MAKING MODERN LIVING POSSIBLE

Datasheets

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

FRCC.UD.140606.222656

General Characteristics

Model number (on compressor nameplate)		**SZ084S4VC**
Code number for Singlepack*		SZ084-4VI
Code number for Industrial pack**		SZ084-4VM
Drawing number		8552036b
Suction and discharge connections		Brazed
Suction connection		1-1/8 " ODF
Discharge connection		3/4 " 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	114,5 cm3/rev	
Displacement @ Nominal speed	19.9 m3/h @ 2900 rpm - 24.1 m3/h @ 3500 rpm	
Net weight	64 kg	
Oil charge	3,25 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	8,5 kg	
Approved refrigerants	R407C, R134a, R404A, R507A	

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 25ºC	1.74 Ω
Rated Load Amps (RLA)	12.1 A
Maximum Continuous Current (MCC)	17 A
Locked Rotor Amps (LRA)	86 A
Motor protection	Internal overload protector

Recommended Installation torques

Oil sight glass	50 Nm
Power connections / Earth connection	3 Nm / 2 Nm
Mounting bolts	21 Nm

Parts shipped with compressor

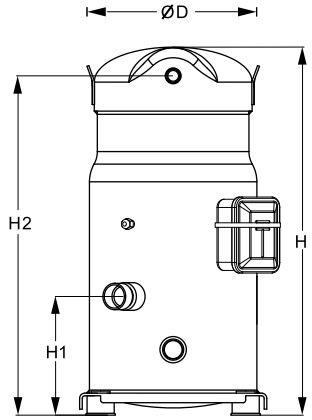
Mounting kit with grommets, bolts, nuts, sleeves and washers
Initial oil charge
Installation instructions

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

*Singlepack: Compressor in cardboard box

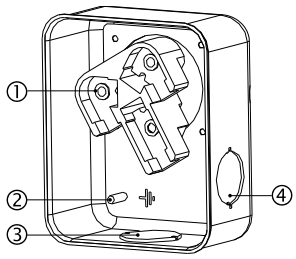
**Industrial pack: 8 Unboxed compressors on pallet (order per multiples of 8)

Dimensions



D=254 mm
H=508 mm
H1=141,9 mm
H2=464,5 mm
H3=- mm

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")

Rotolock accessories, suction side	Code no.
Solder sleeve, P02 (1-3/4" Rotolock, 1-1/8" ODF)	8153004
Angle adapter, C02 (1-3/4" Rotolock, 1-1/8" ODF)	8168005
Rotolock valve, V02 (1-3/4" Rotolock, 1-1/8" ODF)	8168028
Gasket, 1-3/4"	8156132

Rotolock accessories, discharge side	Code no.
Solder sleeve, P04 (1-1/4" Rotolock, 3/4" ODF)	8153008
Angle adapter, C04 (1-1/4" Rotolock, 3/4" ODF)	8168006
Rotolock valve, V04 (1-1/4" Rotolock, 3/4" ODF)	8168029
Gasket, 1-1/4"	8156131

Rotolock accessories, sets	Code no.
Solder sleeve adapter set (1-3/4" Rotolock, 1-1/8" ODF), (1-1/4" Rotolock, 3/4" ODF)	7765005
Angle adapter set, C02 (1-3/4"~1-1/8"), C04 (1-1/4"~3/4")	7703014
Valve set, V02 (1-3/4"~1-1/8"), V04 (1-1/4"~3/4")	7703009
Gasket set, 1-1/4", 1-3/4", 2-1/4", OSG gaskets black & white	8156013

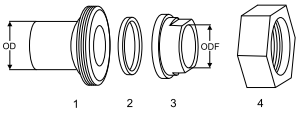
Oil / lubricants	Code no.
POE lubricant, 160SZ, 1 litre can	7754023
POE lubricant, 160SZ, 2.5 litre can	120Z0571

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 15 C	7705006
Acoustic hood for scroll compressor S084-S090-S100	7755011
Bottom insulation for scroll compressor	120Z0356
Discharge thermostat kit	7750009

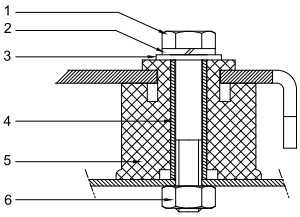
Spare parts	Code no.
Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	8156138
Oil sight glass with gaskets (black & white)	8156019
Gasket for oil sight glass (white teflon)	8156129
Service kit for terminal box 96 x 115 mm, including 1 cover, 1 clamp	8156135
T block 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

