

ALTERNATOR PRO28S C/4

three-phase brushless synchronous alternator with AVR - 4 poles

Technical Data Sheet

PRO28S C/4

COMMON DATA

Rated Power at 50Hz	kVA	225	
Rated Power at 60Hz	kVA	270	
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	32.5 at 50Hz	39 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		0.0093 at 20°C
Rotor Winding Resistance		2.1 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}	0.6
Excitation at full load	A_{dc}	2.36

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	kVA	225	225	225	215	260	270	270	270
(125°C/40°C)	kW	180	180	180	172	208	216	216	216
Rated Power in Class F	kVA	200	200	200	190	225	240	240	240
(105°C/40°C)	kW	160	160	160	152	180	192	192	192
Rated Power Standby	kVA	255	255	255	245	290	305	305	305
(150°C/40°C)	kW	204	204	204	196	232	244	244	244
Rated Power Standby	kVA	265	265	265	250	295	315	315	315
(163°C/27°C)	kW	212	212	212	200	236	252	252	252

EFFICIENCY IN CL. H

4/4		92.1%						92.7%
3/4		92.5%						93.0%
2/4		91.2%						91.6%
1/4		89.7%						90.4%

REACTANCES AND TIME CONSTANTS

ρcc			0.36						
Xd	- dir. axis synchronous	398%	359%	334%	284%	462%	427%	391%	359%
X'd	- dir. axis transient	22.5%	20.3%	18.9%	16.0%	26.2%	24.2%	22.1%	20.3%
X''d	- dir. axis subtransient	11.3%	10.2%	9.5%	8.1%	13.1%	12.1%	11.1%	10.2%
X_q	- quad. axis reactance	253%	228%	212%	180%	294%	271%	248%	228%
T'_{do}	- O.C. field time constant	1825ms							
T'_d	- Transient time constant	113ms							
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	668
	in B3/B14	kg	679
	in B3/B9	kg	\

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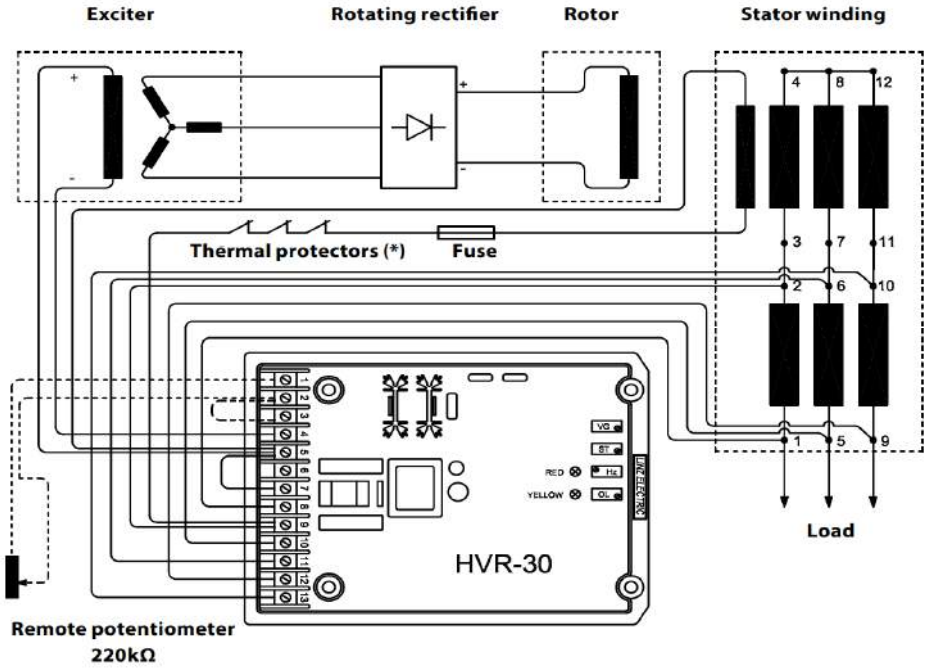
MOMENT OF INERZIA

B3/B9	$kg \cdot m^2$	\
SAE 7½	$kg \cdot m^2$	\
SAE 8	$kg \cdot m^2$	\
SAE 10	$kg \cdot m^2$	\
SAE 11½	$kg \cdot m^2$	2.902
SAE 14	$kg \cdot m^2$	3.018
SAE 18	$kg \cdot m^2$	\
B3/B14	$kg \cdot m^2$	2.723

POWER VARIATION ACCORDING TO TEMPERATURE AND ALTITUDE

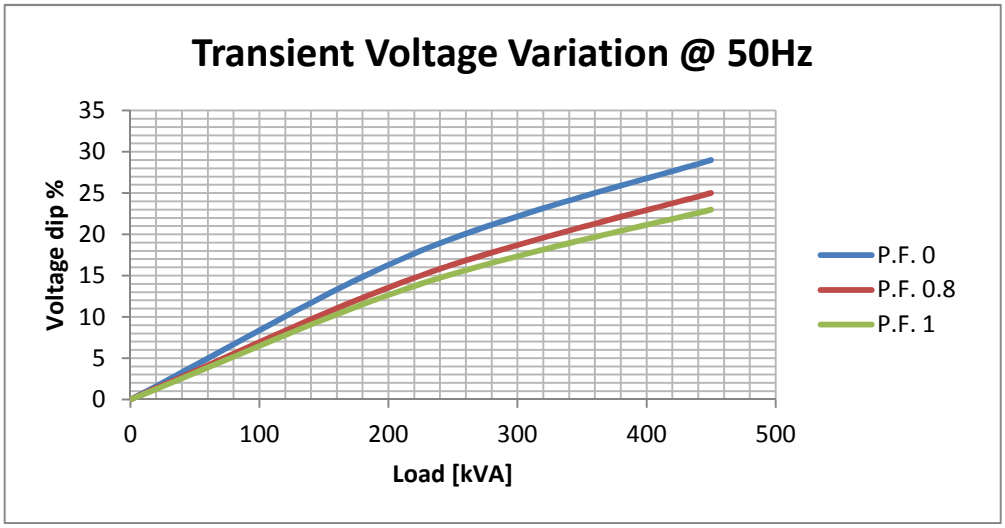
	Ambient temperature				
Altitude	25°C	40°C	45°C	50°C	55°C
< 1000m	1.09	1	0.96	0.93	0.91
1000m - 1500m	1.01	0.96	0.92	0.89	0.87
1500m - 2000m	0.96	0.91	0.87	0.84	0.83
2000m - 3000m	0.9	0.85	0.81	0.78	0.76

WIRING DIAGRAM

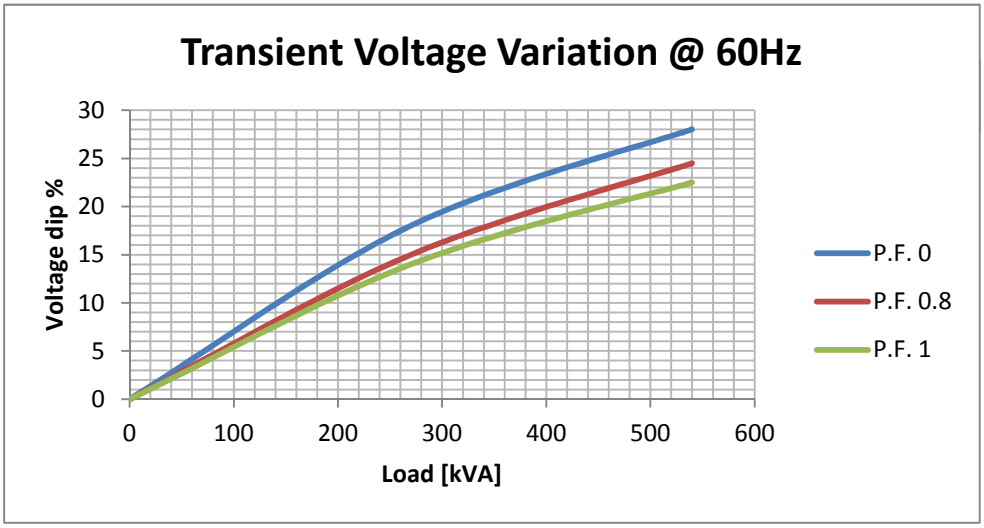


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TRANSIENT VOLTAGE VARIATION 50Hz

