

BACzone 424

ZONE CONTROLLER
HIGH PRECISION READING
TZONE COMPATIBLE



DESCRIPTION

- ▶ BACzone is an incredibly powerful variable air volume box controller. It is entirely programmable and offers 10 physical control points that are completely free for all uses (4 analogue inputs, 2 analogue outputs, 4 binary triac outputs).
- ▶ For improved control, BACzone is equipped with an advanced technology velocity transmitter that scales two combined readings. The controller provides a very rapid response to changes at low flow levels, where most applications for this type of controller are used.
- ▶ BACzone accepts Tzone digital temperature sensors, a STRATO Automation product it is compatible with on the standard 485 network protocol (up to 4 Tzones per BACzone).

ADVANTAGES

- ▶ Maintenance-free high-precision hot wire velocity transmitter.
New dust segregation technology
- ▶ Easy installation, rigid box with an intuitive and technical design on the surface.
- ▶ Very flexible: Wholly programmable and available with a floating (on-off) or modulating actuator.
- ▶ Manual override switches on every output (binary and analogue).
- ▶ Tilt switch for manual override of the actuator.
- ▶ LED indicators on every binary output and every manual override switch.
- ▶ Mini USB port to configure initial controller parameters.
- ▶ Program-activated buzzer available (80 db) (useful for identifying or locating the controller, for example).
- ▶ Removable connector clamps.

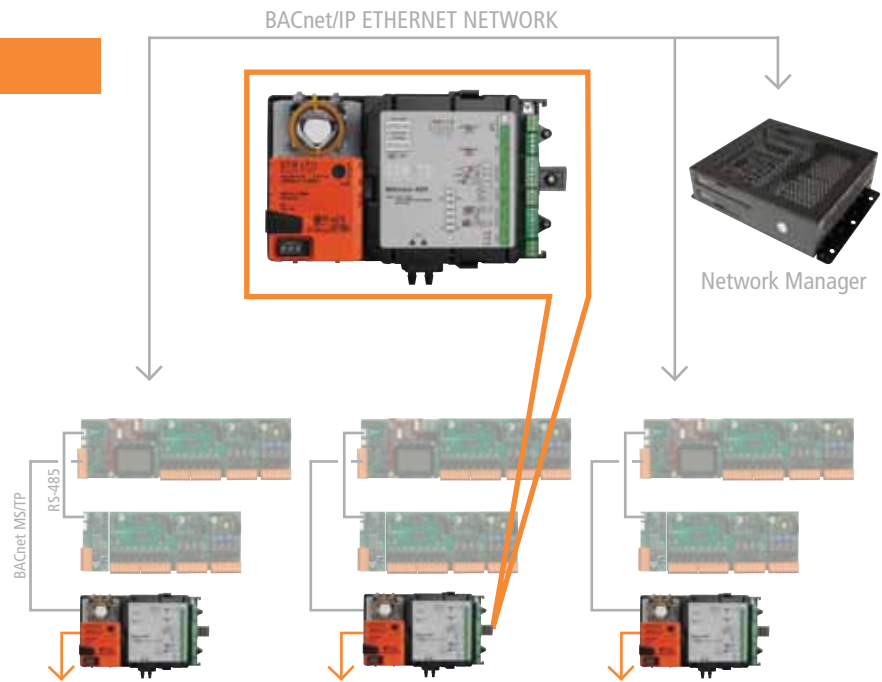
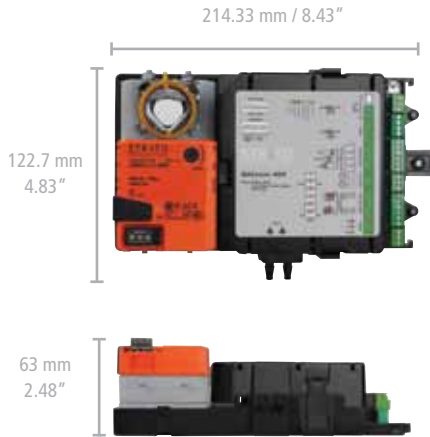
APPLICATIONS

The controller fulfils all requirements for VAV (variable air volume) applications such as:

- ▶ Cooling VAV boxes, with or without heating
- ▶ Single and dual duct VAV boxes, with or without fans
- ▶ Multiple energy efficiency applications and concepts (CO2 readout, motion detector, power limitation...)

