

DATA SHEET

Synchronous Alternator



Customer	: HooverTec LLC	Notes:	
Customer reference	:		
Product line	: GTA161AIHI	Product code	: 13943203
Area classification	: Safe		1011326570

General data		Degree of protection	: IP23
Frame (IEC)	: 160	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	: 132 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	416	440	480	-
	YY (parallel star) connection	190	200	-	190	208	220	240	-
	Δ (series delta) connection	220	230	-	220	240	254	277	-
	ΔΔ (parallel delta) connection	110	115	-	110	120	127	138	-
	Zig-zag or single phase delta	-	-	-	190 - 200	-	-	-	220 - 240
Output power (kVA)	Continuous 80/40	14.5	14.5	8.0	15.9	18.4	20.2	20.8	11.0
	Continuous 105/40	17.0	17.0	9.5	18.2	21.1	23.2	23.8	13.0
	Continuous 125/40	19.0	19.0	10.5	19.9	23.0	25.3	26.0	14.3
	Standby 150/40	19.5	19.5	11.0	21.3	24.6	27.1	28.5	15.5
	Standby 163/27	20.5	20.5	11.5	22.1	25.5	28.1	29.7	16.0
Electrical data (FP=0.8 / Continuous 125/40 (H))	Xd(%) Dir. axis synchronous reactance	222.97	201.56	297.29	278.41	269.95	265.43	229.85	353.91
	X'd(%) Dir. axis transient reactance	16.18	14.61	21.57	20.3	19.61	19.28	16.67	25.71
	X''d(%) Dir. axis subtrans. reactance	12.08	10.91	16.11	15.14	14.63	14.39	12.44	19.19
	Xq(%) Quad. axis sync. reactance	91.66	82.86	122.21	114.43	112.1	109.11	94.49	145.48
	X''q(%) Quad. axis subtrans. react.	11.75	10.61	15.67	14.75	24.51	14.0	12.1	18.67
	X2(%) Negative sequence reactance	11.91	10.76	15.88	14.94	19.57	14.19	12.27	18.92
	X0(%) Zero sequence reactance	2.01	1.82	2.68	2.52	2.44	2.4	2.07	3.2
	T'd(ms) Short Circ.Trans.time const.	37.6	37.6	50.13	37.5	50.36	37.6	37.6	50.13
	T''d(ms) Short Circ. Sub. time const.	0.5	0.5	0.67	0.5	0.66	0.5	0.5	0.67
	T'do(ms) Open Circ. time const Trans	526.0	526.9	701.33	522.7	719.7	525.4	526.9	700.53
	T''do(ms) Open Circ. time const Subt	0.7	0.7	0.93	0.7	0.91	0.7	0.7	0.93
	Ta(ms) Armature time const.	3.21	3.21	4.27	3.2	4.56	3.2	3.21	4.27
	uc(V) Full load excitation voltage	24.58	24.59	24.58	24.34	26.36	27.59	27.82	27.59
	ic(A) Full load excitation current	2.61	2.62	2.61	2.59	2.8	2.93	2.96	2.93
ic(A) No load excitation current	0.7	0.9	0.93	0.4	0.7	0.7	0.9	0.93	
Icc(A) Sustained Short-Circ. Current	86.6	82.27	78.75	90.7	93.94	99.59	93.82	89.38	
Kcc Short-circuit ratio	0.46	0.51	0.61	0.35	0.37	0.38	0.45	0.51	
Efficiency (%)	Power factor	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0
	25% of load	74.4	79.1	74.3	79	68.4	72.8	75.7	80.1
	50% of load	80.1	84.2	80.4	84.5	73.7	77.5	80.8	84.7
	75% of load	80.2	84.4	80.9	85	73.8	77.7	80.6	84.5
	100% of load	78.9	83.3	79.8	84.1	72.6	76.6	79	83.2
	125% of load	77	81.7	78.2	82.8	70.8	75.2	77	81.4

Other characteristics		Automatic voltage regulator		According to:	
Air flow	: 0.3 m³/s	Accuracy (stability)	: +/- 0.5%	IEC 60034	
Exciter stator winding resistance at 20°C	: 9.4 ohm	Rated current	: 5 A	NBR 5117	
Stator winding resistance at 20°C	: 0.63684 ohm	Analog input	: Yes	NEMA MG1	
Rotor winding resistance	: 1.57 ohm	Digital input	: No	VDE530	
Stator winding layers	: 2	Peak current	: 7 A/10 s	ISO 8528	
Inertia WR²	: 0.19 kgm²	Droop / TC	: No	CSA	
NDE Bearing	: 6209-2RS/ZZ	Dynamic recovery	: 8 to 500 ms		
DE bearing		U/F	: Yes		
Flange	: SAE 4	Internal voltage adjustment	: +/- 15%		
Coupling disc	: SAE 7,5	External voltage adjustment	: +/- 10%		
		Transient recovery time for ΔU=20%	: 500 ms		

