

DATA SHEET

Synchronous Alternator



Customer	: HooverTec LLC	Notes:	
Customer reference	:		
Product line	: GTA251AIHD	Product code	: 13943285
Area classification	: Safe		1004243185

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	: 428 kg
Excitation system	: Brushless with Auxiliary Coil	Overload	: 1.1x In per 1h each 6h
Cooling	: IC01	Momentary Overload	: 1.5x In per 30s

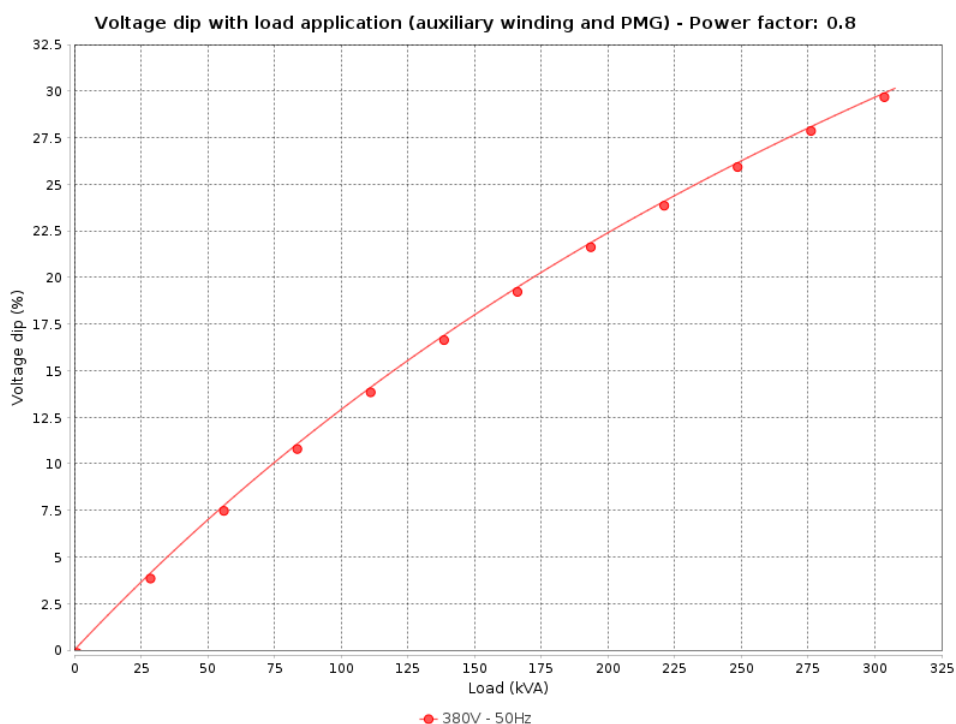
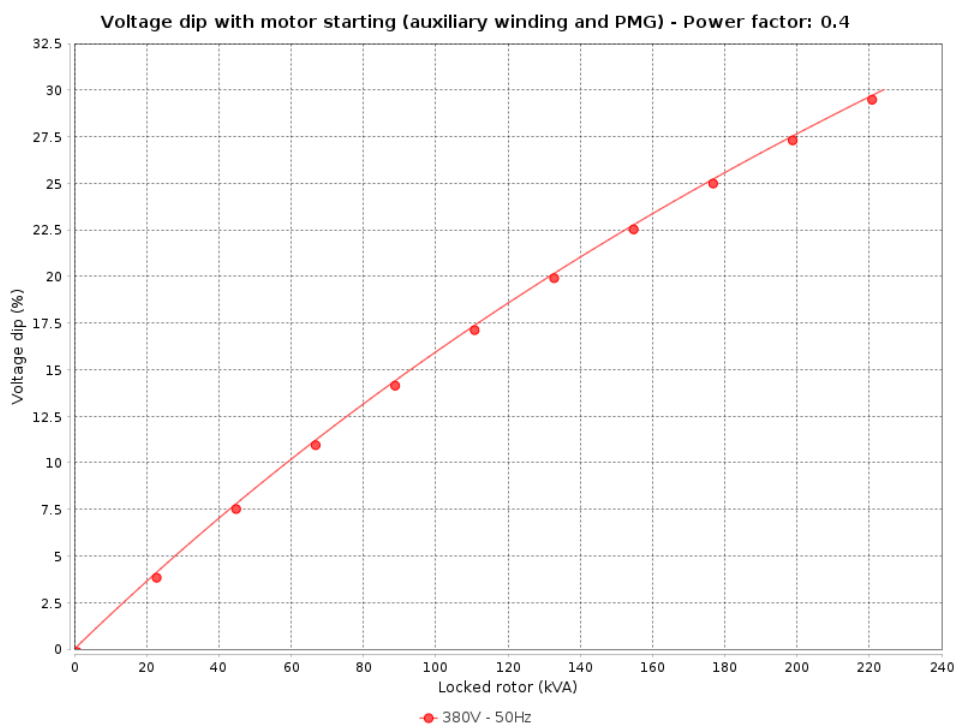
Frequency and number of phases		50 Hz				60 Hz													
		3ph			1ph	3ph			1ph										
Voltages (V)	Y (series star) connection	380	400	415	-	380	416	440	480	-									
	YY (parallel star) connection	190	200	208	-	190	208	220	240	-									
	Δ (series delta) connection	220	230	239	-	220	240	254	277	-									
	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									
	Continuous 125/40	140.0	140.0	133.0	77.0	142.0	159	171	175	96.0									
	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

