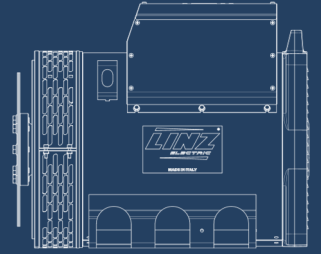


PRO22S D/4

Three-Phase brushless synchronous alternator with AVR - 4 poles



COMMON DATA		
Rated Power at 50Hz	kVA	100
Rated Power at 60Hz	kVA	120
Rated Power Factor		0.8
Nominal Temperature	°C	40
Control System		self-excited
Execution		brushless
Regulation Type		AVR
Insulation Class		H
Protection		IP23
Maximum Over speed	rpm	2250
Overload		110% of rated power for one hour in a cycle of 6 hours
Air Flow Requirement	m ³ /min	17.9 at 50Hz 20.8 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	Ω	0.02 at 20°C
Rotor Winding Resistance	Ω	3.26 at 20°C
Exciter Stator Resistance	Ω	14.3 at 20°C
Exciter Rotor Resistance	Ω	0.47 at 20°C
THD at full load	<3%	
THD at no load	<3%	
Excitation at no load	A _{dc}	0.75
Excitation at full load	A _{dc}	2.3



Three-Phase brushless synchronous alternator with AVR - 4 poles
REFERENCES

EN60034-1 ISO8528-3 EN55011

ON REQUEST:

UL 1446, Systems of Insulating Materials - General CSA-C22.2 No. 0, Appendix B, General Requirements - Canadian Electrical Code,

CAN/CSA - C22.2 No. 100-14 (R2009) Motors and Generators, UL1004-1 2nd ed. Rotating Electrical Machines - General Requirements, UL1004-4 2nd ed. Electric Generators

ELECTRICAL DATA @50Hz

Frequency		50Hz - 1500rpm				
Voltage	V	3 Phase Series High WYE Parallel Low WYE				1 Phase Reconnected Double Delta
		380/220 190/110	400/230 200/115	415/240 208/120	440/254 220/127	115/230
Rated Power in Class H (125°C/40°C)	kVA	100	100	100	85	65
	kW	80	80	80	68	52
Rated Power in Class F (105°C/40°C)	kVA	93	93	93	80	61
	kW	74.4	74.4	74.4	64	48.8
Rated Power Standby (150°C/40°C)	kVA	110	110	110	93	72
	kW	88	88	88	74.4	57.6
Rated Power Standby (163°C/27°C)	kVA	113	113	113	96	74
	kW	90.4	90.4	90.4	76.8	59.2

EFFICIENCY IN CL. H OF RATED POWER @50Hz - 0.8 P.F.

4/4 (100%)	90.6%
3/4 (75%)	90.9%
2/4 (50%)	88.2%
1/4 (25%)	84.5%

REACTANCES AND TIME CONSTANTS @50Hz

pcc		0.47		
X _d	- dir. axis synchronous	330%	298%	277% 209%
X' _d	- dir. axis transient	19.9%	18.0%	16.7% 12.6%
X'' _d	- dir. axis subtransient	10.0%	9.0%	8.4% 6.3%
X _q	- quad. axis reactance	215%	194%	180% 136%
T' _{do}	- O.C. field time constant		277ms	
T' _d	- Transient time constant		22ms	
T'' _d	- Sub-transient time constant		11ms	

Three-Phase brushless synchronous alternator with AVR - 4 poles
ELECTRICAL DATA @60Hz

Frequency		60Hz - 1800rpm				
Voltage	V	3 Phase Series High WYE Parallel Low WYE				1 Phase Reconnected Double Delta
		415/240 208/120	440/254 220/127	460/266 230/133	480/277 240/138	138/277
Rated Power in Class H (125°C/40°C)	kVA	110	120	120	120	78
	kW	88	96	96	96	62.4
Rated Power in Class F (105°C/40°C)	kVA	101	111.5	111.5	111.5	73
	kW	80.8	89.2	89.2	89.2	58.4
Rated Power Standby (150°C/40°C)	kVA	118	130	130	130	86
	kW	94.4	104	104	104	68.8
Rated Power Standby (163°C/27°C)	kVA	123	135.5	135.5	135.5	88
	kW	98.4	108.4	108.4	108.4	70.4

EFFICIENCY IN CL. H OF RATED POWER @60Hz - 0.8 P.F.

