

POWER-GATE™ Solid-State Devices Programmable OR'ing



Made in U.S.A

**up to 600 Amps
12 and 24 Volts**



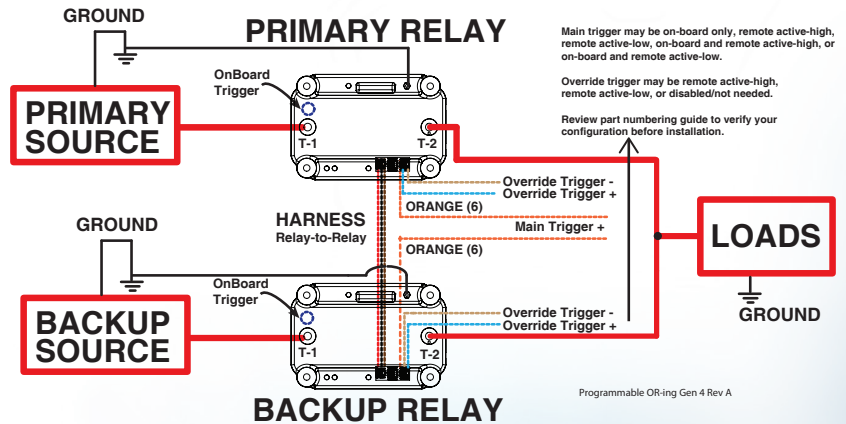
x2

Two solid state bi-directional relays can be used as an assembly to selectively drive one of two Sources to a Load based on specific programming dictated by the customer.

MOSFET-based devices provide high performance and reliable switching in mission-critical, rough duty environments.

POWER-GATE solid state Programmable OR'ing functionality is achieved using two, bi-directional solid state relays (RB devices). Designed to selectively OR one of two Sources to a Load, this configuration can be programmed to automatically conduct current from a pre-defined Master Source to the Load. When the Primary Source drops to a pre-defined low voltage threshold (or alternative metric), the device will "flip" and current from the secondary Slave Source will drive the load. The customer's application and performance requirements dictate how the devices will be programmed. Unlike the non-programmable OR'ing, the Programmable OR'ing has an associated 50us dead-time during the switching process, and some customers may opt to use a "hold-up" capacitor to provide power to the Loads during this dead-time. The nature of the application will dictate if a "hold-up" capacitor is used.

For Absolute Maximum Ratings, Recommended Operating Conditions, and Electrical Specifications, please view the Specification Sheet for the POWER-GATE Bi-Directional Relays located on our website. The information herein relates to the OR'ing when deployed as an RB assembly programmed to behave as a Programmable OR'ing.



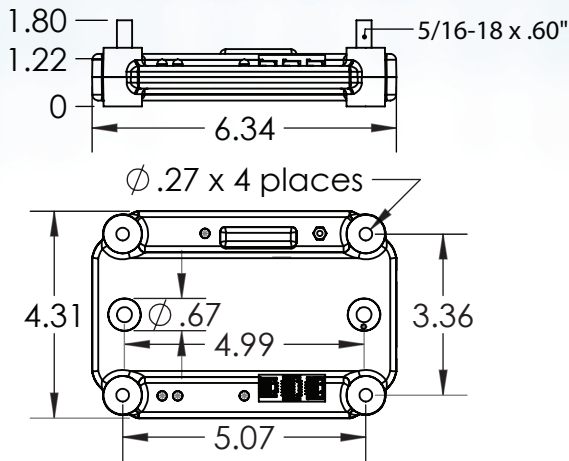
Programmable OR'ing Gen 4 Rev A

FEATURES and BENEFITS:

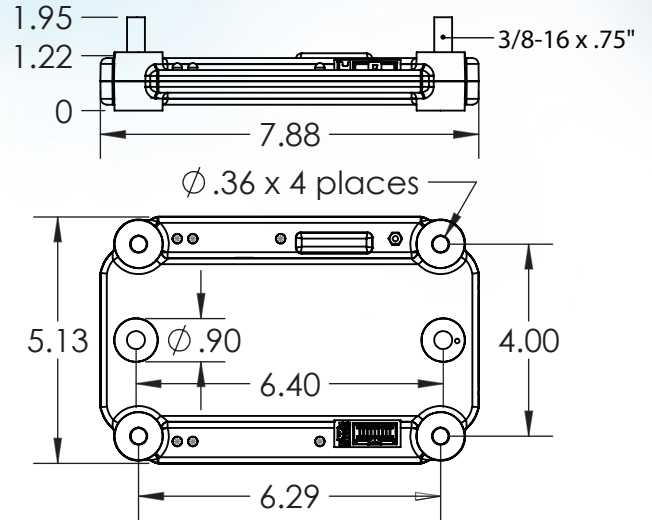
- Low voltage, high current capability
- Internationally patented arrayed MOSFET technology
- Two package options for currents up to 600 amps
- 99.9% efficiency at max. current
- Fully Encapsulated solid state design
- Light weight
- Dramatically smaller than conventional devices
- Market-leading, ultra-low on-state resistance
- Recommended by top battery manufacturers
- No heat sinks or airflow required
- Quik-turn capability
- LED indicators for visual feedback
- Overcurrent indication
- Overtemperature indication
- Voltage transient self-protection
- Fully autonomous operation

