

Technical Data Sheet

Compressor model **MS30FB_V**
 Voltage **220-240V 50Hz ~1**
 Refrigerant **R404A**

APPLICATION

Application Low Back Pressure
 Refrigerant R404A
 Evaporating Temp. -40,0 °C to -10,0 °C
 Expansion Capillar/Valve
 Comp. Cooling Fan cooled
 Max. ambient temp. 43,0 °C

COMPRESSOR

Displacement 29,95 cm³
 Diameter 39,98 mm
 Stroke 23,85 mm
 Net Weight 22,70 Kg
 Oil type ISO VG 46 ESTER
 Oil charge 887 cm³

MOTOR

Nominal Power 7/8 hp
 Voltage/Frequency 220-240V 50Hz
 Voltage range 187-264 V
 Type CSR
 Phase number 1 PH
 Locked Rotor Amps (LRA) 30,00 A
 Max. Cont. Current (MCC) 9,50 A
 Main W. resist. at 25°C 1,99 Ω
 Start W. resist. at 25°C 3,72 Ω

NOMINAL PERFORMANCE

| | ASHRAE | CECOMAF |
|------------------|--------------|--------------|
| Cooling Capacity | 1.201 kCal/h | 932 W |
| COP | 1,35 W/W | 0,95 W/W |
| EER | 1,16 kCal/Wh | 0,82 kCal/Wh |
| Input Power | 1.036 W | 980 W |
| Current | 5,10 A | 4,86 A |

APPROVALS



TEST CYCLE CONDITIONS

| | ASHRAE LBP (B) | CECOMAF LBP (A) |
|---------------------------------------|-------------------|--------------------|
| Evaporating temp. (T _e) | -23,3 °C | -25,0 °C |
| Condensing temp. (T _c) | 55,0 °C | 55,0 °C |
| Liquid temp. (T _{liq.}) | 32,0 °C | 55,0 °C |
| Ambient temp. (T _{amb.}) | 32,0 °C | 32,0 °C |
| Suction temp. (T _{suction}) | 32,0 °C | 32,0 °C |
| Voltage/Frequency | 220 V 50 Hz | 220 V 50 Hz |

ELECTRICAL COMPONENTS

| | | | |
|-------------------------|-------------------|------------------|--|
| Starting capacitor | 88-108 μF 330 V | | |
| Run capacitor | 20 μF 420 V | | |
| Relay | Option 1 | Option 2 | |
| Reference | 3ARR3 3AP3 | RVA 2E.. | |
| Pick-Up | 162-175 V | 162-175 V | |
| Drop-Out | 40-90 V | 40-90 V | |
| Protector | Option 1 | Option 2 | |
| Reference | MRA38088 | T0452 | |
| Current | 22,00 A | 21,00 A | |
| Time check | 7,5-14 seg | 7,5-14 seg | |
| Disc temp. (Open/Close) | 105,00 / 57,00 °C | 95,00 / 57,00 °C | |

ASHRAE

| Tc °C | Te °C | Cooling Capacity kCal/h | Consumption W | Current A | COP W/W | EER kCal/Wh |
|----------|----------|-------------------------------|------------------|--------------|------------|----------------|
| 40 | -40 | 450 | 575 | 3,20 | 0,91 | 0,78 |
| 40 | -35 | 729 | 700 | 3,70 | 1,21 | 1,04 |
| 40 | -30 | 1.049 | 827 | 4,22 | 1,48 | 1,27 |
| 40 | -25 | 1.412 | 957 | 4,77 | 1,71 | 1,47 |
| 40 | -23,3 | 1.545 | 1.002 | 4,96 | 1,79 | 1,54 |
| 40 | -20 | 1.816 | 1.091 | 5,34 | 1,94 | 1,67 |
| 40 | -15 | 2.263 | 1.227 | 5,93 | 2,14 | 1,84 |
| 40 | -10 | 2.751 | 1.366 | 6,55 | 2,34 | 2,01 |

