DATA SHEET
Synchronous Alternator

Customer	:	Notes:	
Customer reference	:		
Product line	: AG10-250SI20AI	Product code	: 14418606
Area classification	: Safe		1010265624

General data

Frame (IEC)	: 250	Degree of protection	: IP23
Insulation Class	: 180°C (H)	Mounting style	: B35T
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	: 730 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)	200	200	190	115.5	205	223	234	250	135.1
	ΔT=105°C (Ta=40°C)	229	229	217	132.2	235	255	268	288	155
	ΔT=125°C (Ta=40°C)	**250**	**250**	**237**	**144.3**	**260**	**278**	**292**	**312**	**169**
	ΔT=150°C (Ta=40°C)	260	260	247	150	275	298	315	345	182
	ΔT=163°C (Ta=27°C)	277	277	263	160	290	312	330	360	188
Electrical data (FP=0.8 / ΔT=125°C / Ta=40°C) Satured reactances values	Xd(%) Dir. axis synchronous reactance	490.0	415.6	357.4	653.3	593.3	516.4	482.0	428.29	642.7
	X'd(%) Dir. axis transient reactance	18.7	15.9	13.6	24.93	22.6	19.7	18.4	16.34	24.5
	X"d(%) Dir. axis subtrans. reactance	13.5	11.4	9.8	18.0	16.4	14.2	13.2	11.68	17.6
	Xq(%) Quad. axis sync. reactance	135.5	114.9	98.8	180.65	164.1	142.8	133.3	118.43	177.7
	X"q(%) Quad. axis subtrans. react.	10.8	9.2	7.9	14.4	13.1	24.6	10.6	9.35	14.1
	X2(%) Negative sequence reactance	17.5	14.9	12.8	23.38	21.2	19.4	17.2	15.27	23.0
	X0(%) Zero sequence reactance	2.2	1.9	1.6	3.0	2.7	2.4	2.2	1.95	2.9
	T'd(ms) Short Circ.Trans.time const.	67.6	57.3	48.1	90.09	81.8	66.9	66.5	59.06	88.6
	T"d(ms) Short Circ. Sub. time const.	1.8	1.5	1.3	2.37	2.1	1.8	1.8	1.55	2.3
	T'do(ms) Open Circ. time const Trans	1347	1143	960	1796.6	1632	1334	1326	1177.8	1767
	T"do(ms) Open Circ. time const Subt	2.4	2.1	1.7	3.25	3.0	2.4	2.4	2.13	3.2
	Ta(ms) Armature time const.	11	9	8	14.91	14	11	11	9.77	15
	uc(V) Full load excitation voltage	61.3	63.0	68.0	68.1	53.3	57.8	55.8	58.15	55.8
	ic(A) Full load excitation current	3.7	3.8	4.1	4.09	3.2	3.5	3.4	3.5	3.4
	ic(A) No load excitation current	0.7	0.8	0.9	0.95	0.6	0.7	0.7	0.87	0.9
	Icc(A) Sustained Short-Circ. Current	1140	1083	989	1082.53	1185	1129	1149	1125.83	1054
	Kcc Short-circuit ratio	0.44	0.38	0.28	0.59	0.54	0.48	0.44	0.39	0.58

	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	91.7	93.5	91.9	93.7	92.3	94.1	84.4	86	92.2	93.7	92.2	93.8	92.2	93.8	92	93.7	84.8	86.3
	50% of load	93	94.7	93.1	94.8	93.5	95.2	85.5	87.1	93.4	94.9	93.5	95	93.7	95.1	93.5	95.1	86.2	87.5
	75% of load	92.4	94.4	92.7	94.6	93.1	95	85	86.8	92.9	94.6	93.1	94.8	93.3	94.9	93.3	95	85.8	87.3
	100% of load	91.6	93.7	92	94.1	92.4	94.4	84.2	86.2	92	93.9	92.3	94.2	92.6	94.4	92.8	94.6	85.2	86.9
	125% of load	90.6	92.9	91.1	93.4	91.5	93.8	81.2	83.7	90.9	93.2	91.3	93.5	91.5	93.6	92	94	84.2	86.2

Other characteristics

Air flow	: 1.38 m³/s
Exciter stator winding resistance at 20ºC	: 12.17 ohm
Stator winding resistance at 20ºC	: 0.01858 ohm
Rotor winding resistance	: 1.13 ohm
Stator winding layers	: 2
Inertia WR²	: 2.36 kgm²
NDE Bearing	: 6314 2RS
DE bearing	: 6316 2RS
Flange	: SAE 2
Coupling disc	: WITHOUT

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
Date	10/08/2022	1 /	

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