

Datasheets

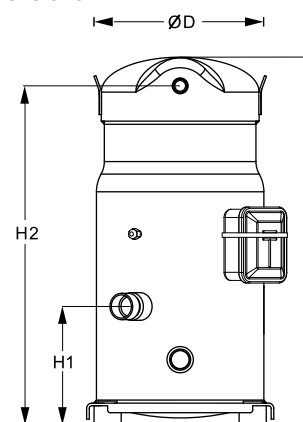
Danfoss scroll compressors **SM / SY / SZ / SH / WSH**



General Characteristics

Model number (on compressor nameplate)		SZ100S4VC
Code number for Singlepack*		SZ100-4VI
Code number for Industrial pack**		SZ100-4VM
Drawing number		8552036b
Suction and discharge connections		Brazed
Suction connection		1-1/8" ODF
Discharge connection		3/4" ODF
Oil sight glass		Threaded
Oil equalisation connection		3/8" flare SAE
Oil drain connection		None
LP gauge port		Schrader
IPR valve		None
Swept volume		127,2 cm ³ /rev
Displacement @ Nominal speed		22.1 m ³ /h @ 2900 rpm - 26.7 m ³ /h @ 3500 rpm
Net weight		65 kg
Oil charge		3,25 litre, POE - 160SZ
Maximum system test pressure Low Side / High side		25 bar(g) / 32 bar(g)
Maximum differential test pressure		24 bar
Maximum number of starts per hour		12
Refrigerant charge limit		8,5 kg
Approved refrigerants		R407C, R134a, R404A, R507A

Dimensions

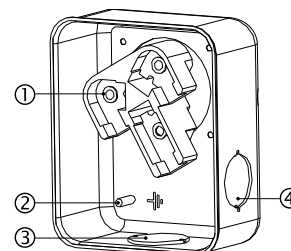


D=254 mm
H=508 mm
H1=141,9 mm
H2=464,5 mm
H3=- mm

Electrical Characteristics

Nominal voltage	380-400V/3/50Hz - 460V/3/60Hz
Voltage range	340-440 V @ 50Hz - 414-506 V @ 60Hz
Winding resistance (between phases) +/- 7% at 25°C	1.48 Ω
Rated Load Amps (RLA)	13.6 A
Maximum Continuous Current (MCC)	19 A
Locked Rotor Amps (LRA)	98 A
Motor protection	Internal overload protector

Terminal box



IP54 (with cable gland)
1: Power connection, 3 x 4.8 mm (3/16")
2: Earth M4-12
3: Knock-out Ø 29 mm (1.14")
4: Knock-out Ø 25.5 mm (1.00")

Recommended Installation torques

Oil sight glass	50 Nm
Power connections / Earth connection	3 Nm / 2 Nm
Mounting bolts	21 Nm

Parts shipped with compressor

Mounting kit with grommets, bolts, nuts, sleeves and washers
Initial oil charge
Installation instructions

Approvals : CE certified, UL certified (file SA6873), -

*Singlepack: Compressor in cardboard box

**Industrial pack: 8 Unboxed compressors on pallet (order per multiples of 8)

Rotolock accessories, suction side

Code no.

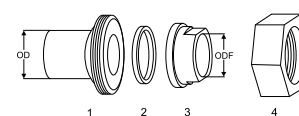
Solder sleeve, P02 (1-3/4" Rotolock, 1-1/8" ODF)	8153004
Angle adapter, C02 (1-3/4" Rotolock, 1-1/8" ODF)	8168005
Rotolock valve, V02 (1-3/4" Rotolock, 1-1/8" ODF)	8168028
Gasket, 1-3/4"	8156132

Rotolock accessories, discharge side

Code no.

Solder sleeve, P04 (1-1/4" Rotolock, 3/4" ODF)	8153008
Angle adapter, C04 (1-1/4" Rotolock, 3/4" ODF)	8168006
Rotolock valve, V04 (1-1/4" Rotolock, 3/4" ODF)	8168029
Gasket, 1-1/4"	8156131

Solder sleeve adapter set



- 1: Rotolock adapter (Suc & Dis)
- 2: Gasket (Suc & Dis)
- 3: Solder sleeve (Suc & Dis)
- 4: Rotolock nut (Suc & Dis)

Rotolock accessories, sets

Code no.

