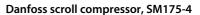
ENGINEERING TOMORROW



Datasheets

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





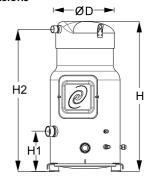




General Characteristics

Model number (on compressor nameplate)	SM175S4RC	SM175S4CC
Code number for Singlepack*	SM175-4RI	SM175-4CAI
Code number for Industrial pack**	SM175-4RM	SM175-4CAM
Drawing number	8551119b	8551056c
Suction and discharge connections	Rotolock	Brazed
Suction connection	2-1/4 " Rotolock	1-5/8 " ODF
Discharge connection	1-3/4 " Rotolock	1-1/8 " ODF
Suction connection with supplied sleeve	1-3/8 " ODF	
Discharge connection with supplied sleeve	7/8 " ODF	
Oil sight glass	Threaded	Threaded
Oil equalisation connection	3/8" flare SAE	3/8" flare SAE
Oil drain connection	1/4" flare	1/4" flare
LP gauge port	Schrader	Schrader
IPR valve	None	None
Swept volume	233 cr	m3/rev
Displacement @ Nominal speed	40.5 m3/h @ 2900 rpm	- 48.9 m3/h @ 3500 rpm
Net weight	100) kg
Oil charge	6,2 litre, Mi	neral - 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	1	2
Refrigerant charge limit	13,	5 kg
Approved refrigerants	R22, R41	7A-160SZ

Dimensions



D=317 mm H=678 mm H1=180 mm H2=643 mm H3=- mm

Electrical Characteristics

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℃	0.77 Ω
Maximum Must Trip current (MMT)	35 A
Locked Rotor Amps (LRA)	175 A
Motor protection	Internal thermostat, ext. overload protector needed

Recommended Installation torques

Suction Rotolock nut or valve	130 Nm
Discharge Rotolock nut or valve	110 Nm
Oil sight glass	50 Nm
Power connections / Earth connection	3 Nm / 2 Nm
Terminal box cover screws	2,3 Nm
Mounting bolts	21 Nm

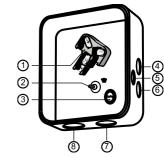
Parts shipped with compressor

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

Terminal box



IP54 (with cable gland)

- 1: Power connection, 3 x 4.8 mm (3/16")
- 2: Earth M5
- 3: Thermostat connector
- 4: Knock-out Ø 22 mm (7/8") for 1/2" conduit
- 5: Knock-out Ø 16.5 mm (0.65")
- 6: Knock-out Ø 20.5 mm (0.81")
- 7: Double knock-out Ø 32.1 mm (1.26") & Ø 25.4 mm (1")
- 8: Double knock-out Ø 44 mm (1-3/4") for 1-1/4" conduit & Ø 34 mm (1-3/8") for 1" conduit

^{**}Industrial pack: 6 Unboxed compressors on pallet (order per multiples of 6)



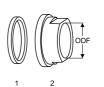
Datasheet, accessories and spare parts

Danfoss scroll compressor, SM175-4

Rotolock accessories, suction side	Code no.
Solder sleeve, P08 (2-1/4" Rotolock, 1-3/8" ODF)	8153005
Solder sleeve, P03 (2-1/4" Rotolock, 1-5/8" ODF)	8153006
Rotolock valve, V08 (2-1/4" Rotolock, 1-3/8" ODF)	8168025
Rotolock valve, V03 (2-1/4" Rotolock, 1-5/8" ODF)	8168026
Gasket, 2-1/4"	8156133

Rotolock accessories, discharge side Code no. Solder sleeve, P07 (1-3/4" Rotolock, 7/8" ODF) 8153013 Solder sleeve, P02 (1-3/4" Rotolock, 1-1/8" ODF) 8153004 Angle adapter, C07 (1-3/4" Rotolock, 7/8" ODF) 8168008 Angle adapter, C02 (1-3/4" Rotolock, 1-1/8" ODF) 8168005 Rotolock valve, V07 (1-3/4" Rotolock, 7/8" ODF) 8168032 Rotolock valve, V02 (1-3/4" Rotolock, 1-1/8" ODF) 8168028

Gaskets, sleeves and nuts



1: Gasket
2: Solder sleeve
3: Rotolock nut

8156132

120Z0464

Codono

Rotolock accessories, sets	Code no.

Solder sleeve adapter set, (2-1/4" Rotolock, 1-5/8" ODF), (1-3/4" Rotolock, 1"1/8 ODF)	7765028
Valve set, V08 (2-1/4"~1-3/8"), V07 (1-3/4"~7/8")	7703010
Gasket set, 1-1/4", 1-3/4", 2-1/4", OSG gaskets black & white	8156013

Solder sleeve adapter set



Oil / lubricants	Code no.
Mineral oil, 160P, 2 litre can	7754001
Mineral oil, 160P, 5 litre can	7754002

Crankcase heaters	Code no.
Surface sump heater + bottom insulation, 56 W, 24 V, CE mark, UL	120Z0360
Surface sump heater + bottom insulation, 56 W, 230 V, CE mark, UL	120Z0376
Surface sump heater + bottom insulation, 56 W, 400 V, CE mark, UL	120Z0377
Surface sump heater + bottom insulation, 56 W, 460 V, CE mark, UL	120Z0378
Belt type crankcase heater, 75 W, 230 V, CE mark, UL	7773108
Belt type crankcase heater, 75 W, 400 V, CE mark, UL	7773118

1: Rotolock adapter (Suc & Dis)

2: Gasket (Suc & Dis)

3: Solder sleeve (Suc & Dis)

4: Rotolock nut (Suc & Dis)

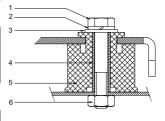
Miscellaneous accessories

Belt type crankcase heater, 75 W, 460 V, CE mark, UL

Gasket, 1-3/4"

Miscellatieous accessories	Code no.
Electronic soft start kit, MCI 25 C	7705007
Acoustic hood for scroll compressor S175-S185	7755007
Acoustic bottom insulation for scroll compressor	120Z0353
Discharge thermostat kit	7750009

Mounting kit



Spare parts	Code no.
Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	8156138
Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers, 2 rotolock nuts, 2 solder sleeves, 2 gaskets	8156147
Oil sight glass with gaskets (black & white)	8156019
Gasket for oil sight glass (white teflon)	8156129
Terminal box 186 x 198 mm, incl cover	8156139
T block connector 60 x 75 mm	8173021

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

6: Nut (4x)



