

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | EM 50HNP        |
| Nominal Voltage/Frequency | 220-240 V 50 Hz |
| Engineering Number        | 513302038       |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|                                    |                                   |                         |                 |
|------------------------------------|-----------------------------------|-------------------------|-----------------|
| 1 Type                             | Hermetic reciprocating compressor |                         |                 |
| 2 Refrigerant                      | R-134a                            |                         |                 |
| 3 Nominal voltage and frequency    | 220-240 / 50                      | [ 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 Expantion device                 | Capillary tube                    |                         |                 |
| 8 Compressor cooling               |                                   | Operating voltage range |                 |
|                                    |                                   | 50 Hz                   | 60 Hz           |
| 8.1 LBP (32°C Ambient temperature) | Static                            | 187 to 255 V            | -               |
| 8.2 LBP (43°C Ambient temperature) | Static                            | 187 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/cm²] (202 psig)    | / °C - °F       |
| 9.2 Peak                           | 15.9                              | [kgf/cm²] (226 psig)    | / °C - °F       |
| 10 Maximum winding temperature     | 130                               | [ °C ]                  |                 |

### B - MECHANICAL DATA

|                               |               |                               |
|-------------------------------|---------------|-------------------------------|
| 1 Commercial designation      | 1/8           | [hp]                          |
| 2 Displacement                | 4.99          | [cm³] (0.305 cu.in)           |
| 2.1 Bore [mm]                 | 21.000        |                               |
| 2.2 Stroke [mm]               | 14.400        |                               |
| 3 Lubricant charge            | 160           | [ml] (5.41 fl.oz.)            |
| 3.1 Lubricants approved       |               |                               |
| 3.2 Lubricants type/viscosity | ESTER / ISO10 |                               |
| 4 Weight (with oil charge)    | 7.6           | [kg] (16.75 lb.)              |
| 5 Nitrogen charge             | 0.2 to 0.3    | [kgf/cm²] (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                       | PTC                                |                                    |
| 2.1 Starting device                          | 8EA17C3/8EA5B3/QPS2-A22MD3         |                                    |
| 3 Start capacitor                            | -                                  | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | 2(330)                             | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM189RHBYY-53                     |                                    |
| 6 Start winding resistance                   | 24.50                              | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 17.90                              | [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 - CE - IRAM - 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><br>+/- 5% |          |     | Power<br>consumption<br><br>+/- 5% | Current<br>consumption<br><br>+/- 5% | Gas flow<br>rate<br><br>+/- 5%                     | EFFICIENCY RATE<br><br>+/- 7% |                                         |       |
| [Btu/h]                        | [kcal/h] | [W] | [W]                                | [A]                                  | [kg/h]                                             | [Btu/Wh]                      | [kcal/Wh]                               | [W/W] |
| 430                            | 108      | 126 | 103                                | 0.82                                 | 2.44                                               | 4.17                          | 1.05                                    | 1.22  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:        |       | ASHRAE32         |          |     |                   | (Condensing temperature 45°C (+113°F) ) |               |                 |           |       |
|-------------------------|-------|------------------|----------|-----|-------------------|-----------------------------------------|---------------|-----------------|-----------|-------|
| @220V50Hz               |       | Static           |          |     |                   |                                         |               |                 |           |       |
| Evaporating temperature |       | Cooling capacity |          |     | Power consumption | Current consumption                     | Gas flow rate | EFFICIENCY RATE |           |       |
|                         |       | +/- 5%           |          |     | +/- 5%            | +/- 5%                                  | +/- 5%        | +/- 7%          |           |       |
| °C                      | (°F)  | [Btu/h]          | [kcal/h] | [W] | [W]               | [A]                                     | [kg/h]        | [Btu/Wh]        | [kcal/Wh] | [W/W] |
| -35                     | (-31) | 180              | 45       | 53  | 71                | 0.73                                    | 1.02          | 2.55            | 0.64      | 0.75  |
| -30                     | (-22) | 292              | 73       | 85  | 85                | 0.79                                    | 1.65          | 3.42            | 0.86      | 1.00  |
| -25                     | (-13) | 414              | 104      | 121 | 97                | 0.81                                    | 2.35          | 4.28            | 1.08      | 1.25  |
| -20                     | (- 4) | 554              | 140      | 162 | 108               | 0.82                                    | 3.15          | 5.13            | 1.29      | 1.50  |
| -15                     | (+ 5) | 719              | 181      | 211 | 119               | 0.83                                    | 4.11          | 6.00            | 1.51      | 1.76  |
| -10                     | (+14) | 918              | 231      | 269 | 132               | 0.86                                    | 5.26          | 6.91            | 1.74      | 2.03  |

