

DATA SHEET

Synchronous Alternator



Customer	: HooverTec LLC	Notes:	
Customer reference	:		
Product line	: AG10 280MI60AI	Product code	: 13943312
Area classification	: Safe		1011327425

General data		Degree of protection	: IP23
Frame (IEC)	: 280	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	: 1127 kg
Excitation system	: Brushless with Auxiliary Coil	Overload	: 1.1x In per 1h each 6h
Cooling	: IC01	Momentary Overload	: 1.5x In per 30s

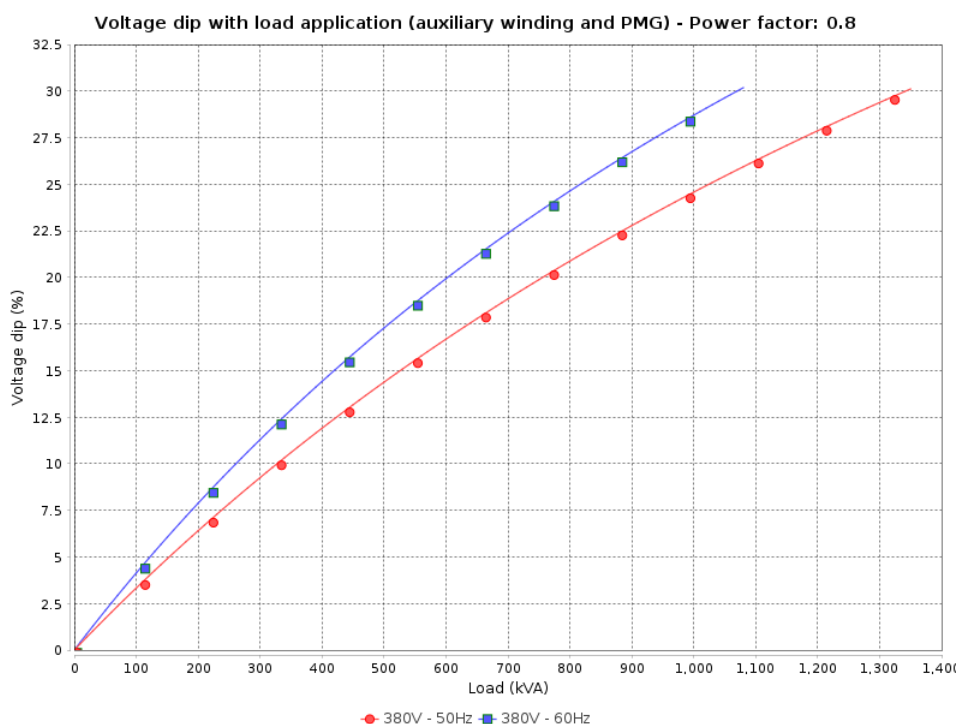
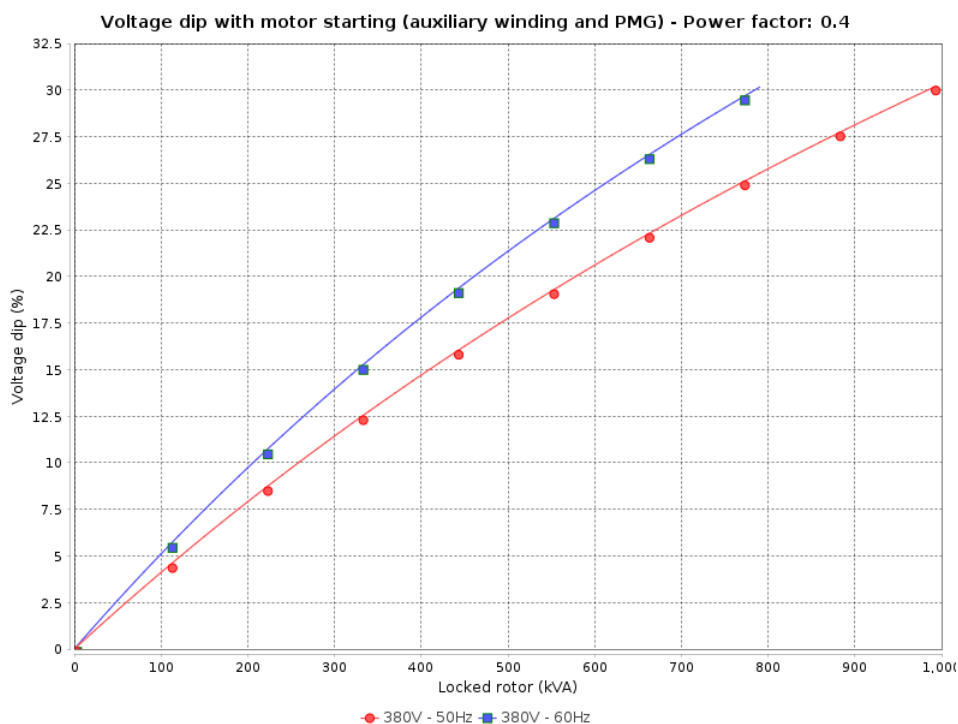
Frequency and number of phases		50 Hz				60 Hz			
		3ph		1ph	3ph		1ph		
Voltages (V)	Y (series star) connection	380	400	-	380	416	440	480	-
	YY (parallel star) connection	190	200	-	190	208	220	240	-
	Δ (series delta) connection	220	230	-	220	240	254	277	-
	ΔΔ (parallel delta) connection	110	115	-	110	120	127	138	-
	Zig-zag or single phase delta	-	-	-	190 - 200	-	-	-	220 - 240
Output power (kVA)	Continuous 80/40	320	328	185	336	362	380	412	219
	Continuous 105/40	367	376	212	395	414	440	472	254
	Continuous 125/40	400	410	231	420	452	475	515	274
	Standby 150/40	430	450	248	450	486	515	550	297
	Standby 163/27	450	470	260	468	506	533	580	308
Electrical data (FP=0.8 / Continuous 125/40 (H))	Xd(%) Dir. axis synchronous reactance	318.1	270.0	424.2	429.0	359.8	338.0	292.35	450.7
	X'd(%) Dir. axis transient reactance	16.4	14.8	21.9	21.6	17.6	16.5	14.91	22.0
