DATA SHEET
Synchronous Alternator

Customer :
Customer reference :

Notes:

Product line : GTA161AIHJ
Area classification : Safe

Product code : 14419469
1010293511

General data

Frame (IEC)	: 160
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	: 145 kg
Overload	: 1.1x In per 1h each 6h
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**		**-**	**380**	**416**	**440**	**480**	**-**
	YY connection	190	200		-	190	208	220	240	-
	Δ connection	220	230		-	220	240	254	277	-
	ΔΔ connection	110	115		-	110	120	127	138	-
	Zig-zag or single phase delta	-	-	-	190 - 200	-	-	-	-	220 - 240
Output power (kVA)	ΔT=80°C (Ta=40°C)	16.0	16.0		10.0	17.7	19.1	20.1	21.8	12.0
	ΔT=105°C (Ta=40°C)	18.0	18.0		11.5	20.3	21.9	23.0	25.0	13.5
	ΔT=125°C (Ta=40°C)	**23.0**	**23.0**		**12.7**	**23.0**	**25.3**	**27.0**	**27.3**	**15.0**
	ΔT=150°C (Ta=40°C)	23.5	23.5		13.5	25.0	26.8	28.0	30.0	16.0
	ΔT=163°C (Ta=27°C)	24.0	24.0		14.0	26.0	27.8	29.0	31.1	17.0
Electrical data (FP=0.8 / ΔT=125°C / Ta=40°C) Satured reactances values	Xd(%) Dir. axis synchronous reactance	201.28	181.94		268.37	240.04	221.44	211.24	179.97	281.65
	X'd(%) Dir. axis transient reactance	13.63	12.31		18.17	16.33	15.01	14.32	12.17	19.09
	X"d(%) Dir. axis subtrans. reactance	10.27	9.28		13.69	12.3	11.31	10.79	9.18	14.39
	Xq(%) Quad. axis sync. reactance	82.59	74.66		110.12	98.48	85.82	86.68	73.85	115.57
	X"q(%) Quad. axis subtrans. react.	10.24	9.24		13.65	12.27	18.76	10.76	9.14	14.35
	X2(%) Negative sequence reactance	10.25	9.26		13.67	12.28	15.04	10.77	9.16	14.37
	X0(%) Zero sequence reactance	1.71	1.55		2.28	2.05	1.89	1.8	1.53	2.4
	T'd(ms) Short Circ.Trans.time const.	35.8	35.8		47.73	35.7	39.34	35.8	35.8	47.73
	T"d(ms) Short Circ. Sub. time const.	0.5	0.5		0.67	0.5	0.52	0.5	0.5	0.67
	T'do(ms) Open Circ. time const Trans	536.3	537.1		715.07	533.1	562.16	535.7	537.1	714.27
	T"do(ms) Open Circ. time const Subt	0.6	0.6		0.8	0.6	0.71	0.6	0.6	0.8
	Ta(ms) Armature time const.	3.16	3.16		4.21	3.15	3.56	3.16	3.16	4.21
	uc(V) Full load excitation voltage	25.66	25.88		25.66	29.34	29.19	31.85	32.35	31.85
	ic(A) Full load excitation current	2.73	2.75		2.73	3.12	3.11	3.39	3.44	3.39
	ic(A) No load excitation current	0.9	1.1		1.2	0.5	0.84	0.8	1.0	1.07
	Icc(A) Sustained Short-Circ. Current	104.83	99.59		95.25	104.83	100.85	106.28	98.51	93.84
	Kcc Short-circuit ratio	0.51	0.58		0.69	0.41	0.45	0.48	0.59	0.65

	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
Efficiency (%)	25% of load	81.2	85.1	81	84.9			74.7	78.3	82.1	85.8	82.6	86.2	83.2	86.8	83	86.5	76.5	79.8		
	50% of load	84.5	88	84.7	88.2			77.7	81	85.2	88.5	85.8	89	86.3	89.4	86.6	89.8	79.4	82.3		
	75% of load	83.8	87.5	84.3	88			77.1	80.5	84.4	87.8	85.1	88.5	85.6	89	86.4	89.7	78.8	81.8		
	100% of load	82.1	86.1	82.9	86.8			75.5	79.2	82.7	86.4	83.6	87.2	84.1	87.7	85.3	88.8	77.4	80.7		
	125% of load	80.1	84.5	81.1	85.4			73.7	77.7	80.7	84.6	81.7	85.6	82.3	86.2	83.8	87.5	75.7	79.3		

Other characteristics

Air flow	: 0.3 m³/s
Exciter stator winding resistance at 20ºC	: 9.4 ohm
Stator winding resistance at 20ºC	: 0.45939 ohm
Rotor winding resistance	: 1.85 ohm
Stator winding layers	: 2
Inertia WR²	: 0.22 kgm²
NDE Bearing	: 6209-2RS
DE bearing	
Flange	: SAE 4
Coupling disc	: SAE 7,5

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	: No
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

Rev.	Changes Summary	Performed	Checked	Date

Performed by			
Checked by		Page	Revision
Date			