

DATA SHEET

Synchronous Alternator



Customer		Notes:
Customer reference		
Product line	: AG10-250MI20AI	Product code : 14422531
Area classification	: Safe	1010467395

General data		Degree of protection	: IP23
Frame (IEC)	: 250	Mounting style	: B15T
Insulation Class	: 180°C (H)	Number of poles	: 4
THD (L-L, no load)	: ≤ 3%	Type of Pole	: Salient
Stator winding pitch	: 2/3	Rated speed - 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	Approx. weight	: 917 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 (series star) connection	380	400	-	380	440	480	-							
	YY (parallel star) connection	190	200	-	190	220	240	-							
	Δ (series delta) connection	220	230	-	220	254	277	-							
	ΔΔ (parallel delta) connection	110	115	-	110	127	138	-							
	Zig-zag or single phase delta	-	-	-	190 - 200	-	-	-	220 - 240						
Output power (kVA)	Continuous 80/40	288	288	166	302	352	378	203							
	Continuous 105/40	330	330	191	350	403	440	233							
	Continuous 125/40	360	360	208	378	440	472	254							
	Standby 150/40	365	365	211	435	477	517	275							
	Standby 163/27	385	370	222	460	505	550	292							
Electrical data (FP=0.8 / Continuous 125/40 (H))	Xd(%) Dir. axis synchronous reactance	437.4	346.2	477.7	518.9	429.1	369.3	572.1							
	X'd(%) Dir. axis transient reactance	16.7	13.2	18.2	19.8	16.4	14.1	21.8							
	X''d(%) Dir. axis subtrans. reactance	12.5	9.9	13.7	14.8	12.2	10.5	16.3							
	Xq(%) Quad. axis sync. reactance	120.9	95.8	132.1	143.5	118.7	102.1	158.2							
	X''q(%) Quad. axis subtrans. react.	10.0	7.9	10.9	11.9	9.8	8.4	13.0							
	X2(%) Negative sequence reactance	15.9	12.6	17.4	18.9	15.6	13.4	20.7							
	X0(%) Zero sequence reactance	2.1	1.6	2.3	2.5	2.0	1.7	2.7							
	T'd(ms) Short Circ.Trans.time const.	60.3	47.8	65.9	71.6	59.2	50.9	78.9							
	T''d(ms) Short Circ. Sub. time const.	1.6	1.3	1.7	1.9	1.6	1.3	2.1							
	T'do(ms) Open Circ. time const Trans	1203	952	1314	1427	1180	1016	1573							
	T''do(ms) Open Circ. time const Subt	2.2	1.7	2.4	2.6	2.1	1.8	2.9							
	Ta(ms) Armature time const.	10	8	11	12	10	8	13							
	uc(V) Full load excitation voltage	57.6	56.7	57.6	47.3	52.0	54.9	52.0							
	ic(A) Full load excitation current	3.5	3.4	3.5	2.8	3.1	3.3	3.1							
	ic(A) No load excitation current	0.8	0.9	25.2	0.6	0.8	0.9	1.0							
Icc(A) Sustained Short-Circ. Current	1641	1559	1559	1723	1732	1703	1588								
Kcc Short-circuit ratio	0.39	0.31	0.43	0.47	0.39	0.33	0.52								
Efficiency (%)	Power factor	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0						
	25% of load	93	94.6	93.2	94.7	85.6	87	93.6	94.9	93.7	95	93.3	94.7	86.2	87.4
	50% of load	94.1	95.5	94.2	95.6	86.6	87.9	94.6	95.8	94.7	95.9	94.6	95.9	87.2	88.3
	75% of load	93.6	95.3	93.9	95.5	86.2	87.6	94.2	95.6	94.4	95.8	94.4	95.8	86.9	88.1
	100% of load	93	94.8	93.3	95	85.6	87.2	93.4	95	93.8	95.4	94	95.5	86.3	87.7
	125% of load	92.2	94.2	92.6	94.5	83.9	85.9	92.5	94.4	93	94.8	93.4	95.1	85.6	87.2

Other characteristics		Automatic voltage regulator		According to:	
Air flow	: 1.84 m³/s	Accuracy (stability)	: +/- 0.5%	IEC 60034	
Exciter stator winding resistance at 20°C	: 12.17 ohm	Rated current	: 5 A	NBR 5117	
Stator winding resistance at 20°C	: 0.00982 ohm	Analog input	: Yes	NEMA MG1	
Rotor winding resistance	: 1.74 ohm	Digital input	: No	VDE530	
Stator winding layers	: 2	Peak current	: 7 A/10 s	ISO 8528	
Inertia WR²	: 3.53 kgm²	Droop / TC	: Yes	CSA	
NDE Bearing	: 6314 2RS/ZZ	Dynamic recovery	: 8 to 500 ms		
DE bearing		U/F	: Yes		
Flange	: SAE 2	Internal voltage adjustment	: +/- 15%		
Coupling disc	: SAE 11,5	External voltage adjustment	: +/- 10%		
		Transient recovery time for ΔU=20%	: 500 ms		

Rev.	Changes Summary				Performed				Checked				Date			
Performed by																
Checked by																
Date	15/07/2023															