# Thermostats for VAV Controller

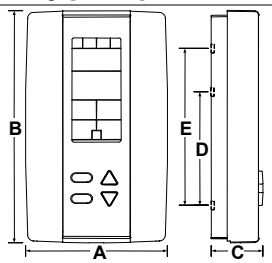
**TRL24**
**TRLH24**
**TRLG24**
**TRLGH24**

**Features:**

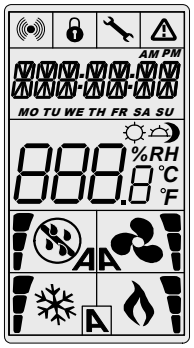
- Used to configure and operate the EVCB VAV controllers
- Selectable internal or external temperature sensor (10 KΩ)
- Humidity sensing (TRLH24 and TRLGH24 only)
- Large LCD with backlight
- Icon-driven information and 1 line of text information
- Three wire connection between thermostat and controller
- Selectable Fahrenheit or Celsius scale
- Network service port via on-board mini USB connector

**$CO_2$ Features** (TRLG24 and TRLGH24 only)

- Built-in, self-calibrating, non-dispersive infrared (NDIR) $CO_2$ sensor
- Adjustable $CO_2$ setpoint via EVCB controller menu
- $CO_2$ measurement display (lockable)

| Description | TRL24 / TRLH24 / TRLG24 / TRLGH24 |
|---|---|
| Temperature Sensor | |
| *Setpoint range* | 10ºC to 40ºC [50ºF to 104ºF] |
| *Control accuracy* | Temperature: ±0.4ºC [0.8ºF] |
| *Display resolution* | ±0.1ºC [0.2ºF] |
| $CO_2$ Sensor (TRLG24 and TRLGH24 only) | |
| *Operating principle* | Self-calibrating, Non-Dispersive Infrared (NDIR) |
| *Sensor Range* | 0 to 2000 ppm |
| *Setpoint range* | 100 to 2000 ppm |
| *Accuracy* | ±30 ppm ±3% of reading |
| *Response time* | 2 minutes by 90% |
| *Display resolution* | 1 PPM |
| Humidity Sensor (TRLH24 and TRLGH24) | |
| *Sensor range* | 5 to 95%RH |
| *Display resolution* | 0.1% |
| Electrical connection | Three wires to EVCB controller and two wires to BACnet/Modbus network \| 0.8 $mm^2$ [18 AWG] minimum |
| Network service port | Mini USB connector |
| Power supply | 24Vac or 24Vdc |
| Power consumption | 1VA |
| Operating temperature | 0ºC to 50ºC [32ºF to 122ºF] |
| Storage temperature | -30ºC to 50ºC [-22ºF to 122ºF] |
| Relative humidity | 5 to 95 % non-condensing |
| Enclosure protection | IP 30 (EN 60529) |
| Weight | 120 g. [0.25 lb] |
| Dimensions |  A = 2.85" \| 73mm<br>B = 4.85" \| 123mm<br>C = 1.00" \| 24mm<br>D = 2.36" \| 60mm<br>E = 3.27" \| 83mm |
| Certifications | Conforms to UL STD 873<br>Certified to CSA STD C22.2 No. 24-93<br>CE |
| **Note** | **The thermostat functions only with the EVCB series VAV controller. All the inputs/outputs are located on the controller except for the temperature, humidity, and $CO_2$ sensor built-in the thermostat.** |

