

TECHNICAL DATA SHEET



ALTERNATOR PRO28M E/4

Three-Phase brushless synchronous alternator with AVR - 4 poles

PRO28M E/4

COMMON DATA

Rated Power at 50Hz	kVA	300
Rated Power at 60Hz	kVA	360
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	38,5 at 50Hz 43,4 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	0,0053 at 20°C
Rotor Winding Resistance	Ω	2,52 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	A _{dc}	0,62
Excitation at full load	A _{dc}	2,32

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 Series Star	V	380/220	400/230	415/240	440/254	415/240	440/254	460/266	480/277
Rated Power in Class H (125°C/40°C)	kVA	300	300	300	288	335	360	360	360
	kW	240	240	240	230,4	268	288	288	288
Rated Power in Class F (105°C/40°C)	kVA	250	250	250	240	277	300	300	300
	kW	200	200	200	192	221,6	240	240	240
Rated Power Standby (150°C/40°C)	kVA	310	310	310	297	345	370	370	370
	kW	248	248	248	237,6	276	296	296	296
Rated Power Standby (163°C/27°C)	kVA	325	325	325	312	365	390	390	390
	kW	260	260	260	249,6	292	312	312	312

EFFICIENCY IN CL. H

4/4	92,9%							93,3%
3/4	93,3%							93,7%
2/4	92,3%							92,8%
1/4	89,7%							90,2%

REACTANCES AND TIME CONSTANTS

pcc		0,39							
X _d - dir. axis synchronous		390%	352%	327%	279%	438%	419%	383%	352%
X' _d - dir. axis transient		20,5%	18,5%	17,2%	14,7%	23,0%	22,0%	20,1%	18,5%
X'' _d - dir. axis subtransient		10,0%	9,0%	8,4%	7,1%	11,2%	10,7%	9,8%	9,0%
X _q - quad. axis reactance		233%	210%	195%	167%	261%	250%	229%	210%
T' _{do} - O.C. field time constant		1850ms							
T' _d - Transient time constant		116ms							
T'' _d - Sub-transient time constant		14ms							

MECHANICAL DATA

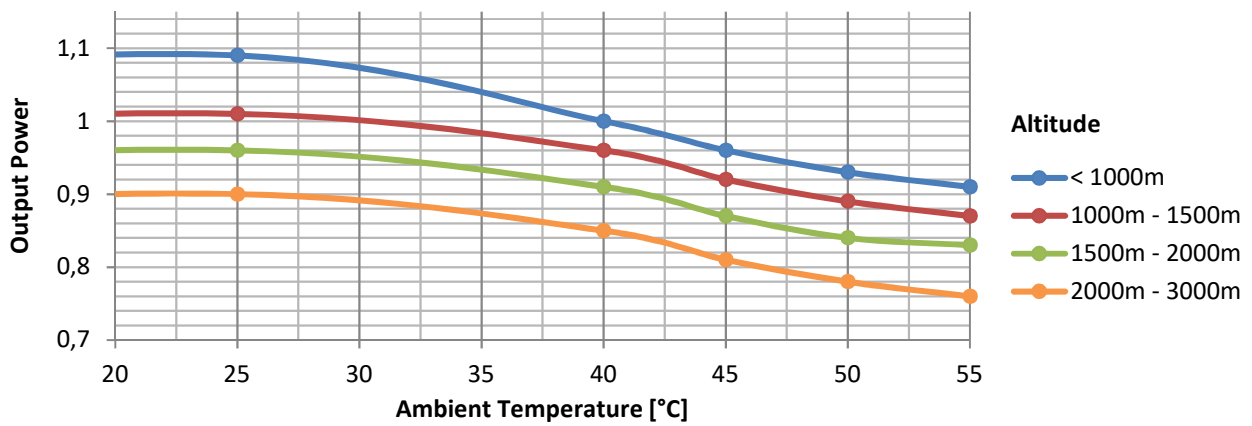
Bearing non drive end			6314-2RS-C3
Bearing drive end (B3/B14 form)			6316-2RS-C3
Weight of generator	in B2	kg	833,5
	in B3/B14	kg	844,5
	in B3/B9	kg	\

