Type: Hermetic piston compressors
Producer: Maneurop
Series: MTZ

Model: MTZ36

Technical data

Cylinder count:	1
Displacement [m³/h]:	10,52
Cylinder capacity [cm³]:	60,5
RPM [min^{-1}]:	2900
Weight [kg]:	25
Oil charge [dm³]:	1
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 [dm³]:	3
Refrigerant:	R134a, 404A/R507, R407C
Sound power [dB]:	70
Sound power with accoustic hood [dB]:	64

Connections

	milimeters	inches
Suction Rotolock valve connection:		1 1/4"
Discharge Rotolock valve connection:		1"
Suction connection with supplied sleeve:		5/8"
Discharge connection with supplied sleeve:		1/2"

Approvals

CCC	+
CE	+
UL	+

R134a

Cooling capacity [W]

t_c \ t_e	-15	-10	-5	0	5	10	15	20
35	2 651	3 483	4 488	5 686	7 101	8 752	10 660	12 849
40	2 446	3 242	4 202	5 347	6 699	8 279	10 108	12 208
45	2 246	3 000	3 909	4 995	6 279	7 782	9 526	11 531
50	2 049	2 756	3 609	4 630	5 840	7 261	8 914	10 820
55	1 858	2 511	3 303	4 253	5 384	6 717	8 273	10 073
60	-	2 266	2 990	3 864	4 910	6 149	7 603	9 292
65	-	-	-	3 463	4 419	5 558	6 903	8 476
70	-	-	-	-	-	4 944	6 176	7 625
75	-	-	-	-	-	-	5 419	6 740

Power input [W]

t_c \ t_e	-15	-10	-5	0	5	10	15	20
35	1 197	1 329	1 450	1 556	1 640	1 699	1 728	1 720
40	1 250	1 393	1 528	1 650	1 753	1 834	1 887	1 906
45	1 295	1 450	1 600	1 740	1 865	1 969	2 047	2 096
50	1 329	1 499	1 666	1 826	1 973	2 102	2 209	2 287
55	1 352	1 538	1 724	1 906	2 077	2 233	2 369	2 480
60	-	1 567	1 774	1 979	2 176	2 361	2 528	2 673
65	-	-	-	2 043	2 268	2 484	2 685	2 865
70	-	-	-	-	-	2 601	2 837	3 056
75	-	-	-	-	-	-	2 985	3 242

Current [A]

t_c \ t_e	-15	-10	-5	0	5	10	15	20
35	3.10	3.22	3.32	3.42	3.50	3.56	3.59	3.60
40	3.14	3.27	3.40	3.52	3.62	3.71	3.78	3.82
45	3.17	3.32	3.47	3.62	3.75	3.87	3.98	4.06
50	3.20	3.37	3.55	3.72	3.88	4.04	4.18	4.31
55	3.23	3.42	3.62	3.82	4.02	4.21	4.40	4.57
60	-	3.46	3.69	3.92	4.16	4.39	4.62	4.84
65	-	-	-	4.02	4.29	4.57	4.84	5.11
70	-	-	-	-	-	4.75	5.07	5.39
75	-	-	-	-	-	-	5.31	5.68

Mass flow [kg/s]