| | | | | | | |
|----|-------|-------|-------|------|------|------|
| 45 | -40 | 380 | 550 | 3,10 | 0,80 | 0,69 |
| 45 | -35 | 645 | 685 | 3,64 | 1,10 | 0,94 |
| 45 | -30 | 953 | 824 | 4,21 | 1,34 | 1,16 |
| 45 | -25 | 1.302 | 965 | 4,80 | 1,57 | 1,35 |
| 45 | -23,3 | 1.430 | 1.014 | 5,00 | 1,64 | 1,41 |
| 45 | -20 | 1.693 | 1.109 | 5,42 | 1,78 | 1,53 |
| 45 | -15 | 2.126 | 1.256 | 6,06 | 1,97 | 1,69 |
| 45 | -10 | 2.601 | 1.406 | 6,73 | 2,15 | 1,85 |

| | | | | | | |
|----|-------|-------|-------|------|------|------|
| 50 | -40 | 310 | 525 | 3,00 | 0,69 | 0,59 |
| 50 | -35 | 562 | 671 | 3,58 | 0,97 | 0,84 |
| 50 | -30 | 856 | 820 | 4,19 | 1,21 | 1,04 |
| 50 | -25 | 1.192 | 972 | 4,83 | 1,43 | 1,23 |
| 50 | -23,3 | 1.316 | 1.025 | 5,05 | 1,49 | 1,28 |
| 50 | -20 | 1.570 | 1.127 | 5,49 | 1,62 | 1,39 |
| 50 | -15 | 1.989 | 1.285 | 6,19 | 1,80 | 1,55 |
| 50 | -10 | 2.451 | 1.446 | 6,92 | 1,97 | 1,70 |

| | | | | | | |
|----|-------|-------|-------|------|------|------|
| 55 | -40 | 240 | 500 | 2,90 | 0,56 | 0,48 |
| 55 | -35 | 479 | 657 | 3,52 | 0,85 | 0,73 |
| 55 | -30 | 759 | 817 | 4,18 | 1,08 | 0,93 |
| 55 | -25 | 1.082 | 980 | 4,86 | 1,28 | 1,10 |
| 55 | -23,3 | 1.201 | 1.036 | 5,10 | 1,35 | 1,16 |
| 55 | -20 | 1.446 | 1.146 | 5,57 | 1,47 | 1,26 |
| 55 | -15 | 1.853 | 1.314 | 6,32 | 1,64 | 1,41 |
| 55 | -10 | 2.301 | 1.486 | 7,10 | 1,80 | 1,55 |

| | | | | | | |
|----|-------|-------|-------|------|------|------|
| 60 | -40 | 170 | 475 | 2,80 | 0,42 | 0,36 |
| 60 | -35 | 395 | 643 | 3,47 | 0,72 | 0,61 |
| 60 | -30 | 663 | 814 | 4,16 | 0,95 | 0,81 |
| 60 | -25 | 972 | 987 | 4,89 | 1,14 | 0,98 |
| 60 | -23,3 | 1.086 | 1.047 | 5,15 | 1,21 | 1,04 |
| 60 | -20 | 1.323 | 1.164 | 5,66 | 1,32 | 1,14 |
| 60 | -15 | 1.716 | 1.344 | 6,45 | 1,49 | 1,28 |
| 60 | -10 | 2.151 | 1.526 | 7,28 | 1,64 | 1,41 |

