



## **ALTERNATOR PRO35M G/4**

*three-phase brushless synchronous alternator with AVR - 4 poles*

Technical Data Sheet

## PRO35M G/4

### COMMON DATA

Rated Power at 50Hz	kVA	725	
Rated Power at 60Hz	kVA	870	
Rated Power Factor		0.8	
Nominal Temperature	°C	40	
Control System		self excited	
Execution		brushless	
Regulation Type		AVR	
Insulation Class		H	
Protection		IP23	
Maximum Overspeed	rpm	2250	
Overload		110% of rated power for one hour in a cycle of 6 hours	
Air Flow Requirement	m <sup>3</sup> /min	54.5 at 50Hz	64 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	12	
Stator Winding Resistance	0.0019 at 20°C	
Rotor Winding Resistance	1.7 at 20°C	
Exciter Stator Resistance	12.5 at 20°C	
Exciter Rotor Resistance	0.095 at 20°C	
THD at full load	<3%	
THD at no load	<2,5%	
Excitation at no load	A <sub>dc</sub>	0.52
Excitation at full load	A <sub>dc</sub>	2.35

### STANDARD

References	EN60034-1 ISO8528-3 EN55011
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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	725	725	725	670	785	820	870	870
	kW	580	580	580	536	628	656	696	696
Rated Power in Class F (105°C/40°C)	kVA	650	650	650	600	700	740	780	780
	kW	520	520	520	480	560	592	624	624
Rated Power Standby (150°C/40°C)	kVA	765	765	765	710	830	865	920	920
	kW	612	612	612	568	664	692	736	736
Rated Power Standby (163°C/27°C)	kVA	795	795	795	735	860	895	950	950
	kW	636	636	636	588	688	716	760	760

### EFFICIENCY IN CL. H

4/4		95.3%						96.2%
3/4		95.8%						96.6%
2/4		94.6%						95.2%
1/4		93.1%						93.7%

### REACTANCES AND TIME CONSTANTS

pcc		0.31							
X <sub>d</sub> - dir. axis synchronous		365%	329%	306%	251%	397%	369%	358%	329%
X' <sub>d</sub> - dir. axis transient		21.1%	19.0%	17.7%	14.5%	22.9%	21.3%	20.7%	19.0%
X'' <sub>d</sub> - dir. axis subtransient		11.1%	10.0%	9.3%	7.6%	12.1%	11.2%	10.9%	10.0%
X <sub>q</sub> - quad. axis reactance		238%	215%	200%	164%	260%	241%	234%	215%
T' <sub>do</sub> - O.C. field time constant		2500ms							
T' <sub>d</sub> - Transient time constant		145ms							
T'' <sub>d</sub> - Sub-transient time constant		9ms							

### MECHANICAL DATA

Bearing non drive end				6316-2RS-C3
Bearing drive end (B3/B14 form)				6319-2RS1-C3
Weight of generator	in B2	kg		1658
	in B3/B14	kg		1682
	in B3/B9	kg		\

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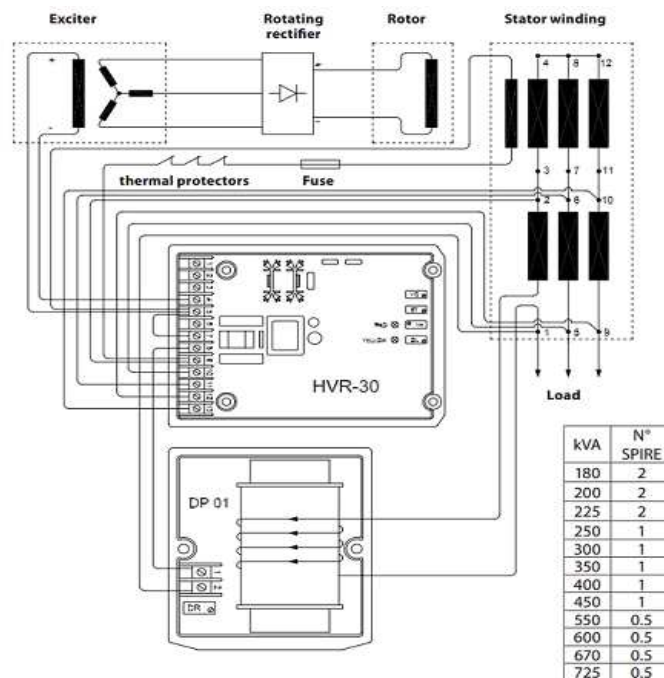
## MOMENT OF INERZIA

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>	12.757
SAE 18	kg·m <sup>2</sup>	13.097
B3/B14	kg·m <sup>2</sup>	12.242

