

Project

Part Number

Ref.

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## Overview

Retrofit Kit (RK) replaces existing relay panel electronics. RK installation retains the original relays, line voltage wire, conduit, and enclosure reducing labor as well as material cost. Retrofit Kit 2 (RK2) converts existing relay panels which utilize 2-Wire relays. The kit includes a Controller Board, up to four 16-Relay Interface Boards (RIB), and ribbon cables. Each board is mounted on a single aluminum plate for installation.

## Features

Compatible with :

- Douglas Panels (WR-6221, 6161, 6162, 6172, 6321)
- ILC Panels (2PC)

Available in 16, 32, 48, and 64 relay capacities

Retains relays, line voltage wire, conduit, and enclosure

BACnet MS/TP communication to BAS network

Sub network for Satellite and Capacitive Touch Stations (CTS)

Install in less than 4 hours

## General Specifications

Construction: PCB's mounted to 14ga aluminum plates

Dimensions:

Controller Board: 11.00"(279mm)H x 4.50"(113mm)W x 1.50"(38mm)D

RIB: 9.88"(251mm)H x 2.13"(113mm)W x 1.06"(27mm)D

16-20pin Ribbon Cable: 12"(304mm)L

16pin Ribbon Cable: 32"(812mm)L

Weight: 2lbs(1kg)

Mounting: Panel back plate with self-tapping screws (not included)

Operating Environment: 32-125°F (0-50°C), 20-95%RH, non-condensing

## Certifications

Electronics meet or exceed IEC Level 3

## Warranty

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

## 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

## Low Voltage Specifications (Controller Board)

Power In: 24VAC +/-10%, 30VA, 50-60 Hz

Auxiliary Out: 24VAC, 800mA (devices with full wave rectified power supply only)

Universal Input (UI) and Satellite / Station Network Power Out: 24VDC, 200mA total

Universal Input: 24 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: 1/8 unit load

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*

## Satellite / Station Network Specifications

Compatible with CTS and Satellite devices. See data sheet for details.

## RIB Specifications

RIB-A: 16 relay outputs each, drives relays 1-16 and 33-48

RIB-B: 16 relay outputs each, drives relays 17-32 and 49-64

Output Ratings: 24VDC Reversible polarity pulse, ON pulse (-), OFF pulse (+)

Relay Output Compatibility: 1 WR style or equal per, no external power / switches

Output Connection: 2-Wire removable terminal blocks

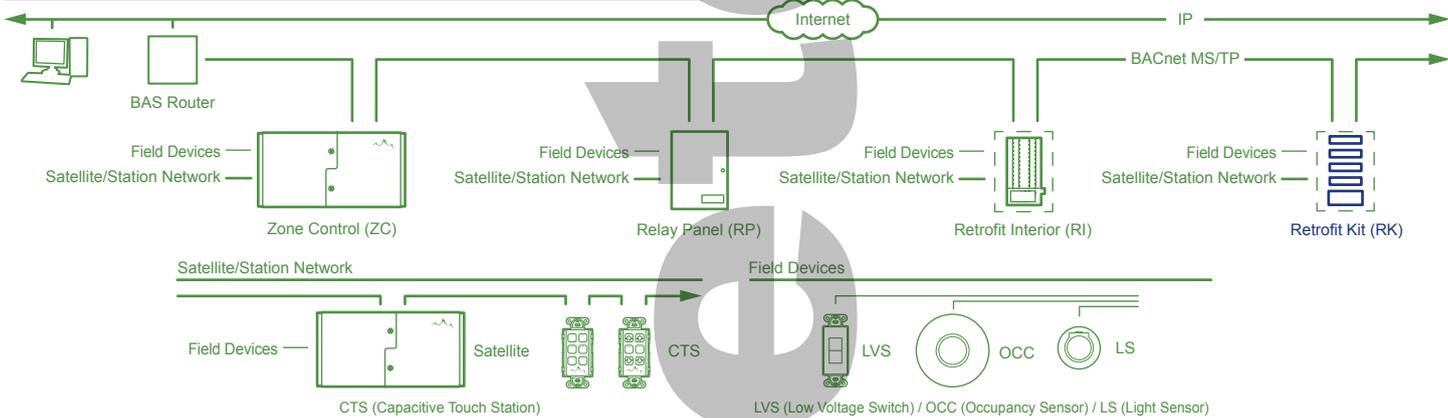
Wire Requirement / Maximum Length: 18AWG / 50'(15m)

