



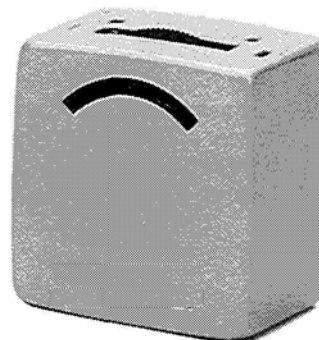
TAC
 1354 Clifford Avenue
 P. O. Box 2940
 Loves Park, IL 61132-2940
 www.tac.com

Unit Temperature Controls General Instructions

APPLICATION

The T460 Series unit Temperature Controllers have been designed for the proportional control of pneumatic devices and actuators in environmental control systems. These devices are designed primarily as return air controllers in induction units, fan coil units, and unit ventilators.

These two pipe controllers incorporate a receiver controller which when coupled with the highly sensitive remote bimetal sensor system, provides accuracy and stability over the entire operating range. Models are available in direct or reverse acting only, or dual pressure summer/winter models for heating and cooling applications (See Table-1 Specifications). Setpoint adjustment is accomplished by means of a serrated "thumb wheel". A "cooler/warmer" cover with graduated marks representing 5°F increments from 65° to 85°F is provided with each controller.



SPECIFICATIONS

Setpoint Range: 65° to 8 °F.

Throttling Rang: 4 °F fixed.

Sensitivity: 2.5 psig/°F fixed.

Environment:

Maximum Ambient Temperature, 140°F (60°C).

Main Air Pressure: Clean, dry, oil free air required (ref. EN-123).

Nominal,

T460-301 16 psig RA, 25 psig DA.

T461-301 20 psig.

T462-301 20 psig.

T463-301 16 psig DA, 25 psig RA.

Maximum, 30 psig.

Connections: Fittings for 1/4" O.D. polyethylene tubing.

Air Consumption:

T460-301, 0.017 scfm @ 16 psig, 0.026 @ 25 psig.

T461-301, 0.017 scfm @ 16 psig.

T462-301, 0.017 scfm @ 16 psig.

T463-301, 0.017 scfm @ 16 psig, 0.026 @ 25 psig.

Adjustments: External or concealed.

Calibration Point: Factory calibrated @ 9 psig for T461 & T462, 12 psig for T460 and T463.

Mounting: Using the mounting bracket, purchase separately, or wall mounting.

Dimensions: See Figure 1.

ACCESSORIES

- N-2-4 1/16" Hexhead wrench
- 10-72 Setpoint adjustment cover
- 220-07 Mounting bracket

Table-1 Specifications.

Model Number	Action	Comments
T460-301	RA @ 16 psig DA @ 25 psig	Includes Cover and Remote Bimetal Sensor
T461-301	Direct	
T462-301	Reverse	
T463-301	DA @ 16 psig RA @ 25 psig	

Table-2 Replacement Parts.

Model Number	Description
100-50	Replacement Sensor for T460-301 & T462-301
100-51	Replacement Sensor for T461-301 & T463-301
C13-42	Replacement Cover

PRE-INSTALLATION

Inspection

Visually inspect the carton for damage. If damaged, notify the appropriate carrier immediately. Visually inspect the device for obvious damage due to shipping. Return damaged parts to place of purchase.

Required Installation Items

- Piping Diagrams
- Tools (not provided):
Appropriate screwdrivers for mounting screws
- Appropriate accessories
- Mounting bracket screws (provided)
- Mounting screws (not provided)

INSTALLATION

Caution:

1. Installer must be a qualified, experienced technician.
2. Make all connections in accordance with the piping diagram.
3. Do not locate the transmitter in areas subjected to excessive vibration, or corrosive atmosphere.
4. Do not exceed ratings of the device.

Clean, Dry, Oil Free Air Supplies for Pneumatic Systems

Caution: A refrigerated air dryer, particulate filter, and a coalescing filter will provide clean, dry, oil free air required (reference EN-123).

Compressor oil must be non-paraffin mineral base or naphtha base. Synthetic or paraffin base oils will destroy pneumatic controls and void the warranty.

