

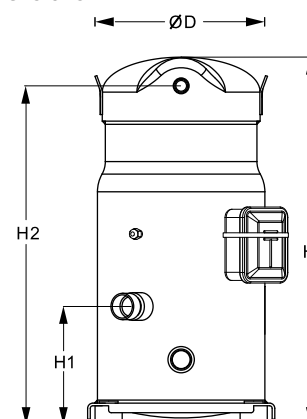
Datasheets

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



General Characteristics

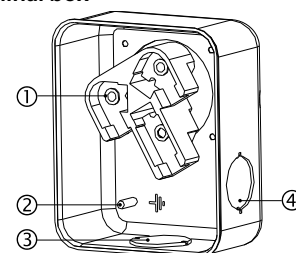
Model number (on compressor nameplate)		SM100S4VC
Code number for Singlepack*		SM100-4VI
Code number for Industrial pack**		SM100-4VM
Drawing number		8552036b
Suction and discharge connections		Brazed
Suction connection		1-1/8" ODF
Discharge connection		3/4" ODF
Oil sight glass		Threaded
Oil equalisation 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, Mineral - 160P	
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	R22, R417A-160SZ	

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

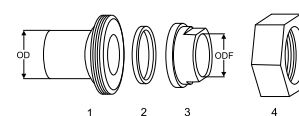
**Industrial pack: 8 Unboxed compressors on pallet (order per multiples of 8)

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


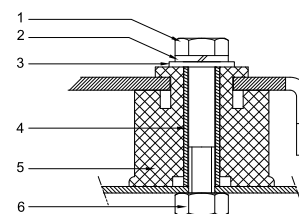
- 1: Rotolock adapter (Suc & Dis)
 2: Gasket (Suc & Dis)
 3: Solder sleeve (Suc & Dis)
 4: Rotolock nut (Suc & Dis)

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.

Mineral oil, 160P, 2 litre can	7754001
Mineral oil, 160P, 5 litre can	7754002

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
R22

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

Cooling capacity in W

30	8 984	11 377	14 173	17 406	21 114	25 332	30 095	35 441	-
35	8 460	10 793	13 511	16 652	20 250	24 341	28 961	34 147	-
40	7 914	10 175	12 807	15 843	19 320	23 274	27 741	32 755	-
45	-	9 525	12 058	14 979	18 325	22 131	26 433	31 266	-
50	-	-	11 265	14 061	17 265	20 912	25 038	29 678	-
55	-	-	-	13 088	16 139	19 617	23 555	27 991	-
60	-	-	-	-	14 947	18 243	21 983	26 203	-
65	-	-	-	-	13 688	16 791	20 321	24 312	-

Power input in W

30	4 143	4 172	4 201	4 227	4 249	4 266	4 275	4 276	-
35	4 607	4 632	4 655	4 674	4 688	4 696	4 695	4 684	-
40	5 134	5 154	5 170	5 182	5 187	5 184	5 172	5 149	-
45	-	5 744	5 753	5 756	5 752	5 739	5 714	5 678	-
50	-	-	6 410	6 404	6 389	6 364	6 327	6 277	-
55	-	-	-	7 131	7 105	7 068	7 017	6 951	-
60	-	-	-	-	7 906	7 855	7 790	7 709	-
65	-	-	-	-	8 798	8 733	8 653	8 555	-

Current consumption in A

30	9.44	9.49	9.53	9.58	9.61	9.63	9.64	9.64	-
35	9.93	9.97	10.01	10.04	10.06	10.07	10.06	10.04	-
40	10.53	10.56	10.59	10.61	10.61	10.60	10.58	10.53	-
45	-	11.26	11.28	11.28	11.27	11.24	11.19	11.12	-
50	-	-	12.08	12.07	12.04	11.99	11.92	11.83	-
55	-	-	-	12.99	12.94	12.87	12.78	12.66	-
60	-	-	-	-	13.99	13.90	13.78	13.63	-
65	-	-	-	-	15.18	15.07	14.92	14.75	-

Mass flow in kg/h

30	194	242	297	360	432	512	602	703	-
35	189	238	294	358	430	511	601	702	-
40	185	234	290	355	427	508	599	700	-
45	-	229	286	350	422	504	595	696	-
50	-	-	279	344	416	498	588	689	-
55	-	-	-	336	409	490	580	681	-
60	-	-	-	-	399	480	570	670	-
65	-	-	-	-	387	467	557	657	-

Coefficient of performance (C.O.P.)

