Battery Protector
Manual

V1.00

Polygon Technologies

Before attempting to connect or operate this product, please read these instructions in its entirety, **especially the guarantee conditions.**

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1. INTRODUCTION

The Polygon Technologies Battery Protector has been designed to protect lead-acid batteries from being damaged, either from under-voltage or over-current.

2. WHY DO YOU NEED A BATTERY PROTECTOR?

2.1. Under-voltage

An often-overlooked problem with lead-acid batteries is that they tend to stop working if they are discharged too far. This causes equipment that relies on lead-acid batteries as back-up supplies, to lose their backup feature because after one or more prolonged power failure, the batteries are effectively dead.

One should **NEVER** ever allow a lead-acid battery to discharge below 10V, much less to 1V or 2V. Discharging a battery to these levels damages the battery permanently.

By default the Battery Protector disconnects the battery when its voltage falls below a predetermined threshold of somewhere around 10 to 10,5V. The protector is clever in that it will automatically re-connect the battery once its voltage recovers(because of charging). The protector has built-in hysteresis so the voltage needs to rise above somewhere around 12 to 12,5V before it will switch back on again.

When the jumper(labeled JP1) is soldered the Battery Protector disconnects the battery when it's voltage falls below a predetermined threshold of somewhere around 9 to 9,5V. Now the voltage needs to rise above somewhere around 11 to 11,5V before it will switch back on again.

2.2. Over-current

Another issue with lead-acid batteries is that they can deliver massive amounts of current. Anyone who has ever accidentally shorted one of these guys will know they can easily cause copper wires to melt, which often causes a fire to start.

The Battery Protector acts as an electronic fuse in that it will disconnect the battery if current drawn from the battery rises above somewhere around 3 to 3,5A . Once it cuts out in response to an over-current condition, the Battery Protector needs to be re-set by pressing the reset button provided on the board.

3. INDICATOR LED

The red indicator LED will show that the load is connected. Under normal conditions, the LED will be on. If the voltage on the battery is fine, and the LED remains off, this means that the over-current protection has triggered.

Simply press the button to re-set, and the LED will go on again provided that the voltage of the battery has recovered to above somewhere around 12 to 12,5V(above somewhere around 11 to 11,5V if jumper has been soldered).

4. WHAT KIND OF BATTERY WILL WORK?

The Battery Protector can be directly mounted onto standard 1.2AH or 7AH batteries, since it has solder terminals whose spacing was been designed to accommodate these batteries.

5. INSTALLATION

The Battery Protector is either soldered directly onto a 1.2AH or 7AH battery. A charger can be connected to the PIN terminal. Charging current must be less than 2A. If you need to charge the battery with a higher current, it would be advisable to connect the charger directly to the battery terminals. The load is connected to the POUT terminal.

In the case of installation with a GSM Commander, one only needs to connect the POUT terminals to the Battery terminals on the GSM Commander, since the Battery Protector POUT terminal is not limited to only delivering power, it can also accept a small charging current.

6. GUARANTEE

The Battery Protector is guaranteed for a period of 24 months against defects in materials or workmanship. Should your product become defective during the guarantee period it will be repaired or replaced at the sole discretion of **Polygon Technologies** under the following conditions:

A: No components must not have been tampered with or removed.

B: The guarantee does not cover damage resulting from excessive input voltages, lightning, power surges or water ingress.

A decision about issues A and B will be at the sole discretion of **Polygon Technologies**. This guarantee does not provide for shipping costs. This will be for the account of the user under all circumstances.

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8. MANUFACTURER CONTACT DETAILS

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