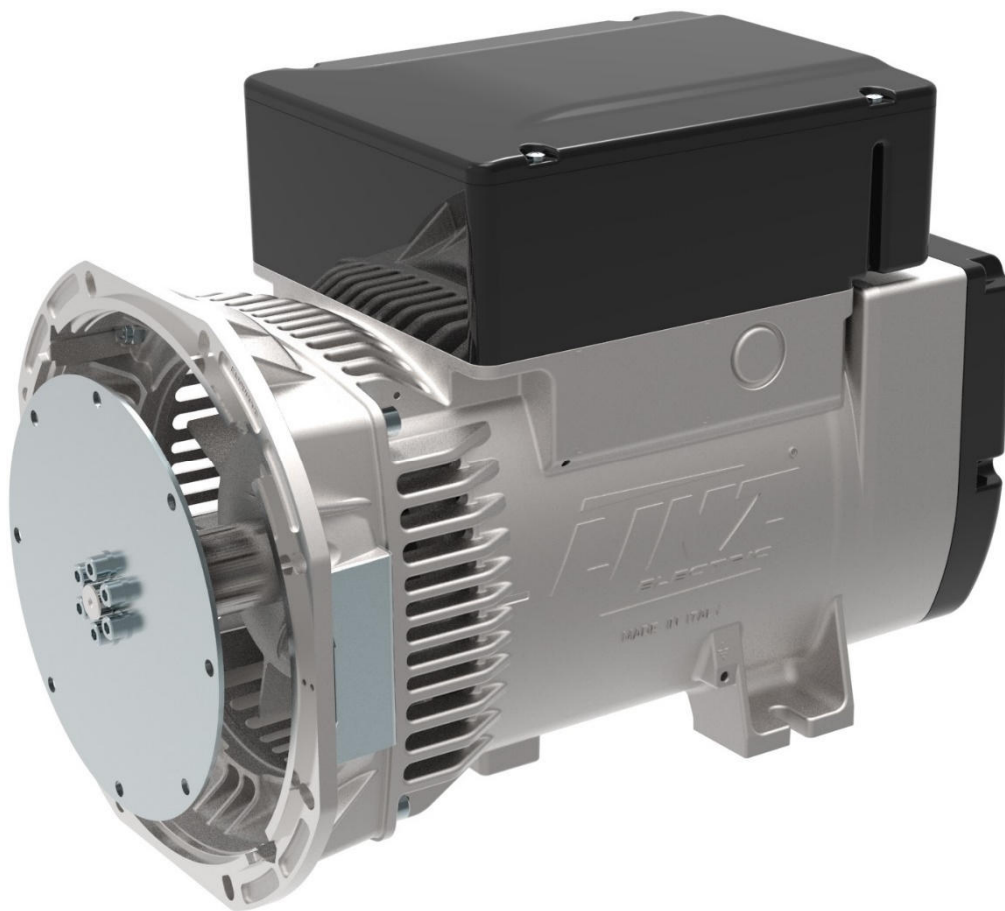


TECHNICAL DATA SHEET



**ALTERNATOR E1X13S C/4**

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

## E1X13S C/4

### COMMON DATA

Rated Power at 50Hz	kVA	10,0	
Rated Power at 60Hz	kVA	12,0	
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	2250	
Overload		110% of rated power for one hour in a cycle of 6 hours	
Air Flow Requirement	m <sup>3</sup> /min	3,2 at 50Hz	3,7 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	1,35 at 20°C
Rotor Winding Resistance	Ω	7,22 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 <sub>dc</sub>	0,54
Excitation at full load	A <sub>dc</sub>	1,51

### 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/4

### ELECTRICAL DATA

Frequency		50Hz - 1500rpm					60Hz - 1800rpm				
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	6,5	10,0	10,0	10,0	9,0	7,0	10,8	11,5	12,0	12,0
	kW	5,2	8,0	8,0	8,0	7,2	5,6	8,64	9,2	9,6	9,6
Rated Power in Class F (105°C/40°C)	kVA	6,0	9,2	9,2	9,2	8,0	6,4	10,0	10,5	11,0	11,0
	kW	4,8	7,36	7,36	7,36	6,4	5,12	8,0	8,4	8,8	8,8
Rated Power Standby (150°C/40°C)	kVA	7,0	11,0	11,0	11,0	8,8	7,7	11,5	12,5	13,0	13,0
	kW	5,6	8,8	8,8	8,8	7,04	6,16	9,2	10,0	10,4	10,4
Rated Power Standby (163°C/27°C)	kVA	7,4	11,4	11,4	11,4	9,0	8,0	12,0	13,0	13,5	13,5
	kW	5,92	9,12	9,12	9,12	7,2	4,8	9,6	10,4	10,8	10,8

