



UPB Dual Output, Universal Dimming Transceiver Base Model US22-40

Provides two ON/OFF, dimming and Timed OFF outputs for:

- Incandescent lighting
- Magnetic low-voltage lighting
- Halogen lighting

IMPORTANT!

Read This Before Installing!

- This incandescent dimmer **cannot be used to dim FLUORESCENT, ELECTRONIC LOW-VOLTAGE or METAL HALIDE lighting**, unless specifically allowed by the lighting manufacturer. **Please see instructions** to configure this product for ON/OFF operation (dimming disabled) with these types of lighting.
- **DO NOT WIRE HOT!** Permanent damage may result. Improper installation voids the warranty.

Model US22-40 shown with actuator faceplate (sold separately)



FUNCTION

The SimplyBrilliant™ UPB Dual Output, Universal Dimming Transceiver Base, model US22-40, provides two direct load controls and remote control of permanently-installed new or existing lighting fixtures, lamps and other electrical devices connected to UPB devices. Incandescent lamps can be turned ON or OFF, and can also be dimmed and brightened. The US22 can be configured to turn other types of non-dimmable loads ON and OFF. The timer function can be preset and automatically turn OFF loads, like bathroom lights, fans or heat lamps. Actuator faceplates, model ZSXX series, available in rocker and pushbutton styles, are interchangeable on the US22 base. The US22 can be configured to control two loads of up to 550W each (see table 1) and provide scene control. Load control can be configured to any rocker or button on the various actuator faceplates. All switch actuators may act as transmitters of UPB lighting scene-links, communicating with other UPB devices - individually or collectively.

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 Dual Output, Universal Dimming Transceiver Base (US22-40) 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 INSTALL TO CONTROL A RECEPTACLE. The default switch configuration operates as a dimmer for incandescent lamps. It will also dim magnetic low-voltage and halogen lamps. To control 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 INSTALLER POUR COMMANDER UNE PRISE. La configuration de changement implicite opère comme un variateur pour les lampes incandescentes. Il baissera aussi le voltage bas magnétique et les lampes d'halogène. Contrôler le voltage bas fluorescent, électronique ou le métal halide les lampes, ou les appareils opérés de moteur, les appareils fournis de transformateur ou les fans, e changement doit être reconfiguré pour SUR/DE l'opération (baissant rendu infirme) avant l'utilisation. Faites allusion à la section sur la Configuration.

 **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 derating table below.

Table 1: *Ganging Derating		Number of Dimmers in J-box		
		1	2	3+
Number of J-box Gangs	1	800W	--	--
	2	900W	500W	--
	3+	1100W	700W	350W

*Total watts – both channels; not to exceed 550W per channel.

2. Disconnect power at the circuit breaker.
3. Remove the existing wall switch hardware. Disconnect the wires to the switch.
4. Using a wire nut, connect all white (Neutral) wires together including white wire of US22.
5. Using wire nuts, connect the US22's BROWN channel 1 (output load) wire to the black wire of the first device load and RED channel 2 (load output) wire to the black wire of second device load to be controlled. **DO NOT CONNECT BOTH BROWN AND RED LOAD WIRES TOGETHER; ONE CHANNEL MAY OVERLOAD.**
6. 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. Refer to the wiring diagrams on pages 3 and 4.
7. Using a wire nut, connect the black (Line) wire of the US22-40 switch to the black (Line) power wire.
8. Mount the switch inside the J-box using captive screws. **DO NOT OVER TIGHTEN THE SCREWS.**
9. Reconnect power at the circuit breaker.



CONFIGURATION

Configuration requires UPB setup/configuration software, called [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 US22-40 default settings are preconfigured for a ZS24 (quad rocker) faceplate. The default settings ensure that both loads will operate locally with most 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 (Link #241 channel 1, Link #242 channel 2). When using UPStart, this is done by selecting the faceplate "device type" when adding the device to the network.

