

TECHNICAL DATA SHEET



**ALTERNATOR PRO28L G/4**

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

## PRO28L G/4

### COMMON DATA

Rated Power at 50Hz	kVA	400	
Rated Power at 60Hz	kVA	480	
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	44,4 at 50Hz	49,6 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	0,0061 at 20°C	
Rotor Winding Resistance	Ω	3,15 at 20°C	
Exciter Stator Resistance	Ω	15 at 20°C	
Exciter Rotor Resistance	Ω	0,25 at 20°C	
THD at full load		<3%	
THD at no load		<3%	
Excitation at no load	Adc	0,6	
Excitation at full load	Adc	2,2	

### 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	400	400	400	380	430	460	480	480
	kW	320	320	320	304	344	368	384	384
Rated Power in Class F (105°C/40°C)	kVA	360	360	360	340	386	415	430	430
	kW	288	288	288	272	308,8	332	344	344
Rated Power Standby (150°C/40°C)	kVA	410	410	410	390	435	470	490	490
	kW	328	328	328	312	348	376	392	392
Rated Power Standby (163°C/27°C)	kVA	420	420	420	400	445	480	500	500
	kW	336	336	336	320	356	384	400	400

### EFFICIENCY IN CL. H

4/4	93,8%							94,2%
3/4	94,0%							94,4%
2/4	93,1%							93,5%
1/4	90,0%							90,1%

### REACTANCES AND TIME CONSTANTS

pcc		0,41							
X <sub>d</sub> - dir. axis synchronous		366%	330%	307%	259%	395%	376%	359%	330%
X' <sub>d</sub> - dir. axis transient		19,9%	18,0%	16,7%	14,1%	21,6%	20,5%	19,6%	18,0%
X'' <sub>d</sub> - dir. axis subtransient		10,0%	9,0%	8,4%	7,1%	10,8%	10,3%	9,8%	9,0%
X <sub>q</sub> - quad. axis reactance		233%	210%	195%	165%	252%	240%	229%	210%
T' <sub>do</sub> - O.C. field time constant		1910ms							
T' <sub>d</sub> - Transient time constant		116ms							
T'' <sub>d</sub> - Sub-transient time constant		14ms							

### MECHANICAL DATA

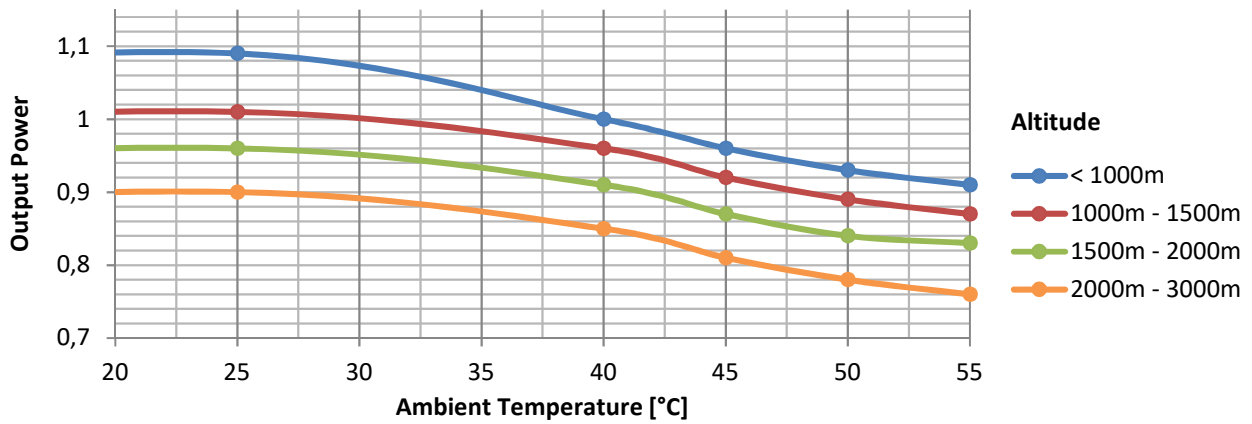
Bearing non drive end			6314-2RS-C3
Bearing drive end (B3/B14 form)			6316-2RS-C3
Weight of generator	in B2	kg	1034
	in B3/B14	kg	1045
	in B3/B9	kg	\

