

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | F F8,5HBK       |
| Nominal Voltage/Frequency | 220-240 V 50 Hz |
| Engineering Number        | 513201008       |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|                                    |                                   |                                   |           |
|------------------------------------|-----------------------------------|-----------------------------------|-----------|
| 1 Type                             | Hermetic reciprocating compressor |                                   |           |
| 2 Refrigerant                      | R-134a                            |                                   |           |
| 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                            | 187 to 255 V                      | -         |
| 8.2 LBP (43°C Ambient temperature) | Static                            | 187 to 255 V                      | -         |
| 8.3 HBP (32°C Ambient temperature) | Fan                               | 187 to 255 V                      | -         |
| 8.4 HBP (43°C Ambient temperature) | Fan                               | 187 to 255 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)    | 10.05         | [kg] (22.16 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 | 220-240 V 50 Hz 1 ~ (Single phase) |                                    |
| 2 Starting device type                       | Current Relay                      |                                    |
| 2.1 Starting device                          | 213516442/213516469                |                                    |
| 3 Start capacitor                            | 88-108(180)                        | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | -                                  | [µF(VAC minimum)]                  |
| 5 Motor protection                           | MRP61AMZ-5590                      |                                    |
| 6 Start winding resistance                   | 24.00                              | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 8.60                               | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (50 Hz)        | 18.20                              | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50 Hz)     | 2.00                               | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50 Hz)      | 2.35                               | [A] - Measured according to UL 984 |
| 11 Approval boards certification             |                                    |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                               |          |     |                             |                               |   |                           |                                      |       |  |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|---------------------------|--------------------------------------|-------|--|
| TEST CONDITIONS:<br>@220V50Hz |          |     | ASHRAEHBP32<br>Static       |                               | 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] |  |
| 2880                          | 726      | 844 | 339                         | 2.00                          |   | 8.50                      | 2.14                                 | 2.49  |  |

|                               |          |     |                             |                               |   |                           |                                      |       |  |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|---------------------------|--------------------------------------|-------|--|
| TEST CONDITIONS:<br>@220V50Hz |          |     | 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] |  |
| 2880                          | 726      | 844 | 339                         | 2.00                          |   | 8.50                      | 2.14                                 | 2.49  |  |

|                               |          |     |                             |                               |   |                           |  |       |  |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|---------------------------|--|-------|--|
| TEST CONDITIONS:<br>@220V50Hz |          |     | ASHRAELBP32<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] |  |
| 662                           | 167      | 194 | 174                         | 1.45                          | 3.76  | 3.80                      | 0.96                                   | 1.11  |  |

|                               |          |     |                             |                               |   |                           |  |       |  |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|---------------------------|--|-------|--|
| TEST CONDITIONS:<br>@220V50Hz |          |     | 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] |  |
| 662                           | 167      | 194 | 174                         | 1.45                          | 3.76  | 3.80                      | 0.96                                   | 1.11  |  |

