Type: Hermetic piston compressors
Producer: Maneurop
Series: MTZ

Model: MTZ32

Technical data

Cylinder count:	1
Displacement [m³/h]:	9,37
Cylinder capacity [cm³]:	53,9
RPM [min^{-1}]:	2900
Weight [kg]:	24
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]:	71
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	1 943	2 676	3 590	4 713	6 069	7 684	9 585	11 796
40	1 746	2 439	3 305	4 368	5 656	7 193	9 006	11 120
45	1 564	2 211	3 021	4 020	5 233	6 685	8 404	10 415
50	1 400	1 995	2 743	3 670	4 802	6 164	7 782	9 683
55	1 255	1 792	2 472	3 321	4 366	5 631	7 143	8 927
60	-	1 606	2 212	2 977	3 928	5 090	6 489	8 151
65	-	-	-	2 640	3 491	4 543	5 823	7 356
70	-	-	-	-	-	3 994	5 149	6 547
75	-	-	-	-	-	-	4 469	5 726

Power input [W]

t_c \ t_e	-15	-10	-5	0	5	10	15	20
35	1 034	1 173	1 299	1 408	1 494	1 551	1 574	1 557
40	1 066	1 214	1 353	1 476	1 579	1 655	1 699	1 706
45	1 088	1 248	1 400	1 540	1 661	1 758	1 825	1 858
50	1 102	1 274	1 442	1 599	1 740	1 859	1 951	2 011
55	1 105	1 292	1 476	1 652	1 815	1 958	2 077	2 165
60	-	1 301	1 504	1 700	1 886	2 055	2 201	2 319
65	-	-	-	1 742	1 952	2 148	2 324	2 474
70	-	-	-	-	-	2 238	2 444	2 628
75	-	-	-	-	-	-	2 563	2 780

Current [A]

t_c \ t_e	-15	-10	-5	0	5	10	15	20
35	3.14	3.25	3.35	3.44	3.51	3.56	3.57	3.56
40	3.17	3.29	3.41	3.52	3.61	3.68	3.72	3.73
45	3.19	3.33	3.47	3.59	3.70	3.80	3.87	3.92
50	3.20	3.36	3.51	3.66	3.80	3.92	4.02	4.10
55	3.20	3.37	3.55	3.72	3.88	4.03	4.17	4.28
60	-	3.38	3.57	3.77	3.96	4.14	4.31	4.46
65	-	-	-	3.81	4.03	4.24	4.44	4.63
70	-	-	-	-	-	4.33	4.57	4.80
75	-	-	-	-	-	-	4.68	4.95

Mass flow [kg/s]

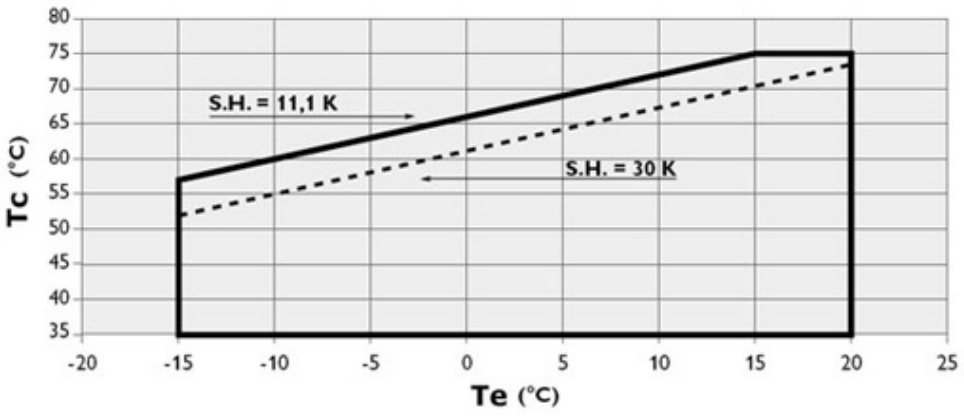
t_c \ t_e	-15	-10	-5	0	5	10	15	20
35	43.38	58.51	76.89	98.91	124.99	155.53	190.94	231.63
40	40.67	55.65	73.86	95.68	121.53	151.81	186.93	227.29
45	38.18	52.85	70.70	92.15	117.59	147.43	182.08	221.95
50	35.99	50.16	67.49	88.37	113.23	142.45	176.46	215.64
55	34.14	47.64	64.26	84.41	108.50	136.93	170.11	208.44
60	-	45.33	61.07	80.31	103.46	130.92	163.10	200.40
65	-	-	-	76.14	98.17	124.48	155.48	191.58
70	-	-	-	-	-	117.67	147.31	182.02
75	-	-	-	-	-	-	138.65	171.79

