

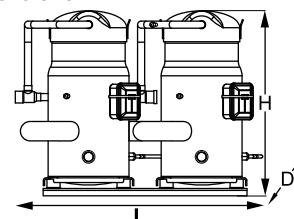
Datasheets

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



General Characteristics

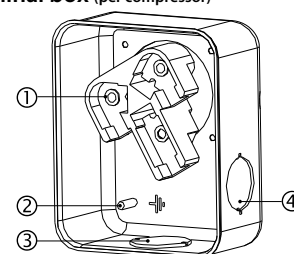
Model number (on tandem nameplate)	SZ242-4
Code number for Singlepack*	SZ242-4
Drawing number	8552027f
Composition	2 x SZ120S4VC
Suction and discharge connections	Brazed
Suction connection	1-5/8" ODF
Discharge connection	1-3/8" ODF
Oil sight glass (per compressor)	Threaded
Oil equalisation connections	Interconnected
Oil drain connection (per compressor)	None
LP gauge port (per compressor)	Schrader
IPR valve (per compressor)	None
Swept volume	333,2 cm ³ /rev
Displacement @ Nominal speed	58.0 m ³ /h @ 2900 rpm - 70.0 m ³ /h @ 3500 rpm
Net weight	170 kg
Oil charge	6,5 litre, POE - 160SZ
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 kg
Approved refrigerants	R407C, R134a

Dimensions


L = 777 mm

D = 443 mm

H = 582 mm

Terminal box (per compressor)


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")

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 (per compressor)	1.05 + 1.05 Ω
Rated Load Amps (RLA) (per compressor)	20.7 + 20.7 A
Maximum Continuous Current (MCC) (per compressor)	29 + 29 A
Locked Rotor Amps (LRA) (per compressor)	130 + 130 A
Motor protection (per compressor)	Internal overload protector

Recommended Installation torques

Oil sight glass	50 Nm
Power connections / Earth connection	3 Nm / 2 Nm

Parts shipped with tandem unit

Initial oil charge
Installation instructions

Approvals : Individual compressors CE certified, Individual compressors UL certified (file SA6873), -

*Singlepack: Compressor in cardboard box on pallet

Oil / lubricants
Code no.

POE lubricant, 160SZ, 1 litre can	7754023
POE lubricant, 160SZ, 2.5 litre can	120Z0571

Crankcase heaters
Code no.

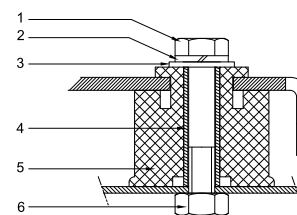
Surface sump heater + bottom insulation, 48 W, 24 V, CE mark, UL	120Z0361
Surface sump heater + bottom insulation, 48 W, 230 V, CE mark, UL	120Z0380
Surface sump heater + bottom insulation, 48 W, 400 V, CE mark, UL	120Z0381
Surface sump heater + bottom insulation, 48 W, 460 V, CE mark, UL	120Z0382
Belt 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
Soft start kit with statoric resistors, prewired box, SCR03	7705001
Acoustic hood for scroll compressor S110-S120	7755010
Bottom insulation for scroll compressor	120Z0356
Discharge thermostat kit	7750009
Suction header restrictor for SM/SZ220-242-268-271-281-296-322	7765025
Restrictor + suction/discharge Tees for SM/SZ220-242	7703384

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

Mounting kit


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

Datasheet, performance data

Danfoss tandem scroll compressor. SZ242-4

Performance data at 50 Hz, EN 12900 rating conditions

R407C

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

Cooling capacity in W

30	21 450	27 440	34 521	42 843	52 552	63 794	76 717	91 468	-
35	20 035	25 860	32 708	40 727	50 062	60 861	73 271	87 438	-
40	18 500	24 129	30 711	38 393	47 321	57 644	69 508	83 060	-
45	-	22 268	28 551	35 863	44 353	54 167	65 452	78 355	-
50	-	-	26 250	33 161	41 178	50 450	61 124	73 345	-
55	-	-	-	30 306	37 819	46 517	56 545	68 052	-
60	-	-	-	-	34 298	42 388	51 739	62 498	-
65	-	-	-	-	30 635	38 085	46 726	56 706	-

Power input in W

30	10 079	10 212	10 312	10 375	10 396	10 372	10 298	10 169	-
35	11 351	11 477	11 563	11 606	11 599	11 541	11 425	11 248	-
40	12 751	12 884	12 969	13 004	12 983	12 903	12 759	12 546	-
45	-	14 446	14 544	14 584	14 562	14 473	14 313	14 078	-
50	-	-	16 301	16 359	16 349	16 264	16 102	15 857	-
55	-	-	-	18 344	18 357	18 290	18 138	17 897	-
60	-	-	-	-	20 602	20 566	20 437	20 213	-
65	-	-	-	-	23 096	23 103	23 012	22 816	-

