UNIVERSAL ROOM CONTROLLER

URC-4 - 4 Relay/ 4 Dimming Zones
URC-2 - 2 Relay/ 2 Dimming Zones

WARNING! SYSTEM MUST BE INSTALLED IN ACCORDANCE WITH LOCAL AND NATIONAL ELECTRICAL CODES. INDOOR USE ONLY

▲ CAUTION ▲

Risk of Electric Shock. More than one disconnect switch is required to de-energize the device before servicing. All Servicing should be performed by qualified service personnel. This unit has more than one power supply connection point. To reduce the risks of electric shock disconnect both the branch circuit breakers / fuses & emergency power supplies before servicing. MUST BE INSTALLED BY QUALIFIED ELECTRICIAN

SAVE THESE INSTRUCTIONS

- READ AND FOLLOW ALL SAFETY INSTRUCTIONS.
- Be aware that Line Voltage Connections may be 120Vac or 277 Vac.
- Not intended for outdoor use or exposure to direct weather.
- Equipment should be mounted in locations where it will not readily be accessable to unauthorized personnel.
- The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
- Using this equipment for anything other than the intended use will immediately void the manufacturer's warranty.

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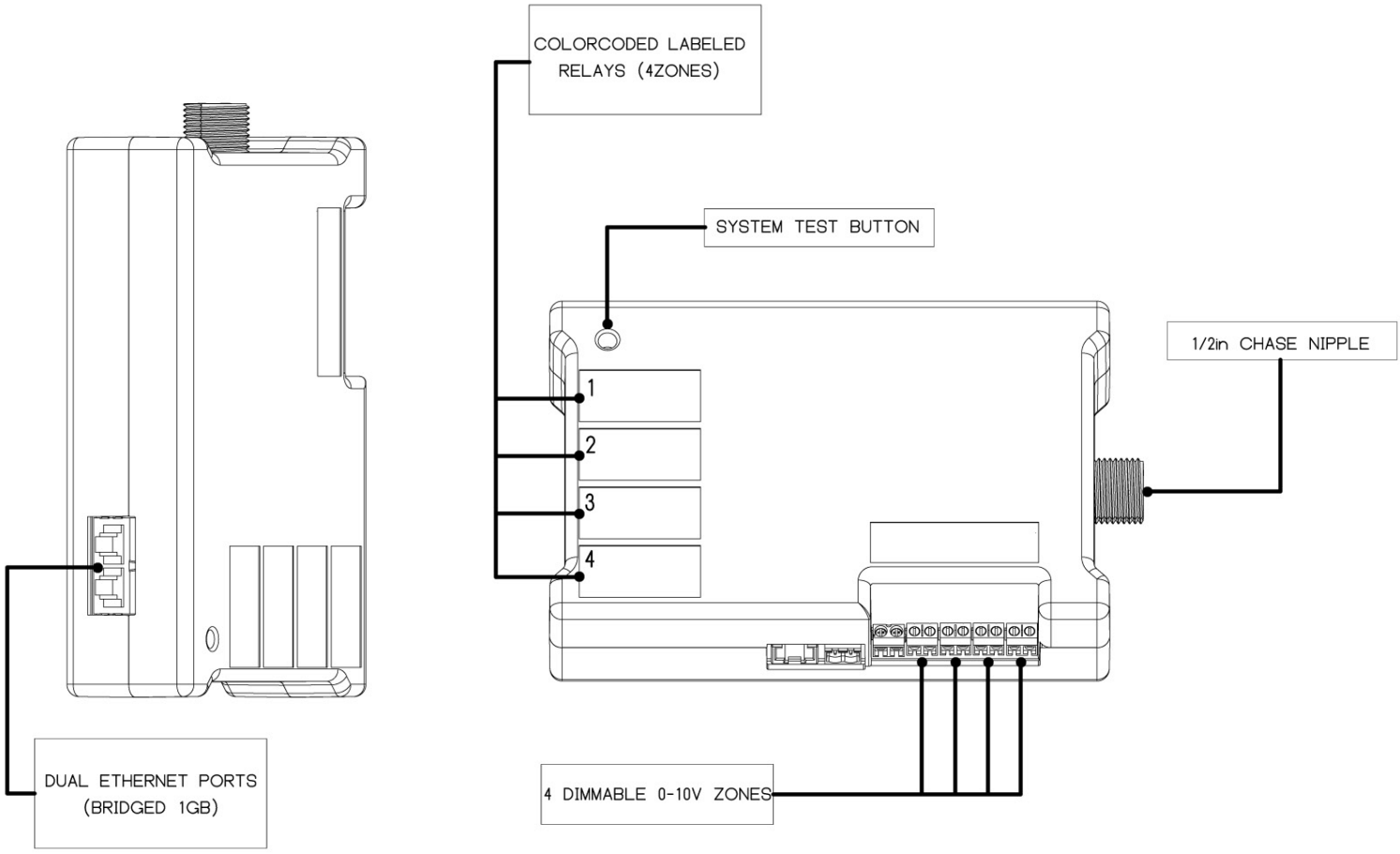
1. Introduction



2. Design Features

- The Universal Room Controller is a plenum Class 1 power unit rated for indoor environments that are stationary, non-vibrating, non-corrosive atmosphere and non-condensing humidity with an Ambient Operation Temperature of 32°F to 100°F (0°C to 38°C).
- Universal Room Controller is a 24VAC power line source for use with other ARC low voltage devices.
- A ½" threaded chase nipple with included locknut is integrated into the chassis for installation to standard-size junction boxes
- High voltage connections are pre-wired with color-coded, tinned leads.
- Low voltage screw terminal blocks are labeled and color-coded.
- Replaceable 3A glass fuse for easy repair of product.
- A top-mounted RGB LED indicates device status
- BACnet IP Native
- Demand Response Ready
- Networkable for scalable building control

3. Compatible Devices

ARC Wired, Emergency and Accessories	
MODELS NUMBERS	**DESCRIPTION**
LOW VOLTAGE SENSORS - CEILING & CORNER MOUNT	
ARC-201-1	Small Motion 360° Ceiling Sensor - PIR, Low Voltage
ARC-202-1	Large Motion 360° Ceiling Sensor - PIR, Low Voltage
ARC-203-1	High Bay 360° Ceiling Sensor - PIR, Low Voltage
ARC-211-1	Small Motion 360° Ceiling Sensor - PIR, Photocell, Low Voltage
ARC-211-1-D	Small Motion 360° Ceiling Sensor - PIR, Daylight Harvesting (0-10V), Low Voltage
ARC-212-1	Large Motion 360° Ceiling Sensor - PIR, Photocell, Low Voltage
ARC-212-1-D	Large Motion 360° Ceiling Sensor - PIR, Daylight Harvesting (0-10V), Low Voltage
ARC-213-1	High Bay 360° Ceiling Sensor - PIR, Photocell, Low Voltage
ARC-221-1	Small Motion 360° Ceiling Sensor - Dual Tech, Low Voltage
ARC-222-1	Large Motion 360° Ceiling Sensor - Dual Tech, Low Voltage
ARC-231-1	Small Motion 360° Ceiling Sensor - Dual Tech, Photocell, Low Voltage
ARC-231-1-D	Small Motion 360° Ceiling Sensor - Dual Tech, Daylight Harvesting (0-10V), Low Voltage
ARC-232-1	Large Motion 360° Ceiling Sensor - Dual Tech, Photocell, Low Voltage
ARC-232-1-D	Large Motion 360° Ceiling Sensor - Dual Tech, Daylight Harvesting (0-10V), Low Voltage
ARC-401-1	Wide View Sensor - PIR, Low Voltage
ARC-421-1	Wide View Sensor - Dual Tech, Low Voltage
ARC-402-1	Hallway Sensor - PIR, Low Voltage
-AR option	Option: Isolated Relay
-BK option	Option: Black Cover and Black Lens (Not available on units with Photocells)
LOW VOLTAGE SENSORS - CEILING MOUNT & CORNER MOUNT (CASAMBI MODELS)	
ARC-201-1-CB	Small Motion 360° Ceiling Sensor - PIR, Low Voltage, Casambi Enabled
ARC-202-1-CB	Large Motion 360° Ceiling Sensor - PIR, Low Voltage, Casambi Enabled
ARC-401-1-CB	Wide View Sensor - PIR, Low Voltage, Casambi Enabled
ARC-402-1-CB	Hallway Sensor - PIR, Low Voltage, Casambi Enabled
-BK option	Option: Black Cover and Black Lens (Not available on units with Photocells)
ON/OFF PHOTOCELL & DAYLIGHTING HARVESTING - CEILING MOUNT	
ARC-250-1	On/Off Photocell, Ceiling Mount - Low Voltage
ARC-250-1-D	Daylight Harvesting & On/Off Photocell, Ceiling Mount - Low Voltage, 0-10V Dimming
-JP option	Option: Bulk Packed in 50 Count Boxes
WALL SWITCH SENSORS - LOW VOLTAGE	
ARC-101-1-xx	Wall Switch Sensor - PIR, Auto On, Low Voltage, <xx = color>
ARC-103-1-xx	Wall Switch Sensor - PIR, Vacancy (Manual On), Low Voltage, <xx = color>
ARC-111-1-xx	Wall Switch Sensor - PIR & Photocell, Auto On, Low Voltage, <xx = color>
ARC-113-1-xx	Wall Switch Sensor - PIR & Photocell, Vacacny (Manual On), Low Voltage, <xx = color>
ARC-121-1-xx	Wall Switch Sensor - Dual Tech, Auto On, Low Voltage, <xx = color>
ARC-123-1-xx	Wall Switch Sensor - Dual Tech, Vacancy (Manual On), Low Voltage, <xx = color>
ARC-131-1-xx	Wall Switch Sensor - Dual Tech. & Photocell, Auto On, Low Voltage, <xx = color>
ARC-133-1-xx	Wall Switch Sensor - Dual Tech. & Photocell, Vacancy (Manual On), Low Voltage, <xx = color>

