



## **ALTERNATOR PRO18S B/4**

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

Technical Data Sheet

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### 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 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	6.3 at 50Hz	6.5 at 60Hz
Telephone Interference		<2%	
R.F.I. Suppression		Standard EN55011	

### REGULATION DATA

AVR	HVR11	HVR30
Sensing	Single phase	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 Winding	12	
Stator Winding Resistance	0.13Ω at 20°C	
Rotor Winding Resistance	2.61Ω at 20°C	
Exciter Stator Resistance	15Ω at 20°C	
Exciter Rotor Resistance	0.72Ω at 20°C	
THD at full load	<3%	
THD at no load	<3%	
Excitation at no load	A <sub>dc</sub>	0.92
Excitation at full load	A <sub>dc</sub>	2.23

### STANDARD

References	EN60034-1, ISO8538, EN55011
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### ELECTRICAL DATA

Frequency	50Hz - 1500rpm				60Hz - 1800rpm				
	Voltage Series Star	V	380/220	400/230	415/240	440/254	415/240	440/254	460/266
Voltage Parallel Star	V	190/110	200/115	207/120	220/127	207/120	220/127	230/133	240/138
Voltage Series Delta	V	220	230	240	254	240	254	266	277
Rated Power in Class H (125°C/40°C)	kVA	25	25	25	22	26	28	30	30
	kW	20	20	20	17.6	20.8	22.4	24	24
Rated Power in Class F (105°C/40°C)	kVA	23	23	23	20	24	25	27.5	27.5
	kW	18.4	18.4	18.4	16	19.2	20	22	22
Rated Power Standby (150°C/40°C)	kVA	27	27	26	24	28.5	30	32	32
	kW	21.6	21.6	20.8	19.2	22.8	24	25.6	25.6
Rated Power Standby (163°C/27°C)	kVA	28	28	27	25	30	32	34	34
	kW	22.4	22.4	21.6	20	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%	224%	175%	280%	267%	261%	240%
X' <sub>d</sub> - dir. axis transient		22.2%	20.0%	18.7%	14.5%	23.3%	22.2%	21.8%	20.0%
X'' <sub>d</sub> - dir. axis subtransient		10.0%	9.0%	8.4%	6.5%	10.5%	10.0%	9.8%	9.0%
X <sub>q</sub> - quad. axis reactance		148%	134%	125%	97%	156%	149%	146%	134%
T' <sub>do</sub> - O.C. field time constant		101 ms							
T' <sub>d</sub> - Transient time constant		8 ms							
T'' <sub>d</sub> - Sub-transient time constant		5 ms							

### MECHANICAL DATA

Bearing non drive end		6307-2RS-C3	
Bearing drive end (B3/B14 form)		6309-2RS-C3	
Weight of generator	in B2	kg	144
	in B3/B14	kg	146

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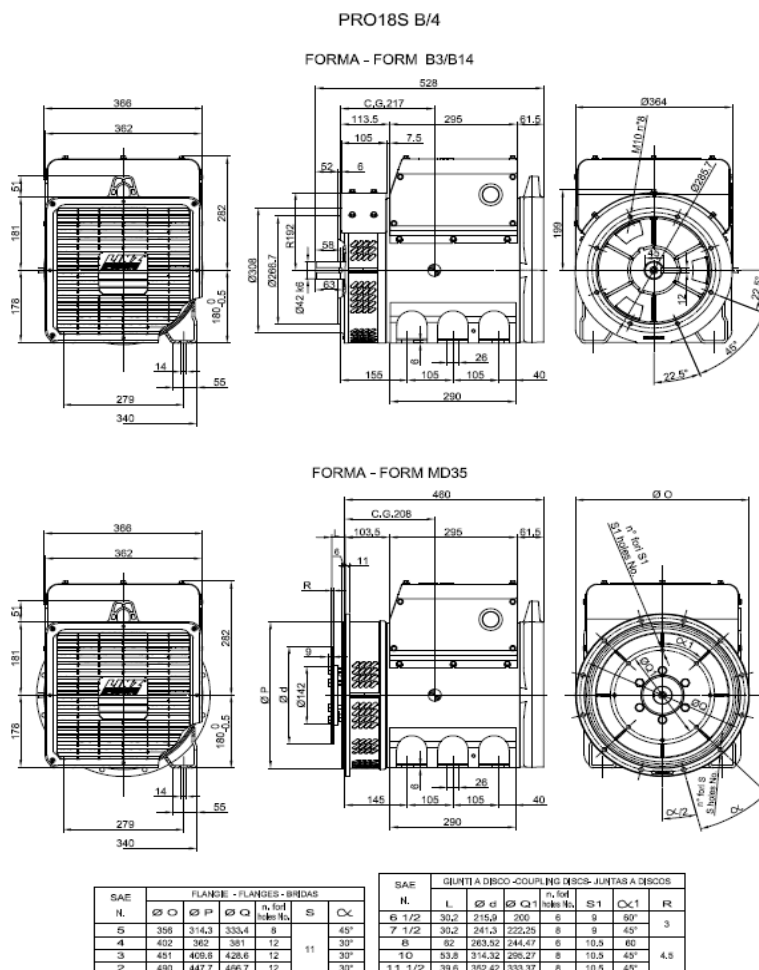
### MOMENT OF INERZIA