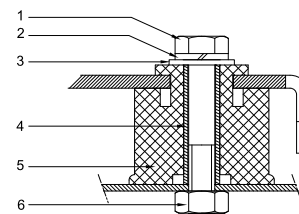
Solder sleeve adapter set (1-3/4" Rotolock, 1-1/8" ODF), (1-1/4" Rotolock, 3/4" ODF)	7765005
Angle adapter set, C02 (1-3/4"~1-1/8"), C04 (1-1/4"~3/4")	7703014
Valve set, V02 (1-3/4"~1-1/8"), V04 (1-1/4"~3/4")	7703009
Gasket set, 1-1/4", 1-3/4", 2-1/4", OSG gaskets black & white	8156013

Oil / lubricants

Code no.

POE lubricant, 160SZ, 1 litre can	7754023
POE lubricant, 160SZ, 2.5 litre can	120Z0571

Mounting kit



- 1: Bolt (4x)
- 2: Lock washer (4x)
- 3: Flat washer (4x)
- 4: Sleeve (4x)
- 5: Grommet (4x)
- 6: Nut (4x)

Crankcase heaters

Code no.

Surface sump heater + bottom insulation, 48 W, 24 V, CE mark, UL	120Z0361
Surface sump heater + bottom insulation, 48 W, 230 V, CE mark, UL	120Z0380
Surface sump heater + bottom insulation, 48 W, 400 V, CE mark, UL	120Z0381
Surface sump heater + bottom insulation, 48 W, 460 V, CE mark, UL	120Z0382
Belt type crankcase heater, 65 W, 460 V, CE mark, UL	120Z0466
Belt type crankcase heater, 65 W, 230 V, CE mark, UL	7773107
Belt type crankcase heater, 65 W, 400 V, CE mark, UL	7773117
Belt type crankcase heater, 65 W, 400 V, CE mark, UL	120Z0039

Miscellaneous accessories

Code no.

Electronic soft start kit, MCI 15 C	7705006
Acoustic hood for scroll compressor S084-S090-S100	7755011
Bottom insulation for scroll compressor	120Z0356
Discharge thermostat kit	7750009

Spare parts

Code no.

Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	8156138
Oil sight glass with gaskets (black & white)	8156019
Gasket for oil sight glass (white teflon)	8156129
Service kit for terminal box 96 x 115 mm, including 1 cover, 1 clamp	8156135
T block connector 52 x 57 mm	8173230

Performance data at 50 Hz, EN 12900 rating conditions

R407C

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-20	-15	-10	-5	0	5	10	15

Cooling capacity in W

30	8 077	10 331	13 043	16 262	20 038	24 421	29 464	35 215	-
35	7 534	9 719	12 337	15 438	19 072	23 289	28 141	33 677	-
40	6 975	9 074	11 582	14 549	18 026	22 061	26 706	32 010	-
45	-	8 398	10 780	13 598	16 900	20 737	25 159	30 215	-
50	-	-	9 933	12 585	15 697	19 320	23 501	28 292	-
55	-	-	-	11 511	14 418	17 809	21 734	26 243	-
60	-	-	-	-	13 062	16 206	19 858	24 067	-
65	-	-	-	-	11 631	14 509	17 870	21 762	-

Power input in W

30	3 899	3 942	3 977	3 999	4 005	3 993	3 960	3 901	-
35	4 345	4 389	4 425	4 449	4 458	4 449	4 418	4 363	-
40	4 849	4 895	4 932	4 959	4 970	4 964	4 937	4 886	-
45	-	5 466	5 506	5 534	5 549	5 546	5 523	5 476	-
50	-	-	6 152	6 183	6 201	6 202	6 182	6 140	-
55	-	-	-	6 913	6 934	6 939	6 923	6 885	-
60	-	-	-	-	7 754	7 763	7 753	7 720	-
65	-	-	-	-	8 670	8 683	8 677	8 650	-

Current consumption in A

30	9.18	9.24	9.28	9.30	9.29	9.24	9.16	9.02	-
35	9.61	9.67	9.72	9.75	9.74	9.70	9.63	9.51	-
40	10.13	10.20	10.25	10.28	10.29	10.26	10.19	10.08	-
45	-	10.83	10.89	10.92	10.94	10.92	10.86	10.76	-
50	-	-	11.64	11.68	11.70	11.70	11.65	11.57	-
55	-	-	-	12.58	12.61	12.61	12.58	12.51	-
60	-	-	-	-	13.66	13.67	13.65	13.60	-
65	-	-	-	-	14.87	14.90	14.89	14.85	-

Mass flow in kg/h

30	169	212	262	321	389	466	555	654	-
35	165	209	260	319	387	465	554	654	-
40	161	205	257	316	385	463	552	652	-
45	-	201	253	312	381	459	548	648	-
50	-	-	248	307	376	454	543	642	-
55	-	-	-	301	369	447	535	634	-
60	-	-	-	-	361	438	525	624	-
65	-	-	-	-	351	427	513	611	-

Coefficient of performance (C.O.P.)

