

### COMPRESSOR DEFINITION

|                           |                    |
|---------------------------|--------------------|
| Designation               | EG ZS90HLC         |
| Nominal Voltage/Frequency | 220-240 V 50-60 Hz |
| Engineering Number        | 513701017          |

### 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                       | RSCR                              |                                   |              |
| 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                      | 198 to 255 V |
| 8.2 LBP (43°C Ambient temperature) | Static                            | 198 to 255 V                      | 198 to 255 V |
| 8.3 HBP (32°C Ambient temperature) | -                                 | -                                 | -            |
| 8.4 HBP (43°C Ambient temperature) | -                                 | -                                 | -            |
| 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                | 7.15          | [cm <sup>3</sup> ] (0.436 cu.in)           |
| 2.1 Bore [mm]                 | 22.500        |  |
| 2.2 Stroke [mm]               | 18.000        |  |
| 3 Lubricant charge            | 230           | [ml] (7.78 fl.oz.)                         |
| 3.1 Lubricants approved       |               |  |
| 3.2 Lubricants type/viscosity | ESTER / ISO10 |  |
| 4 Weight (with oil charge)    | 10.84         | [kg] (23.90 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                          | 8EA17C3/QPS2-A22MD3/QPS2-A22MD3 091   |                                    |
| 3 Start capacitor                            | -                                     | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | 4(330)/5(330)                         | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM283NFBYY-53                        |                                    |
| 6 Start winding resistance                   | 21.70                                 | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 10.40                                 | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (50/60 Hz)     | 10.00/9.30                            | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50/60 Hz)  | 1.40/1.30                             | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50/60 Hz)   | -                                     | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | CE - IRAM - TUV - UKCA - 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<br>consumption<br>+/- 5% | Current<br>consumption<br>+/- 5% | Gas flow<br>rate<br>+/- 5%                         | EFFICIENCY RATE<br>+/- 7% |  |       |
| [Btu/h]                       | [kcal/h] | [W] | [W]                            | [A]                              | [kg/h]   | [Btu/Wh]                  | [kcal/Wh]                              | [W/W] |
| 767                           | 193      | 225 | 133                            | 0.71                             | 4.36   | 5.77                      | 1.45                                   | 1.69  |

|                               |          |     |                                |                                  |  |                           |  |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS:<br>@220V60Hz |          |     | 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<br>consumption<br>+/- 5% | Current<br>consumption<br>+/- 5% | Gas flow<br>rate<br>+/- 5%                         | EFFICIENCY RATE<br>+/- 7% |  |       |
| [Btu/h]                       | [kcal/h] | [W] | [W]                            | [A]                              | [kg/h]   | [Btu/Wh]                  | [kcal/Wh]                              | [W/W] |
| 950                           | 239      | 278 | 157                            | 0.72                             | 5.40   | 6.04                      | 1.52                                   | 1.77  |

### E - PERFORMANCE - CURVES

|                               |                            |          |                    |                                |  |                            |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |                            |          | ASHRAE32<br>Static |                                | (Condensing temperature 45°C (+113°F)) |                            |                           |           |       |
| Evaporating<br>temperature    | Cooling capacity<br>+/- 5% |          |                    | Power<br>consumption<br>+/- 5% | Current<br>consumption<br>+/- 5%       | Gas flow<br>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)                     | 405                        | 102      | 119                | 85                             | 0.48                                   | 2.29                       | 4.72                      | 1.19      | 1.38  |
| -30 (-22)                     | 572                        | 144      | 167                | 102                            | 0.56                                   | 3.24                       | 5.60                      | 1.41      | 1.64  |
| -25 (-13)                     | 758                        | 191      | 222                | 119                            | 0.65                                   | 4.30                       | 6.37                      | 1.61      | 1.87  |
| -20 (- 4)                     | 977                        | 246      | 286                | 137                            | 0.75                                   | 5.56                       | 7.15                      | 1.80      | 2.09  |
| -15 (+ 5)                     | 1245                       | 314      | 365                | 155                            | 0.85                                   | 7.10                       | 8.01                      | 2.02      | 2.35  |
| -10 (+14)                     | 1574                       | 397      | 461                | 173                            | 0.94                                   | 9.02                       | 9.06                      | 2.28      | 2.65  |

|                               |                            |          |                    |                                |  |                            |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |                            |          | ASHRAE32<br>Static |                                | (Condensing temperature 55°C (+131°F)) |                            |                           |           |       |
| Evaporating<br>temperature    | Cooling capacity<br>+/- 5% |          |                    | Power<br>consumption<br>+/- 5% | Current<br>consumption<br>+/- 5%       | Gas flow<br>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)                     | 334                        | 84       | 98                 | 82                             | 0.46                                   | 1.89                       | 4.10                      | 1.03      | 1.20  |
| -30 (-22)                     | 507                        | 128      | 149                | 101                            | 0.56                                   | 2.88                       | 4.98                      | 1.25      | 1.46  |
| -25 (-13)                     | 696                        | 176      | 204                | 122                            | 0.66                                   | 3.95                       | 5.69                      | 1.44      | 1.67  |
| -20 (- 4)                     | 915                        | 231      | 268                | 144                            | 0.78                                   | 5.21                       | 6.35                      | 1.60      | 1.86  |
| -15 (+ 5)                     | 1178                       | 297      | 345                | 167                            | 0.90                                   | 6.73                       | 7.05                      | 1.78      | 2.06  |
| -10 (+14)                     | 1500                       | 378      | 439                | 190                            | 1.02                                   | 8.59                       | 7.87                      | 1.98      | 2.31  |

