

UbiquiSTAT

Commercial BACnet Controller



Description

The UbiquiSTAT series of room controllers are powerful, commercial-grade energy management devices with an extensive array of features and configuration options. Prime installations for these advanced controllers include retail, banking, restaurant, education, and other multi-site enterprises that can benefit from remote-device energy management and data collection.

UbiquiSTAT room controllers can be configured for a variety of conventional, heat pump, and modulating control applications. Models are available for both wired and WiFi communication, and with an optional built-in humidity sensor linked to advanced dehumidification controls.

All UbiquiSTAT room controllers feature a large multicolor touchscreen display for monitoring, programming, and seven-day/holiday scheduling.

UbiquiSTATs incorporate non-volatile memory, so that in the event of power loss, all programmed operating parameters are unaffected; no need for battery backup.

UbiquiSTAT WiFi thermostats connect easily to a WiFi network via BACnet IP, eliminating the need to run wires to locations that may be difficult to reach.

Any location that can supply low-voltage (24VAC) power can support a UbiquiSTAT WiFi thermostat; by integrating UbiquiSTAT WiFi thermostats into their networks, users can save substantial installation costs over other, more complex networking solutions.

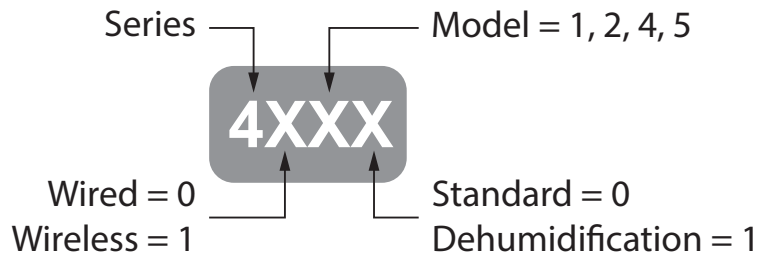
All UbiquiSTAT thermostats interface with the TCS Ubiquity Cloud energy management system, which is designed for retail, banking, restaurant, education, and other multi-site enterprises that can benefit from remote device management and data collection. Ubiquity Cloud is accessible from any web browser, and provides extensive site management and data collection tools, giving users full control of their energy usage while reducing operation costs. See the [Ubiquity Cloud](#) section on the [TCS website](#) for more information.

Features

- **Powerful user interface:**
 - Large 4.3" animated color touchscreen, customizable with customer's company logo
 - Quick-start wizard for easy setup
 - Internal BACnet Explorer
 - System test screen for rapid commissioning
 - Highly detailed status reporting and diagnostics
 - Service status display with custom messaging
 - Calibration of temperature inputs for greater accuracy
- **Selectable BACnet or TCSbus communication:**
 - BACnet BTL Listed (B-ASC)
 - Backwards-compatible with existing TCSbus networks
 - All inputs/outputs fully commandable via network
 - WiFi models use BACnet IP over WiFi
- **Optional built-in humidity sensor with advanced dehumidification control sequences:**
 - Staged cooling to remove moisture
 - Staged reheat to maintain comfort
 - Cooling modulation control
 - Heating modulation control
- **Four temperature inputs (one built-in, three remote) for mixed-air applications:**
 - Outdoor, discharge, remote room
 - Configurable weighted averaging of built-in and remote room sensors
- **Full-featured BACnet scheduling (SCHED-I-B):**
 - Five heat/cool setpoint groups
- **Programmable fan control:**
 - Auto/on/cool/recirculation modes for occupied and unoccupied
 - Adjustable recirculation
 - Fan proving with automatic retries
- **User management controls:**
 - Occupancy override enable/disable
 - Setpoint adjust range limit
 - Optional access code locks out on-screen programming
- **Configurable for conventional heat/cool control or heat pump control**
- **Discharge setpoint reset on modulating heat/cool control**
- **Configurable Smart Recovery™ for preconditioning environments for occupancy**
- **Setpoint setback based on digital inputs**
- **Network-upgradeable firmware (included with your Ubiquity Cloud subscription)**
- **Built-in equipment protection delays and sequencing**
- **Outdoor air heating and cooling lockouts**
- **Discharge air protection limits**
- **Fahrenheit or Celsius temperature display**
- **External time clock input/output**
- **Adjustable delay on power-up and occupancy**
- **Stand-alone or network operation**
- **Backup and restore of all settings (DM-BR-B)**

Model Number Definitions – A Key to Understanding UbiquiSTAT Series Model Versions

TCS offers 16 different UbiquiSTAT versions based on four models: the US4010, US4020, US4040, and US4050. Each model in the series is available in several versions which can include wireless capability and an internal humidity sensor. These versions are identified in the code below:



Applications

| Description | 4010 4110 | 4020 4120 | 4040 4140 | 4050 4150 | 4011 4111 | 4021 4121 | 4041 4141 | 4051 4151 |
|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| RTU Conventional Staging: Heat/Cool/Selectable (Heat or Cool) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| AHU and Split Units with staging: Heat/Cool/Selectable (Heat or Cool) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Cold Climate Heat Pump Disable | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Cooling and Heating Lock-Out | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Heat Pump Control: Compressors/Auxiliary Heat/Emergency Heat | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Demand Control Response Setback | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Setpoint Setback Sequence | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Built-In Humidity Sensing with Dehumidification Control and Reheat | - | - | - | - | ✓ | ✓ | ✓ | ✓ |
| Fan Coil-Two-Pipe Fan Coil Unit with Modulating Valve | ✓ | - | - | ✓ | ✓ | - | - | ✓ |
| Reset Discharge Control (Cooling and Heating) | ✓ | - | - | ✓ | ✓ | - | - | ✓ |
| Fan Coil-Four-Pipe Fan Coil Unit with Two-Position Damper | ✓ | - | - | ✓ | ✓ | - | - | ✓ |
| Zone Damper Control with Reheat | ✓ | - | - | ✓ | ✓ | - | - | ✓ |
| Analog Input Monitoring (Humidity, Pressure, CO ₂) | - | - | ✓ | ✓ | - | - | ✓ | ✓ |
| Economizer Control, Mixed and Outside Air, Dry Bulb Changeover | - | - | ✓ | ✓ | - | - | ✓ | ✓ |
| Demand Control Ventilation with CO ₂ | - | - | ✓ | ✓ | - | - | ✓ | ✓ |
| Pre-Occupancy Purge Ventilation | - | - | ✓ | ✓ | - | - | ✓ | ✓ |
| Modulating Heating Cooling Outputs | - | - | - | ✓ | - | - | - | ✓ |
| Hot and Chilled Water Valve Control | - | - | - | ✓ | - | - | - | ✓ |
| Humidity Sensing with Modulated Dehumidification and Reheat | - | - | - | - | - | - | - | ✓ |

Specifications (All Models)

Communication:

RS-485

| | |
|-------------|--|
| Protocol: | BACnet MS/TP and/or TCSbus |
| Baud Rates: | 9,600, 19,200, 38,400, 57,600, 76,800, 115,200 |
| Wire: | 22 AWG three-conductor twisted/shielded |

Power Requirements:

| | |
|---------------------|---------------------------|
| Input: | 24VAC +15%, -5%, 50/60 Hz |
| Device Consumption: | 10 VA max |
| Wire: | 18 AWG two-conductor |

Mechanical:

| | |
|----------------------|---|
| Exterior Dimensions: | 6.7" x 4.9" x 1.4" (171mm x 123mm x 37mm) |
| Color: | Glossy white |
| Mounting: | One-gang (vertical or horizontal) and two-gang (4" x 4" [102mm x 102mm]) hole patterns, accepts #6 to #8 screws |
| Wiring Terminals: | De-pluggable terminal blocks with screw connections |

User Interface:

| | |
|----------|--|
| Display: | 4.3" (109.2mm) animated color touchscreen. Backlight with auto-dimming |
|----------|--|

Environmental:

| | |
|------------------------|--|
| Operating Temperature: | 32°F to 131°F (0°C to 55°C) |
| Storage Temperature: | -22°F to 176°F (-30°C to 80°C) |
| Operating Humidity: | 0 to 100% RH (non-condensing) |
| Air Quality: | Non-corrosive (i.e. use remote sensor for applications such as swimming pools) |

Certification:

BTL certification in accordance with ANSI/ASHRAE 135 (DIN EN ISO 16484-5)