4/4	90.9%
3/4	91.1%
2/4	89.8%
1/4	88.0%

REACTANCES AND TIME CONSTANTS @60Hz

pcc				0.47	
X _d	- dir. axis synchronous	365%	355%	324%	298%
X' _d	- dir. axis transient	22.1%	21.4%	19.6%	18.0%
X'' _d	- dir. axis subtransient	11.0%	10.7%	9.8%	9.0%
X _q	- quad. axis reactance	238%	231%	211%	194%
T' _{do}	- O.C. field time constant	277ms			
T' _d	- Transient time constant	22ms			
T'' _d	- Sub-transient time constant	11ms			

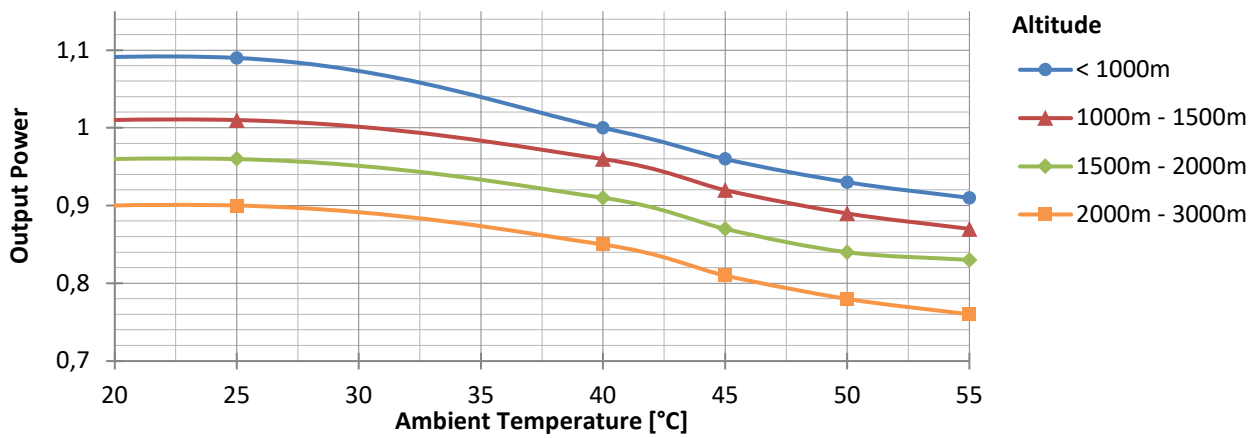
MECHANICAL DATA

Bearing non drive end	6309-2RS-C3		
Bearing drive end (B3/B14 form)	6314-2RS-C3		
Weight of generator	in B2	kg	379
	in B3/B14	kg	381
	in B3/B9	kg	/

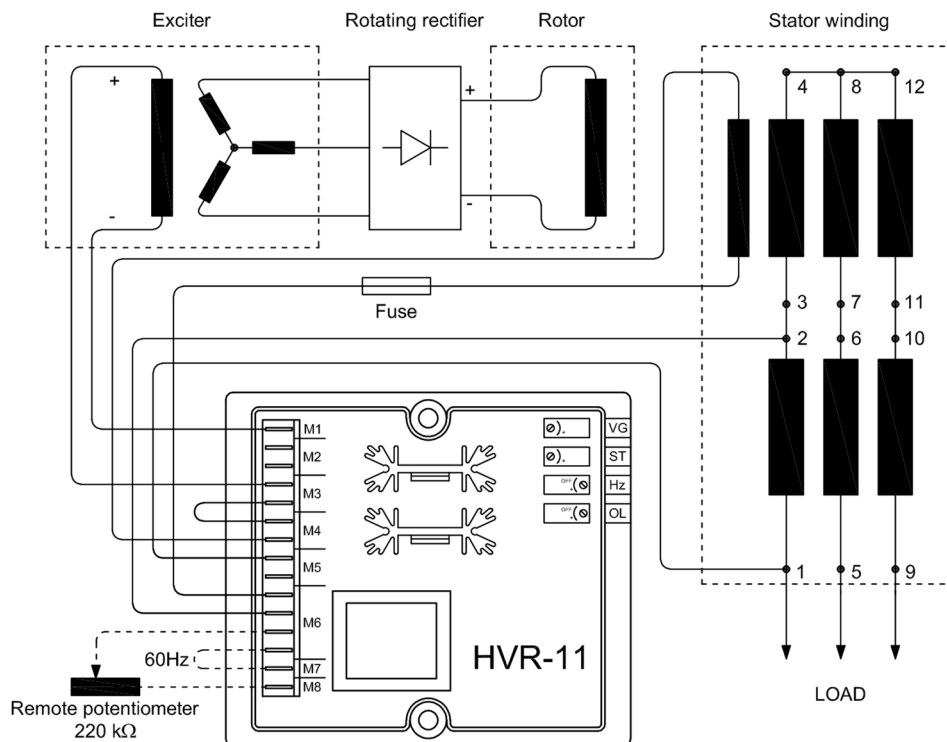
MOMENT OF INERZIA

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	1.074
SAE 14	kg·m ²	1.222
SAE 18	kg·m ²	/
B3/B14	kg·m ²	0.996