R407C

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)								
	-20	-15	-10	-5	0	5	10	15	
Cooling capacity in W									
30	7 168	9 179	11 606	14 497	17 898	21 858	26 423	31 641	-
35	6 686	8 633	10 975	13 759	17 031	20 840	25 231	30 253	-
40	6 193	8 062	10 304	12 966	16 095	19 738	23 942	28 753	-
45	-	7 465	9 593	12 120	15 091	18 554	22 554	27 140	-
50	-	-	8 843	11 219	14 018	17 285	21 068	25 413	-
55	-	-	-	10 264	12 876	15 933	19 483	23 571	-
60	-	-	-	-	11 664	14 496	17 797	21 613	-
65	-	-	-	-	10 381	12 973	16 010	19 537	-
Power input in W									
30	3 507	3 549	3 582	3 604	3 610	3 599	3 567	3 511	-
35	3 898	3 942	3 979	4 004	4 015	4 010	3 984	3 936	-
40	4 336	4 383	4 423	4 453	4 470	4 471	4 453	4 413	-
45	-	4 878	4 922	4 957	4 980	4 988	4 977	4 946	-
50	-	-	5 480	5 521	5 551	5 566	5 564	5 542	-
55	-	-	-	6 151	6 187	6 211	6 218	6 205	-
60	-	-	-	-	6 896	6 928	6 944	6 942	-
65	-	-	-	-	7 681	7 722	7 749	7 758	-
Current consumption in A									
30	8.23	8.28	8.32	8.33	8.32	8.28	8.19	8.07	-
35	8.60	8.65	8.70	8.72	8.72	8.69	8.62	8.51	-
40	9.04	9.10	9.15	9.19	9.20	9.18	9.12	9.03	-
45	-	9.64	9.70	9.74	9.76	9.76	9.72	9.65	-
50	-	-	10.34	10.40	10.44	10.45	10.43	10.37	-
55	-	-	-	11.17	11.22	11.25	11.25	11.21	-
60	-	-	-	-	12.13	12.18	12.20	12.19	-
65	-	-	-	-	13.18	13.25	13.29	13.30	-
Mass flow in kg/h									
30	150	188	233	286	347	417	497	588	-
35	146	185	231	284	346	416	497	588	-
40	143	182	228	282	344	414	495	586	-
45	-	179	225	278	340	411	491	582	-
50	-	-	220	274	336	406	486	577	-
55	-	-	-	268	330	400	480	570	-
60	-	-	-	-	322	392	471	560	-
65	-	-	-	-	313	382	460	549	-
Coefficient of performance (C.O.P.)									
30	2.04	2.59	3.24	4.02	4.96	6.07	7.41	9.01	-
35	1.72	2.19	2.76	3.44	4.24	5.20	6.33	7.69	-
40	1.43	1.84	2.33	2.91	3.60	4.42	5.38	6.52	-
45	-	1.53	1.95	2.45	3.03	3.72	4.53	5.49	-
50	-	-	1.61	2.03	2.53	3.11	3.79	4.59	-
55	-	-	-	1.67	2.08	2.57	3.13	3.80	-
60	-	-	-	-	1.69	2.09	2.56	3.11	-
65	-	-	-	-	1.35	1.68	2.07	2.52	-

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

Cooling capacity	17 285	W
Power input	5 566	W
Current consumption	10.45	A
Mass flow	406	kg/h
C.O.P.	3.11	

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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	71	dB(A)
With accoustic hood	63	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%

