



Installing the Tracer Summit BMTX Building Control Unit

Ordering numbers: BMTX001AAB000, BMTX001AAB010, BMTX001AAB001, BMTX001AAB011, BMTX001BAB000, BMTX001BAB010, BMTX001BAB001, BMTX001BAB011, BMTX001DAB000

For more detailed installation instructions refer to the *Tracer Summit Hardware and Software Installation* guide (BMTX-SVN01C-EN).

Note: BCU boards identified with assembly number #64002334 require BCU image 16.089 or higher for Version 16 sites or V17.033 and higher for Version 17 sites. The assembly number is located on the top left side of the BCU board.

All other BMTX BCUs that are connected to the site must be upgraded to the new BCU image at the same time this board is installed. The new BCU images are available to download from the proprietary Trane intranet software downloads web site. Failure to follow this instruction will result in the BCU board not working.

CAUTION

Avoid Equipment Damage!

Install and use the controllers as specified by the manufacturer. Failure to do so may result in equipment damage.

Selecting a mounting location

Make sure that the location meets the operating environment requirements and clearance requirements described in the following sections. (See Figure 1 on page 2 for enclosure dimensions and Figure 2 on page 3 for mounting clearances.) The controller must be installed indoors. Trane recommends locating the controller:

- Near the controlled equipment to reduce wiring
- Where service personnel have easy access
- Where it is easy to see the operator display
- Where public access is restricted to minimize the possibility of tampering or vandalism

CAUTION

Avoid Equipment Damage!

Install the controller in a location that is out of direct sunlight. Failure to do so may cause the controller to overheat.

Operating environment requirements

Make sure that the operating environment conforms to the specifications listed in Table 1.

Table 1. Specifications

Temperature	From 32°F to 122°F (0°C to 50°C)
Humidity	10–90% non-condensing
Power requirements	120 Vac or 230 Vac, 1 A maximum, 1 phase, 50 or 60 Hz
Weight	Mounting surface must be able to support 60 lb (28 kg)
Dimensions	16 ½ in. × 14 ¾ in. × 5 ½ in. (418 mm × 373 mm × 140 mm)
Altitude	6,500 ft (2,000 m)
Installation	Category 3
Pollution	Degree 2

Verifying model number for local power requirements

Before installing the controller, verify that you have the correct model for local power requirements (Table 2). The model number is on the shipping label and on the product label inside the enclosure.

Table 2. BMTX BCU model numbers

US (120 Vac)	CE (230 Vac)	Description
BMTX001AAB000	BMTX001BAB000	BMTX BCU
BMTX001AAB010	BMTX001BAB010	BMTX BCU with operator display
BMTX001AAB001	BMTX001BAB001	BMTX BCU with modem
BMTX001AAB011	BMTX001BAB011	BMTX BCU with modem and operator display
BMTX001DAB000	N/A	BMTX BCU UL-864-UUKL