C.O.P. [W/W]

t_c \ t_e	-15	-10	-5	0	5	10	15	20
35	1.88	2.28	2.76	3.35	4.06	4.95	6.09	7.58
40	1.64	2.01	2.44	2.96	3.58	4.35	5.30	6.52
45	1.44	1.77	2.16	2.61	3.15	3.80	4.60	5.61
50	1.27	1.57	1.90	2.30	2.76	3.32	3.99	4.82
55	1.14	1.39	1.67	2.01	2.41	2.88	3.44	4.12
60	-	1.23	1.47	1.75	2.08	2.48	2.95	3.51
65	-	-	-	1.52	1.79	2.12	2.51	2.97
70	-	-	-	-	-	1.78	2.11	2.49
75	-	-	-	-	-	-	1.74	2.06

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	1 757	2 453	3 305	4 335	5 561	7 003	8 682	10 616	12 826
35	1 510	2 155	2 945	3 899	5 036	6 376	7 940	9 747	11 816
40	1 271	1 864	2 589	3 464	4 509	5 745	7 191	8 867	10 793
45	1 044	1 582	2 238	3 031	3 983	5 111	6 437	7 980	9 759
50	828	1 308	1 893	2 603	3 457	4 476	5 679	7 085	8 715
55	-	1 046	1 557	2 180	2 935	3 841	4 917	6 185	7 663
60	-	796	1 231	1 764	2 417	3 207	4 155	5 281	6 605

Power input [W]

t_c \ t_e	-30	-25	-20	-15	-10	-5	0	5	10
30	1 246	1 436	1 610	1 767	1 904	2 021	2 115	2 187	2 234
35	1 243	1 456	1 653	1 834	1 997	2 141	2 265	2 367	2 445
40	1 227	1 463	1 685	1 892	2 083	2 256	2 409	2 542	2 654
45	1 198	1 458	1 706	1 941	2 160	2 363	2 548	2 714	2 860
50	1 154	1 441	1 716	1 980	2 229	2 464	2 682	2 882	3 063
55	-	1 410	1 715	2 008	2 289	2 557	2 809	3 045	3 263
60	-	1 367	1 701	2 026	2 340	2 642	2 930	3 203	3 460

Current [A]

t_c \ t_e	-30	-25	-20	-15	-10	-5	0	5	10
30	3.07	3.27	3.49	3.71	3.91	4.08	4.20	4.27	4.26
35	3.08	3.30	3.54	3.78	4.01	4.21	4.37	4.47	4.50
40	3.08	3.33	3.59	3.86	4.12	4.36	4.57	4.72	4.80
45	3.06	3.33	3.63	3.94	4.25	4.53	4.79	4.99	5.14
50	3.00	3.31	3.65	4.01	4.36	4.70	5.02	5.28	5.49
55	-	3.25	3.64	4.05	4.46	4.86	5.24	5.58	5.86
60	-	3.13	3.58	4.04	4.52	4.99	5.44	5.86	6.22

Mass flow [kg/s]

