

DATA SHEET

Synchronous Alternator



Customer	: HooverTec LLC	Notes:	
Customer reference	:		
Product line	: AG10 280MI50AI	Product code	: 14092871
Area classification	: Safe		1011327379

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	: 1068 kg
Excitation system	: Brushless with Auxiliary Coil	Overload	: 1.1x In per 1h each 6h
Cooling	: IC01	Momentary Overload	: 1.5x In per 30s

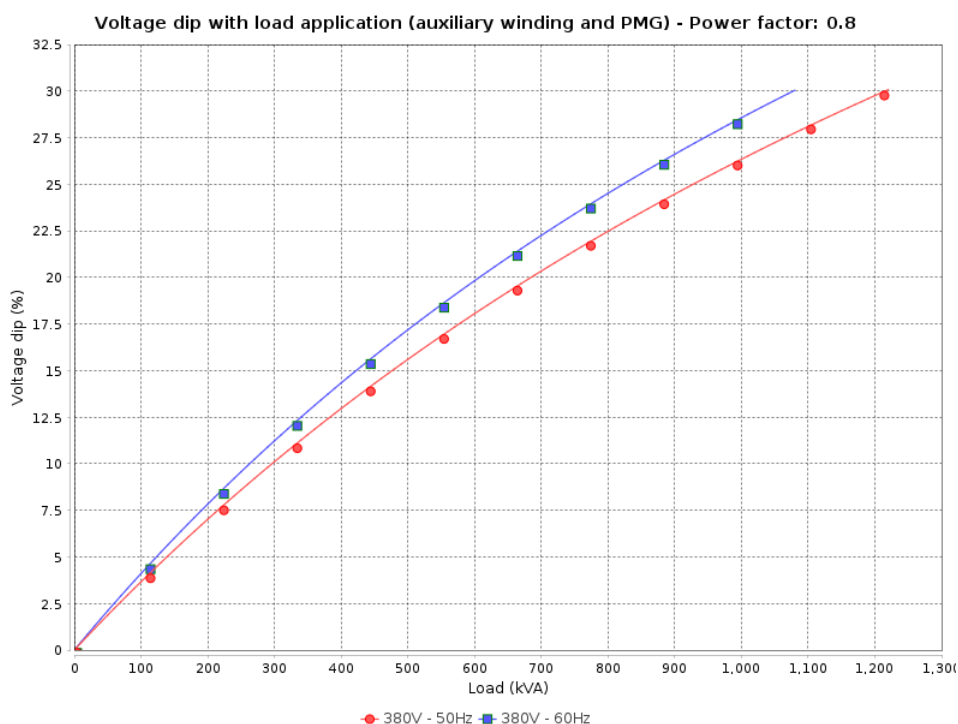
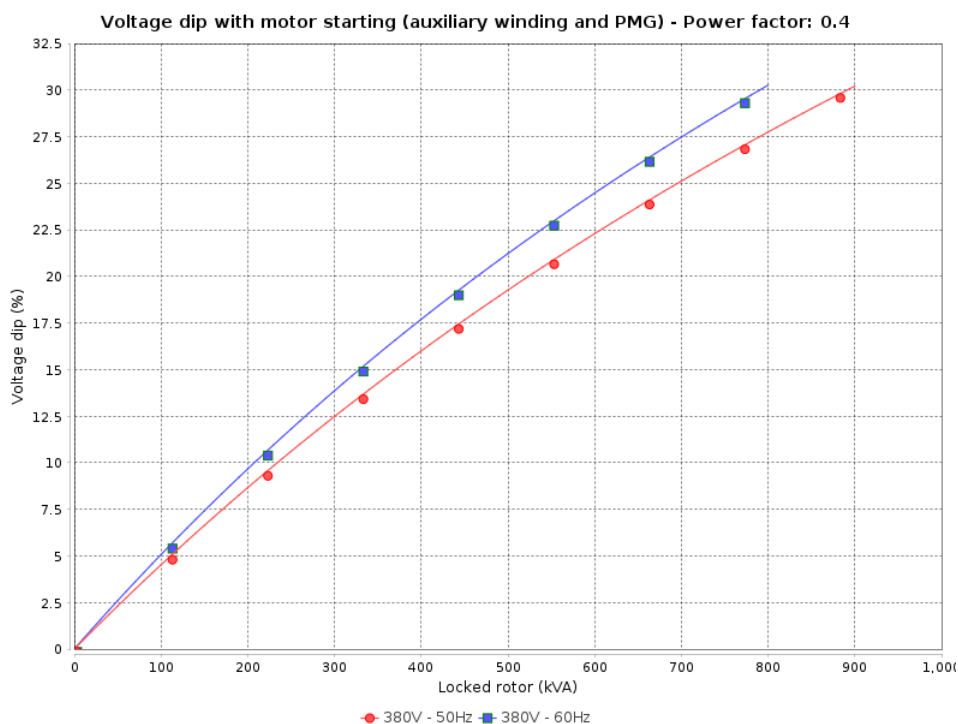
Frequency and number of phases		50 Hz				60 Hz			
		3ph		1ph	3ph		1ph		
Voltages (V)	Y (series star) connection	380	400	-	380	416	440	480	-