3. Compatible Devices Cont.

WALL SWITCH SENSORS - LOW VOLTAGE with MULTI-SWITCH/SENSOR OPTION	
ARC-101-1-MS-xx	Wall Switch Sensor - PIR, Low Voltage, Multi-Switch/Sensor Compatible, <xx = color>
ARC-121-1-MS-xx	Wall Switch Sensor - Dual Tech, Low Voltage, Multi-Switch/Sensor Compatible, <xx = color>
WALL SWITCH SENSORS - LOW VOLTAGE w/ 0-10V DIMMING	
ARC-101-1-D-xx	Wall Switch Sensor - PIR, 0-10V Dimming, Partial Auto On, Low Voltage, <xx = color>
ARC-103-1-D-xx	Wall Switch Sensor - PIR, 0-10V Dimming, Vacancy (Manual On), Low Voltage, <xx = color>
ARC-111-1-D-xx	Wall Switch Sensor - PIR & Photocell, 0-10V Dimming, Auto On, Low Voltage, <xx = color>
ARC-113-1-D-xx	Wall Switch Sensor - PIR & Photocell, 0-10V Dimming, Vacancy (Manual On), Low Voltage, <xx = color>
ARC-121-1-D-xx	Wall Switch Sensor - Dual Tech, 0-10V Dimming, Partial Auto On, Low Voltage, <xx = color>
ARC-123-1-D-xx	Wall Switch Sensor - Dual Tech, 0-10V Dimming, Vacancy (Manual On), Low Voltage, <xx = color>
ARC-131-1-D-xx	Wall Switch Sensor - Dual Tech & Photocell, 0-10V Dimming, Partial Auto On, Low Voltage, <xx = color>
ARC-133-1-D-xx	Wall Switch Sensor - Dual Tech & Photocell, 0-10V Dimming, Vacacny (Manual On), Low Voltage, <xx = colo
WALL SWITCH SENSORS - LOW VOLTAGE w/ 0-10V DIMMING, & MULTI-SWITCH/SENSOR OPTION	
ARC-101-1-D-MS-xx	Wall Switch Sensor - PIR, Low Voltage, 0-10V Dimming, Multi-Switch/Sensor Compatible, <xx = color>
ARC-121-1-D-MS-xx	Wall Switch Sensor - Dual Tech, Low Voltage, 0-10V Dimming, Multi-Switch/Sensor Compatible, <xx = colo
LOW VOLTAGE SWITCHES	
ARC-801-xx	Decorator On/Off Switch - Momentary, Low Voltage, <xx = color>
ARC-803-xx	Decorator 3-Button Dimmer Switch - Momentary, Low Voltage, 0-10V <xx = color>
ARC-804-xx	Decorator 4-Button Dimmer Switch - Momentary, Low Voltage, 0-10V <xx = color>
COLOR (-xx) & OTHER OPTIONS FOR ALL ABOVE WALL SWITCH PRODUCTS	
-WH	White color option
-IV	Ivory color option
-LA	Light Almond color option
-GY	Gray color option
-BK	Black color option
-RD	Red color option
-J10 option	Option: Bulk Packed in 10-count boxes
-JP option	Option: Bulk Packed (any qty > 50)
POWER PACKS	
ARC-900	Power Pack, 120/277 VAC, 16A
ARC-900-AX	Power Pack w/ Auxiliary Switch Input, 120/277 VAC, 16A
ARC-900-AX-D2	Partial-On / Partial Off Power Pack w/ Auxiliary Switch Input & Step 0-10V Dimming, 120/277 VAC, 16A
ARC-910	Secondary Relay Pack, 120/277 VAC, 16A
ARC-910-AR	Secondary Relay Pack, 120/277 VAC, 16A for use with ARC-950-AX-D2
ARC-920	Power Supply, 120/277VAC, 150mA.

*Customer can provide 3rd party devices to be tested by Automated Room Controls, Inc to confirm compatibility. Service may include a testing fee.

4. Specifications

4.1. Mounting

- URC-4 and URC-2 are designed to be mounted to an electrical junction box **(By Others).** Integrated ½" threaded chase nipples allow for easy mounting to the junction box. Please follow the wiring schematics as shown in this instruction manual.

4.2. Power

- Line Voltage: 120/277Vac
- Frequency: 60Hz

4.3. Inputs:

- 24VAC Low Voltage

4.4. Output Power Supply

- Low Voltage: 24VAC ±25%
  source.
- Frequency: 60Hz
- Current: 250mA

4.5. Contact Ratings

- 20A Suitable for General Purpose Loads @ 120/277VAC
- 20A Suitable for Standard Ballasts & Tungsten Loads @ 120/277VAC
- 16A Suitable for Electronic Ballasts @ 120/277VAC
- 0.5HP @ 120/277VAC

4.6. Operation Environment

- Indoors, stationary, non-vibrating, non-corrosive atmosphere and non-condensing humidity
- Ambient Operation Temperature: 32°F to 100°F (0°C to 38°C)

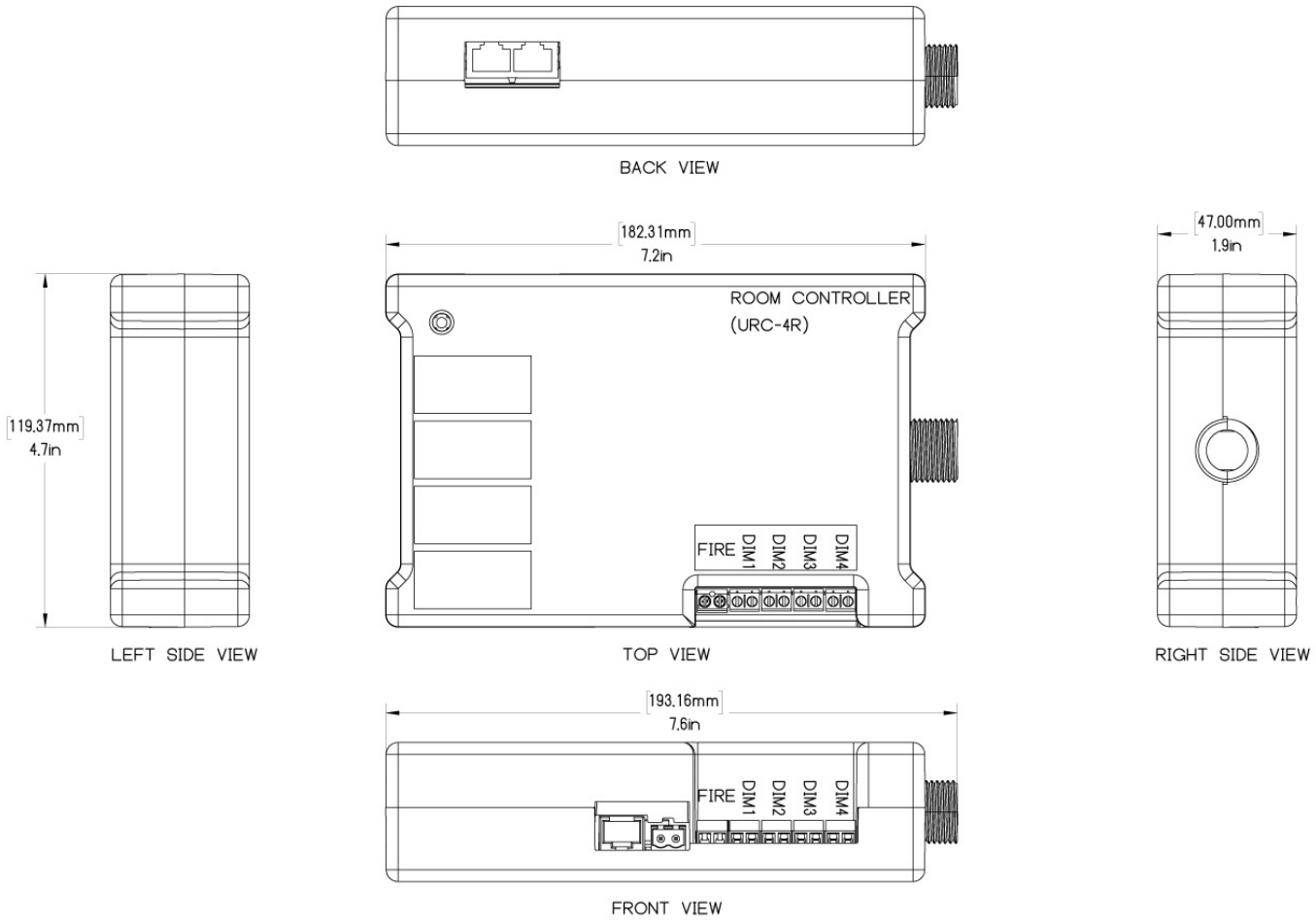
4.7. Storage temp:

- -14° to 140°F (-25° to 60°C)