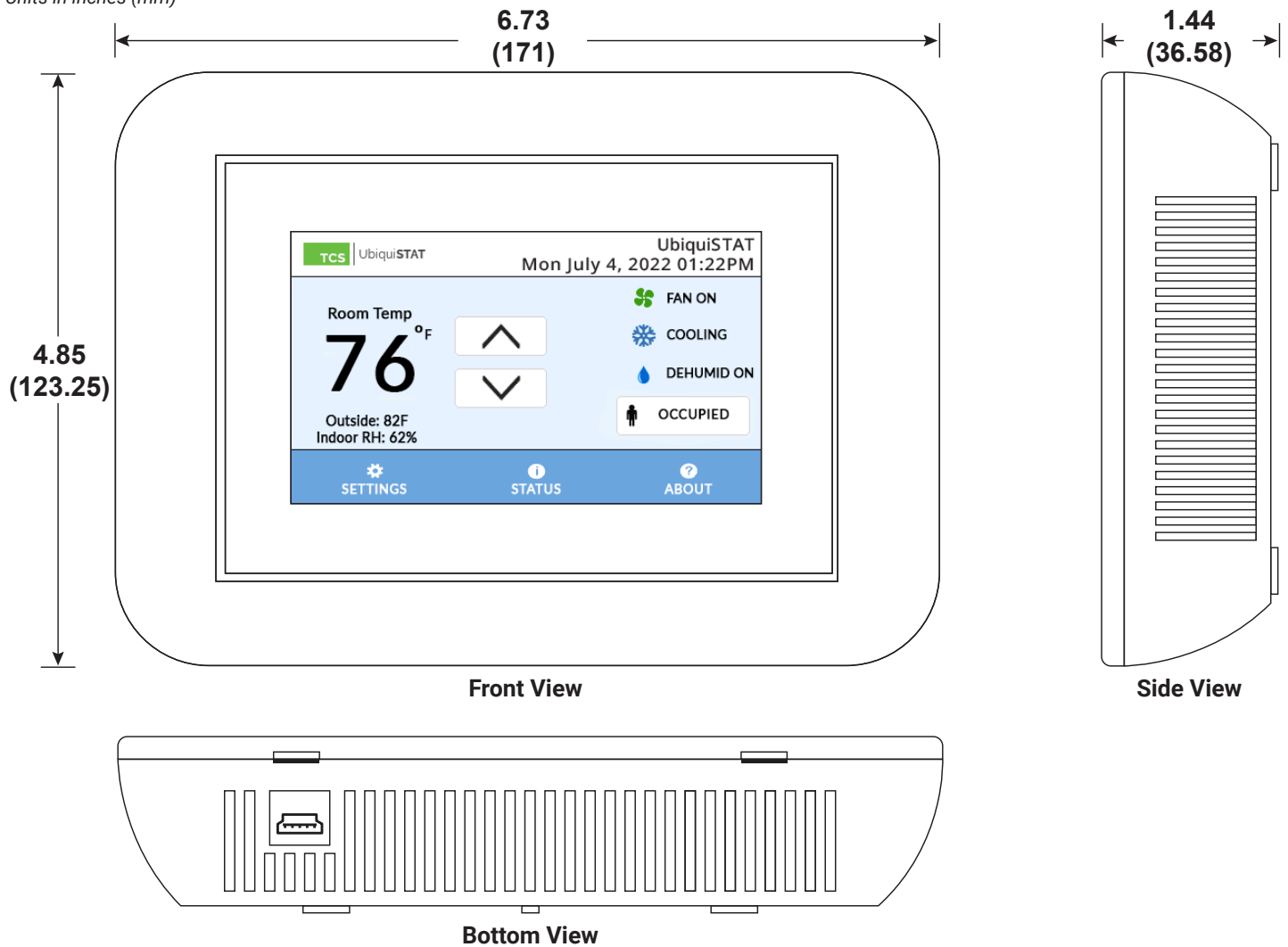
Model-Specific Specifications

| Outputs | 4010 4110 | 4020 4120 | 4040 4140 | 4050 4150 | 4011 4111 | 4021 4121 | 4041 4141 | 4051 4151 |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Relays: | | | | | | | | |
| Type: SPST mechanical contact | | | | | | | | |
| Contact Rating: 2A maximum @ 24VAC (50/60Hz) | 5 | 7 | 7 | 7 | 5 | 7 | 7 | 7 |
| Wire: 18 or 20 AWG multi-conductor | | | | | | | | |
| Analog Outputs: | | | | | | | | |
| Range: 0 to 20mA or 4 to 20mA (programmable) | | | | | | | | |
| Accuracy: ±0.2mA (1% of full scale) | | | | | | | | |
| Resolution: 0.1mA | 2 | 0 | 1 | 2 | 2 | 0 | 1 | 2 |
| Max Load: 1000Ω | | | | | | | | |
| Wire: 18 AWG two-conductor | | | | | | | | |
| Auxiliary Power (+P Terminal): | | | | | | | | |
| Output: 24VDC, 100mA maximum | - | - | ✓ | ✓ | - | - | ✓ | ✓ |
| Wire: 18 AWG two-conductor | | | | | | | | |
| Inputs | 4010 4110 | 4020 4120 | 4040 4140 | 4050 4150 | 4011 4111 | 4021 4121 | 4041 4141 | 4051 4151 |
| One Built-In Temperature Sensor: | | | | | | | | |
| Sensor Type: Digital | | | | | | | | |
| Resolution: 0.1°F | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Digital Accuracy: ±1°F | | | | | | | | |
| Range: -40°F to 160°F | | | | | | | | |
| Three Digital Inputs: | | | | | | | | |
| Type: Dry contact only (no voltage) | | | | | | | | |
| Wire: 18 AWG two-conductor | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Three Remote Temperature Inputs: | | | | | | | | |
| Sensor Type: Pt1000 RTD, Alpha=0.00385 Ω/°C | | | | | | | | |
| Resolution: 0.1°F | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Accuracy: ±1°F Range: -40°F to 160°F | | | | | | | | |
| Wire: 18 AWG two-conductor twisted/shielded | | | | | | | | |
| Analog Inputs: | | | | | | | | |
| Range: 0-20mA or 4-20mA (programmable) | | | | | | | | |
| Accuracy: ±0.2mA (1% of full scale) | - | - | 1 | 2 | - | - | 1 | 2 |
| Resolution: 0.1mA | | | | | | | | |
| Wire: 18 AWG two-conductor twisted/shielded | | | | | | | | |
| Dehumidification | 4010 4110 | 4020 4120 | 4040 4140 | 4050 4150 | 4011 4111 | 4021 4121 | 4041 4141 | 4051 4151 |
| Staged cooling | - | - | - | - | ✓ | ✓ | ✓ | ✓ |
| Staged reheat | - | - | - | - | ✓ | ✓ | ✓ | ✓ |
| Modulating Cooling | - | - | - | - | ✓ | - | - | ✓ |
| Modulating Reheat | - | - | - | - | ✓ | - | - | ✓ |
| WiFi | 4110 | 4120 | 4140 | 4150 | 4111 | 4121 | 4141 | 4151 |
| Communication: | | | | | | | | |
| Protocol: BACnet/IP | | | | | | | | |
| WiFi Standards: 802.11 b/g/n 2.4GHz | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Agency Approvals: FCC Part 15.247 | | | | | | | | |

