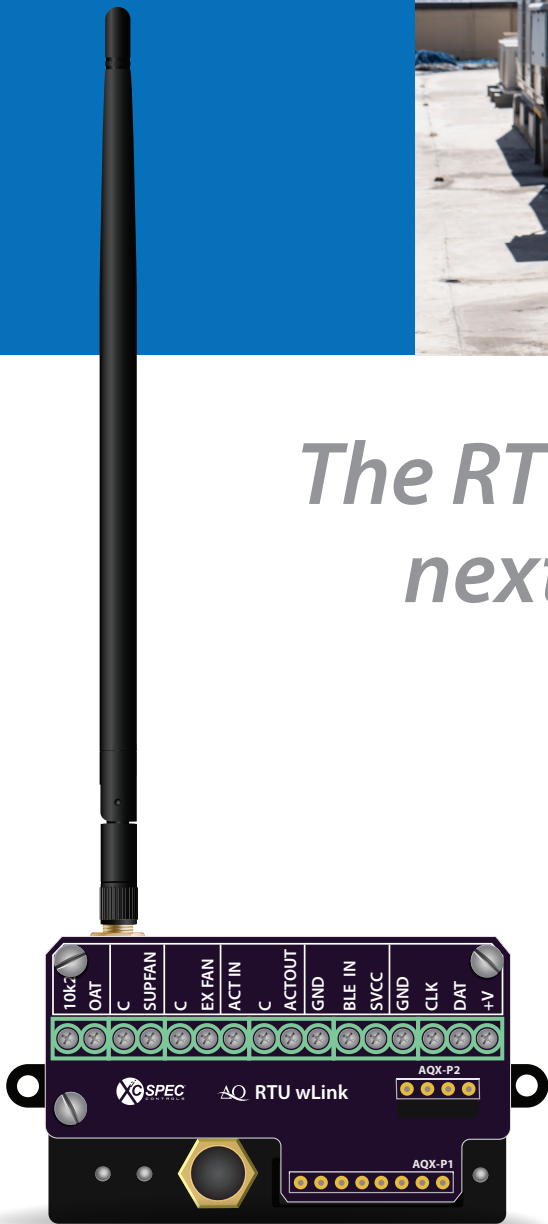


RTUwLink

AQE-LNK-02

The RTUwLink represents the next level in controllers

The XCSpec RTUwLink is a compact, advanced RTU controller that integrates economizer, powered exhaust, and variable supply fan control into one easy-to-install solution. When paired with XCSpec thermostats, the RTUwLink communicates over the thermostat power wires or wirelessly using industry-standard IEEE 802 wireless communications—no custom gateways required. Setup is fast with the AQ Installer App using a simple QR code, and while RTUwLink is cloud-ready, it can install and operate without a cloud connection.





“The RTUwLink integrates multiple building control needs to provide an easy-to-install Smart Dynamic Solution”

Automatically Monitor and Control Air Quality in Real Time To:

- ***Reduce energy costs***
- ***Meet and exceed regulations***
- ***Monitor and control the environment remotely***
- ***Improve handicap access through pressure control***

Compatible With:

- ***TstatPro+***
- ***AQTstatPro+***
- ***Smart Bulb***
- ***Outside Air Transmitter***

Economizer Management

Pair with an XCSpec Thermostat for complete economizer control. Using outside air temperature and air quality conditions, the system optimizes outdoor air ventilation for maximum energy savings and improved indoor air quality. Temperature control within the conditioned space adjusts outside air intake, and if cooling demand is not satisfied within five minutes, the RTUwLink automatically enables integrated economizer operation. Integrated with the thermostat, so there is no need to wire around Y1 and Y2 or CC1 & CC2. The thermostat and RTUwLink work together to assure easy installation. Based on space temperature—not just SAT—the outside air damper is controlled to optimize temperature management for the tenant space.

Demand-Based Ventilation Control – Energy Savings

When paired with the AQTstatPro+ with its built-in CO₂ sensor, the RTUwLink automatically adjusts outside air intake based on occupancy. As CO₂ levels indicate reduced occupancy, the economizer reduces ventilation to minimize the amount of air requiring conditioning, improving energy efficiency.

Outside Air Quality Measurement – Healthier Indoor Environments

Add a Smart Bulb or Outside Air Transmitter to expand economizer functionality with real-time outdoor air quality monitoring. In addition to temperature and humidity, the system measures VOCs, vehicle emissions, and particulate matter (PM) for smoke and dust, automatically adjusting the outside air damper to reduce indoor air pollutants.