Figure 1. Enclosure dimensions

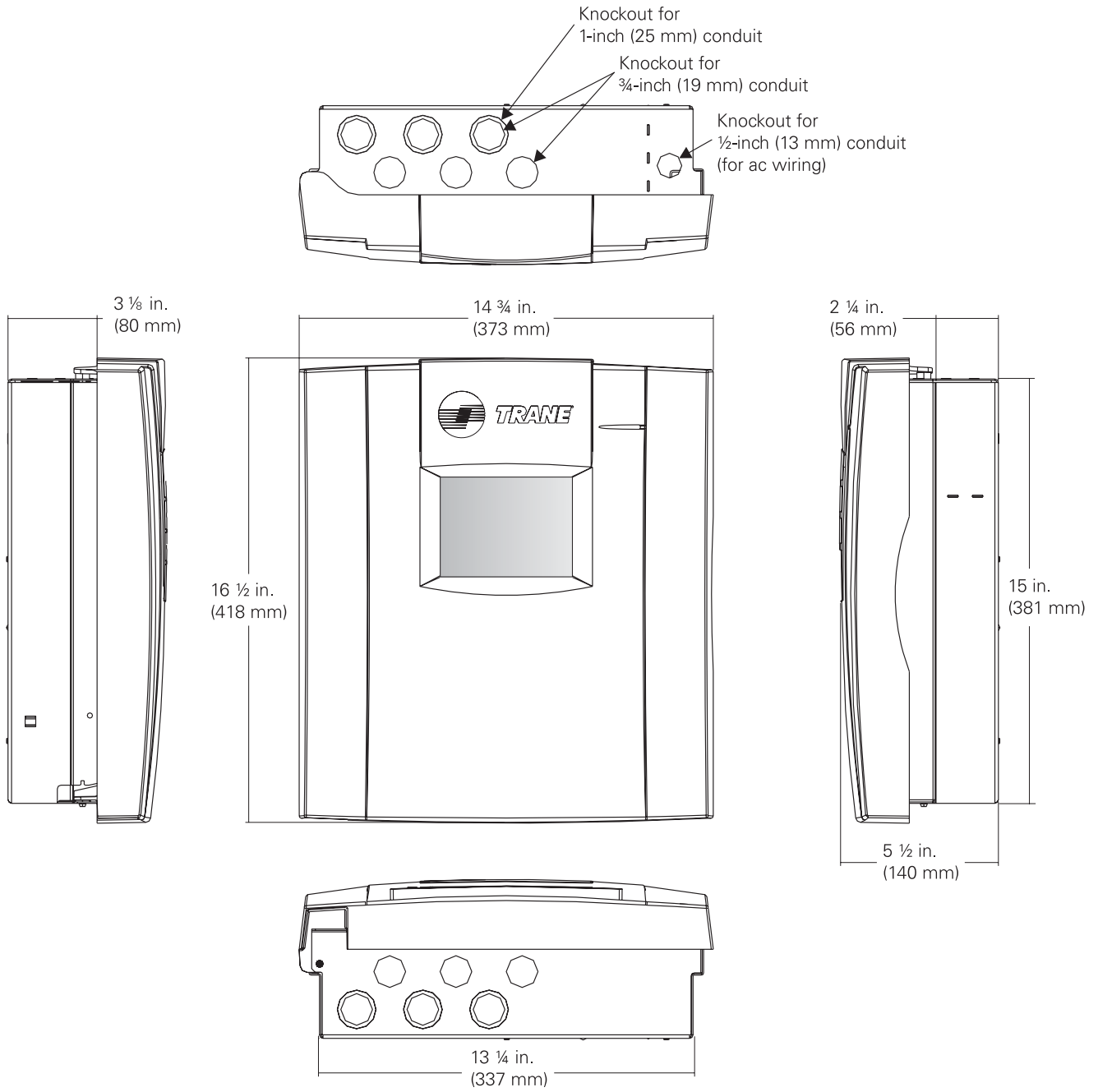
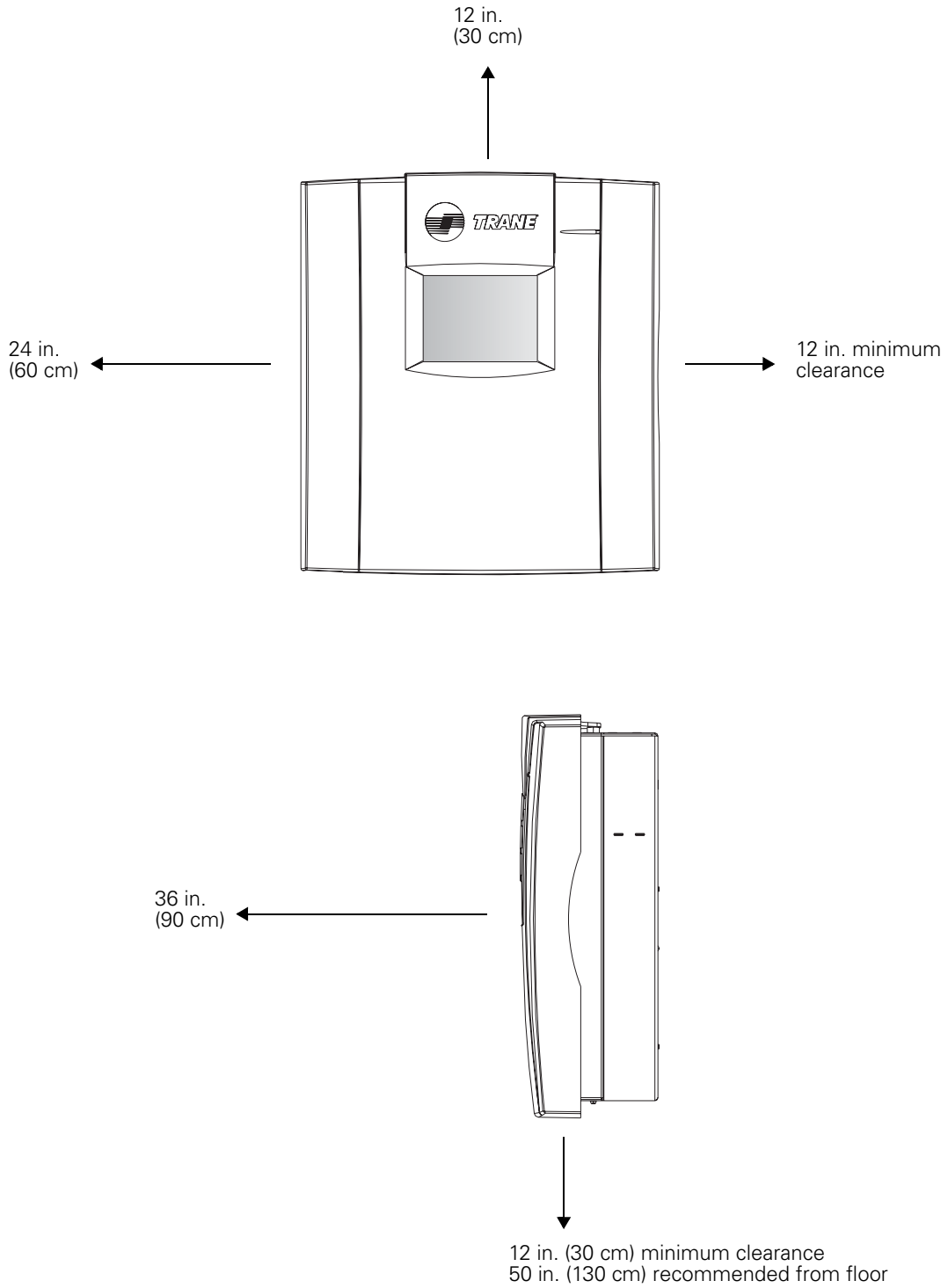