### 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]  |
| -35                           | (-31)                      | 256                | 64      | 75                          | 73                                     | 0.42                    | 1.45                      | 3.51 | 0.88 | 1.03 |
| -30                           | (-22)                      | 432                | 109     | 127                         | 96                                     | 0.53                    | 2.45                      | 4.40 | 1.11 | 1.29 |
| -25                           | (-13)                      | 620                | 156     | 182                         | 121                                    | 0.66                    | 3.52                      | 5.09 | 1.28 | 1.49 |
| -20                           | (- 4)                      | 834                | 210     | 244                         | 148                                    | 0.80                    | 4.74                      | 5.66 | 1.43 | 1.66 |
| -15                           | (+ 5)                      | 1088               | 274     | 319                         | 175                                    | 0.95                    | 6.21                      | 6.22 | 1.57 | 1.82 |
| -10                           | (+14)                      | 1397               | 352     | 409                         | 204                                    | 1.10                    | 8.00                      | 6.85 | 1.73 | 2.01 |

| TEST CONDITIONS:<br>@220V60Hz |                            | 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]  |
| -35                           | (-31)                      | 499                | 126     | 146                         | 102                                    | 0.49                    | 2.82                      | 4.86 | 1.22 | 1.42 |
| -30                           | (-22)                      | 704                | 177     | 206                         | 122                                    | 0.57                    | 3.99                      | 5.77 | 1.45 | 1.69 |
| -25                           | (-13)                      | 934                | 235     | 274                         | 143                                    | 0.66                    | 5.30                      | 6.57 | 1.66 | 1.93 |
| -20                           | (- 4)                      | 1205               | 304     | 353                         | 164                                    | 0.76                    | 6.86                      | 7.37 | 1.86 | 2.16 |
| -15                           | (+ 5)                      | 1535               | 387     | 450                         | 186                                    | 0.86                    | 8.77                      | 8.26 | 2.08 | 2.42 |
| -10                           | (+14)                      | 1942               | 489     | 569                         | 207                                    | 0.95                    | 11.13                     | 9.34 | 2.35 | 2.74 |

| TEST CONDITIONS:<br>@220V60Hz |                            | 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]  |
| -35                           | (-31)                      | 412                | 104     | 121                         | 98                                     | 0.47                    | 2.33                      | 4.24 | 1.07 | 1.24 |
| -30                           | (-22)                      | 626                | 158     | 183                         | 121                                    | 0.57                    | 3.55                      | 5.14 | 1.29 | 1.50 |
| -25                           | (-13)                      | 859                | 217     | 252                         | 146                                    | 0.68                    | 4.88                      | 5.88 | 1.48 | 1.72 |
| -20                           | (- 4)                      | 1130               | 285     | 331                         | 173                                    | 0.80                    | 6.43                      | 6.56 | 1.65 | 1.92 |
| -15                           | (+ 5)                      | 1454               | 366     | 426                         | 200                                    | 0.92                    | 8.30                      | 7.27 | 1.83 | 2.13 |
| -10                           | (+14)                      | 1851               | 466     | 542                         | 227                                    | 1.04                    | 10.60                     | 8.12 | 2.05 | 2.38 |

| TEST CONDITIONS:<br>@220V60Hz |                            | 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]  |
| -35                           | (-31)                      | 316                | 80      | 92                          | 87                                     | 0.42                    | 1.78                      | 3.62 | 0.91 | 1.06 |
| -30                           | (-22)                      | 533                | 134     | 156                         | 115                                    | 0.54                    | 3.02                      | 4.54 | 1.14 | 1.33 |
| -25                           | (-13)                      | 765                | 193     | 224                         | 145                                    | 0.67                    | 4.34                      | 5.25 | 1.32 | 1.54 |
| -20                           | (- 4)                      | 1029               | 259     | 302                         | 177                                    | 0.81                    | 5.86                      | 5.84 | 1.47 | 1.71 |
| -15                           | (+ 5)                      | 1343               | 339     | 394                         | 210                                    | 0.96                    | 7.67                      | 6.42 | 1.62 | 1.88 |
| -10                           | (+14)                      | 1724               | 435     | 505                         | 243                                    | 1.12                    | 9.88                      | 7.07 | 1.78 | 2.07 |

### F - EXTERNAL CHARACTERISTICS

|                         |                                       |      |                          |
|-------------------------|---------------------------------------|------|--------------------------|
| 1 Base plate            | European Standard 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           | 4.94 +0.08/-0.08                      | [mm] | (0.194" +0.003"/-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             | Straight                              |      |                          |
| 3.4 Oil cooler (Copper) | No                                    | [mm] |                          |
| 3.5 Connector sealing   | Rubber Plugs                          |      |                          |