## Overview

Zone Control Basic (ZC Basic) is a UL Listed distributed lighting controller in a compact junction box mounted package. ZC Basic may be scheduled from any BACnet BAS, and it is compatible with all low voltage override switches, occupancy sensors, and light level sensors.  ZC Basic is suited for new or existing buildings, and may be scaled from basic to advanced occupancy and vacancy detection control sequences.

## Features

UL Listed and Plenum Rated
BACnet MS/TP communication to BAS network
Line and low voltage compartment separation
Micro-USB and Bluetooth (optional) ports for configuration
Monitor and measure equipment performance:
•    Track lamp, ballast, and relay life
•    Track schedule, occupancy sensor, and manual control savings

## General Specifications

Construction:  20ga steel white powder coat finish
Dimensions: 5.063"(129mm)H x 10.00"(254mm)W x 2.50"(64mm)D
Weight: 3lbs (1.36kg)
Mounting: 4" or 4 11/16" junction box (Check local code requirements)
Operating Environment: 0-140°F(-18-60°C), 10-90% RH, non-condensing
Type 1 (dry / indoor environment)
Plenum Rated

## Certifications

UL Listed, UL916 Standard for Energy Management Equipment, US/Canada
FCC Part 15
CEC Title 24
Electronics meet or exceed IEC Level 3

## Warranty

Two (2) year limited manufacturer warranty from date of shipment (extended warranty optional).

## Line Voltage Specifications (FI-1 Board)

Power Feed: 120, 230, or 277VAC, 50/60hz, +/- 10%, single phase, 20A circuit (powers ZC and feeds relay outputs)
ZC Maximum Load Rating: 20A

Relay Maximum Load Rating: 20A tungsten @ 120VAC, 20A ballast @ 277VAC, 20A resistive @ 277VAC, 1.5HP @ 120VAC
Relay: 2 mechanically latching relays with manual override lever
Relay Status: Opto-isolated Power Tap (PT) on load side of relay contacts
Line Voltage Input: 2 switch inputs, must utilize same ZC power feed
Line Voltage Input Type: Configurable for maintained or state-change
Wire Requirement: 14-10AWG (Solid or Stranded copper wire only)

## Low Voltage Specifications (FI-2 Board)

Universal Input (UI) Power Out: 24VDC, 200mA total
Universal Input: 6 two-wire inputs
Universal Input Software Configuration:
    Digital Input (DI)
    Analog Input (AI): 0-5VDC, 0-10VDC, or 4-20mA
Universal Input Wire Requirement / Maximum Length: 18AWG (Solid or Stranded) / 500'(152m)

## BAS Network Specifications

Protocol: BACnet MS/TP
Baud Rate: DIP switch selectable 9.6K, 19.2K, 38.4K, 76.8K, or 115.2K
Device Profile: BACnet Advance Application Controller (AAC)
Address Range: 1 – 99 selectable with rotary dials
Unit Load: Full unit load, 32 devices per MS/TP segment
Topology: RS-485, half duplex, daisy chain wiring
Wire Requirement / Maximum Length: CL3P, 22AWG, 2 conductor, shielded, low cap / 4000'(1216m)
Points: See *PIC Statement*

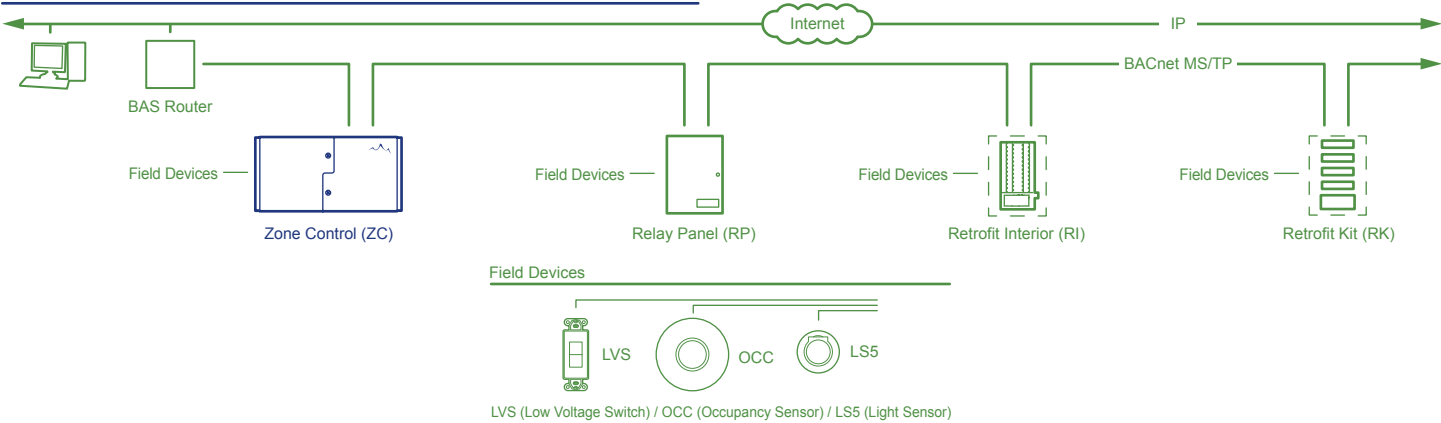## Firmware Specifications (Controller Board)

