2230-018

by Schneider Electric

Pneumatic Room Humidistat Data Sheet

The 2230-018 Pneumatic Room Humidistat is a proportioning-type device designed to control pneumatic valves or damper actuators associated with heating or cooling coils, humidifiers, air washers, or other humidifying or dehumidifying equipment to maintain constant relative humidity. This device uses a highly sensitive hygroscopic nylon ribbon and a pilot bleed relay with pneumatic feedback. Throttling range, action (direct or reverse), and set point are easily adjusted by graduated dials. Internal limit stops are available to restrict adjustment range when required.

The component parts are die cast aluminum, stainless steel, and glass-filled nylon. Diaphragms are fabric-reinforced neoprene. Air lines are connected to the humidistat with spring-reinforced plastic tubes, and both main and branch connections are provided with internal filters.

Ordering Data

TAC Wholesale Number	Replaces Model	Comments
2230-018	H18-301	Includes cover, (2) 1/4" x 3/16" reducers, 6" piece of plastic tubing, mounting plate and wall plate.

Accessories

TAC Wholesale Number	Replaces Model	Description
20-676	10-18	Aspirating box, stainless steel
20-695	10-15	Aspirating box
20-712	10-59	Internal adjustment stops
20-715	10-62	Clear thermostat guard
20-850	—	Thermostat mounting plate
20-881	N2-4	Calibration wrench
21-473	10-73	Drywall mounting bracket
21-800	10-72	Setpoint adjustment cover
21-876	10-76	Opaque thermostat guard
21-955	C10-42	Replacement cover
20-022	—	Thermostat Conversion Kit
22-138	MCS-GA	Branch tap gauge adaptor
900-002	—	Thermostat Calibration Kit

Specifications

Action: Proportional, direct or reverse (factory set for reverse action)
Range: 20% to 90% R.H.
Throttling range: Adjustable 5% to 15% (factory set @ 10%)
Main air pressure*: 20 psig operating, 30 psig maximum
Air consumption: 17 SCIM (DA), 30 SCIM (RA)
Ambient temperature limits:
Shipping & storage, -40 to 150°F (-40 to 65°C)
Operating, 40 to 140°F (4 to 60°C)
Calibration point: Factory calibrated @ 9 psig

*When set for the reverse acting mode, main air pressure MUST NOT drop below 16 psig. Pressure lower than 16 psig will cause the humidistat to switch from reverse to direct acting.

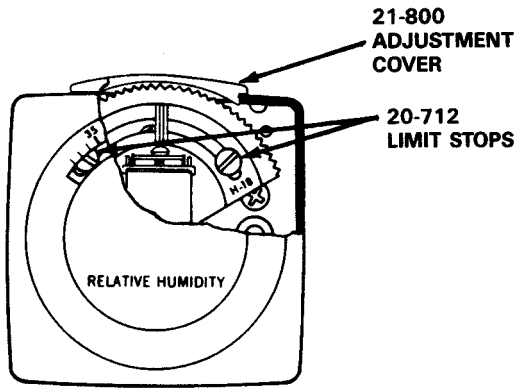
Caution: This device should be installed by a qualified person with due regard for safety, as improper installation could result in a hazardous condition.

Accessory Mounting Instructions

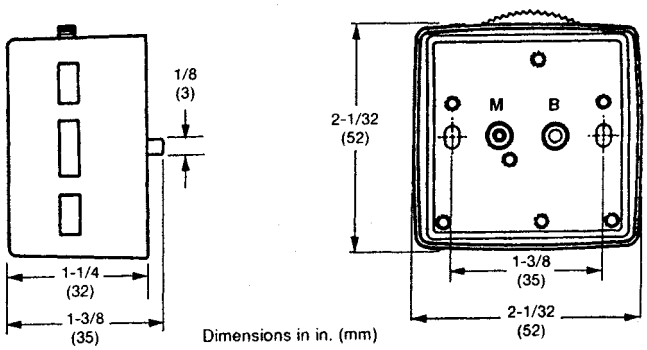
Concealed Adjustment - If concealment of the setpoint adjustment is required, a 21-800 adjustment cover may be installed.

Internal Adjustable Stops - 20-712 Limit Stops consist of two screws and two nuts. To install, move the set point adjustment to one extreme limit. Place nut in the depression of the top plate and move the adjustment cam over the nut to where the slot in the cam exposes the threads of the nut. Turn a stop screw into the nut far enough to allow the stop to slide in the slot.