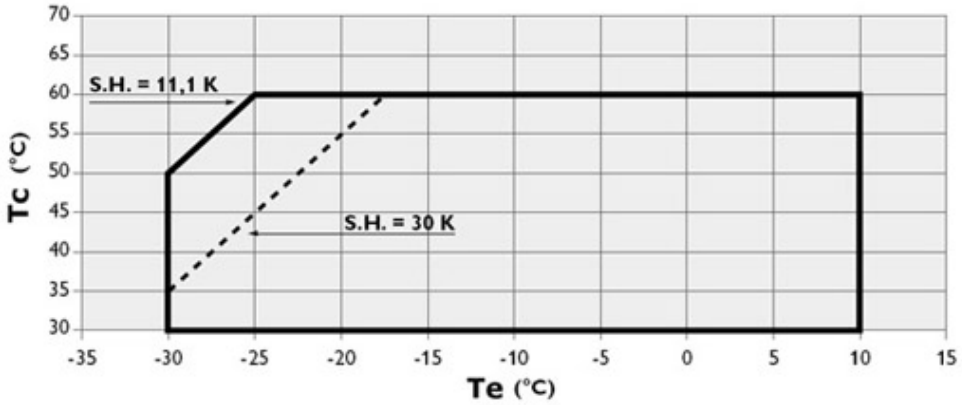
t_c \ t_e	-30	-25	-20	-15	-10	-5	0	5	10
30	55.25	75.52	99.20	126.74	158.53	195.02	236.63	283.77	336.88
35	51.08	71.16	94.59	121.80	153.22	189.26	230.37	276.95	329.43
40	46.67	66.49	89.60	116.44	147.41	182.96	223.50	269.46	321.26
45	42.02	61.52	84.26	110.65	141.13	176.11	216.03	261.31	312.37
50	37.13	56.26	78.55	104.45	134.37	168.73	207.97	252.51	302.76
55	-	50.70	72.50	97.84	127.14	160.82	199.32	243.05	292.44
60	-	44.85	66.10	90.82	119.44	152.39	190.09	232.96	281.43

C.O.P. [W/W]

t_c \ t_e	-30	-25	-20	-15	-10	-5	0	5	10
30	1.41	1.71	2.05	2.45	2.92	3.47	4.10	4.85	5.74
35	1.21	1.48	1.78	2.13	2.52	2.98	3.51	4.12	4.83
40	1.04	1.27	1.54	1.83	2.16	2.55	2.98	3.49	4.07
45	0.87	1.08	1.31	1.56	1.84	2.16	2.53	2.94	3.41
50	0.72	0.91	1.10	1.31	1.55	1.82	2.12	2.46	2.85
55	-	0.74	0.91	1.09	1.28	1.50	1.75	2.03	2.35
60	-	0.58	0.72	0.87	1.03	1.21	1.42	1.65	1.91

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	3 135	4 200	5 458	6 931	8 644	10 620	12 882
40	2 809	3 815	4 997	6 377	7 980	9 827	11 943
45	2 480	3 428	4 534	5 821	7 313	9 032	11 003
50	-	3 040	4 071	5 265	6 646	8 238	10 063
55	-	-	3 609	4 710	5 981	7 445	9 125
60	-	-	-	4 159	5 320	6 656	8 191
65	-	-	-	3 614	4 664	5 873	7 263

Power input [W]

t_c \ t_e	-15	-10	-5	0	5	10	15
35	1 449	1 615	1 749	1 857	1 942	2 011	2 068
40	1 487	1 689	1 856	1 991	2 101	2 190	2 262
45	1 503	1 748	1 953	2 124	2 265	2 381	2 476
50	-	1 786	2 038	2 250	2 429	2 579	2 704
55	-	-	2 103	2 365	2 588	2 779	2 940
60	-	-	-	2 463	2 738	2 976	3 181
65	-	-	-	2 539	2 873	3 165	3 421

Current [A]

t_c \ t_e	-15	-10	-5	0	5	10	15
35	3.29	3.47	3.64	3.78	3.91	4.01	4.10
40	3.34	3.57	3.78	3.95	4.11	4.24	4.35
45	3.38	3.66	3.91	4.13	4.33	4.50	4.65
50	-	3.72	4.04	4.32	4.57	4.79	4.98
55	-	-	4.14	4.49	4.81	5.09	5.33
60	-	-	-	4.65	5.04	5.39	5.71
65	-	-	-	4.80	5.27	5.70	6.10

Mass flow [kg/s]

