

Model: SZ160

Data

Type: Hermetic scroll compressors

Producer: Maneurop

Series: SZ

Model: SZ160

Technical data

Displacement [m ³ /h]:	37,7
:	216,6
RPM [min ⁻¹]:	2900
Weight [kg]:	90
Oil charge [dm ³]:	4
Oil type:	160SZ
Maximum system test pressure low side / high side:	25 / 32
Maximum number of starts without softstart [1/h]:	12
Refrigerant charge limit [dm ³]:	13
Refrigerant:	R407C, R134a, R404A/R507A

Connections

	<u>inches</u>
Suction Rotolock valve connection:	2 1/4"
Discharge Rotolock valve connection:	1 3/4"
Suction connection with supplied sleeve:	1 5/8"
Discharge connection with supplied sleeve:	1 1/8"

Approvals

CCC	-
CE	+
UL	+

Model: SZ160

Capacity

R134a

Cooling capacity [W]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
30	13 127	16 693	20 885	25 765	31 391	37 823	45 122
35	12 406	15 883	19 962	24 704	30 167	36 413	43 501
40	11 660	15 033	18 984	23 573	28 858	34 902	41 763
45	10 895	14 148	17 955	22 375	27 468	33 293	39 912
50	10 112	13 231	16 878	21 114	25 998	31 591	37 952
55	-	12 285	15 757	19 793	24 454	29 798	35 886
60	-	-	14 595	18 417	22 838	27 918	33 717
65	-	-	-	16 988	21 154	25 955	31 450
70	-	-	-	15 510	19 406	23 912	29 088

Power input [W]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
30	4 793	4 853	4 901	4 933	4 946	4 934	4 895
35	5 259	5 322	5 374	5 410	5 427	5 421	5 389
40	5 790	5 856	5 912	5 953	5 975	5 976	5 950
45	6 391	6 461	6 521	6 567	6 595	6 602	6 584
50	7 067	7 141	7 206	7 257	7 292	7 306	7 295
55	-	7 902	7 972	8 030	8 071	8 093	8 090
60	-	-	8 825	8 890	8 938	8 968	8 974
65	-	-	-	9 842	9 899	9 937	9 952
70	-	-	-	10 893	10 957	11 004	11 030

Current [A]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
30	12.17	12.21	12.23	12.22	12.17	12.10	11.98
35	12.56	12.61	12.63	12.63	12.61	12.55	12.45
40	13.04	13.09	13.13	13.15	13.14	13.09	13.02
45	13.61	13.68	13.73	13.76	13.77	13.75	13.70
50	14.31	14.39	14.45	14.50	14.53	14.53	14.50
55	-	15.22	15.30	15.37	15.42	15.44	15.44
60	-	-	16.29	16.38	16.45	16.50	16.53
65	-	-	-	17.55	17.65	17.72	17.78
70	-	-	-	18.89	19.01	19.12	19.20

Model: SZ160

Capacity

Mass flow [kg/s]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
30	280.71	349.84	429.18	519.61	622.01	737.24	866.17
35	276.33	346.62	427.03	518.43	621.71	737.73	867.37
40	271.48	342.73	424.00	516.19	620.15	736.77	866.92
45	266.11	338.12	420.07	512.84	617.30	734.32	864.77
50	260.19	332.77	415.20	508.35	613.11	730.33	860.90
55	-	326.63	409.35	502.69	607.54	724.78	855.26
60	-	-	402.48	495.82	600.58	717.62	847.83
65	-	-	-	487.70	592.16	708.83	838.56
70	-	-	-	478.29	582.27	698.35	827.42

C.O.P. [W/W]

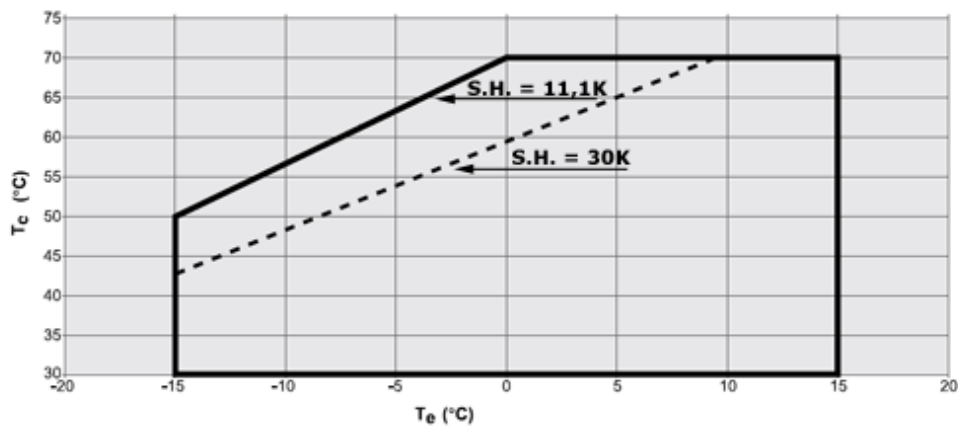
$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
30	2.74	3.44	4.26	5.22	6.35	7.67	9.22
35	2.36	2.98	3.71	4.57	5.56	6.72	8.07
40	2.01	2.57	3.21	3.96	4.83	5.84	7.02
45	1.70	2.19	2.75	3.41	4.16	5.04	6.06
50	1.43	1.85	2.34	2.91	3.57	4.32	5.20
55	-	1.55	1.98	2.46	3.03	3.68	4.44
60	-	-	1.65	2.07	2.56	3.11	3.76
65	-	-	-	1.73	2.14	2.61	3.16
70	-	-	-	1.42	1.77	2.17	2.64