SAE 7½	kg·m <sup>2</sup>		0.239
SAE 8	kg·m <sup>2</sup>		0.248
SAE 10	kg·m <sup>2</sup>		0.265
SAE 11½	kg·m <sup>2</sup>		0.284
B3/B14	kg·m <sup>4</sup>		0.231

### POWER VARIATION ACCORDING TO TEMPERATURE AND ALTITUDE

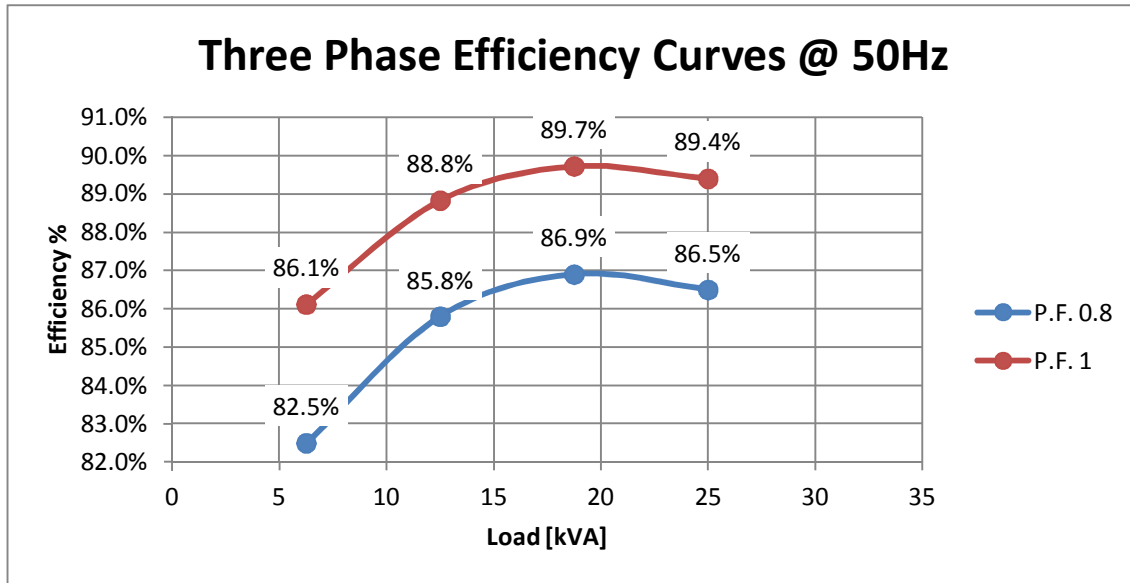
		Ambient temperature				
Altitude		25°C	40°C	45°C	50°C	55°C
< 1000m		1.09	1	0.96	0.93	0.91
1000m - 1500m		1.01	0.96	0.92	0.89	0.87
1500m - 2000m		0.96	0.91	0.87	0.84	0.83
2000m - 3000m		0.9	0.85	0.81	0.78	0.76

