

DATA SHEET

Synchronous Alternator



Customer	:	Notes:
Customer reference	:	
Product line	: GTA202AIVS	Product code : 14419692
Area classification	: Safe	1010312570

General data		Degree of protection	: IP23
Frame (IEC)	: 200	Mounting style	: B15T
Insulation Class	: 180°C (H)	Number of poles	: 4
Total Harmonic Distortion (no load)	: ≤ 3%	Type of Pole	: Salient
Stator winding pitch	: 2/3	Nominal rotation - 50 Hz	: 1500 rpm
Altitude	: up to 1000 m.a.s.l	Nominal rotation - 60 Hz	: 1800 rpm
Number of Leads	: 12	Overspeed	: 2250 rpm
Power factor	: 0.8 to 1.0	Alternator mass	: 311 kg
Excitation system	: Brushless with Auxiliary Coil	Overload	: 1.1x In per 1h each 6h
Cooling	: IC01	Momentary Overload	: 1.5x In per 30s

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)	66.0	66.0	63.0	39.3	72.0	77.8	82.0	88.0	48.0									
	ΔT=105°C (Ta=40°C)	76.0	76.0	72.0	45.0	82.5	89.4	94.4	100.8	55.0									
	ΔT=125°C (Ta=40°C)	83.0	83.0	79.0	47.9	90.0	97.6	103.0	110.0	59.0									
	ΔT=150°C (Ta=40°C)	88.0	88.0	84.0	52.0	97.0	105.7	112.0	116.0	65.0									
	ΔT=163°C (Ta=27°C)	91.0	91.0	86.0	54.0	100.0	108.7	115.0	120.0	66.0									
Electrical data (FP=0.8 / ΔT=125°C / Ta=40°C)	Xd(%) Dir. axis synchronous reactance	340.16	292.25	277.63	453.54	450.89	396.64	374.17	322.79	498.9									
	X'd(%) Dir. axis transient reactance	23.5	20.19	19.18	31.33	31.15	27.4	25.85	22.3	34.47									
	X''d(%) Dir. axis subtrans. reactance	20.27	17.4	16.53	27.03	26.91	23.66	22.32	19.21	29.76									
	Xq(%) Quad. axis sync. reactance	109.8	94.33	89.61	146.39	145.54	128.03	120.78	104.19	161.03									
	X''q(%) Quad. axis subtrans. react.	21.48	18.46	17.53	28.64	28.48	34.25	23.63	20.39	31.51									
	X2(%) Negative sequence reactance	20.88	17.93	17.03	27.84	27.69	28.96	22.98	19.8	30.63									
	X0(%) Zero sequence reactance	3.38	2.9	2.76	4.5	4.49	3.94	3.72	3.2	4.96									
	T'd(ms) Short Circ.Trans.time const.	64.15	55.11	55.11	85.53	85.03	67.92	70.56	60.87	94.09									
	T''d(ms) Short Circ. Sub. time const.	1.12	0.96	0.96	1.49	1.49	1.19	1.23	1.06	1.64									
	T'do(ms) Open Circ. time const Trans	799.94	687.27	687.27	1066.59	1060.35	847.02	879.94	759.09	1173.25									
	T''do(ms) Open Circ. time const Subt	1.32	1.14	1.14	1.76	1.75	1.4	1.46	1.26	1.94									
	Ta(ms) Armature time const.	9.32	8.01	8.01	12.43	12.36	9.87	10.25	8.85	13.67									
	uc(V) Full load excitation voltage	35.11	35.59	35.59	35.11	32.71	34.24	33.67	35.59	33.67									
	ic(A) Full load excitation current	3.65	3.7	3.7	3.65	3.4	3.56	3.5	3.7	3.5									
ic(A) No load excitation current	1.0	1.1	1.1	1.33	0.7	0.97	0.95	1.2	1.27										
Icc(A) Sustained Short-Circ. Current	378.32	359.4	329.72	359.4	410.22	396.08	405.46	396.93	368.75										
Kcc Short-circuit ratio	0.49	0.42	0.36	0.66	0.66	0.59	0.54	0.47	0.72										
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	87.6	90.6	86.8	89.8	87.1	90.1	80.6	83.3	89.1	91.6	88.7	91.4	88.6	91.3	87.9	90.7	81.5	84
	50% of load	88.8	91.7	88.7	91.6	88.9	91.9	81.6	84.3	89.6	92.1	89.6	92.2	89.8	92.4	89.7	92.3	82.6	85
	75% of load	87.5	90.7	87.8	91	88	91.3	80.5	83.5	88	90.8	88.3	91.2	88.7	91.5	88.8	91.8	81.6	84.2
	100% of load	85.6	89.3	86.3	89.9	86.5	90.2	78.8	82.2	86	89.1	86.6	89.8	87	90.2	87.4	90.8	80.1	83
	125% of load	83.7	87.7	84.6	88.6	84.8	88.9	77	80.7	83.9	87.4	84.6	88.2	85.2	88.8	85.8	89.6	78.4	81.7

Other characteristics		Automatic voltage regulator		According to:	
Air flow	: 0.9 m³/s	Accuracy (stability)	: +/- 0.5%	IEC 60034	
Exciter stator winding resistance at 20°C	: 9.62 ohm	Rated current	: 5 A	NBR 5117	
Stator winding resistance at 20°C	: 0.0848 ohm	Analog input	: Yes	NEMA MG1	
Rotor winding resistance	: 1.13 ohm	Digital input	: No	VDE530	
Stator winding layers	: 2	Peak current	: 7 A/10 s	ISO 8528	
Inertia WR²	: 0.52 kgm²	Droop / TC	: Yes	CSA	
NDE Bearing	: 6210-2RS	Dynamic recovery	: 8 to 500 ms		
DE bearing		U/F	: Yes		
Flange	: SAE 3	Internal voltage adjustment	: +/- 15%		
Coupling disc	: SAE 11,5	External voltage adjustment	: +/- 10%		
		Transient recovery time for ΔU=20%	: 500 ms		

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