



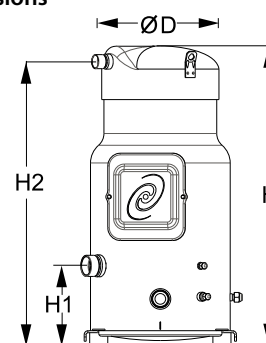
Datasheets

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



General Characteristics

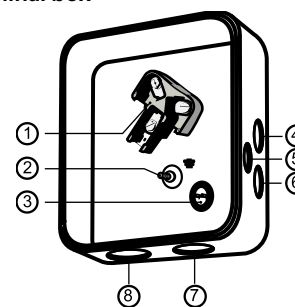
Model number (on compressor nameplate)	SM185S4RC	SM185S4CC
Code number for Singlepack*	SM185-4RI	SM185-4CAI
Code number for Industrial pack**	SM185-4RM	SM185-4CAM
Drawing number	8551119b	8551056c
Suction and discharge connections	Rotolock	Brazed
Suction connection	2-1/4" Rotolock	1-5/8" ODF
Discharge 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	249,9 cm ³ /rev	
Displacement @ Nominal speed	43.5 m ³ /h @ 2900 rpm - 52.5 m ³ /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

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

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

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

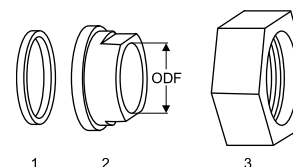
**Industrial pack: 6 Unboxed compressors on pallet (order per multiples of 6)

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
Gasket, 1-3/4"	8156132

Gaskets, sleeves and nuts


- 1: Gasket
- 2: Solder sleeve
- 3: Rotolock nut

Rotolock accessories, sets
Code no.

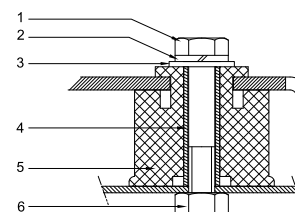
Valve set, V08 (2-1/4"~1-3/8"), V07 (1-3/4"~7/8")	7703010
Gasket set, 1-1/4", 1-3/4", 2-1/4", OSG gaskets black & white	8156013

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	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

Mounting kit


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

Miscellaneous accessories
Code no.

Electronic soft start kit, MCI 25 C	7705007
Soft start kit with statoric resistors, prewired box, SCR04	7705002
Acoustic hood for scroll compressor S175-S185	7755007
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

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	18 321	22 879	28 204	34 366	41 435	49 479	58 569	68 774	-
35	17 280	21 729	26 914	32 904	39 768	47 575	56 393	66 294	-
40	16 221	20 543	25 569	31 367	38 006	45 556	54 085	63 663	-
45	-	19 302	24 144	29 727	36 118	43 386	51 599	60 828	-
50	-	-	22 668	28 017	34 141	41 109	48 989	57 851	-
55	-	-	-	26 214	32 048	38 693	46 217	54 689	-
60	-	-	-	-	29 832	36 128	43 270	51 324	-
65	-	-	-	-	27 523	33 453	40 192	47 810	-

Power input in W

30	7 964	8 050	8 133	8 212	8 284	8 347	8 399	8 437	-
35	8 819	8 906	8 991	9 071	9 145	9 211	9 265	9 306	-
40	9 773	9 861	9 947	10 030	10 106	10 174	10 231	10 275	-
45	-	10 925	11 013	11 097	11 176	11 247	11 307	11 354	-
50	-	-	12 196	12 283	12 364	12 438	12 501	12 553	-
55	-	-	-	13 596	13 680	13 757	13 824	13 879	-
60	-	-	-	-	15 132	15 212	15 283	15 342	-
65	-	-	-	-	16 731	16 814	16 889	16 953	-

Current consumption in A

30	17.62	17.72	17.80	17.88	17.93	17.97	17.99	17.98	-
35	18.55	18.65	18.74	18.82	18.88	18.93	18.95	18.95	-
40	19.61	19.72	19.82	19.90	19.97	20.03	20.06	20.08	-
45	-	20.94	21.05	21.14	21.22	21.29	21.33	21.36	-
50	-	-	22.45	22.55	22.64	22.72	22.78	22.82	-
55	-	-	-	24.14	24.25	24.34	24.42	24.48	-
60	-	-	-	-	26.06	26.17	26.26	26.34	-
65	-	-	-	-	28.09	28.21	28.32	28.42	-

Mass flow in kg/h

30	394	486	592	712	848	1 001	1 172	1 363	-
35	387	480	586	707	844	999	1 171	1 363	-
40	378	472	580	702	840	994	1 167	1 359	-
45	-	464	572	694	832	988	1 161	1 353	-
50	-	-	562	685	823	978	1 151	1 343	-
55	-	-	-	673	811	966	1 138	1 330	-
60	-	-	-	-	796	950	1 122	1 313	-
65	-	-	-	-	778	931	1 102	1 292	-

Coefficient of performance (C.O.P.)

