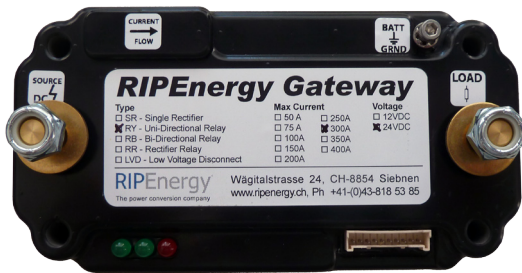


RIPEnergy Gateway RB-Bi-Directional Relay



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 RIPEnergy Gateway is factory programmable to behave as follows:

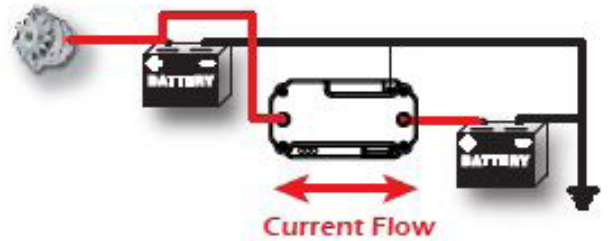
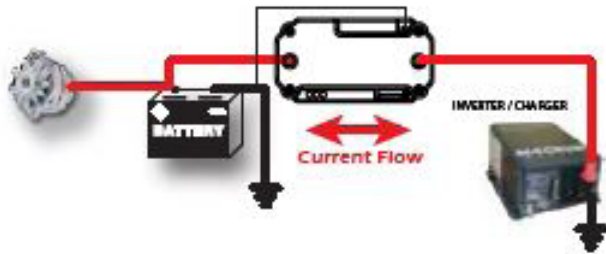
- Manually triggered relay
- Low Voltage Disconnect (fully autonomous)
- Combination of manual and automatic response
- Precision Circuit Breaker

Description

RIPEnergy Gateway RB-Bi-Directional Relays are designed to switch DC current up to 600 amps, and allow current to flow bi-directionally. An integrated microprocessor provides smart control including traditional Low Voltage Disconnect functionality to safeguard batteries. The device can be customized for OEM's serving various internal and external battery management applications. Often used in fleet applications, the device can be placed between a starting and auxiliary battery allowing the onboard logic to decide when to separate the batteries to insure vehicle start-up. A manual override trigger can force the device to join batteries together for self-jumping applications. Bi-Directional relays can behave in full automatic mode, respond to manual triggers, or both. Its on-board logic, low on-resistance, and high current switching make it a compelling choice for systems engineers and fleet operators alike.

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 the 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
- Optional MIL STD 461E



A solid state Bi-Directional Relay can be used to switch power between two batteries. Current can flow in both directions much like a mechanical relay. Reprogrammable logic causes the device to respond to differing voltage and timing cues, safeguarding batteries from deep discharge, or monitoring voltage, current, and temperature for various internal or external battery management applications.

Specifications

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
I _{MAX}	Maximum Continuous Load Current	-	-	50	ADC	Model RB50B, -40 °C ≤ TA ≤ +105 °C
		-	-	100		Model RB100B, -40 °C ≤ TA ≤ +105 °C
		-	-	150		Model RB150B, -40 °C ≤ TA ≤ +105 °C
		-	-	200		Model RB200B, -40 °C ≤ TA ≤ +105 °C
V _{DROP}	Input-to-Output Voltage Drop	-	40	50	mVDC	Load Current = I _{MAX}
		-	-	100		-40 °C ≤ TA ≤ +105 °C, Load Current = I _{MAX}
I _S	Operating Current	18	-	-	mADC	VS = 18 VDC, VTRIG = 0 VDC
		-	18.3	-		VS = 24 VDC, VTRIG = 0 VDC
		-	-	19		VS = 36 VDC, VTRIG = 0 VDC
		32	-	-		VS = 18 VDC, VTRIG = 10 VDC
		-	33.5	-		VS = 24 VDC, VTRIG = 10 VDC
		-	-	35		VS = 36 VDC, VTRIG = 10 VDC
I _{S,LP}	Low Power Mode Current	500	-	-	μADC	
		-	620	-		
		-	-	800		
I _{LEAK}	Relay Off Leakage Current	-	190	250	μADC	
V _{TRIG,ON}	Trigger On Voltage	3.3	-	-	VDC	VS = 36 VDC, Load = 0 VDC
V _{TRIG,OFF}	Trigger Off Voltage	-	-	3	VDC	
I _{TRIG}	Trigger Current	-	2	-	mADC	VTRIG = 3.3 VDC
		-	4.2	-		VTRIG = 24 VDC
		-	5.4	-		VTRIG = 36 VDC
I _{O1}	Overcurrent Threshold - Level 1	1.05*I _{MAX}	1.2*I _{MAX}	1.35*I _{MAX}	ADC	-40 °C ≤ TA ≤ +105 °C
t _{O1}	Overcurrent Threshold Shutdown Delay - Level 1	-	5	-	s	-40 °C ≤ TA ≤ +105 °C
I _{O2}	Overcurrent Threshold - Level 2	1.85*I _{MAX}	2*I _{MAX}	2.35*I _{MAX}	ADC	-40 °C ≤ TA ≤ +105 °C
t _{O2}	Overcurrent Threshold Shutdown Delay - Level 2	-	2	-	s	-40 °C ≤ TA ≤ +105 °C
I _{SC}	Short Circuit Threshold	2.85*I _{MAX}	3*I _{MAX}	3.15*I _{MAX}	ADC	-40 °C ≤ TA ≤ +105 °C
t _{SC}	Short Circuit Threshold Shutdown Delay	-	500	-	μs	-40 °C ≤ TA ≤ +105 °C
T _{OFF}	Internal Overtemp Shutdown	-	135	-	°C	
T _{RESET}	Internal Overtemp Reset	-	130	-	°C	
Temperature Range		-40 to +105 °C				
Overtemperature Shutdown		135°C				
Weight		500 gr				
Dimensions		small 161 x 110 x 46mm medium 200 x 131 x 50mm depend on rated current				
Warranty		1 Year				

(Specifications Subject to Change Without Notice)

Available from:

RIPEnergy

The power conversion company



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