



ALTERNATOR PRO40M D/4

three-phase brushless synchronous alternator with AVR - 4 poles

Technical Data Sheet

PRO40M D/4

COMMON DATA

Rated Power at 50Hz	kVA	1350	
Rated Power at 60Hz	kVA	1620	
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	94 at 50Hz	113 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		6*	
Stator Winding Resistance	Ω	0.0056 at 20°C	
Rotor Winding Resistance	Ω	0.876 at 20°C	
Exciter Stator Resistance	Ω	13.3 at 20°C	
Exciter Rotor Resistance	Ω	0.051 at 20°C	
THD at full load		<3%	
THD at no load		<3%	
Excitation at no load	A _{dc}	0.59	
Excitation at full load	A _{dc}	2.78	

STANDARD

References		EN60034-1 ISO8528-3 EN55011	
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Note (*): 230/400V - 460/800V 50Hz
277/480V - 554/960V 60Hz

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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	1350	1350	1350	1300	1480	1550	1620	1620
	kW	1080	1080	1080	1040	1184	1240	1296	1296
Rated Power in Class F (105°C/40°C)	kVA	1280	1280	1280	1280	1400	1460	1540	1540
	kW	1024	1024	1024	1024	1120	1168	1232	1232
Rated Power Standby (150°C/40°C)	kVA	1450	1450	1450	1450	1600	1660	1750	1750
	kW	1160	1160	1160	1160	1280	1328	1400	1400
Rated Power Standby (163°C/27°C)	kVA	1500	1500	1500	1500	1650	1700	1800	1800
	kW	1200	1200	1200	1200	1320	1360	1440	1440

EFFICIENCY IN CL. H

4/4		95.8%						96.5%
3/4		96.1%						96.7%
2/4		95.8%						96.5%
1/4		92.5%						93.7%

REACTANCES AND TIME CONSTANTS

pcc		0.32							
X _d	- dir. axis synchronous	303%	274%	254%	218%	334%	312%	298%	274%
X' _d	- dir. axis transient	34.9%	31.5%	29.3%	25.1%	38.5%	35.9%	34.3%	31.5%
X'' _d	- dir. axis subtransient	14.8%	13.4%	12.4%	10.7%	16.4%	15.3%	14.6%	13.4%
X _q	- quad. axis reactance	161%	145%	135%	115%	177%	165%	158%	145%
T' _{do}	- O.C. field time constant	1989ms							
T' _d	- Transient time constant	229ms							
T'' _d	- Sub-transient time constant	22ms							

MECHANICAL DATA

Bearing non drive end				6318-DD2-C3E
Bearing drive end (B3/B14 form)				6324-C3
Weight of generator	in B2	kg	2635	
	in B3/B14	kg	2690	

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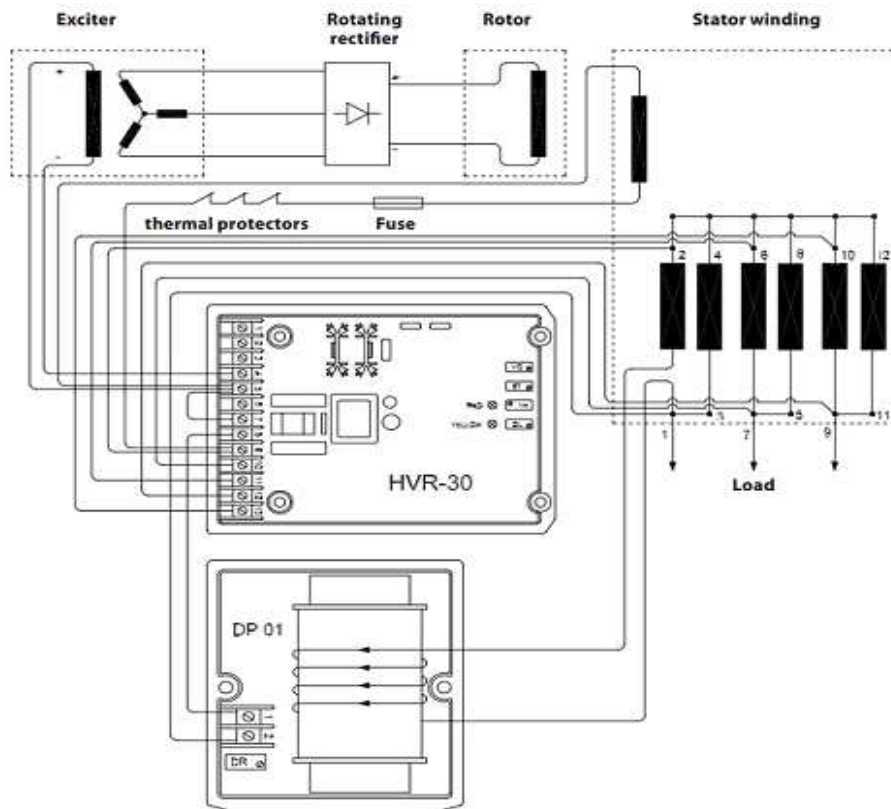
MOMENT OF INERZIA

