

# SPECIFICATION

## GENERAL

Furnish and install Tuttle & Bailey model LPV fan powered terminals to provide air at constant volume/variable temperature for cooling of sizes and capacities scheduled or as shown on the plans. Fan powered unit(s) shall be factory assembled and wired with the fan motor, blower, mixing plenum and primary air damper assembly contained in a single unit housing.

## CONSTRUCTION

### Casing

Unit Casing shall be constructed of not less than 20 gauge galvanized sheet metal, with round or rectangular inlet collars of the proper size with flat, rectangular discharge openings. Unit casing shall also have access doors to gain entry to the unit for maintenance.

### Insulation

1. 1/2" Dual Density - Interior surface of unit casing is to be thermally and acoustically lined with a 1/2" thick fibrous glass blanket with a black top layer and a green core. The insulation is to comply with NFPA 90A, NFPA 90B, UL 181, and ASTM C 1071 and have an R value of 2.08 at 75 °F. Insulation is glued to the terminal unit
2. No Lining - The terminal unit is to be supplied with no acoustical or thermal insulation.
3. Enviroseal™ - Interior surface of unit casing is to be thermally and acoustically lined with a 3/8" engineered polymer foam insulation, fiber free insulation. Insulation complies with NFPA 90A, NFPA 90B, UL 181 and ASTM C 534. The R value is 4 at 75 °F). Insulation is glued and riveted to the terminal unit.

### Sensor

The unit shall be equipped with a sensor that samples duct differential pressure with no less than 24 points strategically located to represent equal duct areas. The sensor shall be the Tuttle & Bailey Flo-Cross® and will provide a differential pressure signal amplified to equal 3 times the duct velocity pressure that represents actual air flow with an accuracy of +/- 5% throughout the catalogued operating range of the unit. A length of one-half of one diameter of straight inlet duct is required before the Flo-Cross® sensor

## Damper Assembly

The damper assembly shall be constructed of two heavy-duty 22 gauge galvanized steel plates, sandwiching an elastomeric gasket to provide minimum leakage. Damper leakage shall not exceed 2% of maximum rated capacity or 10 CFM (whichever is greater) with inlet duct pressures up to 5" of water gauge. Damper blade will have a maximum angular travel of 90° to provide improved linearity and flow characteristics. Damper bearing shall be Delrin construction, provide noise free operation and require no lubrication.

## FAN SECTION

The fan section shall incorporate blowers with forward curved, all steel, dynamically balanced wheels with direct drive motors of the type specified. Blower shall be constructed of heavy gauge steel. Motors are to be 60 Hz, suitable for 120, 208, 240, or 277-Volt service. Motors shall have thermal overload protection, sleeve type bearings and be of the long life split capacitor type. Motors are to be single-speed and are to be equipped with a motor SCR. Shaded pole motors are not acceptable.

## Connections

Units shall incorporate a single point electrical connection. All electrical components shall be UL/ETL recognized and installed in accordance with the National Electric Code. All electrical components are to be mounted in a control enclosure. Unit shall bear ETL label.

## Controls

Controls for the unit are to be supplied by the controls contractor and are to be mounted, calibrated and tested in the field



## OPTIONS

### Unit Accessories

1. The unit shall be built to comply with Chicago Code. All control enclosures will include a dust tight control enclosure and a dust tight toggle switch, or if electric heat is provided, a remote disconnect switch will replace the dust tight toggle switch.
2. The unit shall be supplied with controls/motor toggle disconnect switch. This switch will disconnect all power to the terminal unit, which in turn will turn off the fan motor.
3. All control enclosures shall be supplied with dust tight sealing.
4. The motor(s) in all fan-powered units shall be fused at the terminal unit.
5. The unit shall be supplied with a filter on the induction inlet opening
6. The unit shall be supplied with hanger brackets to allow for a 1/2" threaded rod.

### Hot Water Heat

Hot water coils shall be enclosed in a minimum 20 gauge galvanized steel casing with flanged connection for attachment to metal ductwork. Coils shall be factory supplied and installed on the terminal unit. Fins shall be rippled and corrugated heavy gauge aluminum, mechanically bonded to copper tubes. Hot water tubes shall be copper with a wall of thickness of .16", with male solder header connections. Coils shall be leak tested at 360 psi. Coil performance data shall be rated and certified in accordance with the current edition of ARI standard 410.

### Electric Heat

Electric heat coils shall be supplied and installed by the fan terminal unit manufacturer. Coils shall be ETL/UL listed and shall be an integral part of the fan unit. Elements shall be derated nickel chrome supported by ceramic isolators. High Voltage control components shall be mounted in a NEMA1 certified control enclosure.

### Electric heat standard components:

1. Auto reset thermal cutout
2. Differential pressure airflow switch
3. Line terminal block
4. P.E. switch (for pneumatic controls only)
5. 80/20 NiCr element wires
6. Magnetic contractors

### Electrical heat optional accessories:

1. Fused door interlocking disconnect switch
2. Non-fused door interlocking disconnect switch
3. Fusing
4. Mercury contractors
5. Manual reset cutout
6. Dust tight sealing