Platform: Aperio Open Control Platform
Time Clock: Real-time clock with BACnet time sync
Schedule: BACnet Schedule, Monday – Sunday, Holidays, and Exceptions
Non-Volatile Memory: 16MB total, 2MB for trend data (15min trend requires 2K per day)
RAM: 2MB total, data stored in non-volatile memory upon power loss
Configuration: Tech Kit 2.0 (see data sheet for details)
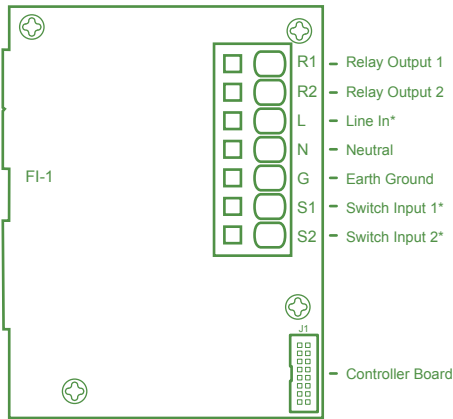Configuration Connection: Micro-B USB or Bluetooth Wireless

# Zone Control Basic

## General Architecture



Internet — IP — BACnet MS/TP

BAS Router

Field Devices — Zone Control (ZC)

Field Devices — Relay Panel (RP)

Field Devices — Retrofit Interior (RI)

Field Devices — Retrofit Kit (RK)

Field Devices

LVS — OCC — LS5

LVS (Low Voltage Switch) / OCC (Occupancy Sensor) / LS5 (Light Sensor)

## FI-1 Board Terminations



FI-1

| | |
|---|---|
| R1 | Relay Output 1 |
| R2 | Relay Output 2 |
| L | Line In* |
| N | Neutral |
| G | Earth Ground |
| S1 | Switch Input 1* |
| S2 | Switch Input 2* |

J1 — Controller Board
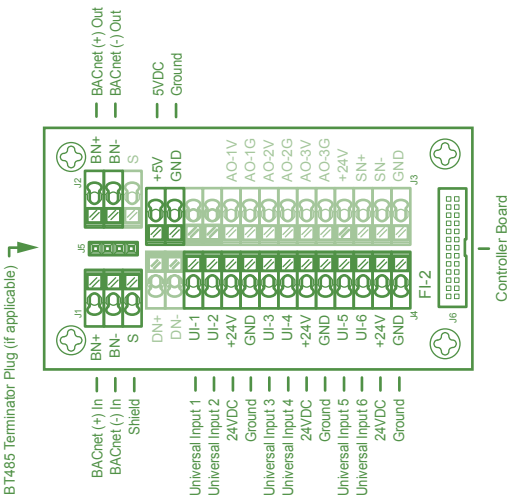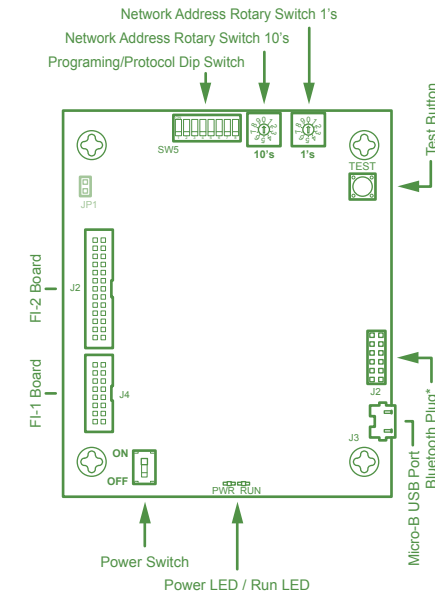
*FI-1 terminations are compatible with 120, 230, or 277VAC single phase circuits. Do not mix voltages or phase on the same unit. Refer to install guide for wiring details.

## FI-2 Board Terminations



BACnet (+) Out
BACnet (-) Out
5VDC
Ground

BN+  BN-  S  +5V  GND  AO-1V  AO-1G  AO-2V  AO-2G  AO-3V  AO-3G  +24V  SN+  SN-  GND

J2  J5  J1  FI-2  Controller Board

BN+  BN-  S  DN+  DN-  UI-1  UI-2  +24V  GND  UI-3  UI-4  +24V  GND  UI-5  UI-6  +24V  GND  J4  J6

BT485 Terminator Plug (if applicable)

BACnet (+) In
BACnet (-) In
Shield
Universal Input 1
Universal Input 2
24VDC
Ground
Universal Input 3
Universal Input 4
24VDC
Ground
Universal Input 5
Universal Input 6
24VDC
Ground

## Controller Board Terminations

Network Address Rotary Switch 1's
Network Address Rotary Switch 10's
Programing/Protocol Dip Switch



SW5  10's  1's  TEST

JP1

FI-2 Board  J2

FI-1 Board  J4

Controller Board

J2
J3

Test Button

Micro-B USB Port
Bluetooth Plug*

ON  OFF
PWR  RUN

Power Switch

Power LED / Run LED

*Applicable on ZC with Bluetooth Wireless Option only.

## Ordering Information

ZC XX - XX - XX

Wireless Options
- XX = 00   No Wireless
- BT   Bluetooth

Power Options
- XX = 00   120, 230, 277VAC

Controller Board Options
- XX = SB   Switching Basic