Current consumption in A

30	24.04	24.21	24.34	24.41	24.42	24.33	24.14	23.82	-
35	25.32	25.48	25.60	25.67	25.66	25.55	25.34	24.99	-
40	26.84	27.00	27.12	27.17	27.15	27.04	26.80	26.44	-
45	-	28.81	28.92	28.98	28.95	28.82	28.58	28.19	-
50	-	-	31.06	31.12	31.09	30.95	30.69	30.30	-
55	-	-	-	33.63	33.60	33.46	33.20	32.79	-
60	-	-	-	-	36.53	36.40	36.13	35.72	-
65	-	-	-	-	39.92	39.79	39.53	39.11	-

Mass flow in kg/h

30	451	569	704	860	1 039	1 242	1 474	1 736	-
35	442	561	698	855	1 034	1 239	1 470	1 732	-
40	430	551	688	846	1 026	1 230	1 461	1 722	-
45	-	537	675	833	1 012	1 216	1 447	1 707	-
50	-	-	658	815	994	1 198	1 427	1 686	-
55	-	-	-	793	972	1 174	1 402	1 658	-
60	-	-	-	-	944	1 144	1 370	1 625	-
65	-	-	-	-	911	1 109	1 333	1 585	-

Coefficient of performance (C.O.P.)

30	2.13	2.69	3.35	4.13	5.05	6.15	7.45	8.99	-
35	1.77	2.25	2.83	3.51	4.32	5.27	6.41	7.77	-
40	1.45	1.87	2.37	2.95	3.64	4.47	5.45	6.62	-
45	-	1.54	1.96	2.46	3.05	3.74	4.57	5.57	-
50	-	-	1.61	2.03	2.52	3.10	3.80	4.63	-
55	-	-	-	1.65	2.06	2.54	3.12	3.80	-
60	-	-	-	-	1.66	2.06	2.53	3.09	-
65	-	-	-	-	1.33	1.65	2.03	2.49	-

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

Cooling capacity	50 450	W
Power input	16 264	W
Current consumption	30.95	A
Mass flow	1 198	kg/h
C.O.P.	3.10	

Pressure switch settings

Maximum HP switch setting	29.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1	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%

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 subsequential changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss and the Danfoss logotype are trademarks of Danfoss A/S. All rights reserved.

Performance data at 50 Hz, ARI rating conditions
R407C

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

Cooling capacity in W

30	23 006	29 396	36 941	45 797	56 117	68 055	81 764	97 396	-
35	21 593	27 835	35 163	43 731	53 693	65 205	78 419	93 488	-
40	20 051	26 114	33 191	41 438	51 011	62 064	74 751	89 226	-
45	-	24 254	31 048	38 942	48 092	58 654	70 782	84 632	-
50	-	-	28 755	36 264	44 959	54 999	66 537	79 731	-
55	-	-	-	33 427	41 636	51 122	62 040	74 548	-
60	-	-	-	-	38 148	47 050	57 319	69 113	-
65	-	-	-	-	34 523	42 813	52 406	63 462	-

Power input in W

30	10 079	10 212	10 312	10 375	10 396	10 372	10 298	10 169	-
35	11 351	11 477	11 563	11 606	11 599	11 541	11 425	11 248	-
40	12 751	12 884	12 969	13 004	12 983	12 903	12 759	12 546	-
45	-	14 446	14 544	14 584	14 562	14 473	14 313	14 078	-
50	-	-	16 301	16 359	16 349	16 264	16 102	15 857	-
55	-	-	-	18 344	18 357	18 290	18 138	17 897	-
60	-	-	-	-	20 602	20 566	20 437	20 213	-
65	-	-	-	-	23 096	23 103	23 012	22 816	-

Current consumption in A

30	24.04	24.21	24.34	24.41	24.42	24.33	24.14	23.82	-
35	25.32	25.48	25.60	25.67	25.66	25.55	25.34	24.99	-
40	26.84	27.00	27.12	27.17	27.15	27.04	26.80	26.44	-
45	-	28.81	28.92	28.98	28.95	28.82	28.58	28.19	-
50	-	-	31.06	31.12	31.09	30.95	30.69	30.30	-
55	-	-	-	33.63	33.60	33.46	33.20	32.79	-
60	-	-	-	-	36.53	36.40	36.13	35.72	-
65	-	-	-	-	39.92	39.79	39.53	39.11	-