Figure 2. Minimum mounting clearances



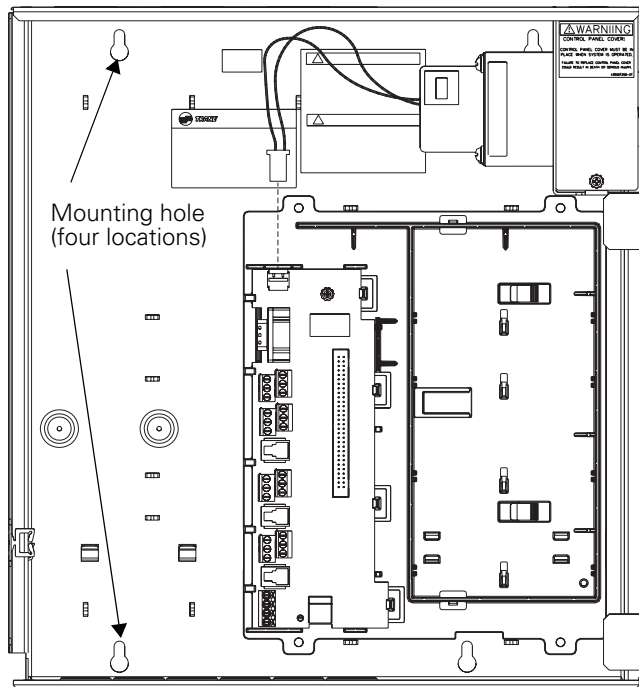
Note: Six of the twelve knockouts are dual-sized knockouts for 1-inch (25 mm) and 3/4-inch (19 mm) conduit.

