Installation Instructions

Tracer™ XM32 Expansion Module

The Tracer XM32 Expansion Module provides additional points when needed for Tracer UC400 and UC600 applications. Each expansion module has a total of four (4) relay outputs. Use of a PM014 24Vac/24Vdc power supply (Order Number X1396153801) is needed for applications requiring more than two expansion modules.

Packaged Contents
- One (1) XM32 expansion module
- One (1) bag of 3-pin and 4-pin terminal connectors
- One (1) IMC cable harness

Important: Visually inspect contents for obvious defects or damage. All components have been thoroughly inspected before leaving the factory. Any claims for damage incurred during shipping should be filed immediately with the carrier.

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X32 Installation Guidelines and General Information

Installation Environment
Install the XM32 in a location that is:
- Protected from weather elements
- Restricted from public access to minimize tampering and vandalism
- Near the controlled equipment to reduce wire usage
- Easily accessible by service technicians

Connection Location
The module can be connected either locally (beside the UC400 or UC600) or remotely from the UC400 or UC600 (not located inside the same enclosure as the UC400 or UC600).
- Local connection—Use IMC cable harness connectors.
- Remote connection—Use screw terminal connectors. (Refer to the illustration on the right.)

General Wiring Requirements and Considerations
- Maximum draw rating of the XM32 is 100 mA.
- Requires a shielded, twisted-pair cable if installed outside enclosure or if the supplied IMC wiring harness is not used. The shield should be terminated on the ground terminal on the UC400 or UC600. Daisy chain the shield at all of the expansion modules.
- Remote mounting distance from UC400 or UC600 is a maximum of 656 ft (200 m) for communication only. If wiring both power and communication to the remote expansion modules, the maximum distance is 165 ft (50 m).

General Wiring Requirements and Considerations (continued)
- When wiring with terminal connectors, strip the wires to expose 0.28 inch (7 mm) of bare wire. Insert each wire into a terminal connector and tighten the terminal screw. A tug test is recommended after tightening terminal screws to ensure all wires are secure.
- The UC400 or UC600 IMC ports have a current limit of 200 mA.
- Allow for proper ventilation when mounting on DIN rail.

Required Tools for Mounting and Wiring
A 1/8 inch (3 mm), flat-bladed screwdriver is required to perform functions such as setting rotary addressing switches, tightening or loosening screw terminals, and removing or repositioning the controller on DIN rail.

SAFETY WARNING
Only qualified personnel should move and remove electrical equipment. The installer, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and require 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.

Notes:
- 24 Vdc power is supplied by the UC400 or UC600 for up to two (2) expansion modules with a maximum current draw of 200 mA. The use of a PM014 DC power supply is required for applications that require more than two expansion modules (XM32 or XM30). (Refer to the illustration below for wiring instructions.)
- Unit Controller
- XM32
- PM014
- XM32
- XM32

Exploded view showing the 24 Vdc wire on the bottom removed from the IMC harness.

Notice: Avoid Equipment Damage!
Remove the 24 Vdc wire from the IMC harness that connects a unit controller powered XM32 to the PM014 power supply.

Mounting or Removing the XM32
To mount or remove the XM32 from DIN rail, follow the illustrated instructions below.

To mount device:
1. Disconnect all connectors before removing or repositioning.
2. Insert screwdriver into slotted release clip and gently pry upward on the screwdriver to disengage the release clip from the DIN rail.
3. While holding tension on the clip, raise the device away from the DIN rail to remove or reposition.
4. If repositioning, place the device until the release clip clicks back into place to secure the device to DIN rail.

To remove or reposition device:
1. Disconnect all connectors before removing or repositioning.
2. Insert screwdriver into slotted release clip and gently pry upward on the screwdriver to disengage the release clip from the DIN rail.
3. While holding tension on the clip, raise the device away from the DIN rail to remove or reposition.
4. If repositioning, place the device until the release clip clicks back into place to secure the device to DIN rail.

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- Remote mounting distance from UC400 or UC600 is a maximum of 656 ft (200 m) for communication only. If wiring both power and communication to the remote expansion modules, the maximum distance is 165 ft (50 m).

