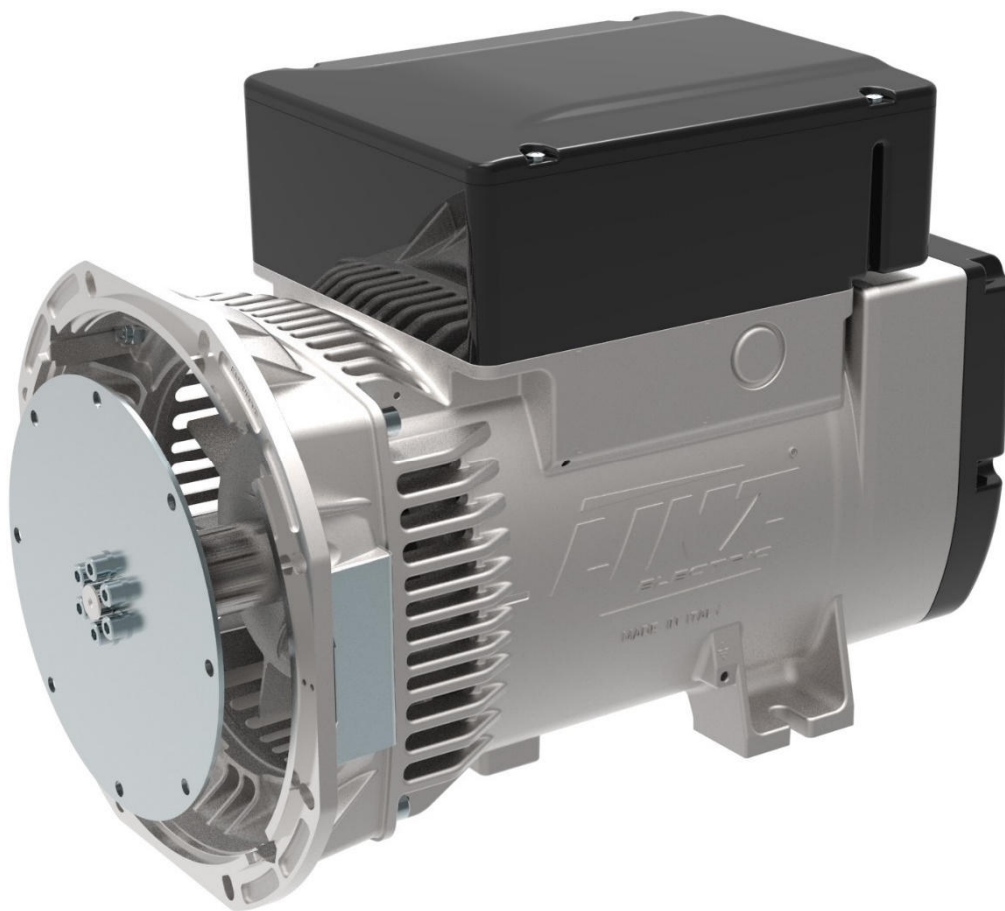


TECHNICAL DATA SHEET



ALTERNATOR E1X13S C/2

Three-Phase brushless synchronous alternator with AVR - 2 poles

E1X13S C/2

COMMON DATA

Rated Power at 50Hz	kVA	12,5	
Rated Power at 60Hz	kVA	15,0	
Rated Power Factor		0,8	
Nominal Temperature	°C	40	
Control System		self-excited	
Execution		brushless	
Regulation Type		AVR	
Insulation Class		H	
Protection		IP21	
Maximum Over speed	rpm	4500	
Overload		110% of rated power for one hour in a cycle of 6 hours	
Air Flow Requirement	m ³ /min	4,5 at 50Hz	5,4 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	0,69 at 20°C
Rotor Winding Resistance	Ω	9,79 at 20°C
Exciter Stator Resistance	Ω	16,5 at 20°C
Exciter Rotor Resistance	Ω	2,15 at 20°C
THD at full load	<3%	
THD at no load	<3%	
Excitation at no load	A _{dc}	0,19
Excitation at full load	A _{dc}	1,03