30	2.07	2.62	3.28	4.07	5.00	6.12	7.44	9.03	-
35	1.73	2.21	2.79	3.47	4.28	5.23	6.37	7.72	-
40	1.44	1.85	2.35	2.93	3.63	4.44	5.41	6.55	-
45	-	1.54	1.96	2.46	3.05	3.74	4.56	5.52	-
50	-	-	1.61	2.04	2.53	3.12	3.80	4.61	-
55	-	-	-	1.67	2.08	2.57	3.14	3.81	-
60	-	-	-	-	1.68	2.09	2.56	3.12	-
65	-	-	-	-	1.34	1.67	2.06	2.52	-

Nominal performance at to = 5 °C, tc = 50 °C

Cooling capacity	19 320	W
Power input	6 202	W
Current consumption	11.70	A
Mass flow	454	kg/h
C.O.P.	3.12	



Pressure switch settings

Maximum HP switch setting	29.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1	bar(g)

Sound power data

Sound power level	73	dB(A)
With acoustic hood	65	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

All performance data +/- 5%

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Performance data at 50 Hz, ARI rating conditions

R407C

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-20	-15	-10	-5	0	5	10	15

Cooling capacity in W

30	8 662	11 068	13 957	17 383	21 397	26 053	31 402	37 497	-
35	8 120	10 461	13 263	16 576	20 455	24 952	30 118	36 007	-
40	7 560	9 821	12 518	15 704	19 431	23 752	28 720	34 386	-
45	-	9 147	11 723	14 765	18 325	22 455	27 208	32 635	-
50	-	-	10 881	13 763	17 139	21 061	25 583	30 756	-
55	-	-	-	12 696	15 873	19 572	23 846	28 748	-
60	-	-	-	-	14 528	17 988	21 999	26 614	-
65	-	-	-	-	13 106	16 310	20 042	24 355	-

Power input in W

30	3 899	3 942	3 977	3 999	4 005	3 993	3 960	3 901	-
35	4 345	4 389	4 425	4 449	4 458	4 449	4 418	4 363	-
40	4 849	4 895	4 932	4 959	4 970	4 964	4 937	4 886	-
45	-	5 466	5 506	5 534	5 549	5 546	5 523	5 476	-
50	-	-	6 152	6 183	6 201	6 202	6 182	6 140	-
55	-	-	-	6 913	6 934	6 939	6 923	6 885	-
60	-	-	-	-	7 754	7 763	7 753	7 720	-
65	-	-	-	-	8 670	8 683	8 677	8 650	-

Current consumption in A

30	9.18	9.24	9.28	9.30	9.29	9.24	9.16	9.02	-
35	9.61	9.67	9.72	9.75	9.74	9.70	9.63	9.51	-
40	10.13	10.20	10.25	10.28	10.29	10.26	10.19	10.08	-
45	-	10.83	10.89	10.92	10.94	10.92	10.86	10.76	-
50	-	-	11.64	11.68	11.70	11.70	11.65	11.57	-
55	-	-	-	12.58	12.61	12.61	12.58	12.51	-
60	-	-	-	-	13.66	13.67	13.65	13.60	-
65	-	-	-	-	14.87	14.90	14.89	14.85	-

Mass flow in kg/h

30	168	211	261	319	387	464	551	650	-
35	164	208	258	317	385	463	551	650	-
40	160	204	255	315	383	460	549	648	-
45	-	200	251	311	379	457	545	644	-
50	-	-	246	306	374	451	539	639	-
55	-	-	-	299	367	444	532	630	-
60	-	-	-	-	359	435	522	620	-
65	-	-	-	-	349	424	510	607	-

Coefficient of performance (C.O.P.)

