



## **ALTERNATOR PRO35S C/4**

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

Technical Data Sheet

## 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 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	54.4 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		0.0011 at 20°C	
Rotor Winding Resistance		1.15 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>	0.54	
Excitation at full load	A <sub>dc</sub>	2.3	

### STANDARD

References		EN60034-1 ISO8528-3 EN55011
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## PRO35S C/4

### 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%	338%
X' <sub>d</sub> - dir. axis transient		19.4%	17.5%	16.3%	13.6%	21.5%	20.1%	17.5%
X'' <sub>d</sub> - dir. axis subtransient		13.3%	12.0%	11.1%	9.3%	14.7%	13.8%	12.0%
X <sub>q</sub> - quad. axis reactance		232%	209%	194%	162%	256%	240%	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)		6319-2RS1-C3	
Weight of generator	in B2	kg	1262.5
	in B3/B14	kg	1276.5
	in B3/B9	kg	\

# PRO35S C/4

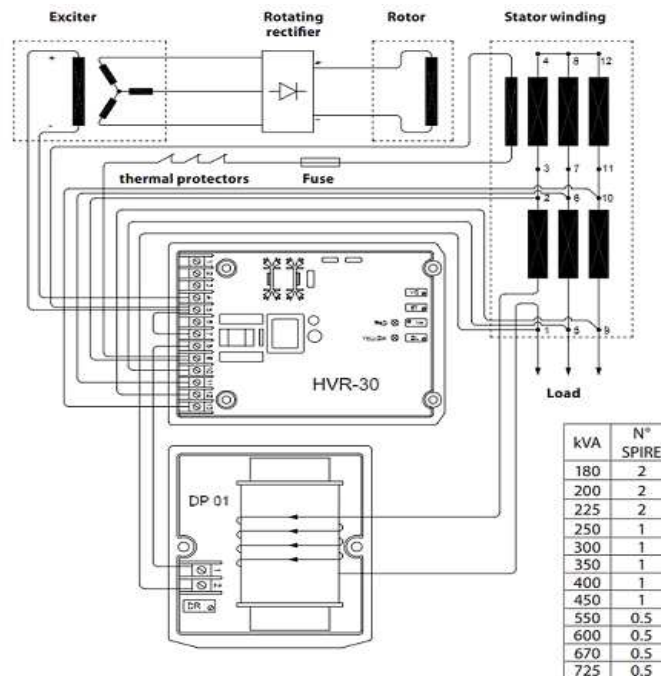
## MOMENT OF INERZIA

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

## POWER VARIATION ACCORDING TO TEMPERATURE AND ALTITUDE

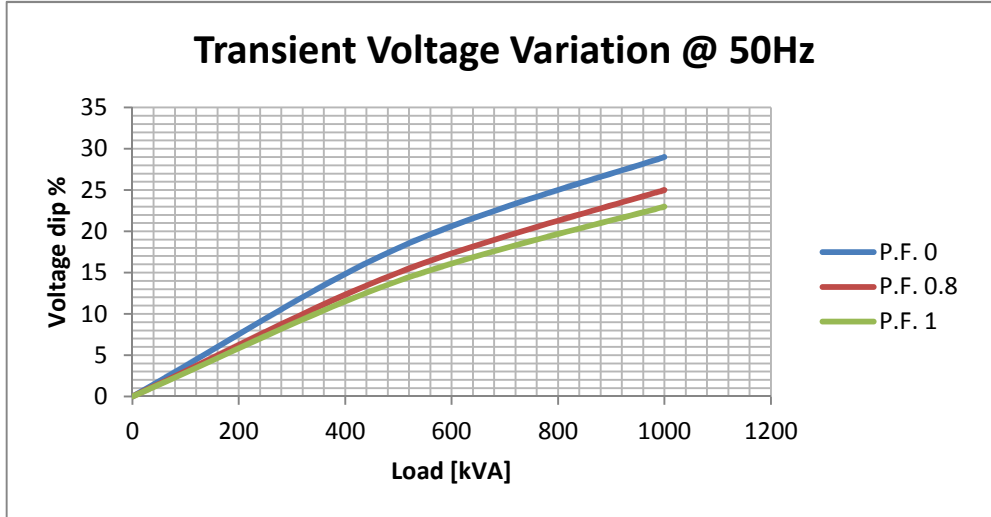
Altitude	Ambient temperature				
	25°C	40°C	45°C	50°C	55°C
< 1000m	1.09	1	0.96	0.93	0.91
1000m - 1500m	1.01	0.96	0.92	0.89	0.87
1500m - 2000m	0.96	0.91	0.87	0.84	0.83
2000m - 3000m	0.9	0.85	0.81	0.78	0.76

