

COMPRESSOR DEFINITION

| | |
|---------------------------|--------------------------------------|
| Designation | NT 2178GK |
| Nominal Voltage/Frequency | 200-240 V 50 Hz / 230 V 60 Hz |
| Engineering Number | 922EN04 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|--|-----------------------------------|-----------------------------------|-----------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-404A | | |
| 3 Nominal voltage and frequency | 200-240 / 50 | [V / Hz] | |
| 4 Application type | Low Back Pressure R404A | | |
| 4.1 Evaporating temperature range | -40°C to -10°C | (-40°F to 14°F) | |
| 5 Motor type | CSCR | | |
| 6 Starting torque | HST - High starting torque | | |
| 7 Expansion device | Capillary tube or Expansion valve | | |
| 8 Compressor cooling | Operating voltage range | | |
| | | 50 Hz | 60 Hz |
| 8.1 LBP (32°C Ambient temperature) | - | - | - |
| 8.2 LBP (43°C Ambient temperature) | - | - | - |
| 8.3 HBP (32°C Ambient temperature) | - | - | - |
| 8.4 HBP (43°C Ambient temperature) | - | - | - |
| 9 Maximum condensing pressures/temperature | | | |
| 9.1 Operating (gauge) | 25.7 | [kgf/cm ²] (365 psig) | / °C - °F |
| 9.2 Peak (gauge) | 28.7 | [kgf/cm ²] (408 psig) | / °C - °F |
| 10 Maximum winding temperature | 130 | [°C] | |

B - MECHANICAL DATA

| | | |
|-------------------------------|---------------|--|
| 1 Commercial designation | 1- | [hp] |
| 2 Displacement | 17.39 | [cm ³] (1.061 cu.in) |
| 2.1 Bore [mm] | 34.120 | |
| 2.2 Stroke [mm] | 19.030 | |
| 3 Lubricant charge | 450 | [ml] (15.22 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ESTER / ISO22 | |
| 4 Weight (with oil charge) | 17 | [kg] (37.48 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 | 200-240 V 50 Hz / 230 V 60 Hz 1 ~ (Single phase) | |
| 2 Starting device type | Voltage Relay | |
| 2.1 Starting device | RVA3N3C-122 | |
| 3 Start capacitor | 88-108(330) | [µF(VAC minimum)] |
| 4 Run capacitor | 15(440) | [µF(VAC minimum)] |
| 5 Motor protection | T0834/G9 | |
| 6 Start winding resistance | 8.80 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 2.30 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (50 Hz) | 26.00 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50 Hz) | - | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50 Hz) | - | [A] - Measured according to UL 984 |
| 11 Approval boards certification | CCC - IMQ - IRAM - UL | |

D - PERFORMANCE - CHECK POINT DATA

| | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS: @200V50Hz | | | 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] |
| 2917 | 735 | 855 | 582 | 3.00 | 19.78 | 5.01 | 1.26 | 1.47 |

E - PERFORMANCE - CURVES

| | | | | | | | | | | |
|-------------------------------|-------|----------------------------|-----------------|------|---------------------------------------|-------------------------------|-------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @200V50Hz | | | ASHRAE32 Fan | | (Condensing temperature 35°C (+95°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] |
| -40 | (-40) | 1297 | 327 | 380 | 319 | 1.69 | 8.72 | 4.06 | 1.02 | 1.19 |
| -35 | (-31) | 1745 | 440 | 511 | 380 | 1.99 | 11.77 | 4.62 | 1.16 | 1.35 |
| -30 | (-22) | 2332 | 588 | 683 | 439 | 2.28 | 15.77 | 5.33 | 1.34 | 1.56 |
| -25 | (-13) | 3056 | 770 | 896 | 495 | 2.56 | 20.77 | 6.16 | 1.55 | 1.81 |
| -20 | (- 4) | 3919 | 988 | 1148 | 551 | 2.84 | 26.77 | 7.10 | 1.79 | 2.08 |
| -15 | (+ 5) | 4921 | 1240 | 1442 | 605 | 3.12 | 33.81 | 8.13 | 2.05 | 2.38 |
| -10 | (+14) | 6061 | 1527 | 1776 | 658 | 3.39 | 41.92 | 9.21 | 2.32 | 2.70 |

| | | | | | | | | | | |
|-------------------------------|-------|----------------------------|-----------------|------|--|-------------------------------|-------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @200V50Hz | | | 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] |
| -40 | (-40) | 1148 | 289 | 336 | 323 | 1.72 | 7.70 | 3.54 | 0.89 | 1.04 |
| -35 | (-31) | 1587 | 400 | 465 | 391 | 2.05 | 10.68 | 4.05 | 1.02 | 1.19 |
| -30 | (-22) | 2144 | 540 | 628 | 458 | 2.39 | 14.48 | 4.67 | 1.18 | 1.37 |
| -25 | (-13) | 2818 | 710 | 826 | 525 | 2.71 | 19.11 | 5.37 | 1.35 | 1.57 |
| -20 | (- 4) | 3611 | 910 | 1058 | 590 | 3.04 | 24.61 | 6.12 | 1.54 | 1.79 |
| -15 | (+ 5) | 4521 | 1139 | 1325 | 656 | 3.37 | 31.00 | 6.90 | 1.74 | 2.02 |
| -10 | (+14) | 5550 | 1399 | 1626 | 722 | 3.70 | 38.32 | 7.69 | 1.94 | 2.25 |

