Wattstopper® PLUS

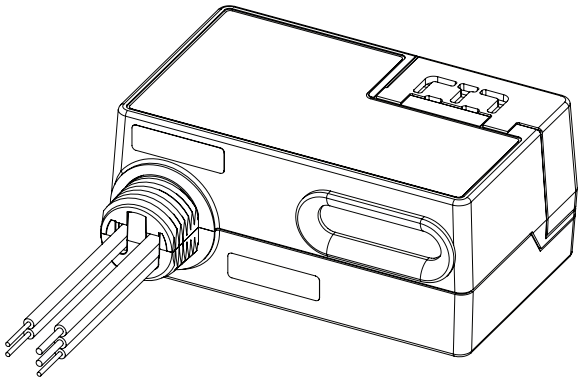
Wireless Area Lighting Controller

Installation Instructions • Instructions d'Installation • Instrucciones de Instalación

No: 080436 – 01/26 rev. 5

Catalog Numbers • Les Numéros de Catalogue • Los Números de Catálogo:
EN-ALC-ZB-BK, EN-ALC-ZB-BK-DR

Country of Origin: Made in Canada • Pays d'origine: Fabriqué en Canada • País de origen: Hecho en Canadá



SPECIFICATIONS

Voltage 120–347V
Maximum Load Ratings .....20A @120–347V, Electronic Ballast/
..... Tungsten/Resistive/General Purpose
..... 1.5HP @120–277V, Motor
Wireless Range ..... 30 m (100 ft) line of sight,
..... 15.2 m (50 ft) through standard walls
...Acts as repeater device when in range of 3 repeater devices
Radio Frequency..... 2.4GHz
Operating Temperature .....-40° to 149°F (-40° to 65°C) @10A
.....-40° to 131°F (-40° to 55°C) @20A
Relative Humidity .....0% to 95%, non-condensing
Certifications
- UL916 (Energy Management Equipment)
- UL924 cUL US Listed (Emergency Lighting Equipment)
- UL2043 Plenum Rated
- FCC Part 15/ICES-003
- RoHS Compliant

DESCRIPTION

The Wireless Area Lighting Controller (WALC) is a wireless control device that provides a switched line AC and 0-10V control to luminaires or receptacles. It communicates with the Wattstopper PLUS Wireless Manager over a wireless mesh network based on the Zigbee standard.

The WALC is available in two models: Indoor and Damp Rated

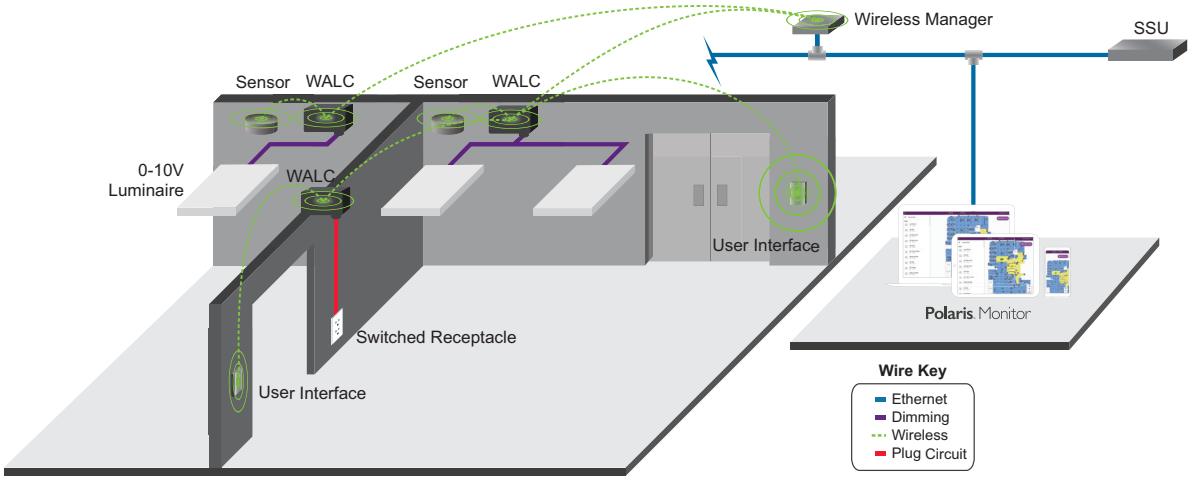
PRODUCT SAFETY

When using electrical equipment, basic safety precautions should always be followed, including the following:

- Do not mount near gas or electric heaters or let power supply cords touch hot surfaces.
- 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 is not recommended by Legrand as it may cause an unsafe condition.
- Do not use this equipment for other than the intended use.

WIRELESS SYSTEM OVERVIEW

This illustration shows how each component is easily integrated into the Wattstopper PLUS System.



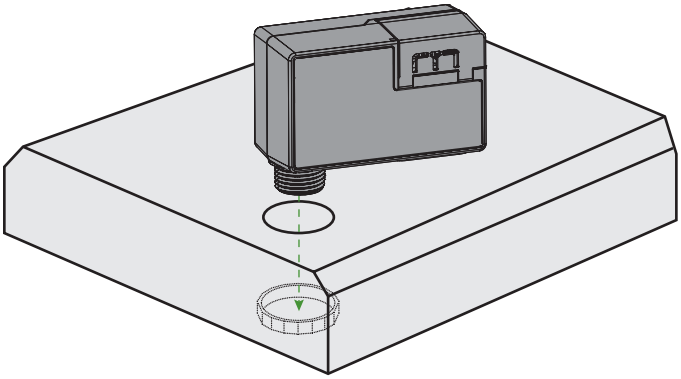
INSTALLATION AND MOUNTING

In a typical installation, the WALC connects to electronic dimming, non-dimming, HID, ballasts, or LED drivers to make each individual device controllable by the Wattstopper PLUS System.

NOTE: The standard EN-ALC-ZB-BK should be installed in dry, indoor locations **only**. For damp installations, use the EN-ALC-ZB-BK-DR damp-rated WALC Module Damp locations are defined as: interior locations subject to moderate degrees of moisture, such as basements, barns, cold-storage warehouses, as well as partially protected locations under canopies, marquees and open roofed porches.

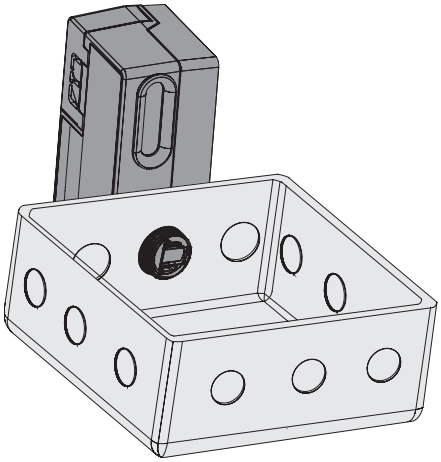
Luminaire Mounting

The mechanical construction allows for simple installation of the module in an available PG-7 (0.5 inch) trade-size knockout on top or side of a luminaire.



Junction Box Mounting

For some installations, a junction box may be required. It is recommended to securely mount the WALC to the junction box using an available PG-7 (0.5 inch) trade-size knockout and retainer nut.



