![KMC CONTROLS logo]

Installation Guide

Mounting

Mount the thermostats on an inside wall away from direct sunlight, heat sources, windows, air vents, and air circulation obstructions (curtains, furniture, etc.). Choose the location best suited for measuring the average room temperature. Units may be mounted horizontally or vertically to either a 2" x 4" electrical box or a hollow wall.

Electrical Box Mounting

1. Attach the HMO-5024/5026/5030/5031 backplate to the box with the two 6-32 screws supplied.

2. Level the box using the slot in the backplate.

3. Fit the aluminum plate into the recess.

4. Pass the 3/32" ID tubing through access hole.

5. Make connections. **See the Connections section.**

6. Mount the thermostat to backplate with two 6-20 x 2" screws supplied with thermostat.
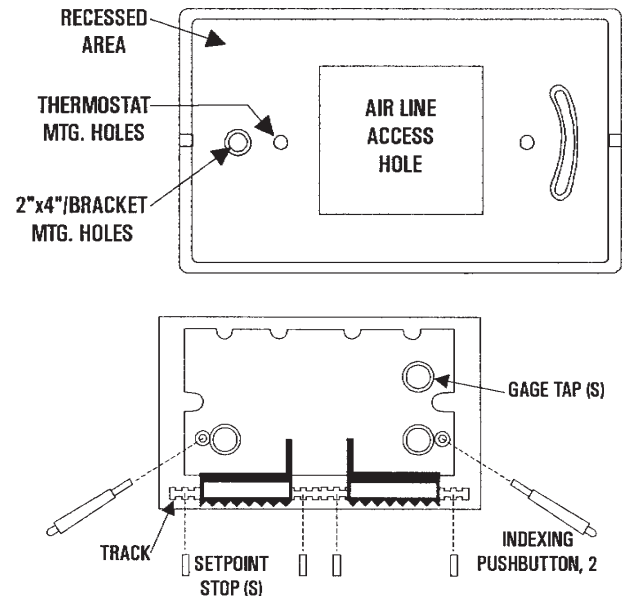
Hollow Wall Mounting

Thermostats may be directly mounted on walls up to 5/8" with the HMO-5023 kit.

1. Using the template, printed on the package, make a 2-11/16" x 1-1/2" cutout.

2. Loosely mount the bracket to the thermostat with two 6-32 x 2" screws supplied.

3. Make connections. **See the Connections section.**

4. Insert the bracket diagonally through the wall.

5. Center the thermostat and tighten screws.

Scale Plate

Adjustments must be made with the scale plate removed. Complete adjustments before installing the scale plate.

1. Remove all gauge tap rubber cap(s).

2. Slide plate under the setpoint indicator(s).

3 Insert retaining pins (two supplied), twisting to lock into place.

4. Replace gauge tap cap(s).

Setpoint Options

- If setpoint indicators are not needed, simply snip off the indicator(s) with wire cutters.
- Limit or lock the range of the setpoint(s) by installing setpoint stops (HFO-0027) in the slider track.

Cover Installation

1. Check that the unit is mounted securely and all gauge tap cap(s) or accessories are installed.

2. Place longer, tapered ends of push-button into the two holes in the thermostat.

3. Align cover over push buttons, so that short ends protrude.

4. Slide the cover over the base.

5. Using a 1/16" hex wrench, turn both cover mounting screws on the thermostat base CCW (outward) until cover is secured.

NOTE: If used, **blank covers** require the removal of the setpoint thumb adjusters. Insert a small screwdriver in the slot between the thumb adjuster and the cam and pry apart. Discard the adjuster.

Connections

The CTC-1653 and CTC-1654 use 3/32" ID tubing (HFO-0028) for all connections.

1. Connect Main Air to Port M.

2. Connect Branch Air to Port B.

For a **three-pipe** application continue by:

3. Clipping off Port R's tip.

4. Connecting Port R to the appropriate air line.

NOTE: Pressure at Port R will be 16 psi with 16 psi main air pressure, and 25 psi with 25 psi main air pressure. When pressure is at 25 psi, depressing the right (or top) indexing button will drop the R port pressure to 0 psi. See also the Remote Indexing section.
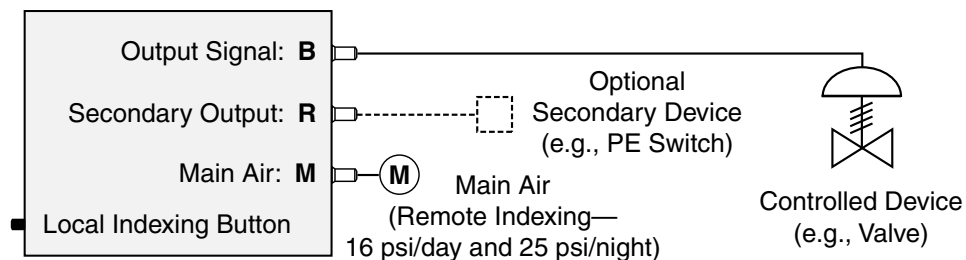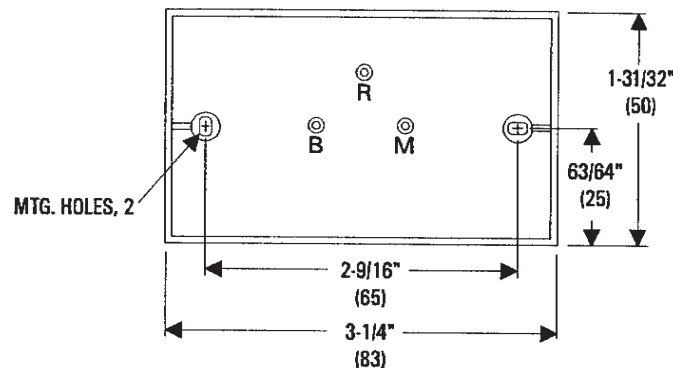
⚠ CAUTION