STANDARD

References	EN60034-1 ISO8528-3 EN55011
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ON REQUEST

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

E1X13S C/2

ELECTRICAL DATA

Frequency		50Hz - 3000rpm					60Hz - 3600rpm				
Voltage	V	Double Delta	Series High Wye Parallel Low Wye			Double Delta	Series High Wye Parallel Low Wye				
		115/230	380/220 190/110	400/230 200/115	415/240 208/120	440/254 220/127	120/240	415/240 208/120	440/254 220/127	460/266 230/133	480/277 240/154
Rated Power in Class H (125°C/40°C)	kVA	8,0	12,5	12,5	12,5	10,0	8,5	13,0	14,5	15,0	15,0
	kW	6,4	10,0	10,0	10,0	8,0	6,8	10,4	11,6	12,0	12,0
Rated Power in Class F (105°C/40°C)	kVA	7,5	11,5	11,5	11,5	9,0	7,8	12,0	13,2	14,0	14,0
	kW	6,0	9,2	9,2	9,2	7,2	6,24	9,6	10,56	11,2	11,2
Rated Power Standby (150°C/40°C)	kVA	8,7	13,5	13,5	13,5	10,8	9,1	14,0	16,0	16,4	16,4
	kW	6,96	10,8	10,8	10,8	8,64	7,28	11,2	12,8	13,12	13,12
Rated Power Standby (163°C/27°C)	kVA	9,0	14,0	14,0	13,8	11,2	9,6	14,7	16,3	17,0	17,0
	kW	7,2	11,2	11,2	11,04	8,96	7,68	11,76	13,04	13,6	13,6

EFFICIENCY IN CL. H

4/4			83,1%							83,4%
3/4			83,3%							83,5%
2/4			80,0%							80,0%
1/4			75,6%							76,0%

REACTANCES AND TIME CONSTANTS

pcc			0,43							
X _d	- dir. axis synchronous	421%	380%	353%	251%		441%	437%	414%	380%
X' _d	- dir. axis transient	34,3%	31,0%	28,8%	20,5%		35,9%	35,7%	33,8%	31,0%
X'' _d	- dir. axis subtransient	12,7%	11,5%	10,7%	7,6%		13,3%	13,2%	12,5%	11,5%
X _q	- quad. axis reactance	260%	235%	218%	155%		272%	270%	256%	235%
T' _{do}	- O.C. field time constant	360ms								
T' _d	- Transient time constant	29ms								
T'' _d	- Sub-transient time constant	8,5ms								

MECHANICAL DATA

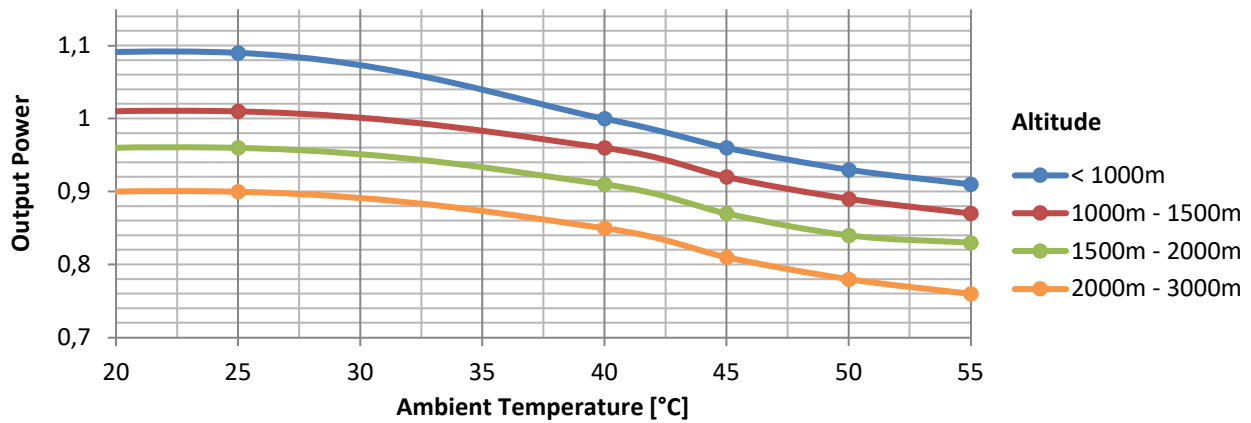
Bearing non drive end					6305-2Z-C3
Bearing drive end (B3/B14 form)					6208-2Z-C3
Weight of generator	in B2	kg			73,0
	in B3/B14	kg			68,9
	in B3/B9	kg			\

