ALTERNATOR E1S13S B/4

three-phase synchronous alternator with brushes and compound - 4 poles

Technical Data Sheet

E1S13S B/4

COMMON DATA

Rated Power at 50Hz	kVA	10	
Rated Power at 60Hz	kVA	12	
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	2250	
Overload		110% of rated power for one hour in a cycle of 6 hours	
Air Flow Requirement	m^3/min	5.3 at 50Hz	6.4 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		Double layer
Rotor Winding		with damping cage
Number of Leads of Stator		6
Stator Winding Resistance		0.97 at 20°C
Rotor Winding Resistance		6.82 at 20°C
THD at full load		<3,5%
THD at no load		<3%
Excitation at no load	A_{dc}	3.2
Excitation at full load	A_{dc}	7.5

STANDARD

References	EN60034-1 ISO8528-3 EN55011

E1S13S B/4

ELECTRICAL DATA

Frequency		50Hz - 1500rpm			60Hz - 1800rpm		
Voltage Series Star	V		**400/230**			**480/277**	
Rated Power in Class H	kVA		10			12	
(125°C/40°C)	kW		8			9.6	
Rated Power in Class F	kVA		9			11	
(105°C/40°C)	kW		7.2			8.8	
Rated Power Standby	kVA		11			13	
(150°C/40°C)	kW		8.8			10.4	
Rated Power Standby	kVA		11.4			13.5	
(163°C/27°C)	kW		9.12			10.8	

EFFICIENCY IN CL. H

4/4		83.0%			83.5%	
3/4		83.5%			84.0%	
2/4		79.3%			80.1%	
1/4		74.5%			75.1%	

REACTANCES AND TIME CONSTANTS

ρcc		0.91
Xd	- dir. axis synchronous	157%
X'd	- dir. axis transient	20.0%
X''d	- dir. axis subtransient	7.7%
X_q	- quad. axis reactance	117%
T'_{do}	- O.C. field time constant	363ms
T'_d	- Transient time constant	46ms
T''_d	- Sub-transient time constant	5.6ms

MECHANICAL DATA

Bearing non drive end			6305-2Z-C3
Bearing drive end (B3/B14 form)			6208-2Z-C3
Weight of generator	in B2	kg	64.4
	in B3/B14	kg	60.3
	in B3/B9	kg	57.4

