



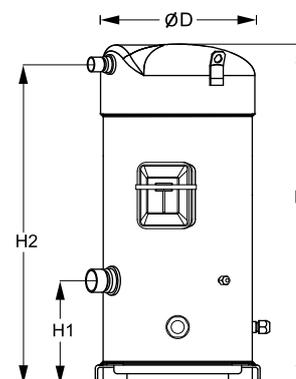
Datasheets

Performer[®] scroll compressors **SM / SY / SZ / SH / WSH**



General Characteristics

Model number (on compressor nameplate)		SM161T4VC
Code number for Singlepack*		SM161-4VAI
Code number for Industrial pack**		SM161-4VAM
Drawing number		8551106b
Suction and discharge connections		Brazed
Suction connection		1-3/8" ODF
Discharge connection		7/8" 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		216,6 cm ³ /rev
Displacement @ Nominal speed		37.7 m ³ /h @ 2900 rpm - 45.5 m ³ /h @ 3500 rpm
Net weight		88 kg
Oil charge		3,6 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		12,5 kg
Approved refrigerants		R22, R417A-160SZ

Dimensions


D=266 mm

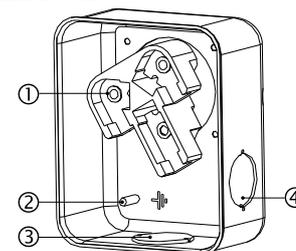
H=591 mm

H1=180 mm

H2=556 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	0,94 #
Rated Load Amps (RLA)	22,9 A
Maximum Continuous Current (MCC)	32 A
Locked Rotor Amps (LRA)	145 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: 6 Unboxed compressors on pallet (order per multiples of 6)

Rotolock accessories, suction side
Code no.

Solder sleeve, P10 (1-3/4" Rotolock, 1-3/8" ODF)	8153003
Rotolock valve, V10 (1-3/4" Rotolock, 1-3/8" ODF)	8168022
Gasket, 1-3/4"	8156132

Rotolock accessories, discharge side
Code no.

Rotolock valve, V05 (1-1/4" Rotolock, 7/8" ODF)	8168030
Gasket, 1-3/4"	8156132

Rotolock accessories, sets
Code no.

Solder sleeve adapter set (1-3/4" Rotolock, 1-3/8" ODF), (1-1/4" Rotolock, 7/8" ODF)	7765006
Valve set, V10 (1-3/4"~1-3/8"), V05 (1-1/4"~7/8")	7703392
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

Crankcase heaters
Code no.

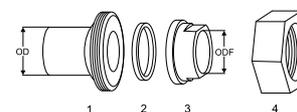
Surface sump heater + bottom insulation, 48 W, 24 V, CE mark, UL	120Z0361
Surface sump heater + bottom insulation, 48 W, 230 V, CE mark, UL	120Z0380
Surface sump heater + bottom insulation, 48 W, 400 V, CE mark, UL	120Z0381
Surface sump heater + bottom insulation, 48 W, 460 V, CE mark, UL	120Z0382
Belt 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.

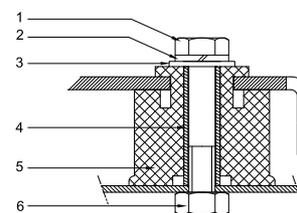
Electronic soft start kit, MCI 25 C	7705007
Acoustic hood for scroll compressor S148-S161 (except code 3)	7755017
Bottom insulation for scroll compressor	120Z0356
Discharge thermostat kit	7750009

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, 1 T block connector 52 x 57 mm	8156135
T block connector 52 x 57 mm	8173230

Solder sleeve adapter set


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

Mounting kit


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

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	15 916	19 822	24 365	29 620	35 663	42 569	50 414	59 274	-
35	15 061	18 858	23 266	28 358	34 211	40 900	48 500	57 086	-
40	14 168	17 843	22 102	27 019	32 670	39 128	46 469	54 769	-
45	-	16 772	20 865	25 590	31 020	37 230	44 295	52 290	-
50	-	-	19 587	24 107	29 304	35 254	42 031	49 709	-
55	-	-	-	22 561	27 510	33 183	39 655	46 999	-
60	-	-	-	-	25 638	31 016	37 164	44 155	-
65	-	-	-	-	23 724	28 795	34 606	41 230	-

Power input in W

30	6 751	6 798	6 849	6 900	6 949	6 991	7 024	7 043	-
35	7 517	7 555	7 600	7 650	7 700	7 748	7 789	7 822	-
40	8 385	8 409	8 444	8 486	8 533	8 581	8 627	8 666	-
45	-	9 378	9 397	9 428	9 466	9 510	9 554	9 596	-
50	-	-	10 480	10 493	10 518	10 551	10 589	10 628	-
55	-	-	-	11 699	11 706	11 724	11 750	11 782	-
60	-	-	-	-	13 047	13 045	13 055	13 074	-
65	-	-	-	-	14 562	14 534	14 522	14 523	-

Current consumption in A

30	14.74	14.82	14.86	14.86	14.86	14.86	14.90	14.99	-
35	15.54	15.64	15.68	15.69	15.69	15.70	15.73	15.81	-
40	16.47	16.58	16.64	16.66	16.66	16.66	16.69	16.76	-
45	-	17.68	17.75	17.78	17.78	17.79	17.81	17.88	-
50	-	-	19.04	19.08	19.09	19.10	19.12	19.18	-
55	-	-	-	20.58	20.60	20.61	20.63	20.69	-
60	-	-	-	-	22.35	22.36	22.38	22.43	-
65	-	-	-	-	24.35	24.37	24.39	24.44	-

Mass flow in kg/h

30	342	420	510	612	728	860	1 007	1 173	-
35	336	415	506	609	725	857	1 005	1 171	-
40	330	409	500	603	720	852	1 000	1 167	-
45	-	402	493	596	713	845	994	1 160	-
50	-	-	484	587	704	836	985	1 151	-
55	-	-	-	577	694	825	973	1 139	-
60	-	-	-	-	681	812	960	1 125	-
65	-	-	-	-	667	798	944	1 109	-

Coefficient of performance (C.O.P.)

