TECHNICAL DATA SHEET

ALTERNATOR PRO28S A/4

Three-Phase brushless synchronous alternator with AVR - 4 poles

PRO28S A/4

COMMON DATA

Rated Power at 50Hz	kVA	180	
Rated Power at 60Hz	kVA	215	
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	32 at 50Hz	38 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	0,0143 at 20°C
Rotor Winding Resistance	Ω	1,7 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		<2,5%
Excitation at no load	Adc	0,56
Excitation at full load	Adc	2,5

STANDARD

References	EN60034-1 ISO8528-3 EN55011

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	117	180	180	175	165	140	196	205	215	215
	kW	93,6	144	144	140	132	112	156,8	164	172	172
Rated Power in Class F (105°C/40°C)	kVA	104	160	160	150	145	125	175	183	192	192
	kW	83,2	128	128	120	116	100	140	146,4	153,6	153,6
Rated Power Standby (150°C/40°C)	kVA	127	195	195	190	177	152	213	223	234	234
	kW	101,6	156	156	152	141,6	121,6	170,4	178	187,2	187,2
Rated Power Standby (163°C/27°C)	kVA	130	200	200	195	182	156	218	228	240	240
	kW	104	160	160	156	145,6	124,8	174,4	182,4	192	192

EFFICIENCY IN CL. H

4/4			91,8%							92,5%
3/4			92,2%							92,7%
2/4			91,0%							91,7%
1/4			89,0%							89,8%

REACTANCES AND TIME CONSTANTS

ρcc			0,32							
Xd	- dir. axis synchronous	399%	360%	325%	273%		439%	409%	392%	360%
X'd	- dir. axis transient	21,1%	19,0%	17,2%	14,4%		23,2%	21,6%	20,7%	19,0%
X''d	- dir. axis subtransient	11,1%	10,0%	9,0%	7,6%		12,2%	11,3%	10,9%	10,0%
X_q	- quad. axis reactance	240%	217%	196%	164%		265%	246%	236%	217%
T'_{do}	- O.C. field time constant	1830ms								
T'_d	- Transient time constant	112ms								
T''_d	- Sub-transient time constant	16ms								

MECHANICAL DATA

Bearing non drive end			6314-2RS-C3
Bearing drive end (B3/B14 form)			6316-2RS-C3
Weight of generator	in B2	kg	564
	in B3/B14	kg	575
	in B3/B9	kg	\

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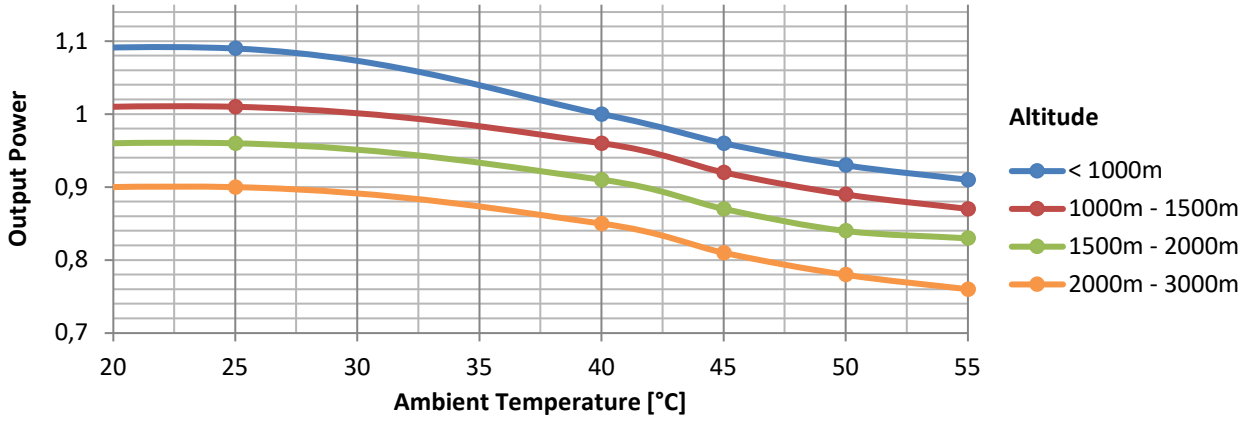
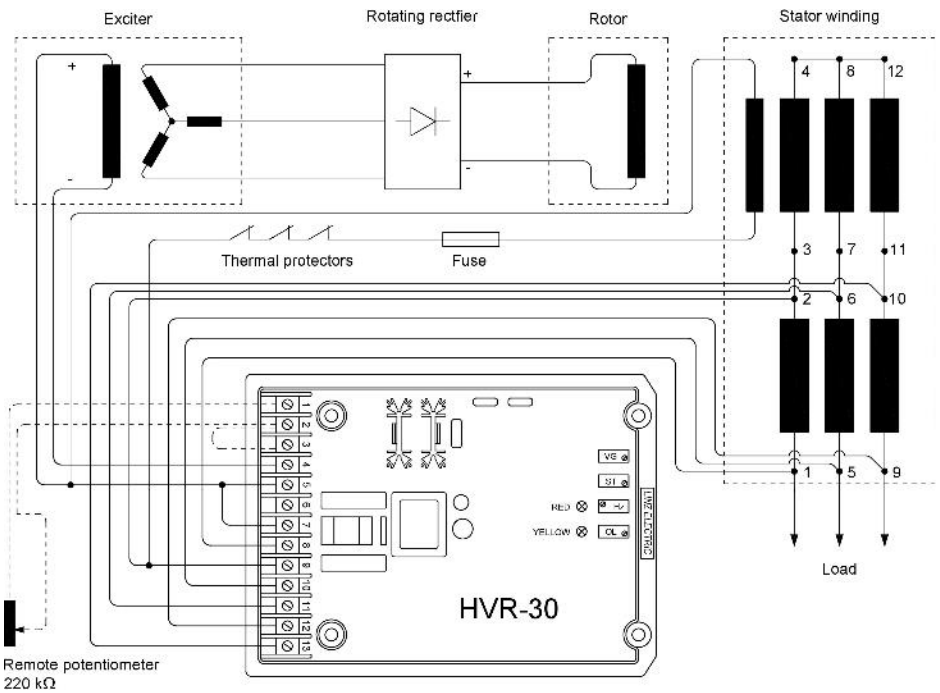
MOMENT OF INERZIA