E1S13S B/4

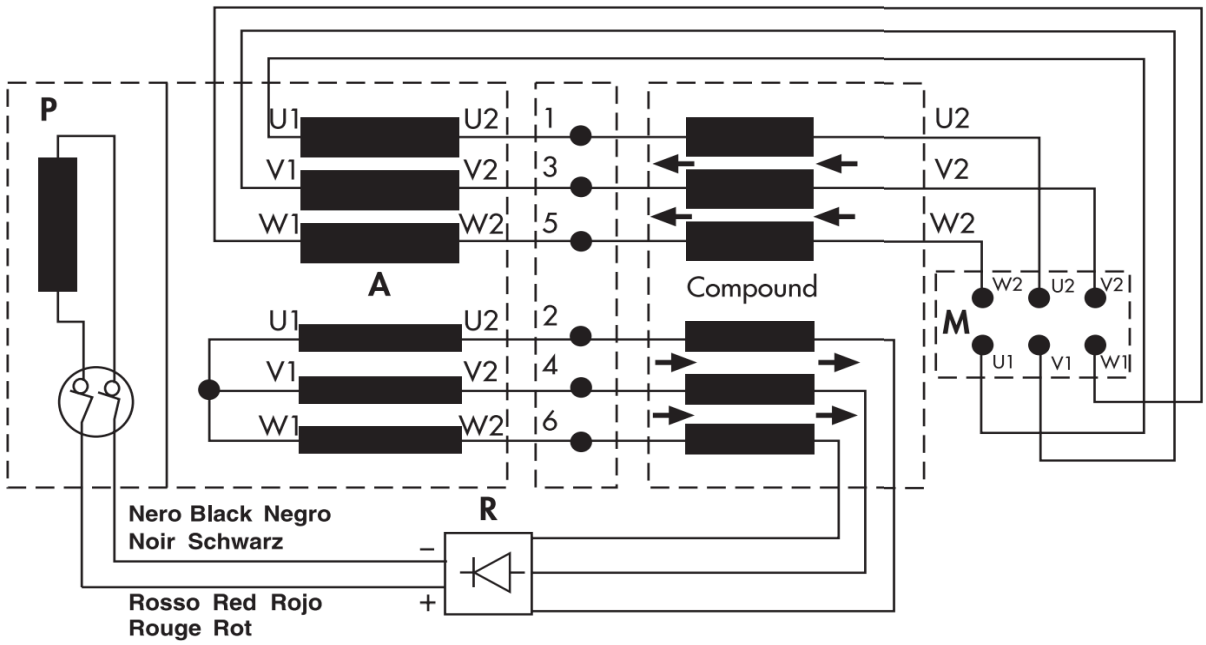
MOMENT OF INERZIA

B3/B9	$kg \cdot m^2$	0.049
B2	$kg \cdot m^2$	0.048
B3/B14	$kg \cdot m^2$	0.049

POWER VARIATION ACCORDING TO TEMPERATURE AND ALTITUDE

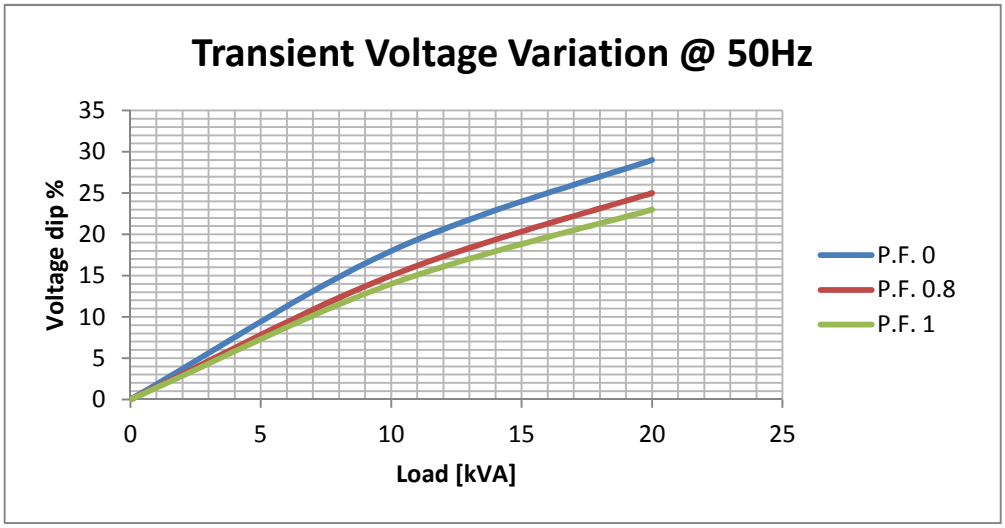
	Ambient temperature				
Altitude	25°C	40°C	45°C	50°C	55°C
< 1000m	1.09	1	0.96	0.93	0.91
1000m - 1500m	1.01	0.96	0.92	0.89	0.87
1500m - 2000m	0.96	0.91	0.87	0.84	0.83
2000m - 3000m	0.9	0.85	0.81	0.78	0.76