Performer scroll compressor. SM175-4

Performance data at 50 Hz, EN 12900 rating conditions

R22

Cond. temp. in				Evapora	ting temperature	in °C (to)			
°C (tc)	-20	-15	-10	-5	0	5	10	15	
Cooling capacity	ı in W								
30	16 913	21 120	26 035	31 724	38 249	45 674	54 065	63 484	_
35	15 950	20 057	24 843	30 373	36 708	43 914	52 055	61 194	_
40	14 972	18 962	23 601	28 953	35 082	42 051	49 924	58 765	
45	-	17 816	22 286	27 439	33 338	40 047	47 629	56 148	
50		17 010	20 924	25 861	31 514	37 946	45 220	53 400	
55		-	-	24 198	29 583	35 717	43 220	50 482	-
								1	
60 65	-	-	-	-	27 537 25 406	33 350	39 942	47 376	-
65	-	-	-	-	25 400	30 880	37 101	44 132	
Power input in W	ı			1	1	ı	1		
30	7 289	7 367	7 443	7 515	7 581	7 639	7 686	7 721	-
35	8 069	8 149	8 226	8 300	8 367	8 427	8 477	8 515	-
40	8 942	9 022	9 101	9 176	9 246	9 308	9 361	9 401	-
45	-	9 996	10 076	10 153	10 225	10 290	10 345	10 389	-
50	-	-	11 159	11 239	11 313	11 381	11 439	11 486	-
55	-	-	-	12 441	12 518	12 588	12 649	12 700	-
60	-	-	-	-	13 847	13 920	13 985	14 039	-
65	-	-	-	-	15 309	15 386	15 454	15 512	-
Current consum	ntion in A								
30	16.13	16.21	16.29	16.36	16.41	16.44	16.45	16.42	_
35	16.13	17.06	17.15	17.22	17.28	17.32	17.34	17.33	
40	17.94	18.04	18.13	18.21	18.28	18.33	18.36	18.36	
45	-	19.15	19.25	19.34	19.42	19.49	19.53	19.54	
		1							-
50	-	-	20.53	20.63	20.72	20.80	20.85	20.88	-
55	-	-	-	22.09	22.19	22.28	22.34	22.39	-
60	-	-	-	-	23.85	23.94	24.03	24.08	-
65	-	-	-	-	25.70	25.81	25.91	25.98	-
Mass flow in kg/	h								
30	364	449	546	657	782	924	1 082	1 258	-
35	357	443	541	653	780	922	1 081	1 258	-
40	349	436	535	648	775	918	1 077	1 255	-
45	-	428	528	641	768	912	1 071	1 249	-
50	-	-	519	632	760	903	1 063	1 240	-
55	-	-	-	621	749	891	1 051	1 228	-
60	-	-	-	-	735	877	1 036	1 212	-
65	-	-	-	-	718	859	1 017	1 192	-
Coefficient of pe	rformance (C C) P)							
30	2.32	2.87	3.50	4.22	5.05	5.98	7.03	8.22	-
35	1.98	2.46	3.02	3.66	4.39	5.21	6.14	7.19	-
40	1.67	2.10	2.59	3.16	3.79	4.52	5.33	6.25	-
45	-	1.78	2.21	2.70	3.26	3.89	4.60	5.40	-
50		-	1.88	2.30	2.79	3.33	3.95	4.65	_
55		-	-	1.95	2.36	2.84	3.37	3.97	
00	<u> </u>	-	-	-	1.99	2.40	2.86	3.37	
60									-

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

itolimiai portormanos at to 00, to	00 0	
Cooling capacity	37 946	W
Power input	11 381	W
Current consumption	20.80	Α
Mass flow	903	kg/h
C.O.P.	3.33	

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

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	80	dB(A)
With accoustic hood	72	dB(A)

All performance data +/- 5%





Performer scroll compressor. SM175-4

Performance data at 50 Hz, ARI rating conditions

R22

Cond. temp. in				Evapora	iting temperature	in °C (to)			
°C (tc)	-20	-15	-10	-5	0	5	10	15	
Cooling capacity	, in W								
30	17 945	22 391	27 581	33 583	40 461	48 284	57 116	67 025	
35	16 984	21 339	26 410	32 262	38 962	46 576	55 171	64 813	_
40	16 002	20 247	25 178	30 861	37 363	44 749	53 087	62 442	
45	-	19 114	23 886	29 380	35 664	42 803	50 863	59 912	
50		19 114	22 531	29 380	33 864	42 803	48 500	57 223	
55		-	-	26 173	31 962	38 547	45 996	54 373	
60				-	29 959	36 238	43 350	51 363	
65	-	-	-	-	29 959	33 806	40 563	48 191	-
00				<u> </u>	21 000	33 000	40 303	40 191	
Power input in W	ı			T	T	T	1		
30	7 289	7 367	7 443	7 515	7 581	7 639	7 686	7 721	-
35	8 069	8 149	8 226	8 300	8 367	8 427	8 477	8 515	-
40	8 942	9 022	9 101	9 176	9 246	9 308	9 361	9 401	-
45	-	9 996	10 076	10 153	10 225	10 290	10 345	10 389	-
50	-	-	11 159	11 239	11 313	11 381	11 439	11 486	-
55	-	-	-	12 441	12 518	12 588	12 649	12 700	-
60	-	-	-	-	13 847	13 920	13 985	14 039	-
65	-	-	-	-	15 309	15 386	15 454	15 512	-
Current consum	ntion in A								
30	16.13	16.21	16.29	16.36	16.41	16.44	16.45	16.42	_
35	16.97	17.06	17.15	17.22	17.28	17.32	17.34	17.33	
40	17.94	18.04	18.13	18.21	18.28	18.33	18.36	18.36	
45	-	19.15	19.25	19.34	19.42	19.49	19.53	19.54	_
50		-	20.53	20.63	20.72	20.80	20.85	20.88	<u> </u>
55		-	-	22.09	22.19	22.28	22.34	22.39	
60		_	_	-	23.85	23.94	24.03	24.08	
65	-	-	-	-	25.70	25.81	25.91	25.98	-
00					25.70	20.01	20.01	25.50	
Mass flow in kg/l	h							 	
30	362	447	543	653	778	919	1 076	1 251	-
35	355	441	538	650	775	917	1 075	1 250	-
40	347	434	532	644	771	913	1 071	1 248	-
45	-	426	525	638	764	907	1 065	1 242	-
50	-	-	516	629	756	898	1 057	1 233	-
55	-	-	-	618	745	886	1 045	1 221	-
60	-	-	-	-	731	872	1 030	1 205	-
65	-	-	-	-	714	855	1 011	1 185	-
Coefficient of pe	rformance (C.C.).P.)							
30	2.46	3.04	3.71	4.47	5.34	6.32	7.43	8.68	-
35	2.10	2.62	3.21	3.89	4.66	5.53	6.51	7.61	-
40	1.79	2.24	2.77	3.36	4.04	4.81	5.67	6.64	-
45	-	1.91	2.37	2.89	3.49	4.16	4.92	5.77	-
50	-	-	2.02	2.48	2.99	3.58	4.24	4.98	-
55	-	_	-	2.10	2.55	3.06	3.64	4.28	-
60	-	_	-	-	2.16	2.60	3.10	3.66	-
		•	1	1					

