

TECHNICAL DATA SHEET



**ALTERNATOR PRO35S C/4**

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

## PRO35S C/4

### COMMON DATA

Rated Power at 50Hz	kVA	500	
Rated Power at 60Hz	kVA	600	
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	54,4 at 50Hz	65,3 at 60Hz
R.F.I. Suppression		Standard EN55011	

### REGULATION DATA

AVR		HVR30
Sensing		three-phase
Voltage Regulation		±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		6	
Stator Winding Resistance	Ω	0,0011 at 20°C	
Rotor Winding Resistance	Ω	1,15 at 20°C	
Exciter Stator Resistance	Ω	12,5 at 20°C	
Exciter Rotor Resistance	Ω	0,095 at 20°C	
THD at full load		<3%	
THD at no load		<2,5%	
Excitation at no load	A <sub>dc</sub>	0,54	
Excitation at full load	A <sub>dc</sub>	2,3	

### 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

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### ELECTRICAL DATA

Frequency		50Hz - 1500rpm				60Hz - 1800rpm			
Voltage Series Star	V	<b>380/220</b>	<b>400/230</b>	<b>415/240</b>	<b>440/254</b>	<b>415/240</b>	<b>440/254</b>	<b>460/266</b>	<b>480/277</b>
Rated Power in Class H (125°C/40°C)	kVA	500	500	500	470	550	580	600	600
	kW	400	400	400	376	440	464	480	480
Rated Power in Class F (105°C/40°C)	kVA	450	450	450	420	495	525	540	540
	kW	360	360	360	336	396	420	432	432
Rated Power Standby (150°C/40°C)	kVA	530	530	530	495	575	615	635	635
	kW	424	424	424	396	460	492	508	508
Rated Power Standby (163°C/27°C)	kVA	550	550	550	515	600	640	660	660
	kW	440	440	440	412	480	512	528	528

### EFFICIENCY IN CL. H

4/4	94,9%							95,9%
3/4	95,4%							96,2%
2/4	94,1%							94,7%
1/4	90,5%							91,1%

### REACTANCES AND TIME CONSTANTS

pcc		0,31							
X <sub>d</sub> - dir. axis synchronous		375%	338%	314%	263%	414%	389%	368%	338%
X' <sub>d</sub> - dir. axis transient		19,4%	17,5%	16,3%	13,6%	21,5%	20,1%	19,1%	17,5%
X'' <sub>d</sub> - dir. axis subtransient		13,3%	12,0%	11,1%	9,3%	14,7%	13,8%	13,1%	12,0%
X <sub>q</sub> - quad. axis reactance		232%	209%	194%	162%	256%	240%	228%	209%
T' <sub>do</sub> - O.C. field time constant		2230ms							
T' <sub>d</sub> - Transient time constant		115ms							
T'' <sub>d</sub> - Sub-transient time constant		11ms							

