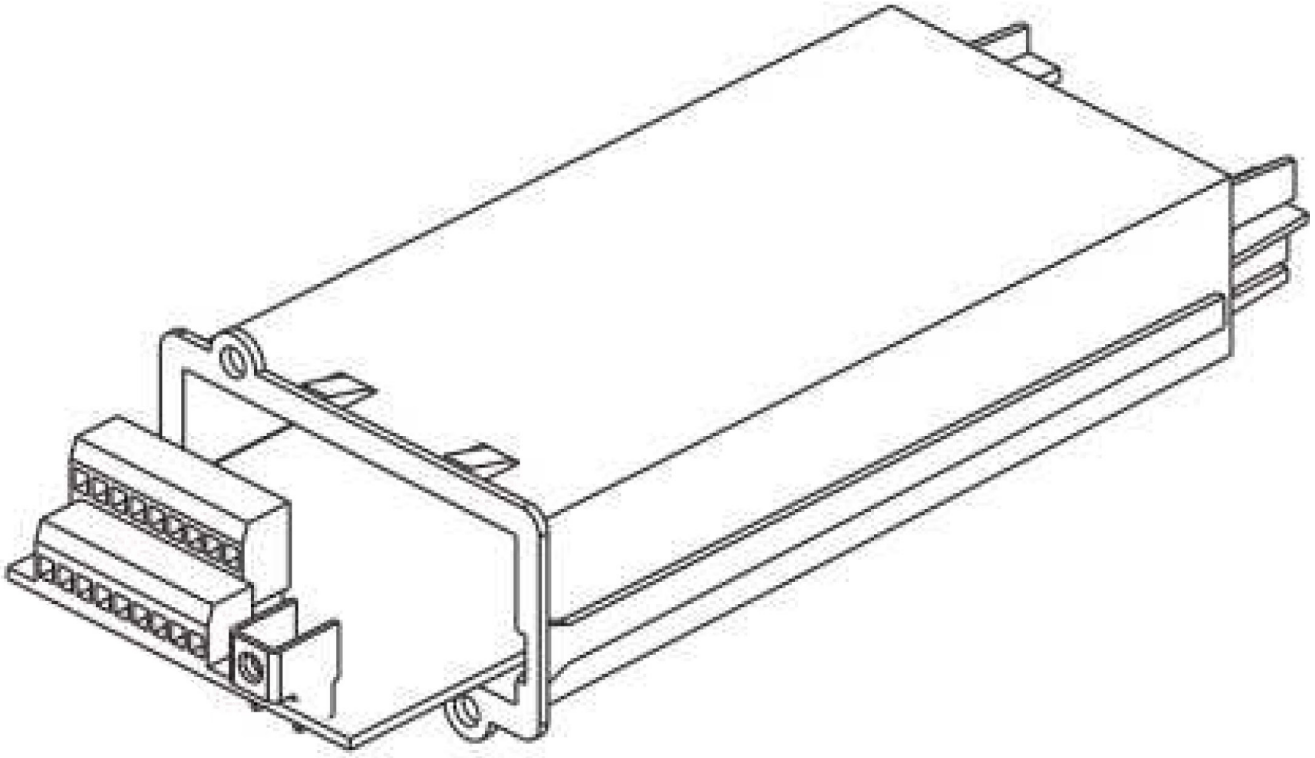
Power Conversion®

TX90-RELAY

Dry Contact Card

Installation Guide

Before start the installation, the UPS must be completely shut down and disconnect with AC mains.



Features

TX90-RELAY is an UPS management product with 6 relay output contacts for monitoring the status and 3 input contacts as a shutdown UPS command.

- Monitor UPS events.
- All output contacts are independent.
- Hardware configurable normal open or normal close for each relay contact.
- Three programmable input contact.
- Input contact can configure conditions of UPS shutdown (Short/Open active, Active time, load percentage effect, utility status effect).