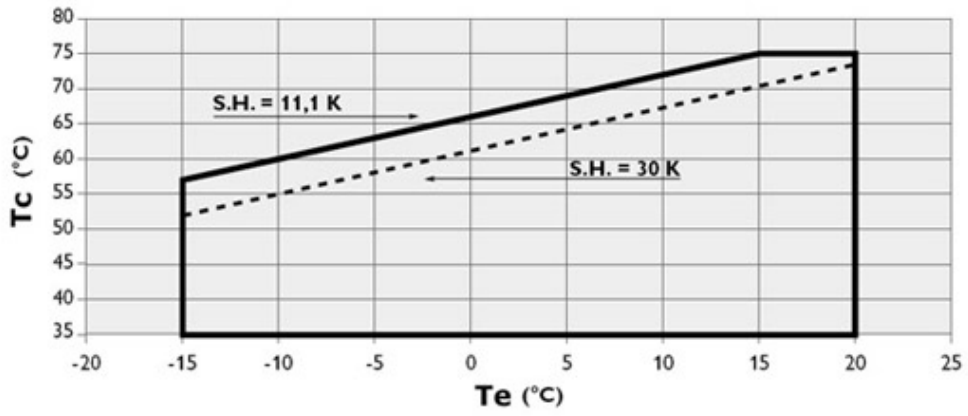
t_c \ t_e	-15	-10	-5	0	5	10	15	20
35	59.10	76.08	96.06	119.36	146.30	177.20	212.39	252.18
40	56.96	73.95	93.89	117.12	143.96	174.72	209.73	249.32
45	54.84	71.70	91.48	114.51	141.11	171.61	206.31	245.56
50	52.72	69.32	88.80	111.50	137.74	167.83	202.10	240.87
55	50.56	66.77	85.83	108.07	133.80	163.36	197.06	235.22
60	-	64.02	82.52	104.17	129.27	158.17	191.16	228.59
65	-	-	-	99.78	124.13	152.22	184.39	220.95
70	-	-	-	-	-	145.50	176.71	212.27
75	-	-	-	-	-	-	168.08	202.51

C.O.P. [W/W]

t_c \ t_e	-15	-10	-5	0	5	10	15	20
35	2.21	2.62	3.09	3.66	4.33	5.15	6.17	7.47
40	1.96	2.33	2.75	3.24	3.82	4.51	5.36	6.40
45	1.73	2.07	2.44	2.87	3.37	3.95	4.65	5.50
50	1.54	1.84	2.17	2.54	2.96	3.45	4.04	4.73
55	1.37	1.63	1.92	2.23	2.59	3.01	3.49	4.06
60	-	1.45	1.69	1.95	2.26	2.60	3.01	3.48
65	-	-	-	1.69	1.95	2.24	2.57	2.96
70	-	-	-	-	-	1.90	2.18	2.50
75	-	-	-	-	-	-	1.82	2.08

Operating conditions: suction superheat: 11.1 K, subcooling: 8.3 K
t_c - Condensing temperature [ºC]
t_e - Evaporating temperature [ºC]

Application range



R404A/R507

Cooling capacity [W]

t_c \ t_e	-30	-25	-20	-15	-10	-5	0	5	10
30	2 064	2 857	3 827	4 996	6 384	8 013	9 904	12 078	14 557
35	1 809	2 550	3 451	4 533	5 817	7 324	9 076	11 093	13 398
40	1 554	2 243	3 073	4 067	5 245	6 630	8 241	10 101	12 230
45	1 300	1 934	2 693	3 598	4 670	5 930	7 400	9 101	11 054
50	1 046	1 624	2 311	3 125	4 089	5 225	6 552	8 093	9 868
55	-	1 313	1 926	2 649	3 504	4 513	5 697	7 077	8 674
60	-	1 001	1 538	2 169	2 914	3 796	4 835	6 052	7 469

Power input [W]

t_c \ t_e	-30	-25	-20	-15	-10	-5	0	5	10
30	1 473	1 685	1 882	2 060	2 216	2 346	2 446	2 512	2 541
35	1 495	1 730	1 953	2 159	2 344	2 506	2 640	2 743	2 811
40	1 504	1 764	2 013	2 248	2 465	2 660	2 830	2 970	3 078
45	1 498	1 784	2 061	2 327	2 576	2 806	3 013	3 192	3 340
50	1 476	1 789	2 096	2 393	2 677	2 942	3 187	3 407	3 598
55	-	1 778	2 116	2 446	2 764	3 068	3 352	3 613	3 848
60	-	1 748	2 119	2 483	2 838	3 180	3 505	3 809	4 089