SETUP MODE

When configuring a UPB system, it is often necessary to place the US22 in SETUP mode in order to initiate self-identification on the powerline. To place the US22 in SETUP mode, tap any rocker/pushbutton exactly 5 times consecutively. The LED indicator will repeatedly pause and blink 2 times GREEN when the unit is in SETUP mode. Module will stay in SETUP mode for five minutes. Once the US22 has been added to the powerline network, UPStart will put the US22 back into Normal mode. To EXIT SETUP mode manually, and enter NORMAL mode, tap any rocker/pushbutton five 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 US22 is factory configured to accept a dual-short rocker (ZS22), or a quad-rocker (ZS24) faceplate, where the top-left (#1) and bottom-left (#2) rockers provide ON/OFF and dimming control functions for the channel 1 and channel 2 connected light fixtures (local loads), respectively. The local loads may be assigned to ANY rockers or buttons using a lighting scene-link, which must be present in both the transmit and receive tables of the device, accessible via UPStart. The factory default scene-links for channel 1 and channel 2 local load controls are 'Link 241' and 'Link 242' respectively, with the transmit options disabled. The other rockers / buttons function as scene-link transmitters communicating with other UPB devices. Local loads may be included in any scene using the scene-link feature in UPStart. See illustration above for actuator numbering and functional examples below.



- Using a rocker configured scene-link on a US22 to control a (non-dimming) UPB Receptacle, Appliance Module or Fixture Relay Module, the Receptacle/Module's connected load can be turned ON by tapping the top rocker and OFF by tapping the bottom rocker. Pushbuttons can be configured for 'multi-button' mode (recommended) where single-tap is ON and double-tap is off, or toggle the load ON and OFF with one button push each (toggle mode - not recommended if more than one button controls the same scene). Fan motors and water pumps are usually controlled with ON/OFF switching instead of dimming (i.e. dimming disabled).
- Using a rocker configured scene-link to control a (dimming) UPB Dimmer Switch, Lamp or Fixture Dimmer Module, the connected load can be controlled according to the table above. Pushbuttons can be configured as a "Super Multi-Button" where a single-tap is ON, double-tap is off and press and hold dims up and down alternately.

An 'auto-off' timer function is available for each channel of the in the US22. Scene-links or rocker taps can turn ON the load and preset the timer period. The US22 automatically turns OFF at the end of the period. The available preset times are: 1 Sec., 5 Sec., 30 Sec., 1 Min., 2 Min., 4 Min., 10 Min., 20 Min., 30 Min., 40 Min., 50 Min., 1 Hr., 2 Hrs. 3 Hrs. and 4 Hrs. The default setting is: Timer Off.

To turn lights on faster, local response time adjustments are available (300, 450, 600 and the default 750 mSec) and configured with UPStart configuration software. Local response time is the time from rocker press to load response. Fast 300mSec response works well with rockers, toggle buttons and separate ON/OFF buttons; however switches with double tap functions (e.g. multi-button mode) may need to be set at a slower speed (e.g. 450mS) allowing users who tap slowly to utilize the function.

POWER DISCONNECTION

To disconnect power to the connected lamp fixture, depress the top of the rocker switch, grab the underside of the clear plastic (green/blue) indicator tab with your fingernail, pull the tab out about 0.2" until it stays in place. The LED indicator will extinguish to show that power is now disconnected. To reconnect power, simply push the tab back into its normal position.

OVERLOAD PROTECTION

The US22 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 change color in the field without disconnecting the switch from the wall. Changing faceplate function types requires re-configuration via UPStart.

To install a faceplate assembly, do the following:

- 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, upgrading functionality or to changing color, do the following:

- Remove the wall plate from the switch.
- Using the thumb and index finger, press the top two 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 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 faceplate assembly.

To change faceplate labeling, do the following:

- Remove the clear plastic label cover on the oval or thin-bar button faceplate by lifting the side with a finger nail or small screwdriver.
- 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.

