

## TECHNICAL DATA SHEET



## ALTERNATOR E1S11M B

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

## E1S11M B

### COMMON DATA

Rated Power at 50Hz	kVA	13,5	
Rated Power at 60Hz	kVA	16,5	
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	4,8 at 50Hz	5,8 at 60Hz
R.F.I. Suppression		Standard EN55011	

### REGULATION DATA

Compound		Compound
Voltage Regulation		±4%
Sustained Short Circuit		> 300% of rated current

### WINDING DATA

Stator Winding		Single layer with auxiliary winding
Rotor Winding		with damping cage
Number of Leads of Stator		6
Stator Winding Resistance	Ω	0,46 at 20°C
Rotor Winding Resistance	Ω	24,6 at 20°C
THD at full load		<4% (L-L)
THD at no load		<3% (L-L)
Excitation at no Load	Adc	1,35
Excitation at full Load	Adc	4,45

### 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

## E1S11M B

### 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	13,5	16,5
	kW	10,8	13,2
Rated Power in Class F (105°C/40°C)	kVA	12,5	15,5
	kW	10,0	12,4

### EFFICIENCY IN CL. H

4/4	83,5%	84,0%
3/4	83,7%	84,3%
2/4	81,5%	82,2%
1/4	81,0%	81,6%

### REACTANCES AND TIME CONSTANTS

Pcc	0,65
X <sub>d</sub> - dir. axis synchronous	275%
X' <sub>d</sub> - dir. axis transient	22,0%
X'' <sub>d</sub> - dir. axis subtransient	5,3%
X <sub>q</sub> - quad. axis reactance	150%
T' <sub>do</sub> - O.C. field time constant	580ms
T' <sub>d</sub> - Transient time constant	46ms
T'' <sub>d</sub> - Sub-transient time constant	5,9ms

### MECHANICAL DATA

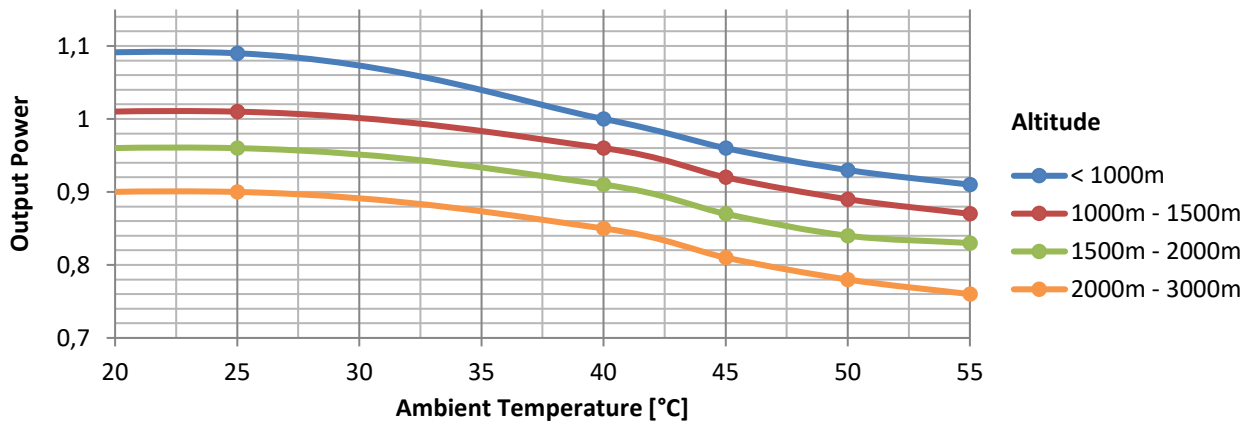
Bearing non drive end	6205-2Z-C3	
Bearing drive end (B3/B14 form)	6207-2Z-C3	
Weight of generator	in B2 kg	56,8
	in B3/B14 kg	52,2
	in B3/B9 kg	51,5