Mounting the back of the enclosure

The back of the enclosure is shipped with the termination board installed inside it. The enclosure door is shipped separately. If the door has already been attached to the enclosure back, remove it. To mount the back of the enclosure:

1. Using the enclosure back as a template, mark the location of the four mounting holes on the mounting surface.

Figure 3. Enclosure mounting holes



2. Set the enclosure aside and drill holes for the screws at the marked locations.

Drill holes for #10 (5 mm) screws or #10 wall anchors. Use wall anchors if the mounting surface is dry wall or masonry.

3. Insert wall anchors if needed.
4. Secure the enclosure to the mounting surface with the enclosed #10 (5 mm) screws.

Wiring high-voltage ac power

IMPORTANT

Make sure that you have the correct controller model for 120 Vac or 230 Vac (see Table 2 on page 1).

To ensure proper operation of the controller, install the power supply circuit in accordance with the following guidelines:

- The controller must receive power from a dedicated power circuit. Failure to comply may cause control malfunctions.
- A disconnect switch for the dedicated power circuit must be near the controller, within easy reach of the operator, and marked as the disconnecting device for the controller.
- High-voltage power-wire conduits or wire bundles must not contain input/output wires. Failure to comply may cause the controller to malfunction due to electrical noise.
- High-voltage power wiring must comply with the National Electrical Code (NEC) and applicable local electrical codes.
- High-voltage wiring requires three-wire 120/230 Vac service (line, neutral, ground).

Note: The transformer voltage utilization range is 98–132 Vac (120 Vac nominal) or 196–264 Vac (230 Vac nominal). The panel automatically detects whether the current is 50 or 60 cycle.

To connect high-voltage power wires:

⚠ WARNING

Hazardous Voltage!

Disconnect all electric power, including remote disconnects, before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

CAUTION

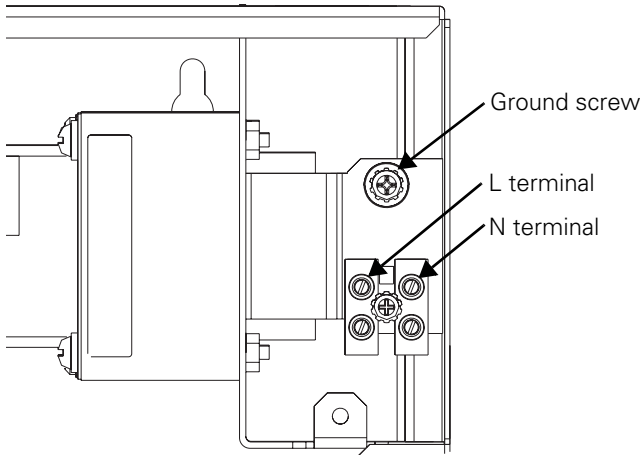
Use Copper Conductors Only!

Unit terminals are designed to accept copper conductors only. Other conductors may cause equipment damage.

1. Lock open the supply-power disconnect switch.
2. At the top-right corner of the enclosure, remove the knockout for ½-inch (13 mm) conduit.
3. Open or remove the enclosure door if it is already installed.

4. Inside of the enclosure at the top-right corner, remove the high-voltage area cover plate.
5. Feed the high-voltage power wire into the enclosure.
6. Connect the line wire to the L terminal as shown in Figure 4.

