Wattstopper® PLUS

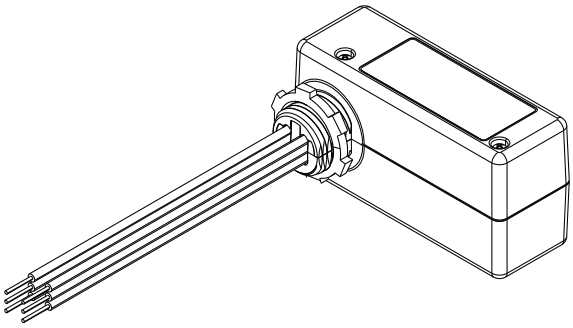
Wireless Control Module

Installation Instructions • Instructions d'Installation • Instrucciones de Instalación

No: 080438 – 11/25 rev. 3

Catalog Numbers • Les Numéros de Catalogue • Los Números de Catálogo: EN-WCM2-ZB, EN-WCM2-ZB-DR

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



DESCRIPTION

The Wireless Control Module (WCM) allows luminaires and occupancy sensors to communicate via a mesh network based on Zigbee® standards. Individually addressable, the WCM enables each ballast or LED driver to be independently controlled and configured.

The WCM is available in two models: Indoor and Damp Rated.

SPECIFICATIONS

Voltage 120–2347V

Maximum Load Ratings .....4.5A @120–347V, Ballast/LED
..... 5.8A @120–347V, Tungsten
..... 9A @120–347V, General Purpose
..... Recommended 300 W Maximum

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 140°F (-40° to 60°C)

Relative Humidity .....0% to 95%, non-condensing

Certifications
- UL916 cUL US (Energy Management Equipment)
- UL924 cUL US Listed (Emergency Lighting Equipment)
- UL2043 Plenum Rated
- FCC Part 15/ICES-003
- RoHS Compliant

Complies with Electromagnetic Compatibility (EMC) Standards:
EN 61000-4-2, EN 61000-4-4, EN 61000-4-5

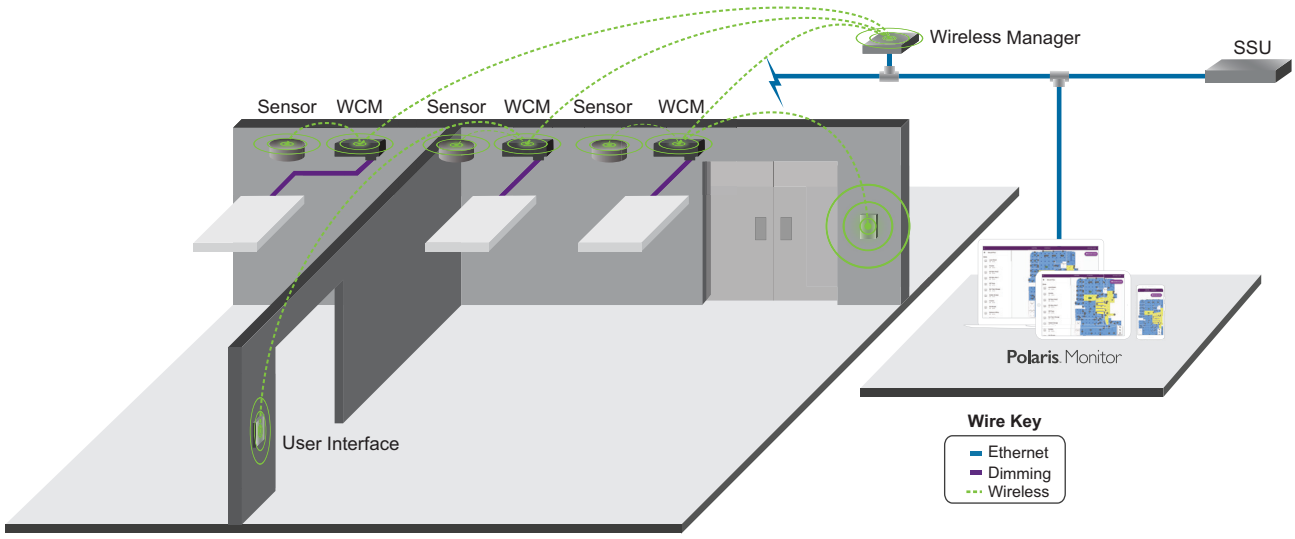
PRODUCT SAFETY

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.