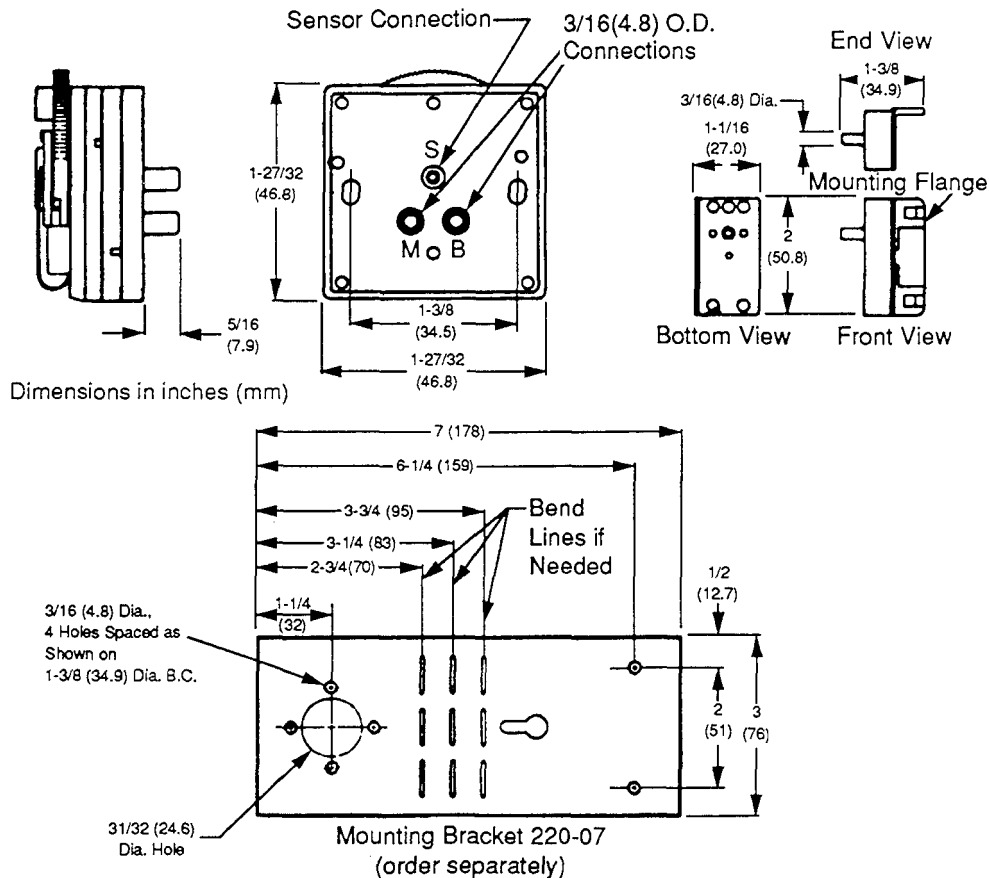


Figure-1 Mounting Dimensions.

MOUNTING INSTRUCTIONS

The unit controller, with cover installed, and the sensor are packaged together. The mounting bracket (220-07 order separately), shown in Figure-1, may be attached to the controller without removing the cover by using mounting screws. The unit, with the bracket, may then be mounted inside the unit end compartment.

If concealment of the setpoint adjustment is required, a concealed adjustment clip Model 10-72 (order separately) can be snapped into slot in the top of the cover.

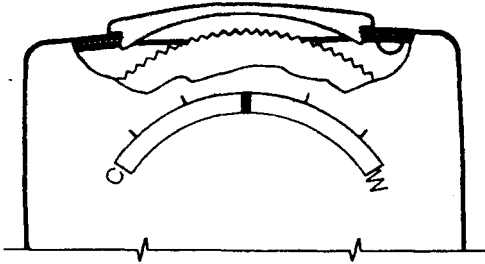


Figure-2 Adjustment Cover.

Caution: To prevent damage to its open sensing element during construction, the protective plastic cover should be left on an installed sensor until ducts have been cleaned and control air pressure can be applied to the transmission line from the controller.

Note: The sensor element must be mounted in the horizontal position, with the connection down. Maximum distance to controller is 200 ft.

For wall mounting the unit controller, remove cover and mount on regular hardware and replace cover.

CALIBRATION

(See Figures-3 and 4)

If recalibration should become necessary, install a test gauge in the branch line and move the Setpoint Adjustment to the measured ambient temperature, using the Internal Setpoint Indicator.

T460-301 and T463-301

See Figure-3:

1. Set main air pressure to 16 psig, and turn Calibration Screw (1), using N-2-4 (1/16" hexhead wrench), until the test gauge indicates 12 psig. Clockwise rotation increases the branch pressure.
2. Raise main air pressure to 25 psig and turn Calibration Screw (2) until the test gauge indicates 12 psig. Counterclockwise rotation increases the branch pressure.

If it is necessary to adjust the switchover point:

- a. Set main air pressure to 21 psig and move Setpoint Adjustment completely clockwise for T460-301 or completely counterclockwise for T463-301.

- b. Adjust Switchover Calibration Screw to where branch pressure just drops to 0 psig.

Caution: Do not force the calibration screws. If action is not obtained when screw is turned, check for proper direction of rotation. The bimetal in the sensor may be raised or lowered to test action.

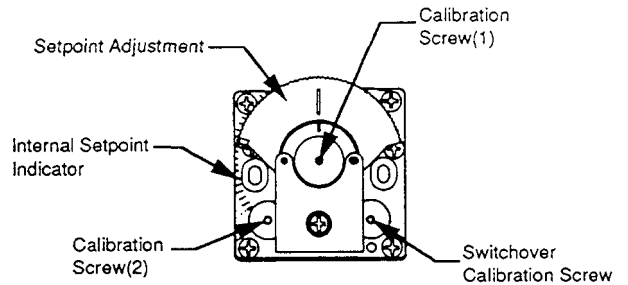


Figure-3 T460-301 & T463-301 Adjustment & Calibration.