Technical Specifications

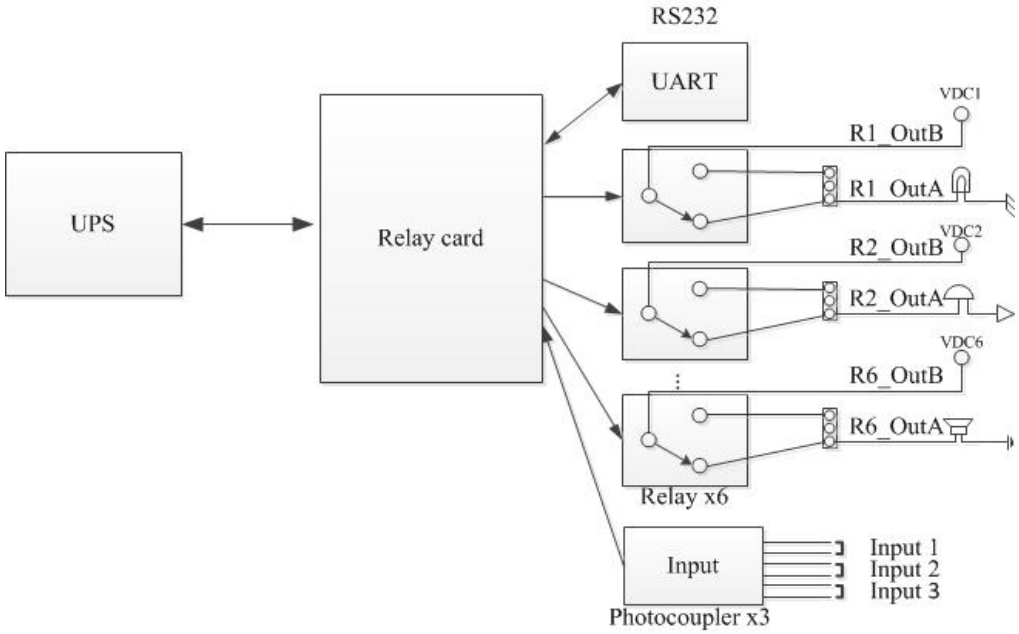
Size	130 x 60mm
Weight	200g
Operating Temperature	0–40°C
Power Input	9–20V
Power Consumption	2.7 Watts

Output Contact Rating

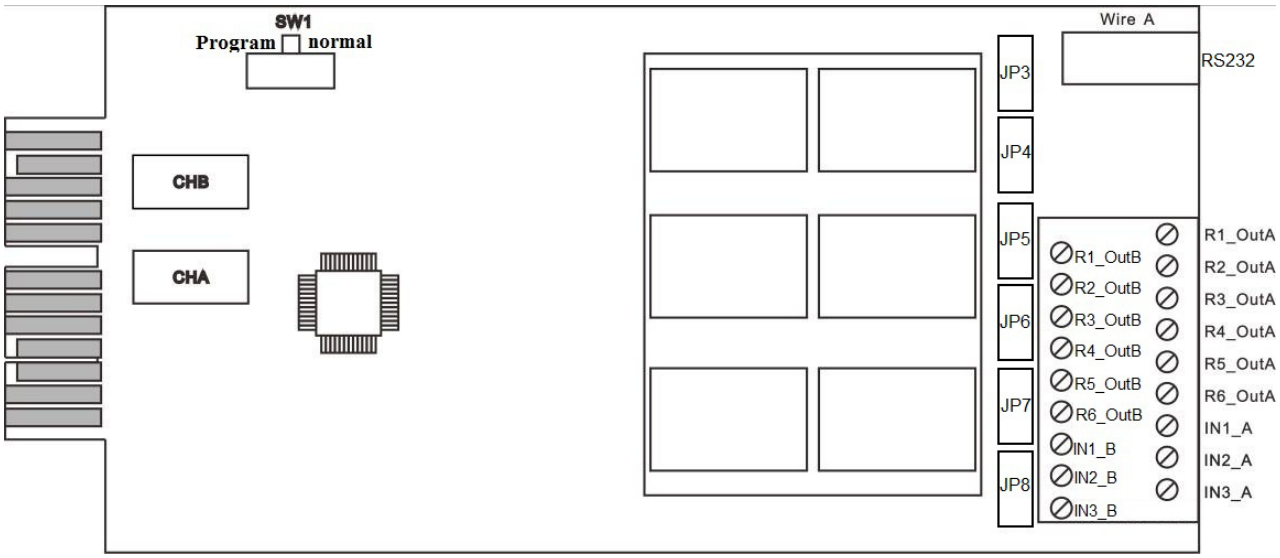
Relay R1-R6	DC Voltage	DC Current
	24V	2A
	AC Voltage	AC Current
	120V	1A

Application Example

In this case we'll use the default settings, please set jumpers JP3-JP8 to short pin 2-3. Apply different VDC to Common contact and connect the lamps to R1~R6 terminals. Short to the input terminal, at least 3 second to shutdown the UPS remotely.



