

## POWERS™ Controls HU 186 Room and Duct Hygrostats

### Product Description

The HU 186 Room and Duct Hygrostats are pneumatic instruments sensitive to slight changes in relative humidity. They feature adjustable sensitivity and bimetal temperature compensation to minimize temperature effects. The room hygrostat comes complete with standard cover and wall plate. The duct hygrostat is shipped inside the duct mounting box.

### Product Numbers

Product Numbers		Model
Direct Action	Reverse Action	
186-0013	186-0019	Room
–	186-0088	Duct
–	186-0090	
–	186-0091	

### Required Tools

- Small, flat-blade screwdriver
- 0 to 30 psi pressure gauge
- Rubber tube for pressure tap
- Needle nose pliers
- 3/16" wrench
- Drill bit for #8 sheet metal screw
- Psychrometer

### Expected Installation Time

30 minutes

### Prerequisites

- Read Technical Bulletin 155-210P25 (TB-145) for roughing-in information
- Read Technical Instructions 155-027P25, Use of Psychrometric Chart section.

### Troubleshooting

See Technical Instructions 155-027P25.

### Calibration

The hygrostat is factory calibrated to pass a control pressure of  $9 \pm 4$  psig at approximately 40% rh. The factory sensitivity setting is centered to give approximately 2 psig per 1% rh. Item numbers shown in parentheses are called out in Figure 1.

### Room Type

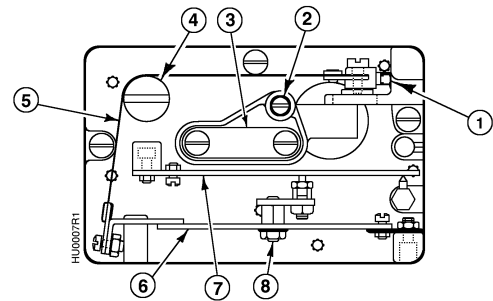


Figure 1. Hygrostat Assembly.

1. Remove the cover using the calibration tool.
2. Loosen the test screw (2) 1/2 turn. Slide the rubber tubing of a pressure gauge over the test port to measure the control pressure.
3. Use a psychrometer to measure the relative humidity near the hygrostat. See *Technical Instructions P/N 155-027P25, Use of Psychrometric Chart* section.
4. If the room humidity is higher than desired, use the calibration tool to turn the adjustment screw (1) counterclockwise to lower the humidity. A 1/4 turn of the adjustment screw will change the setpoint about 10% rh.
5. Cam post (4) is a coarse adjustment and should only be used if the desired setpoint cannot be obtained by the adjustment in Step 4. It is primarily a factory adjustment to obtain a parallel relationship between the nozzle lever (7) and the element lever (6).

## Duct Type

1. Connect pressure gauge to control connection marked "R" on the duct box.
2. Measure relative humidity in duct.
3. Remove cap plug on duct cover and insert calibration tool to make adjustments given in *Room Type*, Steps 4 and 5. See Figure 2.
4. Replace cap plug.

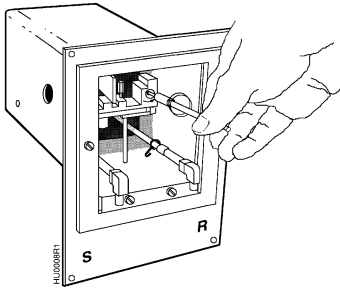


Figure 2 Hygrostat Calibration.

## Sensitivity Adjustment

Item numbers shown in parentheses are called out in Figure 1.

1. Carefully loosen sensitivity adjustment (8) using a 3/16-inch wrench.
2. Slide the sensitivity adjustment (8) to desired position on the element lever (6).

Sensitivity will be 4 psi per 1% rh at the end nearest the element, down to 1/4 psi per 1% rh at the end attached to the flexure pivot. An overtravel spring on the sensitivity adjustment assembly prevents damage to the nozzle on a reverse acting hygrosat. When the sensitivity is changed, the element must be recalibrated for setpoint.

## Installation

### Room Type

See *Technical Bulletin 155-210P25 (TB-145)* for instructions covering terminal roughing-in through the wall plate stage. The HU 186 plugs into the terminal connector through two holes in the wall plate. When facing the wall, the supply connection will be on the left for a horizontal installation and on the bottom for a vertical installation. Two captive mounting screws fasten the hygrosat body assembly to the wall plate. The cover is held in place by two button head cover screws which are tightened with the calibration tool. Wall Plate Kit No. 180-443 is included with the room hygrosat.

### Duct Type

Cut an opening in the air duct, using the front cover of the hygrosat as a template. Fasten the duct box flange to the duct using four # 8 sheet metal screws.

The installation is now complete.

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