Other characteristics		Automatic voltage regulator		According to:	
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	: 1.3 kgm²	Droop / TC	: Yes	CSA	
NDE Bearing	: 6214-2RS/ZZ	Dynamic recovery	: 8 to 500 ms		
DE bearing		U/F	: Yes		
Flange	: SAE 3	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	11/09/2023								Page				Revision			
									1 / 6							

DATA SHEET

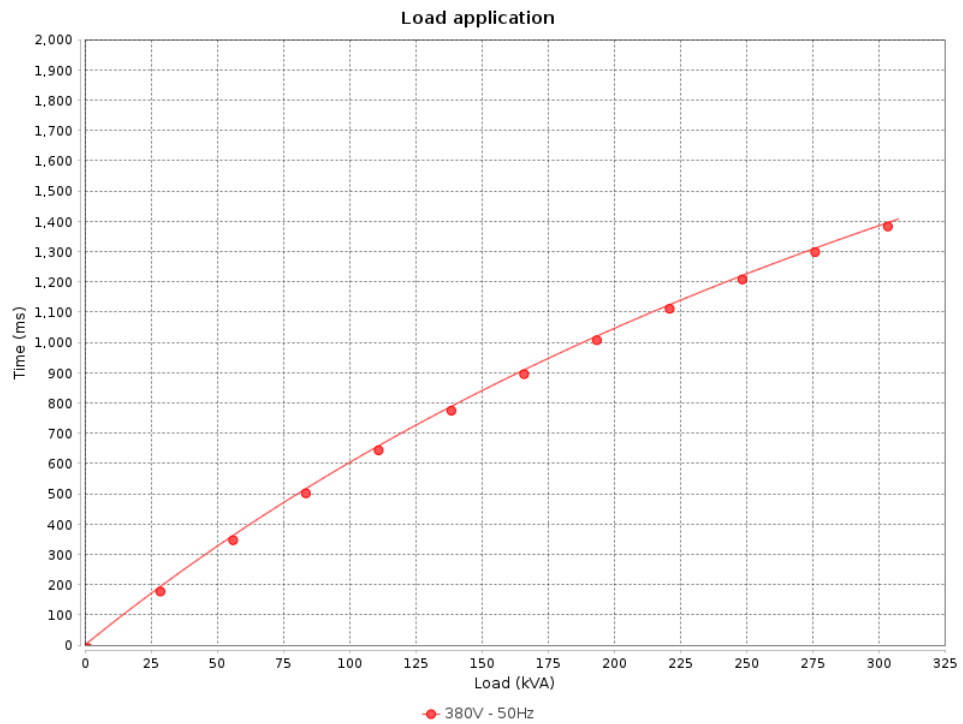
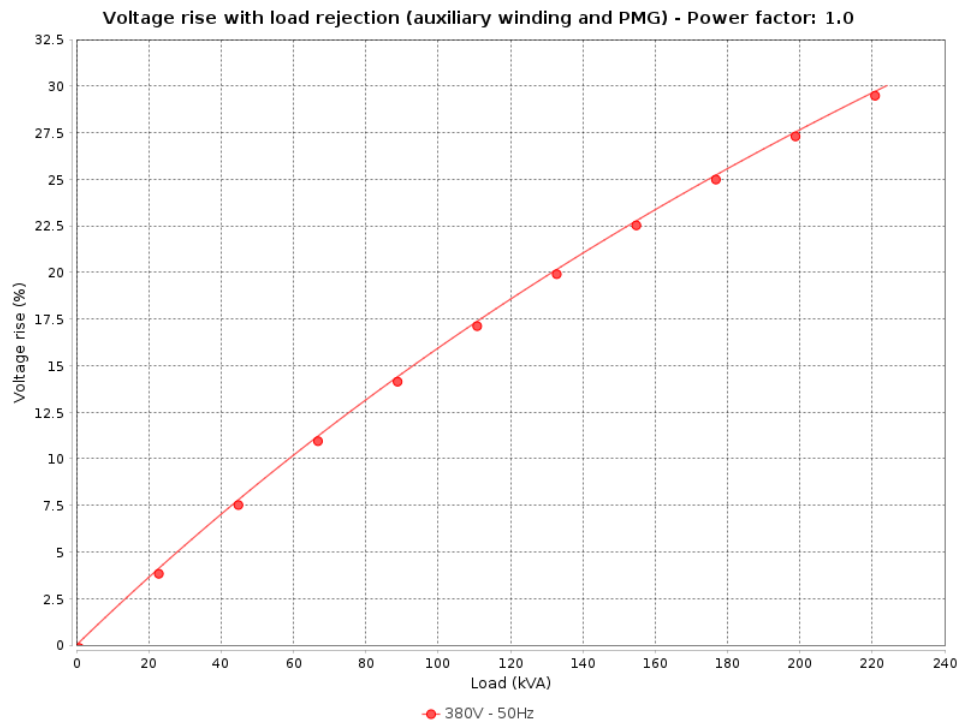
Synchronous Alternator



Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 2 / 6	Revision
Checked by				
Date				

DATA SHEET

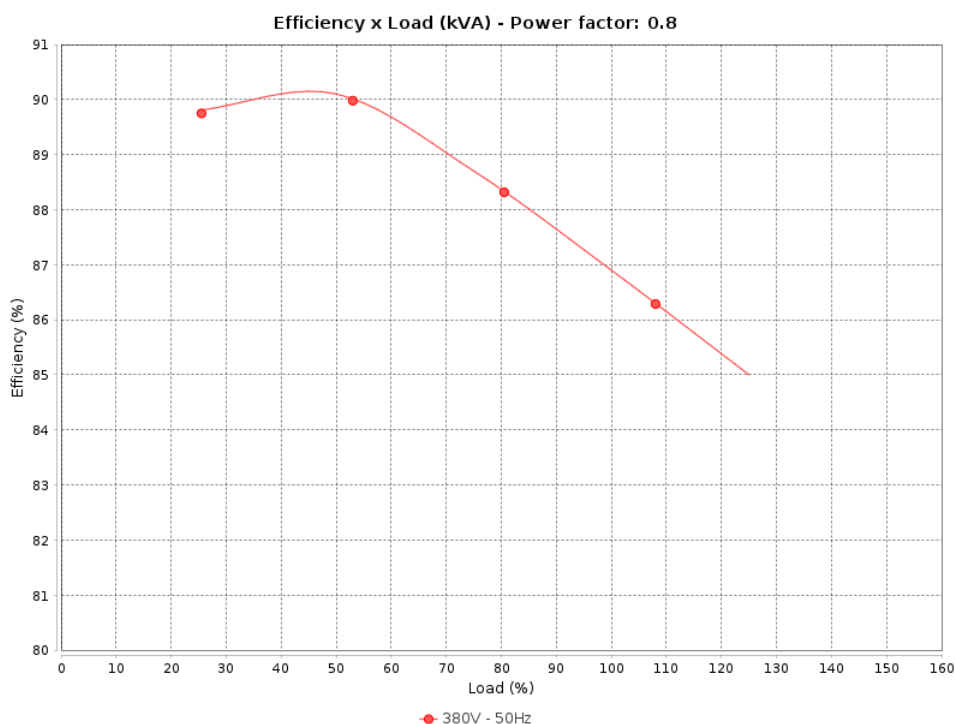
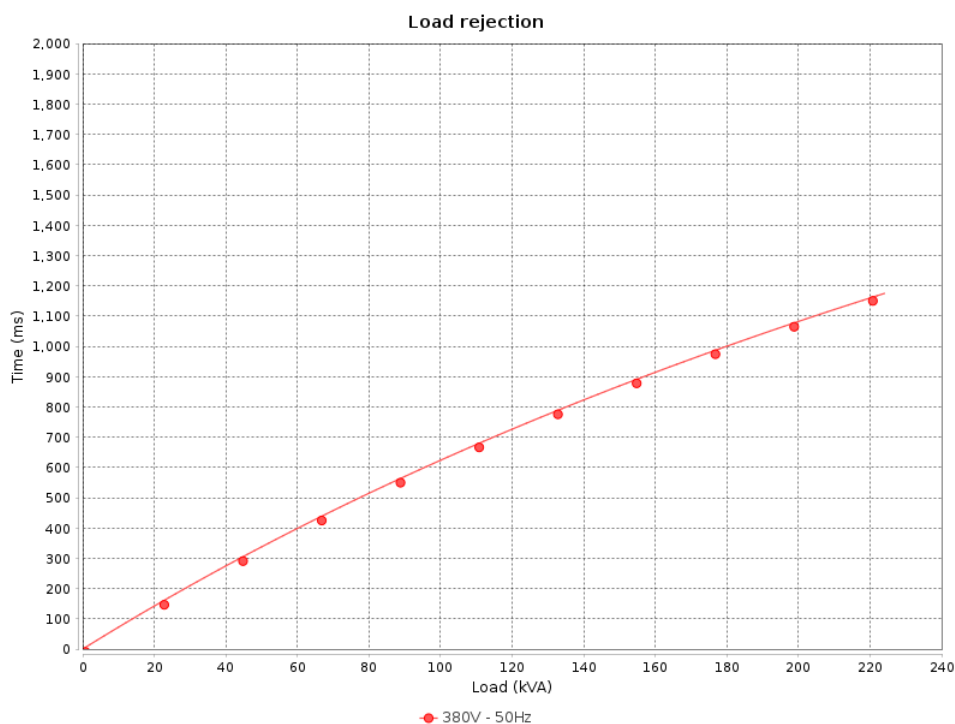
Synchronous Alternator