	X''d(%) Dir. axis subtrans. reactance	11.8	10.7	15.7	15.6	12.7	11.9	10.71	15.9
	Xq(%) Quad. axis sync. reactance	85.0	76.9	113.3	136.6	0.0	92.9	104.45	123.9
	X''q(%) Quad. axis subtrans. react.	9.4	8.4	12.6	12.5	22.0	9.5	11.7	12.7
	X2(%) Negative sequence reactance	10.6	9.5	14.2	14.1	17.3	10.7	11.2	14.3
	X0(%) Zero sequence reactance	2.0	1.8	2.6	2.6	2.1	2.0	1.79	2.6
	T'd(ms) Short Circ. Trans. time const.	110.0	136.0	146.7	138.0	83.4	137.0	134.03	182.7
	T''d(ms) Short Circ. Sub. time const.	11.0	1.4	14.7	2.1	1.7	1.4	1.2	1.8
	T'do(ms) Open Circ. time const Trans	1584	1951	2112	2102	1100	1998	1874.47	2664
	T''do(ms) Open Circ. time const Subt	1.7	2.1	2.3	2.6	2.1	2.0	2.11	2.7
	Ta(ms) Armature time const.	14	13	19	19	15	15	13.09	19
	uc(V) Full load excitation voltage	60.1	61.6	60.1	50.5	52.4	53.4	56.66	53.4
	ic(A) Full load excitation current	2.9	3.0	2.9	2.4	2.5	2.6	2.72	2.6
ic(A) No load excitation current	0.8	0.9	1.0	0.6	0.7	0.7	0.8	0.9	
Icc(A) Sustained Short-Circ. Current	1823	1775	1732	1914	1882	1870	1858.35	1712	
Kcc Short-circuit ratio	0.31	0.35	0.41	0.25	0.28	0.29	0.33	0.39	
Efficiency (%)	Power factor	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0
	25% of load	90.2	92.1	89.9	91.8	82.9	84.7	91.4	93.1
	50% of load	92.9	94.4	92.8	94.3	85.4	86.7	93.5	94.8
	75% of load	93.2	94.7	93.2	94.7	85.6	87	93.6	94.9
	100% of load	92.9	94.4	93	94.6	85.4	86.8	93.2	94.5
	125% of load	92.3	94	92.6	94.3	84.9	86.4	92.5	94

