

COMPRESSOR DEFINITION

| | |
|---------------------------|--------------------|
| Designation | F FU70AK |
| Nominal Voltage/Frequency | 220-240 V 50-60 Hz |
| Engineering Number | 513200592 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|------------------------------------|-----------------------------------|-----------------------------------|--------------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | Blend | | |
| 3 Nominal voltage and frequency | 220-240 / 50-60 | [V / Hz] | |
| 4 Application type | Low-Medium Back Pressure | | |
| 4.1 Evaporating temperature range | -35°C to -5°C | (-31°F to 23°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/Fan | 187 to 255 V | 187 to 242 V |
| 8.2 LBP (43°C Ambient temperature) | Static/Fan | 187 to 255 V | 187 to 242 V |
| 8.3 HBP (32°C Ambient temperature) | - | - | - |
| 8.4 HBP (43°C Ambient temperature) | - | - | - |
| 9 Maximum condensing temperature | | | |
| 9.1 Operating | 14.5 | [kgf/cm ²] (206 psig) | / °C - °F |
| 9.2 Peak | 18.2 | [kgf/cm ²] (259 psig) | / °C - °F |
| 10 Maximum winding temperature | 130 | [°C] | |

B - MECHANICAL DATA

| | | |
|-------------------------------|-----------------|--|
| 1 Commercial designation | 1/4 | [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 | ALQUILB / ISO32 | |
| 4 Weight (with oil charge) | 10.8 | [kg] (23.81 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 | Current Relay | |
| 2.1 Starting device | 213516159/213516353 | |
| 3 Start capacitor | 64-77(220) | [μF(VAC minimum)] |
| 4 Run capacitor | - | [μF(VAC minimum)] |
| 5 Motor protection | 4TM283NFBYY-53 | |
| 6 Start winding resistance | 43.10 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 10.35 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (50/60 Hz) | 12.80/11.90 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50/60 Hz) | 1.70/1.50 | [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 | IRAM - TUV | |

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] | |
| 700 | 176 | 205 | 146 | 1.14 | 5.12 | 4.80 | 1.21 | 1.41 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|--|
| TEST CONDITIONS: @220V50Hz | | | ASHRAELBP32 Fan | | 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] | |
| 700 | 176 | 205 | 146 | 1.14 | 5.12 | 4.80 | 1.21 | 1.41 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|--|
| 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] | |
| 840 | 212 | 246 | 170 | 1.10 | 6.15 | 4.95 | 1.25 | 1.45 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|--|
| TEST CONDITIONS: @220V60Hz | | | ASHRAELBP32 Fan | | 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] | |
| 840 | 212 | 246 | 170 | 1.10 | 6.15 | 4.95 | 1.25 | 1.45 | |

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] |
| -35 | (-31) | 410 | 103 | 120 | 108 | 1.05 | 2.99 | 3.80 | 0.96 | 1.11 |
| -30 | (-22) | 538 | 135 | 158 | 120 | 1.07 | 3.92 | 4.48 | 1.13 | 1.31 |
| -25 | (-13) | 692 | 174 | 203 | 133 | 1.10 | 5.06 | 5.22 | 1.31 | 1.53 |
| -20 | (- 4) | 878 | 221 | 257 | 146 | 1.13 | 6.44 | 6.02 | 1.52 | 1.76 |
| -15 | (+ 5) | 1101 | 277 | 323 | 160 | 1.17 | 8.09 | 6.90 | 1.74 | 2.02 |
| -10 | (+14) | 1365 | 344 | 400 | 173 | 1.22 | 10.06 | 7.86 | 1.98 | 2.30 |
| -5 | (+23) | 1675 | 422 | 491 | 187 | 1.27 | 12.39 | 8.94 | 2.25 | 2.62 |

E - PERFORMANCE - CURVES

| 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) | 371 | 93 | 109 | 110 | 1.05 | 2.70 | 3.38 | 0.85 | 0.99 |
| -30 | (-22) | 495 | 125 | 145 | 124 | 1.08 | 3.62 | 3.99 | 1.01 | 1.17 |
| -25 | (-13) | 644 | 162 | 189 | 139 | 1.12 | 4.71 | 4.63 | 1.17 | 1.36 |
| -20 | (- 4) | 821 | 207 | 241 | 155 | 1.16 | 6.02 | 5.31 | 1.34 | 1.56 |
| -15 | (+ 5) | 1032 | 260 | 302 | 171 | 1.21 | 7.59 | 6.03 | 1.52 | 1.77 |
| -10 | (+14) | 1281 | 323 | 375 | 188 | 1.27 | 9.45 | 6.82 | 1.72 | 2.00 |
| -5 | (+23) | 1573 | 396 | 461 | 205 | 1.33 | 11.64 | 7.67 | 1.93 | 2.25 |