| 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) | 152                        | 38       | 45  | 70                                      | 0.76                          | 0.86                    | 2.17                      | 0.55      | 0.64  |
| -30                           | (-22) | 254                        | 64       | 75  | 85                                      | 0.78                          | 1.44                    | 2.97                      | 0.75      | 0.87  |
| -25                           | (-13) | 370                        | 93       | 108 | 99                                      | 0.79                          | 2.10                    | 3.75                      | 0.95      | 1.10  |
| -20                           | (- 4) | 505                        | 127      | 148 | 112                                     | 0.81                          | 2.88                    | 4.52                      | 1.14      | 1.32  |
| -15                           | (+ 5) | 669                        | 169      | 196 | 126                                     | 0.87                          | 3.82                    | 5.29                      | 1.33      | 1.55  |
| -10                           | (+14) | 868                        | 219      | 254 | 142                                     | 0.97                          | 4.97                    | 6.09                      | 1.54      | 1.79  |

| TEST CONDITIONS:        |       | ASHRAE32         |          |     |                   | (Condensing temperature 65°C (+149°F) ) |               |                 |           |       |
|-------------------------|-------|------------------|----------|-----|-------------------|-----------------------------------------|---------------|-----------------|-----------|-------|
| @220V50Hz               |       | Static           |          |     |                   |                                         |               |                 |           |       |
| Evaporating temperature |       | Cooling capacity |          |     | Power consumption | Current consumption                     | Gas flow rate | EFFICIENCY RATE |           |       |
|                         |       | +/- 5%           |          |     | +/- 5%            | +/- 5%                                  | +/- 5%        | +/- 7%          |           |       |
| °C                      | (°F)  | [Btu/h]          | [kcal/h] | [W] | [W]               | [A]                                     | [kg/h]        | [Btu/Wh]        | [kcal/Wh] | [W/W] |
| -35                     | (-31) | 110              | 28       | 32  | 63                | 0.73                                    | 0.62          | 1.72            | 0.43      | 0.50  |
| -30                     | (-22) | 199              | 50       | 58  | 80                | 0.72                                    | 1.13          | 2.48            | 0.63      | 0.73  |
| -25                     | (-13) | 303              | 76       | 89  | 95                | 0.74                                    | 1.72          | 3.20            | 0.81      | 0.94  |
| -20                     | (- 4) | 431              | 109      | 126 | 111               | 0.79                                    | 2.45          | 3.91            | 0.98      | 1.15  |
| -15                     | (+ 5) | 589              | 148      | 172 | 128               | 0.90                                    | 3.36          | 4.61            | 1.16      | 1.35  |
| -10                     | (+14) | 784              | 198      | 230 | 147               | 1.09                                    | 4.49          | 5.33            | 1.34      | 1.56  |

## F - EXTERNAL CHARACTERISTICS

|                         |                               |      |                          |
|-------------------------|-------------------------------|------|--------------------------|
| 1 Base plate            | Universal EG/F/AMEM version 2 |      |                          |
| 2 Tray holder           | Yes                           |      |                          |
| 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             | 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                  |      |                          |