### EFFICIENCY IN CL. H

4/4			84,4%							84,6%
3/4			84,5%							85,0%
2/4			81,2%							81,4%
1/4			77,0%							78,0%

### REACTANCES AND TIME CONSTANTS

pcc			0,81							
X <sub>d</sub>	- dir. axis synchronous	244%	220%	204%	164%		265%	251%	240%	220%
X' <sub>d</sub>	- dir. axis transient	19,9%	18,0%	16,7%	13,4%		21,7%	20,5%	19,6%	18,0%
X'' <sub>d</sub>	- dir. axis subtransient	8,4%	7,6%	7,1%	5,7%		9,2%	8,7%	8,3%	7,6%
X <sub>q</sub>	- quad. axis reactance	132%	119%	111%	89%		143%	136%	130%	119%
T' <sub>do</sub>	- O.C. field time constant	335ms								
T' <sub>d</sub>	- Transient time constant	27ms								
T'' <sub>d</sub>	- Sub-transient time constant	5ms								

### MECHANICAL DATA

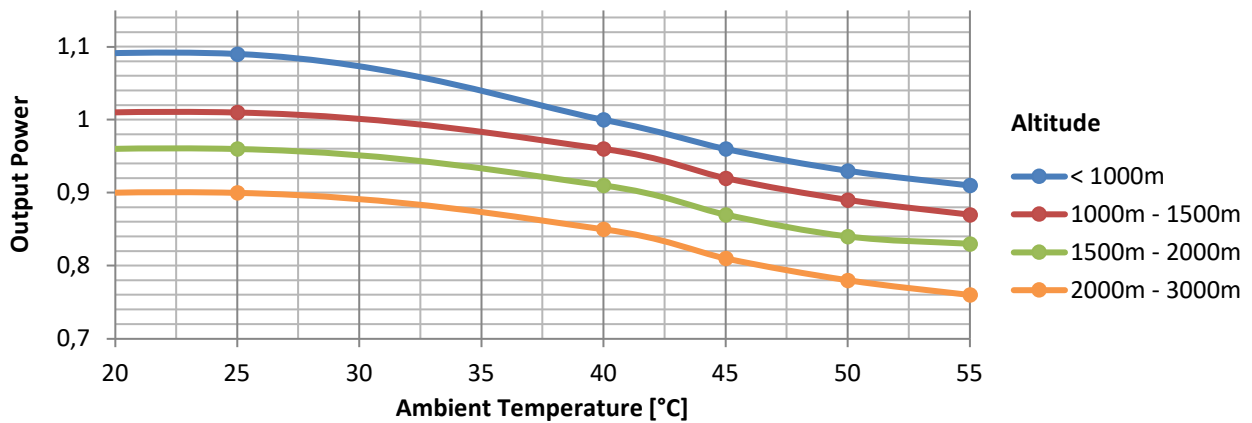
Bearing non drive end					6305-2Z-C3
Bearing drive end (B3/B14 form)					6208-2Z-C3
Weight of generator	in B2	kg			76,5
	in B3/B14	kg			72,4
	in B3/B9	kg			\

