

TECHNICAL DATA SHEET



**ALTERNATOR PRO35M E/4**

*Three-Phase brushless synchronous alternator with AVR - 4 poles*

## PRO35M E/4

### COMMON DATA

Rated Power at 50Hz	kVA	600
Rated Power at 60Hz	kVA	720
Rated Power Factor		0,8
Nominal Temperature	°C	40
Control System		self-excited
Execution		brushless
Regulation Type		AVR
Insulation Class		H
Protection		IP23
Maximum Over speed	rpm	2250
Overload		110% of rated power for one hour in a cycle of 6 hours
Air Flow Requirement	m <sup>3</sup> /min	53 at 50Hz      64,3 at 60Hz
R.F.I. Suppression		Standard EN55011

### REGULATION DATA

AVR	HVR30
Sensing	three-phase
Voltage Regulation	±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	6	
Stator Winding Resistance	Ω	0,0165 at 20°C
Rotor Winding Resistance	Ω	1,42 at 20°C
Exciter Stator Resistance	Ω	12,5 at 20°C
Exciter Rotor Resistance	Ω	0,095 at 20°C
THD at full load	<3%	
THD at no load	<3%	
Excitation at no load	A <sub>dc</sub>	0,56
Excitation at full load	A <sub>dc</sub>	2,25

### 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

## PRO35M E/4

### ELECTRICAL DATA

Frequency		50Hz - 1500rpm				60Hz - 1800rpm			
Voltage Series Star	V	<b>380/220</b>	<b>400/230</b>	<b>415/240</b>	<b>440/254</b>	<b>415/240</b>	<b>440/254</b>	<b>460/266</b>	<b>480/277</b>
Rated Power in Class H (125°C/40°C)	kVA	600	600	600	560	640	680	720	720
	kW	480	480	480	448	512	544	576	576
Rated Power in Class F (105°C/40°C)	kVA	550	550	550	515	590	620	660	660
	kW	440	440	440	412	420	496	528	528
Rated Power Standby (150°C/40°C)	kVA	630	630	630	590	680	720	760	760
	kW	504	504	504	472	544	576	608	608
Rated Power Standby (163°C/27°C)	kVA	660	660	660	620	705	740	790	790
	kW	528	528	528	496	564	692	632	632

### EFFICIENCY IN CL. H

4/4	95,0%							95,7%
3/4	95,3%							96,2%
2/4	94,0%							94,8%
1/4	92,2%							93,5%

### REACTANCES AND TIME CONSTANTS

pcc		0,34							
X <sub>d</sub> - dir. axis synchronous		373%	337%	313%	260%	401%	379%	367%	337%
X' <sub>d</sub> - dir. axis transient		18,8%	17,0%	15,8%	13,1%	20,2%	19,1%	18,5%	17,0%
X'' <sub>d</sub> - dir. axis subtransient		12,2%	11,0%	10,2%	8,5%	13,1%	12,4%	12,0%	11,0%
X <sub>q</sub> - quad. axis reactance		228%	206%	191%	159%	245%	232%	224%	206%
T' <sub>do</sub> - O.C. field time constant		2340ms							
T' <sub>d</sub> - Transient time constant		115ms							
T'' <sub>d</sub> - Sub-transient time constant		10ms							

