Model US2-40

UPB Universal Dimming Transceiver Base Model US2-40

Provides ON/OFF and dimming control 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 (i.e. fixture can be controlled by a standard dimmer). Please see instructions to configure this product for ON/OFF operation with non-dimmable types of lighting.
- **DO NOT WIRE HOT!** Permanent damage may result. Improper installation voids the warranty.

Model US2-40 shown with 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. Incandescent lamps 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. Actuator faceplates, model series ZS1X and ZS2X, available in rocker and/or pushbutton styles, are fully interchangeable on 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 a load of 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 MODE URD. 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 SE CONNECTER A RECIPIENTS, UTILISEZ URD MODELE. La configuration de change ment 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 de-rating table below.

<table>
<thead>
<tr>
<th>Table 1: Power per Dimmer</th>
<th>Number of Load Dimmers in J-box</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Number of J-box Gangs</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3+</td>
</tr>
</tbody>
</table>

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.
Universal Dimming Transceiver Base

Model US2-40

CONFIGURATION

Configuration requires UPB setup/configuration software 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, in order to initiate self-identification on the powerline. To place the US2 in SETUP mode, tap any rocker/pushbutton exactly 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 twice.

OPERATION

Unless otherwise configured, rocker actuators behave as follows:

<table>
<thead>
<tr>
<th>Rocker Event</th>
<th>Dimmer Action</th>
<th>Top Rocker</th>
<th>Bottom Rocker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Tap</td>
<td>Brighten to 100% at Default Rate</td>
<td>Fade to 0% at Default Rate</td>
<td></td>
</tr>
<tr>
<td>Double-Tap</td>
<td>Snap to 100%</td>
<td>Snap to 0%</td>
<td></td>
</tr>
<tr>
<td>Hold</td>
<td>Start brightening to 100% at Default Rate</td>
<td>Start fading to 0% at Default Rate</td>
<td></td>
</tr>
<tr>
<td>Release</td>
<td>Stop brightening and hold current level</td>
<td>Stop fading and hold current level</td>
<td></td>
</tr>
</tbody>
</table>

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 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. 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:

1. 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.
2. Align the four prongs on the side of the faceplate assembly with the four slots on the switch body.
3. 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.
4. 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 to upgrade functionality or to change color, do the following:

1. If installed in a junction box, remove the wall plate framing the switch.
2. 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.
3. 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.
4. 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:

1. Remove the clear plastic label cover on the oval or thin-bar button faceplate.
2. Flip label over to hide switch numbers, or change color in the field without disconnecting the switch from the wall.
3. If custom labels are preferred, order the custom label kit, (Model ZLK-01, specify color) to print your own labels.

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.
STANDARD 3-WAY (OR MULTI-WAY) INSTALLATION
This diagram shows a 3-way wiring configuration in which a USR-40A (for older models refer to USR-40 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.

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 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.
Universal Dimming Transceiver Base Model US2-40

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.

TROUBLESHOOTING

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>PROBABLE CAUSE</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master switch is wired properly but has no power (e.g. LED indicator is OFF).</td>
<td>Air gap power disconnect may be disengaged (pulled out).</td>
<td>Push light pipe (LED indicator) back into position flush with faceplate assembly housing.</td>
</tr>
<tr>
<td>Master switch actuator doesn’t turn load ON and/or OFF (e.g. LED indicator is ON).</td>
<td>3-way remote switch actuator may be binding, causing the switch to be stuck ON or OFF.</td>
<td>Loosen mounting screws on remote switch and/or wallplate to relieve pressure on housing.</td>
</tr>
<tr>
<td>Buttons and/or rockers stick or don’t actuate properly when pressed.</td>
<td>Mounting screws may be too tight or j-box may be deformed, causing the switch body to warp.</td>
<td>Loosen mounting screws to relieve pressure on the switch body.</td>
</tr>
<tr>
<td>Load turns ON and OFF regularly without actuation or command.</td>
<td>Switch is overloaded.</td>
<td>Exercise actuator several times to ensure proper seating and operation.</td>
</tr>
<tr>
<td>Switched links to other UPB devices are intermittent.</td>
<td>Linked UPB devices are on other phase of the homes’ 2 phase power.</td>
<td>Install a phase coupler at each breaker panel. Perform UPStart “Communications Test” to measure signal strength and presence of noise.</td>
</tr>
</tbody>
</table>

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”
Device Name: “New SA US2-40”
Network ID: 29
Network Password: 255
Rocker 1 Top: Transmit Link 241 (internal)
Rocker 2 Top: Transmit Link 11 (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 initially configured with scene links associated to actuators, it is possible to make scene changes without a PC.

1. 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.
2. 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.
3. To remove a device from an existing scene, remove the device from the scene.
4. To change light levels on an existing scene, activate the scene and set the levels as desired. When levels are set tap the scene actuator on the US2 exactly 7 times to modify the scene.