

SPECIFICATION

GENERAL

Furnish and install Tuttle & Bailey model SDV, single duct terminal units, to provide air at variable volume or constant volume for cooling of sizes and capacities scheduled or as shown on the plans. Single duct terminal units shall be factory assembled with a primary air damper assembly contained in a single unit housing.

CONSTRUCTION

Casing

Unit casing shall be constructed of not less than 22 gauge galvanized sheet metal, with round inlet collars of the proper diameter and Slip and Drive connection on discharge opening.

Insulation

1. 1/2" Dual Density - Interior surface of unit casing is to be thermally and acoustically lined with a 1/2" thick dual density fibrous glass blanket. The insulation is to comply with NFPA 90A, NFPA 90B, UL 181, ASTM C 1071 and have a 1.9 R value at 75 °F. This insulation is glued to the terminal unit, and all exposed edges are to be sealed.
2. 1" Dual Density - Interior surface of unit casing is to be thermally and acoustically lined with a 1" thick dual density fibrous glass blanket. Complies with NFPA 90A, NFPA 90B, UL 181 and ASTM C 1071. The R value is 3.8 at 75 °F. This insulation is glued to the terminal unit, and all exposed edges are to be sealed.
3. Insul-Guard™ - Interior surface of unit casing is to be thermally and acoustically lined with a 13/16" rigid duct board, resin bonded fibrous glass board, with a tough, damage-resistant, flame retardant and a reinforced aluminum foil facing. Complies with NFPA 90A, NFPA 90B, UL 181 and UL723. The R value is 3.5 at 75 °F. This insulation is to be glued to the terminal unit, and all exposed edges are to be sealed with foil tape or metal strips.
4. No Lining - The terminal unit is to be supplied with no acoustical or thermal insulation.
5. Galvanized Sheet metal Lining - Double wall, 1/2" dual density lining covered by sheet metal to prevent insulation fibers from entering the air stream. The R value is 1.9. Complies with NFPA 90A, NFPA 90B, UL 181 and UL 723.

6. Enviroseal™ - Interior surface of unit casing is to be thermally and acoustically lined with a 3/8" engineered polymer foam, fiber free insulation. Complies with NFPA 90A, NFPA 90B, UL 181 and ASTM C 534. The R value is 1.5 at 75 °F. This 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 gauge round galvanized steel plates, sandwiching an elastomeric gasket to provide minimum leakage. Damper blade will have a maximum angular travel of 90° to provide improved linearity and flow characteristics. Damper shaft shall be solid, two-piece, cast aluminum, with an indicator to show damper position and shall be riveted to the damper blades. Damper bearing shall be Delrin construction, to provide noise free operation and requiring no lubrication.



SPECIFICATION

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 NEMA 1 control enclosure. Unit shall bear an 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

Discharge Options

1. Unit shall have a round outlet.
2. Unit shall have multiple outlets as shown on schedule.
3. Unit shall have a integral discharge attenuator if required.
4. The terminal unit shall have an access door for access to the hot water heat coil.
5. Unit access doors shall have cam lock fastening device for quick access to inside of terminal unit.

Unit Accessories

1. The unit shall be built to comply with the Chicago Code. All control enclosures will include dust tight gasketing and toggle switch. If electric heat is provided, a remote disconnect switch will replace the toggle switch.
2. The unit shall be supplied with controls toggle disconnect switch. This switch will disconnect all power to the terminal unit.
3. All control enclosures shall be supplied with dust tight gasketing.
4. The unit shall be supplied with a transformer of voltage defined on schedule.
5. 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 Slip and Drive 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 and mechanically bonded to hot water tubes fin thickness of .0045. Hot water tubes shall be copper with a minimum wall thickness of 0.016", 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. Coil section to be supplied with access door, if required.

Electric Heat

Electric heat coils shall be supplied and installed by the single duct terminal unit manufacturer. Coils shall be ETL/UL listed and shall be slip in type construction. Elements shall be derated nickel chromium supported by ceramic isolators. High voltage control components shall be mounted in a NEMA 1 control enclosure.

Electric heat standard components:

1. Auto reset thermal cutout.
2. Secondary replaceable heat limiter.
3. Differential pressure airflow switch.
4. Manual reset cutout.
5. Line terminal block.
6. P.E. switch (for pneumatic controls only).
7. 80/20 NiCr element wires.
8. Magnetic contactors.

Electric heat optional accessories:

1. Door interlocking disconnect switch
2. Fusing
3. Mercury contactors
4. SCR