30	2.30	2.84	3.47	4.18	5.00	5.93	6.97	8.15	-
35	1.96	2.44	2.99	3.63	4.35	5.17	6.09	7.12	-
40	1.66	2.08	2.57	3.13	3.76	4.48	5.29	6.20	-
45	-	1.77	2.19	2.68	3.23	3.86	4.56	5.36	-
50	-	-	1.86	2.28	2.76	3.31	3.92	4.61	-
55	-	-	-	1.93	2.34	2.81	3.34	3.94	-
60	-	-	-	-	1.97	2.37	2.83	3.35	-
65	-	-	-	-	1.65	1.99	2.38	2.82	-

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

Cooling capacity	41 109	W
Power input	12 438	W
Current consumption	22.72	A
Mass flow	978	kg/h
C.O.P.	3.31	

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 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%

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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	19 439	24 255	29 878	36 380	43 832	52 306	61 875	72 610	-
35	18 400	23 118	28 611	34 951	42 209	50 458	59 770	70 215	-
40	17 337	21 936	27 278	33 434	40 478	48 480	57 512	67 647	-
45	-	20 708	25 877	31 829	38 637	46 371	55 103	64 906	-
50	-	-	24 409	30 136	36 686	44 131	52 542	61 992	-
55	-	-	-	28 354	34 625	41 760	49 828	58 904	-
60	-	-	-	-	32 455	39 257	46 962	55 642	-
65	-	-	-	-	30 174	36 623	43 943	52 207	-

Power input in W

30	7 964	8 050	8 133	8 212	8 284	8 347	8 399	8 437	-
35	8 819	8 906	8 991	9 071	9 145	9 211	9 265	9 306	-
40	9 773	9 861	9 947	10 030	10 106	10 174	10 231	10 275	-
45	-	10 925	11 013	11 097	11 176	11 247	11 307	11 354	-
50	-	-	12 196	12 283	12 364	12 438	12 501	12 553	-
55	-	-	-	13 596	13 680	13 757	13 824	13 879	-
60	-	-	-	-	15 132	15 212	15 283	15 342	-
65	-	-	-	-	16 731	16 814	16 889	16 953	-

Current consumption in A

30	17.62	17.72	17.80	17.88	17.93	17.97	17.99	17.98	-
35	18.55	18.65	18.74	18.82	18.88	18.93	18.95	18.95	-
40	19.61	19.72	19.82	19.90	19.97	20.03	20.06	20.08	-
45	-	20.94	21.05	21.14	21.22	21.29	21.33	21.36	-
50	-	-	22.45	22.55	22.64	22.72	22.78	22.82	-
55	-	-	-	24.14	24.25	24.34	24.42	24.48	-
60	-	-	-	-	26.06	26.17	26.26	26.34	-
65	-	-	-	-	28.09	28.21	28.32	28.42	-

Mass flow in kg/h

30	392	484	589	708	843	995	1 165	1 355	-
35	385	477	583	704	840	993	1 164	1 355	-
40	376	470	577	698	835	989	1 161	1 352	-
45	-	461	569	691	828	982	1 154	1 345	-
50	-	-	559	681	819	973	1 145	1 336	-
55	-	-	-	669	807	960	1 132	1 323	-
60	-	-	-	-	792	945	1 116	1 305	-
65	-	-	-	-	774	926	1 096	1 284	-

Coefficient of performance (C.O.P.)

30	2.44	3.01	3.67	4.43	5.29	6.27	7.37	8.61	-
35	2.09	2.60	3.18	3.85	4.62	5.48	6.45	7.55	-
40	1.77	2.22	2.74	3.33	4.01	4.77	5.62	6.58	-
45	-	1.90	2.35	2.87	3.46	4.12	4.87	5.72	-
50	-	-	2.00	2.45	2.97	3.55	4.20	4.94	-
55	-	-	-	2.09	2.53	3.04	3.60	4.24	-
60	-	-	-	-	2.14	2.58	3.07	3.63	-
65	-	-	-	-	1.80	2.18	2.60	3.08	-

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

Cooling capacity	45 500	W
Power input	13 622	W
Current consumption	24.17	A
Mass flow	1 035	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	80	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%

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