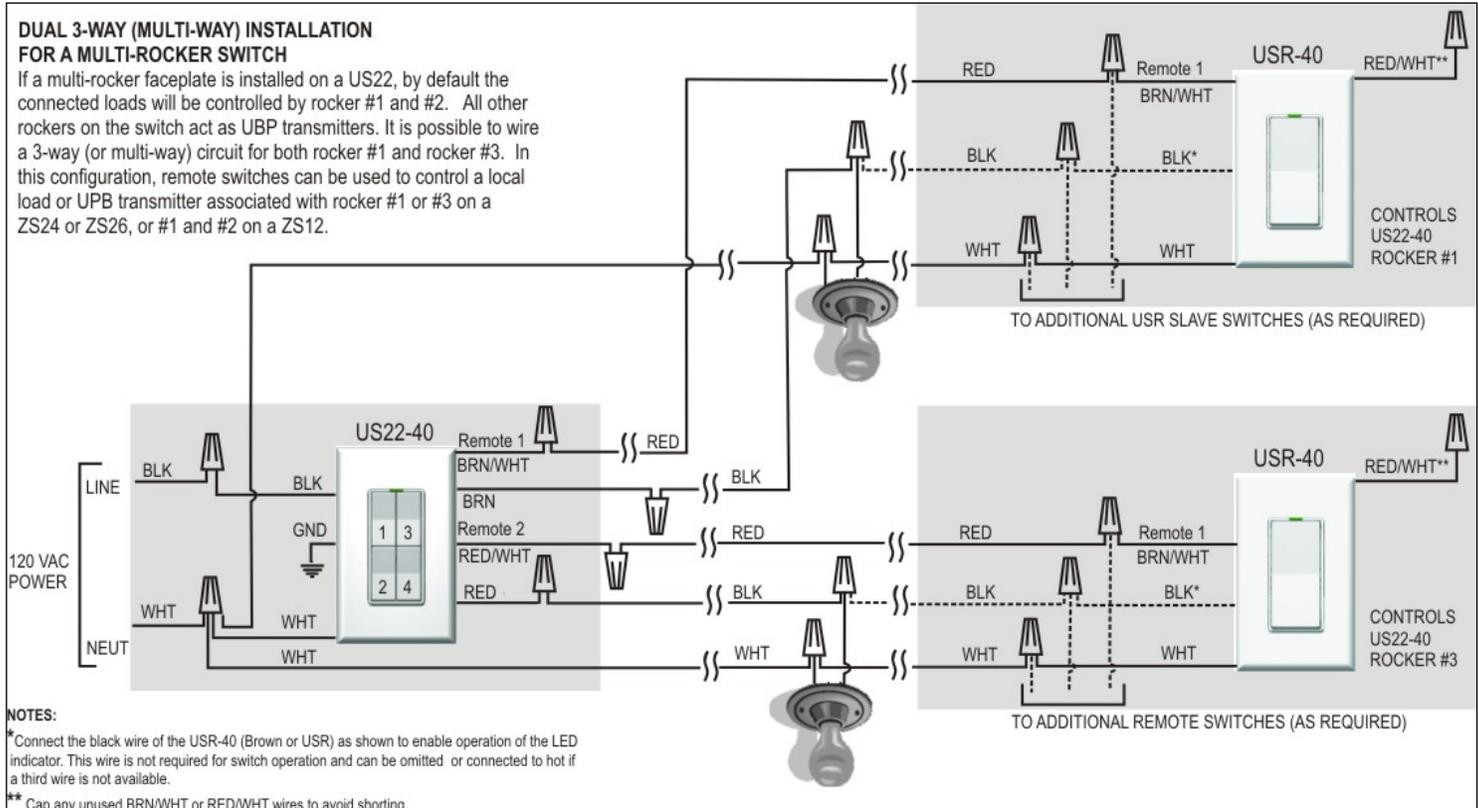
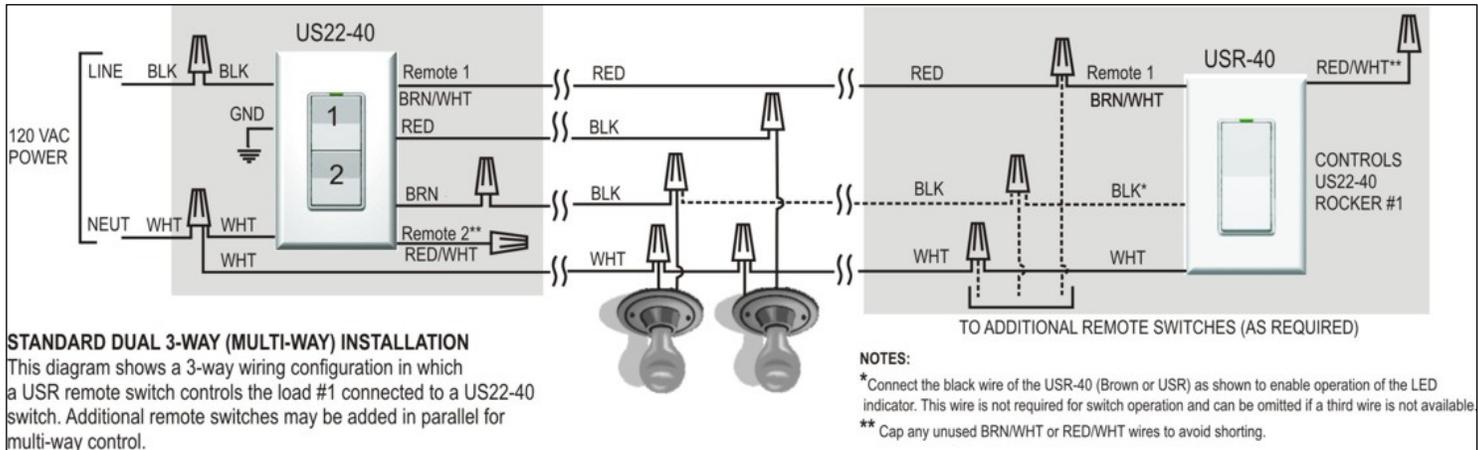
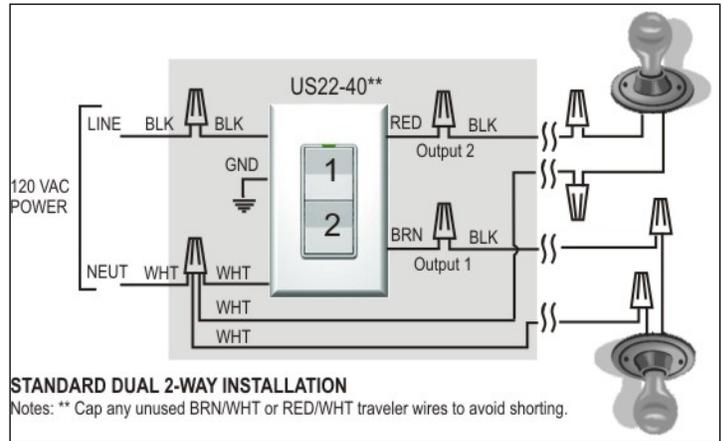
Universal Dimming Transceiver Base