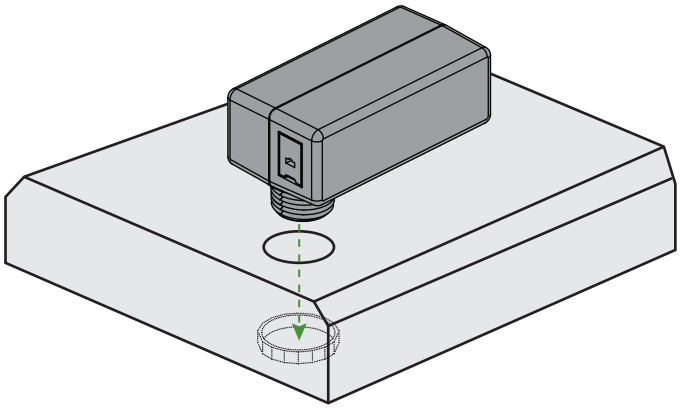
INSTALLATION AND MOUNTING

In a typical installation, the WCM 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-WCM2-ZB should be installed in dry, indoor locations **only**. For damp installations, use the EN-WCM2-ZB-DR damp-rated WCM 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.

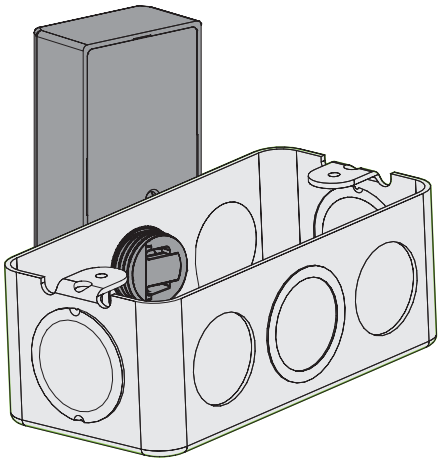
Luminaire Mounting

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 WCM to the junction box using an available PG-7 (0.5 inch) trade-size knockout and retainer nut.



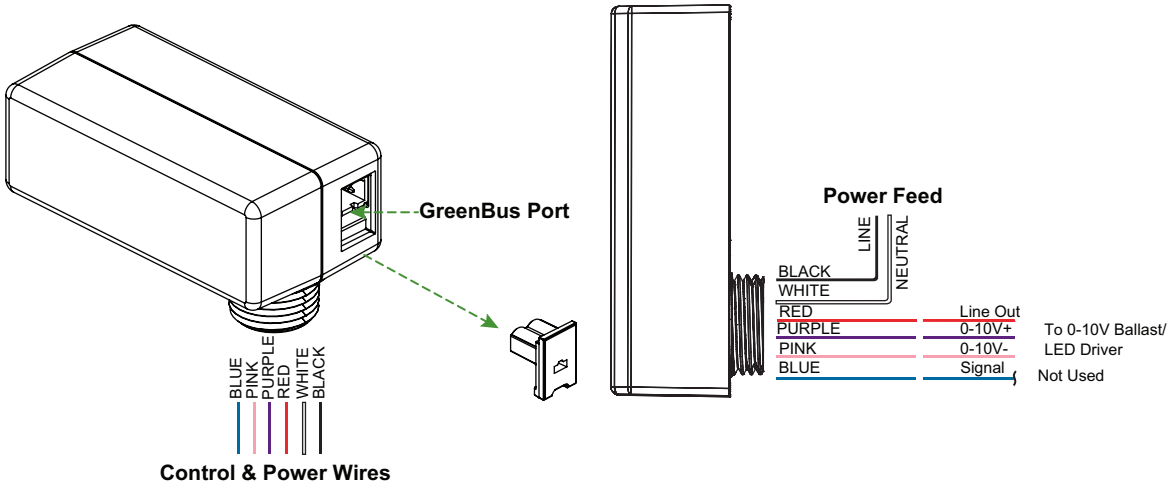
WIRING

A removable cover exposes a GreenBus port.

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

Connecting the WCM to a SIM allows a third party sensor to provide control of the connected loads.