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

Nominal performance at to 7.2 0, to	U-1	
Cooling capacity	42 000	W
Power input	12 465	W
Current consumption	22.12	Α
Mass flow	956	kg/h
C.O.P.	3.37	

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

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	80	dB(A)
With accoustic hood	72	dB(A)

All performance data +/- 5%





Performer scroll compressor. SM175-4

Performance data at 60 Hz, EN 12900 rating conditions

R22

Cond. temp. in				Evapora	ating temperature	in °C (to)			
°C (tc)	-20	-15	-10	-5	0	5	10	15	
								1	
cooling capacity		00.400	00.045	00.000	40.500	55.040	05.004	70.040	
30	21 047	26 138	32 045	38 838	46 583	55 349	65 204	76 216	-
35	19 845	24 822	30 581	37 190	44 718	53 232	62 801	73 492	
40	18 635	23 476	29 066	35 472	42 763	51 005	60 268	70 617	-
45	-	22 080	27 476	33 654	40 682	48 626	57 555	67 536	-
50	-	-	25 843	31 773	38 518	46 146	54 722	64 316	-
55	-	-	-	29 806	36 245	43 530	51 730	60 912	-
60	-	-	-	-	33 850	40 768	48 563	57 304	-
65	-	-	-	-	31 373	37 902	45 273	53 552	-
Power input in V	v								
30	8 942	9 108	9 271	9 427	9 571	9 700	9 810	9 896	-
35	9 813	9 981	10 147	10 306	10 455	10 589	10 704	10 796	-
40	10 796	10 967	11 136	11 300	11 453	11 592	11 714	11 813	-
45	-	12 076	12 249	12 417	12 575	12 721	12 848	12 955	-
50	-	-	13 494	13 666	13 831	13 982	14 117	14 231	-
55	-	-	-	15 058	15 228	15 386	15 529	15 651	-
60	-	-	-	-	16 777	16 942	17 093	17 224	-
65	-	-	-	-	18 486	18 659	18 818	18 958	-
		•	•	•	•	•	•		
Current consum	ption in A								
30	15.21	15.40	15.58	15.75	15.89	16.01	16.10	16.15	-
35	16.11	16.31	16.50	16.67	16.83	16.96	17.06	17.13	-
40	17.16	17.36	17.56	17.75	17.92	18.07	18.19	18.27	-
45	-	18.58	18.79	18.99	19.18	19.34	19.48	19.59	-
50	-	-	20.21	20.43	20.63	20.81	20.97	21.10	-
55	-	-	-	22.06	22.28	22.48	22.66	22.82	-
60	-	-	-	-	24.16	24.39	24.59	24.76	-
65	-	-	-	-	26.29	26.53	26.76	26.96	-
Mass flow in kg/									
30	453	555	672	804	953	1 119	1 304	1 510	-
35	444	548	666	800	950	1 117	1 304	1 510	-
40	435	540	659	794	945	1 113	1 301	1 508	-
45	-	531	651	786	938	1 107	1 295	1 502	-
50	-	-	641	777	929	1 098	1 286	1 494	-
55	-	-	-	765	917	1 086	1 274	1 481	-
60	-	-	-	-	903	1 072	1 259	1 466	-
65	-	-	-	-	887	1 055	1 241	1 447	-
Coefficient of pe	erformance (C.C).P.)							
30	2.35	2.87	3.46	4.12	4.87	5.71	6.65	7.70	-
35	2.02	2.49	3.01	3.61	4.28	5.03	5.87	6.81	-
40	1.73	2.14	2.61	3.14	3.73	4.40	5.15	5.98	-
45	-	1.83	2.24	2.71	3.24	3.82	4.48	5.21	-
50	-	-	1.92	2.32	2.79	3.30	3.88	4.52	-
55	-	-	-	1.98	2.38	2.83	3.33	3.89	-
60	-	-	-	-	2.02	2.41	2.84	3.33	-
65	-	-	-	-	1.70	2.03	2.41	2.82	_

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

pooaoo at to	,		
Cooling capacity	46 146	W	
Power input	13 982	W	
Current consumption	20.81	Α	
Mass flow	1 098	kg/h	
C.O.P.	3.30		

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

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	82.5	dB(A)
With accoustic hood	75	dB(A)

