ALTERNATOR PRO28S A/4

Three-phase brushless synchronous alternator with AVR - 4 poles

Technical Data Sheet

PRO28S A/4

COMMON DATA

Rated Power at 50Hz	kVA	180	
Rated Power at 60Hz	kVA	215	
Rated Power Factor		0.8	
Nominal Temperature	°C	40	
Control System		Self excited	
Execution		brushless	
Regulation Type		AVR	
Insulation Class		H	
Protection		IP23	
Maximum Overspeed	rpm	2250	
Overload		110% of rated power for one hour in a cycle of 6 hours	
Air Flow Requirement	m^3/min	32 at 50Hz	38 at 60Hz
Telephone Interference		<2%	
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 Winding		12
Stator Winding Resistance		0.0143Ω at 20°C
Rotor Winding Resistance		1.7Ω at 20°C
Exciter Stator Resistance		15Ω at 20°C
Exciter Rotor Resistance		0.25Ω at 20°C
THD at full load		<3%
THD at no load		<2.5%
Excitation at no load	A_{dc}	0.56
Excitation at full load	A_{dc}	2.5

STANDARD

References	EN60034-1, ISO8538, EN55011

PRO28S 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
Voltage Parallel Star	V	190/110	200/115	207/120	220/127	207/120	220/127	230/133	240/138
Voltage Series Delta	V	220	230	240	254	240	254	266	277
Rated Power in Class H	kVA	180	180	175	165	196	205	215	215
(125°C/40°C)	kW	144	144	140	132	156.8	164	172	172
Rated Power in Class F	kVA	160	160	150	145	175	183	192	192
(105°C/40°C)	kW	128	128	120	116	140	146.4	153.6	153.6
Rated Power Standby	kVA	195	195	190	177	213	223	234	234
(150°C/40°C)	kW	156	156	152	141.6	170.4	178.4	187.2	187.2
Rated Power Standby	kVA	200	200	195	182	218	228	240	240
(163°C/27°C)	kW	160	160	156	145.6	174.4	182.4	192	192

EFFICIENCY IN CL. H

4/4		91.8%						92.5%
3/4		92.2%						92.7%
2/4		91.0%						91.7%
1/4		89.0%						89.8%

REACTANCES AND TIME CONSTANTS

ρcc		0.32						
Xd - dir. axis synchronous	399%	360%	325%	273%	439%	409%	392%	360%
X'd - dir. axis transient	21.1%	19.0%	17.2%	14.4%	23.2%	21.6%	20.7%	19.0%
X''d - dir. axis subtransient	11.1%	10.0%	9.0%	7.6%	12.2%	11.3%	10.9%	10.0%
X_q - quad. axis reactance	240%	217%	196%	164%	265%	246%	236%	217%
T'_{do} - O.C. field time constant	1830 ms							
T'_d - Transient time constant	112 ms							
T''_d - Sub-transient time constant	16 ms							

MECHANICAL DATA

Bearing non drive end			6314-2RS-C3
Bearing drive end (B3/B14 form)			6316-2RS-C3
Weight of generator	in B2	kg	564
	in B3/B14	kg	575