Current [A]

t_c \ t_e	-30	-25	-20	-15	-10	-5	0	5	10
30	3.53	3.76	4.01	4.27	4.52	4.74	4.91	5.02	5.05
35	3.56	3.81	4.08	4.37	4.64	4.89	5.09	5.23	5.29
40	3.59	3.86	4.17	4.48	4.79	5.07	5.31	5.49	5.60
45	3.59	3.90	4.25	4.60	4.95	5.28	5.57	5.80	5.95
50	3.56	3.92	4.31	4.71	5.12	5.50	5.84	6.13	6.34
55	-	3.89	4.34	4.80	5.27	5.71	6.12	6.48	6.76
60	-	3.81	4.32	4.86	5.39	5.91	6.39	6.82	7.19

Mass flow [kg/s]

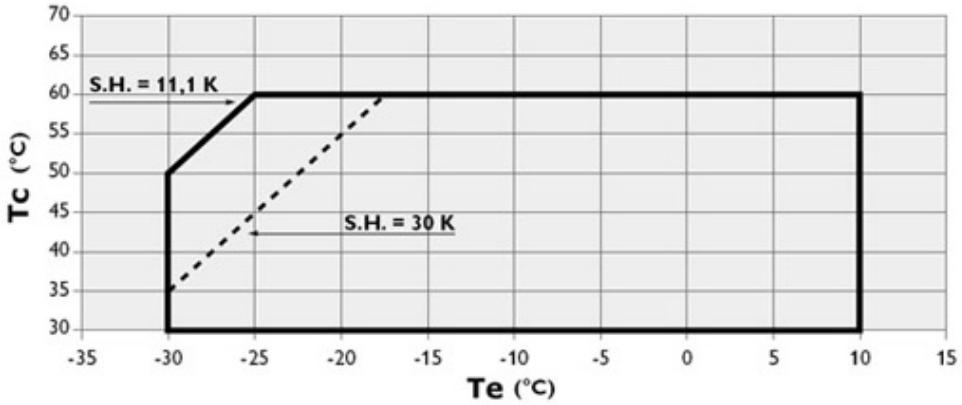
t_c \ t_e	-30	-25	-20	-15	-10	-5	0	5	10
30	64.95	87.90	114.73	145.92	181.92	223.21	270.26	323.55	383.53
35	61.25	84.19	110.79	141.53	176.88	217.31	263.29	315.28	373.77
40	57.07	80.01	106.41	136.74	171.46	211.05	255.98	306.71	363.72
45	52.29	75.27	101.49	131.43	165.55	204.33	248.24	297.73	353.29
50	46.81	69.85	95.93	125.51	159.06	197.05	239.95	288.24	342.38
55	-	63.67	89.62	118.86	151.86	189.09	231.03	278.13	330.87
60	-	56.60	82.46	111.39	143.87	180.37	221.35	267.30	318.67

C.O.P. [W/W]

t_c \ t_e	-30	-25	-20	-15	-10	-5	0	5	10
30	1.40	1.70	2.03	2.42	2.88	3.42	4.05	4.81	5.73
35	1.21	1.47	1.77	2.10	2.48	2.92	3.44	4.04	4.77
40	1.03	1.27	1.53	1.81	2.13	2.49	2.91	3.40	3.97
45	0.87	1.08	1.31	1.55	1.81	2.11	2.46	2.85	3.31
50	0.71	0.91	1.10	1.31	1.53	1.78	2.06	2.38	2.74
55	-	0.74	0.91	1.08	1.27	1.47	1.70	1.96	2.25
60	-	0.57	0.73	0.87	1.03	1.19	1.38	1.59	1.83

Operating conditions: suction superheat: 10 K, subcooling: 0 K
t_c - Condensing temperature [ºC]
t_e - Evaporating temperature [ºC]