Rev.	Changes Summary	Performed	Checked	Date
Performed by				Page 3 / 6
Checked by				
Date	11/09/2023			
				Revision

DATA SHEET

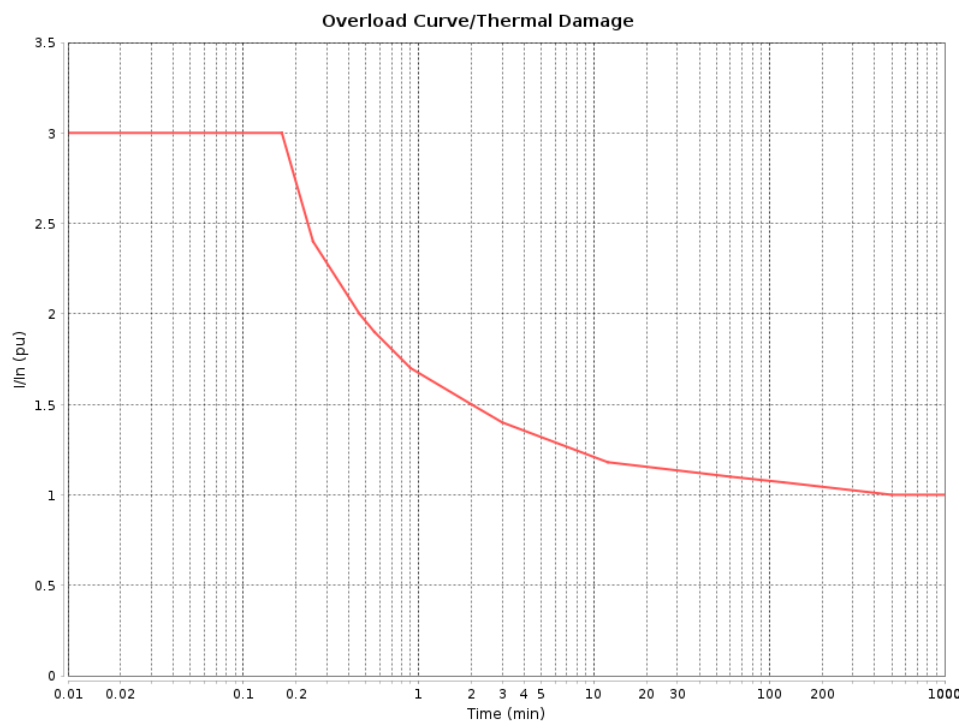
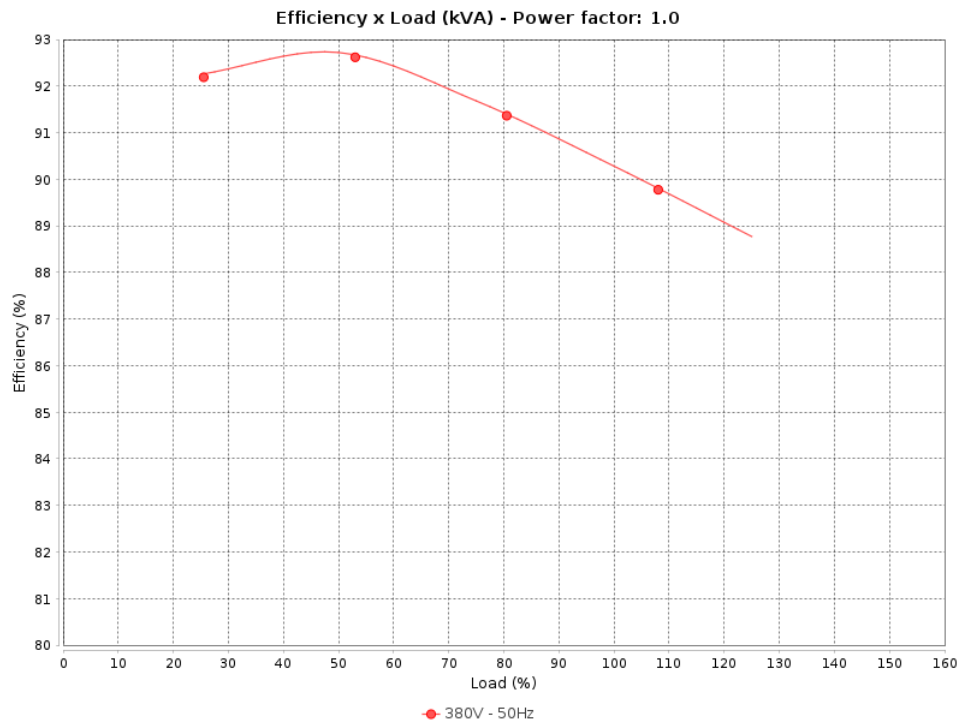
Synchronous Alternator



Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 4 / 6	Revision
Checked by				
Date				

DATA SHEET

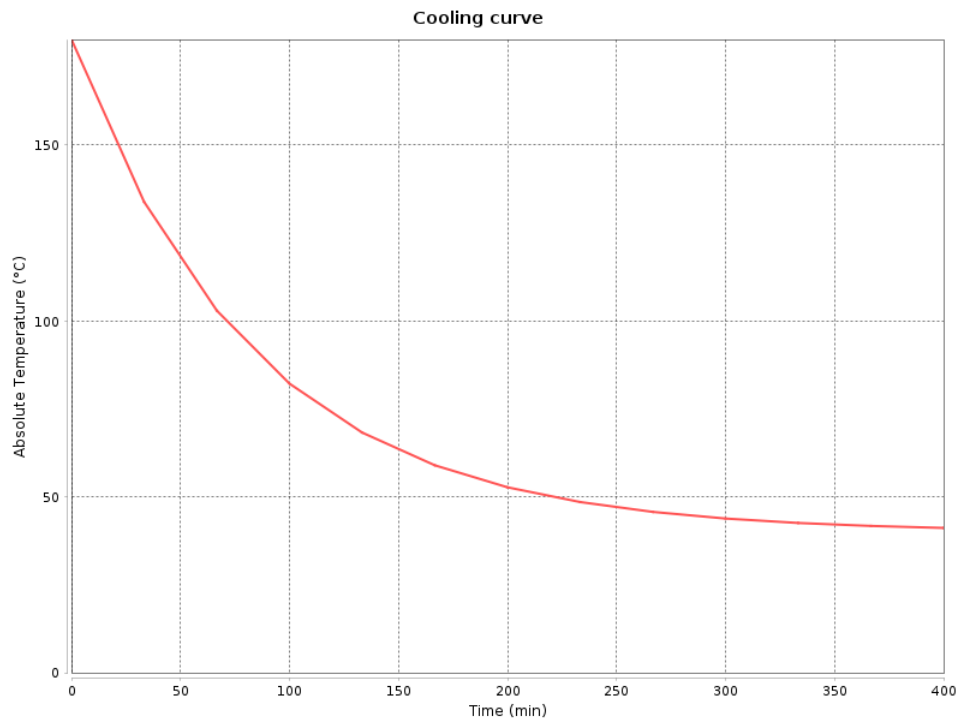
Synchronous Alternator



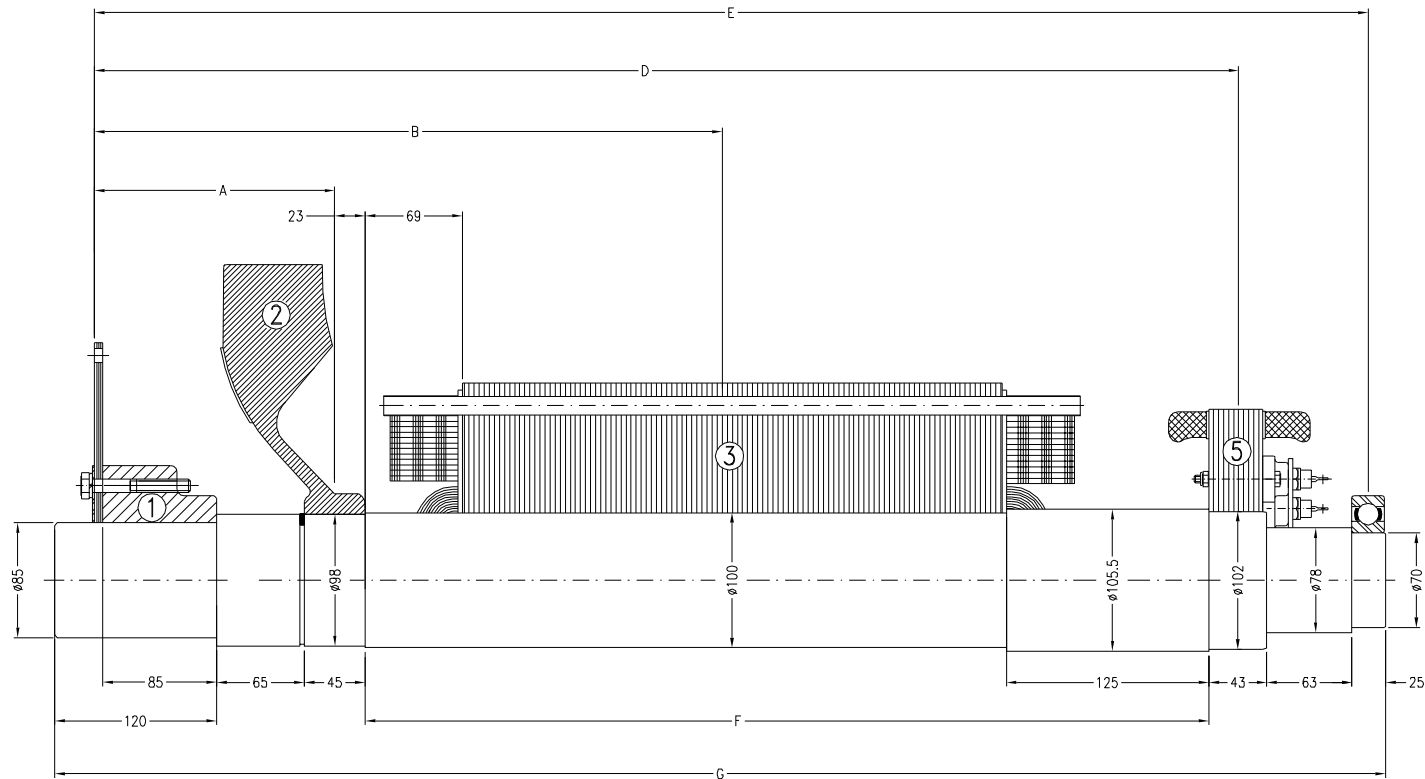
Rev.	Changes Summary	Performed	Checked	Date
Performed by				Page 5 / 6
Checked by				
Date	11/09/2023			

DATA SHEET

Synchronous Alternator



Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 6 / 6	Revision
Checked by				
Date				



TIPO	DISCOS	DIMENSÕES: mm / DIMENSIONS: mm							1		2		3		5		Total Weight	Total Mom. Iner.
TYPE	DISCS	A	B	C	D	E	F	G	WEIGHT MASSA kg	MOMENT MOMENTO kgm ²	WEIGHT MASSA kg	MOMENT MOMENTO kgm ²	WEIGHT MASSA kg	MOMENT MOMENTO kgm ²	WEIGHT MASSA kg	MOMENT MOMENTO kgm ²	kg	J
GTA 251 __HD	SAE 14	176.0	348.0	---	694.0	792.0	475	836	17.0	0.27	1.7	0.043	69.0	0.79	14.0	0.14	101.7	1.24
GTA 251 __HE			363.0	---									111.7	1.36				
GTA 252 __VB			403.0	---	844.0	942.0	625	986					109.0	1.24			141.7	1.69
GTA 252 __II			443.0	---									138.0	1.56			170.7	2.01
GTA 252 __IR			468.0	---									155.0	1.76			187.7	2.21

