

R.E.S.L

Richmonds Earl Shilton Limited

Specialist Distributors of Compressors and Refrigeration Spares

Model: MTZ64

Data

Technical data

| | |
|--|-------------------------|
| Cylinder count: | 2 |
| Displacement [m ³ /h]: | 18,74 |
| Cylinder capacity [cm ³]: | 107,7 |
| RPM [min ⁻¹]: | 2900 |
| Weight [kg]: | 37 |
| 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]: | 80 |
| Sound power with acoustic hood [dB]: | 74 |

Connections

| | <u>milimeters</u> | <u>inches</u> |
|--|-------------------|---------------|
| Suction Rotolock valve connection: | | 1 3/4" |
| Discharge Rotolock valve connection: | | 1 1/4" |
| Suction connection with supplied sleeve: | | 7/8" |
| Discharge connection with supplied sleeve: | | 3/4" |

Approvals

| | |
|-----|---|
| CCC | - |
| CE | + |
| UL | + |

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R134a

Model: MTZ64

Capacity

Cooling capacity [W]

| $t_c \setminus t_e$ | -15 | -10 | -5 | 0 | 5 | 10 | 15 | 20 |
|---------------------|-------|-------|-------|-------|--------|--------|--------|--------|
| 35 | 4 202 | 5 736 | 7 610 | 9 869 | 12 559 | 15 723 | 19 407 | 23 654 |
| 40 | 3 746 | 5 210 | 6 999 | 9 156 | 11 726 | 14 754 | 18 284 | 22 362 |
| 45 | 3 320 | 4 704 | 6 396 | 8 439 | 10 879 | 13 760 | 17 126 | 21 023 |
| 50 | 2 930 | 4 224 | 5 808 | 7 727 | 10 025 | 12 748 | 15 939 | 19 645 |
| 55 | 2 584 | 3 775 | 5 241 | 7 024 | 9 170 | 11 724 | 14 730 | 18 232 |
| 60 | - | 3 365 | 4 701 | 6 338 | 8 321 | 10 695 | 13 504 | 16 793 |
| 65 | - | - | - | 5 674 | 7 483 | 9 666 | 12 267 | 15 332 |
| 70 | - | - | - | - | - | 8 644 | 11 027 | 13 857 |
| 75 | - | - | - | - | - | - | 9 790 | 12 373 |

Power input [W]

| $t_c \setminus t_e$ | -15 | -10 | -5 | 0 | 5 | 10 | 15 | 20 |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| 35 | 2 064 | 2 308 | 2 532 | 2 726 | 2 881 | 2 989 | 3 038 | 3 021 |
| 40 | 2 112 | 2 377 | 2 627 | 2 852 | 3 044 | 3 192 | 3 288 | 3 322 |
| 45 | 2 143 | 2 433 | 2 712 | 2 972 | 3 203 | 3 396 | 3 542 | 3 631 |
| 50 | 2 156 | 2 473 | 2 785 | 3 083 | 3 357 | 3 598 | 3 797 | 3 944 |
| 55 | 2 149 | 2 497 | 2 845 | 3 183 | 3 504 | 3 796 | 4 051 | 4 260 |
| 60 | - | 2 501 | 2 888 | 3 271 | 3 641 | 3 988 | 4 303 | 4 576 |
| 65 | - | - | - | 3 344 | 3 766 | 4 171 | 4 549 | 4 891 |
| 70 | - | - | - | - | - | 4 344 | 4 788 | 5 201 |
| 75 | - | - | - | - | - | - | 5 018 | 5 506 |

Current [A]

| $t_c \setminus t_e$ | -15 | -10 | -5 | 0 | 5 | 10 | 15 | 20 |
|---------------------|------|------|------|------|------|------|------|------|
| 35 | 5.30 | 5.54 | 5.76 | 5.95 | 6.11 | 6.23 | 6.30 | 6.31 |
| 40 | 5.36 | 5.62 | 5.87 | 6.10 | 6.30 | 6.47 | 6.60 | 6.68 |
| 45 | 5.38 | 5.67 | 5.96 | 6.23 | 6.49 | 6.71 | 6.90 | 7.05 |
| 50 | 5.38 | 5.71 | 6.03 | 6.35 | 6.66 | 6.95 | 7.20 | 7.42 |
| 55 | 5.35 | 5.72 | 6.09 | 6.46 | 6.82 | 7.17 | 7.50 | 7.79 |
| 60 | - | 5.70 | 6.12 | 6.54 | 6.97 | 7.38 | 7.78 | 8.16 |
| 65 | - | - | - | 6.61 | 7.10 | 7.59 | 8.06 | 8.52 |
| 70 | - | - | - | - | - | 7.78 | 8.34 | 8.88 |
| 75 | - | - | - | - | - | - | 8.60 | 9.24 |