### MECHANICAL DATA

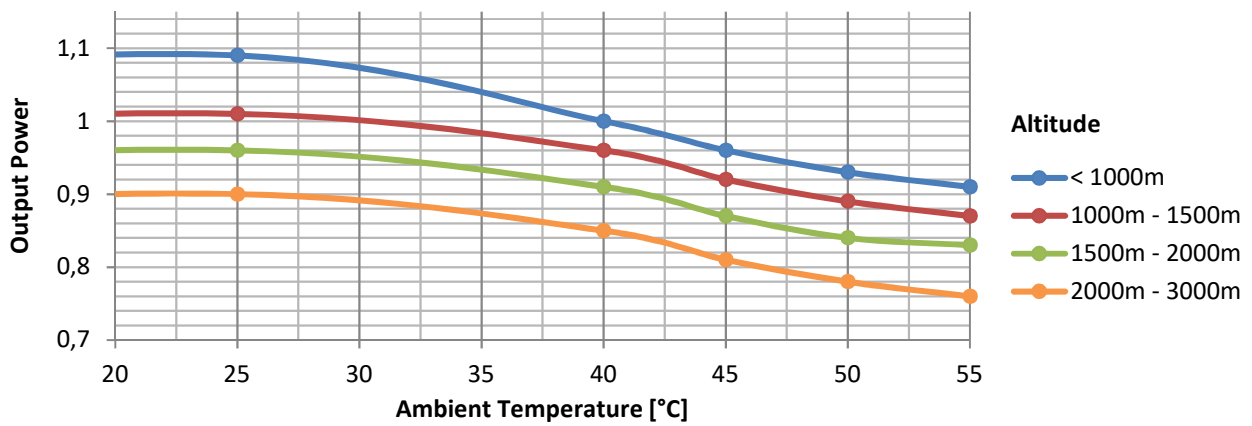
Bearing non drive end			6316-2RS-C3
Bearing drive end (B3/B14 form)			6319-2RS-C3
Weight of generator	in B2	kg	1262,5
	in B3/B14	kg	1276,5
	in B3/B9	kg	\

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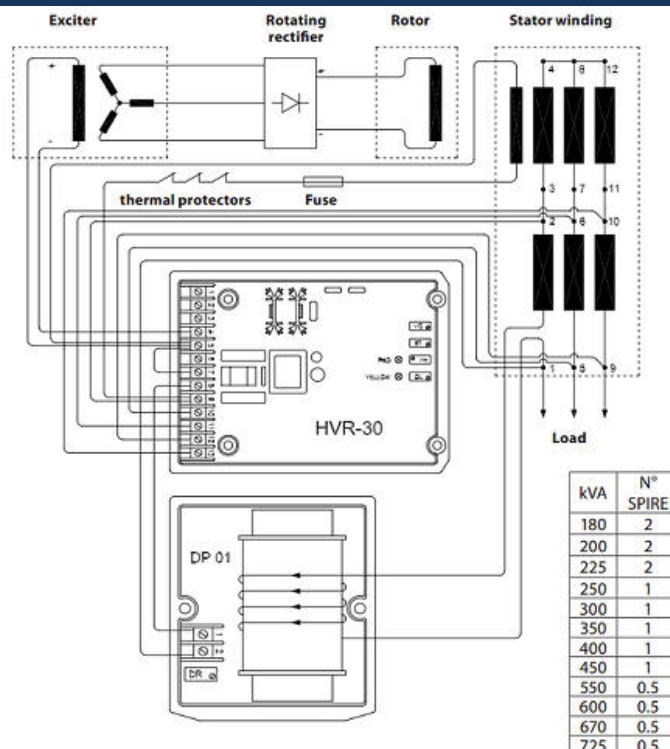
## MOMENT OF INERZIA

B3/B9	kg·m <sup>2</sup>	\
SAE 7½	kg·m <sup>2</sup>	\
SAE 8	kg·m <sup>2</sup>	\
SAE 10	kg·m <sup>2</sup>	\
SAE 11½	kg·m <sup>2</sup>	\
SAE 14	kg·m <sup>2</sup>	9,386
SAE 18	kg·m <sup>2</sup>	9,726
B3/B14	kg·m <sup>2</sup>	8,871

