



ALTERNATOR PRO28S 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	200	
Rated Power at 60Hz	kVA	240	
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 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	0.011 at 20°C	
Rotor Winding Resistance	1.9 at 20°C	
Exciter Stator Resistance	15 at 20°C	
Exciter Rotor Resistance	0.25 at 20°C	
THD at full load	<3%	
THD at no load	<3%	
Excitation at no load	A _{dc}	0.63
Excitation at full load	A _{dc}	2.4

STANDARD

References	EN60034-1 ISO8528-3 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	480/277
Rated Power in Class H (125°C/40°C)	kVA	200	200	200	180	225	240	240	240
	kW	160	160	160	144	180	192	192	192
Rated Power in Class F (105°C/40°C)	kVA	175	175	175	160	200	210	210	210
	kW	140	140	140	128	160	168	168	168
Rated Power Standby (150°C/40°C)	kVA	215	215	215	195	245	260	260	260
	kW	172	172	172	156	196	208	208	208
Rated Power Standby (163°C/27°C)	kVA	220	220	220	200	250	265	265	265
	kW	176	176	176	160	200	212	212	212

EFFICIENCY IN CL. H

4/4		91.7%						92.5%
3/4		92.3%						93.1%
2/4		90.8%						91.6%
1/4		88.7%						89.5%

REACTANCES AND TIME CONSTANTS

pcc		0.34						
X _d - dir. axis synchronous		431%	389%	361%	289%	488%	463%	389%
X' _d - dir. axis transient		23.3%	21.0%	19.5%	15.6%	26.3%	25.0%	21.0%
X'' _d - dir. axis subtransient		12.3%	11.1%	10.3%	8.3%	13.9%	13.2%	11.1%
X _q - quad. axis reactance		265%	239%	222%	178%	300%	284%	239%
T' _{do} - O.C. field time constant		1810ms						
T' _d - Transient time constant		113ms						
T'' _d - Sub-transient time constant		17ms						

MECHANICAL DATA

Bearing non drive end				6314-2RS-C3
Bearing drive end (B3/B14 form)				6316-2RS-C3
Weight of generator	in B2	kg		591
	in B3/B14	kg		602
	in B3/B9	kg		\

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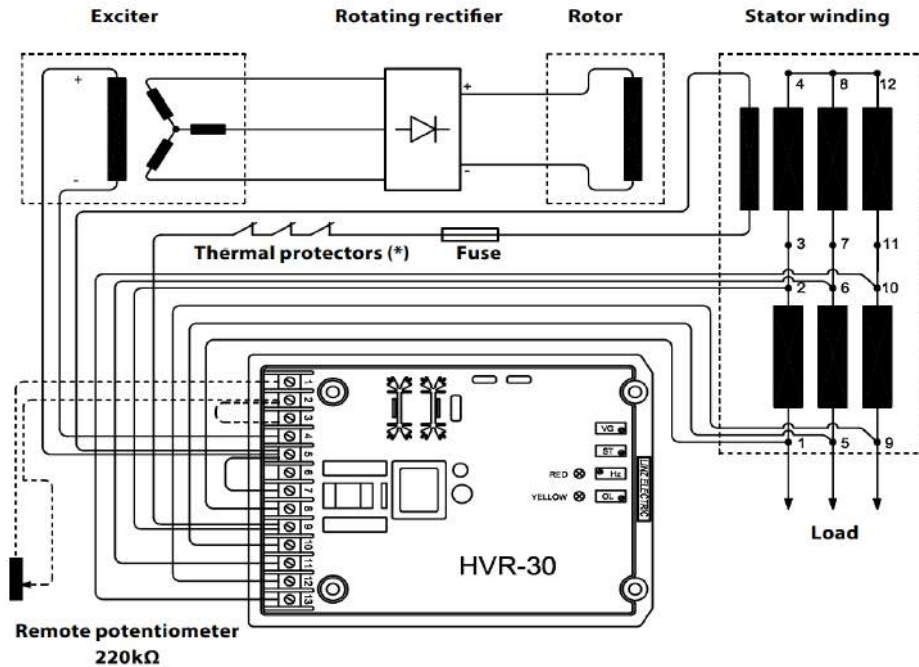
MOMENT OF INERZIA

