

COMPRESSOR DEFINITION

| | |
|---------------------------|------------------------|
| Designation | F F10BKW |
| Nominal Voltage/Frequency | 220-240 V 50 Hz |
| Engineering Number | 513206399 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|--|-----------------------------------|-----------------------------------|-----------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | Blend | | |
| 3 Nominal voltage and frequency | 220-240 / 50 | [V / Hz] | |
| 4 Application type | Low-Medium-High Back Pressure | | |
| 4.1 Evaporating temperature range | -35°C to 15°C | (-31°F to 59°F) | |
| 5 Motor type | RSIR/CSIR | | |
| 6 Starting torque | LST - Low Starting Torque | | |
| 7 Expansion device | Capillary tube | | |
| 8 Compressor cooling | | Operating voltage range | |
| | | 50 Hz | 60 Hz |
| 8.1 LBP (32°C Ambient temperature) | Static | 198 to 255 V | - |
| 8.2 LBP (43°C Ambient temperature) | Static | 198 to 255 V | - |
| 8.3 HBP (32°C Ambient temperature) | Fan | 198 to 255 V | - |
| 8.4 HBP (43°C Ambient temperature) | Fan | 198 to 255 V | - |
| 9 Maximum condensing pressures/temperature | | | |
| 9.1 Operating (gauge) | 14.5 | [kgf/cm ²] (206 psig) | / °C - °F |
| 9.2 Peak (gauge) | 18.2 | [kgf/cm ²] (259 psig) | / °C - °F |
| 10 Maximum winding temperature | 130 | [°C] | |

B - MECHANICAL DATA

| | | |
|-------------------------------|-----------------|--|
| 1 Commercial designation | 1/4+ | [hp] |
| 2 Displacement | 9.04 | [cm ³] (0.552 cu.in) |
| 2.1 Bore [mm] | 24.000 | |
| 2.2 Stroke [mm] | 20.000 | |
| 3 Lubricant charge | 420 | [ml] (14.20 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ALQUILB / ISO32 | |
| 4 Weight (with oil charge) | 10.7 | [kg] (23.59 lb.) |
| 5 Nitrogen charge | 0.2 to 0.3 | [kgf/cm ²] (2.84 to 4.27 psig) |

C - ELETRICAL DATA

| | | |
|--|------------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 220-240 V 50 Hz 1 ~ (Single phase) | |
| 2 Starting device type | Current Relay | |
| 2.1 Starting device | 213510487/213510550 | |
| 3 Start capacitor | 108-130(180) | [µF(VAC minimum)] |
| 4 Run capacitor | - | [µF(VAC minimum)] |
| 5 Motor protection | MRP59AML-6 | |
| 6 Start winding resistance | 31.95 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 9.30 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (50 Hz) | - | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50 Hz) | - | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50 Hz) | - | [A] - Measured according to UL 984 |
| 11 Approval boards certification | IRAM - UL | |

D - PERFORMANCE - CHECK POINT DATA

| | | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|---------------------------|--------------------------------------|-------|--|
| TEST CONDITIONS: @220V50Hz | | | ASHRAEHBP32 Static | | Evaporating temperature (Condensing temperature) | | 7.2°C (44.96°F) 54.4°C (129.92°F) | | |
| Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | | |
| [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] | |
| 2797 | 705 | 820 | 400 | 2.11 | 20.94 | 6.99 | 1.76 | 2.05 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|---------------------------|--------------------------------------|-------|--|
| TEST CONDITIONS: @220V50Hz | | | ASHRAEHBP32 Fan | | Evaporating temperature (Condensing temperature) | | 7.2°C (44.96°F) 54.4°C (129.92°F) | | |
| Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | | |
| [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] | |
| 2797 | 705 | 820 | 400 | 2.11 | 20.94 | 6.99 | 1.76 | 2.05 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|---------------------------|--|-------|--|
| TEST CONDITIONS: @220V50Hz | | | ASHRAELBP32 Static | | Evaporating temperature (Condensing temperature) | | -23.3°C (-9.94°F) 54.4°C (129.92°F) | | |
| Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | | |
| [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] | |
| 793 | 200 | 232 | 208 | 1.33 | 5.80 | 3.81 | 0.96 | 1.12 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|---------------------------|--|-------|--|
| TEST CONDITIONS: @220V50Hz | | | ASHRAELBP32 Fan | | Evaporating temperature (Condensing temperature) | | -23.3°C (-9.94°F) 54.4°C (129.92°F) | | |
| Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | | |
| [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] | |
| 793 | 200 | 232 | 208 | 1.33 | 5.80 | 3.81 | 0.96 | 1.12 | |

