



ALTERNATOR PRO22S A/4

three-phase brushless synchronous alternator with AVR - 4 poles

Technical Data Sheet

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COMMON DATA

Rated Power at 50Hz	kVA	63	
Rated Power at 60Hz	kVA	76	
Rated Power Factor		0.8	
Nominal Temperature	°C	40	
Control System		self excited	
Execution		brushless	
Regulation Type		AVR	
Insulation Class		H	
Protection		IP23	
Maximum Overspeed	rpm	2250	
Overload		110% of rated power for one hour in a cycle of 6 hours	
Air Flow Requirement	m ³ /min	18.2 at 50Hz	21.3 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	> 250% 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	0.049 at 20°C	
Rotor Winding Resistance	2.38 at 20°C	
Exciter Stator Resistance	14.3 at 20°C	
Exciter Rotor Resistance	0.47 at 20°C	
THD at full load	<3%	
THD at no load	<3%	
Excitation at no load	A _{dc}	0.8
Excitation at full load	A _{dc}	2.5

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	63	63	63	52	65	72	76	76
	kW	50.4	50.4	50.4	41.6	52	57.6	60.8	60.8
Rated Power in Class F (105°C/40°C)	kVA	59	59	58	48	61	67	70.5	70.5
	kW	47.2	47.2	46.4	38.4	48.8	53.6	56.4	56.4
Rated Power Standby (150°C/40°C)	kVA	69	69	67	55	71	78.5	83	83
	kW	55.2	55.2	53.6	44	56.8	62.8	66.4	66.4
Rated Power Standby (163°C/27°C)	kVA	71	71	69	57	73.5	81	85.5	85.5
	kW	56.8	56.8	55.2	45.6	58.8	64.8	68.4	68.4

EFFICIENCY IN CL. H

4/4		90.1%						90.4%
3/4		90.4%						90.6%
2/4		87.7%						89.3%
1/4		84.0%						87.5%

REACTANCES AND TIME CONSTANTS

pcc		0.48							
X _d - dir. axis synchronous		335%	302%	281%	206%	346%	340%	329%	302%
X' _d - dir. axis transient		21.1%	19.0%	17.7%	13.0%	21.7%	21.4%	20.7%	19.0%
X'' _d - dir. axis subtransient		10.5%	9.5%	8.8%	6.5%	10.9%	10.7%	10.3%	9.5%
X _q - quad. axis reactance		212%	191%	177%	130%	219%	215%	208%	191%
T' _{do} - O.C. field time constant		236ms							
T' _d - Transient time constant		20ms							
T'' _d - Sub-transient time constant		12ms							

MECHANICAL DATA

Bearing non drive end				6309-2RS-C3
Bearing drive end (B3/B14 form)				6314-2RS-C3
Weight of generator	in B2	kg		280
	in B3/B14	kg		291
	in B3/B9	kg		\

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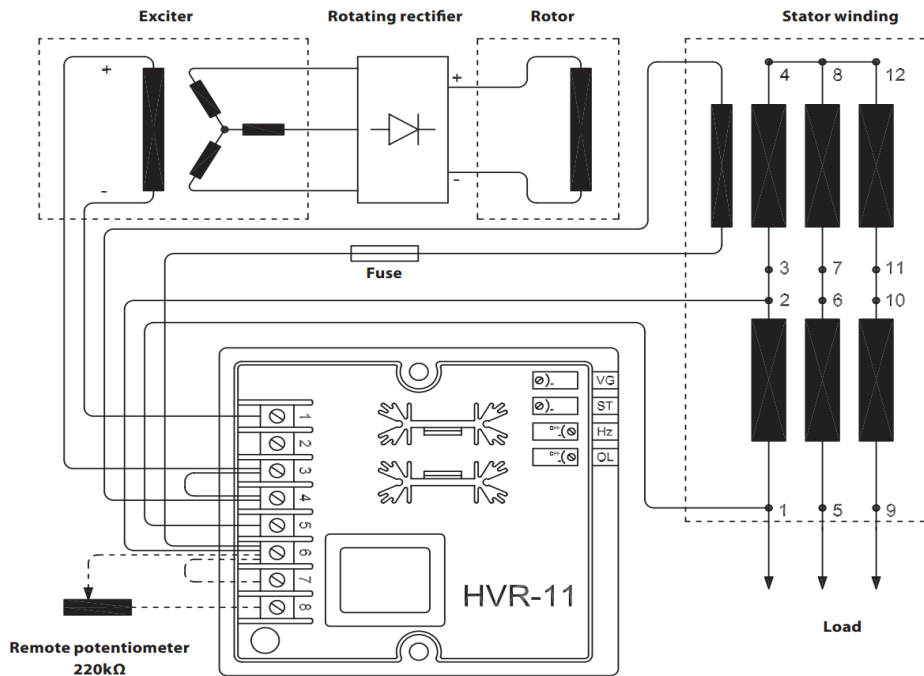
MOMENT OF INERZIA

