

COMPRESSOR DEFINITION

| | |
|---------------------------|--------------------|
| Designation | F F18,5HAK |
| Nominal Voltage/Frequency | 220-240 V 50-60 Hz |
| Engineering Number | 513201400 |

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-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 | 14.2 | [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 | 1/4+ | [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 / ISO22 | |
| 4 Weight (with oil charge) | 11.39 | [kg] (25.11 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 | 213516078/213516086 | |
| 3 Start capacitor | 64-77(200) | [μF(VAC minimum)] |
| 4 Run capacitor | - | [μF(VAC minimum)] |
| 5 Motor protection | 5TM757KDBYY-53 | |
| 6 Start winding resistance | 29.70 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 8.35 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (50/60 Hz) | 17.00/16.00 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50/60 Hz) | 1.80/1.75 | [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 - 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] | |
| 702 | 177 | 206 | 157 | 1.34 | 3.99 | 4.49 | 1.13 | 1.32 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|--|
| 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] | |
| 702 | 177 | 206 | 157 | 1.34 | 3.99 | 4.49 | 1.13 | 1.32 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|--|
| 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] | |
| 823 | 207 | 241 | 176 | 1.23 | 4.68 | 4.68 | 1.18 | 1.37 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|--|
| 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] | |
| 823 | 207 | 241 | 176 | 1.23 | 4.68 | 4.68 | 1.18 | 1.37 | |

E - PERFORMANCE - CURVES

| | | | | | | | | | | |
|-------------------------------|----------------------------|-----------------|---------|--------------------------------|----------------------------------|----------------------------|--|--------|----------|-----------|
| TEST CONDITIONS: @220V50Hz | | ASHRAE32 Fan | | | | | (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) | 381 | 96 | 112 | 114 | 1.21 | 2.16 | 3.33 | 0.84 | 0.97 |
| -30 | (-22) | 518 | 131 | 152 | 130 | 1.25 | 2.93 | 4.00 | 1.01 | 1.17 |
| -25 | (-13) | 690 | 174 | 202 | 146 | 1.28 | 3.92 | 4.77 | 1.20 | 1.40 |
| -20 | (- 4) | 904 | 228 | 265 | 161 | 1.31 | 5.14 | 5.63 | 1.42 | 1.65 |
| -15 | (+ 5) | 1163 | 293 | 341 | 177 | 1.35 | 6.64 | 6.55 | 1.65 | 1.92 |
| -10 | (+14) | 1474 | 372 | 432 | 195 | 1.40 | 8.45 | 7.53 | 1.90 | 2.21 |
| -5 | (+23) | 1842 | 464 | 540 | 216 | 1.46 | 10.60 | 8.55 | 2.15 | 2.51 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V50Hz | | ASHRAE32 Fan | | | (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) | 314 | 79 | 92 | 111 | 1.21 | 1.78 | 2.87 | 0.72 | 0.84 | |
| -30 (-22) | 462 | 116 | 135 | 131 | 1.25 | 2.62 | 3.53 | 0.89 | 1.03 | |
| -25 (-13) | 637 | 160 | 187 | 151 | 1.29 | 3.62 | 4.23 | 1.07 | 1.24 | |
| -20 (- 4) | 846 | 213 | 248 | 170 | 1.33 | 4.81 | 4.97 | 1.25 | 1.46 | |
| -15 (+ 5) | 1093 | 275 | 320 | 191 | 1.39 | 6.24 | 5.72 | 1.44 | 1.68 | |
| -10 (+14) | 1385 | 349 | 406 | 213 | 1.45 | 7.93 | 6.48 | 1.63 | 1.90 | |
| -5 (+23) | 1726 | 435 | 506 | 238 | 1.54 | 9.93 | 7.24 | 1.82 | 2.12 | |