MECHANICAL SPECIFICATIONS:

SMALL PACKAGE



MEDIUM PACKAGE



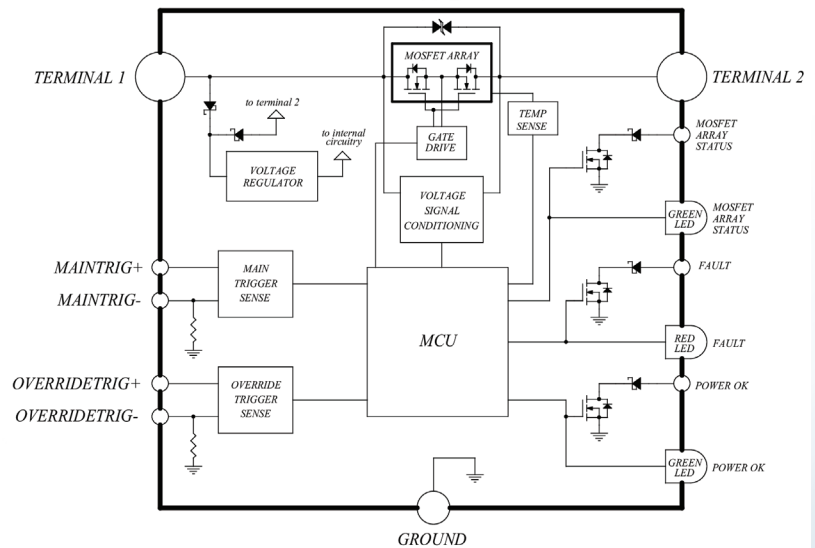
PACKAGE CHARACTERISTICS:

- Injection molded high temperature Polycarbonate
- Dow Corning Sylgard - aerospace electronics grade
- Five integrated LED's for visual status and diagnostics
- Four integrated reinforced mounting points
- Machined brass connection posts
- 6-32 brass ground post with provided ring terminal
- Molex control harness
- Vinyl post insulators
- Two enclosure size options, current depending

Quick Specs:

Supply Voltage	4.8 to 18 VDC (12 volt device) 4.8 to 36 VDC (24 volt device)
Ambient Temperature	-40 to +85 °C
Trigger Voltage	3.3 to 36 VDC
Maximum Continuous Load Current	50 to 600 amps DC
Input-to-Output Voltage Drop	35 to 65 mVDC Typical
Trigger Current	173 µADC (12 volt device) 413 µADC (24 volt device)
Operating Current	18.1 mAADC (12 volt device, trigger at 10 VDC) 22. mAADC (24 volt device, trigger at 10 VDC)
Quiescent Current Sleep Mode	2.4 mAADC (12 volt device) 2.5 mAADC (24 volt device)
Internal Overtemp Shutdown	135 °C

Programmable OR'ing Functional Block Diagram:

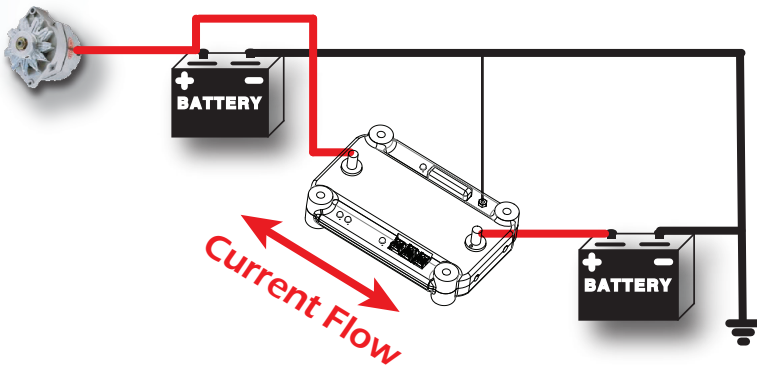


MOSFET ARRAY STATUS: on when MOSFET array is enhanced
 FAULT: on during over-current, short-circuit, circuit-break, over-temperature, and under- and over-voltage
 POWER OK: on when source voltage is above minimum allowable