Model US22-40

UPB FACTORY DEFAULT SETTINGS

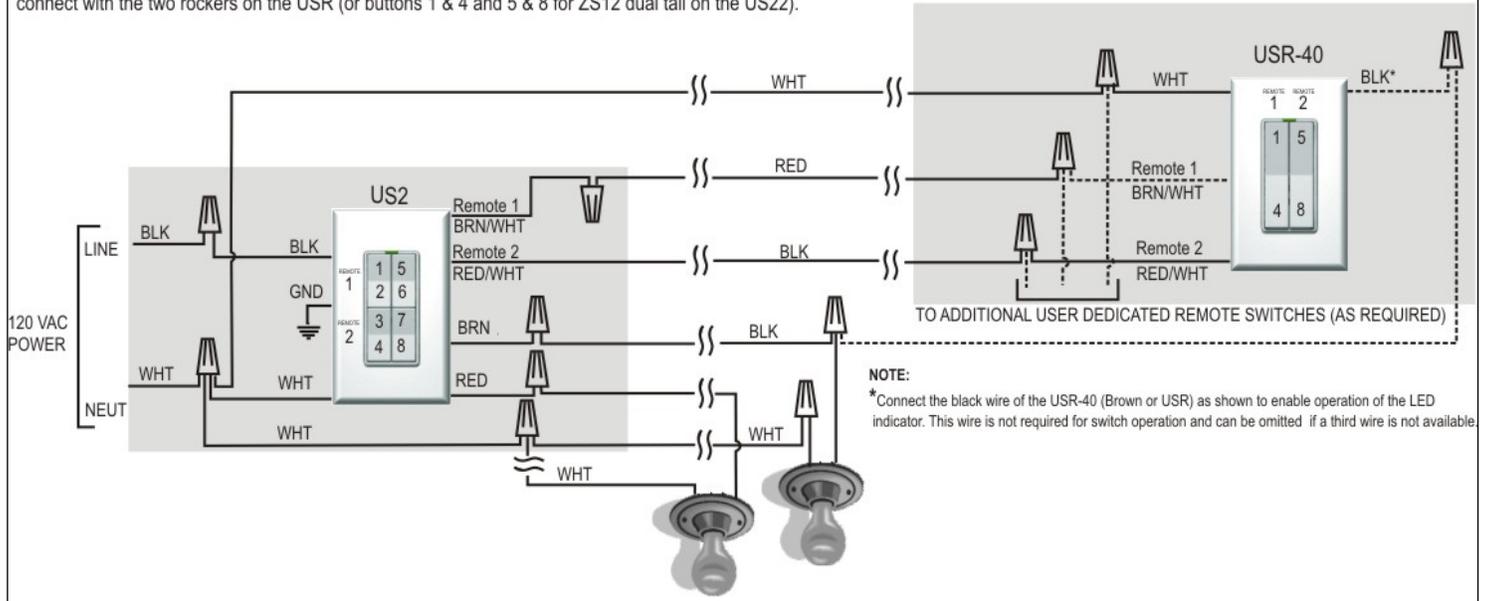
To restore the following default settings, place the US22 in SETUP mode (5 tap) and then tap any actuator exactly 10 times. The indicator will pause then blink BLUE two times repeatedly. Tap the actuator 5 times again to finish.

