

ALTERNATOR PRO22M F/4

Three-phase brushless synchronous alternator with AVR - 4 poles

Technical Data Sheet

PRO22M F/4

COMMON DATA

Rated Power at 50Hz	kVA	150	
Rated Power at 60Hz	kVA	180	
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	20.1 at 50Hz	23.5 at 60Hz
Telephone Interference		<2%	
R.F.I. Suppression		Standard EN55011	

REGULATION DATA

AVR	HVR11	HVR30
Sensing	Single phase	Three phase
Voltage Regulation	± 1%	
Sustained Short Circuit	>250% 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 Winding	12	
Stator Winding Resistance	0.024Ω at 20°C	
Rotor Winding Resistance	4.52Ω at 20°C	
Exciter Stator Resistance	14.3Ω at 20°C	
Exciter Rotor Resistance	0.47Ω at 20°C	
THD at full load	<3%	
THD at no load	<3%	
Excitation at no load	A _{dc}	0.76
Excitation at full load	A _{dc}	2.5

STANDARD

References	EN60034-1, ISO8538, EN55011
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PRO22M F/4

ELECTRICAL DATA

Frequency		50Hz - 1500rpm				60Hz - 1800rpm			
		380/220	400/230	415/240	440/254	415/240	440/254	460/266	480/277
Voltage Series Star	V	380/220	400/230	415/240	440/254	415/240	440/254	460/266	480/277
Voltage Parallel Star	V	190/110	200/115	207/120	220/127	207/120	220/127	230/133	240/138
Voltage Series Delta	V	220	230	240	254	240	254	266	277
Rated Power in Class H (125°C/40°C)	kVA	150	150	150	125	150	170	180	180
	kW	120	120	120	100	120	136	144	144
Rated Power in Class F (105°C/40°C)	kVA	139.5	139.5	139.5	117	139	158	167.5	167.5
	kW	111.6	111.6	111.6	93.6	111.2	126.4	134	134
Rated Power Standby (150°C/40°C)	kVA	162	162	162	136	162	184	195	195
	kW	129.6	129.6	129.6	108.8	129.6	147.2	156	156
Rated Power Standby (163°C/27°C)	kVA	169.5	169.5	169.5	142	170	192	203.5	203.5
	kW	135.6	135.6	135.6	113.6	136	153.6	162.8	162.8

EFFICIENCY IN CL. H

4/4		92.6%						92.8%
3/4		92.8%						93.0%
2/4		91.0%						91.7%
1/4		88.5%						89.9%

REACTANCES AND TIME CONSTANTS

pcc		0.44						
X _d - dir. axis synchronous		321%	290%	269%	200%	323%	326%	316%
X' _d - dir. axis transient		19.9%	18.0%	16.7%	12.4%	20.1%	20.2%	19.6%
X'' _d - dir. axis subtransient		9.4%	8.5%	7.9%	5.9%	9.5%	9.6%	9.3%
X _q - quad. axis reactance		214%	193%	179%	133%	215%	217%	210%
T' _{do} - O.C. field time constant		310 ms						
T' _d - Transient time constant		23 ms						
T'' _d - Sub-transient time constant		10 ms						

MECHANICAL DATA

Bearing non drive end		6309-2RS-C3	
Bearing drive end (B3/B14 form)		6314-2RS-C3	
Weight of generator	in B2	kg	499
	in B3/B14	kg	501