CECOMAF

| Tc °C | Te °C | Cooling Capacity W | Consumption W | Current A | COP W/W | EER kCal/Wh |
|----------|----------|--------------------------|------------------|--------------|------------|----------------|
| 40 | -40 | 467 | 575 | 3,20 | 0,81 | 0,70 |
| 40 | -35 | 786 | 700 | 3,70 | 1,12 | 0,97 |
| 40 | -30 | 1.140 | 827 | 4,22 | 1,38 | 1,19 |
| 40 | -25 | 1.529 | 957 | 4,77 | 1,60 | 1,38 |
| 40 | -23,3 | 1.669 | 1.002 | 4,96 | 1,67 | 1,44 |
| 40 | -20 | 1.953 | 1.091 | 5,34 | 1,79 | 1,55 |
| 40 | -15 | 2.411 | 1.227 | 5,93 | 1,97 | 1,70 |
| 40 | -10 | 2.904 | 1.366 | 6,55 | 2,13 | 1,84 |

| | | | | | | |
|----|-------|-------|-------|------|------|------|
| 45 | -40 | 381 | 550 | 3,10 | 0,69 | 0,60 |
| 45 | -35 | 662 | 685 | 3,64 | 0,97 | 0,83 |
| 45 | -30 | 979 | 824 | 4,21 | 1,19 | 1,03 |
| 45 | -25 | 1.330 | 965 | 4,80 | 1,38 | 1,19 |
| 45 | -23,3 | 1.457 | 1.014 | 5,00 | 1,44 | 1,24 |
| 45 | -20 | 1.716 | 1.109 | 5,42 | 1,55 | 1,34 |
| 45 | -15 | 2.137 | 1.256 | 6,06 | 1,70 | 1,47 |
| 45 | -10 | 2.592 | 1.406 | 6,73 | 1,84 | 1,59 |

| | | | | | | |
|----|-------|-------|-------|------|------|------|
| 50 | -40 | 294 | 525 | 3,00 | 0,56 | 0,48 |
| 50 | -35 | 538 | 671 | 3,58 | 0,80 | 0,69 |
| 50 | -30 | 817 | 820 | 4,19 | 1,00 | 0,86 |
| 50 | -25 | 1.131 | 972 | 4,83 | 1,16 | 1,00 |
| 50 | -23,3 | 1.246 | 1.025 | 5,05 | 1,22 | 1,05 |
| 50 | -20 | 1.479 | 1.127 | 5,49 | 1,31 | 1,13 |
| 50 | -15 | 1.863 | 1.285 | 6,19 | 1,45 | 1,25 |
| 50 | -10 | 2.281 | 1.446 | 6,92 | 1,58 | 1,36 |

| | | | | | | |
|----|-------|-------|-------|------|------|------|
| 55 | -40 | 207 | 500 | 2,90 | 0,41 | 0,36 |
| 55 | -35 | 414 | 657 | 3,52 | 0,63 | 0,54 |
| 55 | -30 | 656 | 817 | 4,18 | 0,80 | 0,69 |
| 55 | -25 | 932 | 980 | 4,86 | 0,95 | 0,82 |
| 55 | -23,3 | 1.034 | 1.036 | 5,10 | 1,00 | 0,86 |
| 55 | -20 | 1.243 | 1.146 | 5,57 | 1,08 | 0,94 |
| 55 | -15 | 1.589 | 1.314 | 6,32 | 1,21 | 1,04 |
| 55 | -10 | 1.969 | 1.486 | 7,10 | 1,33 | 1,14 |

| | | | | | | |
|----|-------|-------|-------|------|------|------|
| 60 | -40 | 121 | 475 | 2,80 | 0,25 | 0,22 |
| 60 | -35 | 290 | 643 | 3,47 | 0,45 | 0,39 |
| 60 | -30 | 494 | 814 | 4,16 | 0,61 | 0,52 |
| 60 | -25 | 733 | 987 | 4,89 | 0,74 | 0,64 |
| 60 | -23,3 | 822 | 1.047 | 5,15 | 0,78 | 0,68 |
| 60 | -20 | 1.006 | 1.164 | 5,66 | 0,86 | 0,75 |
| 60 | -15 | 1.314 | 1.344 | 6,45 | 0,98 | 0,85 |
| 60 | -10 | 1.657 | 1.526 | 7,28 | 1,09 | 0,94 |