Repeat on the other side. Move the set point adjustment to the desired temperature, using the internal setpoint indicator. Slide the stops to the desired limits and tighten both screws.



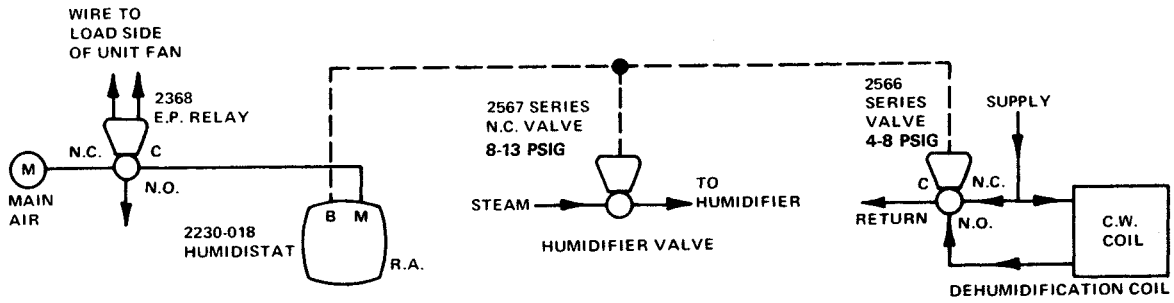
Mounting Dimensions



General Instructions

1. Humidistat should be located to sense average room humidity. Free circulation of air must exist and locations that are affected by drafts, radiant heat, water pipes, air ducts, etc., should be avoided.
2. Avoid outside wall locations. When this location is specified, use Model 20-716 Insulating Backplate.
3. Mount Humidistat only after wall surface has been finished. Allow the device time to reach ambient conditions before calibration.

Typical Application



Adjustments

The 2230-018 Humidistat is factory-set for a 10% throttling range, set in reverse action, and calibrated for 9 psig when the ambient relative humidity equals the set point. It should not require calibration upon installation unless the throttling range is changed.

If adjustments are to be made, refer to Figure 2. Remove cover by turning the Allen screw (8) until bottom of cover can be moved away from the wall, and proceed as follows.

Caution: Do not touch nylon ribbon.

To Set Action

Direct Action

Rotate the switching screw (3) ten complete turns counterclockwise. This change should not interfere with the factory calibration or T.R. setting, and no further adjustment should be necessary.

Reverse Action

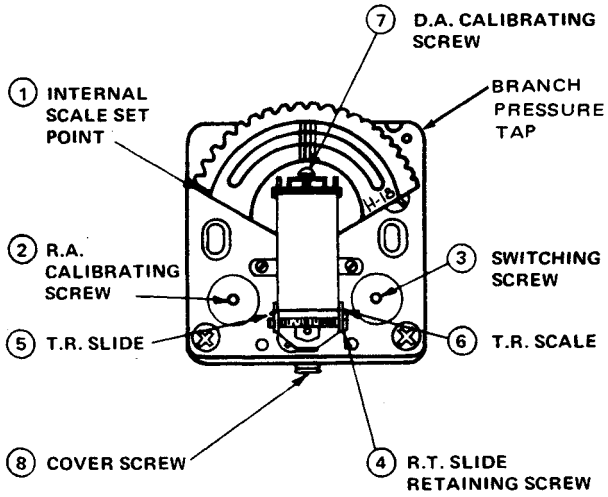
Control is factory set in reverse acting mode. If control is set in direct acting mode, to restore to reverse action, rotate the switching screw (3) clockwise until it becomes snug. **Do not force the screw.**

To Set Throttling Range

To change the throttling range, install a test gauge in the branch and rotate the cam by adjusting the set point until 8-10 psig branch pressure.

To Calibrate And Set Control Point

To check humidistat calibration, install a test gauge in the branch and rotate the cam by adjusting the setpoint until 8-10 psig branch pressure is obtained (R.H. must be within the range of the humidistat). Loosen the T.R. slide retaining screw (4) and slide the T.R. slide (5) to the desired throttling range setting on the T.R. scale (6), making sure to keep the T.R. slide (5) parallel with the T.R. slide retaining screw (4). Tighten this screw to secure the slide (do not over-tighten). Adjust the D.A. calibrating screw (7) to restore 8-10 psig branch pressure.



