Victron Energy BPR000220400

Victron Battery Protect 12/24V 220A Instruction Manual

Model: BPR000220400 | Brand: Victron Energy

Introduction

The Victron Energy BatteryProtect is designed to safeguard your battery from deep discharge, which can cause irreversible damage, and to ensure sufficient power remains for critical functions like engine starting. It achieves this by automatically disconnecting non-essential loads when the battery voltage drops below a pre-set threshold. This device is unidirectional, managing current flow from the battery to the connected loads. It is not intended for simultaneous charging and discharging management. Ensure proper connection: the battery connects to the designated battery terminal, and the loads connect to the designated load terminal.

The Victron Battery Protect device, designed for intelligent battery management in various applications, including recreational vehicles.

Setup and Installation

Safety Warning: Incorrect installation can be dangerous. Always consult a qualified professional for installation and ensure compliance with all applicable electrical codes and safety standards.

Mounting

- Mount the BatteryProtect on a flat, stable surface using 4 screws.
- Ensure adequate ventilation around the unit.

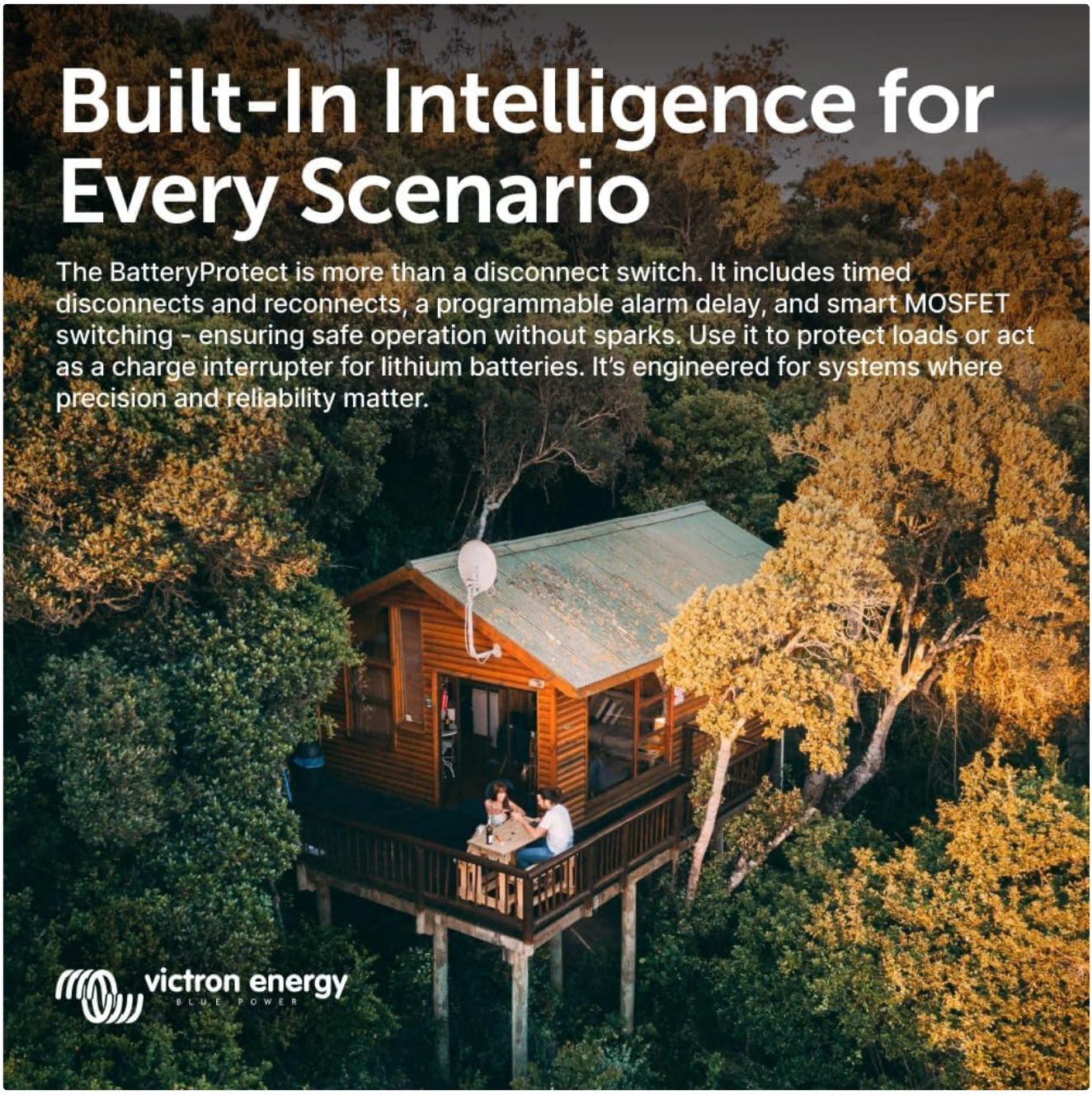
Wiring

- The BatteryProtect automatically detects the system voltage (12V or 24V).
- Connect the battery positive terminal to the 'IN' terminal of the BatteryProtect.
- Connect the positive lead of your loads to the 'OUT' terminal of the BatteryProtect.
- Ensure all connections are secure and use appropriate cable gauges for the expected current.