30	2.22	2.81	3.51	4.35	5.34	6.52	7.93	9.61	-
35	1.87	2.38	3.00	3.73	4.59	5.61	6.82	8.25	-
40	1.56	2.01	2.54	3.17	3.91	4.78	5.82	7.04	-
45	-	1.67	2.13	2.67	3.30	4.05	4.93	5.96	-
50	-	-	1.77	2.23	2.76	3.40	4.14	5.01	-
55	-	-	-	1.84	2.29	2.82	3.44	4.18	-
60	-	-	-	-	1.87	2.32	2.84	3.45	-
65	-	-	-	-	1.51	1.88	2.31	2.82	-

Nominal performance at to = 7.2 °C, tc = 54.4 °C

Cooling capacity	21 575	W
Power input	6 841	W
Current consumption	12.48	A
Mass flow	482	kg/h
C.O.P.	3.15	

Pressure switch settings

Maximum HP switch setting	29.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1	bar(g)

Sound power data

Sound power level	73	dB(A)
With acoustic hood	65	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 11.1 K , Subcooling = 8.3 K

All performance data +/- 5%

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Performance data at 50 Hz, EN 12900 rating conditions

R134a

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-15	-10	-5	0	5	10	15	

Cooling capacity in W

35	6 782	8 654	10 838	13 364	16 261	19 558	23 284	-	-
40	6 382	8 184	10 285	12 712	15 494	18 660	22 240	-	-
45	5 957	7 682	9 689	12 007	14 665	17 692	21 116	-	-
50	5 508	7 145	9 049	11 249	13 774	16 651	19 911	-	-
55	-	6 574	8 367	10 439	12 820	15 539	18 624	-	-
60	-	-	7 641	9 576	11 805	14 355	17 255	-	-
65	-	-	-	8 661	10 727	13 098	15 804	-	-
70	-	-	-	7 692	9 586	11 769	14 270	-	-

Power input in W

35	3 108	3 126	3 135	3 135	3 122	3 096	3 054	-	-
40	3 467	3 487	3 499	3 503	3 495	3 474	3 437	-	-
45	3 863	3 886	3 903	3 910	3 907	3 892	3 861	-	-
50	4 301	4 327	4 348	4 360	4 362	4 353	4 328	-	-
55	-	4 812	4 837	4 854	4 862	4 859	4 841	-	-
60	-	-	5 372	5 395	5 409	5 412	5 402	-	-
65	-	-	-	5 985	6 005	6 015	6 013	-	-
70	-	-	-	6 625	6 653	6 670	6 676	-	-

Current consumption in A

35	8.57	8.59	8.61	8.61	8.61	8.58	8.54	-	-
40	8.85	8.88	8.90	8.91	8.91	8.89	8.86	-	-
45	9.20	9.24	9.26	9.28	9.28	9.27	9.25	-	-
50	9.63	9.66	9.69	9.71	9.72	9.72	9.70	-	-
55	-	10.17	10.20	10.23	10.25	10.25	10.24	-	-
60	-	-	10.80	10.83	10.86	10.87	10.87	-	-
65	-	-	-	11.53	11.57	11.59	11.60	-	-
70	-	-	-	12.33	12.38	12.41	12.43	-	-

Mass flow in kg/h

35	164	205	251	304	363	428	501	-	-
40	163	204	250	303	362	427	500	-	-
45	160	202	249	301	360	426	498	-	-
50	157	199	246	298	357	422	495	-	-
55	-	195	242	294	353	418	489	-	-
60	-	-	237	289	347	411	482	-	-
65	-	-	-	281	339	403	473	-	-
70	-	-	-	272	329	392	461	-	-

Coefficient of performance (C.O.P.)

35	2.18	2.77	3.46	4.26	5.21	6.32	7.63	-	-
40	1.84	2.35	2.94	3.63	4.43	5.37	6.47	-	-
45	1.54	1.98	2.48	3.07	3.75	4.55	5.47	-	-
50	1.28	1.65	2.08	2.58	3.16	3.83	4.60	-	-
55	-	1.37	1.73	2.15	2.64	3.20	3.85	-	-
60	-	-	1.42	1.78	2.18	2.65	3.19	-	-
65	-	-	-	1.45	1.79	2.18	2.63	-	-
70	-	-	-	1.16	1.44	1.76	2.14	-	-

Nominal performance at to = 5 °C, tc = 50 °C

Cooling capacity	13 774	W
Power input	4 362	W
Current consumption	9.72	A
Mass flow	357	kg/h
C.O.P.	3.16	

Pressure switch settings

Maximum HP switch setting	20.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	0.5	bar(g)

Sound power data

Sound power level	0	dB(A)
With acoustic hood	0	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

