

TECHNICAL DATA SHEET



**ALTERNATOR PRO18S B/4**

*Three-Phase brushless synchronous alternator with AVR - 4 poles*

## PRO18S B/4

### COMMON DATA

Rated Power at 50Hz	kVA	25
Rated Power at 60Hz	kVA	30
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 <sup>3</sup> /min	6,3 at 50Hz      6,5 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	0,16 at 20°C
Rotor Winding Resistance	Ω	2,61 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	0,92
Excitation at full load	Adc	2,23

### 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

## PRO18S B/4

### ELECTRICAL DATA

Frequency		50Hz - 1500rpm					60Hz - 1800rpm				
Voltage	V	Double Delta	Series Star			Double Delta	Series Star				
		115/230	380/220	400/230	415/240	440/254	138/277	415/240	440/254	460/266	480/277
Rated Power in Class H (125°C/40°C)	kVA	17	25	25	25	22	20	26	28	30	30
	kW	13,6	20	20	20	17,6	16	20,8	22,4	24	24
Rated Power in Class F (105°C/40°C)	kVA	15,5	23	23	23	20	18,5	24	25	27,5	27,5
	kW	12,4	18,4	18,4	18,4	16	14,8	19,2	20	22	22
Rated Power Standby (150°C/40°C)	kVA	18	27	27	26	24	21,5	28,5	30	32	32
	kW	14,4	21,6	21,6	20,8	19,2	17,2	22,8	24	25,6	25,6
Rated Power Standby (163°C/27°C)	kVA	18,5	28	28	27	25	22,5	30	32	34	34
	kW	14,8	22,4	22,4	21,6	20	18	24	25,6	27,2	27,2

### EFFICIENCY IN CL. H

4/4			86,5%						88,2%
3/4			86,9%						88,6%
2/4			85,8%						86,7%
1/4			82,5%						83,7%

### REACTANCES AND TIME CONSTANTS

pcc			0,57							
X <sub>d</sub>	- dir. axis synchronous	266%	240%	223%	175%	278%	267%	261%	240%	
X' <sub>d</sub>	- dir. axis transient	22,2%	20,0%	18,6%	14,5%	23,2%	22,2%	21,8%	20,0%	
X'' <sub>d</sub>	- dir. axis subtransient	10,0%	9,0%	8,4%	6,5%	10,4%	10,0%	9,8%	9,0%	
X <sub>q</sub>	- quad. axis reactance	148%	134%	124%	97%	155%	149%	146%	134%	
T' <sub>do</sub>	- O.C. field time constant	101ms								
T' <sub>d</sub>	- Transient time constant	8ms								
T'' <sub>d</sub>	- Sub-transient time constant	5ms								

### MECHANICAL DATA

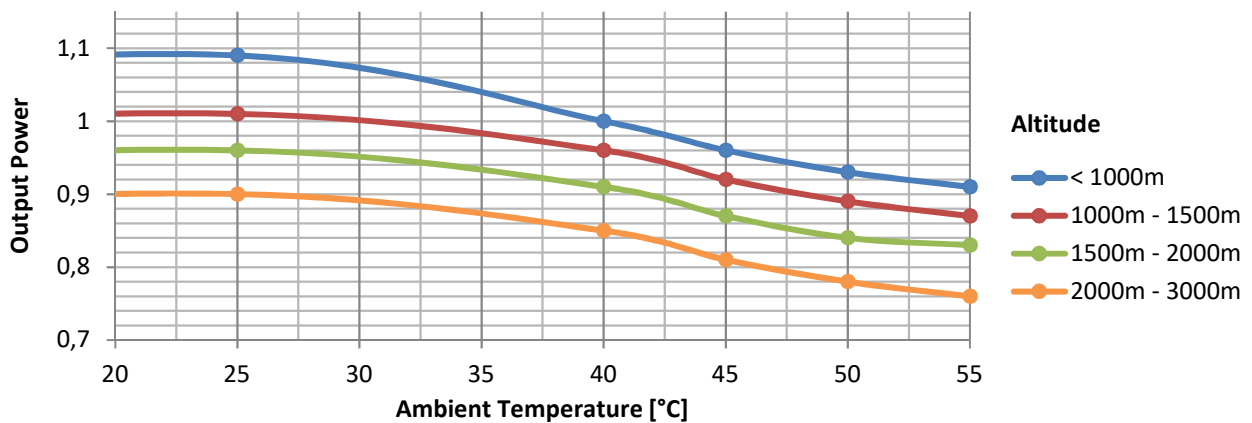
Bearing non drive end		6307-2RS-C3	
Bearing drive end (B3/B14 form)		6309-2RS-C3	
Weight of generator	in B2	kg	134,5
	in B3/B14	kg	136,5
	in B3/B9	kg	\