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Mass flow [kg/s]

Capacity

| $t_c \setminus t_e$ | -15 | -10 | -5 | 0 | 5 | 10 | 15 | 20 |
|---------------------|-------|--------|--------|--------|--------|--------|--------|--------|
| 35 | 93.72 | 125.33 | 162.91 | 207.14 | 258.70 | 318.30 | 386.60 | 464.31 |
| 40 | 87.25 | 118.89 | 156.43 | 200.57 | 251.99 | 311.39 | 379.45 | 456.86 |
| 45 | 81.07 | 112.45 | 149.69 | 193.48 | 244.50 | 303.43 | 370.98 | 447.83 |
| 50 | 75.34 | 106.21 | 142.89 | 186.05 | 236.40 | 294.61 | 361.38 | 437.40 |
| 55 | 70.26 | 100.36 | 136.20 | 178.48 | 227.88 | 285.11 | 350.83 | 425.75 |
| 60 | - | 95.06 | 129.80 | 170.93 | 219.13 | 275.10 | 339.51 | 413.07 |
| 65 | - | - | - | 163.59 | 210.32 | 264.77 | 327.61 | 399.53 |
| 70 | - | - | - | - | - | 254.30 | 315.30 | 385.33 |
| 75 | - | - | - | - | - | - | 302.76 | 370.64 |

C.O.P. [W/W]

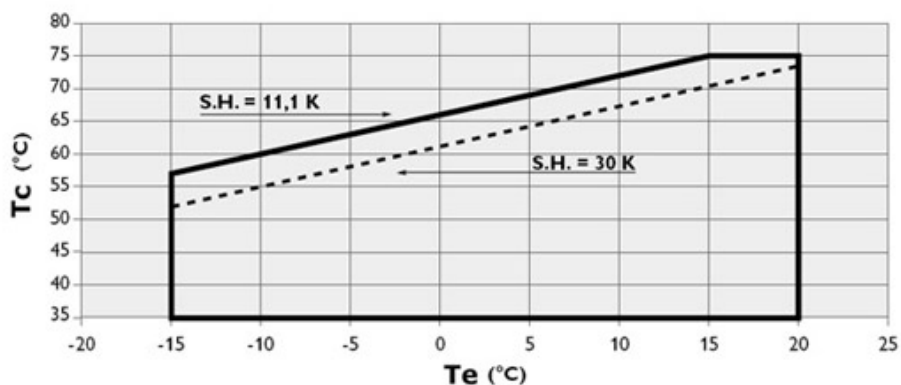
| $t_c \setminus t_e$ | -15 | -10 | -5 | 0 | 5 | 10 | 15 | 20 |
|---------------------|------|------|------|------|------|------|------|------|
| 35 | 2.04 | 2.49 | 3.01 | 3.62 | 4.36 | 5.26 | 6.39 | 7.83 |
| 40 | 1.77 | 2.19 | 2.66 | 3.21 | 3.85 | 4.62 | 5.56 | 6.73 |
| 45 | 1.55 | 1.93 | 2.36 | 2.84 | 3.40 | 4.05 | 4.84 | 5.79 |
| 50 | 1.36 | 1.71 | 2.09 | 2.51 | 2.99 | 3.54 | 4.20 | 4.98 |
| 55 | 1.20 | 1.51 | 1.84 | 2.21 | 2.62 | 3.09 | 3.64 | 4.28 |
| 60 | - | 1.35 | 1.63 | 1.94 | 2.29 | 2.68 | 3.14 | 3.67 |
| 65 | - | - | - | 1.70 | 1.99 | 2.32 | 2.70 | 3.14 |
| 70 | - | - | - | - | - | 1.99 | 2.30 | 2.66 |
| 75 | - | - | - | - | - | - | 1.95 | 2.25 |

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

t_c - Condensing temperature [°C]

t_e - Evaporating temperature [°C]