4.8. Approvals:

- ETL508 Pending
- Plenum Pending

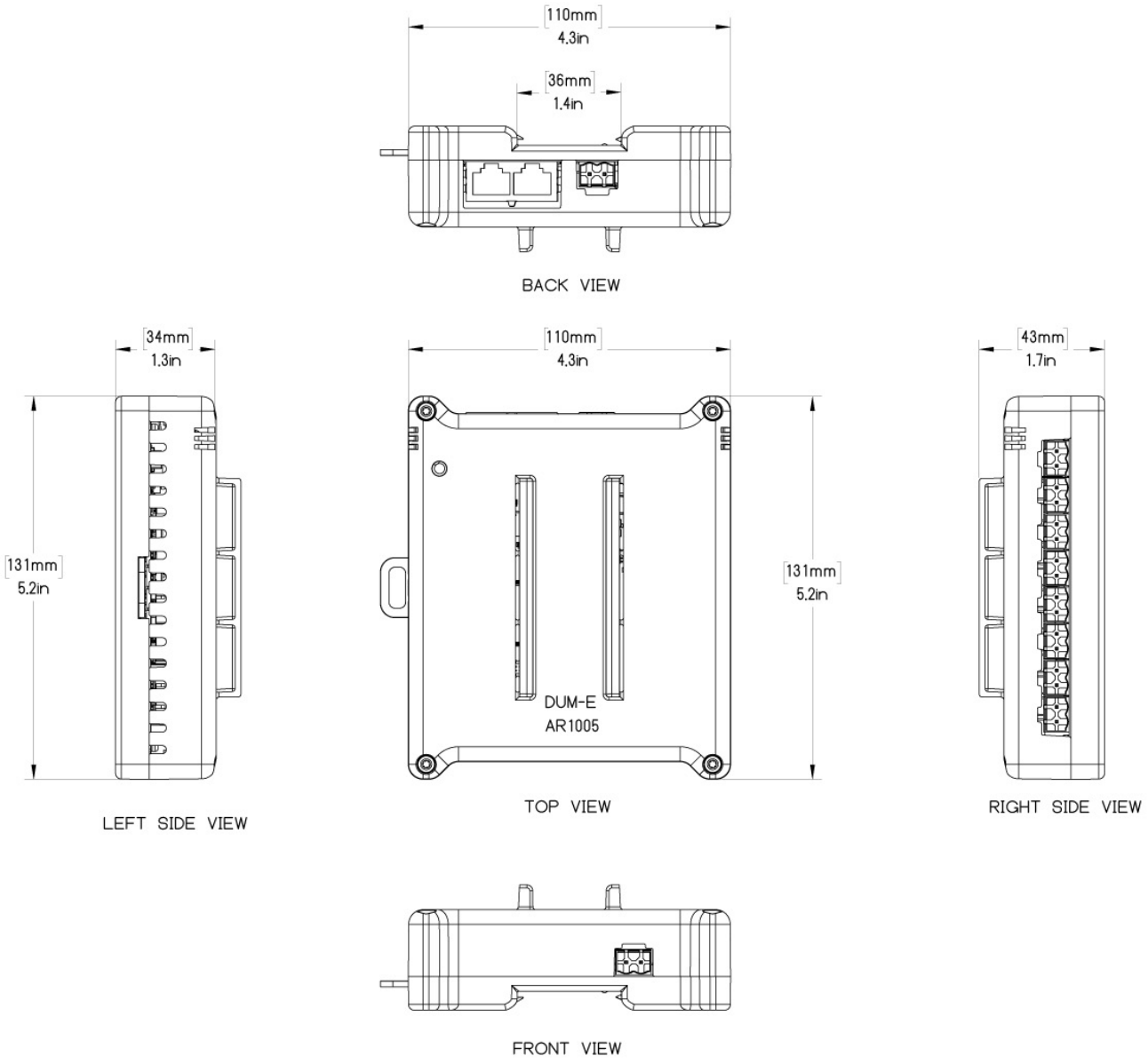
5. Dimensions - URC-4 | URC-2



5.1 URC Installation Notes

- Electrical rough-in can be done before devices arrive on-site (see installation examples below).
- Lightweight chassis allows for the device to be installed directly onto standard 4” x 4” square metal junction boxes using existing knockouts.
- Locknuts are included with each chase nipple.
- URC-4 and URC-2 should be installed with either rigid metallic conduit (as shown below) or with flexible metallic conduit. **Not intended for use with Rigid Non-Metallic Conduit.**
- See Section 7 below for wiring diagrams.

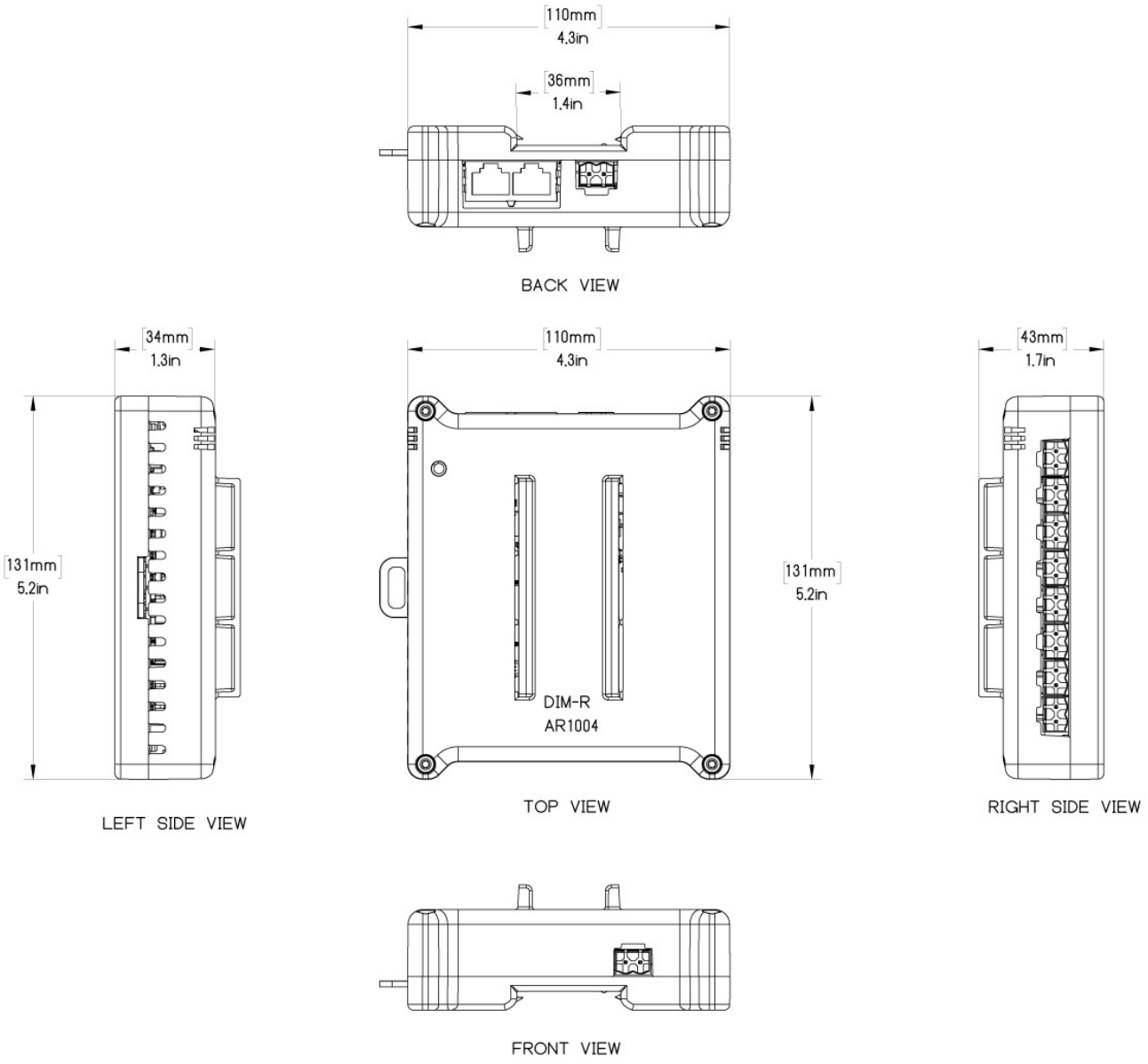
5. Dimensions - DUM-e



5.2 DUM-e Installation Notes

- Electrical wiring can be done before devices arrive on-site (see wiring examples below).
- Lightweight chassis allows for the device to be installed directly onto standard DIN Rail or to be installed onto another ARC device with our built-in mounting system.
- DUM-e should be installed with either a metallic DIN Rail (as shown below) or with a plastic DIN Rail. **Not intended for installation with materials other than DIN Rail.**

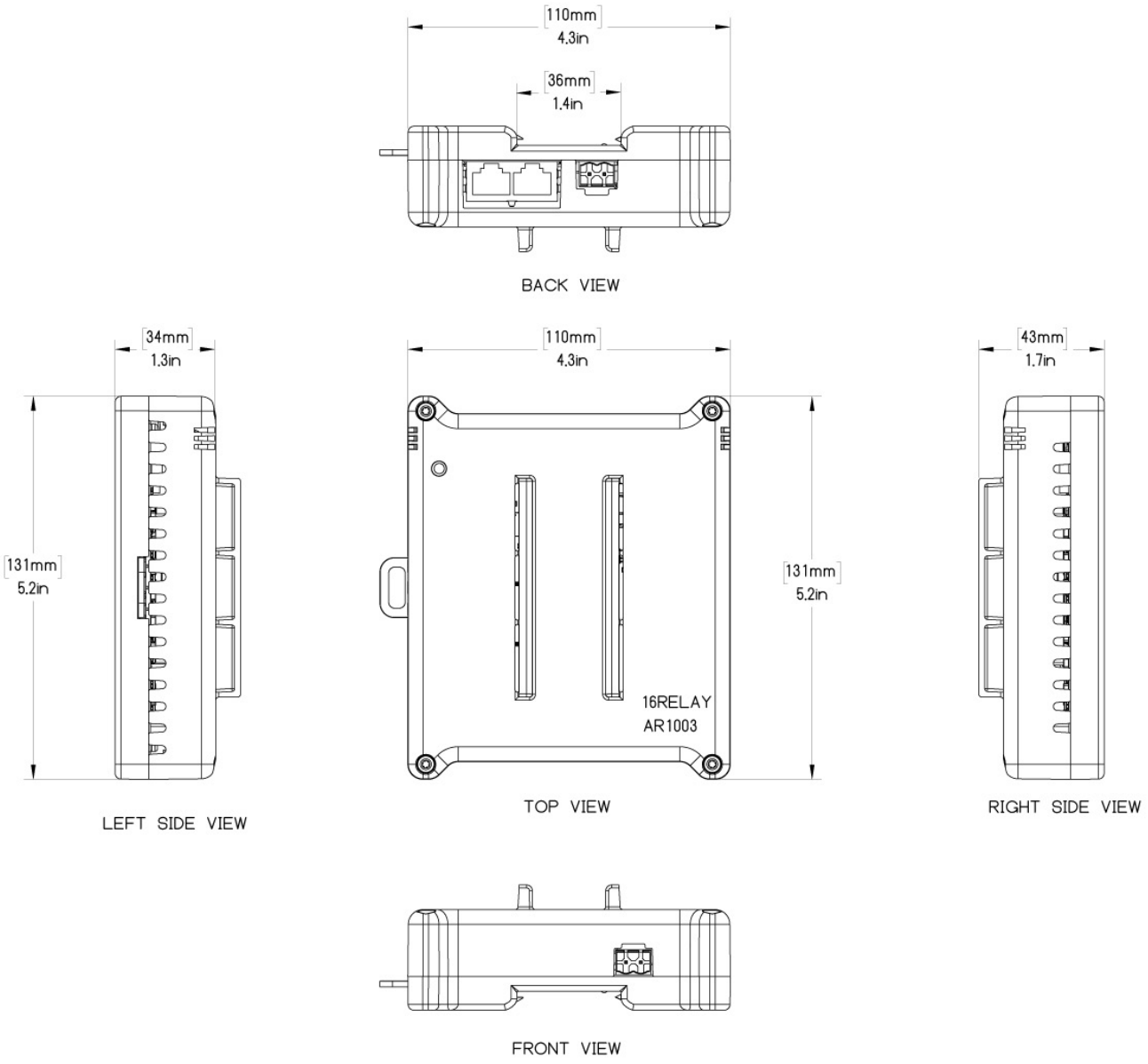
5. Dimensions DIM-r



5.3 DIM-r Installation Notes

- Electrical wiring can be done before devices arrive on-site (see wiring examples below).
- Lightweight chassis allows for the device to be installed directly onto standard DIN Rail or to be installed onto another ARC device with our built-in mounting system.
- DIM-r should be installed with either a metallic DIN Rail (as shown below) or with a plastic DIN Rail. **Not intended for installation with materials other than DIN Rail.**