## Interface

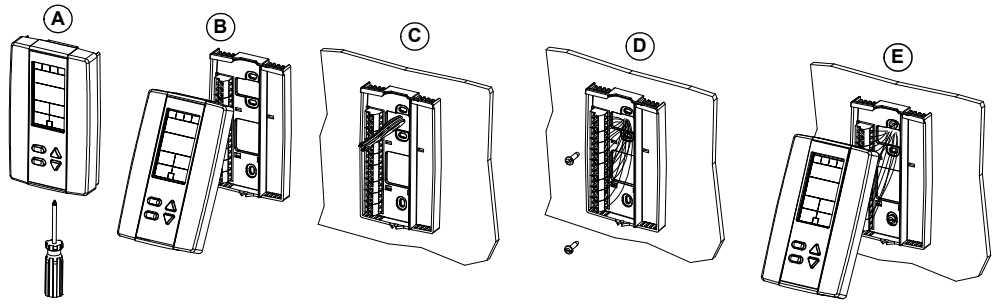



| | | | | | |
|---|---|---|---|---|---|
| A | Cooling ON<br>A: Automatic | | Communication Status | | Alarm status |
| A | Heating ON<br>A: Automatic | | Menu Locked | | Energy saving mode (NSB or Occupancy) |
| A | Fan ON<br>A: Automatic | | Programming mode (Technician setting) | %RH | Percentage of humidity |
| | | | | °C or °F | °C: Celsius scale<br>°F: Fahrenheit scale |

## Mounting Instructions

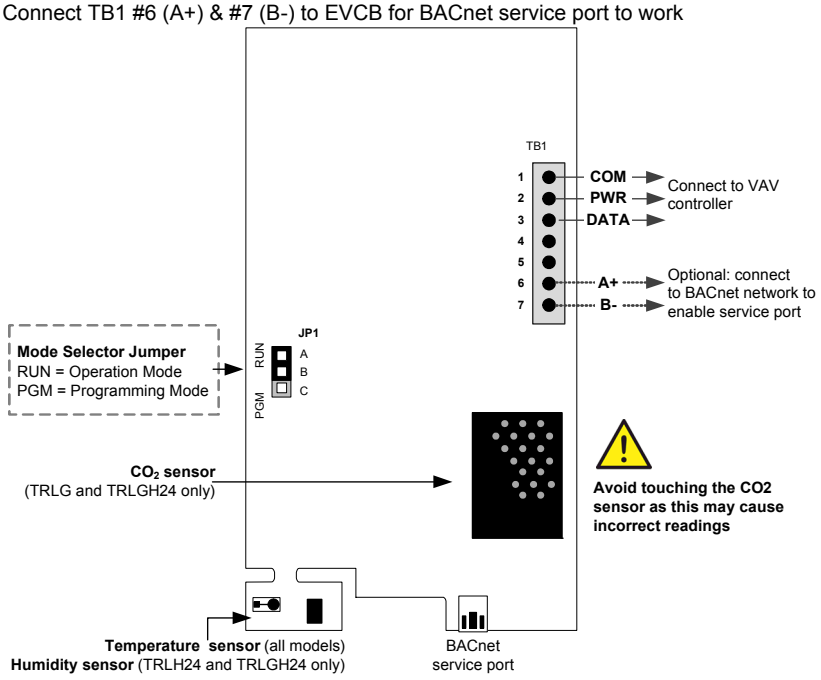
**CAUTION: Remove power to avoid a risk of malfunction.**

A. Remove the captive screw that's holding the base and the front cover of the unit together.
B. Lift the front cover of the unit to separate it from the base.
C. Pull all wires through the holes in the base.
D. Secure the base to the wall using wall anchors and screws (supplied). Make the appropriate connections.
E. Mount the control module on the base and secure using the screw.




## Settings on PC Board & Connections

**3 wire cable (TB1 #1, 2 & 3)**
Connect TB1 #6 (A+) & #7 (B-) to EVCB for BACnet service port to work




### Mode Selection (JP1)

| | |
|---|---|
| JP1 RUN PGM | **RUN:**<br>Thermostat is in **Operation Mode**. Thermostat must be set in this mode to operate properly. If not locked, setpoint and control mode (Heating & Cooling ON, Cooling only ON or Heating only ON) can be modified by the end user. |
| JP1 RUN PGM | **PGM:**<br>Thermostat is set in **Programming Mode**. Refer to the following section about all settings description |