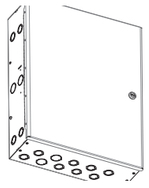
TRANE

Installation Instructions

Comm 3/4 to Tracer SC Bridge Enclosure



Order Numbers:
BMSB001AAA000 - Bridge 120V
BMSB001AAA010 - Bridge 120V
with UC400 option

X39641247-01

⚠ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

December 2020

BAS-SVN216C-EN

TRANE TECHNOLOGIES

1

Warnings, Cautions, and Notices

Read this manual thoroughly before operating or servicing this unit. Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:

⚠ WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe

NOTICE Indicates a situation that could result in equipment or property-damage only accidents.

Table 1. Packaged contents

Description	Quantity
Assy Tracer SC Module	1
PM014 1.4A 6 units	1
Wire harness double housing 4 Cond 18 AWG	1
Ground cable for field applied controls	1
Self tapping, combo drive, pan head, NO. 6, 0.250 inch	1
LonTalk Kit	1
Housing; 3 CKT terminator blocks	6
Housing; 4 CKT terminator blocks	2
Housing; 2 CKT terminator blocks	2
Medium metal field mount enclosure	1
End stop DIN rail	1

2

Description	Quantity
BMSB Installation Guide	1
BMSB, 7-inch power harness	1
Wall anchor 0.25 INCH 33018014	4
Phillips panhead 1.5 inch self tapping screws 1 330061124.0	4
Tracer SC/PM014 Installation Sheet	1
BMTB Legacy Comm Bridge	1
BTMB Terminator Board	1

Table 2. Items included with the UC400 option

Description	Quantity
Housing; 3 CKT terminator blocks	9
Housing; 4 CKT terminator blocks	4
Housing; 2 CKT terminator blocks	17
Plug-in 10 pos (10 amp) connector	1
BMSB, wire harness - power for UC400, 12 inches	1
BMSB, wire harness (BACnet)	1
UC400 Tracer module	1
Tracer BACnet Terminator (TBT)	1
Tracer UC400 Controller Installation Sheet	1

Table 3. Replacement parts

Description	Service Part #	Mnemonic Part #	Literature #
16" DIN Rail Enclosure Solid door	S3090071062	DOR04184	X396412430-01
Field-installed Enclosure Quarter Turn Latch	S3090071262	LAT00998	X396412440-01

3

Description	Service Part #	Mnemonic Part #	Literature #
16" DIN Rail Enclosure back chassis	S3090071362	MOD02560	X396412450-01
16" DIN Rail Enclosure Power section cover	S3090071462	COV04754	X396412460-01
Tracer SC	S309058462	MOD01668	X39641154-01
PM014	S3090-0617-62	MOD01702	X39641159-01
UC400	X1365149020	MOD02071	BAS-SVX20
BMTB	X13651613010	MOD02538	X39641236-01
TBT	X13651524010	MOD01786	X39641151-01

Specifications and Dimensions

Ensure the operating environment conforms to the specifications listed in Table 4.

Table 4. Operating environment specifications

Temperature	From 32°F to 122°F (0°C to 50°C)
Humidity	5–95% non-condensing
Power requirements	120 VAC, 5A maximum, 1 phase, 60 Hz
Weight	Mounting surface must be able to support 75 lb (34 kg)
Dimensions	15 in. x 20 in. x 5.5 in. (38 cm x 51 cm x 14 cm)
Installation	U.L. 840: Category 3
Pollution	U.L. 840: Degree 2

The power output of the panel is rated at higher ambient temperatures to account for the heat rise in the panel. Refer to Table 5 for power ratings.

4

Table 5. Power Output For Transformer

VA at 24 VAC	Temperature Range C°/F°
85	Up to 95°F (35°C)
75	Up to 113°F (45°C)
50	Up 122°F to (50°C)

DIN Unit Widths

Table 6 lists DIN unit width measurements for Trane devices.The enclosure DIN rail is approximately 20 DIN unit widths.

