WaveLinx Relay Switchpack with 0-10V

SAFETY INSTRUCTIONS - DO NOT DISCARD

IMPORTANT SAFEGUARDS

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

- Installation should be performed by a qualified electrician
- Installation shall be in accordance with all applicable local and NEC codes
- Turn the power off at circuit breakers before wiring
- Designed for indoor installation and use only
- All new wiring must be fully verified before applying power
- Servicing of equipment should be performed by qualified service personnel

SAVE THESE INSTRUCTIONS

General Information

Overview

The Wireless Relay Switchpack with 0-10V (WSP-MV-010) control is an integral part of the WaveLinx Wireless Connected Lighting (WCL) system and offers 120-277VAC 20amp zero crossing relay control and continuous 0-10V dimming control of LED and non LED loads. The wireless relay Switchpack with 0-10V control also supports 20amp plug load control. The WSP-MV-010 is powered by the 120-277VAC circuit it is controlling and provides simple 1/2” junction box mounting. The wireless relay Switchpack with 0-10V control operates on a wireless mesh network based on IEEE 802.15.4 standards.

The intended use of the WaveLinx Relay Switchpack with 0-10V output is for commercial lighting and control integration. Listed below are a few operating notes related to the switch pack.

- The basic WaveLinx system uses some number of WaveLinx Relay Switchpacks with 0-10V output. Each is powered by AC line voltage 120/277VAC (+/- 10%) input power supply with Line, and neutral terminals.
- The WaveLinx Relay Switchpack also includes a 0-10V output to allow the entire system to be controlled by a single 0-10V control device.
- The WaveLinx Relay Switchpack will support up to 120mA current sink at the 0-10V output and it can switch up to 20Amps plug loads.

PLENUM RATING

Most of the components in this system are intended to be mounted above the ceiling tiles, in an area that could be intended for air handling. For this reason, all of the WaveLinx Relay Switchpack cabling is plenum rated.

Note: The components do not meet the plenum rating standards for Chicago without additional measures.
Junction Box Mounting

The WaveLinx Relay Switchpack with 0-10V output is designed to be mounted to a solid surface (horizontal or vertical) and attached to a Junction Box. Installation instructions are included for connecting the leads to the fixtures.

10V Wiring Detail

Plug Load Wiring Detail
Relay Switchpack

Installation

1. Ensure power is off to all circuits you will be working with.
2. Secure the WaveLinx Relay Switchpack to the Junction Box.
3. Make all power connections:
   a. The input black wire (HOT) of the Relay Switchpack has HOT_Switched output (red wire) to connect to the load that will be powered through the Relay Switchpack.
   b. The input white wire (Neutral) of the Relay Switchpack is also connected to the load directly.
4. Make all low voltage connections:
   a. The Relay Switchpack also includes a 0-10 V output to allow control of a single 0-10 V control device.
   b. The positive (dim) lead of the luminaires are connected to the purple wire.
   c. The negative (return) lead is connected to the gray terminal.
   d. Use 20 – 24 AWG solid or stranded copper.
5. Check all electrical and mechanical connections.
6. Close up the junction Box.
7. Apply power to the circuit.

Wiring Diagram

Out of the Box functionality

• Upon Power up, the Relay Switchpack will be ON (closed) until paired with Wireless Area Controller (WAC). Output of 0-10V set to 75% light output.
• Commissioning button will toggle Relay state when button is pressed and released in less than 4 seconds.
• LED will indicate Relay state; if Relay is closed then the LED is ON.
• When the Commissioning button is pressed for more than 4 seconds, the Relay Switchpack will search for an Eaton WaveLinx wireless network. The LED will blink at 0.5Hz Slow blink) 50% duty cycle while searching.
Wireless setup

1. Upon power up, the Relay Switchpack will look for an Eaton WaveLinx wireless network.
2. When the Relay Switchpack joins an Eaton WaveLinx wireless network, the Relay turns Off for 5 minutes.
   • This is used to visually inspect which fixtures received the join beacon from the WAC.
   • The installing contractor can document which fixtures did not turn Off. Those fixtures will stay at 75% or full bright light level.
3. When connected to the WaveLinx wireless network the Relay Switchpack returns to full ON light level.
4. When the pairing is complete all relays are part of the default area and the dimmable zone.