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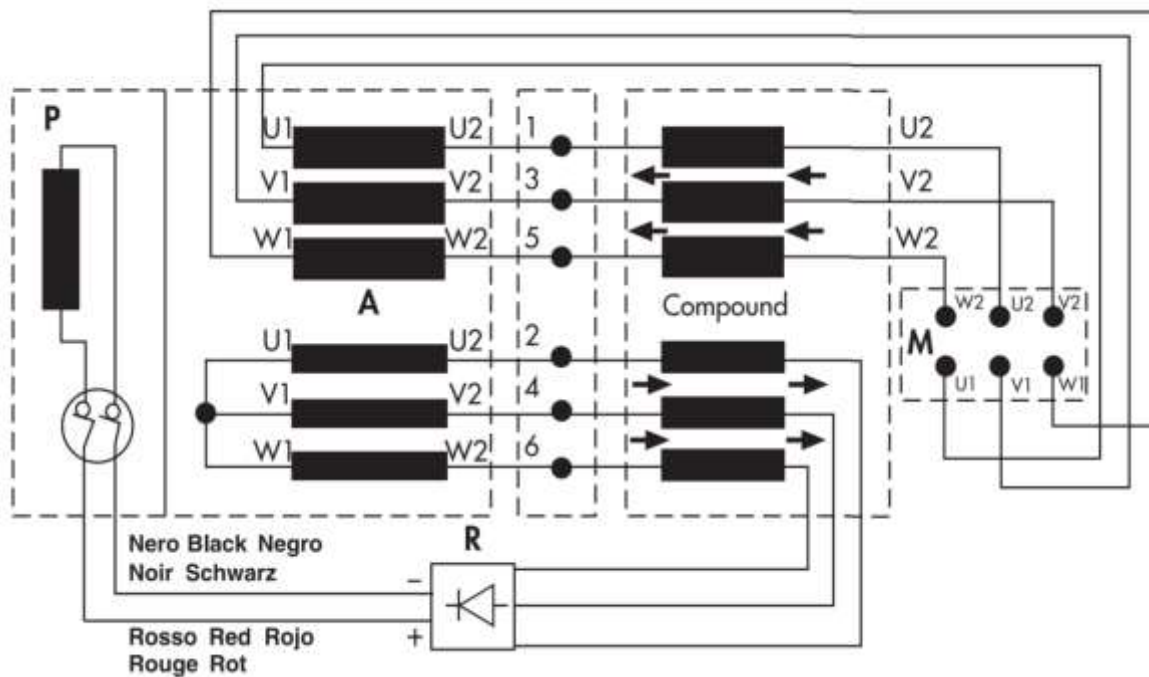
## MOMENT OF INERZIA

B3/B9	kg·m <sup>2</sup>	0,027
B2	kg·m <sup>2</sup>	0,027
B3/B14	kg·m <sup>2</sup>	0,027