Rev.	Changes Summary				Performed				Checked				Date			
Performed by																
Checked by																
Date	08/09/2023								Page				Revision			
									1 /							

A

B

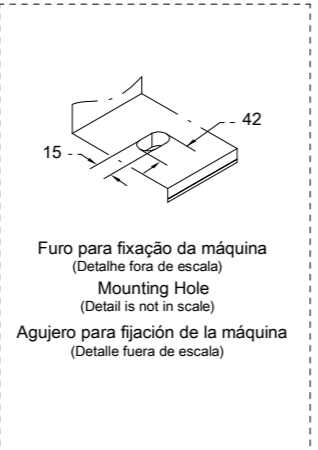
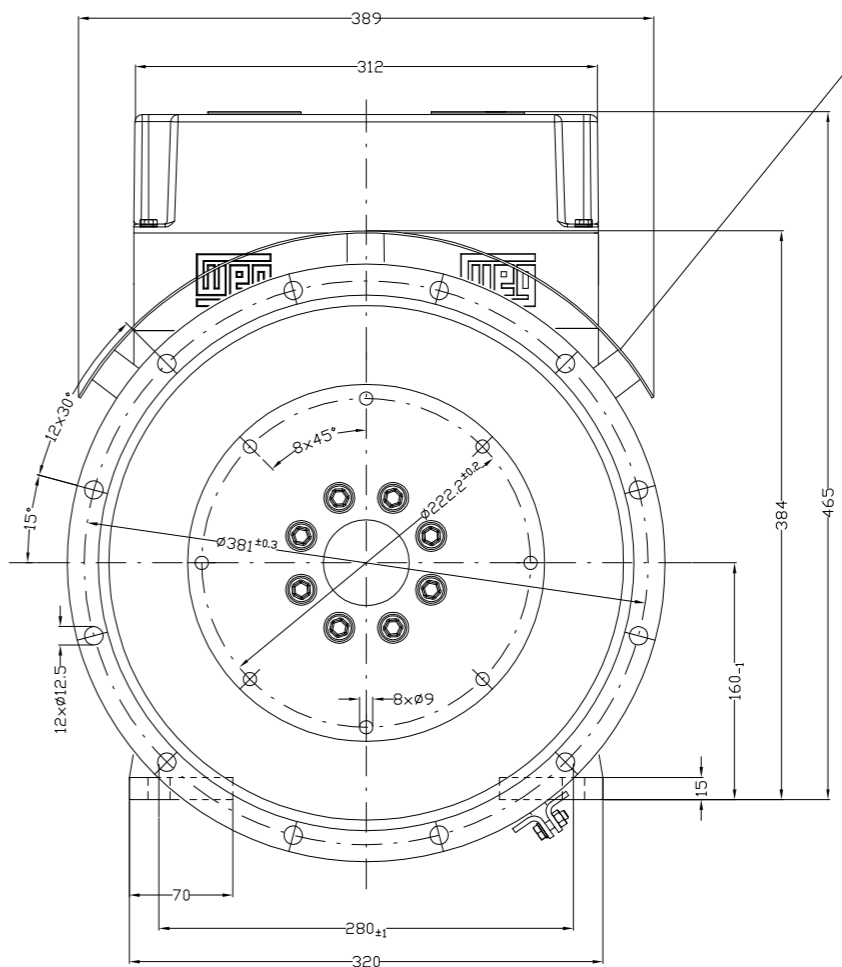
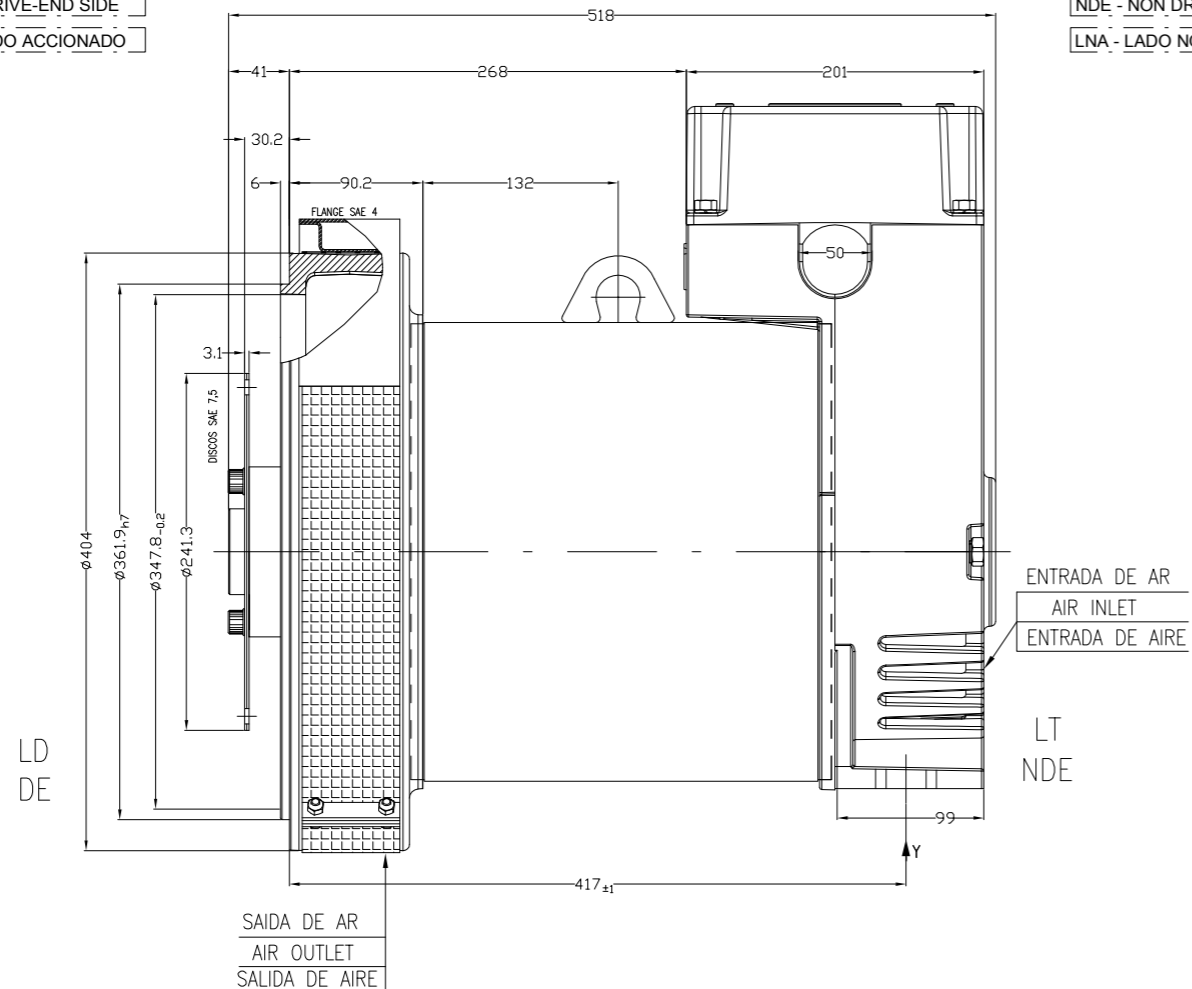
C

