
GACO SARL

28, Rue Bencharif Madani

25000 BELLEVUE/CONSTANTINE - ALGERIE

Tel. : 031 92 54 56 / 031 93 22 23 - Fax : 031 92 13 45

Email : gacosarl@gmail.com / benkobbi_fares@yahoo.fr

**Type: Hermetic scroll compressors****Producer: Maneurop****Series: SZ**

Model: SZ120

Technical data

Displacement [m ³ /h]:	29
:	166,6
RPM [min ⁻¹]:	2900
Weight [kg]:	73
Oil charge [dm ³]:	3,3
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]:	10
Refrigerant:	R407C, R134a, R404A/R507A

Connections

	<u>inches</u>
Suction Rotolock valve connection:	-
Discharge Rotolock valve connection:	-
Suction connection with supplied sleeve:	1 3/8"
Discharge connection with supplied sleeve:	7/8"

Approvals

CCC	-
CE	+
UL	+

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R134a

Cooling capacity [W]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
30	9 958	12 622	15 770	19 448	23 704	28 586	34 141
35	9 439	12 035	15 094	18 665	22 795	27 532	32 923
40	8 890	11 405	14 364	17 816	21 808	26 388	31 603
45	8 312	10 734	13 581	16 902	20 744	25 155	30 182
50	7 705	10 022	12 746	15 924	19 604	23 834	28 660
55	-	9 272	11 859	14 883	18 389	22 425	27 039
60	-	-	10 922	13 779	17 098	20 930	25 320
65	-	-	-	12 613	15 735	19 349	23 502
70	-	-	-	11 386	14 298	17 683	21 588

Power input [W]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
30	3 613	3 641	3 661	3 671	3 668	3 652	3 618
35	4 013	4 041	4 061	4 071	4 069	4 053	4 020
40	4 468	4 495	4 516	4 526	4 525	4 509	4 476
45	4 981	5 009	5 030	5 041	5 039	5 024	4 991
50	5 559	5 587	5 608	5 619	5 618	5 603	5 571
55	-	6 233	6 255	6 266	6 266	6 251	6 219
60	-	-	6 975	6 987	6 987	6 973	6 942
65	-	-	-	7 787	7 787	7 773	7 743
70	-	-	-	8 670	8 671	8 657	8 627

Current [A]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
30	10.72	10.76	10.78	10.79	10.77	10.73	10.67
35	11.07	11.11	11.13	11.13	11.12	11.09	11.02
40	11.49	11.52	11.55	11.55	11.54	11.51	11.45
45	11.98	12.02	12.04	12.05	12.04	12.01	11.95
50	12.56	12.60	12.63	12.64	12.63	12.60	12.54
55	-	13.28	13.30	13.31	13.31	13.28	13.22
60	-	-	14.08	14.09	14.09	14.06	14.01
65	-	-	-	14.98	14.98	14.96	14.91
70	-	-	-	15.99	15.99	15.97	15.92

Mass flow [kg/s]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
30	213.10	264.68	324.16	392.27	469.69	557.13	655.29
35	210.29	262.66	322.88	391.65	469.68	557.66	656.30
40	207.00	260.02	320.81	390.09	468.57	556.93	655.89
45	203.07	256.57	317.78	387.42	466.18	554.77	653.89
50	198.32	252.14	313.62	383.46	462.35	551.01	650.13
55	-	246.58	308.17	378.04	456.91	545.48	644.45
60	-	-	301.24	371.00	449.69	538.01	636.67
65	-	-	-	362.16	440.52	528.44	626.63
70	-	-	-	351.36	429.22	516.58	614.15

C.O.P. [W/W]