E1X13S C/2

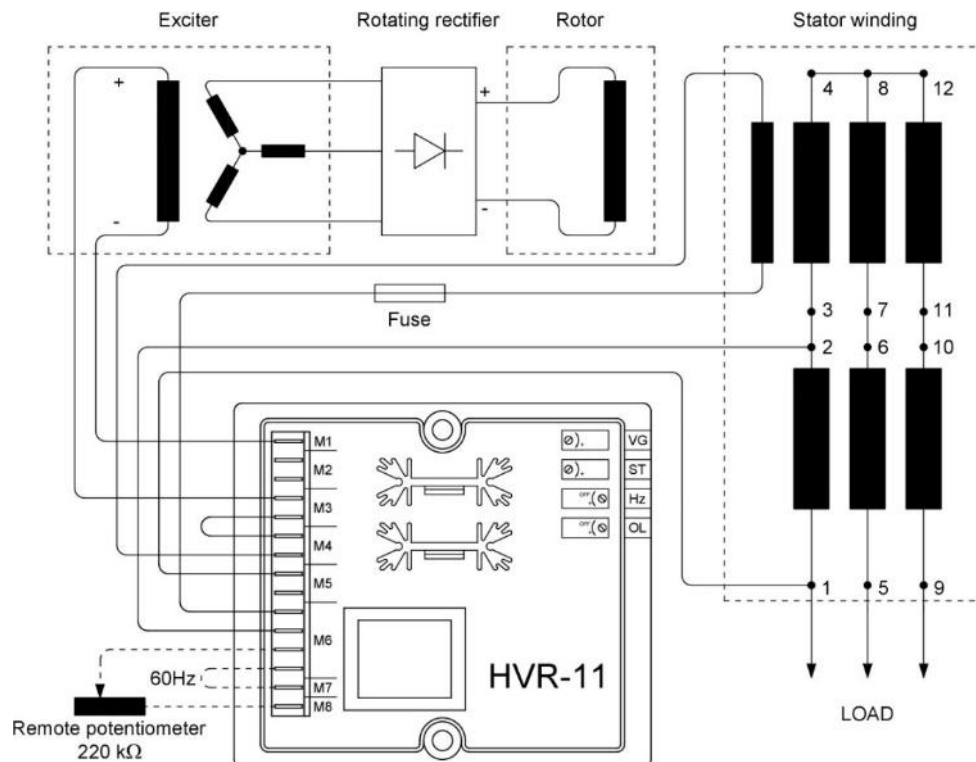
MOMENT OF INERZIA

B3/B9	kg·m ²	\
SAE 7½	kg·m ²	0,067
B2	kg·m ²	0,068

DERATING CURVES



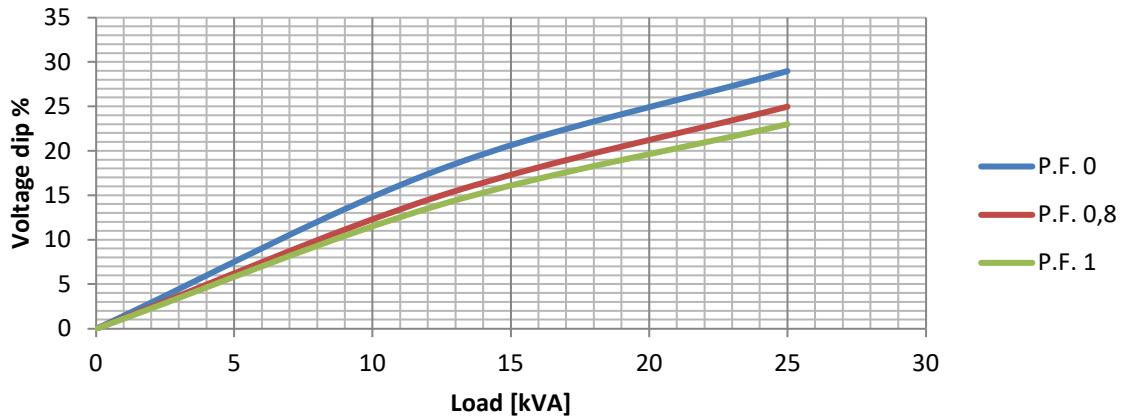
WIRING DIAGRAM



E1X13S C/2

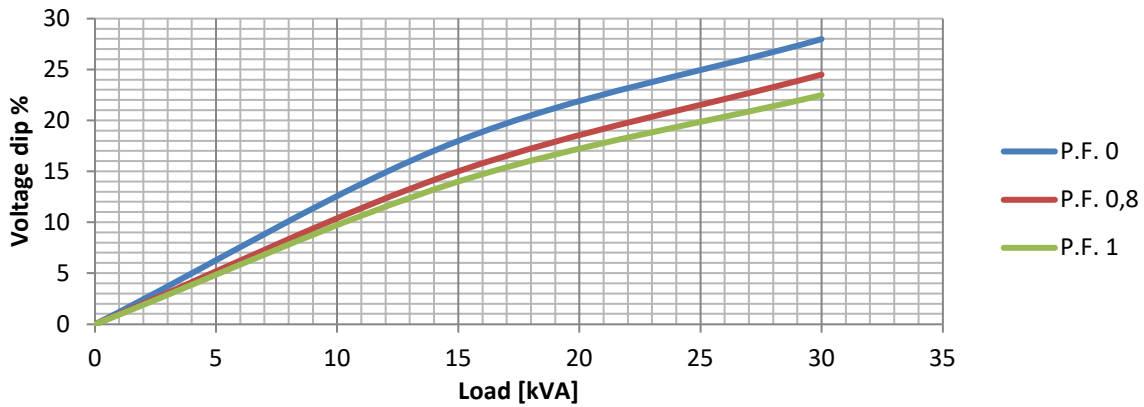
TRANSIENT VOLTAGE VARIATION 50Hz