B3/B9	kg·m ²	\
SAE 7½	kg·m ²	\
SAE 8	kg·m ²	\
SAE 10	kg·m ²	\
SAE 11½	kg·m ²	0.729
SAE 14	kg·m ²	0.878
SAE 18	kg·m ²	\
B3/B14	kg·m ²	0.652

POWER VARIATION ACCORDING TO TEMPERATURE AND ALTITUDE

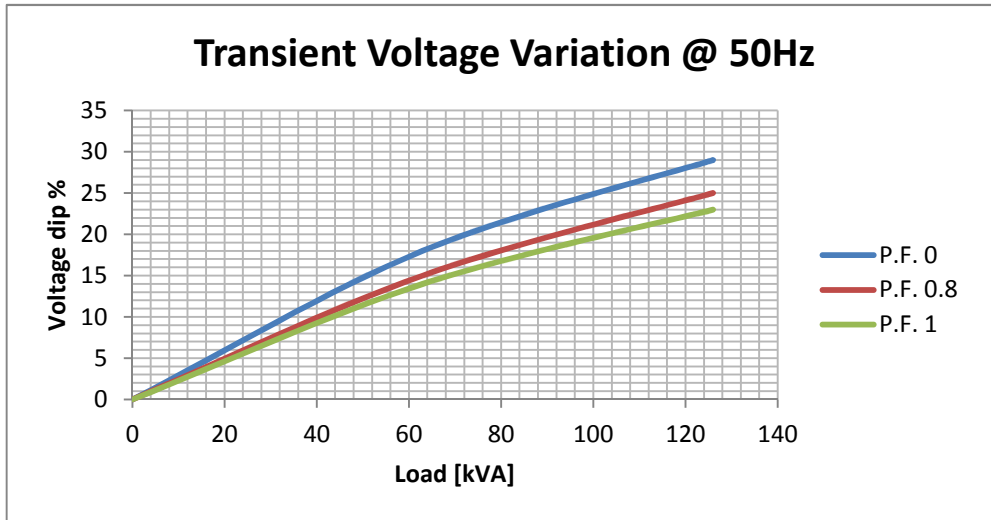
Altitude	Ambient temperature				
	25°C	40°C	45°C	50°C	55°C
< 1000m	1.09	1	0.96	0.93	0.91
1000m - 1500m	1.01	0.96	0.92	0.89	0.87
1500m - 2000m	0.96	0.91	0.87	0.84	0.83
2000m - 3000m	0.9	0.85	0.81	0.78	0.76

WIRING DIAGRAM

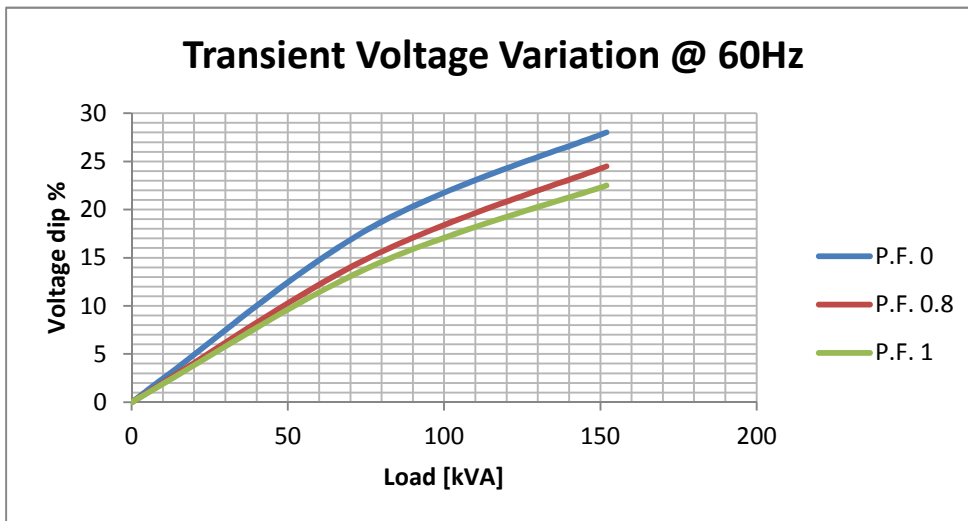


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TRANSIENT VOLTAGE VARIATION 50Hz