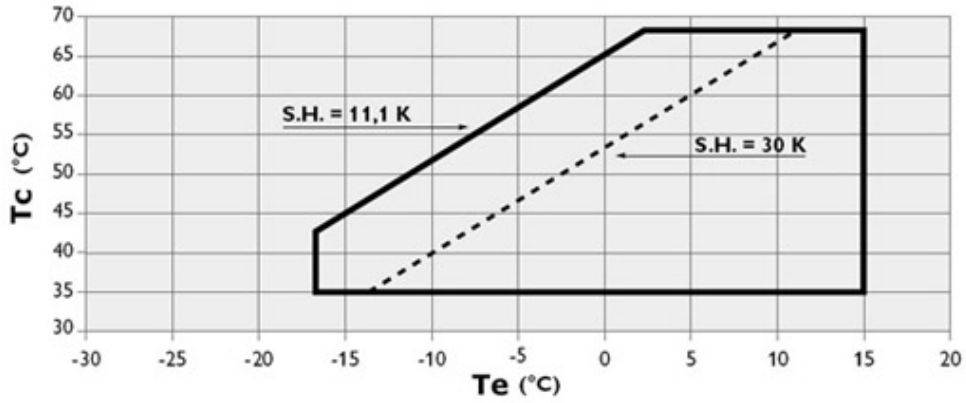
t_c \ t_e	-15	-10	-5	0	5	10	15
35	68.05	89.66	114.58	143.21	175.92	213.13	255.20
40	64.09	85.54	110.13	138.24	170.27	206.61	247.65
45	59.78	81.06	105.30	132.88	164.21	199.68	239.66
50	-	76.22	100.09	127.13	157.74	192.31	231.23
55	-	-	94.49	120.98	150.86	184.52	222.35
60	-	-	-	114.43	143.56	176.29	213.02
65	-	-	-	107.48	135.84	167.63	203.24

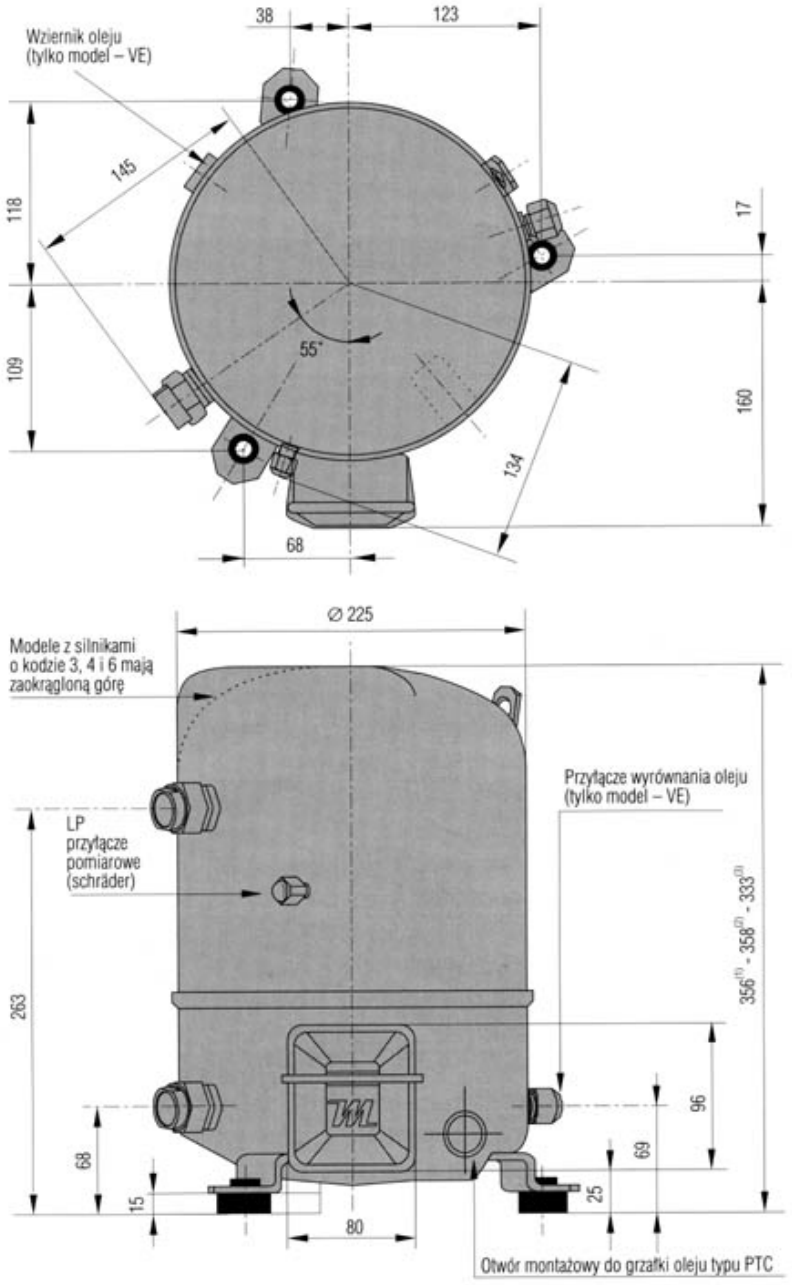
C.O.P. [W/W]

