



## UPB Universal Dimming Transceiver Switch Base Model US2-40

Provides ON/OFF and dimming control for:

- LED, CFL, Halogen and Incandescent lighting
- Magnetic/Electronic low-voltage lighting
- And any fixtures that can be dimmed with a standard dimmer (1 Watt Min., 900 Watt Max.)

**IMPORTANT!**  
**Read This Before Installing!**

- **Not for use with METAL HALIDE or some ELECTRONIC LOW-VOLTAGE lighting that requires a special 'reverse phase' ELV type dimmer.** See 'Operation' section to configure this product for ON/OFF control of non-dimmable lighting / loads.
- **DO NOT WIRE HOT! Permanent damage may result. Improper installation voids the warranty. Please! Pull out safety disconnect (LED indicator light pipe) to disconnect power if circuit must be wired hot!**

Model US2-40 shown with ZS Series 4-rocker actuator faceplate (sold separately)



## FUNCTION

The SimplyBrilliant™ UPB Universal Dimming Transceiver Base, model US2-40, provides direct load control and/or remote control of permanently-installed new or existing lighting fixtures, lamps and other electrical devices connected to UPB devices. Most any dimmable lighting (LED/CFL) can be turned ON or OFF, and can also be dimmed and brightened. The US2-40 can be configured to turn other types of non-dimmable loads ON and OFF (fluorescent and pump/fan motors). There are 13 multi-rocker/button actuator faceplate types available in 6 standard colors, see models ZSxx, providing 78 fully interchangeable faceplate choices for the US2-40 base. The US2-40 can be configured to control a load and provide scene control, or scene control only (no load). The US2-40 can control loads as low as 1W and up to 900W (see table 1). Load control can be configured to any rocker or button on the various actuator faceplates. All switch actuators may act as transmitters that can communicate with other UPB devices, either individually or collectively for lighting scenes.

## IMPORTANT SAFETY INSTRUCTIONS

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

1. READ AND FOLLOW ALL SAFETY INSTRUCTIONS.
2. Installation should be performed by a qualified electrician.
3. Keep away from water. If product comes into contact with water or other liquid, disconnect immediately.

4. Never use products that have been dropped or damaged.
5. Do not use this product outdoors.
6. Do not use this product for other than its intended use.
7. Do not connect multiple lamps that, when combined, exceed the maximum load rating of the product, de-rated for multi-gang boxes.
8. Do not install in areas that can exceed 120°F (e.g., in an attic).
9. To avoid the risk of overheating and possible damage to other equipment, do not use this product to control a receptacle.
10. Do not cover the product with any material when in use.
11. SAVE THESE INSTRUCTIONS.

## INSTALLATION

The SimplyBrilliant™ UPB Universal Dimming Transceiver Base (US2-40) is designed to be installed in a junction box that is wired to a readily accessible over-current protection device in the building wiring per NEC and CEC electrical codes.

**CAUTION:** DO NOT CONNECT TO RECEPTACLE, USE MODEL URD. The default switch configuration operates as a dimmer for dimmable lighting fixtures and dimmable low voltage transformers. To control non-dimmable fluorescent, electronic low-voltage or metal halide lamps, or motor-operated appliances, transformer-supplied appliances or fans, the switch must be reconfigured for ON/OFF operation (dimming disabled) prior to use. Refer to the section on Configuration.

**ATTENTION:** NE PAS CONNECTER RECEPTACLE, UTILISATION MODÈLE URD. La configuration de commutation par défaut fonctionne comme un gradateur pour les appareils d'éclairage graduables et graduables transformateurs basse tension. Pour contrôler fluorescent non-dimmable, lampes aux halogénures à basse tension ou en métal électroniques ou les appareils motorisés, les appareils alimentés par transformateur ou des ventilateurs, le commutateur doit être reconfiguré pour ON / OFF opération (gradation désactivée) avant utilisation.



**CAUTION:** DO NOT WIRE THIS DEVICE WITH POWER CONNECTED. Injury or permanent damage to the device may result. Improper installation voids the product warranty.

1. Locate the existing wall switch for the lighting to be controlled. Note that the lamp rating (or the combined rating of all connected lamps) must not exceed what is shown in the de-rating table below.