30	2.36	2.92	3.56	4.29	5.13	6.09	7.18	8.42	-
35	2.00	2.50	3.06	3.71	4.44	5.28	6.23	7.30	-
40	1.69	2.12	2.62	3.18	3.83	4.56	5.39	6.32	-
45	-	1.79	2.22	2.71	3.28	3.91	4.64	5.45	-
50	-	-	1.87	2.30	2.79	3.34	3.97	4.68	-
55	-	-	-	1.93	2.35	2.83	3.37	3.99	-
60	-	-	-	-	1.96	2.38	2.85	3.38	-
65	-	-	-	-	1.63	1.98	2.38	2.84	-

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

Cooling capacity	35 254	W
Power input	10 551	W
Current consumption	19.10	A
Mass flow	836	kg/h
C.O.P.	3.34	

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	79.5	dB(A)
With acoustic hood	72	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%

Danfoss can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alternations can be made without subsequential changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss, the Danfoss logotype and Performer are trademarks of Danfoss A/S. All rights reserved.

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	16 887	21 015	25 811	31 356	37 726	45 002	53 260	62 580	-
35	16 038	20 064	24 733	30 122	36 312	43 379	51 403	60 462	-
40	15 143	19 053	23 580	28 800	34 794	41 639	49 414	58 197	-
45	-	17 993	22 363	27 400	33 183	39 791	47 302	55 795	-
50	-	-	21 092	25 931	31 489	37 846	45 079	53 267	-
55	-	-	-	24 403	29 722	35 813	42 753	50 622	-
60	-	-	-	-	27 892	33 702	40 335	47 870	-
65	-	-	-	-	26 009	31 524	37 835	45 022	-

Power input in W

30	6 751	6 798	6 849	6 900	6 949	6 991	7 024	7 043	-
35	7 517	7 555	7 600	7 650	7 700	7 748	7 789	7 822	-
40	8 385	8 409	8 444	8 486	8 533	8 581	8 627	8 666	-
45	-	9 378	9 397	9 428	9 466	9 510	9 554	9 596	-
50	-	-	10 480	10 493	10 518	10 551	10 589	10 628	-
55	-	-	-	11 699	11 706	11 724	11 750	11 782	-
60	-	-	-	-	13 047	13 045	13 055	13 074	-
65	-	-	-	-	14 562	14 534	14 522	14 523	-

Current consumption in A

30	14.74	14.82	14.86	14.86	14.86	14.86	14.90	14.99	-
35	15.54	15.64	15.68	15.69	15.69	15.70	15.73	15.81	-
40	16.47	16.58	16.64	16.66	16.66	16.66	16.69	16.76	-
45	-	17.68	17.75	17.78	17.78	17.79	17.81	17.88	-
50	-	-	19.04	19.08	19.09	19.10	19.12	19.18	-
55	-	-	-	20.58	20.60	20.61	20.63	20.69	-
60	-	-	-	-	22.35	22.36	22.38	22.43	-
65	-	-	-	-	24.35	24.37	24.39	24.44	-

Mass flow in kg/h

30	340	418	507	609	725	855	1 002	1 166	-
35	335	413	503	605	721	852	999	1 164	-
40	328	407	497	600	716	847	995	1 160	-
45	-	400	490	593	709	841	988	1 153	-
50	-	-	482	584	701	832	979	1 144	-
55	-	-	-	574	690	821	968	1 133	-
60	-	-	-	-	678	808	955	1 119	-
65	-	-	-	-	664	793	939	1 102	-

Coefficient of performance (C.O.P.)

30	2.50	3.09	3.77	4.54	5.43	6.44	7.58	8.88	-
35	2.13	2.66	3.25	3.94	4.72	5.60	6.60	7.73	-
40	1.81	2.27	2.79	3.39	4.08	4.85	5.73	6.72	-
45	-	1.92	2.38	2.91	3.51	4.18	4.95	5.81	-
50	-	-	2.01	2.47	2.99	3.59	4.26	5.01	-
55	-	-	-	2.09	2.54	3.05	3.64	4.30	-
60	-	-	-	-	2.14	2.58	3.09	3.66	-
65	-	-	-	-	1.79	2.17	2.61	3.10	-

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

Cooling capacity	39 021	W
Power input	11 587	W
Current consumption	20.43	A
Mass flow	885	kg/h
C.O.P.	3.37	

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	79.5	dB(A)
With acoustic hood	72	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%

Danfoss can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alternations can be made without subsequential changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss, the Danfoss logotype and Performer are trademarks of Danfoss A/S. All rights reserved.

