

TECHNICAL DATA SHEET



ALTERNATOR PRO22S B/4

Three-Phase brushless synchronous alternator with AVR - 4 poles

PRO22S B/4

COMMON DATA

Rated Power at 50Hz	kVA	75
Rated Power at 60Hz	kVA	90
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 21,6 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	Ω	0,03 at 20°C
Rotor Winding Resistance	Ω	2,6 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	<2,5%	
Excitation at no load	A _{dc}	0,9
Excitation at full load	A _{dc}	2,5

STANDARD

References	EN60034-1 ISO8528-3 EN55011
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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	V	Double Delta	Series High Wye Parallel Low Wye			Double Delta	Series High Wye Parallel Low Wye				
		115/230	380/220 190/110	400/230 200/115	415/240 208/120	440/254 220/127	138/277	415/240 208/120	440/254 220/127	460/266 230/133	480/277 240/154
Rated Power in Class H (125°C/40°C)	kVA	49	75	75	70	65	58	81	86	90	90
	kW	39,2	60	60	56	52	46,4	64,8	68,8	72	72
Rated Power in Class F (105°C/40°C)	kVA	45	69	69	65	62	54	75	80	83	83
	kW	36	55,2	55,2	52	49,6	43,2	60	64	66,4	66,4
Rated Power Standby (150°C/40°C)	kVA	52	80	80	75	70	62	86	90	95	95
	kW	41,6	64	64	60	56	49,6	68,8	72	76	76
Rated Power Standby (163°C/27°C)	kVA	55	85	85	80	75	64	90	93	98	98
	kW	44	68	68	64	60	51,2	72	74,4	78,4	78,4

EFFICIENCY IN CL. H

4/4			90,3%							90,4%
3/4			90,5%							90,7%
2/4			89,5%							90,6%
1/4			86,2%							87,3%

REACTANCES AND TIME CONSTANTS

pcc			0,53							
X _d	- dir. axis synchronous	334%	301%	261%	216%		362%	342%	328%	301%
X' _d	- dir. axis transient	21,1%	19,0%	16,5%	13,6%		22,9%	21,6%	20,7%	19,0%
X'' _d	- dir. axis subtransient	10,5%	9,5%	8,2%	6,8%		11,4%	10,8%	10,3%	9,5%
X _q	- quad. axis reactance	216%	195%	169%	140%		235%	222%	212%	195%
T' _{do}	- O.C. field time constant	245ms								
T' _d	- Transient time constant	21ms								
T'' _d	- Sub-transient time constant	12ms								

MECHANICAL DATA

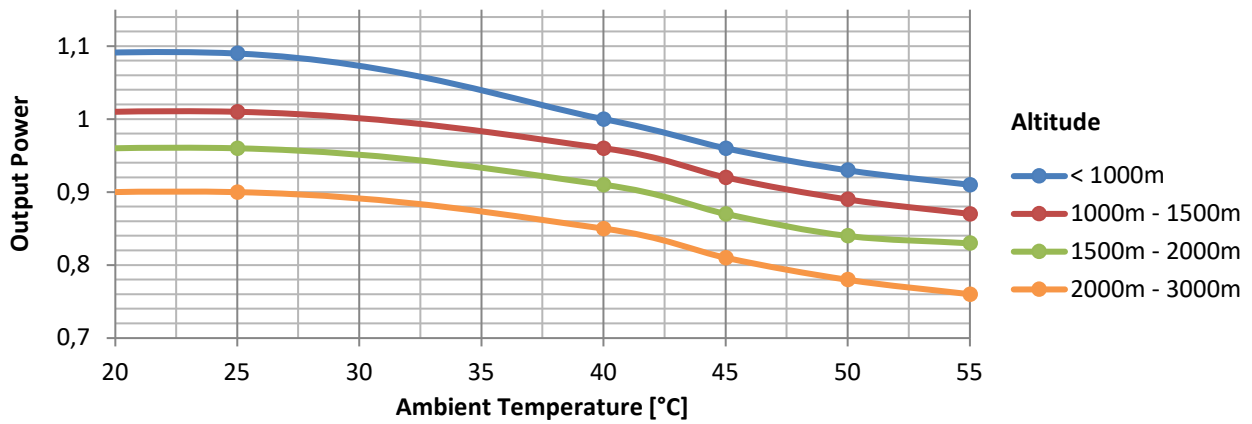
Bearing non drive end				6309-2RS-C3
Bearing drive end (B3/B14 form)				6314-2RS-C3
Weight of generator	in B2	kg		295
	in B3/B14	kg		315
	in B3/B9	kg		\

