TECHNICAL DATA SHEET

ALTERNATOR PRO22S C/4

Three-Phase brushless synchronous alternator with AVR - 4 poles

PRO22S C/4

COMMON DATA

Rated Power at 50Hz	kVA	85	
Rated Power at 60Hz	kVA	102	
Rated Power Factor		0,8	
Nominal Temperature	°C	40	
Control System		self-excited	
Execution		brushless	
Regulation Type		AVR	
Insulation Class		H	
Protection		IP23	
Maximum Over speed	rpm	2250	
Overload		110% of rated power for one hour in a cycle of 6 hours	
Air Flow Requirement	m^3/min	18 at 50Hz	21,1 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	Ω	0,027 at 20°C
Rotor Winding Resistance	Ω	2,9 at 20°C
Exciter Stator Resistance	Ω	14,3 at 20°C
Exciter Rotor Resistance	Ω	0,47 at 20°C
THD at full load		<3%
THD at no load		<3%
Excitation at no load	A_{dc}	0,77
Excitation at full load	A_{dc}	2,3

STANDARD

References	EN60034-1 ISO8528-3 EN55011

ON REQUEST

UL 1446, Systems of Insulating Materials - General CSA-C22.2 No. 0, Appendix B, General Requirements - Canadian Electrical Code, Part I

CAN/CSA - C22.2 No. 100-14 (R2009) Motors and Generators, UL1004-1 2nd ed. Rotating Electrical Machines - General Requirements, UL1004-4 2nd ed. Electric Generators

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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	85	85	85	72	94	100	102	102
	kW	68	68	68	57,6	75,2	80	81,6	81,6
Rated Power in Class F (105°C/40°C)	kVA	79	79	79	67	88	93	95	95
	kW	63,2	63,2	63,2	53,6	70,4	74,4	76	76
Rated Power Standby (150°C/40°C)	kVA	92	92	90	77	100	105	110	110
	kW	73,6	73,6	72	61,6	80	84	88	88
Rated Power Standby (163°C/27°C)	kVA	96	96	90	79	105	110	115	115
	kW	76,8	76,8	74,4	63,2	84	88	92	92

EFFICIENCY IN CL. H

4/4		90,3%						90,6%
3/4		90,6%						90,8%
2/4		87,9%						89,5%
1/4		84,2%						87,7%

REACTANCES AND TIME CONSTANTS

Pcc			0,45						
Xd	- dir. axis synchronous	332%	300%	279%	210%	370%	350%	327%	300%
X'd	- dir. axis transient	21,1%	19,0%	17,7%	13,3%	23,4%	22,2%	20,7%	19,0%
X''d	- dir. axis subtransient	10,5%	9,5%	8,8%	6,7%	11,7%	11,1%	10,3%	9,5%
X_q	- quad. axis reactance	224%	202%	188%	141%	249%	236%	220%	202%
T'_{do}	- O.C. field time constant	258ms							
T'_d	- Transient time constant	21ms							
T''_d	- Sub-transient time constant	11ms							

MECHANICAL DATA

Bearing non drive end			6309-2RS-C3
Bearing drive end (B3/B14 form)			6314-2RS-C3
Weight of generator	in B2	kg	341
	in B3/B14	kg	343
	in B3/B9	kg	\

