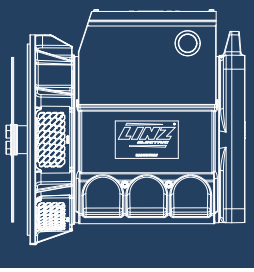
TECHNICAL DATA SHEET

PRO18S C/4

Three-Phase brushless synchronous alternator with AVR - 4 poles



COMMON DATA			
Rated Power at 50Hz	kVA	30	
Rated Power at 60Hz	kVA	36	
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	6.9 at 50Hz	7.1 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		> 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	0.117 at 20°C
Rotor Winding Resistance	Ω	2.9 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	A_{dc}	0.92
Excitation at full load	A_{dc}	2.23

TECHNICAL DATA SHEET
PRO18S C/4
Three-Phase brushless synchronous alternator with AVR - 4 poles

REFERENCES

EN60034-1 ISO8528-3 EN55011

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

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

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	20	30	30	30	25	24	34	35	36	36
	kW	16	24	24	24	20	19.2	27.2	28	28.8	28.8
Rated Power in Class F (105°C/40°C)	kVA	19	28	28	28	24	22.5	32	33	33.5	33.5
	kW	15.2	22.4	22.4	22.4	19.2	18	25.6	26.4	26.8	26.8
Rated Power Standby (150°C/40°C)	kVA	22	33	33	32	27.5	25.5	36	36.5	38	38
	kW	17.6	26.4	26.4	25.6	22	20.4	28.8	29.2	30.4	30.4
Rated Power Standby (163°C/27°C)	kVA	23	34	34	33	28	26	35	37.5	39	39
	kW	18.4	27.2	27.2	26.4	22.4	20.8	28	30	31.2	31.2

EFFICIENCY IN CL. H

4/4		87.1%				88.8%
3/4		87.5%				89.3%
2/4		85.0%				87.0%
1/4		81.3%				82.2%

REACTANCES AND TIME CONSTANTS

ρcc			0.58							
Xd	- dir. axis synchronous	269%	243%	226%	167%		307%	281%	265%	243%
X'd	- dir. axis transient	21.1%	19.0%	17.7%	13.1%		24.0%	22.0%	20.7%	19.0%
X''d	- dir. axis subtransient	8.9%	8.0%	7.4%	5.5%		10.1%	9.3%	8.7%	8.0%
X_q	- quad. axis reactance	150%	135%	125%	93%		171%	156%	147%	135%
T'_{do}	- O.C. field time constant	125ms								
T'_d	- Transient time constant	10ms								
T''_d	- Sub-transient time constant	5ms								

