

DATA SHEET

Synchronous Alternator



Customer	:	Notes:
Customer reference	:	
Product line	: AG10-280MI30AI	Product code : 14410396
Area classification	: Safe	1010431808

General data Frame (IEC) : 280 Insulation Class : 180°C (H) THD (L-L, 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 : B3T Number of poles : 4 Type of Pole : Salient Rated speed - 50 Hz : 1500 rpm Nominal rotation - 60 Hz : 1800 rpm Overspeed : 2250 rpm Approx. weight : 1152 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							
Voltages (V)	Y (series star) connection			380	400		415		-		380	416		440		480		-	
	YY (parallel star) connection			190	200		208		-		190	208		220		240		-	
	Δ (series delta) connection			220	230		239		-		220	240		254		277		-	
	ΔΔ (parallel delta) connection			110	115		120		-		110	120		127		138		-	
	Zig-zag or single phase delta			-	-		-		190 - 200		-	-		-		-		220 - 240	
Output power (kVA)	Continuous 80/40			340	360		342		196		368	396		412		456		238	
	Continuous 105/40			390	412		392		225		425	453		485		510		280	
	Continuous 125/40			425	450		427		245		460	494		515		570		297	
	Standby 150/40			445	480		456		257		500	535		560		600		323	
	Standby 163/27			460	500		475		266		525	565		588		650		340	
Electrical data (FP=0.8 / Continuous 125/40 (H))	Xd(%) Dir. axis synchronous reactance			389.0	416.8		396.0		518.7		594.6	530.6		497.9		462.43		663.9	
	X'd(%) Dir. axis transient reactance			18.1	17.1		16.2		24.1		24.1	21.0		19.7		18.05		26.2	
	X''d(%) Dir. axis subtrans. reactance			13.2	12.5		11.8		17.6		17.6	15.2		14.3		13.15		19.1	
	Xq(%) Quad. axis sync. reactance			110.9	142.5		135.4		147.8		161.1	0.0		177.1		106.28		236.1	
	X''q(%) Quad. axis subtrans. react.			10.6	9.6		9.1		14.1		14.1	26.2		16.0		10.22		21.4	
	X2(%) Negative sequence reactance			11.9	11.0		10.5		15.8		15.8	20.7		15.2		11.69		20.2	
	X0(%) Zero sequence reactance			2.2	2.1		2.0		2.9		2.9	2.5		2.4		2.19		3.2	
	T'd(ms) Short Circ.Trans.time const.			110.0	110.0		110.0		146.7		114.4	90.2		110.3		109.98		147.1	
	T''d(ms) Short Circ. Sub. time const.			11.0	1.1		1.1		14.7		1.3	1.8		1.2		1.1		1.6	
	T'do(ms) Open Circ. time const Trans			1690	1656		1656		2253		1748	1190		1700		1656.3		2267	
	T''do(ms) Open Circ. time const Subt			1.7	1.6		1.6		2.3		1.8	2.3		1.7		1.6		2.2	
	Ta(ms) Armature time const.			16	15		15		21		21	17		17		15.85		23	
	uc(V) Full load excitation voltage			65.0	64.0		64.0		65.0		52.0	57.7		53.0		56.0		53.0	
	ic(A) Full load excitation current			2.8	2.9		2.9		2.8		2.4	2.6		2.4		2.5		2.4	
	ic(A) No load excitation current			0.7	0.7		0.7		0.9		0.6	0.6		0.5		0.55		0.7	
Icc(A) Sustained Short-Circ. Current			1937	1949		1782		1840		2097	2042		2027		2056.81		1858		
Kcc Short-circuit ratio			0.25	0.27		0.25		0.33		0.19	0.21		0.23		0.31		0.31		
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	92.5	94.2	92.7	94.4	85.2	86.7	93.6	95	93.5	95	93.4	94.9	93.3	94.8
	50% of load			94.5	95.8	94.5	95.8	94.7	96	86.9	88.2	95	96.1	94.9	96.2	94.8	96.2	95.1	96.3
	75% of load			94.5	95.8	94.5	95.9	94.7	96.1	86.9	88.2	94.7	95.9	94.8	96.1	94.9	96.2	95.2	96.4
	100% of load			94	95.4	94.1	95.6	94.3	95.8	86.4	87.8	94	95.4	94.3	95.6	94.6	95.9	94.8	96.1
	125% of load			93.3	94.9	93.4	95.1	93.6	95.3	85.8	87.3	93.2	94.7	93.6	95.1	94	95.4	94.2	95.6

Other characteristics Air flow : 2.37 m³/s Exciter stator winding resistance at 20°C : 20.86 ohm Stator winding resistance at 20°C : 0.00815 ohm Rotor winding resistance : 2.02 ohm Stator winding layers : 2 Inertia WR² : 4.73 kgm² NDE Bearing : 6315 2RS DE bearing : 6318 2RS Flange : NOT APPLICABLE Coupling disc : NOT APPLICABLE	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		Page 1 / Revision		
Checked by				
Date	08/06/2023			