

Model: MTZ80

Data

Type: Hermetic piston compressors

Producer: Danfoss-Maneurop

Series: MTZ

Model: MTZ80

Technical data

Cylinder count:	2
Displacement [m ³ /h]:	23,63
Cylinder capacity [cm ³]:	135,8
RPM [min ⁻¹]:	2900
Weight [kg]:	40
Oil charge [dm ³]:	2
Oil type:	160PZ
Crankcase heater type:	PTC 35 W
Maximum system test pressure low side / high side:	25 / 30
Maximum number of starts without softstart [1/h]:	12
Refrigerant charge limit [dm ³]:	5
Refrigerant:	R134a, 404A/R507, R407C
Sound power [dB]:	79
Sound power with accoustic hood [dB]:	73

Connections

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

Approvals

CCC	-
CE	+
UL	+

Model: MTZ80**Capacity**

R134a

Cooling capacity [W]

t_c \ t_e	-15	-10	-5	0	5	10	15	20
35	5 935	7 876	10 211	12 989	16 258	20 065	24 460	29 490
40	5 391	7 252	9 488	12 149	15 281	18 932	23 152	27 987
45	4 858	6 627	8 753	11 284	14 266	17 750	21 781	26 409
50	4 339	6 004	8 006	10 394	13 215	16 517	20 349	24 757
55	3 832	5 381	7 247	9 480	12 127	15 236	18 854	23 031
60	-	4 759	6 477	8 542	11 002	13 905	17 299	21 231
65	-	-	-	7 581	9 842	12 527	15 683	19 358
70	-	-	-	-	-	11 100	14 006	17 412
75	-	-	-	-	-	-	12 269	15 394

Power input [W]

t_c \ t_e	-15	-10	-5	0	5	10	15	20
35	2 636	2 940	3 232	3 504	3 749	3 956	4 118	4 227
40	2 709	3 034	3 354	3 659	3 941	4 191	4 402	4 565
45	2 761	3 112	3 463	3 804	4 127	4 425	4 688	4 908
50	2 794	3 174	3 558	3 939	4 307	4 655	4 973	5 254
55	2 805	3 217	3 639	4 063	4 479	4 881	5 258	5 604
60	-	3 242	3 705	4 175	4 643	5 102	5 542	5 955
65	-	-	-	4 275	4 798	5 317	5 823	6 308
70	-	-	-	-	-	5 526	6 102	6 661
75	-	-	-	-	-	-	6 376	7 013

Current [A]

t_c \ t_e	-15	-10	-5	0	5	10	15	20
35	6.10	6.43	6.75	7.06	7.34	7.60	7.82	8.00
40	6.17	6.53	6.89	7.24	7.57	7.89	8.17	8.42
45	6.23	6.62	7.01	7.41	7.80	8.18	8.53	8.86
50	6.26	6.69	7.13	7.58	8.03	8.47	8.90	9.31
55	6.27	6.74	7.24	7.75	8.26	8.77	9.28	9.77
60	-	6.78	7.33	7.90	8.48	9.07	9.66	10.24
65	-	-	-	8.05	8.71	9.38	10.05	10.73
70	-	-	-	-	-	9.68	10.45	11.22
75	-	-	-	-	-	-	10.84	11.72

Model: MTZ80

Capacity

Mass flow [kg/s]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15	20
35	132.30	172.03	218.56	272.64	334.98	406.30	487.33	578.79
40	125.53	165.41	212.03	266.11	328.38	399.56	480.36	571.53
45	118.66	158.43	204.87	258.69	320.63	391.40	471.73	562.34
50	111.60	151.00	197.00	250.31	311.66	381.76	461.35	551.14
55	104.26	143.04	188.33	240.86	301.36	370.54	449.13	537.84
60	-	134.45	178.78	230.28	289.66	357.65	434.98	522.35
65	-	-	-	218.46	276.47	343.01	418.81	504.59
70	-	-	-	-	-	326.53	400.55	484.47
75	-	-	-	-	-	-	380.10	461.90

C.O.P. [W/W]

