WIRELESS WATTSTOPPER PLUS GENERAL NOTES

WSP INSIDE THE ROOM

- Load Controllers must always be powered with a constant hot (unswitched) circuit.
- Contractor must follow Wattstopper Plus drawings. Any modifications from the drawings require factory approval.
- All sensor adjustments are programmed via Polaris software.Sensors must be installed as per industry standard. Refer to manufacturer's installation instructions sheet included with sensor hardware. All sensors must be mounted at least 6 feet away from air vents & heat exchangers.
- applicable.
- It's recommended that the Wattstopper Plus wired manager (M), system support unit (SSU) and wireless manager (WM) be connected to the tenant network. One IP address per device must be supplied to Wattstopper Plus prior to system start up.
- Any third party system integration, i.e. building management system (BACnet), A/V, etc., requires an Ethernet network connection. Wattstopper Plus requires 3rd party IP address for integration purposes prior to system startup.
- Network runs must not exceed 100 m (328 ft). Any modifications to Wattstopper Plus drawings require factory approval.
- Refer to the Wattstopper Plus contractor's help guides: Installation Instructions, Cut Sheets, and Wiring Diagrams.
- Remote access (via internet) to the Wattstopper Plus server (SSU) is recommended for technical support and factory system adjustments.
- System needs to be tested prior to requesting system startup services. Please refer to Wattstopper Plus contractor manual for testing procedure using GreenBus II tester and/or installation mode.
- End user network access to the Wattstopper Plus server (SSU) must be arranged prior to system training.

UNLESS OTHERWISE NOTED:

- All sensors will operate auto on, auto off with a timeout of 11 minutes.
- Default interior time schedule will be On @ 6:00am; Off @ 6:00pm, Mon. - Fri. with a 3 minute flick warn before lights turn off. Extension time outside default time schedule will be 2 hours, followed again by a 3 minutes flick warn.
- All wireless managers (WM) should be connected to normal power.
- Default high end trim all dimming fixtures is 90% max output. Default light level may vary depending on ballast or driver type.
- Wattstopper Plus technician will assign switches to the closest logical fixture/fixture grouping.
- Wattstopper Plus technician will assign lighting scenes for an area that has an Wattstopper Plus scene controller to the most logical control scheme for that space.
- Outdoor lighting will be controlled via astronomical clock (On @ Sunset; Off at Sunrise) or outdoor photo sensor (threshold set to 400 lux), if

OCC. SENSORS

Ceiling Mounted 360°

Wattstopper Plus SCPPH Wireless Occupancy Sensors include a Photocell for interior daylighting. The sensor(s) that measures the daylighting level will count as 2 nodes. Units come with 2 pre-attached 12" GB II cables with WAGO connectors. Use a EN-SCPPH-MK-ZB mounting kit for Ceiling/Drywall and J-Box mounting.

EN-SCPPH-0450-ZB

High Density Wireless PIR Occupancy & Daylighting Sensor

8-12' CEILING HEIGHT
Battery Powered

EN-SCPPH-1500-ZB

Long Range Wireless PIR Occupancy & Daylighting Sensor

8-12' CEILING HEIGHT
Battery Powered

EN-SCPPH-HB-ZB

High Bay Wireless PIR Occupancy & Daylighting Sensor

40' CEILING HEIGHT
Battery Powered

Analog Sensors require a Sensor Interface Module (via WALC)

Use of other analog sensors may require a BZ-50 powerpack. Refer to Interfaces Column

Dual-Tech Ceiling Wall or Corner Mounted

*MOST COMMONLY USED

*DT-305 1000 sqft
DT-205 2000 sqft

Passive Infrared

CX-105 2000ft
CX-105-1 90 linear ft
CX-105-3 120 linear ft
CX-105-4 50 linear ft

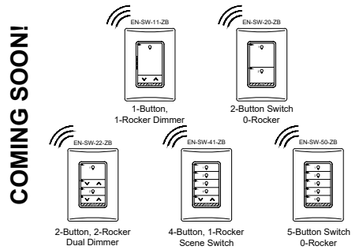
WALL CONTROLS

Wattstopper Plus Wireless Slim Switch Buttons can control Loads in a room On/Off, goto a Scene, or control a network group. Wattstopper Plus Wireless Slim Rockers (dimmers) raise/lower Loads in a room.

New! EN-SW Wireless Wall Switches & Dimmers

x = # buttons, y = # rockers. Plates not included.
ID color by suffix: -WH=White, -LA = Light Almond, -IV = Ivory, -GRY = Gray, -BL = Black, -RED=Red, and -BR = Brown

COMING SOON!



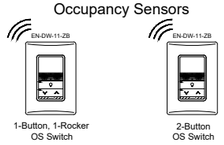
COMING SOON!

Battery Powered

New! Wall Switch Occupancy Sensors

COMING SOON!

Wireless Wall Switch Dual-Tech Occupancy Sensors

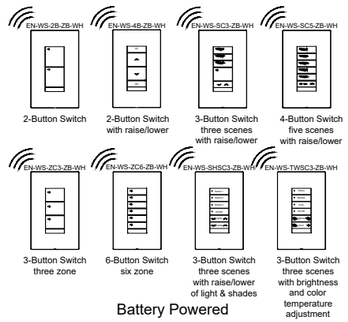


COMING SOON!

WSP Wireless Wallstations

ID color by suffix:
-WH=White, -IV=Ivory, -BL=Black, -GR=Gray,
only EN-SHSC3 & EN-TWSC3 COME IN WHITE ONLY
Pre-Engraved versions are available.

CURRENTLY AVAILABLE!



CURRENTLY AVAILABLE!

Battery Powered

Wall Switch Occupancy Sensors

Requires Wireless Area Lighting Controller (WALC)

DW-100-24
Wall Switch Dual-Tech Occupancy Sensor

1-Button OS Switch
35 mA @ 18-24VDC

Please Refer to Interface Column for wiring configurations

PW-100-24
Wall Switch PIR Occupancy Sensor

1-Button OS Switch
20 mA @ 18-24VDC

DAYLIGHTING

Wattstopper Plus SCPPH Wireless Occupancy Sensors also include a Photocell for interior daylight zones. Any sensor that measures daylight counts as 2 nodes.

Exterior and Skylight On/Off Network Photocells

Include one WALC per each photocell. Controls a Network Group of loads based on Light Level.

PHS-700
Indoor Photocell
0-100 FC

PHS-700
Indoor Photocell
(0-100 fc)

PHS-800
Outdoor Photocell
0-250 FC

PHS-800
Outdoor Photocell
(0-250 fc)

Mount Photocell facing north sky

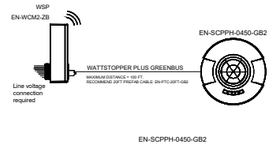
PHS-900
Skylight Photocell
0-2000 FC

PHS-900
Skylight Photocell
(0-2000 fc)

Please Refer to WALC Wiring Configurations

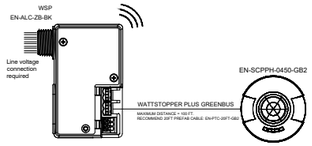
INTERFACE WIRING

WCM "Tethered" to GB2 Sensor

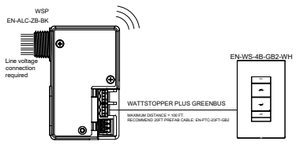


WCM "Tethered" to GB2 Wall Switch

WALC "Tethered" to GB2 Sensor

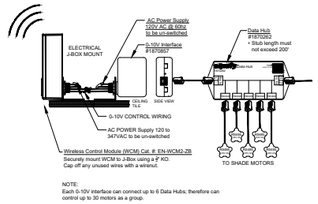


WALC "Tethered" to GB2 Wall Switch



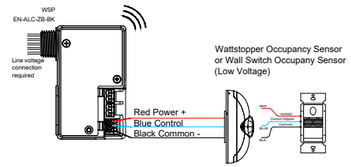
WCM to Somfy Shade Interface

(Requires Shade Interface: EN-SW-SHADE)



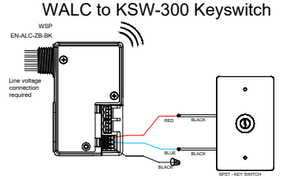
NOTE:
Each 0-10V interface can connect up to 6 Data Hubs; therefore can control up to 30 motors as a group.

WALC to Analog Sensor



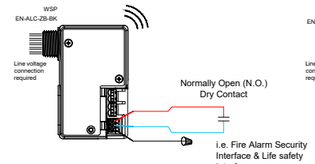
Sensing voltage 12-24VDC.
WALC provides 24VDC to power sensor. Max low voltage wire distance from WALC is 100 ft.

WALC to KSW-300 Keyswitch



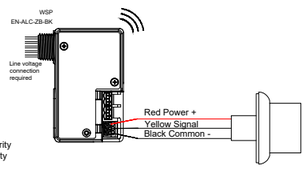
Max low voltage wire distance from WALC is 100 ft.

WALC to Contact Closure



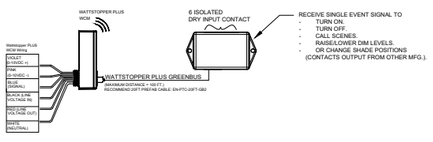
Max low voltage wire distance from WALC is 100 ft.

WALC to PHS-xxx Photo Sensor



Sensing voltage 12-24VDC.
Max low voltage wire distance from WALC is 100 ft.

WCM to Dry Contact Input Interface (DCII) EN-WCM2-ZB & EN-DCII-GB2

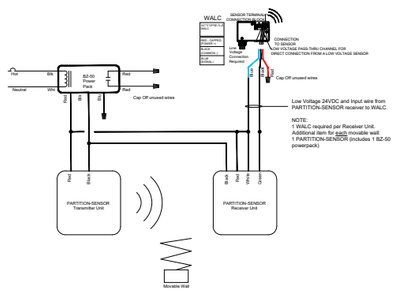


5mA @ 22.5VDC supplied by GreenBus

The Dry Contact Input Interface (DCII) is designed to deliver an enhanced occupant experience by enabling integration between Wattstopper PLUS and third-party systems. These systems can include room booking systems in offices, AV in lecture halls, or bedside controls in hospital patient care rooms. Based on the dry contact signal, the Wattstopper PLUS system sets lighting scenes that can include intensity or color temperature. The DCII can also use momentary hold signals to enable raise/lower functionality

WALC to PARTITION-SENSOR

BZ-50 included with PARTITION-SENSOR



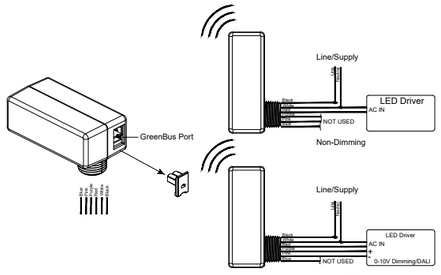
Revised: Sept 10, 2025. Support available at 800 879-8585
CAD@wattstopper.com or charles.knuffke@legrand.com
Note: Not all WSP Devices are drawn to exact scale.

Wattstopper PLUS Wireless Lighting Control System Typical Wiring Details

legrand®

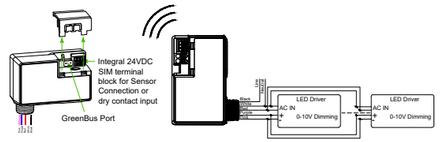
LOAD CONTROLLERS (LIGHTING and PLUG LOAD)

WIRELESS CONTROL MODULE (WCM)
EN-WCM2-ZB



Line Voltage Relay powers drivers On/Off;
Dimming Interface (Class 2, Low-Voltage) provides 0-10V dimming signal
0-10V Dimming wires can be run a maximum of 100 ft.
Ensure to not exceed maximum wattage per WCM
Note: Recommended relay switching capacity 120-347V, 300W max
***IF TUNABLE WHITE OR DYNAMIC WHITE IS CALLED OUT PLEASE NOTE THAT WATTSTOPPER PLUS WILL REQUIRE DALI TYPE 8 DRIVER PER FIXTURE & TUNABLE WHITE INTERFACE EN-SW-TW**
Damp rated model available use EN-WCM2-ZB-DR

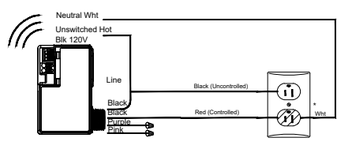
WIRELESS
AREA LIGHTING CONTROLLER (WALC)
EN-ALC-ZB-BK



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

The WALC's dimming 0-10V output is fully isolated and suitable for installation as either an NEC Class 2 or Class 1 circuit.
For distance limits see 0-10V Max Wiring Length table on page 3 under "Cables".
Maximum Output Load Ratings @ 120/277/347V, 20A; Ballast/LED Driver, Tungsten,Resistive, General Purpose– @120/277V; 1.5 HP VAC Motor.
Damp rated model available to suit environments with moderate degree of moisture such as basements and garages
USE EN-ALC-ZB-BK-DR

WIRELESS AREA LIGHTING CONTROLLER (WALC)
EN-ALC-ZB-BK
PLUG LOAD CONTROLLER
1 Controlled Output, 1 Constant Hot Output



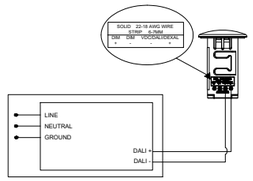
* For split-circuit wiring as shown remove Break-off on hot side.
If only Controlled power to receptacle, cap the Blk/Wht wire and leave Break-off link in place.

ON/OFF Plug Load Controllers

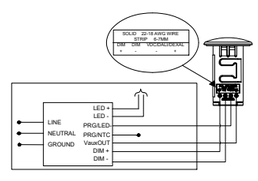
EN-ALC-ZB-BK is UL Listed for Plug Load control and rated 20A, 120-347V. The ALC can switch an entire circuit of electrical loads and is suitable for general-purpose plug load control.

CONNECTED LIGHT MODULE (CLM)
ZBHA-CLM-DIM

Single DALI/Tunable White Driver



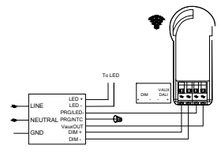
Single 0-10V LED Driver



The EN-ZBHA-CLM-DIM (CLM) is a wireless fixture controller that enables luminaires to be connected wirelessly to the Wattstopper PLUS system. The CLM offers both 0-10V dimming and DALI control options. Maximum 0-10V or DALI wire run should not exceed 100 ft. CLM supports tunable white drivers via compatible DALI Type 8 LED drivers. The CLM mounts via a half-inch PG7 knock-out on any luminaire.
For 0-10V Driver with AUX power connection: 12-24VDC
For DALI Driver with Self-Powered DALI LINK: 18-24VDC

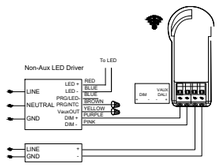
SENSILUM WIRELESS INTEGRATED SENSOR
(SensiLUM) EN-CLM-PIR-DD-ZB

0-10V LED Driver with Auxiliary Power Output

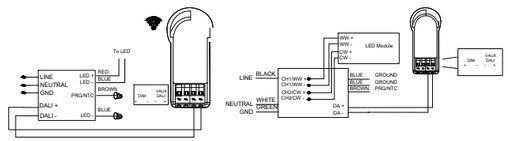


Single DALI Driver

0-10V LED Driver with External Power Supply

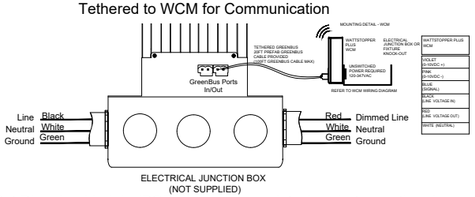


Single DALI Driver (Tunable White)



The SensiLUM wireless integrated sensor enables real-time occupancy detection, daylighting harvesting, and individual or group control of luminaires. Fully compatible with the Wattstopper PLUS System, SensiLUM sensors offer 0-10V dimming, and DALI control options. Maximum 0-10V or DALI wire run should not exceed 100 ft. When used with the Wattstopper PLUS System, the SensiLUM allows for a sensor-rich smart network that users can leverage as their technology infrastructure for entry into smart building and IoT applications. SensiLUM mounts via a half-inch PG-7 knock-out on any luminaire.
Voltage: 12-24 VDC (0-10V with AUX connection ONLY);
18-24 VDC (DALI Driver with Self-Powered DALI Link)

PHASE CUT DIMMING MODULE (PCDM)
EN-PCDM-GB2
Tethered to WCM for Communication

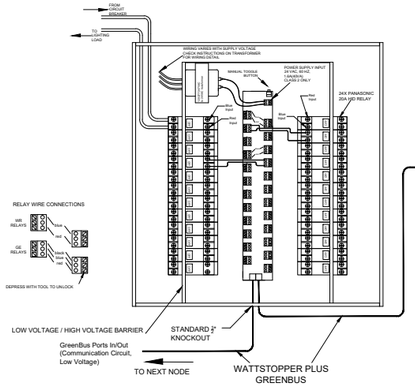


The Phase-Cut Dimming Module (PCDM) provides an interface between the phase-cut dimmable (forward- and reverse-phase) luminaires and the Wattstopper PLUS System. Individually addressable, the PCDM enables each group or zone of luminaires to be independently controlled.
Maximum distance between the PCDM and the last luminaire it is controlling = 50 ft.
Maximum Output Load Ratings
– @120V, 450 W, 3.8 A
– @277V, 900 W, 3.3 A

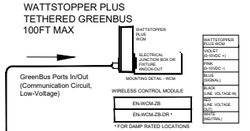
- Not compatible with MLV transformers or MLV LED drivers (consult factory when in doubt).
- Trailing Edge (reverse phase dimming): This method of phase-cut dimming is effective for most load types, especially for LEDs.
- Leading Edge (forward phase dimming): This is the more traditional method of phase-cut dimming. This method is limited to incandescent loads.

LIGHTING CONTROL PANELS AND SITE LIGHTING

LOW VOLTAGE RELAY PANEL (RP24) -
Tethered to WCM for Communication
EN-RPA24R120-347V (24 Circuits) For On/Off Controls only
Voltage: 120–347V Maximum Load: 20A per Relay



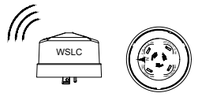
WATTSTOPPER PLUS TETHERED GREENBUS 100FT MAX



WIRELESS CONTROL MODULE (WCM)
EN-WCM2-ZB

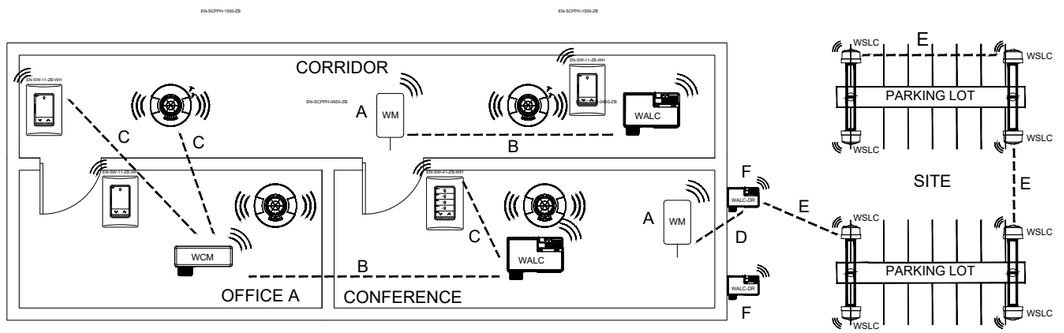
The RPM can be used as part of a wireless Wattstopper PLUS System by connecting the Greenbus to a nearby compatible wireless device
Relay Panel with up to 24 X 20A relays.
• Relay Panel (relays) each count as .5 nodes. IE: 24 relays count as 12 nodes.
Relay Panel Module RPM EN-RPM-24C-GB2 is an electronic retrofit module that enables existing relay panels/boxes to be integrated with Wattstopper PLUS System. Cabinet is 489 x 463.5 x 101.6 mm (19.25" x 18.24" x 4 inches)

WIRELESS
SITE LIGHTING CONTROL MODULE (WSLC)
EN-OC-SLC-ZB



The Wireless Site Lighting Control Module extends the Encelium X lighting controls capability to a building's surroundings or sites such as parking lots and short pathways, via a wireless mesh network based on Zigbee ® standards. The WSLC installs on top of a light pole via an ANSI C136.41 compliant 3-, 5-, or 7-pin twist-lock connector.
The WSLC is individually addressable via the Encelium X Wireless Manager and can switch luminaires ON/OFF via an integrated high current relay, dim luminaires equipped with 0-10V dimming drivers or ballasts, DEXAL or DALI dimming drivers or ballasts, and has an input for an external occupancy sensor.
120 to 347 V, 50/60 Hz

WIRELESS PARAMETERS



(A) Wireless Manager (WM) Location: All devices shall lie within a 300' radius (600' diameter) of the WM
- The number of devices (total nodes count) per WM should not exceed 100.
- The WM is powered from a PoE Network Switch (recommended) or from a separate PoE Injector
- Max. distance from PoE Network Switch to the WM is 100 m / 328 ft
  Up to 3 WM can be daisy chained from each PoE Switch port or PoE Injector.
- The WM should be located to maximize its wireless coverage.

(B) WCM, WALC, CLM and SensiLUM Control Modules:
- Minimum of 4 modules shall be within the first hop of the WM
- 100' Line of Sight (LoS), or 50' Non-LoS
- After the first hop, each module shall be within 100' LoS or 50' Non-LoS of at least 3 other modules

(C) Sensors / Wall Controllers (devices with a battery)
- These are considered "end-of-line" devices. Battery devices do not add to the mesh network, cannot communicate directly to the WM, and are send only
- Battery devices communicate to the nearest load device (WCM, WALC, CLM, and SensiLUM)
- Locate battery devices so there are not more than 4 battery devices communicating to any 1 load device (max. 4:1 ratio).
- Max. 4 Sensors / Wall Stations to any nearby WCM, WALC, CLM, and SensiLUM
- 30' LoS / 15' Non-LoS from the battery device to the nearest load module

(D) First wireless hop to the module on the exterior of bldg. ≤ 25ft.
Wireless Manager (WM) is required for Site Lighting Controls, Make sure that WM is mounted on the same plane as the exterior WALC-DR (recommend to be mounted on second floor ceiling).

(E) Then up to 1,000 ft. clear line of sight between WSLC's

(F) To ensure a robust wireless network, you must also locate a minimum of (2) Damp Rated WALC (EN-ALC-ZB-DR) on the exterior of the building close to an interior wireless load module (WCM, WALC, CLM, SensiLUM). The damp-rated WCM must be installed in a waterproof outdoor-rated enclosure.

Revised: October 15, 2025. Support available at 800 879-8585
CAD@wattstopper.com or charles.knuffke@legrand.com
Note: Not all WSP Devices are drawn to scale.

Wattstopper PLUS Wireless Lighting Control System Typical Wiring Details

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NETWORK HARDWARE

WIRELESS WSP RULES & BEST PRACTICES

WSP NETWORKING

- Max. Ethernet cable distance from Network Switch to Wireless Manager, or WM to next WM = 100 m (328 ft). 3 Wireless Managers can be connected to a single IP network port. WMs must be powered by Power over Ethernet (PoE)
- ZigBee and Wi-Fi can coexist in a common space without issue. ZigBee can also coexist with Bluetooth and Wireless USB without signal degradation.
- Keep ZigBee devices one meter 3 ft./1 m. away from Microwave ovens.
- WM ZigBee coverage (Exterior Line of sight LoS). 600' Diameter / 300' Radius. Derate by 50% for non-LoS applications.
- WCM, WALC, CLM and SensiLUM Control Modules: Minimum of 4 modules shall be within the first hop of the WM Interior 100' Line of Sight (LoS), or 50' Non-LoS
- Max. 4 Sensors / Wall Stations to any nearby WCM, WALC, CLM, and SensiLUM 30' LoS / 15' Non-LoS from the battery device to the nearest load module.
- Maximum 100 wireless nodes per WM
- The WM has an internal antenna that must be visible in the space (bottom end of the WM)
- If batteries are not allowed to be used to power sensors or wall stations, then a single Wattstopper Plus GB2 sensor & wall station can be connected to the GB2 port on a WCM or WALC - this is referred to as "Tethering". Wired Load Control devices (including Relay Panels and PCDM) can also be tethered to a WCM or WALC - a optional solution that can be used for Wireless Emergency Lighting Application (when the WCM or WALC lose normal power, the Wired Load device will automatically turn on).
- ONLY USE WSP C2G56041 CABLE when tethering.
- If a Dual Technology sensor is required, they will need to wired to the integral SIM port on a WALC.
- Sensilum may be counted from one to three nodes depending on utilized functionality (load, occupancy sensor, DLHV)
  - Load control = one node
  - Occupancy sensor = + 1 node
  - Daylight Harvesting = + 1 node
- Wattstopper and their Representative Application Engineers have an online quote tool that can provide a list of recommended items to include on any project.

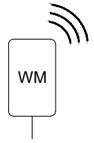
BACnet Integration (Building Management System BMS)

- The connection between the Wattstopper PLUS and 3rd Party BMS (IE: HVAC) systems is established via BACnet/IP.
- Enables BACnet based switching and dimming control, reports occupancy sensor status, reports daylight reading obtained by photosensors, and allows a load-shedding demand response to be triggered via BACnet.
- Network Switch is Required: From the BACnet Network TO Wattstopper PLUS System Lighting Control System

AV Audio/Visual Interface

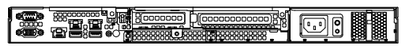
- One A/V Interface is required when using Wattstopper PLUS Touch Screens. Use only (1) A/V Interface with up to 100 Wattstopper PLUS Touch Screens.
- The A/V interface accepts TCP commands for the following tasks via Telnet protocol on a per-zone basis — recalling, saving, and querying scenes; switching zones "ON" and "OFF;" setting brightness levels and dimming

Wattstopper Plus Wired Manager
EN-WM-X



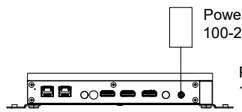
The Wireless Manager communicates via a mesh network. Up to 3 Wireless Managers can be connected to an PoE port on a Ethernet Network Switch (or with a PoE injector) via Cat-5 or greater Ethernet data cabling. Wireless Managers typically control individual floors and are linked via an Ethernet Network back to the lighting control network. Controls up to 100 wireless nodes in a space.
Dimension: 71.4 x 117.6 x 19.8 mm (2.81" x 4.6" x 0.78" inches)
External Power Supply Voltage: 48VDC, Via Power over Ethernet (POE)

Wattstopper Plus System Support Unit
EN-SSU-X



The System Support Unit (SSU) is a key component in the Wattstopper PLUS System. It hosts the Polaris software giving Facility Managers and Building Operators the ability to monitor and maintain their Wattstopper PLUS system. It enables them to change or modify light settings, schedules and other system settings. A typical building or campus requires one SSU per site.
Manages 3rd Party integrations (e.g BACnet, OpenADR, AV integrations)
Emergency Circuit (Preferred), Non-Emergency Circuit (Acceptable)
Dimensions 448 x 700 x 42.9 mm (17.6" x 27.6" x 1.7 inches)
Voltage: 100–240 VAC, 50/60 Hz

Wattstopper Plus System Support Unit, Lite
EN-SSU-LITE

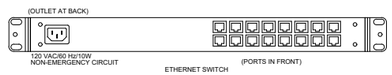


Power Adapter Voltage: 100-240VAC, 50/60Hz

Power Supply: 1 x AC Power Cable, 1 x AC Power Adapter, Included

The "Lite" version of the System Support Unit (EN-SSU-LITE) is used in the Wattstopper PLUS System for smaller projects. It hosts the Polaris software giving Facility Managers and Building Operators the ability to monitor and maintain their Wattstopper PLUS system. It enables them to change or modify light settings, schedules and other system settings. The maximum system size supported by SSU-LITE is 2000 Wired and/or Wireless nodes. For larger systems with more devices, use the Wattstopper PLUS System Support Unit (EN-SSU-X).
Voltage: 100–240 VAC, 50/60 Hz

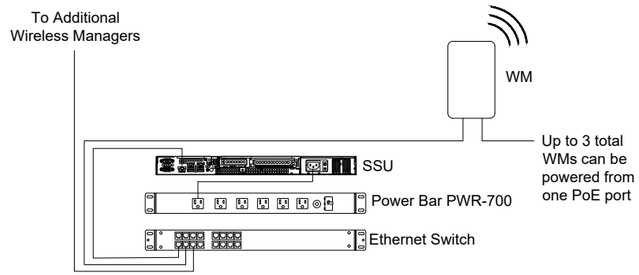
Ethernet Switch 16 Port
TEG-S16G



Sturdy rackmount metal switch with built-in power supply with 16 Gigabit RJ-45 ports
Voltage: 100–240 VAC, 50/60 Hz

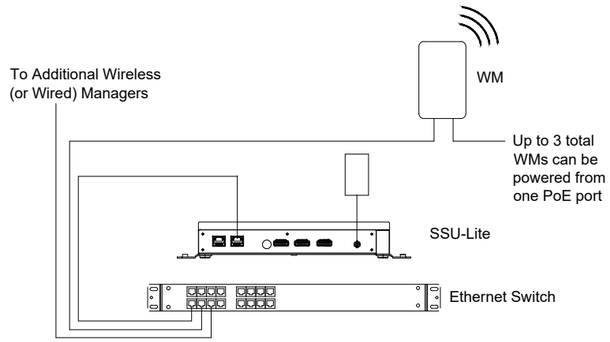
MOUNTING & RISER

TYPICAL RISER WITH SSU & WIRELESS MANAGER(S)



Wattstopper PLUS System Network
Use 4 Unit Mounting Rack RCK-700, includes space for Wired Manager.

TYPICAL RISER WITH SSU-LITE & WIRELESS MANAGER(S)



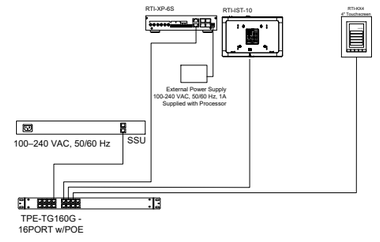
Wattstopper PLUS System Network

TOUCHSCREENS

Touchscreens

RTI-IST-10
10" Touchscreen

RTI-KX4
4" Touchscreen



4" or 10" Touchscreen with a Room, Lighting, and Shade screen.
Requires separately ordered TPE-113GI Power Injector or TPE-TG160G 16 Port switch w/PoE Rack mountable.
Advanced Control Processor is require for RTI-IST-10 use RTI-XP-6S

CABLES

Network Cable
C2G56041
1,000 ft CAT6 Network Cable Plenum Rated

GreenBus Cable & Connectors

EN-BC-1000FT-GB2
305m (1000 ft) Bulk Cable

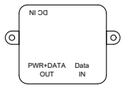
Wattstopper Plus defaults to Bulk 1000 ft GreenBus cable.

EN-PTC-20FT-GB2
6.1 m (20 ft) Pre-terminated cable used for Tethering Wireless WALC & WCM to Wired GB2 Devices

EN-CON-50-GB2
Bag of 50 GreenBus Connectors to be used to terminate the ends of GreenBus cable. This Greenbus connectors are then used to plug directly into specific Wattstopper PLUS Wired products.

ACCESSORIES

EN-WTT-ZB
Wireless ZigBee Test Tool



TPE-113GI
Power Over Ethernet (POE) Injector
TPE-113GI, combines electrical power with a Gigabit network connection to produce a Gigabit Power over Ethernet (PoE) signal.
Connect this device to a non-PoE switch and then run an Ethernet cable for up to100 meters (328Ft.) to network PoE devices.

Wattstopper PLUS Maximum 0-10V Wiring Length (ft)

# Drivers	Wire Gauge 14	16	18	20
10 Drivers	1,000	800	500	320
15 Drivers	650	400	250	160

Notes:
Distances apply unless a specific distance limit is called out for a specific load control product.
For Class 1 dimming, table only valid for MC-PCS cable, shielded 0-1V cable, or twisted-pair 0-10V wires
Table only valid for LED drivers that require 2mA or less to sink

Revised: October 15, 2025. Support available at 800 879-8585
CAD@wattstopper.com or charles.knuffke@legrand.com
Note: Not all WSP Devices are drawn to scale.

Wattstopper PLUS Wireless Lighting Control System Typical Wiring Details

legrand®