

DATA SHEET

Synchronous Alternator



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

General data Frame (IEC) : 250 Insulation Class : 180°C (H) Total Harmonic Distortion (no load) : ≤ 3% Stator winding pitch : 2/3 Altitude : up to 1000 m.a.s.l Number of Leads : 12 Power factor : 0.8 to 1.0 Excitation system : Brushless with Auxiliary Coil Cooling : IC01	Degree of protection : IP23 Mounting style : B15T Number of poles : 4 Type of Pole : Salient Nominal rotation - 50 Hz : 1500 rpm Nominal rotation - 60 Hz : 1800 rpm Overspeed : 2250 rpm Alternator mass : 644 kg Overload : 1.1x In per 1h each 6h Momentary Overload : 1.5x In per 30s
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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)	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	-	-	-
Efficiency (%)	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
	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
	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
	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
	100% of load	91.4	93.5	91.8	93.9	92.4	94.4	84	86	91.7	93.7	92.1	94
	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

Other characteristics Air flow : 1.16 m³/s Exciter stator winding resistance at 20°C : 12.17 ohm Stator winding resistance at 20°C : 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
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Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by				
Date	10/08/2022			