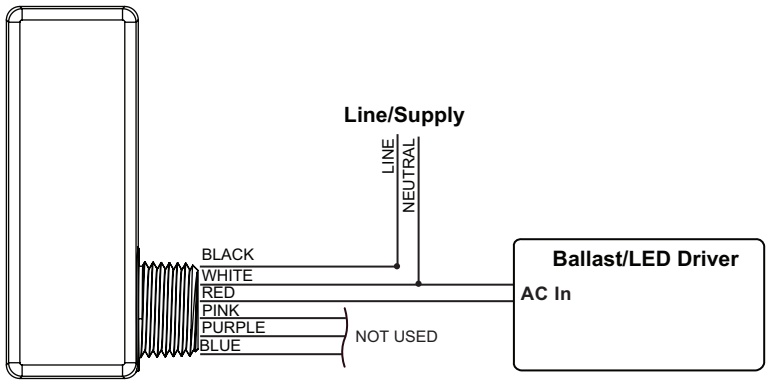
Another common application is to use a wired GreenBus load controller (e.g. Area Lighting Controller (ALC) or LCM) connected to an emergency luminaire, with the WCM wired to normal power. This allows for a clean UL924 suitable design using the WCM as a local power sense.



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

WCM to a Non-Dimming Luminaire

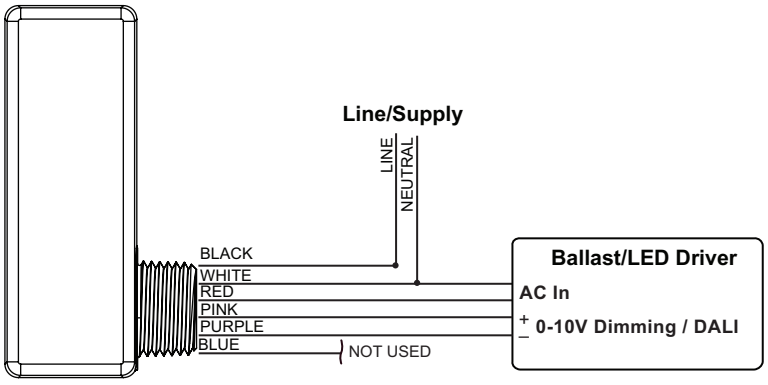
The module has been tested in accordance to UL2043 and is suitable to be used in plenum or “plenum rated” areas. All wiring is rated 600V, 105ºC (221ºF) for use in luminaires. The black and red wires connect to the internal relay and allow the module to interrupt power to the load for complete shutoff.



For a non-dimming fixture, cap off Pink, Purple, and Blue wire ends with UL Listed Wire Nut

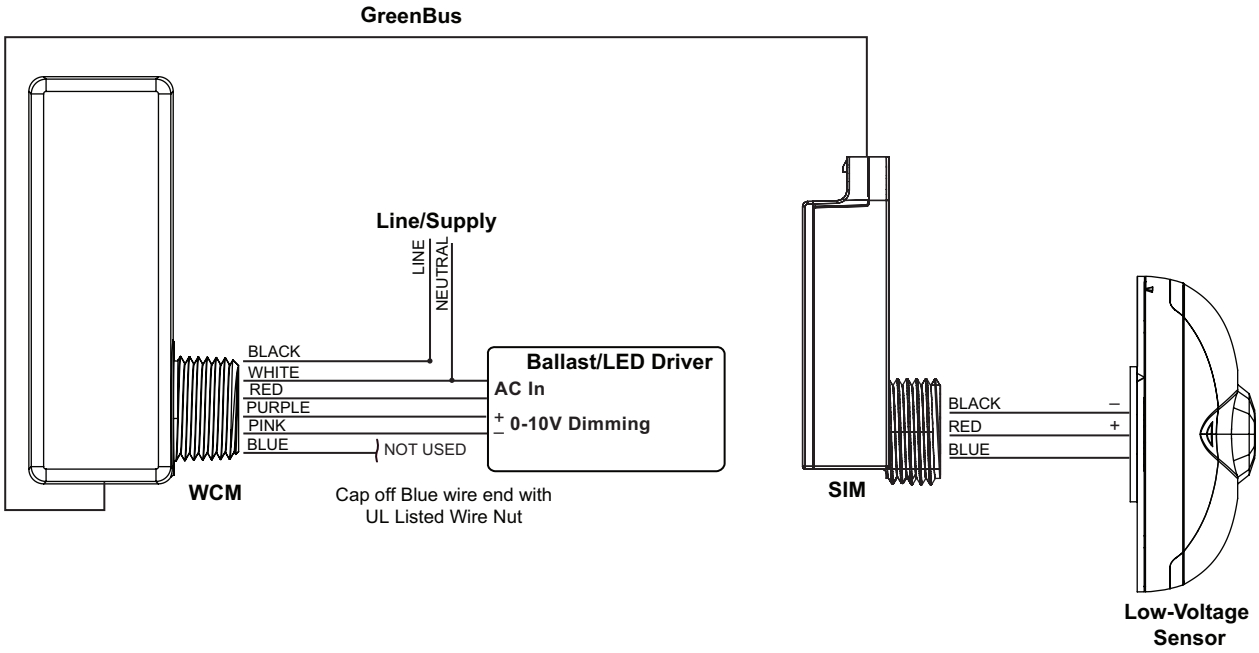
WCM to a Dimming Luminaire

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.



Cap off Blue wire end with UL Listed Wire Nut

WCM to Third Party Sensor Wiring via SIM



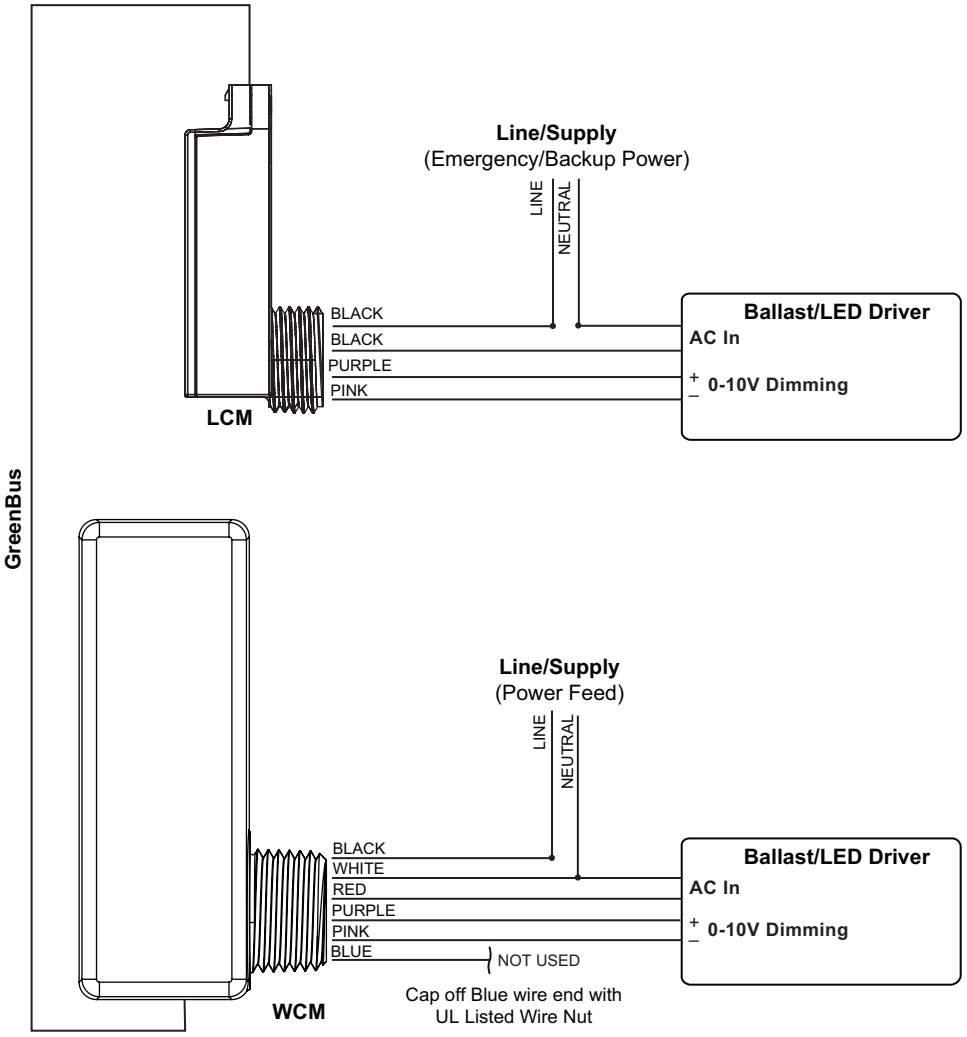
WCM Wiring with a GreenBus Connection to a Wattstopper PLUS Wired Controller

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.

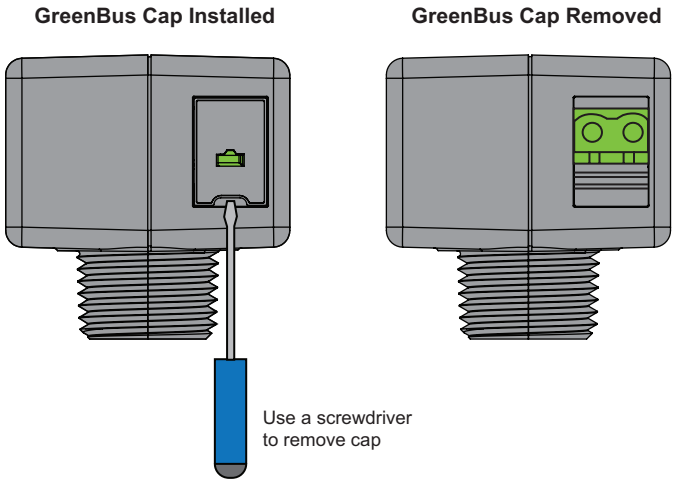
NOTE: The GreenBus ports on the WALC can also be used for connection to a Wired Wallstation.

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



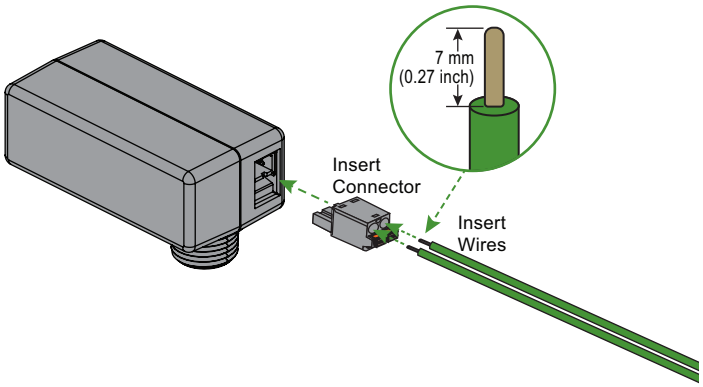
GREENBUS WIRING

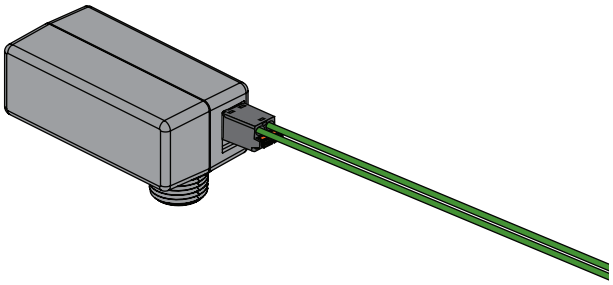
To connect GreenBus or Terminal Block wires, remove the cap.



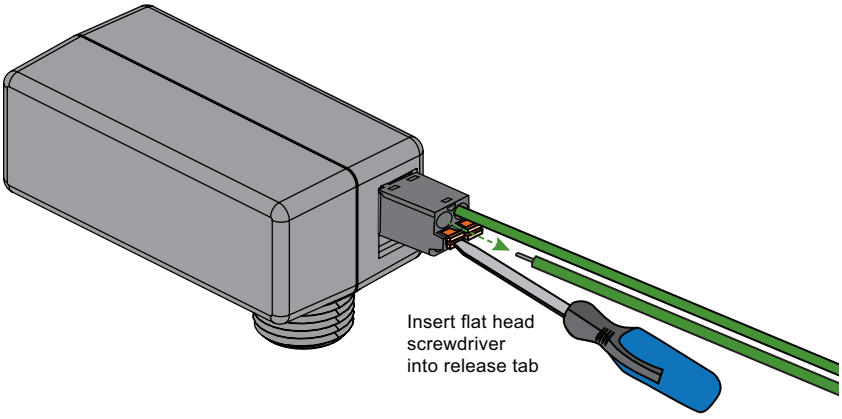
Connecting GreenBus Wires

The GreenBus wires must be used with the supplied proprietary connector. Insert the connector to the WCM GeenBus 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

- WCM 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

- WCM Wireless Manager loses normal power when power outage occurs.
- Emergency/back-up power system is initiated via central sense or switchgear.

Emergency Behavior

- WCM 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 WCM will begin dimming again when the Wireless Manager comes back online.

Local Power Sense, WALC with LCM

Mains Connection

- WCM is **not** connected to an emergency back-up power branch circuit. The WCM detects power loss in this configuration (“local sense”).
- The Wattstopper PLUS Wireless Manager is NOT connected to emergency back-up power.
- 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

- WCM 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.
- WCM 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 WCM and GreenBus Luminaire Control Module will begin dimming again when the normal power is restored.

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