

# ULTRA-ZONE™

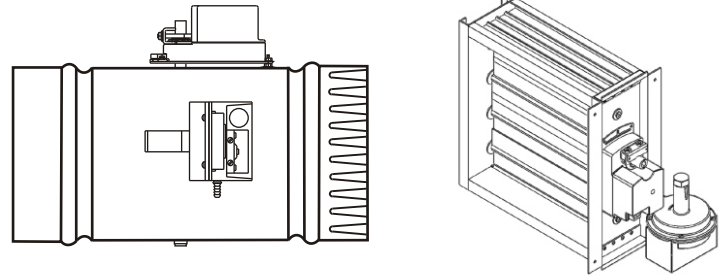
Forced Air Zone Controls

## SUBMITTAL SHEET

Model EBD  
Electronic By-Pass Damper

### Specifications:

Pressure Set point Range - .1" to 4" W.C.  
Sensing Element - Reevecote diaphragm  
Electrical - Two Field Connections (24VAC)  
Pressure - Barbed for 3/8" OD plastic tube  
Case - Cast Aluminum & 3/4" conduit opening  
Mounting - The Pressure Switch should be oriented so that the adjustment stem is pointing vertically up. *(If necessary, loosen the mounting bolt and adjust the pressure switch.)*



### How the Bypass System Works:

As the individual zone dampers open and close, the system static pressure will rise and fall. In order to maintain proper air flow and static pressure through the HVAC system, a bypass system incorporating a reversible type motorized damper and a static pressure control is used. The static pressure control monitors the static pressure and energizes the damper motor open or closed, to maintain the desired airflow and static pressure. The damper will modulate to hold the desired Static Pressure Set-Point.

### Description of Bypass Dampers:

ROUND BYPASS DAMPERS are fabricated from 20, 22, & 24 gauge galvanized steel. Shells are furnished with one straight end and one crimped end with rolled-in stiffening beads for rigidity. RECTANGULAR BYPASS DAMPERS are fabricated from mill finished, extruded 14 gauge aluminum, parallel blade design.

**All round bypass dampers are equipped with low leakage blade seals.**

\*Shell length=Diameter + 0.75

\*Medium duty - up to 1"W.C.

\*Heavy duty - up to 2"W.C.

\*Specify round - 8", 10", 12", 14", 16", 18", 20"

\*Specify rectangular - 12x8, 12x10, 12x12, 20x8  
20x10, 20x12

**\*Custom sizes are available, call for details.**

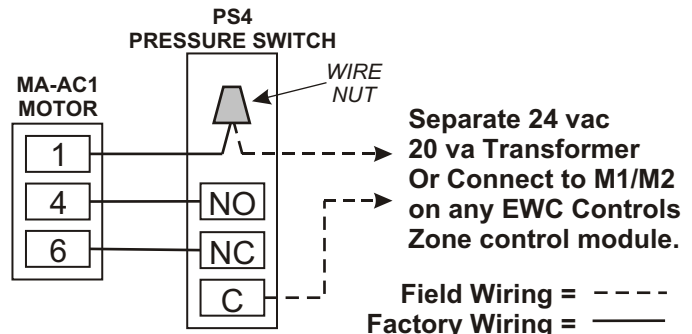
### Description of Static Pressure Control:

The static pressure control is a heavy duty air pressure switch, with a sensitive diaphragm. An integrated micro-switch and a visual ON/OFF indicator are also included. The spring adjustable switch has dual scales calibrated in millimeters and inches of water column for easy setup.

**The Electronic Bypass design includes the Model MA-AC1 Motor Actuator with Open & Closed LED indicators for Medium Duty applications, and a rugged LM-24 Belimo motor for Heavy Duty applications!**

**Both models are designed to be easy to install and service in the field.**

### "EBD" ELECTRONIC BYPASS MOTOR AND STATIC PRESSURE CONTROL DAMPER ASSEMBLY



**Note: Remove cover off of diaphragm to field wire.**

### SUBMITTAL FORM

SUBMITTED BY: \_\_\_\_\_  
JOB: \_\_\_\_\_  
ARCHITECT: \_\_\_\_\_  
ENGINEER: \_\_\_\_\_  
CONTRACTOR: \_\_\_\_\_  
LOCATION: \_\_\_\_\_

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### Installing the Bypass Damper and Static Pressure Control Assembly:

The bypass damper should be installed with the bypass air being discharged back into the return air plenum or above the ceiling if this area is used as a common return.