Application range



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Model: MTZ64

Capacity

R404A/R507

Cooling capacity [W]

| $t_c \setminus t_e$ | -30 | -25 | -20 | -15 | -10 | -5 | 0 | 5 | 10 |
|---------------------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| 30 | 4 239 | 5 730 | 7 568 | 9 797 | 12 457 | 15 590 | 19 239 | 23 444 | 28 249 |
| 35 | 3 534 | 4 979 | 6 741 | 8 862 | 11 385 | 14 350 | 17 800 | 21 777 | 26 322 |
| 40 | 2 925 | 4 303 | 5 967 | 7 960 | 10 324 | 13 100 | 16 331 | 20 057 | 24 322 |
| 45 | 2 407 | 3 696 | 5 242 | 7 085 | 9 269 | 11 835 | 14 825 | 18 280 | 22 243 |
| 50 | 1 974 | 3 154 | 4 560 | 6 233 | 8 216 | 10 551 | 13 278 | 16 441 | 20 081 |
| 55 | - | 2 672 | 3 917 | 5 398 | 7 159 | 9 241 | 11 686 | 14 535 | 17 832 |
| 60 | - | 2 245 | 3 308 | 4 577 | 6 094 | 7 903 | 10 043 | 12 558 | 15 489 |

Power input [W]

| $t_c \setminus t_e$ | -30 | -25 | -20 | -15 | -10 | -5 | 0 | 5 | 10 |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 30 | 2 509 | 2 904 | 3 287 | 3 646 | 3 966 | 4 237 | 4 443 | 4 574 | 4 615 |
| 35 | 2 629 | 3 035 | 3 435 | 3 818 | 4 171 | 4 480 | 4 733 | 4 917 | 5 019 |
| 40 | 2 715 | 3 136 | 3 560 | 3 973 | 4 362 | 4 716 | 5 020 | 5 262 | 5 429 |
| 45 | 2 765 | 3 207 | 3 658 | 4 106 | 4 538 | 4 940 | 5 300 | 5 606 | 5 843 |
| 50 | 2 777 | 3 244 | 3 728 | 4 216 | 4 695 | 5 151 | 5 573 | 5 947 | 6 260 |
| 55 | - | 3 246 | 3 768 | 4 300 | 4 831 | 5 347 | 5 835 | 6 282 | 6 675 |
| 60 | - | 3 211 | 3 775 | 4 357 | 4 945 | 5 524 | 6 084 | 6 609 | 7 088 |

Current [A]

| $t_c \setminus t_e$ | -30 | -25 | -20 | -15 | -10 | -5 | 0 | 5 | 10 |
|---------------------|------|------|------|------|------|------|-------|-------|-------|
| 30 | 5.83 | 6.30 | 6.75 | 7.18 | 7.57 | 7.90 | 8.17 | 8.36 | 8.45 |
| 35 | 5.97 | 6.45 | 6.93 | 7.40 | 7.83 | 8.22 | 8.55 | 8.81 | 8.98 |
| 40 | 6.06 | 6.57 | 7.08 | 7.59 | 8.07 | 8.52 | 8.92 | 9.27 | 9.53 |
| 45 | 6.12 | 6.65 | 7.20 | 7.75 | 8.30 | 8.82 | 9.29 | 9.72 | 10.08 |
| 50 | 6.13 | 6.70 | 7.29 | 7.90 | 8.51 | 9.10 | 9.66 | 10.19 | 10.65 |
| 55 | - | 6.71 | 7.36 | 8.03 | 8.71 | 9.38 | 10.03 | 10.66 | 11.23 |
| 60 | - | 6.69 | 7.40 | 8.14 | 8.90 | 9.66 | 10.41 | 11.14 | 11.83 |

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Model: MTZ64

Capacity

Mass flow [kg/s]

| $t_c \setminus t_e$ | -30 | -25 | -20 | -15 | -10 | -5 | 0 | 5 | 10 |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 30 | 117.64 | 157.63 | 204.23 | 258.23 | 320.42 | 391.58 | 472.50 | 563.95 | 666.72 |
| 35 | 104.87 | 145.87 | 193.34 | 248.06 | 310.81 | 382.37 | 463.53 | 555.07 | 657.78 |
| 40 | 94.09 | 135.54 | 183.29 | 238.14 | 300.86 | 372.23 | 453.06 | 544.11 | 646.17 |
| 45 | 85.23 | 126.53 | 173.98 | 228.37 | 290.47 | 361.09 | 440.99 | 530.96 | 631.78 |
| 50 | 78.18 | 118.74 | 165.31 | 218.65 | 279.56 | 348.82 | 427.22 | 515.52 | 614.53 |
| 55 | - | 112.09 | 157.19 | 208.91 | 268.03 | 335.35 | 411.65 | 497.71 | 594.32 |
| 60 | - | 106.48 | 149.51 | 199.02 | 255.78 | 320.58 | 394.20 | 477.43 | 571.05 |