Table 6. DIN Unit Width Measurements

Device	Device Width (inch/millimeter	DIN Unit Widths (1 unit = 0.8 in. [18 mm])
Tracer SC system controller	5.6 in. / 142.2 mm	8
Tracer UC400 controller	5.6 in. / 142.2 mm	8
Tracer UC600 controller	8.5 in. / 216.0 mm	12
Tracer UC800 controller	2.8 in. / 71.1 mm	4
Tracer XM30 expansion module	2.1 in. / 53.3 mm	3
Tracer XM32 expansion module	2.8 in. / 71.1 mm	4
Tracer XM70 expansion module	8.50 in. / 216.0 mm	12
PM014 power supply module	4.2 in. / 106.7 mm	6
Tracer BACnet terminator (TBT)	1.4 in. / 35.6 mm	2

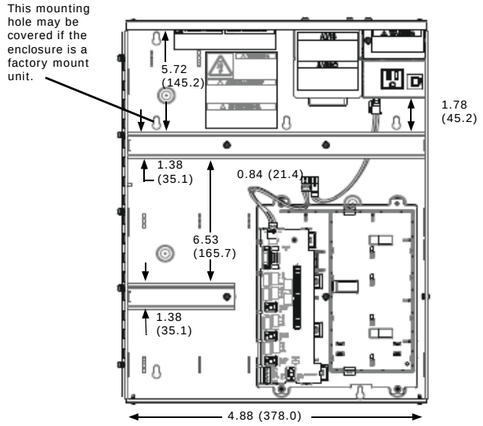
Note: Some devices are optional and may not be included in the enclosure

5

Dimensions and Clearances

Figure 1 shows the internal enclosure dimensions and minimum clearances. Select a mounting location that provides adequate space for the minimum clearance dimensions. Refer to Figure 3 in Panel 7 for external enclosure dimensions.

Figure 1. Internal view and dimensions

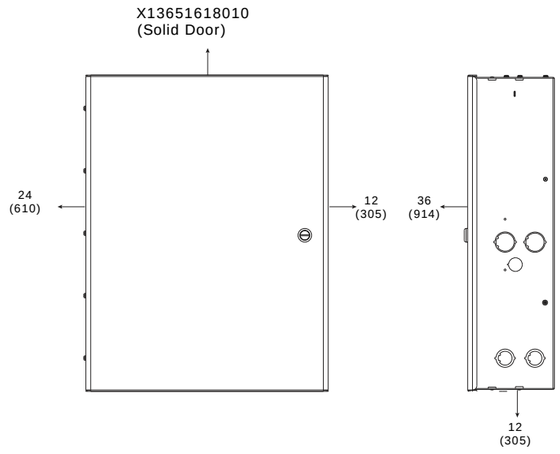


The mounting holes (indicated as) may be covered if the enclosure includes factory-installed devices.

Note: *Dimensions are displayed as x.xx in. (x.xx mm).*

6

Figure 2. Enclosure minimum clearances with cover



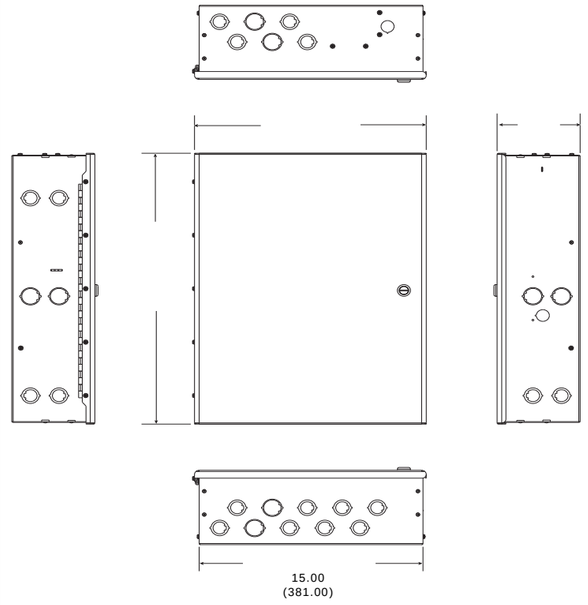
Note: *Dimensions are displayed as x.xx in. (x.xx mm).*

7

Figure 3. External dimensions

Note: Enclosure provides a combination of knockouts in the following sizes:

- 0.75 in. (19 mm)/ 1.0 (25 mm)
- 0.50 in. (13 mm)/0.75 (19 mm)



8

Location and Mounting Guidelines

Location

The location should meet the operating environment requirements and clearances described in the previous sections.