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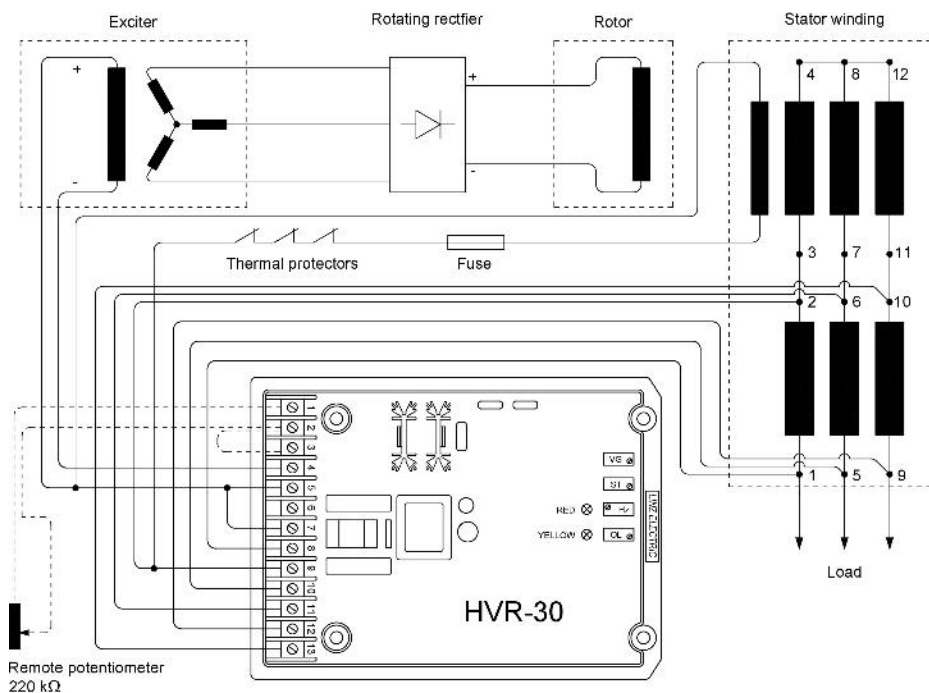
## MOMENT OF INERZIA

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>	4,916
SAE 14	kg·m <sup>2</sup>	5,032
SAE 18	kg·m <sup>2</sup>	\
B3/B14	kg·m <sup>2</sup>	4,737