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	7 688	9 833	12 419	15 496	19 113	23 318	28 161	33 691	-
35	7 206	9 292	11 798	14 773	18 267	22 327	27 004	32 347	-
40	6 712	8 725	11 136	13 995	17 350	21 252	25 748	30 888	-
45	-	8 130	10 432	13 160	16 363	20 090	24 391	29 314	-
50	-	-	9 687	12 269	15 305	18 844	22 934	27 625	-
55	-	-	-	11 321	14 175	17 510	21 376	25 821	-
60	-	-	-	-	12 973	16 090	19 717	23 901	-
65	-	-	-	-	11 698	14 583	17 956	21 864	-
Power input in W									
30	3 507	3 549	3 582	3 604	3 610	3 599	3 567	3 511	-
35	3 898	3 942	3 979	4 004	4 015	4 010	3 984	3 936	-
40	4 336	4 383	4 423	4 453	4 470	4 471	4 453	4 413	-
45	-	4 878	4 922	4 957	4 980	4 988	4 977	4 946	-
50	-	-	5 480	5 521	5 551	5 566	5 564	5 542	-
55	-	-	-	6 151	6 187	6 211	6 218	6 205	-
60	-	-	-	-	6 896	6 928	6 944	6 942	-
65	-	-	-	-	7 681	7 722	7 749	7 758	-
Current consumption in A									
30	8.23	8.28	8.32	8.33	8.32	8.28	8.19	8.07	-
35	8.60	8.65	8.70	8.72	8.72	8.69	8.62	8.51	-
40	9.04	9.10	9.15	9.19	9.20	9.18	9.12	9.03	-
45	-	9.64	9.70	9.74	9.76	9.76	9.72	9.65	-
50	-	-	10.34	10.40	10.44	10.45	10.43	10.37	-
55	-	-	-	11.17	11.22	11.25	11.25	11.21	-
60	-	-	-	-	12.13	12.18	12.20	12.19	-
65	-	-	-	-	13.18	13.25	13.29	13.30	-
Mass flow in kg/h									
30	149	187	232	285	345	415	494	584	-
35	146	184	230	283	344	414	494	584	-
40	142	181	227	280	342	412	492	582	-
45	-	178	224	277	338	409	489	579	-
50	-	-	219	272	334	404	484	574	-
55	-	-	-	267	328	397	477	566	-
60	-	-	-	-	320	389	468	557	-
65	-	-	-	-	311	379	457	545	-
Coefficient of performance (C.O.P.)									
30	2.19	2.77	3.47	4.30	5.29	6.48	7.90	9.60	-
35	1.85	2.36	2.97	3.69	4.55	5.57	6.78	8.22	-
40	1.55	1.99	2.52	3.14	3.88	4.75	5.78	7.00	-
45	-	1.67	2.12	2.65	3.29	4.03	4.90	5.93	-
50	-	-	1.77	2.22	2.76	3.39	4.12	4.99	-
55	-	-	-	1.84	2.29	2.82	3.44	4.16	-
60	-	-	-	-	1.88	2.32	2.84	3.44	-
65	-	-	-	-	1.52	1.89	2.32	2.82	-

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

Cooling capacity	19 319	W
Power input	6 134	W
Current consumption	11.15	A
Mass flow	432	kg/h
C.O.P.	3.15	

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	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	71	dB(A)
With accoustic hood	63	dB(A)

All performance data +/- 5%

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	5 701	7 382	9 359	11 663	14 322	17 369	20 832	-	-
40	5 308	6 929	8 833	11 050	13 610	16 543	19 879	-	-
45	4 903	6 456	8 279	10 401	12 853	15 664	18 864	-	-
50	4 488	5 965	7 699	9 718	12 053	14 734	17 791	-	-
55	-	5 458	7 094	9 003	11 213	13 755	16 659	-	-
60	-	-	6 468	8 257	10 335	12 730	15 472	-	-
65	-	-	-	7 484	9 419	11 659	14 231	-	-
70	-	-	-	6 685	8 470	10 544	12 937	-	-
Power input in W									
35	2 775	2 786	2 787	2 775	2 749	2 706	2 644	-	-
40	3 080	3 092	3 094	3 085	3 062	3 022	2 963	-	-
45	3 428	3 442	3 447	3 440	3 419	3 383	3 327	-	-
50	3 825	3 840	3 847	3 843	3 826	3 793	3 741	-	-
55	-	4 291	4 301	4 300	4 286	4 256	4 209	-	-
60	-	-	4 811	4 813	4 803	4 777	4 734	-	-
65	-	-	-	5 388	5 381	5 359	5 320	-	-
70	-	-	-	6 027	6 024	6 007	5 973	-	-
Current consumption in A									
35	7.14	7.20	7.25	7.26	7.25	7.19	7.08	-	-
40	7.42	7.49	7.53	7.55	7.54	7.48	7.38	-	-
45	7.76	7.83	7.88	7.90	7.89	7.83	7.74	-	-
50	8.17	8.24	8.29	8.31	8.30	8.25	8.16	-	-
55	-	8.72	8.77	8.80	8.79	8.75	8.66	-	-
60	-	-	9.34	9.36	9.36	9.32	9.23	-	-
65	-	-	-	10.01	10.01	9.97	9.89	-	-
70	-	-	-	10.75	10.76	10.72	10.64	-	-
Mass flow in kg/h									
35	138	175	217	265	319	380	448	-	-
40	135	173	215	263	318	379	447	-	-
45	132	170	212	261	316	377	445	-	-
50	128	166	209	258	313	374	442	-	-
55	-	162	205	254	309	370	438	-	-
60	-	-	200	249	304	365	432	-	-
65	-	-	-	243	298	358	426	-	-
70	-	-	-	237	291	351	418	-	-
Coefficient of performance (C.O.P.)									
35	2.05	2.65	3.36	4.20	5.21	6.42	7.88	-	-
40	1.72	2.24	2.85	3.58	4.45	5.47	6.71	-	-
45	1.43	1.88	2.40	3.02	3.76	4.63	5.67	-	-
50	1.17	1.55	2.00	2.53	3.15	3.88	4.76	-	-
55	-	1.27	1.65	2.09	2.62	3.23	3.96	-	-
60	-	-	1.34	1.72	2.15	2.66	3.27	-	-
65	-	-	-	1.39	1.75	2.18	2.67	-	-
70	-	-	-	1.11	1.41	1.76	2.17	-	-