D

E

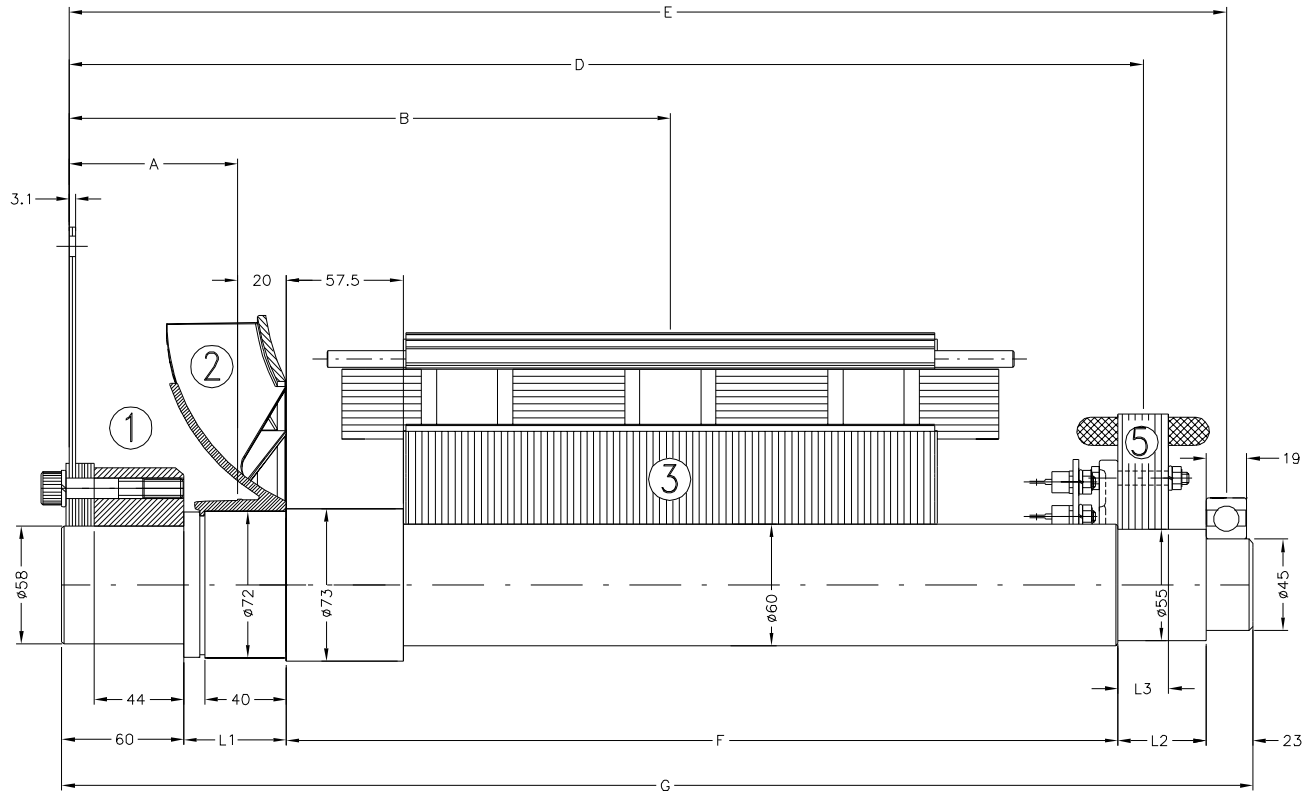
LA - LADO ACIONADO
 DE - DRIVE-END SIDE
 LA - LADO ACCIONADO