B3/B9	kg·m²	\
SAE 7½	kg·m²	\
SAE 8	kg·m²	\
SAE 10	kg·m²	\
SAE 11½	kg·m²	2,302
SAE 14	kg·m²	2,417
SAE 18	kg·m²	\
B3/B14	kg·m²	2,123

DERATING CURVES



WIRING DIAGRAM



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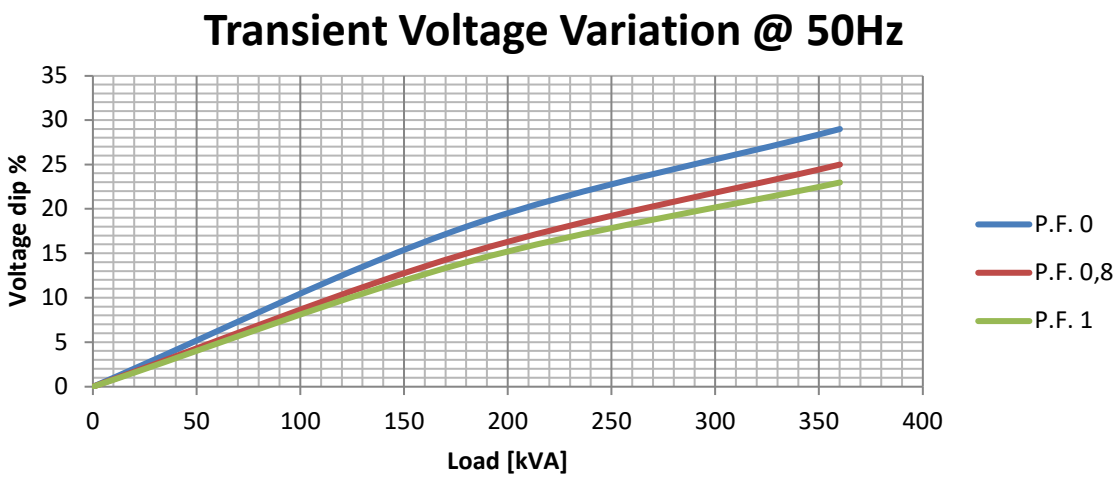
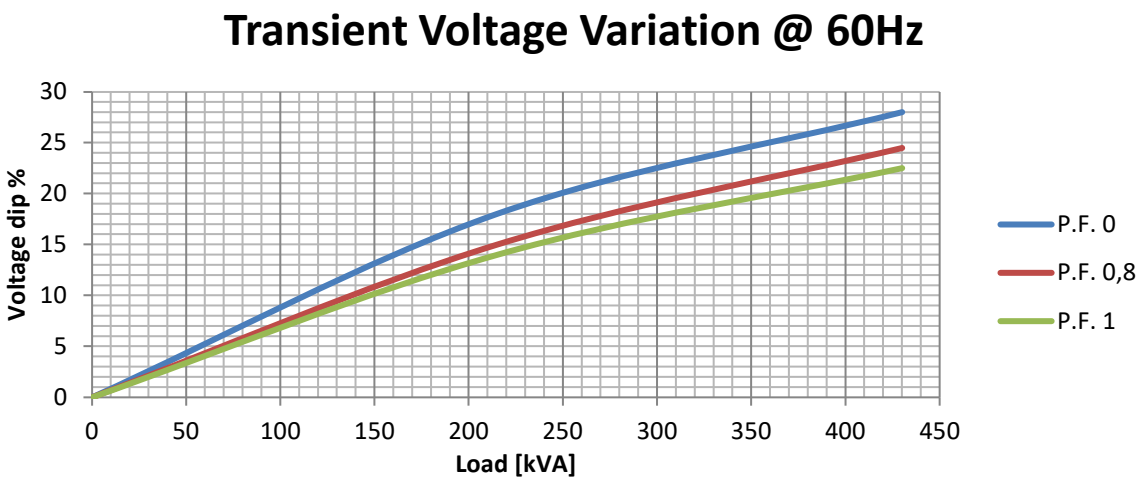
TRANSIENT VOLTAGE VARIATION 50Hz