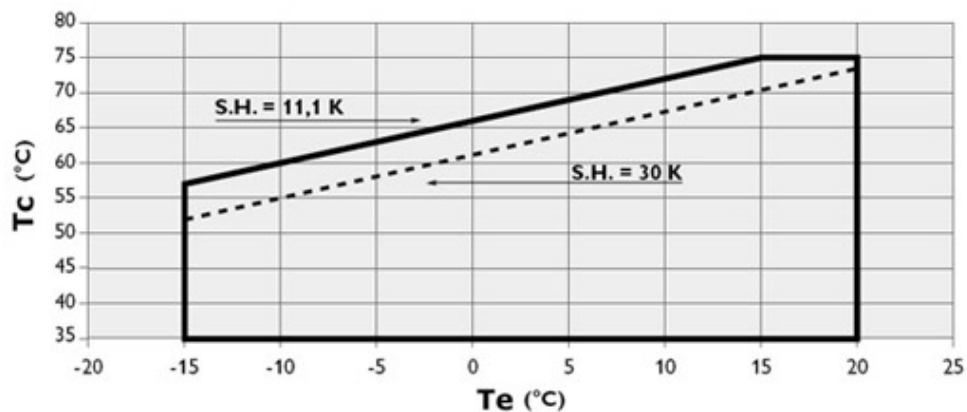
$t_c \setminus t_e$	-15	-10	-5	0	5	10	15	20
35	2.25	2.68	3.16	3.71	4.34	5.07	5.94	6.98
40	1.99	2.39	2.83	3.32	3.88	4.52	5.26	6.13
45	1.76	2.13	2.53	2.97	3.46	4.01	4.65	5.38
50	1.55	1.89	2.25	2.64	3.07	3.55	4.09	4.71
55	1.37	1.67	1.99	2.33	2.71	3.12	3.59	4.11
60	-	1.47	1.75	2.05	2.37	2.73	3.12	3.57
65	-	-	-	1.77	2.05	2.36	2.69	3.07
70	-	-	-	-	-	2.01	2.30	2.61
75	-	-	-	-	-	-	1.92	2.20

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

t_c - Condensing temperature [°C]

t_e - Evaporating temperature [°C]

Application range



Model: MTZ80

Capacity

R404A/R507

Cooling capacity [W]

t _c \ t _e	-30	-25	-20	-15	-10	-5	0	5	10
30	5 725	7 655	9 998	12 799	16 102	19 952	24 391	29 464	35 215
35	4 790	6 666	8 919	11 594	14 736	18 387	22 593	27 396	32 842
40	3 951	5 748	7 886	10 411	13 365	16 794	20 741	25 251	30 366
45	3 213	4 906	6 904	9 253	11 996	15 177	18 841	23 031	27 791
50	2 581	4 144	5 978	8 126	10 633	13 541	16 896	20 742	25 122
55	-	3 468	5 112	7 035	9 280	11 891	14 913	18 389	22 364
60	-	2 882	4 312	5 983	7 942	10 231	12 894	15 976	19 521

Power input [W]

t _c \ t _e	-30	-25	-20	-15	-10	-5	0	5	10
30	3 356	3 841	4 321	4 783	5 215	5 602	5 933	6 193	6 371
35	3 481	3 978	4 478	4 968	5 435	5 866	6 249	6 569	6 814
40	3 573	4 087	4 612	5 136	5 644	6 125	6 564	6 949	7 268
45	3 631	4 168	4 725	5 287	5 842	6 378	6 880	7 336	7 733
50	3 657	4 223	4 816	5 423	6 031	6 626	7 197	7 729	8 210
55	-	4 252	4 887	5 544	6 209	6 871	7 515	8 129	8 699
60	-	4 256	4 938	5 650	6 379	7 112	7 836	8 537	9 202

Current [A]

t _c \ t _e	-30	-25	-20	-15	-10	-5	0	5	10
30	6.92	7.55	8.17	8.76	9.32	9.83	10.27	10.62	10.87
35	7.04	7.68	8.33	8.97	9.58	10.16	10.67	11.12	11.48
40	7.12	7.79	8.48	9.17	9.85	10.50	11.11	11.65	12.12
45	7.17	7.88	8.62	9.37	10.12	10.86	11.56	12.21	12.81
50	7.20	7.95	8.74	9.56	10.39	11.22	12.03	12.81	13.53
55	-	7.99	8.85	9.75	10.67	11.60	12.52	13.42	14.29
60	-	8.00	8.94	9.92	10.94	11.98	13.03	14.07	15.08

