TECHNICAL DATA SHEET

ALTERNATOR E1X13S A/4

Three-Phase brushless synchronous alternator with AVR - 4 poles

E1X13S A/4

COMMON DATA

Rated Power at 50Hz	kVA	6,5	
Rated Power at 60Hz	kVA	8,0	
Rated Power Factor		0,8	
Nominal Temperature	°C	40	
Control System		self-excited	
Execution		brushless	
Regulation Type		AVR	
Insulation Class		H	
Protection		IP21	
Maximum Over speed	rpm	2250	
Overload		110% of rated power for one hour in a cycle of 6 hours	
Air Flow Requirement	m^3/min	2,6 at 50Hz	3,2 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	Ω	2,36 at 20°C
Rotor Winding Resistance	Ω	5,73 at 20°C
Exciter Stator Resistance	Ω	16,5 at 20°C
Exciter Rotor Resistance	Ω	2,15 at 20°C
THD at full load		<3%
THD at no load		<3%
Excitation at no load	Adc	0,48
Excitation at full load	Adc	1,5

STANDARD

References	EN60034-1 ISO8528-3 EN55011

ON REQUEST

UL 1446, Systems of Insulating Materials - General CSA-C22.2 No. 0, Appendix B, General Requirements - Canadian Electrical Code, Part I

CAN/CSA - C22.2 No. 100-14 (R2009) Motors and Generators, UL1004-1 2nd ed. Rotating Electrical Machines - General Requirements, UL1004-4 2nd ed. Electric Generators

E1X13S A/4

ELECTRICAL DATA

Frequency		50Hz - 1500rpm				60Hz - 1800rpm			
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	6,5	6,5	6,5	6,0	7,4	8,0	8,0	8,0
	kW	5,2	5,2	5,2	4,8	5,92	6,4	6,4	6,4
Rated Power in Class F (105°C/40°C)	kVA	6,0	6,0	6,0	5,5	6,7	7,3	7,3	7,3
	kW	4,8	4,8	4,8	4,4	5,36	5,84	5,84	5,84
Rated Power Standby (150°C/40°C)	kVA	7,0	7,0	7,0	6,5	8,0	8,5	8,8	8,8
	kW	5,6	5,6	5,6	5,2	6,4	6,8	7,04	7,04
Rated Power Standby (163°C/27°C)	kVA	7,4	7,4	7,4	6,8	8,4	9,0	9,2	9,2
	kW	5,92	5,92	5,92	5,44	6,72	7,2	7,36	7,36

EFFICIENCY IN CL. H

4/4		80,9%						81,0%
3/4		81,0%						81,3%
2/4		79,0%						79,3%
1/4		74,0%						74,5%

REACTANCES AND TIME CONSTANTS

ρcc			0,76						
Xd	- dir. axis synchronous	265%	239%	222%	182%	296%	284%	260%	239%
X'd	- dir. axis transient	23,3%	21,0%	19,5%	16,0%	26,0%	25,0%	22,9%	21,0%
X''d	- dir. axis subtransient	11,1%	10,0%	9,3%	7,6%	12,4%	11,9%	10,9%	10,0%
X_q	- quad. axis reactance	139%	125%	116%	95%	155%	149%	136%	125%
T'_{do}	- O.C. field time constant	296ms							
T'_d	- Transient time constant	26ms							
T''_d	- Sub-transient time constant	5ms							

