Product Data Sheet

Tracer™ UC400 Programmable Controller
Ordering Number: BMUC400AAA0100011

The Tracer™ UC400 controller is a multi-purpose, programmable, wireless sensor support device. This field- or factory-installed device 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	• 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 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-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
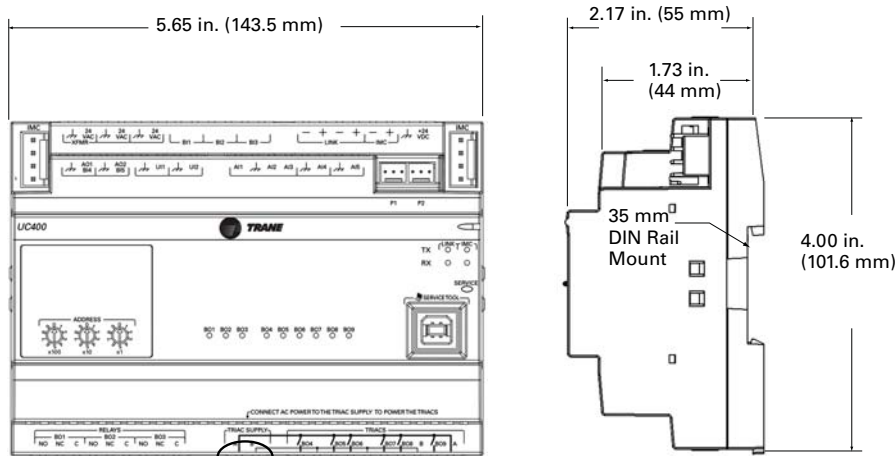
Important: *Slotted release clip shown– if removing or repositioning the controller, the user must remove terminal connectors before proceeding.*

Device Connections

Table 1. Device connections

Connection	Quantity	Types	Range	Notes
*Analog input (AI1 to AI5)	5	Temperature	10 kΩ thermistor	
		Setpoint	0 Ω to 1,000 Ω	
		Resistive	200 Ω to 20 kΩ	Typically used for fan speed switch.
Universal input (UI1 and UI2)	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	
		Pulse	Solid state open collector	Minimum dwell time is 25 milliseconds (ms) **ON** and 25 milliseconds **OFF**.
Binary input[a] (BI1 to BI3)	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] (BO1 to BO3)	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] (BO4 to BO9)	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***.
Analog output/binary input (AO1/BI4 and AO2/BI5)	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_2O	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.***

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