30	2.17	2.73	3.37	4.12	4.97	5.94	7.04	8.29	-
35	1.84	2.33	2.90	3.56	4.32	5.18	6.17	7.29	-
40	1.54	1.97	2.48	3.06	3.72	4.49	5.36	6.36	-
45	-	1.66	2.10	2.60	3.19	3.86	4.63	5.51	-
50	-	-	1.76	2.20	2.70	3.29	3.96	4.73	-
55	-	-	-	1.84	2.27	2.78	3.36	4.03	-
60	-	-	-	-	1.89	2.32	2.82	3.40	-
65	-	-	-	-	1.56	1.92	2.35	2.84	-

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

Cooling capacity	20 912	W
Power input	6 364	W
Current consumption	11.99	A
Mass flow	498	kg/h
C.O.P.	3.29	

Pressure switch settings

Maximum HP switch setting	28	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1.3	bar(g)

Sound power data

Sound power level	70	dB(A)
With acoustic hood	62	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
R22

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

Cooling capacity in W

30	9 534	12 064	15 017	18 430	22 339	26 784	31 800	37 424	-
35	9 010	11 484	14 364	17 689	21 494	25 818	30 697	36 169	-
40	8 461	10 869	13 666	16 892	20 582	24 775	29 506	34 814	-
45	-	10 218	12 923	16 039	19 603	23 654	28 227	33 361	-
50	-	-	12 133	15 128	18 557	22 455	26 860	31 809	-
55	-	-	-	14 161	17 442	21 177	25 403	30 157	-
60	-	-	-	-	16 260	19 822	23 858	28 405	-
65	-	-	-	-	15 010	18 387	22 222	26 554	-

Power input in W

30	4 143	4 172	4 201	4 227	4 249	4 266	4 275	4 276	-
35	4 607	4 632	4 655	4 674	4 688	4 696	4 695	4 684	-
40	5 134	5 154	5 170	5 182	5 187	5 184	5 172	5 149	-
45	-	5 744	5 753	5 756	5 752	5 739	5 714	5 678	-
50	-	-	6 410	6 404	6 389	6 364	6 327	6 277	-
55	-	-	-	7 131	7 105	7 068	7 017	6 951	-
60	-	-	-	-	7 906	7 855	7 790	7 709	-
65	-	-	-	-	8 798	8 733	8 653	8 555	-

Current consumption in A

30	9.44	9.49	9.53	9.58	9.61	9.63	9.64	9.64	-
35	9.93	9.97	10.01	10.04	10.06	10.07	10.06	10.04	-
40	10.53	10.56	10.59	10.61	10.61	10.60	10.58	10.53	-
45	-	11.26	11.28	11.28	11.27	11.24	11.19	11.12	-
50	-	-	12.08	12.07	12.04	11.99	11.92	11.83	-
55	-	-	-	12.99	12.94	12.87	12.78	12.66	-
60	-	-	-	-	13.99	13.90	13.78	13.63	-
65	-	-	-	-	15.18	15.07	14.92	14.75	-

Mass flow in kg/h

30	193	241	296	359	430	509	599	699	-
35	189	237	293	356	428	508	598	698	-
40	184	233	289	353	425	505	595	696	-
45	-	228	284	348	420	501	591	692	-
50	-	-	278	342	414	495	585	685	-
55	-	-	-	334	406	487	577	677	-
60	-	-	-	-	397	477	567	666	-
65	-	-	-	-	385	465	554	653	-

Coefficient of performance (C.O.P.)

30	2.30	2.89	3.57	4.36	5.26	6.28	7.44	8.75	-
35	1.96	2.48	3.09	3.78	4.58	5.50	6.54	7.72	-
40	1.65	2.11	2.64	3.26	3.97	4.78	5.70	6.76	-
45	-	1.78	2.25	2.79	3.41	4.12	4.94	5.88	-
50	-	-	1.89	2.36	2.90	3.53	4.25	5.07	-
55	-	-	-	1.99	2.45	3.00	3.62	4.34	-
60	-	-	-	-	2.06	2.52	3.06	3.68	-
65	-	-	-	-	1.71	2.11	2.57	3.10	-

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

Cooling capacity	23 141	W
Power input	6 959	W
Current consumption	12.73	A
Mass flow	527	kg/h
C.O.P.	3.33	

Pressure switch settings

Maximum HP switch setting	28	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1.3	bar(g)