MECHANICAL DATA

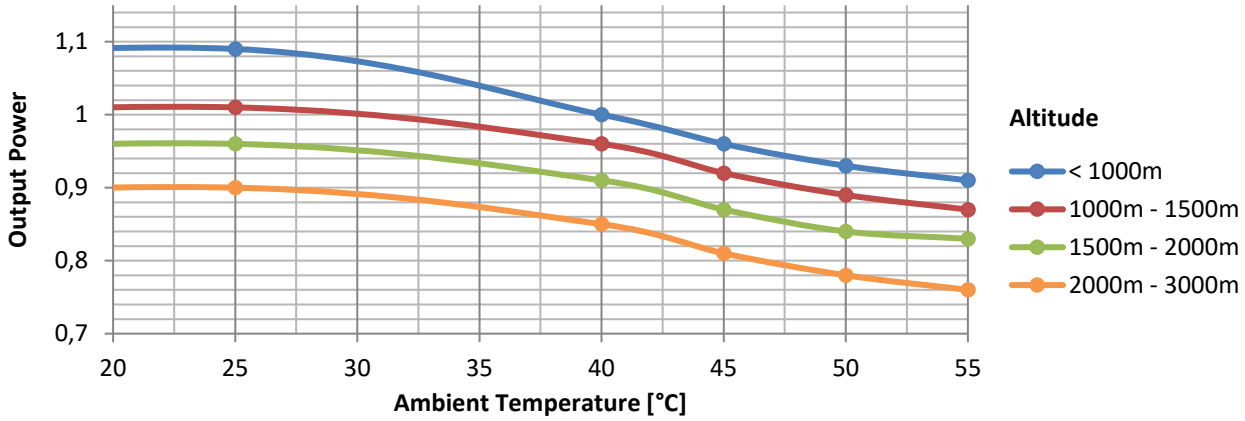
Bearing non drive end			6305-2Z-C3
Bearing drive end (B3/B14 form)			6208-2Z-C3
Weight of generator	in B2	kg	63,5
	in B3/B14	kg	59,4
	in B3/B9	kg	\