C.O.P. [W/W]

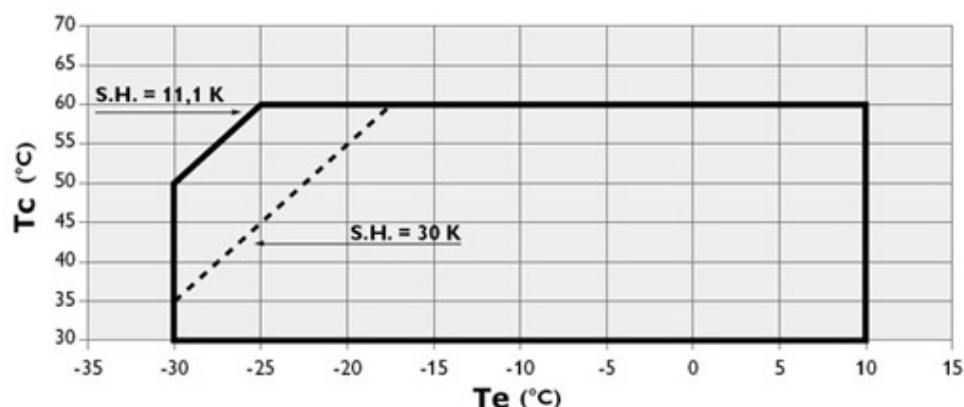
| $t_c \setminus t_e$ | -30 | -25 | -20 | -15 | -10 | -5 | 0 | 5 | 10 |
|---------------------|------|------|------|------|------|------|------|------|------|
| 30 | 1.69 | 1.97 | 2.30 | 2.69 | 3.14 | 3.68 | 4.33 | 5.13 | 6.12 |
| 35 | 1.34 | 1.64 | 1.96 | 2.32 | 2.73 | 3.20 | 3.76 | 4.43 | 5.24 |
| 40 | 1.08 | 1.37 | 1.68 | 2.00 | 2.37 | 2.78 | 3.25 | 3.81 | 4.48 |
| 45 | 0.87 | 1.15 | 1.43 | 1.73 | 2.04 | 2.40 | 2.80 | 3.26 | 3.81 |
| 50 | 0.71 | 0.97 | 1.22 | 1.48 | 1.75 | 2.05 | 2.38 | 2.76 | 3.21 |
| 55 | - | 0.82 | 1.04 | 1.26 | 1.48 | 1.73 | 2.00 | 2.31 | 2.67 |
| 60 | - | 0.70 | 0.88 | 1.05 | 1.23 | 1.43 | 1.65 | 1.90 | 2.19 |

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

t_c - Condensing temperature [°C]

t_e - Evaporating temperature [°C]

Application range



R.E.S.L

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Specialist Distributors of Compressors and Refrigeration Spares

R407C

Model: MTZ64

Capacity

Cooling capacity [W]

| $t_c \setminus t_e$ | -15 | -10 | -5 | 0 | 5 | 10 | 15 |
|---------------------|-------|-------|--------|--------|--------|--------|--------|
| 35 | 6 342 | 8 618 | 11 346 | 14 575 | 18 354 | 22 731 | 27 756 |
| 40 | 5 666 | 7 830 | 10 418 | 13 480 | 17 064 | 21 218 | 25 992 |
| 45 | 5 023 | 7 056 | 9 486 | 12 361 | 15 730 | 19 642 | 24 145 |
| 50 | - | 6 310 | 8 561 | 11 230 | 14 366 | 18 016 | 22 230 |
| 55 | - | - | 7 660 | 10 104 | 12 987 | 16 356 | 20 261 |
| 60 | - | - | - | 8 995 | 11 606 | 14 676 | 18 253 |
| 65 | - | - | - | 7 919 | 10 238 | 12 989 | 16 219 |

