

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | F F112HBX       |
| Nominal Voltage/Frequency | 115-127 V 60 Hz |
| Engineering Number        | 513200469       |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|                                    |                                   |                                   |              |
|------------------------------------|-----------------------------------|-----------------------------------|--------------|
| 1 Type                             | Hermetic reciprocating compressor |                                   |              |
| 2 Refrigerant                      | R-134a                            |                                   |              |
| 3 Nominal voltage and frequency    | 115-127 / 60                      | [ V / Hz ]                        |              |
| 4 Application type                 | Low-Medium-High Back Pressure     |                                   |              |
| 4.1 Evaporating temperature range  | -35°C to 10°C                     | (-31°F to 50°F)                   |              |
| 5 Motor type                       | CSIR                              |                                   |              |
| 6 Starting torque                  | HST - Hight starting torque       |                                   |              |
| 7 Expansion device                 | Capillary tube or Expansion valve |                                   |              |
| 8 Compressor cooling               | Operating voltage range           |                                   |              |
|                                    |                                   | 50 Hz                             | 60 Hz        |
| 8.1 LBP (32°C Ambient temperature) | Fan                               | -                                 | 103 to 140 V |
| 8.2 LBP (43°C Ambient temperature) | Fan                               | -                                 | 103 to 140 V |
| 8.3 HBP (32°C Ambient temperature) | Fan                               | -                                 | 103 to 140 V |
| 8.4 HBP (43°C Ambient temperature) | Fan                               | -                                 | 103 to 140 V |
| 9 Maximum condensing temperature   |                                   |                                   |              |
| 9.1 Operating                      | 14.2                              | [kgf/cm <sup>2</sup> ] (202 psig) | / °C - °F    |
| 9.2 Peak                           | 15.9                              | [kgf/cm <sup>2</sup> ] (226 psig) | / °C - °F    |
| 10 Maximum winding temperature     | 130                               | [ °C ]                            |              |

### B - MECHANICAL DATA

|                               |               |  |
|-------------------------------|---------------|--|
| 1 Commercial designation      | 1/3+          | [hp]                                       |
| 2 Displacement                | 11.14         | [cm <sup>3</sup> ] (0.680 cu.in)           |
| 2.1 Bore [mm]                 | 26.000        |  |
| 2.2 Stroke [mm]               | 21.000        |  |
| 3 Lubricant charge            | 280           | [ml] (9.47 fl.oz.)                         |
| 3.1 Lubricants approved       |               |  |
| 3.2 Lubricants type/viscosity | ESTER / ISO22 |  |
| 4 Weight (with oil charge)    | 11.52         | [kg] (25.40 lb.)                           |
| 5 Nitrogen charge             | 0.2 to 0.3    | [kgf/cm <sup>2</sup> ] (2.84 to 4.27 psig) |

### C - ELETRICAL DATA

|  |                                    |                                    |
|--|------------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 115-127 V 60 Hz 1 ~ (Single phase) |                                    |
| 2 Starting device type                       | Current Relay                      |                                    |
| 2.1 Starting device                          | 213516051                          |                                    |
| 3 Start capacitor                            | 233-280(150)/378-454(110)          | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | -                                  | [µF(VAC minimum)]                  |
| 5 Motor protection                           | MRT22AFZ-5590                      |                                    |
| 6 Start winding resistance                   | 3.87                               | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 1.04                               | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (60 Hz)        | 43.00                              | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz)     | 7.20                               | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz)      | 8.10                               | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | CCC - CE - TUV - UKCA - UL         |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                               |          |      |                             |                               |   |                           |                                      |       |
|-------------------------------|----------|------|-----------------------------|-------------------------------|---|---------------------------|--------------------------------------|-------|
| TEST CONDITIONS:<br>@115V60Hz |          |      | ASHRAEHBP32<br>Fan          |                               | Evaporating temperature<br>(Condensing temperature) |                           | 7.2°C (44.96°F)<br>54.4°C (129.92°F) |       |
| Cooling capacity<br>+/- 5%    |          |      | Power consumption<br>+/- 5% | Current consumption<br>+/- 5% | Gas flow rate<br>+/- 5%                             | EFFICIENCY RATE<br>+/- 7% |                                      |       |
| [Btu/h]                       | [kcal/h] | [W]  | [W]                         | [A]                           | [kg/h]  | [Btu/Wh]                  | [kcal/Wh]                            | [W/W] |
| 5300                          | 1336     | 1553 | 612                         | 6.80                          |   | 8.66                      | 2.18                                 | 2.54  |

