



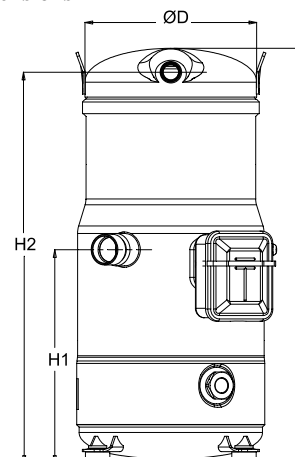
Datasheets

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



General Characteristics

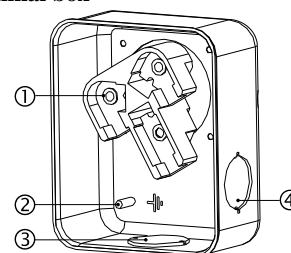
Model number (on compressor nameplate)		SM147A4ALB
Code number for Singlepack*		120H0191
Code number for Industrial pack**		120H0311
Drawing number		8560003d
Suction and discharge connections		Brazed
Suction connection		1-3/8" ODF
Discharge connection		7/8" ODF
Oil sight glass		Threaded
Oil equalisation connection		1-3/4" Rotolock
Oil drain connection		None
LP gauge port		Schrader
IPR valve		None
Swept volume		193,5 cm ³ /rev
Displacement @ Nominal speed		33.7 m ³ /h @ 2900 rpm - 40.6 m ³ /h @ 3500 rpm
Net weight		67 kg
Oil charge		3,3 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		7,9 kg
Approved refrigerants		R22, R417A-160SZ

Dimensions


D=243 mm
H=540 mm
H1=278 mm
H2=509 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	0.92 #
Rated Load Amps (RLA)	20.7 A
Maximum Continuous Current (MCC)	29 A
Locked Rotor Amps (LRA)	147 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	15 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, 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)	120Z0405
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, 80 W, 24 V, CE mark, UL	120Z0388
Surface sump heater, 80 W, 230 V, CE mark, UL	120Z0389
Surface sump heater, 80 W, 400 V, CE mark, UL	120Z0390
Surface sump heater, 80 W, 460 V, CE mark, UL	120Z0391

Miscellaneous accessories	Code no.
Acoustic hood for scroll compressor SH105-161 & SM124, SM147	120Z0035
Gasket, 1-3/4"	8156132
Discharge thermostat kit	7750009

Spare parts	Code no.
Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	120Z0066
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

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	14 780	18 349	22 503	27 311	32 841	39 160	46 338	54 441	-
35	14 025	17 497	21 529	26 189	31 546	37 668	44 622	52 477	-
40	13 234	16 593	20 488	24 986	30 156	36 065	42 781	50 372	-
45	-	15 648	19 390	23 711	28 678	34 359	40 822	48 135	-
50	-	-	18 244	22 373	27 122	32 561	38 756	45 776	-
55	-	-	-	20 979	25 497	30 677	36 590	43 302	-
60	-	-	-	-	23 810	28 719	34 333	40 722	-
65	-	-	-	-	22 072	26 693	31 995	38 046	-

Power input in W

30	5 634	5 757	5 918	6 100	6 285	6 454	6 590	6 675	-
35	6 258	6 350	6 496	6 676	6 873	7 069	7 246	7 385	-
40	6 984	7 033	7 149	7 314	7 510	7 718	7 922	8 101	-
45	-	7 829	7 902	8 037	8 218	8 426	8 642	8 849	-
50	-	-	8 777	8 870	9 021	9 214	9 430	9 650	-
55	-	-	-	9 834	9 944	10 108	10 309	10 529	-
60	-	-	-	-	11 008	11 130	11 303	11 509	-
65	-	-	-	-	12 238	12 304	12 435	12 613	-

Current consumption in A

30	12.99	13.17	13.31	13.44	13.58	13.77	14.02	14.36	-
35	13.64	13.85	14.00	14.15	14.29	14.47	14.71	15.03	-
40	14.36	14.59	14.76	14.91	15.06	15.24	15.46	15.76	-
45	-	15.42	15.62	15.78	15.93	16.09	16.30	16.58	-
50	-	-	16.60	16.77	16.92	17.08	17.27	17.52	-
55	-	-	-	17.92	18.07	18.22	18.40	18.63	-
60	-	-	-	-	19.42	19.56	19.72	19.93	-
65	-	-	-	-	20.99	21.12	21.27	21.45	-

Mass flow in kg/h

30	317	389	471	565	671	791	926	1 077	-
35	313	385	468	562	669	789	925	1 076	-
40	308	381	464	558	665	785	921	1 073	-
45	-	375	458	552	659	780	916	1 068	-
50	-	-	451	545	652	773	908	1 060	-
55	-	-	-	537	643	763	898	1 050	-
60	-	-	-	-	633	752	887	1 038	-
65	-	-	-	-	621	740	873	1 023	-

Coefficient of performance (C.O.P.)