Figure 4. AC wiring



7. Connect the neutral wire to the N terminal.
8. Connect the green ground wire to the chassis ground screw. The ground wire should be continuous back to the circuit breaker panel.
9. Replace the cover plate.

**⚠ WARNING
Hazardous Voltage!**

The cover plate must be in place when the controller is operating. Failure to replace the cover plate could result in death or serious injury.

10. On a label, record the location of the circuit breaker panel and the electrical circuit. Attach the label to the cover plate.

Wiring binary inputs

For binary input wiring, see Chapter 5, “BCU binary inputs” in the *Tracer Summit Hardware and Software Installation* guide (BMTX-SVN01A-EN).

UCM wiring

For UCM wiring, see Chapter 6, “UCM communication link wiring and topology” in the *Tracer Summit Hardware and Software Installation* guide (BMTX-SVN01A-EN).

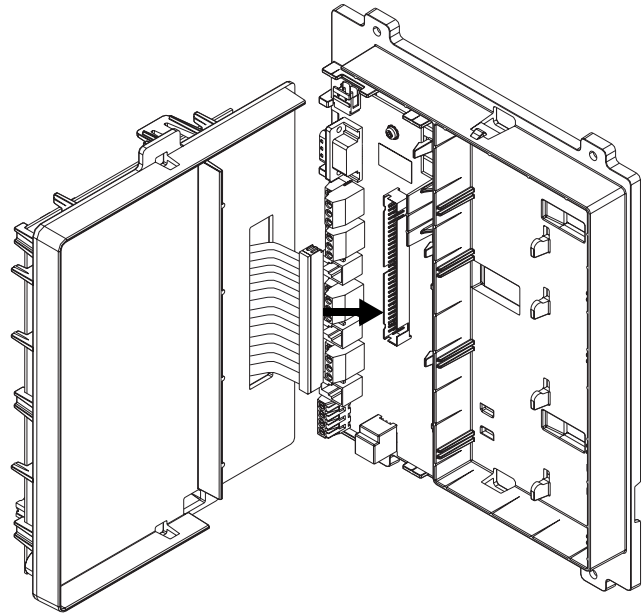
Connecting the main circuit board

The main circuit board is attached to a plastic frame. It is shipped separately. The board can be kept in the office and programmed while the back of the enclosure is mounted and the termination board, which is attached to the back of the enclosure, is wired. After programming has been completed, connect the circuit board to the termination board as shown in the following procedure.

To connect the circuit board:

1. Verify that the 24 Vac power cable is not connected to the termination board.
2. Hold the circuit board frame at a 90° angle to the back of the enclosure, as shown in Figure 5.

Figure 5. Connecting the circuit board ribbon cable

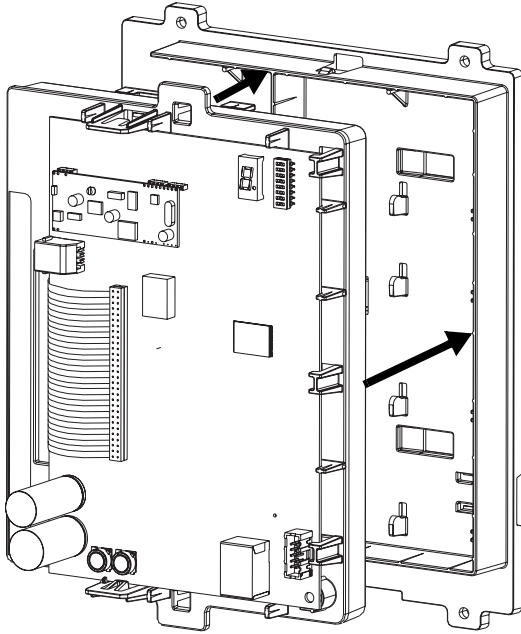


3. Connect the circuit board’s 60-pin cable to the termination board’s 60-pin slot.

The connector is keyed to the slot. If you have difficulty connecting it, make sure that the key is lined up with the slot.