WIRING

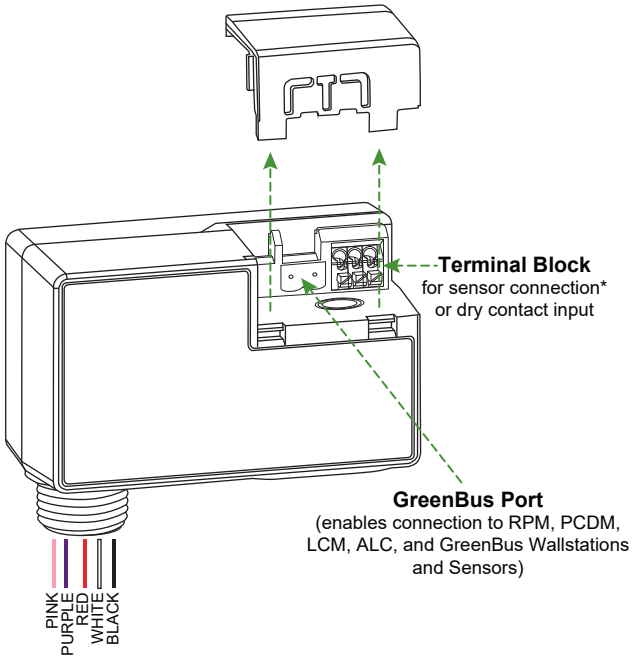
A removable cover exposes a GreenBus port as well as a terminal block for connection to third party sensors or dry contact applications.

WALCs have an integrated GreenBus connection allowing for hybrid wireless / wired applications. Each WALC supports one GreenBus device (e.g. Luminaire Control Module (LCM), Phase-Cut Dimming Module (PCDM), Relay Panel Module (RPM), or Wallstation) connected at a time.

A common use case for the WALC is to have a low voltage sensor wired into the sensor terminal and have a wired GreenBus wallstation connected to the GreenBus port. This allows for a wireless system without the use of batteries.

NOTE: For hybrid tethering, the WALC does not require a Sensor Interface Module (SIM), since it has one built in (the sensor terminal block). However, tethering off a Wireless Control Module (WCM) allows for a SIM to be connected as well.

Another common application is to use a wired GreenBus load controller (e.g. an Area Lighting Controller (ALC) or Luminaire Control Module (LCM)) connected to an emergency luminaire, with the WALC/WCM wired to normal power. This allows for a clean UL924 suitable design using the WALC/WCM as a local power sense.



WARNING: TURN THE POWER OFF AT THE CIRCUIT BREAKER BEFORE WIRING.

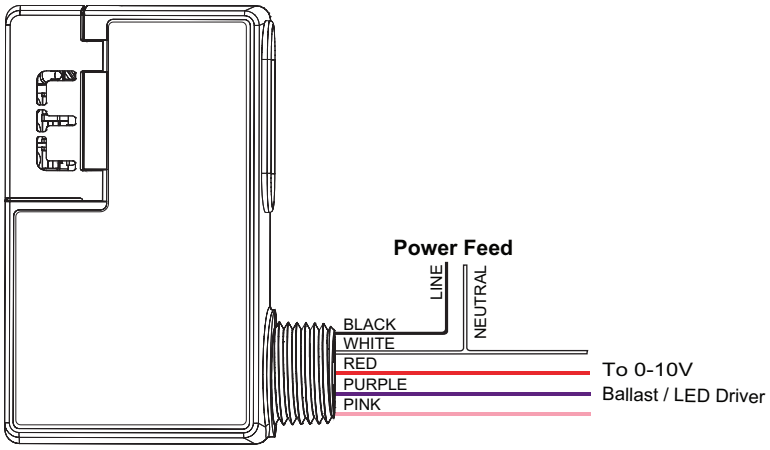
WALC to Dimming Ballast/LED Driver Wiring

The WALC dimming interface (purple and pink wires) is a galvanically isolated 0-10V circuit such that it may be wired as NEC Class 1 or 2.

The module has been tested in accordance to UL2043 and is suitable to be used in plenum or “plenum rated” areas. All wiring is rated 600V, 105ºC (221ºF) for use in luminaires. The black and red wires connect to the internal relay and allow the module to interrupt power to the load for complete shutoff.