Operating conditions: suction superheat: 11.1 K, subcooling: 8.3 K

t_c - Condensing temperature [°C]

t_e - Evaporating temperature [°C]

Application range



Model: SZ160

Capacity

R407C

Cooling capacity [W]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	14 560	18 543	23 283	28 882	35 443	43 068	51 857	61 914
35	13 697	17 568	22 154	27 558	33 881	41 226	49 693	59 386
40	12 777	16 505	20 906	26 083	32 137	39 171	47 286	56 584
45	-	15 374	19 559	24 478	30 232	36 924	44 655	53 527
50	-	-	18 133	22 763	28 186	34 505	41 821	50 236
55	-	-	-	20 957	26 018	31 933	38 803	46 730
60	-	-	-	-	23 750	29 229	35 622	43 030
65	-	-	-	-	21 400	26 413	32 297	39 155

Power input [W]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	6 584	6 668	6 729	6 769	6 791	6 796	6 786	6 764
35	7 344	7 442	7 516	7 567	7 599	7 612	7 610	7 593
40	8 191	8 303	8 389	8 451	8 492	8 514	8 518	8 506
45	-	9 268	9 366	9 439	9 489	9 518	9 528	9 522
50	-	-	10 466	10 549	10 608	10 644	10 660	10 658
55	-	-	-	11 800	11 866	11 910	11 931	11 933
60	-	-	-	-	13 283	13 333	13 360	13 365
65	-	-	-	-	14 877	14 933	14 964	14 973

Current [A]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	13.98	14.05	14.06	14.04	13.98	13.89	13.78	13.65
35	14.79	14.88	14.93	14.95	14.93	14.89	14.83	14.75
40	15.72	15.84	15.93	15.97	15.99	15.99	15.97	15.93
45	-	16.97	17.07	17.14	17.19	17.21	17.22	17.22
50	-	-	18.42	18.50	18.57	18.61	18.64	18.67
55	-	-	-	20.09	20.16	20.22	20.26	20.31
60	-	-	-	-	22.02	22.07	22.13	22.18
65	-	-	-	-	24.17	24.22	24.27	24.32

Model: SZ160

Capacity

Mass flow [kg/s]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	306.00	384.17	474.85	579.71	700.46	838.77	996.35	1 174.87
35	302.21	381.27	472.79	578.47	699.99	839.05	997.33	1 176.52
40	297.28	376.74	468.62	574.63	696.44	835.75	994.25	1 173.63
45	-	370.69	462.45	568.30	689.92	829.00	987.23	1 166.30
50	-	-	454.40	559.60	680.54	818.90	976.38	1 154.67
55	-	-	-	548.64	668.41	805.57	961.81	1 138.82
60	-	-	-	-	653.65	789.12	943.64	1 118.89
65	-	-	-	-	636.37	769.67	921.97	1 094.97

C.O.P. [W/W]