5. Dimensions 16R



5.4 16-R Installation Notes

- Red wire must be landed to the red screw terminal on HID, Blue wire must be landed to the blue screw terminal on the same HID to allow for relay control.
- Lightweight chassis allows for the device to be installed directly onto standard DIN Rail or to be installed onto another ARC device with built-in mounting system.
- 16-R should be installed with either a metallic DIN Rail (as shown below) or with a plastic DIN Rail. **Not intended for installation with materials other than DIN Rail.**

6. Installation Instructions

6.1 URC Installation Notes

1. Feed the URCs Class 1 wires through the ½" knockout of an approved junction box or panel.
2. Apply the provided locknut to the inside of the box or panel on the threaded tip of the URC and tighten.
3. Install any switches, sensors or other peripheral devices.

6.2 DUM-e Installation Notes (See 12.4 for Wiring Diagram)

1. Mount the DUM-e housing to the ARC enclosure via the preinstalled DIN rail.
2. Take the low-voltage leads and use a wire stripper to remove 5-7 mm (about 1/4 inch) of insulation from the end of each wire.
3. Insert the stripped end of each lead into the appropriate slot in the provided Phoenix block and secure .
4. Once all the leads are securely connected, plug the Phoenix block back into its mating header or terminal block on the unit (Make note of which AUX zone you have populated).

6.3 DIM-r Installation Notes

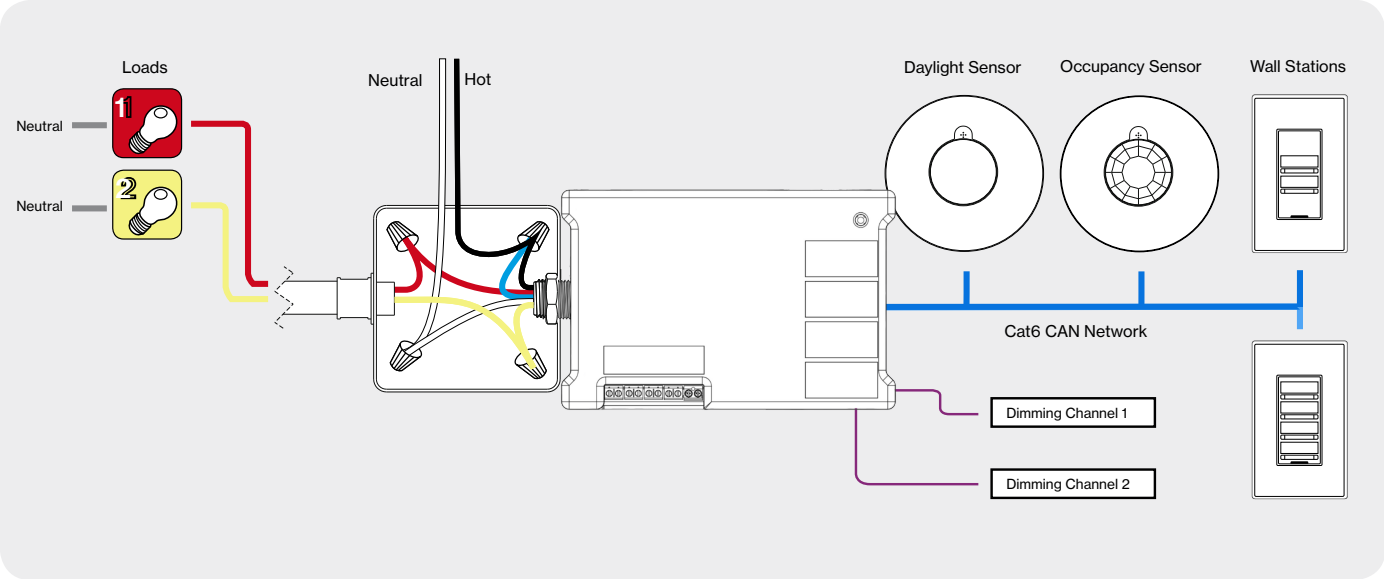
1. Mount the DIM-r housing to the ARC enclosure via the preinstalled DIN rail.
2. Take the purple and grey/pink leads and use a wire stripper to remove 5-7 mm (about 1/4 inch) of insulation from the end of each wire.
3. Insert the stripped end of each lead into the appropriate slot in the provided Phoenix block and secure.
4. Once all the leads are securely connected, plug the Phoenix block back into its mating header or terminal block on the unit (Make note of which dimming zone you have populated).

6.4 16-r Installation Notes

1. Mount the 16-r housing to the ARC enclosure via the preinstalled DIN rail.
2. Take the red and blue leads and use a wire stripper to remove 5-7 mm (about 1/4 inch) of insulation from the end of each wire.
3. Insert the stripped end of each lead into the corresponding colored screw terminal on the provided HID relay (Red wire to Red terminal, Blue wire to Blue terminal).

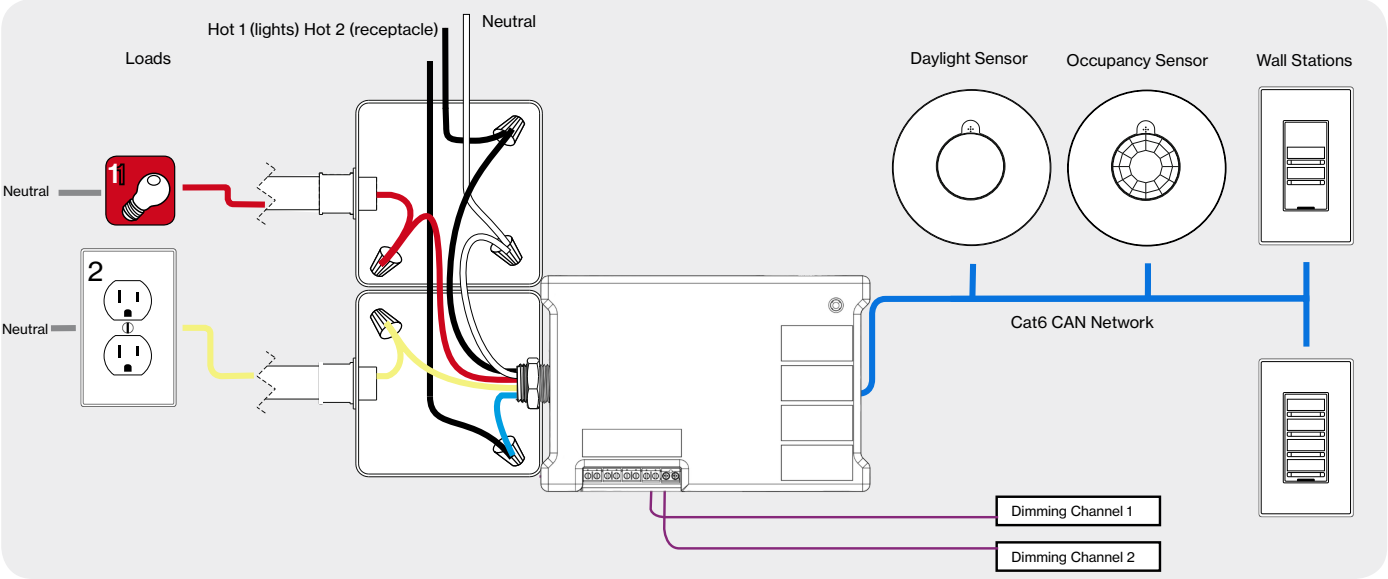
7. Installation Diagrams

7.1 Two Circuits - Common Line Voltage



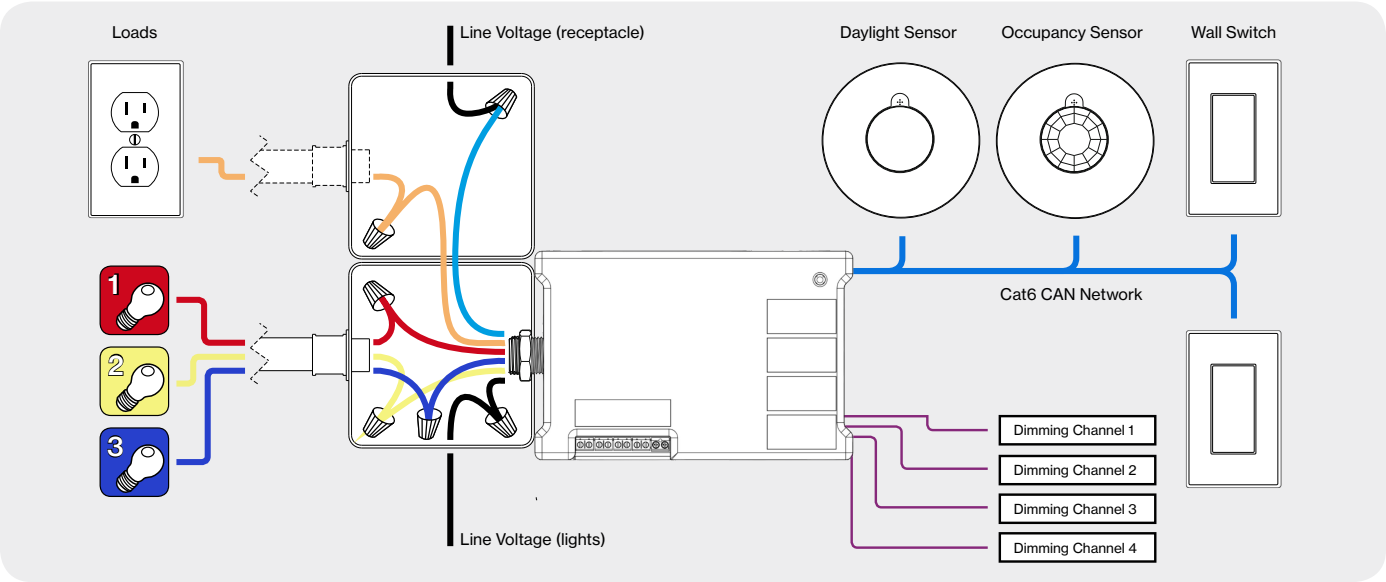
Neutral not shown - these illustrations are for reference purposes only.
For site installations, please review the wiring diagrams and follow local and national electrical codes.