Model: MTZ80

Capacity

Mass flow [kg/s]

$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
30	160.54	211.67	270.54	337.98	414.80	501.83	599.91	709.86	832.50
35	142.83	195.67	255.98	324.59	402.33	490.02	588.48	698.55	821.06
40	127.10	181.01	242.14	311.31	389.34	477.06	575.29	684.87	806.61
45	113.36	167.74	229.07	298.17	375.87	462.99	560.37	668.83	789.19
50	101.67	155.89	216.79	285.20	361.95	447.87	543.77	650.48	768.84
55	-	145.50	205.36	272.46	347.63	431.71	525.51	629.87	745.60
60	-	136.61	194.79	259.96	332.95	414.57	505.65	607.02	719.51

C.O.P. [W/W]

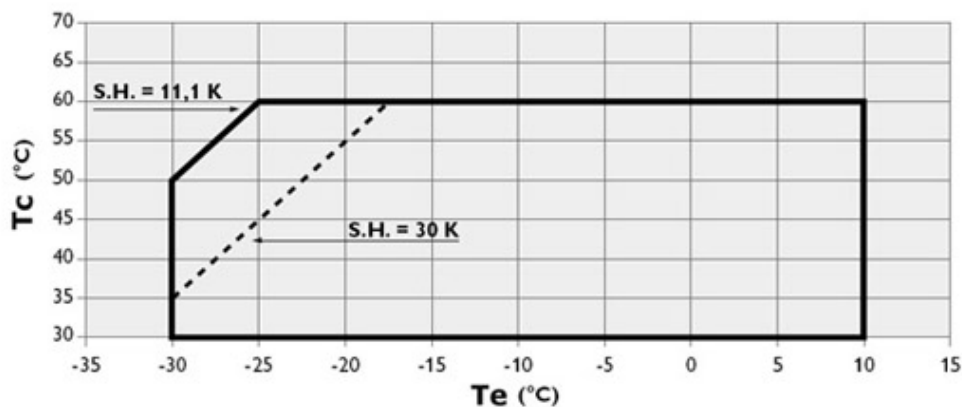
$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
30	1.71	1.99	2.31	2.68	3.09	3.56	4.11	4.76	5.53
35	1.38	1.68	1.99	2.33	2.71	3.13	3.62	4.17	4.82
40	1.11	1.41	1.71	2.03	2.37	2.74	3.16	3.63	4.18
45	0.88	1.18	1.46	1.75	2.05	2.38	2.74	3.14	3.59
50	0.71	0.98	1.24	1.50	1.76	2.04	2.35	2.68	3.06
55	-	0.82	1.05	1.27	1.49	1.73	1.98	2.26	2.57
60	-	0.68	0.87	1.06	1.24	1.44	1.65	1.87	2.12

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

t_c - Condensing temperature [°C]

t_e - Evaporating temperature [°C]

Application range



Model: MTZ80

Capacity

R407C

Cooling capacity [W]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
35	8 513	11 314	14 629	18 510	23 007	28 172	34 055
40	7 667	10 343	13 503	17 196	21 475	26 391	31 994
45	6 851	9 381	12 363	15 849	19 888	24 533	29 834
50	-	8 441	11 225	14 480	18 259	22 612	27 590
55	-	-	10 100	13 105	16 601	20 640	25 274
60	-	-	-	11 735	14 927	18 632	22 899
65	-	-	-	10 384	13 251	16 600	20 480

Power input [W]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
35	3 601	4 113	4 596	5 037	5 421	5 734	5 960
40	3 692	4 239	4 767	5 262	5 708	6 091	6 398
45	3 763	4 353	4 931	5 485	5 999	6 460	6 853
50	-	4 450	5 085	5 704	6 293	6 838	7 323
55	-	-	5 227	5 918	6 587	7 221	7 805
60	-	-	-	6 123	6 879	7 608	8 296
65	-	-	-	6 317	7 166	7 997	8 796