Mass flow in kg/h

30	449	566	700	855	1 033	1 235	1 465	1 725	-
35	440	558	694	850	1 028	1 232	1 462	1 721	-
40	428	548	685	841	1 020	1 223	1 453	1 712	-
45	-	534	671	828	1 007	1 209	1 439	1 697	-
50	-	-	654	811	989	1 191	1 419	1 675	-
55	-	-	-	789	966	1 167	1 393	1 648	-
60	-	-	-	-	939	1 138	1 362	1 615	-
65	-	-	-	-	906	1 103	1 325	1 575	-

Coefficient of performance (C.O.P.)

30	2.28	2.88	3.58	4.41	5.40	6.56	7.94	9.58	-
35	1.90	2.43	3.04	3.77	4.63	5.65	6.86	8.31	-
40	1.57	2.03	2.56	3.19	3.93	4.81	5.86	7.11	-
45	-	1.68	2.13	2.67	3.30	4.05	4.95	6.01	-
50	-	-	1.76	2.22	2.75	3.38	4.13	5.03	-
55	-	-	-	1.82	2.27	2.80	3.42	4.17	-
60	-	-	-	-	1.85	2.29	2.80	3.42	-
65	-	-	-	-	1.49	1.85	2.28	2.78	-

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

Cooling capacity	56 249	W
Power input	17 977	W
Current consumption	33.04	A
Mass flow	1 266	kg/h
C.O.P.	3.13	

Pressure switch settings

Maximum HP switch setting	29.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1	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%

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 subsequential changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss and the Danfoss logotype are trademarks of Danfoss A/S. All rights reserved.

Datasheet, performance data

Danfoss tandem scroll compressor. SZ242-4

Performance data at 50 Hz, EN 12900 rating conditions

R134a

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

Cooling capacity in W

35	17 168	21 926	27 545	34 115	41 726	50 469	60 435	-	-
40	16 082	20 670	26 081	32 405	39 732	48 152	57 755	-	-
45	14 943	19 338	24 519	30 573	37 592	45 665	54 883	-	-
50	13 753	17 933	22 859	28 621	35 309	43 011	51 819	-	-
55	-	16 456	21 105	26 551	32 884	40 191	48 564	-	-
60	-	-	19 259	24 366	30 318	37 207	45 121	-	-
65	-	-	-	22 066	27 615	34 060	41 488	-	-
70	-	-	-	19 656	24 776	30 750	37 666	-	-

Power input in W

35	8 022	8 077	8 117	8 138	8 134	8 101	8 035	-	-
40	8 930	8 985	9 026	9 047	9 044	9 012	8 946	-	-
45	9 956	10 012	10 053	10 075	10 073	10 042	9 977	-	-
50	11 110	11 167	11 209	11 231	11 229	11 199	11 135	-	-
55	-	12 459	12 502	12 525	12 524	12 494	12 431	-	-
60	-	-	13 942	13 966	13 966	13 937	13 875	-	-
65	-	-	-	15 564	15 565	15 537	15 476	-	-
70	-	-	-	17 329	17 331	17 304	17 244	-	-

Current consumption in A

35	22.13	22.20	22.24	22.26	22.23	22.16	22.04	-	-
40	22.96	23.03	23.08	23.09	23.07	23.00	22.88	-	-
45	23.95	24.02	24.07	24.09	24.07	24.01	23.89	-	-
50	25.11	25.19	25.24	25.26	25.24	25.18	25.07	-	-
55	-	26.54	26.59	26.61	26.60	26.54	26.43	-	-
60	-	-	28.14	28.17	28.16	28.11	28.00	-	-
65	-	-	-	29.95	29.94	29.89	29.79	-	-
70	-	-	-	31.96	31.96	31.92	31.82	-	-

Mass flow in kg/h

35	416	520	639	776	930	1 105	1 300	-	-
40	410	515	635	772	928	1 103	1 299	-	-
45	402	508	629	767	923	1 099	1 295	-	-
50	393	499	621	759	916	1 091	1 288	-	-
55	-	488	610	749	905	1 080	1 277	-	-
60	-	-	596	735	891	1 066	1 261	-	-
65	-	-	-	717	872	1 047	1 241	-	-
70	-	-	-	696	850	1 023	1 217	-	-

Coefficient of performance (C.O.P.)

