GreenTrol® Automation Inc.

OAC Series

OAC-3000 Controller

Product Data

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

- ❑ 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
- ❑ Provide airflow setpoint control, CO_2-DCV or population based-DCV during occupied mode
- ❑ Accepts approved BACnet MS/TP CO_2 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
- ❑ MS/TP BACnet connection

- √ 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-3000 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-3000 interfaces with approved MS/TP BACnet CO_2 sensors and occupancy counters when DCV is required.

The OAC-3000 modulates a network MP-bus actuator to maintain the outdoor airflow rate when an external binary trigger is active (i.e. occupied mode). The binary trigger is typically is 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 CO_2-DCV when demand control ventilation is required. The OAC-3000 controller resets the outdoor airflow setpoint between user defined minimum and maximum airflow limits to maintain either a user defined fixed CO_2 level or variable airflow setpoint based on the population using a built-in CO_2/airflow counting algorithm or external occupancy counter.

The OAC-3000 controller 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.

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OAC-3000 Controller Module Technical Specifications

Functionality

Outdoor Air Control (OAC) Modes Supported

FLOW: Maintains a user defined airflow setpoint

CO2: Maintains a user defined CO_2 level by resetting the outdoor airflow setpoint (requires a CO_2 sensor)

CO2/OAF: Maintains a calculated outdoor airflow setpoint based on the estimated ventilation zone population (requires a CO_2 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" CO_2 Alarm (requires a CO_2 sensor)

"All Modes" System Trouble Alarm

Note: Alarms can be assigned to the contact closure relay

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 Connection

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 CO_2 Sensor Capability: One GreenTrol Automation or approved third-party space mounted or return air CO_2 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 ºF [-28.9 to 48.9 ºC]

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: