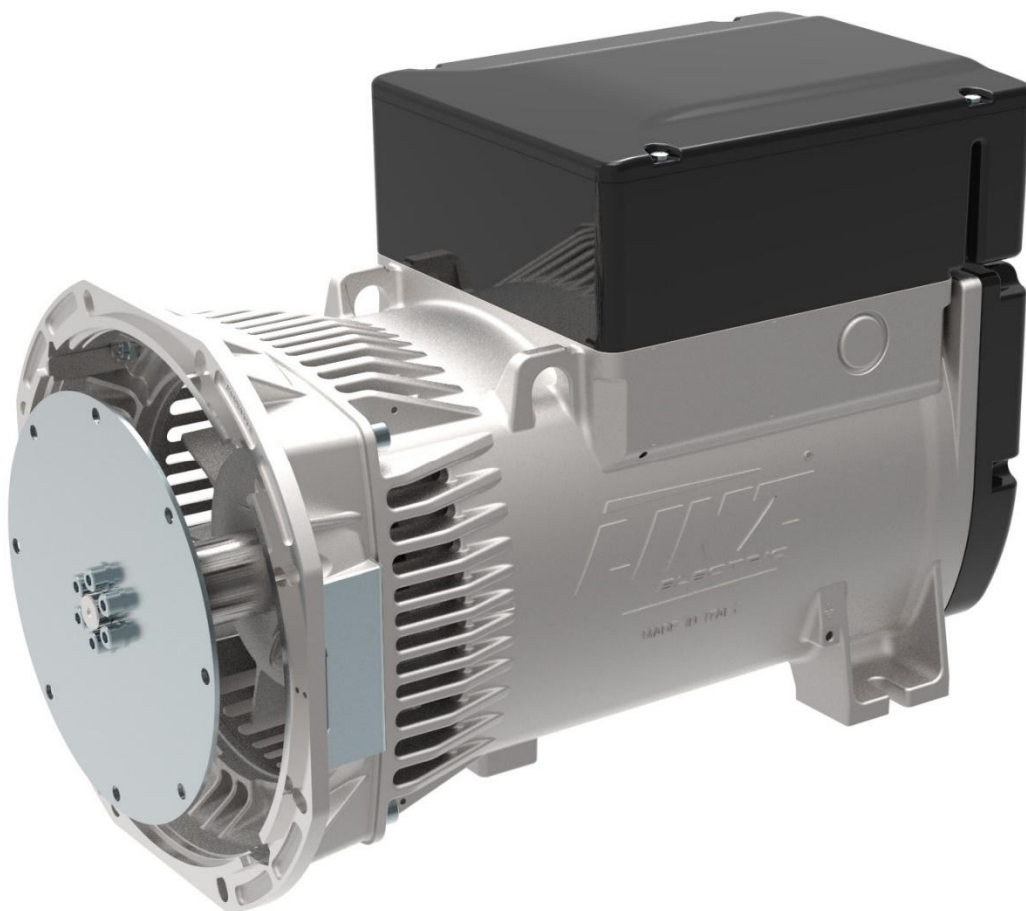


TECHNICAL DATA SHEET



**ALTERNATOR E1S13M E/2**

*Three-Phase synchronous alternator with brushes and compound - 2 poles*

## E1S13M E/2

### COMMON DATA

Rated Power at 50Hz	kVA	27,0	
Rated Power at 60Hz	kVA	32,4	
Rated Power Factor		0,8	
Nominal Temperature	°C	40	
Control System		self-excited	
Execution		with brushes	
Regulation Type		compound	
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 <sup>3</sup> /min	9,0 at 50Hz	10,8 at 60Hz
R.F.I. Suppression		Standard EN55011	

### REGULATION DATA

Compound		Compound
Voltage Regulation		±4%
Sustained Short Circuit		\

### WINDING DATA

Stator Winding		Double layer
Rotor Winding		with damping cage
Number of Leads of Stator		6
Stator Winding Resistance	Ω	0,23 at 20°C
Rotor Winding Resistance	Ω	14,0 at 20°C
THD at full load		<4% (L-L)
THD at no load		<3% (L-L)
Excitation at no Load	Adc	2,2
Excitation at full Load	Adc	7,5

### 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

## E1S13M E/2

### ELECTRICAL DATA

Frequency		50Hz - 3000rpm	60Hz - 3600rpm
Voltage Series Star	V	<b>400/230</b>	<b>480/277</b>
Rated Power in Class H (125°C/40°C)	kVA	27,0	32,4
	kW	21,6	25,92
Rated Power in Class F (105°C/40°C)	kVA	24,5	29,5
	kW	19,6	23,6
Rated Power Standby (150°C/40°C)	kVA	29,5	35,0
	kW	23,6	28,0
Rated Power Standby (163°C/27°C)	kVA	30,0	36,0
	kW	24,0	28,8

### EFFICIENCY IN CL. H

4/4	87,0%	87,5%
3/4	87,5%	88,0%
2/4	82,5%	83,0%
1/4	79,2%	79,0%

### REACTANCES AND TIME CONSTANTS

Pcc	0,40
X <sub>d</sub> - dir. axis synchronous	350%
X' <sub>d</sub> - dir. axis transient	31,0%
X'' <sub>d</sub> - dir. axis subtransient	11,0%
X <sub>q</sub> - quad. axis reactance	152%
T' <sub>do</sub> - O.C. field time constant	610ms
T' <sub>d</sub> - Transient time constant	54ms
T'' <sub>d</sub> - Sub-transient time constant	7,0ms

### MECHANICAL DATA

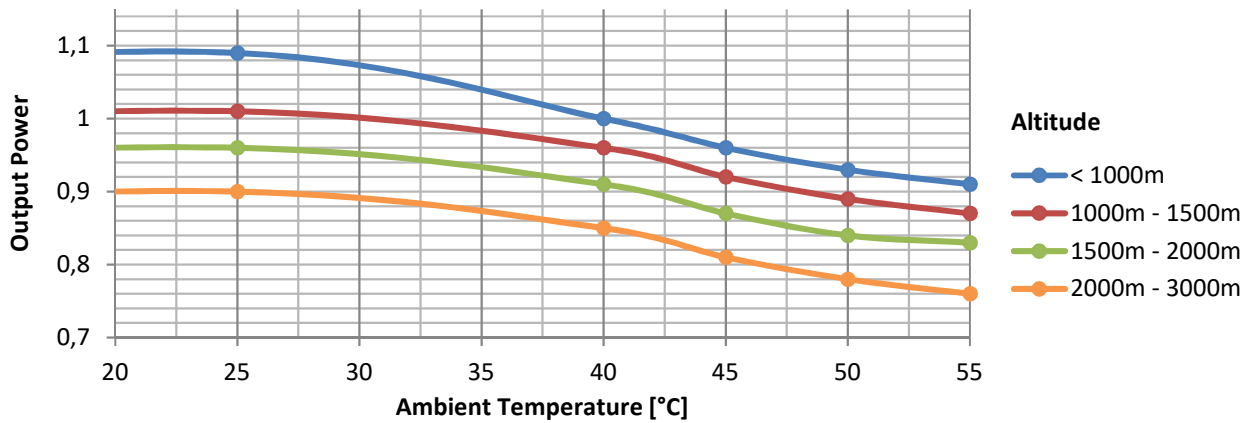
Bearing non drive end	6305-2Z-C3	
Bearing drive end (B3/B14 form)	6208-2Z-C3	
Weight of generator	in B2 kg	95,4
	in B3/B14 kg	91,3
	in B3/B9 kg	88,4

# E1S13M E/2

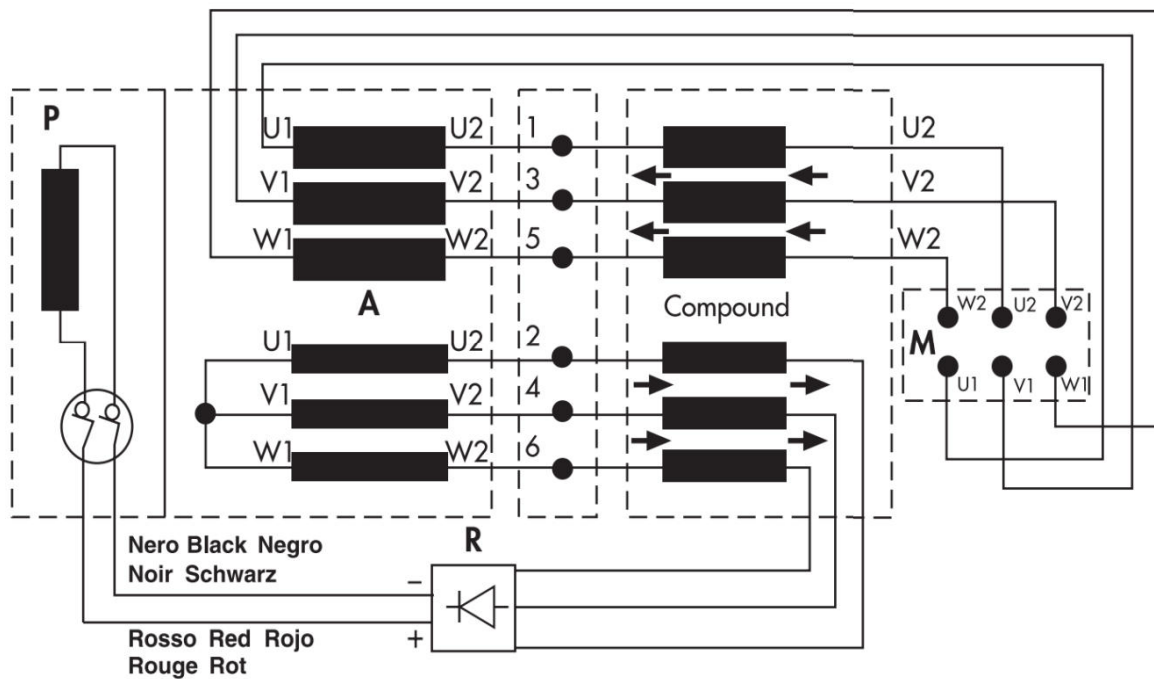
## MOMENT OF INERZIA

B3/B9	kg·m <sup>2</sup>	0,069
B2	kg·m <sup>2</sup>	0,063
B3/B14	kg·m <sup>2</sup>	0,069

## DERATING CURVES



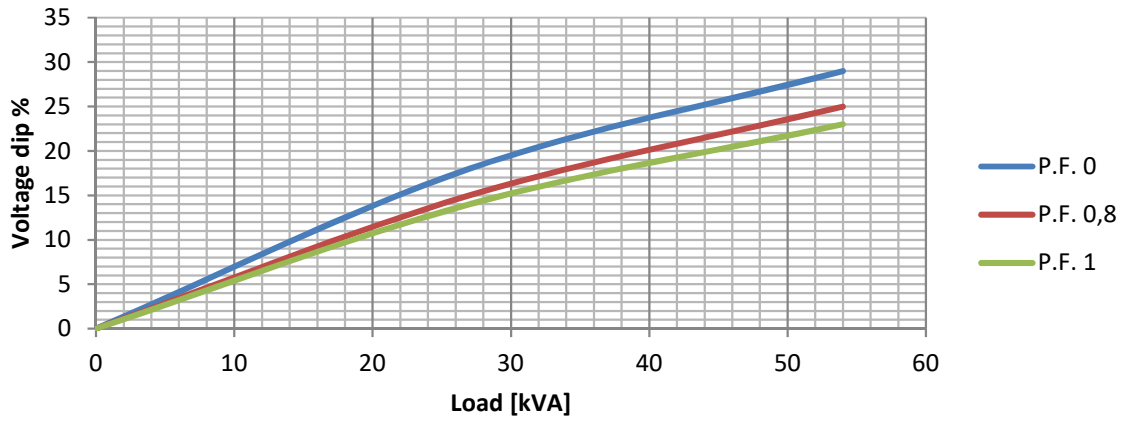
## WIRING DIAGRAM



# E1S13M E/2

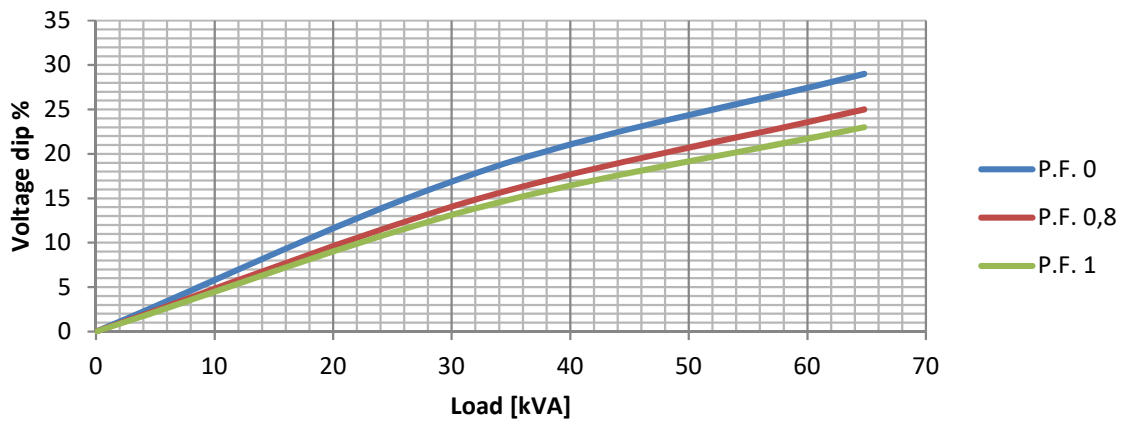
## TRANSIENT VOLTAGE VARIATION 50Hz

### Transient Voltage Variation @ 50Hz



## TRANSIENT VOLTAGE VARIATION 60Hz

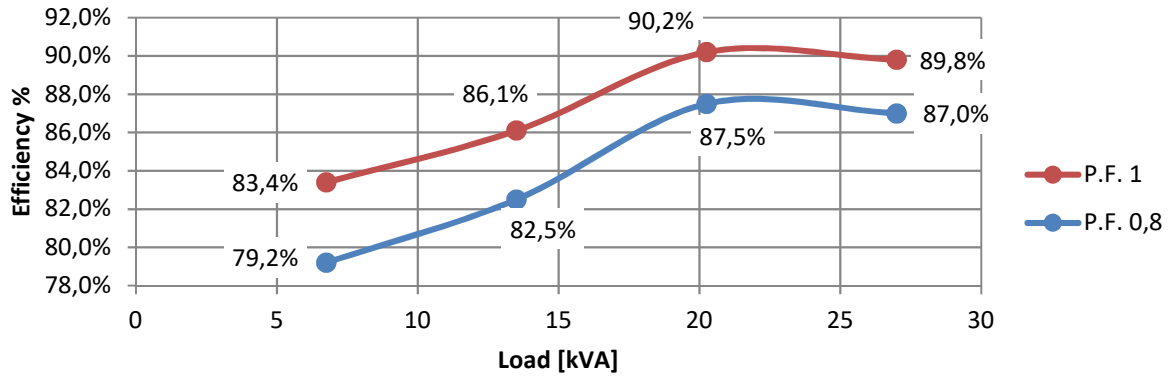
### Transient Voltage Variation @ 60Hz



# E1S13M E/2

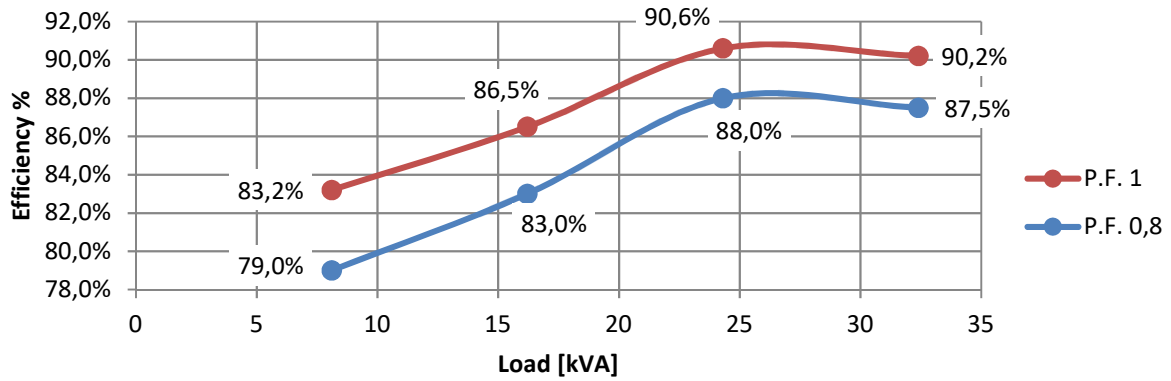
## EFFICIENCY 50Hz

### Efficiency Curves @ 50Hz



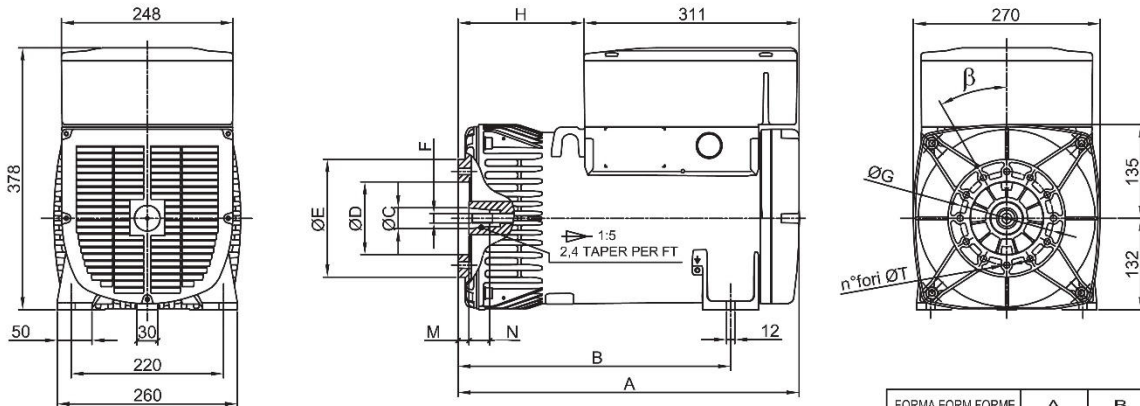
## EFFICIENCY 60Hz

### Efficiency Curves @ 60Hz



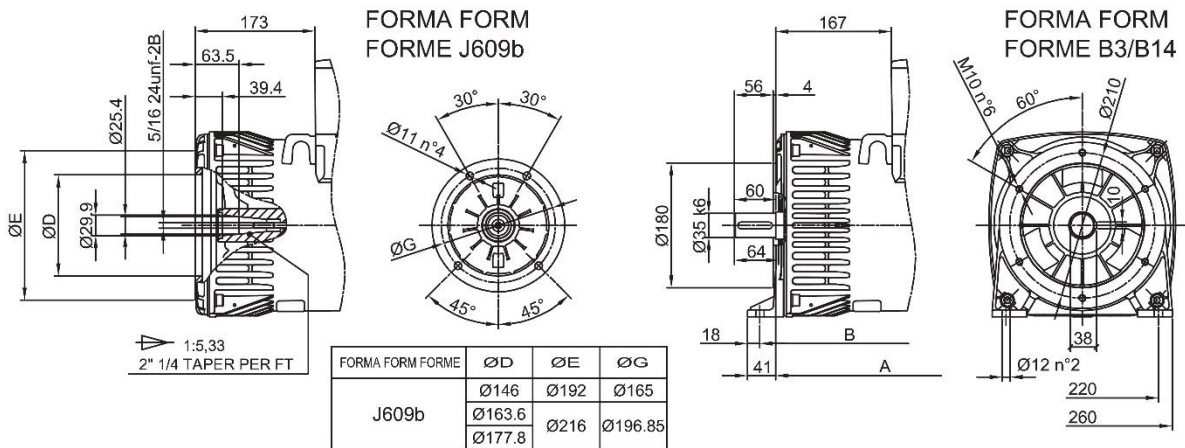
# E1S13M E/2

## FORMA FORM FORME B3/B9



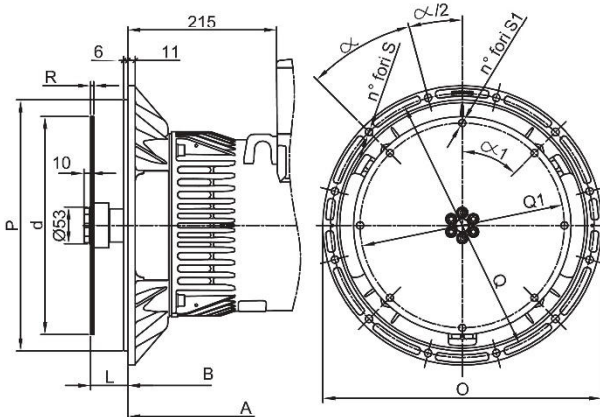
FORMA FORM FORME	ØC	ØD	ØE	F	ØG	H	M	N	n°fori	ØT	β
cono Ø30	Ø30	Ø105	Ø170	M14x1.5	Ø135	182	16	30	12	Ø9	30°
cono Ø38	Ø38	Ø125	Ø185	M18x1.5	Ø150	173	5	30	4	Ø11	β/2 45°

FORMA FORM FORME	A	B
B3B9 cono Ø30	493	394
B3B9 c.Ø38-J609b	484	385
B3/B14	478	402
MD35 - LOMB. STD	526	427

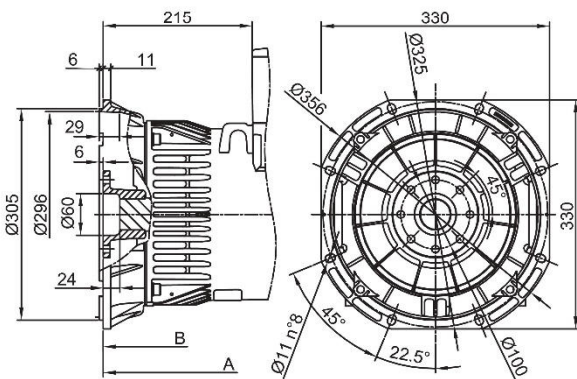


FORMA FORM FORME	ØD	ØE	ØG
J609b	Ø146	Ø192	Ø165
	Ø163.6	Ø216	Ø196.85
	Ø177.8		

## FORMA FORM FORME MD35



## FORMA FORM FORME LOMBARDINI STD



SAE N.	FLANGIE - BRIDE - FLANGE					
	O	P	Q	n. fori	S	α
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°	
7 1/2	30.2	241.3	222.25	8	9	45°	3
8	62	263.52	244.47	6	10.5	60	
10	53.8	314.32	295.27	8	10.5	45°	4.5
11 1/2	39.6	352.42	333.37	8	10.5	45°	