



ALTERNATOR E1X13S C/2

three-phase brushless synchronous alternator with AVR - 2 poles

Technical Data Sheet

E1X13S C/2

COMMON DATA

Rated Power at 50Hz	kVA	12.5	
Rated Power at 60Hz	kVA	15	
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	8.2 at 50Hz	9.8 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	0.69 at 20°C	
Rotor Winding Resistance	9.79 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	12.5	12.5	12.5	10	13	14.5	15	15
	kW	10	10	10	8	10.4	11.6	12	12
Rated Power in Class F (105°C/40°C)	kVA	11.5	11.5	11.5	9	12	13.2	14	14
	kW	9.2	9.2	9.2	7.2	9.6	10.56	11.2	11.2
Rated Power Standby (150°C/40°C)	kVA	13.5	13.5	13.5	10.8	14	16	16.4	16.4
	kW	10.8	10.8	10.8	8.64	11.2	12.8	13.12	13.12
Rated Power Standby (163°C/27°C)	kVA	14	14	13.8	11.2	14.7	16.3	17	17
	kW	11.2	11.2	11.04	8.96	11.76	13.04	13.6	13.6

EFFICIENCY IN CL. H

4/4		83.1%						83.4%
3/4		83.3%						83.5%
2/4		80.0%						80.0%
1/4		75.6%						76.0%

REACTANCES AND TIME CONSTANTS

pcc		0.43							
X _d - dir. axis synchronous		421%	380%	353%	251%	441%	437%	414%	380%
X' _d - dir. axis transient		34.3%	31.0%	28.8%	20.5%	35.9%	35.7%	33.8%	31.0%
X'' _d - dir. axis subtransient		12.7%	11.5%	10.7%	7.6%	13.3%	13.2%	12.5%	11.5%
X _q - quad. axis reactance		260%	235%	218%	155%	272%	270%	256%	235%
T' _{do} - O.C. field time constant		360ms							
T' _d - Transient time constant		29ms							
T'' _d - Sub-transient time constant		8.5ms							

MECHANICAL DATA

Bearing non drive end				6305-2Z-C3
Bearing drive end (B3/B14 form)				6208-2Z-C3
Weight of generator	in B2	kg		73
	in B3/B14	kg		68.9
	in B3/B9	kg		\

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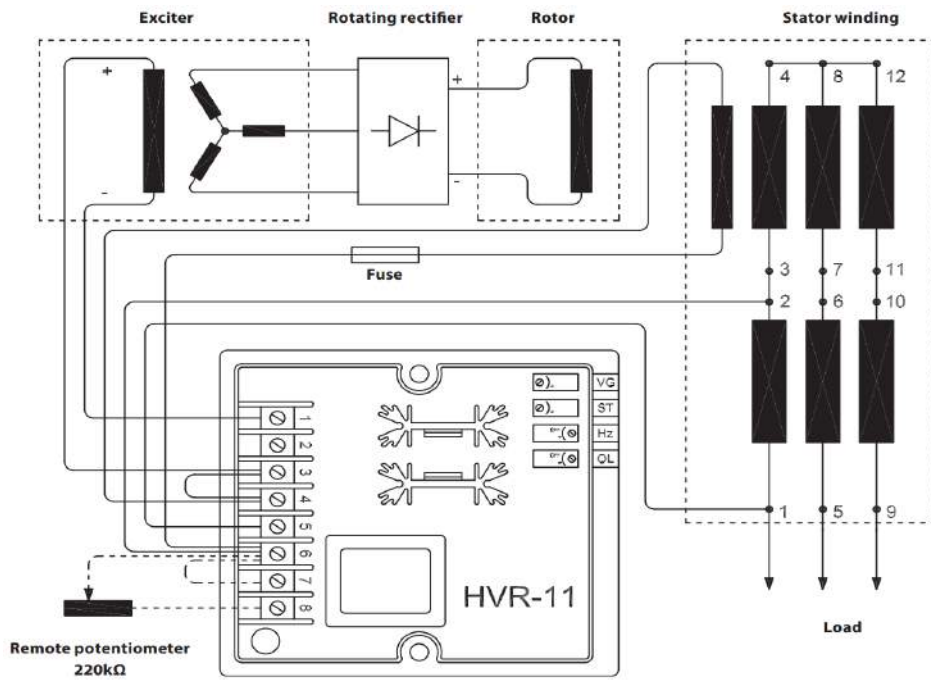
MOMENT OF INERZIA

