

### COMPRESSOR DEFINITION

|                           |                           |
|---------------------------|---------------------------|
| Designation               | <b>F GS100HA</b>          |
| Nominal Voltage/Frequency | <b>220-240 V 50-60 Hz</b> |
| Engineering Number        | <b>513200342</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      | 1/3           | [hp]                                       |
| 2 Displacement                | 9.04          | [cm <sup>3</sup> ] (0.552 cu.in)           |
| 2.1 Bore [mm]                 | 24.000        |  |
| 2.2 Stroke [mm]               | 20.000        |  |
| 3 Lubricant charge            | 280           | [ml] (9.47 fl.oz.)                         |
| 3.1 Lubricants approved       |               |  |
| 3.2 Lubricants type/viscosity | ESTER / ISO22 |  |
| 4 Weight (with oil charge)    | 11.4          | [kg] (25.13 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                          | 8EA17C1/8EA5B1                        |                                    |
| 3 Start capacitor                            | -                                     | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | -                                     | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM276RFBYY-53                        |                                    |
| 6 Start winding resistance                   | 10.80                                 | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 8.00                                  | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (50 Hz)        | -                                     | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50 Hz)     | -                                     | [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 - TUV                             |                                    |

### 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] |
| 850                           | 214      | 249 | 178                         | 1.36                          | 4.83   | 4.77                      | 1.20                                   | 1.40  |

### 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)                     | 450                        | 113      | 132                | 123                         | 0.89                                   | 2.55                    | 3.65                      | 0.92      | 1.07  |
| -30 (-22)                     | 641                        | 162      | 188                | 144                         | 1.10                                   | 3.64                    | 4.43                      | 1.12      | 1.30  |
| -25 (-13)                     | 849                        | 214      | 249                | 167                         | 1.27                                   | 4.82                    | 5.10                      | 1.29      | 1.50  |
| -20 (- 4)                     | 1093                       | 275      | 320                | 190                         | 1.42                                   | 6.22                    | 5.76                      | 1.45      | 1.69  |
| -15 (+ 5)                     | 1391                       | 350      | 408                | 215                         | 1.56                                   | 7.94                    | 6.48                      | 1.63      | 1.90  |
| -10 (+14)                     | 1762                       | 444      | 516                | 239                         | 1.72                                   | 10.10                   | 7.34                      | 1.85      | 2.15  |

|                               |                            |          |                    |                             |  |                         |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|-----------------------------|--|-------------------------|---------------------------|-----------|-------|
| 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)                     | 371                        | 94       | 109                | 122                         | 0.84                                   | 2.10                    | 3.06                      | 0.77      | 0.90  |
| -30 (-22)                     | 565                        | 142      | 166                | 145                         | 1.08                                   | 3.20                    | 3.87                      | 0.98      | 1.13  |
| -25 (-13)                     | 773                        | 195      | 227                | 170                         | 1.29                                   | 4.39                    | 4.54                      | 1.14      | 1.33  |
| -20 (- 4)                     | 1014                       | 256      | 297                | 198                         | 1.47                                   | 5.77                    | 5.14                      | 1.30      | 1.51  |
| -15 (+ 5)                     | 1306                       | 329      | 383                | 226                         | 1.65                                   | 7.46                    | 5.77                      | 1.45      | 1.69  |
| -10 (+14)                     | 1669                       | 421      | 489                | 256                         | 1.84                                   | 9.56                    | 6.49                      | 1.64      | 1.90  |

|                               |                            |          |                    |                             |  |                         |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|-----------------------------|--|-------------------------|---------------------------|-----------|-------|
| 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)                     | 293                        | 74       | 86                 | 113                         | 0.79                                   | 1.66                    | 2.59                      | 0.65      | 0.76  |
| -30 (-22)                     | 487                        | 123      | 143                | 139                         | 1.07                                   | 2.76                    | 3.44                      | 0.87      | 1.01  |
| -25 (-13)                     | 692                        | 175      | 203                | 168                         | 1.32                                   | 3.93                    | 4.11                      | 1.03      | 1.20  |
| -20 (- 4)                     | 928                        | 234      | 272                | 200                         | 1.54                                   | 5.28                    | 4.67                      | 1.18      | 1.37  |
| -15 (+ 5)                     | 1213                       | 306      | 355                | 233                         | 1.76                                   | 6.92                    | 5.21                      | 1.31      | 1.53  |
| -10 (+14)                     | 1565                       | 394      | 459                | 269                         | 1.98                                   | 8.97                    | 5.81                      | 1.46      | 1.70  |

### F - EXTERNAL CHARACTERISTICS

|                         |                     |      |                          |
|-------------------------|---------------------|------|--------------------------|
| 1 Base plate            | Universal EG/F      |      |                          |
| 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 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        |      |                          |