SAE 14	kg·m ²	24.454
SAE 18	kg·m ²	24.846
SAE 21	kg·m ²	25.496
B3/B14	kg·m ²	23.429

POWER VARIATION ACCORDING TO TEMPERATURE AND ALTITUDE

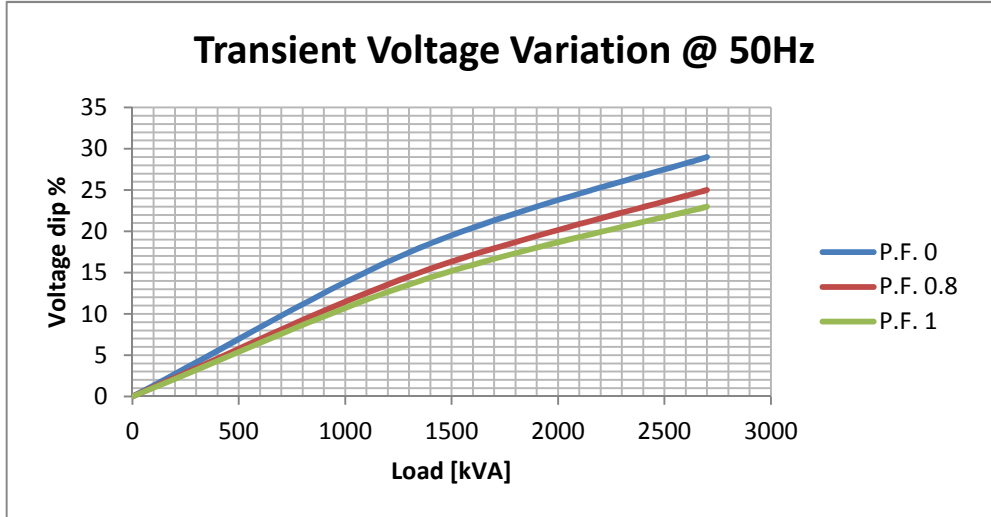
Altitude	Ambient temperature				
	25°C	40°C	45°C	50°C	55°C
< 1000m	1.09	1	0.96	0.93	0.91
1000m - 1500m	1.01	0.96	0.92	0.89	0.87
1500m - 2000m	0.96	0.91	0.87	0.84	0.83
2000m - 3000m	0.9	0.85	0.81	0.78	0.76

WIRING DIAGRAM

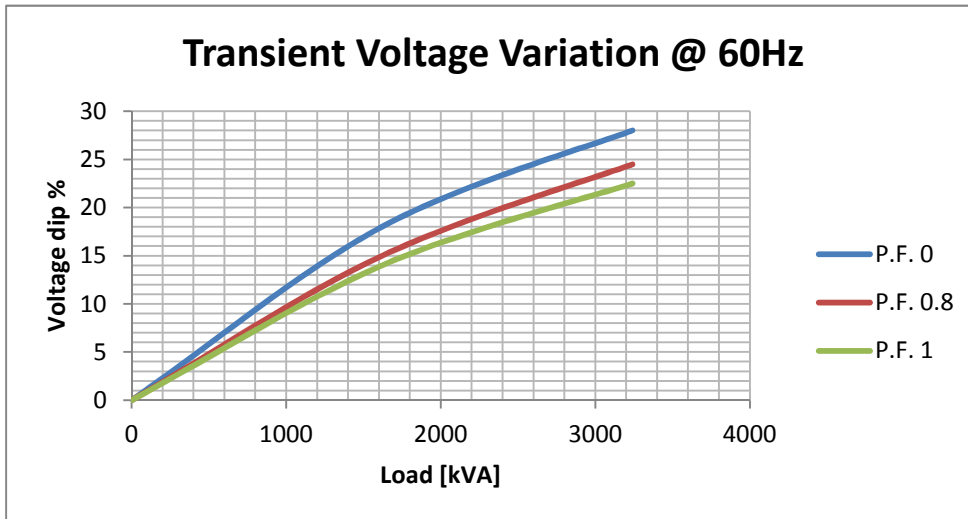


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TRANSIENT VOLTAGE VARIATION 50Hz