t_c \ t_e	-15	-10	-5	0	5	10	15
35	2.16	2.60	3.12	3.73	4.45	5.28	6.23
40	1.89	2.26	2.69	3.20	3.80	4.49	5.28
45	1.65	1.96	2.32	2.74	3.23	3.79	4.44
50	-	1.70	2.00	2.34	2.74	3.19	3.72
55	-	-	1.72	1.99	2.31	2.68	3.10
60	-	-	-	1.69	1.94	2.24	2.58
65	-	-	-	1.42	1.62	1.86	2.12

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: MTZ32

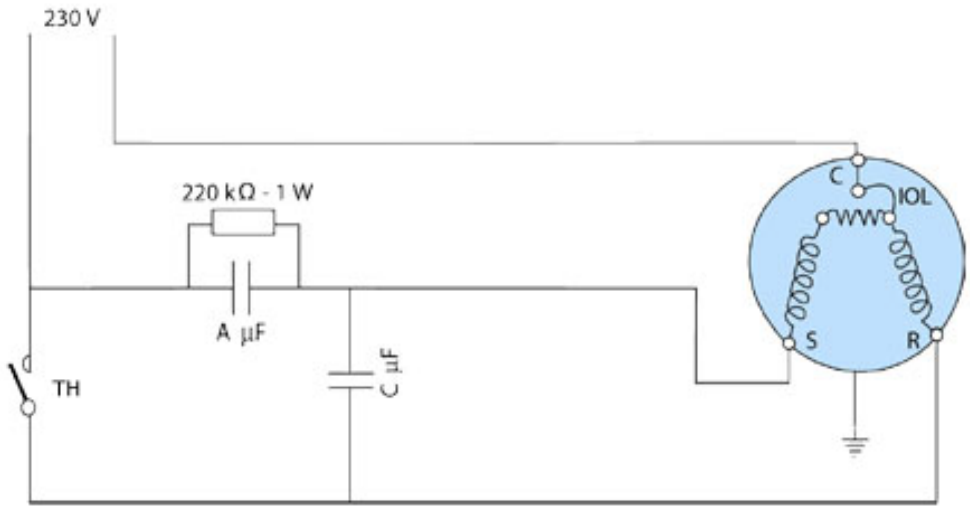
Image

Single phase power supply

Electrical data

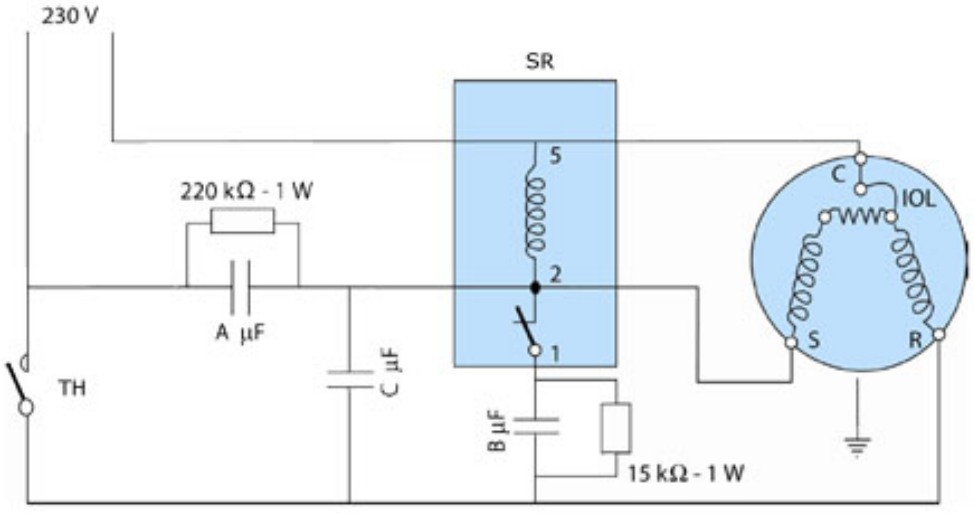
Motor voltage code:	1	5
