DATA SHEET
Synchronous Alternator

Customer	:	Notes:	
Customer reference	:		
Product line	: AG10-250SI10AI	Product code	: 14418535
Area classification	: Safe		1010264379

General data

Frame (IEC)	: 250	Degree of protection	: IP23
Insulation Class	: 180°C (H)	Mounting style	: B15T
Total Harmonic Distortion (no load)	: ≤ 3%	Number of poles	: 4
Stator winding pitch	: 2/3	Type of Pole	: Salient
Altitude	: up to 1000 m.a.s.l	Nominal rotation - 50 Hz	: 1500 rpm
Number of Leads	: 12	Nominal rotation - 60 Hz	: 1800 rpm
Power factor	: 0.8 to 1.0	Overspeed	: 2250 rpm
Excitation system	: Brushless with Auxiliary Coil	Alternator mass	: 644 kg
Cooling	: IC01	Overload	: 1.1x In per 1h each 6h
		Momentary Overload	: 1.5x In per 30s

	Frequency and number of phases	50 Hz				60 Hz				
		3ph			1ph	3ph				1ph
Voltages (V)	Y connection	**380**	**400**	**415**	**-**	**380**	**416**	**440**	**480**	**-**
	YY connection	190	200	208	-	190	208	220	240	-
	Δ connection	220	230	239	-	220	240	254	277	-
	ΔΔ connection	110	115	120	-	110	120	127	138	-
	Zig-zag or single phase delta	-	-	-	190 - 200	-	-	-	-	220 - 240
Output power (kVA)	ΔT=80°C (Ta=40°C)	168	168	159	97.0	168	180	186	208	108.0
	ΔT=105°C (Ta=40°C)	192	192	182	110.9	190	206	217	238	125.0
	ΔT=125°C (Ta=40°C)	**210**	**210**	**199**	**121.2**	**210**	**225**	**233**	**260**	**135.0**
	ΔT=150°C (Ta=40°C)	230	230	218	132.8	230	246	250	290	144.0
	ΔT=163°C (Ta=27°C)	240	240	228	138.6	240	255	260	295	150.0
Electrical data (FP=0.8 / ΔT=125°C / Ta=40°C) Satured reactances values	Xd(%) Dir. axis synchronous reactance	479.6	390.2	338.3	639.43	571.4	487.0	456.8	414.55	609.11
	X'd(%) Dir. axis transient reactance	18.3	14.9	12.9	24.4	21.8	18.6	17.4	15.82	23.24
	X"d(%) Dir. axis subtrans. reactance	13.1	10.7	9.3	17.5	15.6	13.3	12.4	11.26	16.6
	Xq(%) Quad. axis sync. reactance	132.6	107.9	93.5	176.82	158.0	134.7	126.3	114.63	168.43
	X"q(%) Quad. axis subtrans. react.	10.5	8.5	7.4	14.0	12.5	23.2	10.0	9.01	13.28
	X2(%) Negative sequence reactance	17.1	13.9	12.1	22.82	20.4	18.2	16.3	14.75	21.71
	X0(%) Zero sequence reactance	2.2	1.8	1.5	2.92	2.6	2.2	2.1	1.88	2.77
	T'd(ms) Short Circ.Trans.time const.	66.1	53.8	45.2	88.18	78.8	64.2	63.0	57.17	84.0
	T"d(ms) Short Circ. Sub. time const.	1.7	1.4	1.2	2.32	2.1	1.7	1.7	1.5	2.21
	T'do(ms) Open Circ. time const Trans	1319	1073	901	1758.45	1571	1281	1256	1140.03	1675.07
	T"do(ms) Open Circ. time const Subt	2.4	1.9	1.6	3.18	2.8	2.3	2.3	2.06	3.03
	Ta(ms) Armature time const.	11	9	7	14.59	13	11	10	9.46	13.9
	uc(V) Full load excitation voltage	49.3	46.9	49.7	49.29	37.3	42.9	38.7	41.64	38.66
	ic(A) Full load excitation current	4.0	3.9	4.1	4.05	3.1	3.5	3.2	3.42	3.18
	ic(A) No load excitation current	0.7	0.8	0.8	0.88	0.5	0.7	0.7	0.76	0.88
	Icc(A) Sustained Short-Circ. Current	957	909	831	909.33	957	943	917	938.19	843.75
	Kcc Short-circuit ratio	0.43	0.35	0.3	0.58	0.52	0.45	0.41	0.37	0.55

	Power factor	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0
Efficiency (%)	25% of load	91.2	93	91.4	93.2	91.9	93.8	83.9	85.6	91.4	93.1	91.4	93.1	91.4	93.1	91.3	93.1	84.1	85.6
	50% of load	92.7	94.4	92.8	94.5	93.4	95.1	85.2	86.8	92.9	94.5	93.1	94.6	93.2	94.7	93.2	94.8	85.8	87.2
	75% of load	92.2	94.2	92.5	94.4	93.1	95	84.8	86.6	92.6	94.3	92.8	94.5	93.1	94.7	93.1	94.8	85.6	87.1
	100% of load	91.4	93.5	91.8	93.9	92.4	94.4	84	86	91.7	93.7	92.1	94	92.4	94.3	92.6	94.4	85	86.7
	125% of load	90.2	92.6	90.9	93.2	91.5	93.8	80.8	83.4	90.7	93	91.2	93.4	91.5	93.6	91.9	93.9	84.2	86.1

Other characteristics

Air flow	: 1.16 m³/s
Exciter stator winding resistance at 20ºC	: 12.17 ohm
Stator winding resistance at 20ºC	: 0.02664 ohm
Rotor winding resistance	: 1.5 ohm
Stator winding layers	: 2
Inertia WR²	: 2.37 kgm²
NDE Bearing	: 6314 2RS
DE bearing	
Flange	: SAE 1
Coupling disc	: SAE 14

Automatic voltage regulator

Accuracy (stability)	: +/- 0.5%
Rated current	: 5 A
Analog input	: Yes
Digital input	: No
Peak current	: 7 A/10 s
Droop / TC	: Yes
Dynamic recovery	: 8 to 500 ms
U/F	: Yes
Internal voltage adjustment	: +/- 15%
External voltage adjustment	: +/- 10%
Transient recovery time for ΔU=20%	: 500 ms

According to:

IEC 60034
NBR 5117
NEMA MG1
VDE530
ISO 8528
CSA

Rev.	Changes Summary	Performed	Checked	Date

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Checked by		Page	Revision
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