

T-4002 Room Thermostat

The T-4002 Room Thermostat is a single temperature controller that provides a proportional output air signal to modulate pneumatic controlled devices in response to a temperature change.

Models

Action	Mounting	T-4002 Suffix
Direct	Horizontal	-8008
Reverse	Horizontal	-8009

Specifications

Supply Pressure	91 to 175 kPa (13 to 25 PSIG); Nominal 140 kPa (20 PSIG) Air Supply Must Be Clean, Dry, and Oil Free
Sensitivity	Adjustable from 9 to 50 kPa/°C (.75 to 4 PSI/°F); Factory Set at 31 kPa/°C (2.5 PSI/°F)
Air Consumption	5.5 mL/s (20 SCIM)
Output Flow Capacity	109 mL/s (400 SCIM)
Ambient Temp Limits	-29 to 54°C
Air Connections	Barbed Fittings for 5/32 in. O.D. Polytubing

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

Factory Calibration

The T-4002 is factory calibrated to send a 56 ± 7 kPa (8 ± 1 PSIG) output signal when the room temperature is at the setting on the dial. The element (and dial) is calibrated at 140 kPa (20 PSIG) supply. (Dial at 20°C).

Mounting

Note: When handling the unit, leave the front of the blisterpack on to protect the instrument until mounting is complete.

Room thermostats can be connected directly with 5/32 in. O.D. polytubing to barbed fittings on the back of the unit. The fittings are designated "S" for supply and "O" for output. If the installation was roughed in with

1/4 in. polyurethane tubing, use short lengths of black 5/32 in. tubing as couplers to make the connection. Secure the thermostat tight against the mounting bracket with hex head screws on the corners of the unit.

If the installation was roughed in with a plastic terminal connector on the mounting bracket, simply fit the barbed fittings into the terminal connector and secure the thermostat tight against the mounting bracket with the hex head screws on the corners of the unit.

If the thermostat is to be installed on an old T-4000 copper tube pipehead, install two 13 mm long, 5/32 in. pieces of polyurethane tubing on the fittings. Install the thermostat over the pipehead and secure the unit tight against the mounting bracket.

Set Point Adjustment (See Fig. 2)

1. Furnish 140 kPa (20 PSIG) supply pressure to the instrument.
2. Determine the exact temperature at the element.
3. Turn the set point dial to that temperature.
4. Turn the calibration screw to provide an output pressure equal to the mid spring range of the controlled device.
5. Turn the set point dial to the desired temperature.

Operational Checkout

1. Furnish 140 kPa (20 PSIG) supply pressure to the instrument.
2. Slowly increase the dial setting.

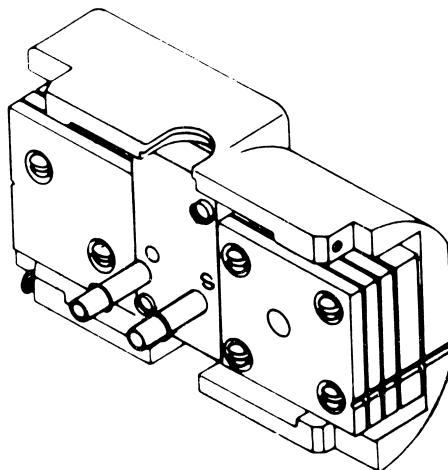


Fig. 1: Back View of Instrument

3. Check for a gradual decrease in output pressure on the direct acting (DIR) model or increase in output pressure on the reverse acting (REV) model.
4. Slowly decrease the dial setting.

Check for a gradual increase in output pressure on the DIR model or decrease in output pressure on the REV model.

6. If a pressure buildup and drop is not observed as mentioned above, refer to Repair Information.

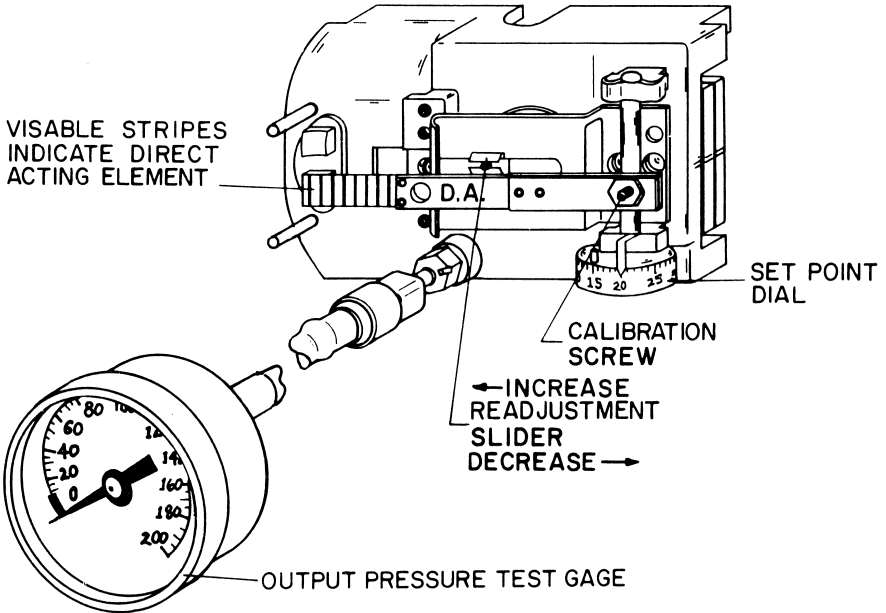


Fig. 2: T-4002 Adjustments

Sensitivity Adjustment

The T-4002 is factory set at 31 ± 6 kPa/°C (2.5 ± 0.5 PSI/°F). Some situations may require a sensitivity adjustment for proper control system operation. To do so, move the sensitivity slider to the left to increase or to the right to decrease the sensitivity setting.

If the output pressure changes due to moving the slider, restore the output pressure to its original value by turning the adjustment screw on the slider clockwise to decrease or counterclockwise to increase the pressure.

Note: This screw is not intended for set point calibration. Refer to Fig. 2.

Repair Information

If the T-4002 fails to operate within its specifications, refer to the Repair Parts Manual for appropriate repair parts.

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