Starting current [A]:	84	70
Maximum Continuous Current (MCC) [A]:	26,5	20
Winding resistance (between phases) (run/start) [Ω]:	0,64/2,85	0,9/4,3
Main condenser (A) (PSC/CSR) [µF]:		25
Main condenser (C) (PSC/CSR) [µF]:		10
Starting condenser (B) (CSR) [µF]:		135
Starting relay (CSR):		3ARR3J4A4

PSC starting with additional winding



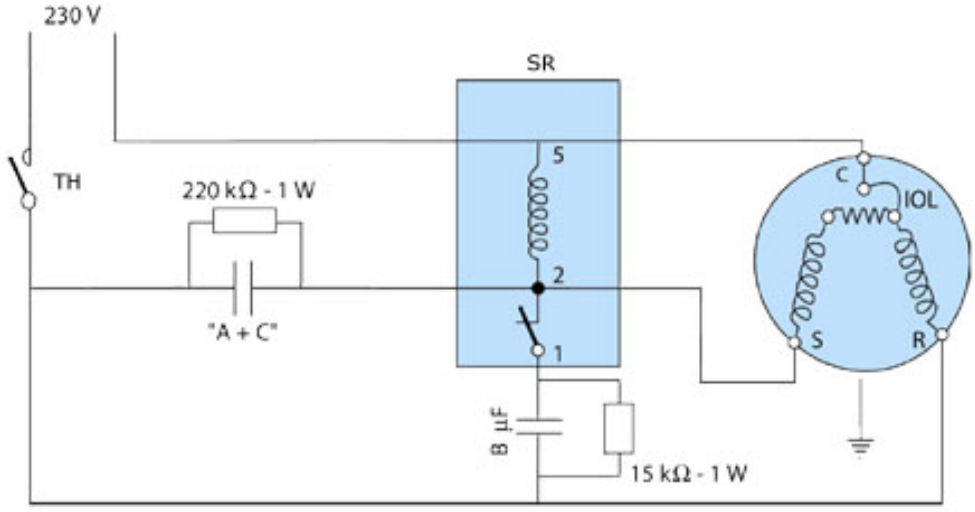
IOL: inner motor protection (klixon)
A, C: main condensers
C: starting condenser / S: common
TH: thermostat
SR: movement transmitter