	YY (parallel star) connection	190	200	-	190	208	220	240	-
	Δ (series delta) connection	220	230	-	220	240	254	277	-
	ΔΔ (parallel delta) connection	110	115	-	110	120	127	138	-
	Zig-zag or single phase delta	-	-	-	190 - 200	-	-	-	220 - 240
Output power (kVA)	Continuous 80/40	288	288	166	302	329	352	378	203
	Continuous 105/40	330	330	191	350	377	403	440	233
	Continuous 125/40	360	360	208	378	412	440	472	254
	Standby 150/40	365	365	211	435	461	477	517	275
	Standby 163/27	385	370	222	460	488	505	550	292
Electrical data (FP=0.8 / Continuous 125/40 (H))	Xd(%) Dir. axis synchronous reactance	427.1	338.1	466.6	506.8	439.0	419.0	360.65	558.7
	X'd(%) Dir. axis transient reactance	16.3	12.9	17.8	19.3	16.8	16.0	13.76	21.3
	X''d(%) Dir. axis subtrans. reactance	12.5	9.9	13.7	14.8	12.8	12.2	10.46	16.3
	Xq(%) Quad. axis sync. reactance	120.9	95.8	132.1	143.5	0.0	118.7	102.12	158.2
	X'q(%) Quad. axis subtrans. react.	10.0	7.9	10.9	11.9	21.4	9.8	8.36	13.0
	X2(%) Negative sequence reactance	11.3	8.9	12.3	13.4	17.1	11.0	9.41	14.7
	X0(%) Zero sequence reactance	2.1	1.6	2.3	2.5	2.1	2.0	1.74	2.7
	T'd(ms) Short Circ.Trans.time const.	60.3	47.8	65.9	71.6	81.3	59.2	50.92	78.9
	T''d(ms) Short Circ. Sub. time const.	1.6	1.3	1.7	1.9	1.6	1.6	1.34	2.1