Tubeless Space Pressure Measurement – Ventilation Assurance

When paired with an XCSpec Thermostat Pro Series, the RTUwLink controls a powered exhaust to maintain the building's desired space pressure. Differential pressure is calculated using indoor building pressure measured by the thermostat and a single-tube outdoor pressure reference at the RTUwLink. This differential pressure is converted into a 0–10V PI-controlled output that modulates the powered exhaust fan to maintain the desired pressure setpoint.

Variable Speed Supply Fan – Energy Savings

Reduce energy consumption by operating the supply fan below full speed whenever possible. Based on space temperature and cooling demand, the RTUwLink provides a 0–10V output to precisely control a variable-speed supply fan.

RTU Monitor – Advanced RTU & Compressor Diagnostics

Using optional clip-on temperature sensors on the evaporator and condenser coils, along with three-phase current monitoring, the RTUwLink captures critical system data for advanced AI-driven predictive maintenance. Delta T measurements across the RAT, SAT, and MAT can be continuously monitored and analyzed to identify performance issues before they become costly failures.

Easy To Install



Economizer Integration

The app features a dedicated economizer setup page that simplifies configuration. Fan minimum and maximum positions are automatically determined using the building's ZIP code and climate zone, while manual test functions allow installers to verify actuator wiring, operation, and damper position for proper system performance.

Powered Exhaust (PE)

When configuring Powered Exhaust, the app includes built-in commissioning tools to determine the optimum fan minimum and maximum speeds needed to allow the installer to set the building pressure setpoint and maintain the desired space pressure. Once configured, the RTUwLink automatically modulates the Powered Exhaust fan to maintain the installer-defined pressure setpoint. There is a manual mode to test wiring to the powered exhaust.



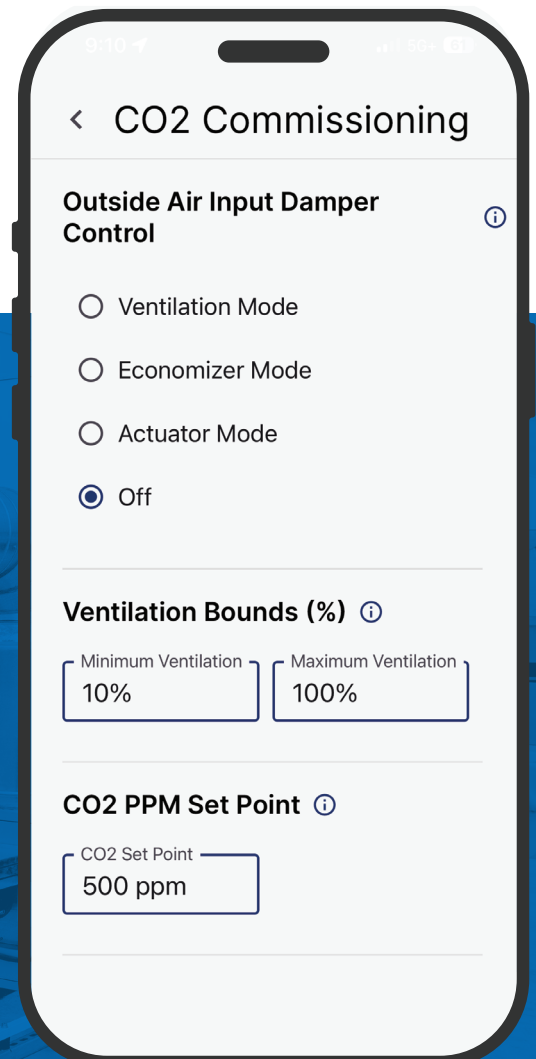
AQ Installer App

Fast Commissioning. Smarter Setup.
Simplified Installation.

Significantly Speeds Up Installations

The AQ Installer App streamlines installation and commissioning by placing powerful setup and diagnostic tools directly in the installer's hands. Using Bluetooth® or Wi-Fi® connectivity, installers can quickly connect to AQ devices without complex procedures, reducing installation time and improving efficiency in the field.

The app provides guided configuration and real-time access to system information, making startup and commissioning faster and easier. Installers can configure operating parameters, view device status, verify system communication, and make adjustments directly from a smartphone or tablet.





Easy to Visualize RTU Operation



From Insight to Action. CloudBEAM Powers Both.

