

**Pneumatic Two-Pipe Room Thermostats
Installation Instructions**

Application

The 2212-112 and 2212-113 Series Pneumatic Room Thermostats are designed for proportional control of pneumatic devices and actuators in environmental control systems. These two-pipe thermostats incorporate a highly sensitive bimetal thermostatic element and a pilot operated relay with pneumatic feedback for accuracy and stability over the entire operating range.

These thermostats have a serrated thumb wheel for setpoint adjustment.

Specifications

Action: Proportional.

Setpoint Range: 55 to 85 °F (13 to 29 °C).

Throttling Range: 2 to 12 °F, adjustable.

Supply Air Pressure: 20 psig.

Maximum Air Pressure: 30 psig.

Main Air Consumption: 15 scim.

Calibration Point: 9 psig branch line pressure when ambient equals setpoint (factory-set).

Setpoint Adjustment: Serrated thumbwheel.

Construction:

Mechanical Components, Die cast aluminum, stainless steel, and glass-filled nylon.

Diaphragm, Fabric-reinforced Neoprene.

Air Lines, Connect to thermostat nipples with spring-reinforced plastic tubes.

Branch Connections, Equipped with internal filters.

Environment:

Humidity: 5 to 95% relative humidity, non-condensing.

Table-1 Model Chart — Thermostats.

Wholesale Number	Replaces Model	Action	Description
2212-118	T18-301	Direct	Includes (2) 1/4" x 3/16" barbed couplings, 20-693 tubing, 20-714 wall plate, 20-711 mounting plate, and mounting screws.
2212-119	T19-301	Reverse	

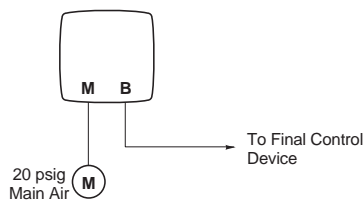
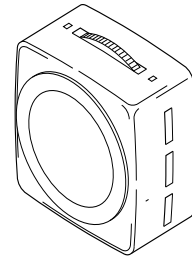


Figure-1 Piping Diagram.



Accessories

Part Number	Replaces Model	Description
Accessories		
20-660	6-441	Cover screw
20-707	10-53	Metal thermometer guard
20-712	10-59	Internal stop kit
20-715	10-62	Clear cover thermostat guard
21-876	10-76	Opaque cover thermostat guard
21-928		Cover, gray plastic with blank dial
21-930		Cover, white plastic with °F/ °C dial
21-933		Cover, gray plastic with humidity dial
Calibration		
20-881	N2-4	Thermostat calibration wrench
22-138	MCS-GA	Branch tap gauge adaptor
900-002		Thermostat calibration kit
Installation		
20-850		Thermostat mounting plate
22-021		Universal wall mounting kit
22-022	N5-95	Thermostat conversion kit
22-023		Thermostat conversion kit, white
22-024		Thermostat mount bracket
10-82-SS		Outlet box mounting plate S.S.
21-473		Snap-in drywall mounting

Location

Caution:

- Do not locate the thermostat near sources of heat or cold, such as lamps, motors, sunlight, or concealed ducts or pipes. Doing so will affect the accuracy of the thermostat.
- Avoid installing the thermostat on outside walls. If such a location is necessary, mount the thermostat on an insulated back plate.
- Mount thermostats *only after the wall surfaces have been finished.*

Locate the thermostat where it will be exposed to an unrestricted circulation of air, which represents the average temperature of the controlled space.