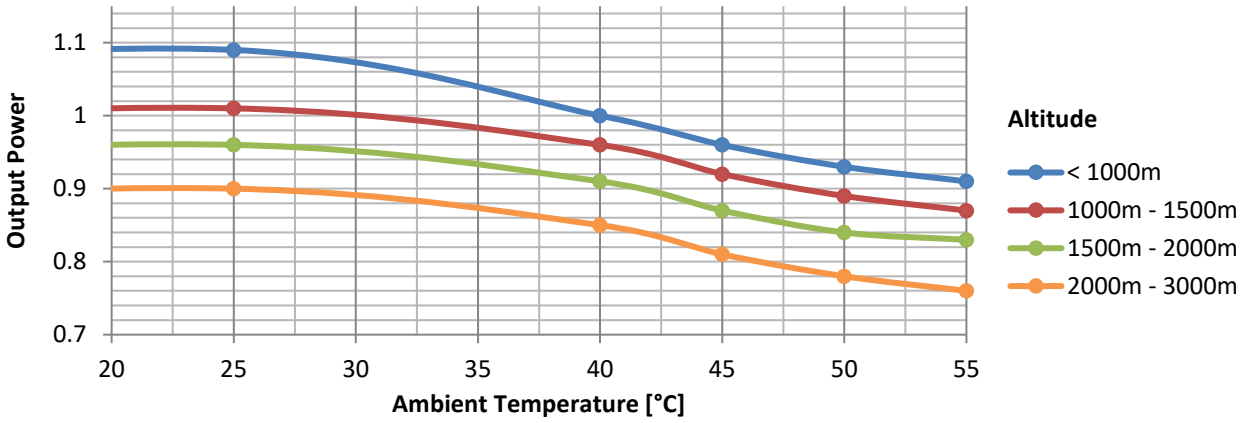
MECHANICAL DATA

Bearing non drive end			6307-2RS-C3
Bearing drive end (B3/B14 form)			6309-2RS-C3
Weight of generator	in B2	kg	141
	in B3/B14	kg	148
	in B3/B9	kg	\

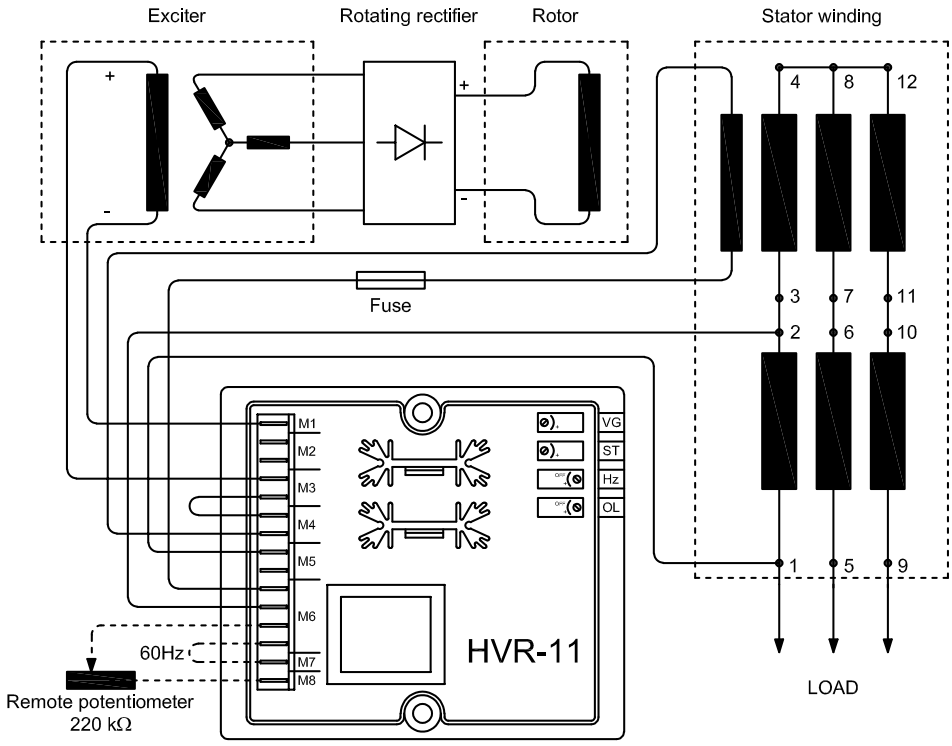
MOMENT OF INERZIA

SAE 6½	kg·m²	0.241
SAE 7½	kg·m²	0.244
SAE 8	kg·m²	0.253
SAE 10	kg·m²	0.269
SAE 11½	kg·m²	0.289
B3/B14	kg·m²	0.236