All performance data +/- 5%





Performer scroll compressor. SM175-4

Performance data at 60 Hz, ARI rating conditions

R22

Cond. temp. in				Evapora	ting temperature	in °C (to)			
°C (tc)	-20	-15	-10	-5	0	5	10	15	
	. i 18/								
30 30	22 330	27 710	33 948	41 114	49 278	58 511	68 884	80 467	-
35	21 132	26 409	32 509	39 504	49 270	56 459	66 561	77 838	
40	19 917	25 068	31 009	37 811	45 544	54 279	64 086	75 037	
45	-	23 689	29 448	36 035	43 519	51 971	61 463	72 063	
50		23 009	27 828	34 177	41 390	49 538	58 691	68 920	
55	_	_	-	32 239	39 159	46 980	55 772	65 607	
60	_	-	-	-	36 827	44 298	52 707	62 125	_
65	_	_	_	_	34 394	41 494	49 498	58 477	
					0.00.		10 100	1 00	
ower input in W	<u> </u>	1	1	•	1	T	1		
30	8 942	9 108	9 271	9 427	9 571	9 700	9 810	9 896	-
35	9 813	9 981	10 147	10 306	10 455	10 589	10 704	10 796	-
40	10 796	10 967	11 136	11 300	11 453	11 592	11 714	11 813	-
45	-	12 076	12 249	12 417	12 575	12 721	12 848	12 955	-
50	-	-	13 494	13 666	13 831	13 982	14 117	14 231	-
55	-	-	-	15 058	15 228	15 386	15 529	15 651	-
60	-	-	-	-	16 777	16 942	17 093	17 224	-
65	-	-	-	-	18 486	18 659	18 818	18 958	-
urrent consum	ntion in A								
30	15.21	15.40	15.58	15.75	15.89	16.01	16.10	16.15	_
35	16.11	16.31	16.50	16.67	16.83	16.96	17.06	17.13	
40	17.16	17.36	17.56	17.75	17.92	18.07	18.19	18.27	
45	-	18.58	18.79	18.99	19.18	19.34	19.48	19.59	
50	-	-	20.21	20.43	20.63	20.81	20.97	21.10	_
55	_	_	-	22.06	22.28	22.48	22.66	22.82	_
60	_	_	_	-	24.16	24.39	24.59	24.76	_
65	-	-	-	-	26.29	26.53	26.76	26.96	-
		I.	I.						
lass flow in kg/l	n	1	1		•	T			
30	451	552	668	800	948	1 113	1 297	1 501	-
35	442	545	663	796	945	1 111	1 297	1 502	-
40	433	537	656	790	940	1 107	1 293	1 499	-
45	-	528	647	782	933	1 101	1 287	1 494	-
50	-	-	638	773	924	1 092	1 279	1 485	-
55	-	-	-	761	912	1 080	1 267	1 473	-
60	-	-	-	-	898	1 066	1 252	1 457	-
65	-	-	-	-	882	1 049	1 234	1 439	-
Coefficient of pe	rformance (C.O	o.P.)							
30	2.50	3.04	3.66	4.36	5.15	6.03	7.02	8.13	-
35	2.15	2.65	3.20	3.83	4.54	5.33	6.22	7.21	-
40	1.84	2.29	2.78	3.35	3.98	4.68	5.47	6.35	-
45	-	1.96	2.40	2.90	3.46	4.09	4.78	5.56	-
50	-	-	2.06	2.50	2.99	3.54	4.16	4.84	-
55	-	-	-	2.14	2.57	3.05	3.59	4.19	-
60	-	-	-	-	2.20	2.61	3.08	3.61	-
65	-	-	-	-	1.86	2.22	2.63	3.08	-

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

	• •	
Cooling capacity	51 057	W
Power input	15 275	W
Current consumption	22.35	Α
Mass flow	1 162	kg/h
C.O.P.	3.34	

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

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

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

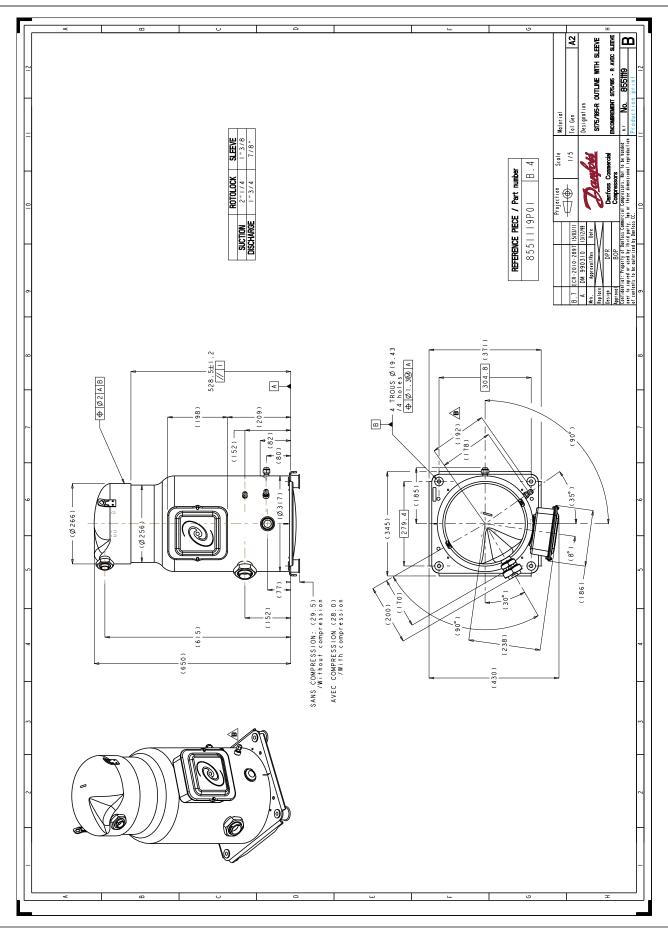
Sound power level	82.5	dB(A)
With accoustic hood	75	dB(A)

All performance data +/- 5%



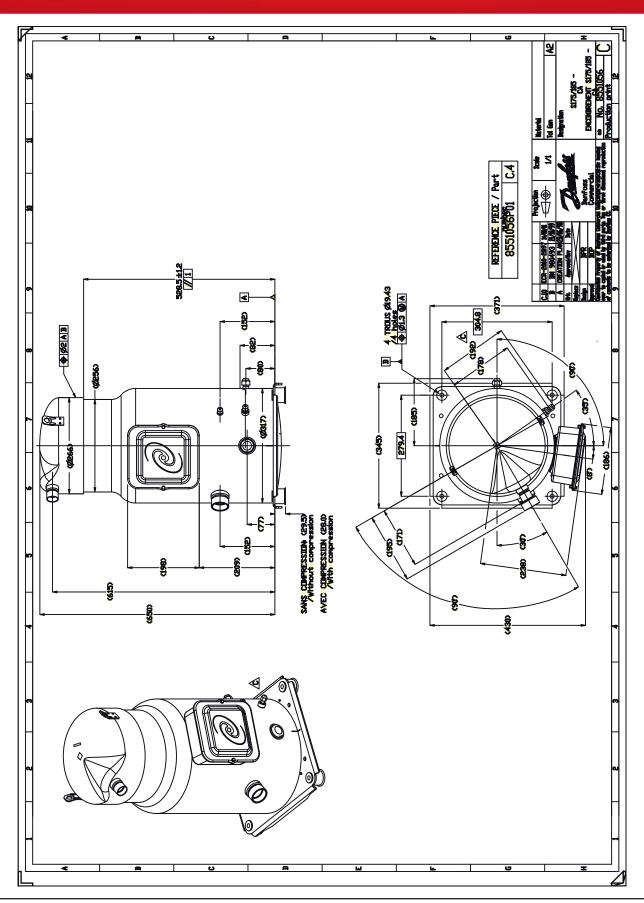


Datasheet, drawing Scroll compressor











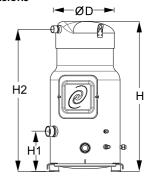


Danfoss

General Characteristics

Model number (on compressor nameplate)		SM175S4QC		
Code number for Singlepack*		SM175-4QAI		
Code number for Industrial pack**		SM175-4QAM		
Drawing number		8551065c		
Suction and discharge connections		Brazed		
Suction connection		1-5/8 " ODF		
Discharge connection		1-1/8 " ODF		
Oil sight glass		Threaded		
Oil equalisation connection		3/8" ODF		
Oil drain connection		1/4" flare		
LP gauge port		Schrader		
IPR valve		None		
Swept volume	233 cr	n3/rev		
Displacement @ Nominal speed	40.5 m3/h @ 2900 rpm	- 48.9 m3/h @ 3500 rpm		
Net weight	100) kg		
Oil charge	6,2 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	13,5 kg			
Approved refrigerants	R22, R417A-160SZ			