Current [A]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
35	7.32	7.96	8.59	9.19	9.77	10.30	10.77
40	7.44	8.13	8.83	9.51	10.18	10.81	11.40
45	7.53	8.28	9.05	9.83	10.60	11.35	12.07
50	-	8.41	9.27	10.14	11.02	11.89	12.75
55	-	-	9.47	10.45	11.45	12.45	13.46
60	-	-	-	10.75	11.88	13.03	14.19
65	-	-	-	11.04	12.31	13.61	14.93

Model: MTZ80

Capacity

Mass flow [kg/s]

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
35	169.15	220.69	280.27	348.68	426.68	515.06	614.58
40	159.21	210.95	270.55	338.78	416.43	504.26	603.06
45	149.54	201.00	260.15	327.74	404.56	491.38	588.98
50	-	191.06	249.28	315.76	391.28	476.61	572.54
55	-	-	238.13	303.03	376.78	460.16	553.94
60	-	-	-	289.76	361.26	442.22	533.39
65	-	-	-	276.15	344.94	422.99	511.08

C.O.P. [W/W]

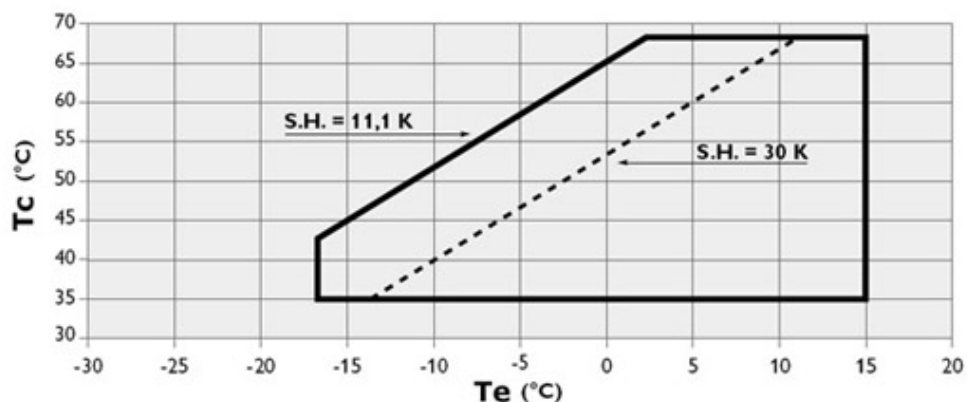
$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
35	2.36	2.75	3.18	3.67	4.24	4.91	5.71
40	2.08	2.44	2.83	3.27	3.76	4.33	5.00
45	1.82	2.16	2.51	2.89	3.32	3.80	4.35
50	-	1.90	2.21	2.54	2.90	3.31	3.77
55	-	-	1.93	2.21	2.52	2.86	3.24
60	-	-	-	1.92	2.17	2.45	2.76
65	-	-	-	1.64	1.85	2.08	2.33

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

t_c - Condensing temperature [°C]