Other characteristics		Automatic voltage regulator		According to:	
Air flow	: 2.37 m³/s	Accuracy (stability)	: +/- 0.5%	IEC 60034	
Exciter stator winding resistance at 20°C	: 20.86 ohm	Rated current	: 5 A	NBR 5117	
Stator winding resistance at 20°C	: 0.00815 ohm	Analog input	: Yes	NEMA MG1	
Rotor winding resistance	: 2.02 ohm	Digital input	: No	VDE530	
Stator winding layers	: 2	Peak current	: 7 A/10 s	ISO 8528	
Inertia WR²	: 5.23 kgm²	Droop / TC	: Yes	CSA	
NDE Bearing	: 6315 2RS	Dynamic recovery	: 8 to 500 ms		
DE bearing		U/F	: Yes		
Flange	: SAE 1	Internal voltage adjustment	: +/- 15%		
Coupling disc	: SAE 14	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	13/09/2023		1 / 6	

DATA SHEET

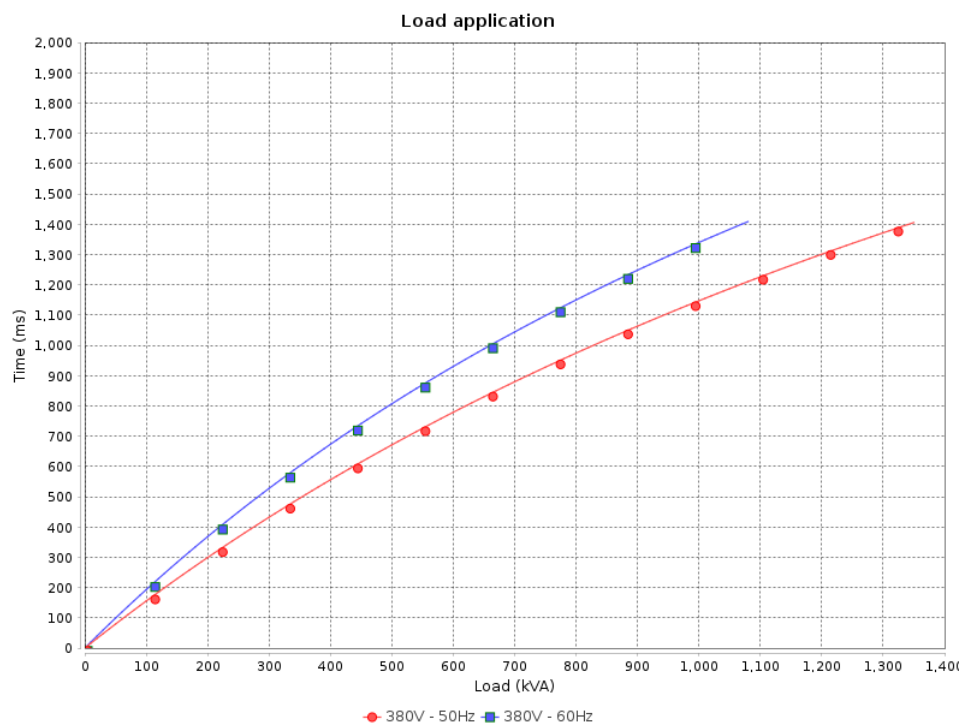
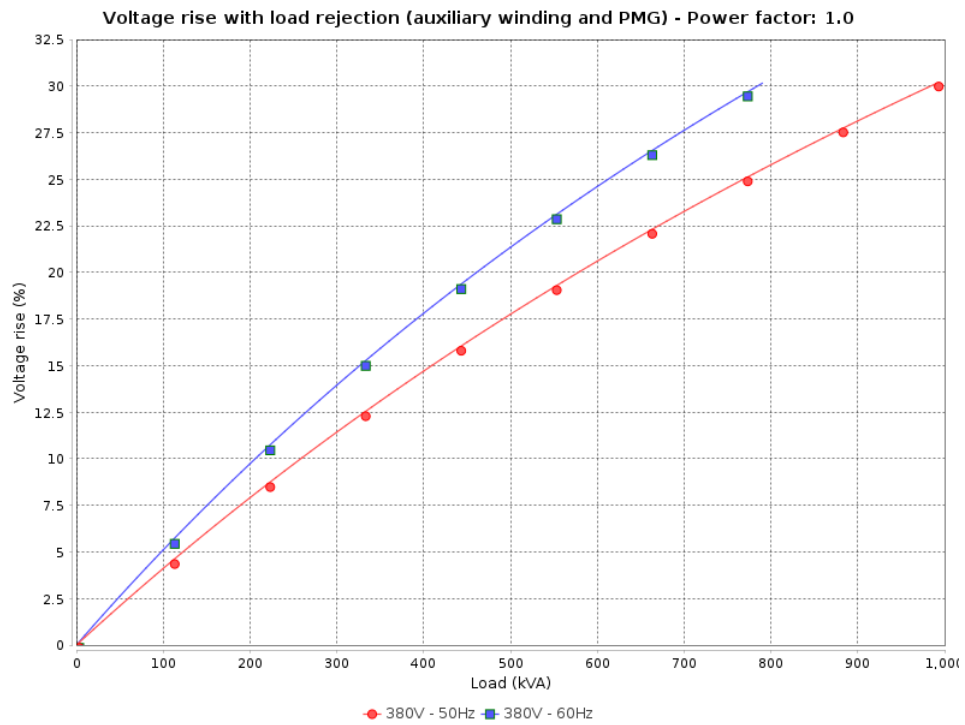
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Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 2 / 6	Revision
Checked by				
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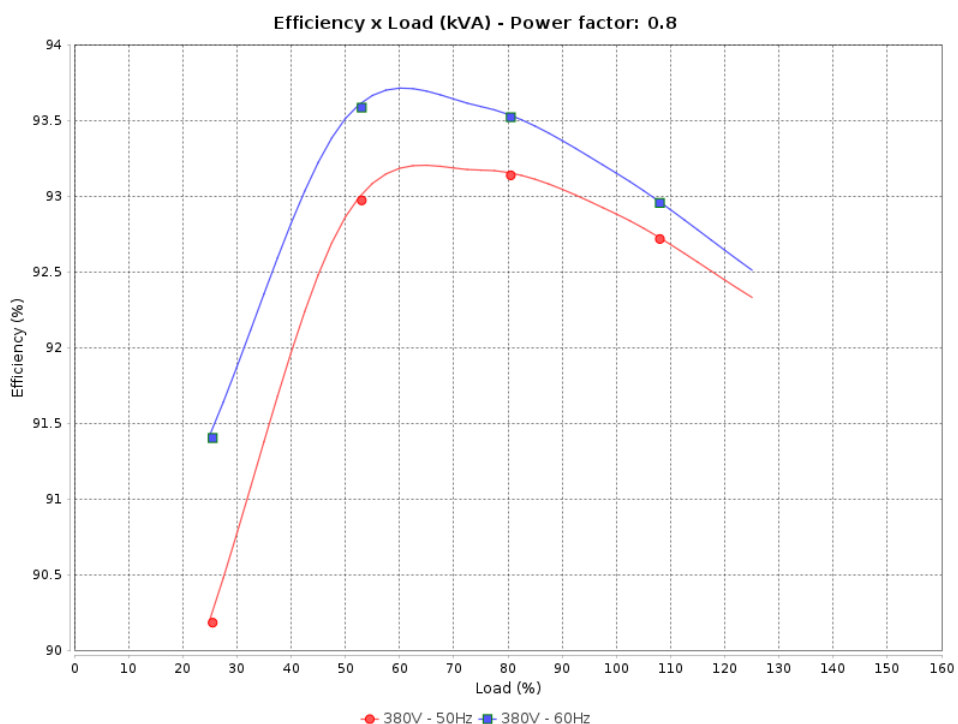
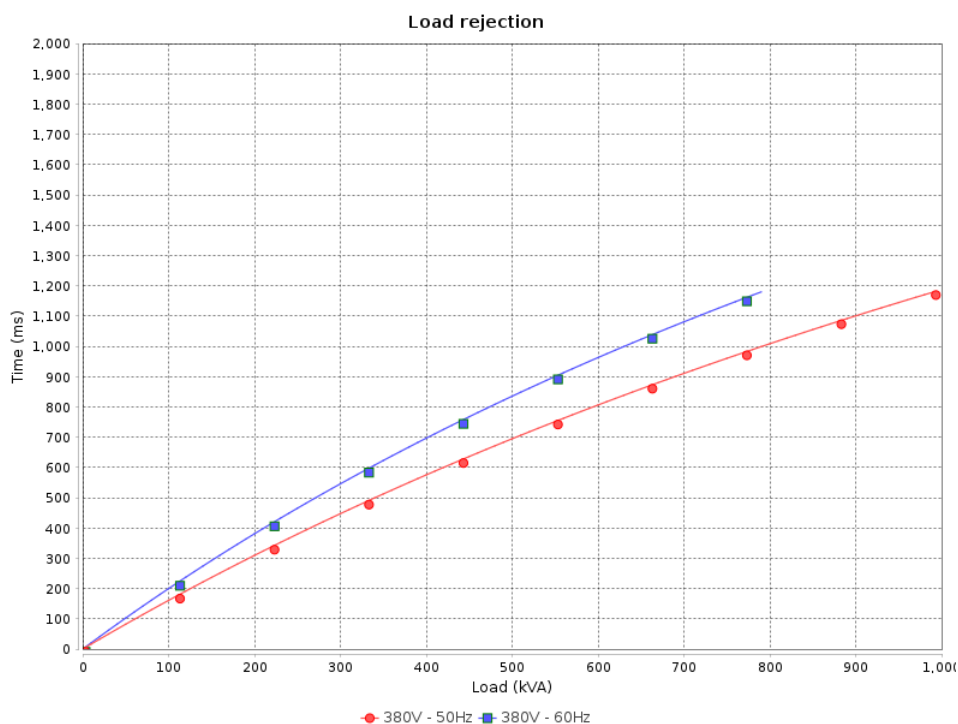
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Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		3 / 6		
Date	13/09/2023			