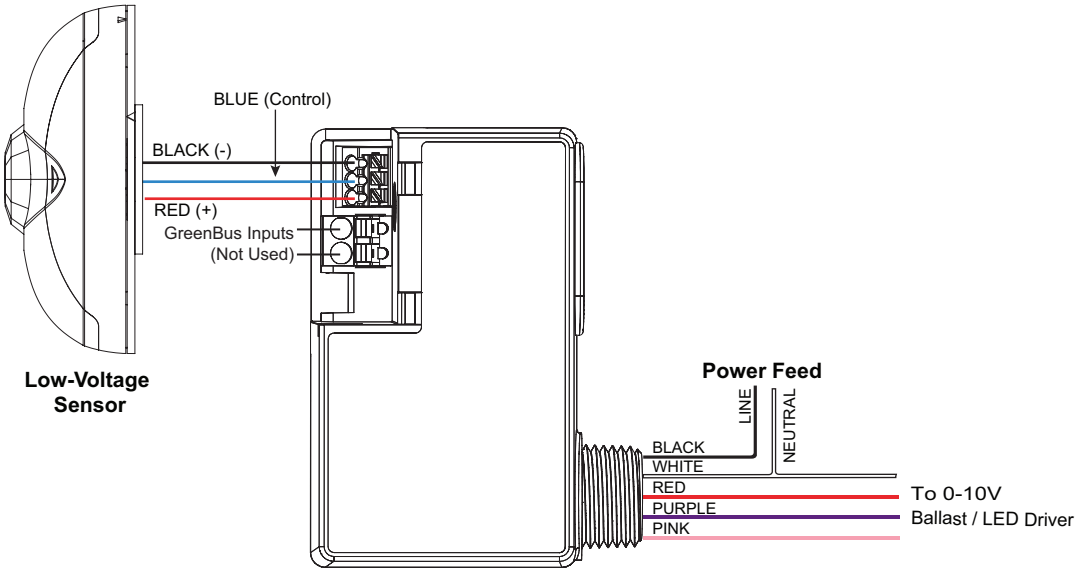
To control multiple ballasts, parallel all ballast input wires (line, neutral, and control wires purple and pink). Observe the maximum ratings of the WALC to ensure maximum ratings are not exceeded. Recommended dimming signal capacity, 0-10V, 30mA maximum (sinking).

For emergency applications, see the **Emergency Lighting** section at the end of tis document.