E - PERFORMANCE - CURVES

| | | | | | | | | | | | |
|-------------------------------|----------------------------|--------------------|---------|-----------------------------|-------------------------------|--|---------------------------|--------|----------|-----------|-------|
| TEST CONDITIONS: @220V50Hz | | ASHRAE32 Static | | | | (Condensing temperature 45°C (+113°F)) | | | | | |
| Evaporating temperature | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | | | |
| | °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 444 | 112 | 130 | 148 | 1.17 | 3.23 | 2.99 | 0.75 | 0.88 | |
| -30 | (-22) | 616 | 155 | 180 | 168 | 1.22 | 4.51 | 3.62 | 0.91 | 1.06 | |
| -25 | (-13) | 805 | 203 | 236 | 190 | 1.29 | 5.89 | 4.21 | 1.06 | 1.23 | |
| -20 | (- 4) | 1018 | 257 | 298 | 214 | 1.36 | 7.46 | 4.76 | 1.20 | 1.40 | |
| -15 | (+ 5) | 1264 | 319 | 370 | 239 | 1.45 | 9.28 | 5.31 | 1.34 | 1.56 | |
| -10 | (+14) | 1551 | 391 | 454 | 266 | 1.54 | 11.42 | 5.87 | 1.48 | 1.72 | |
| -5 | (+23) | 1887 | 476 | 553 | 294 | 1.65 | 13.96 | 6.45 | 1.63 | 1.89 | |
| 0 | (+32) | 2280 | 575 | 668 | 322 | 1.76 | 16.95 | 7.08 | 1.79 | 2.08 | |
| +5 | (+41) | 2738 | 690 | 802 | 352 | 1.89 | 20.46 | 7.78 | 1.96 | 2.28 | |
| +10 | (+50) | 3270 | 824 | 958 | 382 | 2.02 | 24.58 | 8.55 | 2.16 | 2.51 | |
| +15 | (+59) | 3883 | 978 | 1138 | 411 | 2.15 | 29.36 | 9.43 | 2.38 | 2.76 | |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V50Hz | | ASHRAE32 Static | | | (Condensing temperature 55°C (+131°F)) | | | | | |
|-------------------------------|-------|----------------------------|----------|------|--|-------------------------------|-------------------------|---------------------------|-----------|-------|
| Evaporating temperature | | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 366 | 92 | 107 | 146 | 1.16 | 2.66 | 2.55 | 0.64 | 0.75 |
| -30 | (-22) | 534 | 135 | 156 | 170 | 1.22 | 3.91 | 3.11 | 0.78 | 0.91 |
| -25 | (-13) | 716 | 180 | 210 | 196 | 1.30 | 5.25 | 3.62 | 0.91 | 1.06 |
| -20 | (- 4) | 920 | 232 | 270 | 224 | 1.40 | 6.75 | 4.10 | 1.03 | 1.20 |
| -15 | (+ 5) | 1155 | 291 | 338 | 253 | 1.50 | 8.48 | 4.57 | 1.15 | 1.34 |
| -10 | (+14) | 1427 | 360 | 418 | 284 | 1.62 | 10.51 | 5.04 | 1.27 | 1.48 |
| -5 | (+23) | 1746 | 440 | 512 | 316 | 1.75 | 12.92 | 5.53 | 1.39 | 1.62 |
| 0 | (+32) | 2120 | 534 | 621 | 350 | 1.89 | 15.75 | 6.06 | 1.53 | 1.77 |
| +5 | (+41) | 2556 | 644 | 749 | 383 | 2.04 | 19.10 | 6.64 | 1.67 | 1.95 |
| +10 | (+50) | 3063 | 772 | 897 | 418 | 2.20 | 23.02 | 7.31 | 1.84 | 2.14 |
| +15 | (+59) | 3649 | 919 | 1069 | 453 | 2.36 | 27.59 | 8.07 | 2.03 | 2.36 |

| TEST CONDITIONS: @220V50Hz | | ASHRAE32 Static | | | (Condensing temperature 65°C (+149°F)) | | | | | |
|-------------------------------|-------|----------------------------|----------|-----|--|-------------------------------|-------------------------|---------------------------|-----------|-------|
| Evaporating temperature | | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 319 | 80 | 94 | 141 | 1.17 | 2.32 | 2.29 | 0.58 | 0.67 |
| -30 | (-22) | 478 | 121 | 140 | 168 | 1.23 | 3.51 | 2.80 | 0.70 | 0.82 |
| -25 | (-13) | 649 | 164 | 190 | 198 | 1.31 | 4.76 | 3.24 | 0.82 | 0.95 |
| -20 | (- 4) | 839 | 211 | 246 | 229 | 1.40 | 6.16 | 3.65 | 0.92 | 1.07 |
| -15 | (+ 5) | 1057 | 266 | 310 | 263 | 1.50 | 7.77 | 4.04 | 1.02 | 1.18 |
| -10 | (+14) | 1310 | 330 | 384 | 298 | 1.62 | 9.65 | 4.42 | 1.11 | 1.30 |
| -5 | (+23) | 1607 | 405 | 471 | 334 | 1.75 | 11.89 | 4.82 | 1.22 | 1.41 |
| 0 | (+32) | 1956 | 493 | 573 | 372 | 1.89 | 14.54 | 5.26 | 1.32 | 1.54 |
| +5 | (+41) | 2365 | 596 | 693 | 410 | 2.05 | 17.68 | 5.74 | 1.45 | 1.68 |
| +10 | (+50) | 2843 | 716 | 833 | 450 | 2.21 | 21.37 | 6.30 | 1.59 | 1.85 |
| +15 | (+59) | 3396 | 856 | 995 | 489 | 2.39 | 25.69 | 6.95 | 1.75 | 2.04 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|---------------------|------|--------------------------|
| 1 Base plate | Universal | | |
| 2 Tray holder | No | | |
| 3 Connectors | | | |
| 3.1 SUCTION | 8.2 +0.12/-0.08 | [mm] | (0.323" +0.005"/-0.003") |
| 3.1.1 Material | Copper plated steel | | |
| 3.1.2 Shape | Slanted | | |
| 3.2 DISCHARGE | 6.5 +0.12/-0.08 | [mm] | (0.256" +0.005"/-0.003") |
| 3.2.1 Material | Copper plated steel | | |
| 3.2.2 Shape | Slanted | | |
| 3.3 PROCESS | 6.5 +0.12/-0.08 | [mm] | (0.256" +0.005"/-0.003") |
| 3.3.1 Material | Copper plated steel | | |
| 3.3.2 Shape | Slanted | | |
| 3.4 Oil cooler (Copper) | 6.5 +0.09/-0.09 | [mm] | (0.256" +0.004"/-0.004") |
| 3.5 Connector sealing | Rubber Plugs | | |