Transient Voltage Variation @ 50Hz



TRANSIENT VOLTAGE VARIATION 60Hz

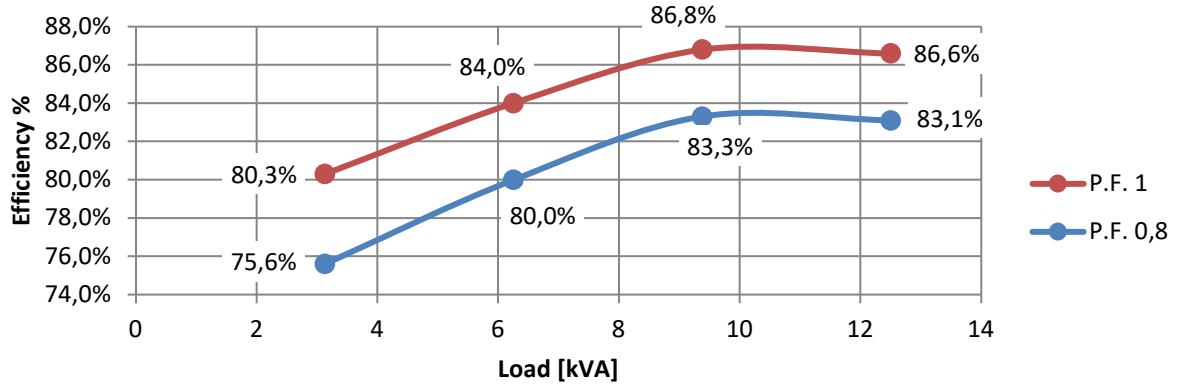
Transient Voltage Variation @ 60Hz



E1X13S C/2

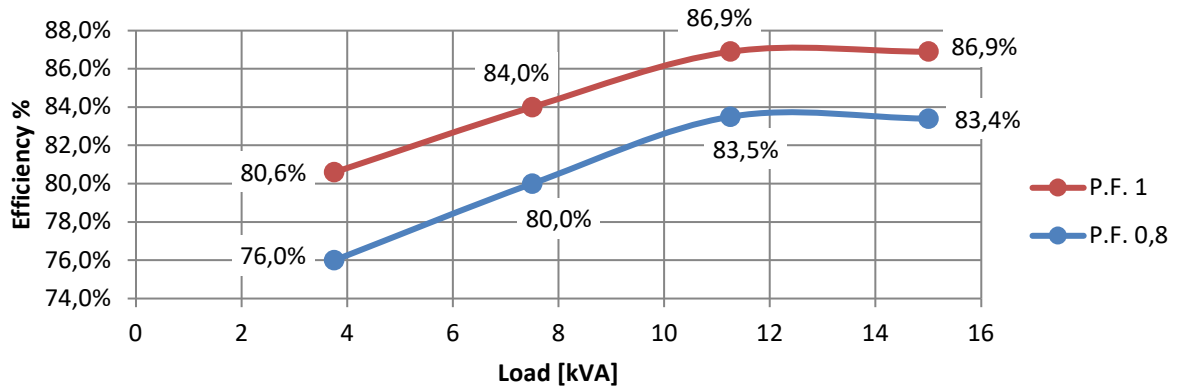
EFFICIENCY 50Hz

Efficiency Curves @ 50Hz



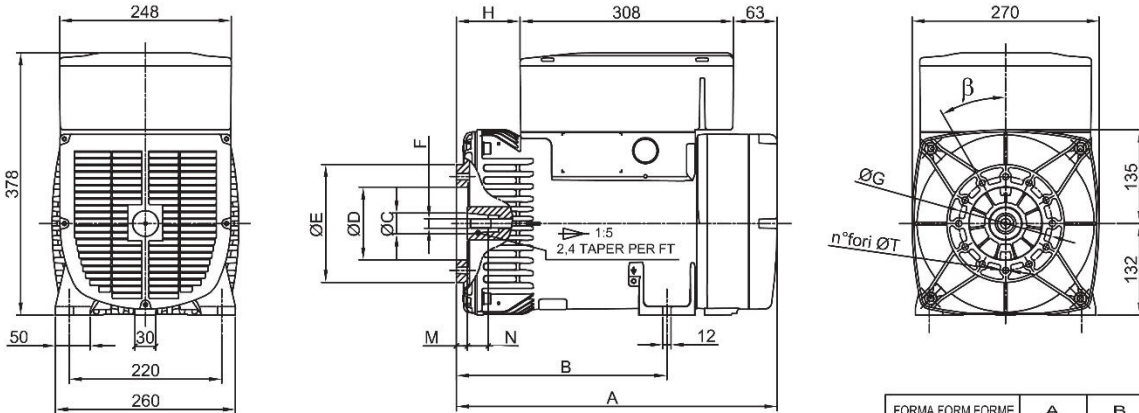
EFFICIENCY 60Hz

Efficiency Curves @ 60Hz



E1X13S C/2

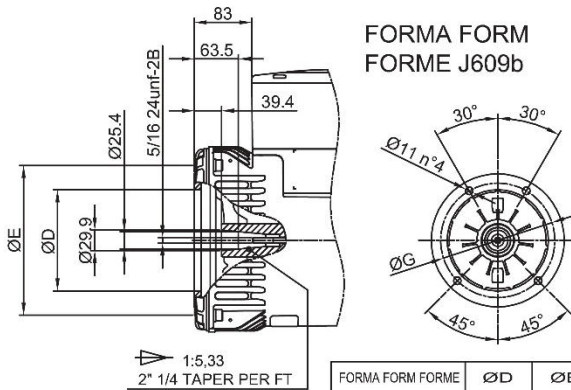
FORMA FORM FORME B3/B9



FORMA FORM FORME	ØC	ØD	ØE	F	ØG	H	M	N	n°fori	ØT	β
cono Ø30	Ø30	Ø105	Ø170	M14x1.5	Ø135	92	16	30	12	Ø9	30°
cono Ø38	Ø38	Ø125	Ø185	M18x1.5	Ø150	83	5	30	4	Ø11	β/2 45°

