

# DATA SHEET

## Synchronous Alternator



Customer	: HooverTec LLC	Notes:	
Customer reference	:		
Product line	: GTA251AIHD	Product code	: 14417252
Area classification	: Safe		1010326324

<b>General data</b>		Degree of protection	: IP23
Frame (IEC)	: 250	Mounting style	: B3T
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	: 430 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	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	110.0	110.0	104.0	61.6	110.0	125.0	137.0	140.0	76.8									
	Continuous 105/40	126.0	126.0	120.0	70.6	127.0	144.0	157	161	88.0									
	<b>Continuous 125/40</b>	<b>140.0</b>	<b>140.0</b>	<b>133.0</b>	<b>77.0</b>	<b>142.0</b>	<b>159</b>	<b>171</b>	<b>175</b>	<b>96.0</b>									
	Standby 150/40	145.0	145.0	138.0	84.3	149.0	169	183	188	105.2									
	Standby 163/27	150.0	150.0	142.0	87.9	156	176	190	189	109.6									
Electrical data (FP=0.8 / Continuous 125/40 (H))	Xd(%) Dir. axis synchronous reactance	402.21	363.48	345.31	536.28	486.95	455.2	439.3	378.62	585.72									
	X'd(%) Dir. axis transient reactance	25.24	22.79	21.65	33.65	30.71	28.6	27.6	23.74	36.79									
	X''d(%) Dir. axis subtrans. reactance	17.23	15.55	14.77	22.97	20.96	19.5	18.8	16.2	25.12									
	Xq(%) Quad. axis sync. reactance	155.57	140.58	133.55	207.43	188.34	207.2	169.9	146.44	226.53									
	X''q(%) Quad. axis subtrans. react.	19.16	17.29	16.43	25.55	23.31	35.7	20.9	18.01	27.92									
	X2(%) Negative sequence reactance	18.14	16.37	15.56	24.19	22.07	27.6	19.8	17.06	26.45									
	X0(%) Zero sequence reactance	2.87	2.59	2.46	3.83	3.49	3.2	3.1	2.7	4.19									
	T'd(ms) Short Circ. Trans. time const.	59.5	59.5	59.5	79.33	59.5	96.2	59.5	59.5	79.33									
	T'd(ms) Short Circ. Sub. time const.	1.7	1.7	1.7	2.27	1.7	2.5	1.7	1.7	2.27									
	T'do(ms) Open Circ. time const Trans	980.7	982.0	982.0	1307.6	975.6	1919	980	982.0	1306.4									
	T''do(ms) Open Circ. time const Subt	2.4	2.4	2.4	3.2	2.4	3.5	2.4	2.4	3.2									
	Ta(ms) Armature time const.	8.29	8.29	8.29	11.05	8.29	16	8	8.29	11.05									
	uc(V) Full load excitation voltage	53.82	54.7	54.7	53.82	47.09	52.9	52.2	53.71	52.19									
	ic(A) Full load excitation current	4.42	4.49	4.49	4.42	3.87	4.3	4.3	4.41	4.29									
ic(A) No load excitation current	0.6	0.8	0.8	0.8	0.3	0.5	0.5	0.7	0.67										
Icc(A) Sustained Short-Circ. Current	638.12	606.22	554.04	577.5	647.24	642	673	631.48	600.0										
Kcc Short-circuit ratio	0.28	0.33	0.29	0.37	0.21	0.23	0.25	0.31	0.33										
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	89.8	92.2	89.6	92.1	89.9	92.4	82.6	84.9	90.6	92.8	90.8	93	91	93.2	90.8	93.1	83.7	85.8
	50% of load	90.1	92.7	90.3	92.9	90.6	93.1	82.9	85.3	90.7	93	91	93.3	91.2	93.5	91.5	93.8	83.9	86.1
	75% of load	88.7	91.7	89.1	92.1	89.4	92.4	81.6	84.4	89.2	91.8	89.6	92.2	89.9	92.5	90.4	93.1	82.7	85.1
	100% of load	86.9	90.3	87.5	90.9	87.8	91.2	80	83.1	87.4	90.2	87.9	90.8	88.2	91.2	89	92	81.1	83.9
	125% of load	85	88.8	85.7	89.6	86	89.9	78.2	81.7	85.4	88.7	86	89.4	86.4	89.7	87.4	90.8	79.5	82.5