Application range



R407C

Cooling capacity [W]

t_c \ t_e	-15	-10	-5	0	5	10	15
35	3 688	4 851	6 219	7 815	9 660	11 776	14 186
40	3 346	4 445	5 728	7 216	8 930	10 894	13 128
45	2 994	4 036	5 239	6 624	8 215	10 032	12 097
50	-	3 617	4 746	6 036	7 508	9 184	11 087
55	-	-	4 246	5 445	6 805	8 346	10 092
60	-	-	-	4 846	6 100	7 513	9 107
65	-	-	-	4 235	5 388	6 678	8 127

Power input [W]

t_c \ t_e	-15	-10	-5	0	5	10	15
35	1 724	1 932	2 106	2 247	2 355	2 429	2 470
40	1 779	2 025	2 233	2 405	2 540	2 637	2 698
45	1 813	2 104	2 355	2 565	2 735	2 863	2 951
50	-	2 166	2 466	2 722	2 934	3 101	3 224
55	-	-	2 560	2 870	3 132	3 345	3 511
60	-	-	-	3 003	3 323	3 591	3 807
65	-	-	-	3 117	3 502	3 831	4 105

Current [A]

t_c \ t_e	-15	-10	-5	0	5	10	15
35	4.01	4.27	4.46	4.62	4.74	4.85	4.97
40	4.08	4.40	4.64	4.84	5.00	5.13	5.26
45	4.12	4.51	4.82	5.08	5.28	5.46	5.61
50	-	4.60	4.99	5.31	5.58	5.81	6.02
55	-	-	5.13	5.54	5.89	6.19	6.45
60	-	-	-	5.74	6.19	6.57	6.91
65	-	-	-	5.91	6.46	6.95	7.38

Mass flow [kg/s]

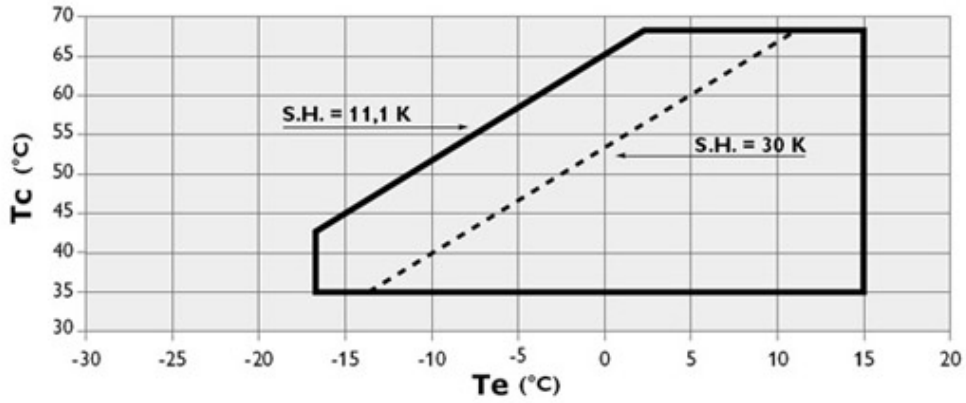
t_c \ t_e	-15	-10	-5	0	5	10	15
35	80.03	103.51	130.53	161.45	196.63	236.42	281.19
40	76.34	99.66	126.23	156.41	190.55	229.02	272.17
45	72.15	95.44	121.68	151.24	184.47	221.73	263.39
50	-	90.67	116.71	145.77	178.22	214.40	254.70
55	-	-	111.16	139.85	171.64	206.87	245.92
60	-	-	-	133.32	164.57	198.98	236.91
65	-	-	-	126.00	156.84	190.55	227.49

