Room Controller™

WRC-3160
WUL-3924

Installation Manual

*Patent Pending
(shown with UL924 Relay Expansion Pack)
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WARNING!

SYSTEM MUST BE INSTALLED IN ACCORDANCE WITH LOCAL AND NATIONAL ELECTRICAL CODES

INDOOR USE ONLY

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.

SAVE THESE INSTRUCTIONS

- READ AND FOLLOW ALL SAFETY INSTRUCTIONS.
- Be aware that Line Voltage Connections may be 120Vac or 277Vac or 347Vac
- Do not use outdoors.
- Do not mount near gas or electric heaters.
- Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
- The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
- Do not use this equipment for other than intended use.
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1. INTRODUCTION

1.1. General Description

The Dialog Room Controller provides localized distributed lighting control for a specific application, defined space or room.

The product is factory configured to be used without the need for onsite programming prior to commissioning.

2. DESIGN FEATURES

- The Dialog Room Controller is plenum Class 2 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).
- High voltage connections are pre-wired with colour coded, tinned, flying leads. The high voltage compartment is not accessible and has no serviceable components.
- Low voltage push-connect terminal blocks are labeled and colour coded.
- A ½” threaded chase nipple with locknut is integrated into the chassis for installation to standard size junction boxes
- Two ½” knockouts and two break-away tabs allow direct wiring access to the low voltage compartment.
- A 120° opening lid is notched to stay in the open position to provide access to the low voltage compartment.
- A top-mounted bi-colour LED indicates device status and allows for easy device locating
- Dialog Room Controller is a 24Vac data line source for use with the Dialog Dual Technology Occupancy Sensors, Daylight Sensors and Digital Wall Station Switches
- Plug 'N Control™ ready out-of-the-box
- Demand Response Ready
- **BACnet IP Ethernet Port**
- **Status LED**
- **Dialog Network Connection (Centralized System)**
- **0-10V dimming terminal block**
- **½" knockout**
- **Break-away tab**
- **Relay Test Buttons**
- **Addressing for Centralized System**
- **Terminal block for local low voltage network**

(low voltage terminal cover removed)
### 3. COMPATIBLE DEVICES

WRC-3160 works in conjunctions with the following Part Numbers:

<table>
<thead>
<tr>
<th>#</th>
<th>Device Type</th>
<th>Description</th>
<th>PN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dialog Room Controller</td>
<td>Digital 4 Channel ON/OFF Room Controller w/ Receptacle Control, BACnet</td>
<td>WRC-3160</td>
</tr>
<tr>
<td>2</td>
<td>Dialog Room Controller</td>
<td>Digital 2 Channel UL924 Emergency Lighting Controller / Relay Expansion Pack</td>
<td>WUL-3924</td>
</tr>
<tr>
<td>3</td>
<td>Digital Occupancy Sensor</td>
<td>Recessed Ceiling Standard Range w/ Time Delay Dial &amp; Aux Relay, No Photo</td>
<td>WORSDG1-R-T</td>
</tr>
<tr>
<td>4</td>
<td>Digital Occupancy Sensor</td>
<td>Recessed Ceiling Extended Range w/ Time Delay Dial &amp; Aux Relay, No Photo</td>
<td>WORXDG1-R-T</td>
</tr>
<tr>
<td>5</td>
<td>Digital Vacancy Sensor</td>
<td>Recessed Ceiling Standard Range w/ Time Delay Dial &amp; Aux Relay, No Photo</td>
<td>WVRSDG1-R-T</td>
</tr>
<tr>
<td>6</td>
<td>Digital Vacancy Sensor</td>
<td>Recessed Ceiling Extended Range w/ Time Delay Dial &amp; Aux Relay, No Photo</td>
<td>WVRXDG1-R-T</td>
</tr>
<tr>
<td>7</td>
<td>Closed Loop Daylight Sensor</td>
<td>Interior Closed Loop</td>
<td>WPP-INT</td>
</tr>
<tr>
<td>8</td>
<td>1 Channel Dimmer &amp; Switch</td>
<td>Digital Dimmer &amp; Switch, 1 Channel</td>
<td>WSD-3501</td>
</tr>
<tr>
<td>9</td>
<td>1 Button Switch</td>
<td>Digital 1 Gang 1 Button Switch</td>
<td>WSW-3511</td>
</tr>
<tr>
<td>10</td>
<td>2 Button Switch</td>
<td>Digital 1 Gang 2 Button Switch</td>
<td>WSW-3512</td>
</tr>
<tr>
<td>11</td>
<td>3 Button Switch</td>
<td>Digital 1 Gang 3 Button Switch</td>
<td>WSW-3513</td>
</tr>
<tr>
<td>12</td>
<td>4 Button Switch</td>
<td>Digital 1 Gang 4 Button Switch</td>
<td>WSW-3514</td>
</tr>
<tr>
<td>13</td>
<td>8 Button Switch</td>
<td>Digital 1 Gang 8 Button Switch</td>
<td>WSW-3518</td>
</tr>
</tbody>
</table>
4. SPECIFICATIONS

4.1. Mounting
- WRC-3160 is designed to be mounted to an electrical junction box. Integrated ½” threaded chase nipples allow for easy mounting to junction box. Please follow wiring schematics as shown in this Instruction Manual.