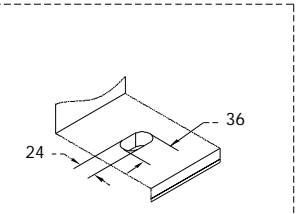
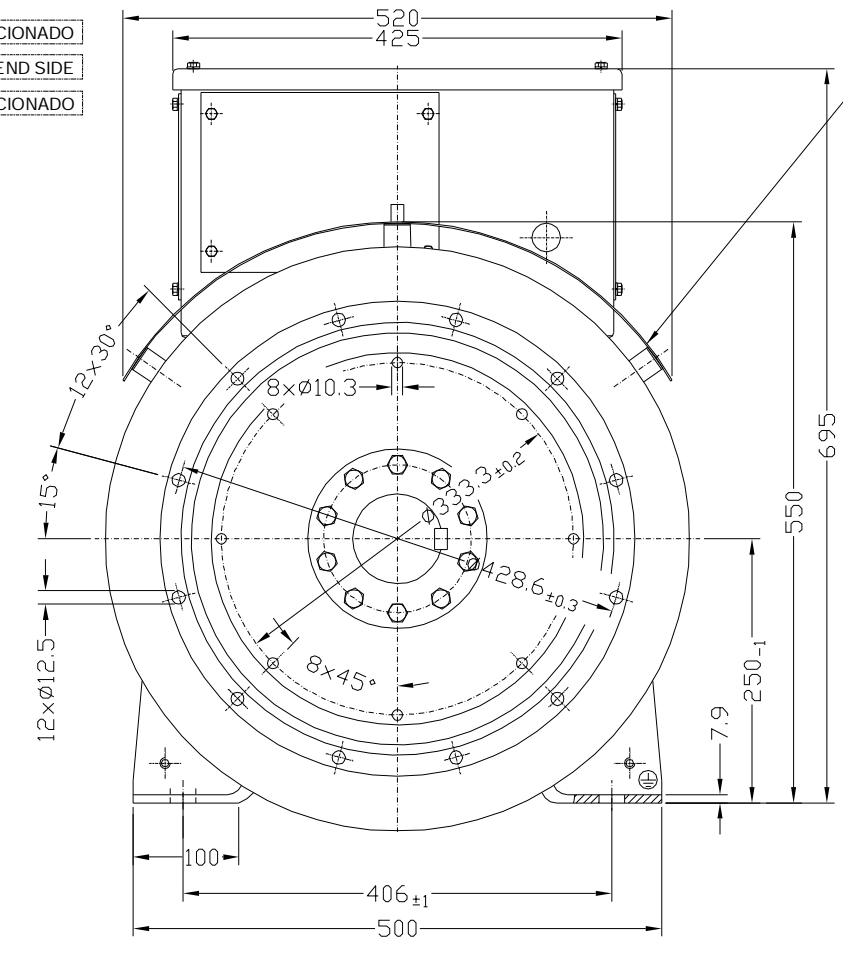
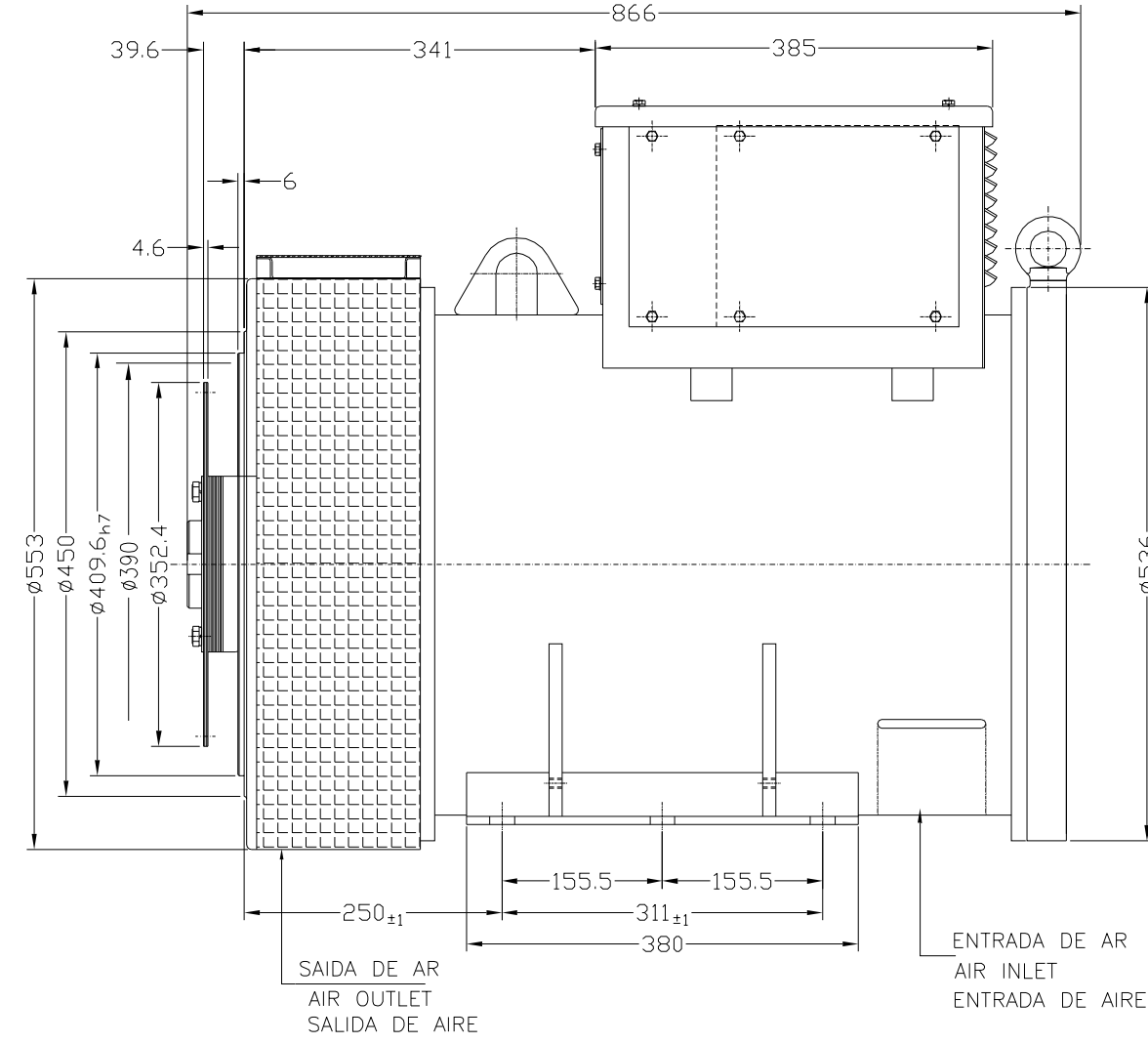
TIPO	DISCOS	DIMENSÕES: mm / DIMENSIONS: mm							1		2		3		5		Total Weight	Total Mom. Iner.
TYPE	DISCS	A	B	C	D	E	F	G	WEIGHT MASSA kg	MOMENT MOMENTO kgm ²	WEIGHT MASSA kg	MOMENT MOMENTO kgm ²	WEIGHT MASSA kg	MOMENT MOMENTO kgm ²	WEIGHT MASSA kg	MOMENT MOMENTO kgm ²	kg	J
GTA 251 __HD	SAE 11.5	190.0	362.0	---	708.0	806.0	475	836	15.0	0.12	1.7	0.043	69.0	0.79	14.0	0.14	99.7	1.09
GTA 251 __HE			377.0	---									109.7	1.21				
GTA 252 __VB			417.0	---	858.0	956.0	625	986					109.0	1.24			139.7	1.54
GTA 252 __II			457.0	---									138.0	1.56			168.7	1.86
GTA 252 __IR			482.0	---									155.0	1.76			185.7	2.06