General Wiring Requirements and Considerations (continued)
- When wiring with terminal connectors, strip the wires to expose 0.28 inch (7 mm) of bare wire. Insert each wire into a terminal connector and tighten the terminal screw. A tug test is recommended after tightening terminal screws to ensure all wires are secure.
- The UC400 or UC600 IMC ports have a current limit of 200 mA.
- Allow for proper ventilation when mounting on DIN rail.
Binary Output Terminal Wiring Requirements

**Maximum Wire Lengths**

- All wiring must be in conformance with the specifications for each device and comply with the National Electrical Code® and local codes.
- 18-22 AWG stranded copper wire is recommended for binary output wiring.
- For CE installations, the temperature rating of the fixed wiring should be a minimum of 105°C.

AC Power Warnings, Cautions, and Notes

**Hazardous Voltage!**

If inadvertently energized, failure to disconnect power before servicing could result in serious injury or death.

**Personal Injury and Equipment Damage!**

After installation, make sure to check that the 24 Vac transformer is grounded through the controller. Failure to check could result in personal injury and/or damage to equipment.

**Note:** Measure voltage between chassis ground and any other ground symbol on the module (± 4.2V). Voltage must comply with National Electrical Code and local electrical codes.

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**Connecting, Addressing, and Discovering the XM32**

The following steps explain how to connect and configure the XM32 with the unit controller using the Tracer TU service tool:

1. Disconnect the power from the UC400 or UC600.
2. Set the two rotary dials on the front of XM32 to the desired address of the expansion module. Each expansion module must have a unique address. Use a 1/8 inch (3 mm) flathead screwdriver to set rotary dials. The dial addresses are either direct or indirect. Address ranges are 1–9.
3. Connect the XM32 and the UC400 or UC600 using either the IEC cable harness provided or by running wire to the IMC/24Vdc screw terminal connectors. If powering the XM32 from a source other than the UC400 or UC600, the power supply must be locally grounded.
4. Power up the UC400 or UC600 and the XM32. The transmitting (TX) and receiving (RX) LEDs blink when communication occurs between the devices. Note the following LED activities on the front of the XM32:
   - **Marquee LED:**
     - **Green:** If powered, application is running (no faults or alarms).
     - **Yellow:** When pressed. Remains on while latched in service mode.
     - **Red:** Normal operation.
     - **Sequence when powered:** Transitions from red to green.
   - **Service LED:**
     - **Green:** When powered up during memory test. Stays green if memory test fails. When powered, application is running (no faults or alarms).
     - **Yellow:** Binary output is Off Energized.
     - **Blue:** Binary output is On Energized.

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**Storage and Operating Environment Specifications**

**Storage**

- Temperature: 
  - 40°F to 104°F (−5°C to 40°C)
  - 33°F to 70°F (−3°C to 21°C)
- Relative Humidity: 5% to 95% (noncondensing)

**Operating**

- Temperature: 
  - 40°F to 104°F (−5°C to 40°C)
- Humidity: 5% to 95% (noncondensing)
- Power: 24 Vac ±10%, 100 mA
- Mounting weight of controller:
  - 1/2 hp at 277 Vac (7.5 A max)
  - 1/3 hp at 125 Vac (7.5 A max)
  - 10 A max up to 30 Vdc
- Environmental rating (Enclosure):
  - NEMA 1

**Agency Compliance**

- UL516 PAX: Open Energy Management Equipment
- UL60954 Flammability
- CE Marked
- FCC Part 15, Subpart B, Class B Limit

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**Declaration of CE Conformity**

Manufacture name: Trane
Manufacture address: Trane, 1500 Trane Way, Charlotte, NC 28262, USA
The manufacturer hereby declares that the product:

**Product name:** The XM32

**Model number:** XM32-XXXX

**Conforms to the following standards or other normative documents:**

- EN61000-4-4: 2004 Electric Fast Transients (ESD)
- EN61000-4-2: 1995 Conducted and Radiated Immunity for Industrial Equipment
- EN61000-4-3: 1995 Conducted and Radiated Immunity for Home Appliances
- EN61000-4-5: 1995 Power Frequency Magnetic Field
- EN61000-4-8: 1993+A1: 2001 Power Frequency Magnetic Field
- EN61000-4-11: Second Edition: Power Frequency Magnetic Field
- EN61326-1:2006 General Requirements

**Where and When Issued:**

- Electromagnetic Emission June 2010

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We are committed to using environmental considerations in all our practices and processes that reduce waste.

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X39641174-01B (20 Mar 2012)
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