

COMPRESSOR DEFINITION

| | |
|---------------------------|---------------------------|
| Designation | F GS80HA |
| Nominal Voltage/Frequency | 220-240 V 50-60 Hz |
| Engineering Number | 513200339 |

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 242 V |
| 8.2 LBP (43°C Ambient temperature) | Static | 198 to 255 V | 198 to 242 V |
| 8.3 HBP (32°C Ambient temperature) | - | - | - |
| 8.4 HBP (43°C Ambient temperature) | - | - | - |
| 9 Maximum condensing pressures/temperature | | | |
| 9.1 Operating (gauge) | 16.2 | [kgf/cm ²] (230 psig) | / °C - °F |
| 9.2 Peak (gauge) | 20.6 | [kgf/cm ²] (293 psig) | / °C - °F |
| 10 Maximum winding temperature | 130 | [°C] | |

B - MECHANICAL DATA

| | | |
|-------------------------------|---------------|--|
| 1 Commercial designation | 1/4 | [hp] |
| 2 Displacement | 7.15 | [cm ³] (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) | 11.52 | [kg] (25.40 lb.) |
| 5 Nitrogen charge | 0.2 to 0.3 | [kgf/cm ²] (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 | 7M220MD3/8EA17C3/8EA5B3 | |
| 3 Start capacitor | - | [µF(VAC minimum)] |
| 4 Run capacitor | 5(350) | [µF(VAC minimum)] |
| 5 Motor protection | 4TM189RHBYY-53 | |
| 6 Start winding resistance | 15.00 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 10.50 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (50/60 Hz) | 7.50/6.00 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50/60 Hz) | 1.10/1.00 | [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 | CCC - IRAM - UL - VDE | |

D - PERFORMANCE - CHECK POINT DATA

| | | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|--|
| TEST CONDITIONS: @220V50Hz | | | ASHRAELBP32 Static | | Evaporating temperature (Condensing temperature | | -23.3°C (-9.94°F) 54.4°C (129.92°F) | | |
| Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | | |
| [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] | |
| 695 | 175 | 204 | 132 | 0.65 | 3.95 | 5.27 | 1.33 | 1.54 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|--|
| TEST CONDITIONS: @220V60Hz | | | ASHRAELBP32 Static | | Evaporating temperature (Condensing temperature | | -23.3°C (-9.94°F) 54.4°C (129.92°F) | | |
| Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | | |
| [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] | |
| 825 | 208 | 242 | 155 | 0.72 | 4.69 | 5.32 | 1.34 | 1.56 | |

E - PERFORMANCE - CURVES

| | | | | | | | | | | |
|-------------------------------|----------------------------|----------|--------------------|--------------------------------|--|----------------------------|---------------------------|-----------|-------|--|
| TEST CONDITIONS: @220V50Hz | | | ASHRAE32 Static | | (Condensing temperature 45°C (+113°F)) | | | | | |
| Evaporating temperature | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | | |
| °C (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] | |
| -35 (-31) | 358 | 90 | 105 | 87 | 0.48 | 2.02 | 4.10 | 1.03 | 1.20 | |
| -30 (-22) | 492 | 124 | 144 | 103 | 0.55 | 2.79 | 4.79 | 1.21 | 1.40 | |
| -25 (-13) | 670 | 169 | 196 | 120 | 0.62 | 3.81 | 5.63 | 1.42 | 1.65 | |
| -20 (- 4) | 893 | 225 | 262 | 136 | 0.69 | 5.08 | 6.58 | 1.66 | 1.93 | |
| -15 (+ 5) | 1160 | 292 | 340 | 152 | 0.76 | 6.62 | 7.61 | 1.92 | 2.23 | |
| -10 (+14) | 1472 | 371 | 431 | 170 | 0.84 | 8.44 | 8.67 | 2.19 | 2.54 | |

