

### COMPRESSOR DEFINITION

|                           |                        |
|---------------------------|------------------------|
| Designation               | <b>F F8,5HBKW</b>      |
| Nominal Voltage/Frequency | <b>115-127 V 60 Hz</b> |
| Engineering Number        | <b>513200049</b>       |

### 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 15°C                     | (-31°F to 59°F)                   |              |
| 5 Motor type                       | 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) | Fan                               | -                                 | 103 to 135 V |
| 8.2 LBP (43°C Ambient temperature) | Fan                               | -                                 | 103 to 135 V |
| 8.3 HBP (32°C Ambient temperature) | Fan                               | -                                 | 103 to 135 V |
| 8.4 HBP (43°C Ambient temperature) | Fan                               | -                                 | 103 to 135 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      | 1/4           | [hp]                                       |
| 2 Displacement                | 7.95          | [cm <sup>3</sup> ] (0.485 cu.in)           |
| 2.1 Bore [mm]                 | 22.500        |  |
| 2.2 Stroke [mm]               | 20.000        |  |
| 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)    | 10.82         | [kg] (23.85 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                          | 213516175                          |                                    |
| 3 Start capacitor                            | 130-156(130)                       | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | -                                  | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM771RFBZZ-53                     |                                    |
| 6 Start winding resistance                   | 8.96                               | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 1.73                               | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (60 Hz)        | -                                  | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz)     | -                                  | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz)      | -                                  | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | CE - UKCA - UL                     |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                               |          |     |                             |                               |   |                                      |           |       |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|--------------------------------------|-----------|-------|
| TEST CONDITIONS:<br>@115V60Hz |          |     | <b>ASHRAEHBP32</b><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] |
| 3135                          | 790      | 919 | 407                         | 4.40                          |   | 7.70                                 | 1.94      | 2.26  |

|                               |          |     |                              |                               |   |  |           |       |
|-------------------------------|----------|-----|------------------------------|-------------------------------|---|--|-----------|-------|
| TEST CONDITIONS:<br>@115V60Hz |          |     | <b>ASHRAELBP32</b><br>Static |                               | 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] |
| 740                           | 186      | 217 | 198                          | 2.88                          | 4.20  | 3.74                                   | 0.94      | 1.10  |

### E - PERFORMANCE - CURVES

|                               |                            |          |                        |                             |  |                         |                           |           |       |
|-------------------------------|----------------------------|----------|------------------------|-----------------------------|--|-------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@115V60Hz |                            |          | <b>ASHRAE32</b><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)                     | 374                        | 94       | 110                    | 149                         | 2.80                                   | 2.12                    | 2.51                      | 0.63      | 0.73  |
| -30 (-22)                     | 512                        | 129      | 150                    | 171                         | 2.85                                   | 2.91                    | 3.03                      | 0.76      | 0.89  |
| -25 (-13)                     | 695                        | 175      | 204                    | 195                         | 2.94                                   | 3.95                    | 3.61                      | 0.91      | 1.06  |
| -20 (- 4)                     | 929                        | 234      | 272                    | 221                         | 3.06                                   | 5.29                    | 4.25                      | 1.07      | 1.25  |
| -15 (+ 5)                     | 1221                       | 308      | 358                    | 248                         | 3.21                                   | 6.96                    | 4.96                      | 1.25      | 1.45  |
| -10 (+14)                     | 1577                       | 397      | 462                    | 276                         | 3.39                                   | 9.02                    | 5.74                      | 1.45      | 1.68  |
| -5 (+23)                      | 2004                       | 505      | 587                    | 305                         | 3.59                                   | 11.52                   | 6.59                      | 1.66      | 1.93  |
| 0 (+32)                       | 2509                       | 632      | 735                    | 334                         | 3.80                                   | 14.51                   | 7.53                      | 1.90      | 2.21  |
| +5 (+41)                      | 3098                       | 781      | 908                    | 362                         | 4.02                                   | 18.04                   | 8.55                      | 2.16      | 2.51  |
| +10 (+50)                     | 3778                       | 952      | 1107                   | 390                         | 4.23                                   | 22.15                   | 9.67                      | 2.44      | 2.83  |
| +15 (+59)                     | 4556                       | 1148     | 1335                   | 417                         | 4.45                                   | 26.90                   | 10.89                     | 2.74      | 3.19  |