### DIMENSIONS

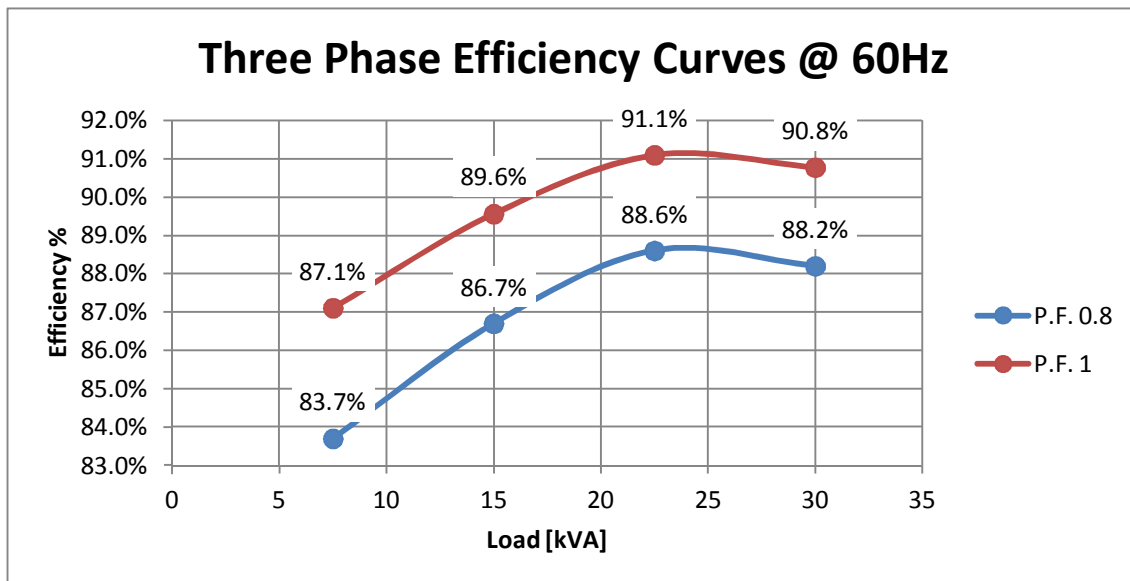


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**EFFICIENCY 50Hz**

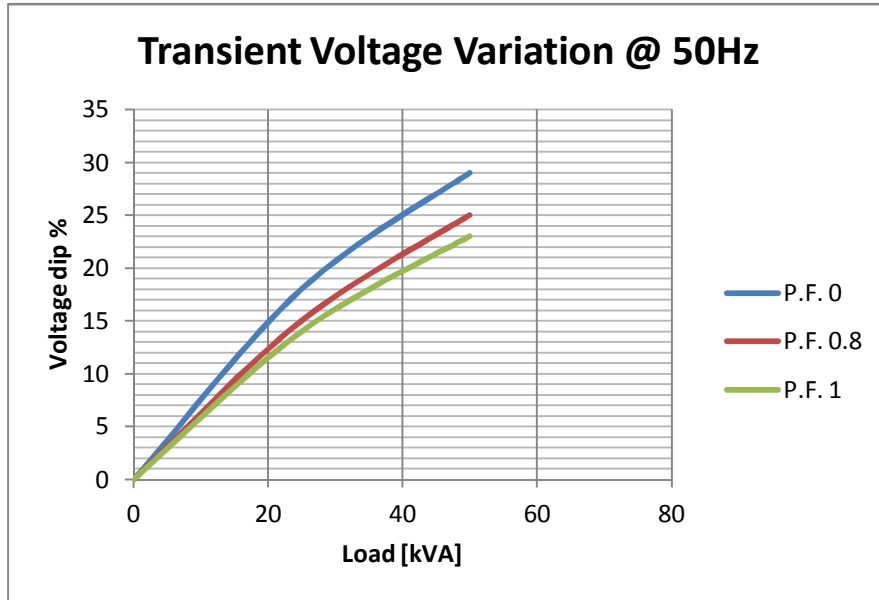


**EFFICIENCY 60Hz**



**PRO18S B/4**

**TRANSIENT VOLTAGE VARIATION 50Hz**



**TRANSIENT VOLTAGE VARIATION 60Hz**