All performance data +/- 5%

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Performance data at 50 Hz, ARI rating conditions

R134a

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-15	-10	-5	0	5	10	15	

Cooling capacity in W

35	7 346	9 357	11 700	14 404	17 501	21 019	24 989	-	-
40	6 950	8 896	11 159	13 768	16 754	20 146	23 974	-	-
45	6 527	8 399	10 572	13 077	15 942	19 199	22 877	-	-
50	6 079	7 866	9 940	12 330	15 066	18 177	21 694	-	-
55	-	7 297	9 262	11 527	14 123	17 080	20 427	-	-
60	-	-	8 537	10 668	13 115	15 907	19 075	-	-
65	-	-	-	9 752	12 040	14 658	17 637	-	-
70	-	-	-	8 778	10 898	13 333	16 112	-	-

Power input in W

35	3 108	3 126	3 135	3 135	3 122	3 096	3 054	-	-
40	3 467	3 487	3 499	3 503	3 495	3 474	3 437	-	-
45	3 863	3 886	3 903	3 910	3 907	3 892	3 861	-	-
50	4 301	4 327	4 348	4 360	4 362	4 353	4 328	-	-
55	-	4 812	4 837	4 854	4 862	4 859	4 841	-	-
60	-	-	5 372	5 395	5 409	5 412	5 402	-	-
65	-	-	-	5 985	6 005	6 015	6 013	-	-
70	-	-	-	6 625	6 653	6 670	6 676	-	-

Current consumption in A

35	8.57	8.59	8.61	8.61	8.61	8.58	8.54	-	-
40	8.85	8.88	8.90	8.91	8.91	8.89	8.86	-	-
45	9.20	9.24	9.26	9.28	9.28	9.27	9.25	-	-
50	9.63	9.66	9.69	9.71	9.72	9.72	9.70	-	-
55	-	10.17	10.20	10.23	10.25	10.25	10.24	-	-
60	-	-	10.80	10.83	10.86	10.87	10.87	-	-
65	-	-	-	11.53	11.57	11.59	11.60	-	-
70	-	-	-	12.33	12.38	12.41	12.43	-	-

Mass flow in kg/h

35	164	204	250	302	361	426	498	-	-
40	162	203	249	301	360	425	497	-	-
45	159	201	247	300	358	423	495	-	-
50	156	198	245	297	355	420	492	-	-
55	-	194	241	293	351	415	487	-	-
60	-	-	235	287	345	409	480	-	-
65	-	-	-	280	337	400	470	-	-
70	-	-	-	271	327	390	459	-	-

Coefficient of performance (C.O.P.)

35	2.36	2.99	3.73	4.60	5.60	6.79	8.18	-	-
40	2.00	2.55	3.19	3.93	4.79	5.80	6.98	-	-
45	1.69	2.16	2.71	3.34	4.08	4.93	5.92	-	-
50	1.41	1.82	2.29	2.83	3.45	4.18	5.01	-	-
55	-	1.52	1.91	2.37	2.90	3.52	4.22	-	-
60	-	-	1.59	1.98	2.42	2.94	3.53	-	-
65	-	-	-	1.63	2.01	2.44	2.93	-	-
70	-	-	-	1.32	1.64	2.00	2.41	-	-

Nominal performance at to = 7.2 °C, tc = 54.4 °C

Cooling capacity	15 503	W
Power input	4 799	W
Current consumption	10.18	A
Mass flow	379	kg/h
C.O.P.	3.23	

Pressure switch settings

Maximum HP switch setting	20.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	0.5	bar(g)

Sound power data

Sound power level	0	dB(A)
With acoustic hood	0	dB(A)