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	2.445
SAE 14	kg·m ²	2.56
SAE 18	kg·m ²	\
B3/B14	kg·m ²	2.265

POWER VARIATION ACCORDING TO TEMPERATURE AND ALTITUDE

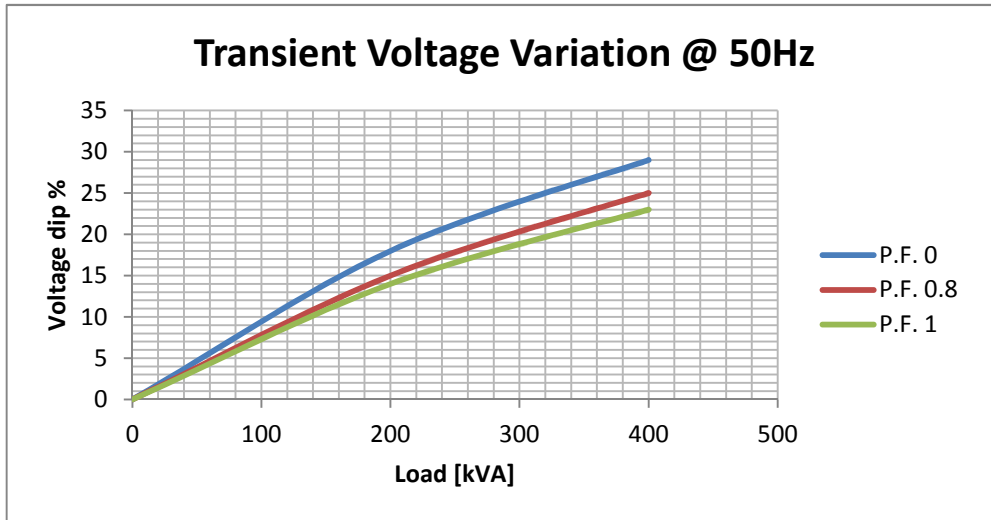
Altitude	Ambient temperature				
	25°C	40°C	45°C	50°C	55°C
< 1000m	1.09	1	0.96	0.93	0.91
1000m - 1500m	1.01	0.96	0.92	0.89	0.87
1500m - 2000m	0.96	0.91	0.87	0.84	0.83
2000m - 3000m	0.9	0.85	0.81	0.78	0.76

WIRING DIAGRAM

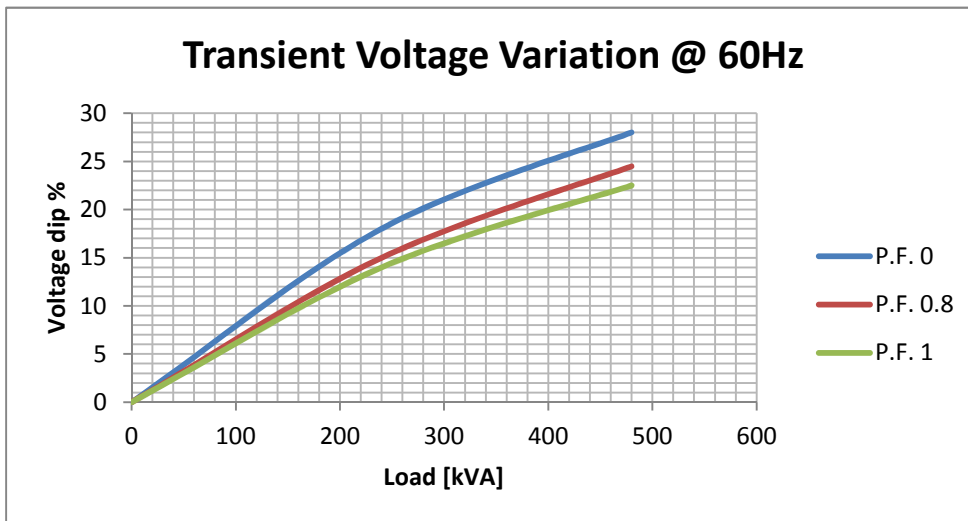


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TRANSIENT VOLTAGE VARIATION 50Hz

