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January 25, 2016

Attn: Keith Whiting

Re: King & Park Multi-Family Residences - -M/P SD Narrative.

### HVAC SYSTEMS NARRATIVE

The load calculation was performed based the following outdoor conditions and room temperature set points:

Cooling: OSA = 86/66.2 degree F DB/WB  
Room T-stat set point: 75 degrees

Heating: OSA = 23 degree F DB  
Room T-stat set point: 70 degree F.

#### **Resident units:**

##### Heating/Cooling & Ventilation:

All Townhouses are heated/cooled by multi-split heat pump system wherein a single heat pump is connected to (2) indoor units, one wall mounted ductless unit to serve the lower level living space, and (1) ducted fan coil unit to serve the three bedrooms in the upper floor. The outdoor heat pump units will be hung high on the exterior wall facing the parking spaces. Ventilation is provided by trickle vents in the living room and bedrooms windows.

Ground floor units are heated/cooled by single one-to-one heat pump split system. A wall mounted indoor unit will be installed in the living room with an electric heater in each bedroom to provide additional heat. The bedroom doors are assumed open in cooling days. The outdoor heat pump units will be hung high on the walls in Bike Storage space. Ventilation is provided by trickle vents in the living room and bedrooms windows.

2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> floor 1 & 2 bedroom units will be served by a single PTHP sized to cool/heat the entire unit. The bedroom doors are assumed open in cooling days. A wall mounted electric heater will be provided in each bedroom for additional heat. Ventilation is provided through PTHP units.

##### Exhaust System:

Bathrooms in the units will be continuously exhausted using small ceiling fans with speed controllers at the rate of 20 cfm per bathroom. Kitchen range hoods will utilize a heat detector in the exhaust duct to start/stop the fan.

Ground Floor Townhouse restrooms and kitchen range hoods are exhausted directly through the exterior wall via exterior louver.

Upper floor townhouse restrooms and restroom exhaust and kitchen range hoods in the 3<sup>rd</sup> floor units above the townhouses are exhausted through the exterior wall at third floor.

Restroom exhaust and kitchen range hood exhausts from all other spaces are routed up shafts to roof collection boxes/points of discharge.

### Core spaces:

Corridors: Conditioned fresh air will be provided by (3) Gas packaged RTU's.

Lobbies: Fresh air will be provided from RTU-2. Cooling/Heating by ductless mini-split heat pump per floor.

500 sq ft Offices: Ducted split Heat Pump unit; Fresh air from exterior wall/louver.

Community Room: Ducted Split Heat Pump & ductless mini split heat pump. Fresh air from exterior wall/louver.

Exhaust from trash/recycle, janitor's closets, trash compactor and clothes dryer vents are exhausted through roof. Make-up air to these units are provided by RTU-1.

### EQUIPMENT SIZING:

#### Heat pumps/Ground floor

3 BA Townhouses: See 1/M6.0

Multi-Split System with:

- ~~HP-2~~ 1.5 Ton outdoor heat pump OHP-1 ✓
- ~~FC-2A~~ 0.75 Ton wall mounted ductless unit serve lower living space IHP-1A ✓
- ~~FC-2B~~ 0.75 Ton ducted fan coil unit to serve (3) bedrooms in 2<sup>nd</sup> floor. IHP-1B ✓

2 BA Townhouses-Corner Unit: See 2/M6.0

Multi-split system system with :

- ~~HP-2~~ 1.5 Ton outdoor heat pump OHP-1 ✓
- ~~FC-2A~~ 0.75 Ton wall mounted ductless unit serve lower living space IHP-1A ✓
- ~~FC-2B~~ 0.75 Ton ducted fan coil unit to serve (2) bedrooms in 2<sup>nd</sup> floor. IHP-1B ✓

2BA units(Corner and typical): See 3/M6.0

Single zone, one on one split system with:

- ~~HP-1~~ One 1.5 Ton outdoor heat pump OHP-2 ✓
- ~~FC-1~~ One 1.5 Ton ductless split system in living space. IHP-2 ✓
- One electric wall heater in each bedroom. EH-1A, EH-1B

3BA ADA unit: See 4/M6.0

Single zone, one on one split system with:

- ~~HP-1~~ One 1.5 Ton outdoor heat pump OHP-2
- ~~FC-1~~ One 1.5 Ton ductless split system in living room IHP-2

One electric wall heater in each bedroom.

**PTHP/2,3 and 4<sup>th</sup> floors:**

2BA Corner units: See 5/M6.0 EF-3

✓ PTH-2 Single PTHP 015 in living room.  
One electric wall heater in each bedroom. EH-1A, 1B

2BA units: See 6/M6.0 EF-3

✓ PTH-2 Single PTHP 015 in living room.  
One electric wall heater in each bedroom. EH-1A, 1B

1BA units: See 7/M6.0 EF-3

✓ PTH-1 Single PTHP 012 in living room.  
One electric wall heater in bedroom.. EH-1A

2BA Corner units: EF-3

✓ PTH-2 Single PTHP 015 in living room.  
One Electric heaters in each bedroom. EH-1A, 1B

EF-4 31

**RTU's:**

✓ RTU-1: 5 Ton gas packaged unit, 100% OSA

✓ RTU-2: 4 Ton gas packaged unit, 100% OSA

✓ RTU-3: 1.5 Ton gas packaged unit, 100% OSA

OHP-7/IHP-7  
OHP-8/OHP-8

IHP 3/OHP 3  
IHP 4/OHP-4

**Other Spaces:** HP/FC-3, 4, 5, 6 & 7

**Lobbies:** IHP-5/OHP-5

2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> floors: 2-ton mini-split heat pump with wall mounted indoor unit.  
1<sup>st</sup> floor: (2) 2 ton mini-split heat pump with wall mounted indoor unit.

Office: 2-ton ducted fan coil with a heat pump. FC-2/OHP-10

Community Center: 3-ton ducted fan coil with a heat pump. FC-1/OHP-9  
2-ton mini-split heat pump with wall mounted indoor unit.

~~HP/FC-9~~

HP/FC-8

OHP 3  
IHP 3  
HP/FC-8

ELECT: IHP 12/OHP 12 - 1.5T

LAUNDRY: IHP-11/OHP 11

OFFICE 121/SAN 120: IHP-6/OHP-6 1.5T

## PLUMBING NARRATIVE

The type and use of this building would require the facility to be fire sprinkled, and thus incoming fire water must be planned for along with domestic water.

The site will be served by a single domestic water meter and fire backflow vault with distribution piping throughout the building. (Installation of owner controlled sub water meters can be designed if the owners wishes to submeter water to each dwelling unit (both hot and cold)).

Minimum water pressure is 55 psi at the base of the riser. If the water flow test report indicate a lower than adequate water pressure, the building will require a fire water booster pump, that is supplied by a back-up power source. The domestic water would be split into two supplies, using city water pressure to serve the ground floor, and a booster pump assembly to serve the 3 resident floors. The current schematic plan assumes adequate pressure to the site.

This building will require:

180 GPM (949 FU) - -A 4" domestic water line.  
8" sewer line (947 FU).

The Sanitary drain system will enter the building at the SW corner of the building with branches that extend the length of west and east wings, be located below grade.

A central high efficiency hot water system with hot water re-circulation will be designed to provide hot water to all dwelling units and common spaces in the ground floor. The system will be located in a the riser room where the domestic water and fire risers room reside, and will consist of five high efficiency, 199 MBH/100 gallon condensing water heaters. The combustion air intake and exhaust will be vented through the exterior wall. Hot water piping will be routed in a loop around the 3<sup>rd</sup> and 4<sup>th</sup> floor ceiling space, with risers at each apartment, and a return loop on the 2<sup>nd</sup> floor ceiling, with balancing valves at each riser. Water service to each dwelling unit will be provided with HW and CW manifolds with shut-off valves in the restrooms.

Plumbing fixtures should be selected to be durable, and have low flow characteristic. The recommendation would be to use 1.28 gpf toilets, 1.5 gpm kitchen sinks, and shower heads with flows in the range of 1.5 to 1.8 gpm.

Plumbing for dog relief area shall be provided at designated areas.

See P6.1 for Plumbing Calculations.

