ROOM CONTROLLER 4000 SERIES

WRC-4222 - 2 Relay / 2 Dimmer
WRC-4244 - 4 Relay / 4 Dimmer
WUL-4924 - 2 Relay UL924 Expansion Pack
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.
1. INTRODUCTION

1.1. General Description

The Dialog Room Controller 4000 Series 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 on-site programming prior to commissioning. If changes are required, the technician can make the required updates.

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 and circuit test buttons.
- 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 Occupancy Sensors, Daylight Sensors and Digital Wallstations.
- Self networkable for up to 12 Relays and 12 Dimmer unified control.
- BACnet IP Native.
- Demand Response Ready.
- Networkable for Global Controls.
Terminal block for local network

Relay Test Buttons

Addressing for Centralized System

Status LED

Dialog Network Connection (Centralized System)

½" knockout

Break-away tab

Break-away tab

½" knockout

0-10V dimming terminal block

(Low voltage compartment cover removed)
3. COMPATIBLE DEVICES

The WRC-4222 and WRC-4244 work in conjunction with the following part numbers:

<table>
<thead>
<tr>
<th>Description</th>
<th>PN</th>
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<tbody>
<tr>
<td>Recessed Ceiling Occupancy Sensor, Standard Range w/ Time Delay Dial &amp; Aux Relay, No Photo</td>
<td>WORSDG1-R-T</td>
</tr>
<tr>
<td>Recessed Ceiling Occupancy Sensor, Extended Range w/ Time Delay Dial &amp; Aux Relay, No Photo</td>
<td>WORXDG1-R-T</td>
</tr>
<tr>
<td>Recessed Ceiling Vacancy Sensor, Standard Range w/ Time Delay Dial &amp; Aux Relay, No Photo</td>
<td>WVRSDG1-R-T</td>
</tr>
<tr>
<td>Recessed Ceiling Vacancy Sensory, Extended Range w/ Time Delay Dial &amp; Aux Relay, No Photo</td>
<td>WVRXDG1-R-T</td>
</tr>
<tr>
<td>1-Button Wall Station with Occupancy &amp; Daylight Sensor w/Time Delay Dial &amp; Daylight Set-point Dial</td>
<td>WOSSDG1-P-T</td>
</tr>
<tr>
<td>Recessed Ceiling Daylight Sensor with Daylight Set-point Dial</td>
<td>WPP-INT</td>
</tr>
<tr>
<td>1-Button &amp; Dimmer Wall Station</td>
<td>WSD-3501</td>
</tr>
<tr>
<td>1-Button Wall Station</td>
<td>WSW-3511</td>
</tr>
<tr>
<td>2-Button Wall Station</td>
<td>WSW-3512</td>
</tr>
<tr>
<td>3-Button Wall Station</td>
<td>WSW-3513</td>
</tr>
<tr>
<td>4-Button Wall Station</td>
<td>WSW-3514</td>
</tr>
<tr>
<td>8-Button Wall Station</td>
<td>WSW-3528</td>
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<tr>
<td>Keyed Wall Station</td>
<td>WSK-3502</td>
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</table>
4. SPECIFICATIONS

4.1. Mounting

- WRC-4222 and WRC-4244 are 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
- Meets ASHRAE 90.1 Requirements
- Meets CEC Title 24 Requirements
- Meets NYLL 48 Requirements
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” x 4” square metal junction boxes using existing knockouts.
- Locknuts are included with each chase nipple.
- WRC-4222 and WRC-4244 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

Two Circuits – Common Line Voltages

Two Circuits – Different Line Voltages
7. INSTALLATION DIAGRAMS

Basic 1.0

Loads
1
2
3
4

Line Voltage (lights)

Daylight Sensor
Occupancy Sensor
Wall Stations

2-Wire Network

Dimming Channel 1
Dimming Channel 2
Dimming Channel 3
Dimming Channel 4

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

Basic + Emergency 2.0

Loads
1
2
3
4

Line Voltage (lights)

Line Voltage (lights) with emergency backup power

Daylight Sensor
Occupancy Sensor
Wall Stations

2-Wire Network

Dimming Channel 1
Dimming Channel 2
Dimming Channel 3
Dimming Channel 4

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

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Product Details

Line Voltage Passive Infrared (PIR) Occupancy / Vacancy Sensor

14040500-A
7. INSTALLATION DIAGRAMS

Basic + Receptacle 3.0

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

Basic + Receptacle + Emergency 4.0

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

Emergency (Remote Installation) 5.0

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

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. Install peripheral devices and run #18/2 power and data network 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 has a 24VAC data line network for use with the Dialog Occupancy Sensors, Daylight Sensors, and Digital Wall Stations. All Wallstations and sensors to be supported by the controller must be included in the current calculation (maximum 100mA).

The Dialog Room Controller is equipped with #12AWG tinned leads for line voltage connections.

