Quick Start Guide

Wall Switch Products

WS1D, WS1DL, WS1R, WS1E, RWS

MODELS:

WS1D – Wall Switch Dimmer – For Incandescent, Halogen, Fluorescent, Inductive and Magnetic LV Loads.

WS1DL – Wall Switch Dimmer – For LED, CFL, Incandescent, Halogen, Fluorescent, Inductive and Magnetic LV Loads.

WS1R – Wall Switch Relay – For heavier loads up to 20A, motors, pumps or ceiling fans that may hum when using a dimming switch.

WS1E – Electronic Low Voltage Dimmer – For Electronic Low Voltage Capacitive Transformers only. This is a Reverse Phase Dimmer.

RWS – Remote Wall Switch – For 3-way applications

FUNCTION

PulseWorx products are designed to provide simple remote control for lighting and other electrical loads without having to run any new wiring. They connect (or "link") to one another by communicating over the existing electrical power wires.

The WS1 Wall Switch series is a high quality light-switch/dimmer that not only allows for local rocker switch control of a lighting load but also incorporates PCS's innovative UPB® two-way powerline communication technology that gives it the ability to be remotely controlled by other UPB® compatible controllers. The WS1 is highly configurable to allow for behaviors customized to each individual's desires. The WS1 is capable of storing up to 16 preset light levels and fade rates to create powerful lighting scenes. The WS1 is also capable of transmitting UPB® messages (including a current light level report) when rocker switch events occur.

The RWS Remote Wall Switch (Figure 2) is an optional low cost accessory to the WS1. The RWS acts like a secondary Decora-style rocker switch for replacing or creating a three-way lighting control circuit. The RWS connects to the load controlling device (WS1) through the single yellow traveler wire normally found in a traditional three-way lighting control circuit.

IMPORTANT SAFETY INSTRUCTIONS

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

1. Keep away from water. If the product comes in contact with water or other liquid, turn off the circuit breaker and remove the product immediately.
2. Never use products that have been dropped or damaged.
3. Do not use this product outdoors.
4. Do not use this product for other than its intended purpose.
5. Do not cover this product with any material when in use.

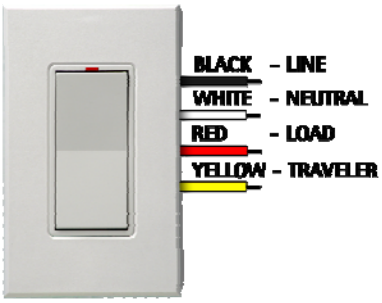
AIR-GAP SWITCH

The WS1D/DL/E rocker switches have an air-gap switch that will remove all power from the load for safe installation and bulb replacement. To activate the air-gap switch firmly press the rocker bottom until you hear a loud "click" or you see the SYSTEM "OFF" label on the top rocker.

INSTALLATION

Follow these instructions to replace an existing wall switch with a WS1:

1. Before installing the Wall Switch into a wall box, ensure that power to the wall box has been disconnected by removing the fuse or turning the circuit breaker off. Installing products while the power is on may expose you to dangerous voltage and may damage the product.



WS1

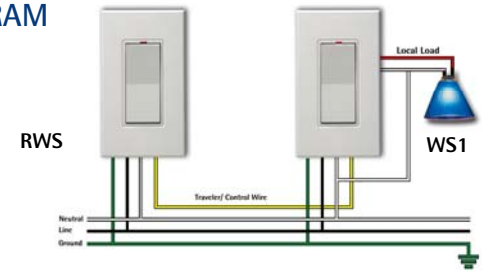
Figure 1

RWS

Figure 2

2. Remove the faceplate from the existing wall switch, then unscrew and pull the existing wall switch out of the wall box.
3. Disconnect the wires from the existing wall switch. Identify the "Line", "Neutral", "Load" and "Control/Traveler" wires.
4. Wire the PulseWorx Wall Switch and any RWS connecting wires per wiring configuration shown in Figure 3. Cap off any unused wires from the device
5. Gently place the wires and Wall Switch into the wall box, with light emitting diode (LED) at the top of device. Screw in place.
6. Before installing the faceplate, restore power to the circuit and test the device for proper local operation.
7. After testing, re-install the faceplate cover(s).