Installation

- Tools (not provided):
 - Appropriate screwdriver for mounting the thermostat
 - 20-881 Thermostat calibration and cover screw wrench (or 1/16" and 1/4" hex wrenches)

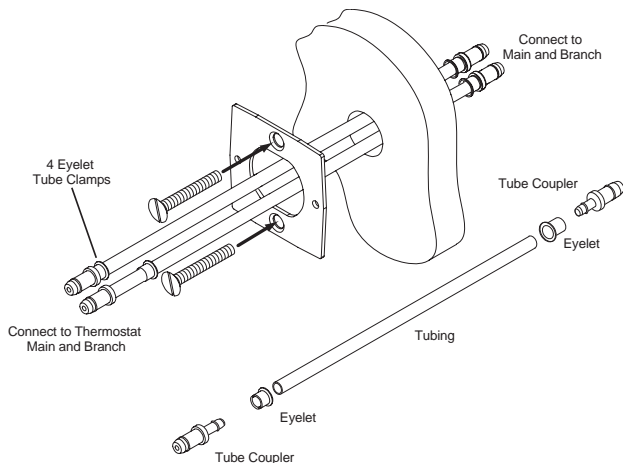


Figure-2

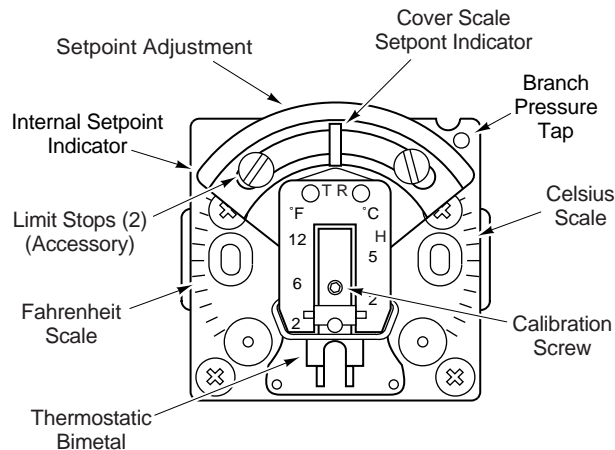
- Assemble the eyelets and two tube couplers to tubing.
- Connect the assembly by inserting the tube couplers into existing tubing in the wall (Figure-2). Note which connection is Main and which connection is Branch.
- Pull tubing through center hole in mounting plate and screw mounting plate to wall with flat head screws. Cut tubing and insert two couplers. The Main and Branch tubing is connected into the corresponding ports on the thermostat (Figure-1).
- Affix thermostat to mounting ring with round head screws, taking care not to kink the tubing.

Calibration and Throttling Range Setting

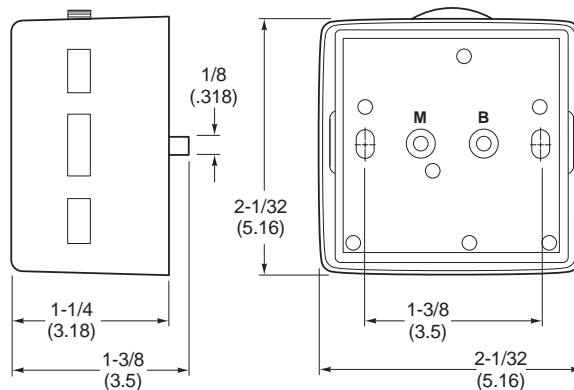
The thermostats are factory calibrated and are shipped with the throttling range set at 3 °F. They should not require calibration upon installation. However, if it is necessary, change the calibration or throttling range setting as follows:

- Remove the thermostat cover, using a 20-881 thermostat wrench (1/16" hex wrench), and install a 22-138 branch tap gauge adaptor into the branch pressure tap hole.
- Measure the ambient temperature with an accurate thermometer. This temperature *must be within the range of the thermostat*.
- Move the setpoint adjustment to the measured ambient temperature, using the internal setpoint indicator.

- Taking care not to breathe on, or place the hand near the bimetal, use a 20-881 thermostat wrench (1/16" hex wrench) to turn the calibration screw until the branch line pressure indicates 9 psig. Clockwise rotation increases the branch line pressure. Counterclockwise rotation lowers the branch line pressure.
- Reinstall the thermostat cover and set the thermostat to the desired setpoint.



Dimensional Data



Dimensions are in inches (mm).