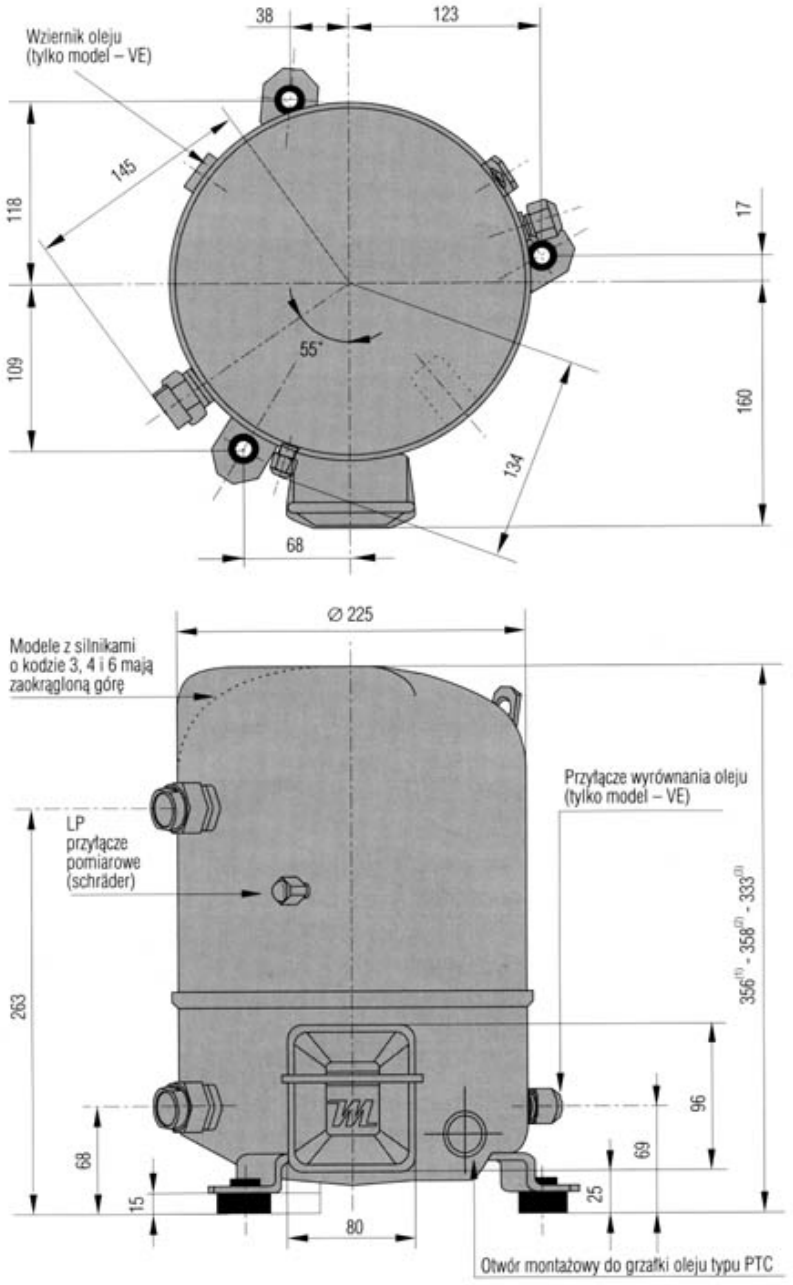
C.O.P. [W/W]

t_c \ t_e	-15	-10	-5	0	5	10	15
35	2.14	2.51	2.95	3.48	4.10	4.85	5.74
40	1.88	2.20	2.56	3.00	3.52	4.13	4.87
45	1.65	1.92	2.22	2.58	3.00	3.50	4.10
50	-	1.67	1.92	2.22	2.56	2.96	3.44
55	-	-	1.66	1.90	2.17	2.49	2.87
60	-	-	-	1.61	1.84	2.09	2.39
65	-	-	-	1.36	1.54	1.74	1.98

Operating conditions: suction superheat: 10 K, subcooling: 0 K
t_c - Condensing temperature [ºC]
t_e - Evaporating temperature [ºC]