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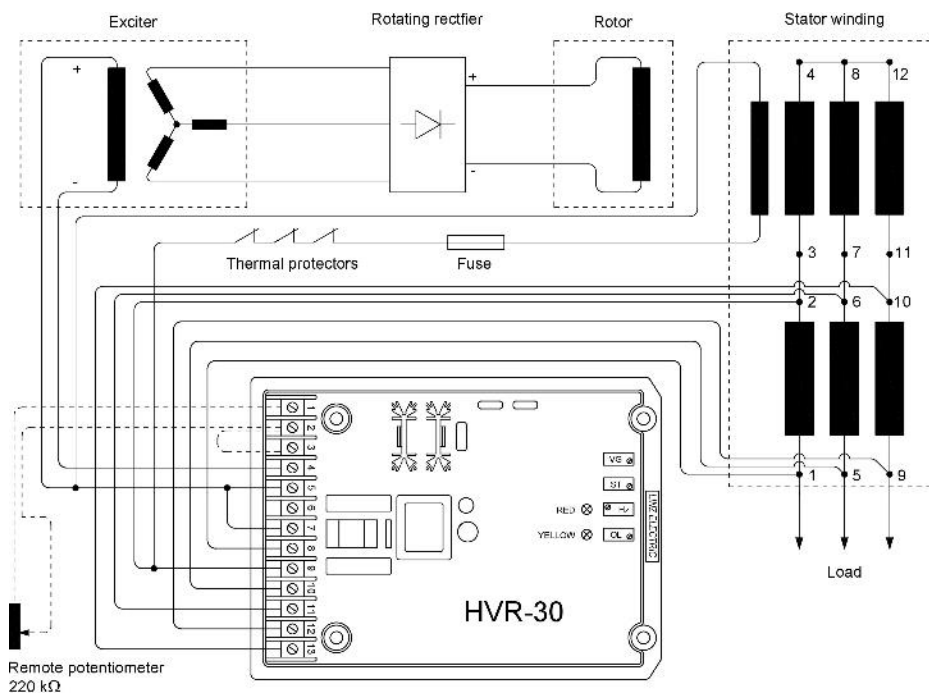
MOMENT OF INERZIA

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	3,721
SAE 14	kg·m ²	3,836
SAE 18	kg·m ²	\
B3/B14	kg·m ²	3,542

