DATA SHEET
Synchronous Alternator

Customer	:	Notes:	
Customer reference	:		
Product line	: AG10-280MI30AI	Product code	: 14410396
Area classification	: Safe		1010431808

General data

Frame (IEC)	: 280	Degree of protection	: IP23
Insulation Class	: 180°C (H)	Mounting style	: B3T
THD (L-L, no load)	: ≤ 3%	Number of poles	: 4
Stator winding pitch	: 2/3	Type of Pole	: Salient
Altitude	: up to 1000 m.a.s.l	Rated speed - 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	Approx. weight	: 1152 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 (series star) connection	**380**	**400**	**415**	**-**	**380**	**416**	**440**	**480**	**-**
	YY (parallel star) connection	190	200	208	-	190	208	220	240	-
	Δ (series delta) connection	220	230	239	-	220	240	254	277	-
	ΔΔ (parallel delta) connection	110	115	120	-	110	120	127	138	-
	Zig-zag or single phase delta	-	-	-	190 - 200	-	-	-	-	220 - 240
Output power (kVA)	Continuous 80/40	340	360	342	196	368	396	412	456	238
	Continuous 105/40	390	412	392	225	425	453	485	510	280
	Continuous 125/40	**425**	**450**	**427**	**245**	**460**	**494**	**515**	**570**	**297**
	Standby 150/40	445	480	456	257	500	535	560	600	323
	Standby 163/27	460	500	475	266	525	565	588	650	340
Electrical data (FP=0.8 / Continuous 125/40 (H)) Satured reactances values	Xd(%) Dir. axis synchronous reactance	389.0	416.8	396.0	518.7	594.6	530.6	497.9	462.43	663.9
	X'd(%) Dir. axis transient reactance	18.1	17.1	16.2	24.1	24.1	21.0	19.7	18.05	26.2
	X"d(%) Dir. axis subtrans. reactance	13.2	12.5	11.8	17.6	17.6	15.2	14.3	13.15	19.1
	Xq(%) Quad. axis sync. reactance	110.9	142.5	135.4	147.8	161.1	0.0	177.1	106.28	236.1
	X"q(%) Quad. axis subtrans. react.	10.6	9.6	9.1	14.1	14.1	26.2	16.0	10.22	21.4
	X2(%) Negative sequence reactance	11.9	11.0	10.5	15.8	15.8	20.7	15.2	11.69	20.2
	X0(%) Zero sequence reactance	2.2	2.1	2.0	2.9	2.9	2.5	2.4	2.19	3.2
	T'd(ms) Short Circ.Trans.time const.	110.0	110.0	110.0	146.7	114.4	90.2	110.3	109.98	147.1
	T"d(ms) Short Circ. Sub. time const.	11.0	1.1	1.1	14.7	1.3	1.8	1.2	1.1	1.6
	T'do(ms) Open Circ. time const Trans	1690	1656	1656	2253	1748	1190	1700	1656.3	2267
	T"do(ms) Open Circ. time const Subt	1.7	1.6	1.6	2.3	1.8	2.3	1.7	1.6	2.2
	Ta(ms) Armature time const.	16	15	15	21	21	17	17	15.85	23
	uc(V) Full load excitation voltage	65.0	64.0	64.0	65.0	52.0	57.7	53.0	56.0	53.0
	ic(A) Full load excitation current	2.8	2.9	2.9	2.8	2.4	2.6	2.4	2.5	2.4
	ic(A) No load excitation current	0.7	0.7	0.7	0.9	0.6	0.6	0.5	0.55	0.7
	Icc(A) Sustained Short-Circ. Current	1937	1949	1782	1840	2097	2042	2027	2056.81	1858
	Kcc Short-circuit ratio	0.25	0.27	0.25	0.33	0.19	0.21	0.23	0.31	0.31

	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	92.5	94.2	92.7	94.4	85.2	86.7	93.6	95	93.5	95	93.4	94.9	93.3	94.8	86	87.3
	50% of load	94.5	95.8	94.5	95.8	94.7	96	86.9	88.2	95	96.1	94.9	96.2	94.8	96.2	95.1	96.3	87.2	88.6
	75% of load	94.5	95.8	94.5	95.9	94.7	96.1	86.9	88.2	94.7	95.9	94.8	96.1	94.9	96.2	95.2	96.4	87.3	88.5
	100% of load	94	95.4	94.1	95.6	94.3	95.8	86.4	87.8	94	95.4	94.3	95.6	94.6	95.9	94.8	96.1	87	88.2
	125% of load	93.3	94.9	93.4	95.1	93.6	95.3	85.8	87.3	93.2	94.7	93.6	95.1	94	95.4	94.2	95.6	86.4	87.8

Other characteristics

Air flow	: 2.37 m³/s
Exciter stator winding resistance at 20ºC	: 20.86 ohm
Stator winding resistance at 20ºC	: 0.00815 ohm
Rotor winding resistance	: 2.02 ohm
Stator winding layers	: 2
Inertia WR²	: 4.73 kgm²
NDE Bearing	: 6315 2RS
DE bearing	: 6318 2RS
Flange	: NOT APPLICABLE
Coupling disc	: NOT APPLICABLE

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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