<b>Other characteristics</b>		<b>Automatic voltage regulator</b>		<b>According to:</b>	
Air flow	: 1.2 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	: 0.05089 ohm	Analog input	: Yes	NEMA MG1	
Rotor winding resistance	: 0.91 ohm	Digital input	: No	VDE530	
Stator winding layers	: 2	Peak current	: 7 A/10 s	ISO 8528	
Inertia WR²	: 1.04 kgm²	Droop / TC	: Yes	CSA	
NDE Bearing	: 6214-2RS/ZZ	Dynamic recovery	: 8 to 500 ms		
DE bearing	: 6318-2RS/ZZC3	U/F	: Yes		
Flange	: NOT APPLICABLE	Internal voltage adjustment	: +/- 15%		
Coupling disc	: NOT APPLICABLE	External voltage adjustment	: +/- 10%		
		Transient recovery time for ΔU=20%	: 500 ms		

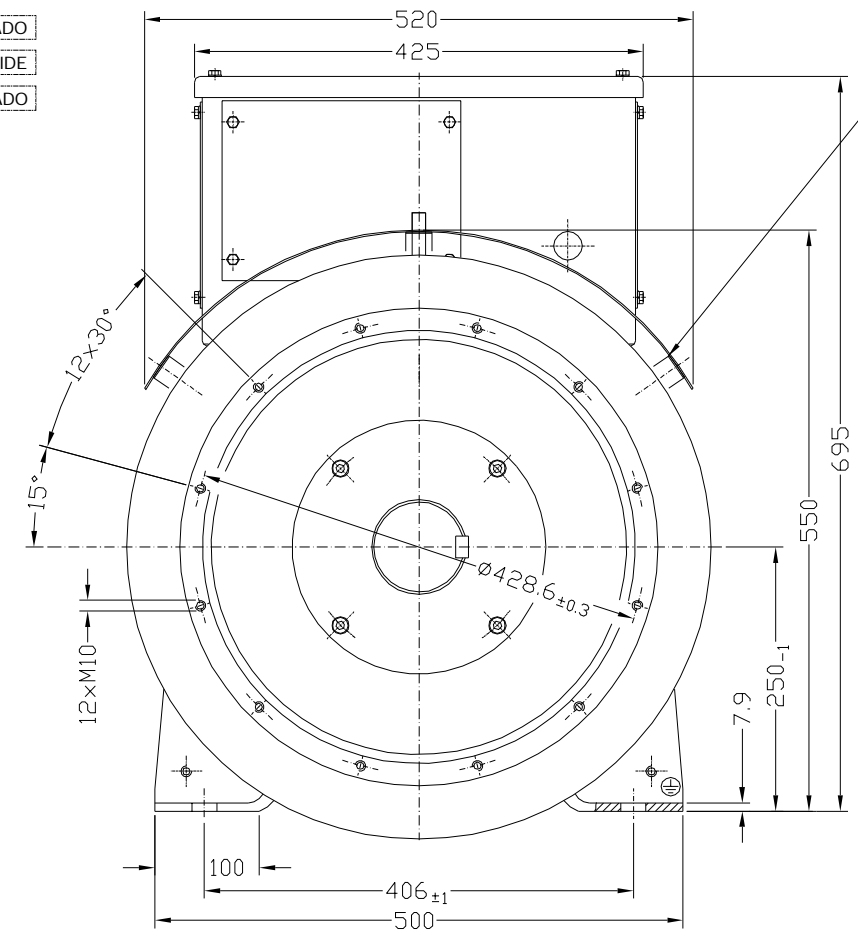
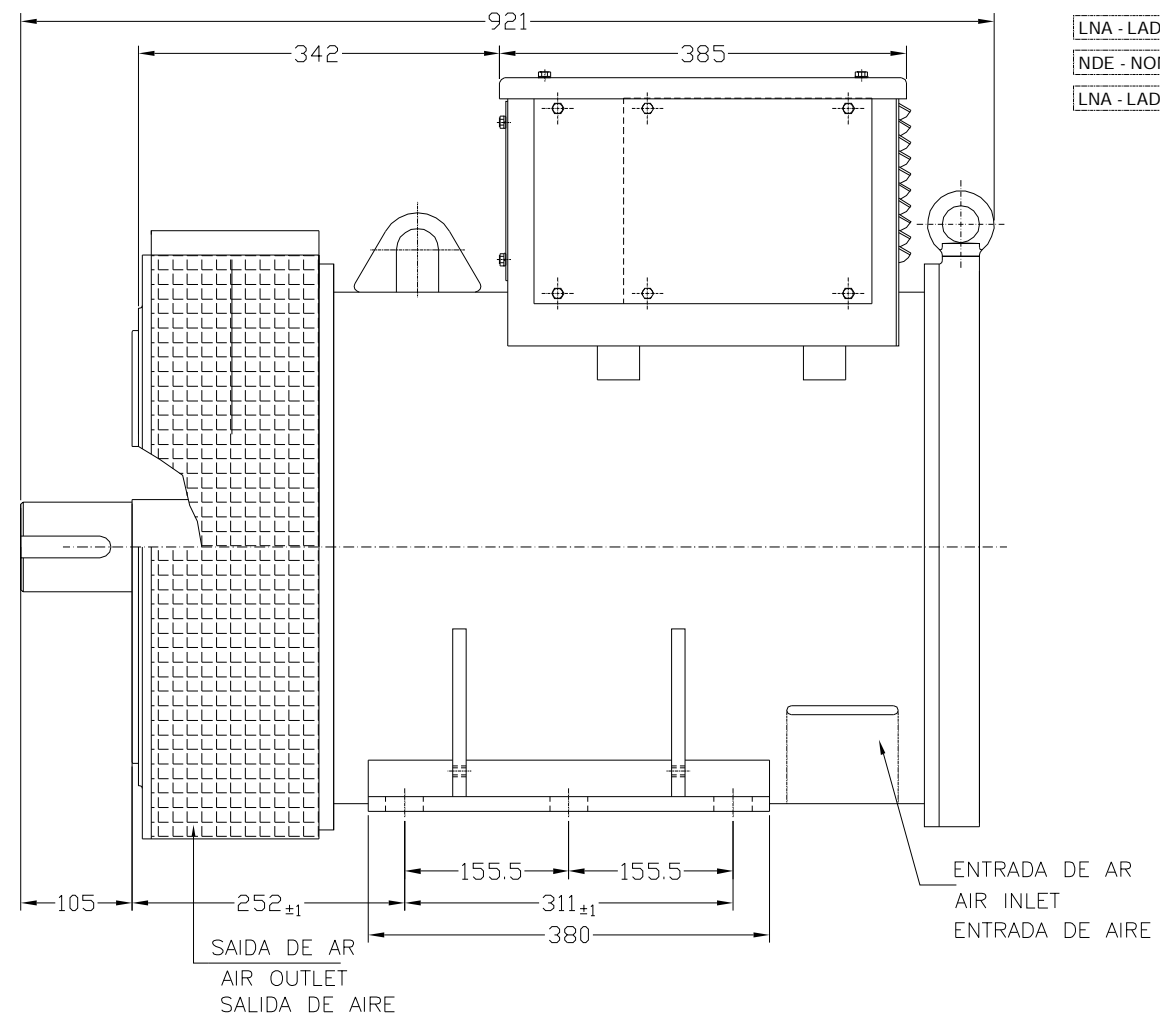
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	11/09/2023		1 /	