## WIRING DIAGRAM

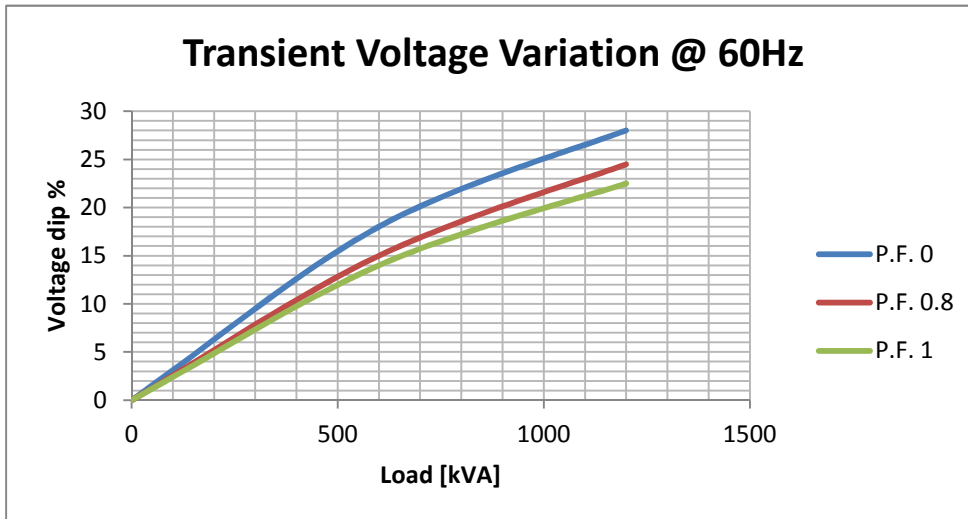


**PRO35S C/4**

**TRANSIENT VOLTAGE VARIATION 50Hz**

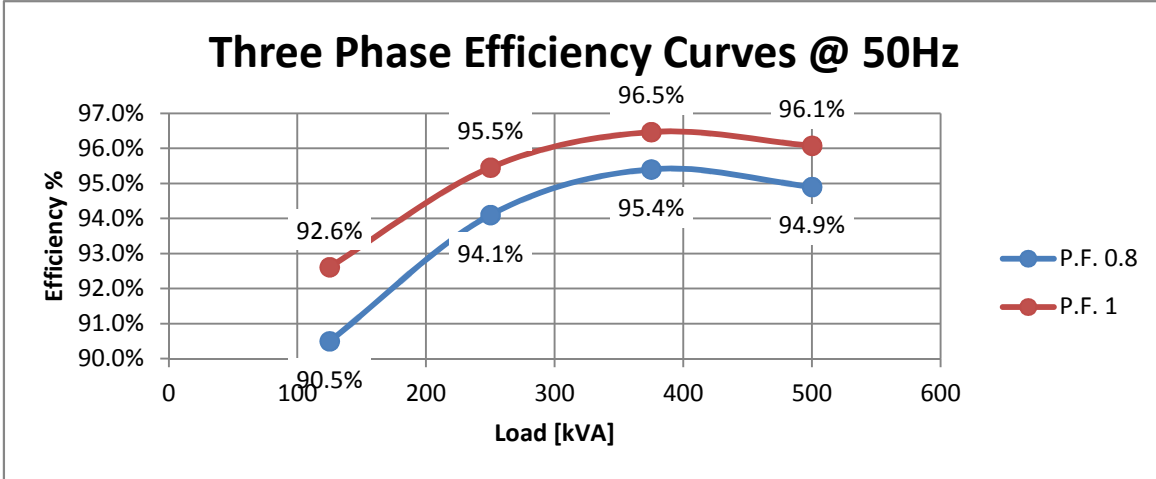


**TRANSIENT VOLTAGE VARIATION 60Hz**

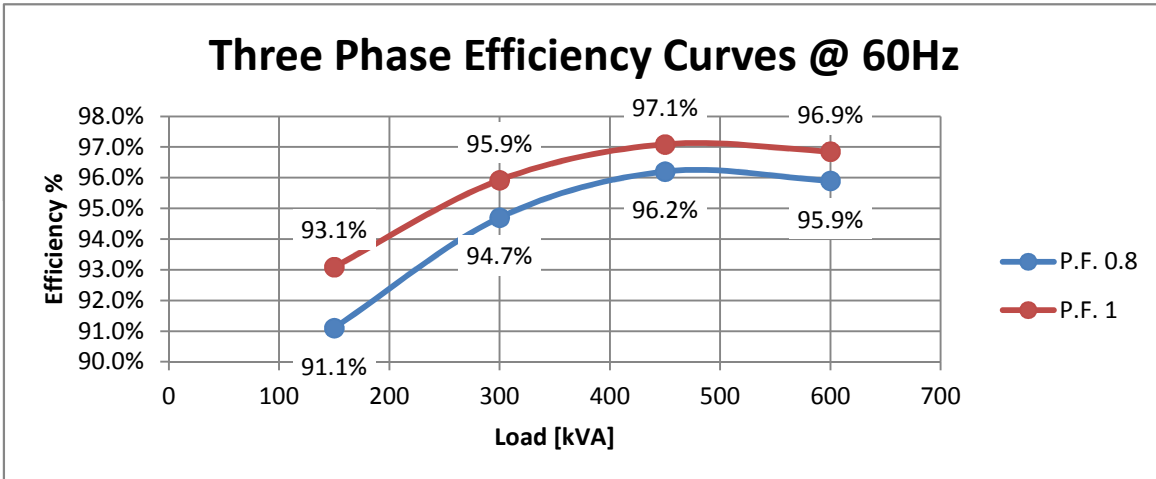


**PRO35S C/4**

**EFFICIENCY 50Hz**

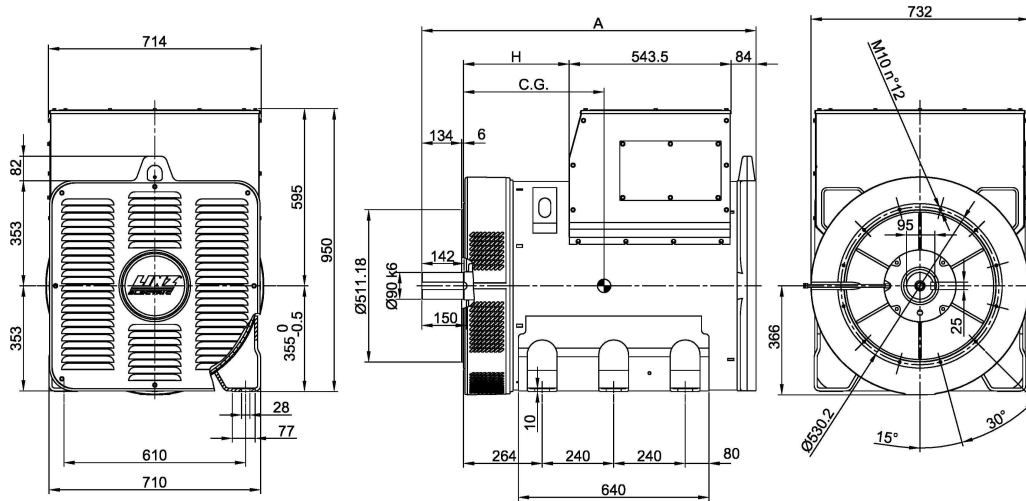


**EFFICIENCY 60Hz**

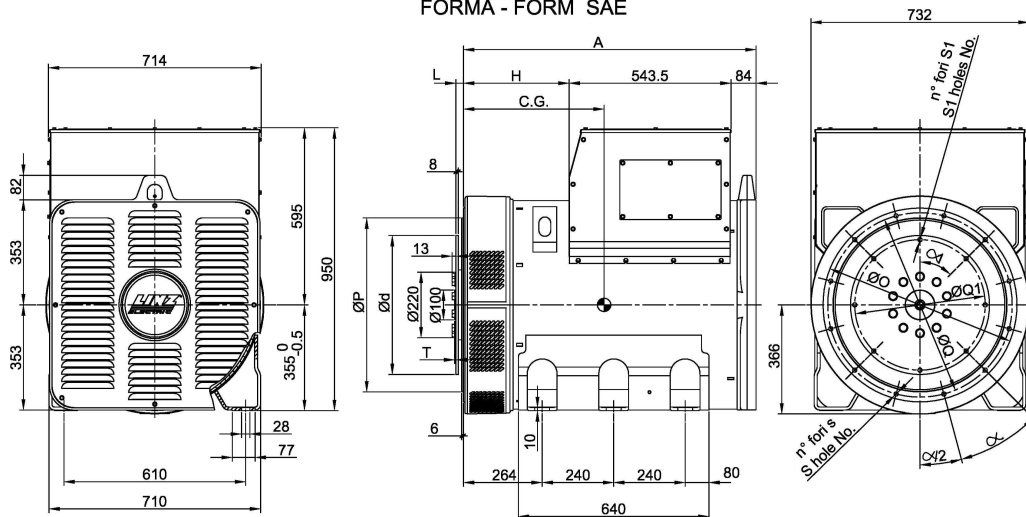


# PRO35S C/4

FORMA - FORM B3/B14



FORMA - FORM SAE



FORMA - FORM		A	H	TIPO - TYPE	C.G.
B3/B14	PRO35 S	1122	354.5	PRO35S B/4	455
	PRO35 M	1247	479.5	PRO35S C/4	465
	PRO35 L	1347	579.5	PRO35S D/4	478
SAE	PRO35 S	982	354.5	PRO35M E/4	516
	PRO35 M	1107	479.5	PRO35M F/4	516
	PRO35 L	1207	579.5	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