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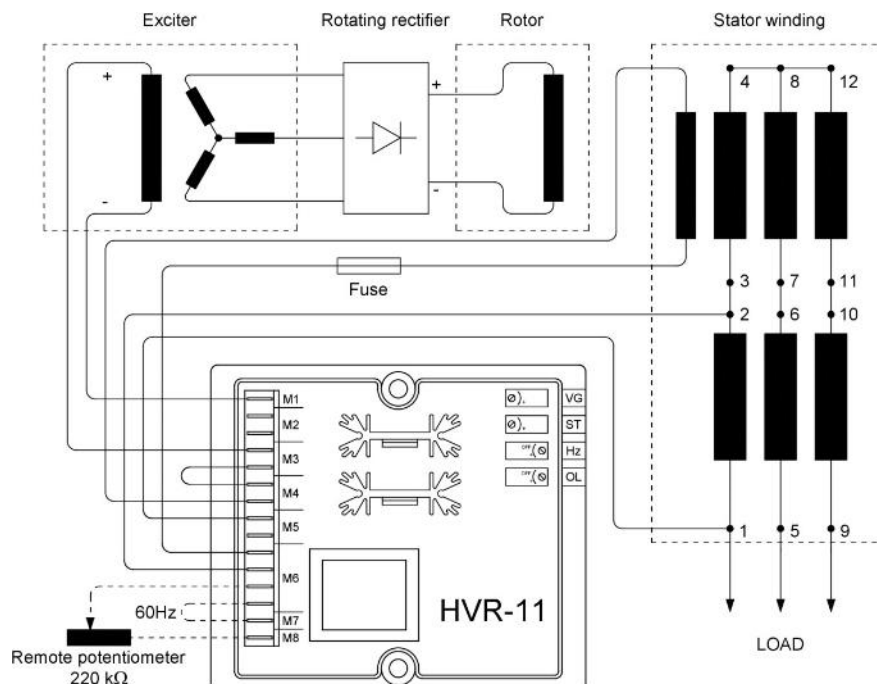
MOMENT OF INERZIA

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	0,853
SAE 14	kg·m ²	1,001
SAE 18	kg·m ²	\
B3/B14	kg·m ²	0,775

