DATA SHEET
Synchronous Alternator

Customer	:	Notes:	
Customer reference	:		
Product line	: AG10-250MI10AI	Product code	: 14418695
Area classification	: Safe		1010266019

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	: 883 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)	260	260	247	150	260	283	302	324	174
	ΔT=105°C (Ta=40°C)	298	298	283	172	298	324	346	371	200
	ΔT=125°C (Ta=40°C)	**325**	**325**	**309**	**188**	**325**	**354**	**377**	**405**	**218**
	ΔT=150°C (Ta=40°C)	350	340	323	202	364	394	412	460	238
	ΔT=163°C (Ta=27°C)	360	350	332	208	380	416	450	470	260
Electrical data (FP=0.8 / ΔT=125°C / Ta=40°C) Satured reactances values	Xd(%) Dir. axis synchronous reactance	447.7	354.8	305.2	596.9	530.9	460.4	435.1	382.29	580.1
	X'd(%) Dir. axis transient reactance	17.1	13.5	11.6	22.8	20.3	17.6	16.6	14.59	22.1
	X"d(%) Dir. axis subtrans. reactance	12.6	10.0	8.6	16.8	15.0	12.9	12.2	10.67	16.3
	Xq(%) Quad. axis sync. reactance	123.8	98.1	84.4	165.1	146.8	127.3	120.3	105.71	160.4
	X"q(%) Quad. axis subtrans. react.	10.1	8.0	6.9	13.5	12.0	22.0	9.8	8.53	13.0
	X2(%) Negative sequence reactance	16.2	12.8	11.0	21.6	19.2	17.4	15.7	13.75	20.9
	X0(%) Zero sequence reactance	2.1	1.7	1.4	2.8	2.5	2.1	2.0	1.78	2.7
	T'd(ms) Short Circ.Trans.time const.	61.7	48.9	41.1	82.3	73.2	60.7	60.0	52.72	80.0
	T"d(ms) Short Circ. Sub. time const.	1.6	1.3	1.1	2.2	1.9	1.6	1.6	1.39	2.1
	T'do(ms) Open Circ. time const Trans	1231	976	820	1642	1460	1210	1197	1051.31	1595
	T"do(ms) Open Circ. time const Subt	2.2	1.8	1.5	3.0	2.6	2.2	2.2	1.9	2.9
	Ta(ms) Armature time const.	10	8	7	14	12	10	10	8.72	13
	uc(V) Full load excitation voltage	63.8	62.7	67.7	63.8	50.9	58.1	54.9	57.8	54.9
	ic(A) Full load excitation current	3.8	3.8	4.1	3.8	3.1	3.5	3.3	3.48	3.3
	ic(A) No load excitation current	0.8	0.9	1.0	1.0	0.6	0.8	0.8	0.88	1.0
	Icc(A) Sustained Short-Circ. Current	1481	1407	1290	1407	1481	1463	1484	1461.42	1360
	Kcc Short-circuit ratio	0.4	0.32	0.33	0.54	0.48	0.42	0.39	0.35	0.52

	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	92.6	94.2	92.7	94.3	93	94.6	85.2	86.6	93.1	94.5	93	94.5	93.1	94.5	92.8	94.4	85.7	87
	50% of load	93.7	95.2	93.8	95.4	94.1	95.6	86.2	87.6	94.2	95.5	94.2	95.6	94.4	95.6	94.2	95.6	86.8	88
	75% of load	93.2	95	93.5	95.2	93.8	95.5	85.8	87.4	93.8	95.2	93.9	95.4	94.1	95.5	94.1	95.6	86.6	87.9
	100% of load	92.6	94.5	92.8	94.7	93.1	95	85.2	86.9	93	94.7	93.2	94.9	93.4	95.1	93.6	95.2	86	87.5
	125% of load	91.7	93.8	92.1	94.2	92.4	94.4	83.4	85.5	92.1	94	92.4	94.3	92.6	94.5	93	94.8	85.2	87

Other characteristics

Air flow	: 1.7 m³/s
Exciter stator winding resistance at 20ºC	: 12.17 ohm
Stator winding resistance at 20ºC	: 0.01207 ohm
Rotor winding resistance	: 1.92 ohm
Stator winding layers	: 2
Inertia WR²	: 3.01 kgm²
NDE Bearing	: 6314 2RS
DE bearing	: 6316 2RS
Flange	: SAE 1
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

Performed by				
Checked by			Page	Revision
Date	10/08/2022		1 /	

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