DATA SHEET

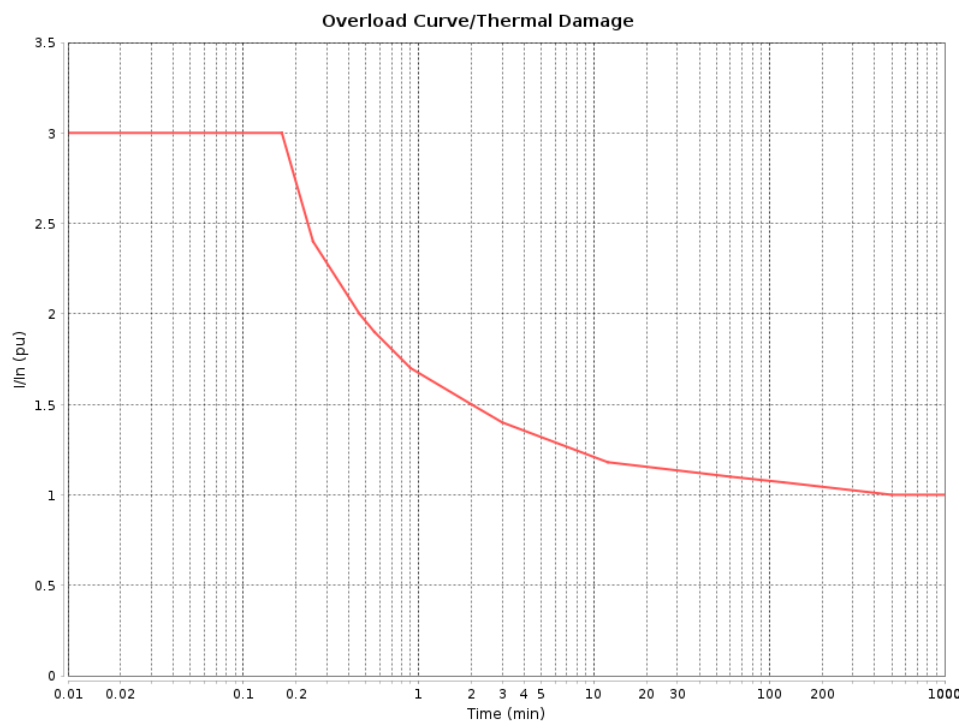
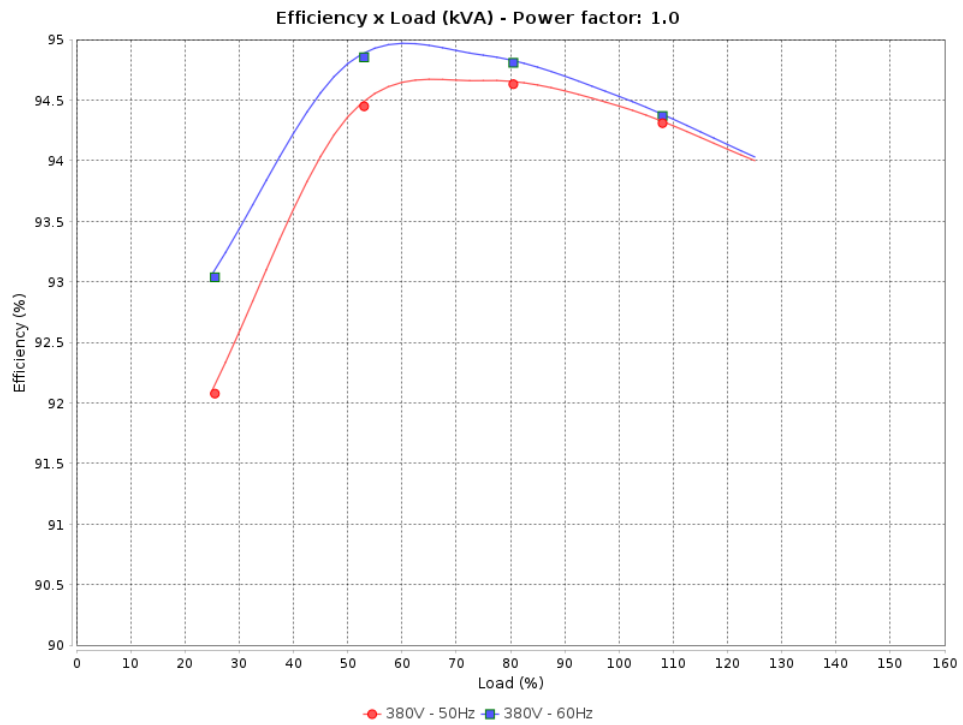
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Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 4 / 6	Revision
Checked by				
Date				