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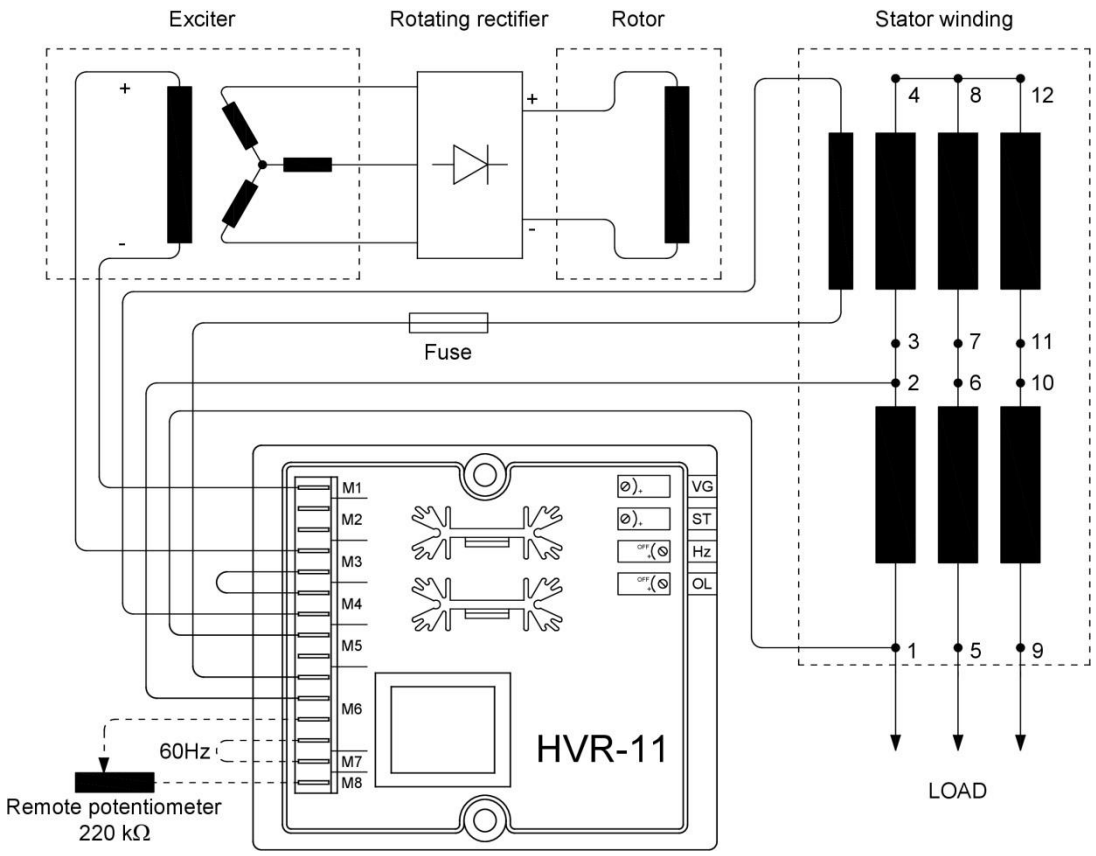
MOMENT OF INERZIA

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	0,932
SAE 14	kg·m^2	1,080
SAE 18	kg·m^2	\
B3/B14	kg·m^2	0,854

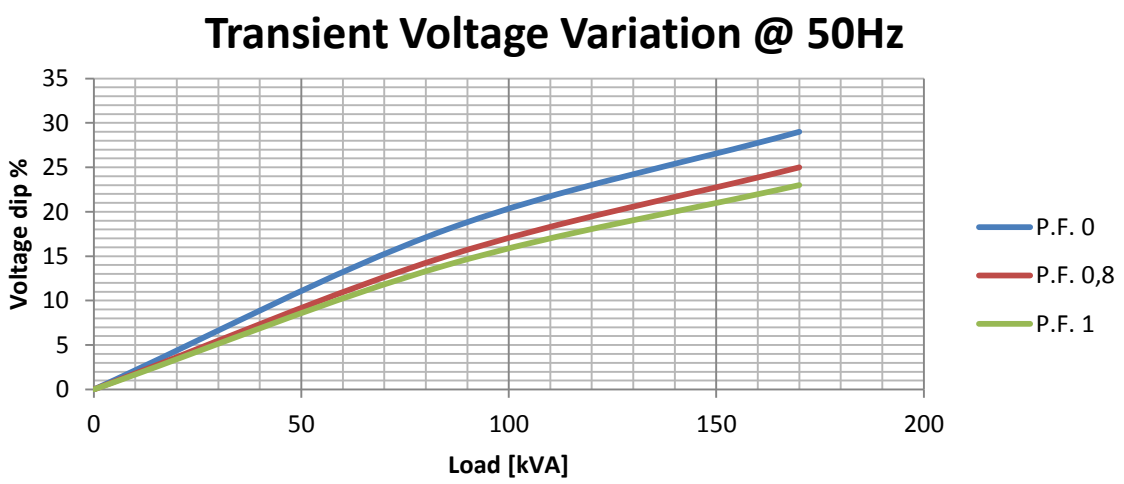
POWER VARIATION ACCORDING TO TEMPERATURE AND ALTITUDE

	Ambient temperature				
Altitude	25°C	40°C	45°C	50°C	55°C
< 1000m	1,09	1,00	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	0,90	0,85	0,81	0,78	0,76