30	2.62	3.19	3.80	4.48	5.23	6.07	7.03	8.16	-
35	2.24	2.76	3.31	3.92	4.59	5.33	6.16	7.11	-
40	1.89	2.36	2.87	3.42	4.02	4.67	5.40	6.22	-
45	-	2.00	2.45	2.95	3.49	4.08	4.72	5.44	-
50	-	-	2.08	2.52	3.01	3.53	4.11	4.74	-
55	-	-	-	2.13	2.56	3.04	3.55	4.11	-
60	-	-	-	-	2.16	2.58	3.04	3.54	-
65	-	-	-	-	1.80	2.17	2.57	3.02	-

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

Cooling capacity	32 561	W
Power input	9 214	W
Current consumption	17.08	A
Mass flow	773	kg/h
C.O.P.	3.53	

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	74	dB(A)
With acoustic hood	68	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	15 682	19 453	23 839	28 911	34 741	41 398	48 953	57 478	-
35	14 935	18 615	22 886	27 819	33 483	39 951	47 294	55 581	-
40	14 144	17 719	21 858	26 634	32 117	38 379	45 491	53 524	-
45	-	16 787	20 782	25 388	30 678	36 723	43 594	51 363	-
50	-	-	19 645	24 065	29 144	34 954	41 566	49 052	-
55	-	-	-	22 692	27 547	33 108	39 449	46 639	-
60	-	-	-	-	25 904	31 206	37 263	44 149	-
65	-	-	-	-	24 198	29 223	34 981	41 545	-

Power input in W

30	5 634	5 757	5 918	6 100	6 285	6 454	6 590	6 675	-
35	6 258	6 350	6 496	6 676	6 873	7 069	7 246	7 385	-
40	6 984	7 033	7 149	7 314	7 510	7 718	7 922	8 101	-
45	-	7 829	7 902	8 037	8 218	8 426	8 642	8 849	-
50	-	-	8 777	8 870	9 021	9 214	9 430	9 650	-
55	-	-	-	9 834	9 944	10 108	10 309	10 529	-
60	-	-	-	-	11 008	11 130	11 303	11 509	-
65	-	-	-	-	12 238	12 304	12 435	12 613	-

Current consumption in A

30	12.99	13.17	13.31	13.44	13.58	13.77	14.02	14.36	-
35	13.64	13.85	14.00	14.15	14.29	14.47	14.71	15.03	-
40	14.36	14.59	14.76	14.91	15.06	15.24	15.46	15.76	-
45	-	15.42	15.62	15.78	15.93	16.09	16.30	16.58	-
50	-	-	16.60	16.77	16.92	17.08	17.27	17.52	-
55	-	-	-	17.92	18.07	18.22	18.40	18.63	-
60	-	-	-	-	19.42	19.56	19.72	19.93	-
65	-	-	-	-	20.99	21.12	21.27	21.45	-

Mass flow in kg/h

30	316	387	469	562	667	787	921	1 071	-
35	312	383	466	559	665	785	919	1 070	-
40	307	379	461	555	661	781	916	1 067	-
45	-	373	456	549	656	776	911	1 061	-
50	-	-	449	542	648	768	903	1 054	-
55	-	-	-	534	640	759	893	1 044	-
60	-	-	-	-	629	748	882	1 032	-
65	-	-	-	-	617	735	868	1 017	-

Coefficient of performance (C.O.P.)

30	2.78	3.38	4.03	4.74	5.53	6.41	7.43	8.61	-
35	2.39	2.93	3.52	4.17	4.87	5.65	6.53	7.53	-
40	2.03	2.52	3.06	3.64	4.28	4.97	5.74	6.61	-
45	-	2.14	2.63	3.16	3.73	4.36	5.04	5.80	-
50	-	-	2.24	2.71	3.23	3.79	4.41	5.08	-
55	-	-	-	2.31	2.77	3.28	3.83	4.43	-
60	-	-	-	-	2.35	2.80	3.30	3.84	-
65	-	-	-	-	1.98	2.38	2.81	3.29	-

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

Cooling capacity	36 038	W
Power input	10 081	W
Current consumption	18.15	A
Mass flow	818	kg/h
C.O.P.	3.57	

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	74	dB(A)
With acoustic hood	68	dB(A)