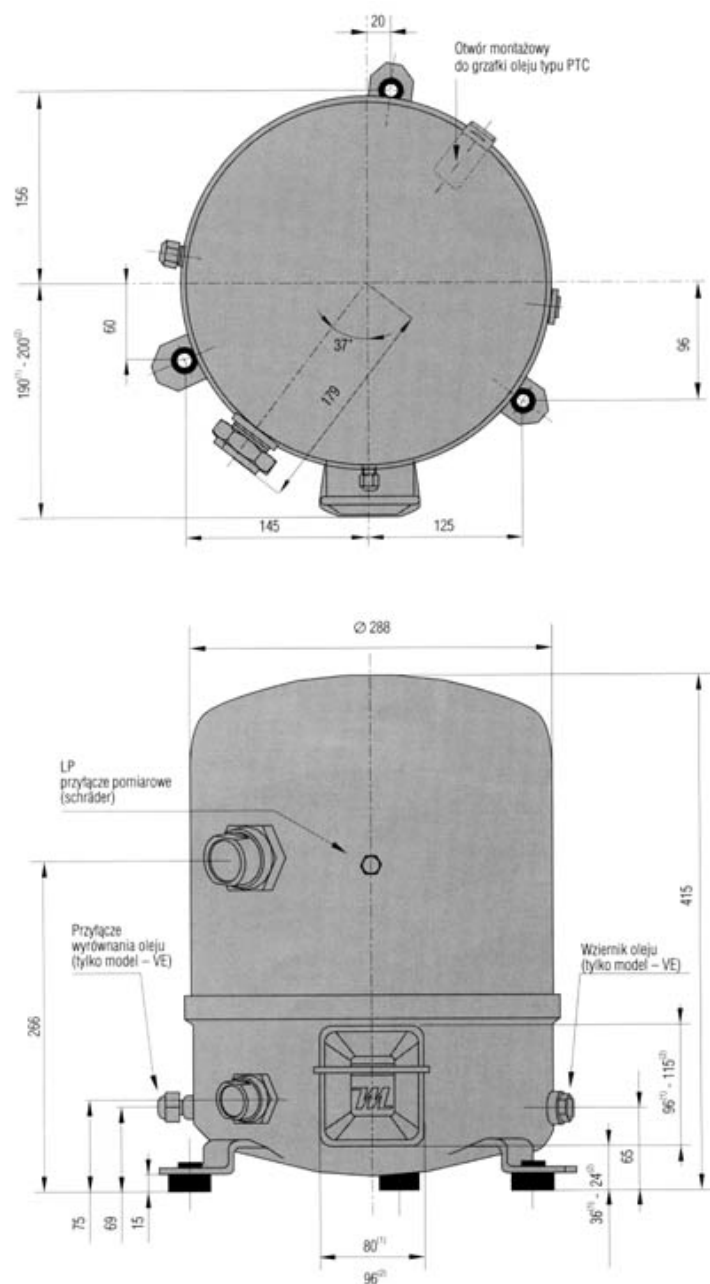
t_e - Evaporating temperature [°C]

Application range



Model: MTZ80

Dimensions



Model: MTZ80

Image

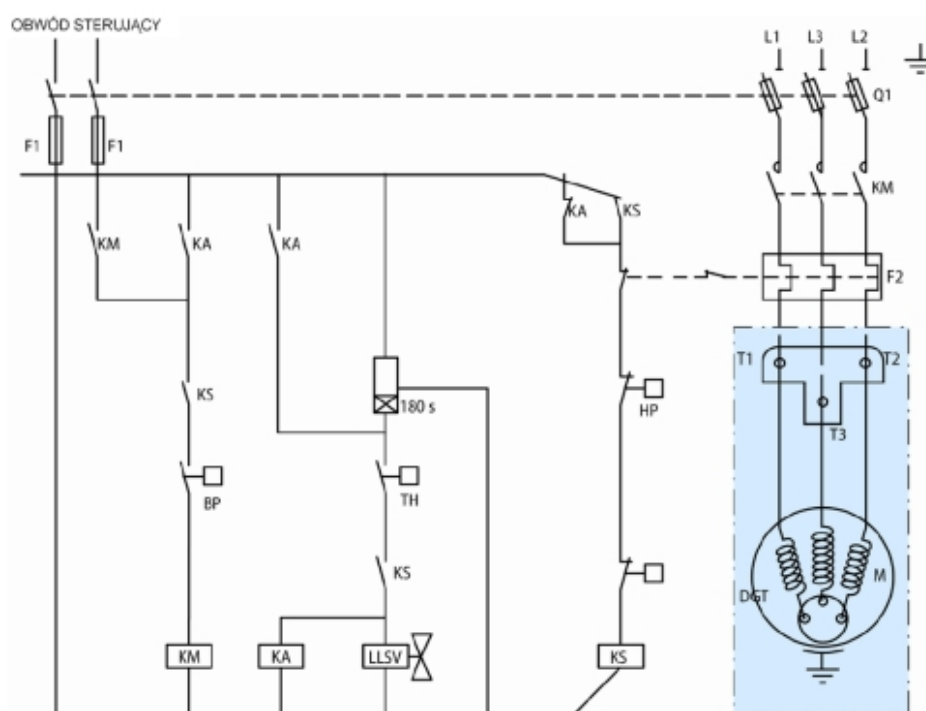


Three-phase power supply

Electrical data

Motor voltage code:	3	4	6	7	9
Starting current [A]:	140	80	132		102
Maximum Continuous	36	18	132		22,5
Current (MCC) [A]:					
Winding resistance	0,48	1,9	0,56		1,3
(between phases) [Ω]:					