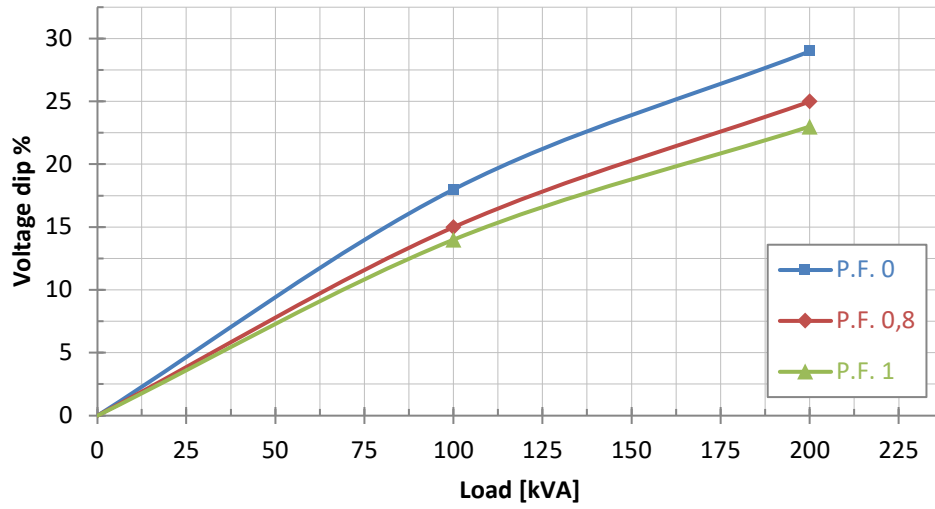
DERATING CURVES



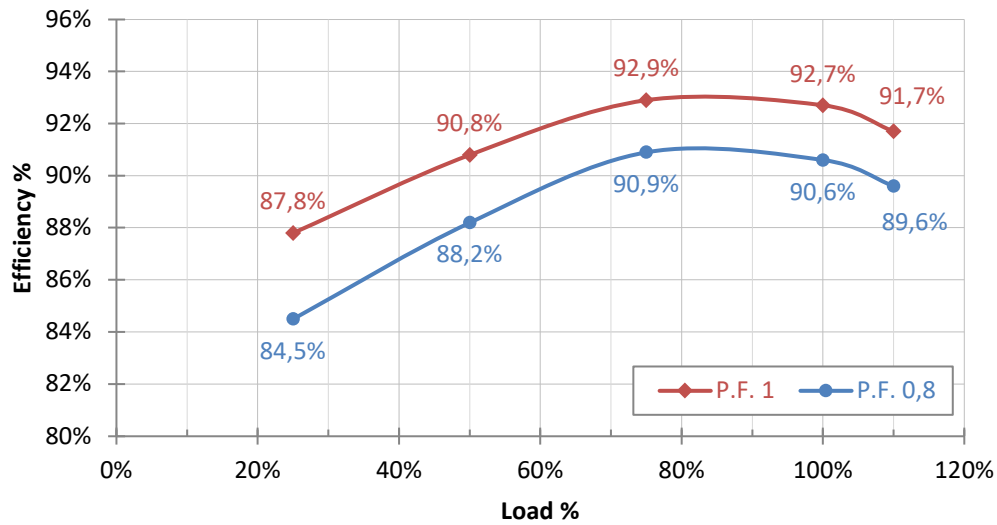
WIRING DIAGRAM



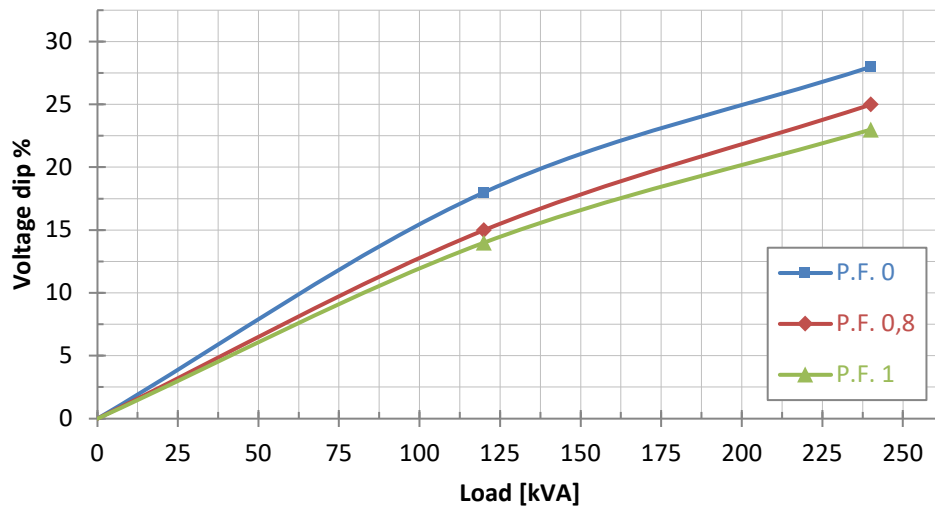
TRANSIENT VOLTAGE VARIATION @50Hz - 230/400V