|                               |          |     |                             |                               |   |                           |  |       |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br>@115V60Hz |          |     | ASHRAELBP32<br>Fan          |                               | Evaporating temperature<br>(Condensing temperature) |                           | -23.3°C (-9.94°F)<br>54.4°C (129.92°F) |       |
| Cooling capacity<br>+/- 5%    |          |     | Power consumption<br>+/- 5% | Current consumption<br>+/- 5% | Gas flow rate<br>+/- 5%                             | EFFICIENCY RATE<br>+/- 7% |  |       |
| [Btu/h]                       | [kcal/h] | [W] | [W]                         | [A]                           | [kg/h]  | [Btu/Wh]                  | [kcal/Wh]                              | [W/W] |
| 1190                          | 300      | 349 | 292                         | 4.65                          | 6.76  | 4.08                      | 1.03                                   | 1.20  |

### E - PERFORMANCE - CURVES

|                               |                            |          |                 |                             |  |                         |                           |           |       |
|-------------------------------|----------------------------|----------|-----------------|-----------------------------|--|-------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@115V60Hz |                            |          | ASHRAE32<br>Fan |                             | (Condensing temperature 45°C (+113°F)) |                         |                           |           |       |
| Evaporating temperature       | Cooling capacity<br>+/- 5% |          |                 | Power consumption<br>+/- 5% | Current consumption<br>+/- 5%          | Gas flow rate<br>+/- 5% | EFFICIENCY RATE<br>+/- 7% |           |       |
| °C (°F)                       | [Btu/h]                    | [kcal/h] | [W]             | [W]                         | [A]                                    | [kg/h]                  | [Btu/Wh]                  | [kcal/Wh] | [W/W] |
| -35 (-31)                     | 657                        | 166      | 192             | 212                         | 4.71                                   | 3.71                    | 3.07                      | 0.77      | 0.90  |
| -30 (-22)                     | 871                        | 220      | 255             | 247                         | 4.79                                   | 4.95                    | 3.59                      | 0.90      | 1.05  |
| -25 (-13)                     | 1165                       | 294      | 341             | 283                         | 4.91                                   | 6.63                    | 4.19                      | 1.06      | 1.23  |
| -20 (- 4)                     | 1545                       | 389      | 453             | 320                         | 5.06                                   | 8.79                    | 4.87                      | 1.23      | 1.43  |
| -15 (+ 5)                     | 2014                       | 508      | 590             | 360                         | 5.24                                   | 11.49                   | 5.60                      | 1.41      | 1.64  |
| -10 (+14)                     | 2579                       | 650      | 756             | 402                         | 5.47                                   | 14.76                   | 6.39                      | 1.61      | 1.87  |
| -5 (+23)                      | 3245                       | 818      | 951             | 447                         | 5.73                                   | 18.66                   | 7.21                      | 1.82      | 2.11  |
| 0 (+32)                       | 4016                       | 1012     | 1177            | 495                         | 6.04                                   | 23.22                   | 8.07                      | 2.03      | 2.36  |
| +5 (+41)                      | 4898                       | 1234     | 1435            | 545                         | 6.40                                   | 28.51                   | 8.94                      | 2.25      | 2.62  |
| +10 (+50)                     | 5896                       | 1486     | 1728            | 600                         | 6.80                                   | 34.56                   | 9.83                      | 2.48      | 2.88  |
| +15 (+59)                     | 7016                       | 1768     | 2056            | 658                         | 7.26                                   | 41.41                   | 10.71                     | 2.70      | 3.14  |

