

# Ubiqui**STAT**

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.

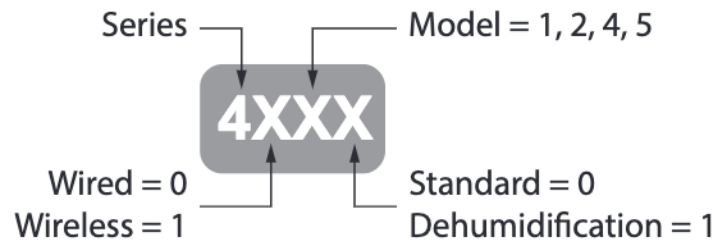
All UbiquiSTAT thermostats interface with the TCS Ubiquity Cloud energy management system, which is designed for retail, banking, restaurant, education, and other multi-site enterprises that can benefit from remote device management and data collection. Ubiquity Cloud is accessible from any web browser, 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 is available in several versions which can include wireless capability and an on-board dehumidification 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)	✓	✓	✓	✓	✓	✓	✓	✓
Analog Input Monitoring (Humidity, CO <sup>2</sup> , Pressure)	✓	✓	✓	✓	✓	✓	✓	✓
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	✓	-	-	✓	✓	-	-	✓
Economizer Control, Mixed and Outside Air, Dry Bulb Changeover	-	-	✓	✓	-	-	✓	✓
Demand Control Ventilation with CO <sup>2</sup>	-	-	✓	✓	-	-	✓	✓
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
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## 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)

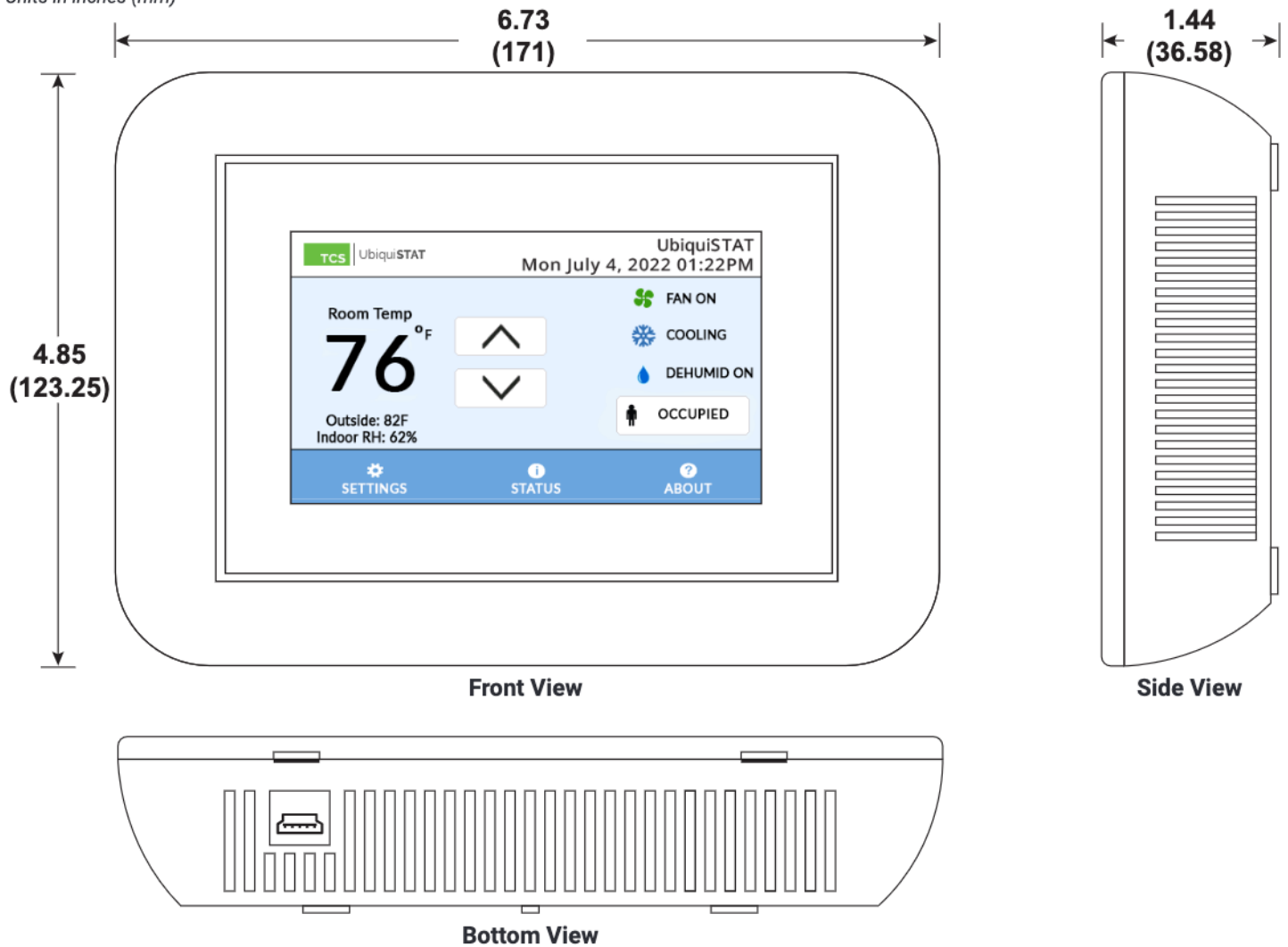
## Model-Specific Specifications

Outputs	4010 4110	4020 4120	4040 4140	4050 4150	4011 4111	4021 4121	4041 4141	4051 4151
<b>Relays:</b>								
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								
<b>Analog Outputs:</b>								
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								
<b>Auxiliary Power (+P Terminal):</b>								
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
<b>One Built-In Temperature Sensor:</b>								
Sensor Type: Digital								
Resolution: 0.1°F	✓	✓	✓	✓	✓	✓	✓	✓
Digital Accuracy: ±1°F								
Range: -40°F to 160°F								
<b>Three Digital Inputs:</b>								
Type: Dry contact only (no voltage)								
Wire: 18 AWG two-conductor	✓	✓	✓	✓	✓	✓	✓	✓
<b>Three Remote Temperature Inputs:</b>								
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								
<b>Analog Inputs:</b>								
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
<b>Communication:</b>								
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*



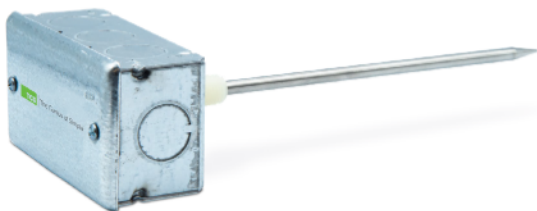
**PS2001 Current Switch**  
*Split Core*



**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*