

TECHNICAL DATA SHEET



ALTERNATOR PRO18M D/4

Three-Phase brushless synchronous alternator with AVR - 4 poles

PRO18M D/4

COMMON DATA

Rated Power at 50Hz	kVA	35
Rated Power at 60Hz	kVA	42
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	8 at 50Hz 8,3 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	> 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	0,087 at 20°C
Rotor Winding Resistance	Ω	3,24 at 20°C
Exciter Stator Resistance	Ω	15 at 20°C
Exciter Rotor Resistance	Ω	0,72 at 20°C
THD at full load		<3%
THD at no load		<3%
Excitation at no load	Adc	0,91
Excitation at full load	Adc	2,28

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	480/277 240/138
Rated Power in Class H (125°C/40°C)	kVA	22,5	35	35	35	29	27	38,5	40	42	42
	kW	18	28	28	28	23,2	21,6	30,8	32	33,6	33,6
Rated Power in Class F (105°C/40°C)	kVA	20,5	32	32	31	27,5	24,7	36	37	38,5	38,5
	kW	16,4	25,6	25,6	24,8	22	19,8	28,8	29,6	30,8	30,8
Rated Power Standby (150°C/40°C)	kVA	24,56	37	37	36	30	29,5	40	42	45	45
	kW	19,6	29,6	29,6	28,8	24	23,6	32	33,6	36	36
Rated Power Standby (163°C/27°C)	kVA	25,5	39	39	37	31	30,5	42	45	47	47
	kW	20,4	31,2	31,2	29,6	24,8	24,4	33,6	36	37,6	37,6

EFFICIENCY IN CL. H

4/4			88,6%							90,4%
3/4			89,1%							90,9%
2/4			86,0%							87,5%
1/4			82,5%							83,0%

REACTANCES AND TIME CONSTANTS

pcc		0,58								
X _d - dir. axis synchronous		266%	240%	223%	164%		294%	272%	261%	240%
X' _d - dir. axis transient		19,9%	18,0%	16,7%	12,3%		22,1%	20,4%	19,6%	18,0%
X'' _d - dir. axis subtransient		7,8%	7,0%	6,5%	4,8%		8,6%	7,9%	7,6%	7,0%
X _q - quad. axis reactance		147%	133%	124%	91%		163%	151%	145%	133%
T' _{do} - O.C. field time constant							147ms			
T' _d - Transient time constant							11ms			
T'' _d - Sub-transient time constant							6ms			

MECHANICAL DATA

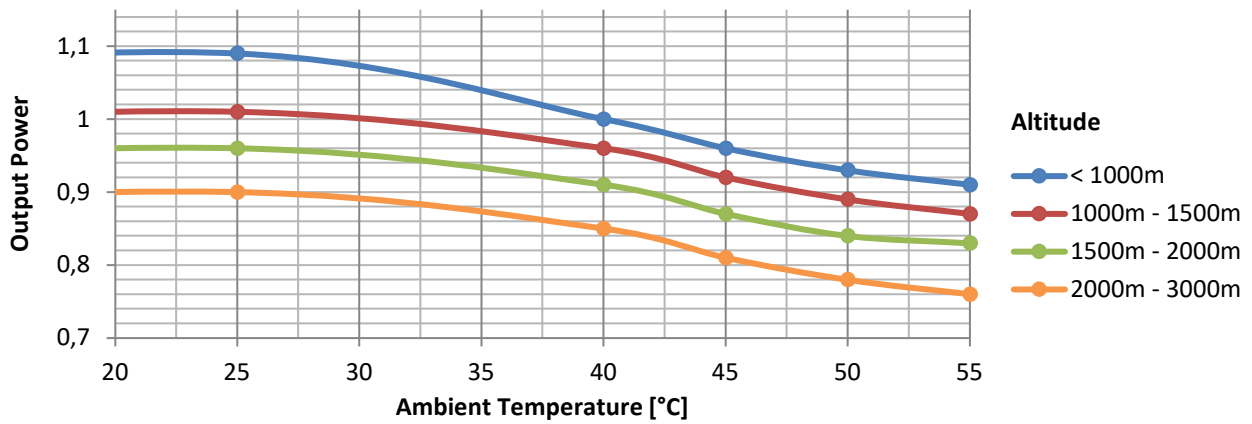
Bearing non drive end				6307-2RS-C3
Bearing drive end (B3/B14 form)				6309-2RS-C3
Weight of generator	170	kg		170
	172	kg		172
	\	kg		\