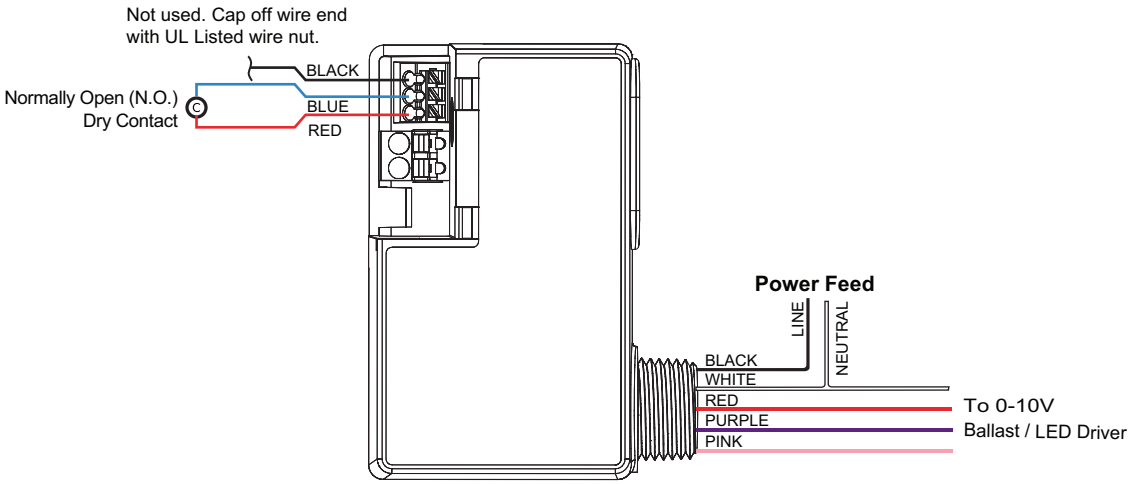


For a non-dimming fixture, cap off unused wire ends with UL Listed Wire Nut

WALC to 3-Wire Sensor Wiring



WALC to Third Party Dry Contact Input Wiring



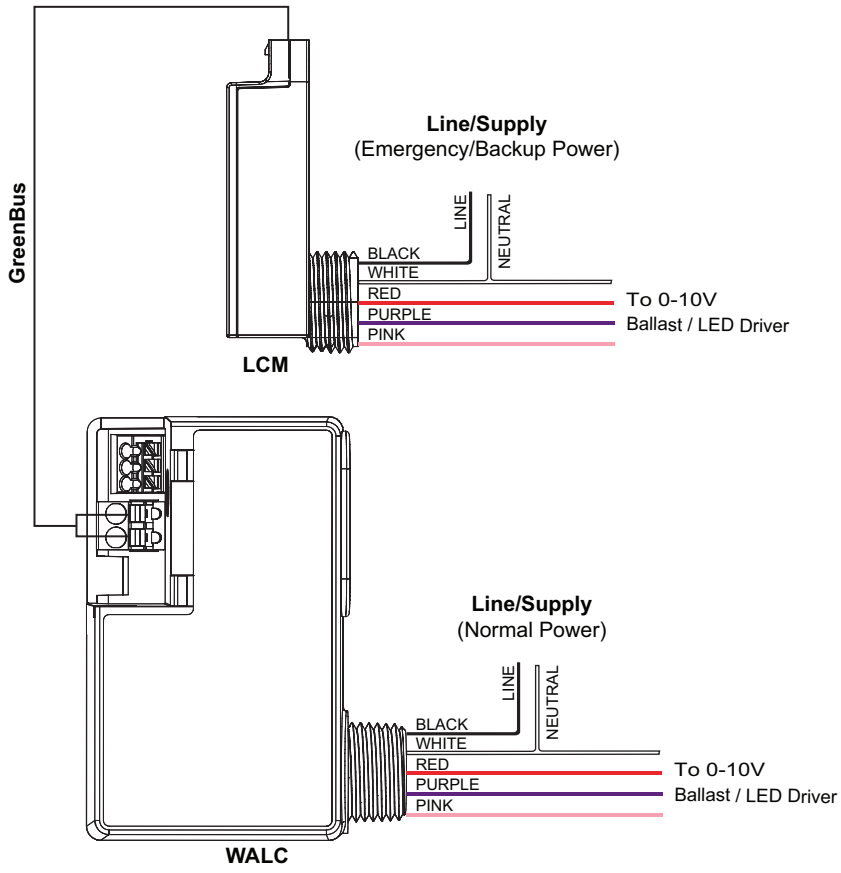
WALC to a Wired PLUS Controller via GreenBus Wiring