7.2 Two Circuits - Separate Line Voltages



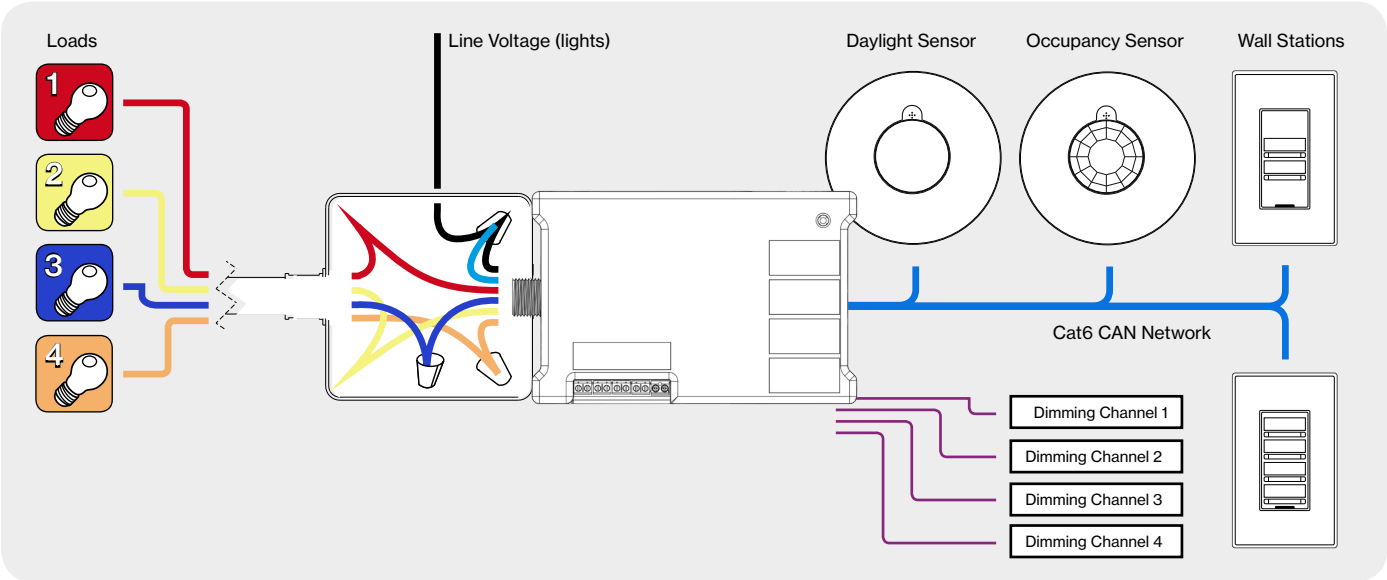
Neutral not shown - these illustrations are for reference purposes only.
For site installations, please review the wiring diagrams and follow local and national electrical codes.

7.3 Four Circuits - Fixtures and Receptacles



Neutral not shown - these illustrations are for reference purposes only.
For site installations, please review the wiring diagrams and follow local and national electrical codes.

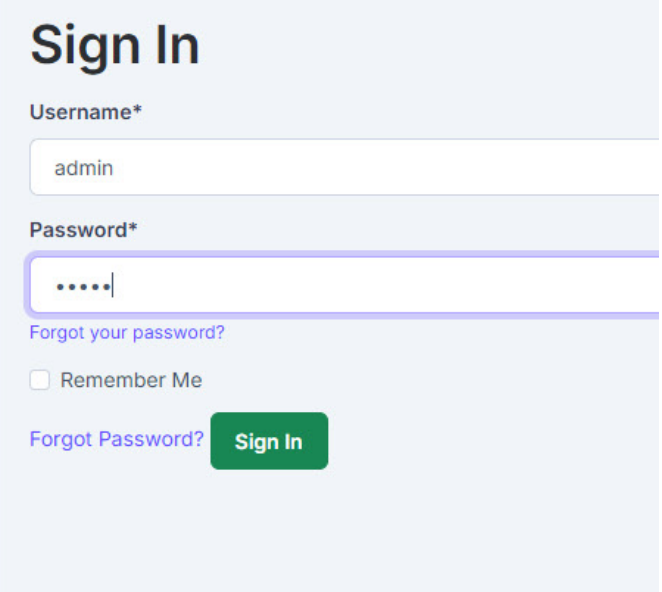
7.4 Four Circuits - Common Line Voltage



Neutral not shown - these illustrations are for reference purposes only. For site installations, please review the wiring diagrams and follow local and national electrical codes.

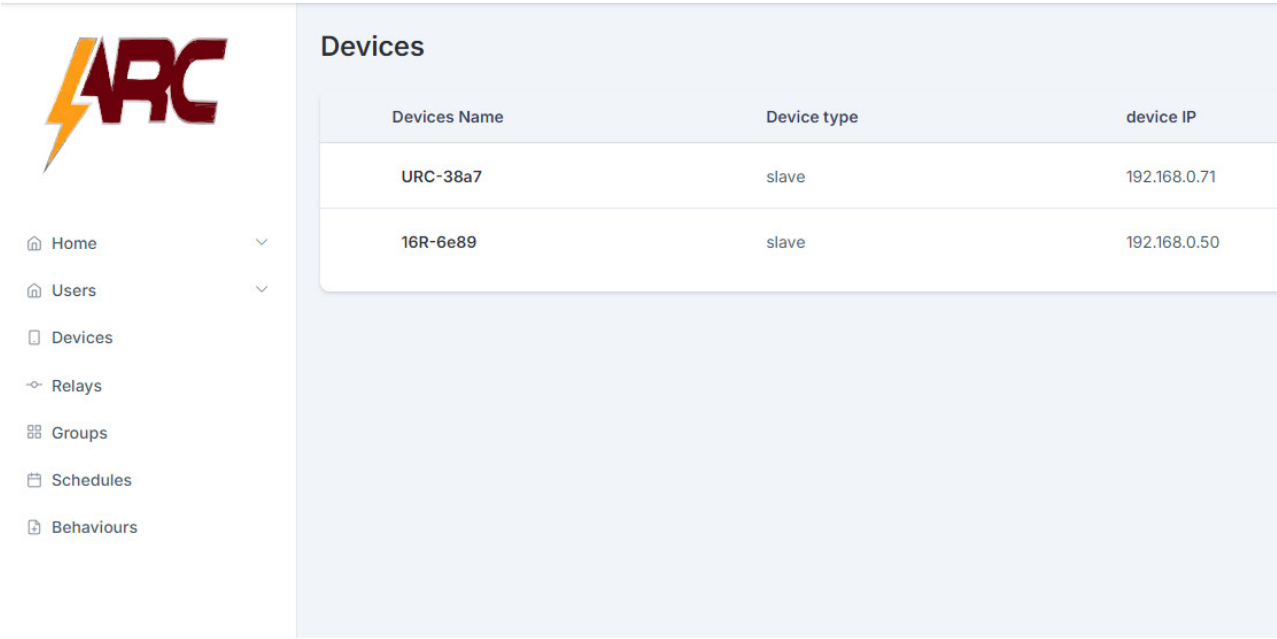
8. Programming

8.1 Logging into ARCnet



Web Interface can be accessed via the IP address of the Primary URC at Port 8000. ex: 10.0.10.80:8000
First time login is Admin / Admin. Username and Password are required to be changed at first login!

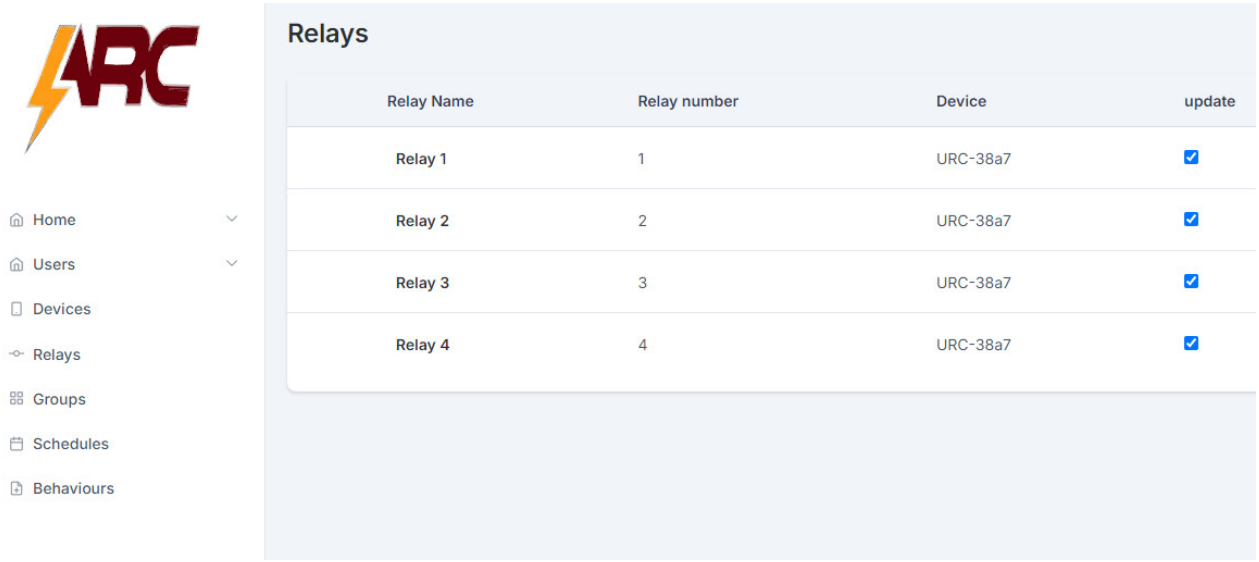
8.2 Discovering devices in ARCnet



A key feature of ARC is its auto-adoption function, which automatically adds devices to the available devices list. Each detected device appears in the Devices tab with details such as device type, IP address, device name, and status.

