

### COMPRESSOR DEFINITION

|                           |                    |
|---------------------------|--------------------|
| Designation               | EG ZS90HLC         |
| Nominal Voltage/Frequency | 220-240 V 50-60 Hz |
| Engineering Number        | 513701045          |

### 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                      | 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            | 280           | [ml] (9.47 fl.oz.)                         |
| 3.1 Lubricants approved       |               |  |
| 3.2 Lubricants type/viscosity | ESTER / ISO10 |  |
| 4 Weight (with oil charge)    | 11.34         | [kg] (25.00 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/QPS2-A22MG1/QPS2-A22MG1 092   |                                    |
| 3 Start capacitor                            | -                                     | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | -                                     | [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)  | -                                     | [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                |                                    |

### 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] |
| 770                           | 194      | 226 | 135                            | 0.71                             | 4.38   | 5.71                      | 1.44                                   | 1.67  |

|                               |          |     |                                |                                  |  |                           |  |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| 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 | 162                            | 0.72                             | 5.40   | 5.86                      | 1.48                                   | 1.72  |

### 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                | 89                             | 0.48                                   | 2.29                       | 4.51                      | 1.14      | 1.32  |
| -30 (-22)                     | 572                        | 144      | 167                | 106                            | 0.56                                   | 3.24                       | 5.35                      | 1.35      | 1.57  |
| -25 (-13)                     | 758                        | 191      | 222                | 125                            | 0.65                                   | 4.30                       | 6.10                      | 1.54      | 1.79  |
| -20 (- 4)                     | 977                        | 246      | 286                | 143                            | 0.75                                   | 5.56                       | 6.84                      | 1.72      | 2.00  |
| -15 (+ 5)                     | 1245                       | 314      | 365                | 162                            | 0.85                                   | 7.10                       | 7.66                      | 1.93      | 2.24  |
| -10 (+14)                     | 1574                       | 397      | 461                | 181                            | 0.94                                   | 9.02                       | 8.66                      | 2.18      | 2.54  |

|                               |                            |          |                    |                                |  |                            |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| 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                 | 85                             | 0.46                                   | 1.89                       | 3.93                      | 0.99      | 1.15  |
| -30 (-22)                     | 507                        | 128      | 149                | 106                            | 0.56                                   | 2.88                       | 4.76                      | 1.20      | 1.40  |
| -25 (-13)                     | 696                        | 176      | 204                | 128                            | 0.66                                   | 3.95                       | 5.45                      | 1.37      | 1.60  |
| -20 (- 4)                     | 915                        | 231      | 268                | 151                            | 0.78                                   | 5.21                       | 6.08                      | 1.53      | 1.78  |
| -15 (+ 5)                     | 1178                       | 297      | 345                | 175                            | 0.90                                   | 6.73                       | 6.74                      | 1.70      | 1.97  |
| -10 (+14)                     | 1500                       | 378      | 439                | 198                            | 1.02                                   | 8.59                       | 7.53                      | 1.90      | 2.21  |

### 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)                     | 256                        | 64                 | 75       | 76                          | 0.42                                   | 1.45                    | 3.36                      | 0.85     | 0.98      |       |
| -30 (-22)                     | 432                        | 109                | 127      | 101                         | 0.53                                   | 2.45                    | 4.21                      | 1.06     | 1.23      |       |
| -25 (-13)                     | 620                        | 156                | 182      | 127                         | 0.66                                   | 3.52                    | 4.87                      | 1.23     | 1.43      |       |
| -20 (- 4)                     | 834                        | 210                | 244      | 155                         | 0.80                                   | 4.74                    | 5.42                      | 1.37     | 1.59      |       |
| -15 (+ 5)                     | 1088                       | 274                | 319      | 183                         | 0.95                                   | 6.21                    | 5.95                      | 1.50     | 1.74      |       |
| -10 (+14)                     | 1397                       | 352                | 409      | 213                         | 1.10                                   | 8.00                    | 6.55                      | 1.65     | 1.92      |       |

| 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]                     | [kg/h]                    | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 (-31)                     | 499                        | 126                | 146      | 107                         | 0.49                                   | 2.82                    | 4.65                      | 1.17     | 1.36      |       |
| -30 (-22)                     | 704                        | 177                | 206      | 127                         | 0.57                                   | 3.99                    | 5.52                      | 1.39     | 1.62      |       |
| -25 (-13)                     | 934                        | 235                | 274      | 149                         | 0.66                                   | 5.30                    | 6.29                      | 1.58     | 1.84      |       |
| -20 (- 4)                     | 1205                       | 304                | 353      | 171                         | 0.76                                   | 6.86                    | 7.05                      | 1.78     | 2.07      |       |
| -15 (+ 5)                     | 1535                       | 387                | 450      | 194                         | 0.86                                   | 8.77                    | 7.91                      | 1.99     | 2.32      |       |
| -10 (+14)                     | 1942                       | 489                | 569      | 217                         | 0.95                                   | 11.13                   | 8.94                      | 2.25     | 2.62      |       |

| 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]                     | [kg/h]                    | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 (-31)                     | 412                        | 104                | 121      | 102                         | 0.47                                   | 2.33                    | 4.06                      | 1.02     | 1.19      |       |
| -30 (-22)                     | 626                        | 158                | 183      | 127                         | 0.57                                   | 3.55                    | 4.91                      | 1.24     | 1.44      |       |
| -25 (-13)                     | 859                        | 217                | 252      | 153                         | 0.68                                   | 4.88                    | 5.62                      | 1.42     | 1.65      |       |
| -20 (- 4)                     | 1130                       | 285                | 331      | 180                         | 0.80                                   | 6.43                    | 6.27                      | 1.58     | 1.84      |       |
| -15 (+ 5)                     | 1454                       | 366                | 426      | 209                         | 0.92                                   | 8.30                    | 6.96                      | 1.75     | 2.04      |       |
| -10 (+14)                     | 1851                       | 466                | 542      | 237                         | 1.04                                   | 10.60                   | 7.77                      | 1.96     | 2.28      |       |

| 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]                     | [kg/h]                    | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 (-31)                     | 316                        | 80                 | 92       | 91                          | 0.42                                   | 1.78                    | 3.46                      | 0.87     | 1.01      |       |
| -30 (-22)                     | 533                        | 134                | 156      | 120                         | 0.54                                   | 3.02                    | 4.34                      | 1.09     | 1.27      |       |
| -25 (-13)                     | 765                        | 193                | 224      | 152                         | 0.67                                   | 4.34                    | 5.02                      | 1.27     | 1.47      |       |
| -20 (- 4)                     | 1029                       | 259                | 302      | 185                         | 0.81                                   | 5.86                    | 5.59                      | 1.41     | 1.64      |       |
| -15 (+ 5)                     | 1343                       | 339                | 394      | 219                         | 0.96                                   | 7.67                    | 6.14                      | 1.55     | 1.80      |       |
| -10 (+14)                     | 1724                       | 435                | 505      | 254                         | 1.12                                   | 9.88                    | 6.76                      | 1.70     | 1.98      |       |

### 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           | 4.94 +0.08/-0.08              | [mm] | (0.194" +0.003"/-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                  |      |                          |