B3/B9	kg·m ²	\
SAE 7½	kg·m ²	0.067
B2	kg·m ²	0.068

POWER VARIATION ACCORDING TO TEMPERATURE AND ALTITUDE

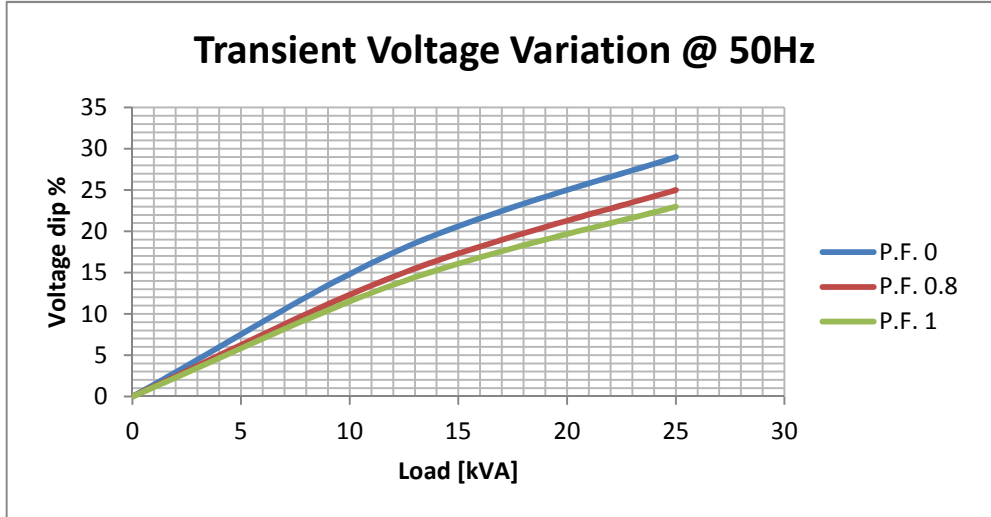
Altitude	Ambient temperature				
	25°C	40°C	45°C	50°C	55°C
< 1000m	1.09	1	0.96	0.93	0.91
1000m - 1500m	1.01	0.96	0.92	0.89	0.87
1500m - 2000m	0.96	0.91	0.87	0.84	0.83
2000m - 3000m	0.9	0.85	0.81	0.78	0.76

WIRING DIAGRAM

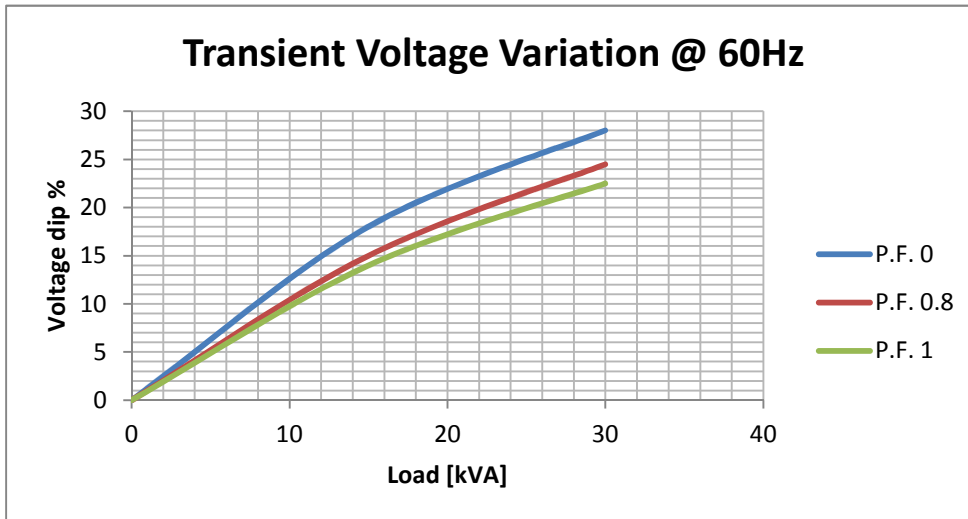


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TRANSIENT VOLTAGE VARIATION 50Hz

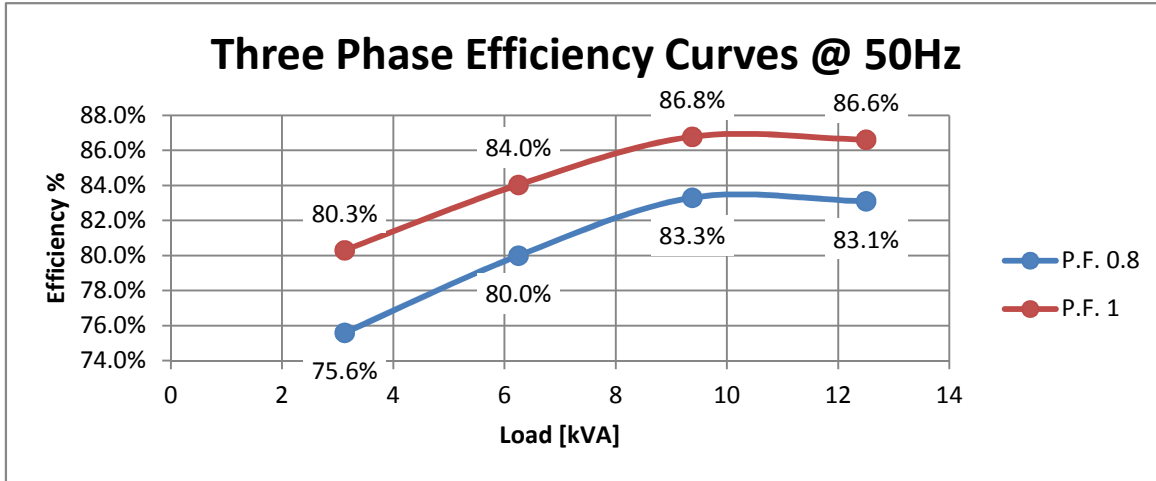


TRANSIENT VOLTAGE VARIATION 60Hz



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EFFICIENCY 50Hz



EFFICIENCY 60Hz