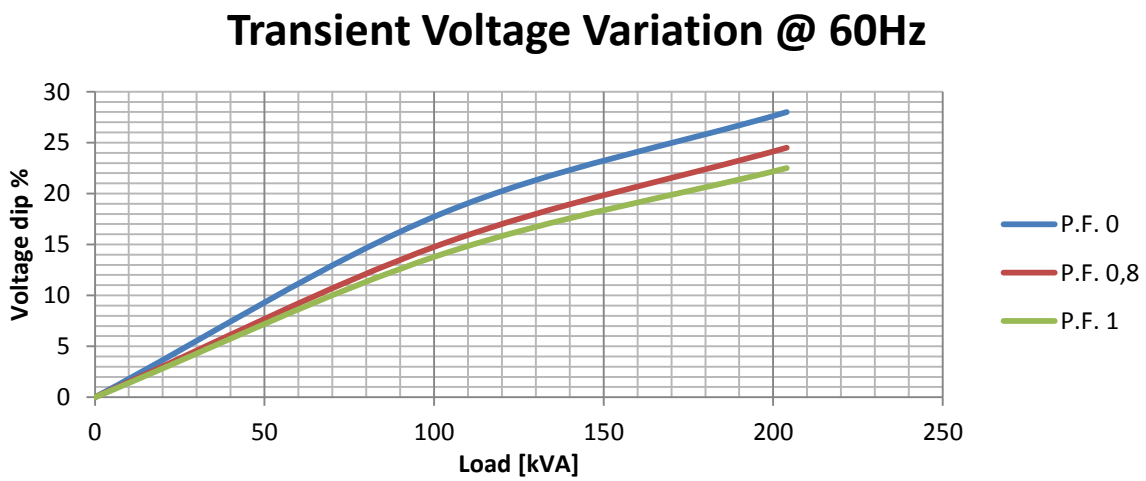
WIRING DIAGRAM



TRANSIENT VOLTAGE VARIATION 50Hz



TRANSIENT VOLTAGE VARIATION 60Hz



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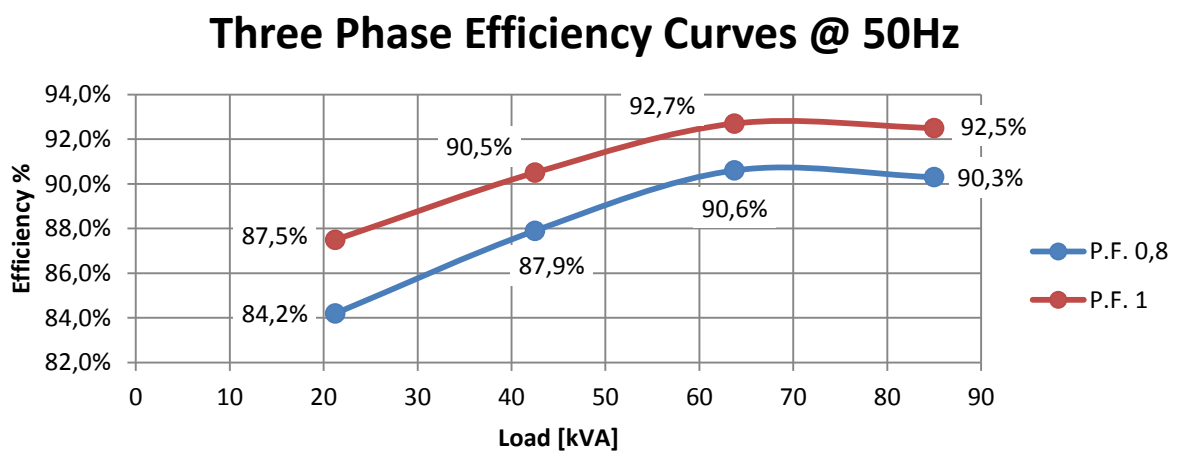
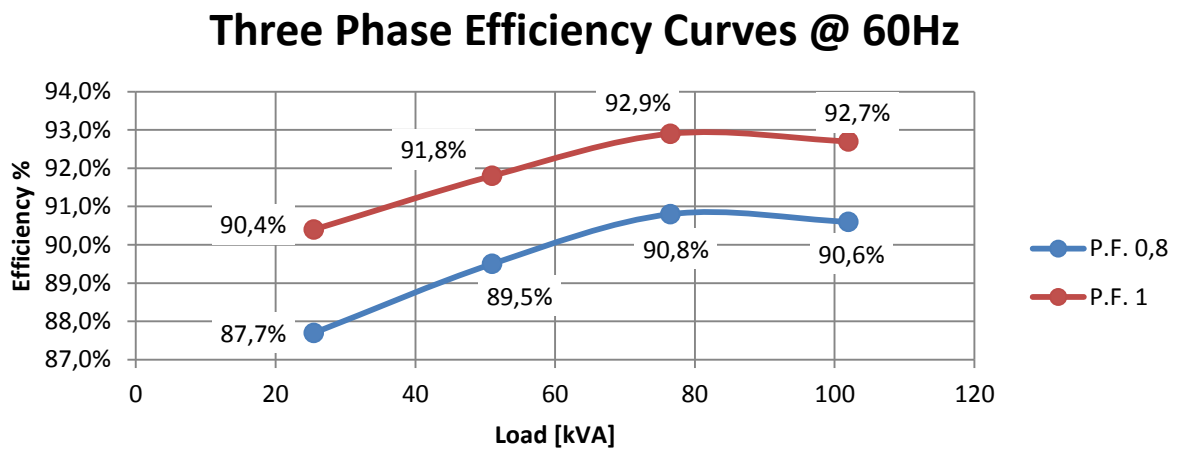
EFFICIENCY 50Hz