| | | | | | | | | | | |
|-------------------------------|----------------------------|----------|--------------------|--------------------------------|--|----------------------------|---------------------------|-----------|-------|--|
| TEST CONDITIONS: @220V50Hz | | | ASHRAE32 Static | | (Condensing temperature 55°C (+131°F)) | | | | | |
| Evaporating temperature | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | | |
| °C (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] | |
| -35 (-31) | 298 | 75 | 87 | 86 | 0.47 | 1.69 | 3.49 | 0.88 | 1.02 | |
| -30 (-22) | 433 | 109 | 127 | 104 | 0.56 | 2.45 | 4.16 | 1.05 | 1.22 | |
| -25 (-13) | 608 | 153 | 178 | 123 | 0.64 | 3.45 | 4.94 | 1.25 | 1.45 | |
| -20 (- 4) | 825 | 208 | 242 | 142 | 0.72 | 4.70 | 5.79 | 1.46 | 1.70 | |
| -15 (+ 5) | 1085 | 273 | 318 | 162 | 0.81 | 6.19 | 6.67 | 1.68 | 1.96 | |
| -10 (+14) | 1387 | 349 | 406 | 184 | 0.90 | 7.95 | 7.56 | 1.90 | 2.21 | |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V50Hz | | ASHRAE32 Static | | | (Condensing temperature 65°C (+149°F)) | | | | | |
|-------------------------------|----------------------------|--------------------|---------|-----------------------------|--|-------------------------|---------------------------|--------|----------|-----------|
| Evaporating temperature | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | | |
| | °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] |
| -35 | (-31) | 230 | 58 | 67 | 81 | 0.46 | 1.30 | 2.85 | 0.72 | 0.84 |
| -30 | (-22) | 362 | 91 | 106 | 102 | 0.55 | 2.05 | 3.54 | 0.89 | 1.04 |
| -25 | (-13) | 531 | 134 | 156 | 123 | 0.64 | 3.02 | 4.29 | 1.08 | 1.26 |
| -20 | (- 4) | 740 | 186 | 217 | 146 | 0.74 | 4.21 | 5.07 | 1.28 | 1.48 |
| -15 | (+ 5) | 988 | 249 | 289 | 170 | 0.84 | 5.64 | 5.83 | 1.47 | 1.71 |
| -10 | (+14) | 1276 | 321 | 374 | 195 | 0.96 | 7.31 | 6.55 | 1.65 | 1.92 |

| TEST CONDITIONS: @220V60Hz | | ASHRAE32 Static | | | (Condensing temperature 45°C (+113°F)) | | | | | |
|-------------------------------|----------------------------|--------------------|---------|-----------------------------|--|-------------------------|---------------------------|--------|----------|-----------|
| Evaporating temperature | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | | |
| | °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] |
| -35 | (-31) | 412 | 104 | 121 | 100 | 0.47 | 2.33 | 4.09 | 1.03 | 1.20 |
| -30 | (-22) | 593 | 149 | 174 | 121 | 0.57 | 3.36 | 4.87 | 1.23 | 1.43 |
| -25 | (-13) | 807 | 203 | 236 | 142 | 0.67 | 4.58 | 5.67 | 1.43 | 1.66 |
| -20 | (- 4) | 1061 | 267 | 311 | 164 | 0.77 | 6.04 | 6.50 | 1.64 | 1.90 |
| -15 | (+ 5) | 1367 | 345 | 401 | 186 | 0.87 | 7.81 | 7.36 | 1.85 | 2.16 |
| -10 | (+14) | 1734 | 437 | 508 | 210 | 0.98 | 9.94 | 8.27 | 2.08 | 2.42 |

| TEST CONDITIONS: @220V60Hz | | ASHRAE32 Static | | | (Condensing temperature 55°C (+131°F)) | | | | | |
|-------------------------------|----------------------------|--------------------|---------|-----------------------------|--|-------------------------|---------------------------|--------|----------|-----------|
| Evaporating temperature | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | | |
| | °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] |
| -35 | (-31) | 353 | 89 | 104 | 100 | 0.47 | 2.00 | 3.57 | 0.90 | 1.05 |
| -30 | (-22) | 510 | 129 | 150 | 121 | 0.57 | 2.89 | 4.23 | 1.07 | 1.24 |
| -25 | (-13) | 702 | 177 | 206 | 144 | 0.67 | 3.99 | 4.90 | 1.23 | 1.44 |
| -20 | (- 4) | 939 | 237 | 275 | 169 | 0.79 | 5.35 | 5.58 | 1.41 | 1.63 |
| -15 | (+ 5) | 1231 | 310 | 361 | 196 | 0.92 | 7.03 | 6.28 | 1.58 | 1.84 |
| -10 | (+14) | 1587 | 400 | 465 | 225 | 1.05 | 9.09 | 7.02 | 1.77 | 2.06 |

| TEST CONDITIONS: @220V60Hz | | ASHRAE32 Static | | | (Condensing temperature 65°C (+149°F)) | | | | | |
|-------------------------------|----------------------------|--------------------|---------|-----------------------------|--|-------------------------|---------------------------|--------|----------|-----------|
| Evaporating temperature | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | | |
| | °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] |
| -35 | (-31) | 282 | 71 | 83 | 93 | 0.44 | 1.60 | 3.02 | 0.76 | 0.89 |
| -30 | (-22) | 425 | 107 | 124 | 116 | 0.54 | 2.41 | 3.66 | 0.92 | 1.07 |
| -25 | (-13) | 606 | 153 | 178 | 141 | 0.66 | 3.44 | 4.29 | 1.08 | 1.26 |
| -20 | (- 4) | 835 | 211 | 245 | 169 | 0.79 | 4.75 | 4.92 | 1.24 | 1.44 |
| -15 | (+ 5) | 1123 | 283 | 329 | 201 | 0.94 | 6.41 | 5.56 | 1.40 | 1.63 |
| -10 | (+14) | 1478 | 372 | 433 | 237 | 1.11 | 8.47 | 6.22 | 1.57 | 1.82 |

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 | | |