WIRING DIAGRAM

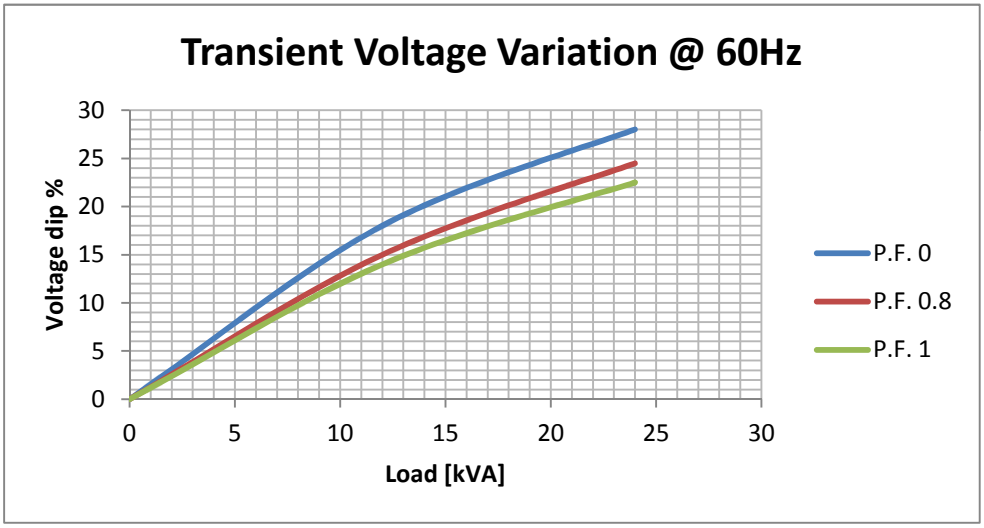


E1S13S B/4

TRANSIENT VOLTAGE VARIATION 50Hz

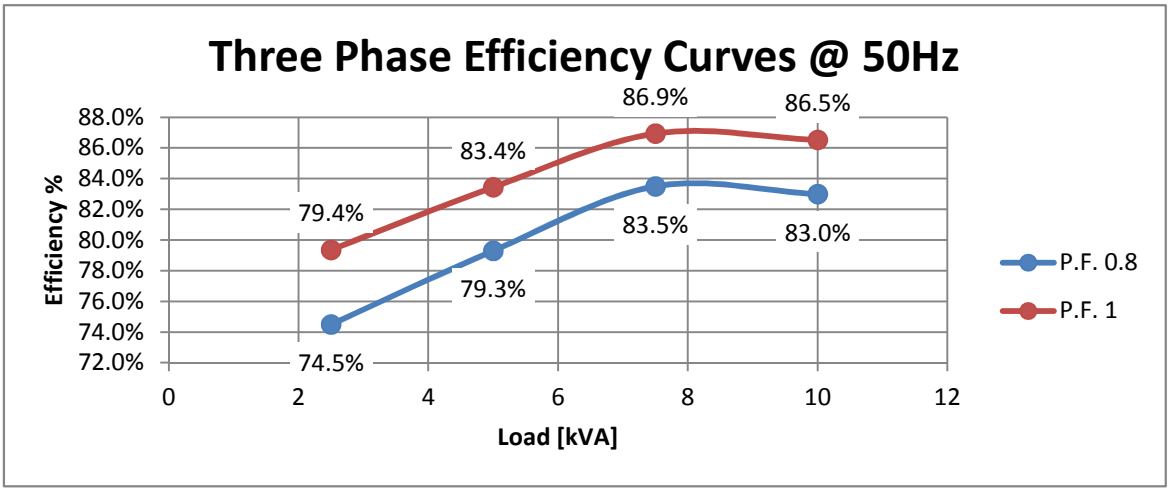


TRANSIENT VOLTAGE VARIATION 60Hz

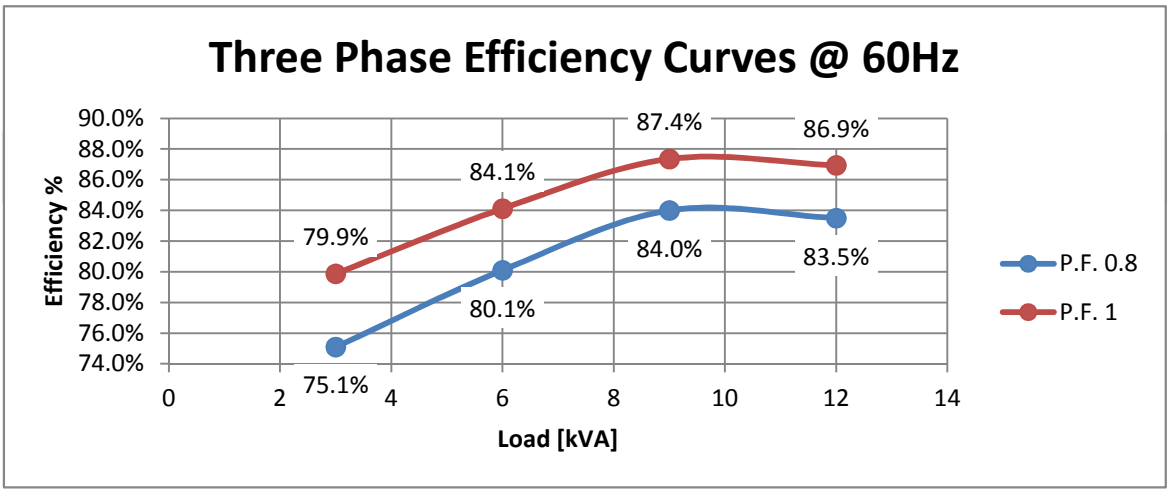


E1S13S B/4

EFFICIENCY 50Hz

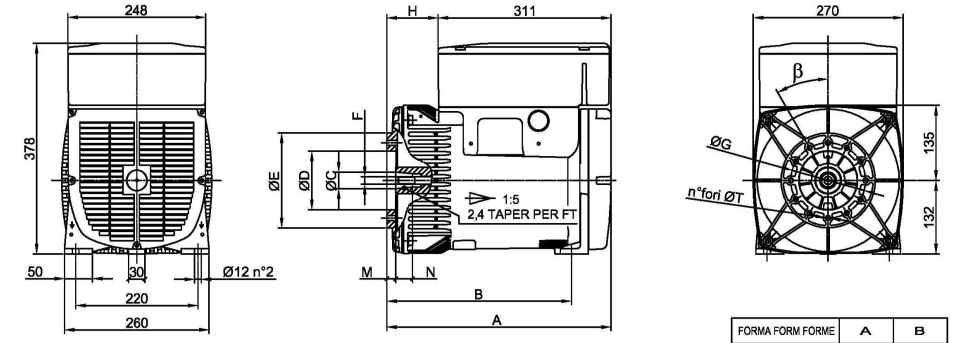


EFFICIENCY 60Hz



E1S13S B/4

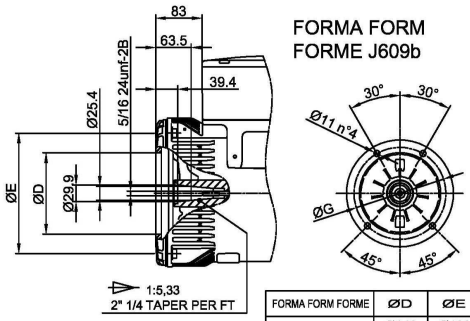
FORMA FORM FORME B3/B9



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°

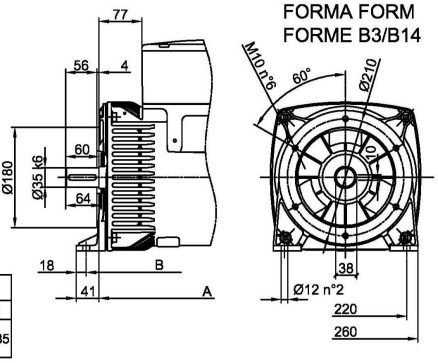
FORMA FORM FORME	A	B