DERATING CURVES



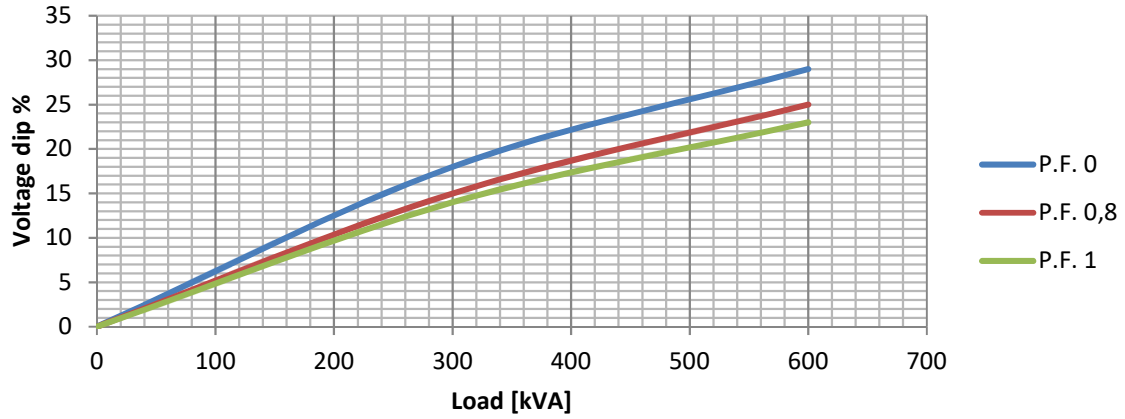
WIRING DIAGRAM



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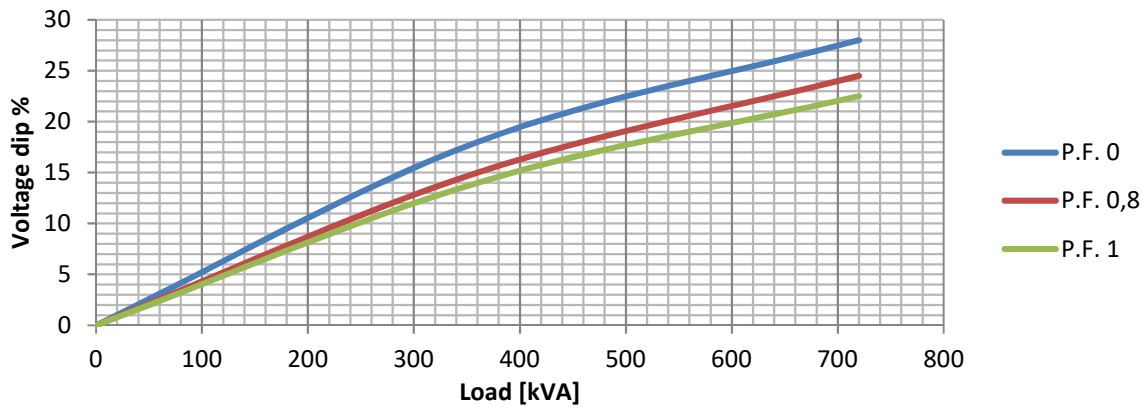
TRANSIENT VOLTAGE VARIATION 50Hz

Transient Voltage Variation @ 50Hz



TRANSIENT VOLTAGE VARIATION 60Hz

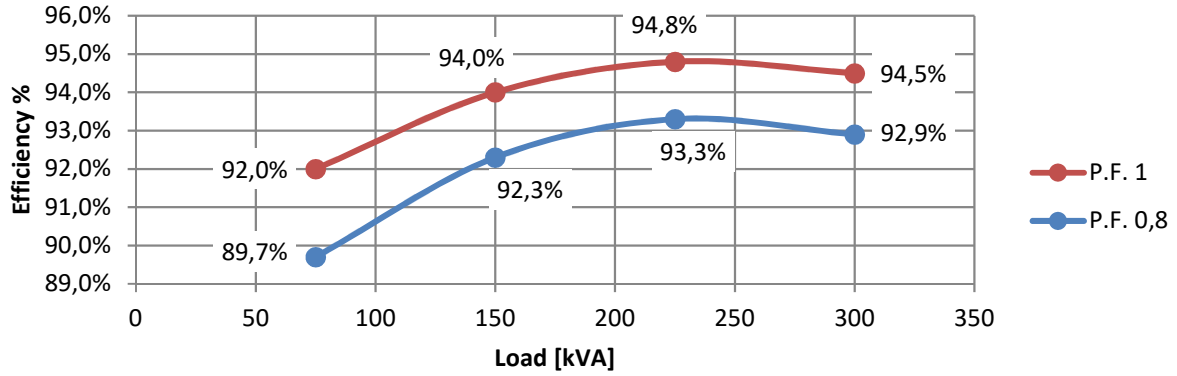
Transient Voltage Variation @ 60Hz



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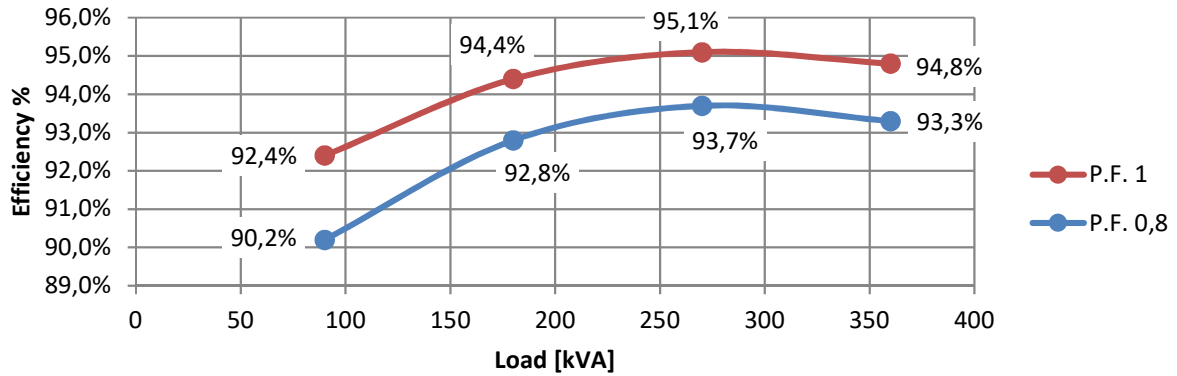
EFFICIENCY 50Hz