Power input [W]

| $t_c \setminus t_e$ | -15 | -10 | -5 | 0 | 5 | 10 | 15 |
|---------------------|-------|-------|-------|-------|-------|-------|-------|
| 35 | 2 797 | 3 189 | 3 558 | 3 893 | 4 182 | 4 414 | 4 578 |
| 40 | 2 859 | 3 279 | 3 682 | 4 057 | 4 394 | 4 681 | 4 906 |
| 45 | 2 911 | 3 362 | 3 804 | 4 225 | 4 614 | 4 960 | 5 251 |
| 50 | - | 3 438 | 3 923 | 4 394 | 4 840 | 5 250 | 5 611 |
| 55 | - | - | 4 039 | 4 565 | 5 073 | 5 551 | 5 988 |
| 60 | - | - | - | 4 737 | 5 311 | 5 862 | 6 379 |
| 65 | - | - | - | 4 908 | 5 553 | 6 182 | 6 783 |

Current [A]

| $t_c \setminus t_e$ | -15 | -10 | -5 | 0 | 5 | 10 | 15 |
|---------------------|------|------|------|------|------|-------|-------|
| 35 | 6.27 | 6.72 | 7.15 | 7.55 | 7.92 | 8.24 | 8.50 |
| 40 | 6.34 | 6.82 | 7.30 | 7.77 | 8.20 | 8.60 | 8.95 |
| 45 | 6.39 | 6.92 | 7.46 | 7.98 | 8.49 | 8.97 | 9.41 |
| 50 | - | 7.01 | 7.61 | 8.20 | 8.79 | 9.36 | 9.90 |
| 55 | - | - | 7.75 | 8.43 | 9.10 | 9.77 | 10.41 |
| 60 | - | - | - | 8.66 | 9.42 | 10.19 | 10.95 |
| 65 | - | - | - | 8.89 | 9.76 | 10.64 | 11.52 |

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Mass flow [kg/s]

Capacity

| $t_c \setminus t_e$ | -15 | -10 | -5 | 0 | 5 | 10 | 15 |
|---------------------|--------|--------|--------|--------|--------|--------|--------|
| 35 | 126.21 | 168.26 | 217.47 | 274.58 | 340.36 | 415.54 | 500.88 |
| 40 | 117.64 | 159.68 | 208.73 | 265.54 | 330.85 | 405.42 | 489.99 |
| 45 | 109.55 | 151.11 | 199.53 | 255.56 | 319.93 | 393.42 | 476.75 |
| 50 | - | 142.77 | 190.09 | 244.86 | 307.83 | 379.75 | 461.37 |
| 55 | - | - | 180.62 | 233.66 | 294.75 | 364.64 | 444.08 |
| 60 | - | - | - | 222.19 | 280.93 | 348.31 | 425.10 |
| 65 | - | - | - | 210.65 | 266.57 | 330.98 | 404.64 |

C.O.P. [W/W]

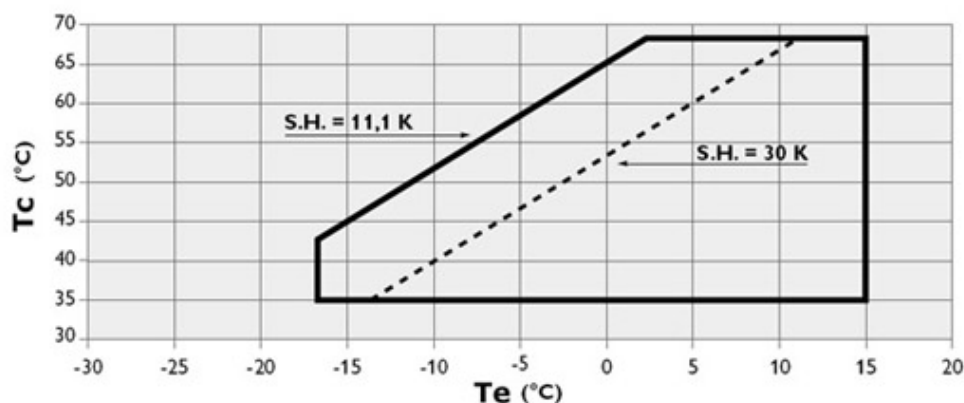
| $t_c \setminus t_e$ | -15 | -10 | -5 | 0 | 5 | 10 | 15 |
|---------------------|------|------|------|------|------|------|------|
| 35 | 2.27 | 2.70 | 3.19 | 3.74 | 4.39 | 5.15 | 6.06 |
| 40 | 1.98 | 2.39 | 2.83 | 3.32 | 3.88 | 4.53 | 5.30 |
| 45 | 1.73 | 2.10 | 2.49 | 2.93 | 3.41 | 3.96 | 4.60 |
| 50 | - | 1.84 | 2.18 | 2.56 | 2.97 | 3.43 | 3.96 |
| 55 | - | - | 1.90 | 2.21 | 2.56 | 2.95 | 3.38 |
| 60 | - | - | - | 1.90 | 2.19 | 2.50 | 2.86 |
| 65 | - | - | - | 1.61 | 1.84 | 2.10 | 2.39 |