Application range




38
123
Wziernik oleju
(tylko model – VE)
145
118
17
55°
109
160
134
68
Ø 225
Modele z silnikami
o kodzie 3, 4 i 6 mają
zaokrągloną górę
Przyłącze wyrównania oleju
(tylko model – VE)
LP
przyłącze
pomiarowe
(schräder)
263
356(1) - 358(2) - 333(3)
96
68
69
15
25
80
Otwór montażowy do grzałki oleju typu PTC

Model: MTZ36

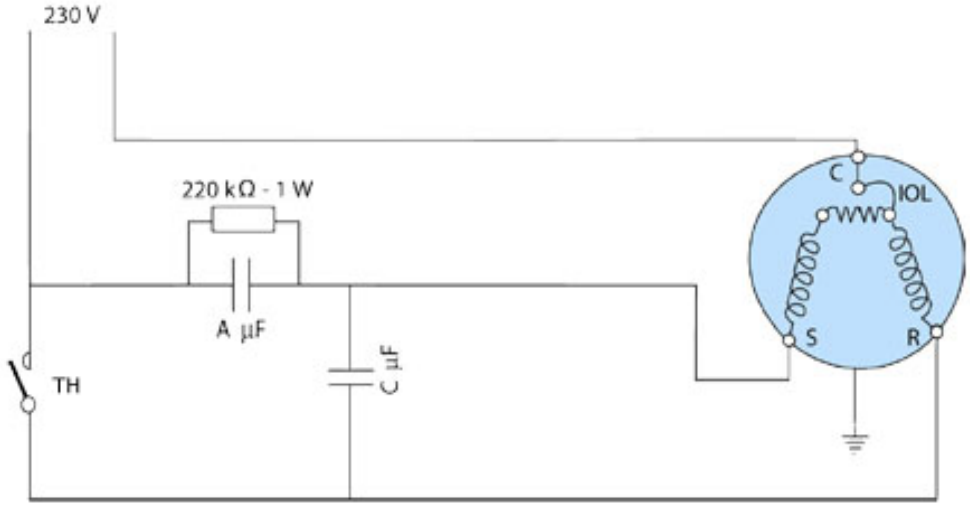
Image

Single phase power supply

Electrical data

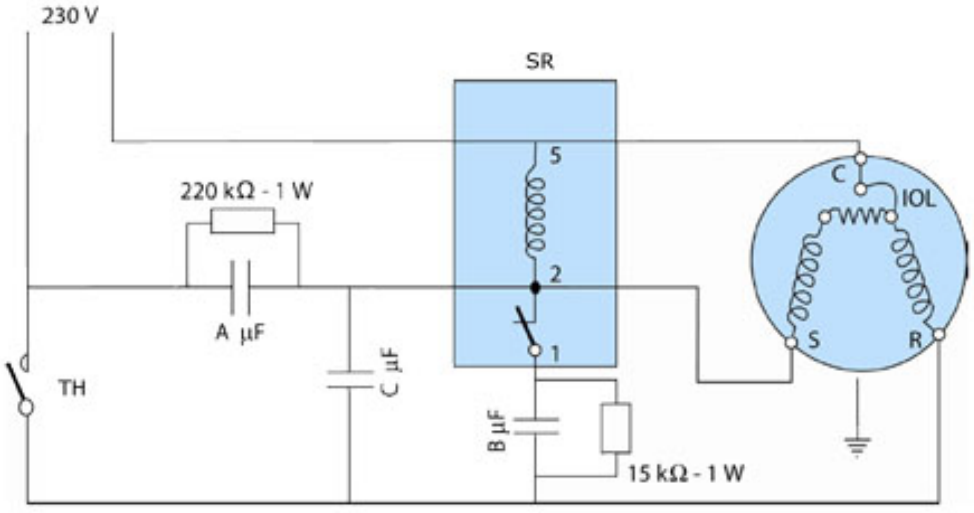
Motor voltage code:	1	5
Starting current [A]:	84	70
Maximum Continuous Current (MCC) [A]:	30	20
Winding resistance (between phases) (run/start) [Ω]:	0,64/2,85	0,89/4,35
Main condenser (A) (PSC/CSR) [µF]:		25
Main condenser (C) (PSC/CSR) [µF]:		10
Starting condenser (B) (CSR) [µF]:		135
Starting relay (CSR):		3ARR3J4A4

