

DATA SHEET

Synchronous Alternator



Customer	:	Notes:
Customer reference	:	
Product line	: GTA201AIHE	Product code : 14419681
Area classification	: Safe	1010310614

General data Frame (IEC) : 200 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 : 301 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)	51.0		51.0		48.0		32.3		62.1		64.4		66.0		66.1		38.7			
	ΔT=105°C (Ta=40°C)	59.0		59.0		56.0		36.9		71.2		73.8		75.6		75.7		44.4			
	ΔT=125°C (Ta=40°C)	70.0		70.0		67.0		40.4		80.0		84.7		88.0		88.0		48.4			
	ΔT=150°C (Ta=40°C)	72.0		72.0		68.0		44.3		83.0		90.0		95.0		95.0		53.0			
	ΔT=163°C (Ta=27°C)	74.0		74.0		70.0		46.1		86.4		92.6		97.0		97.0		55.3			
Electrical data (FP=0.8 / ΔT=125°C / Ta=40°C)	Saturated reactances values	Xd(%) Dir. axis synchronous reactance		305.49		276.11		262.3		407.32		388.77		345.09		320.49		269.97		427.32	
	X'd(%) Dir. axis transient reactance	25.19		22.75		21.61		33.59		32.16		28.48		26.45		22.25		35.27			
	X''d(%) Dir. axis subtrans. reactance	21.65		19.55		18.57		28.87		27.63		24.46		22.72		19.12		30.29			
	Xq(%) Quad. axis sync. reactance	116.2		105.02		99.77		154.93		147.85		133.06		121.9		102.69		162.53			
	X''q(%) Quad. axis subtrans. react.	19.35		17.47		16.6		25.8		24.73		35.6		20.31		17.08		27.08			
	X2(%) Negative sequence reactance	20.44		18.45		17.53		27.25		26.1		30.03		21.45		18.04		28.6			
	X0(%) Zero sequence reactance	3.61		3.26		3.1		4.81		4.61		4.08		3.79		3.19		5.05			
	T'd(ms) Short Circ. Trans. time const.	61.9		62.0		62.0		82.53		61.8		70.81		61.9		62.0		82.53			
	T''d(ms) Short Circ. Sub. time const.	1.0		1.0		1.0		1.33		1.0		1.24		1.0		1.0		1.33			
	T'do(ms) Open Circ. time const Trans	761.5		762.6		762.6		1015.33		757.2		882.95		760.7		762.6		1014.27			
	T''do(ms) Open Circ. time const Subt	1.2		1.2		1.2		1.6		1.2		1.46		1.2		1.2		1.6			
	Ta(ms) Armature time const.	8.97		8.98		8.98		11.97		8.95		10.29		8.97		8.98		11.96			
	uc(V) Full load excitation voltage	39.28		40.1		40.1		39.28		34.53		37.52		36.39		37.45		36.39			
	ic(A) Full load excitation current	4.08		4.17		4.17		4.08		3.59		3.9		3.78		3.89		3.78			
	ic(A) No load excitation current	0.7		0.8		0.8		0.93		0.4		0.64		0.6		0.8		0.8			
	Icc(A) Sustained Short-Circ. Current	319.06		303.11		279.63		303.11		364.64		323.32		346.41		317.54		302.5			
	Kcc Short-circuit ratio	0.36		0.42		0.38		0.48		0.26		0.3		0.33		0.43		0.44			
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	73.7	78.3	73.4	78.1	73.6	78.4	67.8	72.1	75.3	79.7	75.8	80.1	76.5	80.7	76.2	80.4	70.4	74.3		
	50% of load	81.6	85.4	81.3	85.2	81.6	85.5	75.1	78.6	82.8	86.2	83.5	86.9	84.2	87.8	84.3	87.5	77.4	80.7		
	75% of load	83.5	87.1	83.2	87	83.5	87.3	76.8	80.2	84.4	87.6	85.2	88.4	86	89.1	86.4	89.5	79.1	82		
	100% of load	83.5	87.3	83.4	87.4	83.7	87.6	76.8	80.3	84.3	87.6	85.3	88.6	86.2	89.4	86.9	90	79.3	82.2		
	125% of load	82.8	86.8	82.7	87	83	87.2	76.2	79.9	83.6	87	84.8	88.1	85.8	89	86.6	90	78.9	81.9		

Other characteristics Air flow : 0.9 m³/s Exciter stator winding resistance at 20°C : 10.55 ohm Stator winding resistance at 20°C : 0.09886 ohm Rotor winding resistance : 0.98 ohm Stator winding layers : 2 Inertia WR² : 0.43 kgm² NDE Bearing : 6210-2RS DE bearing : 6313-2RS Flange : SAE 3 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		 Industrial Machinery Co		
Checked by				
Date	10/08/2022			
		Page 1 /	Revision	