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TECHNICAL SPECIFICATIONS

Max wire size:

16 awg. twisted pair cable

Supply voltage:

24 VCA ; $\pm 15\%$ 50/60 Hz Class 2
Replaceable 2.0A fuse
LED indicator

Current consumption:

5 VA + external load,
48 VA maximum

External inputs:

4 universal,
T: Thermistor 10 k Ω (type 2 or 3)
Dry contact, 500 ms minimum (On/Off)
V: Voltage 0 .. 10 VCC
I: Courant 0 .. 20 mA
Note: Analogue inputs can also be used as binary outputs.
Resolution: 12 Bits (4096 segments)

Velocity transmitter (internal input):

Omron
(MEMS flow sensor)
0 .. 1" H2O / 0 .. 248.8 Pa
Note: Rapid response to changes at low flow rates.
Resolution: 12 Bits (4096 segments)

Tubes:

5/32" interior diameter required

External outputs:

Binary
4 binary triac outputs, 10 .. 30 VCA, 0.350 A max.,
"sink" or "source" with overvoltage protection
(fusing resistor)
Note: Binary outputs can also be used as pulse outputs.

Analogue

2 analogue outputs, voltage 0 .. 10 VCC linear
Note: Analogue outputs can also be used as binary outputs.
Resolution: 12 Bits (4096 segments)

Internal outputs:

Binary

2 binary outputs for "floating" actuator (Open/Close)

Analogue

1 analogue output for modulating actuator
(0 .. 10 VCC)

"Floating" Belimo actuator:

Model LMB24-3-T-ZSST, 45 pound-inch / 5Nm,
24 VCA / CC
Note: Sound level under 35db

Modulating Belimo actuator (optional):

Model LMB24-SR-T, 45 pound-inch / 5Nm,
24 VCA / CC
Note: Sound level under 35db

Real-time clock (RTC):

yes

Buzzer:

yes, by programming command

Trend logs:

Automatic on all current BACnet objects. Limited only by the storage capacity of the server.

Microprocessor:

STM32 (ARM Cortex™ M3)
32 bits, 72 MHz

Memory:

512 kb Flash non volatile, 64 kb RAM

Number of BACnet objects:

60 maximum
Note: Maximum capacity is relational and varies based on type(s) of objects created.

Tzone wall interface:

Up to 4 Tzones per BACzone controller, "daisy chain" configuration on RS-485 protocol

Baud rate (BACnet MS/TP):

9600, 19200, 38400, 76800, 115200

External port:

mini USB, to use for initial configuration of the controller (Config MS/TP software)

Controller addressing:

Addressing via DIP switch

Fault protection:

A capacitor maintains the time in case of a power-out, for approximately 2 weeks.

Programming:

Programming in C language using BACnet Client (STRATO Automation) interface software

Communication protocol:

BACnet MS/TP

Size:

122.7 mm (4.83") X 214.33 mm (8.43") X 63.0 mm (2.48")

Storage/transport temperature:

30 °C .. 50 °C / -22 °F .. 122 °F

Operating temperature:

0 °C .. 50 °C / 32 °F .. 122 °F

Relative humidity:

10 .. 90% RH

Weight:

744 g / 1.5 lb

Mounting:

Installation on variable air volume box (ventilation duct)

Guarantee:

3 years

Certification:

UL (CAN & EU)
UL 916 Energy management equipment (pending)
BTL: B-ASC, BACnet Application Specific Controller (pending)

Housing:

Type UL94-5V, Colour black, material FR/ABS