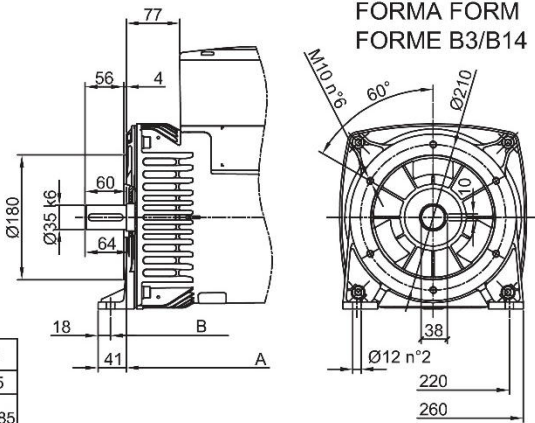
FORMA FORM FORME	A	B
B3B9 cono Ø30	463	304
B3B9 c.Ø38-J609b	454	295
B3/B14	448	312
MD35 - LOMB. STD	496	337

FORMA FORM FORME J609b

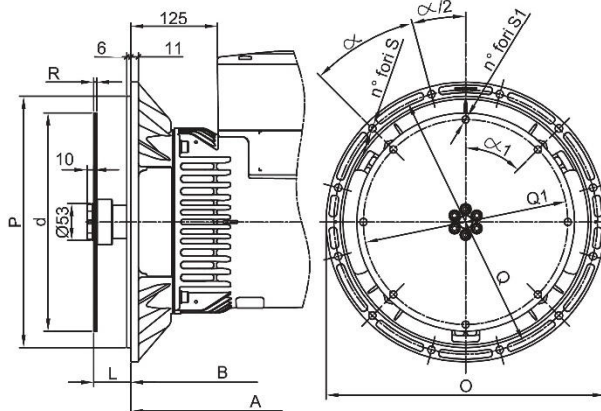


FORMA FORM FORME	ØD	ØE	ØG
J609b	Ø146	Ø192	Ø165
	Ø163.6	Ø216	Ø196.85
	Ø177.8		

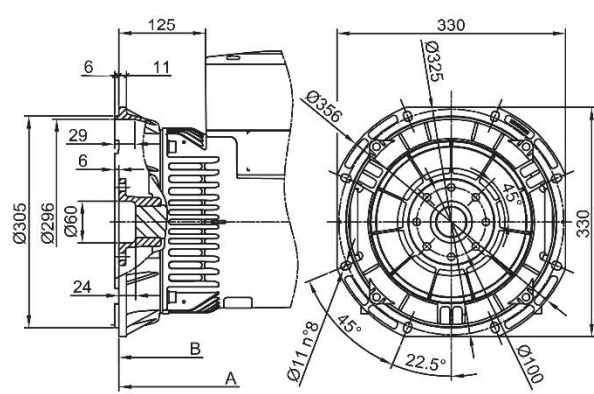
FORMA FORM FORME B3/B14



FORMA FORM FORME MD35



FORMA FORM FORME LOMBARDINI STD



SAE N.	FLANGIE - BRIDE - FLANGE					α
	O	P	Q	n. fori	S	
5	356	314.3	333.4	8	11	45°
4	403	362	381	12		30
3	451	409.6	428.6	12		30

SAE N.	GIUNTI A DISCO - DISC COUPLING - ACC. DISQUE						
	L	d	Q1	n. fori	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	4.5
10	53.8	314.32	295.27	8	10.5	45°	
11 1/2	39.6	352.42	333.37	8	10.5	45°	