Reverse Acting

To change calibration in the reverse action mode, adjust setpoint as given for the calibration check procedure. Adjust the R.A. calibrating screw (2) to obtain 8-10 psig branch pressure. Clockwise rotation of screw (2) causes branch pressure to decrease; counterclockwise rotation causes it to increase. Do not force screw (2).

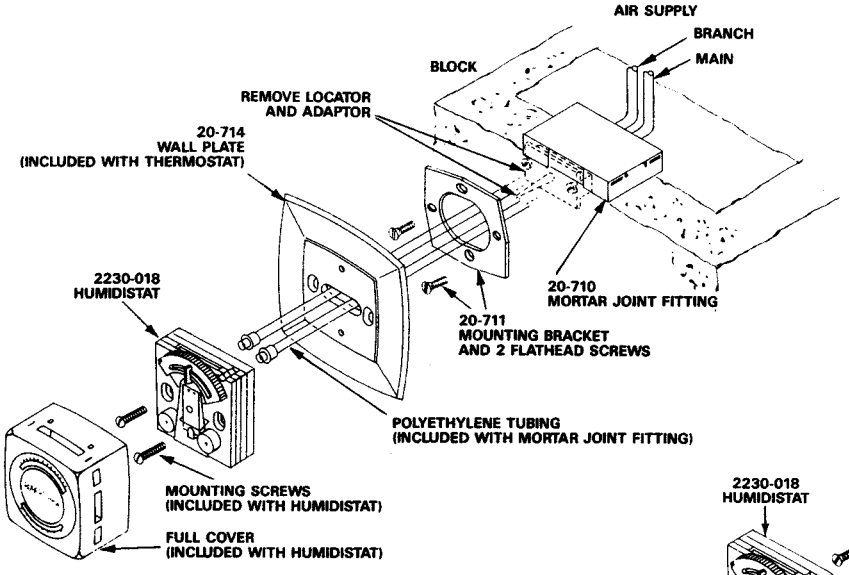
Direct Acting

To change calibration in the direct action mode, proceed as given for the calibration check. Then adjust the D.A. calibrating screw (7) to obtain 8-10 psig branch pressure.

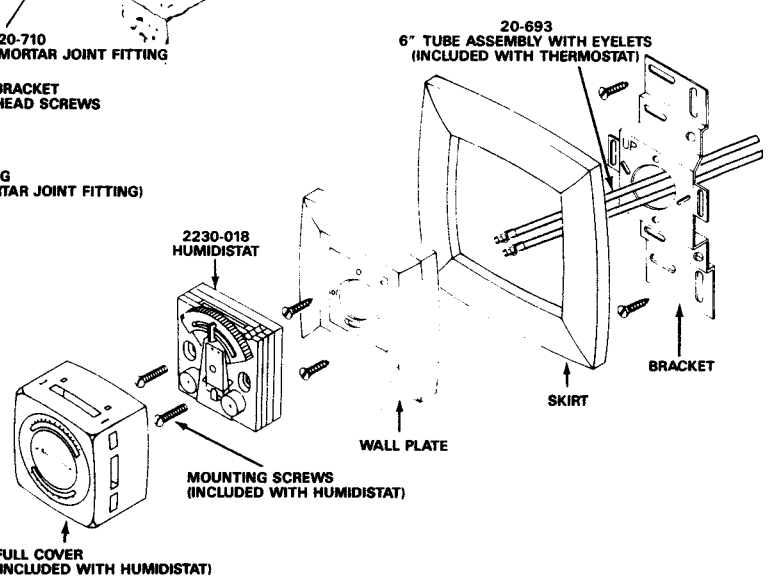
To synchronize D.A. and R.A. calibrations, insert test gauge in branch line and adjust setpoint to actual humidity, as described above. Rotate switch screw (3) clockwise until it is snug. Then rotate ten turns counterclockwise and adjust D.A. calibrating screw (7) for 8-10 psig branch pressure. Then rotate switching screw clockwise until snug, and adjust the R.A. Calibrating Screw (2) for 8-10 psig branch pressure. The instrument is now synchronized from R.A. to D.A. and may be used in either mode without change in calibration.

Replace cover after making adjustments.