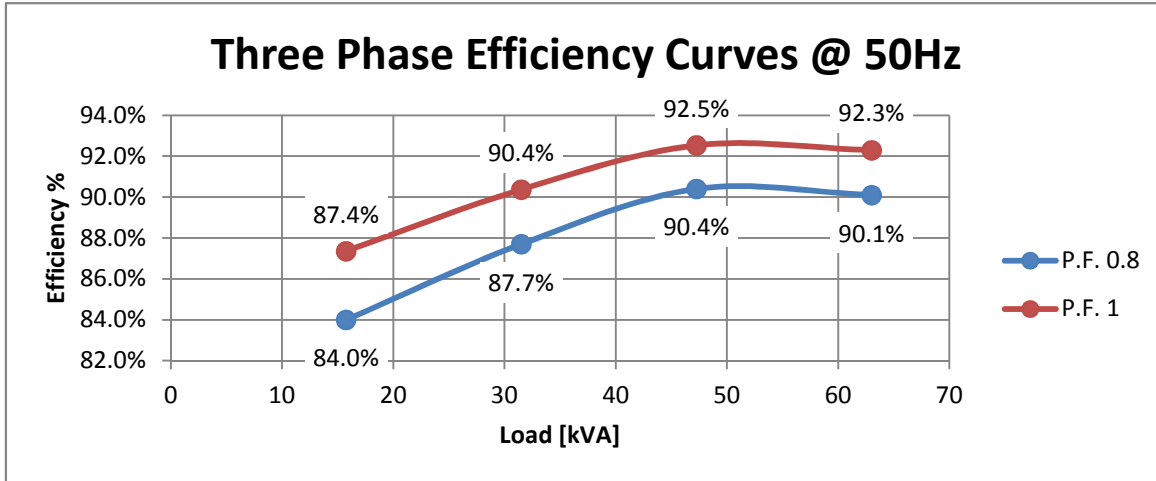


TRANSIENT VOLTAGE VARIATION 60Hz

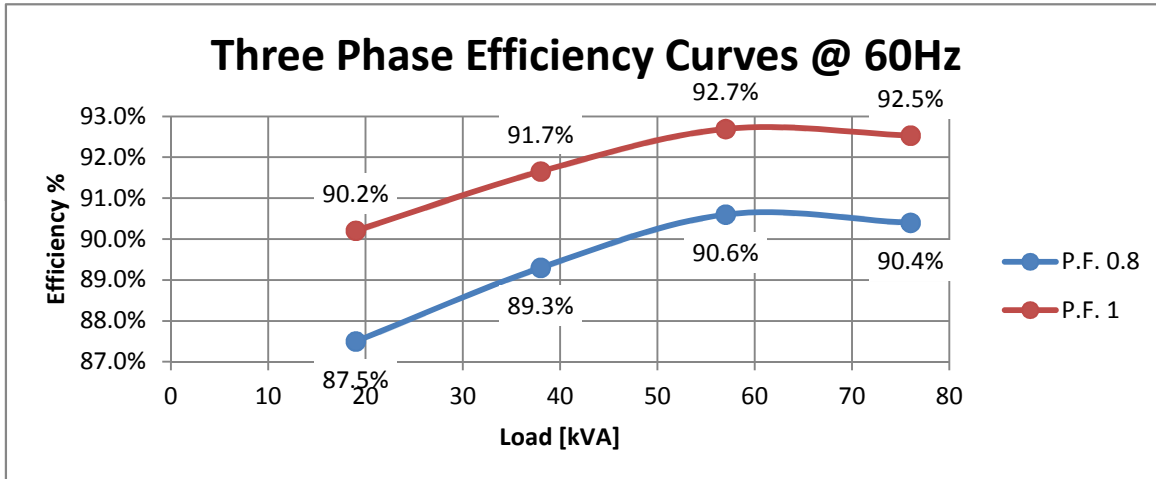


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EFFICIENCY 50Hz

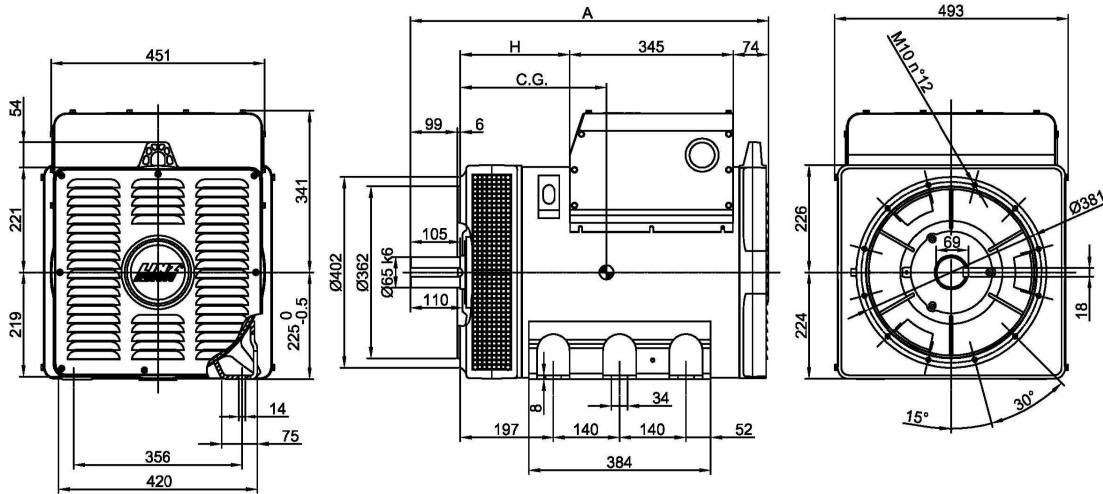


EFFICIENCY 60Hz

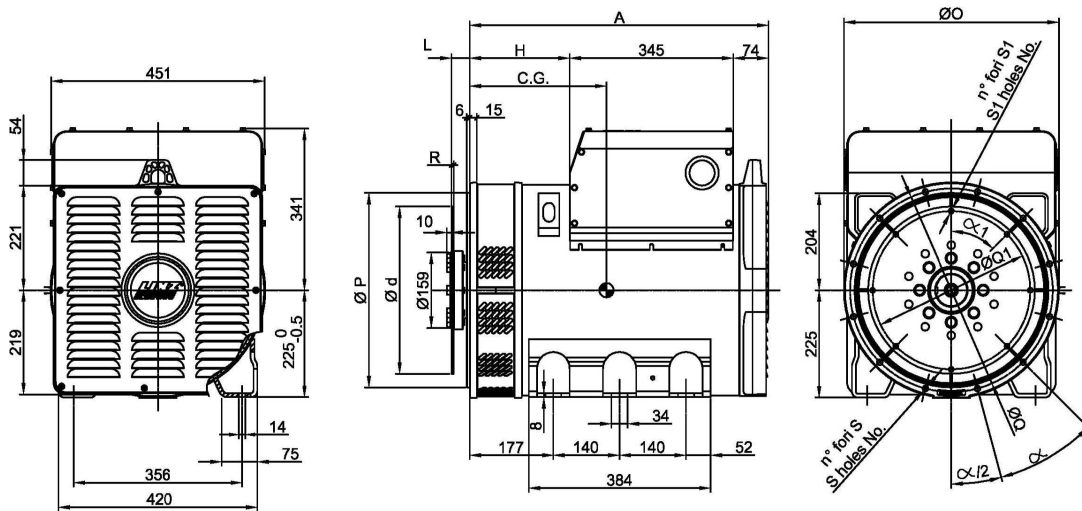


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FORMA - FORM B3/B14



FORMA - FORM SAE



FORMA - FORM		A	H
B3/B14	PRO 22S	756	232
	PRO 22M	886	362
SAE	PRO 22S	631	212
	PRO 22M	761	342

TIPO - TYPE	C.G.
PRO22S A/4 B3/B14	284
PRO22S B/4 B3/B14	293
PRO22S C/4 B3/B14	299
PRO22S D/4 B3/B14	313
PRO22M E/4 B3/B14	359
PRO22M F/4 B3/B14	377

TIPO - TYPE	C.G.
PRO22S A/4 SAE	270
PRO22S B/4 SAE	279
PRO22S C/4 SAE	285
PRO22S D/4 SAE	298
PRO22M E/4 SAE	344
PRO22M F/4 SAE	362

SAE N.	FLANGIE - FLANGES - BRIDAS					
	Ø O	Ø P	Ø Q	n. fori holes No.	S	α
3	454	409.6	428.6	12	12	30°
2	492	447.68	466.7			
1	552	511.18	530.2			

SAE N.	GIUNTI A DISCO - COUPLING DISCS - JUNTAS A DISCOS						
	L	Ø d	Ø Q1	n. fori holes No.	S1	α1	R
11 1/2	39.6	352.42	333.37	8	10.5	45°	6
14	25.4	466.72	438.15	8	14	45°	