(See drawing).

Mount the pitot tube within 5 feet of the air handling unit, down stream of the By-Pass duct, on the center line of a straight section of supply duct (Observe direction of airflow arrow stamped on pitot tube mounting plate). The pitot tube is a 5" length of 1/4" O.D. rigid tubing to be connected to the pressure control with 3/8" O.D. plastic tubing,

The High-pressure tap of the static pressure control must be connected to the pitot tube. **The Low-pressure tap must be left open to atmosphere. Keep the 3/8" plastic tubing as short as possible with no kinks.** The pitot tube, plastic tubing, and mounting hardware are furnished with the Bypass Damper assembly.

### Adjusting the Static Pressure Control:

Before adjusting the pressure control, the installer should confirm the following:

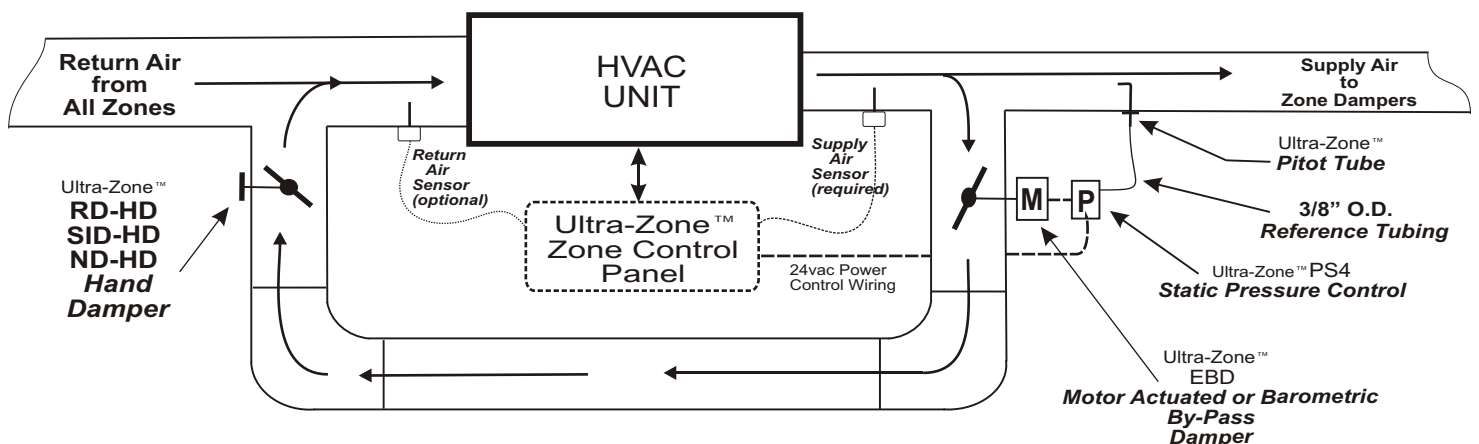
- (1) The HVAC System is functioning properly.
- (2) The system has been properly balanced.
- (3) The zone system is operating properly.
- (4) All zone dampers are in the open position.

### How To Proceed:

With the air handler running at the highest speed & full CFM rating and the bypass damper system powered, turn the static pressure adjusting screw until the top of the screw aligns with the static pressure scale setting you require. (Factory setting is .5" W.C.) Observe that the bypass damper should be closed when all zone dampers are open. If it's open or partially open, adjust the set point for a higher static. Then, start to close one or more zone dampers and observe as the static pressure control senses the increased air pressure and modulates the bypass damper, to maintain the set point you have chosen.

**Note:** The pressure switch should be mounted as close to vertical as possible to ensure proper operation.

## Bypass Damper and Static Pressure Control Assembly



Note: This drawing of the Bypass damper static pressure control and related duct work is intended to serve only as a guide, your actual duct work layout may differ substantially.