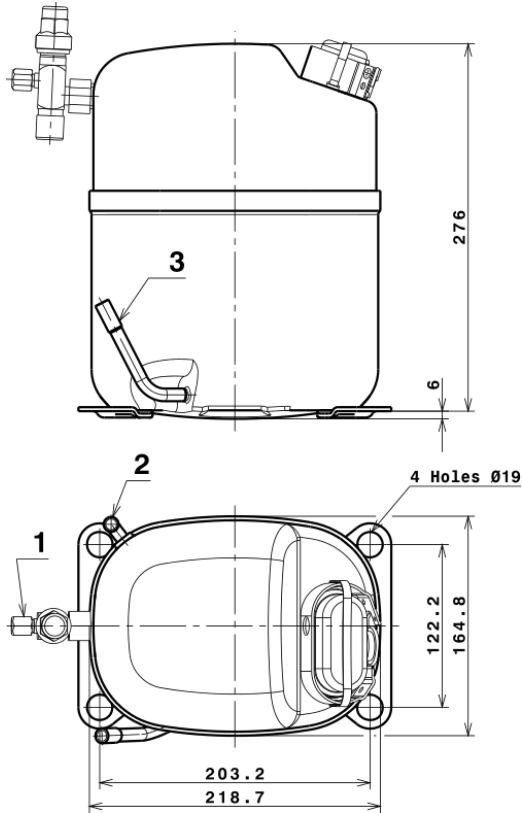
EN12900

| X | Cooling Capacity (W) | Consumption (W) | Current (A) | Mass Flow (kg/h) |
|---|----------------------|------------------|--------------|--------------------|
| 1 | 6.994,4292340913 | 1.195,1716499514 | 5,8656377442 | 154,17083128897 |
| 2 | 172,9843487772 | 12,7871794305 | 0,0728076864 | 4,229978796413 |
| 3 | -78,2766610639 | 12,6565782779 | 0,0570909980 | -1,0415926292118 |
| 4 | 0,6579958620 | 0,0677967672 | 0,0006868615 | 0,026962381316591 |
| 5 | -1,5338337599 | 0,4441820860 | 0,0019313085 | -0,016285908959284 |

| | |
|----------|---|
| Equation | $x_1 + x_2Te + x_3Tc + x_4Te^2 + x_5TeTc$ |
|----------|---|