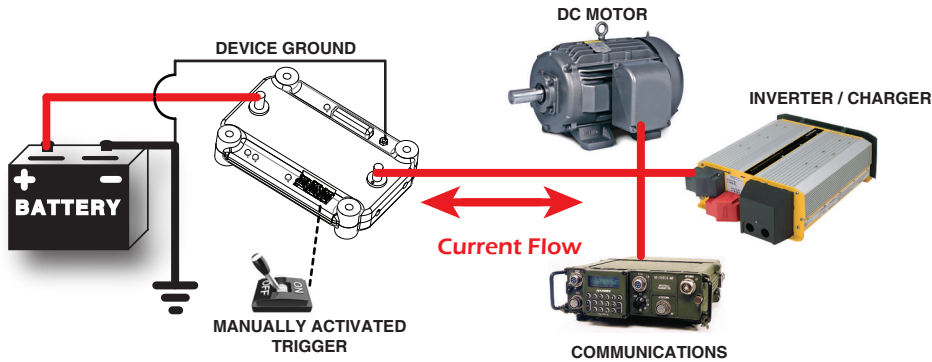
NOTES:

For complete specifications, please see device data sheet.

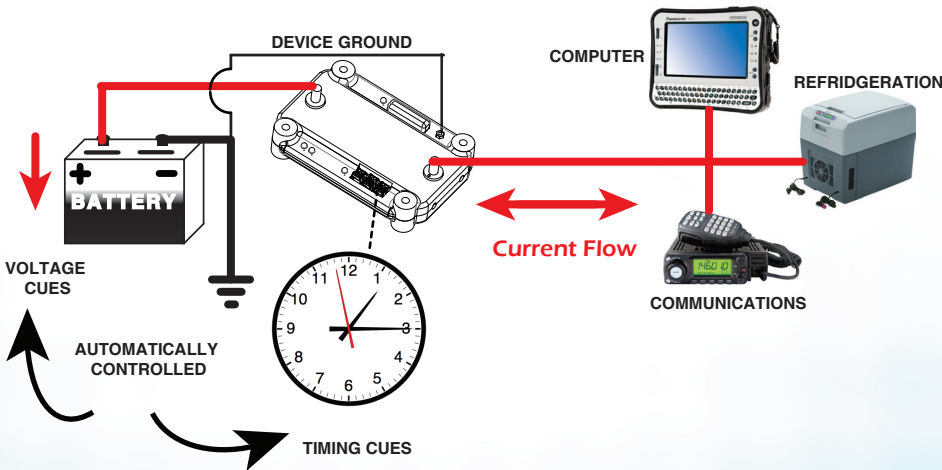
SAMPLE APPLICATION:



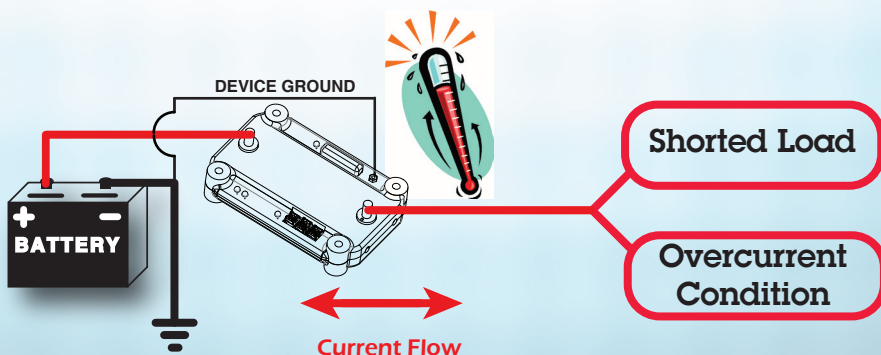
A Bi-directional relay must be used when voltage sources are present on both sides of the device in order to fully open the electrical circuit and insure no MOSFET damage occurs.



POWER-GATE 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.



POWER-GATE Bi-directional relay can be programmed to automatically respond to low-voltage or high voltage battery conditions, and various timing cues making the device highly customizable. The ability to handle both high and low current in a single, easy-to-install module makes **POWER-GATE** a compelling choice when programmed to behave as a low voltage disconnect and preserve battery health.



POWER-GATE Bi-directional relay can be programmed to respond as a precision circuit breaker. If the device senses a shorted load or an overcurrent condition, the device will "open" and de-power the output.

The device will also respond to over temperature conditions by sensing strategically placed sensors within the sealed module.