# 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 use the existing power line for communication and thus require no re-wiring.

Using our Budderfly software, you can visualize consumption data and manage each individual adapter.

The Budderfly Dual Band Outlet is a component of Budderfly system and designed to work with all other Budderfly devices. It is a plug-and-play replacement for your existing Outlet. Once installed, The Budderfly outlets also act as repeaters to extend the range of the network and increase efficiency.

**Part No R0710021**
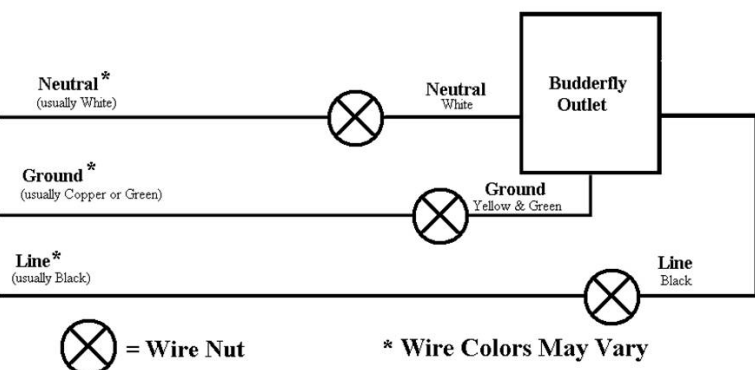
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## WARNING –ELECTRICAL SHOCK HAZARD

- The Budderfly Dual Band Outlet 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 Dual Band Outlet for you.

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## Warning

- Install the Budderfly Dual Band Outlets indoor only.
- Never use the Budderly Outlets to power medical and/or life support equipment.
- The equipment plugged into this Budderfly Dual Band Outlet must not exceed 2400W at 120VAC.

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# Installation:

The Budderfly Dual Band Outlet may be used in new installations or to replace an existing Outlet. The wiring schematic will be as per below:



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 Outlet by trying to turn on a device connected to the plug before continuing.*
3. Remove the wall plate from the plug you are replacing. Then, unscrew the outlet itself and pull it out from the junction box.
4. Disconnect the wires from the outlet you are replacing.
5. Follow the Wiring information provided below and connect the wires as follows:
- Connect the GROUND wire (usually Bare Copper or Green) to the Ground wire of Budderfly Dual Band Outlet (Yellow & Green).
- Connect the LINE wire (usually Black) that comes from the electrical service panel to the HOT wire of Budderfly Dual Band Outlet (Black).
- Connect the NEUTRAL wire (usually White) to the Neutral wire of Budderfly Dual Band Outlet (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 Dual Band Outlet into the junction box. Then, screw the Outlet into place.
8. Reinstall the wall plate
9. Enable power to the Outlet from the circuit breaker or fuse panel
10. Add the device address to the Budderfly software.

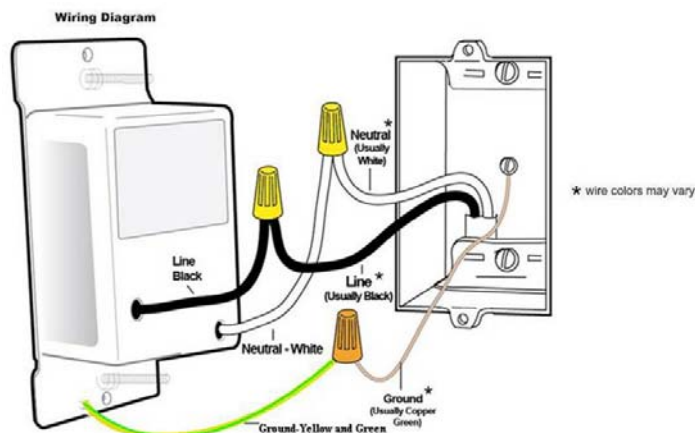## ⚠ WARNING –ELECTRICAL SHOCK HAZARD

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

## ⚠ Wiring Information

- **Important**: Budderfly Outlet is rated for and intended to only be used with copper wire.
- 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 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:** If you are not sure about any part of the above instructions, consult a qualified electrician.

# Features:
- Ability to create a group of devices
- Ability to monitor power consumption
- LED indicator to show the state of the Outlet

*Device Grouping:*
- Using the Budderfly software, it is possible to create a Group of Outlets.

*Power consumption:*
The Budderfly Dual Band Outlets will measure the current, the voltage and the power consumed by the connected load, and will store the minimum, maximum and average data for the past 7 days.
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 Outlets are equipped with 1 bi-Color LED that will indicate the state of the device.
LED is Off: The Budderfly Outlet is not powered.
LED is Red: The Budderfly Outlet is On and not member of a group.
LED is Green: The Budderfly Outlet is On and is member of a group.

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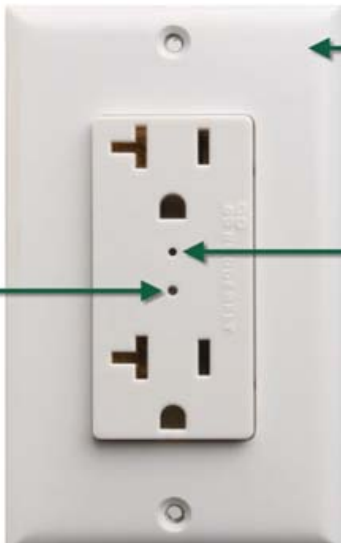If the device stops responding, it can be restarted by pushing the Reset Button.
A non-metallic pin should be used to push the reset button.
None of the stored parameters are affected.

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⚠ **WARNING –ELECTRICAL SHOCK HAZARD**
- Never use a metallic pin to press the reset button.

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# Specifications:
Power: 120VAC/ 60Hz
Maximum Loads: 2400W, 20A (max), 1 HP.
Operating Temperature: 10 $^o$C to +40$^o$C
Certification: UL Certification is in progress
For indoor use only

Specifications subject to change without notice due to continuing product improvement.

# Communication:
The Budderfly Dual Band Outlets use the power line and radio frequency to communicate with the "Facility Controller".
The outlets can reply to the following commands:
- Join/Disjoin group "X": The outlet will Join/Disjoin the group "X". Each outlet can be a member of several groups at the same time.
- Direct RTC synchronization: The outlet can receive a command to synchronize its "Real Time Clock"
- Get Actual Measurement: When the outlet 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 outlet will send back to the Facility Controller the stored electrical measurements.
  - Direct Reset Commands: The outlet 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.
    - Group Reset: 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.

# 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.

## ⚠ WARNING

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.

FCC ID: QCVR0710021
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