

DATA SHEET

Synchronous Alternator



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

General data Frame (IEC) : 250 Insulation Class : 180°C (H) Total Harmonic Distortion (no load) : ≤ 3% Stator winding pitch : 2/3 Altitude : up to 1000 m.a.s.l Number of Leads : 12 Power factor : 0.8 to 1.0 Excitation system : Brushless with Auxiliary Coil Cooling : IC01	Degree of protection : IP23 Mounting style : B35T Number of poles : 4 Type of Pole : Salient Nominal rotation - 50 Hz : 1500 rpm Nominal rotation - 60 Hz : 1800 rpm Overspeed : 2250 rpm Alternator mass : 883 kg Overload : 1.1x In per 1h each 6h Momentary Overload : 1.5x In per 30s
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Frequency and number of phases				50 Hz						60 Hz									
				3ph						1ph		3ph							
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)	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		
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	0.8	1.0
	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
	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
	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
	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
	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

Other characteristics Air flow : 1.7 m³/s Exciter stator winding resistance at 20°C : 12.17 ohm Stator winding resistance at 20°C : 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
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Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by				
Date	10/08/2022			
		Page 1 /	Revision	