4. Align the snaps on the circuit board frame with the mounting locks at opposite ends of the enclosure back, as shown in Figure 6 on page 6.
5. Using the tabs that are at both ends of the top frame, push the two frames together. You will hear a click when the frames connect.

Figure 6. Connecting the frames



6. For controllers with an operator display, connect the operator-display cable to the circuit board (see Figure 7).
7. Connect the 24 Vac power cable to the termination board. The seven-segment LED display should light up.
8. Connect the Ethernet cable to the Ethernet connector on the circuit board.
9. Connect the telephone cable to the modem connector on the circuit board.

Installing the door

To install the enclosure door:

1. Unpack the door and check for missing or damaged parts.
Check to make sure that the magnetic latches and touch screen (if ordered) are installed. Check for any cracks in the plastic.
2. Hold the door at a 90° angle from the enclosure back as shown in Figure 8 on page 7.
3. Align the hinge pegs on the door with the hinge holes on the enclosure.
4. Gently lower the door until it rests securely in the hinge holes.
5. Verify that the door swings freely on the hinges and that the magnetic latches hold the door securely when it is closed.
6. For doors with an operator display, connect the operator-display cable to the operator-display connector on the door (see Figure 8 on page 7).

Figure 7. Cable connector and LED display locations

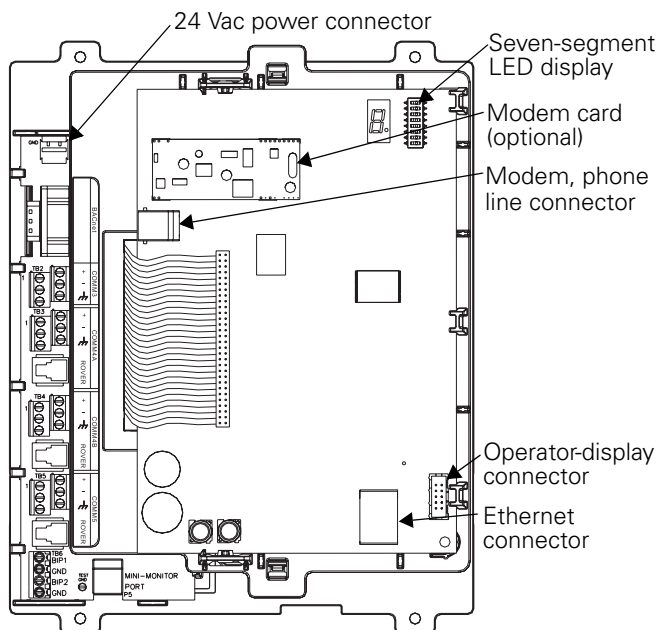
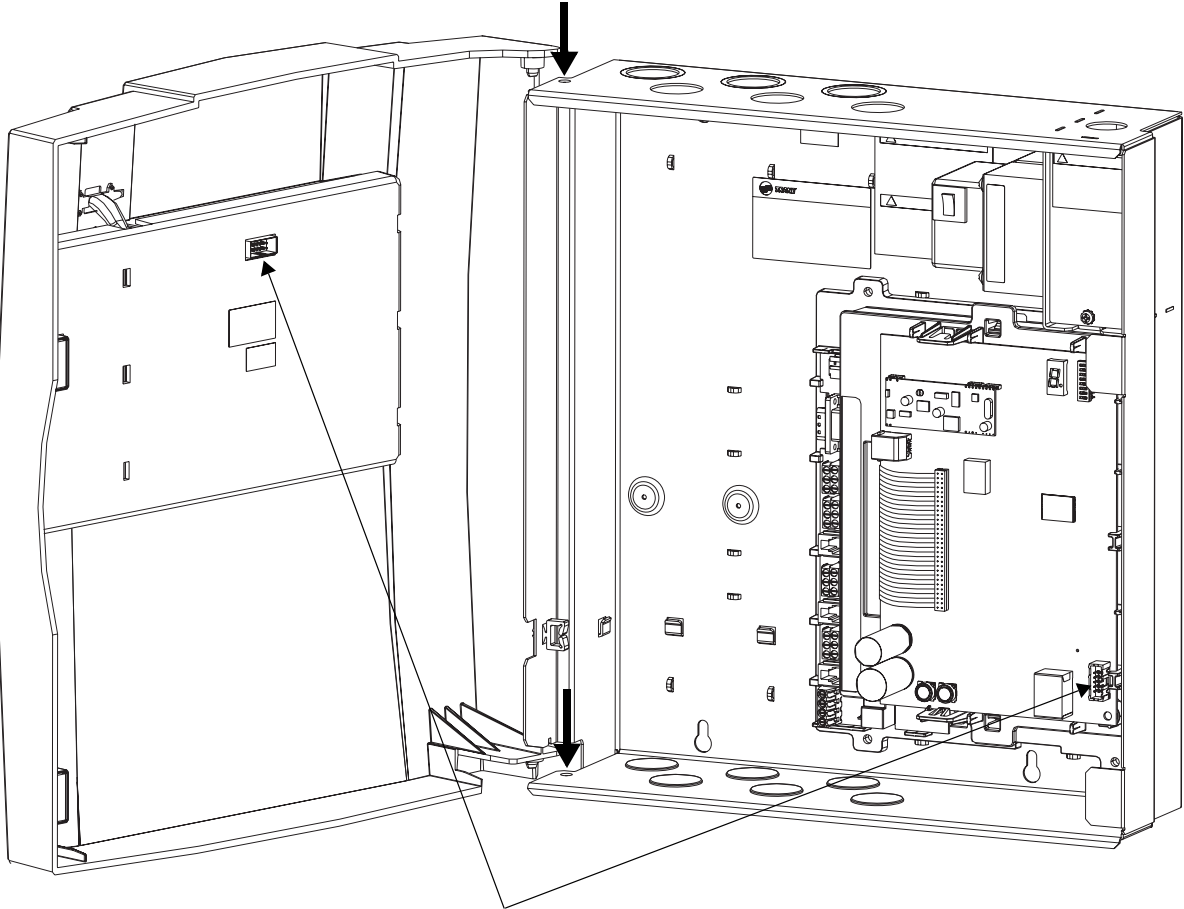