E1X13S A/4

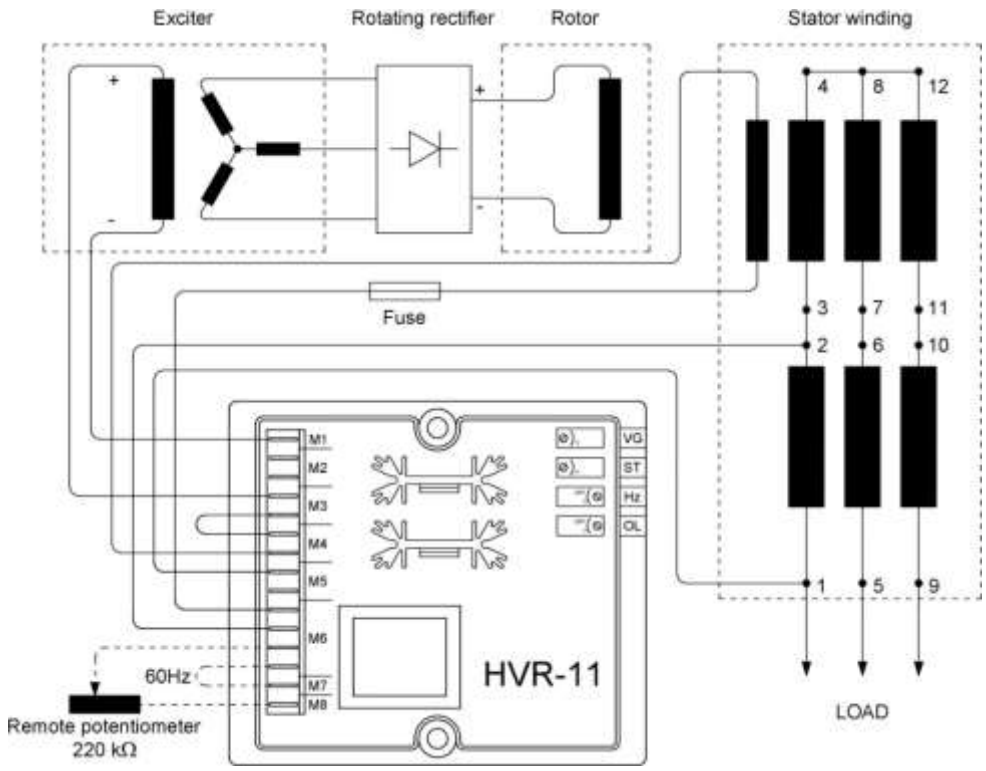
MOMENT OF INERZIA

B3/B9	kg·m^2	\
SAE 7½	kg·m^2	0,06
B2	kg·m^2	0,06

DERATING CURVES

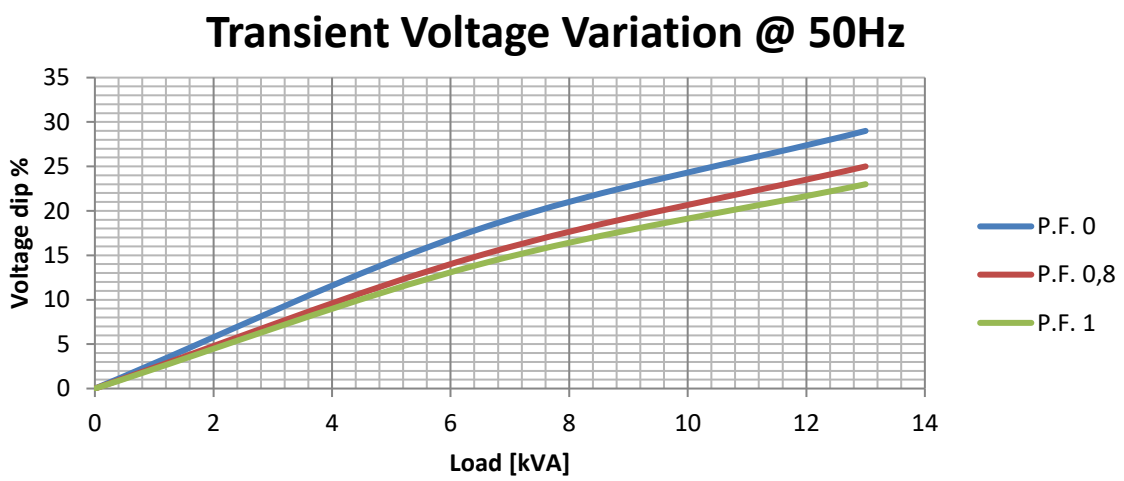


WIRING DIAGRAM

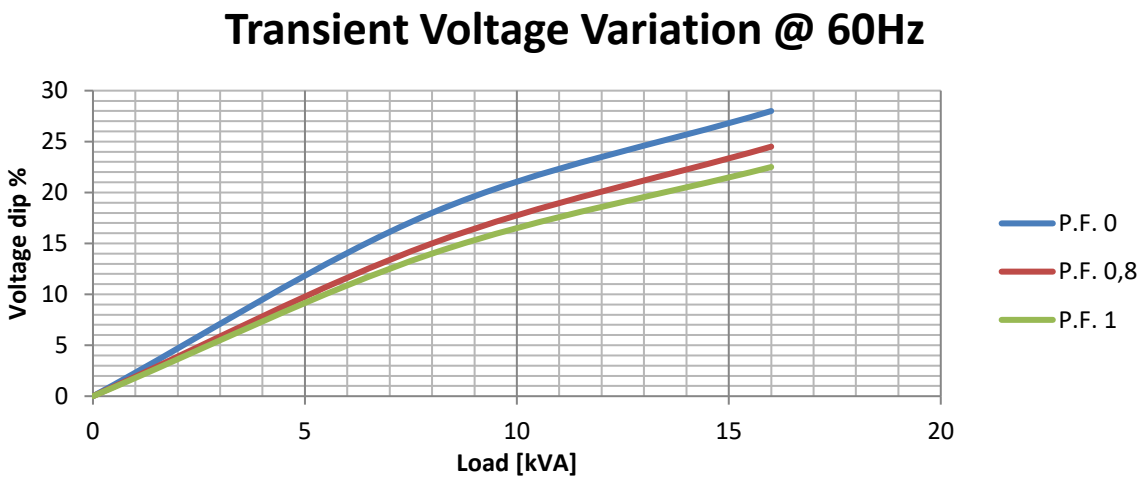


E1X13S A/4

TRANSIENT VOLTAGE VARIATION 50Hz

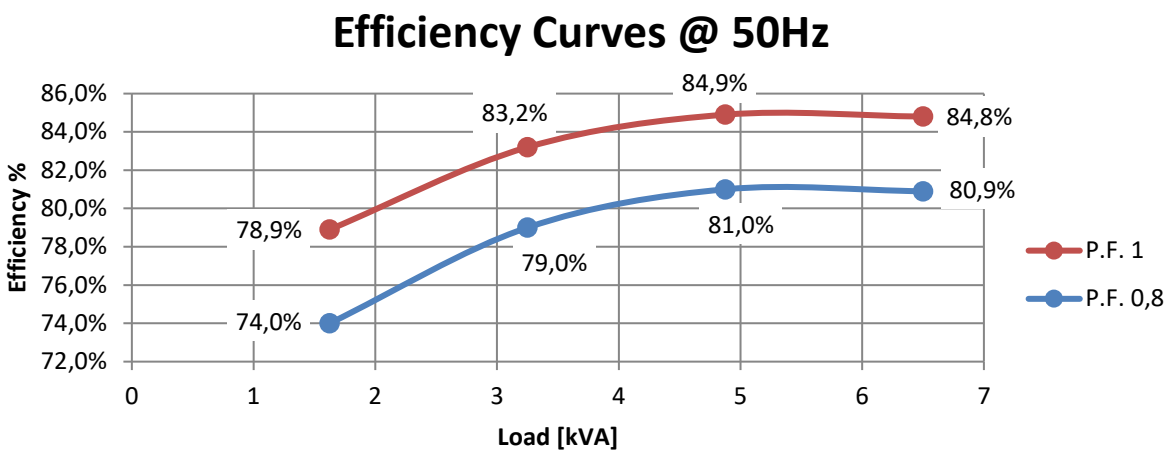


TRANSIENT VOLTAGE VARIATION 60Hz