Dimensions



D=317 mm H=678 mm H1=180 mm H2=643 mm H3=- mm

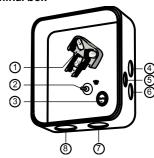
Electrical Characteristics

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℃	0.77 Ω		
Maximum Must Trip current (MMT)	35 A		
Locked Rotor Amps (LRA)	175 A		
Motor protection	Internal thermostat, ext. overload protector needed		

Recommended Installation torques

Oil sight glass	50 Nm		
Power connections / Earth connection	3 Nm / 2 Nm		
Terminal box cover screws	2,3 Nm		
Mounting bolts	21 Nm		

Terminal box



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: 6 Unboxed compressors on pallet (order per multiples of 6)

IP54 (with cable gland)

- 1: Power connection, 3 x 4.8 mm (3/16")
- 2: Earth M5
- 3: Thermostat connector
- 4: Knock-out Ø 22 mm (7/8") for 1/2" conduit
- 5: Knock-out Ø 16.5 mm (0.65")
- 6: Knock-out Ø 20.5 mm (0.81")
- 7: Double knock-out Ø 32.1 mm (1.26") & Ø 25.4 mm (1")
- 8: Double knock-out Ø 44 mm (1-3/4") for 1-1/4" conduit & Ø 34 mm (1-3/8") for 1" conduit



Datasheet, accessories and spare parts

Danfoss scroll compressor, SM175-4

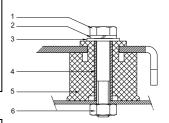
Rotolock accessories, suction side	Code no.
Rotolock accessories, discharge side	Code no.
Rotolock accessories, sets	Code no.
Oil / lubricants	Code no.
Mineral oil, 160P, 2 litre can	7754001
Mineral oil, 160P, 5 litre can	7754002

Crankcase heaters	Code no.
Surface sump heater + bottom insulation, 56 W, 24 V, CE mark, UL	120Z0360
Surface sump heater + bottom insulation, 56 W, 230 V, CE mark, UL	120Z0376
Surface sump heater + bottom insulation, 56 W, 400 V, CE mark, UL	120Z0377
Surface sump heater + bottom insulation, 56 W, 460 V, CE mark, UL	120Z0378
Belt type crankcase heater, 75 W, 230 V, CE mark, UL	7773108
Belt type crankcase heater, 75 W, 400 V, CE mark, UL	7773118
Belt type crankcase heater, 75 W, 460 V, CE mark, UL	120Z0464

Miscellaneous accessories Code no. Electronic soft start kit, MCI 25 C 7705007 Acoustic hood for scroll compressor \$175-\$185 7755007 Acoustic bottom insulation for scroll compressor 120Z0353 Discharge thermostat kit 7750009

Spare parts	Code no.
Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	8156138
Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers, 2 rotolock nuts, 2 solder sleeves, 2 gaskets	8156147
Oil sight glass with gaskets (black & white)	8156019
Gasket for oil sight glass (white teflon)	8156129
Terminal box 186 x 198 mm, incl cover	8156139
T block connector 60 x 75 mm	8173021

Mounting kit



1: Bolt (4x)

2: Lock washer (4x) 3: Flat washer (4x)

4: Sleeve (4x)

5: Grommet (4x)

6: Nut (4x)



Danfoss scroll compressor. SM175-4

Performance data at 50 Hz, EN 12900 rating conditions

R22

Cond. temp. in				Evapora	ting temperature i	n °C (to)			
°C (tc)	-20	-15	-10	-5	0	5	10	15	
Cooling capacit	v in W								
30	16 910	21 116	26 031	31 718	38 242	45 666	54 055	63 473	_
35	15 949	20 056	24 842	30 371	36 706	43 912	52 052	61 190	
40	14 968	18 956	23 594	28 945	35 072	42 039	49 910	58 749	
45	-	17 817	22 287	27 440	33 339	40 048	47 630	56 149	-
50	-	-	20 920	25 855	31 507	37 938	45 211	53 389	-
55	-	-	-	24 190	29 574	35 706	42 650	50 467	-
60	-	-	-	-	27 539	33 352	39 945	47 380	-
65	-	-	-	-	25 400	30 872	37 092	44 122	-
ower input in \	w								
30	7 289	7 367	7 443	7 515	7 581	7 639	7 686	7 721	-
35	8 069	8 149	8 226	8 300	8 367	8 427	8 477	8 515	-
40	8 942	9 022	9 101	9 176	9 246	9 308	9 361	9 401	_
45	-	9 996	10 076	10 153	10 225	10 290	10 345	10 389	-
50	-	-	11 159	11 239	11 313	11 381	11 439	11 486	-
55	_	_	-	12 441	12 518	12 588	12 649	12 700	_
60	-	_	_	-	13 847	13 920	13 985	14 039	-
65	-	-	-	-	15 309	15 386	15 454	15 512	_
00		I		ı	10 000	10 000	10 101	10012	
urrent consun	nption in A								
30	16.13	16.21	16.29	16.36	16.41	16.44	16.45	16.42	-
35	16.97	17.06	17.15	17.22	17.28	17.32	17.34	17.33	-
40	17.94	18.04	18.13	18.21	18.28	18.33	18.36	18.36	-
45	-	19.15	19.25	19.34	19.42	19.49	19.53	19.54	-
50	-	-	20.53	20.63	20.72	20.80	20.85	20.88	-
55	-	-	-	22.09	22.19	22.28	22.34	22.39	-
60	-	-	-	-	23.85	23.94	24.03	24.08	-
65	-	-	-	-	25.70	25.81	25.91	25.98	_
lass flow in kg	/h		•	•	1	•			
30	364	449	546	657	782	924	1 082	1 258	_
35	357	443	541	653	780	922	1 081	1 258	
40	349	436	535	648	775	918	1 077	1 255	
45	- 549	436	528	641	768	910	1 077	1 249	
50		-	519	632	760	903	1 063	1 249	
	-								-
55	-	-	-	621	749	891	1 051	1 228	-
60 65	-	-	-	-	735 718	877	1 036	1 212	-
65	-	-	-	-	718	859	1 017	1 192	-
•	erformance (C.C	T .	T -	1		T _	I _		
30	2.32	2.87	3.50	4.22	5.04	5.98	7.03	8.22	-
35	1.98	2.46	3.02	3.66	4.39	5.21	6.14	7.19	-
40	1.67	2.10	2.59	3.15	3.79	4.52	5.33	6.25	-
45	-	1.78	2.21	2.70	3.26	3.89	4.60	5.40	-
50	-	-	1.87	2.30	2.78	3.33	3.95	4.65	-
55	-	-	-	1.94	2.36	2.84	3.37	3.97	-
60	-	-	-	-	1.99	2.40	2.86	3.37	-
65	_	-	_	_	1.66	2.01	2.40	2.84	_