Figure 8. Aligning the door



Operator-display connectors

Note: The operator-display cable passes beneath the termination board on enclosures with factory-installed operator displays.

Tracer Summit BMTX Declaration of CE Conformity

Manufacturer name: Trane

Manufacturer address: 4833 White Bear Parkway
St. Paul MN 55110, USA

The manufacturer hereby declares that the product:

Product name: Tracer Summit BMTX building control unit

Model numbers: BMTX001BAB000, BMTX001BAB001,
BMTX001BAB010, BMTX001BAB011

Conforms to the following standards or other normative documents:

Electromagnetic emission: EN61326-1
(by Council directive 89/336/EEC) Radiated EN55022: 1998 Class B limit
Conducted EN55022: 1998 Class B limit

Electromagnetic immunity: EN61326-1
(by Council directive 89/336/EEC)

EN61000-4-2	±4.0 kV by contact ±8.0 kV by air
EN61000-4-3:1996 Amendment A1:1998	10.0 V/m 80 .. 1000 MHz
EN61000-4-4	±2.0 kV ac power lines ±1.0 kV signal lines
EN61000-4-5	±2.0 kV
EN61000-4-6	0.15 .. 80 MHz
EN61000-4-8	30 A/m
EN61000-4-11	1/2 cycle

When and Where Issued

Electromagnetic Emission: 4/5/2004
Electromagnetic Immunity: 4/19/2004

Mark of compliance



A handwritten signature in black ink that reads "John Olson". The signature is cursive and fluid.

John Olson
Design/Compliance Engineer

European contact

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This document validates CE conformity of the Tracer Summit BMTX building control unit.