T461-301 and T462-301

See Figure-4:

1. Set main air pressure to 20 psig and turn Calibration Screw until the test gauge indicates 9 psig. Clockwise rotation increase the branch pressure.

Caution: Do not force the calibration screws. If action is not obtained when screw is turned, check for proper direction of rotation. The bimetal in the sensor may be raised or lowered to test action.

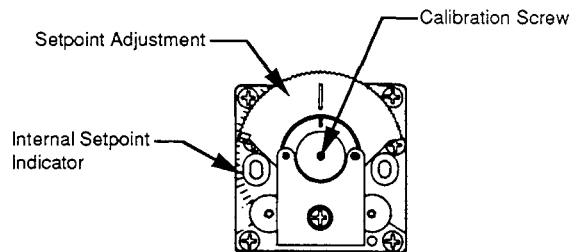


Figure-4 T461-301 & T462-301 Adjustment & Calibration.

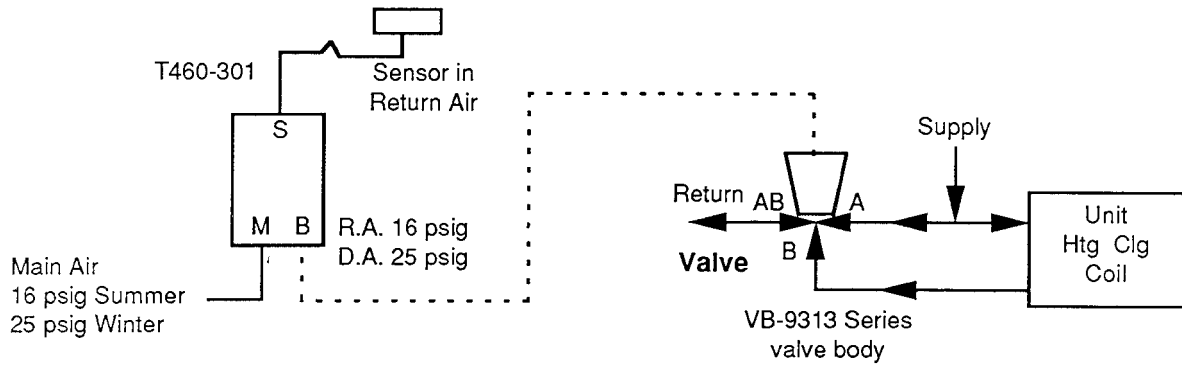


Figure-5 Typical T460-301 Summer/Winter Application.

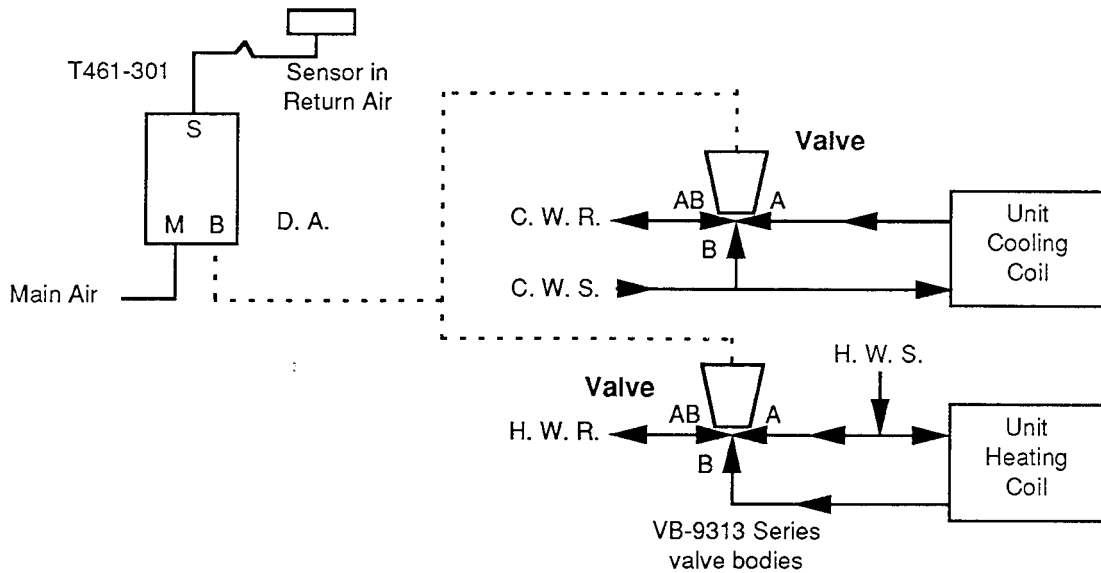


Figure-6 Typical T461-301 Heating/Cooling Application.

MAINTENANCE

Regular maintenance of the total system is recommended to assure sustained optimum performance.

REPAIR

None - replace the entire device.