# PRO18S B/4

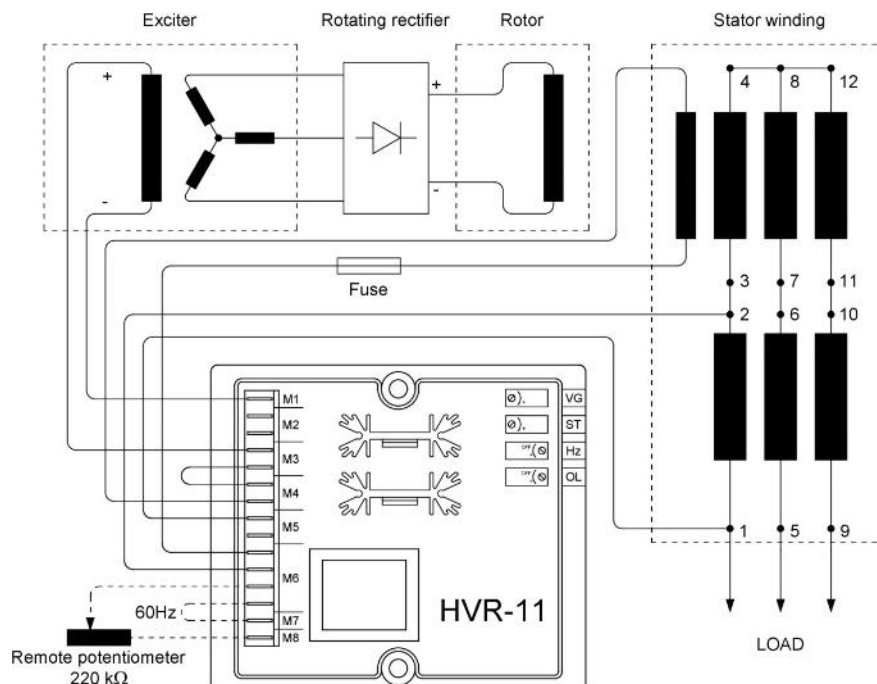
## MOMENT OF INERZIA

B3/B9	kg·m <sup>2</sup>	\
SAE 7½	kg·m <sup>2</sup>	0,244
SAE 8	kg·m <sup>2</sup>	0,253
SAE 10	kg·m <sup>2</sup>	0,270
SAE 11½	kg·m <sup>2</sup>	0,289
SAE 14	kg·m <sup>2</sup>	\
SAE 18	kg·m <sup>2</sup>	\
B3/B14	kg·m <sup>2</sup>	0,231

