



ALTERNATOR E1X13M E/2

three-phase brushless synchronous alternator with AVR - 2 poles

Technical Data Sheet

E1X13M E/2

COMMON DATA

Rated Power at 50Hz	kVA	22	
Rated Power at 60Hz	kVA	26	
Rated Power Factor		0.8	
Nominal Temperature	°C	40	
Control System		self excited	
Execution		brushless	
Regulation Type		AVR	
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 ³ /min	7.9 at 50Hz	9.5 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	0.33 at 20°C	
Rotor Winding Resistance	13.7 at 20°C	
Exciter Stator Resistance	16.5 at 20°C	
Exciter Rotor Resistance	2.15 at 20°C	
THD at full load	<3%	
THD at no load	<3%	
Excitation at no load	A _{dc}	0.14
Excitation at full load	A _{dc}	1.06

STANDARD

References	EN60034-1 ISO8528-3 EN55011
------------	-----------------------------

E1X13M E/2

ELECTRICAL DATA

Frequency		50Hz - 3000rpm				60Hz - 3600rpm			
Voltage Series Star	V	380/220	400/230	415/240	440/254	415/240	440/254	460/266	480/277
Rated Power in Class H (125°C/40°C)	kVA	22	22	22	18	23	25	26	26
	kW	17.6	17.6	17.6	14.4	18.4	20	20.8	20.8
Rated Power in Class F (105°C/40°C)	kVA	20.5	20.5	20.5	16.5	21	23	24	24
	kW	16.4	16.4	16.4	13.2	16.8	18.4	19.2	19.2
Rated Power Standby (150°C/40°C)	kVA	23.5	22.5	22.5	19.5	24.5	26.5	28	28
	kW	18.8	18	18	15.6	19.6	21.2	22.4	22.4
Rated Power Standby (163°C/27°C)	kVA	24	24	22	20	25.7	27	29	29
	kW	19.2	19.2	17.6	16	20.56	21.6	23.2	23.2

EFFICIENCY IN CL. H

4/4		86.0%						86.2%
3/4		86.2%						86.4%
2/4		82.5%						82.7%
1/4		78.1%						78.4%

REACTANCES AND TIME CONSTANTS

pcc		0.40						
X _d - dir. axis synchronous		460%	415%	386%	281%	491%	475%	415%
X' _d - dir. axis transient		35.5%	32.0%	29.7%	21.6%	37.9%	36.6%	32.0%
X'' _d - dir. axis subtransient		11.6%	10.5%	9.8%	7.1%	12.4%	12.0%	10.5%
X _q - quad. axis reactance		277%	250%	232%	169%	296%	286%	250%
T' _{do} - O.C. field time constant		410ms						
T' _d - Transient time constant		32ms						
T'' _d - Sub-transient time constant		8.8ms						

MECHANICAL DATA

Bearing non drive end				6305-2Z-C3
Bearing drive end (B3/B14 form)				6208-2Z-C3
Weight of generator	in B2	kg		101
	in B3/B14	kg		96.9
	in B3/B9	kg		\

