

MINUTEMAN[®]

Power Technologies

From Para Systems, Inc.

PROGRAMMABLE RELAY CARD USER MANUAL

INTRODUCTION

This Programmable Relay card is an UPS management product with 6 relay output contacts for monitoring the status and 1 input contact as a shutdown UPS or a battery test command.

Features:

- Monitors UPS events.
- 6 programmable relay output contacts.
- Configurable normal open or normal close for each relay contact.
- Configurable UPS shutdown delay time.
- Configurable input signal as shutdown UPS or battery test.
- Has the ability to protect up to 6 computers unattended shutdown gracefully.

SPECIFICATIONS

Size Net (L x W)	5.1" x 2.4"
Weight Net	0.50 lbs
Operating Temperature	0 ~ 40° C
Operating Humidity	10 ~ 80 %
Power Input Volts	8 ~ 20V DC
Power Input Current	10mA
Power Consumption	1.2 Watts
Relay Contacts Volts	24VDC (max)
Relay Contacts Current	1A (max)

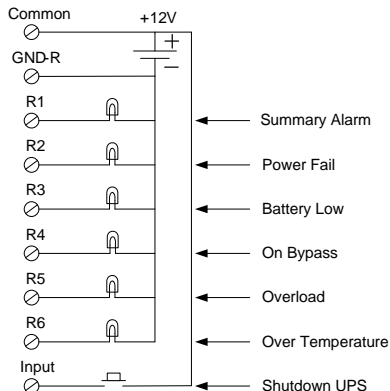
INSTALLATION

Note: These Programmable Relay cards are designed to be Hot Swappable, but there is a remote chance that when Hot-Swapping the Programmable Relay card that the UPS will shutdown. MINUTEMAN recommends following steps 1 through 4 when installing the Programmable Relay card, but to hot-swap, skip to step number 3.

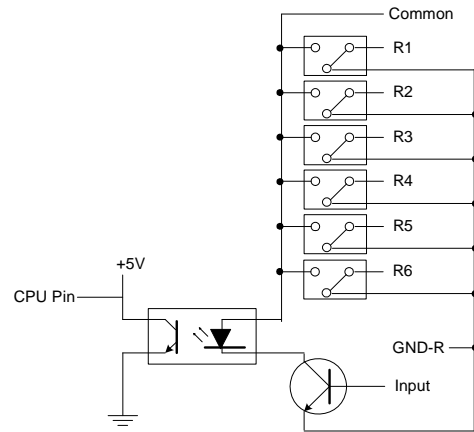
1. Turn off all the equipment that is plugged into the UPS.
2. Turn off the UPS and unplug the UPS's power cord from the AC wall outlet.
3. Remove the option slot cover plates from the rear panel of the UPS.
4. Insert the Programmable Relay card into the option slot, and secure with the retaining screws.

APPLICATION EXAMPLE

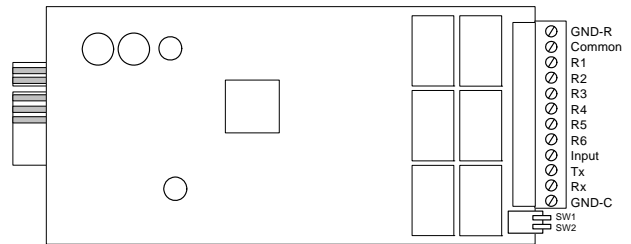
Set SW1 and SW2 to the OFF position. Apply 12VDC to the **Common** contact and connect the lamps to **R1-R6** terminals. Install a push button from the **Common** contact to the input terminal. Press the button for at least 3 seconds to shutdown the UPS remotely.



INTERNAL CIRCUIT



OUTLINE



I/O PINOUT

GND-R: Ground for relays		
Common: 12~24VDC		
Default Alarm Event		
R1	Summary Alarm	
R2	Power Fail	
R3	Battery Low	
R4	On Bypass	
R5	Overload	
R6	Over Temperature	
Input: Remote shutdown or battery test		
Tx: Transmit to PC, connect to sub9-pin2		
Rx: Receive from PC, connect to sub9-pin3		
GND-C: Ground for configuration Tx and Rx pins		
	OFF (Default)	ON
SW1	Normal open	Normal close
SW2	Default settings	Customized settings

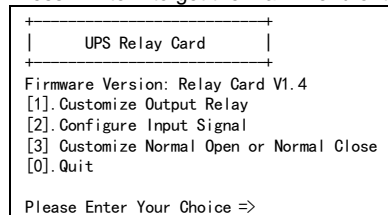
PROGRAMMABLE CONTACTS

COMMUNICATION SETUP

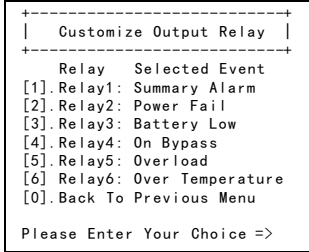
1. Connect **Tx** to pin2, **Rx** to pin3 and **GND-C** to pin5 of PC RS232 port.
2. In the Windows environment, launch the Hyper-Terminal program then open the specified COM port.
3. Set the following properties:
Baud rate: **2400**, Data Bits: **8**, Parity: **None**
Stop Bit: **1**, Flow Control: **None**

CONFIGURATION

1. Press <Enter> to get the main menu of the Programmable Relay card.

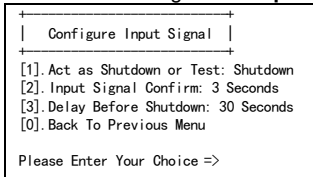


- Press '1' to configure the alarm event for the Relays. Relays R1-R6 can be configured for the following power events: Summary Alarm, Power Fail, Low Battery, On Bypass, Overload, Over Temperature, Output Off, UPS Shutdown, Charger Fail, Bypass Fail, Fan Fail, Fuse Fail, Replace Battery, UPS Disconnect, Battery Discharging, On Boost, On Buck, Test Fail.