4.2. Power
- Line Voltage: 120/277/347Vac
- Frequency: 60Hz

4.3. Inputs:
- 24Vac Dialog Low Voltage Control

4.4. Output Power Supply:
- Low Voltage: 24Vac ±25% source.
- Frequency: 60Hz
- Current: 250mA

4.5. Contact Ratings
- 20A Suitable for General Purpose Loads @ 120/277/347Vac
- 20A Suitable for Standard Ballasts & Tungsten Loads @ 120/277Vac
- 15A Suitable for Standard Ballast Only @ 347Vac
- 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)
- Plenum Rated

4.7. Storage temp:
- -14° to 140°F (-25° to 60°C)

4.8. Approvals:
- CAN/CSA Std. C22.2 No. 14
- UL 508
- UL1310 Standard
- UL2043 Plenum Rating
- ASHRAE 90.1 2010 Compliant
- California Energy Commission Title 24 Compliant
- NY Local Law 48 Compliant
5. DIMENSIONS
6. INSTALLATION FEATURES

- 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”x4” square metal junction boxes using existing knockouts.
- Distance between the ½” chase nipples on WRC-3160 and WUL3924 are spaced to fit into existing 4”x4” square metal junction box knockouts
- Chase nipples include locknuts
- WRC-3160 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.

7. INSTALLATION DIAGRAMS

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

Basic 1.0

![Diagram of Basic 1.0 installation](image-url)
Basic + Emergency 2.0

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

Basic + Receptacle 3.0
Basic + Receptacle + Emergency 4.0

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

Emergency (Remote Installation) 5.0

2-wire network to Dialog Room Controller
8. INSTALLATION

1. Install Dialog Room Controller chase nipples through a 1/2” knockout in standard 4"x4" square metal junction box
2. Attach and tighten locknut
3. If the installation requires the UL924 Relay Expansion Pack WUL-3924, (connected to WRC-3160 at factory), a second standard 4”x4” square metal junction box is needed (see installation examples 3.0 or 4.0 above)
4. Emergency Relay Expansion Pack can be remotely located (see installation example 5.0)
5. Install peripheral devices and run 18/2 data line back to Dialog Room Controller

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.

Dialog Room Controller is a 24Vac data line source for use with the Dialog Dual Technology Occupancy Sensors, Daylight Sensors and Digital Wall Station Switches. All switches or loads required to be supported by the sensor must be included in the loading capacity of the Dialog Room Controller. Controller can support up to 100mA of peripheral devices.

The Dialog Room Controller is equipped with #12AWG tined leads.

Use appropriate sized wire-nuts to connect the wires to the incoming load terminations.

When using field-installed conductors ensure a 60ºC minimum rating.

Wire leads are color coded to match circuit labels. Follow circuit wiring information found on the inside of low voltage terminal door.

1. Connect power, load, and control wiring as shown on appropriate Kit Wiring Diagram
2. Power up system
3. Wait 15 seconds for system to start-up and run system checks
4. Check LED status light
5. When is Solid Green or Flashing Green, test relays with Blue relay test buttons to confirm intended load control
   a. If LED not Solid Green or Flashing Green, see LED Status Indicators (Section 9)
6. Installation & configuration complete!

Wiring Information - Low Voltage Compartment Door

Wiring Information – Low Voltage Terminal Blocks
10. CENTRALIZED SYSTEM

The Dialog Room Controller can be integrated into a centralized Dialog system for global scheduling and control. When using Dialog Room Controllers in a centralized system please be aware of the following:

- The Dialog centralized controller (WUL-3150) is programmed to recognise the Dialog Room Controller (WRC-3160)
- The Dialog Room Controller is factory addressed by setting the addressing DIP switches

DIP Switch Addressing

<table>
<thead>
<tr>
<th>DIP</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binary</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>8</td>
<td>16</td>
<td>32</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Addressing is done by moving DIP switches up.

E.g. For address 10, DIP 2 (value=2) and DIP 4 (value=8) are in up position (2+8=10). The central controller (WUL-3150) is then programmed to control address 10.

11. LED STATUS INDICATOR

The WRC-3160 has a locator and system status bi-color LED on the top surface. There are also 2 LEDs (Green and Orange) on the Ethernet connector.

<table>
<thead>
<tr>
<th>Status LED</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green – Solid</td>
<td>Daylight Sensor address 0.1 is connected to provide 2 zone CLC</td>
</tr>
<tr>
<td>Green – Blinking</td>
<td>Daylight Sensor address 0.1 and 0.2 are connected to provide 2 zone CLC</td>
</tr>
<tr>
<td>Green/Red - Blinking</td>
<td>Daylight Sensor is NOT connected</td>
</tr>
<tr>
<td>Red – Solid</td>
<td>Incorrect Wiring or a Short</td>
</tr>
<tr>
<td>Red – Blinking</td>
<td>Dialog downstream is failing to drive the bus</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ethernet LED</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blinking</td>
<td>Ethernet Initializing (during start-up for 30 seconds)</td>
</tr>
<tr>
<td>Green – Solid</td>
<td>Ethernet Initialized</td>
</tr>
<tr>
<td>Green – Blinking</td>
<td>BACnet transmitting data</td>
</tr>
<tr>
<td>OFF</td>
<td>Ethernet failed to initialized</td>
</tr>
</tbody>
</table>
12. KIT WIRING DIAGRAMS

Kit#1

Diagram showing wiring connections for Kit#1, including symbols for light fixtures, dimmers, receptacles, and controllers. The diagram also includes labels for different components such as 'light K1', 'light K2', 'Dim 1', and 'Dim 2'.

Dialog Room Controller

Kit Ordering Numbers:
DRC01FS-1S11-12-N
DRC01FS-1X11-12-N
DRC01FS-1S31-12-N
DRC01FS-1X31-12-N

Diagram showing a block diagram of a dialog room controller with connections to various sensors, lights, and control devices.
Kit #4

Dialog Room Controller

Kit Ordering Numbers:
DRC010S-1S11-12-E
DRC010S-1X11-12-E
DRC010S-1S31-12-E
DRC010S-1X31-12-E

Kit #4

Douglas Lighting Controls
www.douglaslightingcontrols.com
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