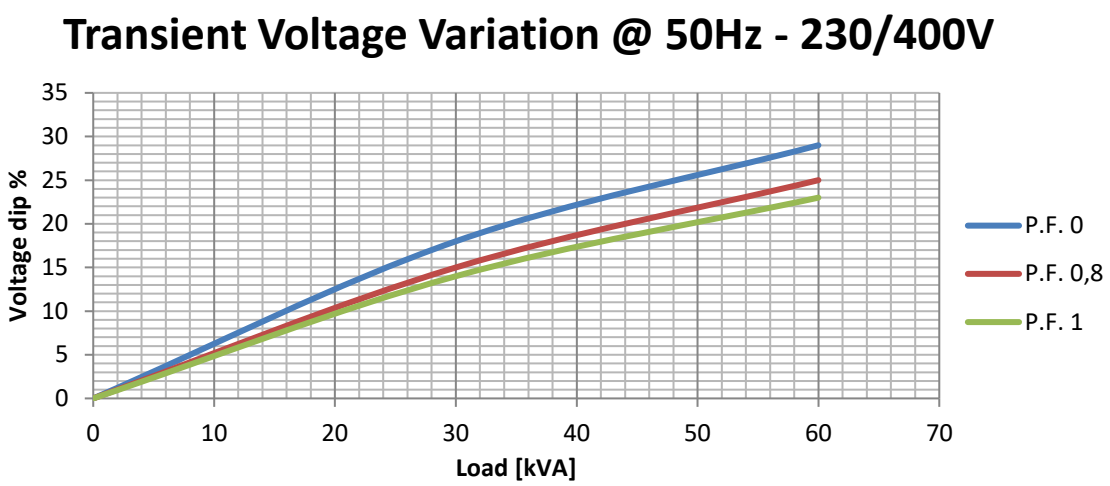
DERATING CURVES



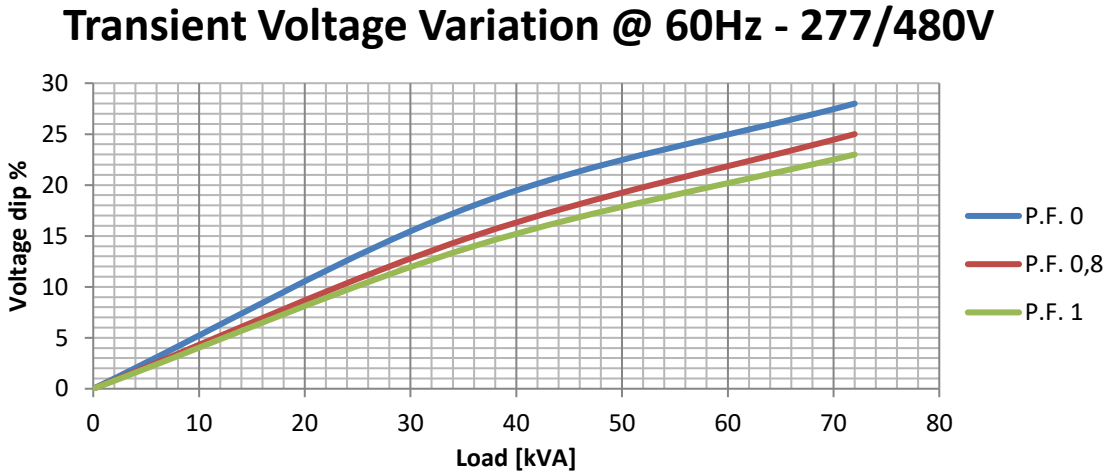
WIRING DIAGRAM



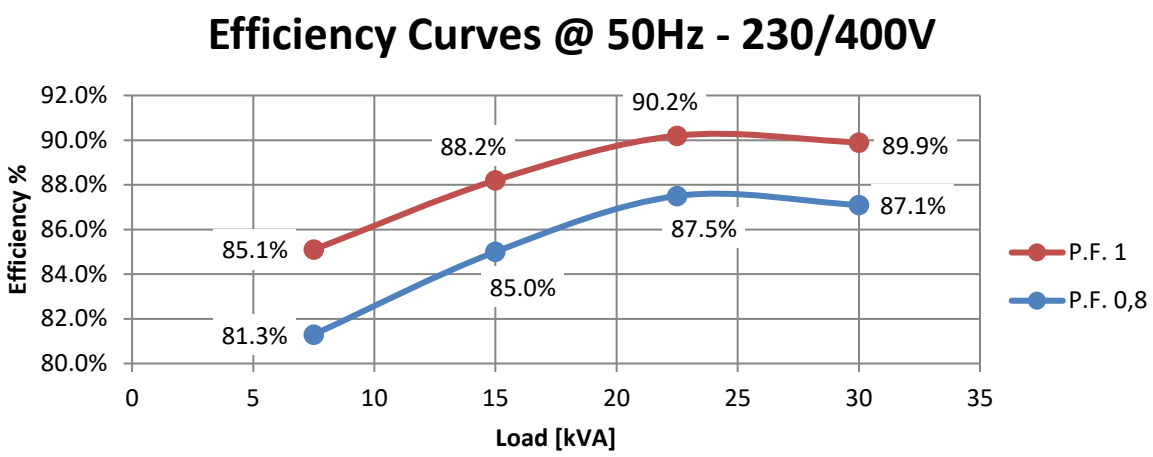
TRANSIENT VOLTAGE VARIATION 50Hz



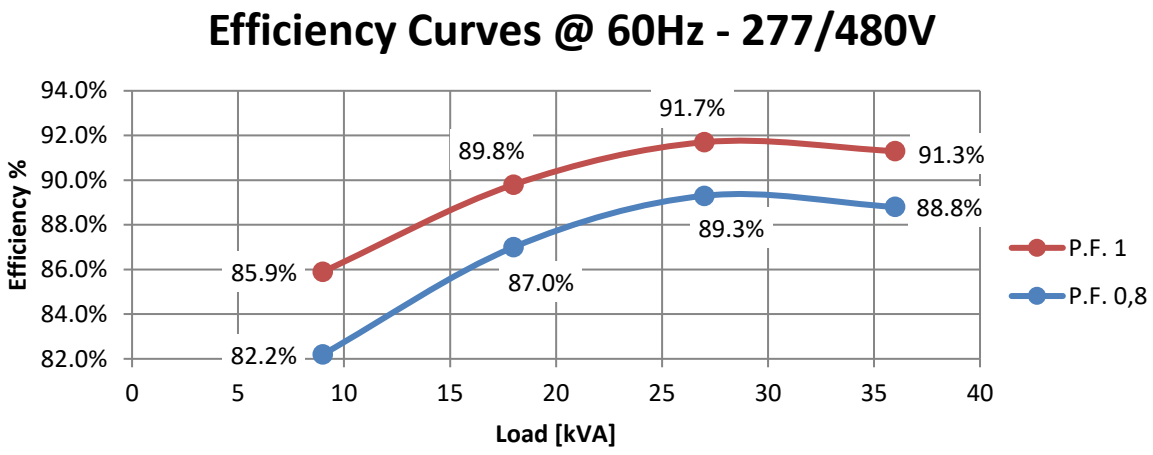
TRANSIENT VOLTAGE VARIATION 60Hz



EFFICIENCY 50Hz