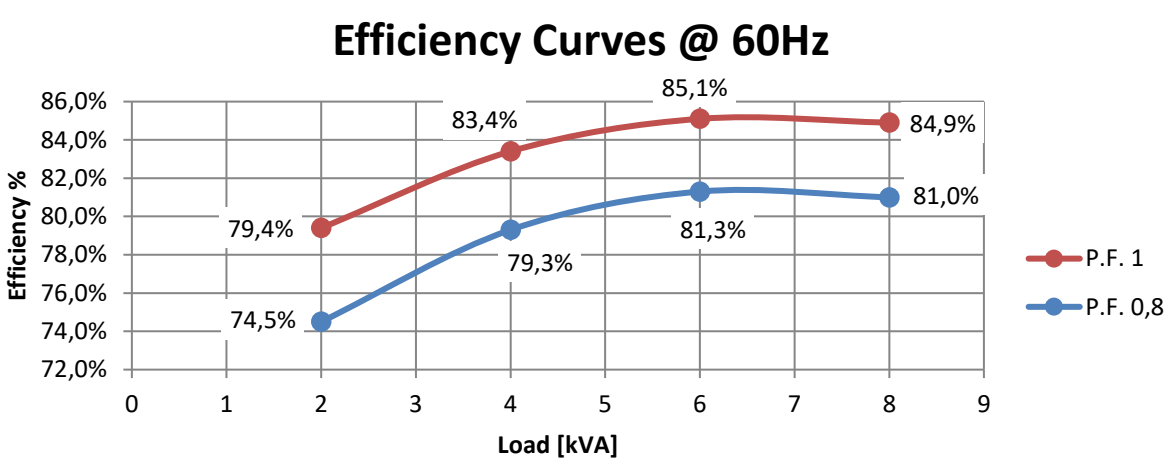


E1X13S A/4

EFFICIENCY 50Hz

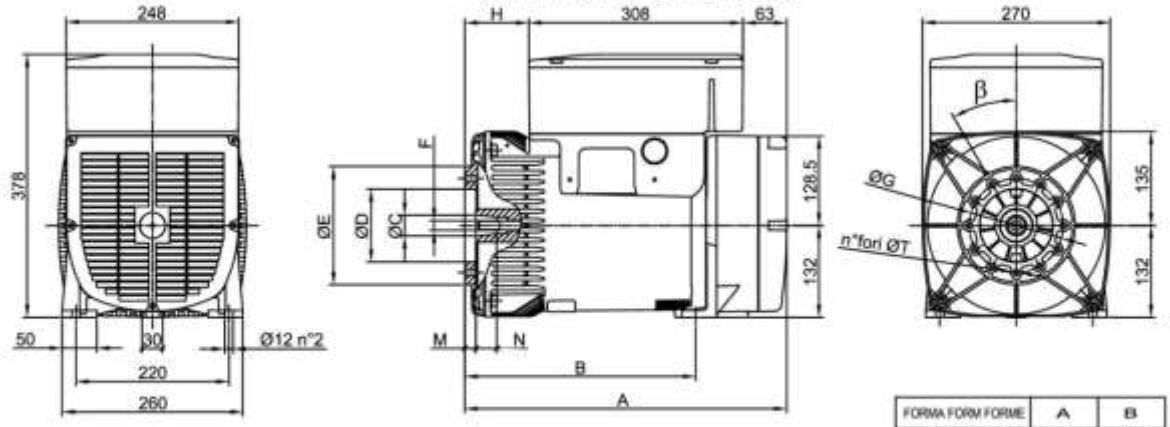


EFFICIENCY 60Hz



E1X13S A/4

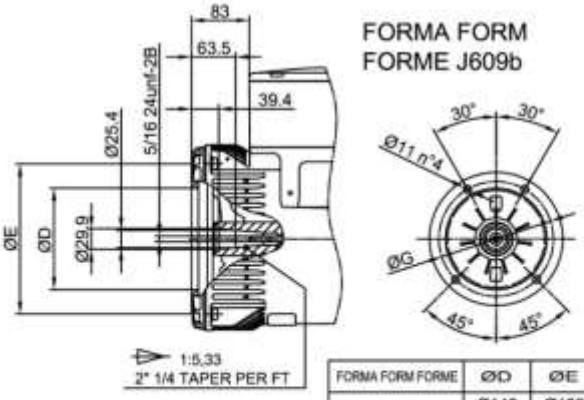
FORMA FORM FORME B3/B9



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°

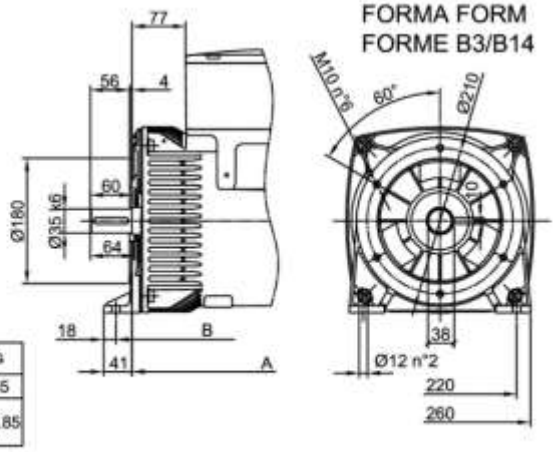
FORMA FORM FORME	A	B
B3B9 cono Ø30	463	332
B3B9 c.Ø38-J609b	454	323
B3/B14	448	340
