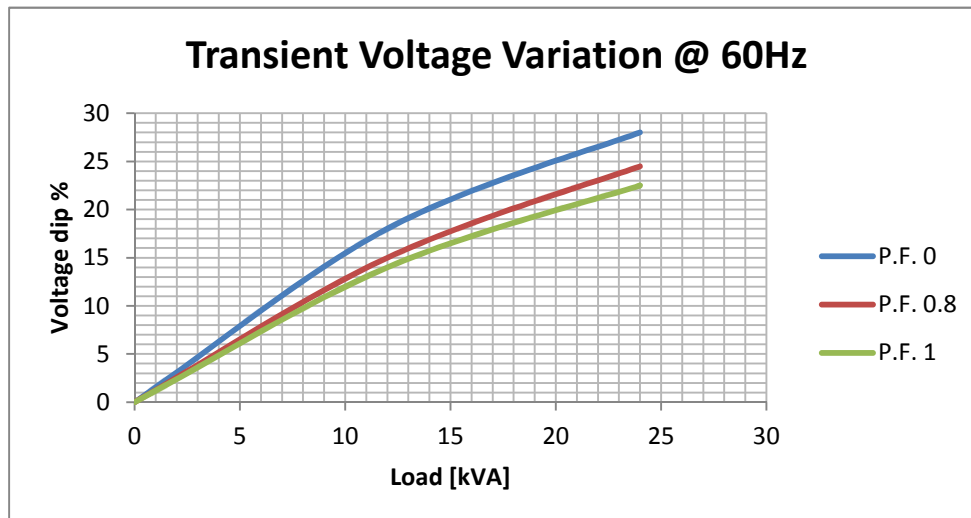


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TRANSIENT VOLTAGE VARIATION 50Hz

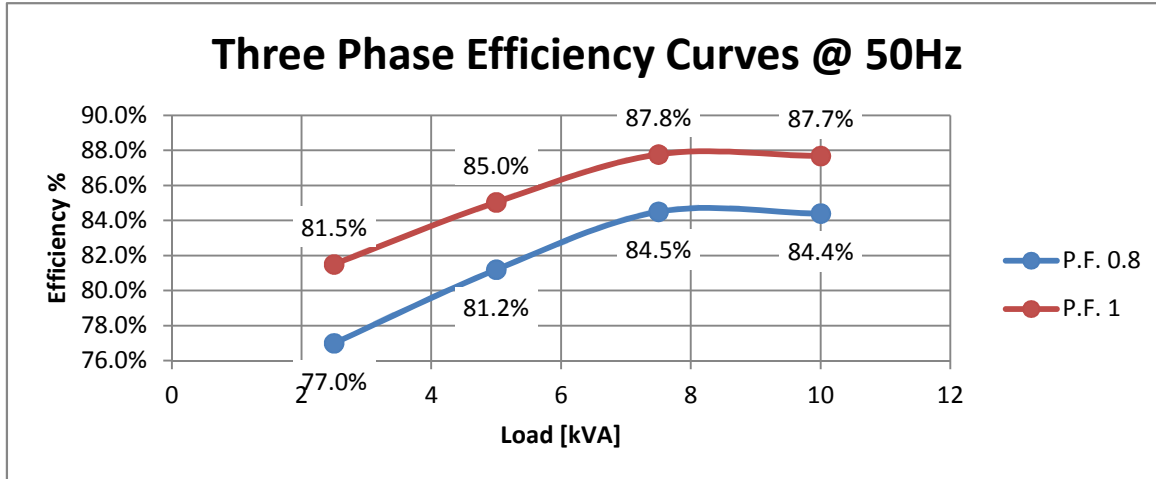


TRANSIENT VOLTAGE VARIATION 60Hz

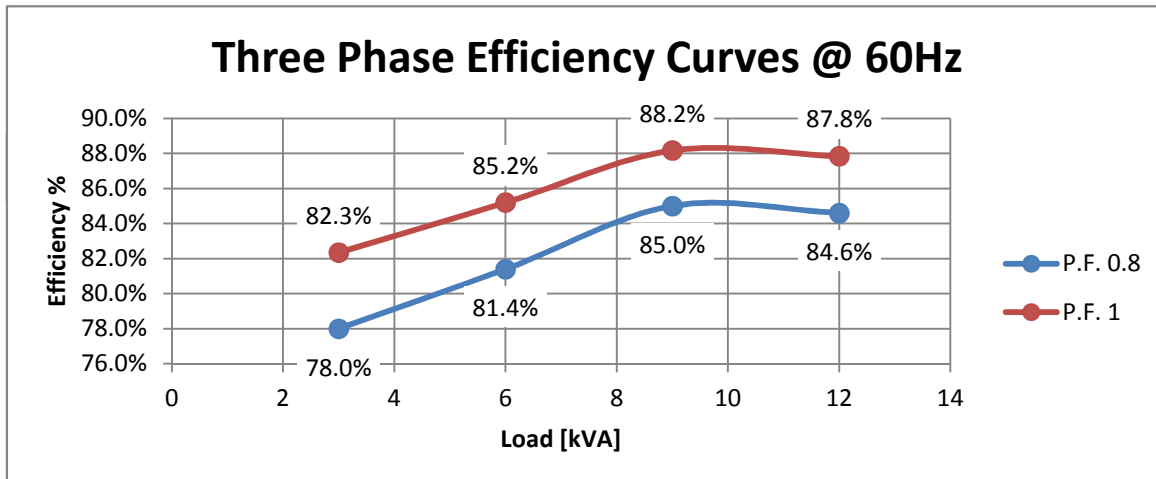


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EFFICIENCY 50Hz



EFFICIENCY 60Hz



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