Network Name	"Network 1"	
Room Name	"New Room Name"	
Device Name	"New US22-40"	
Unit ID	62	
Network ID	255	
Network Password	0000	
Rocker 1 Top	Transmit Link	241 (internal)
Rocker 1 Bottom	Transmit Link	241 (internal)
Rocker 2 Top	Transmit Link	242 (internal)
Rocker 2 Bottom	Transmit Link	242 (internal)
Rocker 3 Top & Bottom	Transmit Link	1 (transmit enabled)
Rocker 4 Top & Bottom	Transmit Link	2 (transmit enabled)
Receive Links	241 and 242 (internal)	



DUAL-ROCKER, DUAL 3-WAY (MULTI-WAY) INSTALLATION

If a multi-rocker faceplate is installed on a US22-40, by default from the factory, the connected load will be controlled by the top-left and bottom-left rockers. All other rockers on the switch act as UPB transmitters. If a dual-rocker is installed on a USR, it is possible to wire a 3-way (multi-way) circuit such that the top-left rocker (or buttons 1 & 2 on a multi-button) and top-right rocker (or buttons 5 & 6) of the US22 will connect with the two rockers on the USR (or buttons 1 & 4 and 5 & 8 for ZS12 dual tall on the US22).



MANUAL SCENE MODIFICATION

Once the US22-40 has been initially configured, it is possible to make scene changes (e.g. default scene-link 1 and 2) without configuration software.

- To modify a scene-link for one of a transmitting device's 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 transmitting device exactly 7 times to create the scene and store the light levels.
- To add a device **other than a US22** to an existing scene, activate the scene and set the light level on the device to be added. Place the device in SETUP mode and tap the scene actuator on the transmitting device exactly 7 times to modify the scene.
- To add a **US22** to an existing scene, activate the scene and set the light level of the US22 channel(s) to be added. Place the US22 in setup mode and then to add specific channel(s)...**add channel 1** by tapping the US22 1 time – wait 3 seconds and tap 1 more time (green/blue LED flash) ; or **add channel 2** by tapping the US22 1 time (blue/green LED); or **add channels 1 and 2** by tapping the US22 2 times – wait 3 seconds and tap 2 more times (green/blue LED); all followed by tapping the transmitting device's actuator button 7 times.
- To remove a device from an existing scene, place the device to be removed in SETUP mode. Tap the scene actuator on the transmitting device exactly 8 times to modify the scene.
- To change light levels on an existing scene, set the levels as desired and tap the scene actuator on the transmitting device exactly 7 times to modify the scene.

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).	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.
	Switch faceplate may be incorrectly selected in UPStart	Select the correct faceplate in UPStart
Buttons and/or rockers stick or don't actuate properly when pressed.	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.
	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.
Load turns ON and OFF regularly without actuation or command.	Switch is overloaded.	Reduce the power load by removing bulbs from the circuit.
	Switch is dimming a load that is not rated for use with incandescent dimmers.	Reconfigure the switch for ON/OFF operation with no dimming (using UPStart, for example).
Communication or switched links to other UPB devices are intermittent.	Linked UPB devices are on other phase of the homes' 2 phase power.	Install an inverting phase coupler at each breaker panel. Perform UPStart 'Communications Test' tool to measure signal strength and presence of noise.