Pneumatic devices must be supplied with clean, dry control air. Any other medium (e.g., oil or moisture contamination) will cause the device to fail.

Remote Indexing

Remote indexing is via dual main air supply pressure, and local indexing is by push-button (HPO-0045) control. Control of one temperature (right indicator for horizontal, top for vertical) occurs when the main air supply is 16 psi. The second temperature (left indicator for horizontal, bottom for vertical) is selected when the main pressure is 25 psi. When 25 psi is supplied, control may be changed to the 16 psi indicator by pressing right (or top) button. If desired, control can be returned to the 25 psi indicator by pressing the left (or bottom) button. When main air supply is changed to 16 psi, control automatically returns to the 16 psi indicator.

Maintenance

No routine maintenance is required. Each component is designed for dependable, long-term reliability, and performance. Careful installation will also ensure long-term reliability and performance.

Adjustments and Calibration

Calibration

These thermostats are factory calibrated and normally do not require further calibration. If it is necessary to change calibration:

1. Remove the cover and gauge-tap rubber caps.

2. Install a gauge on the gauge tap using 3/32" ID tube.

3. Measure the ambient temperature with an accurate thermometer.

4. Move the setpoint slider to the measured ambient temperature.

5. Use a 1/16" hex wrench and turn the calibration adjustment until the test gauge indicates the desired pressure. (Clockwise rotation decreases the output pressure.)

6. Replace the gauge tap rubber cap after calibrating.

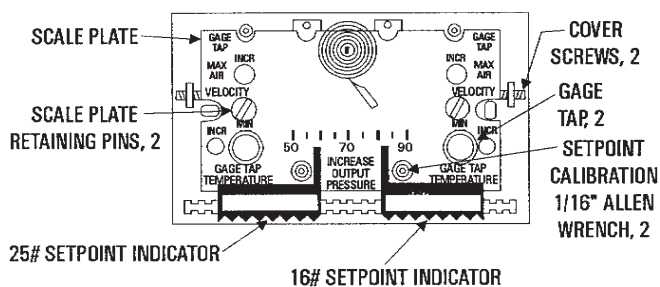7. Place the setpoint slider to the desired temperature and replace the cover.

Throttling Range

Throttling range is the temperature required to change the thermostat output pressure from 3 to 15 psi. These thermostats are factory-set for a 3° F throttling range. The approximate throttling range setting is stamped on each lever in both °F and °C. If this setting is changed, recheck calibration afterwards.

1. Remove the scale plate.

2. Slide the black "TR" adjuster to appropriate value/ location.

NOTE: The hole in the "TR" adjuster fits a 1/16" hex wrench. Gently rotate the adjuster back and forth while sliding. **Do not turn excessively!**

3. Rotate back to a "square" position after adjustment.

4. Replace the scale plate (see the Mounting section).

Accessories

Backplate kit (allows thermostat to be mounted to 2x4 handy box, includes 2 #6-32 screws and decorative matching plate):

HMO-5024	Light almond w/ aluminum trim
HMO-5026	White w/ aluminum trim
HMO-5030	Light almond
HMO-5031	White

Thermostat **scale plates** (includes 2 each HPO-0046 scale plate pins):

HPO-0047-10	°F Horizontal scale plate
HPO-0048-10	°F Vertical scale plate
HPO-0049-11	°C Horizontal scale plate
HPO-0050-11	°C Vertical scale plate

Thermostat **covers, with local indexing**:

HPO-1521	Light almond ABS plastic
HPO-1522	White ABS plastic
HPO-1523	Brushed aluminum
HPO-1526	Painted light almond metal

NOTE: Other covers without the holes for local indexing are also available from KMC if desired. See the CTC-1600 Series ONLY Accessories section in the Electronic and Pneumatic Controls Condensed Catalog (SP-071) for details.

Miscellaneous accessories:

HFO-0027	Setpoint stop strip, 4 stops per strip
HFO-0028	Tubing kit; 3/32" ID
HMO-5023	Mounting strap for mounting on hollow walls, includes 2 #6-32 x 2" screws and "template" printed on envelope
HPO-0044	Replacement cover screws
HPO-0045	Indexing push button
HPO-0046	Replacement scale plate pins
HPO-0051	Replacement cover window for thermostat (1 furnished with each cover)
HPO-1320	Label strip, 3 labels per strip (for day/night, summer/winter or heating/cooling indication), 1 furnished with each cover

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