WIRING DIAGRAM



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DE-RATING INFORMATION FOR WS1D

For a proper fit in a multiple gang installation, it may be necessary to remove one or both sides (break-off tabs) from the mounting plate. When tabs are removed, the overall rating of the device must be reduced in accordance with the following chart:

Model	Max Load	No Fins Removed Normal Depth Box	No Fins Removed Deep Box	One Fin Removed or Next to One Dimmer	Both Fins Removed Or Next to Two Dimmers
WS1D-6	600W	600W	600W	500W	400W
WS1D-10	1000W	900W	1000W	800W	600W

MULTI-WAY CIRCUITS

The Wall Switch is wired directly to the lighting circuit and can (optionally) be controlled by one or more RWS Remote Wall switches producing three, four or five-way circuits. Multi-way circuits make it possible for a group of switches to control the same set of lights. This section will illustrate how to wire the connections.

Note:

1. Refer to Figures 1 and 2 to determine the wire colors of the connections.
2. All PCS Wall Switches require a neutral (white) connection.
3. Remote Wall Switches require that the Line (black) wire be accessible. This wire may be connected to either phase of the 120/240V supply.
4. The gray wire on the Remote Wall Switch can be connected to either *earth ground or neutral*. The gray wire serves only to light the LED in the remote. This LED does not indicate anything except that power is applied and to serve as a night-light.

CONFIGURATION

Once your WS1 is installed it can be configured either manually or with the UPStart Setup Software.

Manual configuration can be used to add your WS1 device into a UPB network and link it to controller buttons. Refer to the Keypad Controller's Manual Configuration Guide for more details.

Although the factory default operation of the WS1 is useful in many situations, it is highly recommended that your device be configured with UPStart Setup Software so that you can take advantage of its many configurable features.

PCS has developed a Powerline Interface Module (PIM) and free UPB Setup Tool software (UPStart) to help you configure all of your PulseWorx Lighting System devices. User's Guides are available to explain how to configure your system from our website.

SETUP MODE

When configuring a UPB system, it will be necessary to place the WS1 in SETUP mode. To do this, tap the Rocker Switch **five** times rapidly. The lighting load will flash one time and the Status LED will continuously blink Blue when the device is in SETUP mode. To exit SETUP mode, tap the Rocker Switch once or wait five minutes for it to time out.

OPERATION

The WS1 can be a member of up to 16 scenes with the capability to store a pre-set relay state (on, off, or blink) for each scene. The WS1 will accept powerline commands from any UPB-compatible transmitter such as PulseWorx Keypad Controllers, Timed Event Controllers, Wall Switches, Interface Modules, and approved Third-Party Controllers.

STATUS LED INDICATOR

The WS1 comes equipped with a multi-color status LED indicator that is normally lit to blue. This LED indicator will blink different colors to indicate UPB ® communication status and configuration status as outlined below. Note: By using UPStart Setup Software, the Status LED can also be configured to stay one solid color or to change colors based on the state of the load.

LED Color	Status
BLUE	Power applied to Wall Switch
MAGENTA	Receives message for Wall Switch
BLACK	Receives message for another device
RED	Switch is transmitting a UPB® message

CERTIFICATION

This product has been thoroughly tested by either Underwriters Laboratories or Intertek Testing Services, nationally recognized independent third-party laboratories. The North American UL/ETL Listed mark signifies that the product has been tested to and has met the requirements of a widely recognized consensus of US and Canadian product safety standards, that the manufacturing site has been audited, and that the manufacturer has agreed to a program of quarterly factory follow-up inspections to verify continued conformance.

LIMITED WARRANTY

Seller warrants this product, if used in accordance with all applicable instructions, to be free from original defects in materials and workmanship for a period of five years from the date of purchase. Refer to the warranty information on the PCS website (www.pcslighting.com) for exact details.

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