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

t_c - Condensing temperature [°C]

t_e - Evaporating temperature [°C]

Application range



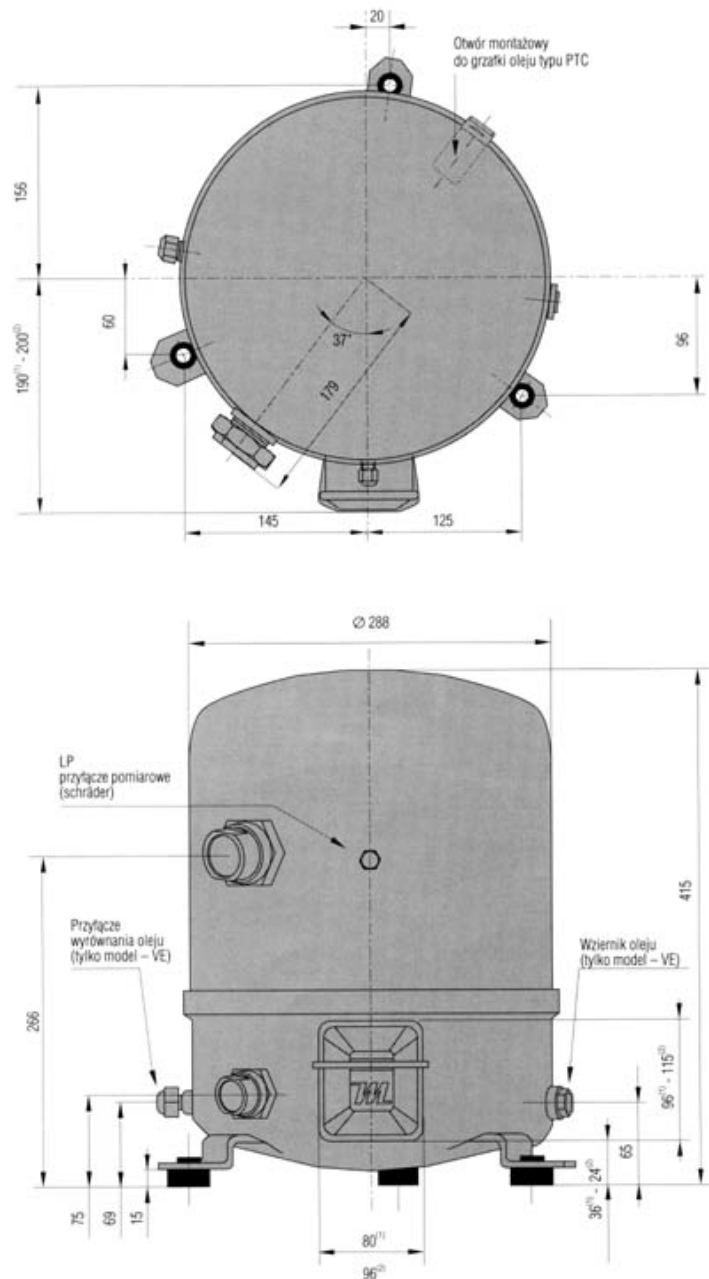
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Model: MTZ64

Dimensions



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Model: MTZ64

Image



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Specialist Distributors of Compressors and Refrigeration Spares