PESO BRUTO / GROSS WEIGHT		kg		PESO LÍQUIDO / NET WEIGHT		kg		ESC / SCALE	1:3.84		
EMISSÃO INICIAL / INITIAL EMISSION											
EXEC / EXECUTED	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 B15									
VERIF. / CHECKED							10009091382				
LIBER. / RELEASED							000		00		
DATA LB / REL DT	WEN	JARAGUA DO SUL	ENGENHARIA DO PRODUTO	FOLHA / SHEET	1 / 1						

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.



Furo para fixação da máquina
 (Detalhe fora de escala)
 Mounting Hole
 (Detail is not in scale)
 Agujero para fijación de la máquina
 (Detalle fuera de escala)

NOTAS / NOTES / NOTAS
 Máquina / Machine / Máquina : GTA251 - B15T
 Grau de proteção / Protection / Grado de protección: IP21 / IP23
 Flange de acoplamento / Coupling flange / Brida de acoplamiento: SAE 3
 Disco de acoplamento / Coupling disc / Disco de acoplamiento: SAE 11,5

PESO BRUTO / GROSS WEIGHT		PESO LIQUIDO / NET WEIGHT		ESC / SCALE				
ECM	LOC	RESUMO MODIFICAÇÃO / SUMMARY OF MODIFICATIONS		EXECUTADO	VERIFICADO	LIBERADO	DATA	VER
EXEC. / EXECUTED		DIMENSIONAL GTA251 B15T		EXECUTED	CHECKED	RELEASED	DATE	VER
VERIF. / CHECKED								
LIBER. / RELEASED								
DATA LB / REL DT	29.01.2018							
				10005057727		000 01		
				FOLHA / SHEET 01 / 01				