| | | | | | | | | | | |
|-------------------------------|-------|----------------------------|-----------------|------|--|-------------------------------|-------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @200V50Hz | | | 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] |
| -40 | (-40) | 974 | 246 | 286 | 325 | 1.72 | 6.52 | 3.02 | 0.76 | 0.89 |
| -35 | (-31) | 1428 | 360 | 418 | 400 | 2.09 | 9.60 | 3.56 | 0.90 | 1.04 |
| -30 | (-22) | 1979 | 499 | 580 | 475 | 2.47 | 13.34 | 4.15 | 1.05 | 1.22 |
| -25 | (-13) | 2627 | 662 | 770 | 551 | 2.85 | 17.78 | 4.77 | 1.20 | 1.40 |
| -20 | (- 4) | 3373 | 850 | 988 | 627 | 3.23 | 22.94 | 5.40 | 1.36 | 1.58 |
| -15 | (+ 5) | 4216 | 1062 | 1235 | 704 | 3.62 | 28.85 | 6.01 | 1.51 | 1.76 |
| -10 | (+14) | 5157 | 1299 | 1511 | 782 | 4.01 | 35.53 | 6.58 | 1.66 | 1.93 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @200V60Hz | | ASHRAE32 Fan | | | (Condensing temperature 35°C (+95°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] |
| -40 | (-40) | 1576 | 397 | 462 | 428 | 1.96 | 10.59 | 3.69 | 0.93 | 1.08 |
| -35 | (-31) | 2189 | 552 | 641 | 501 | 2.24 | 14.76 | 4.36 | 1.10 | 1.28 |
| -30 | (-22) | 2932 | 739 | 859 | 573 | 2.52 | 19.84 | 5.11 | 1.29 | 1.50 |
| -25 | (-13) | 3805 | 959 | 1115 | 643 | 2.81 | 25.85 | 5.92 | 1.49 | 1.73 |
| -20 | (- 4) | 4808 | 1212 | 1409 | 711 | 3.10 | 32.84 | 6.78 | 1.71 | 1.99 |
| -15 | (+ 5) | 5941 | 1497 | 1741 | 776 | 3.39 | 40.82 | 7.66 | 1.93 | 2.24 |
| -10 | (+14) | 7203 | 1815 | 2111 | 840 | 3.68 | 49.83 | 8.57 | 2.16 | 2.51 |

| TEST CONDITIONS: @200V60Hz | | 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] |
| -40 | (-40) | 1371 | 346 | 402 | 429 | 1.97 | 9.20 | 3.21 | 0.81 | 0.94 |
| -35 | (-31) | 1944 | 490 | 570 | 506 | 2.26 | 13.08 | 3.85 | 0.97 | 1.13 |
| -30 | (-22) | 2655 | 669 | 778 | 584 | 2.57 | 17.93 | 4.54 | 1.14 | 1.33 |
| -25 | (-13) | 3506 | 884 | 1027 | 665 | 2.91 | 23.77 | 5.26 | 1.33 | 1.54 |
| -20 | (- 4) | 4497 | 1133 | 1318 | 747 | 3.26 | 30.65 | 6.01 | 1.51 | 1.76 |
| -15 | (+ 5) | 5626 | 1418 | 1648 | 832 | 3.62 | 38.58 | 6.77 | 1.70 | 1.98 |
| -10 | (+14) | 6894 | 1737 | 2020 | 918 | 4.00 | 47.59 | 7.52 | 1.89 | 2.20 |

| TEST CONDITIONS: @200V60Hz | | 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] |
| -40 | (-40) | 1146 | 289 | 336 | 436 | 1.97 | 7.67 | 2.62 | 0.66 | 0.77 |
| -35 | (-31) | 1662 | 419 | 487 | 513 | 2.28 | 11.16 | 3.25 | 0.82 | 0.95 |
| -30 | (-22) | 2327 | 586 | 682 | 596 | 2.62 | 15.68 | 3.91 | 0.99 | 1.15 |
| -25 | (-13) | 3140 | 791 | 920 | 684 | 3.00 | 21.25 | 4.59 | 1.16 | 1.34 |
| -20 | (- 4) | 4102 | 1034 | 1202 | 779 | 3.41 | 27.90 | 5.26 | 1.33 | 1.54 |
| -15 | (+ 5) | 5213 | 1314 | 1528 | 880 | 3.85 | 35.67 | 5.92 | 1.49 | 1.73 |
| -10 | (+14) | 6472 | 1631 | 1896 | 988 | 4.31 | 44.59 | 6.55 | 1.65 | 1.92 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|------------------|------|--------------------------|
| 1 Base plate | Universal | | |
| 2 Tray holder | No | | |
| 3 Connectors | | | |
| 3.1 SUCTION | 9.6 +0.07/+0.00 | [mm] | (0.378" +0.003"/+0.000") |
| 3.1.1 Material | Copper | | |
| 3.1.2 Shape | Vertical | | |
| 3.2 DISCHARGE | 6.42 +0.08/+0.00 | [mm] | (0.253" +0.003"/+0.000") |
| 3.2.1 Material | Copper | | |
| 3.2.2 Shape | Vertical | | |
| 3.3 PROCESS | 6.42 +0.08/+0.00 | [mm] | (0.253" +0.003"/+0.000") |
| 3.3.1 Material | Copper | | |
| 3.3.2 Shape | Vertical | | |
| 3.4 Oil cooler (Copper) | No | [mm] | |
| 3.5 Connector sealing | Rubber Plugs | | |