Sound power data

Sound power level	70	dB(A)
With acoustic hood	62	dB(A)

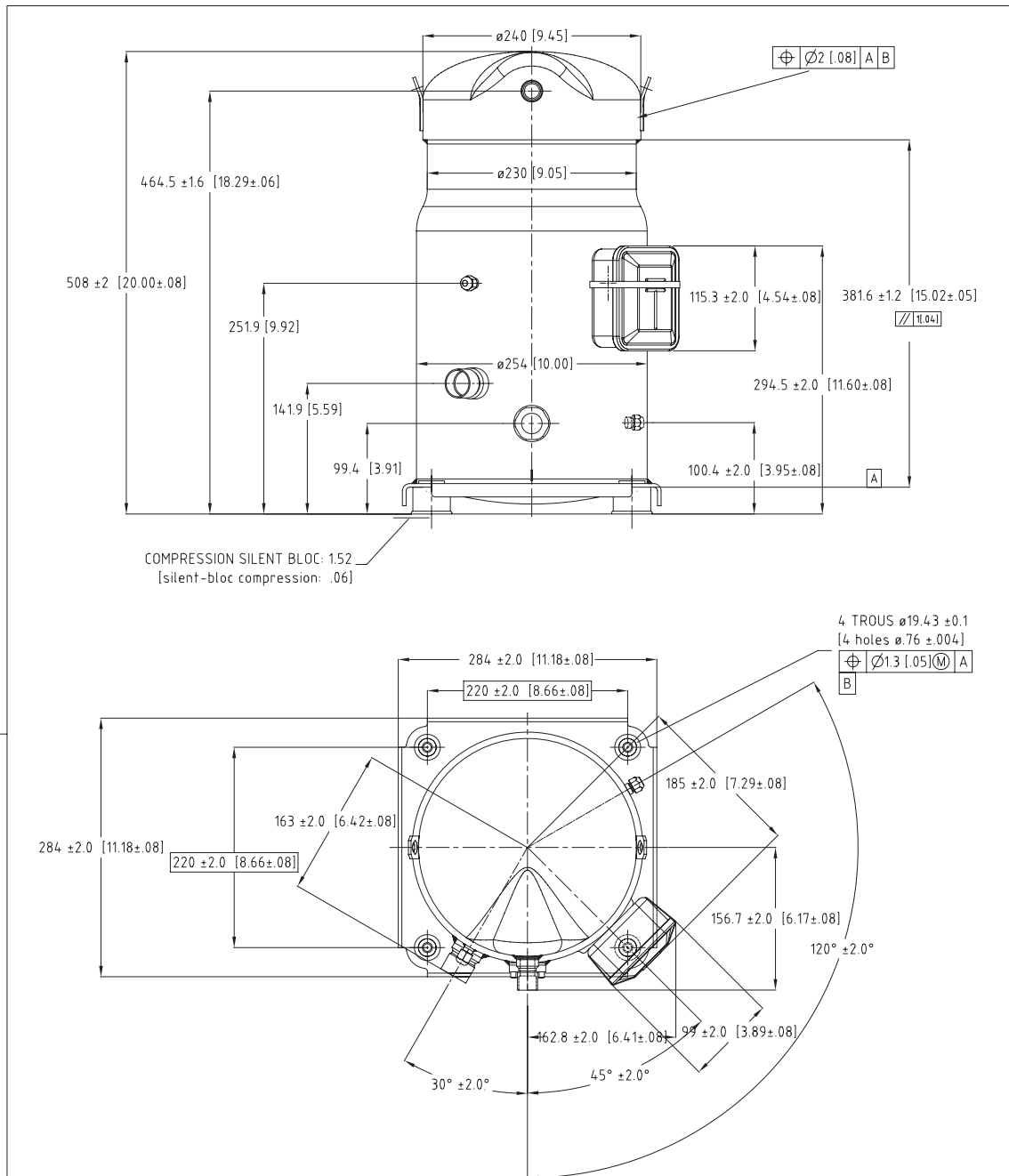
to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

All performance data +/- 5%

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B	PEP	13/06/00	MAP	DM 980927
A	PEP	22/09/99	SOP	CREATION DM990234
IND	RT	PAR	DATE	APPROBATIONS
OBSERVATIONS				
MATIERE:				
Ech.: 1/4		Tol.gén.: ±0.8 [± .03] ± 2°		
ENCOMBREMENT S084/090/100 - V				
S084/090/100 -V OUTLINE				
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