| TEST CONDITIONS: @220V50Hz | | ASHRAE32 Fan | | | (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) | 250 | 63 | 73 | 105 | 1.21 | 1.41 | 2.39 | 0.60 | 0.70 | |
| -30 (-22) | 405 | 102 | 119 | 129 | 1.25 | 2.30 | 3.09 | 0.78 | 0.90 | |
| -25 (-13) | 581 | 146 | 170 | 152 | 1.30 | 3.30 | 3.78 | 0.95 | 1.11 | |
| -20 (- 4) | 783 | 197 | 229 | 175 | 1.35 | 4.45 | 4.46 | 1.12 | 1.31 | |
| -15 (+ 5) | 1016 | 256 | 298 | 200 | 1.41 | 5.80 | 5.11 | 1.29 | 1.50 | |
| -10 (+14) | 1285 | 324 | 377 | 226 | 1.50 | 7.36 | 5.71 | 1.44 | 1.67 | |
| -5 (+23) | 1597 | 402 | 468 | 255 | 1.61 | 9.18 | 6.25 | 1.58 | 1.83 | |

| TEST CONDITIONS: @220V60Hz | | ASHRAE32 Fan | | | (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) | 430 | 108 | 126 | 121 | 1.04 | 2.43 | 3.52 | 0.89 | 1.03 | |
| -30 (-22) | 607 | 153 | 178 | 144 | 1.10 | 3.44 | 4.21 | 1.06 | 1.23 | |
| -25 (-13) | 822 | 207 | 241 | 167 | 1.17 | 4.67 | 4.93 | 1.24 | 1.45 | |
| -20 (- 4) | 1080 | 272 | 317 | 191 | 1.25 | 6.15 | 5.69 | 1.43 | 1.67 | |
| -15 (+ 5) | 1391 | 350 | 408 | 214 | 1.34 | 7.94 | 6.50 | 1.64 | 1.90 | |
| -10 (+14) | 1761 | 444 | 516 | 239 | 1.43 | 10.09 | 7.37 | 1.86 | 2.16 | |
| -5 (+23) | 2198 | 554 | 644 | 264 | 1.53 | 12.64 | 8.30 | 2.09 | 2.43 | |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V60Hz | | ASHRAE32 Fan | | | (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) | 360 | 91 | 105 | 119 | 1.05 | 2.03 | 3.06 | 0.77 | 0.90 |
| -30 | (-22) | 536 | 135 | 157 | 143 | 1.11 | 3.04 | 3.74 | 0.94 | 1.09 |
| -25 | (-13) | 748 | 189 | 219 | 169 | 1.19 | 4.25 | 4.40 | 1.11 | 1.29 |
| -20 | (- 4) | 1004 | 253 | 294 | 197 | 1.28 | 5.71 | 5.07 | 1.28 | 1.49 |
| -15 | (+ 5) | 1311 | 330 | 384 | 227 | 1.39 | 7.48 | 5.75 | 1.45 | 1.69 |
| -10 | (+14) | 1676 | 422 | 491 | 259 | 1.51 | 9.61 | 6.45 | 1.63 | 1.89 |
| -5 | (+23) | 2108 | 531 | 618 | 294 | 1.65 | 12.13 | 7.19 | 1.81 | 2.11 |

| TEST CONDITIONS: @220V60Hz | | ASHRAE32 Fan | | | (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) | 301 | 76 | 88 | 115 | 1.03 | 1.70 | 2.60 | 0.66 | 0.76 |
| -30 | (-22) | 465 | 117 | 136 | 140 | 1.09 | 2.63 | 3.29 | 0.83 | 0.96 |
| -25 | (-13) | 664 | 167 | 195 | 168 | 1.18 | 3.77 | 3.93 | 0.99 | 1.15 |
| -20 | (- 4) | 906 | 228 | 266 | 200 | 1.29 | 5.16 | 4.54 | 1.14 | 1.33 |
| -15 | (+ 5) | 1198 | 302 | 351 | 234 | 1.42 | 6.84 | 5.13 | 1.29 | 1.50 |
| -10 | (+14) | 1548 | 390 | 454 | 272 | 1.57 | 8.87 | 5.69 | 1.43 | 1.67 |
| -5 | (+23) | 1964 | 495 | 576 | 314 | 1.73 | 11.30 | 6.25 | 1.58 | 1.83 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|---------------------|------|--------------------------|
| 1 Base plate | Universal | | |
| 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 plated steel | | |
| 3.1.2 Shape | Slanted | | |
| 3.2 DISCHARGE | 6.5 +0.12/-0.08 | [mm] | (0.256" +0.005"/-0.003") |
| 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 | Slanted | | |
| 3.4 Oil cooler (Copper) | No | [mm] | |
| 3.5 Connector sealing | Rubber Plugs | | |