## DERATING CURVES



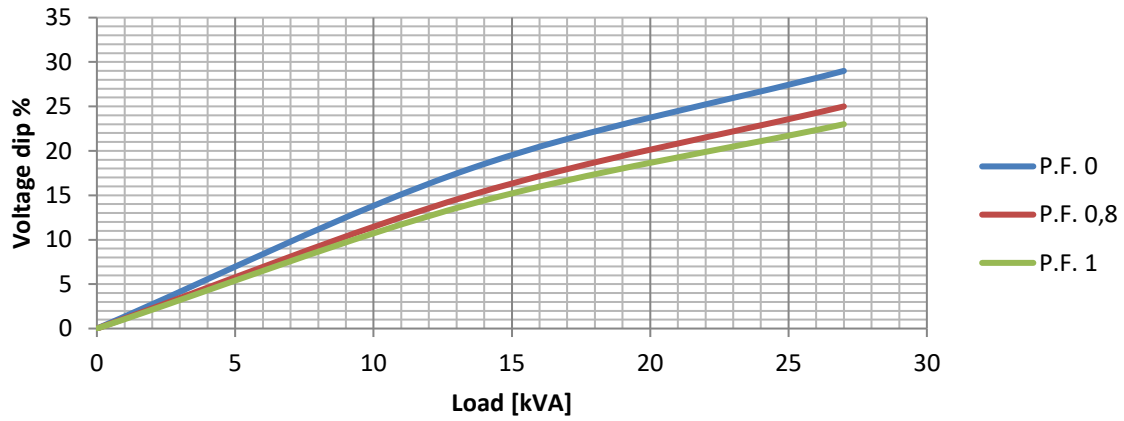
## WIRING DIAGRAM



# E1S11M B

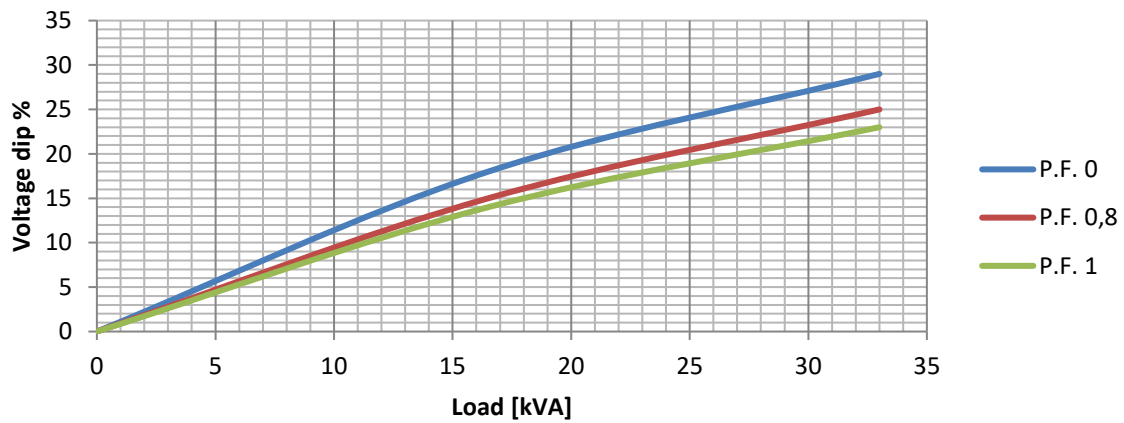
## TRANSIENT VOLTAGE VARIATION 50Hz

### Transient Voltage Variation @ 50Hz



## TRANSIENT VOLTAGE VARIATION 60Hz

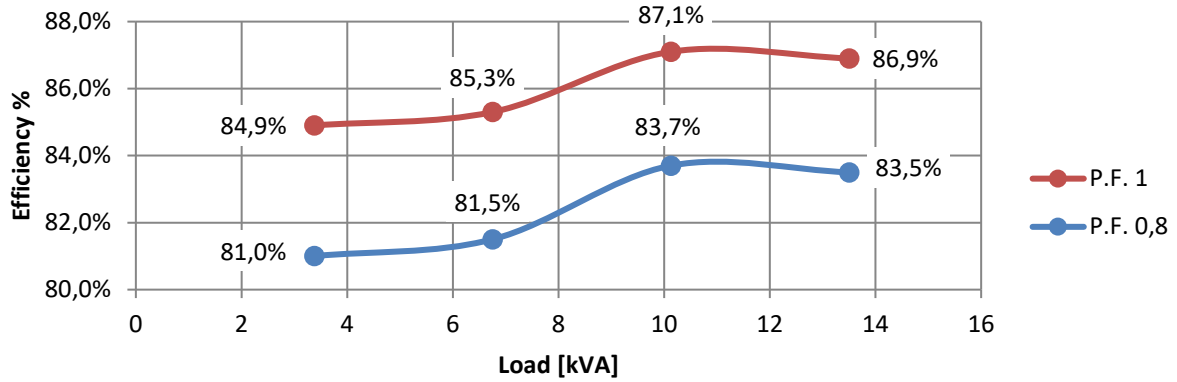
### Transient Voltage Variation @ 60Hz



# E1S11M B

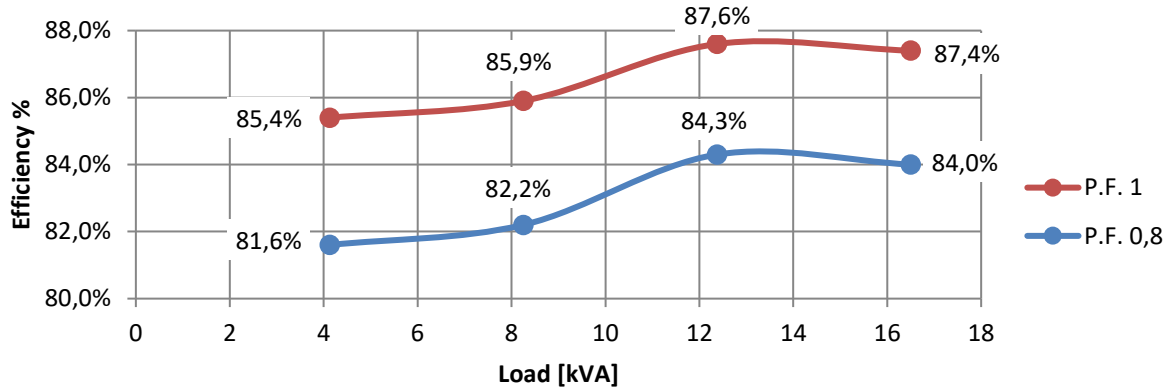