E1X13M E/2

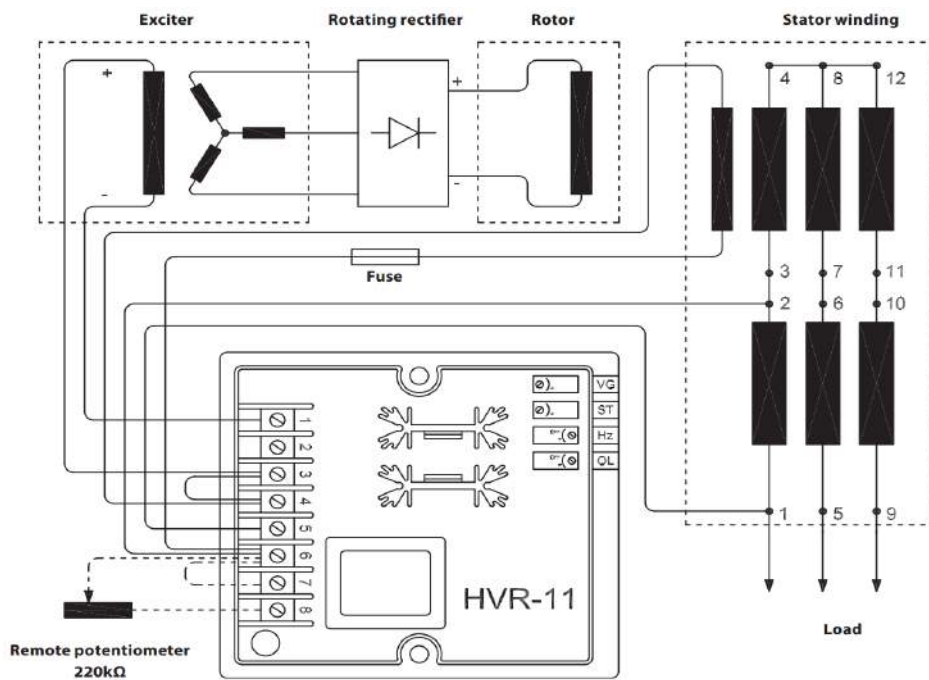
MOMENT OF INERZIA

B3/B9	kg·m ²	\
SAE 7½	kg·m ²	0.092
B2	kg·m ²	0.091

POWER VARIATION ACCORDING TO TEMPERATURE AND ALTITUDE

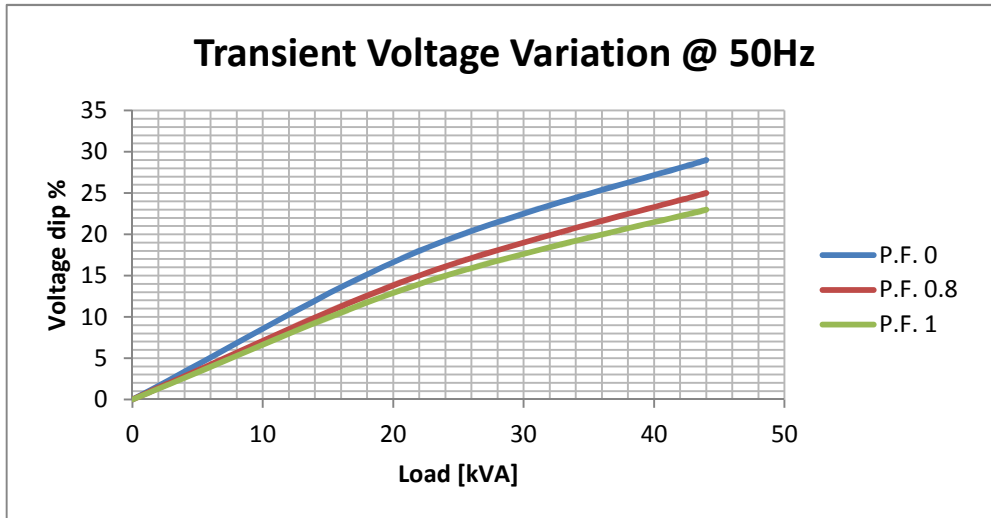
Altitude	Ambient temperature				
	25°C	40°C	45°C	50°C	55°C
< 1000m	1.09	1	0.96	0.93	0.91
1000m - 1500m	1.01	0.96	0.92	0.89	0.87
1500m - 2000m	0.96	0.91	0.87	0.84	0.83
2000m - 3000m	0.9	0.85	0.81	0.78	0.76

