

### COMPRESSOR DEFINITION

|                           |                           |
|---------------------------|---------------------------|
| Designation               | <b>F GS80HA</b>           |
| Nominal Voltage/Frequency | <b>220-240 V 50-60 Hz</b> |
| Engineering Number        | <b>513200557</b>          |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|  |                                   |                                   |           |
|--|-----------------------------------|-----------------------------------|-----------|
| 1 Type                                     | Hermetic reciprocating compressor |                                   |           |
| 2 Refrigerant                              | R-134a                            |                                   |           |
| 3 Nominal voltage and frequency            | 220-240 / 50-60                   | [ V / Hz ]                        |           |
| 4 Application type                         | Low Back Pressure                 |                                   |           |
| 4.1 Evaporating temperature range          | -35°C to -10°C                    | (-31°F to 14°F)                   |           |
| 5 Motor type                               | RSIR                              |                                   |           |
| 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)         | -                                 | -                                 | -         |
| 8.4 HBP (43°C Ambient temperature)         | -                                 | -                                 | -         |
| 9 Maximum condensing pressures/temperature |                                   |                                   |           |
| 9.1 Operating (gauge)                      | 16.2                              | [kgf/cm <sup>2</sup> ] (230 psig) | / °C - °F |
| 9.2 Peak (gauge)                           | 20.6                              | [kgf/cm <sup>2</sup> ] (293 psig) | / °C - °F |
| 10 Maximum winding temperature             | 130                               | [ °C ]                            |           |

### B - MECHANICAL DATA

|                               |               |  |
|-------------------------------|---------------|--|
| 1 Commercial designation      | 1/4           | [hp]                                       |
| 2 Displacement                | 7.15          | [cm <sup>3</sup> ] (0.436 cu.in)           |
| 2.1 Bore [mm]                 | 22.500        |  |
| 2.2 Stroke [mm]               | 18.000        |  |
| 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 | 220-240 V 50-60 Hz 1 ~ (Single phase) |                                    |
| 2 Starting device type                       | PTC                                   |                                    |
| 2.1 Starting device                          | 7M220MC1/8EA17C1/8EA5B1               |                                    |
| 3 Start capacitor                            | -                                     | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | -                                     | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM189RHBYY-53                        |                                    |
| 6 Start winding resistance                   | 15.00                                 | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 10.50                                 | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (50 Hz)        | 7.50                                  | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50 Hz)     | 1.10                                  | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50 Hz)      | -                                     | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | CCC - IRAM - UL - VDE                 |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                               |          |     |                             |                               |  |                           |  |       |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|--|---------------------------|--|-------|
| 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] |
| 693                           | 175      | 203 | 143                         | 0.95                          | 3.94   | 4.83                      | 1.22                                   | 1.42  |

### 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] | [W/W] |
| -35 (-31)                     | 380                        | 96       | 111                | 99                          | 0.83                                   | 2.15                    | 3.84                      | 0.97      | 1.13  |
| -30 (-22)                     | 549                        | 138      | 161                | 116                         | 0.88                                   | 3.11                    | 4.72                      | 1.19      | 1.38  |
| -25 (-13)                     | 727                        | 183      | 213                | 134                         | 0.93                                   | 4.13                    | 5.44                      | 1.37      | 1.59  |
| -20 (- 4)                     | 931                        | 235      | 273                | 153                         | 0.99                                   | 5.30                    | 6.10                      | 1.54      | 1.79  |
| -15 (+ 5)                     | 1176                       | 296      | 345                | 172                         | 1.05                                   | 6.71                    | 6.82                      | 1.72      | 2.00  |
| -10 (+14)                     | 1479                       | 373      | 433                | 191                         | 1.12                                   | 8.48                    | 7.70                      | 1.94      | 2.26  |

|                               |                            |          |                    |                             |  |                         |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|-----------------------------|--|-------------------------|---------------------------|-----------|-------|
| 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)                     | 312                        | 79       | 91                 | 97                          | 0.82                                   | 1.76                    | 3.23                      | 0.81      | 0.95  |
| -30 (-22)                     | 495                        | 125      | 145                | 117                         | 0.88                                   | 2.80                    | 4.16                      | 1.05      | 1.22  |
| -25 (-13)                     | 680                        | 171      | 199                | 139                         | 0.94                                   | 3.86                    | 4.88                      | 1.23      | 1.43  |
| -20 (- 4)                     | 884                        | 223      | 259                | 162                         | 1.01                                   | 5.03                    | 5.48                      | 1.38      | 1.61  |
| -15 (+ 5)                     | 1122                       | 283      | 329                | 185                         | 1.09                                   | 6.40                    | 6.07                      | 1.53      | 1.78  |
| -10 (+14)                     | 1410                       | 355      | 413                | 208                         | 1.18                                   | 8.08                    | 6.76                      | 1.70      | 1.98  |

|                               |                            |          |                    |                             |  |                         |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|-----------------------------|--|-------------------------|---------------------------|-----------|-------|
| 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)                     | 236                        | 59       | 69                 | 88                          | 0.79                                   | 1.33                    | 2.71                      | 0.68      | 0.79  |
| -30 (-22)                     | 428                        | 108      | 125                | 113                         | 0.86                                   | 2.42                    | 3.70                      | 0.93      | 1.08  |
| -25 (-13)                     | 614                        | 155      | 180                | 139                         | 0.94                                   | 3.49                    | 4.40                      | 1.11      | 1.29  |
| -20 (- 4)                     | 811                        | 204      | 238                | 166                         | 1.02                                   | 4.62                    | 4.92                      | 1.24      | 1.44  |
| -15 (+ 5)                     | 1035                       | 261      | 303                | 194                         | 1.12                                   | 5.91                    | 5.38                      | 1.35      | 1.58  |
| -10 (+14)                     | 1302                       | 328      | 381                | 222                         | 1.23                                   | 7.46                    | 5.86                      | 1.48      | 1.72  |

### 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                        |      |                          |
| 3.1.2 Shape             | Straight                      |      |                          |
| 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             | Straight                      |      |                          |
| 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             | Straight                      |      |                          |
| 3.4 Oil cooler (Copper) | No                            | [mm] |                          |
| 3.5 Connector sealing   | Rubber Plugs                  |      |                          |