All specifications subject to change without notice.

Dimensions

Units in inches (mm)



Ordering

| Product | Part # | Description |
|------------|--------|---|
| UbiquiSTAT | US4010 | Single-Stage RTU/Zoning BACnet Thermostat |
| UbiquiSTAT | US4020 | Multi-Stage RTU BACnet Thermostat |
| UbiquiSTAT | US4040 | Advanced RTU BACnet Thermostat |
| UbiquiSTAT | US4050 | Advanced Application BACnet Thermostat |
| UbiquiSTAT | US4110 | Single-Stage RTU/Zoning BACnet WiFi Thermostat |
| UbiquiSTAT | US4120 | Multi-Stage RTU BACnet WiFi Thermostat |
| UbiquiSTAT | US4140 | Advanced RTU BACnet WiFi Thermostat |
| UbiquiSTAT | US4150 | Advanced Application BACnet WiFi Thermostat |
| UbiquiSTAT | US4011 | Single-Stage RTU/Zoning BACnet Thermostat with Built-In Dehumidification |
| UbiquiSTAT | US4021 | Multi-Stage RTU BACnet Thermostat with Built-In Dehumidification |
| UbiquiSTAT | US4041 | Advanced RTU BACnet Thermostat with Built-In Dehumidification |
| UbiquiSTAT | US4051 | Advanced Application BACnet Thermostat with Built-In Dehumidification |
| UbiquiSTAT | US4111 | Single-Stage RTU/Zoning BACnet WiFi Thermostat with Built-In Dehumidification |
| UbiquiSTAT | US4121 | Multi-Stage RTU BACnet WiFi Thermostat with Built-In Dehumidification |
| UbiquiSTAT | US4141 | Advanced RTU BACnet WiFi Thermostat with Built-In Dehumidification |
| UbiquiSTAT | US4151 | Advanced Application BACnet WiFi Thermostat with Built-In Dehumidification |

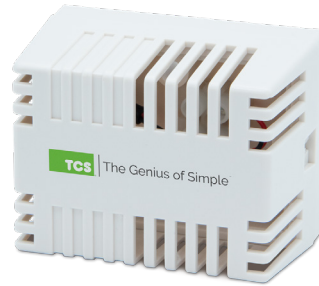
Accessories



PC2002 CO2 Sensor
Indoor Wall Mount



TS3000 Temperature Sensor
Indoor Wall Mount



TS2000 Temperature Sensor
Indoor Wall Mount



PHR1000 Humidity Sensor
Indoor Wall Mount



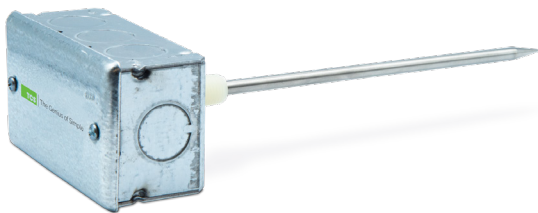
PS2001 Current Switch
Split Core



PHO1000 Humidity Sensor
Outdoor Sensor



PHD1000 Humidity Sensor
Indoor Duct Mount



TS1002 Temperature Sensor
Duct Mount



TT2000a Photocell
Outdoor Analog



TS1005 Temperature Sensor
Pipe Strap On