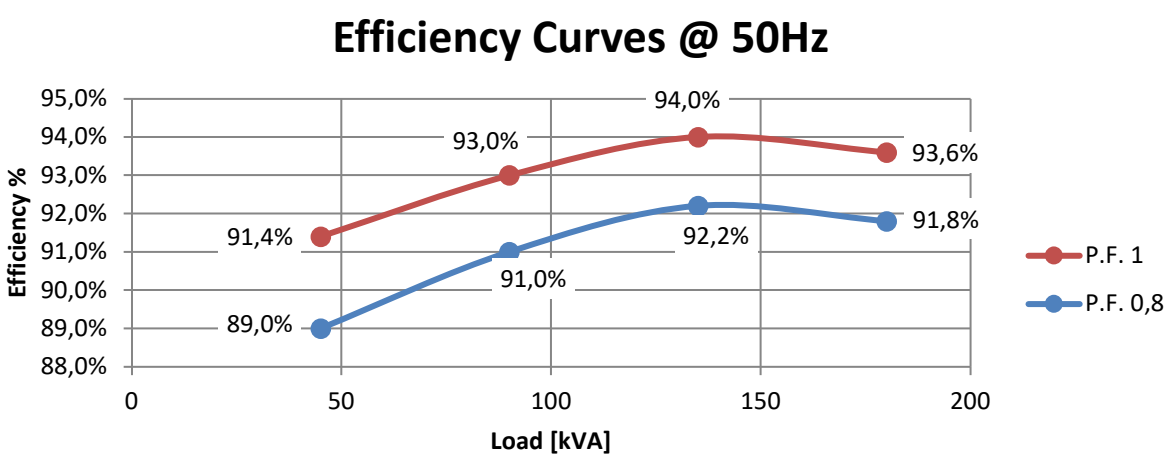


TRANSIENT VOLTAGE VARIATION 60Hz

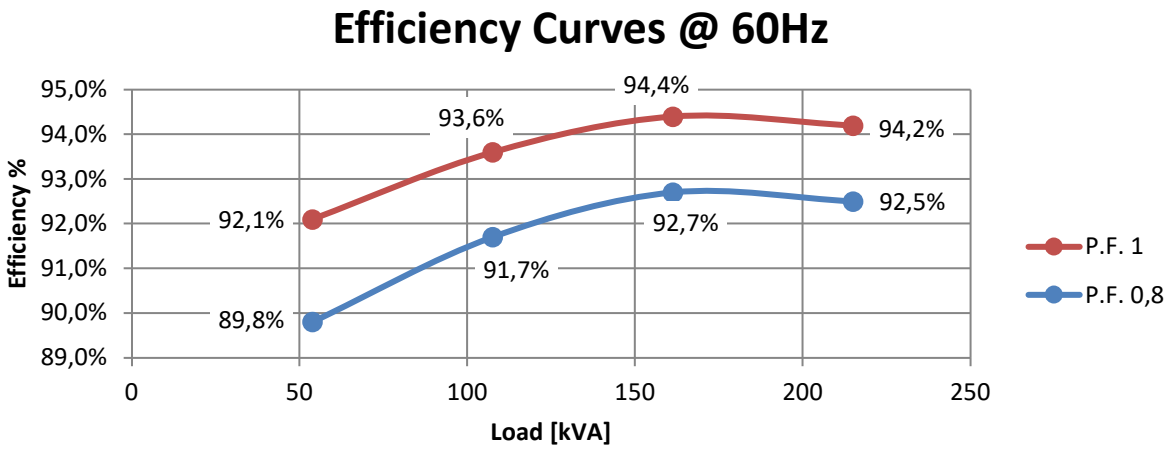


PRO28S A/4

EFFICIENCY 50Hz



EFFICIENCY 60Hz



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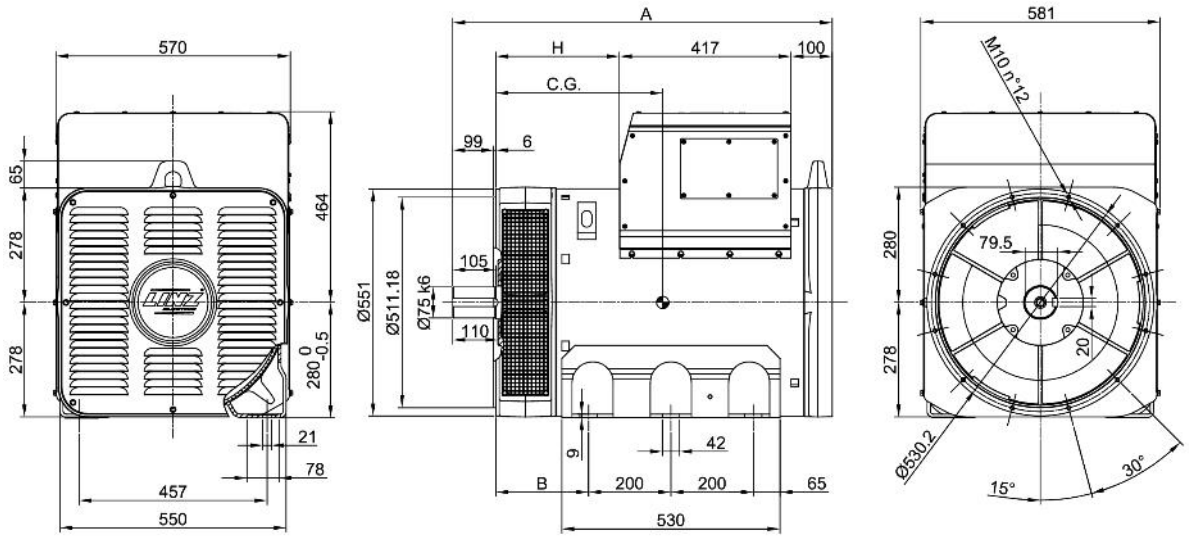
