

COMPRESSOR DEFINITION

| | |
|---------------------------|------------------------|
| Designation | F F10BKW |
| Nominal Voltage/Frequency | 220-240 V 50 Hz |
| Engineering Number | 513200482 |

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 | 280 | [ml] (9.47 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ALQUILB / ISO32 | |
| 4 Weight (with oil charge) | 10.58 | [kg] (23.32 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 | 213516078/213516086 | |
| 3 Start capacitor | 53-64(270) | [µF(VAC minimum)] |
| 4 Run capacitor | - | [µF(VAC minimum)] |
| 5 Motor protection | MSP57AMK-5590 | |
| 6 Start winding resistance | 27.50 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 10.15 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (50 Hz) | 15.50 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50 Hz) | 1.80 | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50 Hz) | 2.15 | [A] - Measured according to UL 984 |
| 11 Approval boards certification | IRAM - VDE | |

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] | |
| 2800 | 706 | 820 | 381 | 2.10 | 20.96 | 7.35 | 1.85 | 2.15 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|---------------------------|--------------------------------------|-------|--|
| 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] | |
| 2800 | 706 | 820 | 381 | 2.10 | 20.96 | 7.35 | 1.85 | 2.15 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|---------------------------|--|-------|--|
| 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] | |
| 795 | 200 | 233 | 203 | 1.40 | 5.82 | 3.92 | 0.99 | 1.15 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|---------------------------|--|-------|--|
| 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] | |
| 795 | 200 | 233 | 203 | 1.40 | 5.82 | 3.92 | 0.99 | 1.15 | |

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] |
| -35 | (-31) | 484 | 122 | 142 | 140 | 1.22 | 3.52 | 3.44 | 0.87 | 1.01 |
| -30 | (-22) | 633 | 159 | 185 | 167 | 1.29 | 4.63 | 3.80 | 0.96 | 1.11 |
| -25 | (-13) | 811 | 204 | 238 | 192 | 1.36 | 5.94 | 4.24 | 1.07 | 1.24 |
| -20 | (- 4) | 1023 | 258 | 300 | 217 | 1.43 | 7.50 | 4.74 | 1.19 | 1.39 |
| -15 | (+ 5) | 1274 | 321 | 373 | 241 | 1.51 | 9.36 | 5.31 | 1.34 | 1.56 |
| -10 | (+14) | 1569 | 395 | 460 | 264 | 1.60 | 11.56 | 5.96 | 1.50 | 1.75 |
| -5 | (+23) | 1911 | 482 | 560 | 287 | 1.69 | 14.13 | 6.67 | 1.68 | 1.95 |
| 0 | (+32) | 2305 | 581 | 676 | 309 | 1.79 | 17.14 | 7.45 | 1.88 | 2.18 |
| +5 | (+41) | 2757 | 695 | 808 | 332 | 1.89 | 20.60 | 8.29 | 2.09 | 2.43 |
| +10 | (+50) | 3271 | 824 | 958 | 355 | 2.01 | 24.58 | 9.21 | 2.32 | 2.70 |
| +15 | (+59) | 3851 | 970 | 1128 | 378 | 2.13 | 29.11 | 10.20 | 2.57 | 2.99 |

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) | 431 | 109 | 126 | 144 | 1.25 | 3.14 | 3.00 | 0.75 | 0.88 |
| -30 | (-22) | 565 | 142 | 166 | 170 | 1.30 | 4.13 | 3.35 | 0.84 | 0.98 |
| -25 | (-13) | 728 | 183 | 213 | 195 | 1.37 | 5.33 | 3.75 | 0.94 | 1.10 |
| -20 | (- 4) | 924 | 233 | 271 | 221 | 1.45 | 6.78 | 4.19 | 1.06 | 1.23 |
| -15 | (+ 5) | 1160 | 292 | 340 | 248 | 1.54 | 8.52 | 4.67 | 1.18 | 1.37 |
| -10 | (+14) | 1438 | 362 | 421 | 276 | 1.64 | 10.59 | 5.18 | 1.31 | 1.52 |
| -5 | (+23) | 1764 | 444 | 517 | 305 | 1.76 | 13.05 | 5.74 | 1.45 | 1.68 |
| 0 | (+32) | 2142 | 540 | 628 | 335 | 1.89 | 15.92 | 6.34 | 1.60 | 1.86 |
| +5 | (+41) | 2577 | 649 | 755 | 367 | 2.04 | 19.26 | 6.98 | 1.76 | 2.05 |
| +10 | (+50) | 3074 | 775 | 901 | 401 | 2.20 | 23.11 | 7.66 | 1.93 | 2.24 |
| +15 | (+59) | 3637 | 917 | 1066 | 437 | 2.38 | 27.51 | 8.38 | 2.11 | 2.45 |

| 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) | 382 | 96 | 112 | 141 | 1.23 | 2.78 | 2.67 | 0.67 | 0.78 |
| -30 | (-22) | 504 | 127 | 148 | 167 | 1.29 | 3.69 | 3.02 | 0.76 | 0.89 |
| -25 | (-13) | 654 | 165 | 192 | 195 | 1.36 | 4.80 | 3.39 | 0.85 | 0.99 |
| -20 | (- 4) | 839 | 211 | 246 | 225 | 1.46 | 6.15 | 3.77 | 0.95 | 1.10 |
| -15 | (+ 5) | 1061 | 267 | 311 | 257 | 1.57 | 7.80 | 4.15 | 1.05 | 1.22 |
| -10 | (+14) | 1327 | 334 | 389 | 293 | 1.71 | 9.78 | 4.56 | 1.15 | 1.33 |
| -5 | (+23) | 1640 | 413 | 480 | 330 | 1.87 | 12.13 | 4.97 | 1.25 | 1.46 |
| 0 | (+32) | 2005 | 505 | 587 | 371 | 2.05 | 14.90 | 5.39 | 1.36 | 1.58 |
| +5 | (+41) | 2427 | 612 | 711 | 415 | 2.26 | 18.14 | 5.82 | 1.47 | 1.71 |
| +10 | (+50) | 2910 | 733 | 853 | 463 | 2.48 | 21.88 | 6.27 | 1.58 | 1.84 |
| +15 | (+59) | 3460 | 872 | 1014 | 514 | 2.73 | 26.17 | 6.73 | 1.69 | 1.97 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|-------------------------------|------|--------------------------|
| 1 Base plate | Universal EG/F/AMEM version 2 | | |
| 2 Tray holder | No | | |
| 3 Connectors | | | |
| 3.1 SUCTION | 6.5 +0.12/-0.08 | [mm] | (0.256" +0.005"/-0.003") |
| 3.1.1 Material | Copper plated steel | | |
| 3.1.2 Shape | Slanted | | |
| 3.2 DISCHARGE | 5 +0.18/-0.06 | [mm] | (0.197" +0.007"/-0.002") |
| 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 | | |