### MECHANICAL DATA

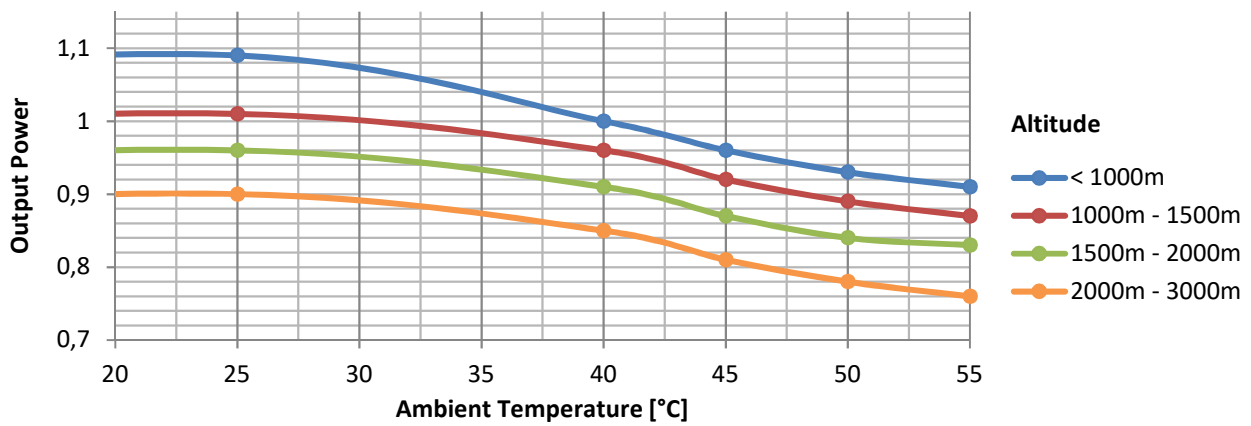
Bearing non drive end			6316-2RS-C3
Bearing drive end (B3/B14 form)			6319-2RS-C3
Weight of generator	in B2	kg	1494
	in B3/B14	kg	1518
	in B3/B9	kg	\

# PRO35M E/4

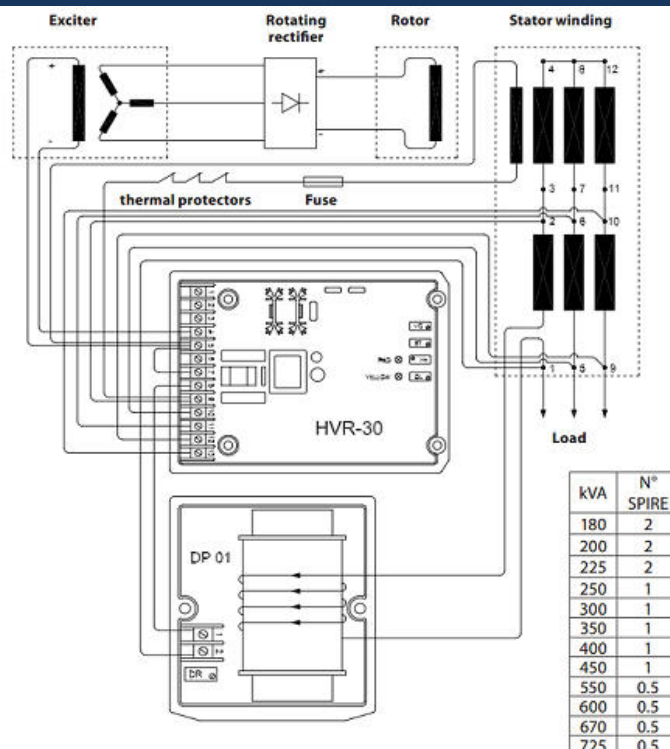
## MOMENT OF INERZIA

B3/B9	kg·m <sup>2</sup>	\
SAE 7½	kg·m <sup>2</sup>	\
SAE 8	kg·m <sup>2</sup>	\
SAE 10	kg·m <sup>2</sup>	\
SAE 11½	kg·m <sup>2</sup>	\
SAE 14	kg·m <sup>2</sup>	11,352
SAE 18	kg·m <sup>2</sup>	11,692
B3/B14	kg·m <sup>2</sup>	10,838

