

Product Data



NOTE: Images are for illustration purposes only. Actual models may differ slightly.

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INDUSTRY LEADING FEATURES / BENEFITS

A PERFECT BALANCE BETWEEN BUDGET LIMITS, ENERGY SAVINGS AND COMFORT.

The 38MHRB series ductless systems are a matched combination of an outdoor condensing unit and an indoor fan coil unit connected only by refrigerant tubing and wires.

The ductless system permits creative solutions to design problems such as:

- Add-ons to current space (an office or family room addition)
- Special space requirements
- When changes in the load cannot be handled by the existing system
- When adding air conditioning to spaces that are heated by hydronic or electric heat and have no ductwork
- Historical renovations or any application where preserving the look of the original structure is essential.

The ideal compliment to your ducted system when it is impractical or prohibitively expensive to use ductwork.

The compact indoor fan coil units take up very little space in the room and do not obstruct windows. The fan coils are attractively styled to blend with most room decors. Advanced system components incorporate innovative technology to provide reliable cooling performance at low sound levels.

Inverter Technology

The inverter driven compressor is designed to run at various input power frequencies (Hz) which controls the compressor's motor speed.

Even Temperature – The control package, including the inverter, monitors the outdoor and indoor temperatures as they relate to the selected indoor set point and adjusts the compressor speed to match the load and keep the system operating continuously rather than cycling and creating temperature swings. This translates to higher comfort levels for the occupants.

Rapid Pull Down/Warm-Up – Comfort is increased by the inverter system's ability to ramp up the compressor speed enabling the system to reach the user selected room temperature set point quicker.

Humidity Control – Running the system for longer periods and continuously varying the compressor speed enhances the humidity control.

Individual Room Comfort

Maximum comfort is provided because each space can be controlled individually based on the usage pattern.

Low Sound Levels

When noise is a concern, ductless systems are the answer. The indoor units are whisper quiet. There are no compressors indoors, either in the conditioned space or directly over it, and there is none of the noise usually generated by air being forced through the ductwork.

When sound ordinances and proximity to neighbors demand quiet operation, this outdoor unit is the right choice. With the inverter technology, these units run at lower speeds most of the time resulting in reduced sound levels.

Inverter Technology – Enhanced Economical Operation

Ductless systems are inherently economical to operate. Individual rooms are heated or cooled only when required, and since the air is delivered directly to the space, there is no need to use additional energy to move the air in the ductwork. This economical operation is enhanced further when the inverter system output matches the load resulting in a more efficient system.

Easy-To-Use Controls

The systems have microprocessor-based controls to provide the ultimate in comfort and efficiency. The user friendly wired and wireless remote controls provide the interface between the user and the unit.

Secure Operation

If security is an issue, outdoor and indoor units are connected only by refrigerant piping and wiring to prevent intruders from crawling through ductwork or wall openings. In addition, since the outdoor unit can be installed close to an outside wall, coils are protected from vandals and severe weather.

Fast Installation

This compact ductless system is simple to install. Only wires and piping need to run between the indoor and outdoor units. These units are fast and easy to install ensuring minimal disruption to customers in homes or the workplace. This makes these systems the equipment of choice for retrofit applications.

Simple Servicing and Maintenance

Removing the top panel of the outdoor unit provides immediate access to the control compartment, providing the service technician access to the diagnostic LEDs to facilitate the troubleshooting process. In addition, the draw-thru design of the outdoor unit means that dirt accumulates on the outside surface of the coil. Coils can be cleaned quickly from the inside using a pressure hose and detergent.

On the indoor units, service and maintenance expense is reduced due to the permanent easy to clean filters. Also, error codes are displayed on the front panel to alert the user to certain system malfunctions

Built-in Reliability

Ductless system indoor and outdoor units are designed to provide years of trouble-free operation.

Both the indoor and outdoor units are well protected. Whenever the microprocessor detects abnormal conditions, the unit stops and an error code appears.

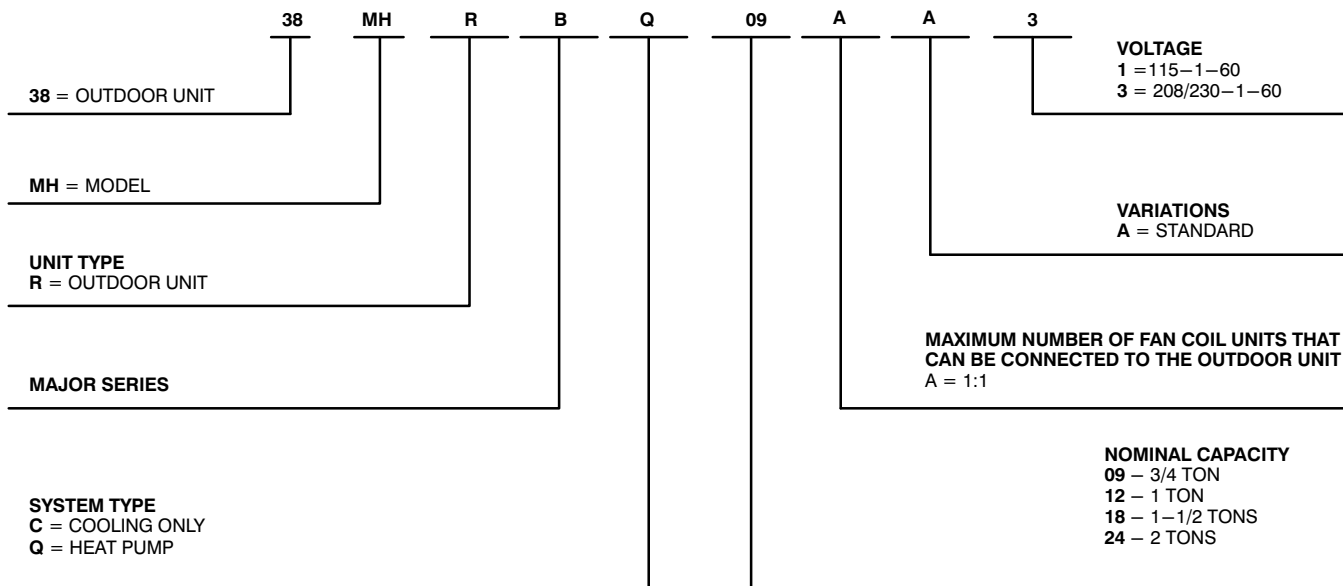
Inverter systems provide additional reliability due to the soft start. This refers to the ability of the inverter to start the compressor motor using reduced voltage and reduced current. This feature is beneficial from an electrical standpoint (eliminates current spikes) as well as an overall reliability standpoint due to reduced stress on all associated system components.

Agency Listings

All systems are listed with AHRI (Air conditioning, Heating, and Refrigeration Institute) and are ETL certified per UL 1995 standard.

MODEL NUMBER NOMENCLATURE

OUTDOOR UNIT



Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program. For verification of certification for individual products, go to www.ahridirectory.org.



STANDARD FEATURES AND ACCESSORIES

| | |
|--|---|
| Ease Of Installation | |
| Low Voltage Controls | S |
| Comfort Features | |
| Microprocessor Controls | S |
| Auto Restart Function | S |
| Auto Changeover | S |
| Energy Saving Features | |
| Inverter Driven Compressor | S |
| 46°F Heating Mode (Heating Setback) | S |
| Safety And Reliability | |
| 3 Minute Time Delay For Compressor | S |
| High Compressor Discharge Temperature | S |
| Low Voltage Protection | S |
| Compressor Overload Protection | S |
| Compressor Over Current Protection | S |
| IPM Module Protection | S |
| Condenser High Temp Protection in Cooling Mode | S |
| Aluminum Hydrophilic pre-coated fins | S |
| Ease Of Service And Maintenance | |
| Diagnostics | S |
| Liquid Line Pressure Taps | S |
| Application Flexibility | |
| Crankcase Heater | S |
| Base pan Heater on Heat Pump units Only | S |

Legend
 S Standard
 A Accessory

OUTDOOR UNITS

Crankcase Heater

The crankcase heater is standard on all unit sizes. Heater clamps must be placed around the compressor oil stump.

Base pan Heater

The base pan heater is standard on all heat pump unit sizes.

ACCESSORIES

| Outdoor Unit Model Number | Basepan Base Rubber Plugs RCD Part Number | Quantity per Unit |
|---------------------------|---|-------------------|
| 38MHRBC12AA1 | 12600801A00077 | 12 |
| 38MHRBC12AA3 | | |
| 38MHRBC18AA3 | | |
| 38MHRBC24AA3 | | 25 |
| 38MHRBQ12AA1 | | 12 |
| 38MHRBQ09AA3 | | |
| 38MHRBQ12AA3 | | |
| 38MHRBQ18AA3 | | |
| 38MHRBQ24AA3 | | |
| 38MHRBQ24AA3 | | 13 |
| 38MHRBQ24AA3 | 25 | |

NOTE: The basepan is constructed with multiple holes to provide proper draining during defrost. For applications where is required to seal these holes, and re-direct the condensate drain, rubber plugs are available through RCD.

DIMENSIONS – OUTDOOR

| | System Size | | Height (H) in. (mm) | Width (W) in. (mm) | Depth (D) in. (mm) | Weight—Net lbs. (kg) |
|-----------|--------------|------------|---------------------|--------------------|--------------------|----------------------|
| | Cooling Only | 12K | (115V) | 21.85(555) | 30.31(770) | 11.81(300) |
| 12K | | (208/230V) | 21.85(555) | 30.31(770) | 11.81(300) | 53.8(24.4) |
| 18K | | (208/230V) | 21.85 (555) | 30.31 (770) | 11.81 (300) | 65.9 (29.9) |
| 24K | | (208/230V) | 27.64(702) | 33.27(845) | 14.29(363) | 88.6(40.2) |
| Heat Pump | System Size | | Height (H) in. (mm) | Width (W) in. (mm) | Depth (D) in. (mm) | Weight—Net lbs. (kg) |
| | 12K | (115V) | 21.85(555) | 30.31(770) | 11.81(300) | 69(31.3) |
| | 9K | (208/230V) | 21.85(555) | 30.31(770) | 11.81(300) | 63(28.6) |
| | 12K | (208/230V) | 21.85(555) | 30.31(770) | 11.81(300) | 65.5(29.7) |
| | 18K | (208/230V) | 21.81(554) | 31.50(800) | 13.11(333) | 79.6(36.1) |
| | 24K | (208/230V) | 27.64(702) | 33.27(845) | 14.29(363) | 114.2(51.8) |

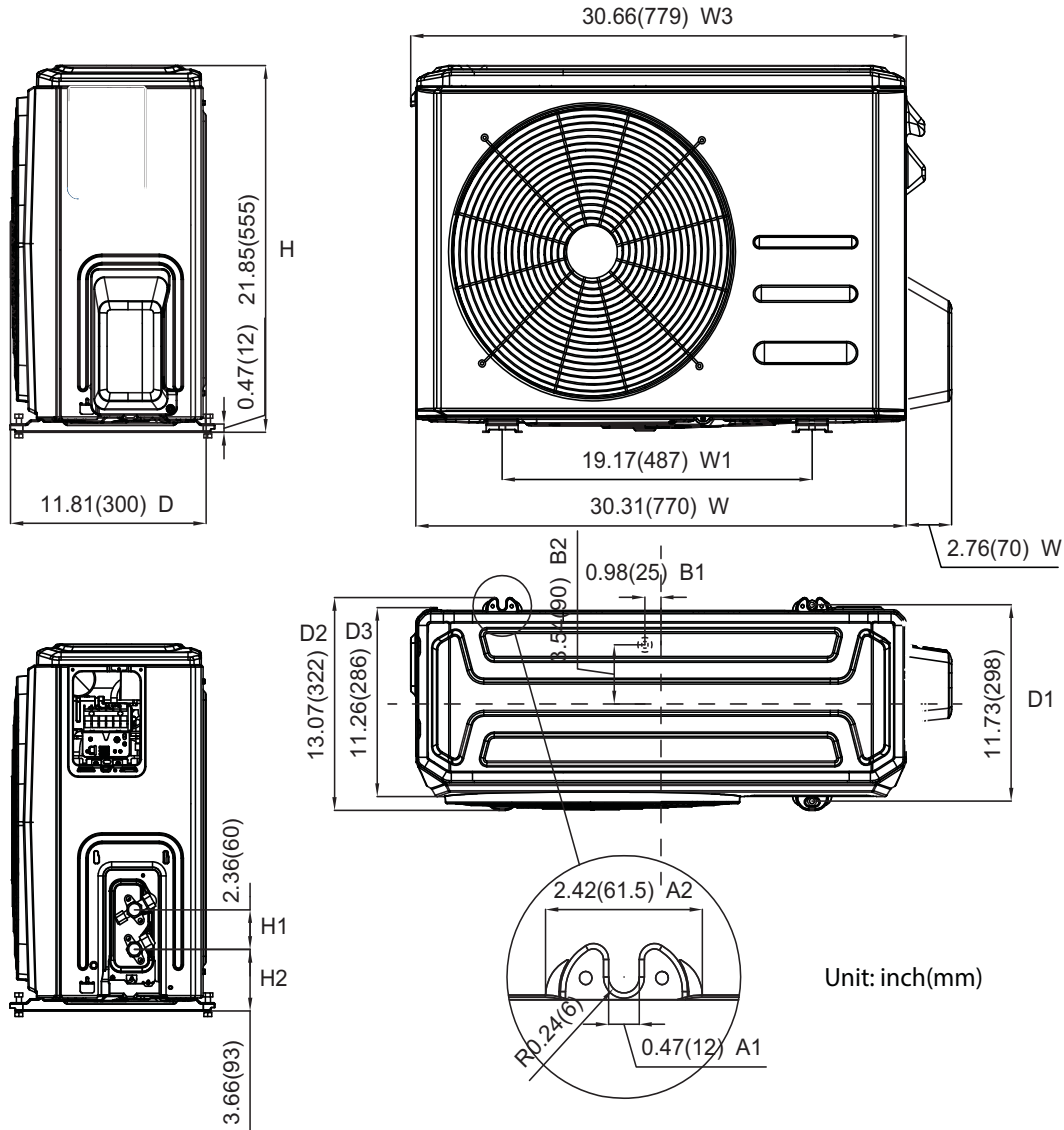
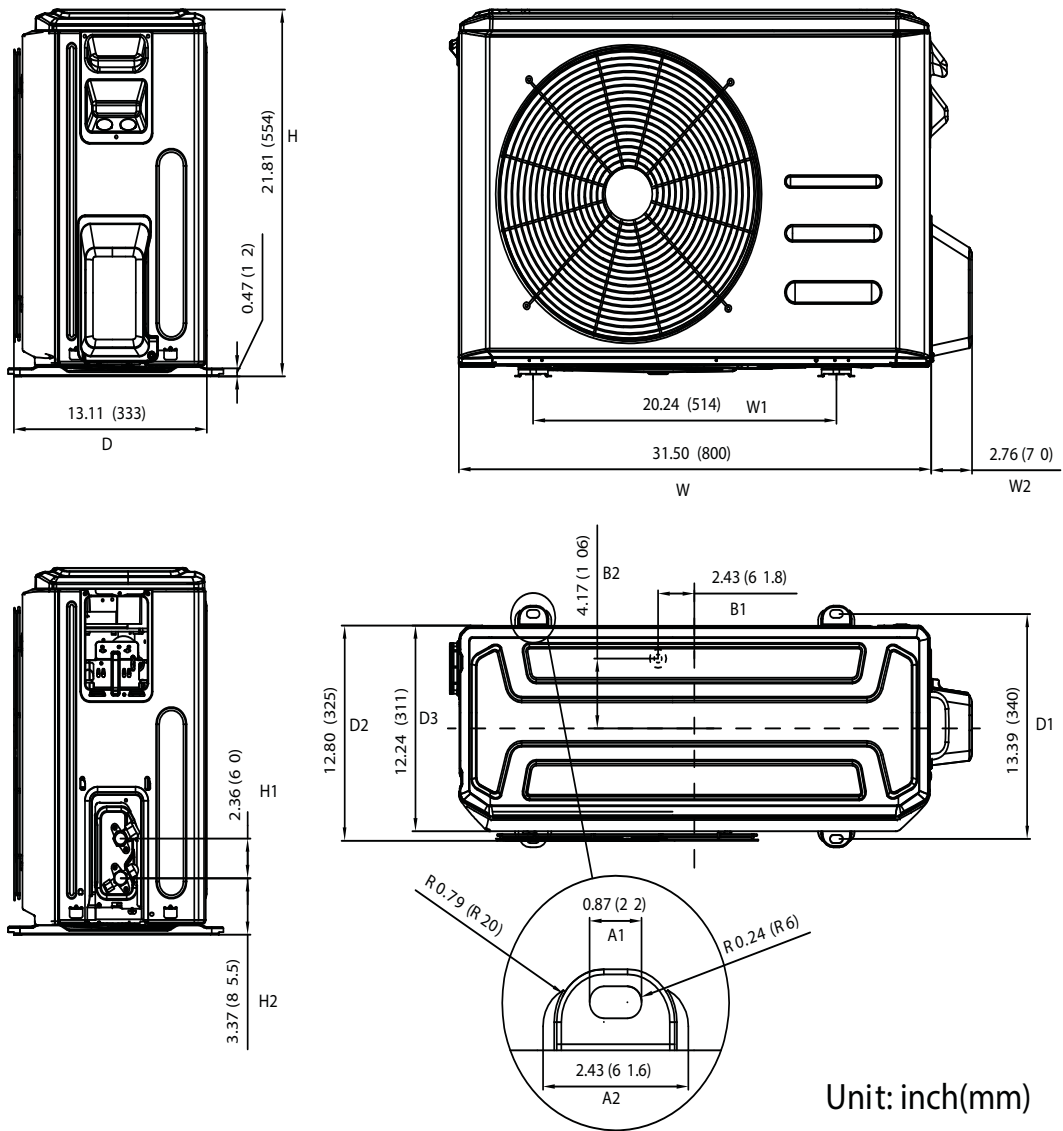


