

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | F F7,5BK        |
| Nominal Voltage/Frequency | 220-240 V 50 Hz |
| Engineering Number        | 513200170       |

### 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 Expantion 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/cm²] (206 psig)    | / °C - °F       |
| 9.2 Peak (gauge)                           | 18.2                              | [kgf/cm²] (259 psig)    | / °C - °F       |
| 10 Maximum winding temperature             | 130                               | [ °C ]                  |                 |

### B - MECHANICAL DATA

|                               |                 |                               |
|-------------------------------|-----------------|-------------------------------|
| 1 Commercial designation      | 1/5+            | [hp]                          |
| 2 Displacement                | 6.92            | [cm³] (0.422 cu.in)           |
| 2.1 Bore [mm]                 | 21.000          |                               |
| 2.2 Stroke [mm]               | 20.000          |                               |
| 3 Lubricant charge            | 280             | [ml] (9.47 fl.oz.)            |
| 3.1 Lubricants approved       |                 |                               |
| 3.2 Lubricants type/viscosity | MINERAL / ISO32 |                               |
| 4 Weight (with oil charge)    | 10.5            | [kg] (23.15 lb.)              |
| 5 Nitrogen charge             | 0.2 to 0.3      | [kgf/cm²] (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                          | 213516116/213516337                |                                    |
| 3 Start capacitor                            | 88-108(180)                        | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | -                                  | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM739KFBYY-53                     |                                    |
| 6 Start winding resistance                   | 39.14                              | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 12.41                              | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (50 Hz)        | 10.00                              | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50 Hz)     | 1.60                               | [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                               |                                    |

### 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><br>+/- 5% |          |     | Power consumption<br><br>+/- 5% | Current consumption<br><br>+/- 5% | Gas flow rate<br><br>+/- 5%                        | EFFICIENCY RATE<br><br>+/- 7% |                                       |       |
| [Btu/h]                        | [kcal/h] | [W] | [W]                             | [A]                               | [kg/h]   | [Btu/Wh]                      | [kcal/Wh]                             | [W/W] |
| 2135                           | 538      | 626 | 292                             | 1.50                              | 15.99  | 7.31                          | 1.84                                  | 2.14  |

|                                |          |     |                                 |                                   |  |                               |   |       |
|--------------------------------|----------|-----|---------------------------------|-----------------------------------|--|-------------------------------|---|-------|
| 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><br>+/- 5% |          |     | Power consumption<br><br>+/- 5% | Current consumption<br><br>+/- 5% | Gas flow rate<br><br>+/- 5%                        | EFFICIENCY RATE<br><br>+/- 7% |   |       |
| [Btu/h]                        | [kcal/h] | [W] | [W]                             | [A]                               | [kg/h]   | [Btu/Wh]                      | [kcal/Wh]                               | [W/W] |
| 627                            | 158      | 184 | 158                             | 0.97                              | 4.59   | 3.97                          | 1.00                                    | 1.16  |

### 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% |           |       |
|                               | [Btu/h]                    | [kcal/h] | [W]                | [W]                         | [A]                                    | [kg/h]                  | [Btu/Wh]                  | [kcal/Wh] | [W/W] |
| -35 (-31)                     | 367                        | 92       | 108                | 111                         | 1.03                                   | 2.67                    | 3.32                      | 0.84      | 0.97  |
| -30 (-22)                     | 495                        | 125      | 145                | 127                         | 0.82                                   | 3.62                    | 3.88                      | 0.98      | 1.14  |
| -25 (-13)                     | 644                        | 162      | 189                | 145                         | 0.79                                   | 4.72                    | 4.44                      | 1.12      | 1.30  |
| -20 (-4)                      | 818                        | 206      | 240                | 164                         | 0.89                                   | 6.00                    | 5.00                      | 1.26      | 1.47  |
| -15 (+5)                      | 1022                       | 258      | 299                | 183                         | 1.07                                   | 7.51                    | 5.60                      | 1.41      | 1.64  |
| -10 (+14)                     | 1261                       | 318      | 369                | 202                         | 1.28                                   | 9.29                    | 6.25                      | 1.57      | 1.83  |
| -5 (+23)                      | 1540                       | 388      | 451                | 221                         | 1.49                                   | 11.39                   | 6.96                      | 1.75      | 2.04  |
| 0 (+32)                       | 1863                       | 470      | 546                | 240                         | 1.64                                   | 13.85                   | 7.77                      | 1.96      | 2.28  |
| +5 (+41)                      | 2237                       | 564      | 655                | 258                         | 1.70                                   | 16.71                   | 8.68                      | 2.19      | 2.54  |
| +10 (+50)                     | 2664                       | 671      | 781                | 274                         | 1.60                                   | 20.03                   | 9.72                      | 2.45      | 2.85  |
| +15 (+59)                     | 3152                       | 794      | 924                | 289                         | 1.32                                   | 23.83                   | 10.90                     | 2.75      | 3.20  |