Table 1: Power per Dimmer		Number of Load Dimmers in J-box		
		1	2	3+
Number of J-box Gangs	1	600W	--	--
	2	800W	500W	--
	3+	900W	700W	500W

2. Disconnect power at the circuit breaker.
3. Remove the existing wall switch. Disconnect the wires to the switch.
4. Remove the white plastic protective cover on the US2 and install faceplate; see "INSTALLING/CHANGING FACEPLATES" on page 2 for details.
5. Using a wire nut, connect all white (Neutral) wires together.
6. Using a wire nut, connect the brown (load output) wire of the US2 to the black wire of the load/fixture to be controlled.
7. IF THIS IS TO BE A 3- OR MORE-WAY INSTALLATION, use a wire nut to connect the brown/white "REMOTE 1" wire or red/white "REMOTE 2" wire if there is a second 3-way switch traveler. Do not connect to mechanical/conventional 3-way switch. Refer to the wiring diagrams on pages 3 and 4.
8. Using a wire nut, connect the black (Line) wire of the US2 switch to the black (Line) power wire.
9. Mount the switch inside the J-box using captive screws. DO NOT OVER TIGHTEN THE SCREWS.
10. Reconnect power at the circuit breaker.

## CONFIGURATION

Configuration requires UPB setup/configuration software (UPStart) and a model UMC Computer Interface Module. Before using UPStart configuration software, be sure to download the latest version from the Simply Automated website. First time users should also download and follow the Quick Start Guide and use the Installation Wizard available in UPStart to save time.

The US2 default settings are preconfigured for a ZS24 (quad rocker) faceplate. The default settings ensure the load will operate locally with any faceplate. To utilize essential functions, the UPB settings should be configured by the installer for the specific faceplate. Any rocker or button can be configured to control the local load. When using UPStart, this is done by selecting the faceplate "device type" when adding the device to the network.

## SETUP MODE

When first adding a US2 device to a UPB system network it is necessary to place the US2 in SETUP mode, to initiate self-identification on the powerline. To place the US2 in SETUP mode, tap any rocker/pushbutton five (5) times quickly. The LED indicator will continuously blink GREEN when the unit is in SETUP mode. Module will stay in SETUP mode for five minutes. Once the US2-40 has been added to the powerline network, UPStart will put the US2 back into Normal mode. To EXIT SETUP mode manually, and enter Normal mode, tap any rocker/pushbutton two (2) times.

## OPERATION

Unless otherwise configured, rocker actuators behave as follows:

Rocker Event	Dimmer Action	
	Top Rocker	Bottom Rocker
Single-Tap	Brighten to 100% at Default Rate	Fade to 0% at Default Rate
Double-Tap	Snap to 100%	Snap to 0%
Hold	Start brightening to 100% at Default Rate	Start fading to 0% at Default Rate
Release	Stop brightening and hold current level	Stop fading and hold current level

The US2 is configured from the factory to accept a single rocker, or a multi-rocker faceplate, where the top-left (#1) rocker provides ON/OFF (double tap) and dimming control functions for the connected light fixture (local load). However, the local load may be assigned to ANY rocker or button using a 'scene link'. The scene link must be present in both the transmit and receive component tables which are edited via UPStart. The factory default for local load control is 'Link 241' and the transmit option for the actuator is disabled. Additional rockers / buttons function as transmitters to other UPB devices (i.e. transmit option is enabled for these actuator). Local load control may be included in any scene using the scene link feature in UPStart. See illustration above for actuator numbering reference.



- By linking a switch to a (non-dimming) UPB Receptacle, Appliance Module or Fixture Relay Module, the connected load can be turned ON by tapping the top rocker and OFF by tapping the bottom rocker. Pushbuttons can be configured to toggle the load ON and OFF, or single-tap ON and double-tap OFF. Fan motors and water pumps should be controlled with ON/OFF switching instead of dimming.
- By linking a transmitting actuator to a (dimming) UPB Lamp or Fixture Dimmer Module, the connected load can be controlled according to the table above. Pushbuttons can be configured as a "Super Toggler," which will alternate the dimmer actions of a top and bottom rocker.

Local response time is the time from rocker press to load response. It can be adjusted (300, 450, 600 and the default 750 mSec) with UPStart configuration software. Similarly, blink rate levels can also be adjusted.