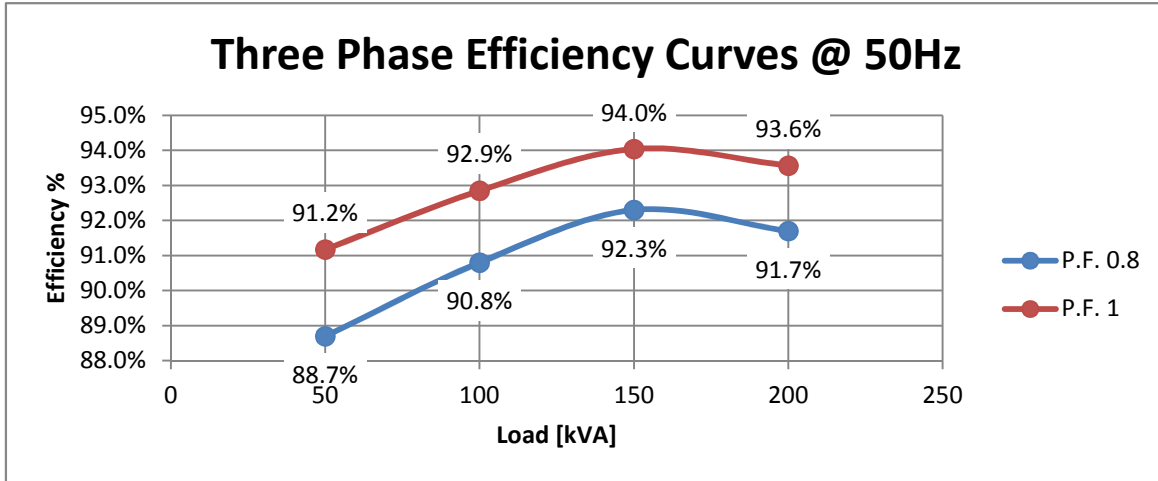


TRANSIENT VOLTAGE VARIATION 60Hz

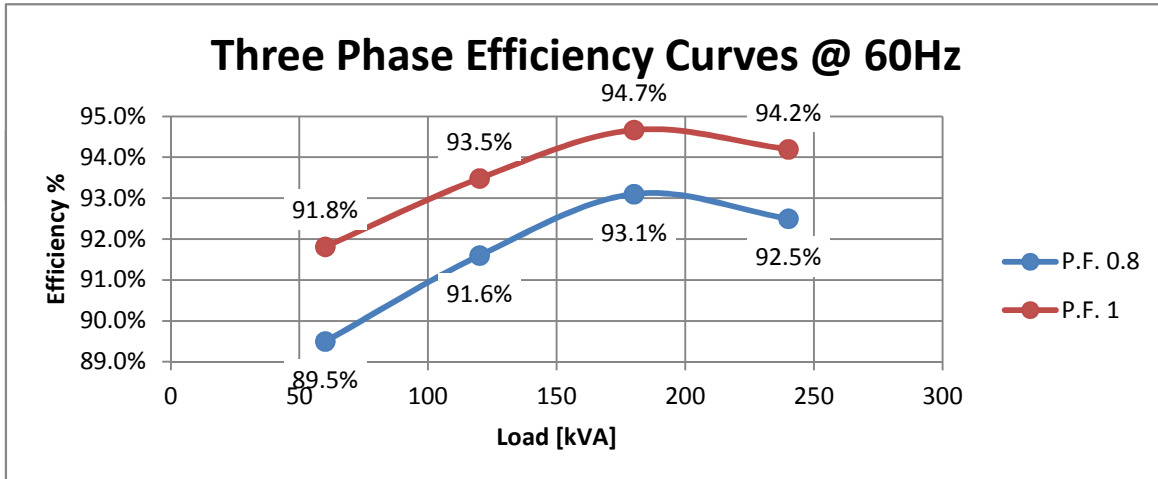


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EFFICIENCY 50Hz

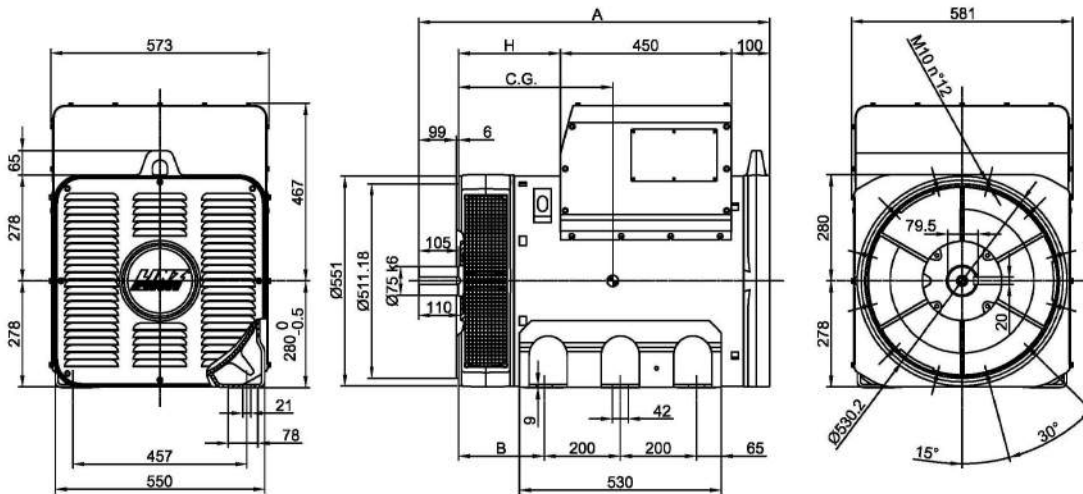


EFFICIENCY 60Hz

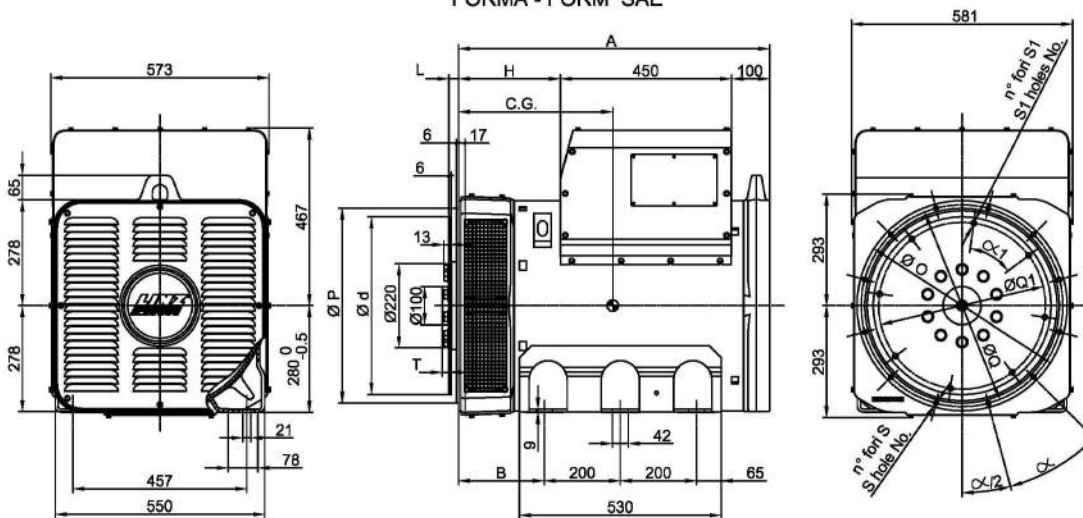


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FORMA - FORM B3/B14



FORMA - FORM SAE



FORMA - FORM	A	B	H	TIPO - TYPE	C.G.
B3/B14	PRO 28S	922	225	267	376
	PRO 28M	1072		417	380
	PRO 28L	1137	325	482	394
SAE	PRO 28S	817	225	267	406
	PRO 28M	967		417	452
	PRO 28L	1032	325	482	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