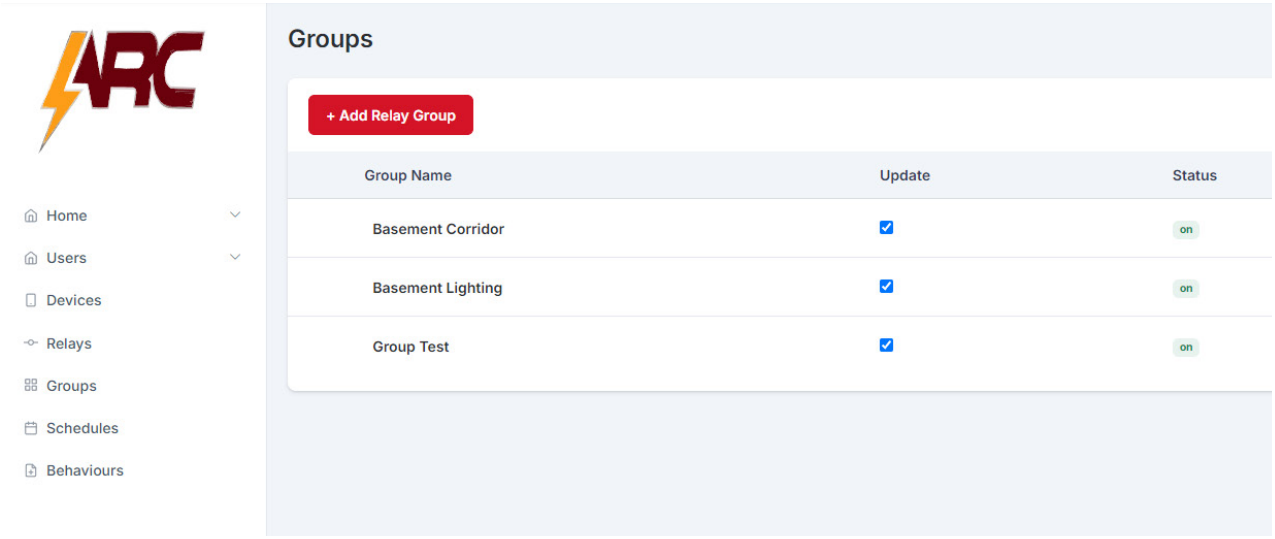
8. Programming Cont.

8.3 Relay List and Status



The Relays page displays a list of relays that are auto-propagated during device adoption. Each relay can be renamed, deleted, or triggered on and off directly from this page. The status of each relay can also be checked to see if it is on or off.

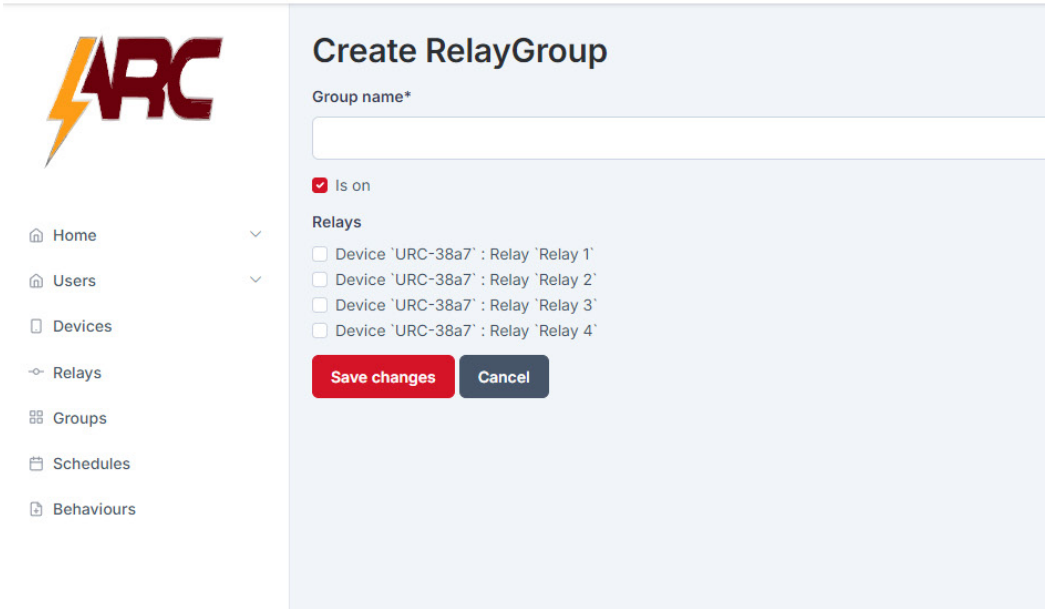
8.4 Relay Groups and Status



The Groups page displays a list of relay and dimming groups. From here, user can create new groups, view their status, and trigger groups on or off. Use the action icons to edit or delete existing groups as needed.

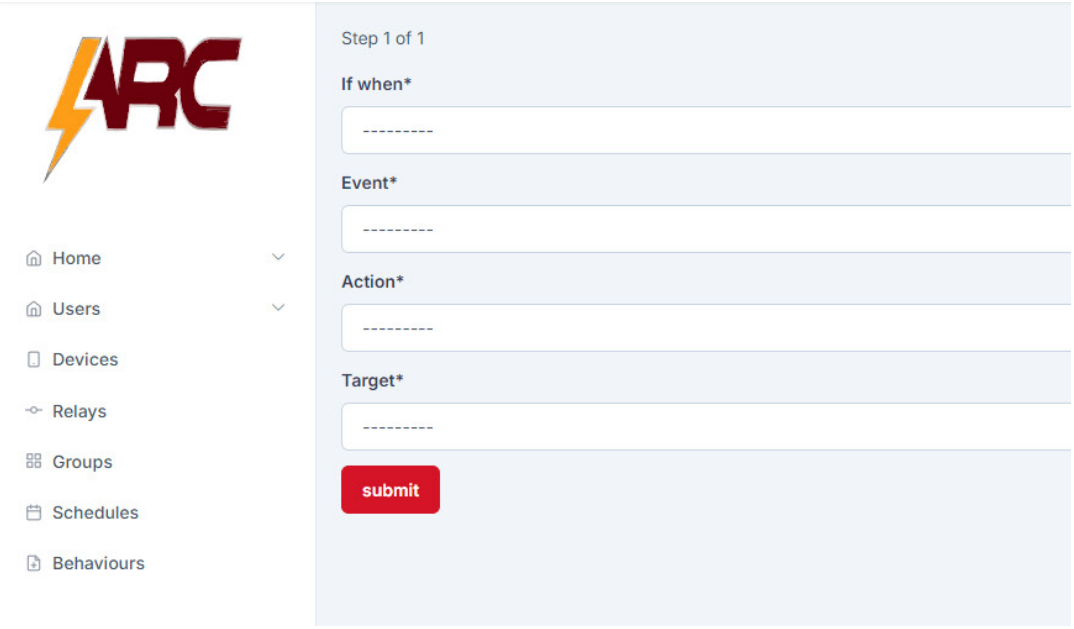
8. Programming Cont.

8.5 Creating a Group



Simply enter a group name, select the devices you want to include in the group, and decide if the group should be initially turned on. Once done, click "Save changes" to create the group, or "Cancel" to discard changes.

8.6 Creating a Behavior



The Behaviors page allows you to create custom automation rules for listed devices. Set conditions by selecting options for "If when," "Event," "Action," and "Target" fields to define what should happen and when. Once all fields are filled out, click "Submit" to save the behavior rule. This enables automatic actions based on specific triggers and conditions.

9. Wiring and Start-Up

▲ CAUTION ▲

Risk of Electric Shock. More than one disconnect switch is required to de-energize the device before servicing. All Servicing should be performed by qualified service personnel. This unit has more than one power supply connection point. To reduce the risks of electric shock disconnect both the branch circuit breakers / fuses & emergency power supplies before servicing.

Use appropriately sized wire nuts and approved terminations for all wire and load connections. If using field-installed conductors, ensure a 90°C minimum rating.

All wire leads have been color-coded to match wire diagrams and labels.

Follow the provided project-specific wiring diagrams.

DO NOT START THE WIRING PROCESS UNTIL POWER HAS BEEN CONFIRMED TO BE OFF

- Once the URC has been secured via the chase nipple to an approved panel or junction box, connect the power, load, switch legs, dimming and device wiring as dictated on the project diagrams.
- Confirm all connections and power up the circuit with the installed devices.
- Give the devices 60 seconds to power on and run through the start-up sequence.
- Check that all devices with status indicator lights are flashing appropriately. **(Section 11)**
- Check that all sensors are providing indicator feedback on movement.
- Installation and initial start-up have been completed.

Note: Some devices may not trigger their selected zones on initial startup if not installed in pre-designated areas. Changes in physical location will require reconfiguration in the software. **(Section 8)**

10. Networked System

A URC-4 or URC-2 product can be networked together with other URCs within ARCnet by setting each additional URC within the "universe" as a secondary device. To do this, hold the test button on the additional URCs for 15 seconds after which the RGB LED will flash **white** for 3 seconds before changing to **blue**. This color change indicates that the unit is now in Secondary mode.

In Secondary mode the URC will no longer act as a DHCP server and the web interface will no longer be accessible. The device will show up in the Primary URC's web interface as an adopted device with the corresponding number of available relays.