## POWER DISCONNECTION

To disconnect power to the US2 and connected lamp fixture, depress the top of the rocker switch, grab the underside of the clear plastic indicator tab (light pipe) with your fingernail, pull the tab out about 0.2" until it stays in place. The LED indicator will extinguish showing that power is now disconnected. To reconnect power, simply push the tab back into its normal position. Utilize the disconnect to prevent damage if wiring hot.

## OVERLOAD PROTECTION

The US2 contains a thermal sensor that automatically turns off the connected load if the switch becomes too hot. This can occur when the load exceeds the power rating of the switch, or when dimming incompatible loads or if the switch is in an environment that exceeds the maximum operating temperature (120°F). If the load begins to turn OFF and ON repeatedly without command or actuation, then the load must be reduced.

## INSTALLING/CHANGING FACEPLATES

SimplyBrilliant Dimming Wall Switches are designed with removable actuator faceplates, making it possible to upgrade functionality and/or change color in the field without disconnecting the switch from the wall. Changing faceplate types will require re-configuration via UPStart.

### To install a faceplate assembly, do the following:

- Remove the white protective faceplate cover, if present (see next section below for details). Hold the actuator faceplate assembly so that clear plastic light pipe (LED) on the switch fits nicely into the recess on the top of the faceplate.
- Align the four prongs on the side of the faceplate assembly with the four slots on the switch body.
- While squeezing the prongs on both sides, press the faceplate into the switch body. Ensure that all four prongs are fully inserted and latched into the switch body. If all four prongs are not fully latched, the rocker/button plungers may not function properly.
- Exercise each rocker/button several times to ensure proper seating and operation. If the rocker or button doesn't operate properly, remove and re-install the faceplate to check proper seating and operation.

### To remove the faceplate assembly and upgrade functionality or change color, do the following:

- If installed in a junction box, remove the wall plate framing the switch.
- Using the thumb and index finger, press the top two side-prongs of the rocker faceplate assembly inward so that they unlatch from the switch body. This will release the top of the rocker assembly.
- Press the two lower side-prongs inward, and pull the faceplate assembly away and slightly downward from the switch body, moving it away from the clear plastic light pipe.
- Once the old faceplate is removed, follow steps 1-4 above for instructions on installing a new rocker or button faceplate assembly.

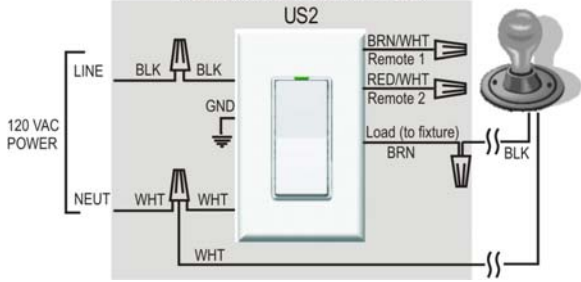
### To change faceplate labeling, do the following:

- Remove the clear plastic label cover on the oval or thin-bar button faceplate.
- Flip label over to hide switch numbers, or
- If custom labels are preferred, order the custom label kit, (Model ZLK-01, specify color) to print your own labels.

# Universal Dimming Transceiver Base

# Model US2-40

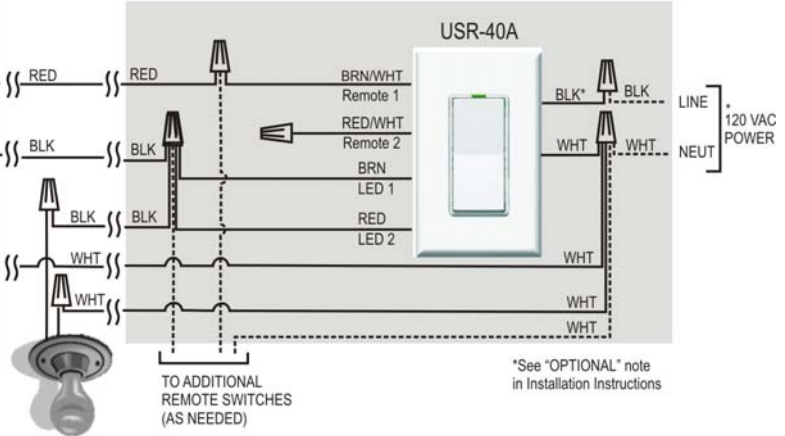
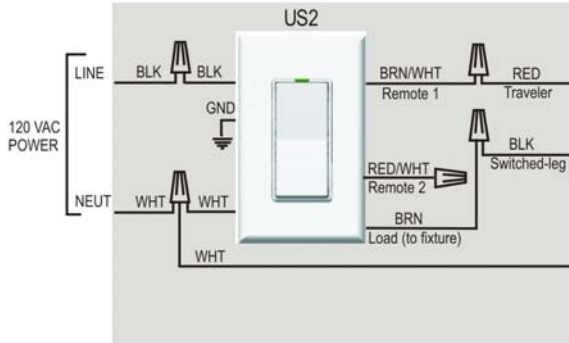
## STANDARD 2-WAY INSTALLATION