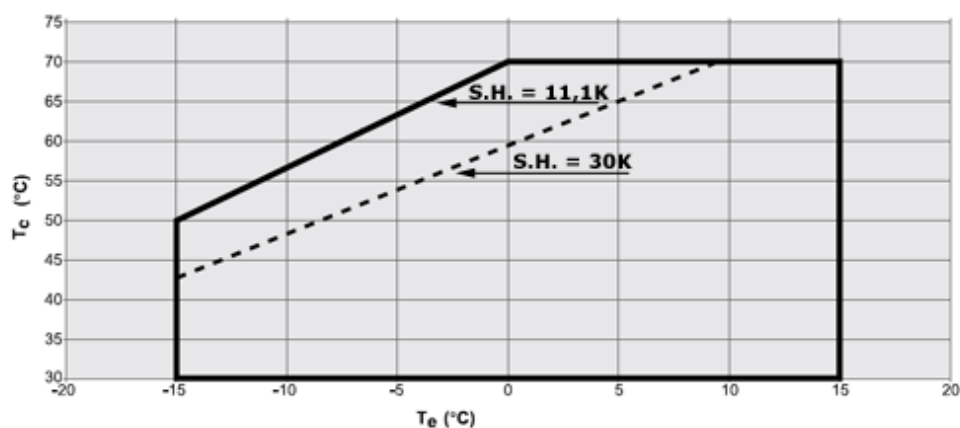
$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
30	2.76	3.47	4.31	5.30	6.46	7.83	9.44
35	2.35	2.98	3.72	4.58	5.60	6.79	8.19
40	1.99	2.54	3.18	3.94	4.82	5.85	7.06
45	1.67	2.14	2.70	3.35	4.12	5.01	6.05
50	1.39	1.79	2.27	2.83	3.49	4.25	5.14
55	-	1.49	1.90	2.38	2.93	3.59	4.35
60	-	-	1.57	1.97	2.45	3.00	3.65
65	-	-	-	1.62	2.02	2.49	3.04
70	-	-	-	1.31	1.65	2.04	2.50

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

t_c - Condensing temperature [$^{\circ}\text{C}$]

t_e - Evaporating temperature [$^{\circ}\text{C}$]

Application range



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**R407C****Cooling capacity [W]**

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	10 889	13 929	17 524	21 748	26 676	32 383	38 943	46 431
35	10 170	13 127	16 603	20 673	25 412	30 894	37 193	44 385
40	9 391	12 248	15 589	19 489	24 021	29 261	35 283	42 162
45	-	11 304	14 493	18 205	22 514	27 496	33 224	39 774
50	-	-	13 325	16 833	20 903	25 609	31 027	37 231
55	-	-	-	15 384	19 198	23 613	28 703	34 544
60	-	-	-	-	17 410	21 517	26 263	31 725
65	-	-	-	-	15 551	19 333	23 719	28 785

Power input [W]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	5 043	5 109	5 159	5 190	5 201	5 189	5 152	5 088
35	5 679	5 742	5 785	5 806	5 803	5 774	5 716	5 627
40	6 379	6 446	6 489	6 506	6 496	6 455	6 383	6 277
45	-	7 227	7 276	7 296	7 285	7 241	7 161	7 043
50	-	-	8 155	8 185	8 179	8 137	8 056	7 933
55	-	-	-	9 177	9 184	9 151	9 075	8 954
60	-	-	-	-	10 307	10 289	10 225	10 112
65	-	-	-	-	11 555	11 559	11 513	11 415

Current [A]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	12.03	12.11	12.18	12.21	12.22	12.17	12.08	11.92
35	12.67	12.75	12.81	12.84	12.84	12.78	12.68	12.50
40	13.43	13.51	13.57	13.60	13.59	13.53	13.41	13.23
45	-	14.41	14.47	14.50	14.48	14.42	14.30	14.11
50	-	-	15.54	15.57	15.55	15.48	15.36	15.16
55	-	-	-	16.82	16.81	16.74	16.61	16.41
60	-	-	-	-	18.28	18.21	18.08	17.87
65	-	-	-	-	19.97	19.91	19.78	19.57

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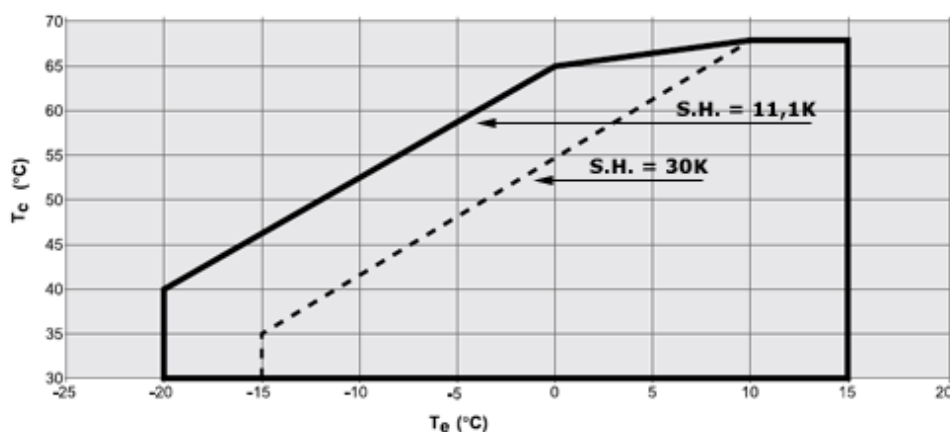
**Mass flow [kg/s]**