### E - PERFORMANCE - CURVES

|                               |                            |                    |         |                             |                               |                         |  |        |          |           |
|-------------------------------|----------------------------|--------------------|---------|-----------------------------|-------------------------------|-------------------------|--|--------|----------|-----------|
| TEST CONDITIONS:<br>@220V50Hz |                            | ASHRAE32<br>Static |         |                             |                               |                         | (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] |
| -35                           | (-31)                      | 347                | 87      | 102                         | 122                           | 1.35                    | 1.96                                   | 2.77   | 0.70     | 0.81      |
| -30                           | (-22)                      | 470                | 119     | 138                         | 141                           | 1.38                    | 2.67                                   | 3.34   | 0.84     | 0.98      |
| -25                           | (-13)                      | 637                | 161     | 187                         | 163                           | 1.43                    | 3.62                                   | 3.96   | 1.00     | 1.16      |
| -20                           | (- 4)                      | 851                | 214     | 249                         | 185                           | 1.48                    | 4.84                                   | 4.63   | 1.17     | 1.36      |
| -15                           | (+ 5)                      | 1115               | 281     | 327                         | 208                           | 1.55                    | 6.35                                   | 5.37   | 1.35     | 1.57      |
| -10                           | (+14)                      | 1432               | 361     | 420                         | 232                           | 1.62                    | 8.19                                   | 6.20   | 1.56     | 1.82      |
| -5                            | (+23)                      | 1807               | 455     | 529                         | 255                           | 1.69                    | 10.39                                  | 7.11   | 1.79     | 2.08      |
| 0                             | (+32)                      | 2243               | 565     | 657                         | 277                           | 1.77                    | 12.97                                  | 8.12   | 2.05     | 2.38      |
| +5                            | (+41)                      | 2743               | 691     | 804                         | 298                           | 1.84                    | 15.96                                  | 9.24   | 2.33     | 2.71      |
| +10                           | (+50)                      | 3311               | 834     | 970                         | 316                           | 1.92                    | 19.41                                  | 10.48  | 2.64     | 3.07      |
| +15                           | (+59)                      | 3951               | 996     | 1158                        | 333                           | 1.99                    | 23.32                                  | 11.85  | 2.99     | 3.47      |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V50Hz |       | ASHRAE32<br>Static         |          |      | (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) | 276                        | 70       | 81   | 121                                    | 1.35                          | 1.56                    | 2.32                      | 0.58      | 0.68  |
| -30                           | (-22) | 401                        | 101      | 118  | 141                                    | 1.38                          | 2.28                    | 2.91                      | 0.73      | 0.85  |
| -25                           | (-13) | 568                        | 143      | 167  | 164                                    | 1.43                          | 3.23                    | 3.52                      | 0.89      | 1.03  |
| -20                           | (- 4) | 780                        | 197      | 229  | 189                                    | 1.49                          | 4.44                    | 4.16                      | 1.05      | 1.22  |
| -15                           | (+ 5) | 1041                       | 262      | 305  | 215                                    | 1.56                          | 5.94                    | 4.83                      | 1.22      | 1.42  |
| -10                           | (+14) | 1354                       | 341      | 397  | 242                                    | 1.65                          | 7.75                    | 5.55                      | 1.40      | 1.63  |
| -5                            | (+23) | 1722                       | 434      | 505  | 270                                    | 1.74                          | 9.90                    | 6.33                      | 1.59      | 1.85  |
| 0                             | (+32) | 2150                       | 542      | 630  | 298                                    | 1.84                          | 12.43                   | 7.17                      | 1.81      | 2.10  |
| +5                            | (+41) | 2641                       | 666      | 774  | 325                                    | 1.94                          | 15.37                   | 8.10                      | 2.04      | 2.37  |
| +10                           | (+50) | 3198                       | 806      | 937  | 351                                    | 2.05                          | 18.74                   | 9.11                      | 2.30      | 2.67  |
| +15                           | (+59) | 3825                       | 964      | 1121 | 375                                    | 2.15                          | 22.58                   | 10.23                     | 2.58      | 3.00  |

| TEST CONDITIONS:<br>@220V50Hz |       | ASHRAE32<br>Static         |          |      | (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) | 229                        | 58       | 67   | 115                                    | 1.34                          | 1.29                    | 1.94                      | 0.49      | 0.57  |
| -30                           | (-22) | 346                        | 87       | 101  | 137                                    | 1.38                          | 1.97                    | 2.55                      | 0.64      | 0.75  |
| -25                           | (-13) | 503                        | 127      | 147  | 162                                    | 1.43                          | 2.86                    | 3.14                      | 0.79      | 0.92  |
| -20                           | (- 4) | 703                        | 177      | 206  | 191                                    | 1.50                          | 4.00                    | 3.72                      | 0.94      | 1.09  |
| -15                           | (+ 5) | 951                        | 240      | 279  | 221                                    | 1.58                          | 5.42                    | 4.31                      | 1.09      | 1.26  |
| -10                           | (+14) | 1249                       | 315      | 366  | 254                                    | 1.69                          | 7.14                    | 4.92                      | 1.24      | 1.44  |
| -5                            | (+23) | 1601                       | 403      | 469  | 287                                    | 1.80                          | 9.20                    | 5.55                      | 1.40      | 1.63  |
| 0                             | (+32) | 2010                       | 507      | 589  | 322                                    | 1.93                          | 11.62                   | 6.22                      | 1.57      | 1.82  |
| +5                            | (+41) | 2482                       | 625      | 727  | 356                                    | 2.06                          | 14.44                   | 6.94                      | 1.75      | 2.03  |
| +10                           | (+50) | 3018                       | 760      | 884  | 391                                    | 2.20                          | 17.68                   | 7.72                      | 1.94      | 2.26  |
| +15                           | (+59) | 3622                       | 913      | 1061 | 424                                    | 2.35                          | 21.38                   | 8.56                      | 2.16      | 2.51  |

### 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                        |      |                          |
| 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                        |      |                          |
| 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                        |      |                          |
| 3.3.2 Shape             | Slanted                       |      |                          |
| 3.4 Oil cooler (Copper) | No                            | [mm] |                          |
| 3.5 Connector sealing   | Rubber Plugs                  |      |                          |