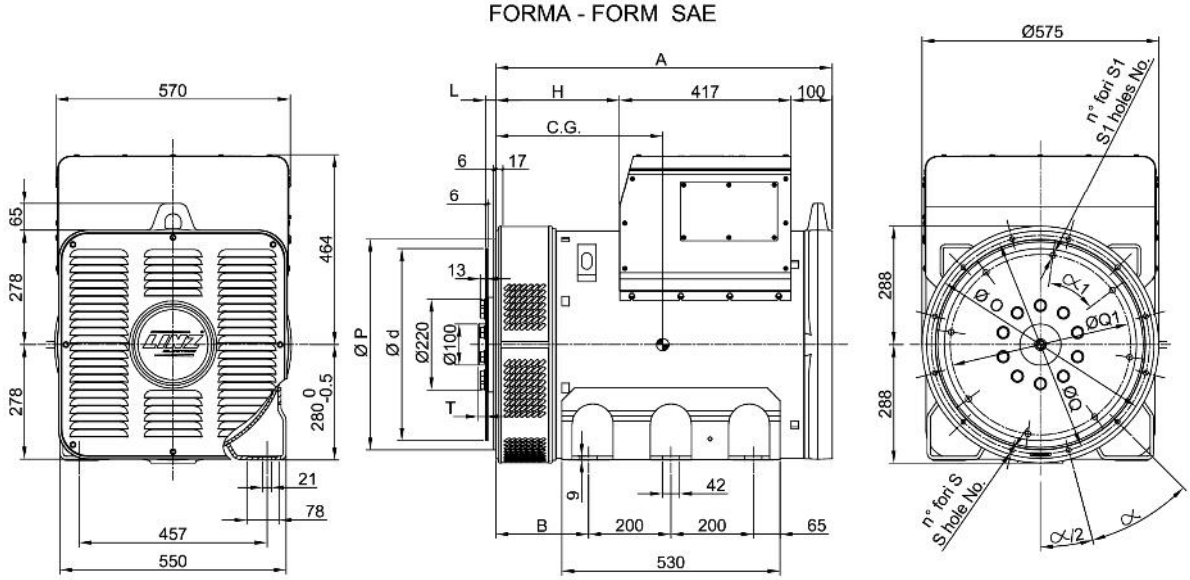
FORMA - FORM B3/B14



FORMA - FORM SAE



FORMA - FORM		A	B	H
B3/B14	PRO 28S	922	225	300
	PRO 28M	1072		450
	PRO 28L	1137	325	515
SAE	PRO 28S	817	225	300
	PRO 28M	967		450
	PRO 28L	1032	325	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