| 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) | 332 | 84 | 97 | 109 | 1.04 | 2.42 | 3.06 | 0.77 | 0.90 |
| -30 | (-22) | 458 | 115 | 134 | 125 | 1.08 | 3.35 | 3.64 | 0.92 | 1.07 |
| -25 | (-13) | 605 | 152 | 177 | 143 | 1.13 | 4.43 | 4.22 | 1.06 | 1.24 |
| -20 | (- 4) | 778 | 196 | 228 | 162 | 1.19 | 5.70 | 4.80 | 1.21 | 1.41 |
| -15 | (+ 5) | 981 | 247 | 287 | 182 | 1.25 | 7.21 | 5.40 | 1.36 | 1.58 |
| -10 | (+14) | 1219 | 307 | 357 | 202 | 1.32 | 8.99 | 6.02 | 1.52 | 1.77 |
| -5 | (+23) | 1497 | 377 | 439 | 224 | 1.40 | 11.08 | 6.69 | 1.69 | 1.96 |

| 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) | 512 | 129 | 150 | 122 | 0.94 | 3.73 | 4.21 | 1.06 | 1.23 |
| -30 | (-22) | 646 | 163 | 189 | 138 | 0.99 | 4.71 | 4.70 | 1.18 | 1.38 |
| -25 | (-13) | 828 | 209 | 243 | 155 | 1.05 | 6.05 | 5.35 | 1.35 | 1.57 |
| -20 | (- 4) | 1055 | 266 | 309 | 172 | 1.11 | 7.74 | 6.11 | 1.54 | 1.79 |
| -15 | (+ 5) | 1326 | 334 | 388 | 190 | 1.18 | 9.74 | 6.96 | 1.75 | 2.04 |
| -10 | (+14) | 1635 | 412 | 479 | 209 | 1.25 | 12.06 | 7.84 | 1.97 | 2.30 |
| -5 | (+23) | 1982 | 499 | 581 | 228 | 1.32 | 14.66 | 8.71 | 2.19 | 2.55 |

E - PERFORMANCE - CURVES

| 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) | 459 | 116 | 135 | 121 | 0.93 | 3.35 | 3.80 | 0.96 | 1.11 |
| -30 | (-22) | 589 | 148 | 173 | 140 | 0.99 | 4.30 | 4.20 | 1.06 | 1.23 |
| -25 | (-13) | 766 | 193 | 224 | 161 | 1.07 | 5.60 | 4.74 | 1.20 | 1.39 |
| -20 | (- 4) | 987 | 249 | 289 | 183 | 1.15 | 7.23 | 5.39 | 1.36 | 1.58 |
| -15 | (+ 5) | 1249 | 315 | 366 | 205 | 1.23 | 9.18 | 6.09 | 1.53 | 1.78 |
| -10 | (+14) | 1549 | 390 | 454 | 228 | 1.32 | 11.43 | 6.80 | 1.71 | 1.99 |
| -5 | (+23) | 1885 | 475 | 552 | 252 | 1.42 | 13.95 | 7.49 | 1.89 | 2.20 |

| 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) | 409 | 103 | 120 | 119 | 0.93 | 2.98 | 3.43 | 0.86 | 1.01 |
| -30 | (-22) | 534 | 135 | 156 | 142 | 1.00 | 3.90 | 3.79 | 0.95 | 1.11 |
| -25 | (-13) | 705 | 178 | 207 | 165 | 1.09 | 5.16 | 4.27 | 1.08 | 1.25 |
| -20 | (- 4) | 919 | 232 | 269 | 190 | 1.18 | 6.74 | 4.83 | 1.22 | 1.41 |
| -15 | (+ 5) | 1173 | 295 | 344 | 216 | 1.28 | 8.62 | 5.42 | 1.37 | 1.59 |
| -10 | (+14) | 1463 | 369 | 429 | 244 | 1.39 | 10.79 | 6.02 | 1.52 | 1.76 |
| -5 | (+23) | 1788 | 451 | 524 | 272 | 1.51 | 13.24 | 6.57 | 1.65 | 1.92 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|-------------------------------|------|--------------------------|
| 1 Base plate | Universal EG/F/AMEM version 2 | | |
| 2 Tray holder | No | | |
| 3 Connectors | | | |
| 3.1 SUCTION | 8.2 +0.12/-0.08 | [mm] | (0.323" +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 | | |