Important: *The controller must be installed indoors.*

Trane recommends locating the controller:

- Near the controlled equipment to reduce wiring.
- Where service personnel have easy access.
- In areas that restrict public access to minimize tampering or vandalism.

Mounting Instructions

Note: *The internal enclosure panel comes with seven (7) mounting holes (refer to the locations in Panel 5). It is only required to choose 4 of the 7 locations in order to hold the weight of the enclosure. If mounting is performed by a single individual, first drill the centrally located mounting hole shown in Panel 5. Then insert 1 screw to temporarily hold the internal enclosure panel and complete the mounting following the steps below.*

1. Using the enclosure as a template, mark the location of the four (4) mounting holes on the mounting surface to accommodate the supplied #10 screws and/or #10 wall anchors.
2. Set aside the enclosure and drill the marked location holes for the screws.

   Note: *Use wall anchors if the mounting surface is dry wall or masonry.*
3. Secure the enclosure to the mounting surface with the enclosed #10 screws and #10 wall anchors.

9

Wiring High Voltage AC Power

Read all WARNINGS, CAUTIONS, and *NOTICES* prior to wiring high-voltage AC power.

Hazardous Voltage!
Disconnect all electrical 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.

Proper Field Wiring and Grounding Required!
All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state electrical codes. Failure to follow code could result in death or serious injury.

NOTICE

Use Copper Conductors Only!
Unit terminals are designed to accept copper conductors only. Other conductors could cause equipment damage.

10

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

- The panel must receive power from a dedicated power circuit. Failure to comply could cause panel malfunctions.
- A disconnect switch for the dedicated power circuit must be near the panel, within easy reach of the operator, and marked as the disconnecting device for the panel.
- Neither 24 VAC, higher power-wire conduits, nor wire bundles must not contain input or output wires. Failure to comply could cause the controller to malfunction due to electrical noise.
- Power wiring must comply with the National Electrical Code™ (NEC) and applicable electrical codes.
- 120 VAC wiring requires three-wire service (**L**ine, **N**eutral, **G**round). Refer to Panel 11 for terminal locations.

  Note: *The transformer voltage utilization range is 98–132 VAC (120 VAC nominal).*

Connecting the 120 VAC Power Wires

1. Lock open the supply power disconnect switch.
2. At the top-right corner of the enclosure, remove the 0.50 inch (13 mm) conduit knockout.
3. If already installed, open or remove the enclosure door.
4. Inside of the enclosure at the top-right corner, remove the line voltage area cover plate and then feed the 120 VAC power wire into the enclosure.
5. Connect the line wire to the **Line** terminal, the neutral wire to the **Neutral** terminal, and the green ground wire to the Chassis **Ground** Screw as shown in Figure 4, Panel 11.

   Note: *The ground wire should be a continuous wire back to the circuit breaker panel.*

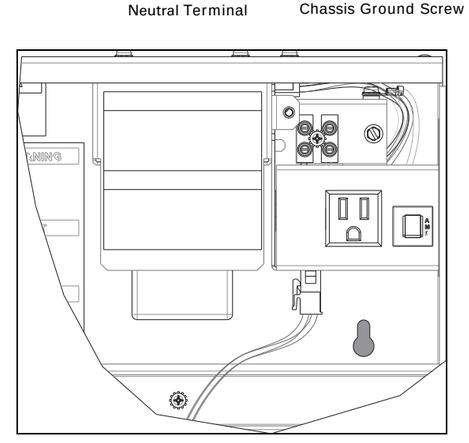
11

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.

6. Replace the cover plate.
7. On a field-supplied label, record the location of the circuit breaker panel and the electrical circuit. Attach the label to the cover plate.