WIRING DIAGRAM

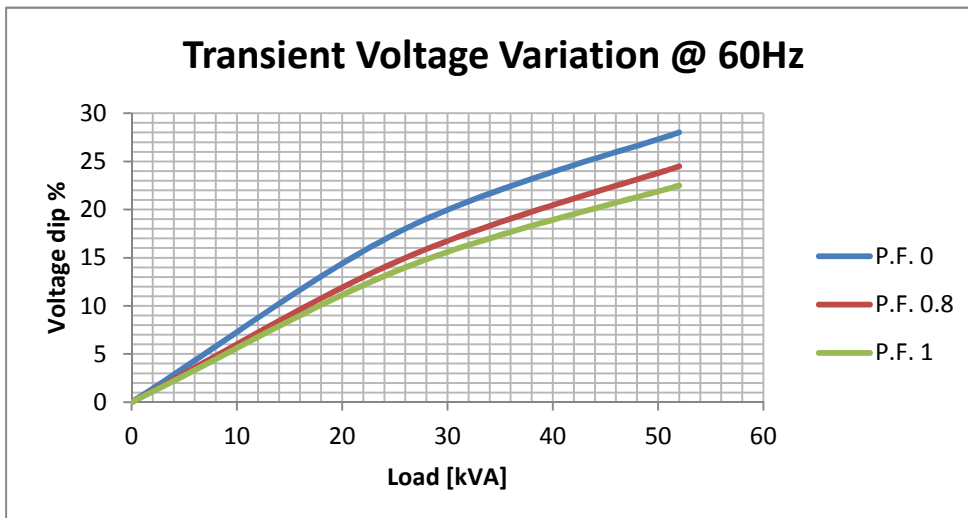


E1X13M E/2

TRANSIENT VOLTAGE VARIATION 50Hz

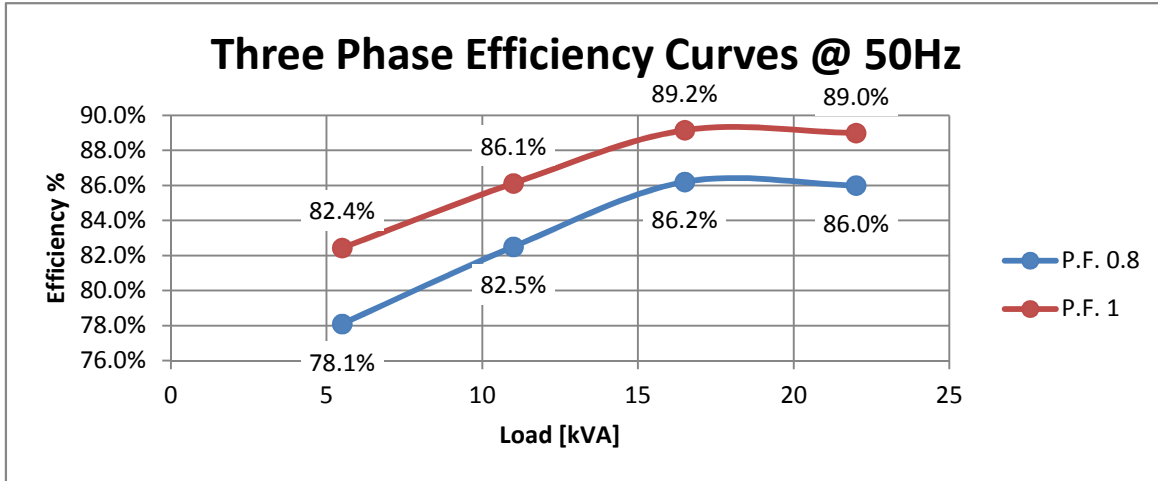


TRANSIENT VOLTAGE VARIATION 60Hz

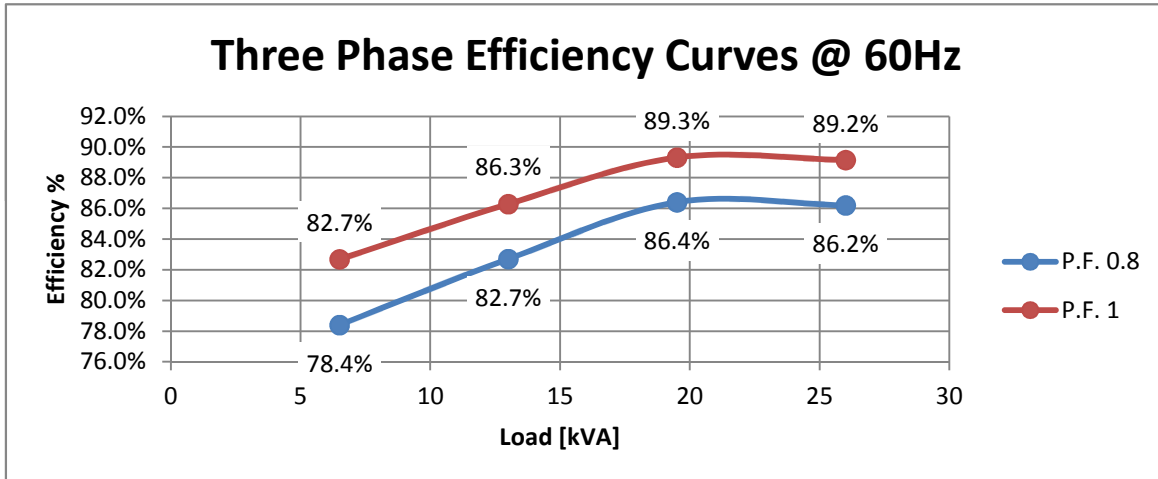


E1X13M E/2

EFFICIENCY 50Hz

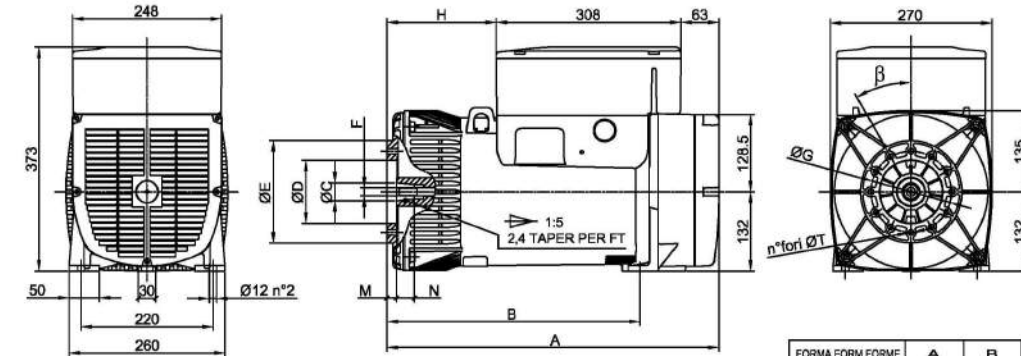


EFFICIENCY 60Hz



E1X13M E/2

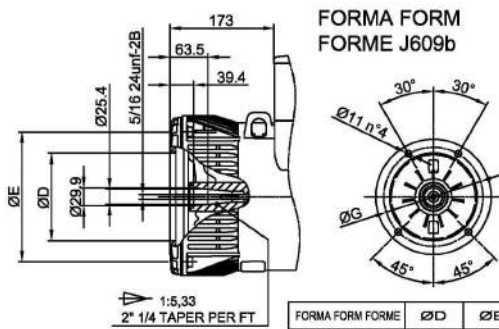
FORMA FORM FORME B3/B9



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°

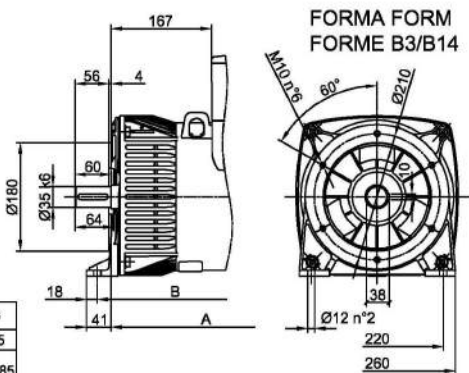
FORMA FORM FORME	A	B
B3B9 cono Ø30	553	422
B3B9 c.Ø38-J609b	544	413
B3/B14	538	430