**STANDARD 3-WAY (OR MULTI-WAY) INSTALLATION** The diagram below shows a 3-way wiring configuration in which a USR-40A (for older model USRs refer to its User Guide) remote controller controls the load connected to a US2 dimmer-controller switch. Additional remote controllers may be added in parallel for multi-way (4 or more way) control. LEDs light when power is applied to the USR LED wires (brown and red wires), typically connected to the load / switched-leg. If a hot (always powered) wire from the same circuit-breaker powering the master US2 switch is available in the remote USR controller junction box, it can be connected to the USR's black power wire enabling the blue LED function (e.g. blue LED indicates off and green LED indicates on). If an always powered wire is not available in the remote USR junction box, then only the green LEDs will light when power is applied to the LED wires, via load/switched-leg connection. Green LEDs are off when power to load/switched-leg is off.

## US2 STANDARD 3-WAY (OR MULTI-WAY) INSTALLATION

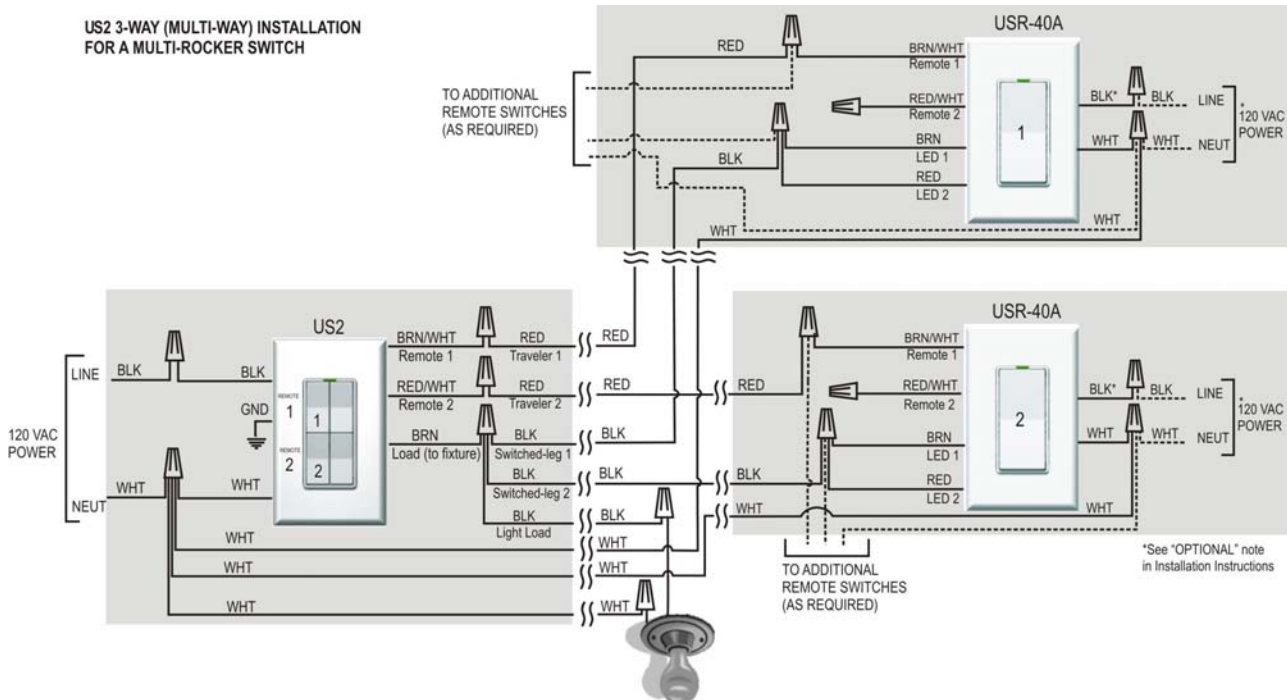
**DO NOT CONNECT MECHANICAL/CONVENTIONAL 3-WAY SWITCH IN PLACE OF USR! DAMAGE WILL RESULT!!**