|                               |                            |          |                    |                             |  |                         |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|-----------------------------|--|-------------------------|---------------------------|-----------|-------|
| 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% |           |       |
|                               | [Btu/h]                    | [kcal/h] | [W]                | [W]                         | [A]                                    | [kg/h]                  | [Btu/Wh]                  | [kcal/Wh] | [W/W] |
| -35 (-31)                     | 336                        | 85       | 99                 | 112                         | 1.08                                   | 2.45                    | 2.98                      | 0.75      | 0.87  |
| -30 (-22)                     | 460                        | 116      | 135                | 130                         | 0.95                                   | 3.36                    | 3.51                      | 0.88      | 1.03  |
| -25 (-13)                     | 600                        | 151      | 176                | 149                         | 0.95                                   | 4.40                    | 3.99                      | 1.01      | 1.17  |
| -20 (-4)                      | 762                        | 192      | 223                | 171                         | 1.04                                   | 5.59                    | 4.45                      | 1.12      | 1.30  |
| -15 (+5)                      | 952                        | 240      | 279                | 193                         | 1.17                                   | 6.99                    | 4.92                      | 1.24      | 1.44  |
| -10 (+14)                     | 1173                       | 296      | 344                | 217                         | 1.30                                   | 8.64                    | 5.40                      | 1.36      | 1.58  |
| -5 (+23)                      | 1432                       | 361      | 419                | 242                         | 1.38                                   | 10.59                   | 5.91                      | 1.49      | 1.73  |
| 0 (+32)                       | 1732                       | 436      | 507                | 266                         | 1.36                                   | 12.87                   | 6.48                      | 1.63      | 1.90  |
| +5 (+41)                      | 2078                       | 524      | 609                | 291                         | 1.21                                   | 15.53                   | 7.13                      | 1.80      | 2.09  |
| +10 (+50)                     | 2476                       | 624      | 726                | 315                         | 0.87                                   | 18.61                   | 7.87                      | 1.98      | 2.31  |
| +15 (+59)                     | 2931                       | 739      | 859                | 338                         | 0.29                                   | 22.16                   | 8.72                      | 2.20      | 2.56  |

### E - PERFORMANCE - CURVES

| 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) | 281                        | 71       | 82  | 110                                     | 0.82                          | 2.05                    | 2.59                      | 0.65      | 0.76  |
| -30                           | (-22) | 409                        | 103      | 120 | 129                                     | 0.87                          | 2.99                    | 3.14                      | 0.79      | 0.92  |
| -25                           | (-13) | 550                        | 139      | 161 | 151                                     | 1.03                          | 4.04                    | 3.62                      | 0.91      | 1.06  |
| -20                           | (- 4) | 711                        | 179      | 208 | 176                                     | 1.22                          | 5.22                    | 4.05                      | 1.02      | 1.19  |
| -15                           | (+ 5) | 895                        | 226      | 262 | 203                                     | 1.42                          | 6.58                    | 4.45                      | 1.12      | 1.30  |
| -10                           | (+14) | 1109                       | 279      | 325 | 231                                     | 1.58                          | 8.17                    | 4.82                      | 1.22      | 1.41  |
| -5                            | (+23) | 1356                       | 342      | 397 | 261                                     | 1.65                          | 10.03                   | 5.21                      | 1.31      | 1.53  |
| 0                             | (+32) | 1642                       | 414      | 481 | 292                                     | 1.58                          | 12.20                   | 5.61                      | 1.41      | 1.64  |
| +5                            | (+41) | 1971                       | 497      | 578 | 324                                     | 1.33                          | 14.73                   | 6.06                      | 1.53      | 1.78  |
| +10                           | (+50) | 2349                       | 592      | 688 | 356                                     | 0.85                          | 17.66                   | 6.56                      | 1.65      | 1.92  |
| +15                           | (+59) | 2780                       | 701      | 815 | 388                                     | 0.10                          | 21.03                   | 7.15                      | 1.80      | 2.09  |

### F - EXTERNAL CHARACTERISTICS

|                         |                        |      |                          |
|-------------------------|------------------------|------|--------------------------|
| 1 Base plate            | European Standard EG/F |      |                          |
| 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           |      |                          |