AQ TstatProPlus

See the freshness of the air from across the room

"Combining health and building sciences for healthier buildings"

Economizer Ready Heating, Air Conditioning & Smart Ventilation Solution

The AQ TstatProPlus is not just a thermostat, it is a dashboard and control panel into the operation of your HVAC System to assure energy savings while providing a healthy work space. Embedded controls and sensors provide standard temperature and humidity controls, but extends these to ventilation controls that work to bring in fresh air when needed or provide energy savings through smarter ventilation and temperature controls based on occupancy. Part of the XCSpec™ AQ Family of products the AQ TstatProPlus integrates with standard HVAC DDC economizer controllers and powered exhausts. The AQ TstatProPlus provides a low-cost option for your customer to save money per square foot on the buildings total HVAC operating costs.

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"AQ Thermostat MERGES BUILDING AND HEALTH SCIENCE to provide Smart Dynamic Ventilation Controls"

Automatically Monitor And Control Air Quality In Real Time To:

Reduce Energy Costs

Meet and Exceed Regulations

Monitor and control an Environment Remotely

Improve Handicap Access Through Pressure Control

Designed with Light Commercial Buildings in Mind

• 2 Stage Heat and Cool, Fan • Cool/Heat cross over, heat pump
• Heat, Cool or Auto Changeover • 7 Day schedules with 2 or 4 Periods
• Partial or full tenant keypad lock out
• CO2 based Occupancy assist saves energy costs when tenants are not in the office space area by overriding heat and cool set points.

Economizer Ready for Additional Energy Savings

• Economizer Alarm annunciation • True Occupancy Out Relay hardwire wired output
• Demand Controlled Ventionaltion (DCV) wired output for additional savings when space is not fully occupied.

Air Quality Measurements take Action for Healthier Environments

Embeddded Title 24 approved carbon dioxide sensor measures CO2 parts per million. Automatic CO2 Background Calibration. Set up configuration to display PPM on front panel

• Ventilation mode energizes supply fan when CO2 goes above alert level.
• Additional Volatile Organic Compounds (VOC) and Particulate Matter (PM) 2.5 upgrade options.

At-A-Glance Quality Indicators to "See" the Health of the Space

• Air Quality Range: Green/Good, Amber/Moderate, indicator thresholds configurable at installation.
• Ventilation Quality Blue Indicator for Space Pressure - Pressure Range configured at installation.

Space Pressure Measurement for Ventilation Assurance

When an AQ Outdoor or Extender is a part of the system, individual space pressure can be derived to assure that air in the space is flowing through the ventilation and filtration system. Space pressure can be used to detect if windows or doors are open to the outside while heating or cooling and automatically stop heating or cooling.

• Space pressure measurements require Outside Air Pressure information from AQ Outside or AQ Extender.

BUILDING CONTROL UPGRADES

Communicating Sensors

No Tubes. No Wires.
No fishing wires
through the wall.
No conduit to install.
Designed for easy retrofit!

Smart Controllers

No Panels. No Buttons
No complicated menus.
No up/down buttons
Lowering Unit Costs!

Mobile Apps

Smart Phone based Set Up & Commissioning
Take the guess work out of the installation

Easy Installation

The AQ Family of products are designed to make the installation and commissioning simple. AQ Product's communicate directly between units when in radio range. Alternatively the units can be attached to a standard 802.b/g/n Wi-Fi network to communicate data and control. Conversely, an AQ Bridge installed in the RTU can be used to communicate data and control information to and from units in the space using the thermostat power wires. All XCSpec™ products support Over-The-Wire communications.

Economizer Integration

Uniquely designed for integration with roof top based economizer controllers, the AQ Thermostat supports several key features to optimize your economizer operation and achieve greater energy savings. While these can be wired directly to the thermostat backplate, if the extra wires for alarm input, occupancy or 0-10V control are not available, the thermostat communicates this same information over the wire to an AQ Bridge. The AQ Bridge provides the wired outputs needed to integrate with an economizer controller.

Powered Exhaust (PE)

The AQ Thermostat is part of the AQ Family designed to work with powered exhausts. Making use of our tubeless pressure system, the AQ Thermostat provides in-space pressure information to drive a 0-10V output on the AQ Extender. Control is based on maintaining a building pressure set point commissioned by the installer. The AQ Extender is installed near the exhaust and can communicate with the thermostat over Wi-Fi or through the AQ Bridge.