In the example below, an LCM is used to control Emergency Lighting

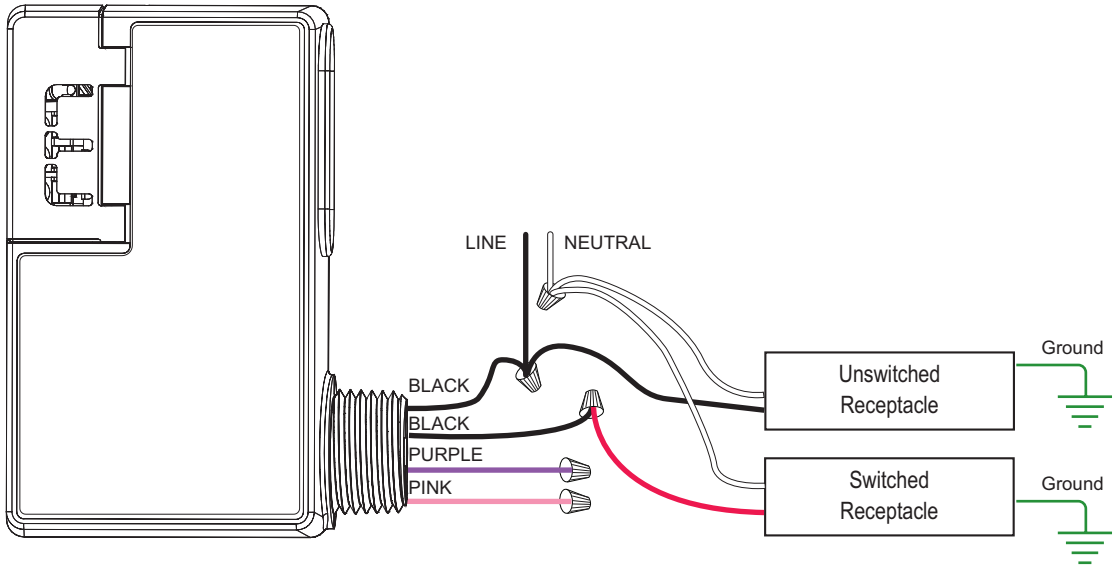
NOTE: The WALC's GreenBus port connects to the following GreenBus lighting controllers: Relay Panel Module (RPM), Phase-Cut Dimming Module (PCDM), Luminaire Control Module (LCM), and Area Lighting Controller(ALC) . Please refer to installation manuals of the appropriate products for connection information.

NOTE: The GreenBus ports on the WALC can also be used for connection to a GreenBus Wallstation or Sensor.

NOTE: GreenBus uses proprietary connectors and jacks for ease of installation. Connect to Wattstopper PLUS System only. Do not connect to other circuits.