PSC starting with additional winding



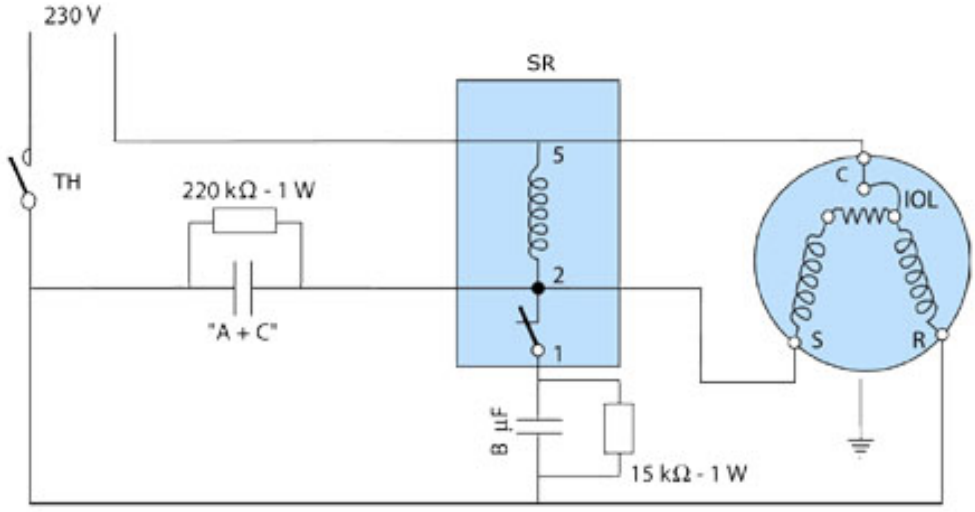
IOL: inner motor protection (klixon)
A, C: main condensers
C: starting condenser / S: common
TH: thermostat
SR: movement transmitter

CSR starting with additional winding



IOL: inner motor protection (klixon)
A, C: main condensers
B: starting condenser
C: common / S: additional starting winding
TH: thermostat
SR: movement transmitter

CSR starting without additional winding



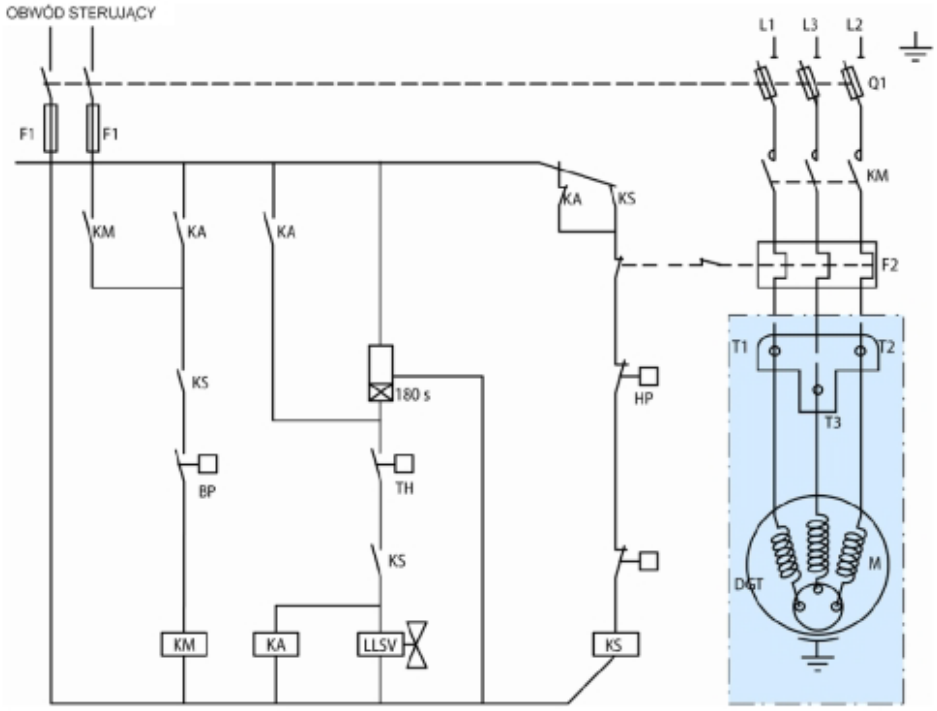
IOL: inner motor protection (klixon)
A, C: main condensers
B: starting condenser
C: common / S: additional starting winding
TH: thermostat
SR: movement transmitter
condensers A and C are replaced by one condenser of capacity A + C