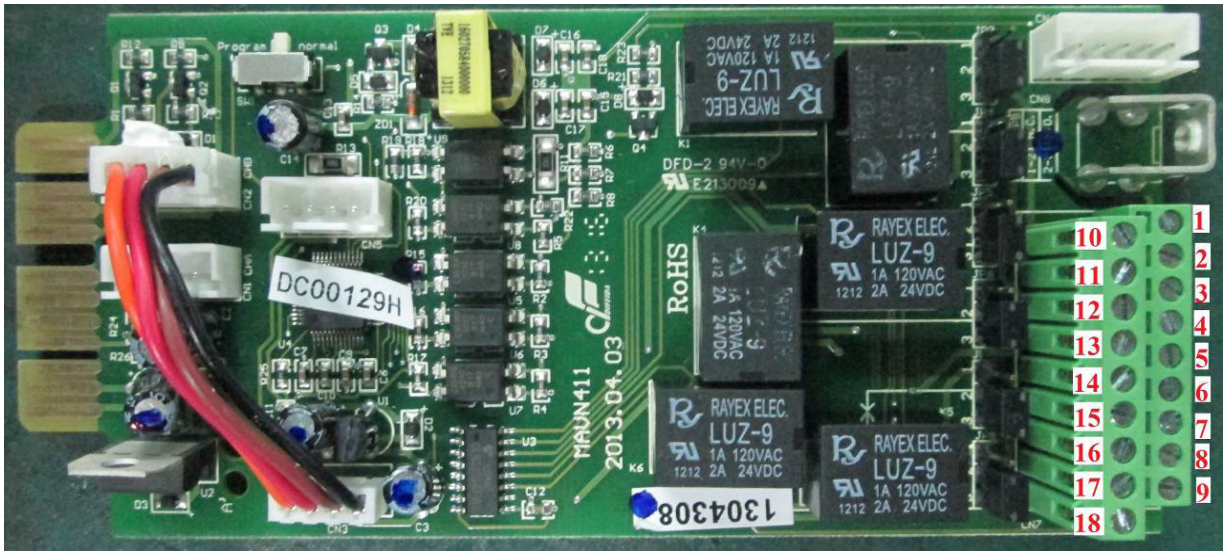
Outline



I/O Pinout

R1_OutB	UPS on Bypass mode	
R1_OutA		
R2_OutB	Utility Abnormal / Utility Normal	
R2_OutA		
R3_OutB	Inverter On	
R3_OutA		
R4_OutB	Battery Low	
R4_OutA		
R5_OutB	Battery Bad or Abnormal	
R5_OutA		
R6_OutB	UPS Alarm	
R6_OutA		
IN1_A	Remote shutdown by Utility status	
IN1_B		
IN2_A	Energy saving shutdown by Utility status and load percentage.	
IN2_B		
IN3_A	Energy saving shutdown by Utility failure time.	
IN3_B		
RS232	Communicate to PC for setting or firmware upgrade	
SW1	Normal (Default)	Program
	Default for setting shutdown function	Firmware Update

The pin assignments of 18-Pin Terminal:



10	1
11	2
12	3
13	4
14	5
15	6
16	7
17	8
18	9

Default behavior of Output Pin

Dry contact Output pin	Jumper Pin 1,2 short	Jumper Pin 2,3 short	Output Setting
R1_OutA,R1_OutB Open	UPS on Bypass mode	UPS is not on Bypass mode	JP3
R1_OutA,R1_OutB Short	UPS is not on Bypass mode	UPS on Bypass mode	
R2_OutA,R2_OutB Open	Utility Abnormal	Utility Normal	JP4
R2_OutA,R2_OutB Short	Utility Normal	Utility Abnormal	
R3_OutA,R3_OutB Open	Inverter On	Inverter Off	JP5
R3_OutA,R3_OutB Short	Inverter Off	Inverter On	
R4_OutA,R4_OutB Open	Battery Low	Battery voltage enough	JP6
R4_OutA,R4_OutB Short	Battery voltage enough	Battery Low	
R5_OutA,R5_OutB Open	Battery bad or abnormal	Battery normal	JP7
R5_OutA,R5_OutB Short	Battery normal	Battery bad or abnormal	
R6_OutA,R6_OutB Open	UPS occur alarm	UPS is not occur alarm	JP8
R6_OutA,R6_OutB Short	UPS is not occur alarm	UPS occur alarm	

Default behavior of Input Pin

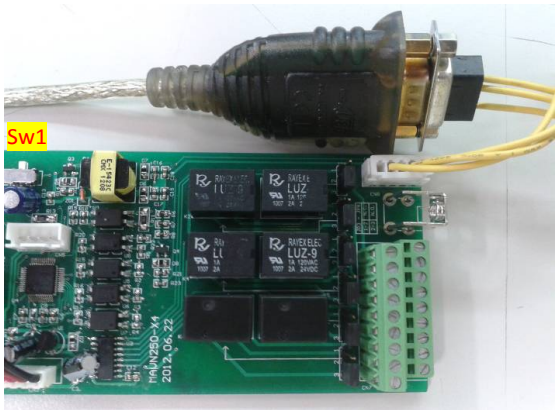
Dry contact input pin	Pin Number	Default function
IN1	IN1_A, IN1_B short	UPS shutdown after 6sec
IN2	IN2_A, IN2_B short	UPS shutdown by load lower than 10 %
IN3	IN1_A, IN1_B short	UPS shutdown by Utility abnormal

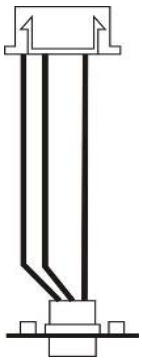
Note: OutA,Out_B of R5 and R6 are no function on MS series.
R6_OutA, OutB no function for Line-interactive UPS only.

1. Flexible communication from channel A (CN1) or channel B (CN2).
2. Flexible signal output for N.C. (Normal close) or N.O.(Normal open) contact by shorting pin1-2 or pin2-3 from JP3-8.
3. The Shutdown function can be programmable by the software. Please refer to the Configuration section of this manual.

Communication Setup

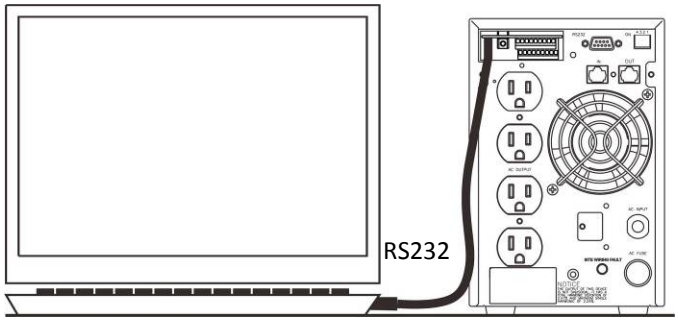
1. Connect wire A to CN6.





Wire A

2. Connect RS232 to computer.
3. SW1 switch to "normal".
4. Run the setting tool.
5. Select COM port and Baud Rate (9600bps).
6. Select "Dry contact" option.



Configuration

User can program shutdown function that include delay time before shutdown by normal open and normal close active, utility normal/abnormal and load percentage.

