



Product Data Sheet

Tracer® UC400 Programmable Controller

Ordering Number: BMUC400AAA0100011



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.



The Tracer® UC400 unit controller is a multi-purpose, programmable, wireless sensor support device. This field-or factory-installed device that is designed to control the following equipment:

- Single- and dual-duct variable-air-volume (VAV) units
- Fan coils
- Unit ventilators
- Blower coils
- Water-source heat pumps (WSHP)
- Small air handlers

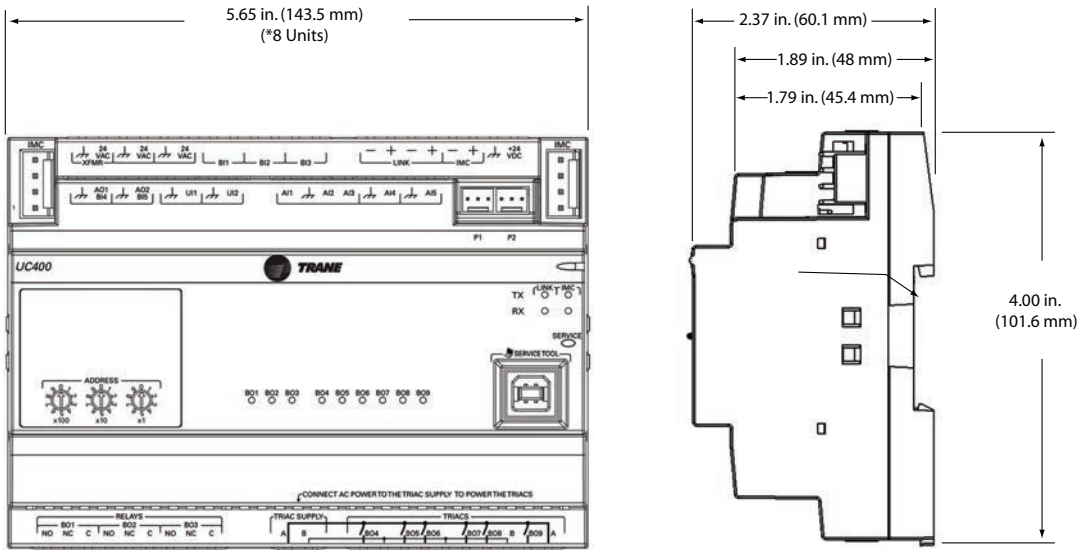
Features and Benefits

Feature	Benefit
BACnet MS/TP	An open standard building automation communications protocol which enables connections to other BAS systems and controllers.
Configurable and Fully Programmable	<ul style="list-style-type: none">• Factory programs available through quick configuration for lowest setup time.• Programmable for flexibility to meet unique sequence or hardware needs.
Total of 23 I/O Points, Built- in	Meets most terminal unit needs with extra built-in I/O available to network or additional programming on controller.
Expandable to 55 Points	Flexibility to meet additional equipment needs.
Data Logging—25,000 Samples	Easier investigation of equipment, zone, or building problems.
Factory and Field Mounting Options	Options to best meet job schedule and bidding process.
Removable Connectors, DIN Rail Mounting, Multiple Service Tool Connections	Ease of installation and service.
Compatible with Trane Wireless Comm	Provides wireless communication between Trane BACnet® unit and system controllers and zone sensors. This allows faster, easier, lower-risk installation and life-cycle savings due to future space re-configuration, upgrades, and expansions.

Controller Specifications and Agency Compliance

Storage	
Temperature:	-48°F to 203°F (-55°C to 95°C)
Relative Humidity:	Between 5% to 95% (non-condensing)
Operating	
Temperature:	-40°F to 158°F (-40°C to 70°C)
Humidity:	Between 5% to 95% (non-condensing)
Power:	20.4–27.6 Vac (24 Vac, ±15% nominal) 50–60 Hz 24 VA (24 VA plus binary output loads for a maximum of 12 VA for each binary output)
Mounting Weight of Controller:	Mounting surface must support .80 lb. (.364 kg)
Environmental Rating (Enclosure):	NEMA 1
Altitude:	6,500 ft maximum (1,981 m)
Installation:	UL 840: Category 3
Pollution:	UL 840: Degree 2
Wiring/Transformer	
16 AWG (recommended) copper wire	
<ul style="list-style-type: none"> UL Listed, Class 2 power transformer 20.4–27.6 Vac (24 Vac, ±15% nominal) The transformer must be sized to provide adequate power to the UC400 controller (12 VA) and outputs (maximum 12 VA per binary output) 	
Agency Compliance	
<ul style="list-style-type: none"> UL-864/UUKL listed (when installed and programmed in accordance with the Engineered Smoke Control System Application Guide, BAS-APG019-EN) UL916 PAZX- Open Energy Management Equipment UL94-5V Flammability CE Marked FCC Part 15, Subpart B, Class B Limit AS/NZS CISPR 22:2006 VCCI V-3/2008.04 ICES-003, Issue 4:2004 Communications BACnet MS/TP, supports BACnet protocol ASHRAE 135-2004 and meets BACnet Testing Laboratory (BTL) as an Application Specific Controller (ASC) profile device 	