## DERATING CURVES



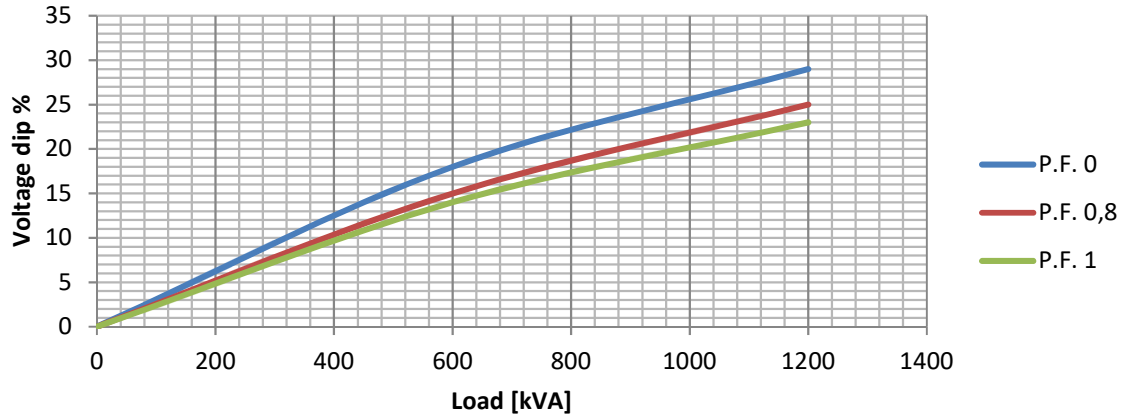
## WIRING DIAGRAM



# PRO35M E/4

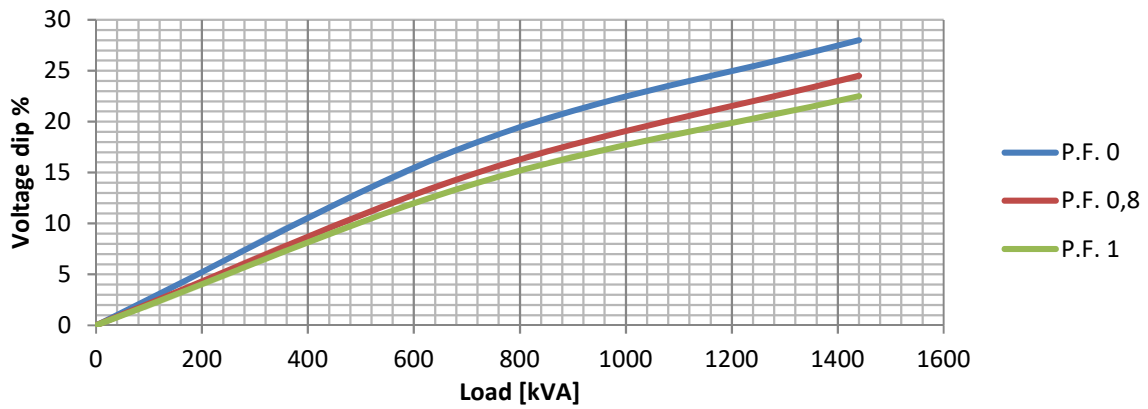
## TRANSIENT VOLTAGE VARIATION 50Hz

### Transient Voltage Variation @ 50Hz



## TRANSIENT VOLTAGE VARIATION 60Hz

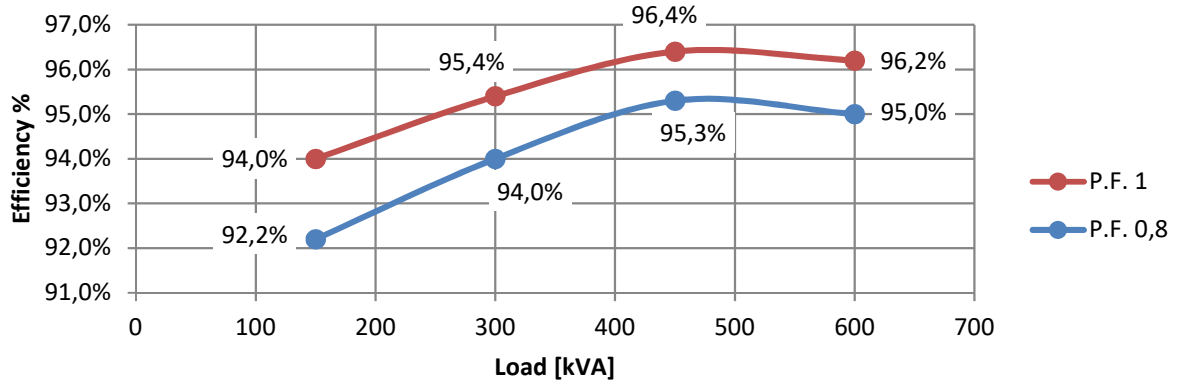
### Transient Voltage Variation @ 60Hz



# PRO35M E/4

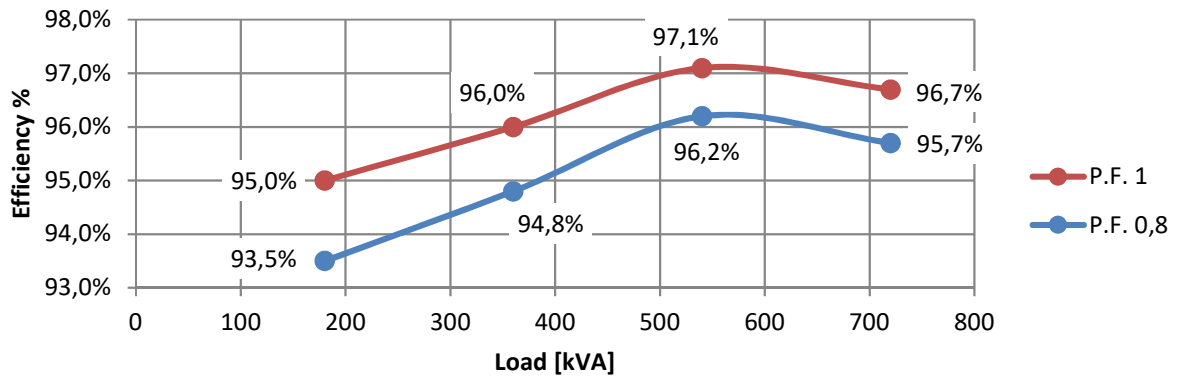