Connection diagram for systems without refrigerant suction



TH: Thermostat

180 s: Optional short cycle timer (3min) 5 pts

KA: Control relay

LLSV: Liquid Solenoid valve

KM: Compressor contactor

KS: Safety lock out relay

BP: Low pressure switch

HP: High pressure switch

Q1: Fused disconnect

F1: Fuses

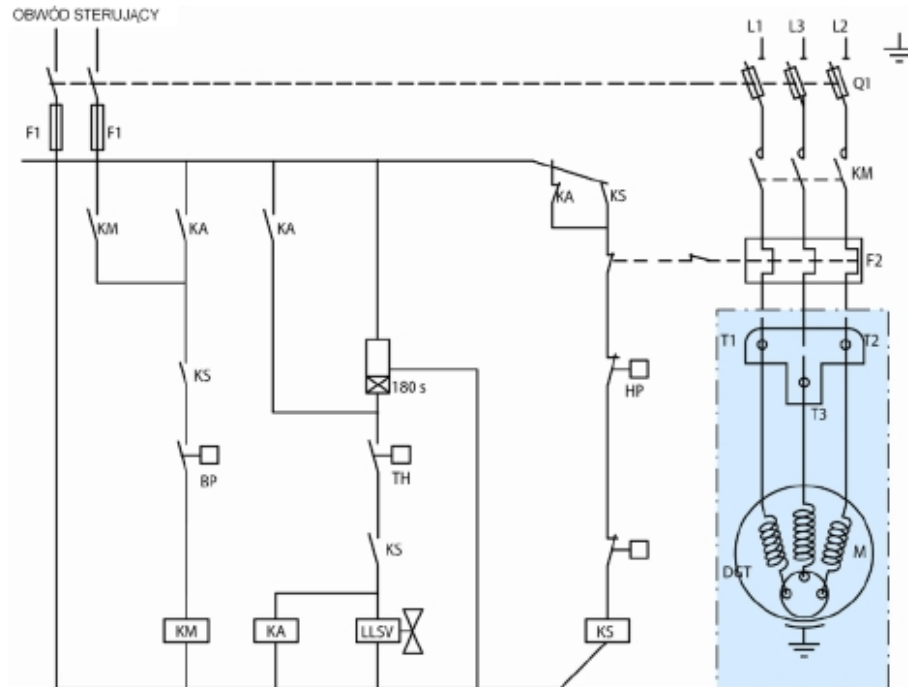
F2: External overload protection

M: Compressor's engine

thM: Motor safety thermostat

DGT: Discharge gas thermostat

Connection diagram for systems with refrigerant suction



TH: Thermostat

180 s: Optional short cycle timer (3min) 5 pts

KA: Control relay

LLSV: Liquid Solenoid valve

KM: Compressor contactor

KS: Safety lock out relay

BP: Low pressure switch

HP: High pressure switch

Q1: Fused disconnect

F1: Fuses

F2: External overload protection

M: Compressor's engine

thM: Motor safety thermostat

DGT: Discharge gas thermostat

Equipment

- ▶ crankcase heater - PTC 35 W
- ▶ belt type heater - crankcase heater 65W, 230V
- ▶ Rotolock valves
 - suction: Rotolock valve connection 1 3/4", connection with supplied sleeve 1 1/8"
 - discharge: Rotolock valve connection 1 1/4", connection with supplied sleeve 3/4"
- ▶ soft-start kit - electronic softstart MCI 15C
- ▶ accoustic hood - acoustic shield of Danfoss catalogue number 7755002