# E1X13S C/4

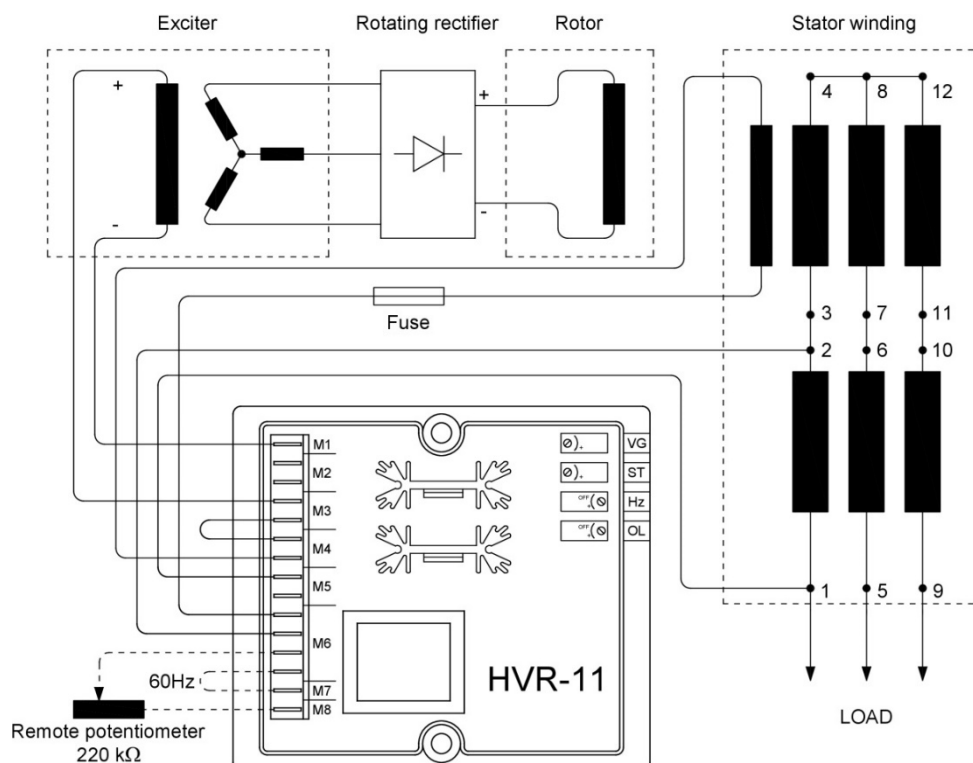
## MOMENT OF INERZIA

B3/B9	kg·m <sup>2</sup>	\
SAE 7½	kg·m <sup>2</sup>	0,073
B2	kg·m <sup>2</sup>	0,072

## DERATING CURVES



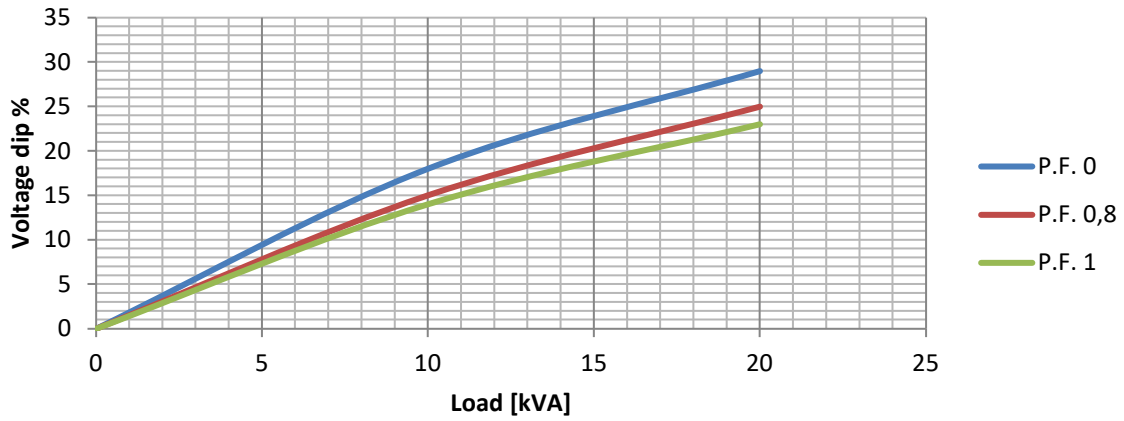
## WIRING DIAGRAM



# E1X13S C/4

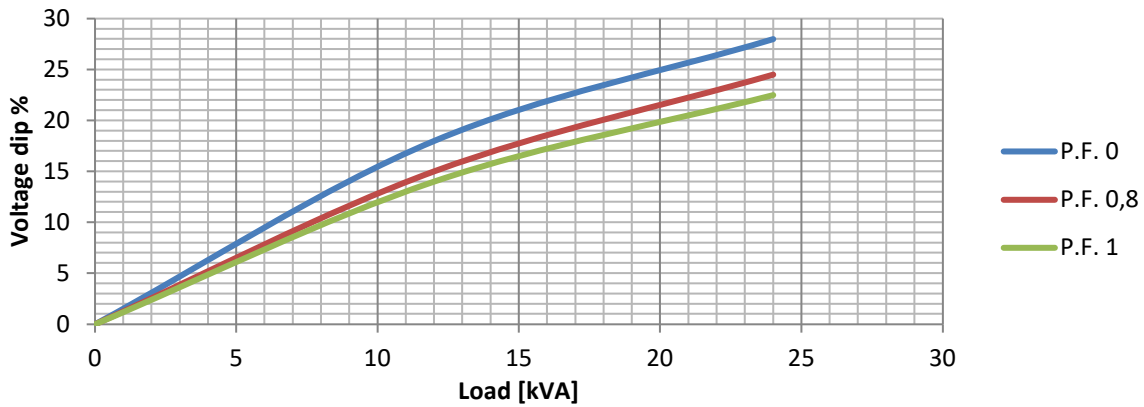
## TRANSIENT VOLTAGE VARIATION 50Hz

### Transient Voltage Variation @ 50Hz



## TRANSIENT VOLTAGE VARIATION 60Hz

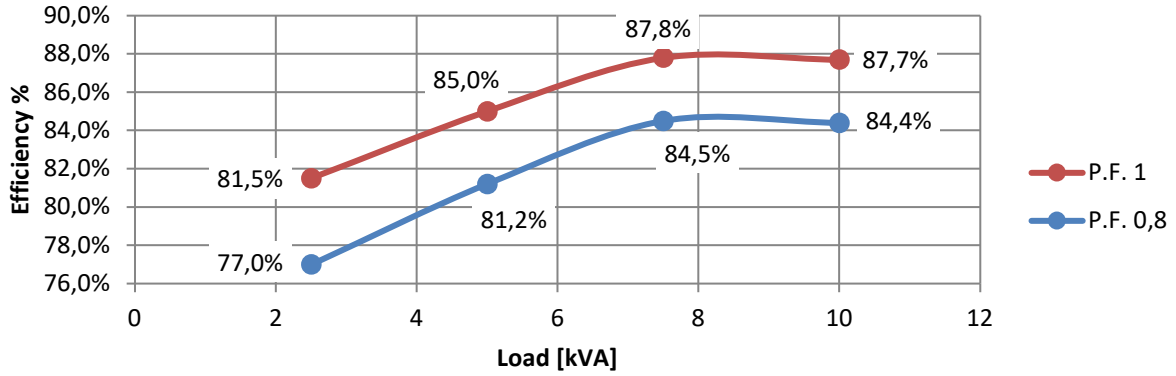
### Transient Voltage Variation @ 60Hz



# E1X13S C/4

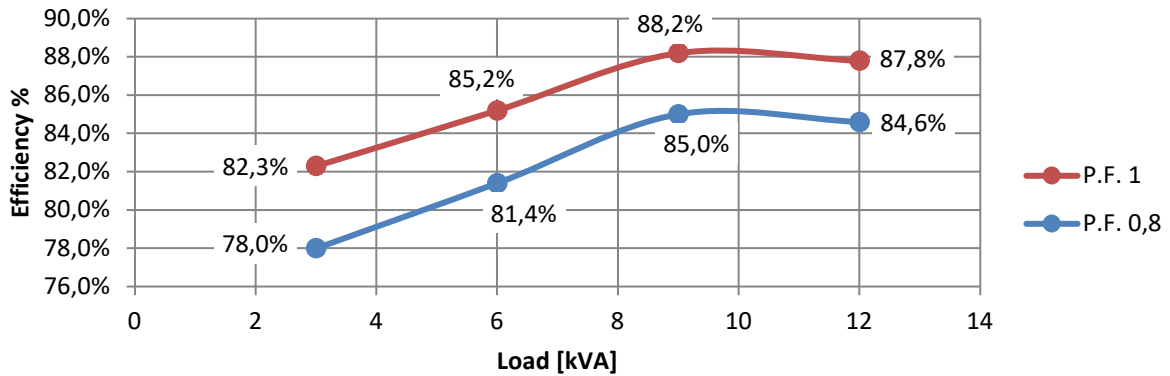
## EFFICIENCY 50Hz

### Efficiency Curves @ 50Hz



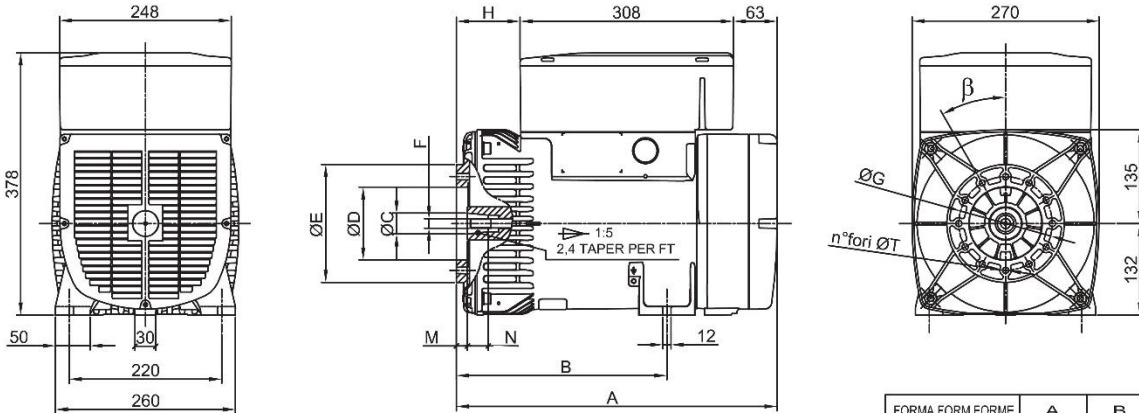
## EFFICIENCY 60Hz

### Efficiency Curves @ 60Hz



# E1X13S C/4

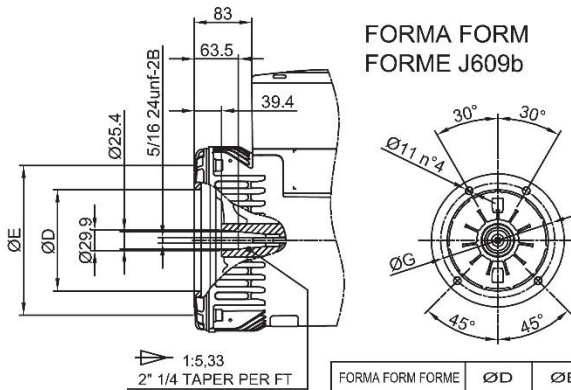