Model: MTZ64

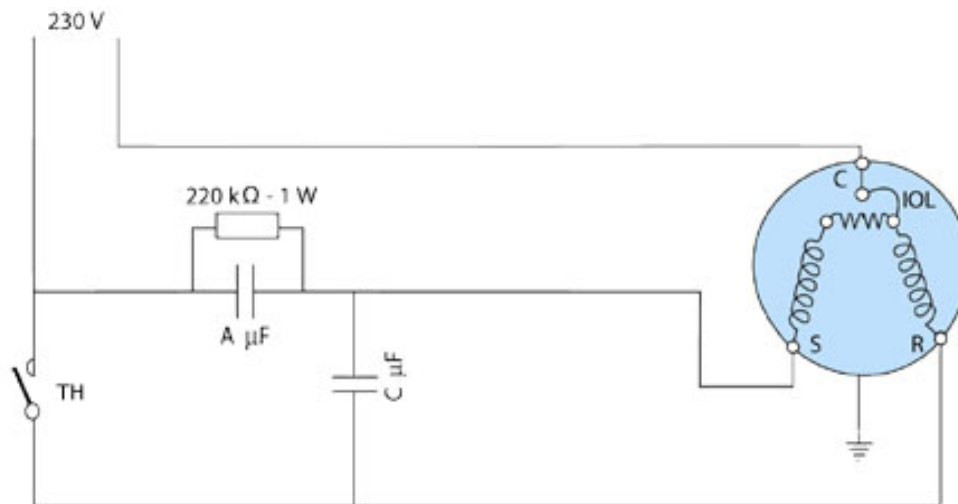
Electrical

Single phase power supply

Electrical data

| | | |
|--|----------|---|
| Motor voltage code: | 1 | 5 |
| Starting current [A]: | 143 | |
| Maximum Continuous Current (MCC) [A]: | 46 | |
| Winding resistance (between phases) (run/start) [Ω]: | 0,32/2,1 | / |

PSC starting with additional winding



IOL: inner motor protection (klixon)

A, C: main condensers

C: starting condenser / S: common

TH: thermostat

SR: movement transmitter

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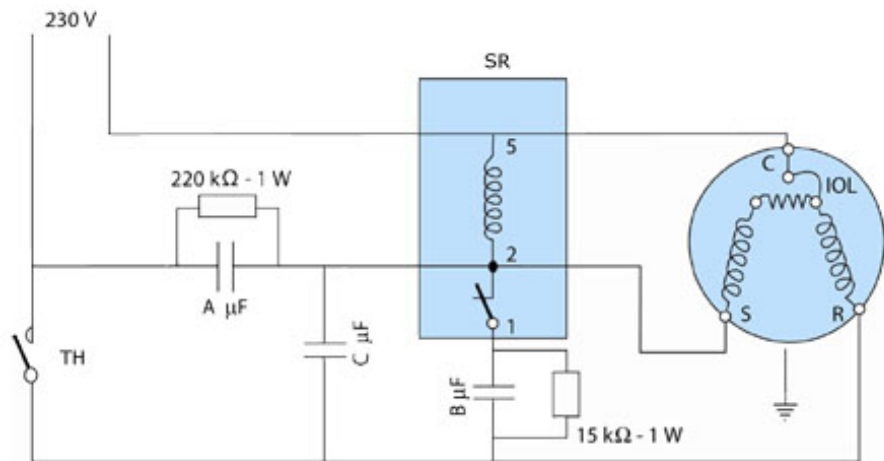
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Specialist Distributors of Compressors and Refrigeration Spares

Model: MTZ64

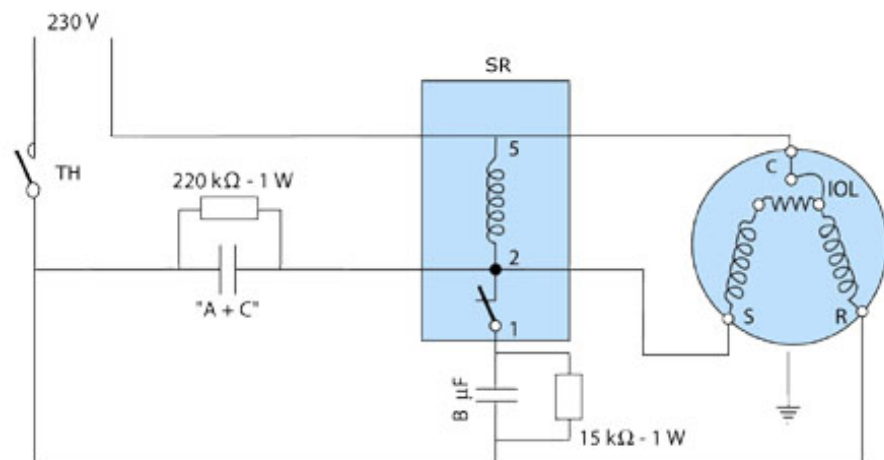
Electrical

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

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Specialist Distributors of Compressors and Refrigeration Spares

Model: MTZ64

Electrical

Three-phase power supply

Electrical data

| | | | | | |
|---|------|------|------|---|------|
| Motor voltage code: | 3 | 4 | 6 | 7 | 9 |
| Starting current [A]: | 137 | 67 | 124 | | 72 |
| Maximum Continuous Current (MCC) [A]: | 29 | 15 | 124 | | 17,5 |
| Winding resistance (between phases) [Ω]: | 0,57 | 2,41 | 0,76 | | 1,64 |