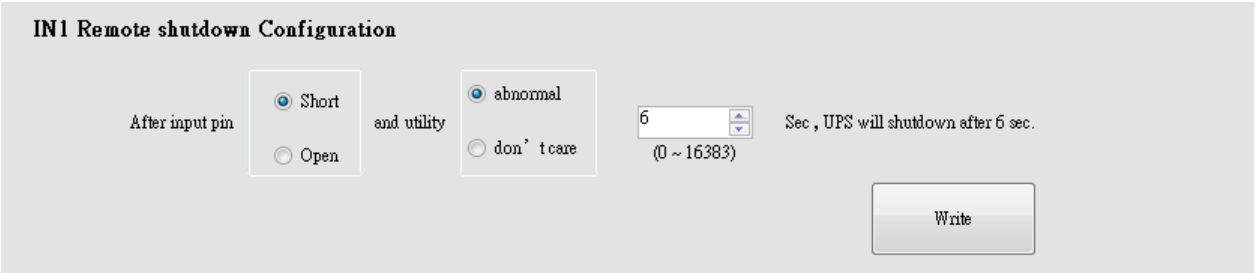
Input 1: Remote shutdown by Utility status.

Utility fail select: If input pin was active and utility failure, UPS will shut down after X second. This command can't be cancelled.

Utility fail didn't select: Don't care Utility status. If input pin was active, UPS will shut down after X second. This command can't be cancelled.

Default: Input 1 short, determine Utility status and UPS shut down after 6 seconds.

Example:



If utility abnormal and input pin short, UPS will shut down after 6 seconds.

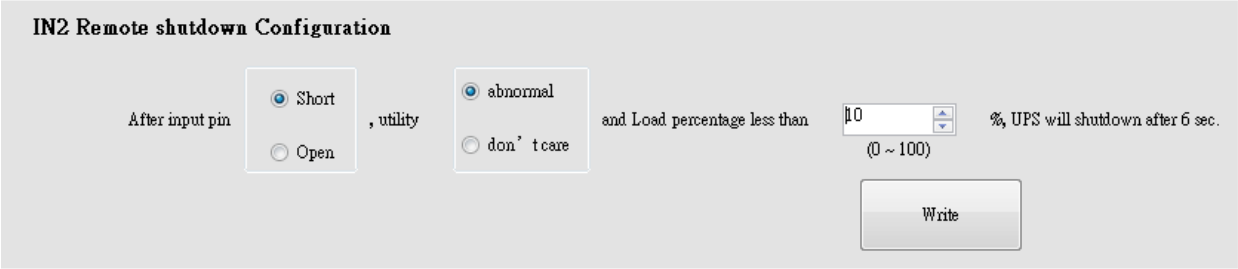
Input 2: Energy saving shutdown by Utility status and load percentage.

Utility fail select: If input pin was active and utility failure, UPS will shut down at load percentage less than X %.

Utility fail didn't select: Don't care Utility status. If input pin was active, UPS will shut down at load percentage less than X %.

Default: Input 2 short, determine Utility status and load percentage less than 10%.

Example:

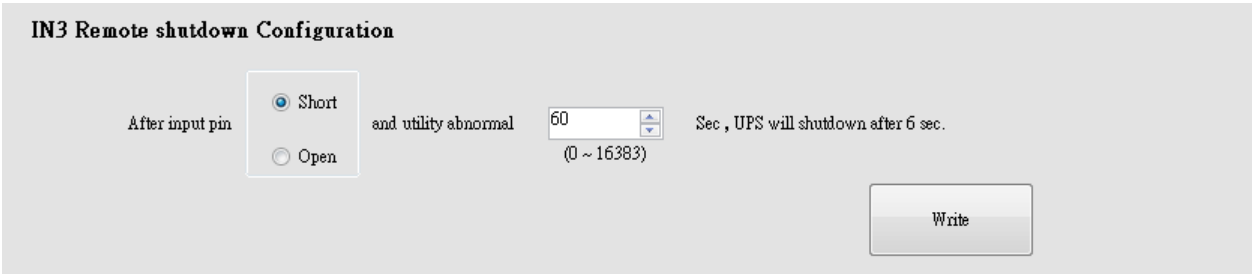


If utility abnormal, Load percentage less than 10% and input pin short, UPS will shut down immediately.

Input 3: Energy saving shutdown by Utility failure time. If input pin was active and utility failure time keeping X second, UPS will shut down immediately. This command can be cancelled by utility recovery to normal.

Default: Input 3 short, determine Utility status and UPS shut down after 60 seconds. Before shut down UPS and recovery the utility.

Example:



Note: The Input 3 function will be activated after short pin8-17 and Utility abnormal (default). Once utility become normal from abnormal, the action will be cancelled.