## DUAL-ROCKER 3-WAY (OR MULTI-WAY) INSTALLATION

If a multi-rocker faceplate is installed on a US2, by default from the factory, the connected load will be controlled by the top-left rocker (1). All other rockers on the switch act as UPB transmitters. A remote USR controller connected to Remote 1 (brown/white wire) will control the top-left rocker (1). If a second remote USR controller is installed and connected to Remote 2 (red/white wire), it will control the bottom-left rocker (2) of the master US2 switch (i.e. buttons 3 & 4 of the US2). Additional USR remote controllers may be added in parallel for multi-way (4 or more way) control. LEDs light when power is applied to the USR LED wires (brown and red wires), typically connected to the load / switched-leg. If a hot (always powered) wire from the same circuit-breaker powering the master US2 switch is available in the remote USR junction box, it can be connected to the USR's black power wire enabling the blue LED function (e.g. blue LED indicates off and green LED indicates on). If an always powered wire is not available in the remote controller junction box, then only the green LEDs will light when power is applied to the LED wires, via load/switched-leg connection. Green LEDs are off when power to load/switched leg is off.

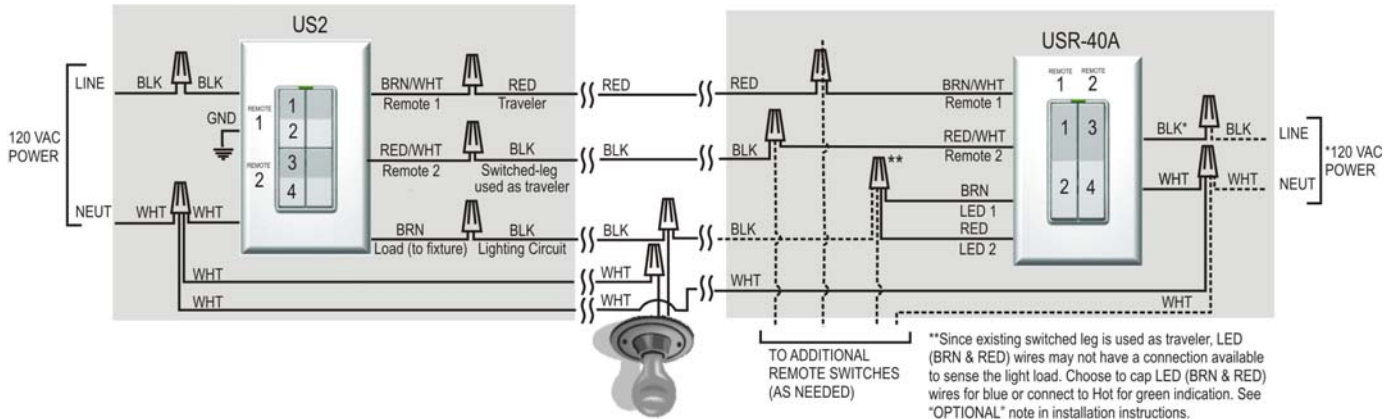
## US2 3-WAY (MULTI-WAY) INSTALLATION FOR A MULTI-ROCKER SWITCH



## DUAL-ROCKER 3-WAY (OR MULTI-WAY) INSTALLATION

If a multi-rocker faceplate is installed on a US2, by default from the factory, the connected load will be controlled by the top-left rocker. All other rockers on the switch act as UPB transmitters. If a dual-rocker faceplate is installed on a USR-40A, it is possible to wire a 3-way (or multi-way) circuit such that the top-left rocker (or buttons 1 & 2 on a multi-button) and bottom-left rocker (or buttons 3 & 4) of the US2 will connect with the two rockers on the USR-40A. LEDs light when power is applied to the USR LED wires (brown and red wires), typically connected to the load / switched-leg. If a hot (always powered) wire from the same circuit-breaker powering the master US2 switch is available in the remote USR junction box, it can be connected to the USR's black power wire, enabling the blue LED function (e.g. blue LED indicates off and green LED indicates on). If an always powered wire is not available in the remote controller junction box, then only the green LEDs will light when power is applied to the LED wires, via load/switched-leg connection. Green LEDs are off when power to load/switched leg is off.