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

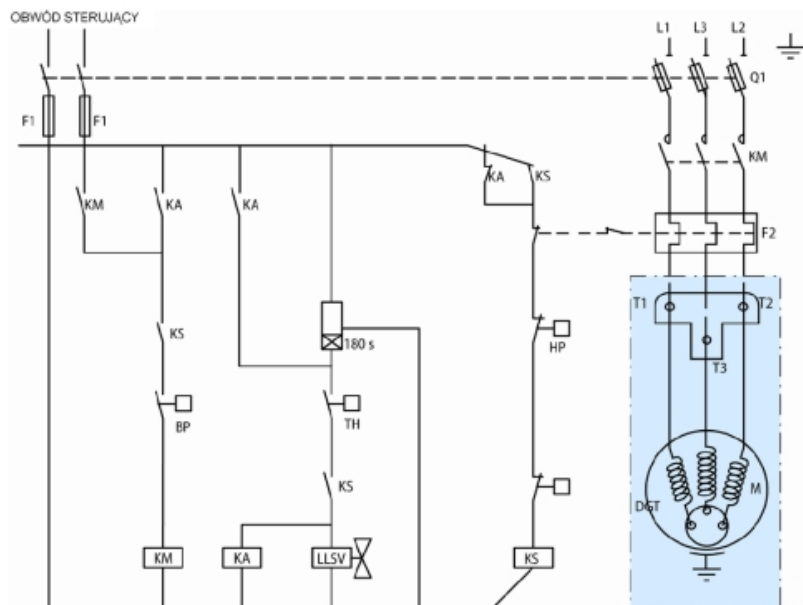
F1: Fuses

F2: External overload protection

M: Compressor's engine

thM: Motor safety thermostat

DGT: Discharge gas thermostat



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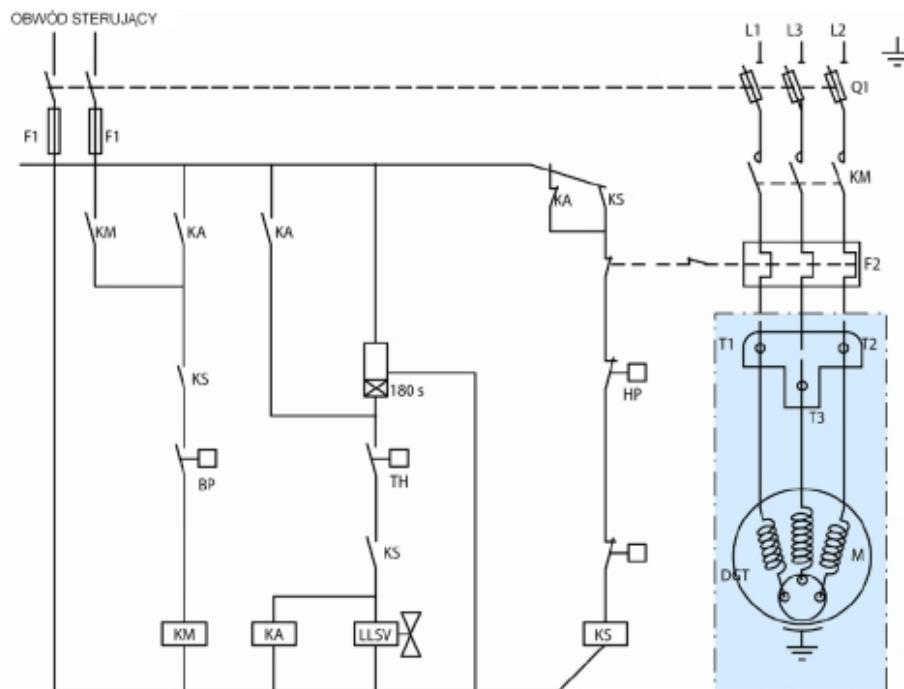
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Specialist Distributors of Compressors and Refrigeration Spares

Model: MTZ64

Electrical

Connection diagram for systems with refrigerant suction



- TH: Termostat
- 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

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Equipment

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 7/8"
 - discharge: Rotolock valve connection 1 1/4", connection with supplied sleeve 3/4"
- ▶ soft-start kit - electronic softstart MCI 15C
- ▶ acoustic hood - acoustic shield of Danfoss catalogue number 7755002