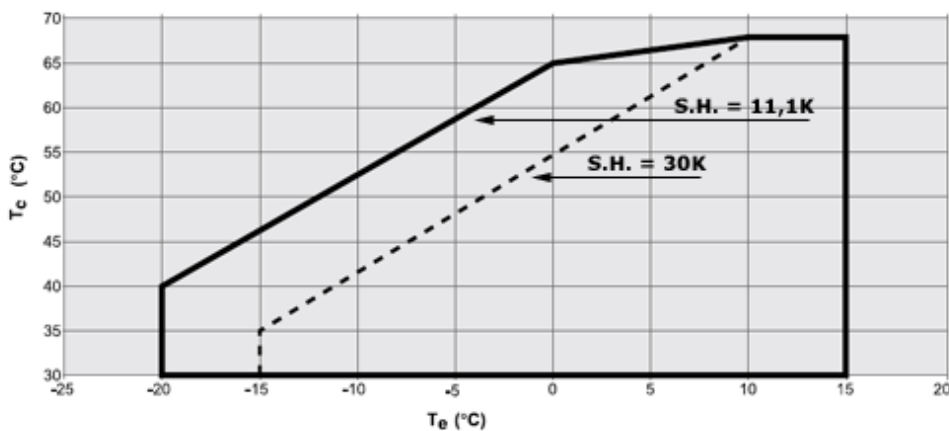
$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	2.21	2.78	3.46	4.27	5.22	6.34	7.64	9.15
35	1.87	2.36	2.95	3.64	4.46	5.42	6.53	7.82
40	1.56	1.99	2.49	3.09	3.78	4.60	5.55	6.65
45	-	1.66	2.09	2.59	3.19	3.88	4.69	5.62
50	-	-	1.73	2.16	2.66	3.24	3.92	4.71
55	-	-	-	1.78	2.19	2.68	3.25	3.92
60	-	-	-	-	1.79	2.19	2.67	3.22
65	-	-	-	-	1.44	1.77	2.16	2.62

Operating conditions: suction superheat: 10 K, subcooling: 0 K

t_c - Condensing temperature [°C]

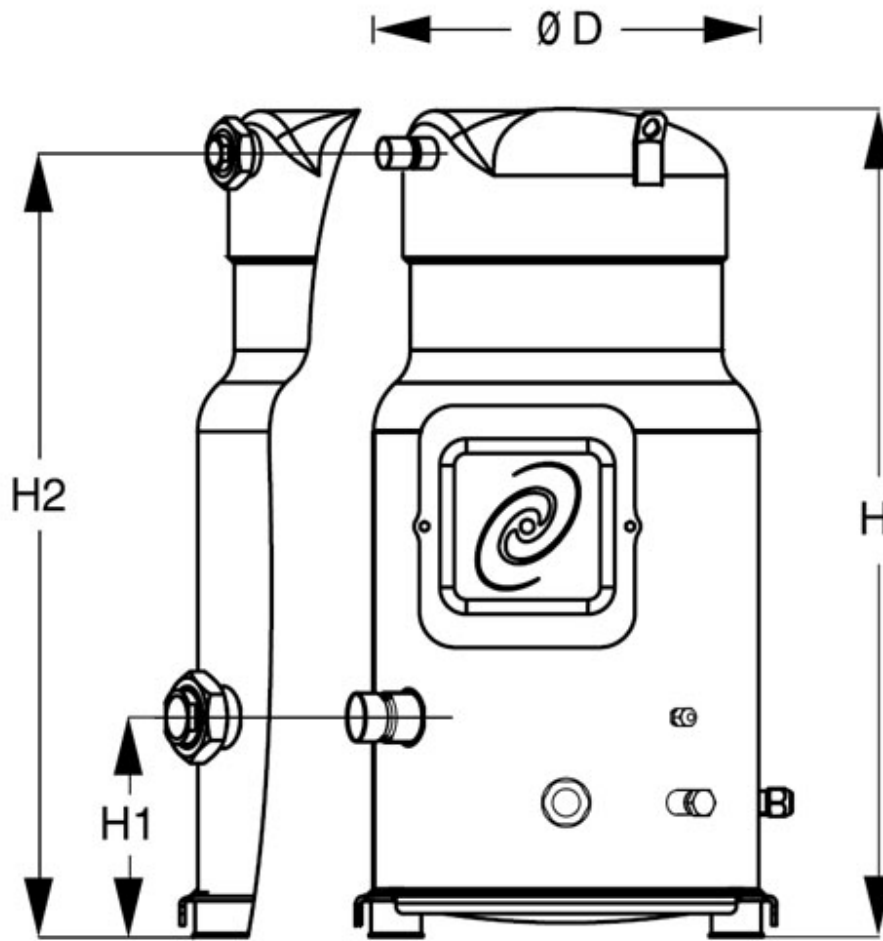
t_e - Evaporating temperature [°C]