## DERATING CURVES



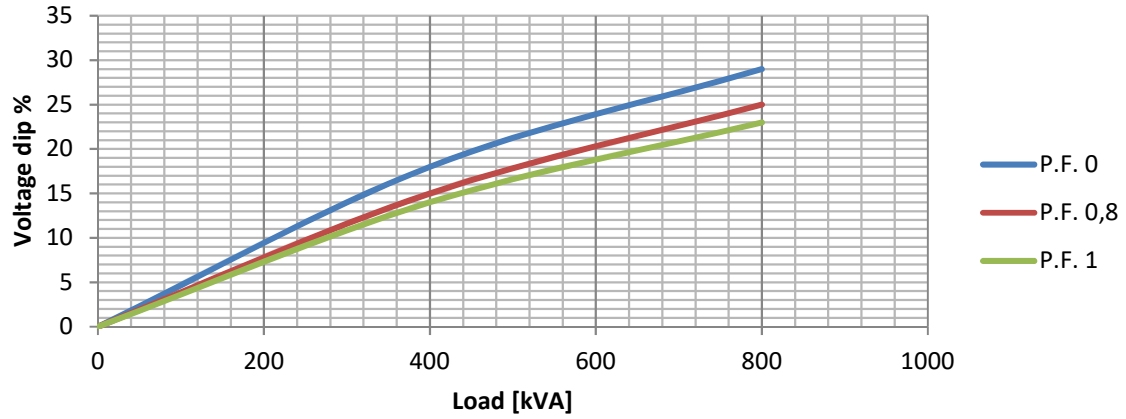
## WIRING DIAGRAM



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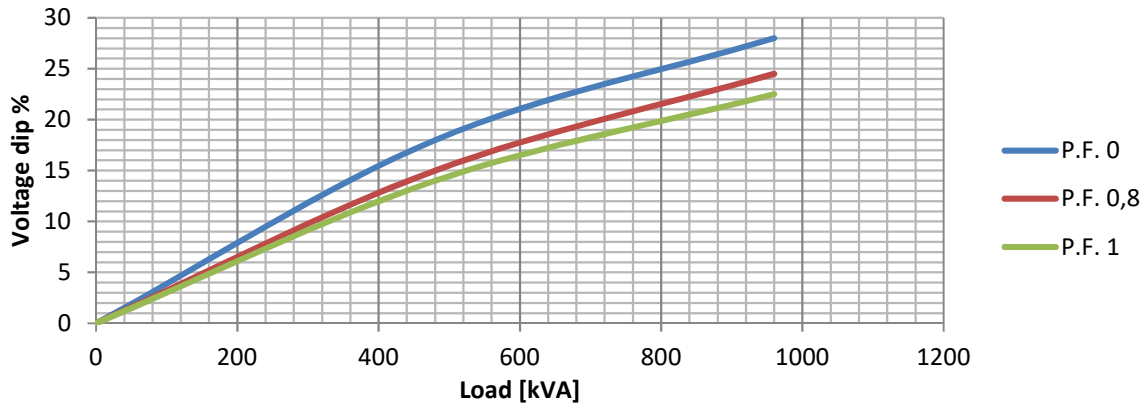
## TRANSIENT VOLTAGE VARIATION 50Hz

### Transient Voltage Variation @ 50Hz



## TRANSIENT VOLTAGE VARIATION 60Hz

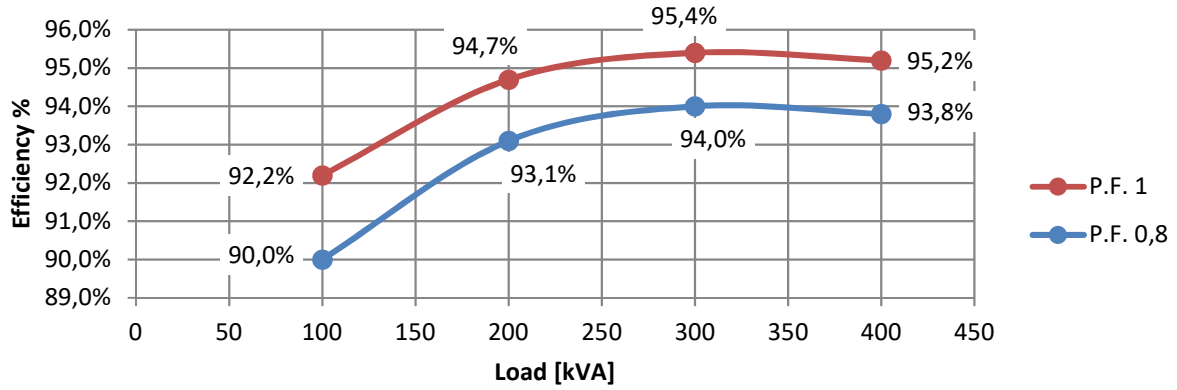
### Transient Voltage Variation @ 60Hz



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## EFFICIENCY 50Hz

### Efficiency Curves @ 50Hz



## EFFICIENCY 60Hz

### Efficiency Curves @ 60Hz