- The device is unidirectional; current flows from 'IN' to 'OUT'.

Voltage Setting

The BatteryProtect can be configured to operate and disengage at various voltage thresholds. Use the integrated seven-segment display to select the desired setting. Refer to the operating section for detailed programming instructions.



Physical dimensions of the Victron Battery Protect (120mm x 123mm x 62mm) and its M8 connection terminals, emphasizing its compact design and ease of mounting.

Operating Instructions

The Victron BatteryProtect offers intelligent features to optimize battery life and system reliability.

Automatic Load Disconnection

- The device automatically disconnects non-essential loads when the battery voltage drops below the programmed threshold, preventing deep discharge.
- It protects sensitive equipment from over-voltage conditions, with a maximum protection threshold of 16V for 12V

systems and 32V for 24V systems.

Programmable Settings

- The seven-segment display allows for easy selection of various voltage thresholds for disconnect and reconnect.
- Features a programmable alarm delay to prevent nuisance alarms during temporary voltage drops.
- Includes a delayed disconnect and reconnect function, specifically useful for engine starting applications to avoid premature disconnection.

Advanced Features

- Utilizes smart MOSFET switching for spark-free operation, enhancing safety.
- Features ultra-low standby current consumption, making it ideal for lithium battery systems.
- Compatible with VE.Bus BMS for advanced smart Li-ion battery management.
- Can function as a charge interrupter for lithium battery systems, adding versatility.

An overview of the main features and benefits of the Battery Protect, highlighting its automatic voltage detection, load disconnection, over-voltage protection, and low standby current.

Key engineering features of the Battery Protect, including its seven-segment display for voltage programming, delayed reconnect for engine starts, spark-free MOSFETs, alarm output for low voltage, and its ability to function as a charge interrupter for lithium systems.

Maintenance

The Victron BatteryProtect is designed for minimal maintenance. To ensure optimal performance and longevity:

- Periodically inspect all electrical connections to ensure they are tight and free from corrosion.
- Keep the unit clean and free from dust and debris. Use a dry cloth for cleaning.
- Ensure that the ventilation openings are not obstructed.
- Avoid exposing the unit to excessive moisture or extreme temperatures beyond its operating specifications.

Troubleshooting

If you encounter issues with your Victron BatteryProtect, consider the following steps:

No Power/No Display

- Check all battery connections to ensure they are secure and correctly wired.
- Verify the battery voltage is within the operational range (12V or 24V).
- Inspect any inline fuses or circuit breakers in the power supply line.

Loads Disconnect Unexpectedly

- Check the battery voltage. The BatteryProtect will disconnect loads if the voltage drops below the programmed threshold.
- Verify the programmed voltage setting on the seven-segment display. It might be set too high for your application.
- Ensure there are no excessive current draws from your loads that could cause a temporary voltage sag.

Loads Do Not Reconnect

- Confirm that the battery voltage has risen above the reconnect threshold.
- Check the charging source (e.g., alternator, solar charger) to ensure it is functioning correctly and charging the battery.

Alarm Output Active

- The alarm output activates after 12 seconds of low voltage. This indicates the battery voltage is consistently below the set threshold.
- Address the low battery voltage by charging the battery.

For persistent issues, refer to the detailed troubleshooting guide available on the Victron Energy website or contact customer support.

Technical Specifications

Feature	Specification
Model Number	BPR000220400
System Voltage	12V / 24V Auto-ranging
Maximum Continuous Load Current	220 A
Peak Current (30 seconds)	600 A
Connection Type	M8 Terminals
Dimensions (L x W x H)	12.19 x 12.45 x 6.35 cm (4.8 x 4.9 x 2.5 inches)
Weight	0.8 kg (1.76 lbs)
Mounting	4 screws
Standby Current	Ultra-low
Over-voltage Protection	16V (12V system) / 32V (24V system) max

The Battery Protect's advanced features, such as timed disconnects, programmable alarms, and smart MOSFET switching, enable reliable operation in diverse environments.

Warranty Information

Victron Energy products typically come with a standard manufacturer's warranty. For specific warranty terms, duration, and conditions applicable to your BatteryProtect 12/24V 220A, please refer to the warranty card included with your product or visit the official Victron Energy website. Keep your proof of purchase for any warranty claims.

Customer Support

For technical assistance, product inquiries, or support, please contact Victron Energy customer service. You can find contact information, FAQs, and additional resources on the official Victron Energy website:

- **Official Website:** www.victronenergy.com
- **Support Portal:** Check the website for a dedicated support section or contact form.

When contacting support, please have your product model number (BPR000220400) and purchase details readily available.