

HVI JET INDUCTION TERMINALS

Furnish and install Anemostat type HVI Jet Induction Terminals / HVIR Jet induction Terminals with (Hot Water) (Electric Heat) where shown on plans and as scheduled.

PERFORMANCE

The air terminals shall have been tested in accordance with the ARI STD 880. The minimum operating static pressure and downstream duct static pressure shall be as scheduled for design induction capacities. The induction terminal shall be capable of operation down to .5" inlet static pressure, with .10" static pressure in the downstream duct, while inducing up to 50% secondary air as the induction damper is modulated. The discharge and radiated sound power levels shall not exceed the NC values as shown on the terminal schedule at the inlet static pressure shown, using attenuation assumptions as dictated by ARI 880, appendix E.

CONSTRUCTION

The unit casing shall be fabricated from minimum 22 gage zinc coated sheet steel. Sealant approved for duct use and conforming to NFPA 90A shall be used during construction of the assembly between mating parts to form a leak resistant assembly. The single inlet shall be of the diameter as scheduled. A 1" long rectangular discharge collar shall be provided for the discharge duct connection. The attenuator / venturi section shall be lined with thermal/acoustical glass fiber insulation that is 1" thick, high density ductboard. The casing of the terminal shall be lined with dual density thermal acoustical glass fiber not less than 1/2" thick, and shall conform to NFPA 90A and UL 181. Each terminal shall be provided with a bottom access door.

The primary air nozzle shall be constructed from aluminum, and shall vary the primary air flow rate by varying the area of the nozzle opening. The high velocity jet shall create sufficient negative pressure within the casing to induce the quantity of air as scheduled.

PNEUMATIC CONTROL SYSTEMS

The pneumatic controls shall be suitable for a 20 psi control system. The sequence of operation is based on Anemostat Control Package JP-3XXX. The pneumatic actuators shall be furnished and mounted by the unit manufacturer to sequence both the primary and induction dampers as required. The primary damper shall fail in an (open) (closed) position should the main air fail to 0 psi. The pneumatic velocity controller shall be furnished and mounted by the unit manufacturer, and the maximum and minimum flow setpoints shall be set at the factory, and shall be field adjustable. The reset span shall remain constant independent of the minimum and maximum flow setpoints. Controller air consumption shall not exceed .017 SCFM @ 20 psi. The unit controls shall be pressure independent and shall control flow within +5% of the design flow regardless of changes in system static pressure. The controller shall reset the flow, as required by the thermostat (furnished by the TC), with the same accuracy. (Optional) Controls shall be housed in a steel enclosure. A multi-point, cross flow, center averaging air flow sensor shall be located in the inlet of the terminal. The sensor shall amplify velocity pressure signal and provide closed-loop feedback of actual flow to the controller. Open loop systems are not acceptable. An identification label, piping diagram, and flow chart shall be included with each unit. Flow taps, separate from the sensor or controller taps shall be provided for flow adjustment in the field, if required.

ELECTRONIC ANALOG CONTROL SYSTEMS

The analog controls shall operate in a pressure independent manner, and shall control air flow within +5% of the design volume. The sequence of operation is based on Anemostat Control Package JA-5XXX. A transformer shall be furnished and mounted by the unit manufacturer to step down the primary line voltage. Controls shall be mounted in a steel control enclosure. The electric actuator shall be "clutch" type, and develop a minimum of 45-inch pounds of torque using an all metal gear train. The controller shall maintain a constant span regardless of maximum and minimum flow settings, and shall reset the primary flow linearly with respect to room temperature changes. The wall thermostat, factory set for primary design flow, shall be furnished by the unit manufacturer, for installation by the temperature control contractor. The flow adjustments shall be made at the wall thermostat utilizing a digital volt meter. An identification label, wiring diagram, and flow chart shall be included with each unit. A multi-point, cross flow, center averaging air flow sensor shall be located in the inlet of the terminal. The sensor shall amplify velocity pressure signal and provide closed-loop feedback of actual flow to the controller. Open loop systems are not acceptable.

HVIR JET INDUCTION TERMINALS

HOT WATER HEATING COILS

Where shown on the plans, hot water heating coils shall be provided by the unit manufacturer. The integral hot water coils shall be mounted upstream of the primary nozzle, in the high pressure chamber, by the terminal manufacturer. The coils shall be 1/2" copper tubing mechanically expanded in aluminum fins, 10 fins/inch. Refer to the heating schedule for capacities and performance requirements. Sequencing of the primary air flow and water valves shall be coordinated between the air terminal manufacturer and the controls contractor. Water control actuators and valves shall be furnished and installed under Division _____ of the specifications.

ELECTRIC HEATING COILS

Where shown on the plans, electric resistance type heating coils and coil controls of the slip-in type shall be furnished by the terminal manufacturer. The coil shall be field mounted in the discharge duct work, and shall be of sufficient distance downstream of the air terminal to prevent hot spots and nuisance tripping. This distance is as recommended by the unit manufacturer. Interconnections between the terminal controls and the electric coil shall be performed by the temperature controls contractor. All coils shall be UL or ETL listed, and include an air proving switch, primary disc type automatic reset, hi-limit, secondary hi-limit fusible links, magnetic contactors and/or PE switches per step, grounding terminal, door interlocking disconnect switch, and circuit fusing on heaters exceeding 48 amps. A wiring diagram shall be permanently affixed to the coil. Refer to the coil schedule for heater requirements.