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

Cooling capacity	12 053	W
Power input	3 826	W
Current consumption	8.30	A
Mass flow	313	kg/h
C.O.P.	3.15	

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	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 accoustic hood	0	dB(A)

All performance data +/- 5%

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	6 175	7 982	10 103	12 570	15 414	18 666	22 357	-	-
40	5 781	7 532	9 584	11 969	14 717	17 860	21 429	-	-
45	5 373	7 059	9 034	11 328	13 973	16 999	20 437	-	-
50	4 953	6 567	8 457	10 652	13 184	16 084	19 384	-	-
55	-	6 058	7 853	9 941	12 353	15 120	18 273	-	-
60	-	-	7 227	9 199	11 482	14 106	17 104	-	-
65	-	-	-	8 427	10 573	13 047	15 882	-	-
70	-	-	-	7 629	9 629	11 945	14 607	-	-
Power input in W									
35	2 775	2 786	2 787	2 775	2 749	2 706	2 644	-	-
40	3 080	3 092	3 094	3 085	3 062	3 022	2 963	-	-
45	3 428	3 442	3 447	3 440	3 419	3 383	3 327	-	-
50	3 825	3 840	3 847	3 843	3 826	3 793	3 741	-	-
55	-	4 291	4 301	4 300	4 286	4 256	4 209	-	-
60	-	-	4 811	4 813	4 803	4 777	4 734	-	-
65	-	-	-	5 388	5 381	5 359	5 320	-	-
70	-	-	-	6 027	6 024	6 007	5 973	-	-
Current consumption in A									
35	7.14	7.20	7.25	7.26	7.25	7.19	7.08	-	-
40	7.42	7.49	7.53	7.55	7.54	7.48	7.38	-	-
45	7.76	7.83	7.88	7.90	7.89	7.83	7.74	-	-
50	8.17	8.24	8.29	8.31	8.30	8.25	8.16	-	-
55	-	8.72	8.77	8.80	8.79	8.75	8.66	-	-
60	-	-	9.34	9.36	9.36	9.32	9.23	-	-
65	-	-	-	10.01	10.01	9.97	9.89	-	-
70	-	-	-	10.75	10.76	10.72	10.64	-	-
Mass flow in kg/h									
35	138	174	216	264	318	378	446	-	-
40	135	172	214	262	316	377	445	-	-
45	131	169	211	260	314	375	443	-	-
50	127	165	208	256	311	372	440	-	-
55	-	161	204	253	307	368	435	-	-
60	-	-	199	248	302	363	430	-	-
65	-	-	-	242	296	356	423	-	-
70	-	-	-	235	289	349	416	-	-
Coefficient of performance (C.O.P.)									
35	2.22	2.87	3.63	4.53	5.61	6.90	8.46	-	-
40	1.88	2.44	3.10	3.88	4.81	5.91	7.23	-	-
45	1.57	2.05	2.62	3.29	4.09	5.03	6.14	-	-
50	1.30	1.71	2.20	2.77	3.45	4.24	5.18	-	-
55	-	1.41	1.83	2.31	2.88	3.55	4.34	-	-
60	-	-	1.50	1.91	2.39	2.95	3.61	-	-
65	-	-	-	1.56	1.96	2.43	2.99	-	-
70	-	-	-	1.27	1.60	1.99	2.45	-	-

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

Cooling capacity	13 633	W
Power input	4 217	W
Current consumption	8.71	A
Mass flow	333	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 accoustic 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%