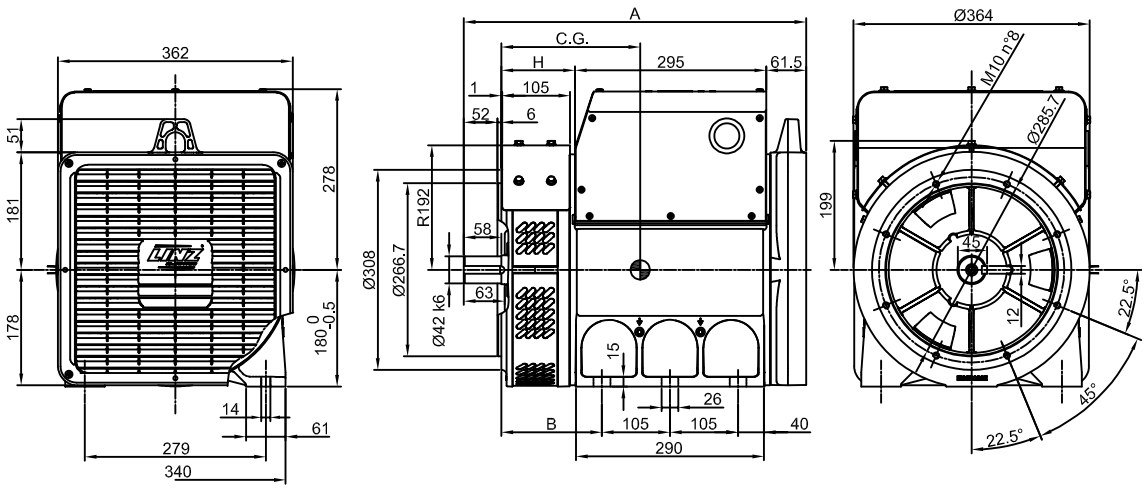


EFFICIENCY 60Hz



OVERALL DIMENSIONS

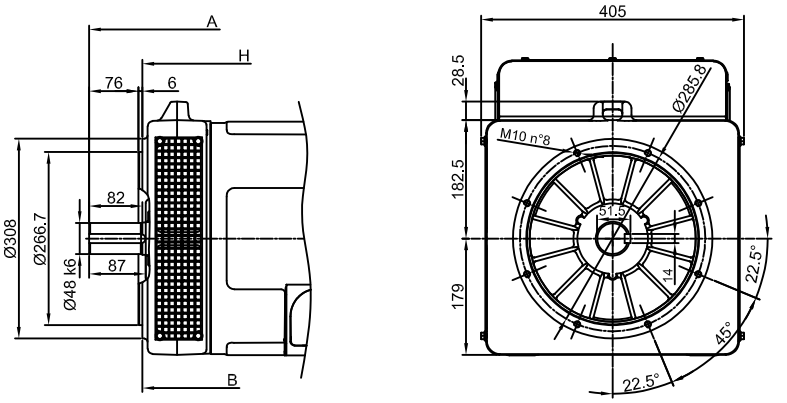
FORMA - FORM B3/B14 'S-M'



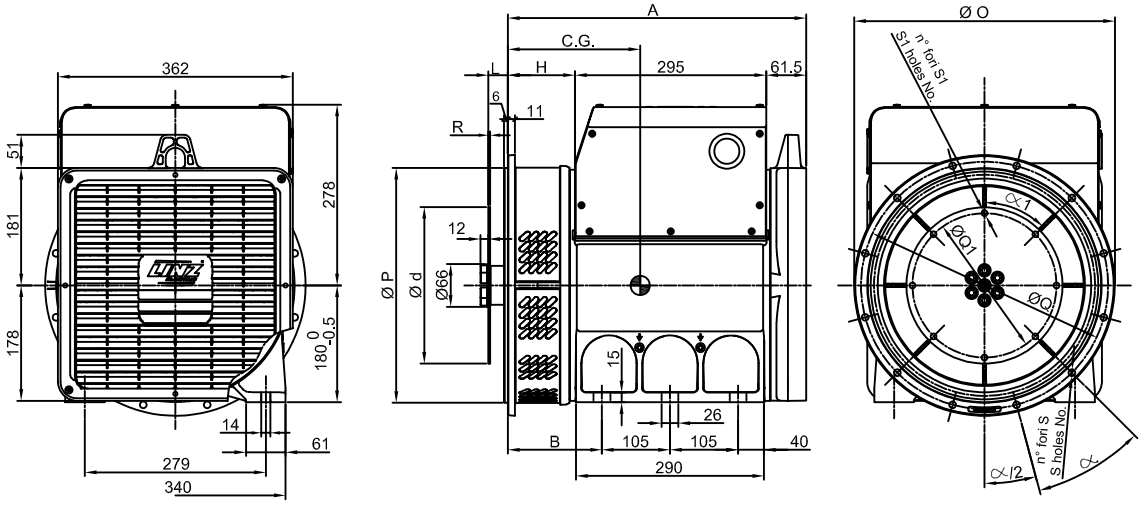
FORMA - FORM B3/B14 'L'

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	155	113,5
	PRO 18M	598		183,5
	PRO 18L	734	260	295,5
SAE	PRO 18S	460	145	103,5
	PRO 18M	530		173,5
	PRO 18L	642	250	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	α1	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°	4,5
10	53,8	314,32	295,27	8		45°	
11 1/2	39,6	352,42	333,37				