Electro-Resales LLC

Reverse Polarity Protection Switch

Overview and basic installation

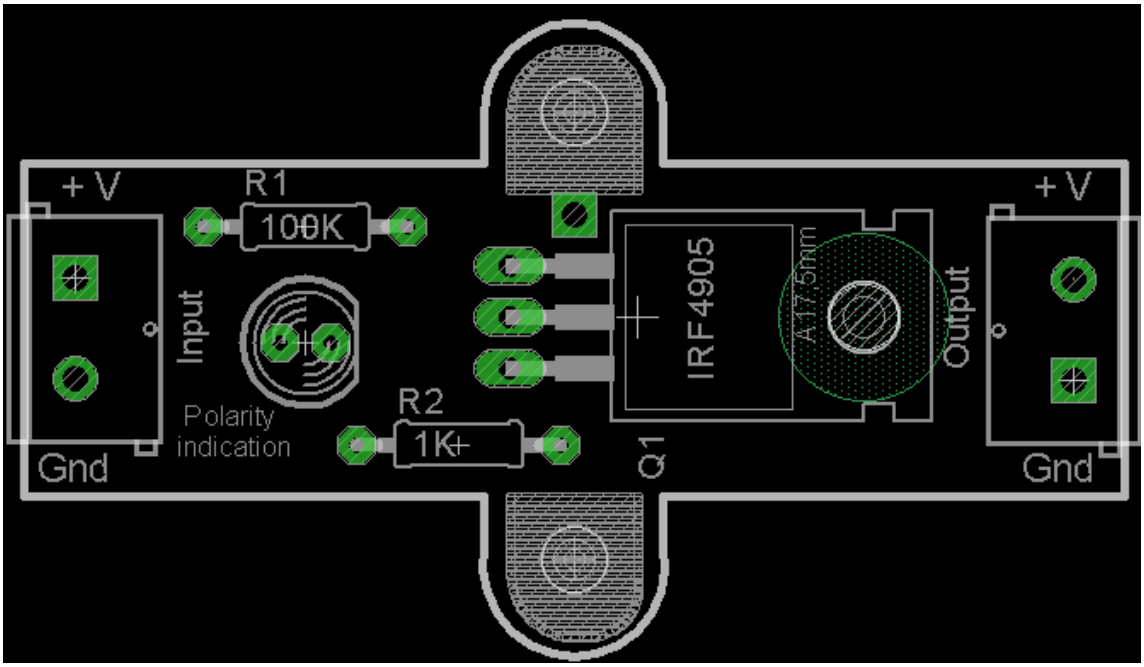
This protection switch is designed to be placed in-line between a 12 volt power source and equipment designed to operate from 12 volts. Its purpose is to protect the attached equipment from damage, in event of the cables being reversed.

Several methods exist for providing this level of protection from a simple diode on the input positive lead to more sophisticated current sensing circuits. A good compromise is achieved in this device by utilizing the switching speed of a Mosfet configured to 'switch' the power off in event of a polarity reversal.

The RPP-S is shown below, diagrammatically, and its operation is very simple. The input screw terminals attach to the incoming supply voltage and the output terminals are attached to the device to be protected. The only precautions to note are to;

a) Always connect the incoming power to the input terminals.
b) Always connect the input/output cables with power off, energize the circuit only once all cables are connected.

A Bi-color LED on the board provides a quick indication of the state of incoming power, glowing green for everything connected ok and red when polarity is reversed, this is designed to indicate an issue before connecting anything to the output terminals.



RPP-S : F19

Mounting the RPP-S

Several options exist for mounting or installing the RPP-S. A permanent installation is possible inside a piece of equipment; the two grounded lugs on the PCB can be used for this. If grounding is required use metal bolts if the device is to float use nylon bolts.

Permanent installations can also be effected by use of double sided foam tape applied to the PCB back side and then affixed to a location inside the equipment. This option avoids drilling holes and returning equipment to original condition if needed.

The device can also be included ‘in-line’ in a cable, by breaking the cable and installing the device at the break. Some protection should be provided to protect the exposed tracks to prevent shorts.

Electrical Specifications

Minimum input voltage:	5 volts DC
Maximum input voltage:	24 Volts DC
Typical application voltage:	13.8 Volts DC
Current draw, continuous:	5 Amps
Current draw, Peak:	8 Amps
Voltage drop, Min.:	3mV, at 5 Amps – 13.8 Volts input
Voltage drop, Max.:	450mV, at 8 amps – 13.8 Volts input

Physical Specifications

PCB Width:	2.2”
PCB Height:	1.3” (includes mounting lugs)
Mount holes:	4 x 40 bolt size

The small Print

DISCLAIMER

Any person who constructs or works on electronic equipment may be exposed to hazards, including physical injury, the risk of electric shock or electrocution.. These hazards can result in health problems, injury, or death. Only qualified persons who understand and are willing to bear these risks themselves should attempt the construction of electronic equipment. By purchasing this item, the buyer acknowledges these risks.

There is a risk of electric shock, electrocution, burns, or fires that is inherent in the construction and use of electronic equipment. By purchasing this item, the buyer acknowledges these risks.

IN NO EVENT SHALL THE SELLER BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY NATURE including, but not limited to, property damage, personal injury, death or legal expenses. Buyer's recovery from Seller for any claim shall not exceed the purchase price paid by Buyer for the goods, irrespective of the nature of the claim, whether in warrant, contract or otherwise.

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