MD35 - LOMB. STD	586	455

FORMA FORM FORME J609b

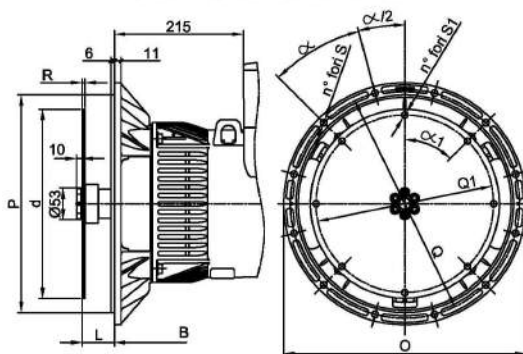


FORMA FORM FORME	ØD	ØE	ØG
J609b	Ø146	Ø192	Ø165
	Ø163.6	Ø216	Ø196.85
	Ø177.8		

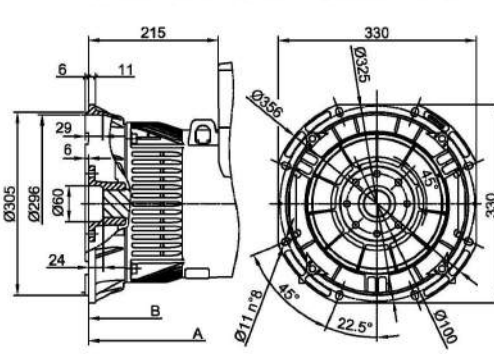
FORMA FORM FORME B3/B14



FORMA FORM FORME MD35



FORMA FORM FORME LOMBARDINI STD



SAE	FLANGIE - BRIDE - FLANGE					
N.	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	GIUNTI A DISCO - DISC COUPLING - ACC. DISQUE						
N.	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	283.52	244.47	6	10.5	60	
10	53.8	314.32	295.27	8	10.5	45°	4.5
11 1/2	38.6	352.42	333.37	8	10.5	45°	