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

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

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

1. Connect power, load, and control wiring as shown on appropriate Guide Wiring Diagram
   a. Neutral wire is for Room Controller
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!
9. WIRING AND START-UP

Wiring Information: Low Voltage Compartment Door

WIRING INFORMATION:

- RELAY 1
  - NEUTRAL: WHITE
  - HOT (120/277/347VAC): BLACK
  - LOAD 1: RED

- RELAY 2
  - HOT (120/277/347VAC): BLUE
  - LOAD 4: BLUE

Wiring Information: Low Voltage Terminal Blocks

- RELAY 1
  - LOAD 1: RED

- RELAY 2
  - LOAD 4: BLUE

- RELAY 3
  - LOAD 2: BROWN

- RELAY 4
  - LOAD 3: YELLOW

- RELAY 4
  - LOAD 4: BLUE

Schematic Diagrams:

(WRC-4222)

(WRC-4224)
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 is programmed to recognize the Dialog Room Controller.
- 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>
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</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 Dialog central controller is then programmed to control address 10.

11. LED STATUS INDICATOR

The WRC-4222 and WRC-4244 each have 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>
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<tbody>
<tr>
<td>Green – Solid</td>
<td>Daylight Sensor address 1 is connected to provide 2 zone CLC</td>
</tr>
<tr>
<td>Green – Blinking</td>
<td>Daylight Sensor address 1 and 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 of Dialog Room Controller is failing to provide power to the power &amp; data bus</td>
</tr>
</tbody>
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<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. WIRING DIAGRAMS

Dialog Room Controller - Guide #20

Diagram showing wiring connections for a Dialog Room Controller, including:
- Building Control via BACnet IP or Dialog Network
- 0-10V Dimming (18/2 per channel)
- Local Room Dataline (18/2)
- One or more Occupancy Sensors (up to 4)
- Daylight Sensor
- Teachers Station
- Entry Station
- Classroom Front and Rear (Relay 1 and 2)
- Primary and Secondary Daylight Zones
- Various lighting and control connections

Diagram also shows connections for Lighting Distribution Panel (120/277/347Vac) and General ON/ALL OFF buttons for Lighting and AV control.
12. WIRING DIAGRAMS

Dialog Room Controller - Guide #21

Primary Daylight Zone

Classroom Front (Relay 1)
Dim 2

Classroom Rear (Relay 2)
Dim 1

Secondary Daylight Zone

Classroom Front (Relay 1)
Dim 2

Classroom Rear (Relay 2)
Dim 1

Building Control via BACnet IP or Dialog Network

Occupancy Sensor (up to 4)

Daylight Sensor

Teachers Station

Entry Station

Local Room Dataline (18/2)

0-10V Dimming (18/2 per channel)

Lighting 120/277/347Vac Distribution Panel (by Others)

NEUTRAL

RED/WHITE

BLUE/WHITE

BLUE

BLACK

WHITE

RED/WHITE

LIGHTING LOAD 1

BLUE/WHITE

LIGHTING LOAD 2

BLUE

LIGHTING HOT

BLACK

LIGHTING HOT

WHITE

NEUTRAL

Room Controller (WRC-4222)
Dialog Room Controller - Guide #22

12. WIRING DIAGRAMS
Primary Daylight Zone

Classroom Front (Relay 1)
Dim 2

Classroom Front (Relay 1)
Dim 2

Classroom Rear (Relay 2)
Dim 1

Classroom Rear (Relay 2)
Dim 1

Secondary Daylight Zone

Building Control via BACnet IP or Dialog Network

0-10V Dimming (18/2 per channel)

Local Room Dataline (18/2)

Occupancy Sensor (up to 4)

Daylight Sensor 1

Daylight Sensor 2

Teachers Station

Entry Station

Entry Station

Lighting Load 1

Lighting Load 2

Lighting Load 1

Lighting Load 2

Lighting Hot

Lighting Hot

Neutral

Neutral

120/277/347Vac Distribution Panel (by Others)

Building Control

Dialog Room Controller - Guide #23
Dialog Room Controller - Guide #24

Primary Daylight Zone

Classroom Front (Relay 1)
Dim 2

Classroom Front (Relay 1)

Classroom Rear (Relay 2)
Dim 1

Classroom Rear (Relay 2)

Secondary Daylight Zone

Building Control via BACnet IP or Dialog Network

Room Controller (WRC-4222)

Occupancy Sensor (up to 4)

Daylight Sensor

Entry Station

0-10V Dimming (18/2 per channel)

Local Room Dataline (18/2)

Lighting Load 1

Lighting Load 2

Lighting 120/277/347Vac Distribution Panel (by Others)

NEUTRAL
12. WIRING DIAGRAMS

Dialog Room Controller - Guide #25

Primary Daylight Zone

Classroom Front (Relay 1)
Dim 2

Classroom Rear (Relay 2)
Dim 1

Secondary Daylight Zone

Classroom Front (Relay 1)
Dim 2

Classroom Rear (Relay 2)
Dim 1

Building Control via BACnet IP or Dialog Network

0-10V Dimming (18/2 per channel)

Local Room Dataline (18/2)

Room Controller (WRC-4222)

Occupancy Sensor (up to 4)

Daylight Sensor

Entry Station

Lighting 120/277/347Vac Distribution Panel (by Others)

REDF/WHITE
BLUE/WHITE
BLUE
BLACK
WHITE

LIGHTING LOAD 1
LIGHTING LOAD 2
LIGHTING HOT
LIGHTING HOT
NEUTRAL
NEUTRAL
## Edits

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