DATA SHEET
Synchronous Alternator

Customer	:	Notes:	
Customer reference	:		
Product line	: AG10-315MI15AI	Product code	: 14419084
Area classification	: Safe		1010272753

General data

Frame (IEC)	: 315	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	: 1318 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)	480	480	456	277	465	500	530	570	306
	ΔT=105°C (Ta=40°C)	550	550	522	318	535	573	605	650	349
	ΔT=125°C (Ta=40°C)	**600**	**600**	**570**	**346**	**580**	**625**	**660**	**710**	**381**
	ΔT=150°C (Ta=40°C)	650	650	617	375	655	686	725	780	419
	ΔT=163°C (Ta=27°C)	685	685	651	396	675	728	770	825	445
Electrical data (FP=0.8 / ΔT=125°C / Ta=40°C) Satured reactances values	Xd(%) Dir. axis synchronous reactance	254.8	210.7	200.1	339.8	416.1	301.8	283.7	226.4	378.3
	X'd(%) Dir. axis transient reactance	18.3	15.9	15.1	24.4	24.9	20.5	19.2	16.86	25.7
	X"d(%) Dir. axis subtrans. reactance	14.7	11.5	10.9	19.6	18.2	15.0	14.1	12.16	18.8
	Xq(%) Quad. axis sync. reactance	71.9	55.6	52.8	95.8	117.5	106.2	79.0	59.06	105.3
	X"q(%) Quad. axis subtrans. react.	10.0	8.8	8.3	13.3	13.8	25.6	10.7	9.3	14.3
	X2(%) Negative sequence reactance	12.3	10.1	9.6	16.4	16.0	20.3	12.4	10.73	16.5
	X0(%) Zero sequence reactance	2.4	1.9	1.8	3.3	3.0	2.5	2.4	2.03	3.1
	T'd(ms) Short Circ.Trans.time const.	137.0	134.1	134.1	182.7	139.3	89.5	138.3	134.04	184.5
	T"d(ms) Short Circ. Sub. time const.	0.9	0.8	0.8	1.2	1.3	1.8	0.9	0.75	1.3
	T'do(ms) Open Circ. time const Trans	1494	1385	1385	1992	1668	1180	1545	1385.6	2061
	T"do(ms) Open Circ. time const Subt	1.7	1.7	1.7	2.2	1.8	2.3	1.7	1.68	2.3
	Ta(ms) Armature time const.	16	14	14	21	22	17	17	14.8	23
	uc(V) Full load excitation voltage	65.0	55.0	55.0	65.0	60.0	63.1	62.0	70.0	62.0
	ic(A) Full load excitation current	3.5	3.0	3.0	3.5	3.0	3.2	3.1	3.5	3.1
	ic(A) No load excitation current	0.8	0.9	0.9	1.1	0.7	0.8	0.8	1.0	1.1
	Icc(A) Sustained Short-Circ. Current	2735	2598	2379	2598	2644	2588	2598	2561.99	2382
	Kcc Short-circuit ratio	0.34	0.4	0.5	0.45	0.24	0.27	0.3	0.4	0.41

	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	90.8	92.8	90.2	92.3	90.2	92.3	83.5	85.4	91.8	93.6	91.6	93.4	91.4	93.3	91	92.9	84.1	85.8
	50% of load	93.5	95.1	93.2	94.9	93.2	94.9	86	87.5	94.1	95.4	94.1	95.4	94.3	95.5	93.8	95.4	86.7	87.8
	75% of load	93.9	95.5	93.8	95.5	93.8	95.5	86.4	87.8	94.4	95.8	94.6	95.9	94.9	96	94.6	96	87.3	88.3
	100% of load	93.6	95.3	93.7	95.4	93.7	95.4	86.1	87.7	94.1	95.6	94.3	95.7	94.6	95.9	94.5	96	87	88.2
	125% of load	93.2	95	93.3	95.2	93.3	95.2	85.7	87.4	93.7	95.2	93.9	95.5	94.1	95.7	94.3	95.9	86.6	88

Other characteristics

Air flow	: 2.75 m³/s
Exciter stator winding resistance at 20ºC	: 15.26 ohm
Stator winding resistance at 20ºC	: 0.00466 ohm
Rotor winding resistance	: 1.85 ohm
Stator winding layers	: 2
Inertia WR²	: 6.84 kgm²
NDE Bearing	: 6316 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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