PRO28S A/4

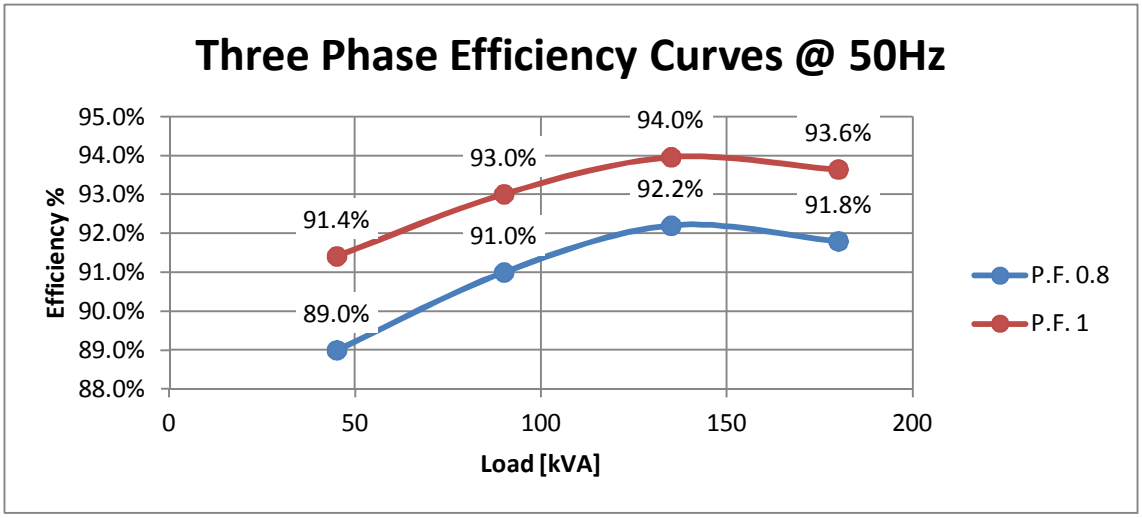
MOMENT OF INERZIA

SAE 11½	$kg \cdot m^2$	2.302
SAE 14	$kg \cdot m^2$	2.417
B3/B14	$kg \cdot m^2$	2.123

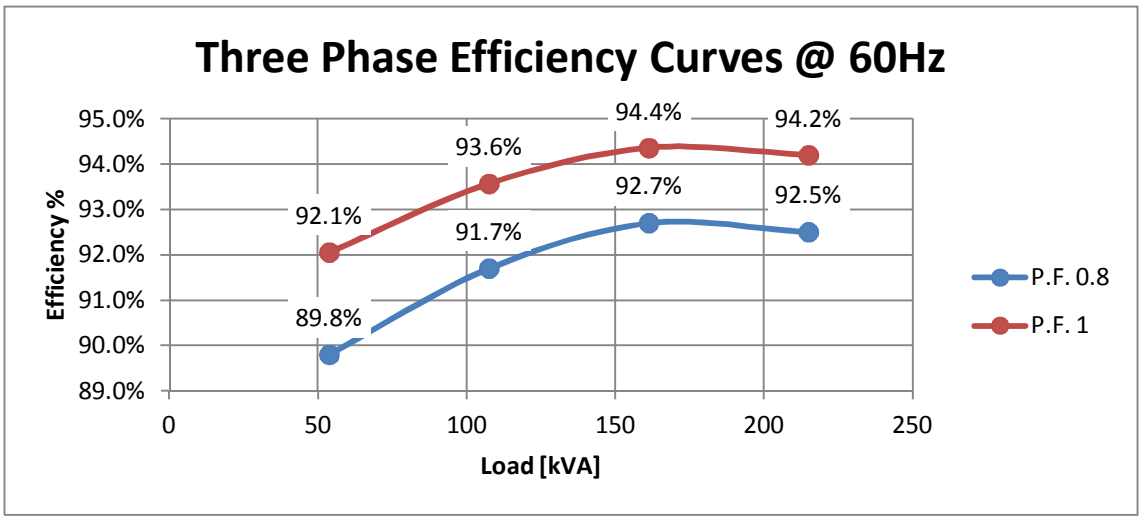
POWER VARIATION ACCORDING TO TEMPERATURE AND ALTITUDE