The URC will only function as a network bridge in Secondary mode. In Primary mode the **Number 1** ethernet port is intended to be connected to the client's WAN or to be left unplugged if the design does not call for a networked system. ***The ARCnet web interface can only be accessed via a network connected to the Number 1 port.***

In Secondary mode the **Number 1** port is intended for upstream devices such as another URC or ARC device within the chain. The **Number 2** port is intended for downstream devices such as a 16R, DUM-e, DIM-r or other "Secondary mode" URCs.

11. LED Status Indicator

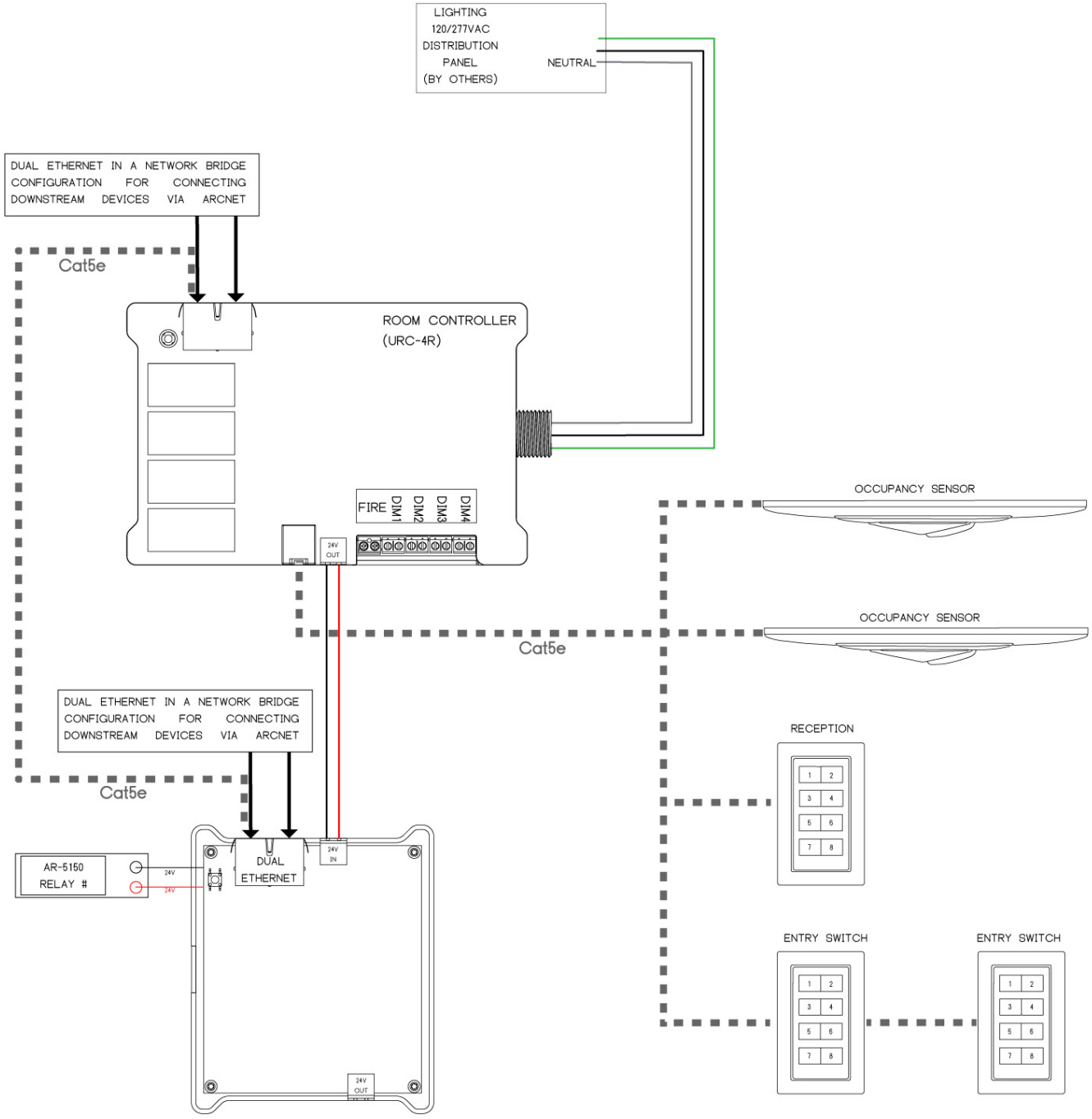
The URC-4 and URC-2 each have a locator and system status RGB LED on the top surface. There are also 2 LEDs (Green and Orange) on each of the two Ethernet ports.

Status LED	Description
Green	System is functioning as intended and operating in Primary mode
Blue	System is functioning as intended and operating in Secondary mode
White	System is adopting devices into ARCnet
Red – Solid	Incorrect Wiring or a Short
Red – Blinking	Device failed to initalize.

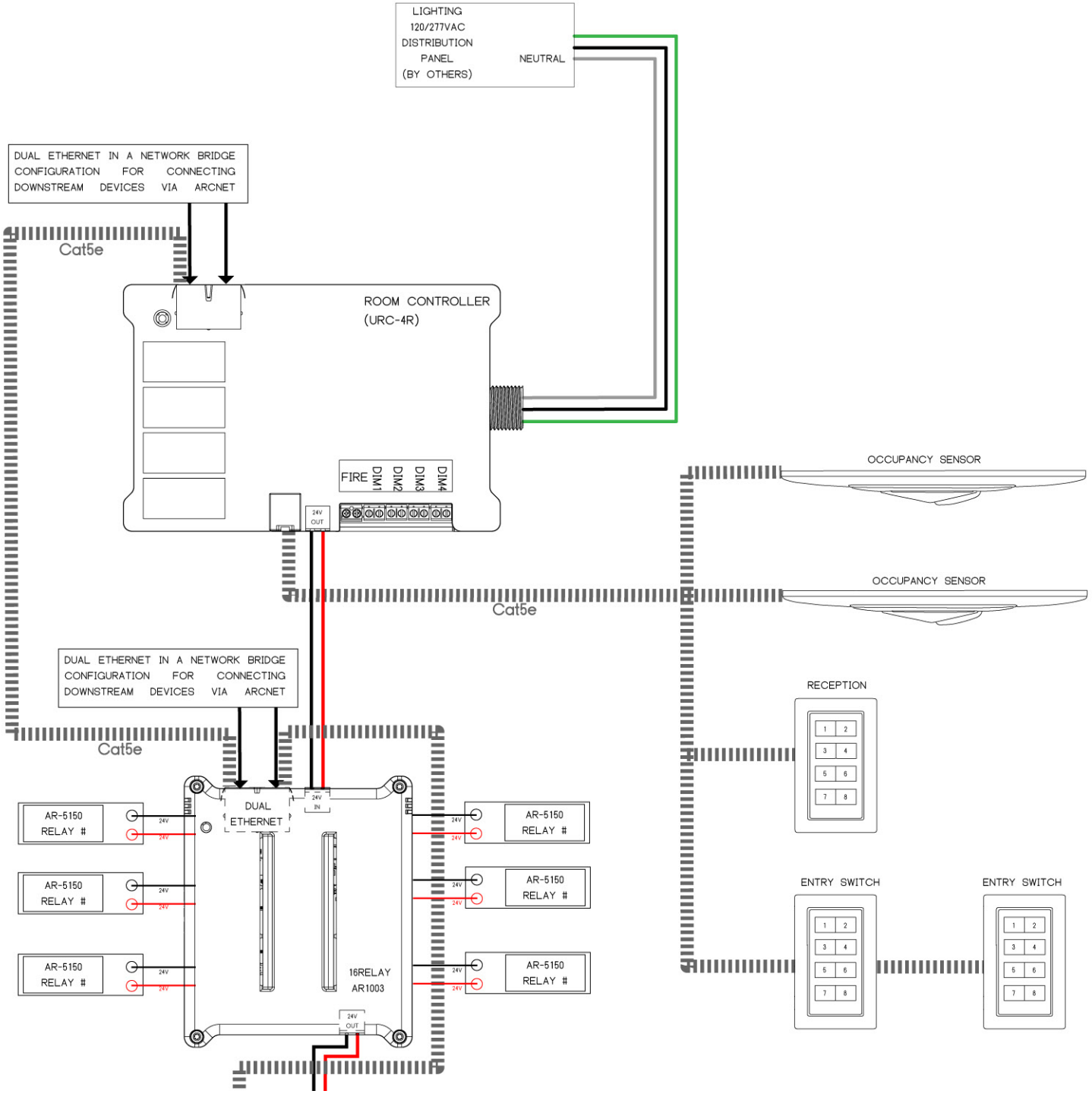
Ethernet LED	Description
Blinking	Ethernet Initializing (during start-up for 30 seconds)
Green – Solid	Ethernet Initialized
Green – Blinking	Transmitting data
OFF	Ethernet failed to initialize.

