

DATA SHEET

Synchronous Alternator



Customer	:	Notes:
Customer reference	:	
Product line	: AG10-250MI10AI	Product code : 14418695
Area classification	: Safe	1010266019

General data		Degree of protection	: IP23
Frame (IEC)	: 250	Mounting style	: B35T
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	: 883 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)	260	260	247	150	260	283	302	324	174									
	ΔT=105°C (Ta=40°C)	298	298	283	172	298	324	346	371	200									
	ΔT=125°C (Ta=40°C)	325	325	309	188	325	354	377	405	218									
	ΔT=150°C (Ta=40°C)	350	340	323	202	364	394	412	460	238									
	ΔT=163°C (Ta=27°C)	360	350	332	208	380	416	450	470	260									
Electrical data (FP=0.8 / ΔT=125°C / Ta=40°C)	Xd(%) Dir. axis synchronous reactance	447.7	354.8	305.2	596.9	530.9	460.4	435.1	382.29	580.1									
	X'd(%) Dir. axis transient reactance	17.1	13.5	11.6	22.8	20.3	17.6	16.6	14.59	22.1									
	X''d(%) Dir. axis subtrans. reactance	12.6	10.0	8.6	16.8	15.0	12.9	12.2	10.67	16.3									
	Xq(%) Quad. axis sync. reactance	123.8	98.1	84.4	165.1	146.8	127.3	120.3	105.71	160.4									
	X''q(%) Quad. axis subtrans. react.	10.1	8.0	6.9	13.5	12.0	22.0	9.8	8.53	13.0									
	X2(%) Negative sequence reactance	16.2	12.8	11.0	21.6	19.2	17.4	15.7	13.75	20.9									
	X0(%) Zero sequence reactance	2.1	1.7	1.4	2.8	2.5	2.1	2.0	1.78	2.7									
	T'd(ms) Short Circ. Trans. time const.	61.7	48.9	41.1	82.3	73.2	60.7	60.0	52.72	80.0									
	T''d(ms) Short Circ. Sub. time const.	1.6	1.3	1.1	2.2	1.9	1.6	1.6	1.39	2.1									
	T''do(ms) Open Circ. time const Trans	1231	976	820	1642	1460	1210	1197	1051.31	1595									
	T''do(ms) Open Circ. time const Subt	2.2	1.8	1.5	3.0	2.6	2.2	2.2	1.9	2.9									
	Ta(ms) Armature time const.	10	8	7	14	12	10	10	8.72	13									
	uc(V) Full load excitation voltage	63.8	62.7	67.7	63.8	50.9	58.1	54.9	57.8	54.9									
	ic(A) Full load excitation current	3.8	3.8	4.1	3.8	3.1	3.5	3.3	3.48	3.3									
	ic(A) No load excitation current	0.8	0.9	1.0	1.0	0.6	0.8	0.8	0.88	1.0									
Icc(A) Sustained Short-Circ. Current	1481	1407	1290	1407	1481	1463	1484	1461.42	1360										
Kcc Short-circuit ratio	0.4	0.32	0.33	0.54	0.48	0.42	0.39	0.35	0.52										
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	92.6	94.2	92.7	94.3	93	94.6	85.2	86.6	93.1	94.5	93	94.5	93.1	94.5	92.8	94.4	85.7	87
	50% of load	93.7	95.2	93.8	95.4	94.1	95.6	86.2	87.6	94.2	95.5	94.2	95.6	94.4	95.6	94.2	95.6	86.8	88
	75% of load	93.2	95	93.5	95.2	93.8	95.5	85.8	87.4	93.8	95.2	93.9	95.4	94.1	95.5	94.1	95.6	86.6	87.9
	100% of load	92.6	94.5	92.8	94.7	93.1	95	85.2	86.9	93	94.7	93.2	94.9	93.4	95.1	93.6	95.2	86	87.5
	125% of load	91.7	93.8	92.1	94.2	92.4	94.4	83.4	85.5	92.1	94	92.4	94.3	92.6	94.5	93	94.8	85.2	87

Other characteristics		Automatic voltage regulator		According to:	
Air flow	: 1.7 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	: 0.01207 ohm	Analog input	: Yes	NEMA MG1	
Rotor winding resistance	: 1.92 ohm	Digital input	: No	VDE530	
Stator winding layers	: 2	Peak current	: 7 A/10 s	ISO 8528	
Inertia WR²	: 3.01 kgm²	Droop / TC	: Yes	CSA	
NDE Bearing	: 6314 2RS	Dynamic recovery	: 8 to 500 ms		
DE bearing	: 6316 2RS	U/F	: Yes		
Flange	: SAE 1	Internal voltage adjustment	: +/- 15%		
Coupling disc	: WITHOUT	External voltage adjustment	: +/- 10%		
		Transient recovery time for ΔU=20%	: 500 ms		

Rev.	Changes Summary				Performed				Checked				Date			
Performed by																
Checked by																
Date	10/08/2022				www.pmeyco.com				Page				Revision			
									1 /							