Efficiency Curves @ 50Hz



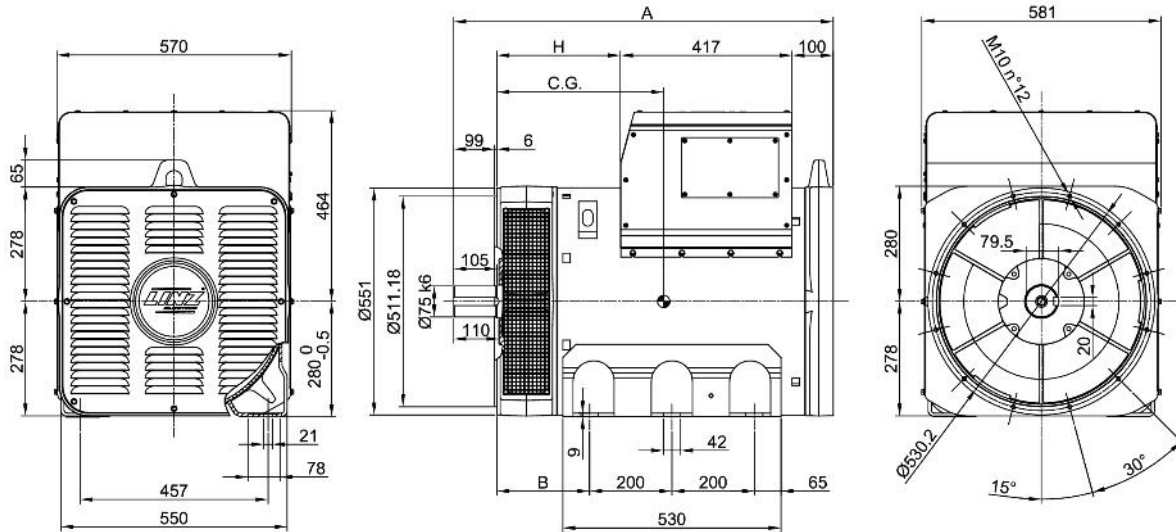
EFFICIENCY 60Hz

Efficiency Curves @ 60Hz

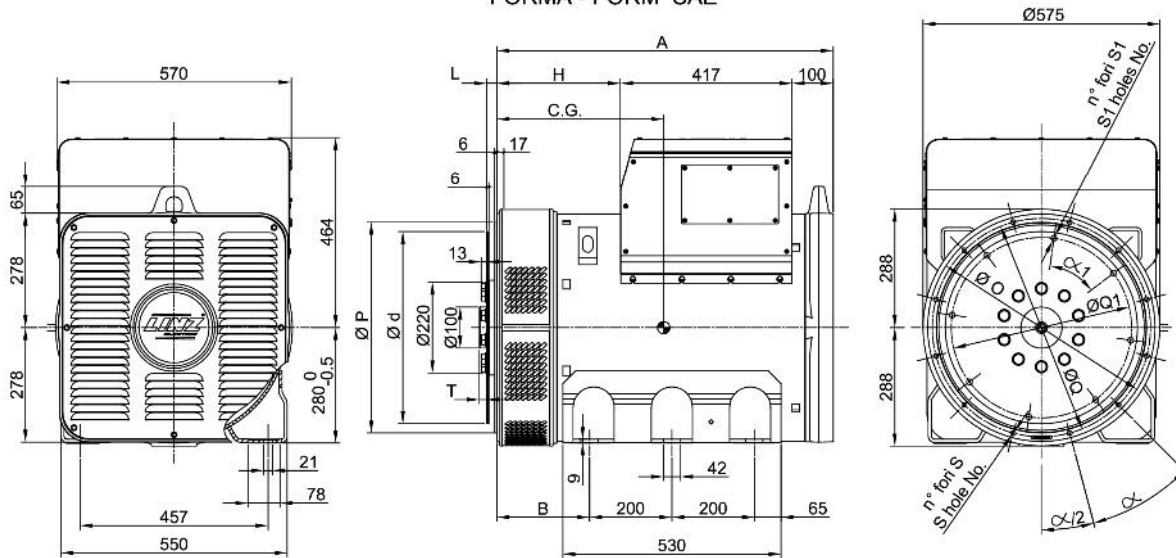


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FORMA - FORM B3/B14



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