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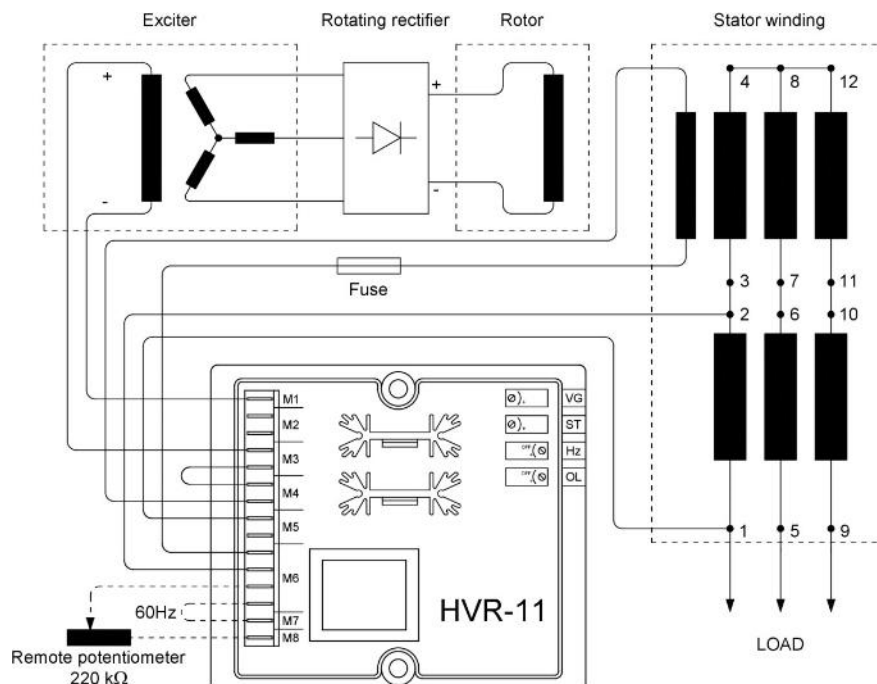
MOMENT OF INERZIA

B3/B9	kg·m ²	\
SAE 7½	kg·m ²	0,316
SAE 8	kg·m ²	0,325
SAE 10	kg·m ²	0,342
SAE 11½	kg·m ²	0,362
SAE 14	kg·m ²	\
SAE 18	kg·m ²	\
B3/B14	kg·m ²	0,313