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	228.96	288.58	357.33	436.45	527.16	630.71	748.32	881.22
35	224.42	284.87	354.30	433.93	525.01	628.77	746.43	879.24
40	218.47	279.53	349.42	429.37	520.60	624.36	741.87	874.36
45	-	272.51	342.66	422.70	513.87	617.42	734.56	866.53
50	-	-	333.93	413.86	504.76	607.88	724.44	855.68
55	-	-	-	402.79	493.21	595.70	711.47	841.76
60	-	-	-	-	479.16	580.80	695.57	824.70
65	-	-	-	-	462.55	563.13	676.68	804.45

C.O.P. [W/W]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	2.16	2.73	3.40	4.19	5.13	6.24	7.56	9.13
35	1.79	2.29	2.87	3.56	4.38	5.35	6.51	7.89
40	1.47	1.90	2.40	3.00	3.70	4.53	5.53	6.72
45	-	1.56	1.99	2.50	3.09	3.80	4.64	5.65
50	-	-	1.63	2.06	2.56	3.15	3.85	4.69
55	-	-	-	1.68	2.09	2.58	3.16	3.86
60	-	-	-	-	1.69	2.09	2.57	3.14
65	-	-	-	-	1.35	1.67	2.06	2.52

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

 t_c - Condensing temperature [°C] t_e - Evaporating temperature [°C]**Application range**

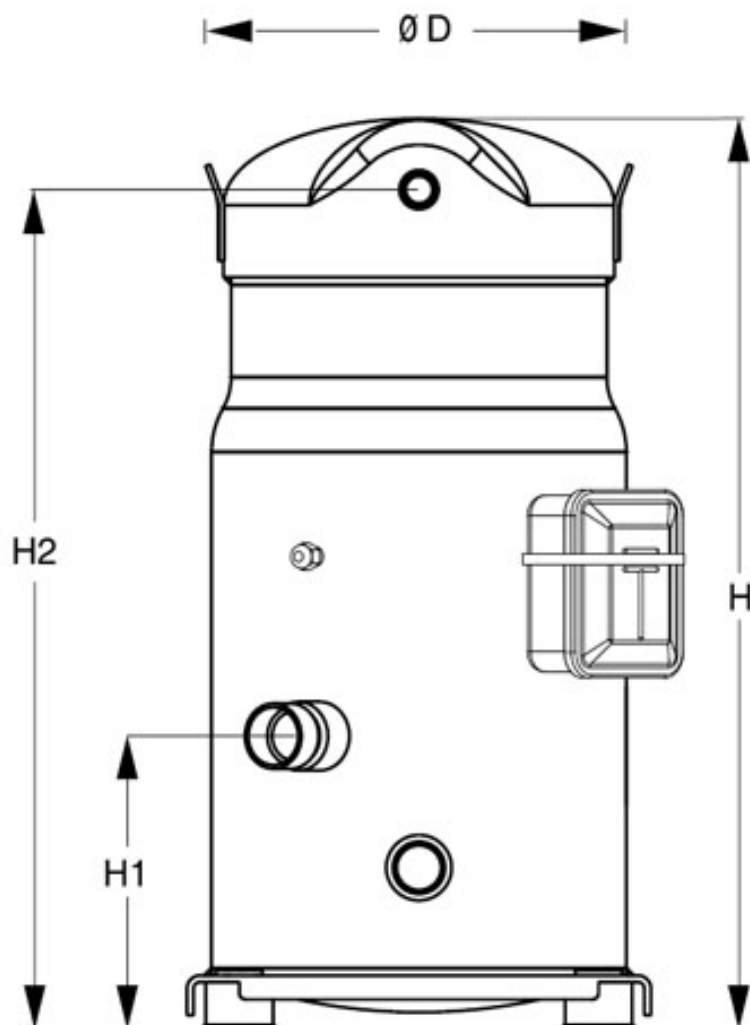
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D	254
H	558
H1	178 mm
H2	515 mm