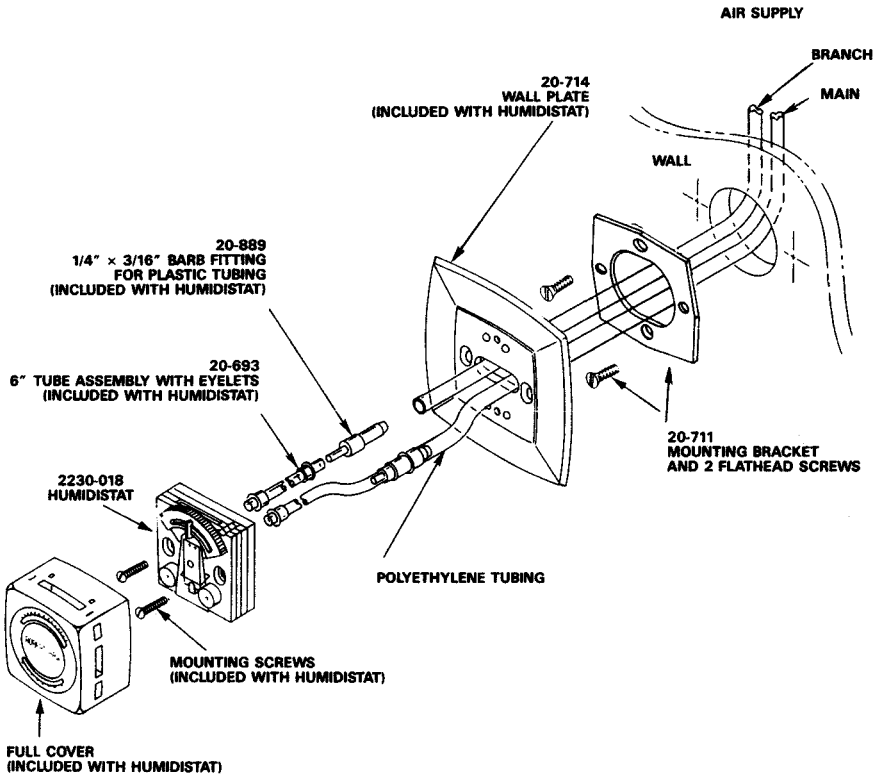
Mounting Methods



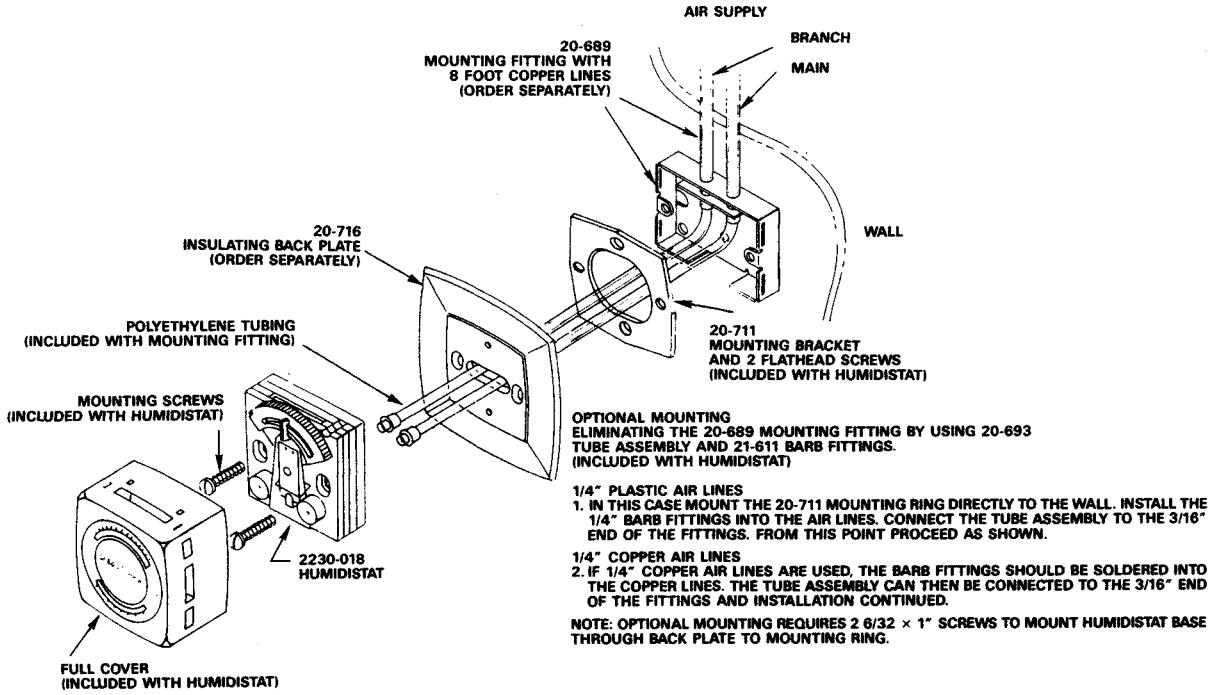
2230-018 INSTALLATION USING MOUNTING BOX IN MASONRY WALL