DATA SHEET

Synchronous Alternator



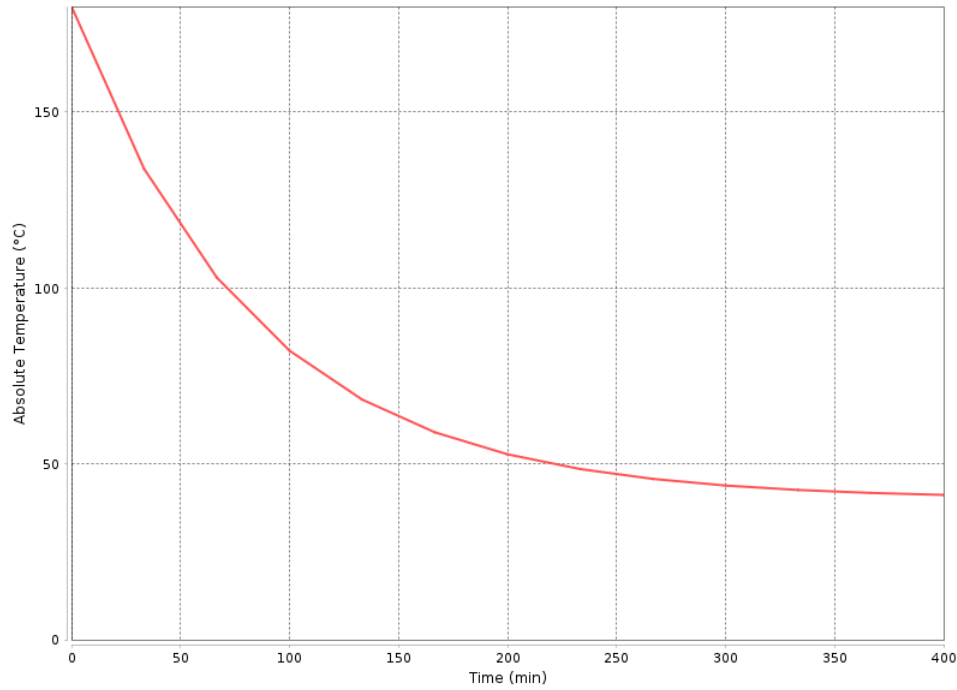
Rev.	Changes Summary	Performed	Checked	Date
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Checked by				
Date				
			Page 5 / 6	Revision

DATA SHEET

Synchronous Alternator



Cooling curve



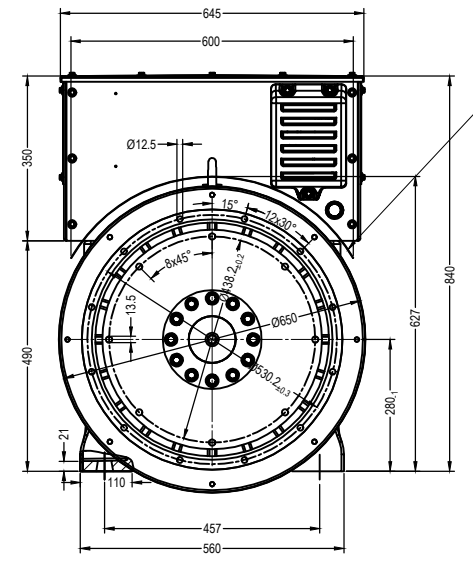
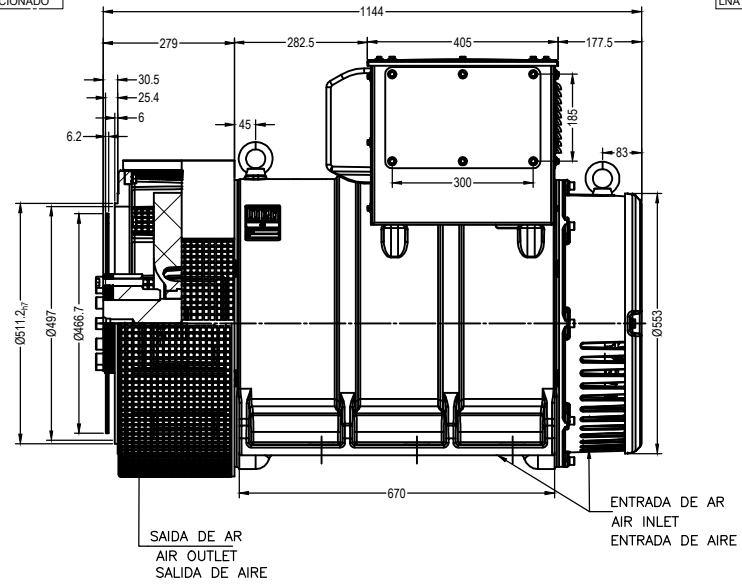
Rev.	Changes Summary	Performed	Checked	Date
Performed by				Page 6 / 6
Checked by				
Date	13/09/2023			
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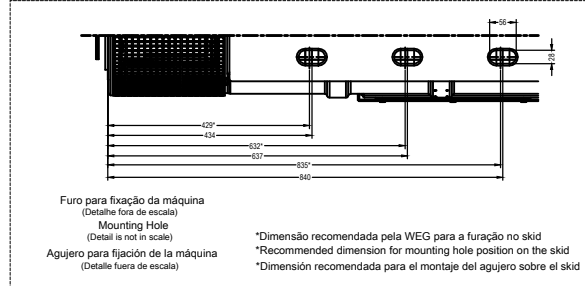
LA - LADO ACIONADO
 DE - DRIVE-END SIDE
 LA - LADO ACCIONADO