DERATING CURVES



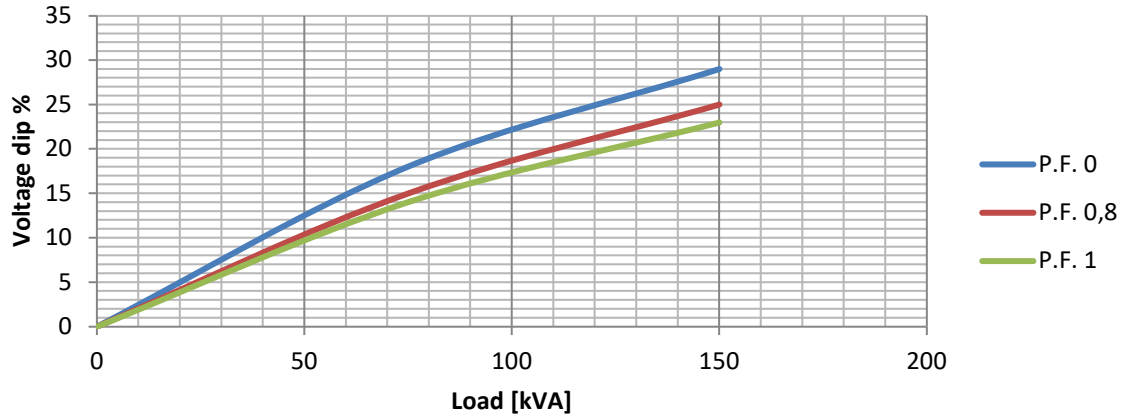
WIRING DIAGRAM



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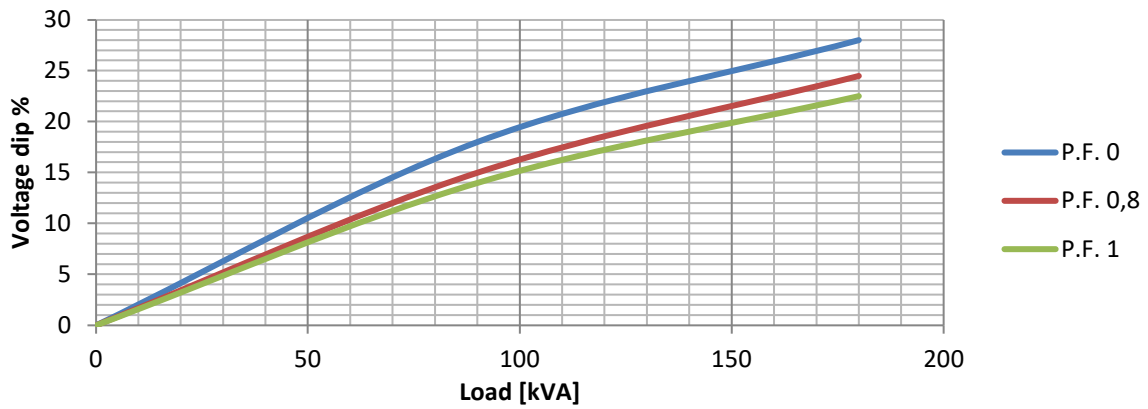
TRANSIENT VOLTAGE VARIATION 50Hz

Transient Voltage Variation @ 50Hz



TRANSIENT VOLTAGE VARIATION 60Hz

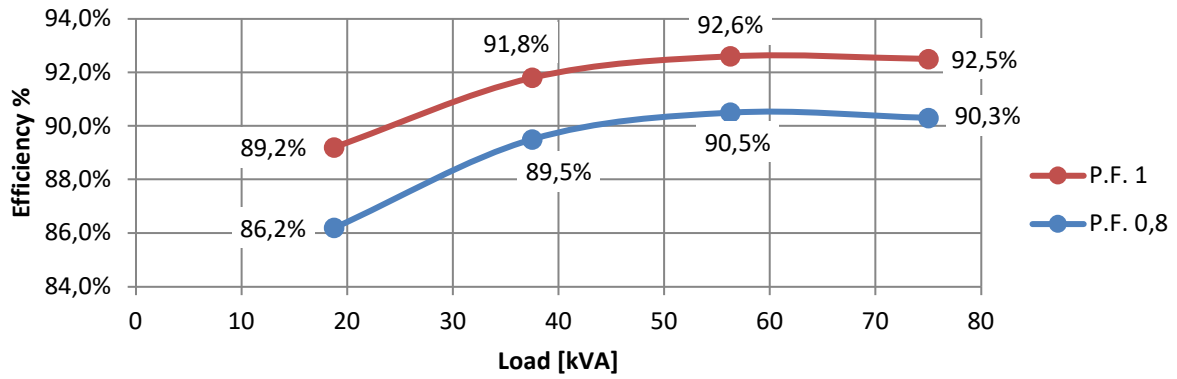
Transient Voltage Variation @ 60Hz



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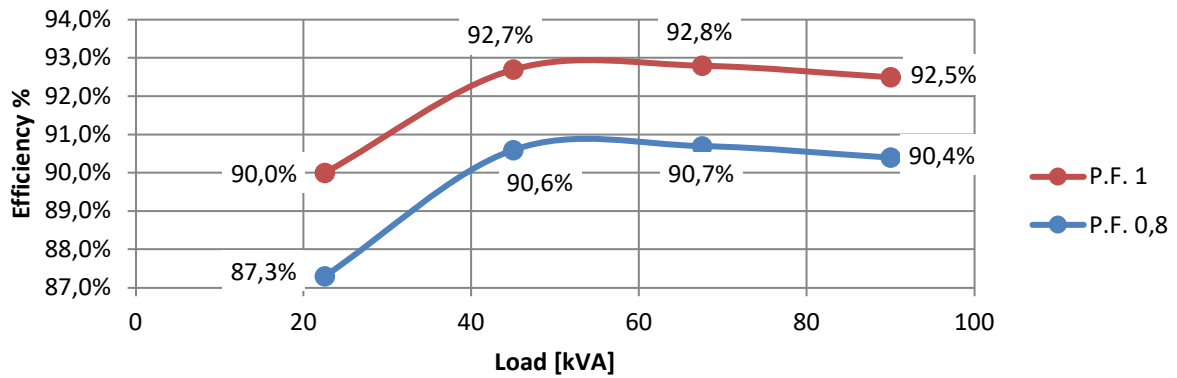
EFFICIENCY 50Hz

