

# BZ424-LX Configurable VAV Zone Controller

## ONYXX<sup>®</sup> LX VAV-ASC | PRODUCT DATA SHEET

Designed and assembled in Canada

### Description

- ✓ Supports BACnet MS/TP
- ✓ Has 4 AI/BIs, 2 AOs & 4 BOs with local HOA switches for the outputs
- ✓ Uses a pre-calibrated, precise digital MEMS Omron flow through airflow sensor
- ✓ BTL certified as a B-ASC (BACnet Application Specific Controller)
- ✓ Supports up to 3 TZ100-LX or TZ200-LX room sensors
- ✓ Requires Onyx LX USB to RS-485 adapter to program with Onyx LX UI
- ✓ To order use part number: **BZ424-LX**



### Application

This controller is designed to facilitate control and management of various VAV equipment typically used in the HVAC industry. It allows powerful yet flexible solutions that can be tailored and sized according to any project needs. Single duct, with or without fan.

### Technical Specifications

#### POWER SUPPLY

- 24 Vac/dc  $\pm$  15%
- 2 A replaceable fuse
- LED power indicator

#### CURRENT CONSUMPTION

- 5 VA controller only
- Up to 48 VA (8 VA each) with the 4 BOs and 2 AOs @ 0.35 A each

#### INPUTS

- 4 x AI/BIs universal inputs
- Thermistor 10 K  $\Omega$  Type 2 or 3)
- Dry contact, 500 ms minimum (On-Off)
- Voltage 0 - 10 Vdc (Input impedance of 100 K  $\Omega$ )
- Current 0 - 20 mA (internal resistance of 162  $\Omega$ )
- Resolution: 12 bits (4,096 segments)

#### OUTPUTS

- 4 x BOs Triad
- 10 to 30 Vac/dc, 0.35 A maximum
- Sink or source
- Built-in overcurrent protection
- Thermal protection with automatic reset
- Triad BOs can be used as pulse outputs
- 2 x AOs
- Voltage 0 - 10 Vdc linear

#### INTERNAL ACTUATOR OUTPUTS

- 2 BO Triad
- 1 extra AO for analog actuators

#### AIR FLOW SENSOR

- MEMS Omron D6F-PH
- 1 in. / 250 PA range with rapid response.
- Resolution: 12 bits (4,096 segments).
- 5/32 in. tubes required for airflow probe.

#### REAL-TIME CLOCK (RTC)

- Built in with one-week capacitor backup when charged

#### MICROPROCESSOR

- STM32 (ARM Cortex<sup>™</sup> M3)
- 32 bits, 72 MHz

#### MEMORY

- Flash: 768 KB non-volatile for the application program
- RAM: 96 KB

#### RS485 BACNET MS/TP COMMUNICATION SPEED

- 9600, 19200, 38400, 76800 Bps

#### CONTROLLER ADDRESSING

- Via DIP switch

#### EXTERNAL CONNECTIONS

- Mini USB Type-A connector allows local access to the MS/TP network.
- Requires the USB to RS-485 adapter: USB-MSTP-LX.

#### FLOATING ACTUATOR SUPPLIED

- Belimo LMB24-3-T
- 45 in./lb. 5 Nm

#### TZ100-LX/TZ200-LX WALL INTERFACE

- Up to 3 controllers based on solution used.
- Daisy-chained wiring on local RS-485 port.

#### COMMUNICATION PROTOCOLS

- BACnet MS/TP

#### DIMENSIONS

- 4.9 in. x 8.5 in. x 2.5 in.
- 123 mm X 215 mm X 63 mm

#### WIRE SIZE

- 18-24 AWG accepted; 18 recommended

#### STOCKING TEMPERATURE

- 30 °C to 50 °C / -22 °F to 122 °F

#### OPERATING CONDITIONS

- 25 °C to 45 °C / -13 °F to 113 °F
- 10% to 90% RH without condensation

#### WEIGHT

- 744 g. / 1.5 lb.

#### MOUNTING TYPE

- Standard Belimo mounting hardware.
- Directly on VAV shaft and duct.

#### WARRANTY

- 1 year

#### ENCLOSURE

- Black color, ABS material UL94-5V
- Material FR/ABS

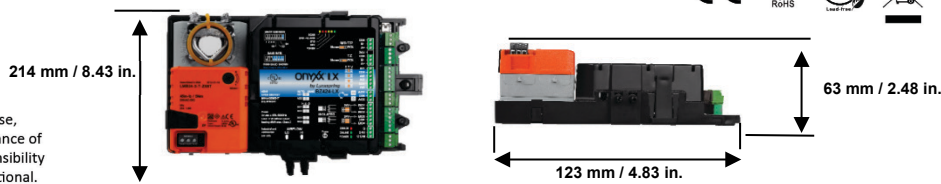
#### CERTIFICATIONS

- UL 916 Energy Management Equipment
- BTL listed: B-ASC, BACnet Application Specific Controller



BACnet is a registered trademark of ASHRAE. ASHRAE does not endorse, approve or test products for compliance with ASHRAE standards. Compliance of listed products to the requirements of ASHRAE Standard 135 is the responsibility of BACnet International. BTL is a registered trademark of BACnet International.

### Dimension



© 2021 by Lynxpring, Inc. All rights reserved. The information and/or specifications published here are current as of the date of publication of this document. Lynxpring, Inc. reserves the right to change or modify specifications without prior notice. The latest product specifications can be found by contacting our corporate headquarters in Lee's Summit, Missouri. Products or features contained herein are covered by one or more United States or foreign patents. Other brand and product names are trademarks or registered trademarks of their respective holders. This document may be copied by parties who are authorized to distribute Lynxpring products in connection with distribution of those products, subject to the contracts that authorize such distribution. It may not otherwise, in whole or in part, be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form without prior written consent from Lynxpring, Inc. Complete Confidentiality, Trademark, Copyright and Patent notifications can be found at: [lynxpring.com/company/legal](http://lynxpring.com/company/legal).

Lynxpring<sup>®</sup>, JENEsys<sup>®</sup>, JENEsys Edge<sup>®</sup>, Onyx<sup>®</sup> and Helixx<sup>®</sup> are registered trademarks of Lynxpring, Inc.

Niagara Framework<sup>®</sup> is a registered trademark of Tridium, Inc.

2900 NE Independence Ave  
Lees Summit, MO 64064  
sales@lynxpring.com  
1 (877) 649-5969



© 2021 Lynxpring, Inc.  
All Rights Reserved  
Revised 5/9/2022  
Onyx-BZ424-LX-DS-V1.1