

PULLOUT TITUS ZCOM DIFFUSER SPECIFICATION SECTION

1.0 DIRECT DIGITAL VARIABLE AIR VOLUME DIFFUSERS

- A. Furnish and install variable air volume diffusers at locations shown on the drawings. The diffusers shall be of the sizes and capacities scheduled on the drawings. The diffusers shall be the Zcom diffusers as manufactured by Titus.
- B. The variable air volume mechanism shall be an electronic mechanical device which functions to vary the diffuser discharge air opening to adjust supply air volume in response to room temperature. The VAV mechanism shall be a totally self-contained and replaceable module. All controls shall be accessible from the face of the diffuser, for ease of service.
- C. Controls shall be microprocessor-based and shall include the following:
 - a. VAV cooling (P + I) when the supply air temperature is less than the heating setpoint.
 - b. VAV heating when the supply air temperature is greater than the cooling setpoint.
 - c. Fully open purge cycle when the supply air temperature is greater than the heating setpoint and less than the cooling setpoint.
 - d. Automatic changeover.
 - e. Automatic supply air temperature and volume reset control.
 - f. Individual tamper-proof heating and cooling setpoint adjustment.
 - g. Individual tamper-proof heating and cooling minimum volume setpoint adjustment.
 - h. Linearized discharge control.
 - i. Maximum full close time cycles.
- D. The Zcom auxiliary heat function shall include a 120°F high limit cut-off, tamper-proof maximum occupied volume adjustment, system start-up protection and a 2 minute cycle delay.
- E. Controls shall be normally open on power failure or disruption. All setpoints shall be held in non-volatile memory to ensure proper operation after power loss.
- F. Diffusers indicated on the drawings as model Zcom shall contain a microprocessor control systems in which the temperature setpoints are adjustable through a wall mount setpoint adjust or remote hand held digital display unit, model Zapper. One Zapper shall accommodate all Zcom units for tamper-proof adjustment. Room temperature setpoints from 66° to 80°F shall be adjustable and displayed preceded by the active operating mode.
- G. Diffusers indicated on the drawings as model Zdrone shall be interfaced with their appropriate microprocessor based Zcom diffuser in multi-diffuser zones. Each Zdrone diffuser connected to a Zcom diffuser shall have a synchronized discharge opening control reaction which follows that of the Zcom diffuser.

2.0 POWER AND COMMUNICATION WIRING REQUIREMENTS

- A. All wiring, including control transformer(s) and power wiring to the transformer(s) shall be furnished and installed as part of the electrical specification.
- B. Communications wiring shall be 22 gauge twisted pair, stranded wire.
- C. Where auxiliary heating control is indicated, an 18 gauge, 2 wire connection shall be furnished and installed between the appropriate Zcom diffuser and a heater control relay or contactor.

3.0 CONSTRUCTION

- A. Ceiling diffusers shall be square, architectural, panel face diffusers.
- B. The diffuser shall have an 18 gauge steel face panel mounted on an aerodynamically shaped, one piece, seamless back pan. The diffuser face panel must be field removable by means of four positive locking clips. The exposed surface of the face panel shall be smooth, flat, and free of visible fasteners. The face panel cannot project more than 1/8" below the outside border of the diffuser back pan. The face panel shall have an aerodynamically shaped, hemmed edge. A single metal thickness on the edges of the face panel is not acceptable. Ceiling diffusers with a 24" x 24" full face shall have no less than an 18" x 18" face panel. The entire diffuser shall be constructed of steel, with an integral drawn inlet. The diffuser neck shall have a minimum 1-1/8" depth available for duct connection.
- C. Finish shall be a thermo set alky-melamine enamel paint, baked at 315°F. The paint hardness must be 2H to 3H. The paint must pass a 300 hour ASTM D-1654 Corrosive Environments Salt Spray Test without creepage, blistering, or deterioration of film. The paint must pass the 500 hour ASTM D-870 Water immersion Test. The paint must also pass the ASTM D-2794 Reverse Impact Cracking Test with 50 in-lb applied.

4.0 PERFORMANCE

- A. Alternatives to the specified product must provide published performance ratings that meet or exceed the performance of the Zcom ceiling Diffuser.
- B. All test data shall be obtained in accordance with ANSI/ASHRAE Standard 70-1991, and ARI Standard 880-94. A copy of the certified test results shall be provided upon request.