

## COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | EM T2130GK      |
| Nominal Voltage/Frequency | 220-240 V 50 Hz |
| Engineering Number        | 513306211       |

## A - APPLICATION / LIMIT WORKING CONDITIONS

|                                            |                                   |                         |           |
|--------------------------------------------|-----------------------------------|-------------------------|-----------|
| 1 Type                                     | Hermetic reciprocating compressor |                         |           |
| 2 Refrigerant                              | R-404A                            |                         |           |
| 3 Nominal voltage and frequency            | 220-240 / 50                      | [ V / Hz ]              |           |
| 4 Application type                         | Low Back Pressure R404A           |                         |           |
| 4.1 Evaporating temperature range          | -40°C to -10°C                    | (-40°F to 14°F)         |           |
| 5 Motor type                               | CSIR                              |                         |           |
| 6 Starting torque                          | HST - Hight starting torque       |                         |           |
| 7 Expantion device                         | Capillary tube or Expansion valve |                         |           |
| 8 Compressor cooling                       |                                   | Operating voltage range |           |
|                                            |                                   | 50 Hz                   | 60 Hz     |
| 8.1 LBP (32°C Ambient temperature)         | -                                 | -                       | -         |
| 8.2 LBP (43°C Ambient temperature)         | -                                 | -                       | -         |
| 8.3 HBP (32°C Ambient temperature)         | -                                 | -                       | -         |
| 8.4 HBP (43°C Ambient temperature)         | -                                 | -                       | -         |
| 9 Maximum condensing pressures/temperature |                                   |                         |           |
| 9.1 Operating (gauge)                      | 25,7                              | [kgf/cm²] (365 psig)    | / °C - °F |
| 9.2 Peak (gauge)                           | 28,7                              | [kgf/cm²] (408 psig)    |           |
| 10 Maximum winding temperature             | 130                               | [ °C ]                  |           |

## B - MECHANICAL DATA

|                               |               |                                            |
|-------------------------------|---------------|--------------------------------------------|
| 1 Commercial designation      | 1/2-          | [hp]                                       |
| 2 Displacement                | 6,76          | [cm <sup>3</sup> ] (0.413 cu.in)           |
| 2.1 Bore [mm]                 | 22,500        |                                            |
| 2.2 Stroke [mm]               | 17,000        |                                            |
| 3 Lubricant charge            | 180           | [ml] (6.09 fl.oz.)                         |
| 3.1 Lubricants approved       |               |                                            |
| 3.2 Lubricants type/viscosity | ESTER / ISO22 |                                            |
| 4 Weight (with oil charge)    | 8             | [kg] (17.64 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 Hz 1 ~ (Single phase) |                                    |
| 2 Starting device type                       | Current Relay                      |                                    |
| 2.1 Starting device                          | MTRPH-0025-65                      |                                    |
| 3 Start capacitor                            | 72-88(330)                         | [μF(VAC minimum)]                  |
| 4 Run capacitor                              | -                                  | [μF(VAC minimum)]                  |
| 5 Motor protection                           | T0971/G6                           |                                    |
| 6 Start winding resistance                   | 16.95                              | [Wat 25°C (77°F)] +/- 8%           |
| 7 Run winding resistance                     | 10.10                              | [Wat 25°C (77°F)] +/- 8%           |
| 8 LRA - Locked rotor amperage (50 Hz)        | 12.40                              | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50 Hz)     | 2.80                               | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50 Hz)      | 3.05                               | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | VDE                                |                                    |

## D - PERFORMANCE - CHECK POINT DATA

|                               |          |     |                                |                                  |                                                    |                                         |           |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|----------------------------------------------------|-----------------------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |          |     | ASHRAELBP32<br>Fan             |                                  | 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] |
| 1332                          | 336      | 390 | 292                            | 1,80                             | 9,03                                               | 4,56                                    | 1,15      | 1,34  |