## DERATING CURVES



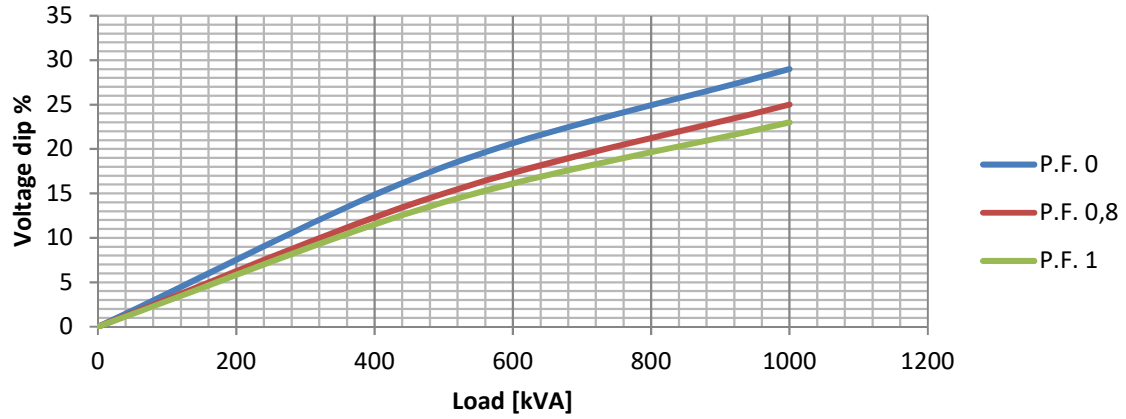
## WIRING DIAGRAM



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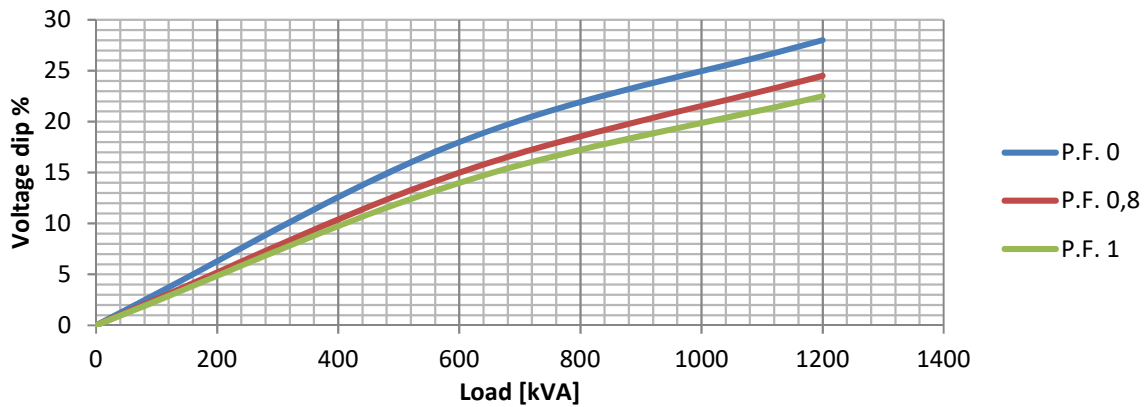
## TRANSIENT VOLTAGE VARIATION 50Hz