1 2 3 4 5 6

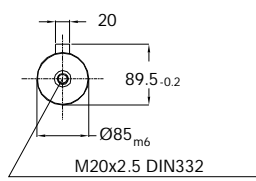
LA - LADO ACIONADO  
 DE - DRIVE-END SIDE  
 LA - LADO ACCIONADO

LNA - LADO NÃO ACIONADO  
 NDE - NON DRIVE-END SIDE  
 LNA - LADO NO ACCIONADO

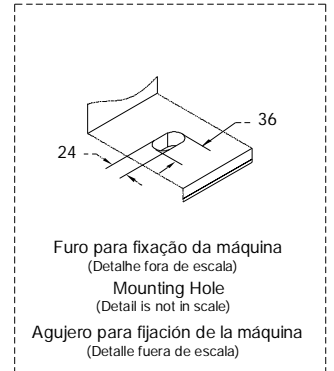
APENAS PARA O GRAU DE PROTEÇÃO IP23.  
 ONLY FOR IP23 PROTECTION.  
 SOLAMENTE PARA EL GRADO DE PROTECCIÓN IP23.



A  
 B  
 C  
 D  
 E

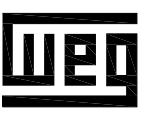


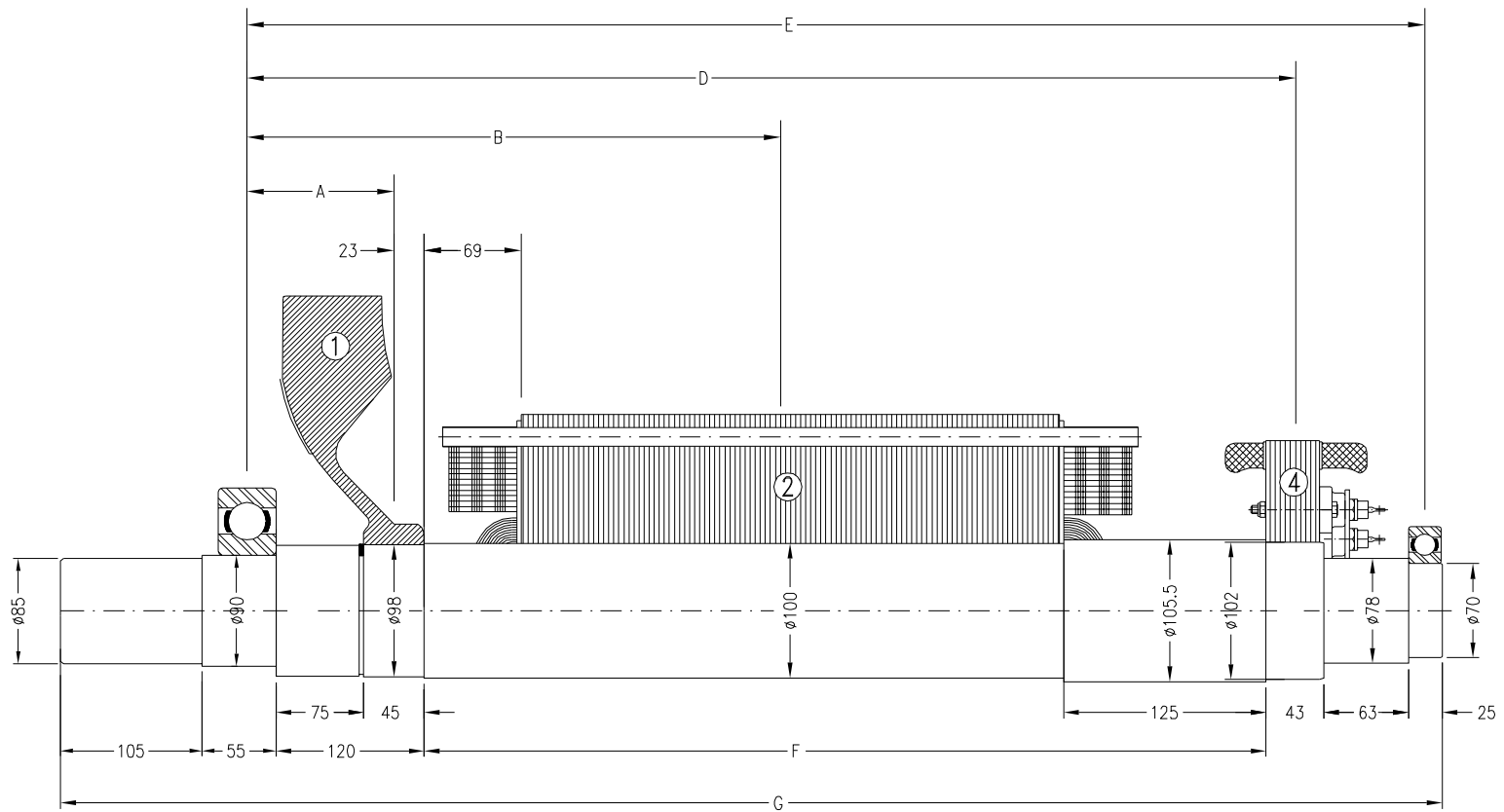
Ponta de eixo (LA)  
 (Detalhe fora de escala)  
 Shaft end (DE)  
 (Detail is not in scale)  
 Punta de eje (LA)  
 (Detalle fuera de escala)