MD35 - LOMB. STD	496	365

FORMA FORM FORME J609b

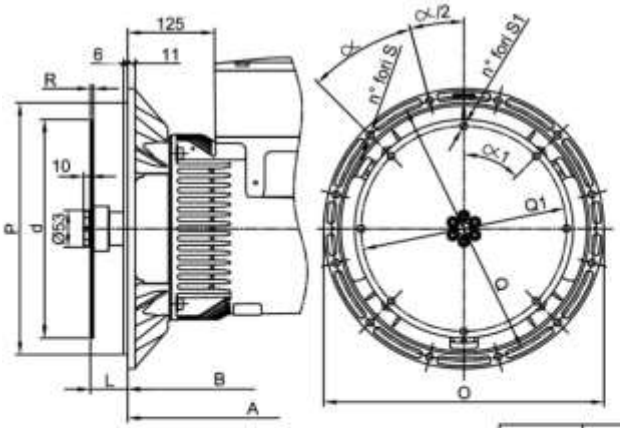


FORMA FORM FORME	ØD	ØE	ØG
J609b	Ø146	Ø192	Ø165
	Ø163.6	Ø216	Ø196.85
	Ø177.8		

FORMA FORM FORME B3/B14

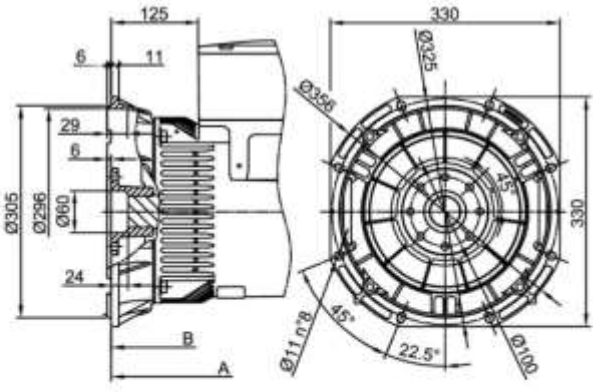


FORMA FORM FORME MD35



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	4.5
10	53.8	314.32	295.27	8	10.5	45°	
11 1/2	39.6	352.42	333.37	8	10.5	45°	