B3B9 cono Ø30	403	332
B3B9 c.Ø38-J609b	394	323
B3/B14	388	340
MD35 - LOMB. STD	436	365

FORMA FORM FORME J609b

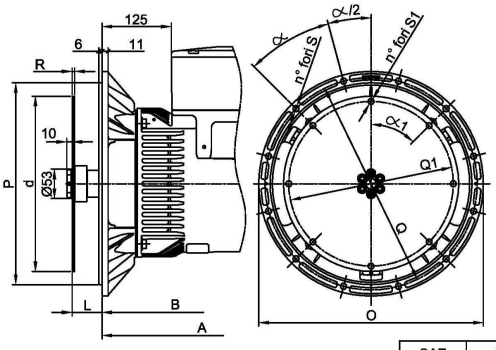


FORMA FORM FORME	ØD	ØE	ØG
J609b	Ø146	Ø192	Ø165
	Ø163.6	Ø216	Ø196.85
	Ø177.8		

FORMA FORM FORME B3/B14

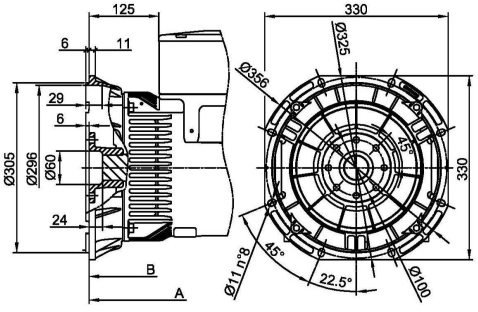


FORMA FORM FORME MD35



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

FORMA FORM FORME LOMBARDINI STD



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	
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°	