## POWER VARIATION ACCORDING TO TEMPERATURE AND ALTITUDE

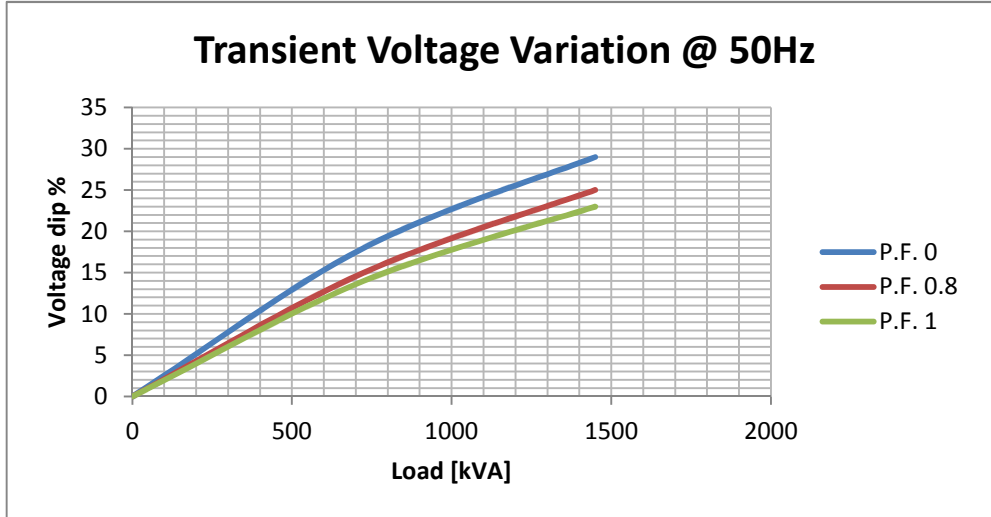
Altitude	Ambient temperature				
	25°C	40°C	45°C	50°C	55°C
< 1000m	1.09	1	0.96	0.93	0.91
1000m - 1500m	1.01	0.96	0.92	0.89	0.87
1500m - 2000m	0.96	0.91	0.87	0.84	0.83
2000m - 3000m	0.9	0.85	0.81	0.78	0.76

## WIRING DIAGRAM

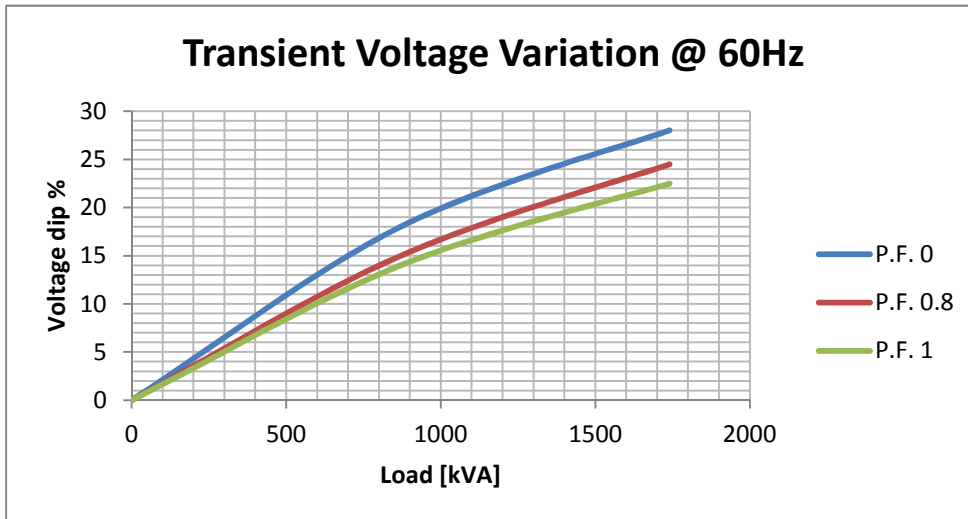


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## TRANSIENT VOLTAGE VARIATION 50Hz

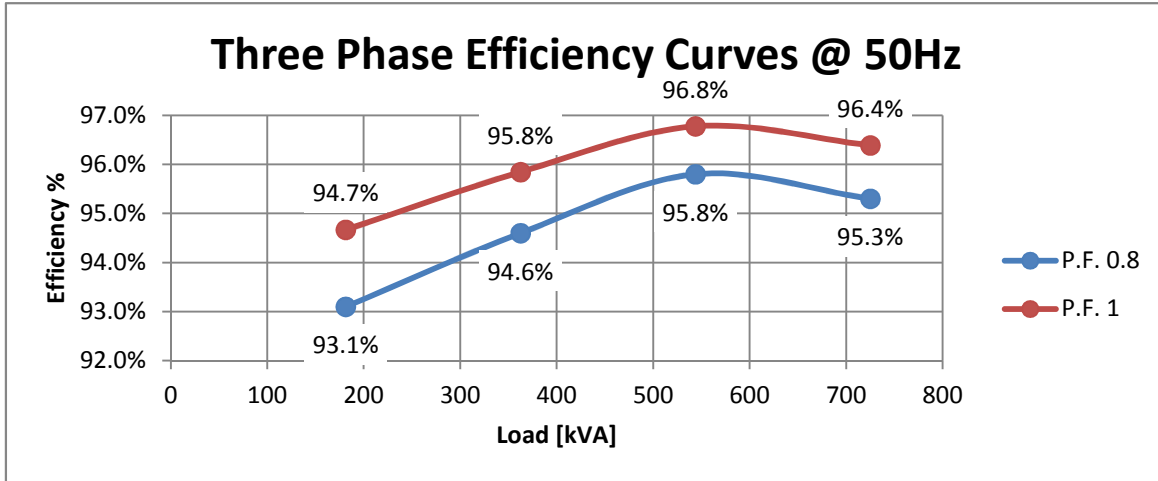


## TRANSIENT VOLTAGE VARIATION 60Hz



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**EFFICIENCY 50Hz**



**EFFICIENCY 60Hz**

