

### COMPRESSOR DEFINITION

|                           |             |
|---------------------------|-------------|
| Designation               | EM 40NR     |
| Nominal Voltage/Frequency | 115 V 60 Hz |
| Engineering Number        | 513302025   |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|                                    |                                   |                                   |              |
|------------------------------------|-----------------------------------|-----------------------------------|--------------|
| 1 Type                             | Hermetic reciprocating compressor |                                   |              |
| 2 Refrigerant                      | Blend                             |                                   |              |
| 3 Nominal voltage and frequency    | 115 / 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/CSIR                         |                                   |              |
| 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                            | -                                 | 103 to 127 V |
| 8.2 LBP (43°C Ambient temperature) | Static                            | -                                 | 103 to 127 V |
| 8.3 HBP (32°C Ambient temperature) | -                                 | -                                 | -            |
| 8.4 HBP (43°C Ambient temperature) | -                                 | -                                 | -            |
| 9 Maximum condensing temperature   |                                   |                                   |              |
| 9.1 Operating                      | 14.5                              | [kgf/cm <sup>2</sup> ] (206 psig) | / °C - °F    |
| 9.2 Peak                           | 18.2                              | [kgf/cm <sup>2</sup> ] (259 psig) | / °C - °F    |
| 10 Maximum winding temperature     | 130                               | [ °C ]                            |              |

### B - MECHANICAL DATA

|                               |                 |  |
|-------------------------------|-----------------|--|
| 1 Commercial designation      | 1/8             | [hp]                                       |
| 2 Displacement                | 3.77            | [cm <sup>3</sup> ] (0.230 cu.in)           |
| 2.1 Bore [mm]                 | 19.000          |  |
| 2.2 Stroke [mm]               | 13.300          |  |
| 3 Lubricant charge            | 170             | [ml] (5.75 fl.oz.)                         |
| 3.1 Lubricants approved       |                 |  |
| 3.2 Lubricants type/viscosity | ALQUILB / ISO32 |  |
| 4 Weight (with oil charge)    | 6.97            | [kg] (15.37 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 | 115 V 60 Hz 1 ~ (Single phase) |                                    |
| 2 Starting device type                       | Current Relay                  |                                    |
| 2.1 Starting device                          | 213514040                      |                                    |
| 3 Start capacitor                            | 145-175(115)                   | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | -                              | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM743PFBYY-53                 |                                    |
| 6 Start winding resistance                   | 15.10                          | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 6.00                           | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (60 Hz)        | 13.20                          | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz)     | 1.85                           | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz)      | -                              | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | CE - UKCA - UL                 |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                               |          |     |                                |                                  |  |                           |  |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS:<br>@115V60Hz |          |     | 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] |
| 420                           | 106      | 123 | 114                            | 1.45                             | 3.07   | 3.68                      | 0.93                                   | 1.08  |

### E - PERFORMANCE - CURVES

|                               |                            |          |                    |                                |  |                            |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@115V60Hz |                            |          | 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)                     | 202                        | 51       | 59                 | 81                             | 1.32                                   | 1.47                       | 2.49                      | 0.63      | 0.73  |
| -30 (-22)                     | 288                        | 73       | 85                 | 96                             | 1.39                                   | 2.11                       | 3.00                      | 0.76      | 0.88  |
| -25 (-13)                     | 389                        | 98       | 114                | 110                            | 1.42                                   | 2.85                       | 3.54                      | 0.89      | 1.04  |
| -20 (- 4)                     | 506                        | 128      | 148                | 124                            | 1.44                                   | 3.71                       | 4.08                      | 1.03      | 1.20  |
| -15 (+ 5)                     | 642                        | 162      | 188                | 139                            | 1.45                                   | 4.72                       | 4.63                      | 1.17      | 1.36  |
| -10 (+14)                     | 799                        | 201      | 234                | 155                            | 1.47                                   | 5.89                       | 5.16                      | 1.30      | 1.51  |

|                               |                            |          |                    |                                |  |                            |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@115V60Hz |                            |          | 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)                     | 202                        | 51       | 59                 | 81                             | 1.32                                   | 1.47                       | 2.49                      | 0.63      | 0.73  |
| -30 (-22)                     | 288                        | 73       | 85                 | 96                             | 1.39                                   | 2.11                       | 3.00                      | 0.76      | 0.88  |
| -25 (-13)                     | 389                        | 98       | 114                | 110                            | 1.42                                   | 2.85                       | 3.54                      | 0.89      | 1.04  |
| -20 (- 4)                     | 506                        | 128      | 148                | 124                            | 1.44                                   | 3.71                       | 4.08                      | 1.03      | 1.20  |
| -15 (+ 5)                     | 642                        | 162      | 188                | 139                            | 1.45                                   | 4.72                       | 4.63                      | 1.17      | 1.36  |
| -10 (+14)                     | 799                        | 201      | 234                | 155                            | 1.47                                   | 5.89                       | 5.16                      | 1.30      | 1.51  |

|                               |                            |          |                    |                                |  |                            |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@115V60Hz |                            |          | ASHRAE32<br>Static |                                | (Condensing temperature 65°C (+149°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)                     | 202                        | 51       | 59                 | 81                             | 1.32                                   | 1.47                       | 2.49                      | 0.63      | 0.73  |
| -30 (-22)                     | 288                        | 73       | 85                 | 96                             | 1.39                                   | 2.11                       | 3.00                      | 0.76      | 0.88  |
| -25 (-13)                     | 389                        | 98       | 114                | 110                            | 1.42                                   | 2.85                       | 3.54                      | 0.89      | 1.04  |
| -20 (- 4)                     | 506                        | 128      | 148                | 124                            | 1.44                                   | 3.71                       | 4.08                      | 1.03      | 1.20  |
| -15 (+ 5)                     | 642                        | 162      | 188                | 139                            | 1.45                                   | 4.72                       | 4.63                      | 1.17      | 1.36  |
| -10 (+14)                     | 799                        | 201      | 234                | 155                            | 1.47                                   | 5.89                       | 5.16                      | 1.30      | 1.51  |

### 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 plated steel           |      |                          |
| 3.1.2 Shape             | Straight                      |      |                          |
| 3.2 DISCHARGE           | 5 +0.18/-0.06                 | [mm] | (0.197" +0.007"/-0.002") |
| 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             | Straight                      |      |                          |
| 3.4 Oil cooler (Copper) | No                            | [mm] |                          |
| 3.5 Connector sealing   | Rubber Plugs                  |      |                          |