Technical Data Sheet

COMPRESSOR DIMENSIONS

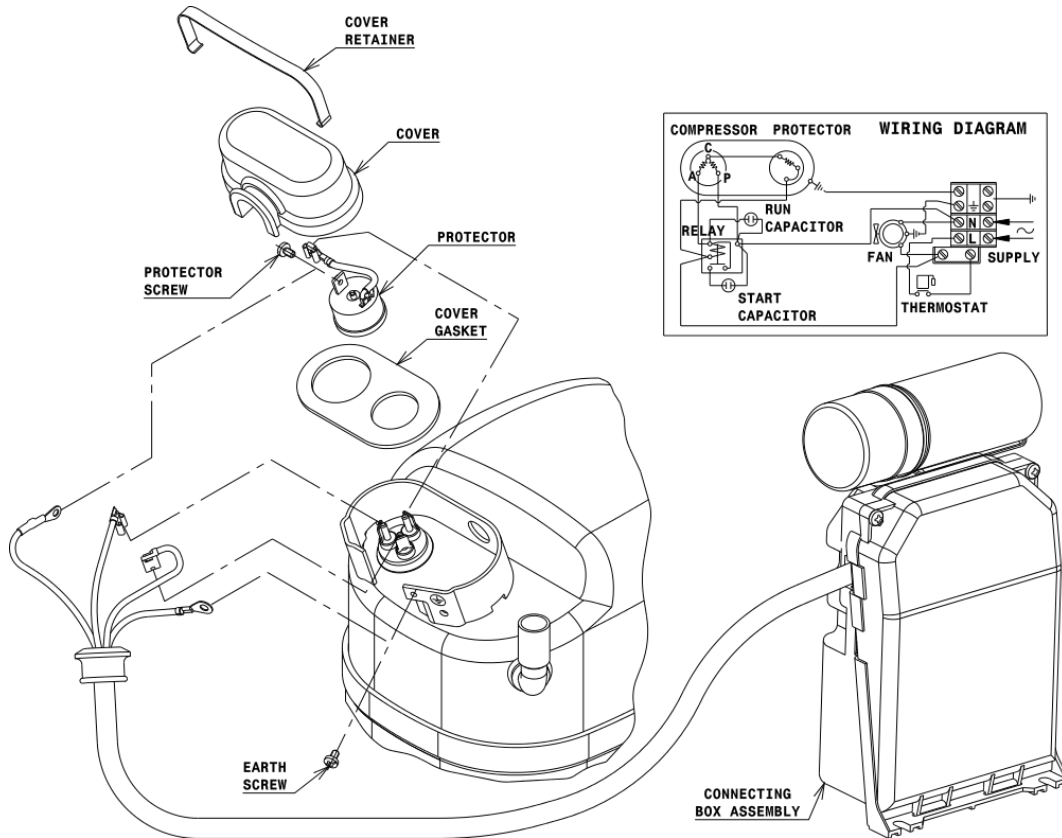


DESIGNATION INTERNAL DIAM.

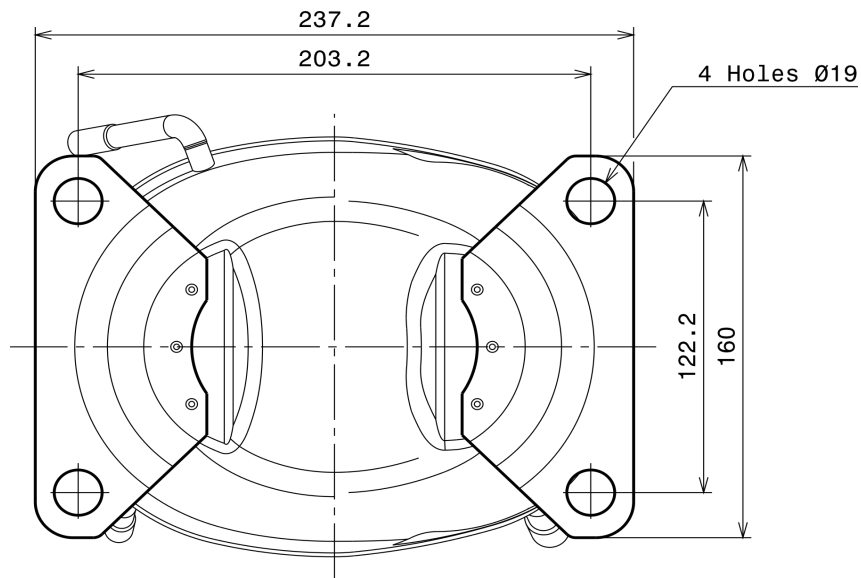
| | DESIGNATION | INTERNAL DIAM. |
|---|---------------|----------------|
| 1 | Service Valve | 5/8" SAE |
| 2 | Service | 9,7 mm |
| 3 | Discharge | 8,0 mm |

WIRING DIAGRAMS AND ELECTRICAL ASSEMBLY

CSR CONNECTION (EXTERNAL CONNECTING BOX) (S range)



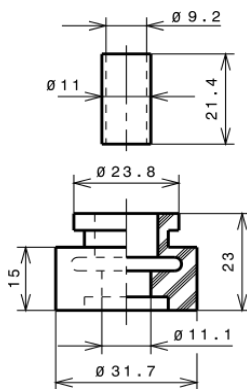
FIXINGS



SILENT BLOCKS (MOUNTING ACCESSORIES)

STANDARD

$\varnothing 19$ holes (203.2x122.2 net)



SOA

SOA R404A LBP