FORMA FORM FORME B3/B9



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°

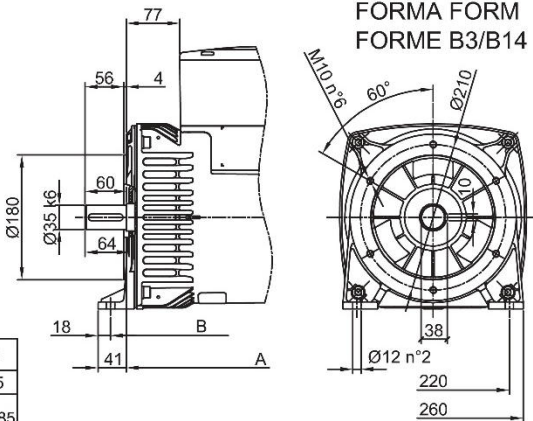
FORMA FORM FORME	A	B
B3B9 cono Ø30	463	304
B3B9 c.Ø38-J609b	454	295
B3/B14	448	312
MD35 - LOMB. STD	496	337

FORMA FORM FORME J609b

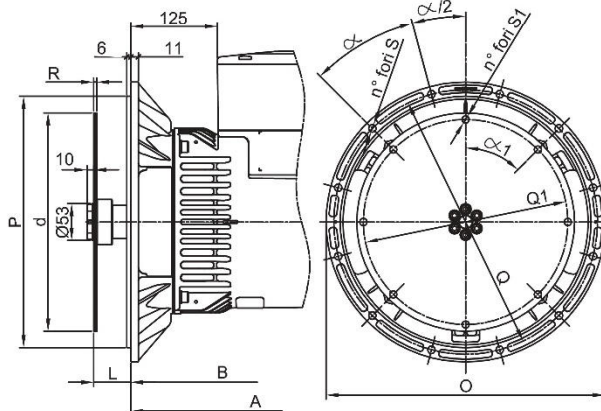


FORMA FORM FORME	ØD	ØE	ØG
J609b	Ø146	Ø192	Ø165
	Ø163.6	Ø216	Ø196.85
	Ø177.8		

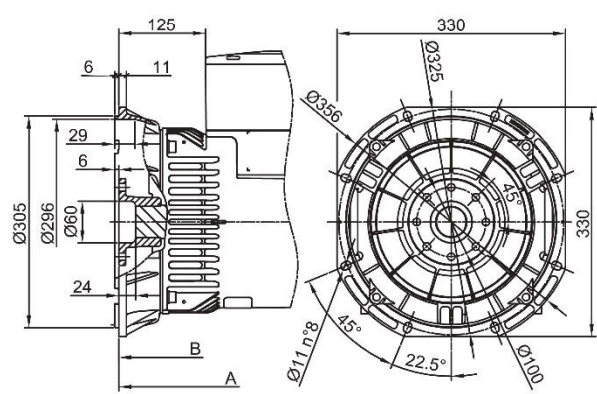
FORMA FORM FORME B3/B14



FORMA FORM FORME MD35



FORMA FORM FORME LOMBARDINI STD



SAE N.	FLANGIE - BRIDE - FLANGE					R
	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°	