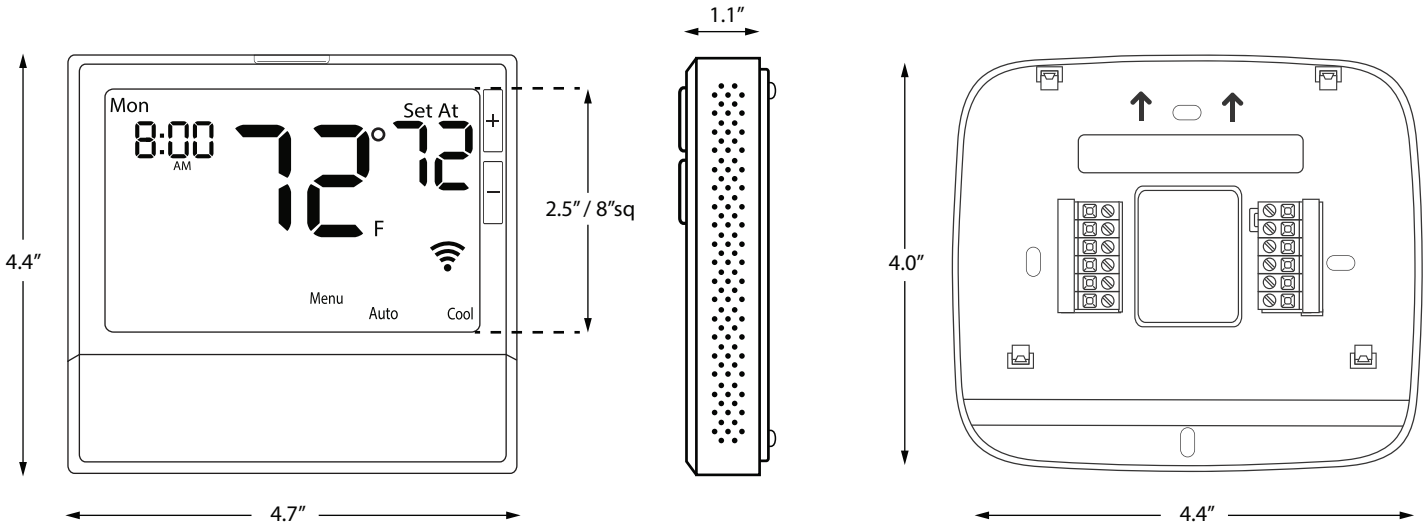
**** The AQ Thermostat is plug and play with MicroMetl Powered Exhaust products.**

Multi-ZoneControls

Extend energy savings and air quality health in your buildings by adding additional zones. The AQ Thermostat extends the temperature, humidity, economizer, air quality and powered exhausts control by up to 3 additional zones. Based on receiving sensor information from ZONE units, the installer can apply a weight to any particular zone's input to prioritize that zone. ZONE units attach to the thermostat over Wi-Fi direct or through the buildings Wi-Fi network.

Transforming HVAC Controls for IoT

THERMOSTAT SPECIFICATIONS



Display Range of Temperature	41° F to 95° F(5° C to 35° C)
Control Temperature Range	44° F to 90° F(7° C to 32° C)
Load Rating	1 Amp per terminal, 1.5 amp maximum all terminals combined
Display Accuracy	+/- 1° F
Swing (cycle rate or differential)	Heating and Cooling are adjustable from 0.2° F to 2.0° F
Power	18 - 30 VAC, NEC Class II, 50/60 Hz for common wire
Operating Ambient	32° F to 105° F(0° C to 41° C)
Operating Humidity	90% Non-condensing maximum
Dimensions of Thermostat	4.7″ wide x 4.4″ high x 1.1″ wide

SPECIFIC THERMOSTAT OPERATIONS

- 7 day / 2 or 4 period programming
- Auto changeover
- 2 heat 2 cool
- Integrated room temperature and humidity sensor
- Full or partial front panel user lock out
- Separate heating and cooling swing adjustments
- CO2 Sensor - 0-5000ppm +/- 50pm accuracy
- automatic background calibration (ABC) on CO2
- Automatic altitude adjustment on CO2 reading
- Option to enable Fan if CO2 exceeds user set threshold.
- Wireless communication to add up to 3 zones for temperature/humidity, pressure or CO2

SPECIFIC FOR AIRFLOW MEASUREMENT

- Outside transmitter must be installed. Only one required per building
- Inside pressure at thermostat is compared to the outside transmitter pressure
- Thermostat derives differential pressure between inside building pressure and outside air pressure
- Option to display on the thermostat panel
- Automatically calibrates pressure sensors during unoccupied times

CLOUD PORTAL AVAILABLE FOR SITE SPECIFIC THERMOSTAT MANAGEMENT

SPECIFIC FOR CO2 BASED OCCUPANCY

- Learning algorithm for determine unoccupied CO2 baseline
- Changes to occupied settings when measured ppm higher than learned baseline
- Remains occupied for 30 minutes
- After 30 minutes automatically converts to scheduled based set points if CO2 is at baseline. If CO2 is above the baseline it will continue occupied settings

FOR ECONOMIZER INTEGRATION

- O or B Relay can be reconfigured for occupancy out relay to economizer input
- Alarm out from economizer wired to backplate to annunciate on thermostat panel when active
- 0-10/2-10V Demand control ventilation (DCV) output
- Installer configurable DCV output range from 0 to 5000 ppm


XC SPEC®
CONTROLS