

INDOOR PACKAGED EQUIPMENT

SINGLE PACKAGE  
VERTICAL UNITS



VPC, VPH  
& VPP

# Single Package Vertical Air Conditioners and Heat Pumps



 **ENVIRO-TEC<sup>®</sup>**  
BY JOHNSON CONTROLS

# Packaged convenience for multi-story residential and commercial applications.

Single Package Vertical Air Conditioners and Heat Pumps offer the ultimate in HVAC design flexibility. The Single Package Vertical Heat Pump is a compact through-the-wall packaged system, capable of providing total heating and cooling functions for a single zone or multiple rooms. Unlike conventional horizontal equipment, each Single Package Vertical Heat Pump Unit has been designed with sufficient air handling capacity for ducted installations. The Single Package Vertical Heat Pump Units are ideally suited for the perimeter zones of buildings such as:

- Hotels and Motels
- High-Rise Apartments / Condominiums
- Hospitals / Nursing Homes
- Dormitories
- Renovated Office Space

The VP-Series unit is installed in a closet having an exterior wall. Wall mounting sleeves for various wall thicknesses are available for installation during building construction. Final installation is reduced to sliding the unit onto the mounting sleeve, and connecting the electrical supply. The result is a low cost installation, and allows delivery of the units to be deferred until just before occupancy.

## STANDARD FEATURES

### Models Available

- Air conditioner with electric heat (VPC)
- Air-to-air heat pump with electric heat (VPP)
- Air conditioner with hydronic heat (VPH)

### Construction

- All models are shipped as a factory tested through-the-wall packaged HVAC system
- Units install in a closet having an exterior wall
- Self supporting wall sleeve is factory supplied – no unit stand required (added value)
- Exterior grille is factory supplied – available in five standard colors or custom match (optional)
- Cabinet assembly is constructed of heavy gauge corrosion-resistant galvanized steel
- Unit interior (evaporator and condensing section) are insulated with 1/2" thick, high-density acoustic fiberglass insulation

Tonnage Capacities  
3/4 to 3 tons





- Models allow for service access to the reversing valve (VPP units only), electric heater, condenser blower/motor, and compressor
- An integral duct-collar is provided on the indoor blower discharge opening
- Factory provided intake and discharge grille
- Convenient indoor access to all parts and service needs
- Standard units come with provisions for outside air intake

### Compressors

- All models utilize a high-efficiency rotary or scroll compressor
- High efficiency rotary compressors on 3/4 and 1 ton and scroll compressors for 1-1/2, 2, 2-1/2 and 3 ton units
- Compressors are mounted on rubber isolators to minimize vibration transmission
- Internal overload protection provided on compressors
- Compressor enclosure insulated with 1/2 inch thick, 2-pound density insulation

### Refrigerant System

- Cooling capacities available in 3/4, 1, 1-1/2, 2, 2-1/2 and 3 tons
- R-22, 3/4 ton - 2 tons
- R-410A, 3/4 ton - 3 tons
- Air-to-air refrigerant coil
- Water-to-refrigerant coil
- Chassis base is fabricated from heavy gauge galvanized steel
- Quick connect plugs
- External high pressure manual-reset cutout switches are included in each compressor control circuit
- Standard time delay relays for anti-short cycle protection
- Each refrigeration circuit includes an adjustable bi-flow thermal expansion valve (with external equalizer), liquid line filter drier, and service gauge ports
- The reversing valve (heat pump units), is a pilot operated, sliding piston type with a replaceable magnetic solenoid coil
- A condensate drain connection is available via a female pipe thread fitting located on the bottom of the wall sleeve
- Each refrigeration circuit is thoroughly evacuated, and fully charged with refrigerant prior to shipment

### Evaporator and Condenser Coils

- Refrigerant-to-air heat transfer coils are constructed of internally enhanced copper tubes; mechanically bonded to enhanced aluminum plate fins

### Heating

- Electric heating available from 2KW to 10KW
- Hydronic heating available with 2 - 3 row coils

## Fan Assembly

- Forward curved, double-inlet and double-width, direct-drive centrifugal blowers are used for air movement
- Large diameter blower wheels are employed to provide required airflow performance at minimum sound levels
- Fan motors are PSC types, with minimum three (Hi-Med-Low), speeds on indoor fan and one speed on outdoor fan
- The PSC motors feature permanently lubricated bearings and are provided with internal thermal overload protection

## Electrical Components and Controls

- All units are ETL listed
- All units are factory wired with a 24-volt control circuit to allow for connection to a factory or field provided mechanical or electronic heat-pump thermostat
- Basic control functions include anti-short cycle compressor protection, random start delay, and positive compressor lockout in the event of high pressure/low temperature cutout
- The reversing valve solenoid coil shall be energized in cooling mode only (heat pump models)
- Standard non-fused electrical disconnect provided for service convenience and maintenance
- 50 VA Class II transformer
- Both cooling and heat pump models feature an ambient outdoor temperature sensor to lockout compressor operation below 40°F
- Factory provided low suction temperature thermostat to prevent evaporator icing during cooling demands with low outdoor air temperature

## Filters

- All models shipped with a 1-inch thick medium-efficiency throwaway filter
- Filters are accessible from front of unit

## Fresh Air Intake

- Factory provided mechanical fresh air intake with adjustable damper to allow for minimum fresh air code requirements

## OPTIONAL ACCESSORIES

- Sleeves for through-the-wall installation
- Painted intake grilles, available in various colors