	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

EFFICIENCY 50Hz

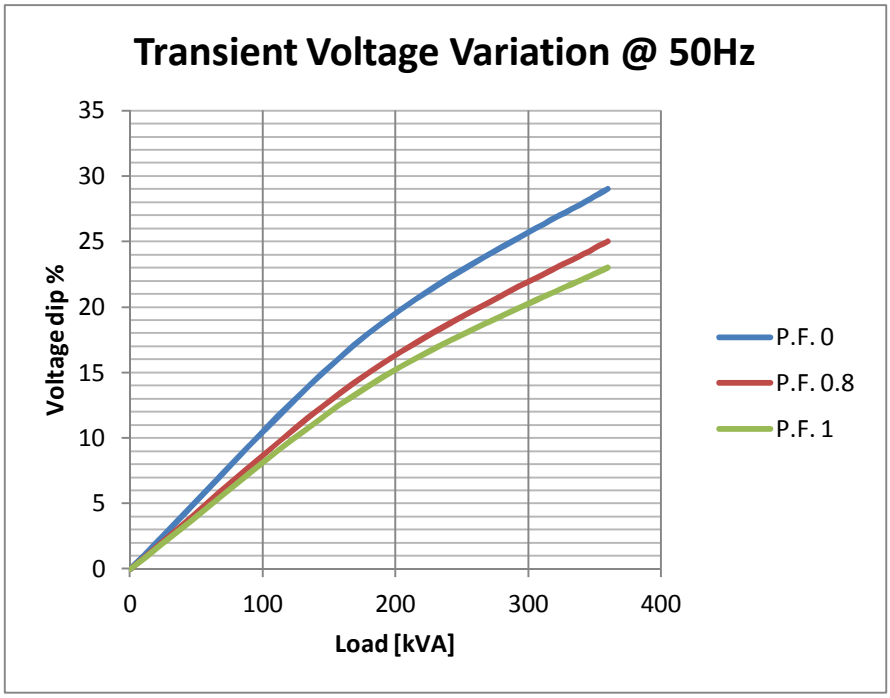


EFFICIENCY 60Hz

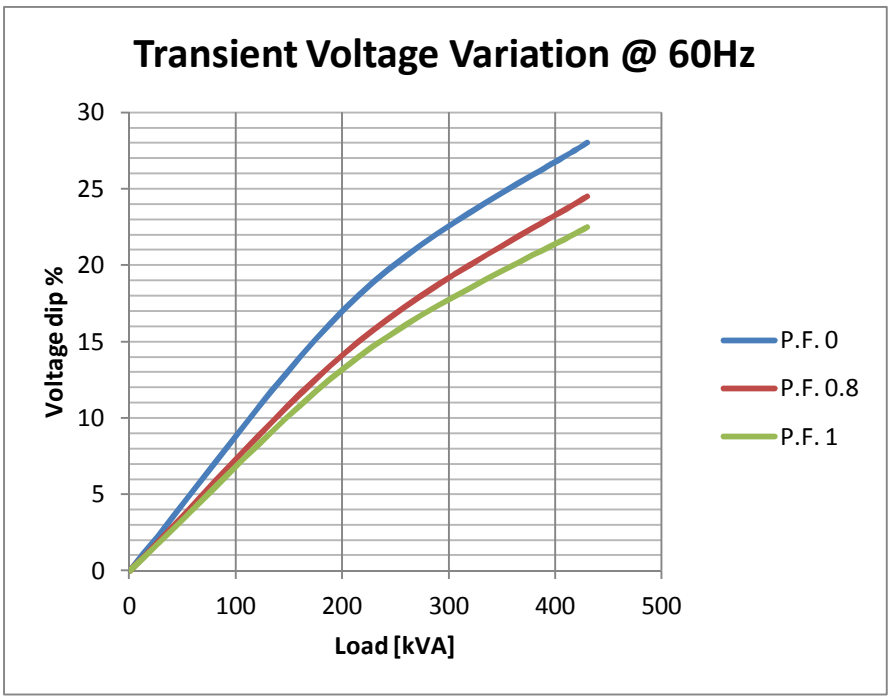


PRO28S A/4

TRANSIENT VOLTAGE VARIATION 50Hz

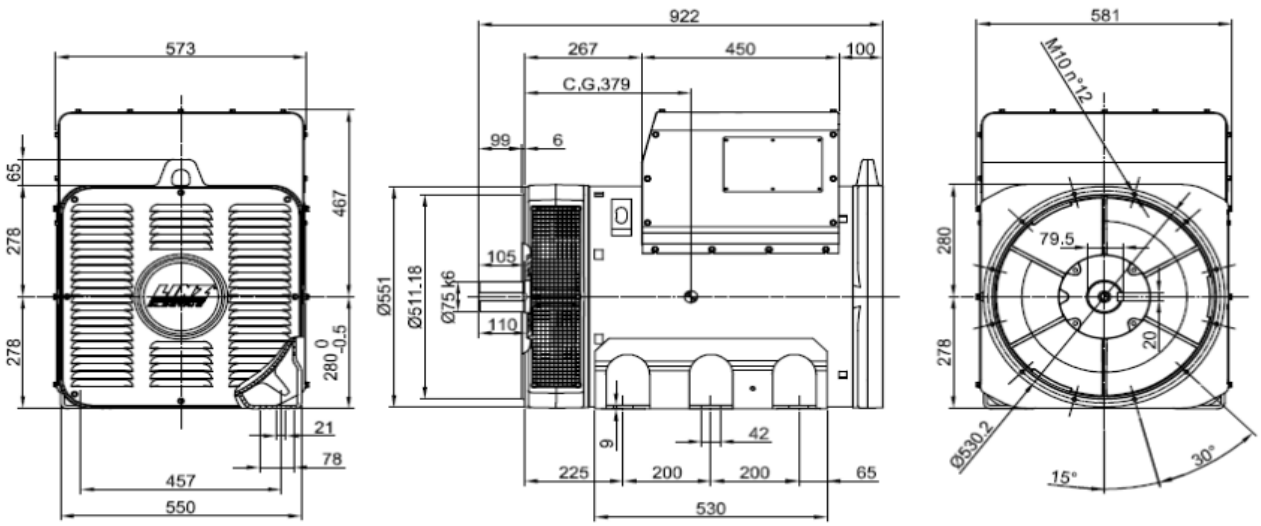


TRANSIENT VOLTAGE VARIATION 60Hz

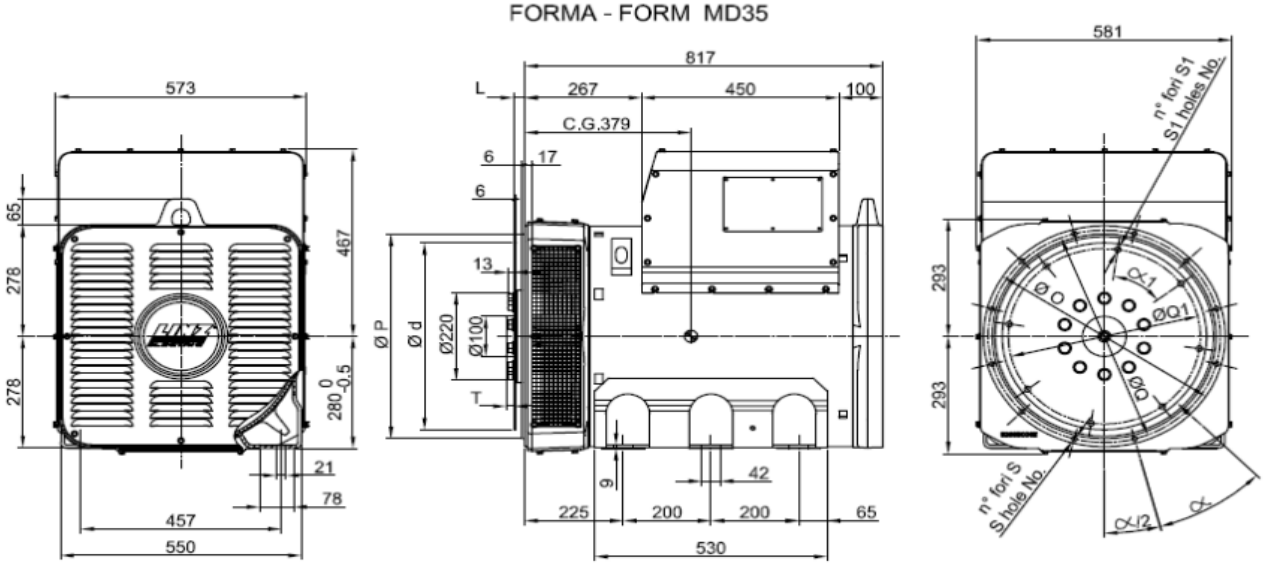


PRO28S A/4

FORMA - FORM B3/B14



FORMA - FORM MD35



SAE N.	FLANGIE - FLANGES - BRIDAS					
	Ø O	Ø P	Ø Q	n. fori holes No.	S	α
3	451	409.6	428.6	12	12	30°
2	490	447.68	466.7			
1	552	511.18	530.2			

SAE N.	GIUNTI A DISCO -COUPLING DISCS- JUNTAS A DISCOS						
	L	Ø d	Ø Q1	n. fori holes No.	S1	α1	T
11 1/2	39.6	352.42	333.37	8	10.5	45°	0
14	25.4	466.72	438.15	8	14	45°	17.3