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



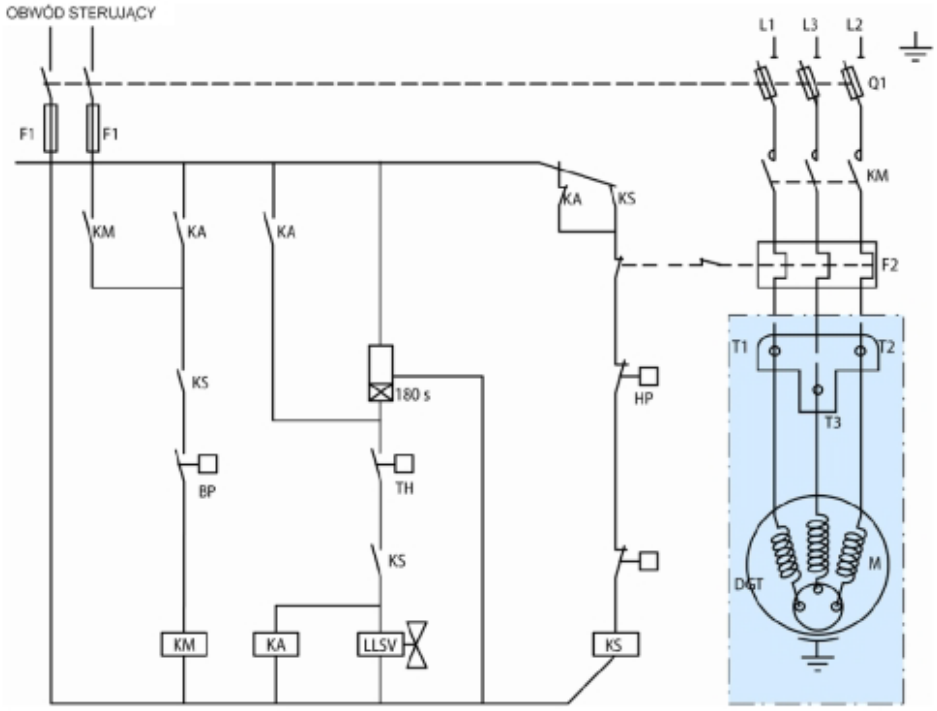
IOL: inner motor protection (klixon)
A, C: main condensers
B: starting condenser
C: common / S: additional starting winding
TH: thermostat
SR: movement transmitter
condensers A and C are replaced by one condenser of capacity A + C

Three-phase power supply

Electrical data

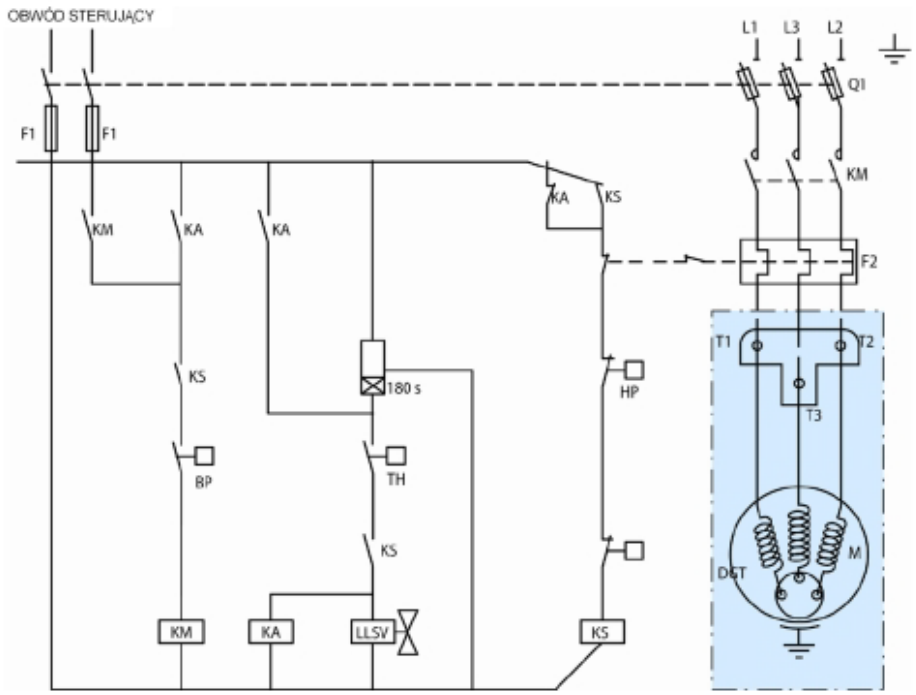
Motor voltage code:	3	4	6	7	9
Starting current [A]:	60	25	60	22	35
Maximum Continuous Current (MCC) [A]:	18	8	60	5,5	9
Winding resistance (between phases) [Ω]:	1,27	6,15	1,27	8,9	4,2

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 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