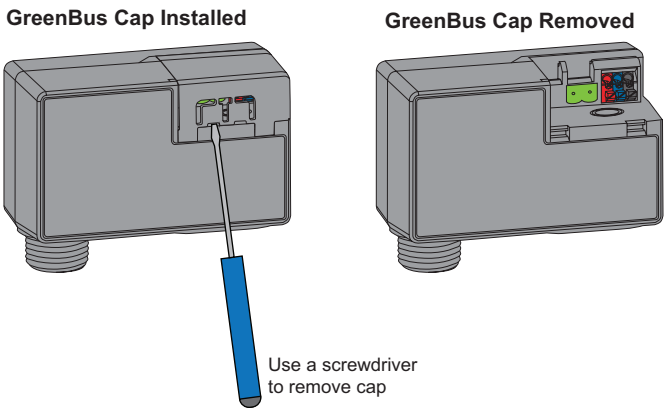


WALC to Receptacle Wiring



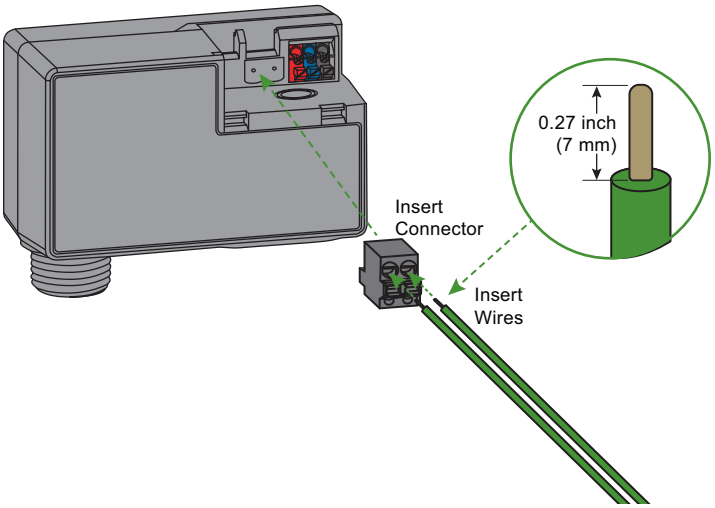
GREENBUS AND TERMINAL BLOCK WIRING

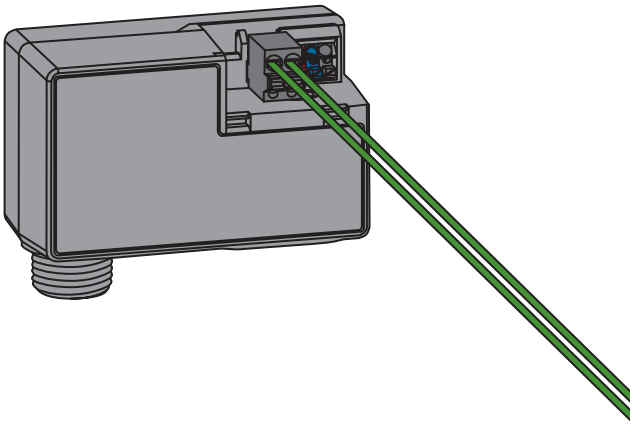
To connect GreenBus or Terminal Block wires, remove the cap.



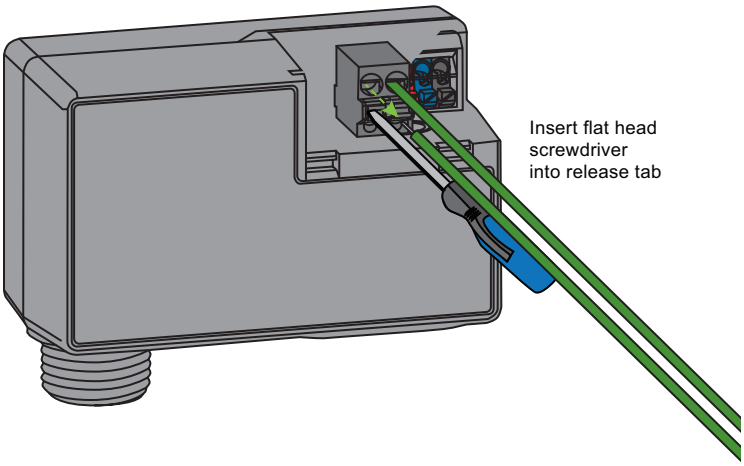
Connecting GreenBus Wires

The GreenBus wires must be used with the supplied proprietary connector. Insert the connector to the WALC GreenBus ports. GreenBus must be laid out as per supplied system layout drawing. If changes are required, determine an optimum wiring path utilizing the supplied cables, based on the position of the devices.





To remove the wires, use a flat head screwdriver to release the wires from the terminal blocks.



EMERGENCY LIGHTING

Central Power Sense, Stand-Alone WALC

Mains Connection

- WALC is connected to a branch circuit that is connected to back-up power circuit.
- The Wattstopper PLUS Wireless Manager is **not** connected to emergency back-up power.

Condition Prior to Emergency

- Luminaire is functioning normally.

Emergency Condition

- WALC and Wattstopper PLUS Wireless Manager lose normal power when power outage occurs.
- Emergency/back-up power system is initiated via central sense or switchgear.

Emergency Behavior

- WALC regains power feed when back-up power comes on. It releases the dimming control and turns on the internal relay to pass back-up power to the emergency luminaire.

NOTE: The WALC will begin dimming again when the Wireless Manager comes back online.

Local Power Sense, WALC with LCM

Mains Connection

- WALC is **not** connected to an emergency back-up power branch circuit. The WALC detects power loss in this configuration (“local sense”).
- Luminaire Control Module (LCM) is connected to a branch circuit that is connected to back-up power.

Condition Prior to Emergency

- Luminaire is dim (or off).

Emergency Condition

- WALC and GreenBus Luminaire Control Module (UL924 recognized) loses power when power outage occurs.

Emergency Behavior

- GreenBus Luminaire Control Module regains power feed when backup power comes on.
- WALC does **not** regain power feed because it is not connected to an emergency back-up power branch circuit.
- The GreenBus Communication Bus is released allowing the GreenBus Luminaire Control Module to release dimming control and turn on the internal relay to pass backup power to the emergency luminaire.

NOTE: The WALC and GreenBus Luminaire Control Module will begin dimming again when the normal power is restored.

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