# RIPEENERGY Gateway
# RB-Bi-Directional Relay

RIPEENERGY Gateway RB-Bi-Directional Relays are designed to switch a source to a load, or switch current between two sources. Devices are strictly DC, and have no mechanical contacts or moving parts which means no arcing or degradation in performance over time. Much like conventional relays, devices are provided an input trigger signal to turn on or off. An integrated microcontroller provides additional functionality including:

— differentiation between in-rush and shorted conditions
— response to low or high voltage thresholds
— timers to delay turn on or off
— Five levels of overcurrent protection
— Four levels of under-voltage protection
— Four levels of over-voltage protection
— Two levels of circuit-break shutdown and three options for reset
— Remote LED outputs for monitoring of device status and faults
— over temperature protection
— precision circuit breaker functionality
— fault status and troubleshooting feedback

Bi-directional relay can be programmed to behave as follows:
— Circuit Breakers are specifically programmed for precision current monitoring and circuit breaking functionality.
— Voltage Sensitive Disconnects, also known as low voltage disconnects (LVD) are specifically programmed for popular low voltage/high voltage cutout applications.

## Benefits
— 99.9 % efficiency at max. current
— Fully Encapsulated solid state design
— Light weight
— Dramatically smaller than conventional devices
— Market-leading, ultra-low on-state resistance
— No heat sinks or airflow required
— Quik-turn capability
— Recommended by top battery manufacturers

## APPLICATIONS

Common uses include military, aeronautic, automotive, marine, industrial machinery, photovoltaic, and fleet utility.

The RIPEENERGY Gateway is factory programmable to behave as follows:
— Manually triggered relay
— Low Voltage Disconnect (fully autonomous)
— Combination of manual and automatic response
— Precision Circuit Breaker

## FEATURES

— Low voltage cutoff
— High voltage cutoff
— Overcurrent protection
— Overtemperature protection
— Timers / programmable Delays
— Manual override trigger
— Manual activation trigger
— Short circuit protection
— Voltage transient self-protection
— Fully autonomous operation
— On-board fault diagnostics
— Automatically disconnects loads preventing battery drain
— Automatically reconnects loads to th battery when a charging source is applied
— Automatically prevents loads from being disconnected from the battery during momentary dips in voltage due to high current draw like engine starting
— Prolongs battery life by preventing deep battery discharge
— Optional Sleep Mode for minimal quiescent current draw
— Easy to install with no external mechanical relays or wiring to fuss with
— Ultra-fast over-voltage response protects sensitive equipment like computers, GPS modules, and computers
— MIL STD 461E CE101 and RE102

# SPECIFICATIONS

| Gateway Model | | 12V device | 24V device |
|---|---|---|---|
| **Electrical Specifications** | | | |
| Nominal DC-Input Voltage | VDC | 4.8 - 18 | 4.8 - 36 |
| Maximum Continous Load Current | ADC | 50 - 600 | |
| Input to Output Voltage Drop | mVDC | 35 - 65 Typical | |
| Trigger Voltage | VDC | 3.3 - 36 | |
| Trigger Current | uADC | 173 | 413 |
| Operating Current | mADC | 18.1 Trigger @ 10VDC | 22 Trigger @ 10VDC |
| Quiescent Current Sleep Mode | mADC | 2.4 | 2.5 |
| Ambient Temperature | ° C | -40 to +105 | |
| Internal Overtemp Shutdown | ° C | 135 | |

Dimension are in Inches



Small Package

Medium Package

Large Package
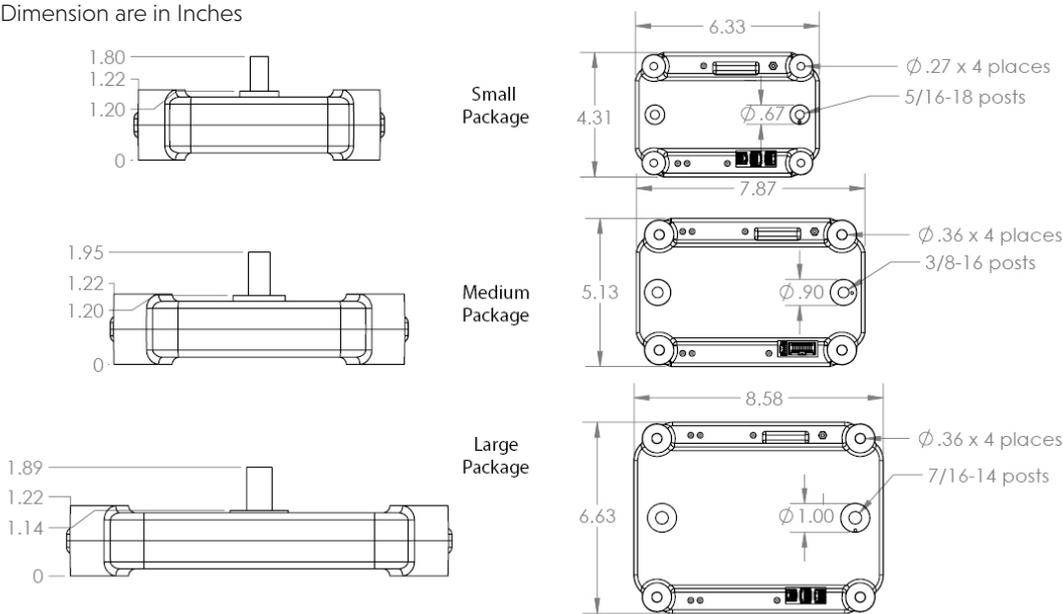
# SAMPLE APPLICATION
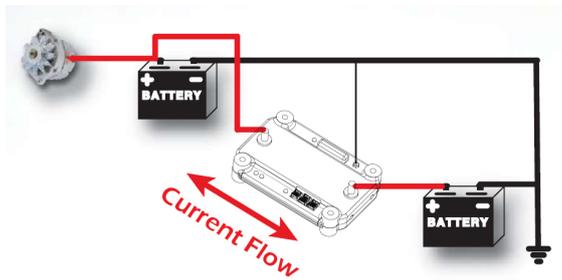


A Bi-directional relay must be used when voltage sources are present on both sides of the device in order to fully open the electrical circuit and insure no MOSFET damage occurs.
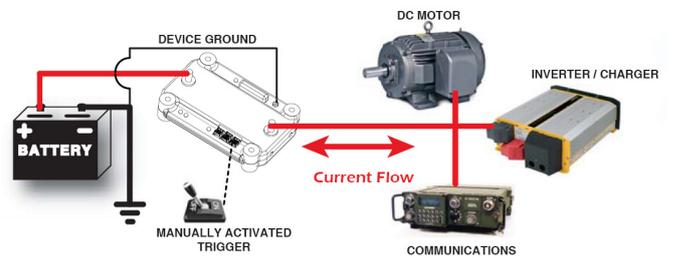
The RIPEENERGY Gateway Bi-directional relay can be manually activated or ignition-switched to power or de-power all high and low current accessories including motors, inverters, communications equipment, lighting, refrigerators/freezers and sensitive computer equipment.