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



PESO BRUTO / GROSS WEIGHT		PESO LIQUIDO / NET WEIGHT		ESC / SCALE	1:8			
EXEC. / EXECUTED	LOC	RESUMO MODIFICAÇÃO / SUMMARY OF MODIFICATIONS		EXECUTADO / EXECUTED	VERIFICADO / CHECKED	LIBERADO / RELEASED	DATA / DATE	VER
VERIF. / CHECKED		DIMENSIONAL GTA161 B15T			10005054368			
LIBER. / RELEASED					000	03		
DATA LB / REL DT	29.01.2018	WEN	JARAGUA DO SUL	ALTERNADORES GENSET	FOLHA / SHEET	01 / 01		





TIPO	DISCOS	DIMENSÕES: mm / DIMENSIONS: mm										1		2		3		5		Total Weight kg	Total Mom. Iner. J																				
		L1	L2	L3	A	B	C	D	E	F	G	WEIGHT kg	MOMENT kgm ²	WEIGHT kg	MOMENT kgm ²	WEIGHT kg	MOMENT kgm ²	WEIGHT kg	MOMENT kgm ²																						
GTA 162 __VD	SAE 11.5	49	56.5	35	85.5	---	528.5	577.0	405.5	617.5	4.5	0.041	0.6	0.004	38.0	0.18	5.2	0.023	48.3	0.24																					
GTA 161 __SR																					213	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
GTA 161 __HS																					223	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GTA 161 __HH																					228	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GTA 161 __HI																					238	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GTA 161 __HJ																					253	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

TIPO	DISCOS	DIMENSÕES: mm / DIMENSIONS: mm										1		2		3		5		Total Weight kg	Total Mom. Iner. J																				
		L1	L2	L3	A	B	C	D	E	F	G	WEIGHT kg	MOMENT kgm ²	WEIGHT kg	MOMENT kgm ²	WEIGHT kg	MOMENT kgm ²	WEIGHT kg	MOMENT kgm ²																						
GTA 162 __VD	SAE 7.5	49	56.5	35	76.0	---	519.0	567.5	405.5	617.5	3.3	0.012	0.6	0.004	38.0	0.18	5.2	0.023	47.1	0.22																					
GTA 161 __SR																					203.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
GTA 161 __HS																					213.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GTA 161 __HH																					218.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GTA 161 __HI																					228.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GTA 161 __HJ																					243.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

PESO BRUTO / GROSS WEIGHT		kg		PESO LÍQUIDO / NET WEIGHT		kg		ESC / SCALE		1:4		
EMISSÃO INICIAL / INITIAL EMISSION												
ECM	LOC	RESUMO MODIFICAÇÃO / SUMMARY OF MODIFICATIONS						EXECUTADO / EXECUTED	VERIFICADO / CHECKED	LIBERADO / RELEASED	DATA / DATE	VER / VER
EXEC / EXECUTED		ANÁLISE TORSIONAL LINHA G-PLUS 160 B15										
VERIF. / CHECKED								10009091394				
LIBER. / RELEASED								000				00
DATA LB / REL DT		JARAGUA DO SUL		ENGENHARIA DO PRODUTO		FOLHA / SHEET		1 / 1				