Controller Dimensions



*DIN Standard 43 880, Built-in Equipment for Electrical Installation. Overall Dimensions and Related Mounting Dimensions.

Device Connections

Table 1. Device connections

Connection	Quantity	Types	Range	Notes
*Analog input (A11 to A15)	5	Temperature	10 k Ω thermistor	
		Setpoint	0 Ω to 1,000 Ω	
		Resistive	200 Ω to 20 k Ω	
Universal input (U11 and U12)	2	Linear	0–20 mA	These inputs may be configured to be thermistor inputs, 0–10 Vdc inputs, or 4–20 mA inputs.
		Linear	0–10 Vdc	
		Resistive	* Refer to analog input connection for ranges and types above	
		Binary	Solid state open collector	Minimum dwell time is 25 milliseconds (ms) ON and 25 milliseconds OFF .
		Pulse	Solid state open collector	
Binary input ^(a) (B11 to B13)	3		24 Vac detect	The UC400 controller provides the 24 Vac that is required to drive the binary inputs when using the recommended connections.
Binary output ^(a) (B01 to B03)	3	Relay	2.88 A @24 Vac pilot duty (For further power ratings, refer to the Tracer UC400 Installation, Operation, and Maintenance Manual [BAS-SVX20]).	Power needs to be wired to the binary output. All outputs are isolated from each other and from ground or power. Ranges given are per contact.
Binary output ^(a) (B04 to B09)	6	TRIAC	0.5 A max @24–277 Vac, resistive and pilot duty (For further power ratings, refer to the Tracer UC400 Installation, Operation, and Maintenance Manual [BAS-SVX20]).	Use for modulating TRIAC. User determines whether closing high side (providing voltage to the grounded load) or low side (providing ground to the power load). Ranges given are per contact and power comes from TRIAC SUPPLY circuit.

Table 1. Device connections (continued)

Connection	Quantity	Types	Range	Notes
Analog output/binary input (AO1/B14 and AO2/B15)	2	Linear output	0–20 mA	Each termination must be configured as either an analog output or binary input.
		Linear output	0–10 Vdc	
		Binary input	Dry contact	
Pressure inputs (PI1 and PI2)	2	3-wire	0–5 in H ₂ O	Pressure inputs supplied with 5 volts of power. Designed for Kavlico™ pressure transducers.
Overall Point Total	23			

(a) Binary Inputs, Binary Outputs, and TRIACs: **For safety precautions, do not mix Class 1 and Class 2 voltages in an enclosure or on a controller without a physical barrier between these units.**

Additional Ordering Options

- UC400 Controller (Made in U.S.A. Version) (*Order Number: BMUC400UAA0100011*)
- UC 400 Controller Pre-programmed for RTU or Heat Pump (*Order Number: UC400ABA0100011*)
- Tracer® XM30 Expansion Module (*Order Number: X13651537010*)
- Tracer XM32 Expansion Module (*Order Number: X13651563010*)
- Tracer XM70 Expansion Module (*Order Number: X13651568010*)
- Tracer XM7 Expansion Module (Made in the U.S.A version) (*Order Number: X13651597010*)
- Tracer BACnet Term (2 pack) (*Order Number: X1365152401*)
- Tracer Small 10" DIN Rail Enclosure (*Order Number: X19091354010*)
- Tracer Medium Enclosure, 120 VAC (*Order Number: X13651559010*)
- Tracer Medium Enclosure, 230 VAC (*Order Number: X13651560010*)
- Tracer Large Enclosure, 120 VAC with display capable door (*Order Number: X13651552010*)
- Tracer Large Enclosure, 230 VAC with display capable door (*Order Number: X13651554010*)

Agency Listing and Compliance

The European Union (EU) Declaration of Conformity is available from your local Trane® office.

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.