## Product Specifications: PTC / PTH Models — Electric Heat Performance

(Primary Heating for PTC Models; Auxiliary Heating for PTH Models; See below for Power Cord Configuration)

| VOLTAGE  | ELECTRIC HEATER SIZE (kW) | NO. OF STAGES | NOMINAL HEATING (BTU/H) |        |        | TOTAL WATTS <sup>6</sup> | TOTAL AMPS  | MIN. CIRCUIT AMPACITY <sup>2</sup> | MOP <sup>4</sup> (AMPS) | POWER CORD |
|----------|---------------------------|---------------|-------------------------|--------|--------|--------------------------|-------------|------------------------------------|-------------------------|------------|
|          |                           |               | @ 230V                  | @ 208V | @ 265V |                          |             |                                    |                         |            |
| 230/208V | 1.5 / 1.3                 | 1             | 5,100                   | 4,200  | --     | 1,570 / 1,295            | 6.8 / 6.2   | 8.5                                | 15                      | 6-15 P     |
| 230/208V | 2.5 / 2.1                 | 1             | 8,500                   | 6,800  | --     | 2,570 / 2,115            | 11.2 / 10.1 | 14.1                               | 15                      | 6-15 P     |
| 230/208V | 3.5 / 3.0                 | 1             | 12,000                  | 9,900  | --     | 3,570 / 2,935            | 15.5 / 14.1 | 19.5                               | 20                      | 6-20 P     |
| 230/208V | 5.0 / 4.1                 | 1             | 17,100                  | 14,000 | --     | 5,070 / 4,160            | 22.1 / 20.0 | 27.6                               | 30                      | 6-30 P     |
| 265V     | 1.5                       | 1             | --                      | --     | 5,100  | 1,570                    | 5.9         | 7.4                                | 15                      | 7-20P      |
| 265V     | 2.5                       | 1             | --                      | --     | 8,500  | 2,570                    | 9.7         | 12.2                               | 15                      | 7-20 P     |
| 265V     | 3.7                       | 1             | --                      | --     | 12,600 | 3,770                    | 14.2        | 17.9                               | 20                      | 7-20 P     |
| 265V     | 5                         | 1             | --                      | --     | 17,100 | 5,070                    | 19.2        | 23.9                               | 25                      | 7-30 P     |

✓ PTH-1  
✓ PTH-2

**NOTES**

- <sup>1</sup> All 265-volt models must use an Amana® brand sub-base (PTSB4\*\*E) or an Amana® brand hard-wire kit (PTPWHWK4).
- <sup>2</sup> Minimum branch circuit ampacity ratings conform to the National Electric Code; however, local codes should apply.
- <sup>3</sup> Minimum voltage on 230/208-volt models is 197 volts; maximum is 253 volts. Minimum voltage on 265-volt models is 239 volts; maximum is 292 volts.
- <sup>4</sup> Overcurrent protection for all units without electric heaters is 15 amps. Overcurrent protection on 265-volt models must be cartridge-style time-delay fuses (included and factory-installed on all Amana® brand 265-volt chassis).
- <sup>5</sup> Heating capacity and efficiency based on unit operation without condensate pump; unit automatically switches to electric heat at approximately 24°F outdoor ambient.
- <sup>6</sup> Total watts for 15,000 BTU/h models; subtract 20 watts for PT07/09/12
- <sup>7</sup> Specify two-digit heater kW size to complete model number.
- <sup>8</sup> R-410A refrigerant used in all systems.
- <sup>9</sup> All units meet or exceed ASHRAE 90.1 standards.
- <sup>10</sup> All units less than 250 volts have a Leak Current Detector Interrupter (LCDI) power cord and meet UL 484 standards.

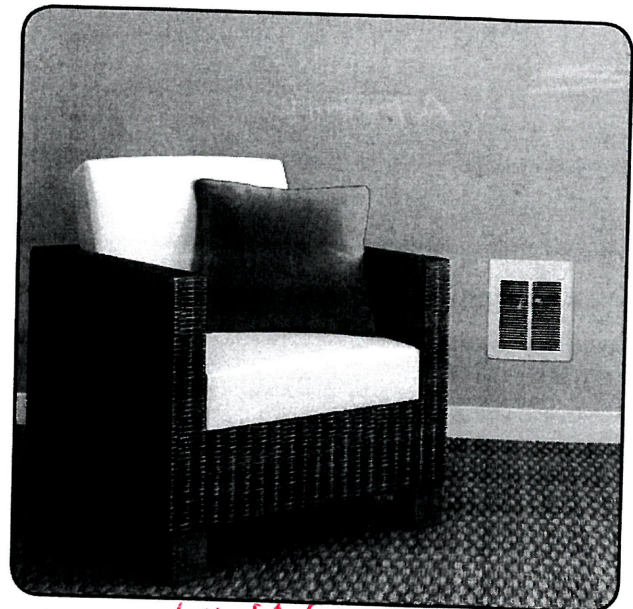
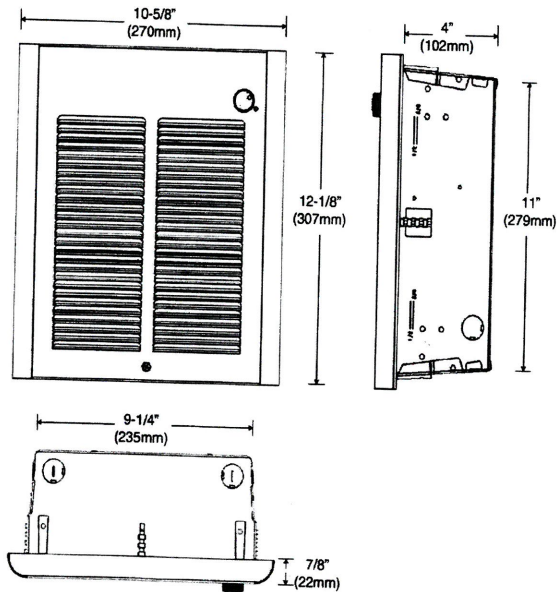
# ELECTRIC WALL HEATERS IN BEDROOMS

| Model #     | Voltage  | Amps     | Watts     | BTU/HR    | Wire Size |
|-------------|--|----------|-----------|-----------|-----------|
| SRA1012DSF  | 120  | 8.4/4.2  | 1000/500  | 3413/1706 | 14AWG     |
| SRA1512DSF  | 120  | 12.5/6.3 | 1500/750  | 5120/2560 | 12AWG     |
| SRA1812DSF  | 120  | 15.0/7.5 | 1800/900  | 6143/3072 | 12AWG     |
| SRA2024DSF  | 240  | 8.4/4.2  | 2000/1000 | 6826/3413 | 14AWG     |
|             | 208  | 7.3/3.6  | 1500/750  | 5120/2560 | 14AWG     |
| SRA2027DSF  | 277  | 7.3/3.6  | 2000/1000 | 6826/3413 | 14AWG     |
|             | 240  | 6.3/3.2  | 1500/750  | 5120/2560 | 14AWG     |
| SRA1527DSF  | 277  | 5.5/2.75 | 1500/750  | 5120/2560 | 14AWG     |
|             | 240  | 4.7/2.4  | 1125/562  | 3840/1920 | 14AWG     |
| SRA2020DSF  | 208  | 9.6/4.8  | 2000/1000 | 6826/3413 | 14AWG     |
| Accessories |  |          |           |           |           |
| SRASM       | Surface Mounting Frame (Accessory) Order Separately 12-1/2" (318mm)H X 10-3/8" (264mm)W X 4" (102mm) |          |           |           |           |
| SRAS1       | 1" (25mm) Recess Mounting Frame (Accessory) Order Separately   |          |           |           |           |
| SRAS2       | 2" (50mm) Recess Mounting Frame (Accessory) Order Separately   |          |           |           |           |
| SRAFCTP     | Tamper-resistant front cover   |          |           |           |           |

EH 1A/E

EH-2, 3, 4 & 5

## DIMENSIONS



EH-1A/1B - BEDROOMS.  
 EH-2: STAR 3  
 EH-3 - STAR 4  
 EH-4: STAR 2  
 EH-5: RISER

## MOUNTING LIMITATIONS

Do not install heater closer than 8" from floor or adjacent wall surface, behind towel rack or door, upside down or side up, in floor, ceiling or closet.



# 11. Electric Characteristics

★  
HP-2  
OHP-1

| Outdoor Unit | Power Supply |                  |       |     | Compressor |      | OFM |      |
|--------------|--------------|------------------|-------|-----|------------|------|-----|------|
|              | Hz - Volts   | Voltage Range    | MCA   | MFA | MSC        | RLA  | W   | FLA  |
| 2MXS18NMVJU  | 60 - 208     | Max. 60 Hz 253 V | 15.80 | 20  | 14.0       | 14.0 | 56  | 0.37 |
|              | 60 - 230     | Min. 60 Hz 187 V |       |     |            |      |     |      |
| 3MXS24NMVJU  | 60 - 208     | Max. 60 Hz 253 V | 18.70 | 20  | 15.5       | 15.5 | 51  | 0.33 |
|              | 60 - 230     | Min. 60 Hz 187 V |       |     |            |      |     |      |
| 4MXS36NMVJU  | 60 - 208     | Max. 60 Hz 253 V | 19.75 | 20  | 17.5       | 17.5 | 75  | 0.50 |
|              | 60 - 230     | Min. 60 Hz 187 V |       |     |            |      |     |      |

**Symbols:**

- MCA : Min. circuit amps (A)
- MFA : Max. fuse amps (A)
- MSC : Max. current during starting compressor (A)
- RLA : Rated load amps (A)
- OFM : Outdoor fan motor
- W : Fan motor rated output (W)
- FLA : Full load amps (A)

**Notes:**

1. RLA is based on the following conditions.  
Cooling  
Indoor temp.: 80°FDB (27°CDB) / 67°FWB (19°CWB)  
Outdoor temp.: 95°FDB (35°CDB)
2. Voltage range  
Units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.
3. Maximum allowable voltage variation between phases is 2%.
4. MCA represents maximum input current.  
MFA represents capacity which may accept MCA.
5. Select wire size based on the value of MCA.
6. MFA is used to select the circuit breaker and the ground fault circuit interrupter (earth leakage circuit breaker).
7. Be sure to install an earth leak detector.  
(This unit uses an inverter, which means that an earth leak detector capable of handling high harmonics must be used in order to prevent malfunctioning of the earth leak detector.)

