



ALTERNATOR PRO28S B/4

three-phase brushless synchronous alternator with AVR - 4 poles

Technical Data Sheet

PRO28S B/4

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
------------	-----------------------------

PRO28S B/4

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%	424%	389%
X' _d	- dir. axis transient	23.3%	21.0%	19.5%	15.6%	26.3%	25.0%	22.9%	21.0%
X'' _d	- dir. axis subtransient	12.3%	11.1%	10.3%	8.3%	13.9%	13.2%	12.1%	11.1%
X _q	- quad. axis reactance	265%	239%	222%	178%	300%	284%	260%	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	\	

PRO28S B/4

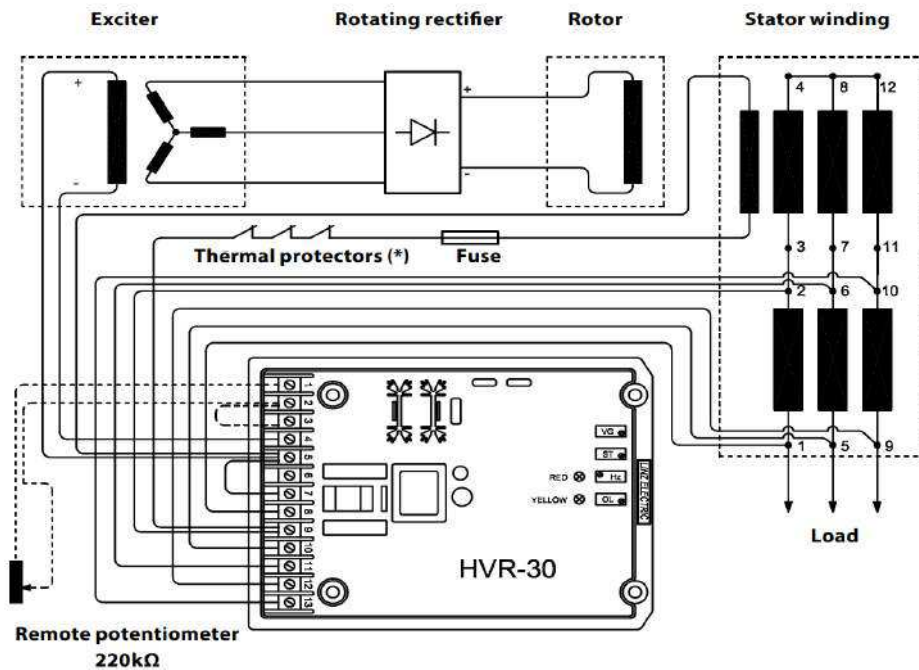
MOMENT OF INERZIA

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

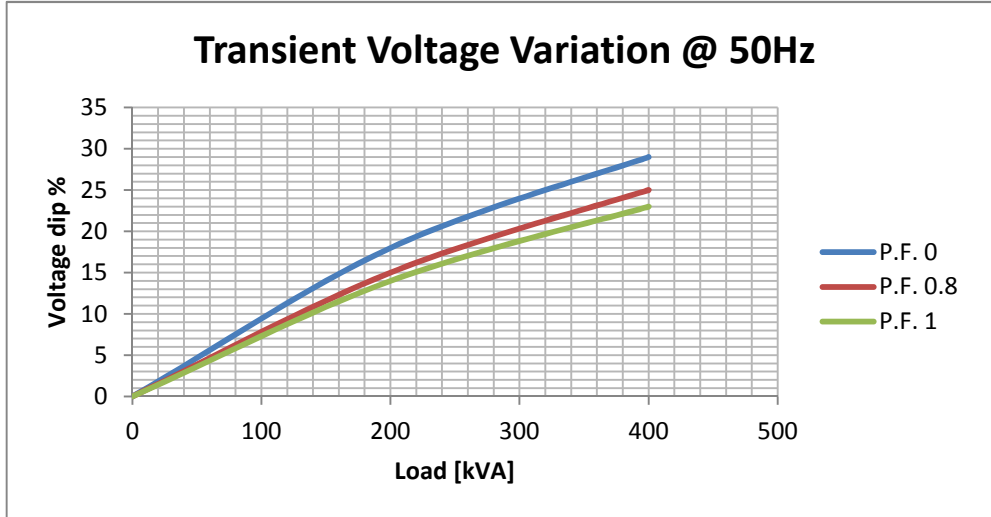
Altitude	Ambient temperature				
	25°C	40°C	45°C	50°C	55°C
< 1000m	1.09	1	0.96	0.93	0.91
1000m - 1500m	1.01	0.96	0.92	0.89	0.87
1500m - 2000m	0.96	0.91	0.87	0.84	0.83
2000m - 3000m	0.9	0.85	0.81	0.78	0.76