	T'do(ms) Open Circ. time const Trans	1203	952	1314	1427	1072	1180	1015.56	1573
	T''do(ms) Open Circ. time const Subt	2.2	1.7	2.4	2.6	2.1	2.1	1.84	2.9
	Ta(ms) Armature time const.	10	8	11	12	15	10	8.43	13
	uc(V) Full load excitation voltage	57.6	56.7	57.6	47.3	50.0	52.0	54.94	52.0
	ic(A) Full load excitation current	3.5	3.4	3.5	2.8	3.0	3.1	3.3	3.1
ic(A) No load excitation current	0.8	0.9	25.2	0.6	0.7	0.8	0.91	1.0	
Icc(A) Sustained Short-Circ. Current	1641	1559	1559	1723	1715	1732	1703.18	1588	
Kcc Short-circuit ratio	0.23	0.3	0.21	0.2	0.23	0.24	0.28	0.18	
Efficiency (%)	Power factor	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0
	25% of load	92.8	94.4	93	94.5	85.4	86.8	93.4	94.7
	50% of load	93.9	95.3	94	95.4	86.4	87.7	94.4	95.6
	75% of load	93.4	95.1	93.7	95.3	86	87.4	94	95.4
	100% of load	92.8	94.6	93.1	94.8	85.4	87	93.2	94.8
	125% of load	92	94	92.4	94.3	83.7	85.7	92.3	94.2

Other characteristics		Automatic voltage regulator		According to:	
Air flow	: 2.12 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	: 0.0086 ohm	Analog input	: Yes	NEMA MG1	
Rotor winding resistance	: 1.91 ohm	Digital input	: No	VDE530	
Stator winding layers	: 2	Peak current	: 7 A/10 s	ISO 8528	