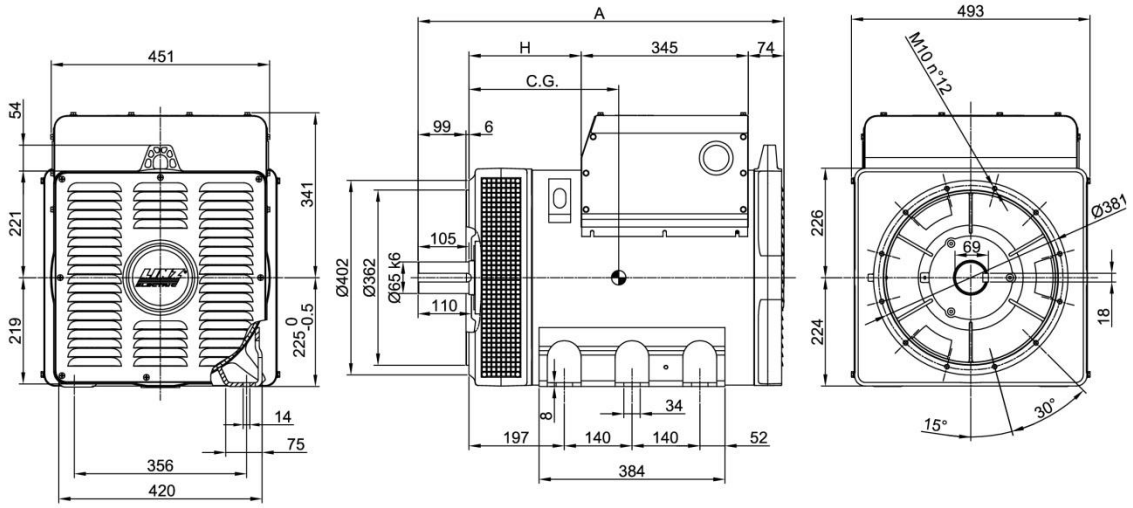


EFFICIENCY 60Hz

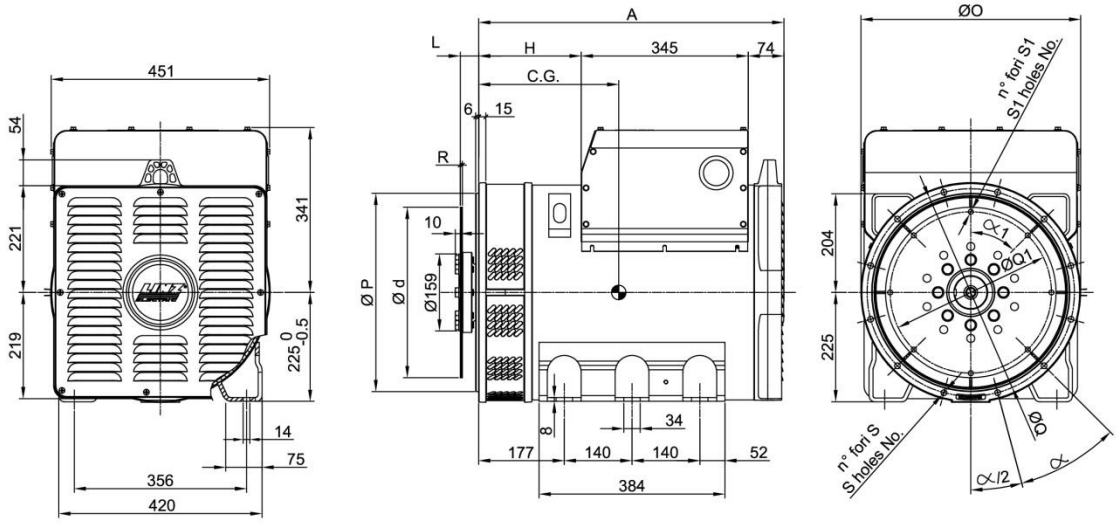


PRO22S C/4

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	FLANGIE - FLANGES - BRIDAS					
N.	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	GIUNTI A DISCO -COUPLING DISCS- JUNTAS A DISCOS						
N.	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°	