WIRING DIAGRAM

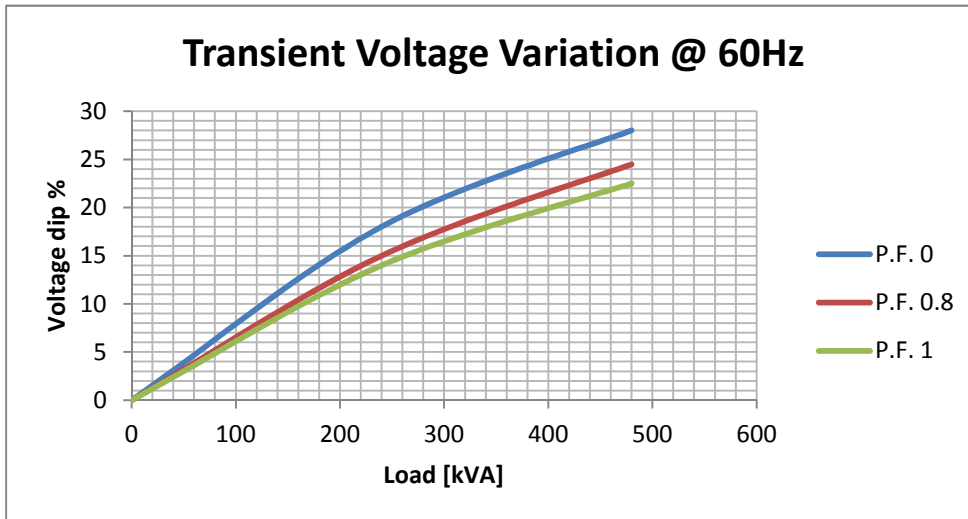


PRO28S B/4

TRANSIENT VOLTAGE VARIATION 50Hz

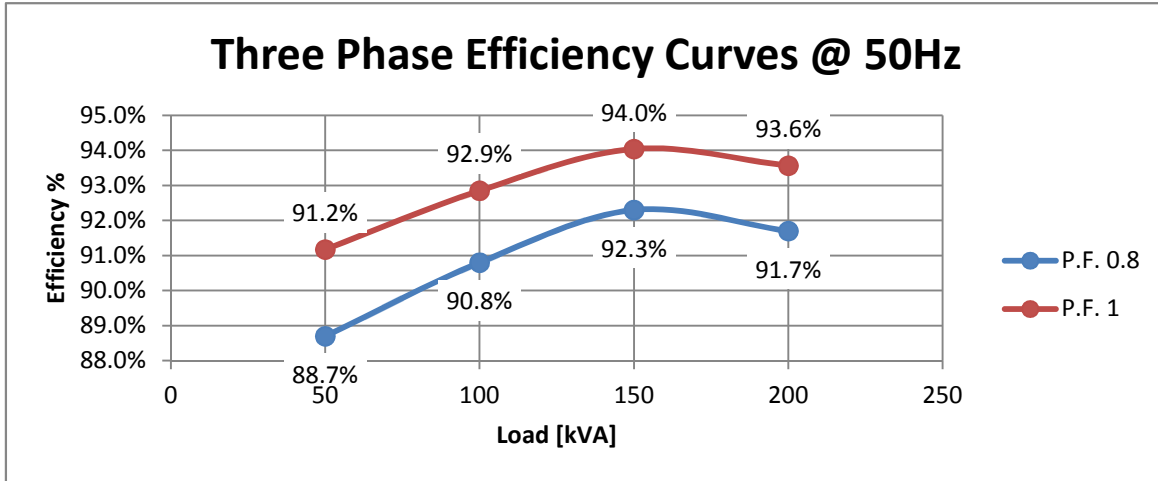


TRANSIENT VOLTAGE VARIATION 60Hz

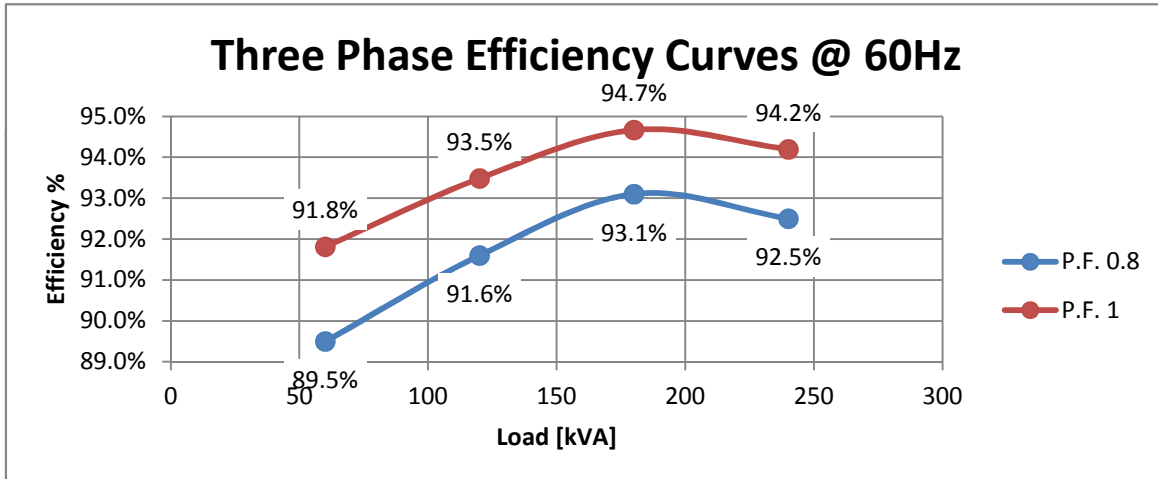


PRO28S B/4

EFFICIENCY 50Hz

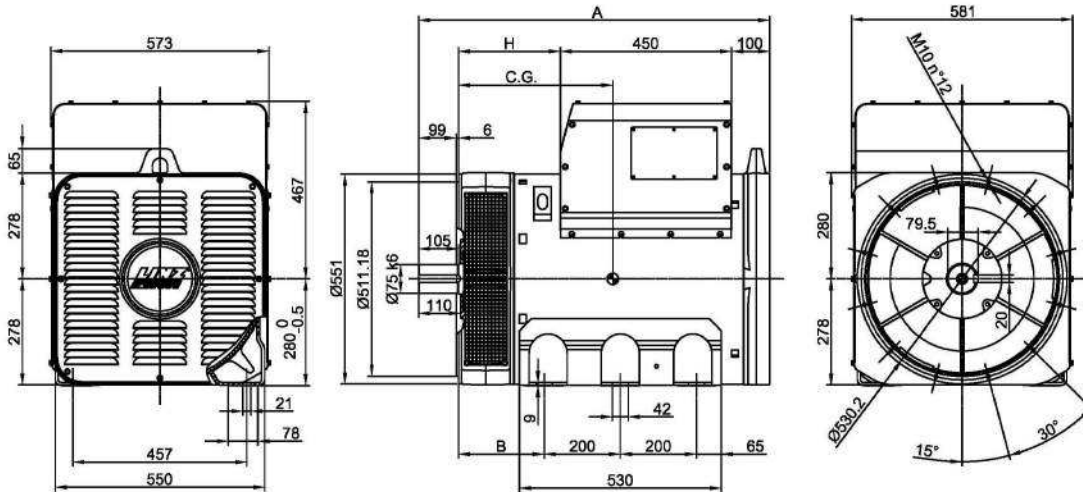


EFFICIENCY 60Hz

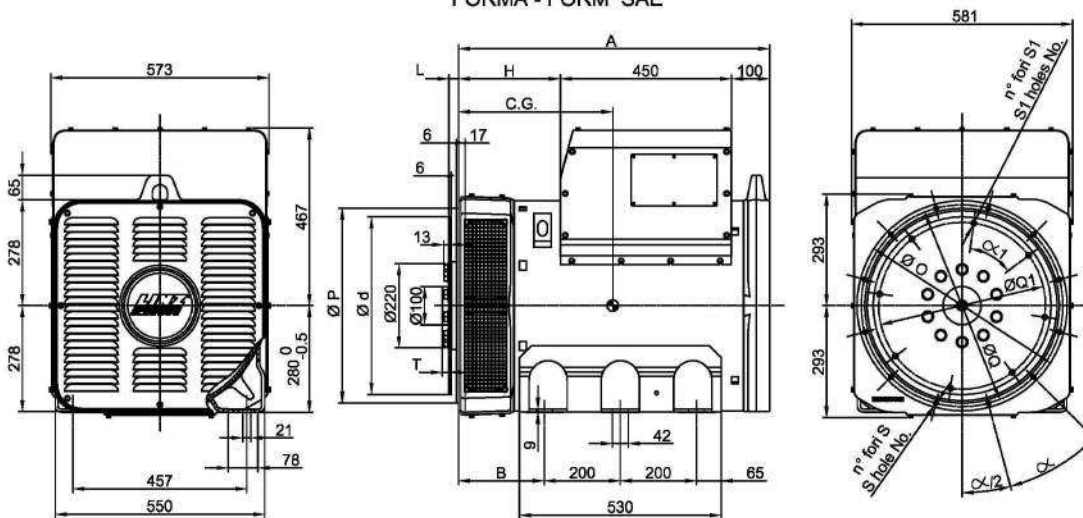


PRO28S B/4

FORMA - FORM B3/B14



FORMA - FORM SAE



FORMA - FORM	A	B	H	TIPO - TYPE	C.G.	
B3/B14	PRO 28S	922	225	267	PRO28S A/4	376
	PRO 28M	1072		417	PRO28S B/4	380
	PRO 28L	1137	325	482	PRO28S C/4	394
SAE	PRO 28S	817	225	267	PRO28S D/4	406
	PRO 28M	967		417	PRO28M E/4	452
	PRO 28L	1032	325	482	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