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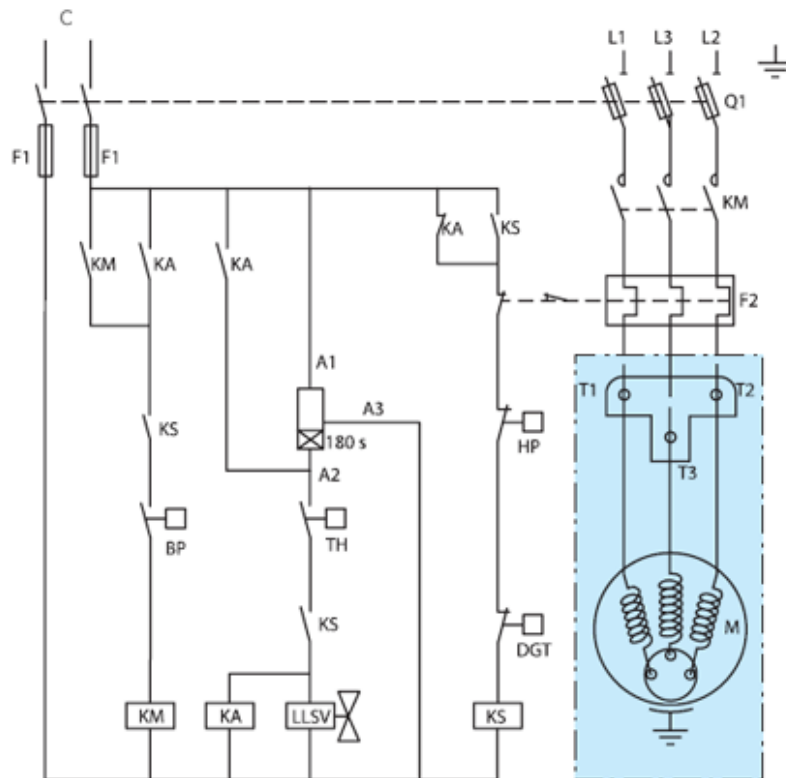
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Electrical data

Starting current [A]:	130
Maximum Continuous Current (MCC) [A]:	29
Winding resistance (between phases) [Ω]:	1,05

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

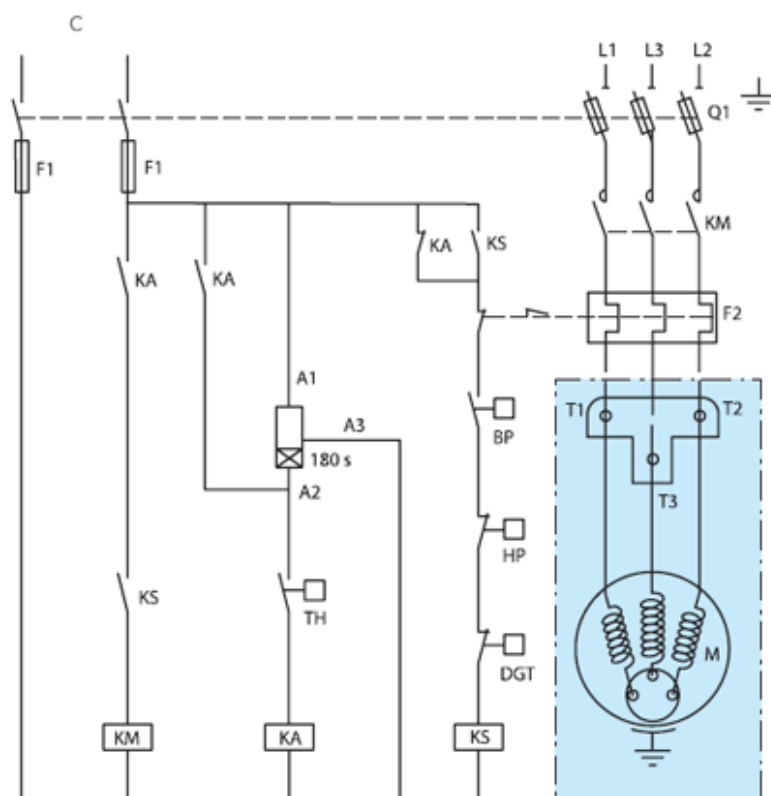
F1: Fuses / S: Thermal relay T1

F2: Thermal relay T1

M: Compressor's engine

DGT: Discharge gas thermostat

Connection diagram for systems without 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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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 7755010
- ▶ discharge thermostatic protection - discharge temperature protection accessory - Danfoss catalogue number 7750009