DERATING CURVES



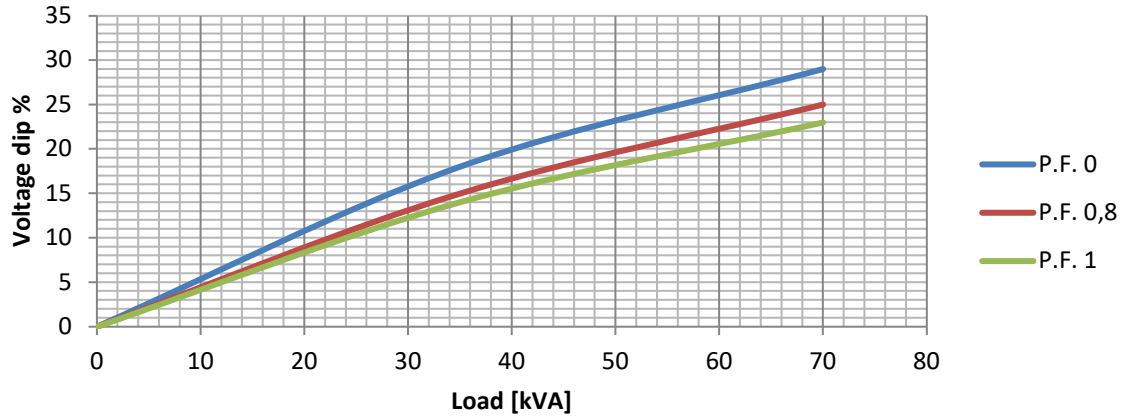
WIRING DIAGRAM



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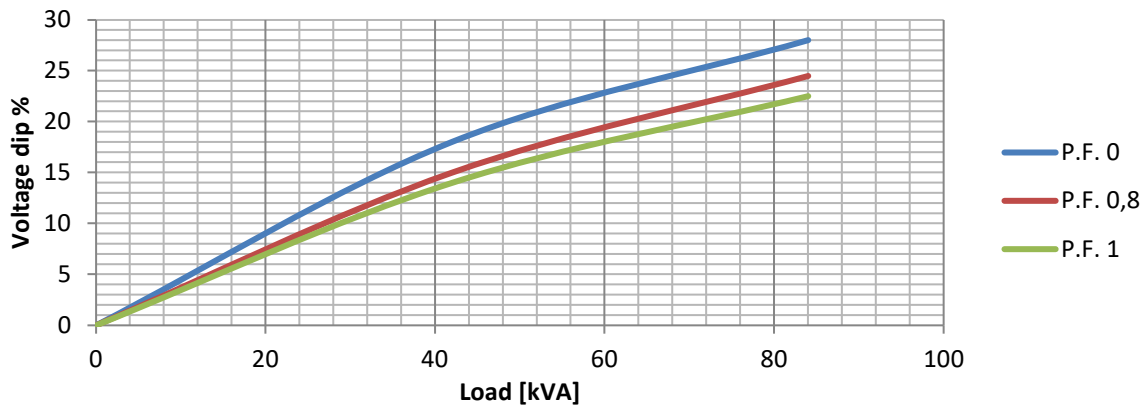
TRANSIENT VOLTAGE VARIATION 50Hz