|                               |                            |          |                        |                             |  |                         |                           |           |       |
|-------------------------------|----------------------------|----------|------------------------|-----------------------------|--|-------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@115V60Hz |                            |          | <b>ASHRAE32</b><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)                     | 359                        | 91       | 105                    | 136                         | 2.66                                   | 2.03                    | 2.56                      | 0.65      | 0.75  |
| -30 (-22)                     | 496                        | 125      | 145                    | 160                         | 2.72                                   | 2.83                    | 3.04                      | 0.77      | 0.89  |
| -25 (-13)                     | 671                        | 169      | 197                    | 187                         | 2.82                                   | 3.82                    | 3.55                      | 0.89      | 1.04  |
| -20 (- 4)                     | 890                        | 224      | 261                    | 218                         | 2.97                                   | 5.07                    | 4.08                      | 1.03      | 1.20  |
| -15 (+ 5)                     | 1160                       | 292      | 340                    | 250                         | 3.17                                   | 6.62                    | 4.65                      | 1.17      | 1.36  |
| -10 (+14)                     | 1488                       | 375      | 436                    | 284                         | 3.39                                   | 8.51                    | 5.25                      | 1.32      | 1.54  |
| -5 (+23)                      | 1880                       | 474      | 551                    | 319                         | 3.65                                   | 10.80                   | 5.90                      | 1.49      | 1.73  |
| 0 (+32)                       | 2343                       | 590      | 687                    | 356                         | 3.92                                   | 13.54                   | 6.60                      | 1.66      | 1.93  |
| +5 (+41)                      | 2883                       | 727      | 845                    | 393                         | 4.22                                   | 16.78                   | 7.35                      | 1.85      | 2.15  |
| +10 (+50)                     | 3508                       | 884      | 1028                   | 431                         | 4.53                                   | 20.56                   | 8.16                      | 2.06      | 2.39  |
| +15 (+59)                     | 4224                       | 1064     | 1238                   | 468                         | 4.84                                   | 24.93                   | 9.04                      | 2.28      | 2.65  |

### 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) | 250                        | 63       | 73   | 130                                     | 2.74                          | 1.41                    | 2.07                      | 0.52      | 0.61  |
| -30                           | (-22) | 408                        | 103      | 120  | 155                                     | 2.78                          | 2.32                    | 2.64                      | 0.67      | 0.77  |
| -25                           | (-13) | 596                        | 150      | 175  | 184                                     | 2.87                          | 3.40                    | 3.20                      | 0.81      | 0.94  |
| -20                           | (- 4) | 822                        | 207      | 241  | 216                                     | 3.02                          | 4.69                    | 3.75                      | 0.94      | 1.10  |
| -15                           | (+ 5) | 1093                       | 275      | 320  | 252                                     | 3.22                          | 6.24                    | 4.30                      | 1.08      | 1.26  |
| -10                           | (+14) | 1414                       | 356      | 414  | 290                                     | 3.47                          | 8.09                    | 4.85                      | 1.22      | 1.42  |
| -5                            | (+23) | 1792                       | 452      | 525  | 331                                     | 3.76                          | 10.30                   | 5.42                      | 1.37      | 1.59  |
| 0                             | (+32) | 2235                       | 563      | 655  | 373                                     | 4.08                          | 12.92                   | 6.00                      | 1.51      | 1.76  |
| +5                            | (+41) | 2748                       | 692      | 805  | 417                                     | 4.42                          | 15.99                   | 6.60                      | 1.66      | 1.93  |
| +10                           | (+50) | 3339                       | 841      | 978  | 462                                     | 4.80                          | 19.56                   | 7.23                      | 1.82      | 2.12  |
| +15                           | (+59) | 4013                       | 1011     | 1176 | 508                                     | 5.19                          | 23.69                   | 7.90                      | 1.99      | 2.31  |

### 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) | 6.5 +0.09/-0.09               | [mm] | (0.256" +0.004"/-0.004") |
| 3.5 Connector sealing   | Rubber Plugs                  |      |                          |