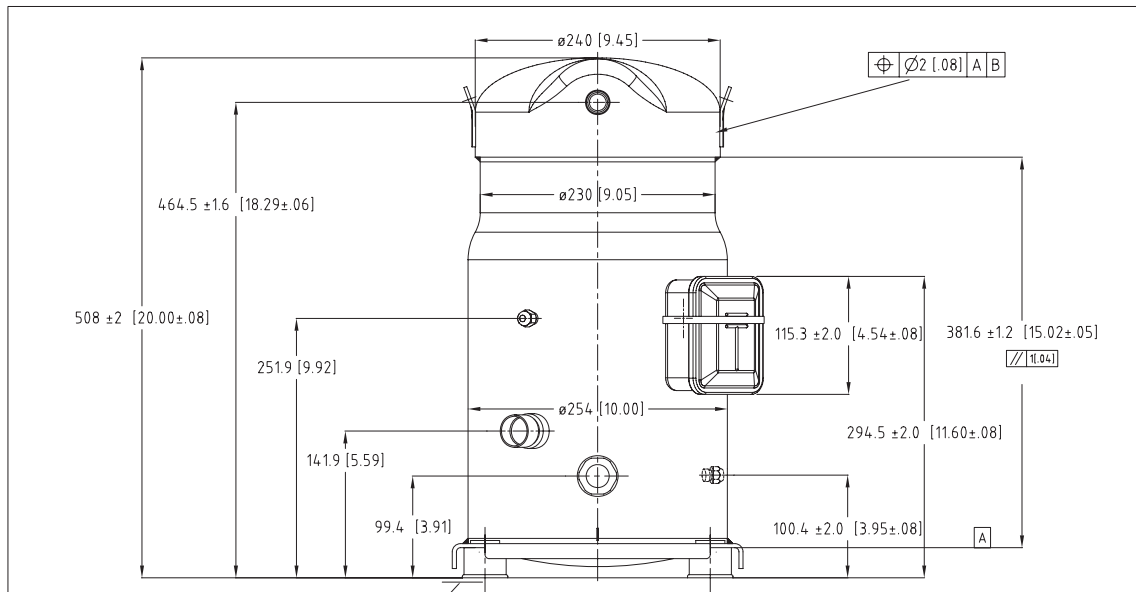
to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

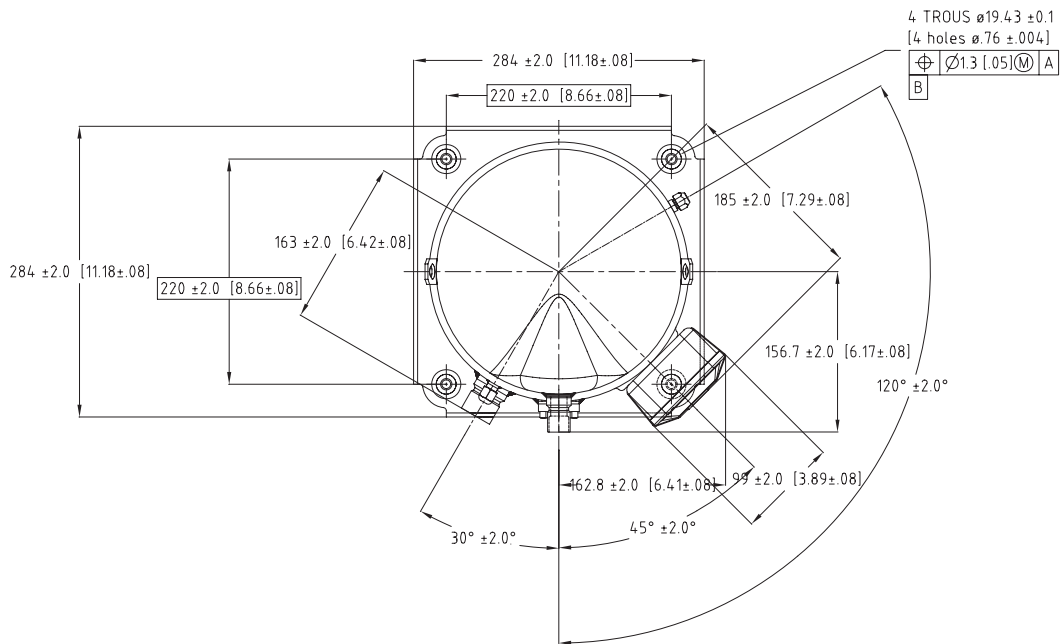
Rating conditions : Superheat = 11.1 K , Subcooling = 8.3 K

All performance data +/- 5%

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COMPRESSION SILENT BLOC: 152
[silent-bloc compression: .06]



B	PEP	13/06/00	MAP	DM 980927	
A	PEP	22/09/99	SOP	CREATION DM990234	
IND	RT	PAR	DATE	APPROBATIONS	OBSERVATIONS
MATERIE:					
Ech.: 1/4	Tol.gén.: ±0.8 [± .03] ± 2°				Danfoss Maneurop S.A. Z.I. de REYRIEUX - B.P. 331F 01603 TREVOUX - FRANCE
ENCOMBREMENT S084/090/100 - V					
S084/090/100 - V OUTLINE					
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				85 52 036	