LNA - LADO NÃO ACIONADO
 NDE - NON DRIVE-END SIDE
 LNA - LADO NÃO ACCIONADO

A
 B
 C
 D
 E



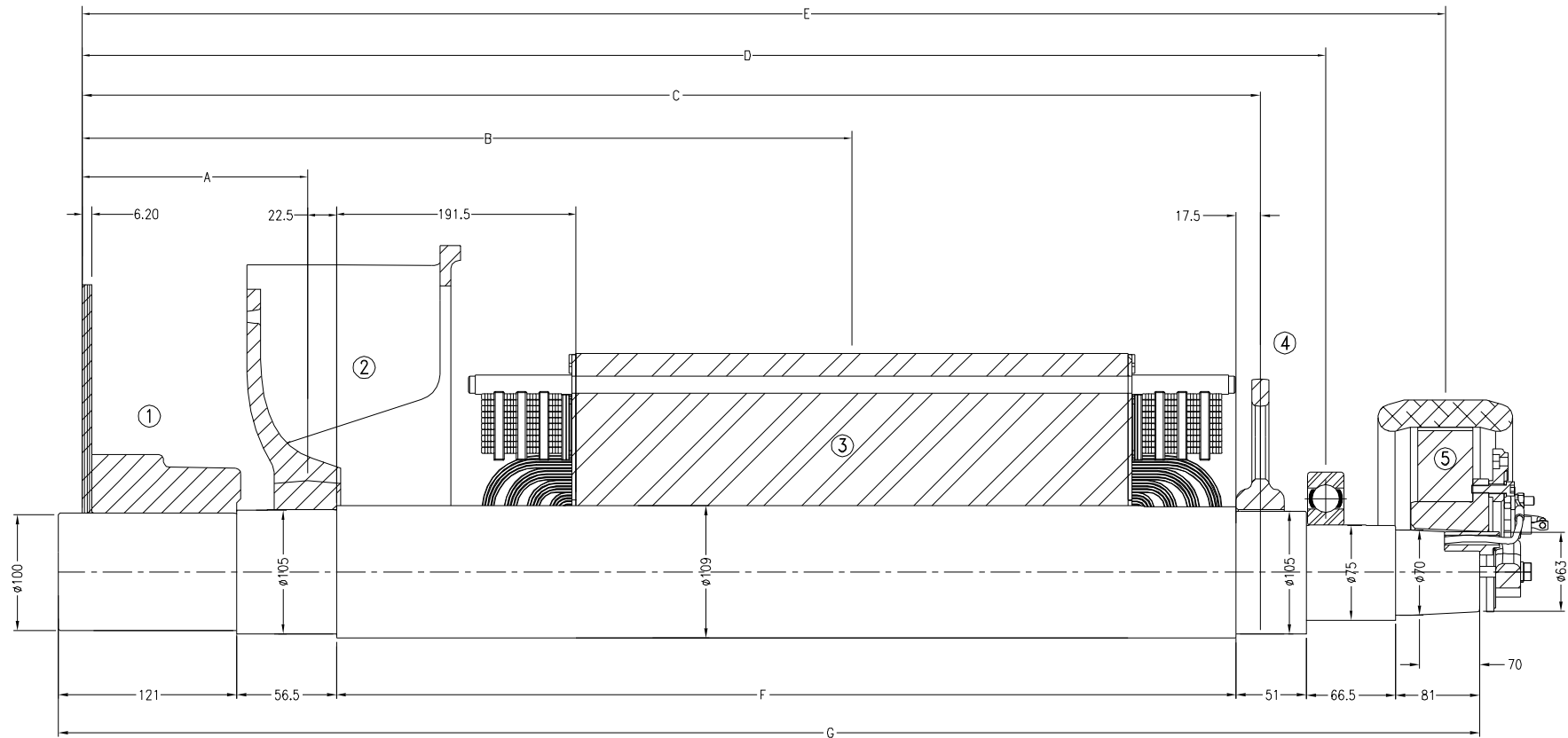
APENAS PARA O GRAU DE PROTEÇÃO IP23.
 ONLY FOR IP23 PROTECTION.
 SOLAMENTE PARA EL GRADO DE PROTECCIÓN IP23.