3D093255

★ IHP-1A/1B  
~~FC-2A/2B~~ (Indoor units for ~~HP-2~~)  
 are powered from ~~HP-2~~.  
 OHP-1

### 3. Specifications

#### 3.1 Indoor Unit

60 Hz, 208 - 230 V

| Model                           |                |              | CTXS07LVJU                                    |                   |
|---------------------------------|----------------|--------------|---|-------------------|
| Rated Capacity *                |                |              | Cooling                                       | Heating           |
| Front Panel Color               |                |              | 7 kBtu/h Class                                |                   |
|                                 |                |              | White   |                   |
| Airflow Rate                    | H              | cfm (m³/min) | 332 (9.4)                                     | 350 (9.9)         |
|                                 | M              |              | 261 (7.4)                                     | 290 (8.2)         |
|                                 | L              |              | 194 (5.5)                                     | 233 (6.6)         |
|                                 | SL             |              | 145 (4.1)                                     | 219 (6.2)         |
| Fan                             | Type           |              | Cross Flow Fan                                |                   |
|                                 | Motor Output   | W            | 23  |                   |
|                                 | Speed          | Steps        | 5 Steps, Quiet, Auto                          |                   |
| Air Direction Control           |                |              | Right, Left, Horizontal, Downward             |                   |
| Air Filter                      |                |              | Removable, Washable, Mildew Proof             |                   |
| Running Current (Rated)         |                |              | 0.09 - 0.08                                   | 0.11 - 0.10       |
| Power Consumption (Rated)       |                |              | 18 - 18                                       | 21 - 21           |
| Power Factor (Rated)            |                |              | %   | 96.2 - 97.8       |
| Temperature Control             |                |              | Microcomputer Control                         |                   |
| Dimensions (H x W x D)          |                |              | 11-5/8 x 31-1/2 x 8-7/16 (295 x 800 x 215)    |                   |
| Packaged Dimensions (H x W x D) |                |              | 10-13/16 x 34-1/4 x 14-7/16 (274 x 870 x 366) |                   |
| Weight (Mass)                   |                |              | 20 (9)  |                   |
| Gross Weight (Gross Mass)       |                |              | 29 (13)                                       |                   |
| Sound Pressure Level            | H / M / L / SL | dB(A)        | 38 / 32 / 25 / 22                             |                   |
|                                 |                |              |   | 38 / 33 / 28 / 25 |
| Sound Power Level               |                |              | 54  |                   |
| Heat Insulation                 |                |              | 54  |                   |
| Piping Connections              | Liquid         | in. (mm)     | Both Liquid and Gas Pipes                     |                   |
|                                 | Gas            | in. (mm)     | φ 1/4 (φ 6.4)                                 |                   |
|                                 | Drain          | in. (mm)     | φ 3/8 (φ 9.5)                                 |                   |
| Drawing No.                     |                |              | φ 5/8 (φ 16.0)<br>3D075490                    |                   |

0.75" wall mounted ductless unit [FC-2A] IHP-1A

| Model                           |                |              | FTXS08LVJU                                    |                   | FTXS12LVJU                                    |             |
|---------------------------------|----------------|--------------|---|-------------------|---|-------------|
| Rated Capacity *                |                |              | Cooling                                       | Heating           | Cooling                                       | Heating     |
| Front Panel Color               |                |              | 9 kBtu/h Class                                |                   | 12 kBtu/h Class                               |             |
|                                 |                |              | White   |                   | White   |             |
| Airflow Rate                    | H              | cfm (m³/min) | 381 (10.8)                                    | 420 (11.9)        | 403 (11.4)                                    | 438 (12.4)  |
|                                 | M              |              | 279 (7.9)                                     | 321 (9.1)         | 307 (8.7)                                     | 335 (9.5)   |
|                                 | L              |              | 194 (5.5)                                     | 233 (6.6)         | 205 (5.8)                                     | 240 (6.8)   |
|                                 | SL             |              | 145 (4.1)                                     | 219 (6.2)         | 155 (4.4)                                     | 212 (6.0)   |
| Fan                             | Type           |              | Cross Flow Fan                                |                   | Cross Flow Fan                                |             |
|                                 | Motor Output   | W            | 23  |                   | 23  |             |
|                                 | Speed          | Steps        | 5 Steps, Quiet, Auto                          |                   | 5 Steps, Quiet, Auto                          |             |
| Air Direction Control           |                |              | Right, Left, Horizontal, Downward             |                   | Right, Left, Horizontal, Downward             |             |
| Air Filter                      |                |              | Removable, Washable, Mildew Proof             |                   | Removable, Washable, Mildew Proof             |             |
| Running Current (Rated)         |                |              | 0.09 - 0.08                                   | 0.11 - 0.10       | 0.13 - 0.12                                   | 0.14 - 0.13 |
| Power Consumption (Rated)       |                |              | 18 - 18                                       | 21 - 21           | 26 - 26                                       | 28 - 28     |
| Power Factor (Rated)            |                |              | %   | 96.2 - 97.8       | 91.8 - 91.3                                   | 96.2 - 93.6 |
| Temperature Control             |                |              | Microcomputer Control                         |                   | Microcomputer Control                         |             |
| Dimensions (H x W x D)          |                |              | 11-5/8 x 31-1/2 x 8-7/16 (295 x 800 x 215)    |                   | 11-5/8 x 31-1/2 x 8-7/16 (295 x 800 x 215)    |             |
| Packaged Dimensions (H x W x D) |                |              | 10-13/16 x 34-1/4 x 14-7/16 (274 x 870 x 366) |                   | 10-13/16 x 34-1/4 x 14-7/16 (274 x 870 x 366) |             |
| Weight (Mass)                   |                |              | 20 (9)  |                   | 22 (10)                                       |             |
| Gross Weight (Gross Mass)       |                |              | 29 (13)                                       |                   | 31 (14)                                       |             |
| Sound Pressure Level            | H / M / L / SL | dB(A)        | 41 / 33 / 25 / 22                             |                   | 45 / 37 / 29 / 23                             |             |
|                                 |                |              |   | 42 / 35 / 28 / 25 |   |             |
| Sound Power Level               |                |              | 57  |                   | 58  |             |
| Heat Insulation                 |                |              | 57  |                   | 61  |             |
| Piping Connections              | Liquid         | in. (mm)     | Both Liquid and Gas Pipes                     |                   | Both Liquid and Gas Pipes                     |             |
|                                 | Gas            | in. (mm)     | φ 1/4 (φ 6.4)                                 |                   | φ 1/4 (φ 6.4)                                 |             |
|                                 | Drain          | in. (mm)     | φ 3/8 (φ 9.5)                                 |                   | φ 3/8 (φ 9.5)                                 |             |
| Drawing No.                     |                |              | φ 5/8 (φ 16.0)<br>3D075491                    |                   | φ 5/8 (φ 16.0)<br>3D075492                    |             |

Note: \*See page 19 - 70 "Combination Capacity".

|                     |  |
|---------------------|--|
| Conversion Formulae |  |
| kcal/h = kW × 860   |  |
| Btu/h = kW × 3412   |  |
| cfm = m³/min × 35.3 |  |