|                               |                            |          |                 |                             |  |                         |                           |           |       |
|-------------------------------|----------------------------|----------|-----------------|-----------------------------|--|-------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@115V60Hz |                            |          | ASHRAE32<br>Fan |                             | (Condensing temperature 55°C (+131°F)) |                         |                           |           |       |
| Evaporating temperature       | Cooling capacity<br>+/- 5% |          |                 | Power consumption<br>+/- 5% | Current consumption<br>+/- 5%          | Gas flow rate<br>+/- 5% | EFFICIENCY RATE<br>+/- 7% |           |       |
| °C (°F)                       | [Btu/h]                    | [kcal/h] | [W]             | [W]                         | [A]                                    | [kg/h]                  | [Btu/Wh]                  | [kcal/Wh] | [W/W] |
| -35 (-31)                     | 535                        | 135      | 157             | 201                         | 4.70                                   | 3.02                    | 2.61                      | 0.66      | 0.77  |
| -30 (-22)                     | 745                        | 188      | 218             | 241                         | 4.79                                   | 4.24                    | 3.14                      | 0.79      | 0.92  |
| -25 (-13)                     | 1037                       | 261      | 304             | 282                         | 4.92                                   | 5.90                    | 3.73                      | 0.94      | 1.09  |
| -20 (- 4)                     | 1414                       | 356      | 414             | 326                         | 5.09                                   | 8.05                    | 4.38                      | 1.10      | 1.28  |
| -15 (+ 5)                     | 1883                       | 475      | 552             | 372                         | 5.30                                   | 10.74                   | 5.08                      | 1.28      | 1.49  |
| -10 (+14)                     | 2449                       | 617      | 718             | 421                         | 5.56                                   | 14.01                   | 5.81                      | 1.46      | 1.70  |
| -5 (+23)                      | 3116                       | 785      | 913             | 472                         | 5.87                                   | 17.92                   | 6.58                      | 1.66      | 1.93  |
| 0 (+32)                       | 3891                       | 980      | 1140            | 527                         | 6.23                                   | 22.50                   | 7.35                      | 1.85      | 2.16  |
| +5 (+41)                      | 4777                       | 1204     | 1400            | 586                         | 6.65                                   | 27.80                   | 8.14                      | 2.05      | 2.38  |
| +10 (+50)                     | 5781                       | 1457     | 1694            | 648                         | 7.12                                   | 33.88                   | 8.92                      | 2.25      | 2.61  |
| +15 (+59)                     | 6907                       | 1741     | 2024            | 715                         | 7.66                                   | 40.77                   | 9.68                      | 2.44      | 2.84  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@115V60Hz |       | ASHRAE32<br>Fan            |          |      | (Condensing temperature 65°C (+149°F) ) |                               |                         |                           |           |       |
|-------------------------------|-------|----------------------------|----------|------|---|-------------------------------|-------------------------|---------------------------|-----------|-------|
| Evaporating temperature       |       | Cooling capacity<br>+/- 5% |          |      | Power consumption<br>+/- 5%             | Current consumption<br>+/- 5% | Gas flow rate<br>+/- 5% | EFFICIENCY RATE<br>+/- 7% |           |       |
| °C                            | (°F)  | [Btu/h]                    | [kcal/h] | [W]  | [W]                                     | [A]                           | [kg/h]                  | [Btu/Wh]                  | [kcal/Wh] | [W/W] |
| -35                           | (-31) | 415                        | 105      | 122  | 181                                     | 4.68                          | 2.35                    | 2.21                      | 0.56      | 0.65  |
| -30                           | (-22) | 617                        | 155      | 181  | 227                                     | 4.78                          | 3.51                    | 2.74                      | 0.69      | 0.80  |
| -25                           | (-13) | 901                        | 227      | 264  | 275                                     | 4.92                          | 5.13                    | 3.32                      | 0.84      | 0.97  |
| -20                           | (- 4) | 1273                       | 321      | 373  | 326                                     | 5.12                          | 7.24                    | 3.95                      | 0.99      | 1.16  |
| -15                           | (+ 5) | 1737                       | 438      | 509  | 379                                     | 5.37                          | 9.90                    | 4.61                      | 1.16      | 1.35  |
| -10                           | (+14) | 2299                       | 579      | 674  | 435                                     | 5.67                          | 13.15                   | 5.30                      | 1.33      | 1.55  |
| -5                            | (+23) | 2964                       | 747      | 869  | 495                                     | 6.03                          | 17.04                   | 6.00                      | 1.51      | 1.76  |
| 0                             | (+32) | 3737                       | 942      | 1095 | 559                                     | 6.46                          | 21.61                   | 6.70                      | 1.69      | 1.96  |
| +5                            | (+41) | 4624                       | 1165     | 1355 | 626                                     | 6.94                          | 26.91                   | 7.40                      | 1.86      | 2.17  |
| +10                           | (+50) | 5629                       | 1419     | 1649 | 697                                     | 7.49                          | 32.99                   | 8.07                      | 2.03      | 2.37  |
| +15                           | (+59) | 6758                       | 1703     | 1980 | 773                                     | 8.11                          | 39.89                   | 8.72                      | 2.20      | 2.56  |

### F - EXTERNAL CHARACTERISTICS

|                         |                               |      |                          |
|-------------------------|-------------------------------|------|--------------------------|
| 1 Base plate            | Universal EG/F/AMEM version 2 |      |                          |
| 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) | No                            | [mm] |                          |
| 3.5 Connector sealing   | Rubber Plugs                  |      |                          |