Efficiency Curves @ 50Hz



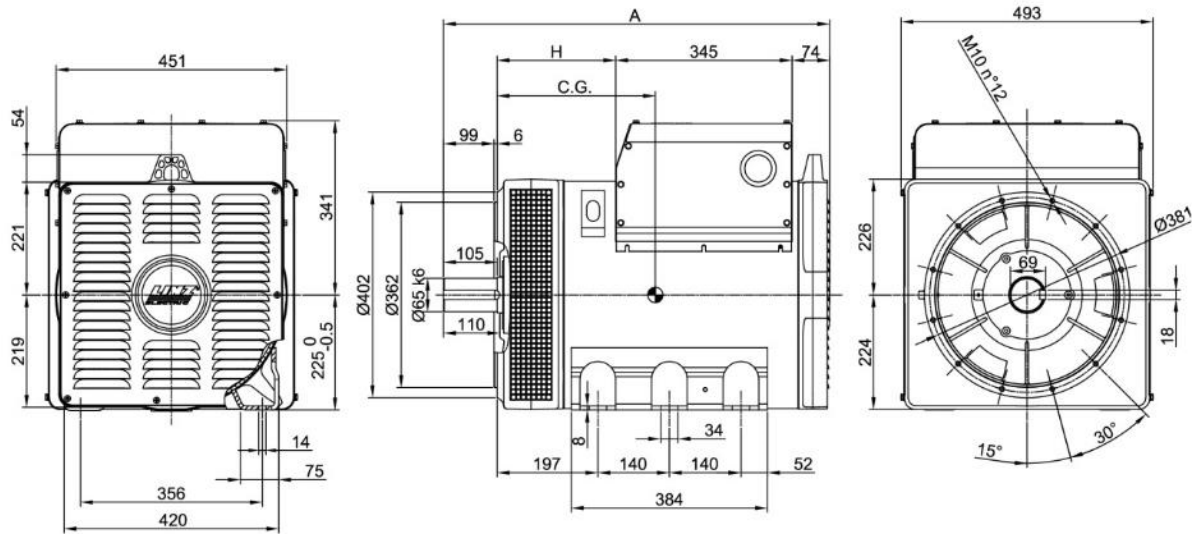
EFFICIENCY 60Hz

Efficiency Curves @ 60Hz

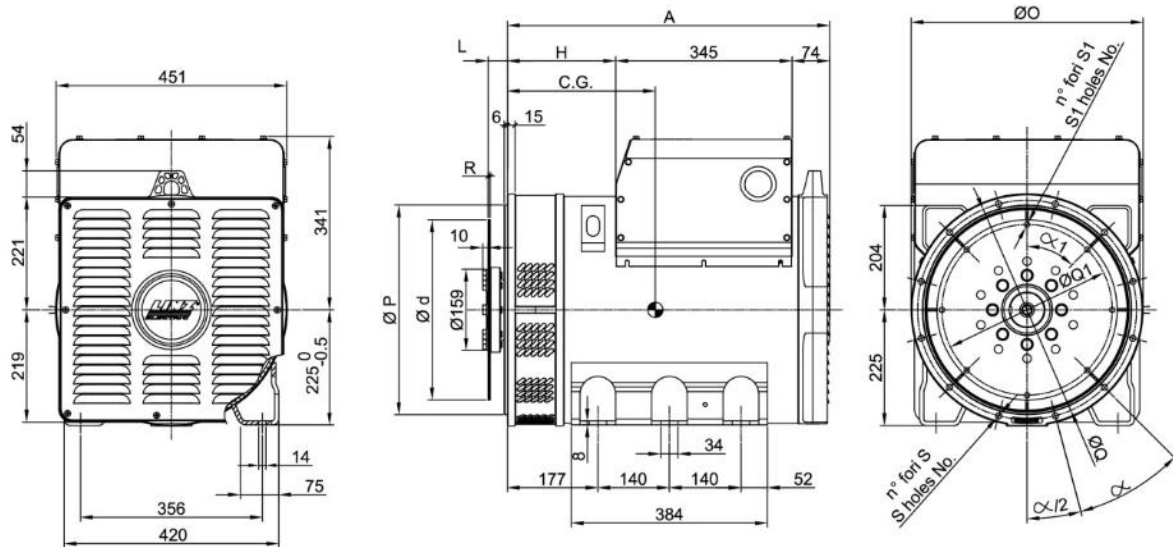


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FORMA - FORM B3/B14



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°	