CloudBEAM is a secure, cloud-based platform that optimizes your building's HVAC management with real-time visibility, intelligent monitoring, and advanced system analytics.

Remote Monitoring & Alerts

Access HVAC operations from anywhere through a secure private cloud. Receive real-time system alerts, performance notifications, and preventative maintenance reminders to keep equipment operating efficiently and reliably.

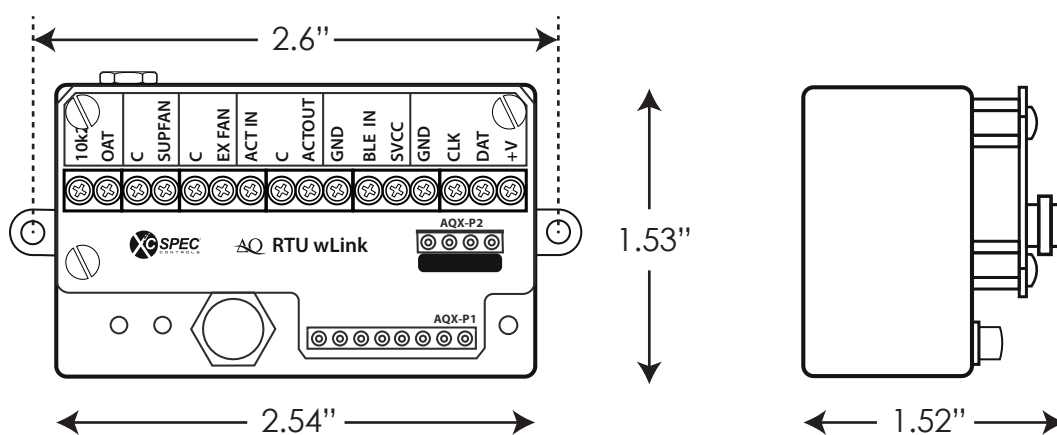
Performance Analytics

Monitor economizer and RTU performance over time with easy-to-read trends and historical data, helping identify opportunities to improve efficiency and reduce operating costs.

AI-Driven Predictive Maintenance

CloudBEAM uses AI-driven analytics to detect issues such as power phase imbalances and Delta T degradation before they become costly failures, helping maximize equipment life and reduce downtime.

SPECIFICATIONS



Power - Hardwire	24VAC, 60 Hz, 35 mA
Two 0-10V PI Control Outputs	Powered Exhaust, Supply Fan
One 0-10/2-10V Output	Actuator Drive Out
One 0-10V/2-10V Input	Actuator Position In
One 10K-2 Input	10K Type II / Dry Bulb
BLE Wireless Input	Up to 10 Temp inputs
Sensor Bus I2C Extension Port	Smart Bulb and Power Measurement

ECONOMIZER OPERATION

- Outside Air Temperature is used to determine whether to input cooler outside air.
- When the thermostat determines a need for cooling and the OAT is in the proper range, the Outside Air actuator is opened, under PI control, to begin cooling space.
- If cooling demand does not decrease within 5 minutes and the actuator is fully open, the first stage compressor is energized by the thermostat.
- Demand Controlled Ventilation (DCV) control is based on ppm readings from the thermostat and used to close the actuator.

OUTSIDE AIR QUALITY BASED CONTROL

- Advanced air quality sensors are used by both the Smart Bulb and the Outside Air Transmitter.
- Conditions from smoke or ash in the air is detected and action is taken to close the outside air input actuator while the event exists.
- Conditions from vehicle fumes are detected and action is taken to close the air input while poor outdoor air quality exists.
- If connected to an AQTstatPro with a CO2 sensor, indoor CO2 levels are monitored and, if they exceed a dangerous level, outside air will be introduced until CO2 levels drop.

POWERED EXHAUST PRESSURE CONTROL

- The exhaust fan is managed while the building is occupied. This is provided by the thermostat.
- While occupied, the differential pressure is continuously calculated by the RTUwLink.
- Based on the difference from the pressure set point, an integrated PI function continuously controls 0-10V to maintain the pressure setpoint.
- When unoccupied, the RTUwLink self calibrates the pressure offsets.

ADVANCED RTU MONITOR

- Delta T between evaporator coils mid and exit are continuously measured.
- Delta T between Condenser coils mid and exit are continuously measured.
- All three phases of power are monitored. Any single phase out of phase with the other two is immediately flagged and the Compressor is disabled at the thermostat.
- CloudBEAM-ready for remote monitoring, trending, alerts, and AI-driven predictive maintenance.

