



Part No S0811011

Description:

Installing a Budderfly adapter transforms your building's existing wiring into the "Budderfly Open Network" and allows the adapter to monitor energy consumption and communicate the data to a facility controller. Budderfly adaptors will use the existing power line and the RF for communication and thus require no re-wiring. Using our Budderfly software, you can visualize consumption data and manage each individual adapter. The Budderfly Multi-Way light switch is a component of the Budderfly system and designed to work with all other Budderfly devices. It is a plug-and-play replacement for your existing light switch. Once installed, the Budderfly switches also act as repeaters to extend the range of the network and increase efficiency.



WARNING –ELECTRICAL SHOCK HAZARD

- The Budderfly Multi-Way lightswitch is intended for installation in accordance with the National Electric Code and local regulations in the United States.
- If you are not knowledgeable or comfortable with electrical circuitry, you should have a qualified electrician install the Budderfly Multi-Way lightswitch for you.

This device is designed for use only with permanently installed fixtures.



Warning

RISK OF FIRE / ELECTRICAL SHOCK / BURNS

Exercise extreme caution when using Budderfly switching devices to control appliances.

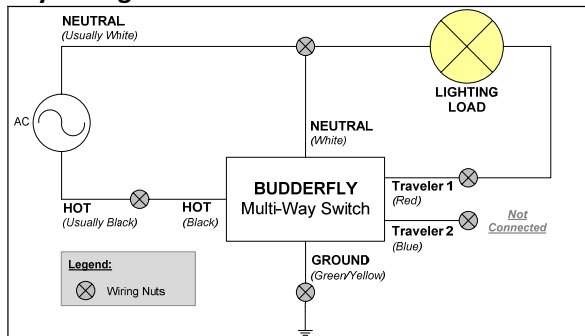
To avoid the risk of Fire, Electrical Shock, Burns or other hazards we recommend the following:

- Install the Budderfly switches indoor only.
 - Never use the Budderfly switches to control medical and/or life support equipment.
 - Do not use the Budderfly switches to control electric heaters or any other appliances which may present a hazardous condition due to unattended or unintentional power on control.
- Never use the Budderfly switches with loads that exceed the maximum rating specified.

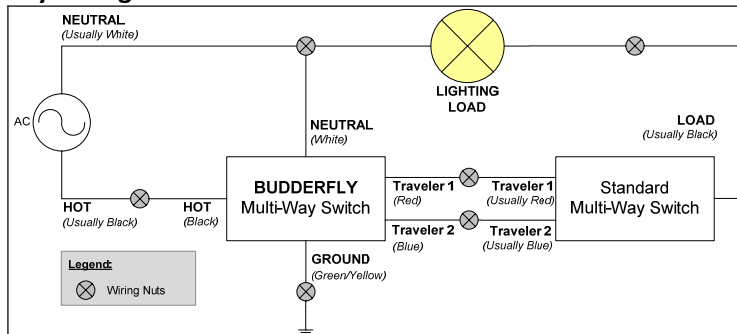
Installation:

The Budderfly Multi-Way light switch may be used in new installations or to replace an existing wall switch. It could be used either as a 2-way switch, or as a 3-way switch. The wiring steps for both configurations are explained in the following diagrams:

2-Way Configuration:



3-Way Configuration:



Wiring Information

- Important:** Budderfly switches are rated for and intended to be used only with copper wires.
- Use 12 AWG or larger wires suitable for 80°.
- Remove 3/4" (1.9 cm) of insulation from each wire.
- Connect as follows: Twist strands of each end tightly together. Hold bare ends of wires together and push firmly into wire Nut. Screw Nut clockwise making sure that no bare conductor shows below the connector.



WARNING –ELECTRICAL SHOCK HAZARD

- Turn OFF the power to the branch circuit for the switch and lighting fixture at the service panel.
- All wiring connections must be made with the POWER OFF to avoid personal injury and/or damage to the switch.