NOTAS / NOTES / NOTAS
 Máquina / Machine / Máquina: AG10280M - B15T
 Grau de proteção / Protection / Grado de protección: IP21 / IP23
 Flange de acoplamento / Coupling flange / Brida de acoplamiento: SAE 1
 Disco de acoplamento / Coupling disc / Disco de acoplamiento: SAE 14

PESO BRUTO / GROSS WEIGHT		PESO LIQUIDO / NET WEIGHT		ESC / SCALE	1:10.00
ECM ECM	LOC LOC	RESUMO MODIFICAÇÃO SUMMARY OF MODIFICATIONS		EXECUTADO EXECUTED	VERIFICADO CHECKED
EXEC. / EXECUTED		DIMENSIONAL AG10 280M B15T		LIBERADO RELEASED	DATA DATE
VERIF. / CHECKED				10005101438	
LIBER. / RELEASED				000	03
DATA LB / REL DT	10.07.2017			FOLHA / SHEET	01 / 01





TIPO/AG10	DISCO	DIMENSÕES: mm / DIMENSIONS: mm						1		2		3		4		5		Total Weight	Total Mom. Iner.	
TYPE/AG10	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	WEIGHT MASSA kg	MOMENT MOMENTO kgm ²	kg	J kgm ²
280M_50	SAE 18	140.0	526.0	-	937.0	1031.0	700.0	1076.0	27.8	0.609	19.30	0.68	214.5	3.434	-	-	20.5	0.20	282.1	4.761
280M_60			536.0										293.4	4.940						
280M_70			556.0										319.2	5.353						
280M_80			566.0										331.2	5.544						

TIPO/AG10	DISCO	DIMENSÕES: mm / DIMENSIONS: mm						1		2		3		4		5		Total Weight	Total Mom. Iner.	
TYPE/AG10	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	WEIGHT MASSA kg	MOMENT MOMENTO kgm ²	kg	J kgm ²
280M_50	SAE 14	140.0	526.0	-	937.0	1031.0	700.0	1076.0	23.8	0.327	19.30	0.68	214.5	3.434	-	-	20.5	0.20	278.1	4.479
280M_60			536.0										289.4	4.658						
280M_70			556.0										315.2	5.071						
280M_80			566.0										327.2	5.262						

TIPO/AG10	DISCO	DIMENSÕES: mm / DIMENSIONS: mm						1		2		3		4		5		Total Weight	Total Mom. Iner.	
TYPE/AG10	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	WEIGHT MASSA kg	MOMENT MOMENTO kgm ²	kg	J kgm ²
280M_50	SAE 11,5	140.0	526.0	-	937.0	1031.0	700.0	1076.0	20.3	0.174	19.30	0.68	214.5	3.434	-	-	20.5	0.20	274.6	4.326
280M_60			536.0										285.9	4.505						
280M_70			556.0										311.7	4.918						
280M_80			566.0										323.7	5.109						

PESO BRUTO		PESO LÍQUIDO		SIC		NOME	
ESCALA	UNID.	EMISSÃO FINAL / IMPRIMIR		E REVISÃO		VERIFICADO	
1:1	mm	REVISÃO MODIFICAÇÃO		ELABORADO		LIBERADO	
DATA	DE	NOME DO PROJETO		DATA		DE	
01/01/2018		10009091312		000		00	
VIA: PROJEÇÃO		VIA: PROJEÇÃO		VIA: PROJEÇÃO		VIA: PROJEÇÃO	
LIBERADO		LIBERADO		LIBERADO		LIBERADO	