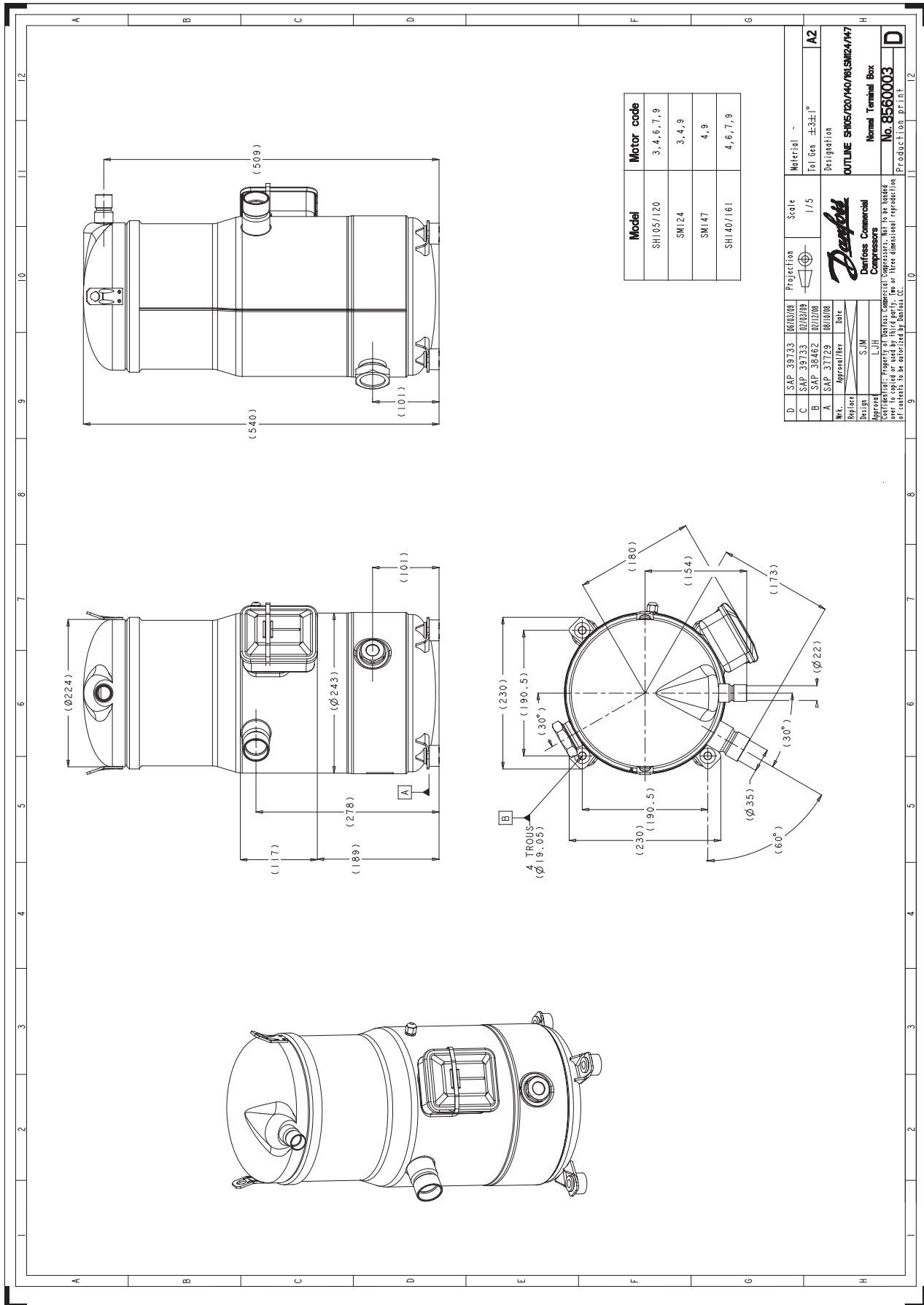
to: Evaporating temperature at dew point

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.



Model	Motor code
SHI 05/120	3, 4, 6, 7, 9
SMI 24	3, 4, 9
SMI 47	4, 9
SHI 40/161	4, 6, 7, 9

D	SAP	30733	02/03/00	Projection	Scale	Material	-
C	SAP	39733	02/03/00	1/5		Tol. Gen.	±0.3±1°
B	SAP	36462	02/02/00			Designation	
A	SAP	37729	02/02/00			OUTLINE	SHI05/20/40/161/SMI24/47
Mk.	Approved/Rev.	Date				Normal Terminal Box	
Design	SJM					No.	8560003
Approval: This drawing is the property of Danfoss. It is to be used only for the specific product and for the specific application. It is not to be reproduced or used for other than the intended application without the written consent of Danfoss.							Production print
							D

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 alterations can be made without consequential changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss, the Danfoss logotype and Maneurop are trademarks of Danfoss A/S. All rights reserved.