1. At the circuit breaker or fuse panel, disconnect the power for all of the circuits in the switch junction box.
2. **Double Check that the power is OFF to the switch box before continuing by trying to turn on the controlled load.**
3. Remove the wall plate from the switch you are replacing. Then, unscrew the switch itself and pull it out from the junction box.
4. Disconnect the wires from the switch you are replacing.
5. Follow the wiring information provided below to connect the wires as follows:
 - Connect the GROUND (usually Bare Copper or Green) to the Ground wire of Budderfly Switch (Yellow & Green).
 - **2-Way configuration:**
 - Connect the LOAD wire (usually Black) that goes to the light to the Traveler#1 (Red) wire of Budderfly Switch.
 - **3-Way configuration:**
 - Connect the Traveler#1 (Usually Red) and Traveler#2 (Usually Blue) wires of the Standard Multi-Way Switch to the Traveler#1 (Red) and Traveler#2 (Blue) wires of Budderfly Switch respectively.
 - Connect the LOAD wire (usually Black) that goes to the light to the LOAD wire (usually Black) of the Standard Multi-Way Switch.
 - Connect the LINE wire (usually Black) that comes from the electrical service panel to the HOT wire of Budderfly Switch (Black).
 - Connect the NEUTRAL wire (usually White) to the Neutral wire of Budderfly Switch (White).
6. After you have connected all of the wires, ensure that all of the wire connectors are firmly attached and that there is no exposed copper except for the GROUND wire.
7. Gently place Budderfly switch into the junction box, orienting the unit with the LED bar on the left. Then, screw the switch into place.
8. Reinstall the wall plate
9. Enable power to the switch from the circuit breaker or fuse panel
10. After the Power LED comes on, test that the switch is working properly by turning the light on and off
11. Add the device address to the Budderfly web application.

Features:

- Remote On/Off control
- Manual On/Off control
- Ability to create a group of devices
- Ability to monitor power consumption
- LED indicators to show the state of the switch

On/Off Control:

- Remote Control:
 - o The Budderfly switches can be controlled remotely thru the Budderfly software.
 - o The Budderfly software will inform you that the action was successful. In case the action failed, please repeat the procedure
- Manual Control: In addition to the Remote control, the Budderfly switches can be controlled manually. Tap the top or bottom of the rocker toggle the state connected load.

Device Grouping:

- Using the Budderfly web application, it is possible to create a Group of devices that can be controlled remotely simultaneously with just one click.
- Budderfly switches can join/disjoin groups at any time.

Power consumption:

Budderfly switches will measure the current, voltage, power and energy consumed by the connected load, and will store the cumulative energy consumption. The data can be accessed at any time thru the Budderfly software. The user can generate reports, monitor the consumption or check expenses.

LED Indicators:

The Budderfly switches are equipped with two LEDs to indicate the current state of the device. The behavior of these LEDs is explained in the following table:

Status	Red LED		Green LED	
	ON	OFF	ON	OFF
Device is not powered.		X		X
Device is powered. Lighting load is OFF.	X			X
Device is powered. Lighting load is ON.		X	X	

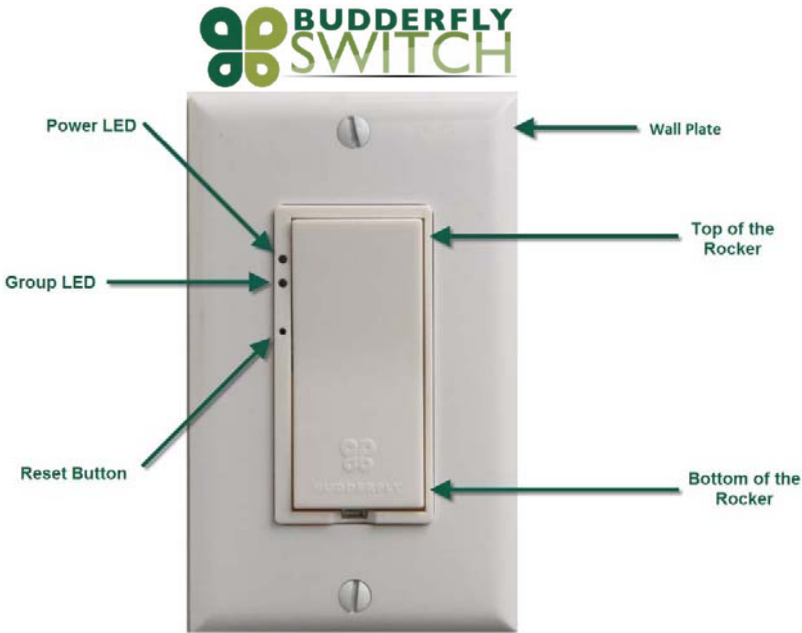
Reset:

If the device stops responding, it can be restarted by pushing the Reset Button. A non-metallic pin should be used to push the reset button. None of the stored parameters will be affected.



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- Never use a metallic pin to press the reset button.



Communication:

The Budderfly Multi-Way light switches use the power line and radio frequency to communicate with the Budderfly Facility Controller.

The switches have the capability to respond to (but not limited to) the following commands:

- Turn ON/OFF: The connected lighting load will turn ON/OFF.
- Join/Disjoin group “X”: The switch will Join/Disjoin the group “X”. Each switch can be a member of several groups at the same time.
- Direct RTC synchronization: The switch can receive a command to synchronize its “Real Time Clock”
- Get Actual Measurement: When the switch receives a “Get Measurement” command, it will send back to the facility controller a string of data that contains:
 - The Current in Ampere “A”.
 - The Power in Watt “W”.
 - A Timestamp.
- Get Stored Measurement: The switch will send back to the Facility Controller the stored electrical measurements.
- Direct Reset Commands: The switch can receive 3 types of reset commands:
 - Hard Reset: This command will restart the device without affecting any stored parameter.
 - Data Reset: This command will erase all the measurement and RTC data stored in the non-volatile memory.
 - Disjoin Group: This command will remove the device from all the joined groups.
- Group Reset Commands: The above reset commands can be directed to a group of devices instead of just one device.

Specifications:

- Power: 120V - 277V AC/ 60Hz
- Maximum Loads:
 - o 120VAC, 60 Hertz: 1600W for Tungsten, 1400W for Electronic ballast, 800W for Standard ballast
 - o 277VAC, 60 Hertz: 3300W for Electronic ballast, 1200W for Standard ballast.
- Neutral Line: Required
- Operating Temperature: 0°C to +40°C
- Certification: UL & FCC certifications are in progress
- For indoor use only

Specifications are subject to change without prior notice due to continuous product improvement.

Warranty:

Budderfly LLC warrants to the original consumer purchaser and not for the benefit of anyone else that this product at the time of its sale by Budderfly is free of defects in material and workmanship under normal and proper use for a period of three (3) years from date of delivery to you. Budderfly’s only obligation is to correct such defects by repair or replacement, at its option, if within such three year period the product is returned prepaid via Budderfly’s Returned Materials Authorization (RMA) process to **Budderfly LLC, Att: Quality Assurance Department, 2 Trap Falls Road, Suite 507, Shelton, CT 06484**. In no case is product to be returned without first obtaining an RMA.

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 is required by the applicable jurisdiction, the duration of any such implied warranty, including merchantability and fitness for a particular purpose, is limited to three years. **Budderfly 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. Budderfly’s liability on any claim for damages arising out of in connection with the manufacture, sales, installation delivery, or use of the product shall never exceed the purchase price of the product.** The remedies provided herein are the exclusive remedies under this warranty, whether based on contract, tort or otherwise.



Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment

FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

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.

The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS OR CHANGE TO THIS EQUIPMENT. SUCH MODIFICATIONS OR CHANGE COULD VOID AND CHANGE AN ANTENNA WHICH THE MANUFACTURER PROVIDES. IT IS THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

FCC ID: QCVS0811011

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