## E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V50Hz |       | ASHRAE32<br>Fan            |          |     | (Condensing temperature 35°C (+95°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] |
| -40                           | (-40) | 660                        | 166      | 193 | 180                                    | 1,50                          | 4,44                    | 3,67                      | 0,93      | 1,08  |
| -35                           | (-31) | 859                        | 217      | 252 | 203                                    | 1,55                          | 5,79                    | 4,23                      | 1,07      | 1,24  |
| -30                           | (-22) | 1098                       | 277      | 322 | 227                                    | 1,63                          | 7,43                    | 4,84                      | 1,22      | 1,42  |
| -25                           | (-13) | 1380                       | 348      | 404 | 253                                    | 1,70                          | 9,38                    | 5,46                      | 1,38      | 1,60  |
| -20                           | (- 4) | 1712                       | 432      | 502 | 281                                    | 1,80                          | 11,69                   | 6,09                      | 1,54      | 1,78  |
| -15                           | (+ 5) | 2097                       | 529      | 615 | 310                                    | 1,90                          | 14,41                   | 6,77                      | 1,71      | 1,98  |
| -10                           | (+14) | 2541                       | 641      | 745 | 340                                    | 2,00                          | 17,58                   | 7,47                      | 1,88      | 2,19  |

| TEST CONDITIONS:<br>@220V50Hz |       | ASHRAE32<br>Fan            |          |     | (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] |
| -40                           | (-40) | 593                        | 150      | 174 | 183                                     | 1,50                          | 3,98                    | 3,24                      | 0,82      | 0,95  |
| -35                           | (-31) | 789                        | 199      | 231 | 210                                     | 1,56                          | 5,31                    | 3,76                      | 0,95      | 1,10  |
| -30                           | (-22) | 1022                       | 258      | 300 | 237                                     | 1,64                          | 6,90                    | 4,31                      | 1,09      | 1,26  |
| -25                           | (-13) | 1295                       | 327      | 380 | 268                                     | 1,74                          | 8,78                    | 4,83                      | 1,22      | 1,42  |
| -20                           | (- 4) | 1615                       | 407      | 473 | 302                                     | 1,86                          | 11,01                   | 5,35                      | 1,35      | 1,57  |
| -15                           | (+ 5) | 1985                       | 501      | 582 | 337                                     | 1,98                          | 13,61                   | 5,89                      | 1,49      | 1,73  |
| -10                           | (+14) | 2412                       | 608      | 707 | 374                                     | 2,11                          | 16,65                   | 6,45                      | 1,63      | 1,89  |

| TEST CONDITIONS:<br>@220V50Hz |       | ASHRAE32<br>Fan            |          |     |                             | (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] |
| -40                           | (-40) | 524                        | 132      | 154 | 185                         | 1,50                                    | 3,51                    | 2,83                      | 0,71      | 0,83  |
| -35                           | (-31) | 716                        | 181      | 210 | 215                         | 1,57                                    | 4,81                    | 3,33                      | 0,84      | 0,98  |
| -30                           | (-22) | 932                        | 235      | 273 | 246                         | 1,65                                    | 6,28                    | 3,79                      | 0,96      | 1,11  |
| -25                           | (-13) | 1190                       | 300      | 349 | 280                         | 1,77                                    | 8,05                    | 4,25                      | 1,07      | 1,25  |
| -20                           | (- 4) | 1502                       | 379      | 440 | 320                         | 1,93                                    | 10,22                   | 4,69                      | 1,18      | 1,37  |
| -15                           | (+ 5) | 1848                       | 466      | 542 | 365                         | 2,09                                    | 12,65                   | 5,06                      | 1,28      | 1,48  |
| -10                           | (+14) | 2270                       | 572      | 665 | 410                         | 2,25                                    | 15,64                   | 5,54                      | 1,40      | 1,62  |

## F - EXTERNAL CHARACTERISTICS

|                         |                                |      |                          |
|-------------------------|--------------------------------|------|--------------------------|
| 1 Base plate            | European Standard EUEM         |      |                          |
| 2 Tray holder           | No                             |      |                          |
| 3 Connectors            |                                |      |                          |
| 3.1 SUCTION             | 6,1 +0.10/+0.00                | [mm] | (0.240" +0.004"/+0.000") |
| 3.1.1 Material          | Copper                         |      |                          |
| 3.1.2 Shape             | Slanted 42° up + 45° to Back   |      |                          |
| 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 parallel BP+24°to Back |      |                          |
| 3.3 PROCESS             | 6,1 +0.10/+0.00                | [mm] | (0.240" +0.004"/+0.000") |
| 3.3.1 Material          | Copper                         |      |                          |
| 3.3.2 Shape             | Slanted 45° up + 45° to Back   |      |                          |
| 3.4 Oil cooler (Copper) | No                             | [mm] |                          |
| 3.5 Connector sealing   | Rubber Plugs                   |      |                          |