Transient Voltage Variation @ 50Hz



TRANSIENT VOLTAGE VARIATION 60Hz

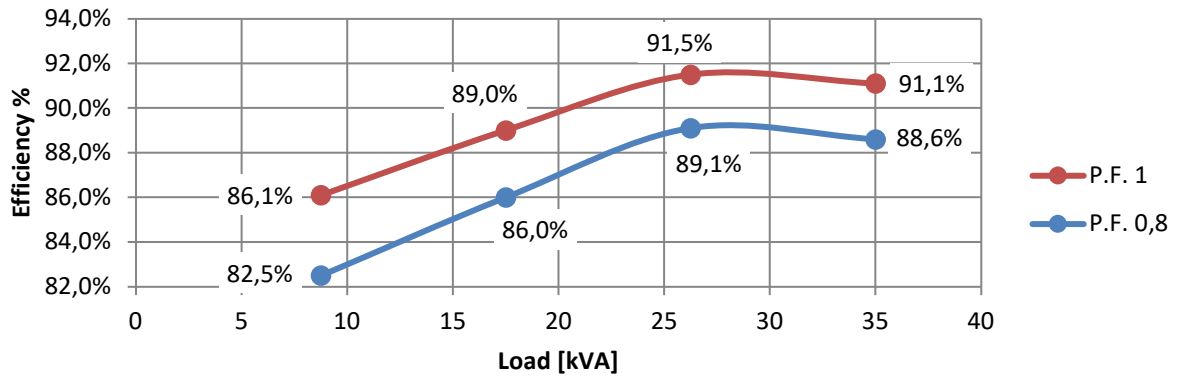
Transient Voltage Variation @ 60Hz



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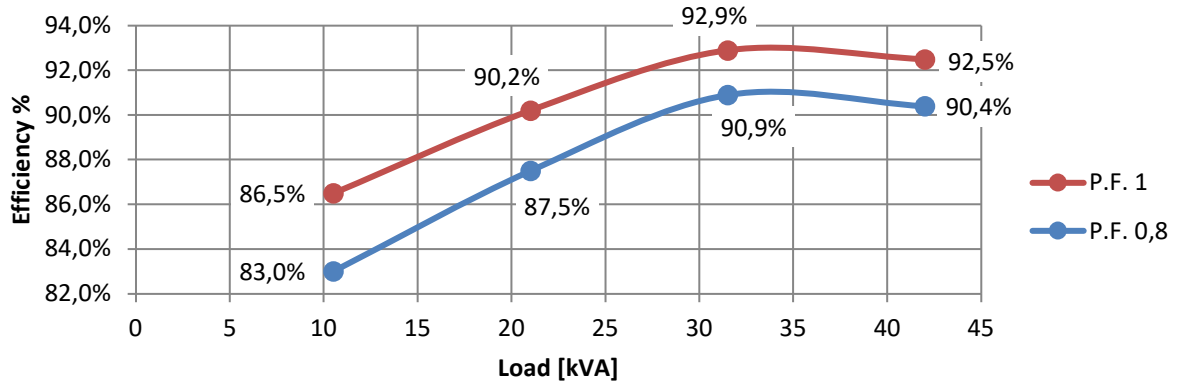
EFFICIENCY 50Hz

Efficiency Curves @ 50Hz



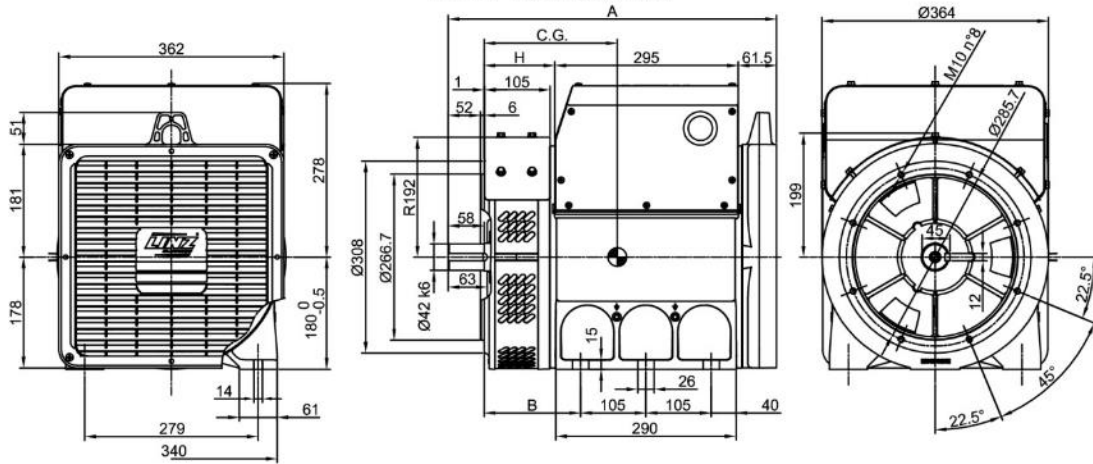
EFFICIENCY 60Hz

Efficiency Curves @ 60Hz

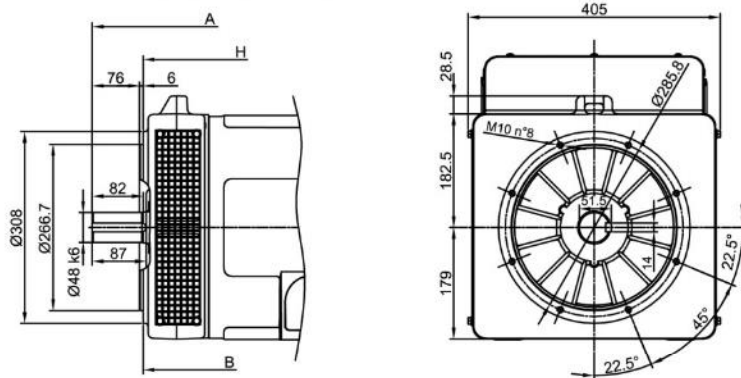


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FORMA - FORM B3/B14 'S-M'



