



## **ALTERNATOR E1S10M H**

*three-phase synchronous alternator with brushes and compound - 2 poles*

Technical Data Sheet

## E1S10M H

### COMMON DATA

Rated Power at 50Hz	kVA	7	
Rated Power at 60Hz	kVA	8.5	
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 Overspeed	rpm	4500	
Overload		110% of rated power for one hour in a cycle of 6 hours	
Air Flow Requirement	m <sup>3</sup> /min	3.7 at 50Hz	4.6 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		1.24 at 20°C	
Rotor Winding Resistance		21 at 20°C	
THD at full load		<4% (L-L)	
THD at no load		<3% (L-L)	
Excitation at no load	A <sub>DC</sub>	1.3	
Excitation at full load	A <sub>DC</sub>	4.1	

### STANDARD

References		EN60034-1 ISO8528-3 EN55011	
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## E1S10M H

### 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)	kW	7	8.5
Rated Power in Class F (105°C/40°C)	kW	6.5	8

### EFFICIENCY IN CL. H

4/4	80.5%	81.0%
3/4	81.0%	82.0%

### REACTANCES AND TIME CONSTANTS

pcc	0.60
X <sub>d</sub> - dir. axis synchronous	270%
X' <sub>d</sub> - dir. axis transient	20.0%
X'' <sub>d</sub> - dir. axis subtransient	6.5%
X <sub>q</sub> - quad. axis reactance	150%
T' <sub>do</sub> - O.C. field time constant	450ms
T' <sub>d</sub> - Transient time constant	33ms
T'' <sub>d</sub> - Sub-transient time constant	5.5ms

### MECHANICAL DATA

Bearing non drive end	6204-2Z-C3	
Bearing drive end (B3/B14 form)	6305-2Z-C3	
Weight of generator	in B2 kg	\
	in B3/B14 kg	33.8
	in B3/B9 kg	33.1

# E1S10M H

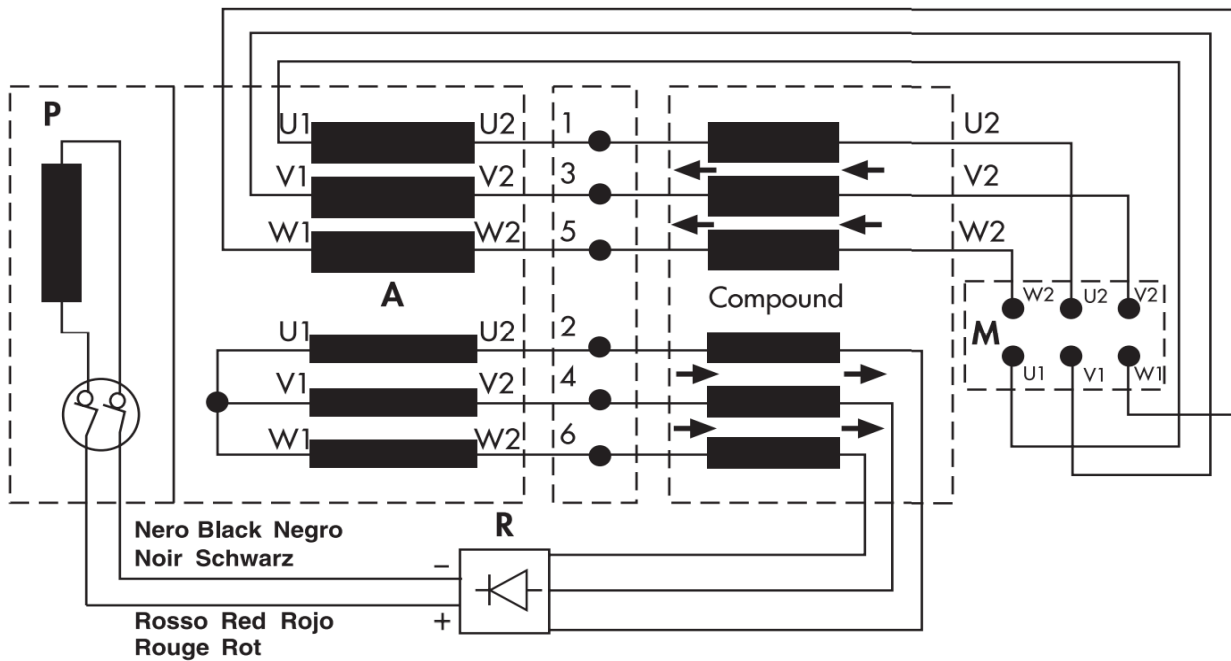
## MOMENT OF INERZIA

B3/B9	kg·m <sup>2</sup>	0.016
B3/B14	kg·m <sup>2</sup>	0.016
B2	kg·m <sup>2</sup>	\

