

DATA SHEET

Synchronous Alternator



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

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 : B15T 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 : 1318 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)	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)	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		
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	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 20°C : 15.26 ohm Stator winding resistance at 20°C : 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
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Rev.	Changes Summary	Performed	Checked	Date
Performed by		 Industrial Machinery Co		
Checked by				
Date	10/08/2022			
		Page	Revision	
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