## DERATING CURVES



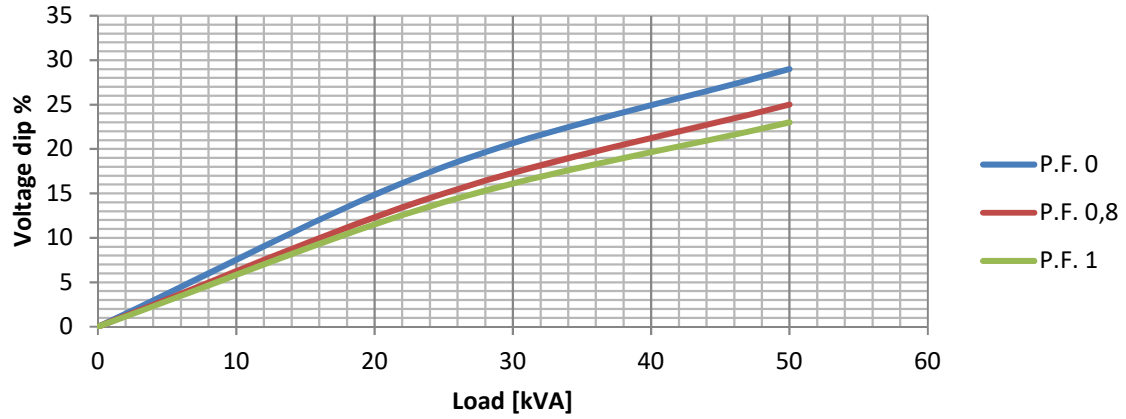
## WIRING DIAGRAM



# PRO18S B/4

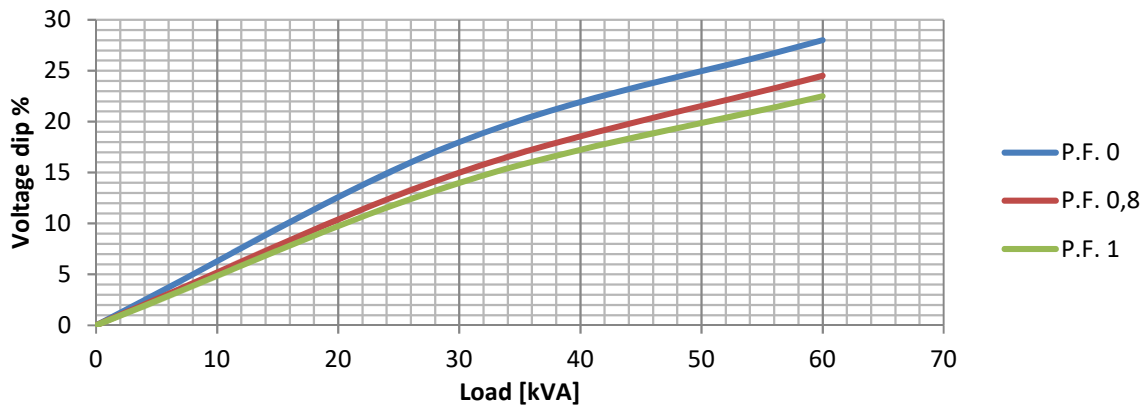
## TRANSIENT VOLTAGE VARIATION 50Hz

### Transient Voltage Variation @ 50Hz



## TRANSIENT VOLTAGE VARIATION 60Hz

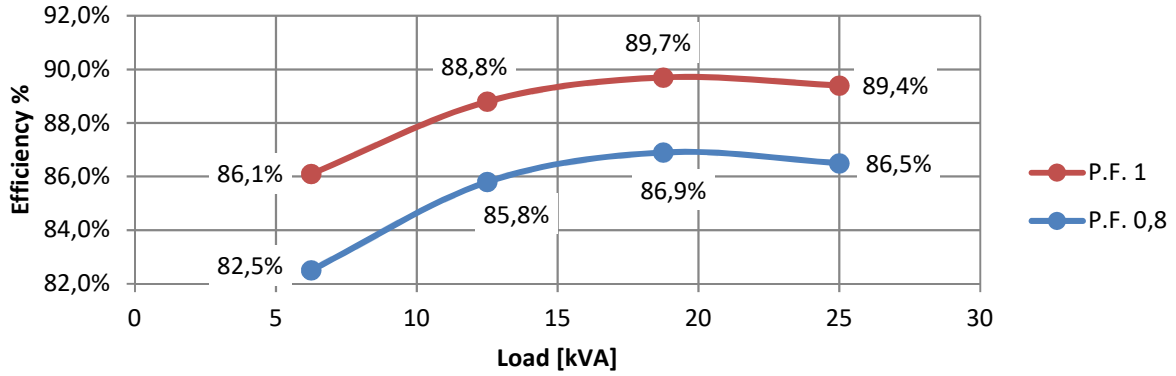
### Transient Voltage Variation @ 60Hz



# PRO18S B/4

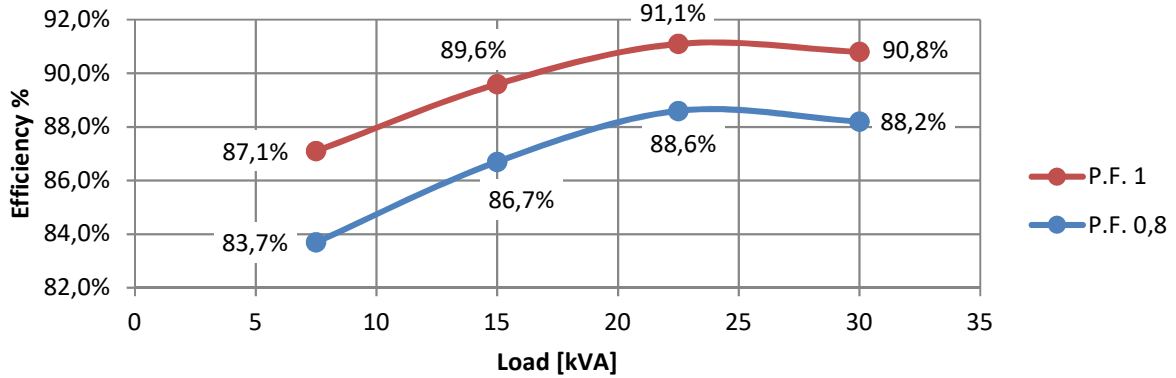