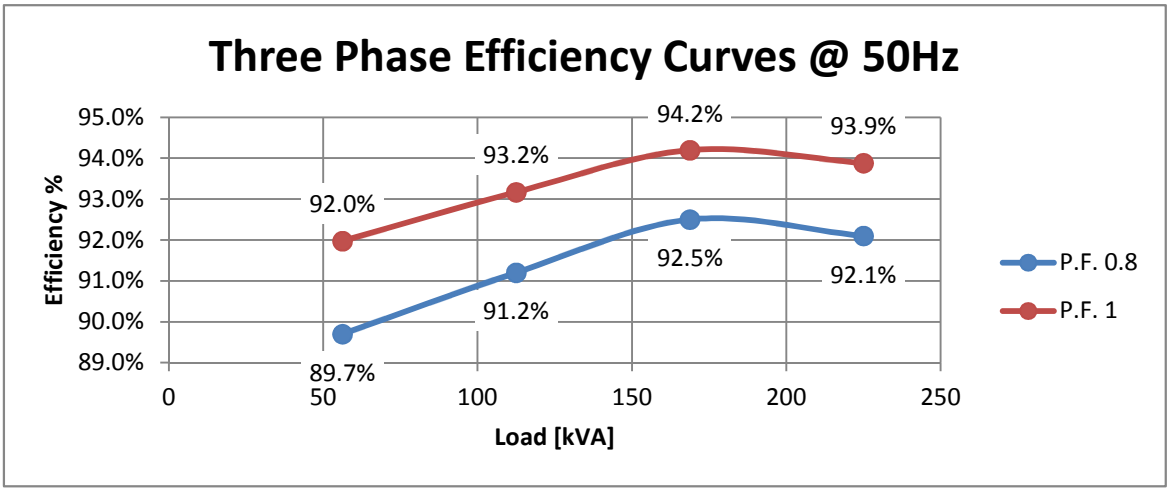


TRANSIENT VOLTAGE VARIATION 60Hz

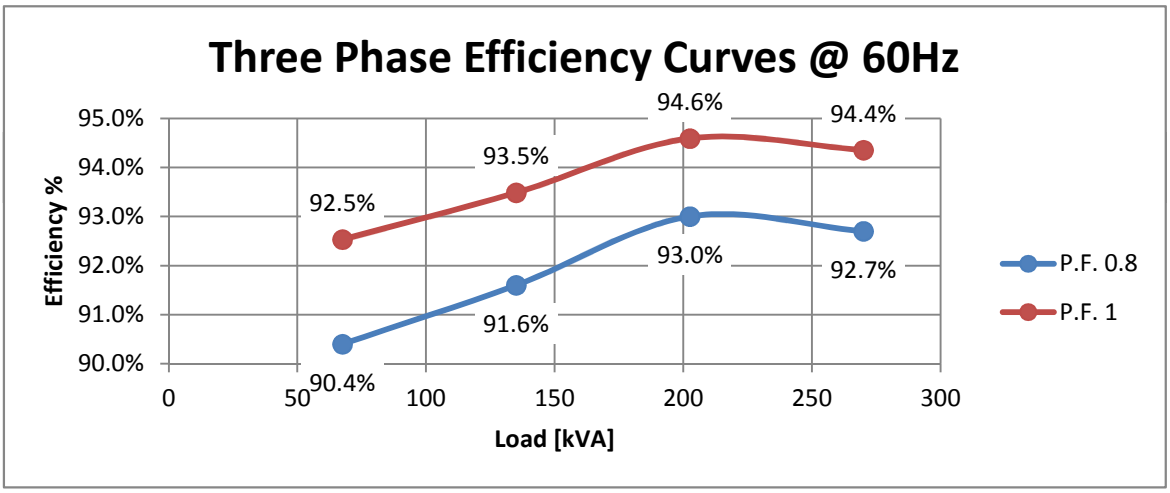


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EFFICIENCY 50Hz

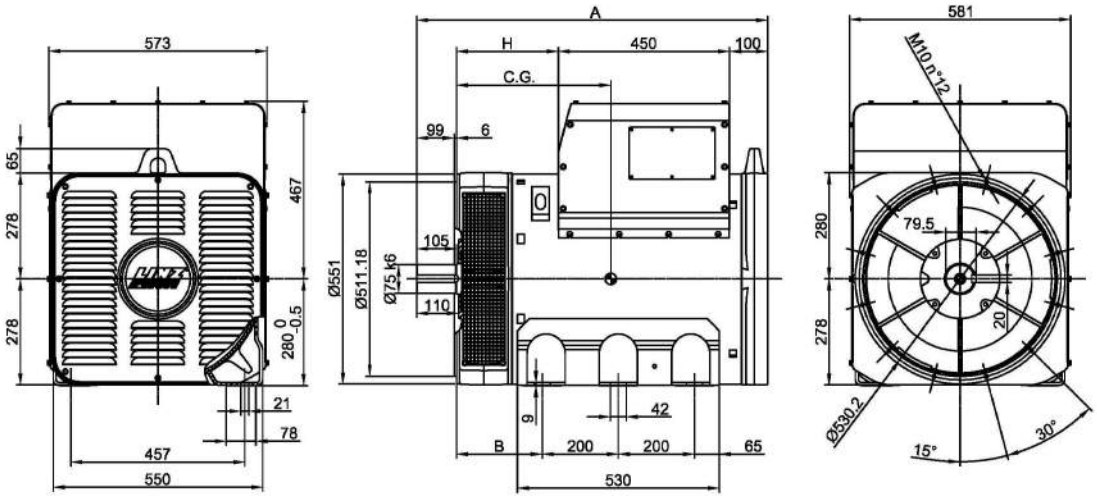


EFFICIENCY 60Hz

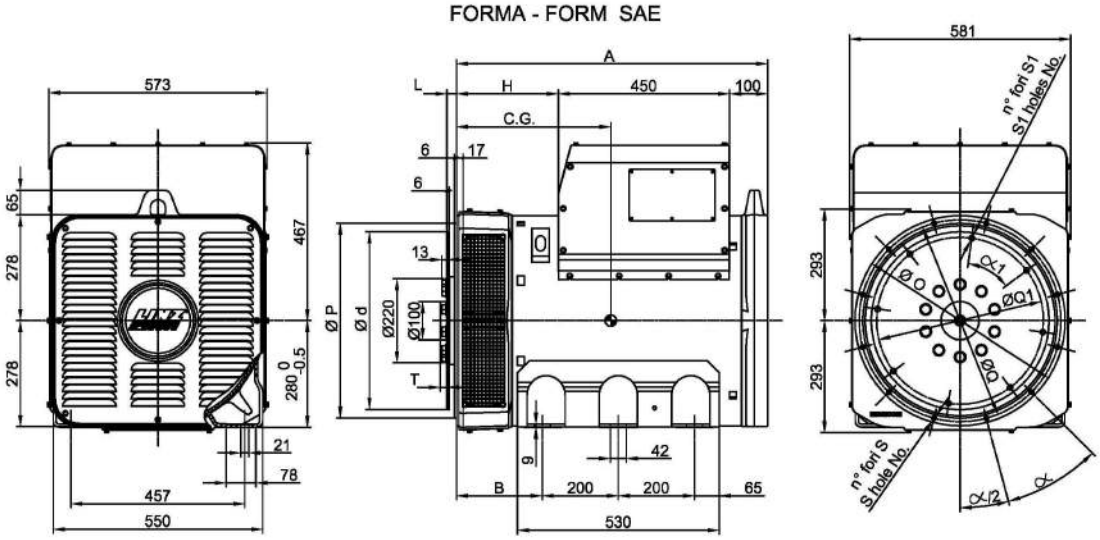


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FORMA - FORM B3/B14



FORMA - FORM SAE



FORMA - FORM		A	B	H
B3/B14	PRO 28S	922	225	267
	PRO 28M	1072		417
	PRO 28L	1137	325	482
SAE	PRO 28S	817	225	267
	PRO 28M	967		417
	PRO 28L	1032	325	482

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	FLANGIE - FLANGES - BRIDAS					
N.	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	GIUNTI A DISCO -COUPLING DISCS- JUNTAS A DISCOS						
N.	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