PRO22M F/4

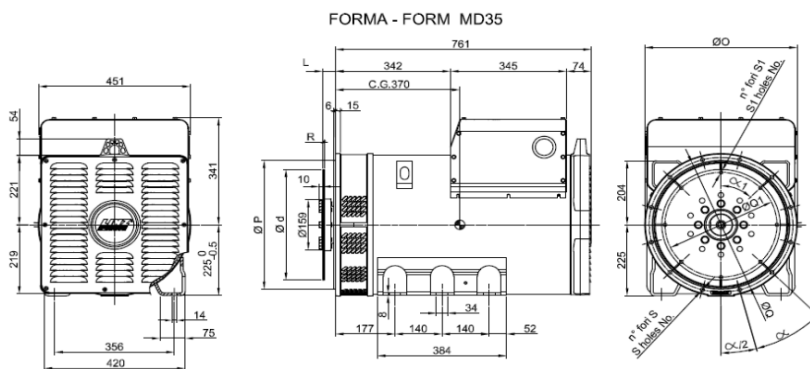
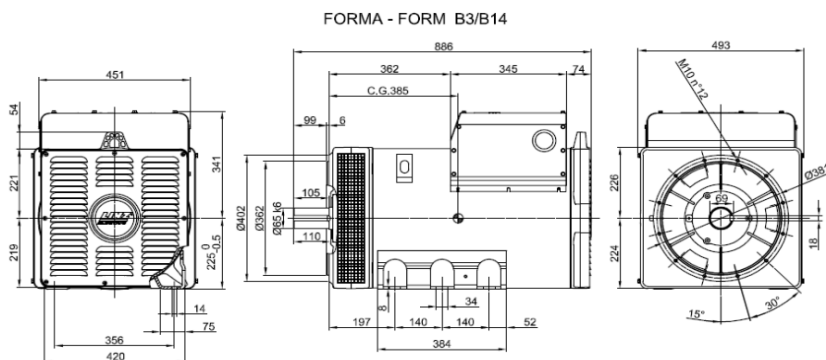
MOMENT OF INERZIA

SAE 10	kg·m ²	1.388
SAE 11½	kg·m ²	1.407
SAE 14	kg·m ²	1.556
B3/B14	kg·m ²	1.324

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

DIMENSIONS

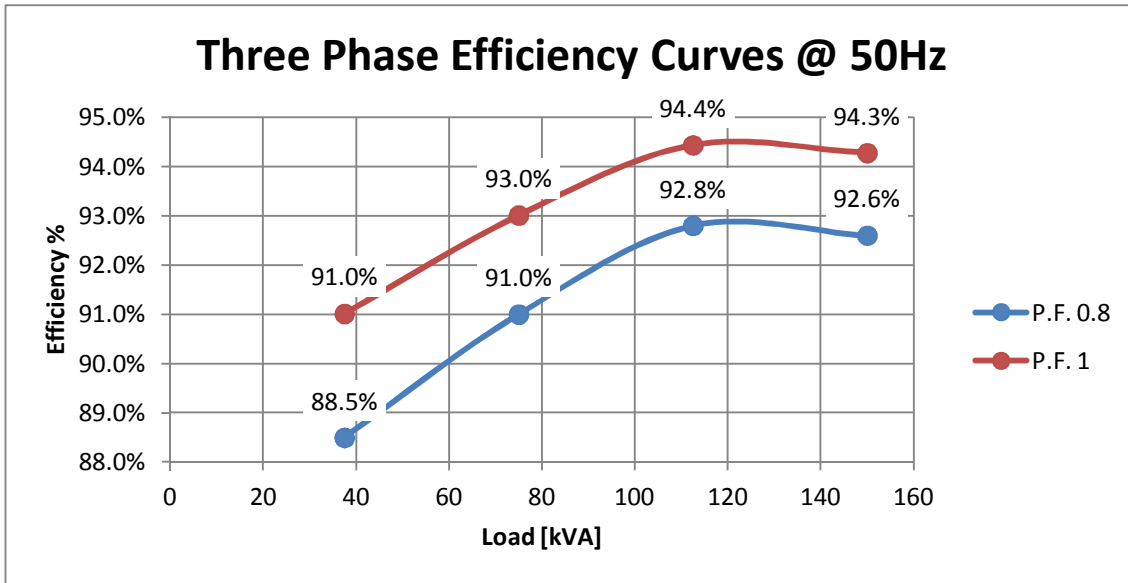


SAE N.	FLANGIE - FLANGES - BRIDAS					
	Ø O	Ø P	Ø Q	n. fori holes No.	S	α
3	454	409.6	426.6	12	12	30°
2	492	447.68	466.7			
1	552	511.18	530.2			

