

Outdoor Airflow Controller Module with Network Control Connection for MP-Bus Actuators



- √ Compensate for damper hysteresis, filter loading, wind, stack and fan speed variations
- √ Provide continuous verification of intake flow rates
- √ Demonstrate compliance with ASHRAE Standards 62.1, 90.1 and 189.1
- √ Satisfy LEED prerequisites and document code compliance
- √ Improve indoor air quality and thermal comfort
- √ Save energy

The OAC-3000S can be provided with a single integrated IAT-DI duct probe, one or two integrated IAT-UI or IAT-US universal mount probes or an approved external BACnet MS/TP airflow measurement device.

The OAC-3000S interfaces with approved MS/TP BACnet CO₂ sensors and occupancy counters when DCV is required.

- Compatible with GreenTrol IAT integrated thermal dispersion airflow/temperature sensors or approved BACnet MS/TP airflow measuring devices
- 24 VAC/DC or MS/TP BACnet binary input activates occupied mode operation
- RTC occupied/unoccupied scheduler**
- Provide airflow setpoint control, CO₂-DCV or population based-DCV during occupied mode
- Accepts approved BACnet MS/TP CO₂ sensors or occupancy counters when DCV is required
- Clamp DCV airflow rates between minimum and maximum airflow limits
- Supports unoccupied airflow setpoint control
- Built-in notification alarms
- Contact closure relay can be assigned to notification alarms or active control mode

The OAC-3000S modulates an MP-Bus damper actuator to maintain the outdoor airflow rate. The controller can be configured to operate solely on the schedule or use the schedule with the binary input trigger to activate occupied mode. The binary trigger is typically provided by a thermostat or other analog or MS/TP BACnet binary output. The trigger can also be provided by the 24 VAC control signal used when a two-position actuator is provided for outdoor air control (replace the two-position actuator with an MP-bus actuator).

Advanced logic and airflow measurement improves traditional CO₂-DCV when demand control ventilation is required. The OAC-3000S controller resets the outdoor airflow setpoint between user defined minimum and maximum airflow limits to maintain either a user defined fixed CO₂ level or variable airflow setpoint based on the population using a built-in CO₂/airflow counting algorithm or external occupancy counter.

The OAC-3000S interfaces with most MS/TP BACnet building automation systems and supports full read/write privileges as a BACnet 1/8 load master. An RS-485 signal isolator is available when an isolated MS/TP network is required.

OAC-3000S Controller Module Technical Specifications

Functionality

Outdoor Air Control (OAC) Modes Supported

- FLOW:** Maintains a user defined airflow setpoint
- CO2:** Maintains a user defined CO₂ level by resetting the outdoor airflow setpoint (requires a CO₂ sensor)
- CO2/OAF:** Maintains a calculated outdoor airflow setpoint based on the estimated ventilation zone population (requires a CO₂ sensor)
- COUNT:** Maintains a calculated outdoor airflow setpoint based on the occupancy counter population (requires an occupancy counter)
- FIXED:** Maintains a fixed damper position (no control)

Unoccupied Air Control (UAC) Mode Option: Yes, maintains a user defined airflow setpoint

Notification Alarms

- "Unoccupied Mode" High/Low Airflow Alarm
- "Outdoor Airflow Mode" High/Low Airflow Alarm
- "All Modes" CO₂ Alarm (requires a CO₂ sensor)
- "All Modes" System Trouble Alarm

Note: Alarms can be assigned to the contact closure relay

Built-in RTC Scheduler Modes:

- Off:** No schedule set
- Days:** Allows s different occupied start time and duration for each day of the week
- Weeks:** Allows a different occupied start time and duration for weekdays and weekends

User Interface

- Display:** 16-character alpha-numeric LCD
- Navigation:** 4-button interface

Integrated Sensor Capability

Type: Accepts GreenTrol IAT-DI, IAT-UI and IAT-US Thermal Dispersion Airflow and Temperature Measurement Probe (required unless an external MS/TP airflow measurement device is provided). See appropriate IAT product data sheet for probe information.

Available Configurations: IAT-DI Probes

Single Probe: 1 probe x 1 or 2 sensor nodes/probe

Available Configurations: IAT-UI and IAT-US Probes

- Single Probe:** 1 probe x 1 sensor node/probe
- Dual Probe:** 2 probes x 1 sensor node/probe

Binary Input

BI1

- Type:** Binary Input (BI1)
- Assignment:** Mode activation trigger signal
- Configurable Ranges:** 0-24VAC or 0-24VDC
- Trigger Threshold:**
 - VAC configuration:** 6.5 VAC
 - VDC Configuration:** 8 VDC

MP-Bus Output

MP1

Assignment: MP-Bus proportional actuator network signal (requires MP-bus cable, sold separately)

Contact Closure Relay

R1

- Type:** Dry contact w/ onboard jumper to drive a remote LED
- Assignment:** OAC alarms or Control Mode
- Status:** Normally Open (N.O.)
- Rating:** 30 VDC or 24 VAC @ 3 amp. max.

Network Connection

N1

- Type:** Non-isolated MS/TP BACnet master connection (provide an RS-485 network isolator if isolation is required)
- B.A.S. Object Read/Write Access:** Yes
- Device Load:** 1/8 load
- Supported Baud Rates:** 9.6, 19.2, 38.4 and 76.8 kbaud
- MS/TP BACnet Airflow Sensor Capability:** One GreenTrol Automation or approved third-party airflow measurement device (cannot be used if an integrated airflow measurement device is connected).
- MS/TP BACnet CO₂ Sensor Capability:** One GreenTrol Automation or approved third-party space mounted or return air CO₂ sensor
- MS/TP BACnet Occupancy Counter Capability:** One to four GreenTrol Automation or approved third-party occupancy counters

Environmental Limits, Power Requirements & Dimensions

Environmental Limits

- Temperature:** -20 to 120 °F [-28.9 to 48.9 °C]
- Humidity:** 5 to 95%

Important: Provide a weather-proof enclosure if the controller module is mounted outdoors

- Power Requirement:** 24 VAC (22.8 to 26.4 under load) @8.5V-A
- Dimensions:** 4.34H x 6.59W x 1.83D in. [110.2 x 167.3 x 46.6 mm]