

DATA SHEET

Synchronous Alternator



Customer	:	Notes:
Customer reference	:	
Product line	: AG10-315MI40AI	Product code : 14419232
Area classification	: Safe	1010278778

General data Frame (IEC) : 315 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 : 1658 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								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)	640		664		631		370		660		720		768		832		443	
	ΔT=105°C (Ta=40°C)	733		761		723		423		756		825		880		953		508	
	ΔT=125°C (Ta=40°C)	800		830		788		462		825		900		960		1040		554	
	ΔT=150°C (Ta=40°C)	865		890		845		499		863		948		1020		1100		589	
	ΔT=163°C (Ta=27°C)	890		920		874		514		900		990		1060		1160		612	
Electrical data (FP=0.8 / ΔT=125°C / Ta=40°C)	Xd(%) Dir. axis synchronous reactance	284.4		228.0		216.6		379.3		422.7		432.9		409.6		267.83		385.5	
	X'd(%) Dir. axis transient reactance	17.4		15.7		14.9		23.2		22.0		18.7		17.7		15.72		23.6	
	X''d(%) Dir. axis subtrans. reactance	12.9		11.6		11.0		17.2		16.4		13.8		13.1		11.58		17.5	
	Xq(%) Quad. axis sync. reactance	72.7		59.8		56.9		96.9		110.6		97.0		77.4		81.51		122.2	
	X''q(%) Quad. axis subtrans. react.	9.6		8.8		8.3		12.8		12.3		23.4		9.8		12.08		22.1	
	X2(%) Negative sequence reactance	11.2		10.2		9.7		15.0		14.3		18.6		11.4		11.83		19.8	
	X0(%) Zero sequence reactance	2.1		1.9		1.8		2.9		2.7		2.3		2.2		1.93		2.9	
	T'd(ms) Short Circ.Trans.time const.	142.3		139.2		139.2		189.7		146.9		83.3		77.5		139.27		111.7	
	T''d(ms) Short Circ. Sub. time const.	0.9		0.8		0.8		1.2		1.2		1.7		1.0		0.8		2.3	
	T'do(ms) Open Circ. time const Trans	1652		1535		1535		2202		1834		1099		1705		1538.45		1473	
	T''do(ms) Open Circ. time const Subt	1.6		1.6		1.6		2.1		1.7		2.1		1.6		1.6		2.9	
	Ta(ms) Armature time const.	15		14		14		20		19		15		16		13.8		21	
	uc(V) Full load excitation voltage	70.0		60.0		60.0		70.0		60.0		63.6		60.0		62.0		53.5	
	ic(A) Full load excitation current	3.5		3.0		3.0		3.5		3.0		3.2		3.0		3.1		3.5	
	ic(A) No load excitation current	0.8		0.9		0.9		1.1		0.6		0.6		0.6		0.9		1.3	
Icc(A) Sustained Short-Circ. Current	3646		3594		3289		3464		3760		3729		3779		3752.78		3464		
Kcc Short-circuit ratio	0.36		0.41		0.46		0.48		0.26		0.29		0.32		0.4		0.46		
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	0.8	1.0
	25% of load	91.7	93.5	91.4	93.3	91.4	93.4	84.4	86	92.9	94.5	92.7	94.3	92.6	94.2	92.2	93.9	85.2	86.7
	50% of load	94.2	95.7	94.1	95.6	94.2	95.7	86.7	88	94.9	96.2	95	96.1	95.2	96.2	94.7	96	87.6	88.5
	75% of load	94.6	96	94.5	96	94.6	96.1	87	88.3	95.1	96.3	95.2	96.4	95.3	96.4	95.2	96.5	87.7	88.7
	100% of load	94.4	95.9	94.4	96	94.5	96.1	86.8	88.2	94.7	96	94.9	96.2	95	96.3	95	96.4	87.4	88.6
	125% of load	93.9	95.6	94	95.7	94.1	95.8	86.4	87.9	94.2	95.6	94.4	95.8	94.6	96	94.7	96.2	87	88.3

Other characteristics Air flow : 2.81 m³/s Exciter stator winding resistance at 20°C : 15.26 ohm Stator winding resistance at 20°C : 0.00319 ohm Rotor winding resistance : 2.31 ohm Stator winding layers : 2 Inertia WR² : 7.88 kgm² NDE Bearing : 6316 2RS DE bearing : 6320 2RS Flange : SAE 0 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			
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