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

Cooling capacity	37 938	W
Power input	11 381	W
Current consumption	20.80	Α
Mass flow	903	kg/h
C.O.P.	3.33	

to: Evaporating temperature at dew point

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	80	dB(A)
With accoustic hood	72	dB(A)

All performance data +/- 5%

tc: Condensing temperature at dew point

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



Danfoss scroll compressor. SM175-4

Performance data at 50 Hz, ARI rating conditions

R22

Cond. temp. in				Evapora	ating temperature	in °C (to)			
°C (tc)	-20	-15	-10	-5	0	5	10	15	
ooling capacit		1		1	T	1	T	1	
30	17 945	22 391	27 581	33 583	40 461	48 284	57 116	67 025	-
35	16 984	21 339	26 410	32 262	38 962	46 576	55 171	64 813	-
40	16 002	20 247	25 178	30 861	37 363	44 749	53 087	62 442	-
45	-	19 114	23 886	29 380	35 664	42 803	50 863	59 912	-
50	-	-	22 531	27 818	33 864	40 735	48 500	57 223	-
55	-	-	-	26 173	31 962	38 547	45 996	54 373	-
60	-	-	-	-	29 959	36 238	43 350	51 363	-
65	-	-	-	-	27 853	33 806	40 563	48 191	-
ower input in \	W								
30	7 289	7 367	7 443	7 515	7 581	7 639	7 686	7 721	_
35	8 069	8 149	8 226	8 300	8 367	8 427	8 477	8 515	_
40	8 942	9 022	9 101	9 176	9 246	9 308	9 361	9 401	_
45	-	9 996	10 076	10 153	10 225	10 290	10 345	10 389	_
50	-	-	11 159	11 239	11 313	11 381	11 439	11 486	
55	-	-	-	12 441	12 518	12 588	12 649	12 700	
60		-		12 441	13 847	13 920	13 985	14 039	
65	-	-	-	-	15 309	15 386	15 454	15 512	
บอ	-	<u> </u>		<u> </u>	10 308	10 300	10 404	10 012	-
urrent consum	antion in A								
30	16.13	16.21	16.29	16.36	16.41	16.44	16.45	16.42	_
35	16.13	17.06	17.15	17.22	17.28	17.32	17.34	17.33	_
40	17.94	18.04	18.13	18.21	18.28	18.33	18.36	18.36	
	-				1				
45		19.15	19.25	19.34	19.42	19.49	19.53	19.54	
50	-	-	20.53	20.63	20.72	20.80	20.85	20.88	-
55	-	-	-	22.09	22.19	22.28	22.34	22.39	-
60	-	-	-	-	23.85	23.94	24.03	24.08	-
65	-	-	-	-	25.70	25.81	25.91	25.98	-
lace flow in ka	/h								
lass flow in kg		447	F42	653	770	010	1.076	1 251	
30	362	447	543	653	778	919	1 076	1 251	-
35	355	441	538	650	775	917	1 075	1 250	-
40	347	434	532	644	771	913	1 071	1 248	-
45	-	426	525	638	764	907	1 065	1 242	-
50	-	-	516	629	756	898	1 057	1 233	-
55	-	-	-	618	745	886	1 045	1 221	-
60	-	-	-	-	731	872	1 030	1 205	-
65	-	-	-	-	714	855	1 011	1 185	-
aaffiala-4-6		.							
-	erformance (C.C	· ·	0.74	1 4	501	0.00	7.0	1 000	
30	2.46	3.04	3.71	4.47	5.34	6.32	7.43	8.68	-
35	2.10	2.62	3.21	3.89	4.66	5.53	6.51	7.61	-
40	1.79	2.24	2.77	3.36	4.04	4.81	5.67	6.64	-
45	-	1.91	2.37	2.89	3.49	4.16	4.92	5.77	-
EΩ	-	-	2.02	2.48	2.99	3.58	4.24	4.98	-
50	-	-	-	2.10	2.55	3.06	3.64	4.28	-
55									
	-	-	-	-	2.16 1.82	2.60	3.10 2.62	3.66 3.11	-

to: Evaporating temperature at dew point

Cooling capacity

Current consumption

Power input

Mass flow

C.O.P.

tc: Condensing temperature at dew point

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

42 000

12 465

22.12

956

3.37

W

W

kg/h

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	80	dB(A)
With accoustic hood	72	dB(A)