Specifications

EDUS121503

60 Hz, 208 - 230 V

0.75T ducted fan coil  
FC-215 1HP-1B

| Model                           |                   |              | FDXS09LVJU                        |   | FDXS12LVJU                                    |   |
|---------------------------------|-------------------|--------------|-----------------------------------|---|---|---|
| Rated Capacity *                |                   |              | Cooling                           | Heating                                       | Cooling                                       | Heating                                       |
| External Static Pressure        |                   |              | 9 kBTu/h Class                    |   | 12 kBTu/h Class                               |   |
| inAq (Pa)                       |                   |              | 0.12 (30)                         |   | 0.12 (30)                                     |   |
| Airflow Rate                    | H                 | cfm (m³/min) | 305 (8.6)                         | 305 (8.6)                                     | 305 (8.6)                                     | 305 (8.6)                                     |
|                                 | M                 |              | 280 (7.9)                         | 280 (7.9)                                     | 280 (7.9)                                     | 280 (7.9)                                     |
|                                 | L                 |              | 260 (7.4)                         | 260 (7.4)                                     | 260 (7.4)                                     | 260 (7.4)                                     |
|                                 | SL                |              | 235 (6.7)                         | 235 (6.7)                                     | 235 (6.7)                                     | 235 (6.7)                                     |
| Fan                             | Type              |              | Sirocco Fan                       |   | Sirocco Fan                                   |   |
|                                 | Motor Output      | W            | 62                                |   | 62  |   |
|                                 | Speed             | Steps        | 5 Steps, Quiet, Auto              |   | 5 Steps, Quiet, Auto                          |   |
| Air Filter                      |                   |              | Removable, Washable, Mildew Proof |   | Removable, Washable, Mildew Proof             |   |
| Running Current (Rated)         |                   |              | A                                 | 0.58 - 0.52                                   | 0.58 - 0.52                                   | 0.58 - 0.52                                   |
| Power Consumption (Rated)       |                   |              | W                                 | 72 - 72                                       | 72 - 72                                       | 72 - 72                                       |
| Power Factor (Rated)            |                   |              | %                                 | 59.7 - 60.2                                   | 59.7 - 60.2                                   | 59.7 - 60.2                                   |
| Temperature Control             |                   |              | Microcomputer Control             |   | Microcomputer Control                         |   |
| Dimensions (H x W x D)          |                   |              | in. (mm)                          | 7-7/8 x 27-9/16 x 24-7/16 (200 x 700 x 620)   | 7-7/8 x 27-9/16 x 24-7/16 (200 x 700 x 620)   | 7-7/8 x 27-9/16 x 24-7/16 (200 x 700 x 620)   |
| Packaged Dimensions (H x W x D) |                   |              | in. (mm)                          | 10-13/16 x 36-5/16 x 30-1/4 (274 x 923 x 768) | 10-13/16 x 36-5/16 x 30-1/4 (274 x 923 x 768) | 10-13/16 x 36-5/16 x 30-1/4 (274 x 923 x 768) |
| Weight (Mass)                   |                   |              | Lbs (kg)                          | 47 (21)                                       | 47 (21)                                       | 47 (21)                                       |
| Gross Weight (Gross Mass)       |                   |              | Lbs (kg)                          | 64 (29)                                       | 64 (29)                                       | 64 (29)                                       |
| Sound Pressure Level            | H / M / L         | dB(A)        | 35 / 33 / 31                      | 35 / 33 / 31                                  | 35 / 33 / 31                                  | 35 / 33 / 31                                  |
|                                 | Sound Power Level |              | dB                                | 51  | 51  | 51  |
| Heat Insulation                 |                   |              | Both Liquid and Gas Pipes         |   | Both Liquid and Gas Pipes                     |   |
| Piping Connections              | Liquid            | in. (mm)     | φ 1/4 (φ 6.4)                     |   | φ 1/4 (φ 6.4)                                 |   |
|                                 | Gas               | in. (mm)     | φ 3/8 (φ 9.5)                     |   | φ 3/8 (φ 9.5)                                 |   |
|                                 | Drain             | in. (mm)     | φ 25/32 (φ 20)                    |   | φ 25/32 (φ 20)                                |   |
| Drawing No.                     |                   |              | 3D075493                          |   | 3D075494                                      |   |

| Model                           |                 |              | CDXS15LVJU                                       |  | CDXS18LVJU                                       |  |
|---------------------------------|-----------------|--------------|--|--|--|--|
| Rated Capacity *                |                 |              | Cooling  | Heating  | Cooling  | Heating  |
| External Static Pressure        |                 |              | 15 kBTu/h Class                                  |  | 18 kBTu/h Class                                  |  |
| inAq (Pa)                       |                 |              | 0.16 (40)  |  | 0.16 (40)  |  |
| Airflow Rate                    | H               | cfm (m³/min) | 424 (12.0)                                       | 424 (12.0)                                     | 424 (12.0)                                       | 424 (12.0)                                     |
|                                 | M               |              | 388 (11.0)                                       | 388 (11.0)                                     | 388 (11.0)                                       | 388 (11.0)                                     |
|                                 | L               |              | 353 (10.0)                                       | 353 (10.0)                                     | 353 (10.0)                                       | 353 (10.0)                                     |
|                                 | SL              |              | 297 (8.4)  | 297 (8.4)                                      | 297 (8.4)  | 297 (8.4)                                      |
| Fan                             | Type            |              | Sirocco Fan                                      |  | Sirocco Fan                                      |  |
|                                 | Motor Output    | W            | 130  |  | 130  |  |
|                                 | Speed           | Steps        | 5 Steps, Quiet, Auto                             |  | 5 Steps, Quiet, Auto                             |  |
| Air Filter                      |                 |              | Removable, Washable, Mildew Proof                |  | Removable, Washable, Mildew Proof                |  |
| Running Current (Rated)         |                 |              | A  | 0.79   | 0.79   | 0.79   |
| Power Consumption (Rated)       |                 |              | W  | 172  | 172  | 172  |
| Power Factor (Rated)            |                 |              | %  | 94.4   | 94.4   | 94.4   |
| Temperature Control             |                 |              | Microcomputer Control                            |  | Microcomputer Control                            |  |
| Dimensions (H x W x D)          |                 |              | in. (mm)   | 7-7/8 x 35-7/16 x 24-7/16 (200 x 900 x 620)    | 7-7/8 x 35-7/16 x 24-7/16 (200 x 900 x 620)      | 7-7/8 x 35-7/16 x 24-7/16 (200 x 900 x 620)    |
| Packaged Dimensions (H x W x D) |                 |              | in. (mm)   | 10-1/2 x 43-9/16 x 29-9/16 (266 x 1,106 x 751) | 10-1/2 x 43-9/16 x 29-9/16 (266 x 1,106 x 751)   | 10-1/2 x 43-9/16 x 29-9/16 (266 x 1,106 x 751) |
| Weight (Mass)                   |                 |              | Lbs (kg)   | 60 (27)  | 60 (27)  | 60 (27)  |
| Gross Weight (Gross Mass)       |                 |              | Lbs (kg)   | 75 (34)  | 75 (34)  | 75 (34)  |
| Sound Pressure Level            | H / M / L / SL  | dB(A)        | 37 / 35 / 33 / 31                                | 37 / 35 / 33 / 31                              | 37 / 35 / 33 / 31                                | 37 / 35 / 33 / 31                              |
|                                 | Heat Insulation |              | Both Liquid and Gas Pipes                        |  | Both Liquid and Gas Pipes                        |  |
| Piping Connections              | Liquid          | in. (mm)     | φ 1/4 (φ 6.4)                                    |  | φ 1/4 (φ 6.4)                                    |  |
|                                 | Gas             | in. (mm)     | φ 1/2 (φ 12.7)                                   |  | φ 1/2 (φ 12.7)                                   |  |
|                                 | Drain           | in. (mm)     | VP20 (O.D. φ 1-1/32 (φ 26), I.D. φ 25/32 (φ 20)) |  | VP20 (O.D. φ 1-1/32 (φ 26), I.D. φ 25/32 (φ 20)) |  |
| Drawing No.                     |                 |              | C: 3D075721                                      |  | C: 3D075722                                      |  |

Note: \* See page 19 - 70 "Combination Capacity".

| Conversion Formulae |  |
|---------------------|--|
| kcal/h = kW x 860   |  |
| Btu/h = kW x 3412   |  |
| cfm = m³/min x 35.3 |  |

10. Electric Characteristics

3

OHP 2, 6  
HP=1  
1HP-2, 6  
FC=1  
  
1HP  
3, 4, 5, 7, 8  
OHP  
3, 4, 5, 7, 8

| Unit Combination |              | Power Supply |                          |      |     | Compressor |      | OFM |      | IFM |      |
|------------------|--------------|--------------|--------------------------|------|-----|------------|------|-----|------|-----|------|
| Indoor Unit      | Outdoor Unit | Hz - Volts   | Voltage Range            | MCA  | MFA | RHz        | RLA  | W   | FLA  | W   | FLA  |
| FTKN09NMVJU      | RKN09NMVJU   | 60 - 208     | Min. 187 V<br>Max. 253 V | 7.9  | 15  | 72         | 6.8  | 20  | 0.17 | 18  | 0.18 |
|                  |              | 60 - 230     |                          |      |     |            |      |     |      |     |      |
| FTKN12NMVJU      | RKN12NMVJU   | 60 - 208     | Min. 187 V<br>Max. 253 V | 8.6  | 15  | 80         | 7.5  | 26  | 0.21 | 22  | 0.20 |
|                  |              | 60 - 230     |                          |      |     |            |      |     |      |     |      |
| FTKN18NMVJU      | RKN18NMVJU   | 60 - 208     | Min. 187 V<br>Max. 253 V | 9.5  | 15  | 98         | 8.5  | 58  | 0.38 | 46  | 0.30 |
|                  |              | 60 - 230     |                          |      |     |            |      |     |      |     |      |
| FTKN24NMVJU      | RXN24NMVJU   | 60 - 208     | Min. 187 V<br>Max. 253 V | 18.3 | 20  | 92         | 12.0 | 80  | 0.53 | 46  | 0.30 |
|                  |              | 60 - 230     |                          |      |     |            |      |     |      |     |      |
| FTXN09NMVJU      | RXN09NMVJU   | 60 - 208     | Min. 187 V<br>Max. 253 V | 10.1 | 15  | 72         | 8.5  | 20  | 0.17 | 18  | 0.18 |
|                  |              | 60 - 230     |                          |      |     |            |      |     |      |     |      |
| FTXN12NMVJU      | RXN12NMVJU   | 60 - 208     | Min. 187 V<br>Max. 253 V | 10.1 | 15  | 80         | 8.5  | 26  | 0.21 | 22  | 0.20 |
|                  |              | 60 - 230     |                          |      |     |            |      |     |      |     |      |
| FTXN18NMVJU      | RXN18NMVJU   | 60 - 208     | Min. 187 V<br>Max. 253 V | 13.3 | 15  | 74         | 10.0 | 58  | 0.38 | 46  | 0.30 |
|                  |              | 60 - 230     |                          |      |     |            |      |     |      |     |      |
| FTXN24NMVJU      | RXN24NMVJU   | 60 - 208     | Min. 187 V<br>Max. 253 V | 18.3 | 20  | 96         | 14.5 | 80  | 0.53 | 46  | 0.30 |
|                  |              | 60 - 230     |                          |      |     |            |      |     |      |     |      |

**Symbols:**

- MCA : Min. circuit amps (A)
- MFA : Max. fuse amps (A)
- RHz : Rated operating frequency (Hz)
- RLA : Rated load amps (A)
- OFM : Outdoor fan motor
- IFM : Indoor fan motor
- W : Fan motor rated output (W)
- FLA : Full load amps (A)

**Notes:**

1. RHz is the max frequency that comes in cooling operation and heating operation.
2. RLA is the max current that comes in cooling operation and heating operation.
3. Maximum allowable voltage variation between phases is 2%.
4. Select wire size based on the larger value of MCA.
5. Instead of a fuse, use a circuit breaker.
6. Be sure to install a ground leak detector.  
(This unit uses an inverter, which means that a ground leak detector capable of handling high harmonics must be used in order to prevent malfunctioning of the ground leak detector.)

3D092214

Indoor units are powered from outdoor units

# 11. Electric Characteristics

| Indoor Unit | Outdoor Unit | Power Supply |  |       |     | COMP |     | OFM |      | IFM |      |
|-------------|--------------|--------------|--|-------|-----|------|-----|-----|------|-----|------|
|             |              | Hz - Volts   | Voltage Range                          | MCA   | MOP | RHz  | RLA | W   | FLA  | W   | FLA  |
| FTXS09LVJU  | RXS09LVJU    | 60 - 208     | MAX. 60 Hz, 253 V<br>MIN. 60 Hz, 187 V | 8.00  | 15  | 46   | 3.2 | 23  | 0.22 | 23  | 0.15 |
|             |              | 60 - 230     |  |       |     |      | 2.9 |     |      |     |      |
| FTXS12LVJU  | RXS12LVJU    | 60 - 208     | MAX. 60 Hz, 253 V<br>MIN. 60 Hz, 187 V | 8.75  | 15  | 68   | 4.4 | 23  | 0.22 | 23  | 0.15 |
|             |              | 60 - 230     |  |       |     |      | 3.9 |     |      |     |      |
| FTXS15LVJU  | RXS15LVJU    | 60 - 208     | MAX. 60 Hz, 253 V<br>MIN. 60 Hz, 187 V | 13.75 | 20  | 50   | 4.7 | 53  | 0.32 | 48  | 0.31 |
|             |              | 60 - 230     |  |       |     |      | 4.2 |     |      |     |      |
| FTXS18LVJU  | RXS18LVJU    | 60 - 208     | MAX. 60 Hz, 253 V<br>MIN. 60 Hz, 187 V | 13.75 | 20  | 65   | 6.6 | 53  | 0.32 | 48  | 0.32 |
|             |              | 60 - 230     |  |       |     |      | 5.9 |     |      |     |      |
| FTXS24LVJU  | RXS24LVJU    | 60 - 208     | MAX. 60 Hz, 253 V<br>MIN. 60 Hz, 187 V | 17.50 | 20  | 42.6 | 7.9 | 66  | 0.40 | 48  | 0.57 |
|             |              | 60 - 230     |  |       |     |      | 7.1 |     |      |     |      |
| FDXS09LVJU  | RXS09LVJU    | 60 - 208     | MAX. 60 Hz, 253 V<br>MIN. 60 Hz, 187 V | 8.00  | 15  | 57   | 4.1 | 23  | 0.22 | 62  | 0.52 |
|             |              | 60 - 230     |  |       |     |      | 3.7 |     |      |     |      |
| FDXS12LVJU  | RXS12LVJU    | 60 - 208     | MAX. 60 Hz, 253 V<br>MIN. 60 Hz, 187 V | 8.75  | 15  | 82   | 5.9 | 23  | 0.22 | 62  | 0.52 |
|             |              | 60 - 230     |  |       |     |      | 5.3 |     |      |     |      |

**Symbols:**

- MCA : Min. circuit amps (A)
- MOP : Max. overcurrent protection (A)
- RHz : Rated operating frequency (Hz)
- RLA : Rated load amps (A)
- OFM : Outdoor fan motor
- IFM : Indoor fan motor
- W : Fan motor rated output (W)
- FLA : Full load amps (A)

**Note:**

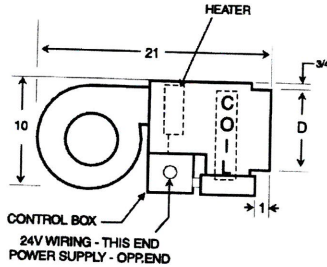
1. RLA is based on the following conditions.  
Indoor temp. 80°FDB / 67°FDB (26.7°CDB / 19.4°CDB)  
Outdoor temp. 95°FDB (35°CDB)
2. Maximum allowable voltage variation between phases is 2%.
3. Select wire size based on the larger value of MCA.
4. Instead of a fuse, use a circuit breaker.
5. Be sure to install a Ground Fault Circuit Interrupter / Earth Leakage Circuit Breaker that can handle higher harmonics because this unit uses an inverter, and therefore must be capable of handling high harmonics in order to prevent malfunction.

IHP-6  
OHP-6

# HX(-C) Series

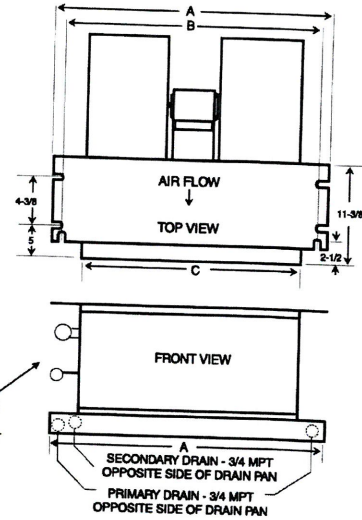
## 1-1/2 through 3 tons

Approved for installation with 0" clearance to combustible materials



(See P. 4 for Model Numbers)

SUCTION LINE  
5/8 SWEAT: 18-24, 28HX  
7/8 SWEAT: 25-37HX  
LIQUID LINE - 3/8 SWEAT



| PERFORMANCE DATA  |          |                 |      |        |            |                    |      |              |      |
|---|----------|-----------------|------|--------|------------|--------------------|------|--------------|------|
| UNIT MODEL  | NOM. CFM | NOM. COOL. BTUH | HEAT |        | TOTAL AMPS | MIN. CIR. AMPACITY |      | (2) MAX FUSE |      |
|   |          |                 | kW   | BTUH   |            | 208V               | 240V | 208V         | 240V |
|   |          |                 |      |        |            |                    |      |              |      |
| 18HX<br>-0-51<br>-3<br>-5<br>-6<br>-8<br>-10                | 600      | 18,000          | ---  | ---    | 2.0        | 3                  | 3    | 15           | 15   |
|   |          |                 | 3    | 10,200 | 14.5       | 16                 | 20   | 20           | 20   |
|   |          |                 | 5    | 17,000 | 22.8       | 25                 | 30   | 25           | 30   |
|   |          |                 | 6    | 20,500 | 27.0       | 30                 | 35   | 30           | 35   |
|   |          |                 | 8    | 27,300 | 35.3       | 39                 | 47   | 40           | 50   |
| 19HX & 20HX<br>-0-51<br>-3<br>-5<br>-6<br>-8<br>-10         | 600      | 18,000          | ---  | ---    | 1.0        | 2                  | 2    | 15           | 15   |
|   |          |                 | 3    | 10,200 | 13.5       | 15                 | 18   | 15           | 20   |
|   |          |                 | 5    | 17,000 | 21.8       | 24                 | 30   | 25           | 30   |
|   |          |                 | 6    | 20,500 | 26.0       | 29                 | 35   | 30           | 35   |
|   |          |                 | 8    | 27,300 | 34.3       | 38                 | 47   | 40           | 50   |
| 24, 25HX & 26, 28HX<br>-0-59<br>-3<br>-5<br>-6<br>-8<br>-10 | 800      | 24,000          | ---  | ---    | 2.0        | 3                  | 3    | 15           | 15   |
|   |          |                 | 3    | 10,200 | 14.5       | 16                 | 20   | 20           | 20   |
|   |          |                 | 5    | 17,000 | 22.8       | 25                 | 30   | 25           | 30   |
|   |          |                 | 6    | 20,500 | 27.0       | 29                 | 35   | 30           | 35   |
|   |          |                 | 8    | 27,300 | 35.3       | 39                 | 47   | 40           | 50   |
| 30, 31HX & 32HX<br>-0-63<br>-3<br>-5<br>-6<br>-8<br>-10     | 1000     | 30,000          | ---  | ---    | 2.0        | 3                  | 3    | 15           | 15   |
|   |          |                 | 3    | 10,200 | 14.5       | 16                 | 20   | 20           | 20   |
|   |          |                 | 5    | 17,000 | 22.8       | 25                 | 30   | 25           | 30   |
|   |          |                 | 6    | 20,500 | 27.0       | 29                 | 35   | 30           | 35   |
|   |          |                 | 8    | 27,300 | 35.3       | 39                 | 47   | 40           | 50   |
| 36HX & 37HX<br>-0-70<br>-3<br>-5<br>-6<br>-8<br>-10         | 1200     | 36,000          | ---  | ---    | 2.8        | 4                  | 4    | 15           | 15   |
|   |          |                 | 3    | 10,200 | 15.3       | 18                 | 20   | 20           | 20   |
|   |          |                 | 5    | 17,000 | 23.6       | 27                 | 30   | 30           | 30   |
|   |          |                 | 6    | 20,500 | 27.8       | 31                 | 35   | 35           | 35   |
|   |          |                 | 8    | 27,300 | 36.1       | 40                 | 46   | 40           | 50   |
| HIGH STATIC MODELS (special order)                          |          |                 |      |        |            |                    |      |              |      |
| 24HXB<br>-5<br>-6<br>-8<br>-10                              | 800      | 24,000          | 5    | 17,000 | 22.8       | 25                 | 30   | 25           | 30   |
|   |          |                 | 6    | 20,500 | 27.0       | 29                 | 35   | 30           | 35   |
|   |          |                 | 8    | 27,300 | 35.3       | 39                 | 47   | 40           | 50   |
|   |          |                 | 10   | 34,100 | 43.6       | 48                 | 55   | 50           | 60   |
| 30HXB<br>-5<br>-6<br>-8<br>-10                              | 1000     | 30,000          | 5    | 17,000 | 23.2       | 26                 | 30   | 30           | 30   |
|   |          |                 | 6    | 20,500 | 27.5       | 30                 | 35   | 30           | 35   |
|   |          |                 | 8    | 27,300 | 35.8       | 39                 | 47   | 40           | 50   |
|   |          |                 | 10   | 34,100 | 44.1       | 48                 | 56   | 50           | 60   |

| PHYSICAL DIMENSIONS           |        |          |    |       |
|-------------------------------|--------|----------|----|-------|
| MODEL                         | A      | B        | C  | D     |
| 18HX<br>19HX<br>24HX<br>24HXB | 37-1/4 | 34-11/16 | 30 | 6-1/2 |
| 20HX<br>25HX<br>30HX<br>30HXB | 43-1/4 | 40-11/16 | 36 | 6-1/2 |
| 26, 31, 36HX                  | 49-1/4 | 46-11/16 | 42 | 6-1/2 |
| 28, 32, 37HX                  | 56-1/4 | 53-11/16 | 49 | 6-1/2 |

| BLOWER DATA |                 |                                  |      |      |      |      |      |      |
|-------------|-----------------|----------------------------------|------|------|------|------|------|------|
| UNIT MODEL  | MOTOR HP (240V) | CFM vs. EXTERNAL STATIC PRESSURE |      |      |      |      |      |      |
|             |                 | 0.00                             | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 |
| 18HX        | 1/8             | 810                              | 775  | 740  | 705  | 670  | 640  | 610  |
| 19HX        | 1/8             | 820                              | 785  | 750  | 715  | 680  | 650  | 620  |
| 20HX        | 1/8             | 850                              | 815  | 780  | 745  | 710  | 670  | 630  |
| 24, 28HX    | 1/4             | 910                              | 875  | 840  | 805  | 770  | 730  | 690  |
| 25HX        | 1/4             | 930                              | 895  | 860  | 825  | 790  | 750  | 710  |
| 26HX        | 1/4             | 960                              | 925  | 890  | 850  | 810  | 770  | 730  |
| 24HXB       | 1/4             | ---                              | ---  | ---  | 920  | 890  | 860  | 830  |
| 30, 31HX    | 1/4             | 1110                             | 1075 | 1040 | 990  | 940  | 900  | 860  |
| 32HX        | 1/4             | 1170                             | 1140 | 1110 | 1075 | 1040 | 1000 | 960  |
| 30HXB       | 1/3             | ---                              | ---  | ---  | 1110 | 1070 | 1030 | 990  |
| 36HX        | 1/3             | 1410                             | 1370 | 1330 | 1290 | 1250 | 1210 | 1170 |
| 37HX        | 1/3             | 1460                             | 1420 | 1380 | 1340 | 1300 | 1250 | 1200 |

- (1) B models NOT recommended for free air delivery.
- (2) Add .05 static when enclosure is used.

| EXPANSION VALVE KITS (Heat pump or cooling only) |       |                           |
|--|-------|---------------------------|
| PART NO.   | TYPE  | FOR                       |
| 9EVR410-1  | R410A | 18 - 37HX (1-1/2 - 3 TON) |

### NOTES:

1. Above expansion valve kits are approved for both cooling only (non heat pump) or heat pump applications.
2. Valves are non-bleed type. Field added. Hard start kit may be required
3. Valves have screw-on connections.
4. Field installed.

| HEAT PUMP KIT (FIELD INSTALLED) |                                      |
|---------------------------------|--------------------------------------|
| PART NO.                        | DESCRIPTION                          |
| 942-1                           | KIT FOR HX MODELS WITH ELECTRIC HEAT |

Note: Heat pump kit must be field installed for all HX models with electric heat. 0 kW models do not require kit. Contact the factory for compatibility match with condensing unit.

In keeping with its policy of continuous progress and product improvement, First Co. reserves the right to make changes without notice. Maintenance for all First Co. products is available under "Product Maintenance" at [www.firstco.com](http://www.firstco.com).





# General Data

OHP-2  
~~HP-8~~

OHP-9  
~~HP-9~~

## Product Specifications

| Model No. ①                     | 4TWB4018G1000B | 4TWB4024G1000B | 4TWB4030G1000B     | 4TWB4036G1000B   |
|---------------------------------|----------------|----------------|--------------------|------------------|
| Electrical Data V/Ph/Hz ②       | 208/230/1/60   | 208/230/1/60   | 208/230/1/60       | 208/230/1/60     |
| Min Cir Ampacity                | 9              | 11             | 15                 | 18               |
| Max Fuse Size (Amps)            | 15             | 15             | 25                 | 30               |
| Compressors                     | RECIP          | RECIP          | RECIP              | RECIP            |
| RL AMPS - LR AMPS               | 6.4 - 38.6     | 8.3 - 58       | 11.3 - 68.2        | 13.2 - 63        |
| Outdoor Fan FL Amps             | 0.70           | 0.74           | 0.92               | 1.00             |
| Fan HP                          | 1/8            | 1/8            | 1/5                | 1/5              |
| Fan Dia (inches)                | 23             | 23             | 27.5               | 27.5             |
| Coil                            | Spine Fin™     | Spine Fin™     | Spine Fin™         | Spine Fin™       |
| Refrigerant R-410A              | 5/14-LB/OZ     | 7/02-LB/OZ     | 8/02-LB/OZ         | 7/13-LB/OZ       |
| Line Size - (in.) O.D. Gas ③    | 5/8            | 5/8            | 3/4                | 3/4              |
| Line Size - (in.) O.D. Liquid ③ | 3/8            | 3/8            | 3/8                | 3/8              |
| Dimensions H x W x D (Crated)   | 34 x 30.1 x 33 | 38 x 30.1 x 33 | 38.4 x 35.1 x 38.7 | 37.9 x 35 x 37.9 |
| Weight - Shipping               | 204            | 236            | 273                | 261              |
| Weight - Net                    | 176            | 208            | 239                | 227              |
| Start Components                | YES            | YES            | YES                | YES              |
| Sound Enclosure                 | NO             | NO             | NO                 | YES              |
| Compressor Sump Heat            | NO             | NO             | NO                 | YES              |
| Optional Accessories: ④         |                |                |                    |                  |
| Anti-short Cycle Timer          | TAYASCT501A    | TAYASCT501A    | TAYASCT501A        | TAYASCT501A      |
| Evaporator Defrost Control A/C  | AY28X084       | AY28X084       | AY28X084           | AY28X084         |
| Rubber Isolator Kit             | BAYISLT101     | BAYISLT101     | BAYISLT101         | BAYISLT101       |
| Crankcase Heater                | BAYCCHT300     | BAYCCHT300     | BAYCCHT300         | BAYCCHT300       |
| Extreme Condition Mounting Kit  | BAYECMT004     | BAYECMT004     | BAYECMT004         | BAYECMT004       |
| Snow Leg - Base & Cap 4" High   | BAYLEGS002     | BAYLEGS002     | BAYLEGS002         | BAYLEGS002       |
| Snow Leg - 4" Extension         | BAYLEGS003     | BAYLEGS003     | BAYLEGS003         | BAYLEGS003       |
| Seacoast Kit                    | BAYSEAC001     | BAYSEAC001     | BAYSEAC001         | BAYSEAC001       |
| Refrigerant Lineset ⑤           | TAYREFLN950    | TAYREFLN950    | TAYREFLN7*         | TAYREFLN7*       |

- ① Certified in accordance with the Air-Source Unitary Heat Pump Equipment certification program which is based on AHRI Standard 210/240.
- ② Calculated in accordance with N.E.C. Only use HACR circuit breakers or fuses.
- ③ Standard line lengths - 80'. Standard lift - 60' Suction and Liquid line.  
For Greater lengths and lifts refer to refrigerant piping software Pub# 32-3312-01. (\*denotes latest revision)
- ④ For accessory description and usage, see page 5.
- ⑤ \* = 15, 20, 25, 30, 40 and 50 foot lineset available.

### A-weighted Sound Power Level [dB(A)]

| MODEL     | SOUND POWER LEVEL [dB(A)] | A-WEIGHTED FULL OCTAVE SOUND POWER LEVEL dB - [dB(A)] High Stage |      |      |      |      |      |      |      |
|-----------|---------------------------|--|------|------|------|------|------|------|------|
|           |                           | 63   | 125  | 250  | 500  | 1000 | 2000 | 4000 | 8000 |
| 4TWB4018G | 76                        | 52.3   | 57.8 | 62.4 | 67.2 | 69.4 | 67.2 | 59.6 | 52.5 |
| 4TWB4024G | 76                        | 50.3   | 55   | 58.6 | 65.3 | 69.5 | 64.5 | 58.6 | 50.8 |
| 4TWB4030G | 78                        | 48.8   | 55.4 | 60.1 | 66.4 | 67.4 | 63.9 | 60.2 | 53.5 |
| 4TWB4036G | 76                        | 54.5   | 55.1 | 58.3 | 67   | 69.8 | 65.9 | 59.7 | 49.1 |
| 4TWB4042G | 76                        | 55.1   | 52   | 59.3 | 64.9 | 67.2 | 63.5 | 60.4 | 47.6 |
| 4TWB4049E | 76                        | 43.7   | 51.2 | 54.5 | 61   | 61.5 | 57.1 | 51.3 | 40.7 |
| 4TWB4061E | 76                        | 31.9   | 58.9 | 57.1 | 64.8 | 66.4 | 59.8 | 55.9 | 51.2 |

Note: Rated in accordance with AHRI Standard 270-2008.



# Electrical Data

Table 154. Unit wiring — standard efficiency

| Tons | Unit Model Number | Voltage Range | Standard Indoor Fan Motor <sup>(a)</sup> |                                      | Oversized Indoor Fan Motor |                                      |
|------|-------------------|---------------|--|--------------------------------------|----------------------------|--------------------------------------|
|      |                   |               | MCA                                      | Max Fuse Size or Max Circuit Breaker | MCA                        | Max Fuse Size or Max Circuit Breaker |
| 3    | T/YSC033G3        | 187-253       | 19.9                                     | 30                                   | —                          | —                                    |
| 3    | T/YSC033G4        | 414-506       | 9.5                                      | 15                                   | —                          | —                                    |
| 3    | T/YSC033GW        | 517-633       | 7.6                                      | 15                                   | —                          | —                                    |
| 4    | T/YSC043G3        | 187-253       | 25.4                                     | 35                                   | —                          | —                                    |
| 4    | T/YSC043G4        | 414-506       | 11                                       | 15                                   | —                          | —                                    |
| 4    | T/YSC043GW        | 517-633       | 9.4                                      | 15                                   | —                          | —                                    |
| 5    | T/YSC063G3        | 187-253       | 28.3                                     | 40                                   | —                          | —                                    |
| 5    | T/YSC063G4        | 414-506       | 12.9                                     | 20                                   | —                          | —                                    |
| 5    | T/YSC063GW        | 517-633       | 10.6                                     | 15                                   | —                          | —                                    |
| 3    | T/YSC036G3        | 187-253       | 19.9                                     | 30                                   | —                          | —                                    |
| 3    | T/YSC036G4        | 414-506       | 9.5                                      | 15                                   | —                          | —                                    |
| 3    | T/YSC036GW        | 517-633       | 7.6                                      | 15                                   | —                          | —                                    |
| 4    | T/YSC048G3        | 187-253       | 25.4                                     | 35                                   | —                          | —                                    |
| 4    | T/YSC048G4        | 414-506       | 11                                       | 15                                   | —                          | —                                    |
| 4    | T/YSC048GW        | 517-633       | 9.4                                      | 15                                   | —                          | —                                    |
| 5    | T/YSC060G3        | 187-253       | 28.2                                     | 40                                   | —                          | —                                    |
| 5    | T/YSC060G4        | 414-506       | 12                                       | 15                                   | —                          | —                                    |
| 5    | T/YSC060GW        | 517-633       | 9.9                                      | 15                                   | —                          | —                                    |
| 6    | T/YSC072F3        | 187-253       | <del>36.5</del>                          | <del>50</del>                        | 37.8                       | 60                                   |
| 6    | T/YSC072F4        | 414-506       | 18.2                                     | 25                                   | 19.4                       | 25                                   |
| 6    | T/YSC072FW        | 517-633       | 12.7                                     | 20                                   | 13.5                       | 20                                   |
| 7.5  | T/YSC090F3        | 187-253       | 38.2                                     | 60                                   | 44                         | 60                                   |
| 7.5  | T/YSC090F4        | 414-506       | 19.5                                     | 30                                   | 22.4                       | 35                                   |
| 7.5  | T/YSC090FW        | 517-633       | 14.7                                     | 20                                   | 16.7                       | 25                                   |
| 7.5  | T/YSC092F3        | 187-253       | 39.3                                     | 50                                   | 45.1                       | 50                                   |
| 7.5  | T/YSC092F4        | 414-506       | 18.5                                     | 20                                   | 21.4                       | 25                                   |
| 7.5  | T/YSC092FW        | 517-633       | 15.5                                     | 20                                   | 17.8                       | 20                                   |
| 8.5  | T/YSC102F3        | 187-253       | 43.3                                     | 50                                   | 46.4                       | 60                                   |
| 8.5  | T/YSC102F4        | 414-506       | 21.4                                     | 25                                   | 22.4                       | 25                                   |
| 8.5  | T/YSC102FW        | 517-633       | 16.8                                     | 20                                   | 18                         | 20                                   |
| 10   | T/YSC120F3        | 187-253       | 50.1                                     | 60                                   | —                          | —                                    |
| 10   | T/YSC120F4        | 414-506       | 23.5                                     | 30                                   | —                          | —                                    |
| 10   | T/YSC120FW        | 517-633       | 19.5                                     | 25                                   | —                          | —                                    |

**Note:** T/YSC092F (7.5 ton) models have a dual refrigeration system.

<sup>(a)</sup> No optional motors available for 3 to 5 tons. The standard motor is a multispeed, direct drive motor. The standard motor for 3-phase (6 to 8.5 ton models) is a belt drive motor.

*This is larger than original unit.*



## Product Specifications

| MODEL                                    | 4YCC4024A1060A | 4YCC4030A1070A | 4YCC4036A1070A | 4YCC4036A1090A |
|--|----------------|----------------|----------------|----------------|
| Motor — HP/R.P.M.                        | 1/34 / 3350    | 1/34 / 3290    | 1/34 / 3290    | 1/34 / 3075    |
| Volts/Ph/Hz                              | 230/1/60       | 230/1/60       | 230/1/60       | 230/1/60       |
| FLA                                      | .20            | .20            | .20            | .24            |
| <b>FILTER / FURNISHED</b>                | NO             | NO             | NO             | NO             |
| Type Recommended                         | THROWAWAY      | THROWAWAY      | THROWAWAY      | THROWAWAY      |
| Recmd. Face Area (sq. ft) <sup>(h)</sup> | 4.0            | 4.0            | 4.0            | 4.0            |
| <b>REFRIGERANT</b>                       | R-410          | R-410          | R-410          | R-410          |
| Charge (lbs.)                            | 5.24           | 6.94           | 7.2            | 7.2            |
| <b>CHARGING SPECIFICATIONS</b>           |                |                |                |                |
| Subcooling                               | 12°            | 11°            | 11°            | 11°            |
| <b>GAS PIPE SIZE (In.)</b>               | 1/2            | 1/2            | 1/2            | 1/2            |
| <b>DIMENSIONS</b>                        | H X D X W      | H X D X W      | H X D X W      | H X D X W      |
| Crated (in.)                             | 46 X 45 X 52   | 46 X 45 X 52   | 48 X 45 X 52   | 48 X 45 X 52   |
| <b>WEIGHT</b>                            |                |                |                |                |
| Shipping (lbs.) / Net (lbs.)             | 432 / 358      | 451 / 377      | 438 / 374      | 453 / 379      |

(a) Rated in accordance with AHRI Standard 210/240. AHRI standard rating conditions are: 80 D.B.67 W.B. entering air to indoor coil. 95 D.B. entering air to outdoor coil.

(b) Sound Power values are not adjusted for AHRI 270-95 tonal corrections.

(c) Ratings shown are for elevations up to 2000 ft. For higher elevations reduce ratings at a rate of 4% per 1000 ft. elevation.

(d) Convertible to LPG.

(e) This value is approximate. For more precise value, see Unit Nameplate.

(f) Standard Air — Dry Coil — Outdoor.

(g) Based on U.S. Government Standard Tests.

(h) Filters must be installed in return air stream. Square footages listed are based on 300 f.p.m. face velocity. If permanent filters are used size per manufacturer's recommendation with a clean resistance of 0.05" W.C.

RTU-2  
(4 ton)

| MODEL   | 4YCC4042A1060A | 4YCC4042A1090A | 4YCC4048A1070A |
|---|----------------|----------------|----------------|
| RATED Volts/PH/Hz                                 | 208-230/1/60   | 208-230/1/60   | 208-230/1/60   |
| Performance Cooling BTUH <sup>(a)</sup>           | 40500          | 40500          | 46500          |
| Indoor Airflow (CFM)                              | 1450           | 1450           | 1600           |
| Power Input (KW)                                  | 3.4            | 3.4            | 4.06           |
| EER/SEER (BTU/Watt-Hr.)                           | 12.0 / 14.00   | 12.0 / 14.00   | 11.50 / 14.00  |
| Sound Power Rating [dB(A)] <sup>(b)</sup>         | 74.6           | 74.6           | 72.5           |
| <b>PERFORMANCE HEATING<sup>(c)</sup></b>          |                |                |                |
| Input BTUH-1st Stage (Natural Gas) <sup>(d)</sup> | 60000          | 90000          | 70000          |
| AFUE  | 81             | 81             | 81             |
| Temp. Rise — Min/Max (°F)                         | 30 / 60        | 35 / 65        | 30 / 60        |
| Orifice Qty/Drill Sz. (Natural Gas)               | 2 / #37        | 3 / #37        | 2 / #33        |
| <b>POWER CONN. — V/Ph/Hz</b>                      | 208-230/1/60   | 208-230/1/60   | 208-230/1/60   |
| Min. Brch. Cir. Ampacity <sup>(e)</sup>           | 28.5           | 28.5           | 32.0           |
| Fuse Size — Max. (amps)                           | 45             | 45             | 50             |
| Fuse Size — Recmd. (amps)                         | 45             | 45             | 50             |
| <b>COMPRESSOR</b>                                 | SCROLL         | SCROLL         | SCROLL         |
| VOLTS/PH/HZ                                       | 208-230/1/60   | 208-230/1/60   | 208-230/1/60   |
| R.L. Amps — L.R. Amps                             | 16.7 / 109.0   | 16.7 / 109.0   | 19.6 / 130.0   |
| <b>OUTDOOR COIL — TYPE</b>                        | SPINE-FIN      | SPINE-FIN      | SPINE-FIN      |
| Rows/F.P.I  | 2 / 24         | 2 / 24         | 2 / 24         |
| Face Area (sq. ft.)                               | 15.63          | 15.63          | 20.54          |
| Tube Size (in.)                                   | 3/8            | 3/8            | 3/8            |
| <b>INDOOR COIL — TYPE</b>                         | MCHE           | MCHE           | MCHE           |
| Rows/F.P.I  | 2 / 16         | 2 / 16         | 2 / 16         |



RTU-3 (2tm) ✓

# Product Specifications

| MODEL                                  | 4YCC4024A1060A     | 4YCC4030A1070A     | 4YCC4036A1070A     | 4YCC4036A1090A     |
|--|--------------------|--------------------|--------------------|--------------------|
| RATED Volts/PH/Hz                      | 208-230/1/60       | 208-230/1/60       | 208-230/1/60       | 208-230/1/60       |
| Performance Cooling BTUH (a)           | 24600              | 28200              | 37000              | 37000              |
| Indoor Airflow (CFM)                   | 805                | 870                | 1190               | 1190               |
| Power Input (KW)                       | 1.99               | 2.39               | 3.08               | 3.08               |
| EER/SEER (BTU/Watt-Hr.)                | 12.0/ 14.00        | 12.0/ 14.00        | 12.0/ 14.00        | 12.0/ 14.00        |
| Sound Power Rating [dB(A)] (b)         | 66.6               | 70.0               | 69.3               | 69.3               |
| <b>PERFORMANCE HEATING (c)</b>         |                    |                    |                    |                    |
| Input BTUH-1st Stage (Natural Gas) (d) | 60000              | 70000              | 70000              | 90000              |
| AFUE                                   | 81                 | 81                 | 81                 | 81                 |
| Temp. Rise — Min/Max (°F)              | 30/ 60             | 30/ 60             | 30/ 60             | 35/ 65             |
| Orifice Qty/Drill Sz. (Natural Gas)    | 2 / #37            | 2 / #33            | 2 / #33            | 3 / #37            |
| <b>POWER CONN. — V/Ph/Hz</b>           | 208-230/1/60       | 208-230/1/60       | 208-230/1/60       | 208-230/1/60       |
| Min. Brch. Cir. Ampacity (e)           | 19.1               | 22.6               | 24.5               | 24.5               |
| Fuse Size — Max. (amps)                | 30                 | 35                 | 40                 | 40                 |
| Fuse Size — Recmd. (amps)              | 30                 | 35                 | 40                 | 40                 |
| <b>COMPRESSOR</b>                      |                    |                    |                    |                    |
| VOLTS/PH/Hz                            | 208-230/1/60       | 208-230/1/60       | 208-230/1/60       | 208-230/1/60       |
| R.L. Amps — L.R. Amps                  | 12.8 / 58.3        | 14.1 / 73.0        | 15.4 / 83.9        | 15.4 / 83.9        |
| <b>OUTDOOR COIL — TYPE</b>             |                    |                    |                    |                    |
| Rows/F.P.I                             | 2 / 24             | 2 / 24             | 2 / 24             | 2 / 24             |
| Face Area (sq. ft.)                    | 13.32              | 13.32              | 15.49              | 15.49              |
| Tube Size (in.)                        | 3/8                | 3/8                | 3/8                | 3/8                |
| <b>INDOOR COIL — TYPE</b>              |                    |                    |                    |                    |
| Rows/F.P.I                             | 2 / 16             | 2 / 16             | 2 / 16             | 2 / 16             |
| Face Area (sq. ft.)                    | 2.7                | 2.7                | 2.7                | 2.7                |
| Tube Size Width (in.)                  | .81                | .81                | 1"                 | 1"                 |
| Refrigeration Control                  | EXPANSION VALVE    | EXPANSION VALVE    | EXPANSION VALVE    | EXPANSION VALVE    |
| Drain Conn. Size (in.)                 | 3/4 FEMALE NPT     | 3/4 FEMALE NPT     | 3/4 FEMALE NPT     | 3/4 FEMALE NPT     |
| <b>OUTDOOR FAN — TYPE</b>              |                    |                    |                    |                    |
| DIA. (IN.)                             | 23.4               | 23.4               | 23.4               | 23.4               |
| DRIVE/NO. SPEEDS                       | DIRECT / 1         | DIRECT / 1         | DIRECT / 1         | DIRECT / 1         |
| CFM @ 0.0 in. w.g. (f)                 | 2350               | 2800               | 3080               | 3080               |
| Motor — HP/R.P.M                       | 1/12 / 810         | 1/6 / 825          | 1 / 5 / 825        | 1 / 5 / 825        |
| Volts/Ph/Hz                            | 208-230/1/60       | 208-230/1/60       | 208-230 / 1 / 60   | 208-230 / 1 / 60   |
| F.L. Amps/L.R Amps                     | .54 / .82          | .85 / 1.65         | 1.1 / 2.0          | 1.1 / 2.0          |
| <b>INDOOR FAN — TYPE</b>               |                    |                    |                    |                    |
| Dia. x Width (in.)                     | 10.62 X 10.62      | 10.62 X 10.62      | 10.62 X 10.62      | 10.62 X 10.62      |
| Drive/No. Speeds                       | DIRECT-3           | DIRECT-3           | DIRECT-3           | DIRECT-3           |
| CFM @ 0.0 in. w.g. (g)                 | SEE FAN PERF TABLE | SEE FAN PERF TABLE | SEE FAN PERF TABLE | SEE FAN PERF TABLE |
| Motor — HP/R.P.M.                      | 1/3 / 1050         | 1/2 / 1050         | 1/2 / 1050         | 1/2 / 1050         |
| Volts/Ph/Hz                            | 208-230/1/60       | 208-230/1/60       | 208-230/1/60       | 208-230/1/60       |
| F.L. Amps                              | 2.6                | 4.1                | 4.1                | 4.1                |
| <b>COMBUSTION FAN — TYPE</b>           |                    |                    |                    |                    |
| Drive/No. Speeds                       | DIRECT / 1         | DIRECT / 1         | DIRECT / 1         | DIRECT / 1         |



| EXHAUST FANS  | SERVICE                                 | MFR/MODEL                                  | POWER | MOTOR SIZE |
|---------------|---|--|-------|------------|
| EF-1          | TOWNHOUSES                              | GREENHECK SB-b110                          | 120/1 | 80 WATTS   |
| EF-2          | TOWNHOUSES                              | PANASONIC FV-05-11VKS1                     | 120/1 | 11.7 WATTS |
| EF-3          | OTHER APARTMENT UNITS                   | PANASONIC FV-05-11VKS1                     | 120/1 | 11.7 WATTS |
| EF-4          | RECYCLING 122                           | GREENHECK CSP-A390                         | 120/1 | 135 WATTS  |
| EF-5A, 5B, 5C | LAUNDRY/TRASH/JAN @ 2ND 3RD FLOOR UNITS | UNKNOWN, PENDING CLOTHES DRYER INFORMATION | ?     | ?          |
| EF-6          | 1ST FLOOR RESTROOMS (COMMON SPACE)      | GREENHECK CSP-A390                         | 120/1 | 135 WATTS  |
| EF-7          | TRASH COMPACTOR - FAN ON ROOF           | GREENHECK 080-VG                           | 120/1 | 1/10 HP    |