12. Wiring Diagrams

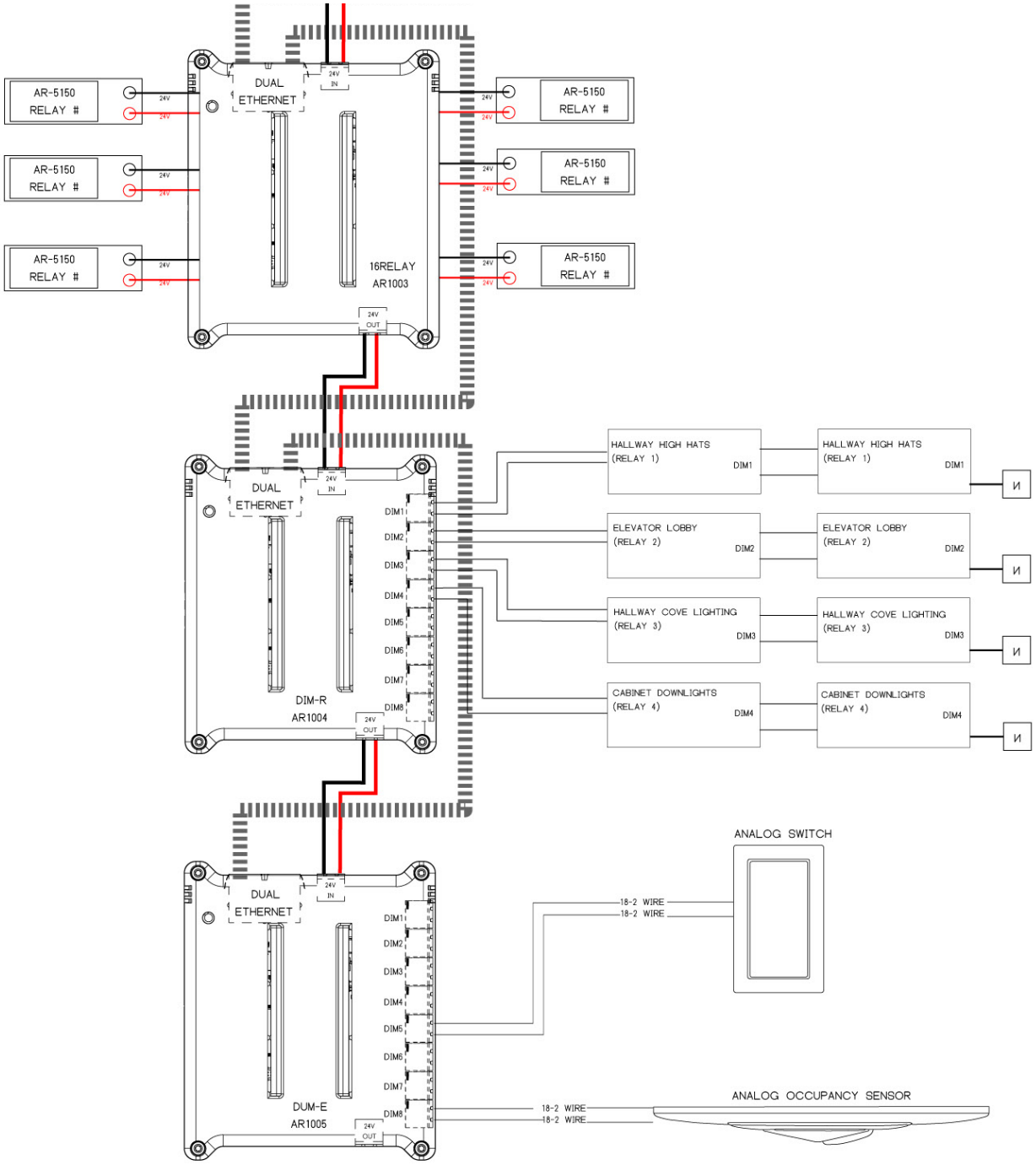
12.1 URC-4 with 16R expansion card



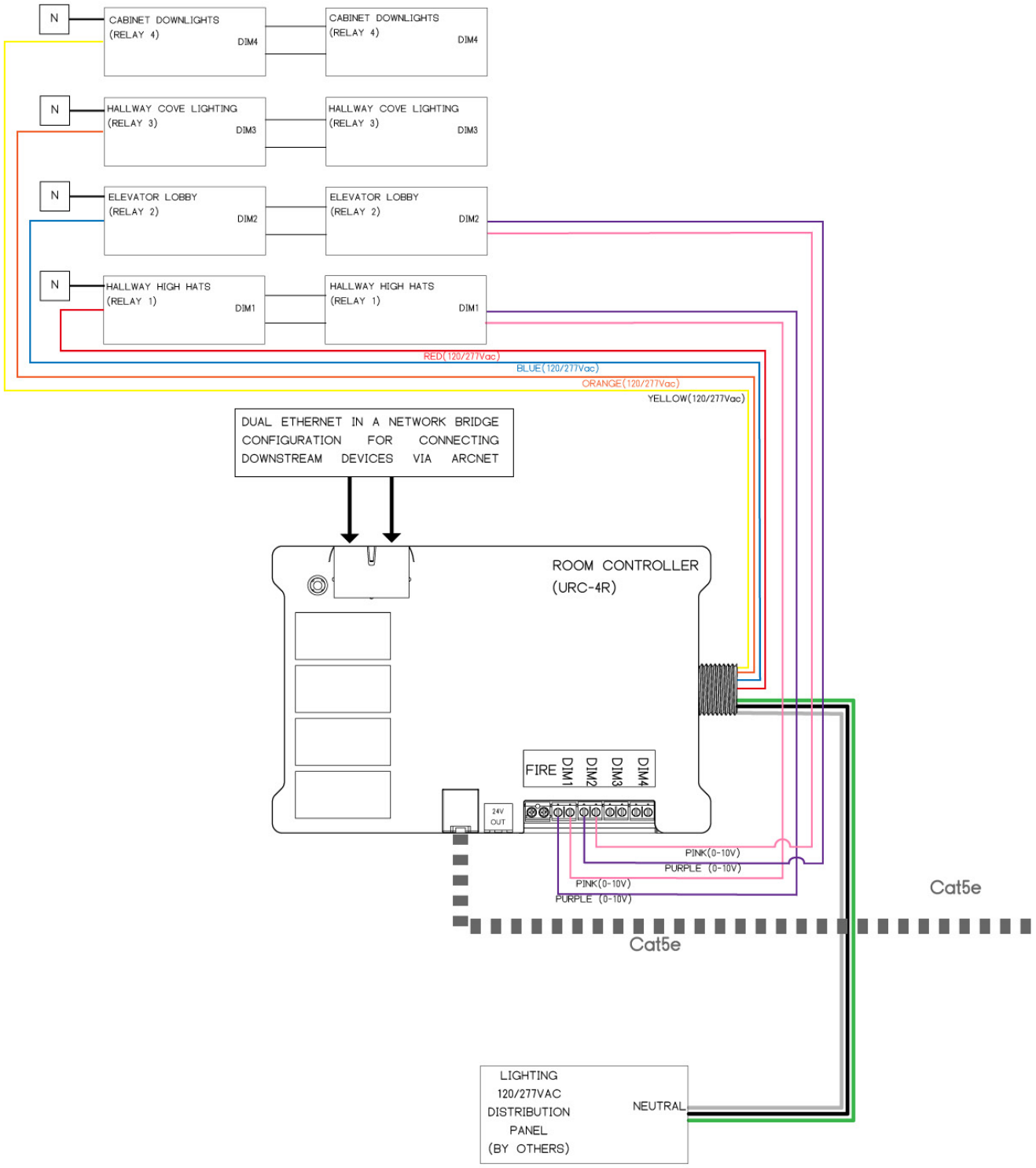
12.2 URC-4 with multiple expansion cards



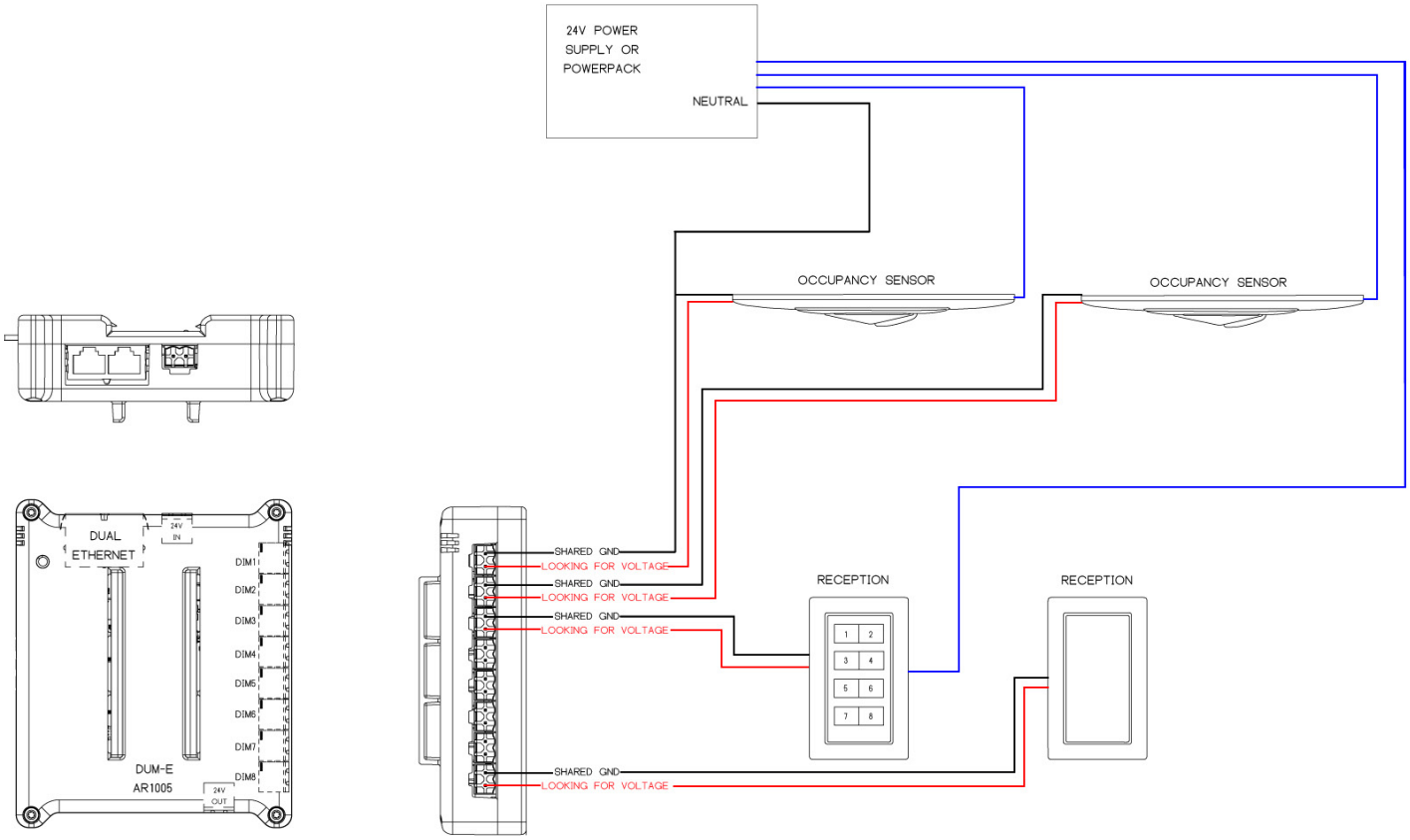
12.2 URC-4 with multiple expansion cards - cont



12.3 URC-4 Standalone



12.4 DUM-e Wiring



13. Support