Application range



Model: SZ160

Dimensions



D	266 mm
H	631 mm
H1	180 mm
H2	596 mm

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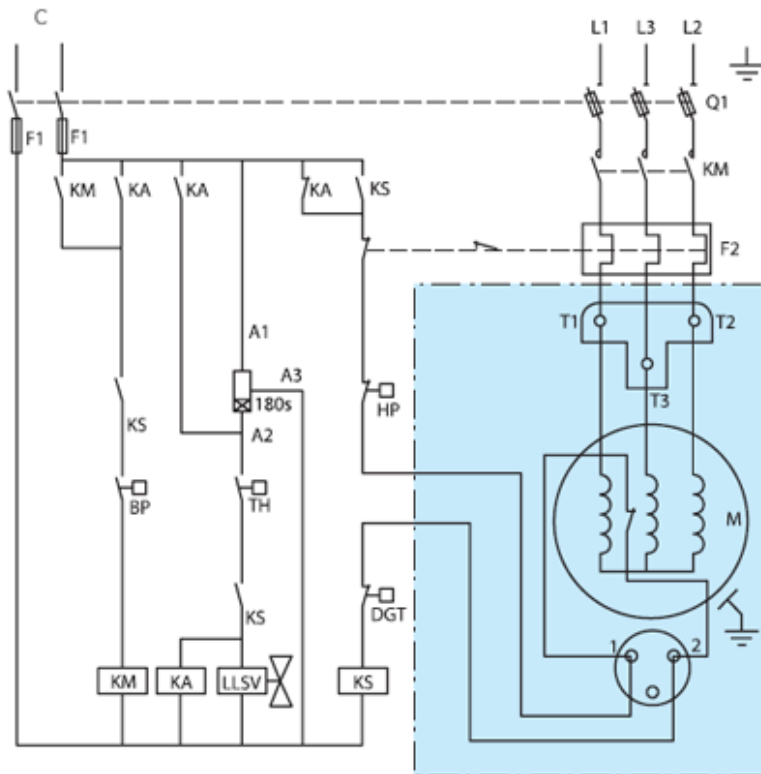
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Electrical data

Starting current [A]:	150
Maximum Continuous Current (MCC) [A]:	-
Winding resistance (between phases) [Ω]:	0,94

Connection diagram for systems with refrigerant suction

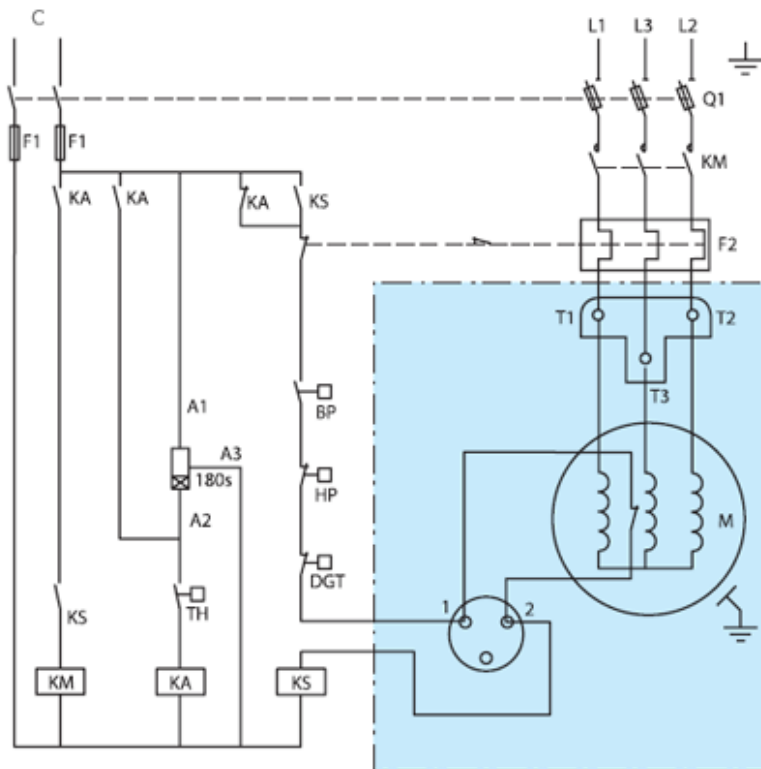


- TH: Thermostat
- 180 s: ATI electronic timer
- KA: Control transmitter CI 4-2
- LLSV: Electromagnetic liquid valve
- KM: Main contactor CI
- KS: Fuses' switch
- BP: Low pressure switch
- HP: High pressure switch
- Q1: Safety switch
- F1: Fuses / S: Thermal relay TI
- F2: Thermal relay TI
- M: Compressor's engine
- DGT: Discharge gas thermostat

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Electrical

Connection diagram for systems without refrigerant suction



- TH: Thermostat
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- M: Compressor's engine
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Equipment

- ▶ oil equalization - thread adapter 3/8"
- ▶ belt type heater - crankcase heater 65W, 230V
- ▶ soft-start kit - electronic softstart MCI 25C
- ▶ accoustic hood - acoustic shield of Danfoss catalogue number 7755008
- ▶ discharge thermostatic protection - discharge temperature protection accessory - Danfoss catalogue number 7750009