

COMPRESSOR DEFINITION

| | |
|---------------------------|---------------------------|
| Designation | F GS70HA |
| Nominal Voltage/Frequency | 220-240 V 50-60 Hz |
| Engineering Number | 513200216 |

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 temperature | | | |
| 9.1 Operating | 14.2 | [kgf/cm ²] (202 psig) | / °C - °F |
| 9.2 Peak | 15.9 | [kgf/cm ²] (226 psig) | / °C - °F |
| 10 Maximum winding temperature | 130 | [°C] | |

B - MECHANICAL DATA

| | | |
|-------------------------------|---------------|--------------------------------------------|
| 1 Commercial designation | 1/5+ | [hp] |
| 2 Displacement | 6.36 | [cm ³] (0.388 cu.in) |
| 2.1 Bore [mm] | 22.500 | |
| 2.2 Stroke [mm] | 16.000 | |
| 3 Lubricant charge | 280 | [ml] (9.47 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ESTER / ISO22 | |
| 4 Weight (with oil charge) | 11.25 | [kg] (24.80 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 | 8EA17C3/8EA5B3/QPS2-A22MD3 | |
| 3 Start capacitor | - | [µF(VAC minimum)] |
| 4 Run capacitor | 5(330) | [µF(VAC minimum)] |
| 5 Motor protection | 4TM189NFBYY-53 | |
| 6 Start winding resistance | 14.90 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 12.60 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (50/60 Hz) | 6.00/5.00 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50/60 Hz) | 0.90/0.80 | [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 - UKCA - UL | |

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] | |
| 607 | 153 | 178 | 119 | 0.57 | 3.45 | 5.11 | 1.29 | 1.50 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|----------------------------------------------------|---------------------------|----------------------------------------|-------|--|
| 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] | |
| 710 | 179 | 208 | 139 | 0.64 | 4.03 | 5.11 | 1.29 | 1.50 | |

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) | 325 | 82 | 95 | 82 | 0.40 | 1.84 | 3.98 | 1.00 | 1.17 |
| -30 (-22) | 459 | 116 | 135 | 96 | 0.47 | 2.60 | 4.81 | 1.21 | 1.41 |
| -25 (-13) | 616 | 155 | 180 | 110 | 0.55 | 3.50 | 5.61 | 1.41 | 1.64 |
| -20 (- 4) | 802 | 202 | 235 | 125 | 0.62 | 4.56 | 6.43 | 1.62 | 1.88 |
| -15 (+ 5) | 1026 | 259 | 301 | 140 | 0.69 | 5.86 | 7.32 | 1.85 | 2.15 |
| -10 (+14) | 1296 | 326 | 380 | 155 | 0.75 | 7.42 | 8.34 | 2.10 | 2.44 |

| | | | | | | | | | |
|-------------------------------|----------------------------|----------|--------------------|--------------------------------|----------------------------------------|----------------------------|---------------------------|-----------|-------|
| 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) | 242 | 61 | 71 | 78 | 0.39 | 1.37 | 3.11 | 0.78 | 0.91 |
| -30 (-22) | 380 | 96 | 111 | 94 | 0.47 | 2.16 | 4.00 | 1.01 | 1.17 |
| -25 (-13) | 538 | 136 | 158 | 111 | 0.55 | 3.06 | 4.81 | 1.21 | 1.41 |
| -20 (- 4) | 724 | 182 | 212 | 129 | 0.63 | 4.12 | 5.59 | 1.41 | 1.64 |
| -15 (+ 5) | 945 | 238 | 277 | 147 | 0.72 | 5.39 | 6.40 | 1.61 | 1.87 |
| -10 (+14) | 1209 | 305 | 354 | 166 | 0.80 | 6.92 | 7.27 | 1.83 | 2.13 |

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] | [W/W] |
| -35 (-31) | 186 | 47 | 55 | 72 | 0.36 | 1.05 | 2.62 | 0.66 | 0.77 | |
| -30 (-22) | 324 | 82 | 95 | 91 | 0.45 | 1.84 | 3.54 | 0.89 | 1.04 | |
| -25 (-13) | 480 | 121 | 141 | 110 | 0.54 | 2.72 | 4.34 | 1.09 | 1.27 | |
| -20 (- 4) | 660 | 166 | 194 | 131 | 0.64 | 3.76 | 5.05 | 1.27 | 1.48 | |
| -15 (+ 5) | 874 | 220 | 256 | 153 | 0.74 | 4.99 | 5.74 | 1.45 | 1.68 | |
| -10 (+14) | 1129 | 284 | 331 | 175 | 0.84 | 6.47 | 6.45 | 1.62 | 1.89 | |

| 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] | [W/W] |
| -35 (-31) | 357 | 90 | 105 | 94 | 0.44 | 2.02 | 3.82 | 0.96 | 1.12 | |
| -30 (-22) | 528 | 133 | 155 | 114 | 0.54 | 2.99 | 4.64 | 1.17 | 1.36 | |
| -25 (-13) | 723 | 182 | 212 | 133 | 0.63 | 4.11 | 5.44 | 1.37 | 1.59 | |
| -20 (- 4) | 949 | 239 | 278 | 152 | 0.72 | 5.40 | 6.23 | 1.57 | 1.82 | |
| -15 (+ 5) | 1214 | 306 | 356 | 172 | 0.81 | 6.93 | 7.03 | 1.77 | 2.06 | |
| -10 (+14) | 1523 | 384 | 446 | 193 | 0.91 | 8.73 | 7.87 | 1.98 | 2.30 | |

| 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] | [W/W] |
| -35 (-31) | 282 | 71 | 83 | 88 | 0.42 | 1.59 | 3.19 | 0.80 | 0.94 | |
| -30 (-22) | 441 | 111 | 129 | 110 | 0.53 | 2.50 | 4.01 | 1.01 | 1.17 | |
| -25 (-13) | 627 | 158 | 184 | 132 | 0.63 | 3.56 | 4.76 | 1.20 | 1.40 | |
| -20 (- 4) | 846 | 213 | 248 | 155 | 0.74 | 4.82 | 5.49 | 1.38 | 1.61 | |
| -15 (+ 5) | 1107 | 279 | 324 | 178 | 0.84 | 6.32 | 6.20 | 1.56 | 1.82 | |
| -10 (+14) | 1416 | 357 | 415 | 204 | 0.96 | 8.11 | 6.92 | 1.74 | 2.03 | |

| 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] | [W/W] |
| -35 (-31) | 194 | 49 | 57 | 80 | 0.39 | 1.10 | 2.41 | 0.61 | 0.71 | |
| -30 (-22) | 343 | 87 | 101 | 104 | 0.51 | 1.95 | 3.27 | 0.83 | 0.96 | |
| -25 (-13) | 522 | 132 | 153 | 129 | 0.62 | 2.96 | 4.06 | 1.02 | 1.19 | |
| -20 (- 4) | 738 | 186 | 216 | 155 | 0.74 | 4.20 | 4.78 | 1.20 | 1.40 | |
| -15 (+ 5) | 997 | 251 | 292 | 183 | 0.86 | 5.69 | 5.46 | 1.38 | 1.60 | |
| -10 (+14) | 1307 | 329 | 383 | 213 | 1.00 | 7.49 | 6.13 | 1.54 | 1.80 | |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|-----------------|------|--------------------------|
| 1 Base plate | Universal EG/F | | |
| 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 | 6.5 +0.12/-0.08 | [mm] | (0.256" +0.005"/-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 | | |