### DUAL-ROCKER 3-WAY (OR MULTI-WAY) INSTALLATION



## TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	SOLUTION
Master switch is wired properly but has no power (e.g. LED indicator is OFF).	Air gap power disconnect may be disengaged (pulled out), or circuit breaker may be off.	Push light pipe (LED indicator) back into position flush with faceplate assembly housing.
Master switch actuator doesn't turn load ON and/or OFF (e.g. LED indicator is ON).	3-way remote switch actuator may be binding, causing the switch to be stuck ON or OFF.	Loosen mounting screws on remote switch and/or wallplate to relieve pressure on housing.
	Actuator faceplate may not be seated properly on the switch body.	Exercise actuator several times to ensure proper seating and operation. If necessary, remove and replace faceplate to ensure proper seating and operation.
Buttons and/or rockers stick or don't actuate properly when pressed.	Switch faceplate may be incorrectly selected in UPStart	Select the correct faceplate in UPStart
	Mounting screws may be too tight or j-box may be deformed, causing the switch body to warp.	Loosen mounting screws to relieve pressure on the switch housing.
Load turns ON and OFF regularly without actuation or command.	Actuator faceplate may not be seated properly on the switch body.	Exercise actuator several times to ensure proper seating and operation. If necessary, remove and replace faceplate to ensure proper seating and operation.
	Switch is overloaded.	Test buttons without faceplate. Use an appropriately-sized non-metallic object such as a toothpick to press/test each of the 8 micro-switches.
Switched links to other UPB devices are intermittent.	Switch is dimming a load that is not rated for use with standard dimmers.	Reduce the power load (watts) by removing/replacing bulbs on the circuit.
	Linked UPB devices are on other phase of the homes' 2 phase power.	Reconfigure the switch for ON/OFF operation. Choose 'dimming disabled' option for the switch in UPStart.
Switched links to other UPB devices are intermittent.	Linked UPB devices are on other phase of the homes' 2 phase power.	Install a phase coupler at each breaker panel. Perform UPStart Network "Communications Test" to measure signal strength and presence of noise.

## UPB FACTORY DEFAULT SETTINGS

To restore the following default settings, place the US2 in SETUP mode and tap any actuator exactly 10 times. The indicator will continuously blink BLUE. Tap the actuator twice again to exit SETUP mode.

Network Name	"Network 1"	
Room Name	"New Room Name"	
Device Name	"New SA US2-40"	
Unit ID	29	
Network ID	255	
Network Password	1234	
Rocker 1 Top	Transmit Link	241 (internal)
Rocker 1 Bottom	Transmit Link	241 (internal)
Rocker 2 Top	Transmit Link	11 (internal)
Rocker 2 Bottom	Transmit Link	241 (internal)
Rocker 3 Top & Bottom	Transmit Link	1
Rocker 4 Top & Bottom	Transmit Link	10
Receive Links	1 (ON), 2(OFF) and 241 (internal)	

## MANUAL SCENE CREATION & MODIFICATION

Once the US2-40 has been configured with UPStart, so scene links assigned to actuators, it is possible to adjust scenes without a PC.

- To create a scene for one of the US2-40 actuators, set all scene devices to the desired light levels and then place them in SETUP mode. Tap the scene actuator (e.g. button 1) on the US2 exactly 7 times to create the scene and store the light levels.
- To add a device to an existing scene, activate the scene and set the light level on the device to be added. Place the device to be added in SETUP mode and tap the scene actuator on the US2 exactly 7 times to modify the scene.
- To remove a device from an existing scene, place the device to be removed in SETUP mode. Tap the scene actuator on the US2 exactly 8 times to remove the device from the scene.
- To change light levels on an existing scene, activate the scene then set the levels as desired. When levels are set tap the scene actuator on the US2 exactly 7 times to modify the scene.