NOTAS / NOTES / NOTAS  
 Máquina / Machine / Máquina : GTA251 - B3T  
 Grau de proteção / Protection / Grado de protección: IP21 / IP23

PESO BRUTO / GROSS WEIGHT		PESO LIQUIDO / NET WEIGHT		ESC / SCALE				
ECM	LOC	RESUMO MODIFICAÇÃO SUMMARY OF MODIFICATIONS		EXECUTADO EXECUTED	VERIFICADO CHECKED	LIBERADO RELEASED	DATA DATE	VER VER
EXEC. / EXECUTED		DIMENSIONAL GTA251 B3T			10005058088			
VERIF. / CHECKED					000	01		
LIBER. / RELEASED								
DATA LB / REL DT	29.01.2018				FOLHA / SHEET 01 / 01			





TIPO TYPE	DIMENSÕES: mm / DIMENSIONS: mm							1		2		4		Total Weight kg	Total Mom <sub>y</sub> Iner. kgm <sup>2</sup>
	A	B	C	D	E	F	G	WEIGHT MASSA kg	MOMENT MOMENTO kgm <sup>2</sup>	WEIGHT MASSA kg	MOMENT MOMENTO kgm <sup>2</sup>	WEIGHT MASSA kg	MOMENT MOMENTO kgm <sup>2</sup>		
GTA 251 __HD	118.5	290.5	---	635.5	734.5	475	889	1.7	0.043	69.0	0.79	14	0.14	84.7	0.97
GTA 251 __HE		305.5	---	635.5	734.5	475	889			79.0	0.91			94.7	1.09
GTA 252 __VB		345.5	---	786.5	884.5	625	1039			109.0	1.24			124.7	1.42
GTA 252 __II		385.5	---	786.5	884.5	625	1039			138.0	1.56			153.7	1.74
GTA 252 __IR		410.5	---	786.5	884.5	625	1039			155.0	1.76			170.7	1.94

PESO BRUTO / GROSS WEIGHT		kg		PESO LÍQUIDO / NET WEIGHT		kg		ESC / SCALE		
EMISSÃO INICIAL / INITIAL EMISSION										
ECM ECM	LOC LOC	RESUMO MODIFICAÇÃO SUMMARY OF MODIFICATIONS				EXECUTADO EXECUTED	VERIFICADO CHECKED	LIBERADO RELEASED	DATA DATE	VER VER
EXEC / EXECUTED		ANÁLISE TORSIONAL LINHA G-PLUS 250 B3S				10009091380				
VERIF. / CHECKED						000		00		
LIBER. / RELEASED										
DATA LB / REL DT	WEN	JARAGUA DO SUL	ENGENHARIA DO PRODUTO	FOLHA / SHEET		1 / 1				