## EFFICIENCY 50Hz

### Efficiency Curves @ 50Hz



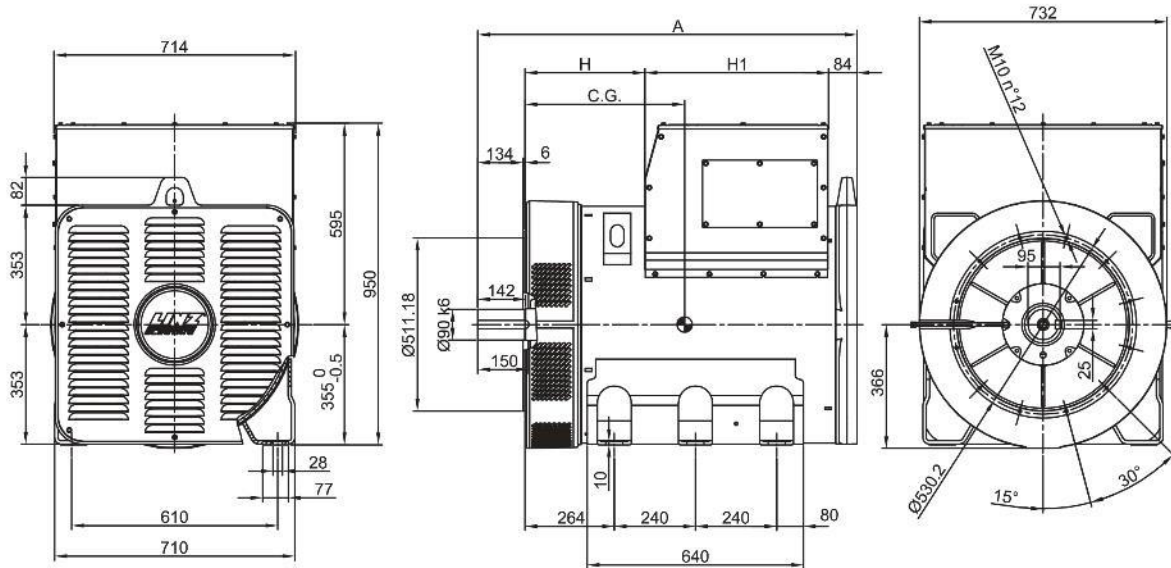
## EFFICIENCY 60Hz

### Efficiency Curves @ 60Hz

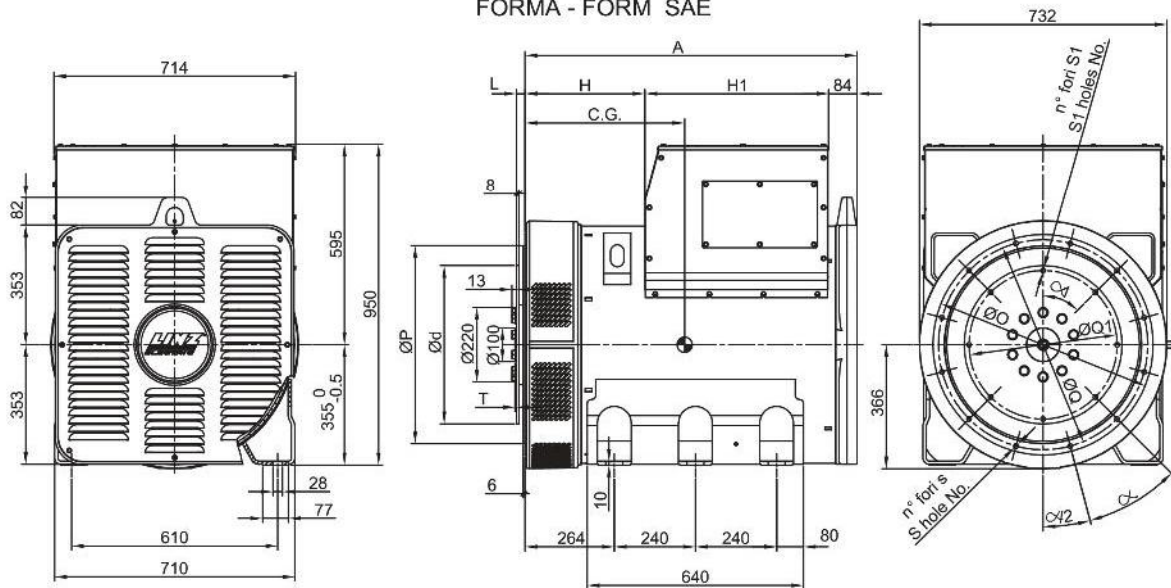


# PRO35M E/4

FORMA - FORM B3/B14



FORMA - FORM SAE



FORMA - FORM		A	H	H1	TIPO - TYPE	C.G.
B3/B14	PRO35 S	1122	454.5	443.5	PRO35S B/4	456
	PRO35 M	1247	479.5	543.5	PRO35S C/4	466
	PRO35 L	1347	579.5		PRO35S D/4	478
SAE	PRO35 S	982	454.5	443.5	PRO35M E/4	516
	PRO35 M	1107	479.5	543.5	PRO35M F/4	516
	PRO35 L	1207	579.5		PRO35M G/4	539
					PRO35L H/4	588

SAE N.	FLANGIE - FLANGES - BRIDAS					
	Ø O	Ø P	Ø Q	n. fori holes No.	S	α
0	710	647.7	679.5	16	14	22.5°
1/2	650	584.2	619.2	12	14	30°
1	552	511.18	530.2	12	12	30°

SAE N.	GIUNTI A DISCO - COUPLING DISCS - JUNTAS A DISCOS						
	L	Ø d	Ø Q1	n. fori holes No.	S1	α1	T
14	25.4	466.72	438.15	8	14	45°	4.3
18	15.7	571.5	542.92	6	17	60°	14