enocean alliance
No Wires. No Batteries. No Limits.

LevNet RF Receptacle (Tamper-Resistant)

Cat. Nos. WSG15-0DZ (Top Controlled), WSG15-TDZ (Dual Controlled, Title 24)
Ratings: 125VAC, 60Hz, 15A
Switched: 15A General Use/Resistive, 1800W Incandescent, 1800VA Inductive, 1/2HP, 120VAC

LEVITON

DI-000-WSG15-02A

INSTALLATION AND QUICK START GUIDE

WARNINGS AND CAUTIONS:

- **TO AVOID FIRE SHOCK OR DEATH; TURN OFF POWER** at circuit breaker or fuse and test that power is off before wiring, servicing, installing or removing device.
- To be installed and/or used in accordance with electrical codes and regulations.
- If you are unsure about any part of these instructions, consult an electrician.
- To ensure that there is adequate room for wires, Leviton recommends using 3-1/2 inch deep wall boxes, at a minimum. For single-gang applications, this would be an 18-cubic inch wall box, at a minimum.
- Use this device with **copper or copper clad wire only**.

DESCRIPTION

The LevNet RF Receptacle (WSG15) is designed to use wireless communication and provide remote control of your lighting. The device will control lighting or equipment attached to the receptacle by receiving a wireless signal (315MHz) from other EnOcean enabled wireless devices.

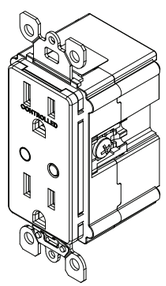
Devices can be learned directly into the unit via the Programming Mode Selection Menu or wireless via the Leviton ComWi software and WSCOM-03W.

The WSG15 receptacle has a 50-100 ft. reception range depending upon the environment and transmission device. Range will be reduced by signals having to transmit through walls. **NOTE:** Some motorized devices, such as a power drill, can significantly reduce the effective range of the WSG15.

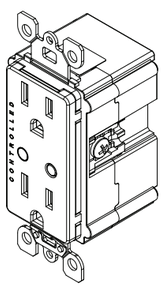
Transmit range for WSG15, when utilized as a repeater or for initial setup/commissioning is between 20-50 ft.

FEATURES

- Able to switch single (WSG15-0DZ) or dual (WSG15-TDZ) outlets ON/OFF remotely
- Scene Capable
- ON/OFF LED
- Can be remotely configured and commissioned using the LevNetRF ComWi software and EnOcean WSCOM hardware
- Includes repeater function (Level 1 or 2) to increase wireless reception to other devices
- Ease of installation – No new wiring
- Built-In tamper resistant barrier designed to limit improper insertion of small objects into receptacle contact slots



Single Controlled Top Outlet



Dual Controlled Outlets

COMPATIBLE DEVICES

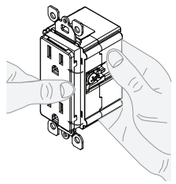
Most EnOcean Alliance enabled devices which conform to the EnOcean Equipment Profile (EEP) are compatible with the WSG15 receptacle. This includes but is not limited to room controllers, occupancy sensors, key cards, unpowered switches, door and window sensors made by Leviton as well as other EnOcean Alliance companies which support EEP 2.1 and above.

EQUIPMENT NEEDED FOR INSTALLATION

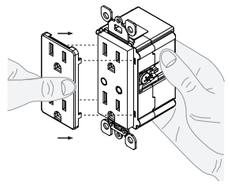
- Slotted/Phillips Screwdriver
- Pencil
- Electrical Tape
- Cutters
- Pliers
- Ruler

INSTALLATION

Changing the color of your receptacle:
Your receptacle includes five color options. The receptacle ships with the white frame attached. To change color of the frame, proceed as follows:



Push in side at tab to release

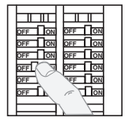


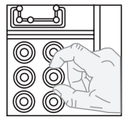
Line up tabs and press in sides one at a time to attach

INSTALLING YOUR RECEPTACLE

NOTE: Use check boxes ☐ when Steps are completed.

Step 1 ☐ **WARNING: TO AVOID FIRE SHOCK OR DEATH; TURN OFF POWER** at circuit breaker or fuse and test that power is off before wiring!





Step 2 ☐ **Identifying your wiring application (most common):**

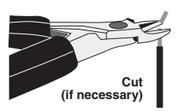
NOTE: If the wiring in your wall box does not resemble this configuration, consult an electrician.

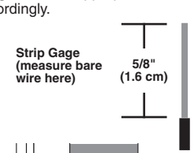
Single Pole

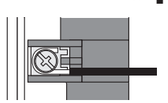
1. Line (Hot)
2. Neutral
3. Ground

Step 3 ☐ **Wiring the receptacle:**

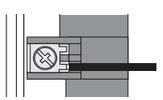
This receptacle can be wired using side wire terminal screws or through backwire openings. Choose appropriate wire stripping specifications accordingly.







Side Wire Connection
Side wire terminals accept #14-12 AWG solid copper wire only.

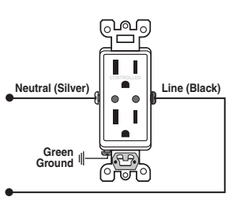


Back Wire Connection
(either hole may be used)
Back wire openings accept #14-12 AWG solid copper wire only.

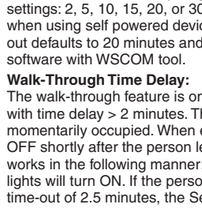
- Make sure that the ends of the wires from the wall box are straight **(cut if necessary)**.
- Remove insulation from each wire in the wall box as shown.

Connect wires per WIRING DIAGRAM as follows:

- Green or bare copper wire in wall box to Green terminal screw.
- Line Hot wall box wire to terminal screw (Black) marked "LINE".
- Line Neutral wall box wire to terminal screw (Silver) marked "NEUTRAL".
- Proceed to Step 4.



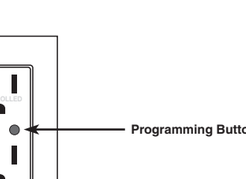
Step 4 ☐ **Testing your Receptacle prior to mounting in wall box:**



- Position all wires to provide room in outlet wall box for device.
- Partially screw in mounting screws in wall box mounting holes.
  NOTE: Dress wires with a bend as shown in diagram in order to relieve stress when mounting device.
- Restore power at circuit breaker or fuse.
- The green Locator light should turn ON. **If locator light does not turn ON, refer to the TROUBLESHOOTING section.**

Step 5 ☐ **Receptacle Mounting:**
TURN OFF POWER AT CIRCUIT BREAKER OR FUSE.

- Installation may now be completed by tightening mounting screws into wall box. Attach wallplate.
- Restore power at circuit breaker or fuse. **Installation is complete.**



INSTALLING SOFTWARE (OPTIONAL)

For additional details refer to the ComWi Installation & Operation instructions. Consult the factory for details.

Programming Instructions:

All devices are learned in a "reduced sensitivity" mode to avoid interference from other devices which may be active in areas close by. This reduction of sensitivity reduces the range so devices learned to the WSG15 receptacle should be within 10 ft when learning.

Factory Defaults (only accessible via ComWi software):

- Occupancy Sensor Timeout: 20 minutes
- Momentary Egress Delay: 0 seconds
- Repeater Mode: ON, Level 1

Time-Outs:
When used with an occupancy sensor the WSG15 has six time-out settings: 2, 5, 10, 15, 20, or 30 min. (a longer timeout is recommended when using self powered devices in dark spaces). The values of time-out defaults to 20 minutes and can only be changed using the ComWi software with WSCOM tool.

Walk-Through Time Delay:
The walk-through feature is only active in the Auto-On/Auto-Off mode with time delay > 2 minutes. This feature is useful when a room is momentarily occupied. When enabled, the Sensor will turn the lights OFF shortly after the person leaves the room. The walk-through feature works in the following manner: When a person enters the room, the lights will turn ON. If the person leaves the room before the walk-through time-out of 2.5 minutes, the Sensor will turn the lights OFF within 2.5 minutes of no occupancy detected. If the room is occupied for longer than 2.5 minutes, the Sensor will enter the Occupied Mode with the time-out duration specified by Factory Default settings or configuration set by the ComWi software.

There are five distinct programming modes, each represented by a different Amber Blink:

Amber Blinks	Mode	Details
1	Rocker	• Door and Window Sensors – "Normal" mode. OPEN = OFF (magnet is not near sensor), CLOSED = ON (magnet near sensor). • Switches – Sets the device to use the "I" side to turn the light ON and the "O" side to turn the light OFF. Acts light normal rocker light switch. • Occupancy sensor – Manual-ON/Auto-OFF mode which turns the light OFF when unoccupied. Has a 30 second Vacancy period before lights can only be turned ON via switch. Default delay time is 20 minutes. • SLT Device – "Normal" mode. Similar to a switch which turns lights ON and keeps lights ON when active.
2	Momentary	• Door and Window Sensors – "Inverted" mode. OPEN = ON (magnet is not near sensor), CLOSED = OFF (magnet near sensor). • Switches and Key Cards – Press turns the lights ON and release turns them OFF. Intended for key card devices to turn lights ON when card is inserted and OFF when removed. Only applies to the actual button pressed on the device (ignores the other side of a Decora® rocker switch). • Occupancy sensor – Auto-ON/Auto-OFF mode. Turns lights ON with detection of occupancy and lights OFF when unoccupied (after time delay). Default delay time is 20 minutes.
3	Toggle	• Door and Window Sensors – "Inverted" mode. OPEN = ON (magnet is not near sensor), CLOSED = OFF (magnet near sensor). • Switches/Key Cards – The state of the lights will toggle with the press of the switch or insertion of a Key Card. Only applies to the actual button pressed on the device (ignores the other side of a Decora® rocker switch). Removing the Key Card will be ignored. • Occupancy sensor – Auto-ON/Auto-OFF mode with 2.5 minute Walk-Thru Enabled. Turns lights ON with detection of occupancy and lights OFF when unoccupied. Default delay time is 20 minutes.
4	Scene	• Door and Window Sensors – "Inverted" mode. OPEN = ON (magnet is not near sensor), CLOSED = OFF (magnet near sensor). • Switch and Key card devices – Restores the state of the lights to what they were when the device was learned. Only applies to the actual button pressed on the device (ignores the other side of a Decora® rocker switch).
5	Clear All	• Clears all devices from memory and returns device to factory default configuration.

NOTE: If a NEW occupancy sensor is learned, then all learned occupancy sensors for that unit will default to this current state learned. For example, if the first occupancy sensor is learned as Manual-ON/Auto-OFF and the second occupancy sensor is learned to Auto-ON/Auto-OFF, then all occupancy sensors will default to the last learned occupancy state, which is Auto-ON/Auto-OFF in this case.

Follow these directions for the standard way to program and configure the WSC15 Receptacle.

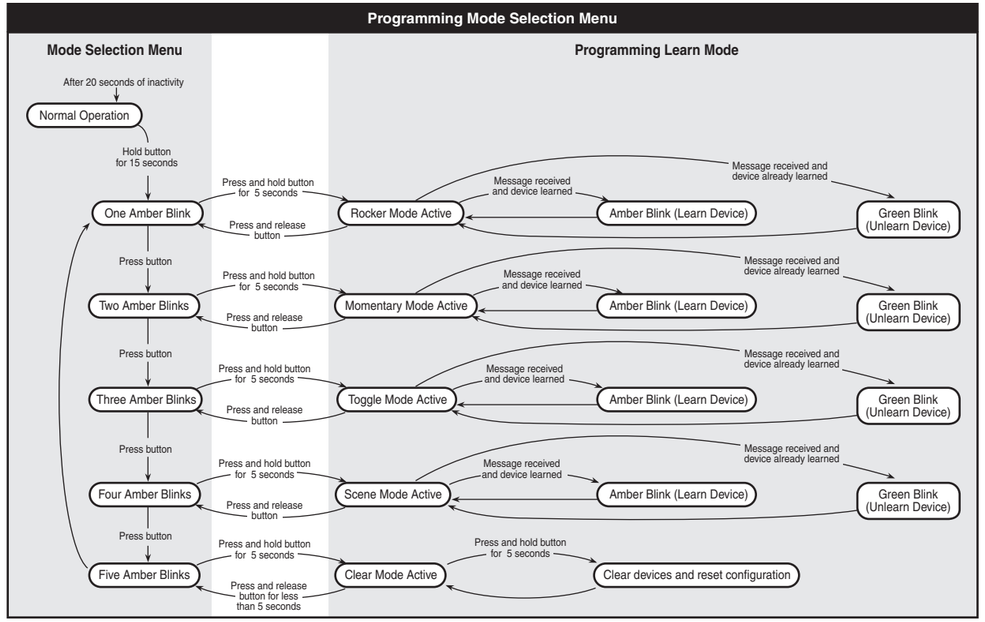
1. Enter Programming Mode by pressing and holding the Programming Button for 15 Seconds until the LED on the receptacle begins flashing Amber slowly 1x per second. This is the Mode Selection Menu of programming.
2. Press the Programming Button to advance between the five programming modes. The Amber LED will blink to represent the Programming Mode.
3. Press and hold the Programming Button 3-5 seconds to enter the desired Programming Learn Mode. The LED will blink Red (empty) or Green (memory) upon entering the Programming Learn Mode.
4. Press the Programming Button for 1-2 seconds to leave the programming mode and go back to the Mode Selection Menu (Amber blink).
5. Device will exit Programming Mode after 20 seconds of inactivity.

NOTE: *Amber flashing LED represents the Mode Selection Menu of programming. No buttons can be learned into a receiver with Amber flashing lights. A Red or Green flashing LED represents the Programming Learn Mode.*

Rocker Mode Programming Instructions (LED flashing Amber 1x per second)

1. Upon entering Programming Mode, the device will automatically begin in Rocker Mode (Amber LED flashing 1x per sec).
2. To Learn a device in Rocker Mode press and hold the Programming Button for 3-5 seconds until the LED changes from Amber to Red or Green to signify you are now in the Programming Learn Mode.
3. When learning a wireless switch to the LevNet RF Receptacle, press one end of a switch rocker. When learning a transmitter other than a wireless switch or keycard, press the LEARN button on the transmitter **(see appropriate transmitter instruction sheet)**. The LED on the receptacle will turn Amber and the load will toggle states for 2 seconds indicating that the receptacle has stored the transmitter's unique ID in its memory. **NOTE:** The LED will change from Flashing Red to Flashing Green on the first learned device or increase the number of Green flashes to represent a device was learned.
   NOTE: Pressing the transmitter switch again will unlearn the unique ID. The load will not toggle and the Green LED will light up for 2 seconds before going back to a Red or Green blink.
   NOTE: If only one transmitter is desired then skip to Step 6.
4. To program additional transmitters to communicate with this receptacle in Rocker Mode, wait until LED flashing resumes. Repeat the instructions in Step 3 until the unique IDs of all desired transmitters are stored in the Rocker Mode memory of the receiver (up to 20). The Green tracking blinks for up to 20 devices learned, however, the Programming Mode will exit after 20 seconds of inactivity so it will not be possible to tell if 20 devices are learned.
5. To program additional transmitters to communicate with this receptacle in another Mode, press the receiver switch/programming button and return to the Mode Selection Menu (Amber LED flashing). The Amber LED will be flashing 1x per second for Rocker Mode. Pressing the receiver switch button will advance the Amber flashing to the next Programming Mode, Momentary Mode (Amber flash 2x per second). Follow Steps 3 and 4 to program transmitters to Momentary Mode.
6. To exit Learn Mode, just wait; the receiver automatically exits Learn Mode after 20 seconds (indicated by the ceasing of the LED flashing).

WEB VERSION



Momentary Mode Programming Instructions
(LED flashing amber 2x per second)

1. Read all Rocker Mode programming steps before taking any action to program the receiver in Momentary Mode.
2. While the receptacle is in the Mode Selection Menu (Amber LED flashing) press the receiver switch/programming button to advance the Amber LED to flashing 2x per second (Momentary Mode).
3. To Learn a device in Momentary Mode press and hold the button for 3-5 seconds. The LED will change from Amber to Red or Green to signify you are now in Programming Learn Mode.
4. Follow Steps 3-6 of "Rocker Mode Programming Instructions" described above.

Toggle Mode Programming Instructions
(LED flashing amber 3x per second)

1. Read all Rocker Mode programming steps before taking any action to program the receiver in Toggle Mode.
2. While the receiver is in the Mode Selection Menu (Amber LED flashing) press the receiver switch/programming button to advance the Amber LED to flashing 3x per second (Toggle Mode).
3. To Learn a device in Toggle Mode press and hold the button for 3-5 seconds. The LED will change from Amber to Red or Green to signify you are now in the Programming Learn mode.
4. Follow Steps 3-6 of "Rocker Mode Programming Instructions" described above.

Scene Mode Programming Instructions
(LED flashing amber 4x per second)

1. Before going into Programming Mode toggle the load of the receptacle to the state desired for Scene Mode. Turn load ON if load is desired ON or OFF if it is desired OFF for the Scene Mode being programmed.
2. Enter Programming Selection Mode (hold down receiver switch/ programming button for 15 seconds until the Amber LED begins blinking).
3. While the receiver is in the Mode Selection Menu (Amber LED flashing) press the receiver switch/programming button to advance the Amber LED to flashing 4x per second (Scene Mode).
4. To Learn a device in Scene Mode press and hold the button for 2 seconds. The LED will change from Amber to Red or Green to signify you are now in the Learn mode of programming.
5. Press the wireless light switch to be learned for the Scene. The load will stay ON for 2-3 seconds indicating that the receiver has stored the transmitter's unique ID in its memory. The LED will change from Red to Green or increase the number of Green flashes per cycle as additional devices are learned.
6. Follow Steps 4-6 of "Rocker Mode Programming Instructions" described above.

Clear Mode Programming Instructions
(LED flashing amber 5x per second)

1. While the receiver is in the Mode Selection Menu (Amber LED flashing) press the receiver switch/programming button to advance the Amber LED to flashing 5x per second (Clear Mode).
2. To enter the Clear Mode, hold the button for 3-5 seconds. The LED will change from Amber to a single Red or Green flash to signify you are now in the Clear Mode of programming.
3. To CLEAR ALL devices from memory and reset to factory defaults press the receiver switch/programming button for 5 seconds. The entire memory of the receiver will be deleted. The receiver LED will flash Red when the process is complete.
4. To program new devices, press the receiver switch/programming button and return to the Mode Selection Menu (Amber LED flashing). Select the mode desired for programming devices.

Selective Deleting (unlearn): Go back to the same mode the device was learned (Rocker Switch = Rocker Mode, Key Card = Momentary Mode) and enter the Learn Programming Mode. Press the button on the transmitter to be unlearned. The load will not toggle but the Green locator LED will remain ON for 2 seconds. The number of devices in memory will reduce by one resulting in either a Red blink (nothing in memory) or one less Green blink representing the number of devices learned. If the device toggles the load and the Amber LED stays on for 2 seconds then the device was learned. This means the device has been learned in another mode. Unlearn the device and go to a different Learn Mode to try again.

LED feedback/indicators in the learn programming mode:

- 1 Red flash = no learned devices
- 1 Green flash = 1 learned devices
- 2 Green flashes = 2 learned devices
- 3 Green flashes = 3 learned devices
- X Green flashes = X or more learned devices (A maximum of 20 devices can be learned)

Helpful Hint: *When operating normally, pressing the learn button will toggle the state of the lights (Occ Sensors/SLT devices) to allow for validating range.*

OPERATION

The **locator LED** will illuminate when the load is in the OFF position to facilitate access in the dark.
Push Button:
Turn ON from OFF position:
Tap – Lights turn ON.
Turn OFF from ON position:
Tap – Lights turn OFF.
Cleaning: Clean with a damp cloth. DO NOT use chemical cleaners.

If there is a power outage, when the power is restored, the lights will return to the state they were in prior to power loss.

TROUBLESHOOTING

Having difficulty plugging an item into the receptacle:

- This Tamper-Resistant receptacle has a built-in shutter barrier design to limit improper insertion of small objects into the receptacle contact slots. It is necessary to plug devices directly (as straight as possible) into the receptacle. Both hot and neutral plugs need to be inserted at the same time in order to allow the shutter barrier to open.

Receptacle has no power:

- Receptacle has a bad connection.
- Wires not secured firmly under terminal screws of receptacle.

Locator LED does not turn ON with device in OFF state:

- Circuit breaker or fuse has tripped.
- Neutral connection is not wired.

When paired with an Occupancy Sensor:

- **Sensor turns lights back ON right after they turn OFF**
  - Adjust range (CCW) slightly to reduce range or relocate Sensor farther away from light or heat source.
- **False Tripping when no one is around**
  - Adjust range (CCW) slightly to reduce sensitivity, relocate Sensor closer to light source, or re-configure sensor to MANUAL ON mode.
- **Confirm Range**
  - Press the learn button on the occupancy sensor several times with it at the installed location. The load should toggle on the receptacle. If not, try rotating Occupancy sensor 90 degrees (point Leviton logo towards receptacle) and try again.

Unable to get the ComWi Tool working: First try unplugging all devices from the receptacle as this can often increase the transmission range by 50% or more. Next move closer to the receptacle (within 10 ft).
Marginal-Poor Signal Quality: Reposition the transmitter so the antenna is aligned with the receiving device. When re-position of the transmitter or receiver is not possible, then adding repeaters or enabling the repeaters in nearby receptacles and other devices may be required.
Improving Performance: Metal around or near the antenna will cause signal degradation. Keep these guidelines in mind to increase device operational performance:

- Devices should not be installed near metal or behind metal faceplates.
- Avoid installing sensors on metal ceilings.
- Leviton occupancy sensors should be rotated so that the Leviton logo points towards the receiver.
- Relays and wall box switches installed in a metal single or dual gang electrical switch boxes need to have their antenna outside of the metal enclosure.

Other factors restricting transmission range:

- False ceilings with panels of metal or carbon fiber.
- Lead glass or glass with metal coating, steel furniture.
- Hollow lightweight walls filled with insulating wool on metal foil.
- The distance between EnOcean receivers and other transmitting devices such as computers, audio and video equipment that also emit high-frequency signals should be at least 3 ft.
- Do not use power tools such as drills or saws as the turn off range will be significantly reduced.

Technical Notes:

- Noise interference can be either line noise (from motors) or Radio Frequency (RF)
- Receptacles go into a reduced range mode when in programming (within 10 feet)
- Range can be reduced by overloading the receptacle (receptacle is rated at 15A)
- Range can be reduced by metal objects (metal decreases the effectiveness of RF transmission)
- A fixed antenna is integrated into the product

Consider Factors affecting the Environment:

- Device placement
- Obstructions (metal, concrete, other construction materials)
- Interference

Obstructions:

- Does the system work more reliably at close range (without obstructions)?
- Identify nearby metal, concrete and other objects possibly affecting signal strength
- Can either device be relocated (even slightly) away from obstructions to improve the system performance?

Interference:

- Does the system work better at certain times of the day?
- Look for pieces of equipment that may affect wireless performance when they are ON.
- Try using a WSCOM tool to measure 315MHz (RF) noise floor and quantify packet receiving reliability.

Product variations:

- Replace one piece of hardware at a time to isolate any variation in product performance.

Product LED indicators:

- **Red LED:** Indicates reception of wireless package from a sensor. In Programming Mode it signals no devices learned. A fast blinking LED in Normal Mode indicates overheating; load should turn OFF until device cools down.
- **Green LED:** In Programming Mode this indicates number of devices learned. A 2 second blink represents a device is unlearned. In Normal Mode the Green LED will remain lit when the controlled load is OFF.
- **Amber LED:** In programming mode indicates menu selection (1-5 blinks). Also indicates a device was learned when in the Learn Mode.

SPECIFICATIONS	
Frequency / Range	315MHz / 50-100ft
Modulation Type	ASK (Amplitude Shift Keying)
Operational Temperature	0˚ to +40˚C
Power Consumption	120VAC @10mA AC (320mW typical)
Addressing	Factory set unique ID (1 of 4 billion)
Antenna	315MHz tuned wire
Standards	UL244A, CSA C22.2 No. 14-10, UL498
UL Certification	E66800
Radio Certification	FCC Part 15 Subpart C IC RSS-Gen Issue 3 and RSS-210 Issue 8 FCC (US): QGH-WSG15 IC (Canada): 2473A-WSG15

RoHS:

Leviton certifies that to its knowledge the WSG15 is RoHS compliant, conforming to the requirements of "Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment." This declaration is based on Leviton's current understanding of the RoHS Directive and information provided through supplier material declarations pertinent to the ingredients and materials comprising Leviton's product.

FCC COMPLIANCE STATEMENT:

FCC ID: QGH-WSG15

The enclosed device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(i.) This device may not cause harmful interference

(ii.) This device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by Leviton could void the user's authority to operate this equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

INDUSTRY CANADA COMPLIANCE STATEMENT:

IC: 2473A-WSG15

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

IMPORTANT! Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This Class B digital apparatus complies with Canadian ICES-003.

LIMITED 5 YEAR WARRANTY AND EXCLUSIONS

Leviton warrants to the original consumer purchaser and not for the benefit of anyone else that this product at the time of its sale by Leviton is free of defects in materials and workmanship under normal and proper use for five years from the purchase date. Leviton's only obligation is to correct such defects by repair or replacement, at its option, if within such five year period the product is returned prepaid, with proof of purchase date, and a description of the problem to **Leviton Manufacturing Co., Inc., Att: Quality Assurance Department, 201 North Service Road, Melville, New York 11747**. This warranty excludes and there is disclaimed liability for labor for removal of this product or reinstallation. This warranty is void if this product is installed improperly or in an improper environment, overloaded, misused, opened, abused, or altered in any manner, or is not used under normal operating conditions or not in accordance with any labels or instructions. **There are no other or implied warranties of any kind, including merchantability and fitness for a particular purpose**, but if any implied warranty is required by the applicable jurisdiction, the duration of any such implied warranty, including merchantability and fitness for a particular purpose, is limited to five years. **Leviton is not liable for incidental, indirect, special, or consequential damages, including without limitation, damage to, or loss of use of, any equipment, lost sales or profits or delay or failure to perform this warranty obligation**. The remedies provided herein are the exclusive remedies under this warranty, whether based on contract, tort or otherwise.

For Technical Assistance Call: 1-800-824-3005 (U.S.A. Only)
www.leviton.com

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