

TECHNICAL DATA SHEET



ALTERNATOR PRO28S D/4

Three-Phase brushless synchronous alternator with AVR - 4 poles

PRO28S D/4

COMMON DATA

Rated Power at 50Hz	kVA	250	
Rated Power at 60Hz	kVA	300	
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 ³ /min	36,5 at 50Hz	43,1 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	Ω	0,0069 at 20°C	
Rotor Winding Resistance	Ω	2,26 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	0,62	
Excitation at full load	Adc	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	V	Double Delta	Series High Wye Parallel Low Wye			Double Delta	Series High Wye Parallel Low Wye				
		115/230	380/220 190/110	400/230 200/115	415/240 208/120	440/254 220/127	138/277	415/240 208/120	440/254 220/127	460/266 230/133	480/277 240/138
Rated Power in Class H (125°C/40°C)	kVA	163	250	250	250	235	200	290	300	300	300
	kW	130,4	200	200	200	188	160	232	240	240	240
Rated Power in Class F (105°C/40°C)	kVA	137	210	210	210	197	165	240	250	250	250
	kW	109,6	168	168	168	157,6	132	192	200	200	200
Rated Power Standby (150°C/40°C)	kVA	173	266	266	266	250	210	310	320	320	320
	kW	138,4	212,8	212,8	212,8	200	168	248	256	256	256
Rated Power Standby (163°C/27°C)	kVA	182	280	280	280	260	220	320	335	335	335
	kW	145,6	224	224	224	208	176	256	268	268	268

EFFICIENCY IN CL. H

4/4			92,7%							93,2%
3/4			93,1%							93,6%
2/4			92,0%							92,5%
1/4			89,3%							90,1%

REACTANCES AND TIME CONSTANTS

pcc			0,38							
X _d	- dir. axis synchronous	388%	350%	325%	272%		453%	417%	381%	350%
X' _d	- dir. axis transient	19,9%	18,0%	16,7%	14,0%		23,3%	21,4%	19,6%	18,0%
X'' _d	- dir. axis subtransient	11,1%	10,0%	9,3%	7,8%		12,9%	11,9%	10,9%	10,0%
X _q	- quad. axis reactance	235%	212%	197%	165%		274%	252%	231%	212%
T' _{do}	- O.C. field time constant	1850ms								
T' _d	- Transient time constant	115ms								
T'' _d	- Sub-transient time constant	14ms								

MECHANICAL DATA

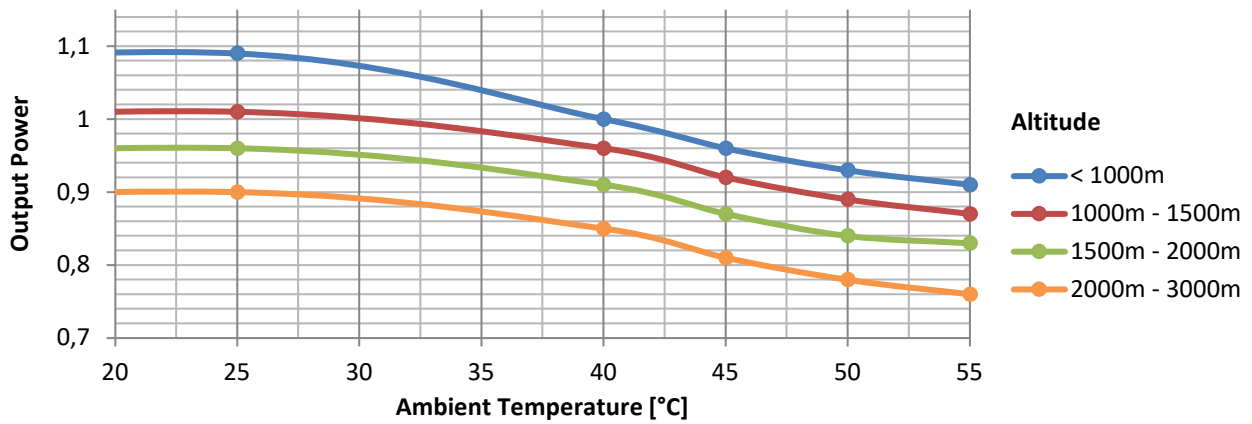
Bearing non drive end			6314-2RS-C3
Bearing drive end (B3/B14 form)			6316-2RS-C3
Weight of generator	in B2	kg	730,5
	in B3/B14	kg	741,5
	in B3/B9	kg	\