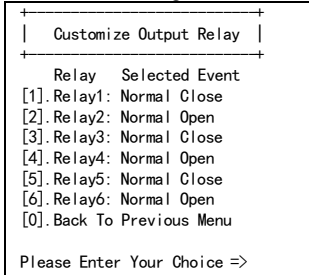
Once the configuration is complete switch **SW2 MUST** be switched to the ON position to apply the new settings. **SW2 MUST** remain in the ON position to use the new settings. Switch **SW2** back to OFF position to reset to the default settings.

- Press '2' to configure the Input signal.



In this menu, the input signal can be redefined as shutdown UPS or battery test signal. Meanwhile, the UPS shutdown delay time is also adjustable to a maximum of 9999 seconds.

- Press '3' to configure the normal open or normal close for each relay.

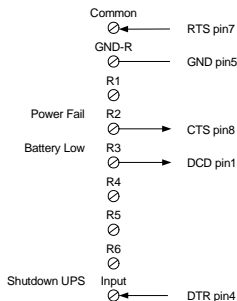


Once the configuration is complete switch **SW2 MUST** be switched to the ON position to apply the new settings. **SW2 MUST** remain in the ON position to use the new settings. Switch **SW2** back to OFF position to reset to the default settings. SW1 can be used to change the normal open or the normal close contacts for all relays. SW1 set to the OFF position; normal open (default), SW1 set to the ON position; normal close.

- Press '0' to quit this configuration session. The system will prompt you to save or not. Press 'Y' to save your settings, 'N' to ignore.

POWER OPTION IN WIN 2000/XP

This relay card has the ability to provide UPS signals for Windows NT4/2000/XP/2003. First connect the RS232 port on the PC to the relay card as shown:



Then open the power option from control panel and click on the UPS tab to setup the signals polarity, select **Positive** for Power Fail, Low Battery and UPS Shutdown. Since the R1-R6 contacts are programmable, the output contacts can be configured for 3 computers with 2 signals (power fail and low battery) or 6 computers with one signal (power fail or low battery).

Note: All of the computers must have the same earth ground potential. Connect all of the computers input power cords to the same UPS.

OBTAINING SERVICE

- Call your dealer for assistance. If you cannot reach your dealer, or if they cannot resolve the problem call or fax MINUTEMAN Technical Support at the following numbers; Voice phone (972) 446-7363, FAX line (972) 446-9011 or visit our Web site at www.minutemanups.com the "Discussion Board". Please have the following information available BEFORE calling the Technical Support Department.
 - Your name and address.
 - Where and when the unit was purchased.
 - All of the model information about your relay card.
 - Any information on the failure.
 - A technician will ask you for the above information and, if possible, help solve your problem over the phone. In the event that the unit requires factory service, the technician will issue you a Return Material Authorization Number (RMA #).
 - If the relay card is under warranty, the repairs will be done at no charge. If not, there will be a charge for repair.
- Pack the relay card in its original packaging. If the original packaging is no longer available, ask the Technical Support Technician about obtaining a new set. It is important to pack the relay card properly in order to avoid damage in transit. Never use Styrofoam beads for a packing material.
 - Include a letter with your name, address, daytime phone number, RMA number, a copy of your original sales receipt, and a brief description of the problem.
- Mark the RMA # on the outside of all packages. The factory cannot accept any package without the RMA # marked on the outside.
- Return the relay card by insured, prepaid carrier to:

Para Systems Inc.
MINUTEMAN UPS
1455 LeMay Drive
Carrollton, TX 75007
ATTN: RMA # _____

LIMITED PRODUCT WARRANTY

Para Systems, Inc. (Para Systems) warrants this equipment, when properly applied and operated within specified conditions, against faulty materials or workmanship for a period of three years from the date of purchase. For equipment sites within the United States and Canada, this warranty covers depot repair or replacement of defective equipment at the discretion of Para Systems. Depot repair will be from the nearest authorized service center. The customer pays for shipping the product to Para Systems. Para Systems pays ground freight to ship the product back to the customer. Replacement parts and warranty labor will be borne by Para Systems. For equipment located outside of the United States and Canada, Para Systems only covers faulty parts. Para Systems products that are depot repaired or replaced pursuant to this warranty shall only be warranted for the unexpired portion of the warranty applying to the original product. This warranty applies only to the original purchaser who must have properly registered the product within 10 days of purchase.

The warranty shall be void if (a) the equipment is damaged by the customer, is improperly used, is subjected to an adverse operating environment, or is operated outside the limits of its electrical specifications; (b) the equipment is repaired or modified by anyone other than Para Systems or Para Systems approved personnel; or (c) has been used in a manner contrary to the product's User's Manual or other written instructions.

Any technical advice furnished before or after delivery in regard to use or application of Para Systems' equipment is furnished without charge and on the basis that it represents Para Systems' best judgment under the circumstances, but it is used at the recipient's sole risk.

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No employee, salesman, or agent of Para Systems is authorized to add to or vary the terms of this warranty. Please go to our web site at www.minutemanups.com/support to fill out the Warranty Registration.