## POWER VARIATION ACCORDING TO TEMPERATURE AND ALTITUDE

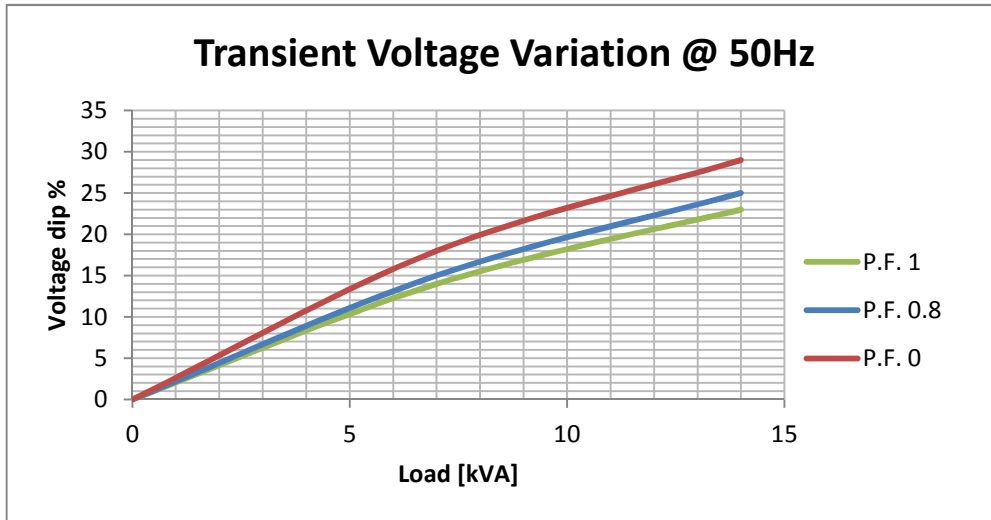
Altitude	Ambient temperature				
	25°C	40°C	45°C	50°C	55°C
< 1000m	1.09	1	0.96	0.93	0.91
1000m - 1500m	1.01	0.96	0.92	0.89	0.87
1500m - 2000m	0.96	0.91	0.87	0.84	0.83
2000m - 3000m	0.9	0.85	0.81	0.78	0.76

## WIRING DIAGRAM

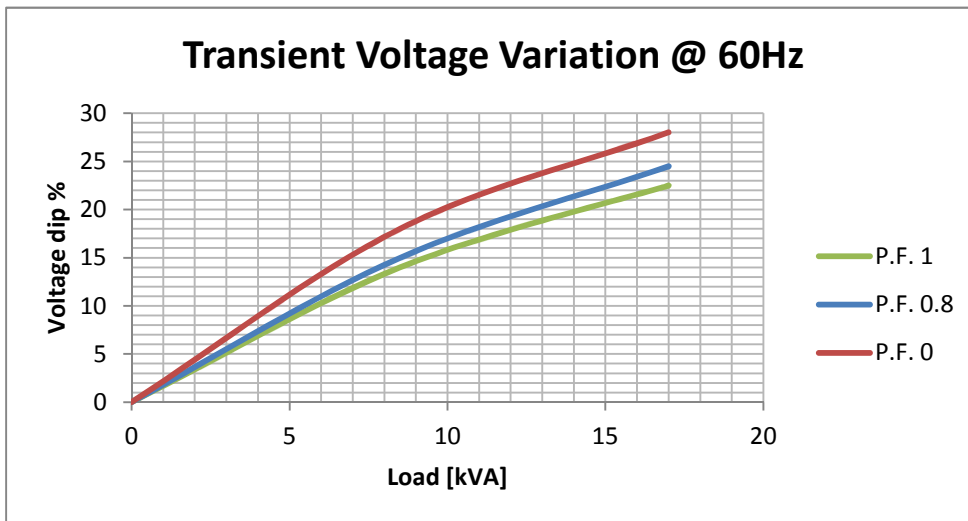


# E1S10M H

## TRANSIENT VOLTAGE VARIATION 50Hz

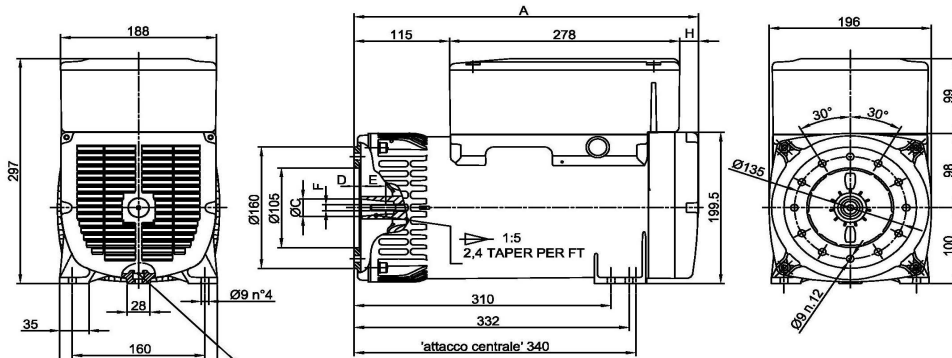


## TRANSIENT VOLTAGE VARIATION 60Hz



# E1S10M H

FORMA FORM FORME B3/B9



TIPO TYPE TYP	A	H
E1S10M - E1E10M	394	1
E1S10L - E1E10L	416	23

FORMA FORM FORME FORME FORM FORMA	ØC	D	E	F
cono Ø23	Ø23	8	25	M8
cono Ø30	Ø30	16	30	M14x1.5