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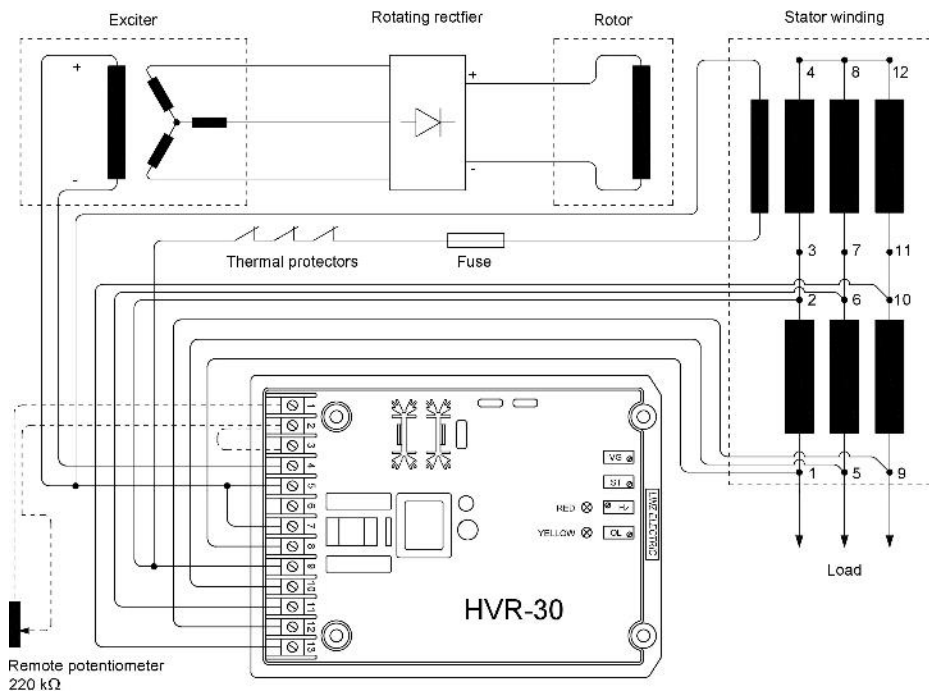
MOMENT OF INERZIA

B3/B9	kg·m ²	\
SAE 7½	kg·m ²	\
SAE 8	kg·m ²	\
SAE 10	kg·m ²	\
SAE 11½	kg·m ²	3,252
SAE 14	kg·m ²	3,368
SAE 18	kg·m ²	\
B3/B14	kg·m ²	3,073

DERATING CURVES



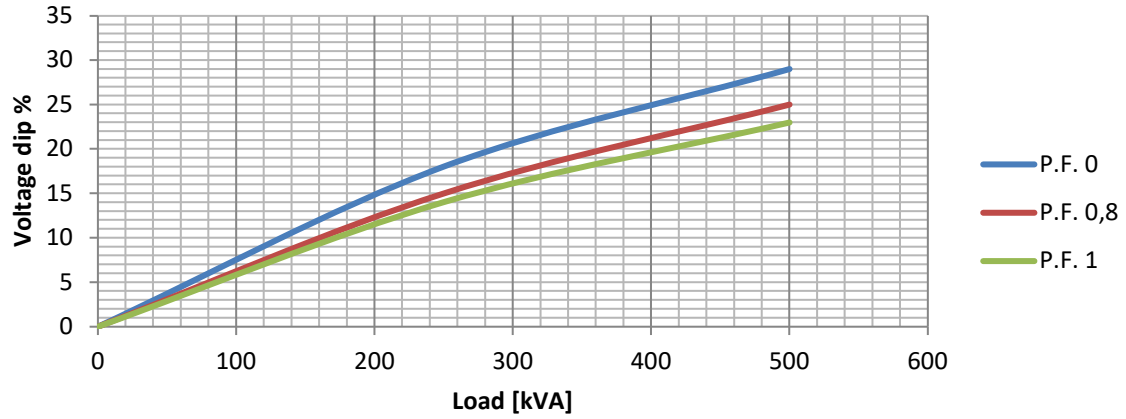
WIRING DIAGRAM



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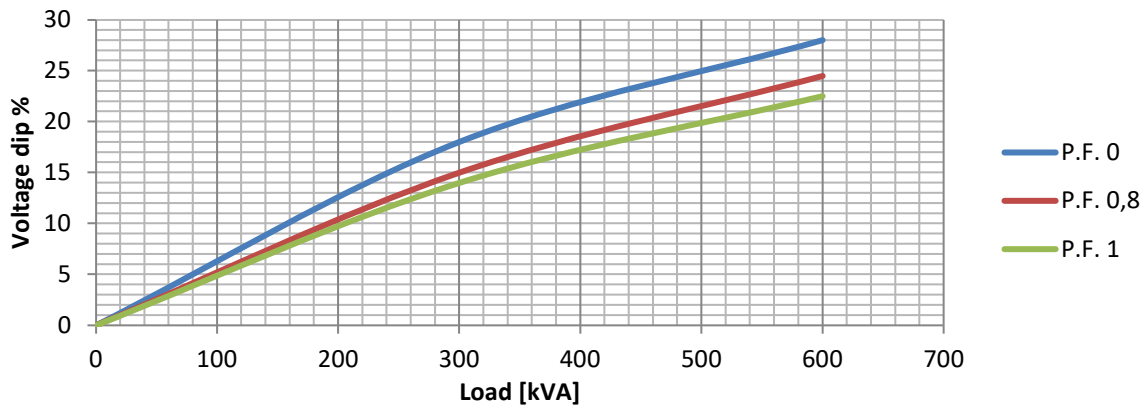
TRANSIENT VOLTAGE VARIATION 50Hz

