



ALTERNATOR PRO18M D/4

three-phase brushless synchronous alternator with AVR - 4 poles

Technical Data Sheet

PRO18M D/4

COMMON DATA

Rated Power at 50Hz	kVA	35
Rated Power at 60Hz	kVA	42
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	8 at 50Hz 8.3 at 60Hz
R.F.I. Suppression		Standard EN55011

REGULATION DATA

AVR	HVR11	HVR30
Sensing	single-phase	three-phase
Voltage Regulation	±1%	±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	0.087 at 20°C
Rotor Winding Resistance	3.24 at 20°C
Exciter Stator Resistance	15 at 20°C
Exciter Rotor Resistance	0.72 at 20°C
THD at full load	<3%
THD at no load	<3%
Excitation at no load	A _{dc} 0.91
Excitation at full load	A _{dc} 2.28

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	35	35	35	29	38.5	40	42	42
	kW	28	28	28	23.2	30.8	32	33.6	33.6
Rated Power in Class F (105°C/40°C)	kVA	32	32	31	27.5	36	37	38.5	38.5
	kW	25.6	25.6	24.8	22	28.8	29.6	30.8	30.8
Rated Power Standby (150°C/40°C)	kVA	37	37	36	30	40	42	45	45
	kW	29.6	29.6	28.8	24	32	33.6	36	36
Rated Power Standby (163°C/27°C)	kVA	39	39	37	31	42	45	47	47
	kW	31.2	31.2	29.6	24.8	33.6	36	37.6	37.6

EFFICIENCY IN CL. H

4/4		88.6%						90.4%
3/4		89.1%						90.9%
2/4		86.0%						87.5%
1/4		82.5%						83.0%

REACTANCES AND TIME CONSTANTS

pcc		0.58						
X _d - dir. axis synchronous	266%	240%	223%	164%	294%	272%	261%	240%
X' _d - dir. axis transient	19.9%	18.0%	16.7%	12.3%	22.1%	20.4%	19.6%	18.0%
X'' _d - dir. axis subtransient	7.8%	7.0%	6.5%	4.8%	8.6%	7.9%	7.6%	7.0%
X _q - quad. axis reactance	147%	133%	124%	91%	163%	151%	145%	133%
T' _{do} - O.C. field time constant	147ms							
T' _d - Transient time constant	11ms							
T'' _d - Sub-transient time constant	6ms							

MECHANICAL DATA

Bearing non drive end	6307-2RS-C3		
Bearing drive end (B3/B14 form)	6309-2RS-C3		
Weight of generator	in B2	kg	170
	in B3/B14	kg	172
	in B3/B9	kg	\

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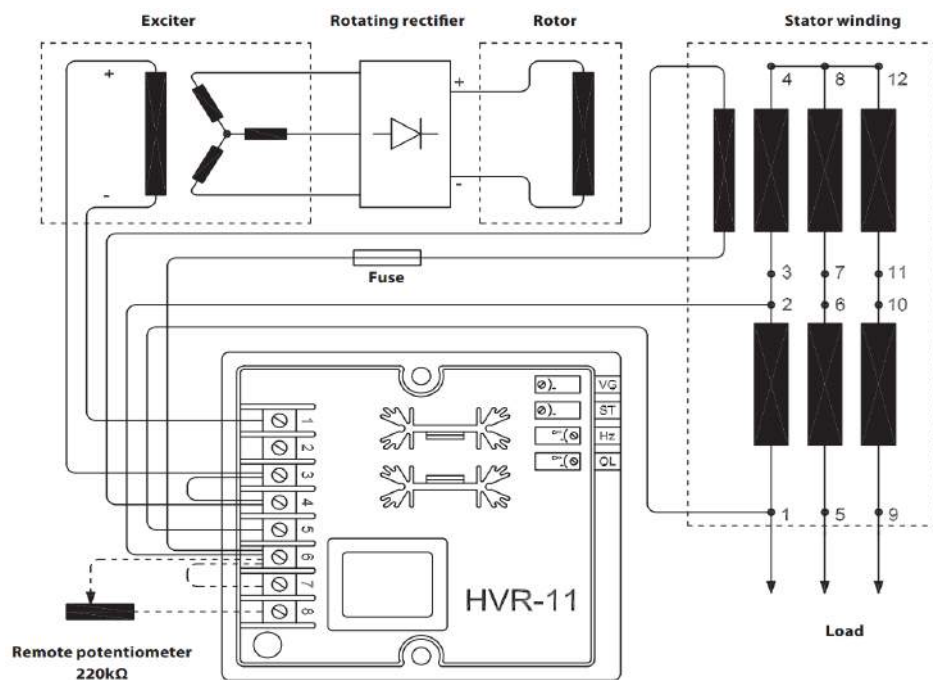
MOMENT OF INERZIA

B3/B9	kg·m ²	\
SAE 7½	kg·m ²	0.316
SAE 8	kg·m ²	0.325
SAE 10	kg·m ²	0.342
SAE 11½	kg·m ²	0.362
SAE 14	kg·m ²	\
SAE 18	kg·m ²	\
B3/B14	kg·m ²	0.313

POWER VARIATION ACCORDING TO TEMPERATURE AND ALTITUDE

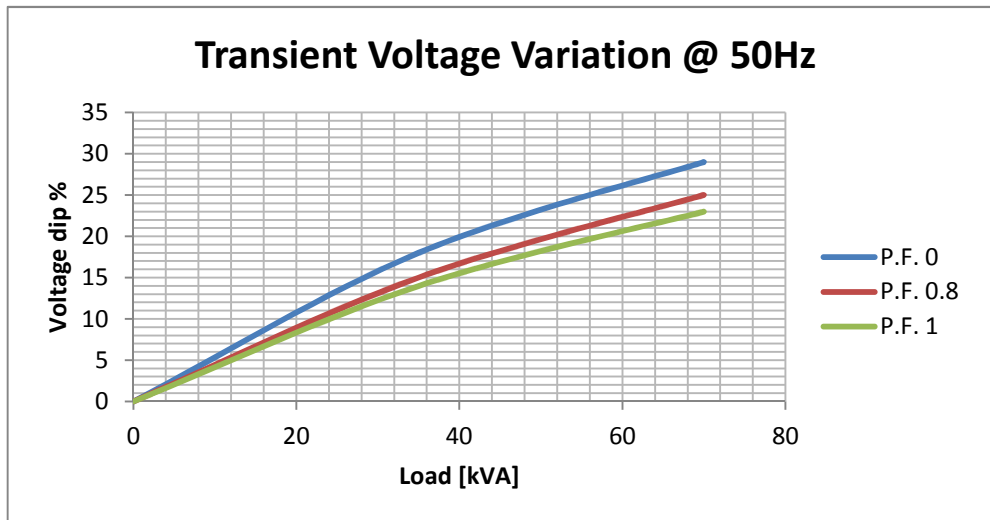
Altitude	Ambient temperature				
	25°C	40°C	45°C	50°C	55°C
< 1000m	1.09	1	0.96	0.93	0.91
1000m - 1500m	1.01	0.96	0.92	0.89	0.87
1500m - 2000m	0.96	0.91	0.87	0.84	0.83
2000m - 3000m	0.9	0.85	0.81	0.78	0.76

WIRING DIAGRAM

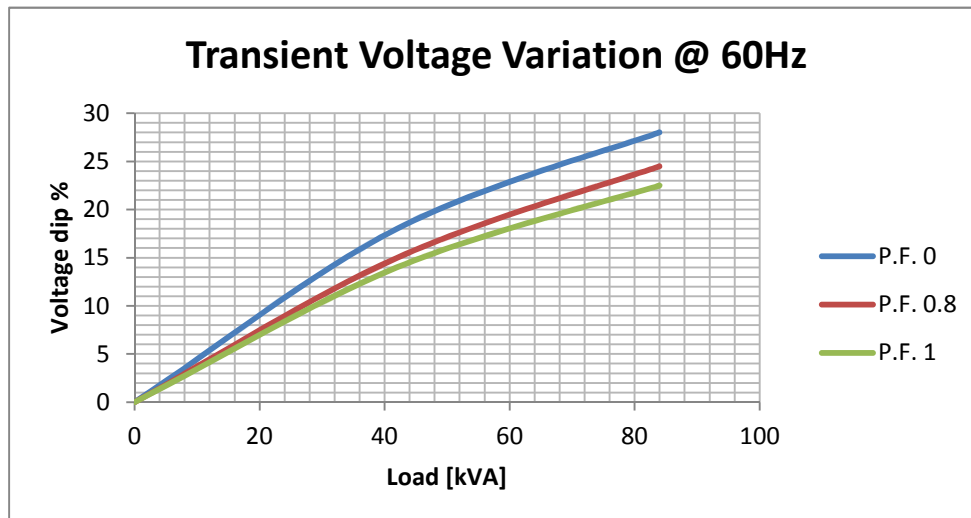


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TRANSIENT VOLTAGE VARIATION 50Hz