## EFFICIENCY 50Hz

### Three Phase Efficiency Curves @ 50Hz

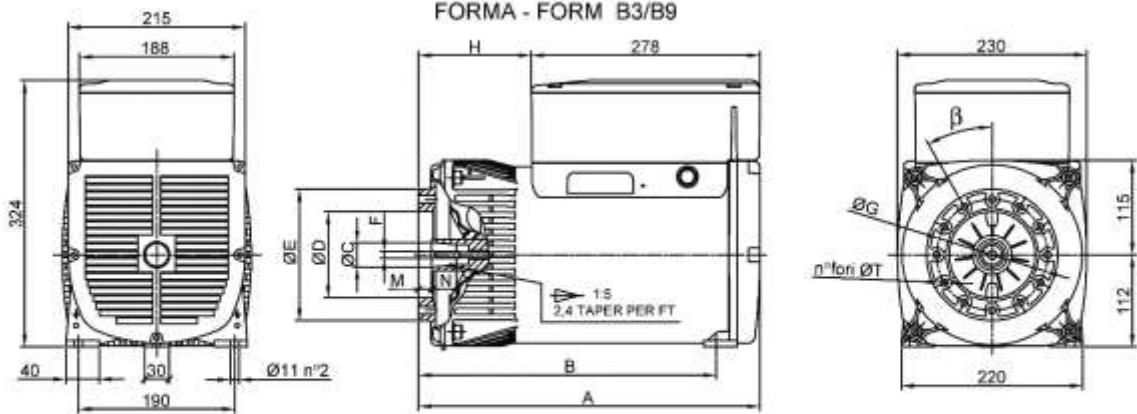


## EFFICIENCY 60Hz

### Three Phase Efficiency Curves @ 60Hz

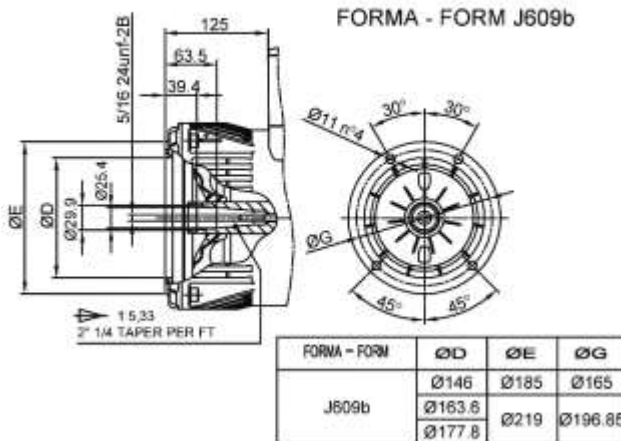


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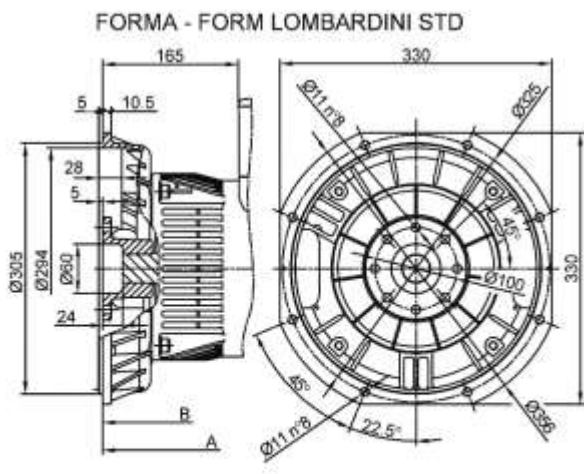
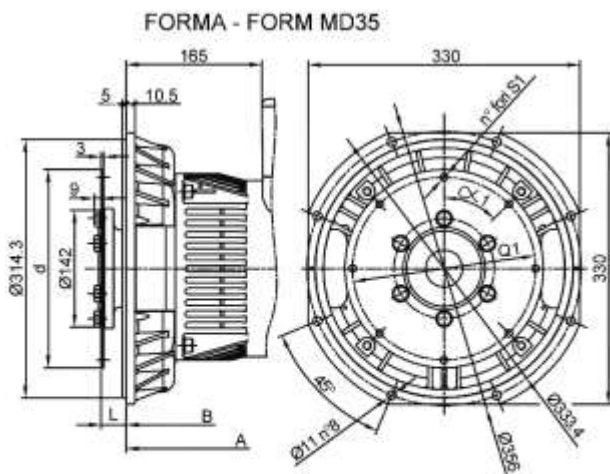
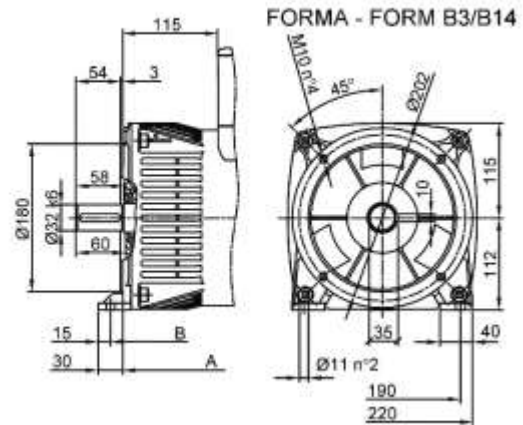


FORMA - FORM	A	B
B3-B9 cono Ø23 Ø30	415	362
B3-B9 cono Ø38	398.5	345.5
J609b	403	350
B3/B14	393	355
MD35-LOMB.STD	443	390

FORMA - FORM	ØC	ØD	ØE	F	ØG	H	M	N	n°fori	ØT	β
cono Ø23	Ø23	Ø105	Ø160	M8	Ø135	137	8	25	12	Ø9	30°
cono Ø30	Ø30			M14x1.5							
cono Ø38	Ø38	Ø125	Ø185	M18x1.5	Ø150	120.5	5	30	4	Ø11	β/2 45°



FORMA - FORM	ØD	ØE	ØG
J609b	Ø146	Ø185	Ø165
	Ø163.6	Ø219	Ø196.85
	Ø177.8		



SAE	GIUNTI A DISCO - COUPLING DISCS - JUNTAS A DISCOS					
N.	L	d	Q1	n. fori	S1	α1
6 1/2	30.2	215.9	200	6	9	60°
7 1/2	30.2	241.3	222.25	6	9	45°