Three-phase power supply

Electrical data

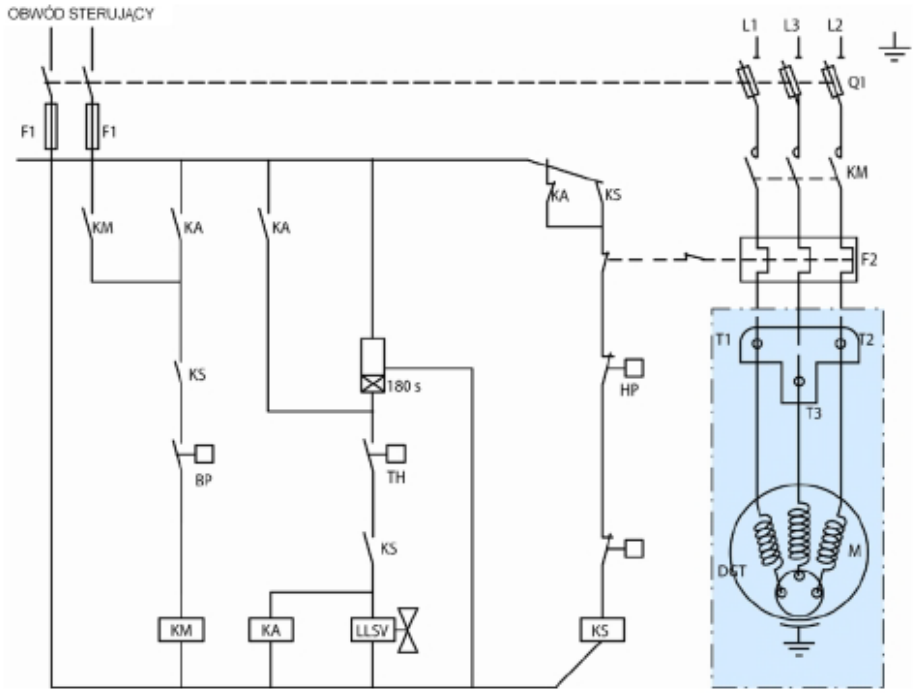
Motor voltage code:	3	4	6	7	9
Starting current [A]:	74	30	74	26	35
Maximum Continuous Current (MCC) [A]:	17	9	74	7	9,5
Winding resistance (between phases) [Ω]:	1,16	5,57	1,16	8,6	4,1

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
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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 55W, 230V
- Rotalock valves
  - suction: Rotolock valve connection 1 1/4", connection with supplied sleeve 5/8"
  - discharge: Rotolock valve connection 1", connection with supplied sleeve 1/2"
- soft-start kit - electronic softstart MCI 15C
- accoustic hood - acoustic shield of Danfoss catalogue number 7755001