Transient Voltage Variation @ 50Hz



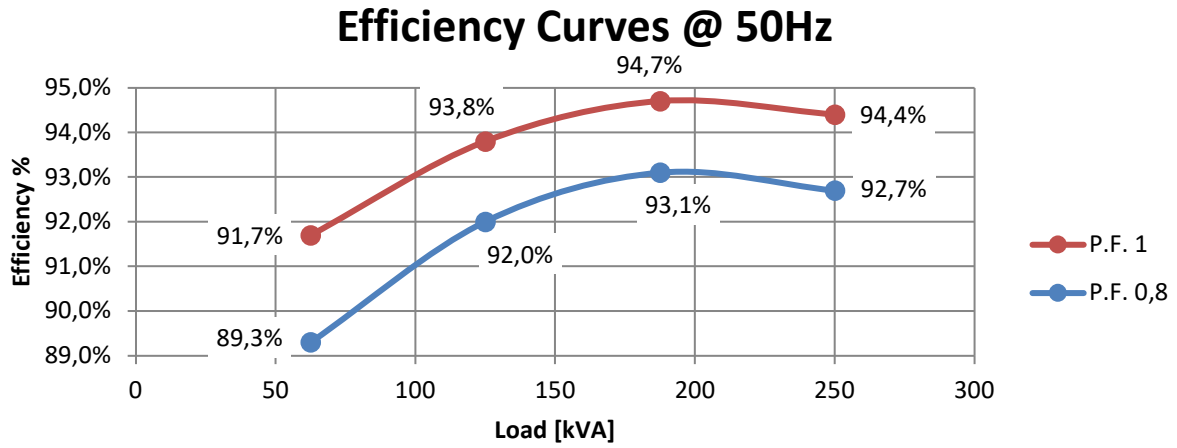
TRANSIENT VOLTAGE VARIATION 60Hz

Transient Voltage Variation @ 60Hz

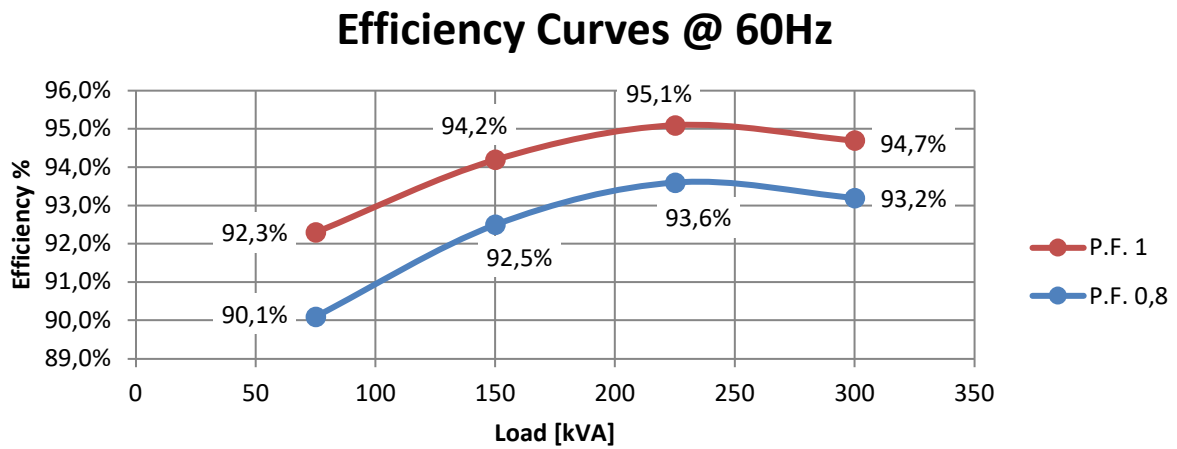


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EFFICIENCY 50Hz

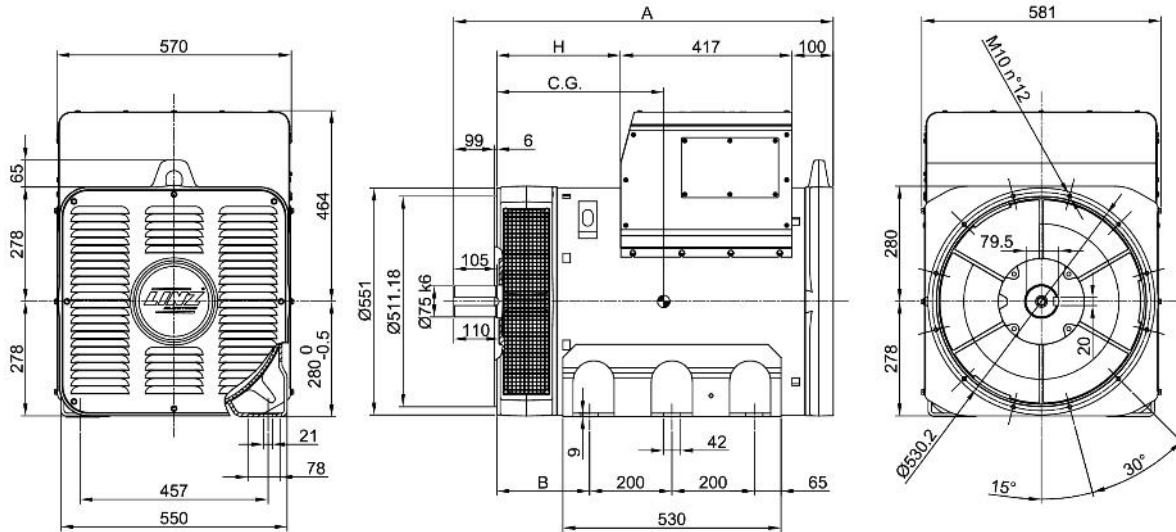


EFFICIENCY 60Hz

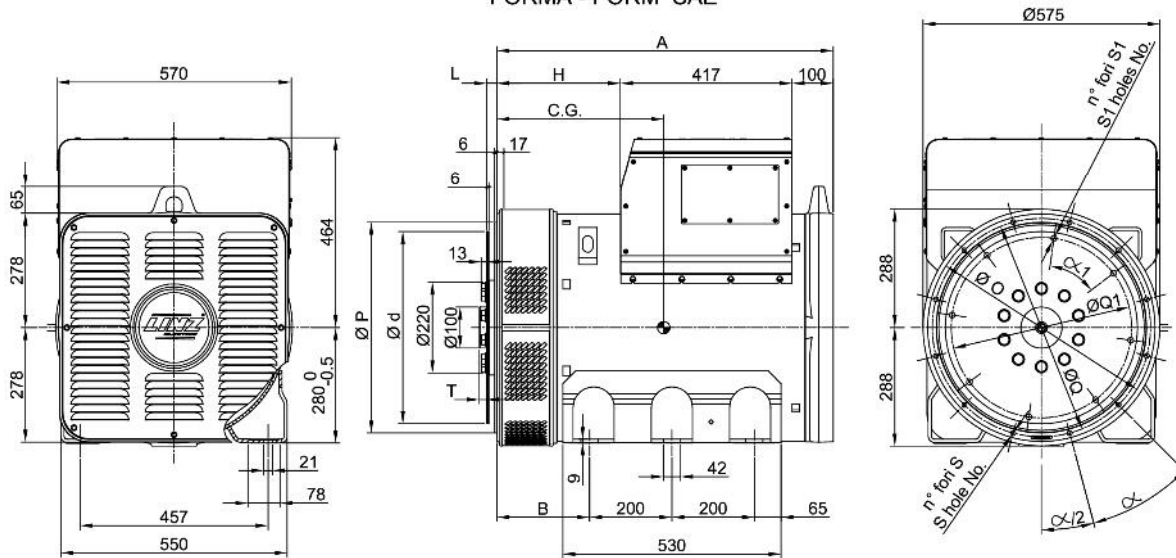


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FORMA - FORM B3/B14



FORMA - FORM SAE



FORMA - FORM	A	B	H
B3/B14	PRO 28S	922	300
	PRO 28M	1072	450
	PRO 28L	1137	515
SAE	PRO 28S	817	300
	PRO 28M	967	450
	PRO 28L	1032	515

TIPO - TYPE	C.G.
PRO28S A/4	376
PRO28S B/4	380
PRO28S C/4	394
PRO28S D/4	406
PRO28M E/4	452
PRO28M F/4	480
PRO28L G/4	513

SAE N.	FLANGIE - FLANGES - BRIDAS					
	Ø O	Ø P	Ø Q	n. fori holes No.	S	α
3	451	409.6	428.6	12	12	30°
2	490	447.68	466.7			
1	552	511.18	530.2			

SAE N.	GIUNTI A DISCO - COUPLING DISCS - JUNTAS A DISCOS						
	L	Ø d	Ø Q1	n. fori holes No.	S1	α1	T
11 1/2	39.6	352.42	333.37	8	10.5	45°	0
14	25.4	466.72	438.15	8	14	45°	17.3