## EFFICIENCY 50Hz

### Efficiency Curves @ 50Hz



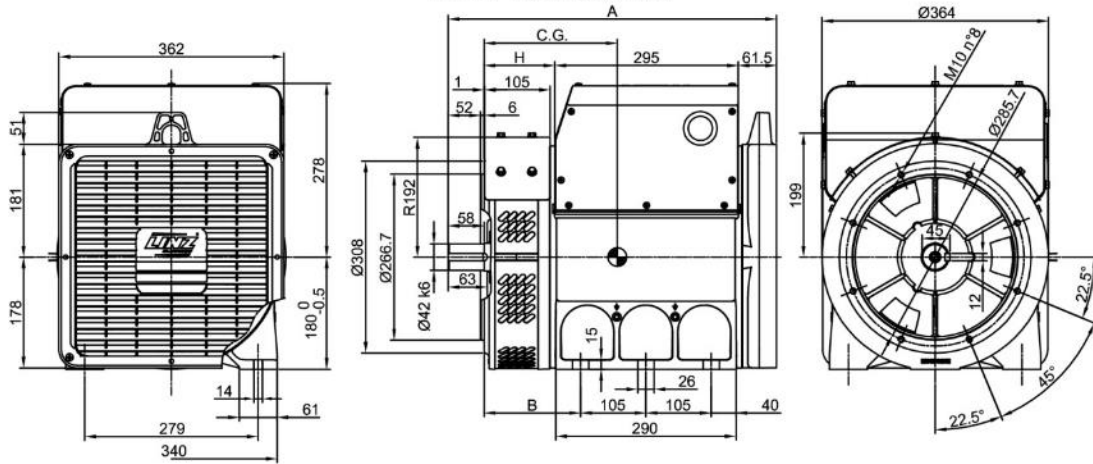
## EFFICIENCY 60Hz

### Efficiency Curves @ 60Hz

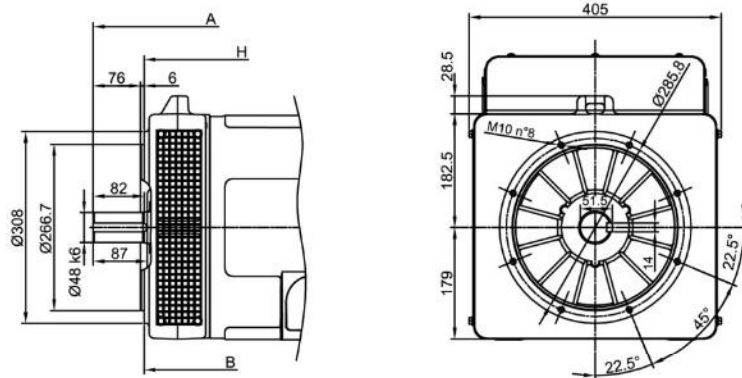


# PRO18S B/4

FORMA - FORM B3/B14 'S-M'



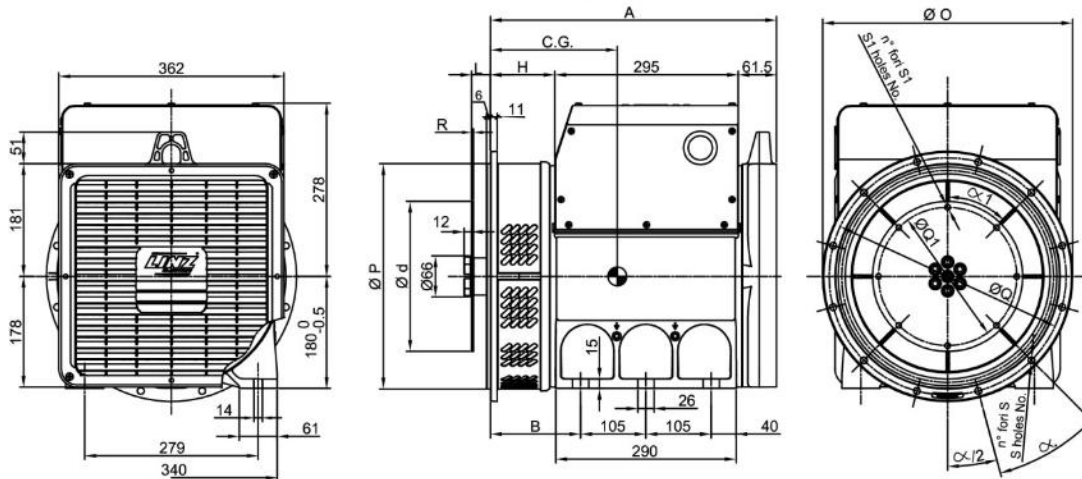
FORMA - FORM B3/B14 'L'



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	62	241,3	222,25	8		45°	
8	62	263,52	244,47	6		60°	
10	53,8	314,32	295,27	8	10,5	45°	4,5
11 1/2	39,6	352,42	333,37				