### Transient Voltage Variation @ 50Hz



## TRANSIENT VOLTAGE VARIATION 60Hz

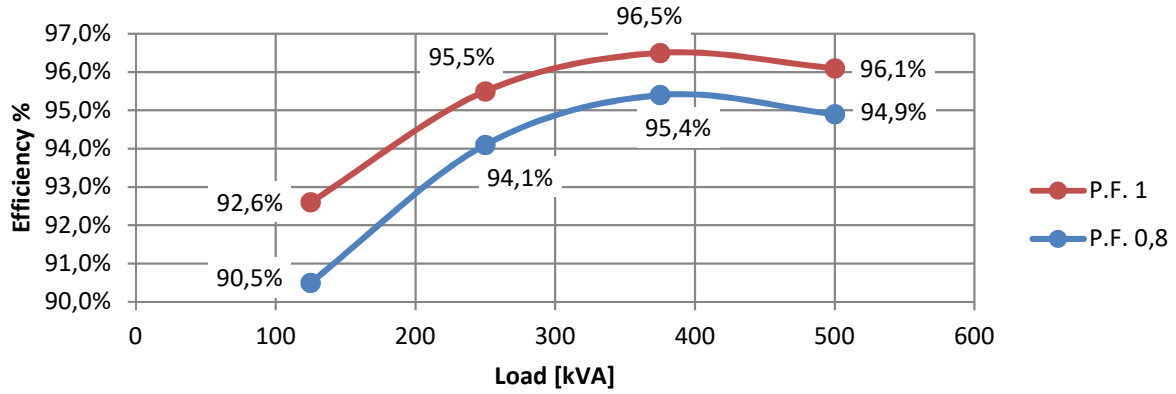
### Transient Voltage Variation @ 60Hz



# PRO35S C/4

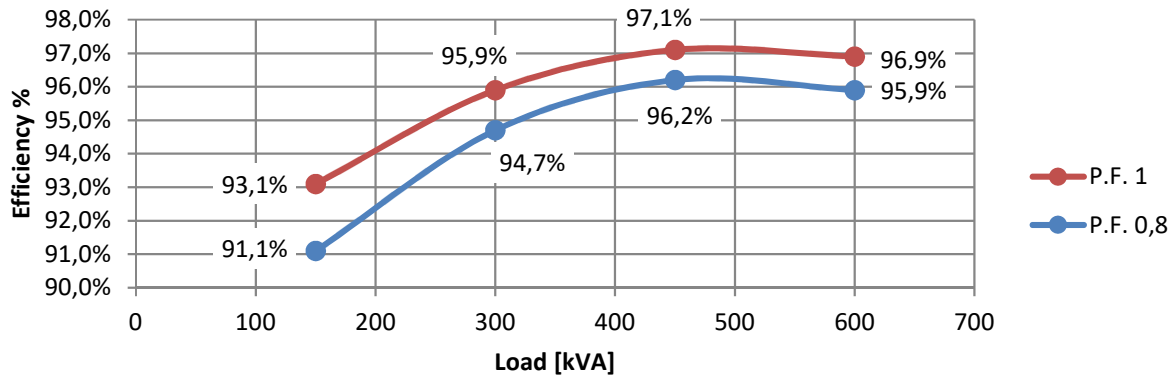
## EFFICIENCY 50Hz

### Efficiency Curves @ 50Hz



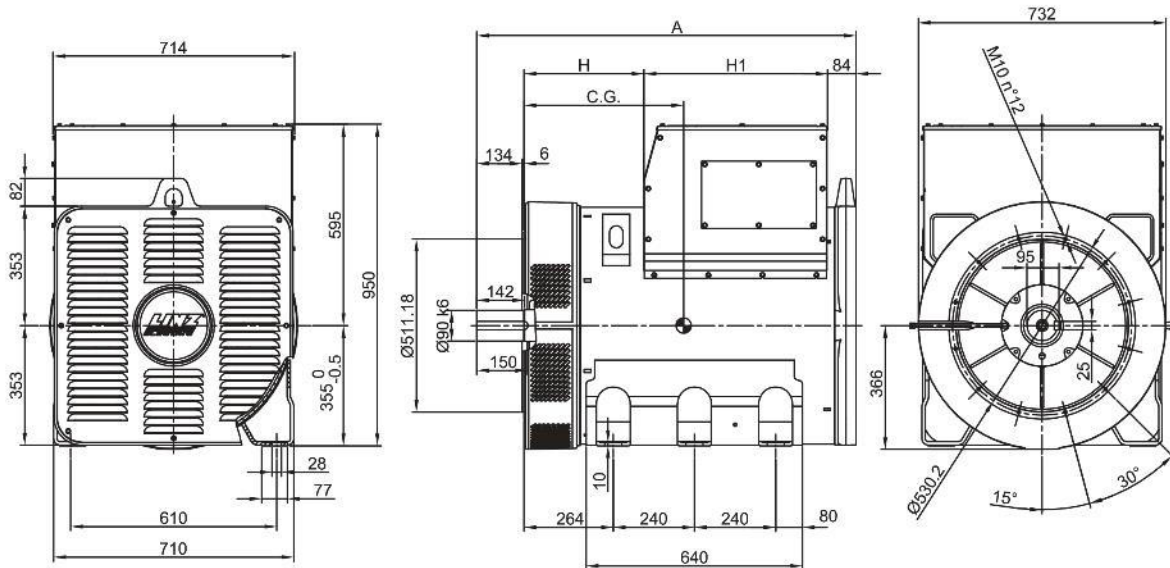
## EFFICIENCY 60Hz

### Efficiency Curves @ 60Hz

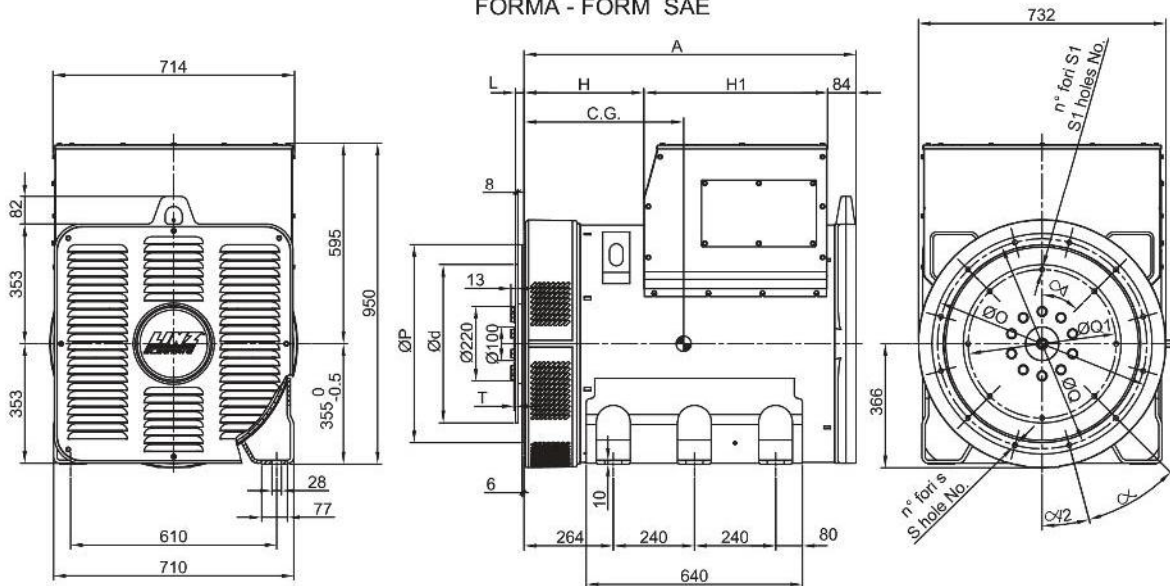


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## FORMA - FORM B3/B14



## FORMA - FORM SAE



FORMA - FORM		A	H	H1
B3/B14	PRO35 S	1122	454.5	443.5
	PRO35 M	1247	479.5	543.5
	PRO35 L	1347	579.5	
SAE	PRO35 S	982	454.5	443.5
	PRO35 M	1107	479.5	543.5
	PRO35 L	1207	579.5	

TIPO - TYPE	C.G.
PRO35S B/4	456
PRO35S C/4	466
PRO35S D/4	478
PRO35M E/4	516
PRO35M F/4	516
PRO35M G/4	539
PRO35L H/4	588

SAE N.	FLANGIE - FLANGES - BRIDAS					
	Ø O	Ø P	Ø Q	n. fori holes No.	S	α
0	710	647.7	679.5	16	14	22.5°
1/2	650	584.2	619.2	12	14	30°
1	552	511.18	530.2	12	12	30°

SAE N.	GIUNTI A DISCO - COUPLING DISCS - JUNTAS A DISCOS						
	L	Ø d	Ø Q1	n. fori holes No.	S1	α1	T
14	25.4	466.72	438.15	8	14	45°	4.3
18	15.7	571.5	542.92	6	17	60°	14