Note: Please refer to WaveLinx Mobile App manual to complete configuration.

LED’s Definitions

There are two major LED patterns for the Relay Switchpack:

• When the commissioning button is pressed for more than 4 seconds, the LED blinks at 0.5Hz (Slow Blink) 50% duty cycle for 10 seconds; indicating that the Wallstation is searching for an Eaton Network.

• When the commissioning button is pressed for less than 4 seconds, the Relay State will toggle and the LED will indicate its state.
  o LED ON = Relay Close.
  o LED OFF = Relay Open.

• At any given time the Relay state can be identified via the LED.
  o LED ON = Relay Close.
  o LED OFF = Relay Open.

Troubleshooting

<table>
<thead>
<tr>
<th>Issue</th>
<th>Possible Causes</th>
<th>Suggestions</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED will not toggle ON when button is pressed</td>
<td>Power Interruption</td>
<td>Check incoming voltage and/or wiring.</td>
</tr>
<tr>
<td>Relay Switchpack cannot join Eaton WaveLinx wireless network and/or not reliable</td>
<td>Communication Issue</td>
<td>Check that the Relay Switchpack is within range of WAC without obstacles and can establish reliable communications with the Wireless Area Controller. Check the Wireless Area Controller for additional details.</td>
</tr>
<tr>
<td>0-10V doesn’t function correctly</td>
<td>0-10V connection Issue</td>
<td>Check wiring connection for purple and gray wires.</td>
</tr>
<tr>
<td>Relay doesn’t function correctly</td>
<td>Communication Issue</td>
<td>Check that the Relay Switchpack is within range of WAC without obstacles and can establish reliable communications with the Wireless Area Controller. Check the Wireless Area Controller for additional details.</td>
</tr>
<tr>
<td>Relay not toggling</td>
<td></td>
<td>If communication is established, check for a ‘clicking’ sound of the relay indicating that it’s opening and closing.</td>
</tr>
<tr>
<td>Wiring Issues</td>
<td></td>
<td>Check to see if power and load wires are wired correctly according to the wiring section.</td>
</tr>
</tbody>
</table>

If still having trouble, call Technical Services at 1-800-553-3879
# Specifications

**Technology:** WaveLinx Relay Switchpack for lighting control based on IEEE 802.15.4. Compatible only with Eaton WaveLinx Wireless Lighting Control system.

<table>
<thead>
<tr>
<th>Power</th>
<th>Input power: 120/277VAC. Connections: Black (Incoming HOT), White (Neutral), Red (Switched Out), Purple (0-10V +), Gray (0-10V -)</th>
</tr>
</thead>
</table>
| Indicators | LED functionality  
- Indication of wireless network join request  
- Indication of wireless network connection  
- Scene indication of operations  
- Relay (ON/OFF) status |
| Installation | Standard junction box or fixture mounting via 1/2” knockout. |
| Size | 4.75”H x 3.25”W x 1.25”D. |
| Software Specifications | Automatically controlled by WaveLinx Occupancy Sensors and WaveLinx Wallstation when added to the same area using the WaveLinx Mobile Application. Provides +/-5% power measurement data. |
| Environmental Specifications | Operating Temperature Range: 32°F to 104°F (0°C to 40°C).  
Storage Temperature Range: 32°F to 167°F (0°C to 75°C).  
Relative Humidity: 5% to 95% non-condensing, for indoor use only. |
| Standards | Listings: cULus Certified, FCC.  
Meets ASHRAE Standard 90.1 requirements.  
Meets IECC 2015 requirements.  
Meets CEC Title 24 requirements. |
| Wireless Specifications | Radio 2.4GHz.  
Standard IEEE 802.15.4.  
Transmitter Power + 7dBm.  
Configuration type Router, End Point .  
Range 50m (150ft) LOS.  
# of walls 3 interior walls standard construction.  
Max # of Devices 200 per Wireless Area Controller. |