All performance data +/- 5%



Danfoss scroll compressor. SM175-4

Performance data at 60 Hz, EN 12900 rating conditions

R22

Cond. temp. in				Evapora	ting temperature	in °C (to)			
°C (tc)	-20	-15	-10	-5	0	5	10	15	
					•		•		
Cooling capacity	y in W	1	1		,		1	, ,	
30	21 043	26 133	32 040	38 831	46 574	55 339	65 192	76 203	-
35	19 844	24 820	30 579	37 188	44 715	53 229	62 797	73 487	-
40	18 629	23 469	29 058	35 463	42 751	50 992	60 252	70 599	-
45	-	22 081	27 477	33 655	40 683	48 627	57 556	67 537	-
50	-	-	25 838	31 766	38 510	46 136	54 711	64 303	-
55	-	-	-	29 797	36 233	43 517	51 715	60 894	-
60	-	-	-	-	33 852	40 771	48 567	57 308	-
65	-	-	-	-	31 365	37 893	45 262	53 540	-
Power input in V	v								
30	8 942	9 108	9 271	9 427	9 571	9 700	9 810	9 896	_
35	9 813	9 981	10 147	10 306	10 455	10 589	10 704	10 796	
40								 	
	10 796	10 967	11 136	11 300	11 453	11 592	11 714	11 813	
45	-	12 076	12 249	12 417	12 575	12 721	12 848	12 955	-
50	-	-	13 494	13 666	13 831	13 982	14 117	14 231	-
55	-	-	-	15 058	15 228	15 386	15 529	15 651	-
60	-	-	-	-	16 777	16 942	17 093	17 224	-
65	-	-	-	-	18 486	18 659	18 818	18 958	-
Current consum	•	1	1	1			1	1 1	
30	15.21	15.40	15.58	15.75	15.89	16.01	16.10	16.15	-
35	16.11	16.31	16.50	16.67	16.83	16.96	17.06	17.13	-
40	17.16	17.36	17.56	17.75	17.92	18.07	18.19	18.27	-
45	-	18.58	18.79	18.99	19.18	19.34	19.48	19.59	-
50	-	-	20.21	20.43	20.63	20.81	20.97	21.10	-
55	-	-	-	22.06	22.28	22.48	22.66	22.82	-
60	-	-	-	-	24.16	24.39	24.59	24.76	-
65	-	-	-	-	26.29	26.53	26.76	26.96	-
Mass flow in kg/	h	ı	ı	1	•	•	1	, ,	
30	453	555	672	804	953	1 119	1 304	1 510	-
35	444	548	666	800	950	1 117	1 304	1 510	-
40	435	540	659	794	945	1 113	1 301	1 508	-
45	-	531	651	786	938	1 107	1 295	1 502	-
50	-	-	641	777	929	1 098	1 286	1 494	-
55	-	-	-	765	917	1 086	1 274	1 481	-
60	-	-	-	-	903	1 072	1 259	1 466	-
65	-	-	-	-	887	1 055	1 241	1 447	-
Saaffialant of		\							
Coefficient of pe			2.40	4.40	4.07	F 74	0.05	7.70	
30	2.35	2.87	3.46	4.12	4.87	5.71	6.65	7.70	-
35	2.02	2.49	3.01	3.61	4.28	5.03	5.87	6.81	-
40	1.73	2.14	2.61	3.14	3.73	4.40	5.14	5.98	-
45	-	1.83	2.24	2.71	3.24	3.82	4.48	5.21	-
50	-	-	1.91	2.32	2.78	3.30	3.88	4.52	-
55	-	-	-	1.98	2.38	2.83	3.33	3.89	-
60	-	-	-	-	2.02	2.41	2.84	3.33	-
65	_	_	_	_	1.70	2.03	2.41	2.82	_

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

Cooling capacity	46 136	W	
Power input	13 982	W	
Current consumption	20.81	Α	
Mass flow	1 098	kg/h	
C.O.P.	3.30		

to: Evaporating temperature at dew point

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

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	82.5	dB(A)
With accoustic hood	75	dB(A)