Inertia WR²	: 4.82 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	

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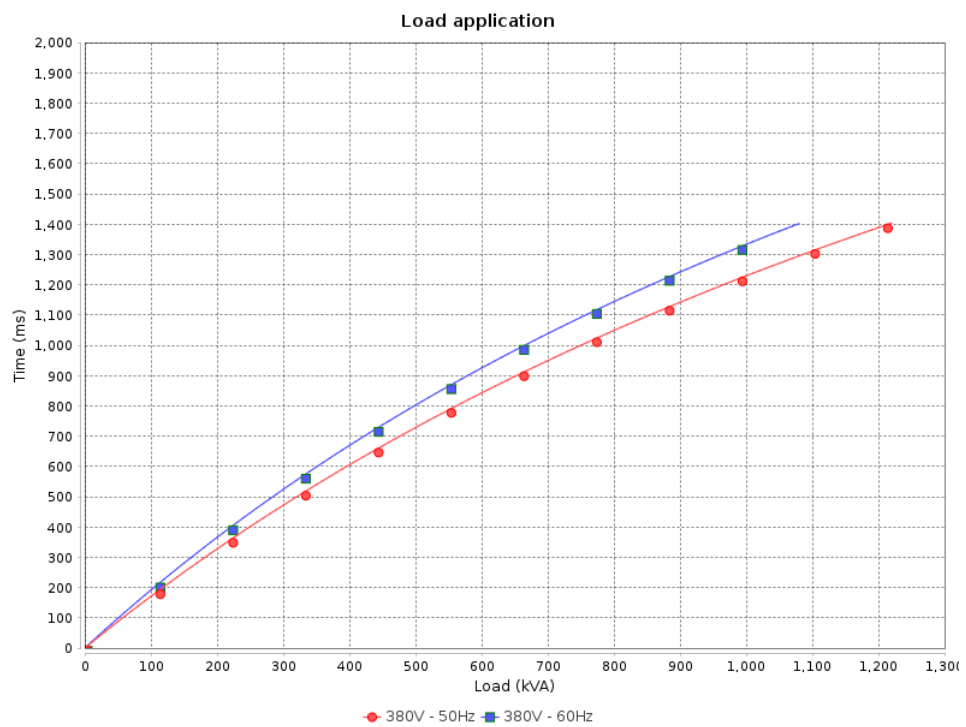
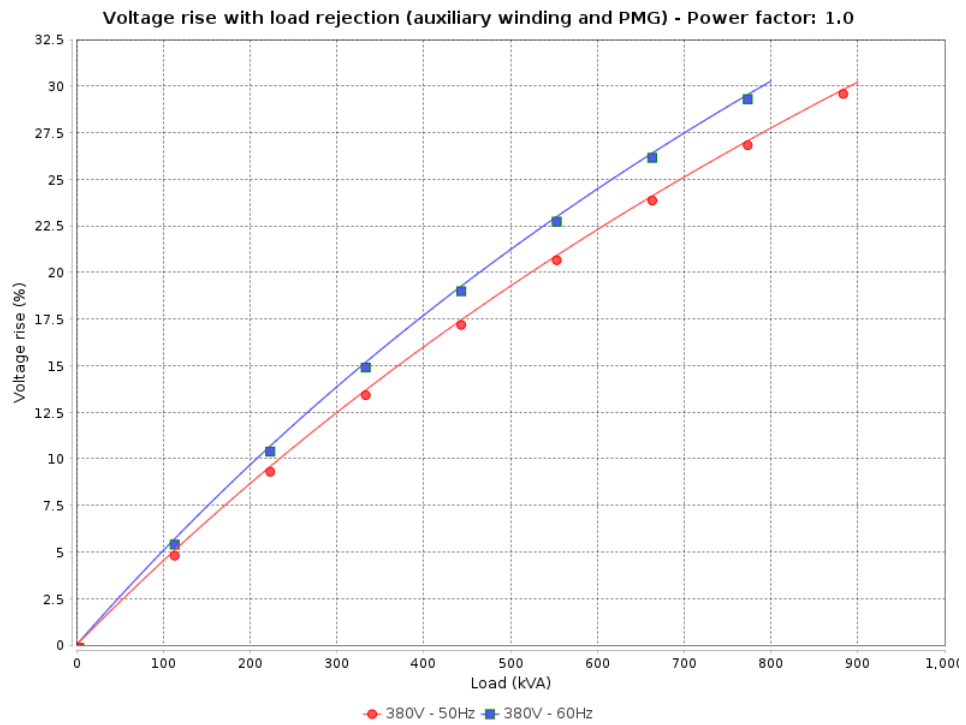
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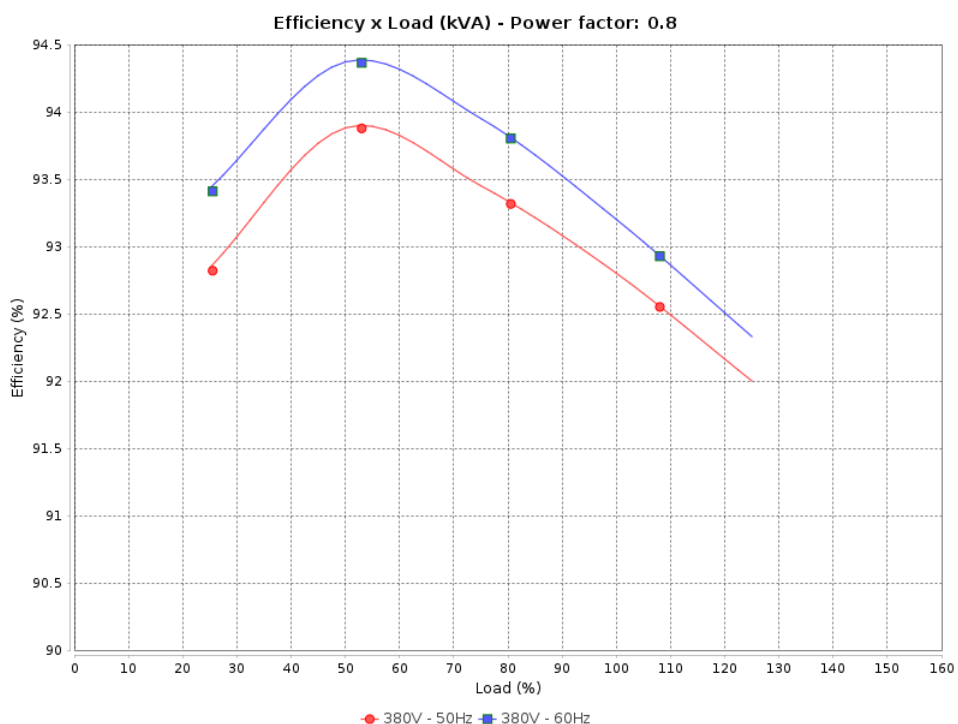
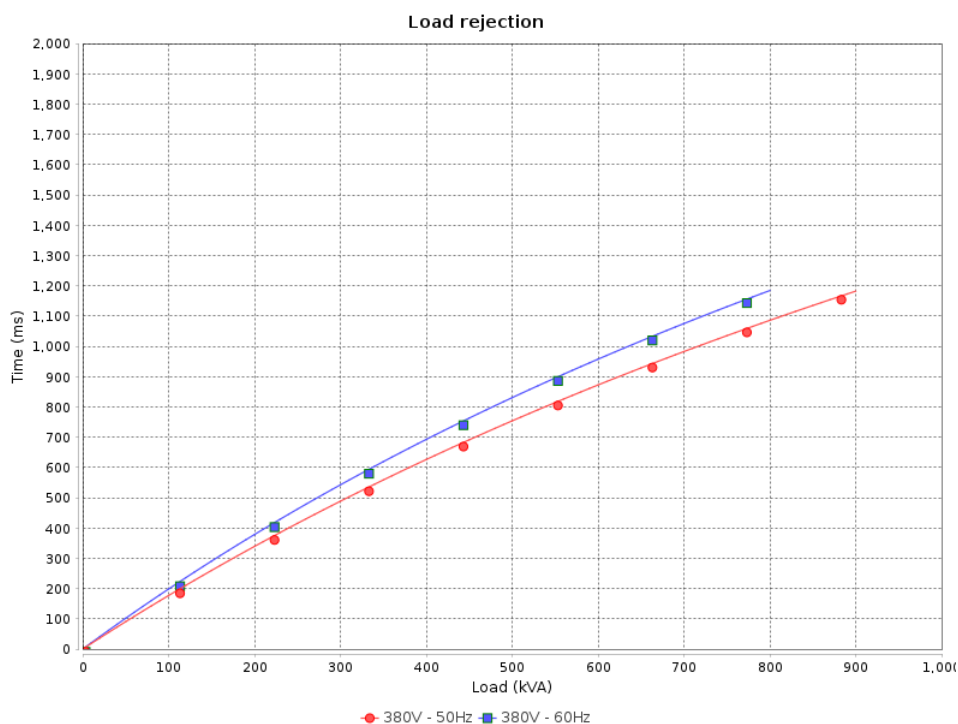
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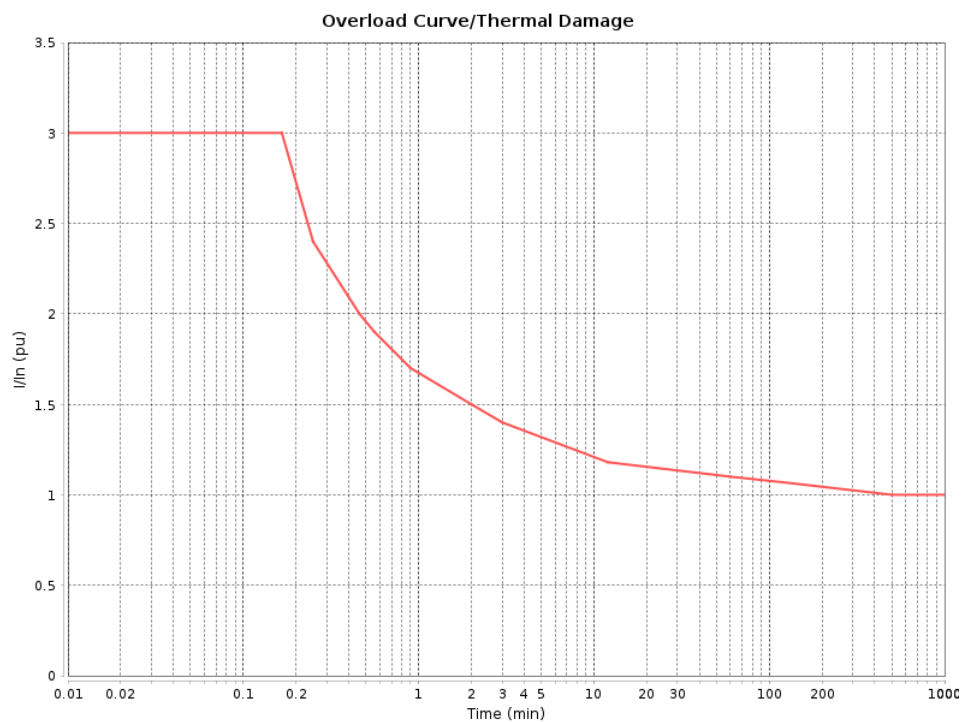
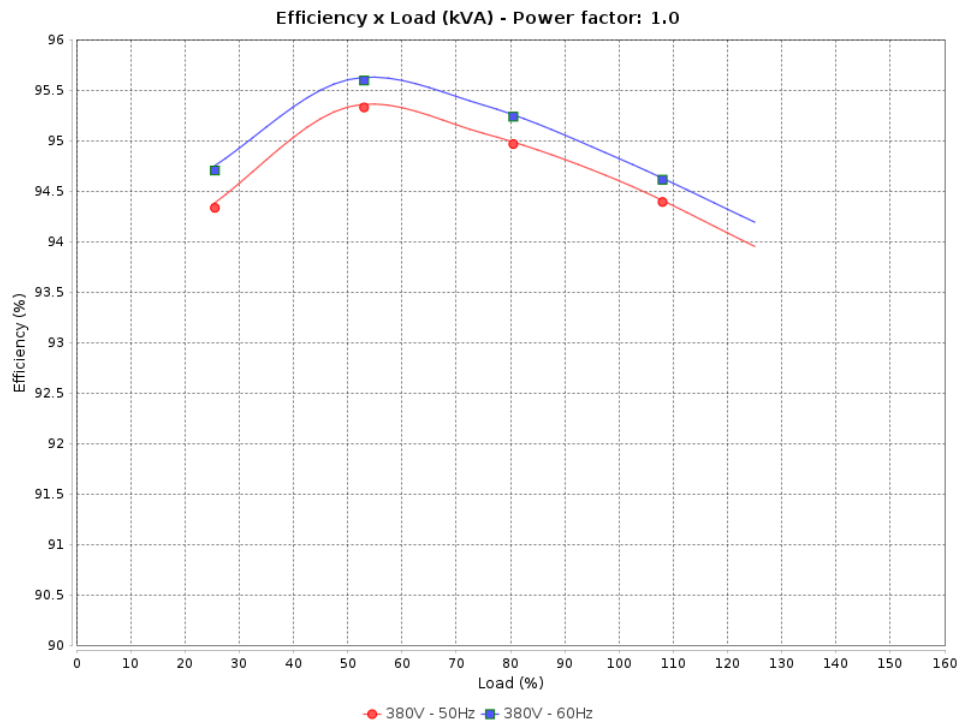
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Synchronous Alternator



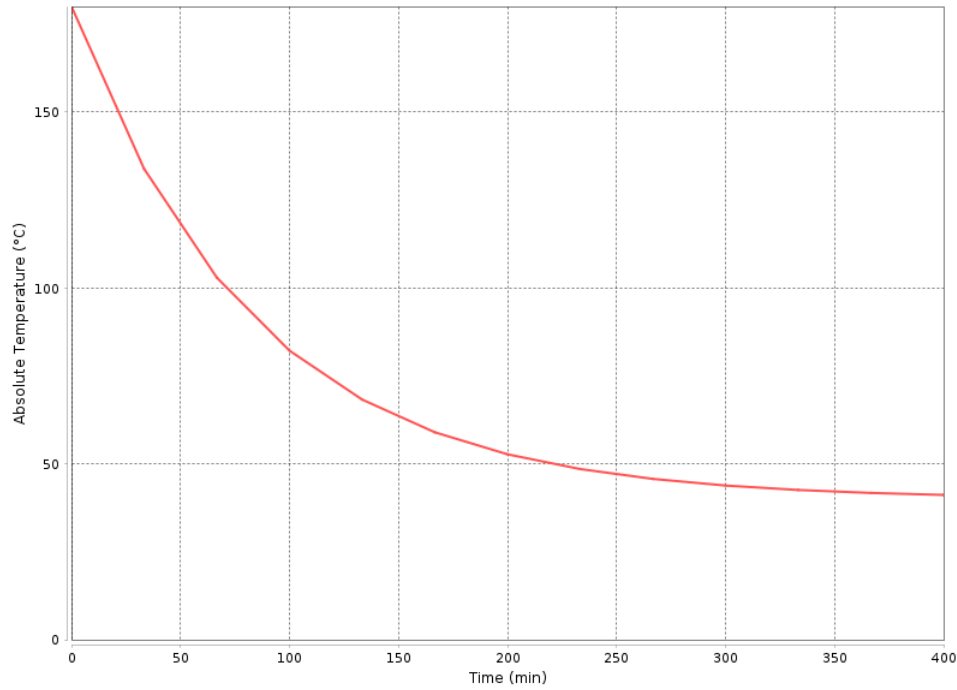