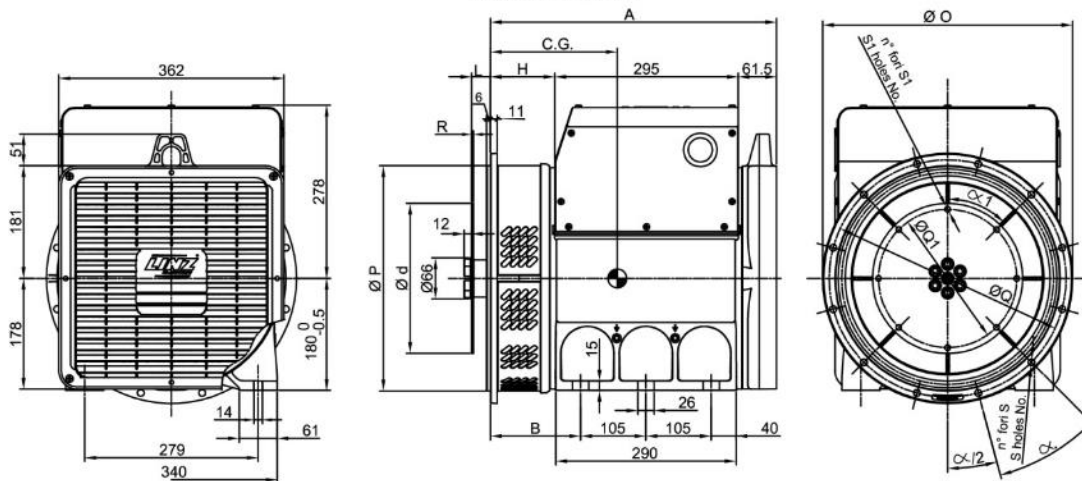
FORMA - FORM B3/B14 'L'



TIPO - TYPE	C.G.
PRO18S A/4 B3/B14	217
PRO18S B/4 B3/B14	221
PRO18S C/4 B3/B14	228
PRO18M D/4 B3/B14	251
PRO18M E/4 B3/B14	262
PRO18L F/4 B3/B14	301
PRO18L G/4 B3/B14	318

TIPO - TYPE	C.G.
PRO18S A/4 SAE	213
PRO18S B/4 SAE	217
PRO18S C/4 SAE	223
PRO18M D/4 SAE	246
PRO18M E/4 SAE	257
PRO18L F/4 SAE	296
PRO18L G/4 SAE	313

FORMA - FORM SAE



FORMA - FORM	A	B	H
B3/B14	PRO 18S	528	113,5
	PRO 18M	598	183,5
	PRO 18L	734	295,5
SAE	PRO 18S	460	103,5
	PRO 18M	530	173,5
	PRO 18L	642	285,5

SAE N.	FLANGIE - FLANGES - BRIDAS					
	Ø O	Ø P	Ø Q	n. fori holes No.	S	α
5	356	314,3	333,4	8	11	45°
4	402	362	381	12		30°
3	451	409,6	428,6			
2	490	447,7	466,7			

SAE N.	GIUNTI A DISCO - COUPLING DISCS - JUNTAS A DISCOS						
	L	Ø d	Ø Q1	n. fori holes No.	S1	α 1	R
6 1/2	30,2	215,9	200	6	9	60°	3
7 1/2		241,3	222,25	8		45°	
8	62	263,52	244,47	6	10,5	60°	
10	53,8	314,32	295,27	8		45°	
11 1/2	39,6	352,42	333,37				