All performance data +/- 5%

tc: Condensing temperature at dew point



Danfoss scroll compressor. SM175-4

Performance data at 60 Hz, ARI rating conditions

R22

Coling capacity in W -5 0 5 10 15 30 22 330 27 710 33 948 4 11 114 49 278 58 511 68 884 80 467 35 21 352 26 409 32 509 38 304 47 464 66 459 66 561 77 838 40 19 917 25 088 24 484 36 036 43 519 66 66 661 77 638 50 32 629 38 4177 41 390 46 558 56 610	Cond. temp. in				Evapora	ting temperature	in °C (to)			
30	°C (tc)	-20	-15	-10	-5	0	5	10	15	
30										
35			T	T	Т	T	T	1	1	
40		22 330	27 710		41 114	49 278	58 511	68 884		-
45	35	21 132	26 409	32 509	39 504	47 464	56 459	66 561	77 838	-
So	40	19 917	25 068	31 009	37 811	45 544	54 279	64 086	75 037	-
55	45	-	23 689	29 448	36 035	43 519	51 971	61 463	72 063	-
60	50	-	-	27 828	34 177	41 390	49 538	58 691	68 920	-
65 - - - 34 394 41 494 49 498 58 477 - cover input in W 30 8 942 9 108 9 271 9 477 9 571 9 700 9 810 9 69 - 35 9 813 9 981 10 967 11 136 11 300 11 453 11 592 11 714 11 1813 - 40 10 796 10 967 11 136 11 300 11 453 11 592 11 714 11 1813 - 45 - 12 076 12 249 12 417 12 575 12 721 12 948 12 955 - 50 - - 13 494 13 666 13 831 13 982 14 117 14 231 - 55 - - - - 15 058 15 228 15 396 15 529 15 651 - 66 - - - - - 18 486 16 679 18 818 18 958 -	55	-	-	-	32 239	39 159	46 980	55 772	65 607	-
ower input in W 30 8 942 9 108 9 271 9 427 9 571 9 700 9 810 9 896 . 35 9 813 9 981 10 147 10 306 10 455 10 589 10 704 10 796 . 40 10 796 10 967 11 138 11 300 11 453 11 592 11 714 11 813 . 45 - 12 076 12 249 12 417 12 575 12 721 12 848 12 955 . 50 - - 13 494 13 666 13 831 13 982 14 117 14 231 . 60 - - - - 16 777 16 942 17 093 17 224 . 65 - - - - 16 777 16 942 17 093 17 224 . urrent consumption in A urrent consumption in A urrent consumption in A 15 58 15.75	60	-	-	-	-	36 827	44 298	52 707	62 125	-
30	65	-	-	-	-	34 394	41 494	49 498	58 477	-
30	Power input in V	v								
35			9 108	9 271	9 427	9 571	9 700	9.810	9.896	
40 10 796 10 967 11 136 11 300 11 453 11 592 11 714 11 813 45 - 12 076 12 249 12 417 12 575 12 721 12 848 12 955 50 13 494 13 666 13 831 13 982 14 117 14 211 55 13 494 13 666 13 831 13 982 14 117 14 12 11 12 1- 55 15 5058 15 228 15 386 15 529 15 651 60 16 777 16 942 17 093 17 224 65 18 486 18 669 18 818 18 958 wrent consumption in A 30 15 21 15 40 15 58 15 75 15 89 16 01 16 10 16 15 35 16 11 16 31 16 50 16 67 16 83 16 96 17 06 17 13 40 17 16 17 36 17 66 17 75 17 92 18 18 19 34 19 48 19 59 50 20 21 20 43 20 63 20 81 20 97 21 10 55 20 21 20 43 20 63 20 81 20 97 21 10 55 20 21 20 43 20 63 20 81 20 97 21 10 55 20 21 20 43 20 63 22 88 22 48 22 66 22 82 60 20 21 20 43 20 63 20 81 20 97 21 10 55 20 21 20 43 20 63 20 81 20 97 21 10 65 7 76 10 912 18 19 34 19 34 19 49 lass flow in kg/h 30 451 552 668 800 948 1113 1297 1501 35 442 545 663 790 940 1107 1293 1499 45 - 628 647 782 933 1101 1287 1494 50 638 773 924 10 92 1279 1485 55 898 10 66 1252 1457 56 898 10 66 1252 1457 66 898 10 66 1252 1457 66 898 10 66 1252 1457 67 898 10 66 1252 1457 67 898 10 66 1252 1457 68										
45			+				+		1	_
50							1		1	
15 15 15 15 15 15 15 15	1						•			
60						1				
66 - - - 18 486 18 659 18 818 18 958 - urrent consumption in A 30 15.21 15.40 15.58 15.75 15.89 16.01 16.10 16.15 - 35 16.11 16.31 16.50 16.67 16.83 16.96 17.06 17.13 - 40 17.16 17.36 17.56 17.75 17.92 18.07 18.19 18.27 - 45 - 18.58 18.79 18.99 19.18 19.34 19.48 19.59 - 50 - - 20.21 20.43 20.63 20.81 20.97 21.10 - 55 - - - 22.06 22.28 22.48 22.66 22.82 - 60 - - - - 26.29 26.53 26.76 26.96 - Isass flow in kg/h 30					-					
Section Sect				-	-					
30	00					10 400	10 039	10 010	10 930	
15.21	urrent consum	ntion in A								
35			15.40	15.58	15.75	15.89	16.01	16.10	16.15	_
40			+				+			_
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So			+		1		+			_
55	1		i						1	
60 24.16 24.39 24.59 24.76 - 65 26.29 26.53 26.76 26.96 26.29 26.53 26.76 26.96 26.29 26.53 26.76 26.96 26.29 26.53 26.76 26.96 26.29 26.53 26.76 26.96		_		-						_
Section Sect		_		_						
30			l	l	1					
30	lass flow in kg/	'h								
35 442 545 663 796 945 1 111 1 297 1 502 - 40 433 537 656 790 940 1 107 1 293 1 499 - 45 - 528 647 782 933 1 101 1 287 1 494 - 50 - - 638 773 924 1 092 1 279 1 485 - 55 - - - 761 912 1 080 1 267 1 473 - 60 - - - - 888 1 066 1 252 1 457 - 65 - - - - - 882 1 049 1 234 1 439 - coefficient of performance (C.O.P.) 30 2.50 3.04 3.66 4.36 5.15 6.03 7.02 8.13 - 35 2.15 2.65 3.20 3.83			552	668	800	948	1 113	1 297	1 501	_
40 433 537 656 790 940 1107 1293 1499 - 45 - 528 647 782 933 1101 1287 1494 - 50 638 773 924 1092 1279 1485 - 55 761 912 1080 1267 1473 - 60 888 1066 1252 1457 - 65 888 1066 1252 1457 - 65 882 1049 1234 1439 - coefficient of performance (C.O.P.) 30 2.50 3.04 3.66 4.36 5.15 6.03 7.02 8.13 - 35 2.15 2.65 3.20 3.83 4.54 5.33 6.22 7.21 - 40 1.84 2.29 2.78 3.35 3.98 4.68 5.47 6.35 - 45 - 1.96 2.40 2.90 3.46 4.09 4.78 5.56 - 50 2.06 2.50 2.99 3.54 4.16 4.84 - 55 2.14 2.57 3.05 3.59 4.19 - 60 2.14 2.57 3.05 3.08 3.61 -										_
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65 - - - 1.86 2.22 2.63 3.08 -						1		1		
	65	-	-	-	-	1.86	2.22	2.63	3.08	-
ominal performance at to = 7.2 °C, tc = 54.4 °C Pressure switch settings	commun periori		54.05	7 \\/	_		Pressure switch		20	

to: Evaporating temperature at dew point

Cooling capacity

Current consumption

Power input

Mass flow

C.O.P.

tc: Condensing temperature at dew point

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

51 057

15 275

22.35

1 162

3.34

W

W

kg/h

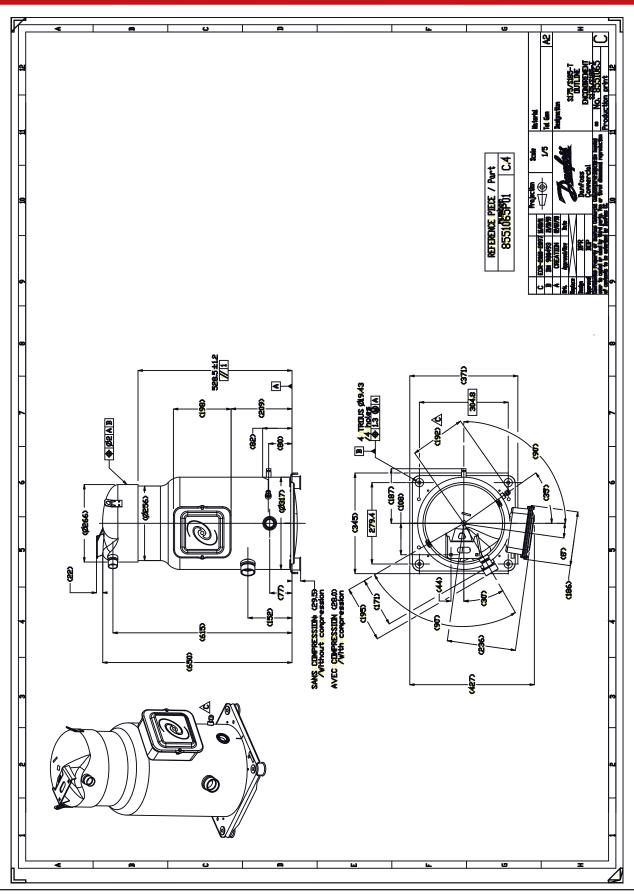
Maximum HP switch setting	28	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1.3	bar(g)

Sound	power	data
Oouna	power	uutt

Sound power level	82.5	dB(A)
With accoustic hood	75	dB(A)

All performance data +/- 5%





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