Fig. 1 – Sizes 9K and 12K Heat Pump and Size 18K Cooling Only

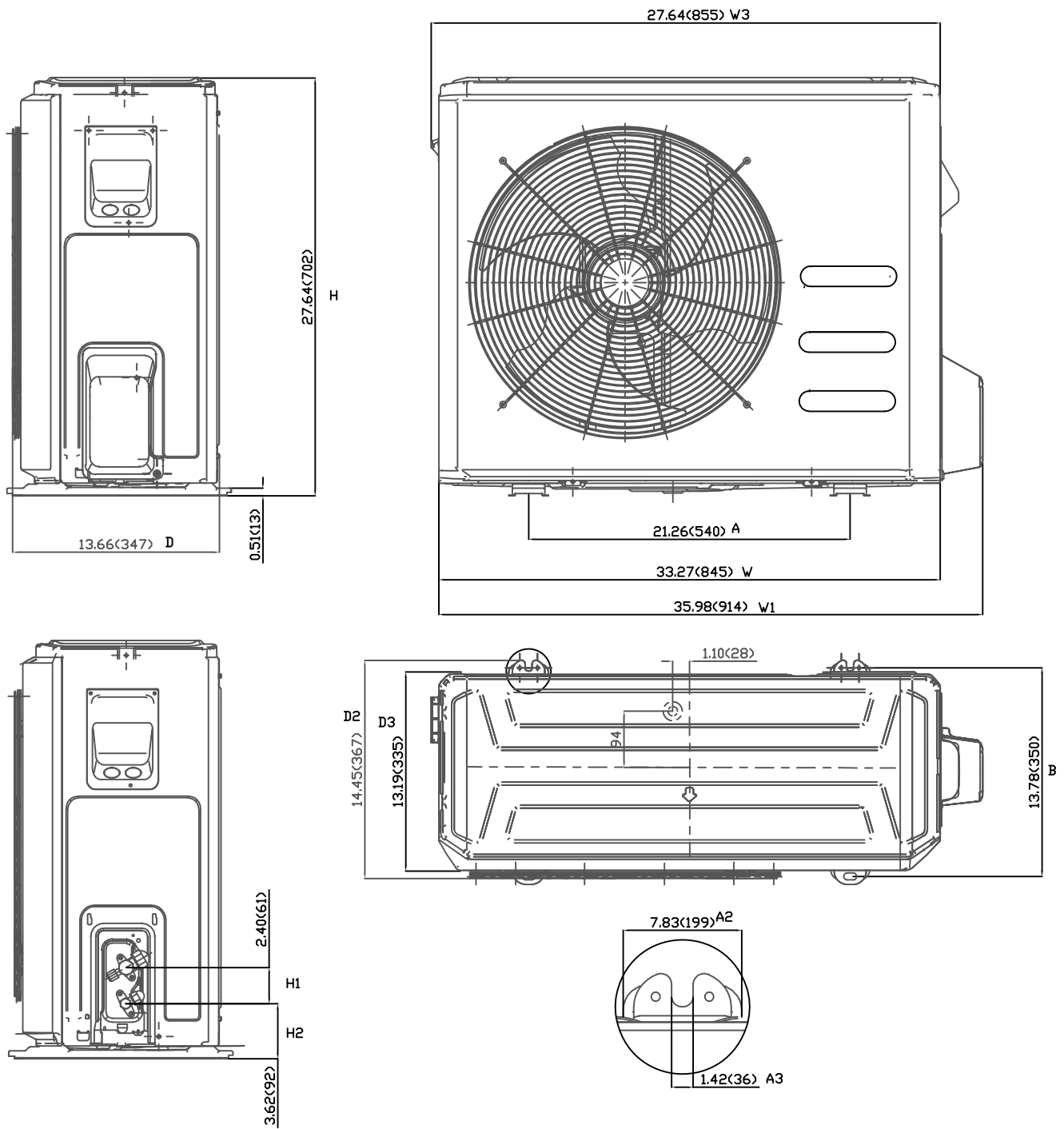
DIMENSIONS – OUTDOOR (CONT)



Unit: inch(mm)

Fig. 2 – Size 18K Heat Pump

DIMENSIONS – OUTDOOR (CONT)



Unit: inch (mm)

Fig. 3 – Size 24K

CLEARANCES – OUTDOOR

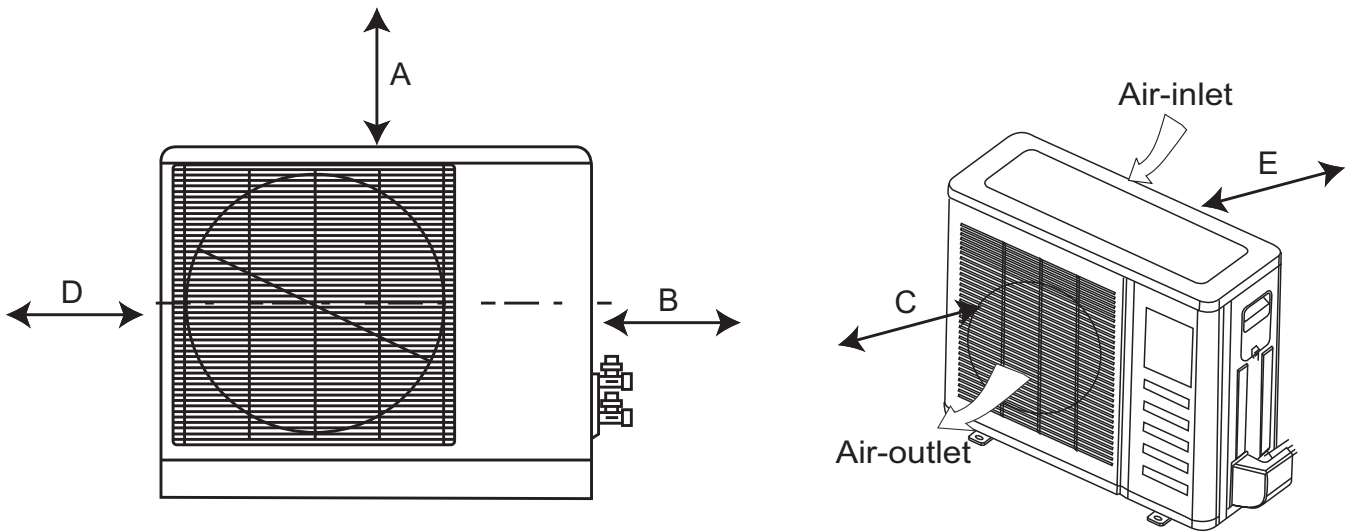


Fig. 4 – Outdoor Unit Clearance

| UNIT | MINIMUM VALUE in. (mm) |
|------|------------------------|
| A | 24 (610) |
| B | 24 (610) |
| C | 24 (610) |
| D | 4 (101) |
| E | 4 (101) |

NOTE: The outdoor unit must be mounted at least 2in. (50mm) above the maximum anticipated snow depth.

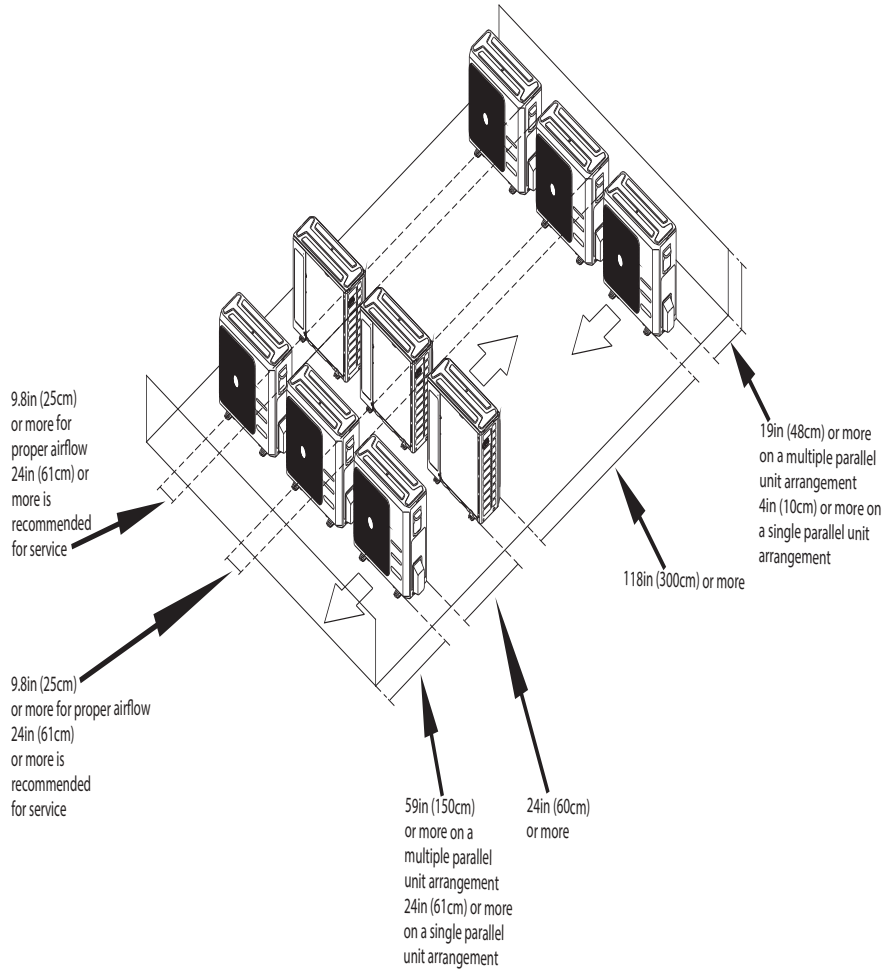


Fig. 5 – Clearances for multiple units

SPECIFICATIONS – OUTDOOR COOLING ONLY

| System | Size | | 12 | 12 | 18 | 24 |
|-----------------|--------------------------------|-----------|-----------------|-----------------|-----------------|-----------------|
| | Outdoor Model | | | 38MHRBC12AA1 | 38MHRBC12AA3 | 38MHRBC18AA3 |
| Electrical | Voltage, Phase, Cycle | V/Ph/Hz | 115-1-60 | 208/230-1-60 | 208/230-1-60 | 208/230-1-60 |
| | MCA | A. | 13 | 11 | 15 | 18 |
| | MOCP – Fuse Rating | A. | 20 | 15 | 20 | 25 |
| Operating Range | Cooling Outdoor DB Min – Max | ° F (° C) | 0~122 (-17~50) | 0~122 (-17~50) | 0~122 (-17~50) | 0~122 (-17~50) |
| Piping | Total Piping Length | ft (m) | 82 (25) | 82 (25) | 98 (30) | 164 (50) |
| | Piping Lift* | ft (m) | 33 (10) | 33 (10) | 66 (20) | 66 (20) |
| | Pipe Connection Size – Liquid | in (mm) | 1/4 (6.35) | 1/4 (6.35) | 1/4 (6.35) | 3/8 (9.52) |
| | Pipe Connection Size – Suction | in (mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) | 5/8 (16) |
| Refrigerant | Type | | R410A | R410A | R410A | R410A |
| | Charge | lbs (kg) | 1.30 (0.59) | 1.17 (0.53) | 1.98 (0.90) | 2.56 (1.16) |
| | Metering Device | | EEV | EEV | EEV | EEV |
| Outdoor Coil | Face Area | Sq. Ft. | 4.15 | 4.15 | 4.15 | 4.78 |
| | No. Rows | | 1 | 1 | 2 | 2 |
| | Fins per inch | | 22 | 22 | 22 | 22 |
| | Circuits | | 2 | 2 | 4 | 6 |
| Compressor | Type | | Rotary Inverter | Rotary Inverter | Rotary Inverter | Rotary Inverter |
| | Model | | ASN98D22UFZ | ASK89D29UEZD | ASN140D21UFZ | ATN150D30UFZA |
| | Oil Type | | VG74 | VG74 | VG74 | VG74 |
| | Oil Charge | Fl. Oz. | 13.0 | 13.0 | 15.5 | 23.6 |
| | Rated Current | RLA | 9.5 | 6.8 | 9.0 | 12.0 |
| Outdoor | Unit Width | in (mm) | 30.31 (770) | 30.31 (770) | 30.31 (770) | 33.27 (845) |
| | Unit Height | in (mm) | 21.85 (555) | 21.85 (555) | 21.85 (555) | 27.64 (702) |
| | Unit Depth | in (mm) | 11.81 (300) | 11.81 (300) | 11.81 (300) | 14.29 (363) |
| | Net Weight | lbs (kg) | 57.8 (26.2) | 53.8 (24.4) | 65.9 (29.9) | 88.6 (40.2) |
| | Airflow | CFM | 1,170 | 1,230 | 1,195 | 1,825 |
| | Sound Pressure | dB(A) | 52.0 | 53.6 | 55.3 | 58.0 |

* Condensing unit above or below indoor unit

COMPATIBILITY

| Indoor Unit | | 38MHRBC12AA1 | 38MHRBC12AA3 | 38MHRBC18AA3 | 38MHRBC24AA3 |
|-------------|--------------|--------------|--------------|--------------|--------------|
| High Wall | 40MHHC12---1 | • | | | |
| | 40MHHC12---3 | | • | | |
| | 40MHHC18---3 | | | • | |
| | 40MHHC24---3 | | | | • |

PERFORMANCE

| Indoor Model | | 40MHHC12---1 | 40MHHC12---3 | 40MHHC18---3 | 40MHHC24---3 |
|--------------|------------------------------|--------------|--------------|--------------|--------------|
| High Wall | Energy Star | | NO | NO | NO |
| | Cooling System Tons | | 1.0 | 1.0 | 1.4 |
| | Cooling Rated Capacity | Btu/h | 12,000 | 11,500 | 17,000 |
| | Cooling Cap. Range Min – Max | Btu/h | 4,800~13,200 | 4,800~13,000 | 5,800~18,600 |
| | SEER | | 17.3 | 19.0 | 19.0 |
| | EER | | 10.7 | 11.2 | 10.3 |
| | | | | | |

SPECIFICATIONS – OUTDOOR HEAT PUMP

| System | Size | | 12 | 9 | 12 | 18 | 24 |
|-----------------|--------------------------------|-----------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | | | Outdoor Model | 38MHRBQ12AA1 | 38MHRBQ09AA3 | 38MHRBQ12AA3 | 38MHRBQ18AA3 |
| Electrical | Voltage, Phase, Cycle | V/Ph/Hz | 115–1–60 | 208/230–1–60 | 208/230–1–60 | 208/230–1–60 | 208/230–1–60 |
| | MCA | A. | 13 | 8 | 10 | 15 | 18 |
| | MOCP – Fuse Rating | A. | 20 | 15 | 15 | 20 | 25 |
| Operating Range | Cooling Outdoor DB Min – Max | ° F (° C) | 0~ 122 (–17~ 50) | 0~ 122 (–17~ 50) | 0~ 122 (–17~ 50) | 0~ 122 (–17~ 50) | 0~ 122 (–17~ 50) |
| | Heating Outdoor DB Min – Max | ° F (° C) | 0~ 86 (–17~ 30) | 0~ 86 (–17~ 30) | 0~ 86 (–17~ 30) | 0~ 86 (–17~ 30) | 0~ 86 (–17~ 30) |
| Piping | Total Piping Length | ft (m) | 82 (25) | 82 (25) | 82 (25) | 98 (30) | 164 (50) |
| | Piping Lift* | ft (m) | 33 (10) | 33 (10) | 33 (10) | 66 (20) | 66 (20) |
| | Pipe Connection Size – Liquid | in (mm) | 1/4 (6.35) | 1/4 (6.35) | 1/4 (6.35) | 1/4 (6.35) | 3/8 (9.52) |
| | Pipe Connection Size – Suction | in (mm) | 1/2 (12.7) | 3/8 (9.52) | 1/2 (12.7) | 1/2 (12.7) | 5/8 (16) |
| Refrigerant | Type | | R410A | R410A | R410A | R410A | R410A |
| | Charge | lbs (kg) | 2.12 (0.96) | 1.76 (0.80) | 2.12 (0.96) | 2.82 (1.28) | 3.97 (1.80) |
| | Metering Device | | EEV | EEV | EEV | EEV | EEV |
| Outdoor Coil | Face Area | Sq. Ft. | 4.1 | 4.1 | 4.1 | 4.7 | 5.3 |
| | No. Rows | | 1.6 | 1 | 1.6 | 2 | 2 |
| | Fins per inch | | 18 | 18 | 18 | 21 | 18 |
| | Circuits | | 2 | 2 | 4 | 4 | 6 |
| Compressor | Type | | Rotary Inverter | Rotary Inverter | Rotary Inverter | Rotary Inverter | Rotary Inverter |
| | Model | | ASN98D22UFZ | ASN98D22UFZ | ASN98D22UFZ | ASN140D21UFZ | ATF235D22UMT |
| | Oil Type | | VG74 | VG74 | VG74 | VG74 | VG74 |
| | Oil Charge | Fl. Oz. | 13.0 | 13.0 | 13.0 | 15.5 | 23.6 |
| | Rated Current | RLA | 10.5 | 5.5 | 6.8 | 10.5 | 12.0 |
| Outdoor | Unit Width | in (mm) | 30.31 (770) | 30.31 (770) | 30.31 (770) | 31.50 (800) | 33.27 (845) |
| | Unit Height | in (mm) | 21.85 (555) | 21.85 (555) | 21.85 (555) | 21.81 (554) | 27.64 (702) |
| | Unit Depth | in (mm) | 11.81 (300) | 11.81 (300) | 11.81 (300) | 13.11 (333) | 14.29 (363) |
| | Net Weight | lbs (kg) | 69 (31.3) | 63 (28.6) | 65.5 (29.7) | 79.6 (36.1) | 114.2 (51.8) |
| | Airflow | CFM | 1,170 | 1,170 | 1,170 | 1,170 | 1,765 |
| | Sound Pressure | dB(A) | 54.5 | 57.2 | 57.4 | 57.0 | 60.2 |

* Condensing unit above or below indoor unit

COMPATIBILITY

| Indoor Unit | | 38MHRBQ12AA1 | 38MHRBQ09AA3 | 38MHRBQ12AA3 | 38MHRBQ18AA3 | 38MHRBQ24AA3 |
|-------------|--------------|--------------|--------------|--------------|--------------|--------------|
| High Wall | 40MHHQ12---1 | • | | | | |
| | 40MHHQ09---3 | | • | | | |
| | 40MHHQ12---3 | | | • | | |
| | 40MHHQ18---3 | | | | • | |
| | 40MHHQ24---3 | | | | | • |

PERFORMANCE

| | Indoor Model | | 40MHHQ12---1 | 40MHHQ09---3 | 40MHHQ12---3 | 40MHHQ18---3 | 40MHHQ24---3 |
|-----------|----------------------------------|-------|---------------|---------------|---------------|---------------|---------------|
| | | | Energy Star | NO | NO | NO | NO |
| High Wall | Cooling System Tons | | 1.0 | 0.8 | 1.0 | 1.5 | 2.0 |
| | Cooling Rated Capacity | Btu/h | 12,000 | 9,000 | 12,000 | 18,000 | 24,000 |
| | Cooling Cap. Range Min – Max | Btu/h | 3,700~ 13,000 | 3,400~ 10,500 | 3,700~ 13,000 | 5,500~ 19,000 | 8,987~ 26,585 |
| | SEER | | 19.8 | 18.5 | 19.8 | 19.0 | 17.3 |
| | EER | | 10 | 11.2 | 11.2 | 11.2 | 9.7 |
| | Heating Rated Capacity (47° F) | Btu/h | 12,000 | 9,800 | 12,000 | 18,000 | 24,800 |
| | Heating Rated Capacity (17° F) | Btu/h | 8,000 | 7,500 | 9,230 | 11,600 | 18,000 |
| | Heating Maximum Capacity (17° F) | Btu/h | 8,200 | 7,850 | 9,500 | 11,800 | 18,300 |
| | Heating Maximum Capacity (5° F) | Btu/h | 9,000 | 6,070 | 8,880 | 10,150 | 16,760 |
| | Heating Cap. Range Min – Max | Btu/h | 3,500~ 13,500 | 2,800~ 11,500 | 3,500~ 13,500 | 6,200~ 19,000 | 8,371~ 25,350 |
| | HSPF | | 10.6 | 10.0 | 9.6 | 10.6 | 9.6 |
| | COP (47° F) | W/W | 2.93 | 3.27 | 3.22 | 3.26 | 3.13 |
| | COP (17° F) | W/W | 2.58 | 2.58 | 2.64 | 2.64 | 2.49 |
| | COP (5° F) | W/W | 1.60 | 1.60 | 1.60 | 1.50 | 1.40 |

COOLING PERFORMANCE DATA – (COOLING ONLY)

| Model | Cooling | | | Outdoor Conditions (DB) | | | | | | | | | |
|------------------|-------------------|----------------|-------|-------------------------|--------------|--------------|-------------|--------------|--------------|--------------|---------------|---------------|---------------|
| | Indoor Conditions | | | 0F (-17C) | 5F (-15C) | 17F (-8C) | 47F (8C) | 77F (25C) | 86F (30C) | 95F (35C) | 104F (40C) | 113F (45C) | 122F (50C) |
| | DB | WB | | | | | | | | | | | |
| 12 (115V) | 69.8F (21C) | 59F (15C) | TC | 6.54 | 6.67 | 7.33 | 8.42 | 8.57 | 11.44 | 9.94 | 8.98 | 7.80 | 4.84 |
| | | | SC | 5.60 | 5.77 | 6.08 | 6.20 | 6.32 | 7.72 | 6.98 | 6.53 | 6.00 | 4.67 |
| | | | Input | 0.21 | 0.21 | 0.25 | 0.30 | 0.56 | 1.16 | 1.03 | 1.04 | 1.03 | 0.80 |
| | 75.2F (24C) | 62.6F (17C) | TC | 6.99 | 7.13 | 7.84 | 9.01 | 9.24 | 12.18 | 10.66 | 9.67 | 8.41 | 5.43 |
| | | | SC | 6.00 | 6.19 | 6.51 | 6.64 | 6.83 | 8.16 | 7.46 | 7.03 | 6.48 | 5.24 |
| | | | Input | 0.20 | 0.21 | 0.24 | 0.30 | 0.56 | 1.19 | 1.06 | 1.06 | 1.05 | 0.81 |
| | 80.6F (27C) | 66.2F (19C) | TC | 7.46 | 7.61 | 8.36 | 9.61 | 10.94 | 12.99 | 12.32 | 10.26 | 9.06 | 5.97 |
| | | | SC | 6.36 | 6.56 | 6.90 | 7.04 | 7.30 | 8.60 | 7.88 | 7.43 | 6.94 | 4.72 |
| | | | Input | 0.20 | 0.21 | 0.24 | 0.30 | 0.56 | 1.22 | 1.08 | 1.08 | 1.07 | 0.81 |
| | 89.6F (32C) | 73.4F (23C) | TC | 12.04 | 12.28 | 13.50 | 15.52 | 14.21 | 14.69 | 12.90 | 11.76 | 10.47 | 7.13 |
| | | | SC | 8.20 | 8.45 | 8.89 | 9.07 | 8.68 | 8.85 | 8.19 | 7.79 | 7.34 | 6.20 |
| | | | Input | 0.56 | 0.57 | 0.67 | 0.81 | 0.94 | 1.28 | 1.14 | 1.13 | 1.10 | 0.83 |
| 12 (208-230V) | 69.8F (21C) | 59F (15C) | TC | 7.16 | 7.31 | 8.03 | 9.23 | 8.72 | 8.75 | 9.83 | 8.31 | 7.07 | 4.56 |
| | | | SC | 6.21 | 6.40 | 6.74 | 6.87 | 6.70 | 6.71 | 7.24 | 6.48 | 5.89 | 4.56 |
| | | | Input | 0.31 | 0.32 | 0.37 | 0.45 | 0.59 | 0.73 | 1.10 | 1.02 | 1.01 | 0.79 |
| | 75.2F (24C) | 62.6F (17C) | TC | 7.64 | 7.80 | 8.57 | 9.85 | 9.58 | 11.84 | 10.69 | 9.07 | 7.76 | 5.02 |
| | | | SC | 6.63 | 6.83 | 7.19 | 7.34 | 7.26 | 8.32 | 7.80 | 7.07 | 6.43 | 5.02 |
| | | | Input | 0.31 | 0.32 | 0.38 | 0.46 | 0.60 | 1.12 | 1.12 | 1.03 | 1.02 | 0.79 |
| | 80.6F (27C) | 66.2F (19C) | TC | 8.16 | 8.33 | 9.15 | 10.52 | 11.25 | 12.71 | 11.98 | 9.76 | 8.45 | 5.59 |
| | | | SC | 7.03 | 7.25 | 7.63 | 7.78 | 7.55 | 8.79 | 8.37 | 7.56 | 6.94 | 5.59 |
| | | | Input | 0.32 | 0.33 | 0.39 | 0.47 | 0.56 | 1.15 | 1.15 | 1.04 | 1.03 | 0.80 |
| | 89.6F (32C) | 73.4F (23C) | TC | 11.49 | 11.72 | 12.88 | 14.80 | 14.83 | 14.65 | 13.37 | 11.35 | 9.92 | 6.56 |
| | | | SC | 8.37 | 8.63 | 9.08 | 9.27 | 9.28 | 9.26 | 8.80 | 8.04 | 7.41 | 6.18 |
| | | | Input | 0.73 | 0.75 | 0.88 | 1.07 | 1.07 | 1.22 | 1.22 | 1.09 | 1.07 | 0.81 |
| 18 (208-230V) | 69.8F (21C) | 59F (15C) | TC | 7.85 | 11.21 | 12.32 | 14.16 | 15.32 | 17.55 | 15.92 | 13.84 | 11.90 | 7.57 |
| | | | SC | 6.86 | 9.80 | 10.32 | 10.53 | 10.16 | 12.14 | 11.37 | 10.38 | 9.52 | 7.34 |
| | | | Input | 0.26 | 0.40 | 0.46 | 0.57 | 0.80 | 1.63 | 1.59 | 1.48 | 1.47 | 1.15 |
| | 75.2F (24C) | 62.6F (17C) | TC | 7.29 | 10.41 | 11.44 | 13.15 | 14.28 | 18.35 | 16.97 | 14.93 | 13.03 | 8.51 |
| | | | SC | 6.75 | 9.64 | 10.15 | 10.36 | 10.91 | 12.73 | 12.10 | 11.18 | 10.36 | 8.27 |
| | | | Input | 0.21 | 0.33 | 0.38 | 0.47 | 0.80 | 1.65 | 1.62 | 1.52 | 1.49 | 1.16 |
| | 80.6F (27C) | 66.2F (19C) | TC | 7.38 | 10.55 | 11.59 | 13.32 | 15.17 | 18.99 | 18.15 | 15.98 | 14.10 | 9.36 |
| | | | SC | 6.85 | 9.79 | 10.31 | 10.52 | 11.60 | 13.18 | 12.69 | 11.92 | 11.17 | 9.16 |
| | | | Input | 0.21 | 0.33 | 0.38 | 0.46 | 0.81 | 1.69 | 1.65 | 1.55 | 1.52 | 1.17 |
| | 89.6F (32C) | 73.4F (23C) | TC | 7.41 | 10.59 | 11.64 | 13.38 | 19.66 | 19.99 | 18.99 | 17.42 | 15.97 | 11.05 |
| | | | SC | 6.52 | 9.32 | 9.81 | 10.01 | 12.92 | 13.07 | 12.70 | 12.14 | 11.65 | 10.14 |
| | | | Input | 0.21 | 0.33 | 0.38 | 0.46 | 1.41 | 1.71 | 1.69 | 1.60 | 1.57 | 1.19 |
| 24 (208-230V) | 69.8F (21C) | 59F (15C) | TC | 15.85 | 16.44 | 16.52 | 17.16 | 18.06 | 21.39 | 19.68 | 17.54 | 14.38 | 11.13 |
| | | | SC | 11.92 | 12.27 | 13.05 | 13.15 | 14.32 | 15.45 | 14.02 | 12.94 | 11.40 | 9.89 |
| | | | Input | 0.88 | 0.89 | 1.14 | 1.66 | 1.70 | 1.83 | 2.31 | 2.23 | 2.04 | 1.87 |
| | 75.2F (24C) | 62.6F (17C) | TC | 16.98 | 17.22 | 18.69 | 19.21 | 21.81 | 23.68 | 22.14 | 18.88 | 15.89 | 12.50 |
| | | | SC | 12.73 | 12.88 | 13.77 | 13.98 | 15.52 | 16.10 | 15.61 | 13.87 | 12.55 | 10.93 |
| | | | Input | 0.90 | 0.90 | 1.32 | 1.67 | 1.92 | 2.12 | 2.36 | 2.28 | 2.08 | 1.90 |
| | 80.6F (27C) | 66.2F (19C) | TC | 17.72 | 18.15 | 19.03 | 21.60 | 23.26 | 25.91 | 24.80 | 22.59 | 20.29 | 17.30 |
| | | | SC | 13.31 | 13.54 | 13.94 | 15.13 | 15.92 | 17.35 | 17.99 | 15.75 | 14.75 | 13.42 |
| | | | Input | 0.89 | 0.91 | 1.51 | 2.01 | 2.13 | 2.61 | 2.72 | 2.43 | 2.34 | 2.12 |
| | 89.6F (32C) | 73.4F (23C) | TC | 19.71 | 20.04 | 20.16 | 23.50 | 24.81 | 26.29 | 25.24 | 25.13 | 23.12 | 20.12 |
| | | | SC | 13.74 | 13.86 | 15.95 | 16.18 | 18.17 | 17.95 | 16.66 | 16.11 | 15.35 | 14.13 |
| | | | Input | 0.93 | 0.99 | 1.74 | 2.21 | 2.54 | 2.74 | 2.81 | 2.51 | 2.45 | 2.21 |

LEGEND

DB - Dry Bulb
 WB - Wet Bulb
 TC - Total Net Capacity (1000BTU/hour)
 SC - Sensible Capacity (1000BTU/hour)
 Input - Total Power (kW)

COOLING PERFORMANCE DATA – (HEAT PUMP)

| Model | Cooling | | | Outdoor Conditions (DB) | | | | | | | | | |
|------------------|-------------------|----------------|-------|-------------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| | Indoor Conditions | | | 0F | 5F | 17F | 47F | 77F | 86F | 95F | 104F | 113F | 122F |
| | DB | WB | | (-17C) | (-15C) | (-8C) | (8C) | (25C) | (30C) | (35C) | (40C) | (45C) | (50C) |
| 12 (115V) | 69.8F (21C) | 59F (15C) | TC | 11.24 | 11.44 | 11.38 | 10.68 | 10.82 | 10.99 | 10.45 | 9.73 | 7.88 | 4.96 |
| | | | SC | 7.73 | 7.85 | 7.86 | 7.42 | 7.46 | 7.67 | 7.39 | 7.06 | 6.26 | 4.94 |
| | | | Input | 0.48 | 0.46 | 0.43 | 0.46 | 0.45 | 0.90 | 0.97 | 1.06 | 1.00 | 0.81 |
| | 75.2F (24C) | 62.6F (17C) | TC | 12.25 | 12.11 | 12.18 | 11.43 | 11.63 | 11.90 | 11.21 | 10.29 | 8.30 | 5.44 |
| | | | SC | 8.33 | 8.34 | 8.31 | 7.99 | 8.05 | 8.18 | 7.85 | 7.45 | 6.58 | 5.41 |
| | | | Input | 0.46 | 0.50 | 0.46 | 0.48 | 0.46 | 0.91 | 0.99 | 1.04 | 0.96 | 0.81 |
| | 80.6F (27C) | 66.2F (19C) | TC | 12.93 | 12.61 | 11.40 | 11.44 | 11.00 | 11.98 | 12.01 | 11.24 | 9.32 | 6.03 |
| | | | SC | 8.71 | 8.80 | 8.76 | 8.32 | 8.17 | 8.67 | 8.46 | 8.16 | 7.32 | 6.10 |
| | | | Input | 0.49 | 0.52 | 0.47 | 0.42 | 0.61 | 0.92 | 1.19 | 1.10 | 1.00 | 0.82 |
| | 89.6F (32C) | 73.4F (23C) | TC | 14.54 | 14.30 | 14.73 | 14.62 | 13.29 | 13.05 | 12.97 | 12.52 | 10.31 | 7.51 |
| | | | SC | 9.03 | 8.99 | 9.11 | 9.58 | 8.61 | 8.55 | 8.52 | 8.33 | 7.48 | 6.58 |
| | | | Input | 0.58 | 0.61 | 0.55 | 0.81 | 0.84 | 0.93 | 1.03 | 1.09 | 0.93 | 0.83 |
| 09 (208-230V) | 69.8F (21C) | 59F (15C) | TC | 9.06 | 8.57 | 7.95 | 9.11 | 9.16 | 8.79 | 9.42 | 6.98 | 6.52 | 5.08 |
| | | | SC | 6.56 | 6.61 | 5.88 | 7.47 | 7.60 | 6.91 | 7.22 | 4.88 | 4.53 | 3.01 |
| | | | Input | 0.38 | 0.40 | 0.40 | 0.62 | 0.76 | 0.90 | 1.19 | 1.00 | 0.93 | 0.95 |
| | 75.2F (24C) | 62.6F (17C) | TC | 9.59 | 9.30 | 8.60 | 10.07 | 9.83 | 9.76 | 10.17 | 8.17 | 6.70 | 5.76 |
| | | | SC | 6.18 | 6.15 | 5.73 | 6.50 | 6.41 | 6.37 | 6.55 | 5.66 | 5.01 | 4.65 |
| | | | Input | 0.41 | 0.43 | 0.43 | 0.63 | 0.73 | 0.90 | 1.19 | 1.01 | 0.94 | 0.96 |
| | 80.6F (27C) | 66.2F (19C) | TC | 10.20 | 9.91 | 9.81 | 11.17 | 11.31 | 11.56 | 10.78 | 8.41 | 6.95 | 6.10 |
| | | | SC | 6.59 | 6.53 | 7.01 | 7.50 | 7.69 | 7.58 | 6.96 | 5.91 | 5.26 | 5.10 |
| | | | Input | 0.48 | 0.46 | 0.47 | 0.51 | 0.73 | 0.95 | 1.20 | 1.06 | 0.98 | 1.01 |
| | 89.6F (32C) | 73.4F (23C) | TC | 11.39 | 11.15 | 10.81 | 12.39 | 13.39 | 12.26 | 12.12 | 9.24 | 8.03 | 6.74 |
| | | | SC | 6.83 | 6.75 | 6.88 | 7.23 | 7.83 | 7.17 | 7.15 | 6.02 | 5.57 | 5.08 |
| | | | Input | 0.52 | 0.56 | 0.57 | 1.04 | 1.01 | 0.92 | 1.23 | 1.03 | 0.96 | 0.97 |
| 12 (208-230V) | 69.8F (21C) | 59F (15C) | TC | 12.24 | 11.97 | 12.09 | 12.05 | 11.58 | 12.11 | 11.93 | 10.59 | 8.17 | 7.18 |
| | | | SC | 8.47 | 8.38 | 8.37 | 8.32 | 8.08 | 8.32 | 8.24 | 7.63 | 6.41 | 5.97 |
| | | | Input | 0.58 | 0.53 | 0.37 | 0.66 | 1.02 | 1.10 | 1.27 | 1.24 | 0.95 | 0.97 |
| | 75.2F (24C) | 62.6F (17C) | TC | 13.26 | 13.53 | 12.36 | 12.45 | 12.18 | 12.91 | 12.67 | 10.78 | 8.67 | 7.73 |
| | | | SC | 9.10 | 9.19 | 8.60 | 8.63 | 8.52 | 8.86 | 8.68 | 7.89 | 6.88 | 6.49 |
| | | | Input | 0.71 | 0.71 | 0.46 | 0.67 | 0.76 | 1.10 | 1.29 | 1.24 | 0.95 | 0.98 |
| | 80.6F (27C) | 66.2F (19C) | TC | 13.82 | 14.07 | 14.91 | 12.71 | 12.95 | 13.75 | 13.49 | 11.07 | 9.20 | 8.05 |
| | | | SC | 9.44 | 9.50 | 9.90 | 8.84 | 8.98 | 9.29 | 9.12 | 8.14 | 7.07 | 6.80 |
| | | | Input | 0.72 | 0.73 | 0.69 | 0.68 | 0.76 | 1.11 | 1.30 | 1.25 | 0.96 | 0.98 |
| | 89.6F (32C) | 73.4F (23C) | TC | 14.89 | 15.18 | 15.53 | 14.36 | 16.88 | 15.79 | 14.92 | 11.84 | 10.34 | 8.68 |
| | | | SC | 9.54 | 9.61 | 9.70 | 9.22 | 10.20 | 9.71 | 9.41 | 8.24 | 7.68 | 7.07 |
| | | | Input | 0.75 | 0.76 | 0.70 | 1.03 | 1.11 | 1.78 | 1.33 | 1.26 | 0.97 | 0.99 |
| 18 (208-230V) | 69.8F (21C) | 59F (15C) | TC | 19.82 | 18.50 | 18.02 | 15.81 | 17.95 | 17.37 | 17.66 | 16.59 | 11.76 | 10.12 |
| | | | SC | 13.87 | 12.96 | 12.85 | 11.15 | 12.96 | 12.35 | 13.74 | 12.99 | 10.86 | 10.07 |
| | | | Input | 0.76 | 0.77 | 0.80 | 0.67 | 0.87 | 1.42 | 1.75 | 1.83 | 1.39 | 1.43 |
| | 75.2F (24C) | 62.6F (17C) | TC | 20.51 | 19.26 | 18.68 | 16.45 | 18.46 | 18.38 | 18.22 | 17.94 | 12.61 | 10.95 |
| | | | SC | 14.57 | 14.02 | 14.52 | 12.71 | 13.90 | 13.70 | 14.06 | 13.89 | 11.87 | 10.95 |
| | | | Input | 0.80 | 0.81 | 0.85 | 0.71 | 0.92 | 1.48 | 1.81 | 1.90 | 1.42 | 1.49 |
| | 80.6F (27C) | 66.2F (19C) | TC | 21.52 | 20.35 | 19.74 | 18.38 | 19.20 | 19.60 | 19.14 | 18.94 | 13.85 | 11.94 |
| | | | SC | 15.51 | 15.74 | 16.22 | 14.81 | 15.00 | 14.89 | 15.32 | 14.84 | 13.10 | 11.94 |
| | | | Input | 0.85 | 0.86 | 0.89 | 0.76 | 0.96 | 1.52 | 1.85 | 1.95 | 1.48 | 1.54 |
| | 89.6F (32C) | 73.4F (23C) | TC | 22.49 | 21.22 | 20.38 | 20.43 | 22.59 | 23.55 | 22.15 | 21.37 | 15.67 | 13.48 |
| | | | SC | 15.32 | 15.11 | 16.66 | 14.82 | 15.96 | 15.01 | 15.72 | 15.23 | 13.79 | 13.00 |
| | | | Input | 0.96 | 0.98 | 1.26 | 1.25 | 1.18 | 1.52 | 1.89 | 1.99 | 1.49 | 1.55 |
| 24 (208-230V) | 69.8F (21C) | 59F (15C) | TC | 25.25 | 25.18 | 25.21 | 24.09 | 23.85 | 24.10 | 22.92 | 20.08 | 14.76 | 9.91 |
| | | | SC | 17.91 | 17.81 | 17.82 | 16.77 | 16.60 | 16.74 | 16.04 | 15.19 | 12.06 | 7.78 |
| | | | Input | 1.75 | 1.80 | 1.72 | 1.32 | 1.60 | 2.43 | 2.65 | 2.52 | 2.10 | 1.79 |
| | 75.2F (24C) | 62.6F (17C) | TC | 27.07 | 27.34 | 28.29 | 25.45 | 25.50 | 26.45 | 24.08 | 21.05 | 15.76 | 10.53 |
| | | | SC | 18.94 | 18.59 | 19.58 | 17.90 | 17.56 | 18.47 | 16.85 | 15.89 | 11.53 | 7.55 |
| | | | Input | 1.84 | 1.83 | 1.75 | 1.42 | 1.62 | 2.46 | 2.70 | 2.56 | 2.12 | 1.79 |
| | 80.6F (27C) | 66.2F (19C) | TC | 29.21 | 29.96 | 30.18 | 27.10 | 26.80 | 27.93 | 24.93 | 22.19 | 16.55 | 13.08 |
| | | | SC | 20.47 | 21.03 | 21.41 | 19.08 | 18.82 | 19.88 | 18.08 | 16.04 | 12.05 | 9.79 |
| | | | Input | 1.89 | 1.91 | 1.78 | 1.46 | 1.66 | 2.48 | 2.66 | 2.58 | 2.13 | 1.80 |
| | 89.6F (32C) | 73.4F (23C) | TC | 31.19 | 31.10 | 31.10 | 27.86 | 30.22 | 30.43 | 28.05 | 24.84 | 18.36 | 14.88 |
| | | | SC | 21.92 | 21.99 | 21.85 | 19.63 | 21.48 | 21.78 | 19.85 | 18.75 | 13.58 | 11.05 |
| | | | Input | 1.92 | 2.07 | 1.91 | 1.61 | 2.02 | 2.55 | 2.82 | 2.65 | 2.17 | 1.82 |

LEGEND

DB - Dry Bulb
 WB - Wet Bulb
 TC - Total Net Capacity (1000BTU/hour)
 SC - Sensible Capacity (1000BTU/hour)
 Input - Total Power (kW)

HEATING PERFORMANCE DATA – (HEAT PUMP)

| Model | Heating | | | Outdoor Conditions (DB) | | | | | | | |
|------------------|-------------------|-----------|-----------|-------------------------|-------------|-------------|----------|------------|------------|-------------|-------|
| | Indoor Conditions | 0F (-17C) | 5F (-15C) | 17F (-8C) | 19.4F (-7C) | 24.8F (-4C) | 32F (0C) | 39.2F (4C) | 44.6F (7C) | 53.6F (12C) | |
| 12 (115V) | 59F (15C) | TC | 5.65 | 6.37 | 7.89 | 8.78 | 9.55 | 10.55 | 11.46 | 12.45 | 12.89 |
| | | Input | 0.82 | 0.88 | 0.90 | 0.92 | 0.99 | 0.99 | 1.15 | 1.21 | 1.01 |
| | | COP | 2.03 | 2.11 | 2.57 | 2.79 | 2.84 | 3.11 | 2.92 | 3.01 | 3.73 |
| | 64.4F (18C) | TC | 5.45 | 5.17 | 6.69 | 7.58 | 8.35 | 9.35 | 11.26 | 12.11 | 12.84 |
| | | Input | 0.80 | 0.86 | 0.88 | 0.90 | 0.97 | 0.97 | 1.20 | 1.24 | 1.06 |
| | | COP | 2.01 | 1.76 | 2.23 | 2.46 | 2.53 | 2.82 | 2.75 | 2.87 | 3.54 |
| | 69F (20.5C) | TC | 5.25 | 4.37 | 5.89 | 6.78 | 7.55 | 8.55 | 11.16 | 12.03 | 12.75 |
| | | Input | 0.78 | 0.84 | 0.86 | 0.88 | 0.95 | 0.95 | 1.21 | 1.26 | 1.07 |
| | | COP | 1.98 | 1.52 | 2.01 | 2.25 | 2.34 | 2.63 | 2.70 | 2.80 | 3.48 |
| | 71.6F (22C) | TC | 5.20 | 6.32 | 7.56 | 8.54 | 9.51 | 10.21 | 10.99 | 11.88 | 12.49 |
| | | Input | 0.84 | 0.81 | 0.85 | 0.87 | 1.00 | 0.90 | 1.03 | 1.10 | 1.10 |
| | | COP | 1.81 | 2.28 | 2.61 | 2.87 | 2.80 | 3.32 | 3.12 | 3.18 | 3.33 |
| 09 (208–230V) | 59F (15C) | TC | 7.28 | 7.70 | 8.53 | 9.43 | 10.05 | 10.45 | 11.33 | 11.92 | 12.68 |
| | | Input | 1.17 | 1.14 | 1.15 | 1.17 | 1.03 | 0.94 | 0.95 | 1.02 | 1.12 |
| | | COP | 1.82 | 1.99 | 2.17 | 2.35 | 2.85 | 3.26 | 3.49 | 3.44 | 3.32 |
| | 64.4F (18C) | TC | 6.08 | 6.50 | 7.33 | 8.23 | 8.85 | 9.85 | 11.13 | 11.72 | 12.48 |
| | | Input | 1.15 | 1.12 | 1.13 | 1.15 | 1.01 | 0.92 | 1.00 | 1.07 | 1.17 |
| | | COP | 1.55 | 1.71 | 1.90 | 2.09 | 2.56 | 3.14 | 3.25 | 3.22 | 3.12 |
| | 69F (20.5C) | TC | 5.28 | 5.70 | 6.53 | 7.43 | 8.05 | 9.05 | 10.03 | 11.63 | 12.38 |
| | | Input | 1.13 | 1.10 | 1.11 | 1.13 | 0.99 | 0.90 | 1.01 | 1.08 | 1.18 |
| | | COP | 1.37 | 1.52 | 1.72 | 1.92 | 2.38 | 2.95 | 2.90 | 3.16 | 3.07 |
| | 71.6F (22C) | TC | 6.43 | 6.95 | 7.68 | 8.58 | 8.90 | 9.30 | 10.14 | 11.13 | 12.29 |
| | | Input | 1.06 | 1.03 | 1.20 | 1.23 | 1.08 | 0.98 | 1.02 | 1.09 | 1.19 |
| | | COP | 1.78 | 1.99 | 1.87 | 2.05 | 2.42 | 2.78 | 2.90 | 3.00 | 3.02 |
| 12 (208–230V) | 59F (15C) | TC | 7.91 | 8.89 | 9.84 | 10.87 | 11.11 | 11.35 | 11.86 | 12.41 | 13.00 |
| | | Input | 0.83 | 1.27 | 0.81 | 1.37 | 0.90 | 1.01 | 1.17 | 1.51 | 1.04 |
| | | COP | 2.79 | 2.06 | 3.54 | 2.32 | 3.61 | 3.30 | 2.98 | 2.41 | 3.66 |
| | 64.4F (18C) | TC | 6.33 | 7.65 | 8.06 | 9.56 | 9.83 | 10.53 | 11.38 | 12.03 | 12.74 |
| | | Input | 0.85 | 0.82 | 0.84 | 0.86 | 0.92 | 0.83 | 1.19 | 1.53 | 1.51 |
| | | COP | 2.18 | 2.74 | 2.83 | 3.26 | 3.12 | 3.72 | 2.81 | 2.31 | 2.47 |
| | 69F (20.5C) | TC | 5.55 | 6.07 | 6.98 | 8.08 | 8.95 | 10.55 | 12.20 | 13.65 | 14.06 |
| | | Input | 0.88 | 0.84 | 0.86 | 0.88 | 0.95 | 0.85 | 1.21 | 1.55 | 1.54 |
| | | COP | 1.86 | 2.11 | 2.38 | 2.69 | 2.78 | 3.63 | 2.96 | 2.58 | 2.68 |
| | 71.6F (22C) | TC | 4.58 | 5.35 | 5.95 | 7.12 | 7.92 | 8.94 | 10.48 | 11.52 | 12.38 |
| | | Input | 0.86 | 0.79 | 0.84 | 0.86 | 0.93 | 0.98 | 1.20 | 1.54 | 1.16 |
| | | COP | 1.56 | 1.99 | 2.07 | 2.42 | 2.50 | 2.67 | 2.57 | 2.20 | 3.14 |
| 18 (208–230V) | 59F (15C) | TC | 9.03 | 10.16 | 11.43 | 12.37 | 13.33 | 14.90 | 16.83 | 18.03 | 18.59 |
| | | Input | 2.33 | 5.12 | 2.12 | 5.25 | 1.92 | 5.03 | 1.71 | 1.61 | 5.06 |
| | | COP | 1.14 | 1.99 | 1.58 | 2.36 | 2.04 | 2.26 | 2.88 | 3.29 | 3.68 |
| | 64.4F (18C) | TC | 8.55 | 10.05 | 11.95 | 12.45 | 13.45 | 15.65 | 16.85 | 18.15 | 18.17 |
| | | Input | 2.35 | 2.25 | 2.15 | 2.04 | 1.94 | 1.84 | 1.73 | 1.63 | 1.62 |
| | | COP | 1.07 | 1.31 | 1.63 | 1.79 | 2.03 | 2.50 | 2.85 | 3.26 | 3.29 |
| | 69F (20.5C) | TC | 8.47 | 9.67 | 11.87 | 12.47 | 13.37 | 15.57 | 16.87 | 18.07 | 18.09 |
| | | Input | 2.37 | 2.27 | 2.17 | 2.07 | 1.96 | 1.86 | 1.76 | 1.65 | 1.64 |
| | | COP | 1.05 | 1.25 | 1.61 | 1.77 | 2.00 | 2.46 | 2.82 | 3.20 | 3.23 |
| | 71.6F (22C) | TC | 7.85 | 8.78 | 11.25 | 12.50 | 13.35 | 14.74 | 16.85 | 18.05 | 18.18 |
| | | Input | 2.36 | 5.02 | 2.15 | 5.47 | 1.95 | 5.41 | 1.74 | 1.64 | 5.52 |
| | | COP | 0.98 | 1.75 | 1.53 | 2.29 | 2.01 | 2.72 | 2.84 | 3.23 | 3.29 |
| 24 (208–230V) | 59F (15C) | TC | 14.08 | 16.77 | 19.76 | 21.26 | 23.01 | 24.12 | 25.70 | 26.17 | 26.60 |
| | | Input | 2.60 | 2.88 | 2.76 | 2.83 | 2.62 | 2.44 | 2.47 | 2.33 | 2.82 |
| | | COP | 1.59 | 1.71 | 2.10 | 2.10 | 2.57 | 2.08 | 3.05 | 3.29 | 3.00 |
| | 64.4F (18C) | TC | 13.36 | 15.13 | 19.00 | 21.27 | 22.02 | 23.36 | 24.43 | 25.67 | 26.69 |
| | | Input | 2.83 | 3.08 | 2.88 | 2.74 | 2.68 | 2.72 | 2.58 | 2.43 | 2.25 |
| | | COP | 1.38 | 1.44 | 1.93 | 2.27 | 2.41 | 2.52 | 2.78 | 3.10 | 3.47 |
| | 69F (20.5C) | TC | 12.60 | 14.92 | 18.50 | 20.79 | 21.22 | 22.45 | 23.69 | 24.52 | 25.29 |
| | | Input | 2.89 | 3.17 | 2.92 | 2.83 | 2.77 | 2.83 | 2.66 | 2.52 | 2.43 |
| | | COP | 1.28 | 1.38 | 1.86 | 2.15 | 2.25 | 2.32 | 2.61 | 2.85 | 3.05 |
| | 71.6F (22C) | TC | 11.87 | 15.37 | 19.07 | 21.85 | 22.82 | 23.37 | 24.48 | 25.44 | 27.45 |
| | | Input | 2.98 | 2.75 | 3.25 | 2.82 | 2.95 | 2.68 | 2.81 | 2.88 | 2.88 |
| | | COP | 1.17 | 1.64 | 1.72 | 2.27 | 2.27 | 2.56 | 2.55 | 2.59 | 2.79 |

LEGEND
 DB - Dry Bulb
 WB - Wet Bulb
 TC - Total Net Capacity (1000BTU/hour)
 Input - Total Power (kW)
 COP -W/W

APPLICATION DATA

UNIT SELECTION

Select equipment that either matches or supports slightly more than the anticipated peak load. This provides better humidity control, fewer unit cycles, and less part-load operation.

For units used in spaces with high sensible loads, base equipment selection on unit sensible load, not on total anticipated load. Adjust for anticipated room wet bulb temperature to avoid undersizing the equipment.

UNIT MOUNTING (OUTDOOR)

Refer to the unit's installation instructions for further details.

Unit leveling – For reliable operation, units should be level in all planes.

Clearance – Minimum clearance (see Fig. 4) must be provided for airflow. The condensing units are designed for free-flow application. Air inlets and outlets should not be restricted.

Unit location – A location which is convenient to installation and not exposed to strong winds. A location that can bear the weight of the outdoor unit and where the outdoor unit can be mounted in a level position.

Do not install the indoor or outdoor units in a location with special environmental conditions. For those applications, contact your sales representative.

SYSTEM OPERATING CONDITIONS

| OPERATING RANGE MIN / MAX °F (°C) | | |
|--------------------------------------|--------------------|-------------------|
| | COOLING | HEATING |
| Outdoor DB | 0 ~ 122 (-17 ~ 50) | 0 ~ 86 (-17 ~ 30) |

NOTE: Reference the product installation instructions for more information.

METERING DEVICES

The outdoor unit has an electronic expansion valve to manage the refrigerant flow of the connected fan coil.

DRAIN CONNECTIONS

Install drains to meet the local sanitation codes.

REFRIGERANT LINES

General refrigerant line sizing:

1. The outdoor units are shipped with a full charge of R410A refrigerant. All charges, line sizing, and capacities are based on runs of 25 ft. (7.6 m). For runs over 25 ft. (7.6 m), review the *Long Line Applications* section for the proper charge adjustments.
2. Refrigerant lines should not be buried in the ground. If it is necessary to bury the lines, do not bury more than 36-in (914 mm). Provide a minimum 6-in (152 mm) vertical rise to the service valves to prevent refrigerant migration.
3. Both lines must be insulated. Use a minimum of 1/2-in. (12.7 mm) thick insulation. Closed-cell insulation is recommended in all long-line applications.
4. Special consideration should be given to isolating the interconnecting tubing from the building structure. Isolate the tubing so vibration or noise is not transmitted into the structure.

Long Line Applications:

1. No change in line sizing is required.
2. Add refrigerant per the Additional Charge table.

| ADDITIONAL CHARGE | | | | | | | |
|-------------------|---------------------------|---------|-----------------------------------|---------------|----------------|-----------------|------|
| UNIT SIZE | TOTAL LINE LENGTH ft. (m) | | ADDITIONAL CHARGE, oz/ft. FT. (m) | | | | |
| | Min | Max | 10-25 (3-8) | >25-82 (8-25) | >82-98 (25-30) | >98-164 (30-50) | |
| 9 | 10(3) | 82(25) | None | 0.16 | | | |
| 12 | | 98(30) | | | 0.16 | | |
| 18 | | 164(50) | | | 0.32 | 0.32 | 0.32 |
| 24 | | | | | | | |

WIRING

All wires must be sized per NEC (National Electrical Code) or CEC (Canadian Electrical Code) and local codes. Use Electrical Data table MCA (minimum circuit amps) and MOCP (maximum over current protection) to correctly size the wires and the disconnect fuse or breakers respectively.

Recommended Connection Method for Power and Communication Wiring:

The main power is supplied to the outdoor unit. The field supplied 14/3 stranded wire with ground with a 600 volt insulation rating, power/communication wiring from the outdoor unit to indoor unit consists of four (4) wires and provides the power for the indoor unit. Two wires are line voltage AC power, one is communication wiring (S) and the other is a ground wire. Wiring between indoor and outdoor unit is polarity sensitive. The use of BX wire is NOT recommended.

If installed in a high Electromagnetic field (EMF) area and communication issues exists, a 14/2 stranded shielded wire can be used to replace L2/N and (S) between outdoor unit and indoor unit landing the shield onto ground in the outdoor unit only.



CAUTION

EQUIPMENT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

Wires should be sized based on NEC and local codes.



CAUTION

EQUIPMENT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

Be sure to comply with local codes while running wire from the indoor unit to the outdoor unit.

Every wire must be connected firmly. Loose wiring may cause the terminal to overheat or result in unit malfunction. A fire hazard may also exist. Ensure all wiring is tightly connected.

No wire should touch the refrigerant tubing, compressor or any moving parts.

Disconnecting means must be provided and shall be located within sight and readily accessible from the air conditioner.

Connecting cable with conduit shall be routed through the hole in the conduit panel.

AIR FLOW DATA

| COOLING ONLY | | | | |
|-------------------|------------|----------------|----------------|----------------|
| 38MHRBC Unit Size | 12K (115V) | 12K (208/230V) | 18K (208/230V) | 24K (208/230V) |
| Outdoor (CFM) | 1,170 | 1,230 | 1,195 | 1,825 |

| HEAT PUMP | | | | | |
|-------------------|------------|---------------|----------------|----------------|----------------|
| 38MHRBQ Unit Size | 12K (115V) | 9K (208/230V) | 12K (208/230V) | 18K (208/230V) | 24K (208/230V) |
| Outdoor (CFM) | 1,170 | 1,170 | 1,170 | 1,170 | 1,765 |

SOUND DATA

| COOLING ONLY | | | | | |
|------------------------------|-------|------------|----------------|----------------|----------------|
| 38MHRBC Unit Size | | 12K (115V) | 12K (208/230V) | 18K (208/230V) | 24K (208/230V) |
| Outdoor Sound Pressure Level | dB(A) | 52 | 53.6 | 55.3 | 58 |
| Outdoor Sound Power Level | dB(A) | 63.3 | 63.6 | 65.3 | 65.5 |

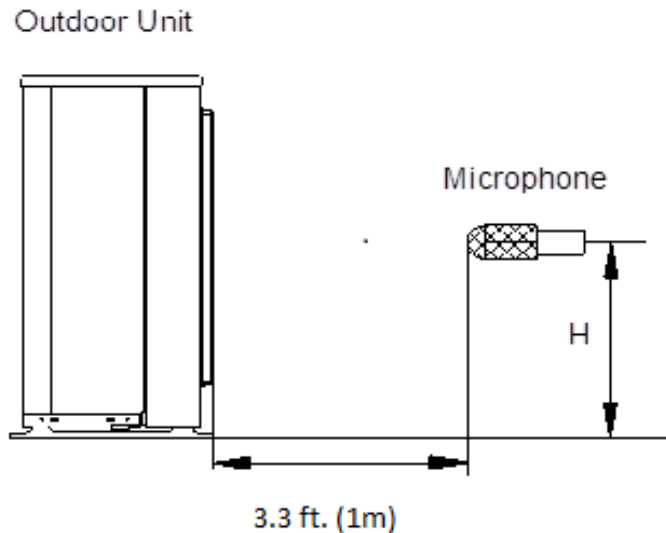
| HEAT PUMP | | | | | | |
|------------------------------|-------|------------|---------------|----------------|----------------|----------------|
| 38MHRBQ Unit Size | | 12K (115V) | 9K (208/230V) | 12K (208/230V) | 18K (208/230V) | 24K (208/230V) |
| Outdoor Sound Pressure Level | dB(A) | 54.5 | 57.2 | 57.4 | 57 | 60.2 |
| Outdoor Sound Power Level | dB(A) | 63.5 | 62.8 | 64.1 | 65.7 | 66.2 |

SOUND PRESSURE IN OCTAVE BANDS

| COOLING ONLY | | | | | | | | | | |
|--------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | Frequency (Hz) | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 6300 | 8000 |
| 12K(115) | Cooling dB(A) | 60.2 | 57.3 | 52.0 | 49.9 | 45.9 | 41.1 | 35.6 | 30.1 | 60.2 |
| 12K(208V) | Cooling dB(A) | 17.47 | 32.97 | 38.41 | 41.03 | 41.68 | 38.9 | 32.81 | 27.85 | 25.52 |
| 18K(208V) | Cooling dB(A) | 22.93 | 37.81 | 40.28 | 45.45 | 43.52 | 42.24 | 32.44 | 25.5 | 20.79 |
| 24K(208V) | Cooling dB(A) | 19.86 | 37.23 | 46.54 | 45.59 | 45.92 | 41.09 | 36.12 | 30.05 | 26.86 |

| HEAT PUMP | | | | | | | | | | |
|------------|----------------|------|------|------|------|------|------|------|------|--|
| | Frequency (Hz) | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | |
| 12K (115) | Cooling dB(A) | 52.6 | 56.9 | 56.6 | 53.3 | 48.7 | 42.1 | 37.4 | 34.0 | |
| | Heating dB(A) | 59.9 | 55.5 | 54.0 | 50.6 | 46.8 | 42.2 | 36.1 | 31.5 | |
| 9K (208V) | Cooling dB(A) | 59.3 | 56.9 | 53.1 | 50.8 | 46.4 | 42.6 | 36.4 | 30.3 | |
| | Heating dB(A) | 57.8 | 56.3 | 55.1 | 51.7 | 47.9 | 44.5 | 38.7 | 33.6 | |
| 12K (208V) | Cooling dB(A) | 64.8 | 57.3 | 55.7 | 53.3 | 51.1 | 48.1 | 42.6 | 36.1 | |
| | Heating dB(A) | 56.8 | 56.9 | 57.8 | 53.2 | 49.3 | 44.6 | 39.2 | 31.8 | |
| 18K (208V) | Cooling dB(A) | 54.1 | 55.8 | 51.2 | 48.7 | 46.8 | 42.5 | 34.8 | 28.3 | |
| | Heating dB(A) | 52.9 | 58.6 | 51.7 | 49.9 | 50.3 | 43.0 | 38.5 | 33.3 | |
| 24K (208V) | Cooling dB(A) | 52.6 | 56.9 | 56.6 | 53.3 | 48.7 | 42.1 | 37.4 | 34.0 | |
| | Heating dB(A) | 59.9 | 55.5 | 54.0 | 50.6 | 46.8 | 42.2 | 36.1 | 31.5 | |

OUTDOOR UNIT SOUND PRESSURE TEST CONDITIONS



NOTE: $H=0.5 \times$ Height of outdoor unit

| | Indoor Condition | | Outdoor Condition | |
|---------|------------------|-------------|-------------------|-------------|
| | DB | WB | DB | WB |
| Cooling | 80.6F (27C) | 66.2F (19C) | 95F (35C) | 75.2F (24C) |
| Heating | 68F (20C) | 59F (15C) | 44.6F (7C) | 42.8F (6C) |

ELECTRICAL DATA

| COOLING ONLY | Outdoor Unit Size | 12K | 12K | 18K | 24K |
|-------------------|-----------------------------|---------|------------|------------|------------|
| | Volts–PH–Hz | (115V) | (208/230V) | (208/230V) | (208/230V) |
| | Max – Min* Oper. Voltage | 127–104 | 253–187 | 253–187 | 253–187 |
| Power Supply | MCA | 13 | 11 | 15 | 18 |
| | MOCP | 20 | 15 | 20 | 25 |
| Compressor | RLA | 9.5 | 6.8 | 9 | 12 |
| Outdoor Fan Motor | FLA | 0.6 | 0.5 | 0.6 | 0.6 |
| | Rated HP | 0.054 | 0.054 | 0.054 | 0.068 |
| | Output | 40 | 40 | 40 | 50 |

| HEAT PUMP | Outdoor Unit Size | 12K | 9K | 12K | 18K | 24K |
|-------------------|-----------------------------|---------|------------|------------|------------|------------|
| | Volts–PH–Hz | (115V) | (208/230V) | (208/230V) | (208/230V) | (208/230V) |
| | Max – Min* Oper. Voltage | 127–104 | 253–187 | 253–187 | 253–187 | 253–187 |
| Power Supply | MCA | 13 | 8 | 10 | 15 | 18 |
| | MOCP | 20 | 15 | 15 | 20 | 25 |
| Compressor | RLA | 10.5 | 5.5 | 6.8 | 10.5 | 12 |
| Outdoor Fan Motor | FLA | 0.6 | 0.4 | 0.4 | 0.5 | 0.6 |
| | Rated HP | 0.054 | 0.054 | 0.054 | 0.054 | 0.068 |
| | Output | 40 | 40 | 40 | 40 | 50 |

*Permissible limits of the voltage range at which the unit will operate satisfactorily.

LEGEND

FLA – Full Load Amps

MCA – Minimum Circuit Amps

MOCP – Maximum Over–Current Protection

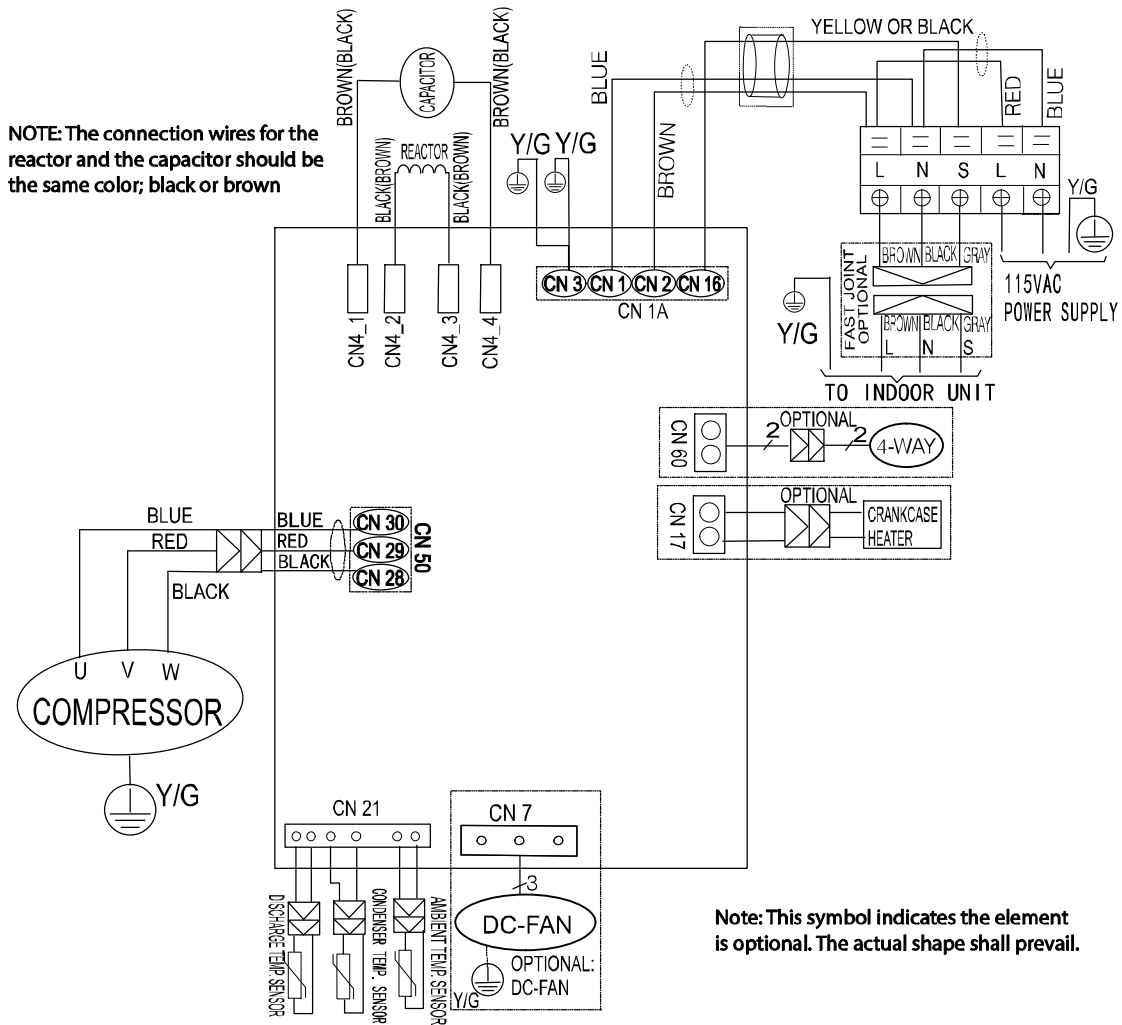
RLA – Rated Load Amps

FAN AND MOTOR SPECIFICATIONS

| Cooling Only | | | | | | |
|-------------------|------------------|---------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 38MHRB Unit Size | | 12K (115V) | 12K (208/230V) | 18K (208/230V) | 24K (208/230V) | |
| Outdoor fan | Material | | Acrylonitrile Styrene +20%GF | Acrylonitrile Styrene +20%GF | Acrylonitrile Styrene +20%GF | Acrylonitrile Styrene +20%GF |
| | Type | – | ZL–425*127*8–3KN | ZL–425*127*8–3KN | ZL–420*143*8–3KN | ZL–490*151*12–3KN |
| | Diameter | Inch (mm) | 16.73 (425) | 16.73 (425) | 16.54 (420) | 19.29 (490) |
| | Height | inch | 5 (127) | 5 (127) | 5.63 (143) | 5.94 (151) |
| Outdoor fan motor | Model | – | ZKFN–40–8–1L | ZKFN–40–8–1L | YKT–48–6–206 | ZKFN–50–8–2 |
| | Volts | V | 115 | 208/230 | 208/230 | 208/230 |
| | Phase | – | 1 | 1 | 1 | 1 |
| | Hertz | Hz | 60 | 60 | 60 | 60 |
| | FLA | A | 0.6 | 0.5 | 0.6 | 0.6 |
| | Rated HP | HP | 0.054 | 0.054 | 0.054 | 0.068 |
| | Output | W | 40 | 40 | Ø40 | 50 |
| | Type | – | DC | DC | DC | DC |
| | Insulation class | – | E | E | E | E |
| | Safe class | – | IPX4 | IPX4 | IPX4 | IPX4 |
| | Input | W | 63 | 63 | 63 | 115 |
| | Range of current | Amps | 0.6±10% | 0.5±10% | 0.6±10% | 0.6±10% |
| | Rated current | Amps | 0.6 | Ø0.5 | Ø0.6 | 0.6 |
| | Capacitor | µF | N/A | N/A | N/A | N/A |
| | Speed | rev/min | 960/700 | 850/700 | 850/700 | 900/650 |
| | Rated RPM | rev/min | 980 | 980 | 980 | 900 |
| Max. input | W | 91 | 91 | 91 | 137 | |

| Heat Pump | | | | | | |
|-------------------|------------------|---------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 38MHRB Unit Size | | 12K (115V) | 9K (208/230V) | 12K (208/230V) | 18K (208/230V) | 24K (208/230V) |
| Outdoor fan | Material | – | Acrylonitrile Styrene +20%GF | Acrylonitrile Styrene +20%GF | Acrylonitrile Styrene +20%GF | Acrylonitrile Styrene +20%GF |
| | Type | – | ZL–425*127*8–3KN | ZL–425*127*8–3KN | ZL–425*127*8–3KN | ZL–427*139*8–3KN |
| | Diameter | inch | 16.73 (425) | 16.73 (425) | 16.73 (425) | 16.81 (427) |
| | Height | inch | 5 (127) | 5 (127) | 5 (127) | 5.47 (139) |
| Outdoor fan motor | Model | – | ZKFN–40–8–1L | ZKFN–40–8–1L | ZKFN–40–8–1L | ZKFN–40–8–1L |
| | Volts | V | 115 | 208/230 | 208/230 | 208/230 |
| | Phase | – | 1 | 1 | 1 | 1 |
| | Hertz | Hz | 60 | 60 | 60 | 60 |
| | FLA | A | 0.6 | 0.4 | 0.4 | 0.5 |
| | Rated HP | HP | 0.054 | 0.054 | 0.054 | 0.054 |
| | Output | W | 40 | 40 | 40 | 40 |
| | Type | – | DC | DC | DC | DC |
| | Insulation class | – | E | E | E | E |
| | Safe class | – | IPX4 | IPX4 | IPX4 | IPX4 |
| | Input | W | 63 | 63 | 63 | 63 |
| | Range of current | Amps | 0.6±10% | 0.4±10% | 0.4±10% | 0.5±10% |
| | Rated current | Amps | 0.6 | 0.4 | 0.4 | 0.5 |
| | Capacitor | µF | NA | NA | NA | NA |
| | Speed | rev/min | 850/650 | 850/650 | 850/650 | 850/650 |
| | Rated RPM | rev/min | 980 | 980 | 980 | 980 |
| Max. input | W | 91 | 91 | 91 | 91 | |

WIRING DIAGRAMS (COOLING ONLY)

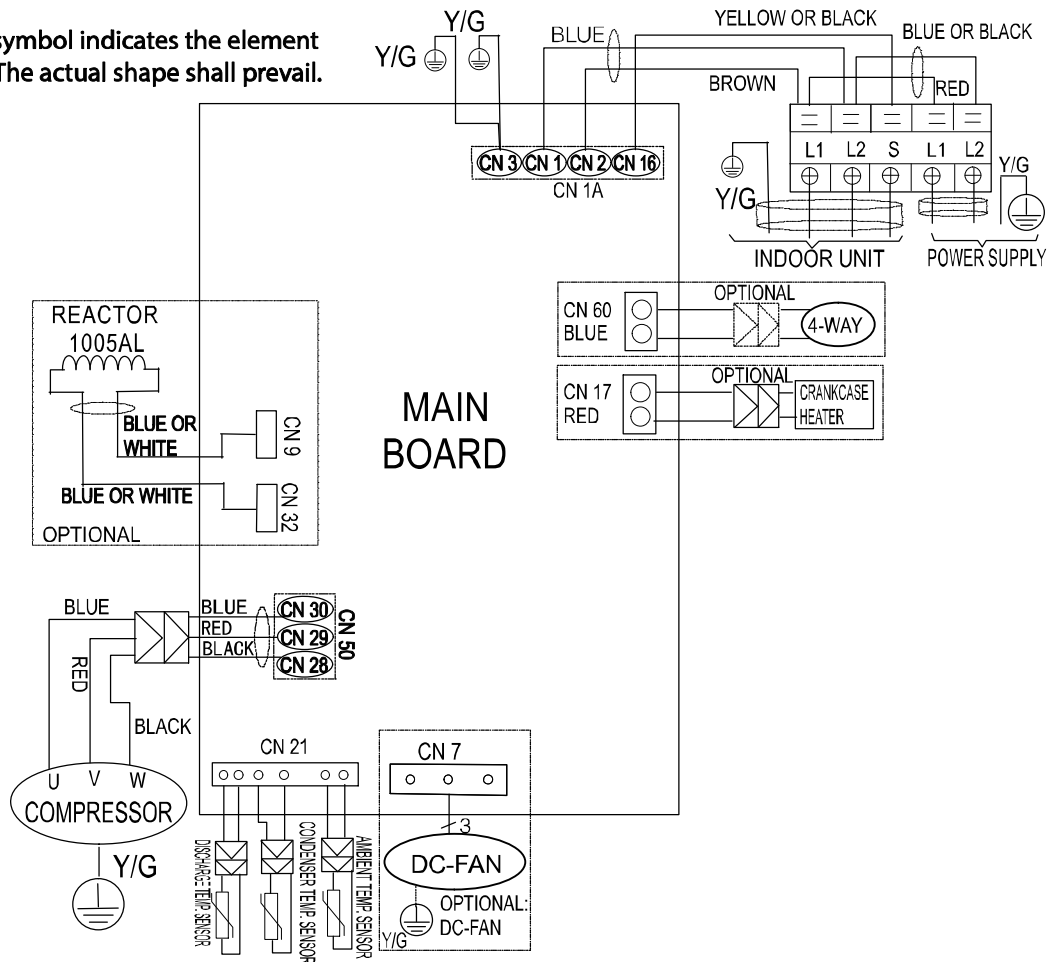


| CODE | PART NAME | CODE | PART NAME |
|----------------------------|--|------|---|
| CN1A | Input: 115V high voltage connector with L/N/signal/ground | CN21 | Input: temperature acquisition (0~5VDC) |
| CN7 | Output: 0~320VDC to control DC FAN | | |
| CN4_1 CN4_2 CN4_3 CN4_4 | Output: 115VAC High voltage connector for power factor corrector (PFC) | | |
| CN17 | Output: 115VAC to control crankcase heater | CN60 | Output: 115 VAC to control 4-way valve |
| CN50 | Output: 0~320V DC to connect compressor | | |

Fig. 6 – Wiring Diagram Size – Cooling Only Size 12K (115V)

WIRING DIAGRAMS (COOLING ONLY (CONTINUED))

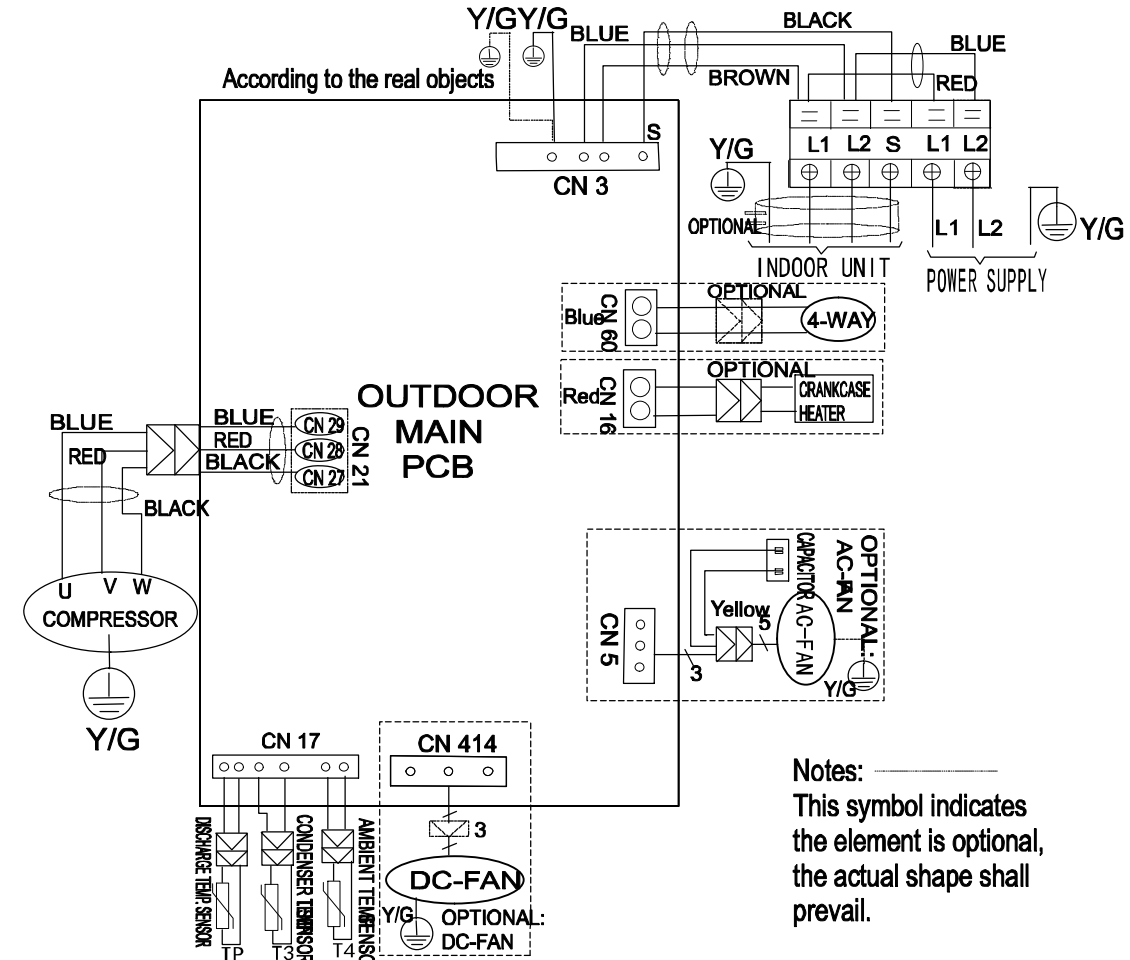
Notes: This symbol indicates the element is optional. The actual shape shall prevail.



| CODE | PART NAME | CODE | PART NAME |
|----------|---|------|---|
| CN1A | Input: 220V high voltage connector with L1,L2/signal/ground | GN21 | Input: temperature sensor connector (0~5V DC) |
| GN7 | Output: 0~320V DC to connect DC FAN | | |
| CN9~CN32 | To connect PFC reactor | CN50 | Output: 0~320V DC to connect compressor |
| CN17 | Output: 220V AC to connect crankcase heater | CN60 | Output: 0~220V AC to connect 4-way valve |

Fig. 7 – Wiring Diagram Cooling Only Size 12K (230V)

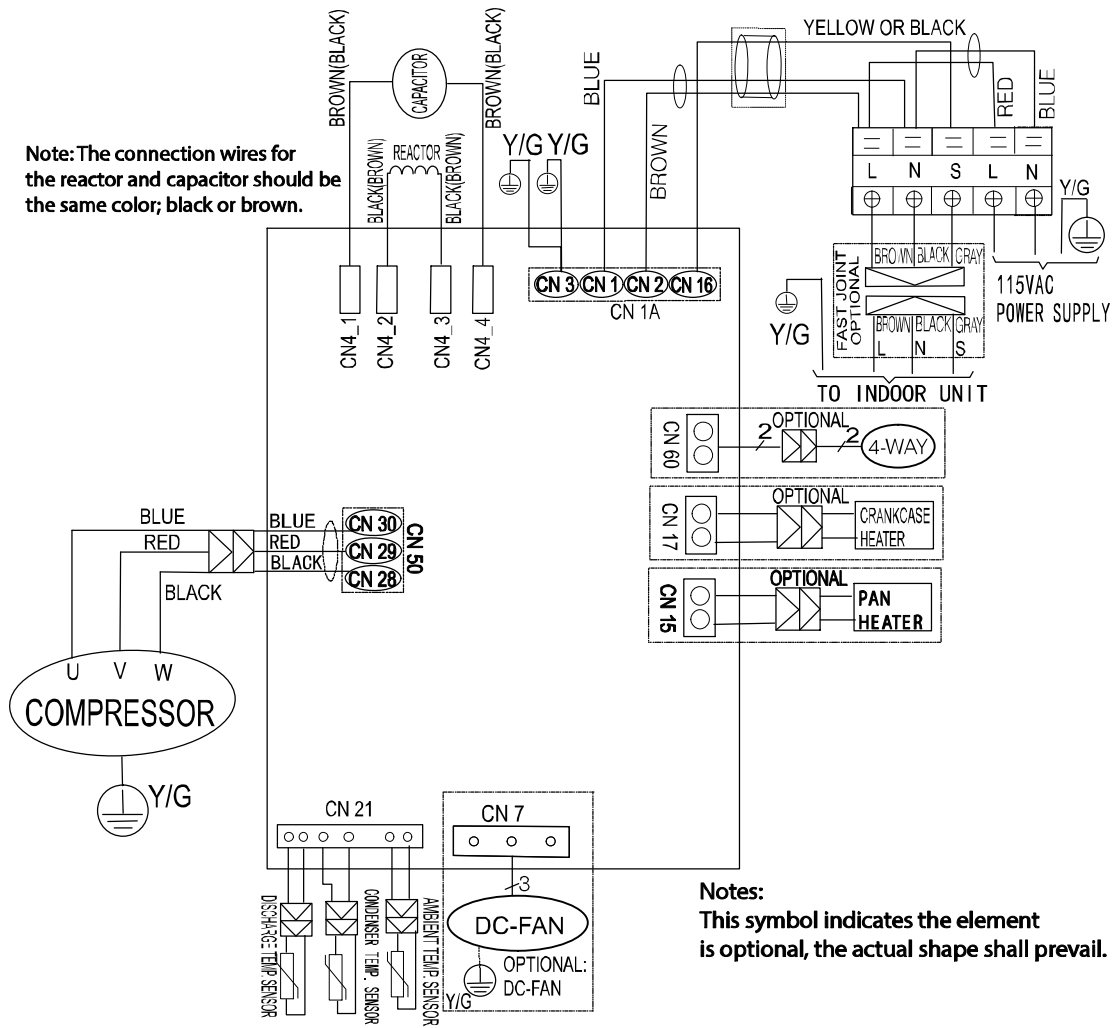
WIRING DIAGRAMS (COOLING ONLY (CONTINUED))



| CODE | PART NAME | CODE | PART NAME |
|-------|---|------|---|
| CN3 | Input: 220V high voltage connector with L1/L2/signal/ground | CN5 | Output: 0~220VAC to control AC FAN |
| CN21 | Output: PWM for UVW to control Compressor(0~320VDC) | CN16 | Output: 220V AC to control crankcase heater |
| CN17 | Input: Temperature acquisition(0-5VDC) | CN60 | Output: 0~220V AC to control 4-way valve |
| CN414 | Output: 0~320VDC to control DC FAN | | |

Fig. 8 – Wiring Diagram Cooling Only Sizes 18–24K

WIRING DIAGRAMS (HEAT PUMP)

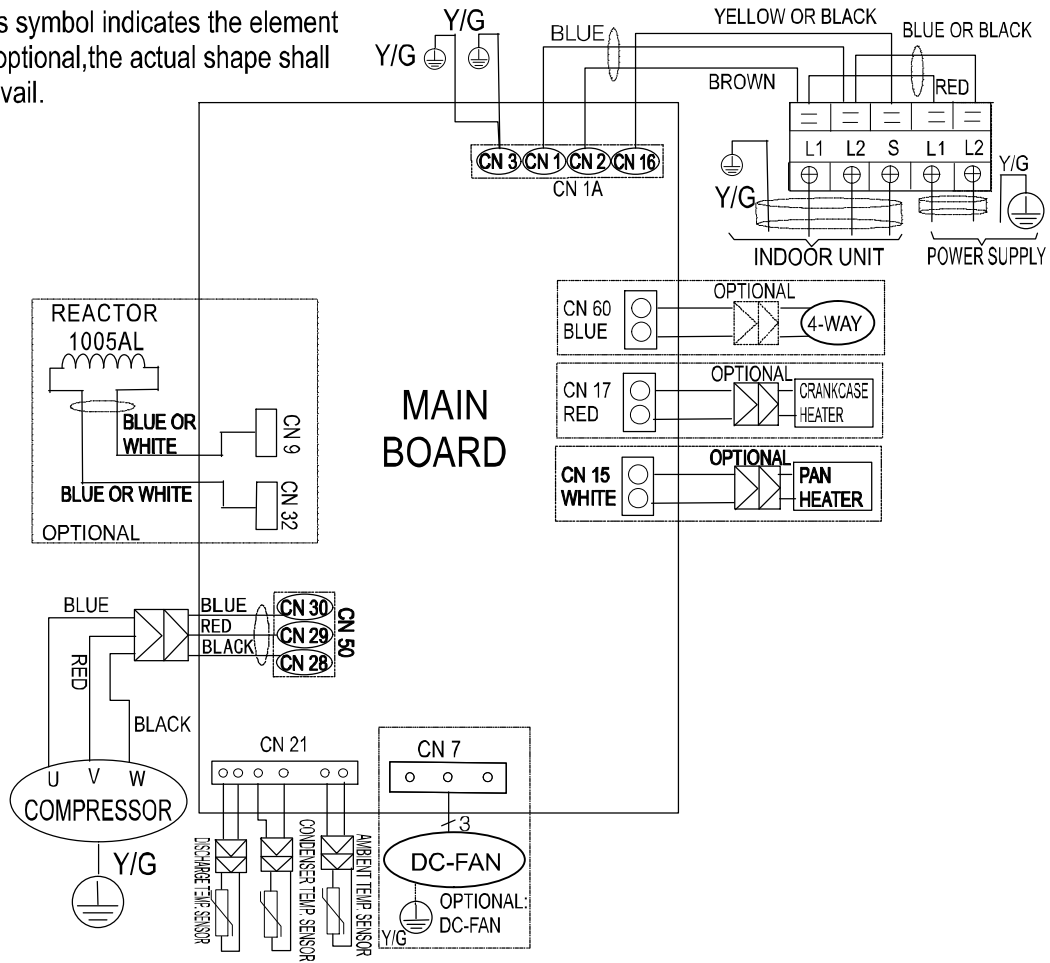


| CODE | PART NAME | CODE | PART NAME |
|-------|---|-------------------------|---|
| CN 1A | Input: 115V high voltage connector with L/N/signal/ground | CN 15 | 100-130VAC Pan Heater |
| CN 50 | Output: PWM to control Compressor (0~320VDC) | CN 17 | Output: 115V AC to control crankcase heater |
| CN 21 | Input: Temperature acquisition(0-5VDC) | CN 60 | Output: 0-115V AC to control 4-way valve |
| CN 7 | Output: 0~320VDC to control DC FAN | CN4_1 CN4_2 CN4_3 CN4_4 | Output: Connection of the high voltage(REACTOR) |

Fig. 9 – Wiring Diagram Heat Pump Size 12K (115V)

WIRING DIAGRAMS (HEAT PUMP (CONTINUED))

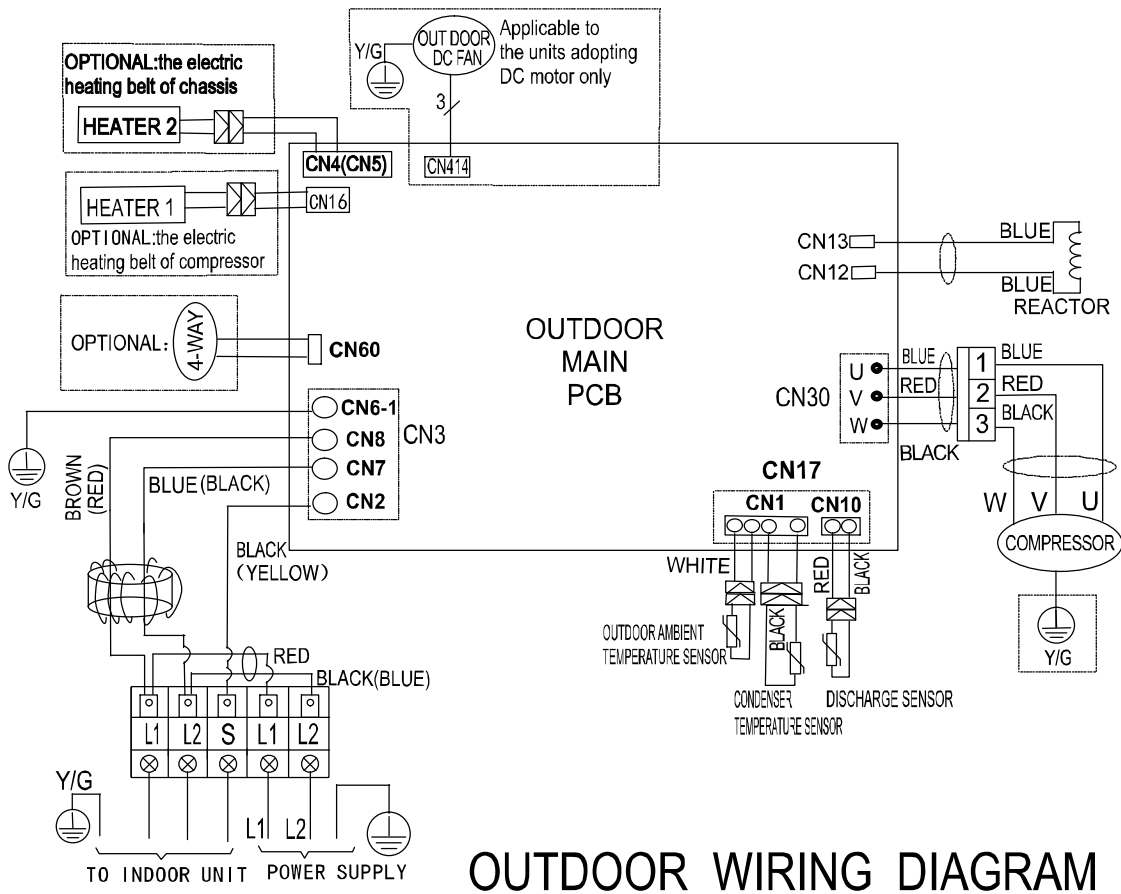
Notes: _____
 This symbol indicates the element is optional, the actual shape shall prevail.



| CODE | PART NAME | CODE | PART NAME |
|----------|---|------|---|
| CN1A | Input: 220V high voltage connector with L1,L2/signal/ground | CN21 | Input: temperature sensor connector (0~5V DC) |
| CN7 | Output: 0~320V DC to connect DC FAN | CN15 | 220VAC Pan Heater |
| CN9~CN32 | To connect PFC reactor | CN50 | Output: 0~320V DC to connect compressor |
| CN17 | Output: 220V AC to connect crankcase heater | CN60 | Output: 0~220V AC to connect 4-way valve |

Fig. 10 – Wiring Diagram Heat Pump Sizes 09, 12, 18 (230V)

WIRING DIAGRAMS (HEAT PUMP (CONTINUED))



OUTDOOR WIRING DIAGRAM

| CODE | PART NAME | CODE | PART NAME |
|-----------|---|-----------|---|
| CN414 | Output: 0~320VDC to control DC FAN | CN3 | Input: 230V high voltage connector with L1/L2/signal/ground |
| CN4 (CN5) | 208-230VAC Base Pan heater | CN17 | Input: Temperature acquisition(0-5VDC) |
| CN16 | Output: 220V AC to control crankcase heater | CN30 | Output: PWM for UVW to control Compressor(0~320VDC) |
| CN60 | Output: 0~220V AC to control 4-way valve | CN12~CN13 | Output: To connect PFC reactor |

Fig. 11 – Wiring Diagram Heat Pump Size 24 (230V)

GUIDE SPECIFICATIONS

HORIZONTAL DISCHARGE OUTDOOR UNITS

Size Range: 3/4 to 2 Ton Nominal Cooling and Heating Capacity
Model Number: 38MHRB

PART 1 – GENERAL

1.01 System Description

- A. Outdoor air-cooled split system compressor sections suitable for on-the-ground, rooftop, wall hung or balcony mounting. Units consist of a rotary compressor, an air-cooled coil, propeller-type draw-through outdoor fan, reversing valve (HP), accumulator (HP units), metering device(s), and a control box. Units discharge air horizontally as shown on the contract drawings. Units function as the outdoor component of an air-to-air cooling only, or heat pump system.
- B. Units are to be used in a refrigeration circuit matched to ductless heat pump fan coil units.

1.02 Agency Listings

- A. Unit construction complies with ANSI/ASHRAE 15, latest revision, and with the NEC.
- B. Units are evaluated in accordance with UL standard 1995.
- C. Units are listed in the CEC directory.
- D. Unit cabinet is capable of withstanding 500-hour salt spray test per Federal Test Standard No. 141 (method 6061).
- E. Air-cooled condenser coils are leak tested at 550 psig.

1.03 Delivery, Storage, And Handling

Units are shipped in one piece and are stored and handled per unit manufacturer's recommendations.

1.04 Warranty (For Inclusion By Specifying Engineer)

PART 2 – PRODUCTS

2.01 Equipment

A. General:

Factory assembled, single piece, air-cooled outdoor unit. Contained within the unit enclosure is all the factory wiring, piping, controls, and the compressor.

B. Unit Cabinet:

- 1. Unit cabinet is constructed of galvanized steel, bonderized and coated with a baked-enamel finish on the inside and outside (PANTONE 7527U).
- 2. Unit access panels is removable with minimal screws and provides full access to the compressor, fan, and control components.
- 3. The outdoor compartment is isolated and has an acoustic lining to assure quiet operation.

C. Fans:

- 1. Outdoor fans are the direct drive propeller type, and discharges air horizontally. Fans draw air through the outdoor coil.
- 2. Outdoor fan motors are totally enclosed, single phase motors with class E insulation and permanently lubricated ball bearings. Motor shall be protected by internal thermal overload protection.
- 3. The shaft has inherent corrosion resistance.
- 4. Fan blades are non-metallic and statically and dynamically balanced.
- 5. Outdoor fan openings are equipped with a PVC metal/mesh coated protection grille over the fan.

D. Compressor:

- 1. Compressor is the fully hermetic rotary type.
- 2. Compressor is equipped with an oil system, operating oil charge, and a motor.
- 3. Motor is NEMA rated class E, suitable for operation in a refrigerant atmosphere.
- 4. Compressor assembly is installed on rubber vibration isolators.

E. Outdoor Coil:

The coil is constructed of aluminum hydrophilic pre-coated fins mechanically bonded to seamless copper tubes, which are cleaned, dehydrated, and sealed.

F. Refrigeration Components:

Refrigerant circuit components include a brass external liquid line service valve with service gage port connections, a suction line service valve with a service gage connection port, service gage port connections on compressor suction and discharge lines with Schrader type fittings with brass caps, accumulator, reversing valve.

G. Controls and Safeties:

Operating controls and safeties are factory selected, assembled, and tested. The minimum control functions include the following:

- 1. Controls:
 - a. A time delay control sequence is provided standard through the fan coil board
 - b. Automatic outdoor fan motor protection.
- 2. Safeties:
 - a. System diagnostics
 - b. Compressor motor current and temperature overload protection
 - c. Outdoor fan failure protection.

H. Electrical Requirements:

- 1. Unit operates on single-phase, 60 Hz power at 115V for unit sizes 12 and 208/230V for unit sizes 09, 12, 18, and 24 as specified.
- 2. Unit electrical power has a single point connection.
- 3. Unit Control voltage to the indoor fan coil is 0-15V DC.
- 4. All power and control wiring must be installed per NEC and all local electrical codes.
- 5. The unit has high and low voltage terminal block connections.