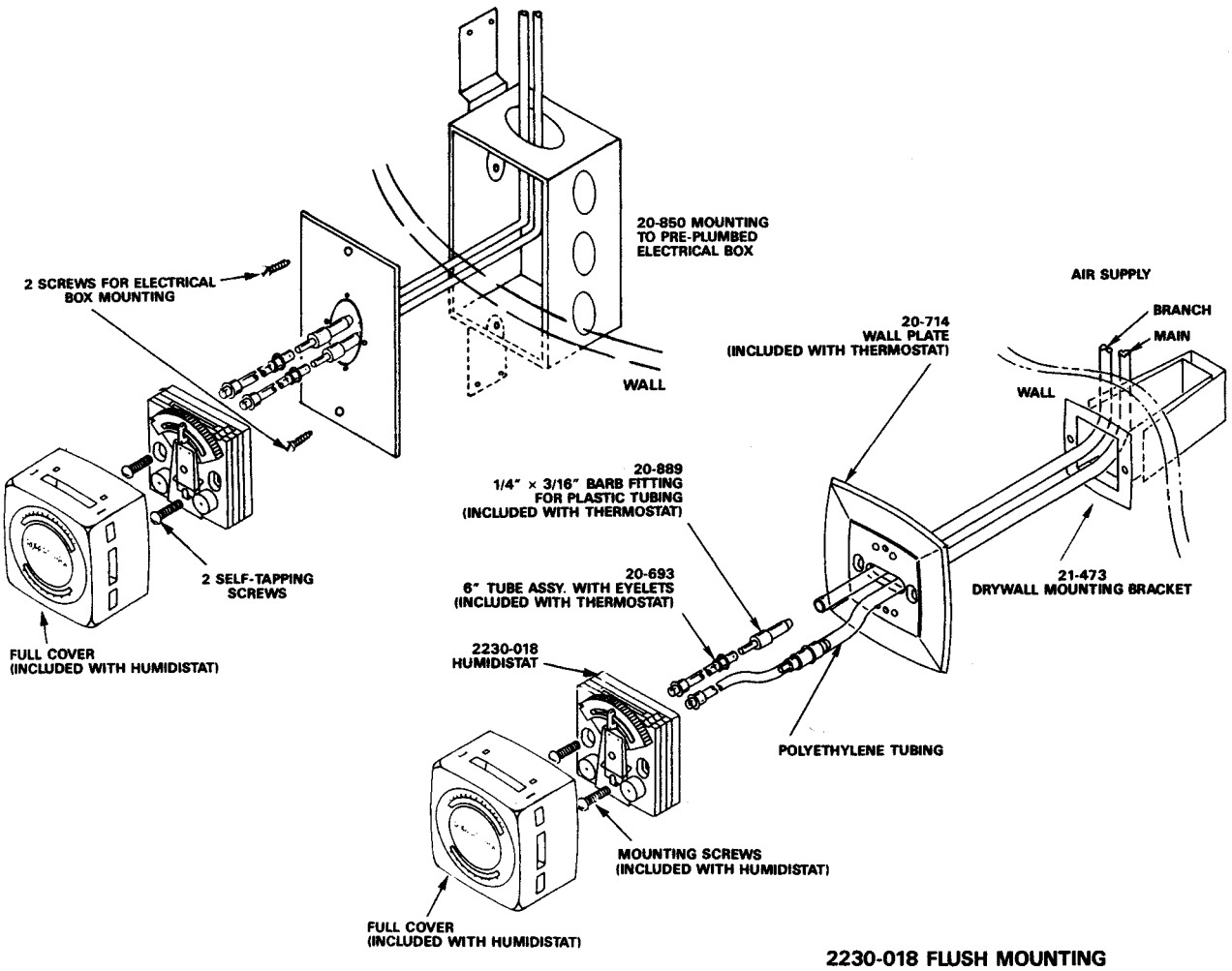
MOUNTED WITH 22-022 WALL PLATE & SKIRT (MOUNTING SCREWS INCLUDED WITH KIT)



2230-018 FLUSH MOUNTING



2230-018 SURFACE MOUNTING



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