Figure 4. AC Wiring for 120 VAC



12

Installing device components in the enclosure

Install the Tracer SC, PM014 and, optionally, the UC400 as shown in Figure 5.

1. Connect the ribbon cable of the bridge board into the terminator board.
2. Install the bridge boards assembly into the terminator board.

For Base model Version:

3. Place the Tracer SC on the top DIN rail on the left side.
4. Place the PM014 to the right of the Tracer SC.
5. Connect the 4-wire harness to the Tracer SC IMC connector and PM014.
6. Connect the transformer power supply cable in the 24VAC terminal block.
7. Connect the bridge board power cable to the PM014 24VAC terminal block.

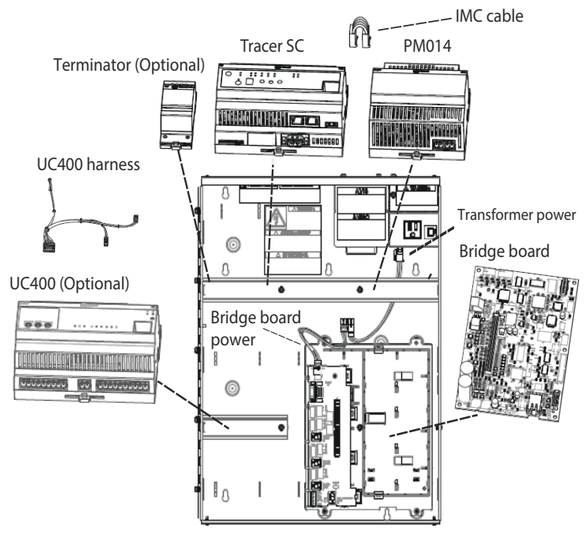
For Tracer UC400 Option:

3. Place the TBT module on the top DIN rail on the left side.
4. Place the Tracer module to the right of the TBT module.
5. Place the PM014 module to the right of the Tracer SC module.
6. Place the UC400 module on the bottom DIN rail.
7. Connect the 4-wire cable harness to the IMC connector on the Tracer SC and PM014.
8. Connect the transformer power supply cable in the 24VAC terminal block.
9. Connect the 6-position power cable harness to the UC400 24VAC terminal block.
10. Connect the 2-position power cable harness to the PM014 24VAC terminal block.
11. Connect the 2-position power cable harness to the bridge board terminal block.
12. Screw the 2-wire leads of the power cable harness to the TBT terminal block.
13. Connect the 4-position BACnet cable harness (Blue/yellow wires) to the UC400 link terminal block.

13

14. Connect the 2-position BACnet cable harness (Blue/Yellow wires) to the Tracer SC Link 1 terminal block.
15. Screw the 2-wire leads of the BACnet cable harness (Blue/Yellow wires) to the TBT terminal block.

Figure 5. Placement of Tracer SC, PM014, and optional UC400



14

Figure 6.Installing the Enclosure Door

Installing the Enclosure Door

1. Remove packaging from the door and locate the provided five (5) M4 screws.
2. Position the door on the front of the enclosure in its approximate position with the latch on the right-hand side.
3. Latch the enclosure door to assist in holding the door on the enclosure.
4. Align the screw holes with the threaded hardware on the door hinge so the screws can be inserted through the door as shown in Figure 6.
5. Insert the five (5) screws into the aligned holes and only finger tighten all screws at this time.
6. While applying slight upward pressure on the door, use a screwdriver to securely tighten one (1) screw on the upper portion of the door and one (1) screw on the lower portion of the door.
7. Unlatch the door and ensure that it freely opens and closes.
8. Finally, tighten the remaining screws.

15

Agency Listings and Compliance

United States Compliance

UL Listed — UL 916 Energy Management Accessory

Canada Compliance

CUL Listed — CSA C22.2 No. 205

Trane - by Trane Technologies (NYSE: TT), a global climate innovator - creates comfortable, energy efficient indoor environments for commercial and residential applications. For more information, please visit trane.com or tranetechnologies.com.

Trane has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice. We are committed to using environmentally conscious print practices.

BAS-SVN216C-EN 11 Dec 2020
Supersedes X39641247-01B (Nov 2013)