35	2.14	2.71	3.39	4.19	5.13	6.23	7.52	-	-
40	1.80	2.30	2.89	3.58	4.39	5.34	6.46	-	-
45	1.50	1.93	2.44	3.03	3.73	4.55	5.50	-	-
50	1.24	1.61	2.04	2.55	3.14	3.84	4.65	-	-
55	-	1.32	1.69	2.12	2.63	3.22	3.91	-	-
60	-	-	1.38	1.74	2.17	2.67	3.25	-	-
65	-	-	-	1.42	1.77	2.19	2.68	-	-
70	-	-	-	1.13	1.43	1.78	2.18	-	-

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

Cooling capacity	35 309	W
Power input	11 229	W
Current consumption	25.24	A
Mass flow	916	kg/h
C.O.P.	3.14	

Pressure switch settings

Maximum HP switch setting	20.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	0.5	bar(g)

Sound power data

Sound power level	0	dB(A)
With acoustic hood	0	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 alterations can be made without subsequential changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss and the Danfoss logotype are trademarks of Danfoss A/S. All rights reserved.

Performance data at 50 Hz, ARI rating conditions
R134a

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

Cooling capacity in W

35	18 595	23 708	29 735	36 770	44 907	54 238	64 859	-	-
40	17 513	22 467	28 298	35 098	42 963	51 985	62 258	-	-
45	16 374	21 145	26 755	33 298	40 867	49 556	59 458	-	-
50	15 179	19 744	25 110	31 371	38 620	46 952	56 461	-	-
55	-	18 265	23 363	29 319	36 225	44 177	53 267	-	-
60	-	-	21 517	27 144	33 684	41 231	49 880	-	-
65	-	-	-	24 847	30 997	38 117	46 300	-	-
70	-	-	-	22 431	28 167	34 835	42 529	-	-

Power input in W

35	8 022	8 077	8 117	8 138	8 134	8 101	8 035	-	-
40	8 930	8 985	9 026	9 047	9 044	9 012	8 946	-	-
45	9 956	10 012	10 053	10 075	10 073	10 042	9 977	-	-
50	11 110	11 167	11 209	11 231	11 229	11 199	11 135	-	-
55	-	12 459	12 502	12 525	12 524	12 494	12 431	-	-
60	-	-	13 942	13 966	13 966	13 937	13 875	-	-
65	-	-	-	15 564	15 565	15 537	15 476	-	-
70	-	-	-	17 329	17 331	17 304	17 244	-	-

Current consumption in A

35	22.13	22.20	22.24	22.26	22.23	22.16	22.04	-	-
40	22.96	23.03	23.08	23.09	23.07	23.00	22.88	-	-
45	23.95	24.02	24.07	24.09	24.07	24.01	23.89	-	-
50	25.11	25.19	25.24	25.26	25.24	25.18	25.07	-	-
55	-	26.54	26.59	26.61	26.60	26.54	26.43	-	-
60	-	-	28.14	28.17	28.16	28.11	28.00	-	-
65	-	-	-	29.95	29.94	29.89	29.79	-	-
70	-	-	-	31.96	31.96	31.92	31.82	-	-

Mass flow in kg/h

35	414	517	636	772	925	1 099	1 293	-	-
40	408	512	632	768	923	1 097	1 292	-	-
45	400	505	626	763	918	1 093	1 288	-	-
50	391	497	618	755	911	1 085	1 281	-	-
55	-	486	607	745	900	1 075	1 270	-	-
60	-	-	593	731	886	1 060	1 254	-	-
65	-	-	-	713	868	1 041	1 234	-	-
70	-	-	-	692	846	1 018	1 210	-	-

Coefficient of performance (C.O.P.)

35	2.32	2.94	3.66	4.52	5.52	6.70	8.07	-	-
40	1.96	2.50	3.14	3.88	4.75	5.77	6.96	-	-
45	1.64	2.11	2.66	3.30	4.06	4.94	5.96	-	-
50	1.37	1.77	2.24	2.79	3.44	4.19	5.07	-	-
55	-	1.47	1.87	2.34	2.89	3.54	4.28	-	-
60	-	-	1.54	1.94	2.41	2.96	3.59	-	-
65	-	-	-	1.60	1.99	2.45	2.99	-	-
70	-	-	-	1.29	1.63	2.01	2.47	-	-

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

Cooling capacity	39 905	W
Power input	12 352	W
Current consumption	26.41	A
Mass flow	976	kg/h
C.O.P.	3.23	

Pressure switch settings

Maximum HP switch setting	20.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	0.5	bar(g)

Sound power data

Sound power level	0	dB(A)
With acoustic hood	0	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 alterations can be made without subsequential changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss and the Danfoss logotype are trademarks of Danfoss A/S. All rights reserved.

