DATA SHEET
Synchronous Alternator

Customer	:	Notes:	
Customer reference	:		
Product line	: AG10-250MI20AI	Product code	: 14422531
Area classification	: Safe		1010467395

General data

Frame (IEC)	: 250	Degree of protection	: IP23
Insulation Class	: 180°C (H)	Mounting style	: B15T
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	: 917 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**		**-**	**380**	**440**	**480**		**-**
	YY (parallel star) connection	190	200		-	190	220	240		-
	Δ (series delta) connection	220	230		-	220	254	277		-
	ΔΔ (parallel delta) connection	110	115		-	110	127	138		-
	Zig-zag or single phase delta	-	-	-	190 - 200	-	-	-	-	220 - 240
Output power (kVA)	Continuous 80/40	288	288		166	302	352	378		203
	Continuous 105/40	330	330		191	350	403	440		233
	Continuous 125/40	**360**	**360**		**208**	**378**	**440**	**472**		**254**
	Standby 150/40	365	365		211	435	477	517		275
	Standby 163/27	385	370		222	460	505	550		292
Electrical data (FP=0.8 / Continuous 125/40 (H)) Satured reactances values	Xd(%) Dir. axis synchronous reactance	437.4	346.2		477.7	518.9	429.1	369.3		572.1
	X'd(%) Dir. axis transient reactance	16.7	13.2		18.2	19.8	16.4	14.1		21.8
	X"d(%) Dir. axis subtrans. reactance	12.5	9.9		13.7	14.8	12.2	10.5		16.3
	Xq(%) Quad. axis sync. reactance	120.9	95.8		132.1	143.5	118.7	102.1		158.2
	X"q(%) Quad. axis subtrans. react.	10.0	7.9		10.9	11.9	9.8	8.4		13.0
	X2(%) Negative sequence reactance	15.9	12.6		17.4	18.9	15.6	13.4		20.7
	X0(%) Zero sequence reactance	2.1	1.6		2.3	2.5	2.0	1.7		2.7
	T'd(ms) Short Circ.Trans.time const.	60.3	47.8		65.9	71.6	59.2	50.9		78.9
	T"d(ms) Short Circ. Sub. time const.	1.6	1.3		1.7	1.9	1.6	1.3		2.1
	T'do(ms) Open Circ. time const Trans	1203	952		1314	1427	1180	1016		1573
	T"do(ms) Open Circ. time const Subt	2.2	1.7		2.4	2.6	2.1	1.8		2.9
	Ta(ms) Armature time const.	10	8		11	12	10	8		13
	uc(V) Full load excitation voltage	57.6	56.7		57.6	47.3	52.0	54.9		52.0
	ic(A) Full load excitation current	3.5	3.4		3.5	2.8	3.1	3.3		3.1
	ic(A) No load excitation current	0.8	0.9		25.2	0.6	0.8	0.9		1.0
	Icc(A) Sustained Short-Circ. Current	1641	1559		1559	1723	1732	1703		1588
	Kcc Short-circuit ratio	0.39	0.31		0.43	0.47	0.39	0.33		0.52

Efficiency (%)	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
	25% of load	93	94.6	93.2	94.7			85.6	87	93.6	94.9	93.7	95	93.3	94.7			86.2	87.4
	50% of load	94.1	95.5	94.2	95.6			86.6	87.9	94.6	95.8	94.7	95.9	94.6	95.9			87.2	88.3
	75% of load	93.6	95.3	93.9	95.5			86.2	87.6	94.2	95.6	94.4	95.8	94.4	95.8			86.9	88.1
	100% of load	93	94.8	93.3	95			85.6	87.2	93.4	95	93.8	95.4	94	95.5			86.3	87.7
	125% of load	92.2	94.2	92.6	94.5			83.9	85.9	92.5	94.4	93	94.8	93.4	95.1			85.6	87.2

Other characteristics

Air flow	: 1.84 m³/s
Exciter stator winding resistance at 20ºC	: 12.17 ohm
Stator winding resistance at 20ºC	: 0.00982 ohm
Rotor winding resistance	: 1.74 ohm
Stator winding layers	: 2
Inertia WR²	: 3.53 kgm²
NDE Bearing	: 6314 2RS/ZZ
DE bearing	
Flange	: SAE 2
Coupling disc	: SAE 11,5

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	15/07/2023	1 /	

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