# Retrofit Kit 2

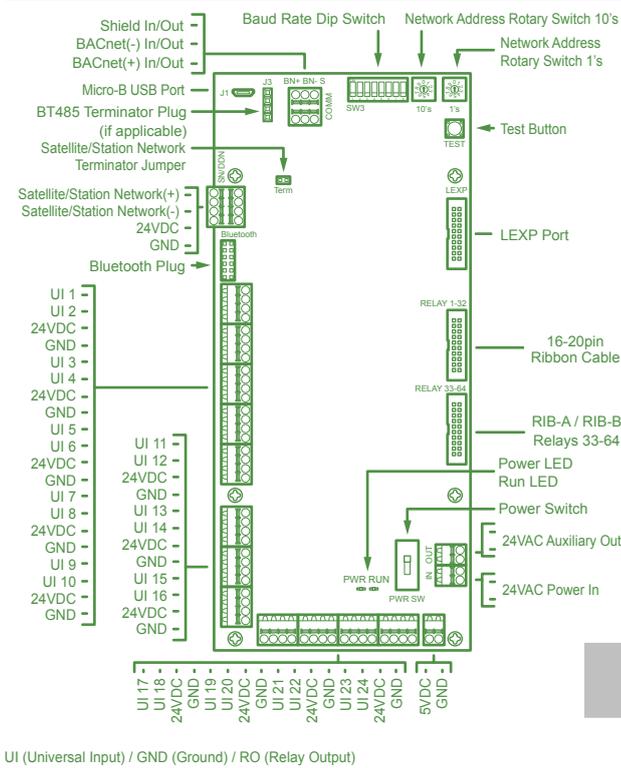
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## General Architecture

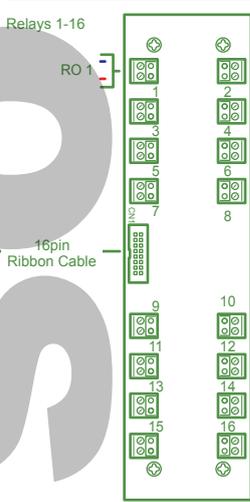


## Controller Board Terminations

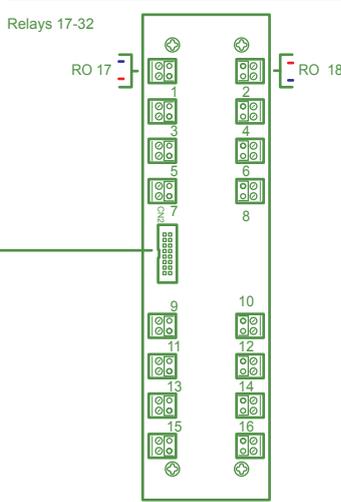


UI (Universal Input) / GND (Ground) / RO (Relay Output)

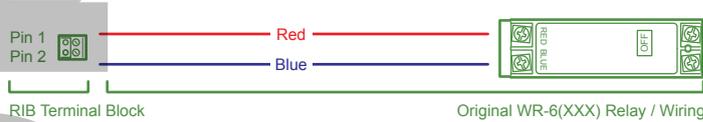
## RIB-A Terminations



## RIB-B Terminations



## Relay Terminations



## Ordering Information

Part Number	Description
RK2SS16	Kit for 2-wire relays, Aromat WR or equal, 16 RO, 24 UI
RK2SS32	Kit for 2-wire relays, Aromat WR or equal, 32 RO, 24 UI
RK2SS48	Kit for 2-wire relays, Aromat WR or equal, 48 RO, 24 UI
RK2SS64	Kit for 2-wire relays, Aromat WR or equal, 64 RO, 24 UI

RO (Relay Output) / UI (Universal Input)