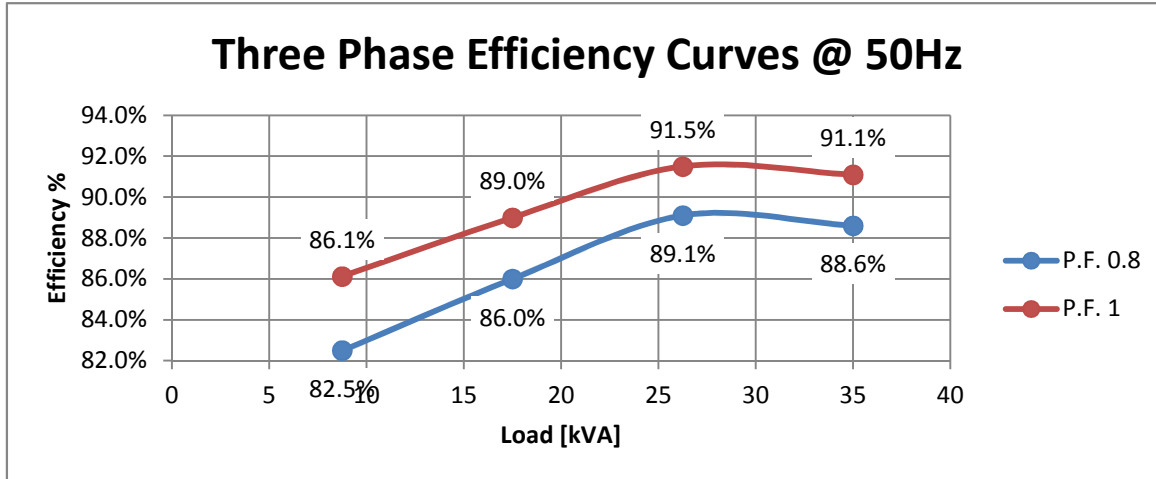


TRANSIENT VOLTAGE VARIATION 60Hz

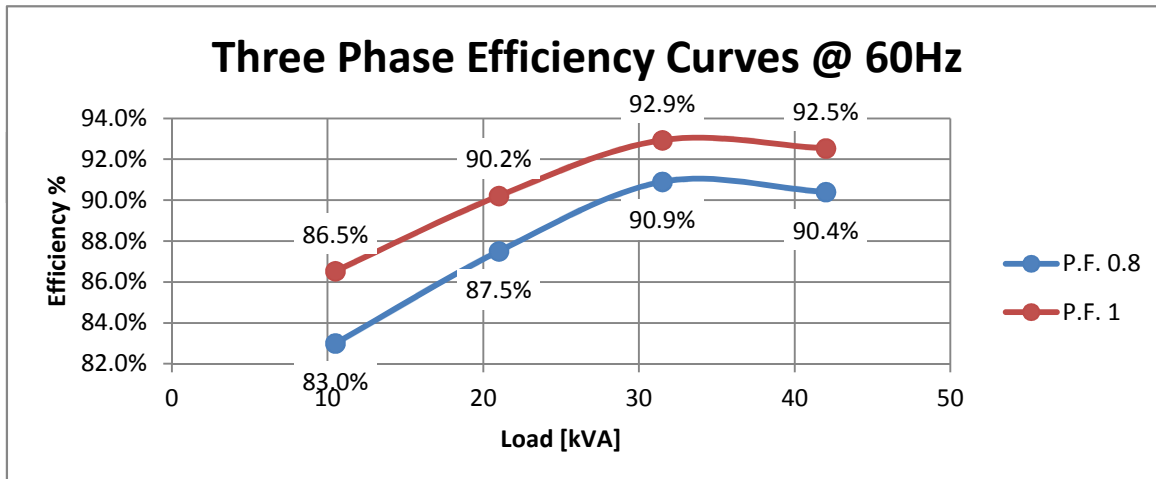


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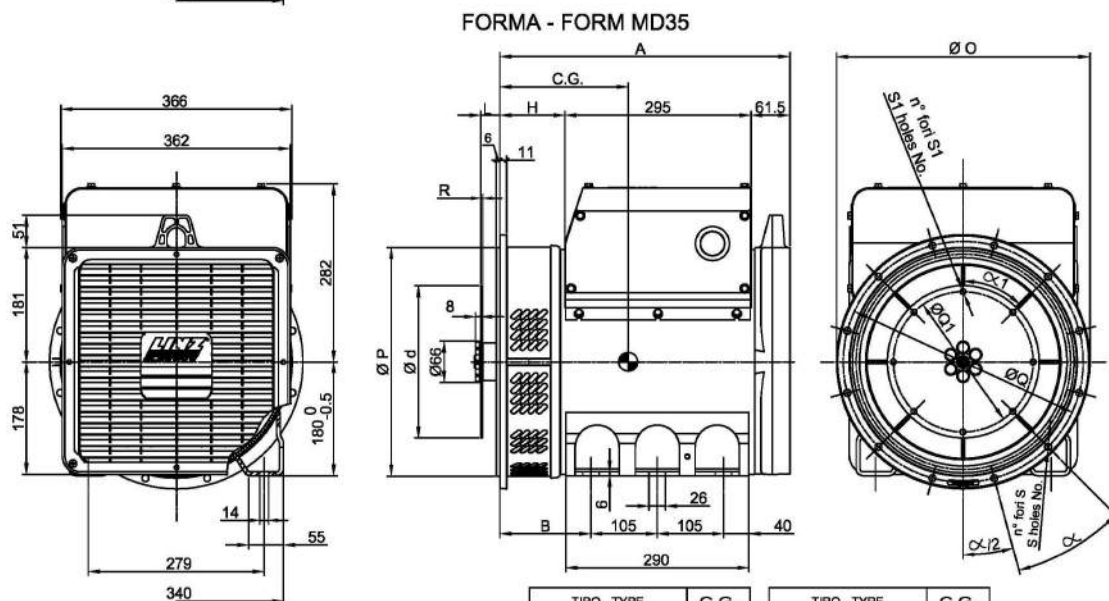
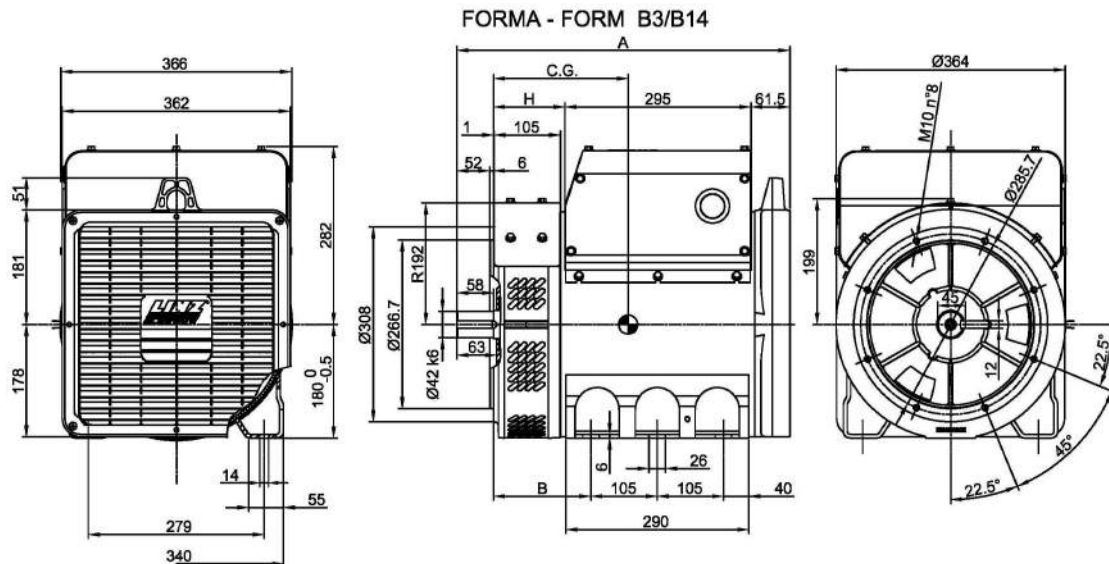
EFFICIENCY 50Hz



EFFICIENCY 60Hz



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FORMA - FORM		A	B	H
B3/B14	PRO 18S	528	155	113.5
	PRO 18M	598		183.5
	PRO 18L	710	260	295.5
	PRO 18S	460		103.5
MD35	PRO 18M	530	145	173.5
	PRO 18L	642	250	285.5

TIPO - TYPE	C.G.	TIPO - TYPE	C.G.
PRO18S A/4 B3/B14	217	PRO18S A/4 MD35	213
PRO18S B/4 B3/B14	221	PRO18S B/4 MD35	217
PRO18S C/4 B3/B14	228	PRO18S C/4 MD35	223
PRO18M D/4 B3/B14	251	PRO18M D/4 MD35	246
PRO18M E/4 B3/B14	262	PRO18M E/4 MD35	257
PRO18L F/4 B3/B14	301	PRO18L F/4 MD35	296
PRO18L G/4 B3/B14	318	PRO18L G/4 MD35	313

SAE N.	FLANGIE - FLANGES - BRIDAS					
	Ø O	Ø P	Ø Q	n. fori holes No.	S	α
5	356	314.3	333.4	8	11	45°
4	402	362	381	12		30°
3	451	409.6	428.6	12		30°
2	490	447.7	466.7	12		30°

SAE N.	GIUNTI A DISCO - COUPLING DISCS - JUNTAS A DISCOS						
	L	Ø d	Ø Q1	n. fori holes No.	S1	α1	R
6 1/2	30.2	215.9	200	6	9	60°	3
7 1/2	30.2	241.3	222.25	8	9	45°	
8	62	263.52	244.47	6	10.5	60°	
10	53.8	314.32	295.27	8	10.5	45°	
11 1/2	39.6	352.42	333.37	8	10.5	45°	4.5