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Cooling curve



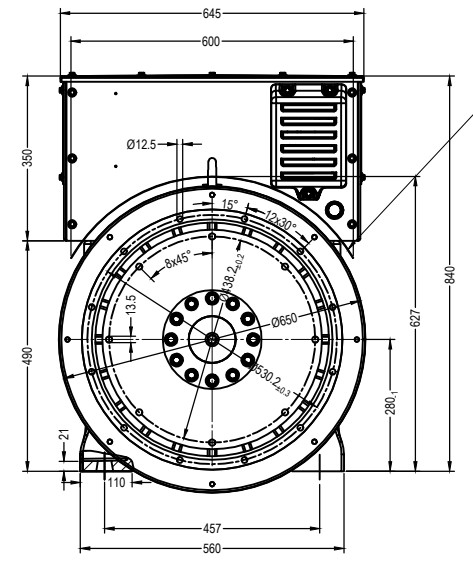
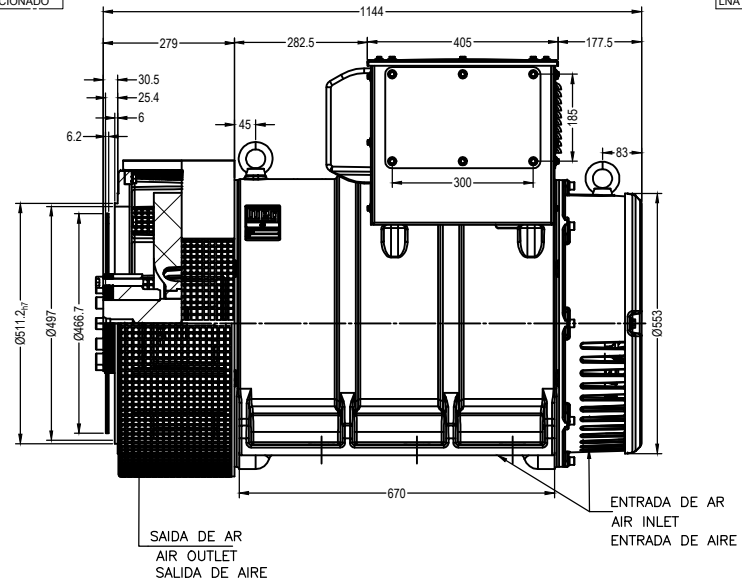
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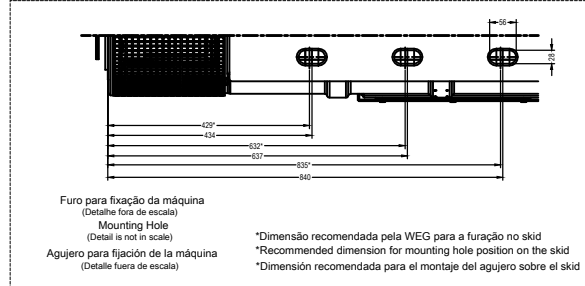
LA - LADO ACIONADO
 DE - DRIVE-END SIDE
 LA - LADO ACCIONADO

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

A
 B
 C
 D
 E



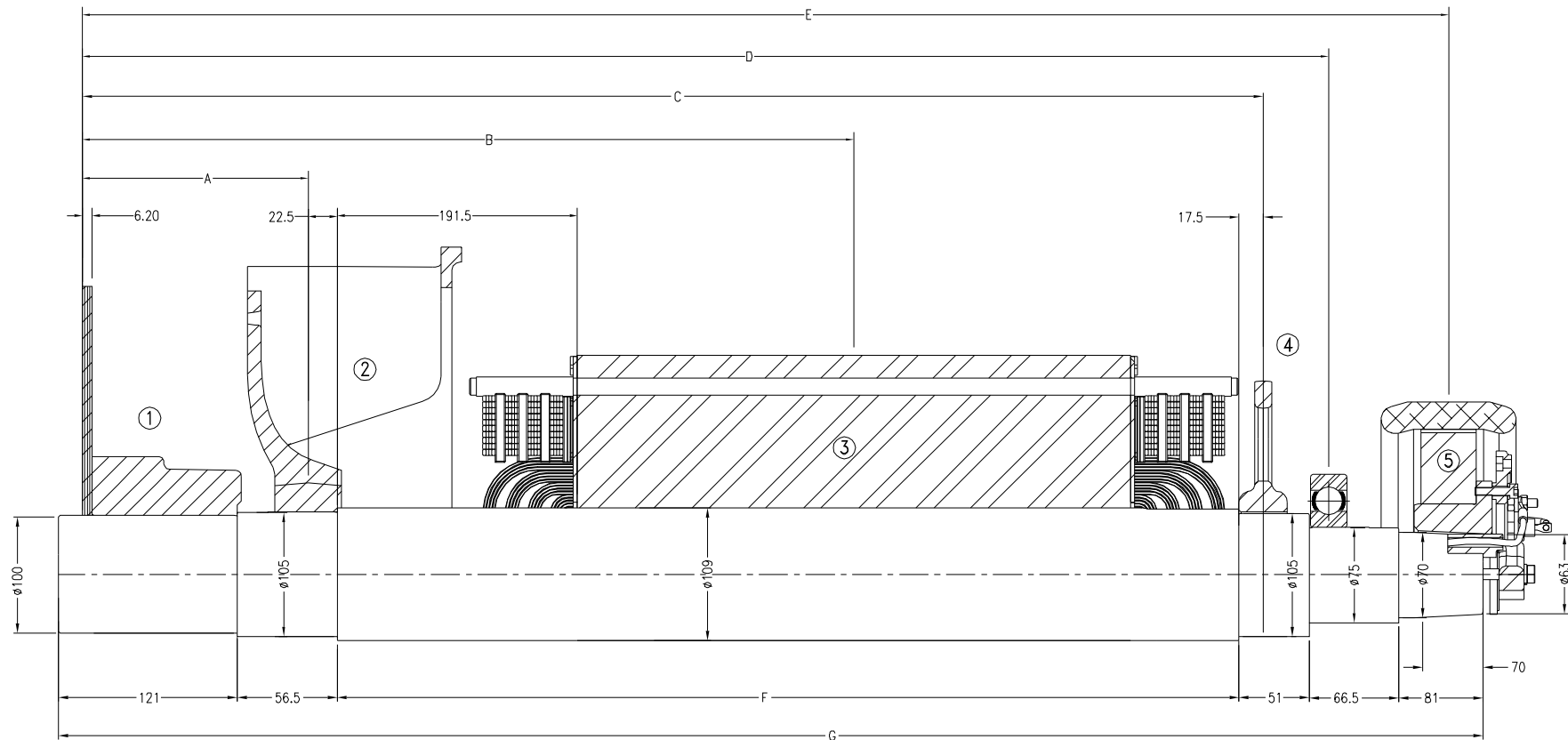
APENAS PARA O GRAU DE PROTEÇÃO IP23.
 ONLY FOR IP23 PROTECTION.
 SOLAMENTE PARA EL GRADO DE PROTECCIÓN IP23.



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
EXEC. / EXECUTED	LOC. / LOC	RESUMO MODIFICAÇÃO / SUMMARY OF MODIFICATIONS		EXECUTADO / EXECUTED	VERIFICADO / CHECKED
LIBER. / RELEASED		DIMENSIONAL AG10 280M B15T			
DATA LB / REL DT	10.07.2017			10005101438	000 03
				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 / GROSS WEIGHT	PESO LÍQUIDO / NET WEIGHT					CSC / INCL					
USO / USE	EMISSÃO FINAL / FINAL EMISSION							VERIFICADO / CHECKED	LIBERADO / RELEASED	DATA / DATE	VL / V
REC. / ISSUED	LDC	SISTEMA MODIFICAÇÃO / MODIFICATION SYSTEM					EXCETO / EXCEPT				
REC. / ISSUED		SISTEMA MODIFICAÇÃO / MODIFICATION SYSTEM								10009091312	
REC. / ISSUED										000 00	
REC. / ISSUED										7	