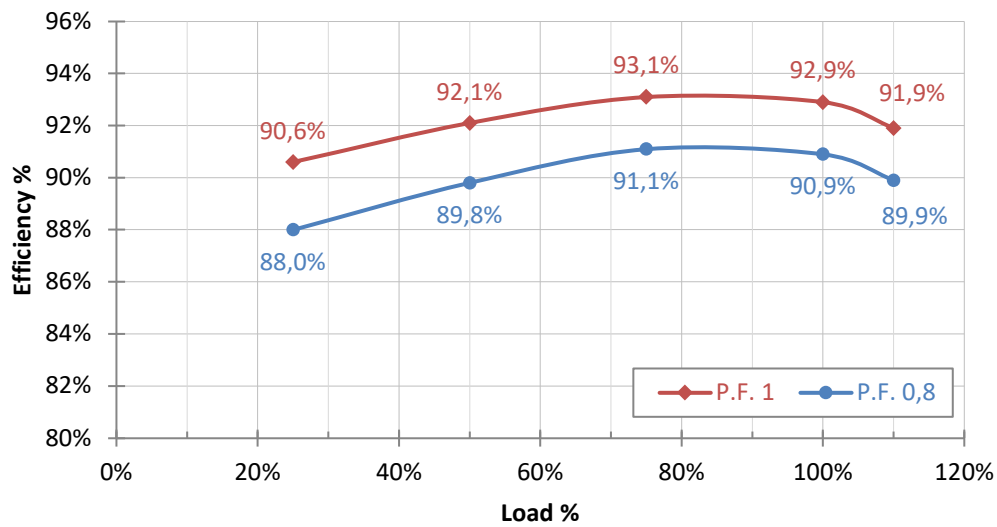
EFFICIENCY CURVES @50Hz - 230/400V



TRANSIENT VOLTAGE VARIATION @60Hz - 277/480V

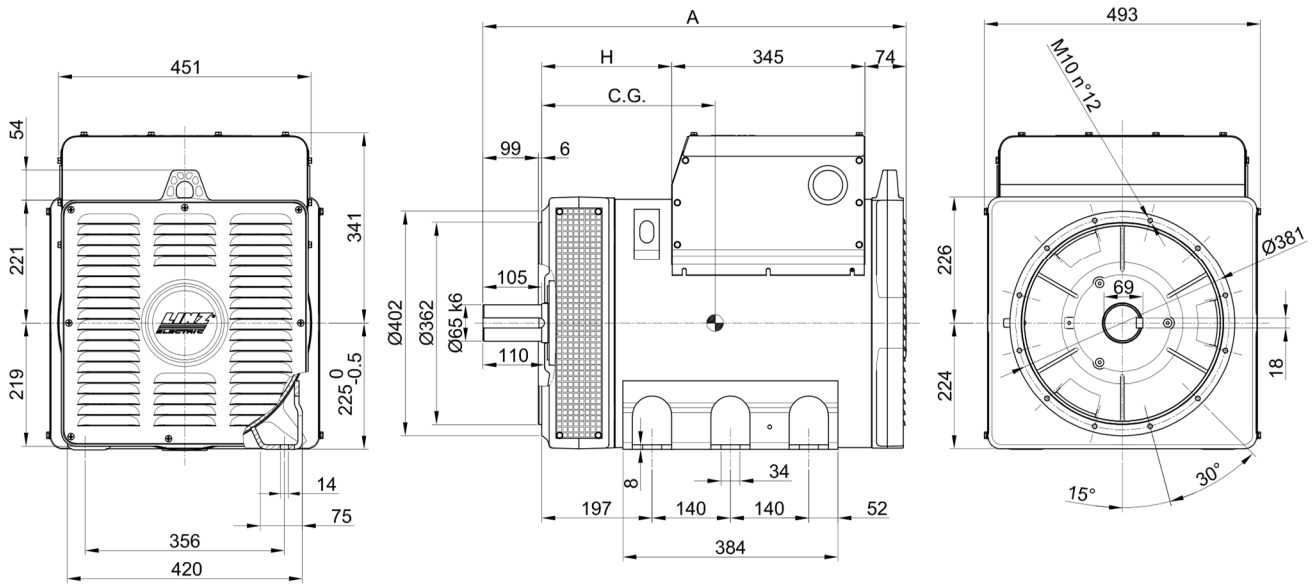


EFFICIENCY CURVES @60Hz - 277/480V

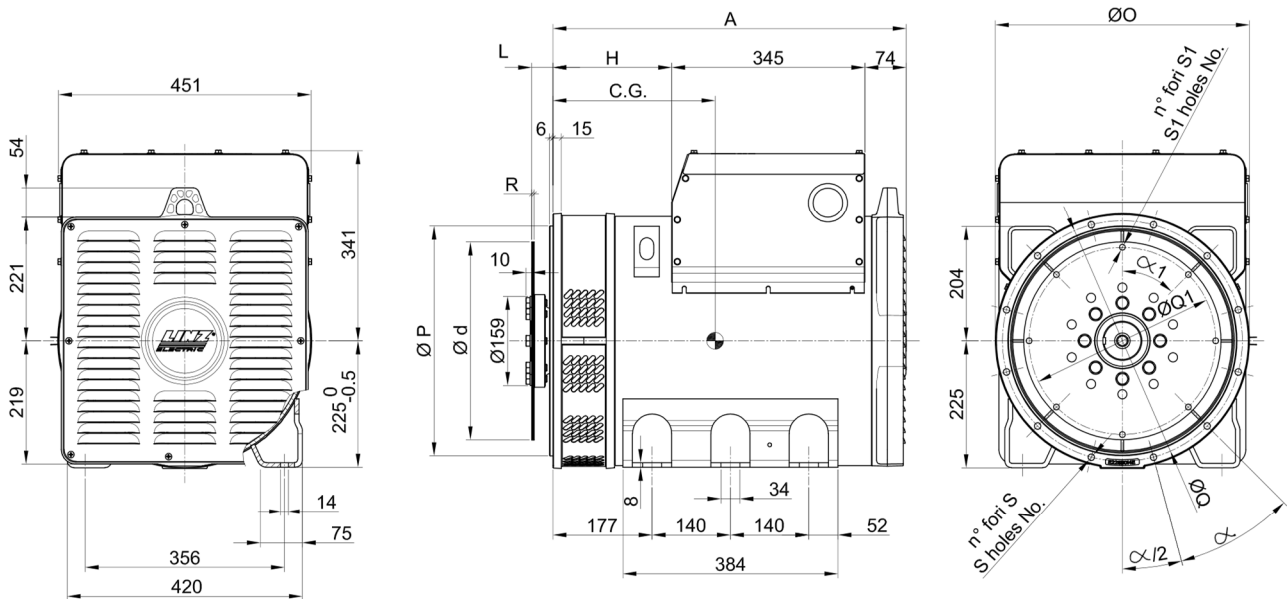


OVERALL DIMENSIONS

FORMA - FORM B3/B14



FORMA - FORM SAE



FORMA - FORM		A	H
B3/B14	PRO 22S	756	232
	PRO 22M	886	362
SAE	PRO 22S	631	212
	PRO 22M	761	342

TIPO - TYPE	C.G.
PRO22S A/4 B3/B14	284
PRO22S B/4 B3/B14	293
PRO22S C/4 B3/B14	299
PRO22S D/4 B3/B14	313
PRO22M E/4 B3/B14	359
PRO22M F/4 B3/B14	377

TIPO - TYPE	C.G.
PRO22S A/4 SAE	270
PRO22S B/4 SAE	279
PRO22S C/4 SAE	285
PRO22S D/4 SAE	298
PRO22M E/4 SAE	344
PRO22M F/4 SAE	362

SAE	FLANGIE - FLANGES - BRIDAS						
	N.	Ø O	Ø P	Ø Q	n. fori holes No.	S	α
	3	454	409.6	428.6			
	2	492	447.68	466.7	12	12	30°
	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	R
	11 1/2	39.6	352.42	333.37	8	10.5	45°	
	14	25.4	466.72	438.15	8	14	45°	6