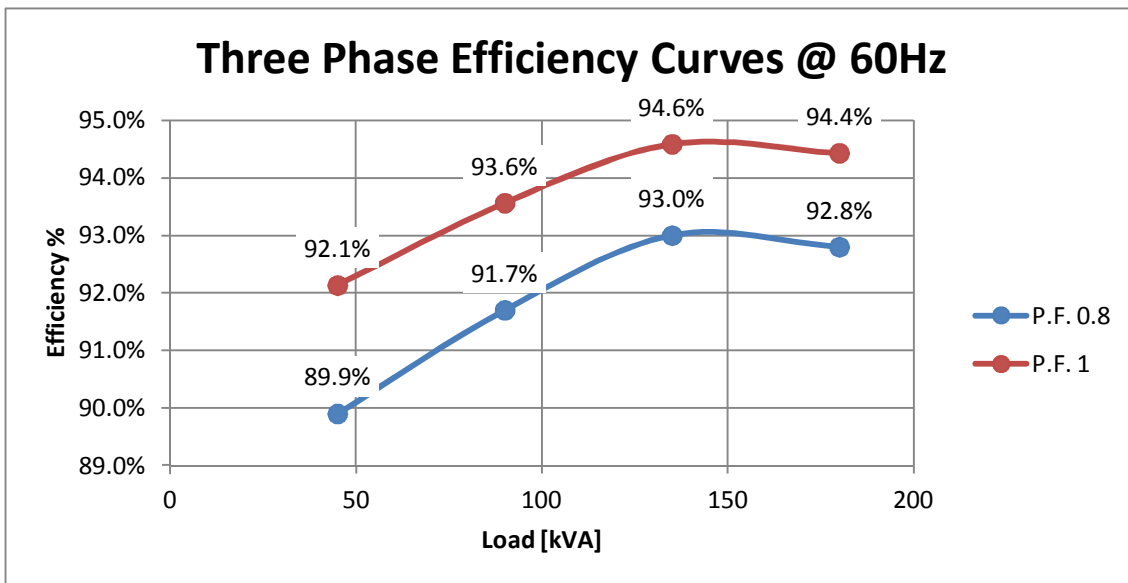
SAE N.	GIUNTI A DISCO - COUPLING DISCS - JUNTAS A DISCOS						
	L	Ø d	Ø Q1	n. fori holes No.	S1	α1	R
1 1/2	39.6	352.42	333.37	8	10.5	45°	6
14	25.4	466.72	438.15	8	14	45°	6

PRO22M F/4

EFFICIENCY 50Hz

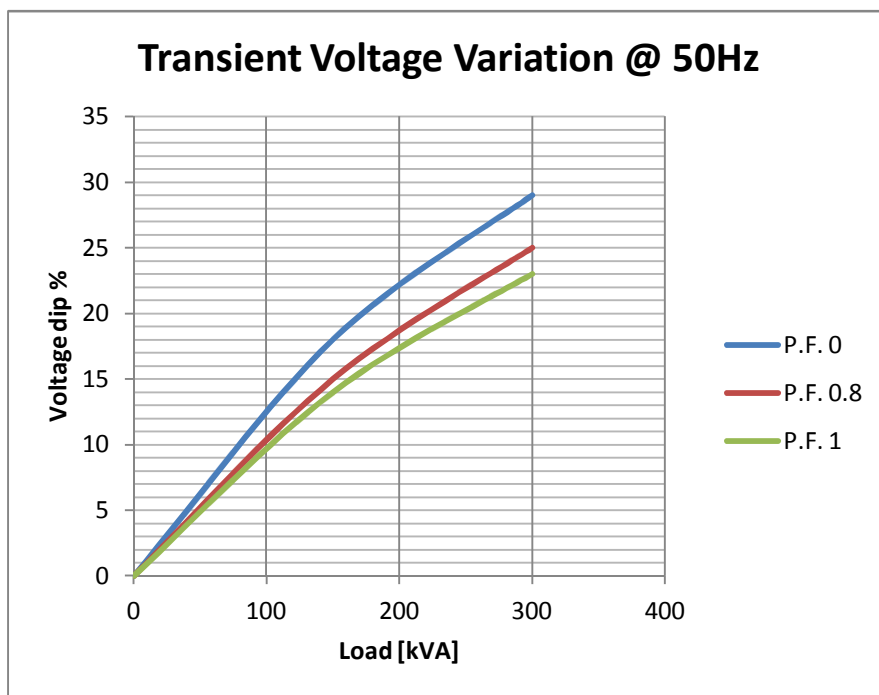


EFFICIENCY 60Hz



PRO22M F/4

TRANSIENT VOLTAGE VARIATION 50Hz



TRANSIENT VOLTAGE VARIATION 60Hz