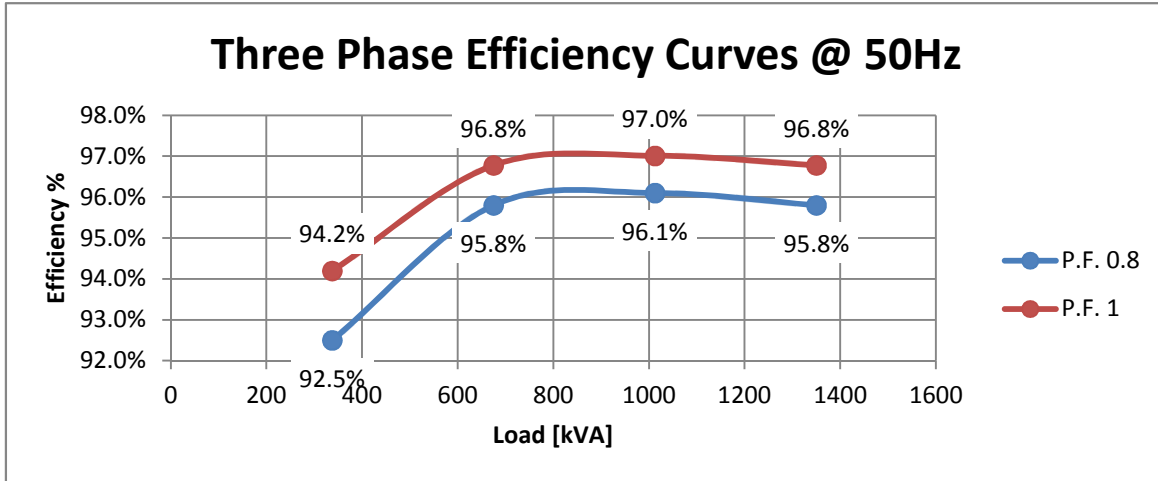


TRANSIENT VOLTAGE VARIATION 60Hz

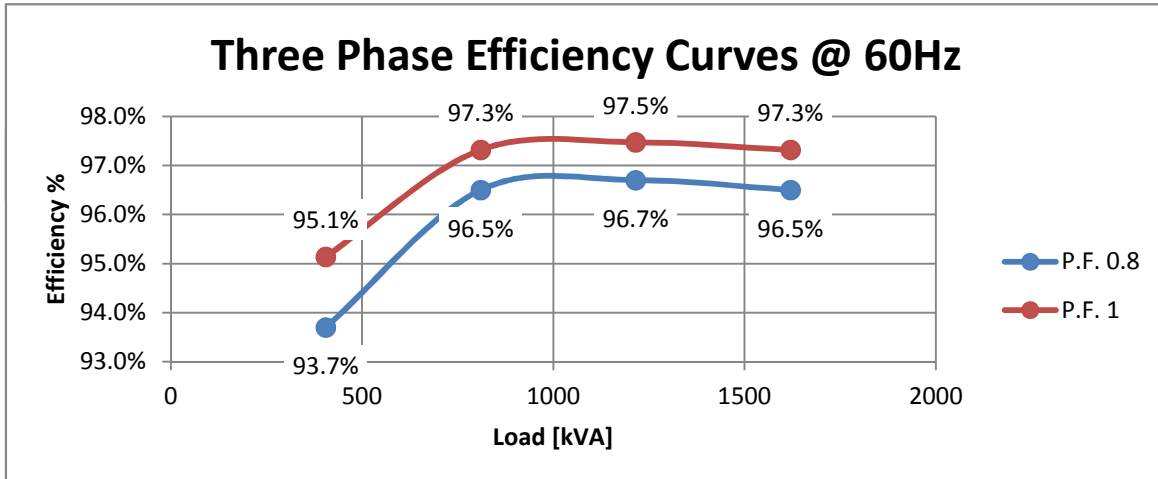


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EFFICIENCY 50Hz

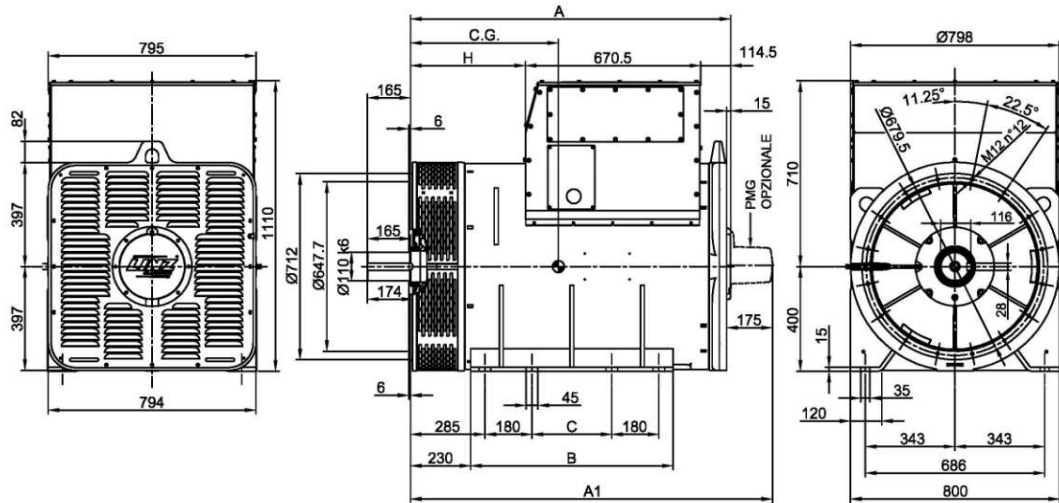


EFFICIENCY 60Hz

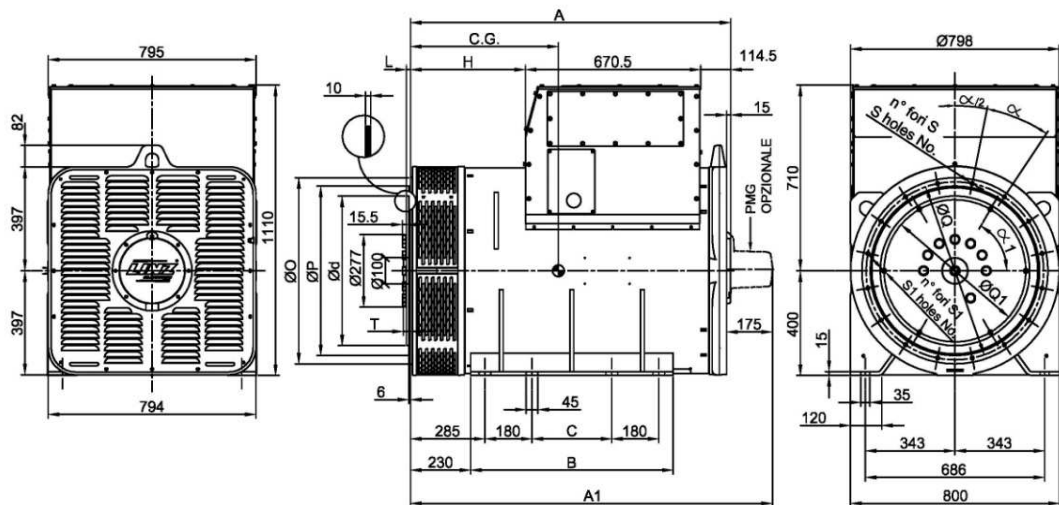


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FORMA - FORM B3/B14



FORMA - FORM SAE



FORMA - FORM		A	H	A1	B	C
B3/B14	PRO40 S	1225	440	1385	775	305
	PRO40 M	1420	635	1580		
	PRO40 L	1625	840	1785		
SAE	PRO40 S	1225	440	1385	775	305
	PRO40 M	1420	635	1580		
	PRO40 L	1625	840	1785		

TIPO - TYPE	C.G.
PRO40S A/4	597
PRO40S B/4	597
PRO40M C/4	648
PRO40M D/4	693
PRO40L E/4	795

SAE N.	FLANGIE - FLANGES - BRIDAS					
	Ø O	Ø P	Ø Q	n. fori holes No.	S	α
OO	883	787.4	850.9	16	14	22.5°
O	710	647.7	679.5	16	14	22.5°

SAE N.	GIUNTI A DISCO - COUPLING DISCS - JUNTAS A DISCOS						
	L	Ø d	Ø Q1	n. fori holes No.	S1	α1	T
14	25.4	466.72	438.15	8	14	45°	2
18	15.7	571.5	542.92	6	17	60°	12
21	0	673.1	641.35	12	17	30°	28