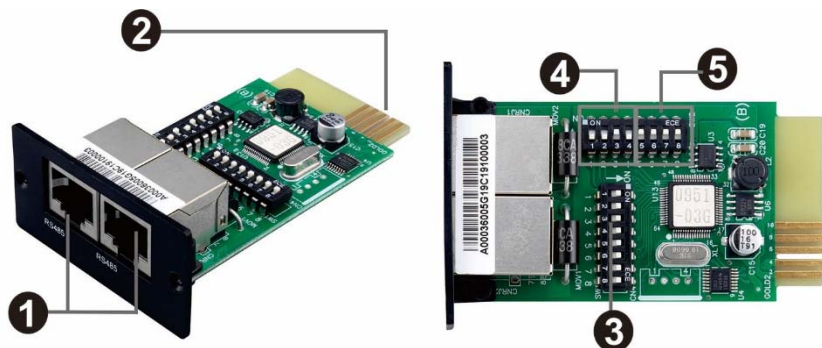


1.- Introduction

MODBUS card is designed to be installed in SNMP port of all our Online UPS. This card can provide communication for the UPS under MODBUS serial communication protocol.

2.- Product Description



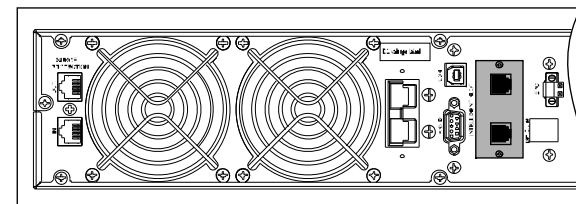
1. RS-485 port
2. Connector
3. Address switch

4. Communication setting
5. Resistance switch

3. Installation

1. Configure Modbus ID (according to section 4)
2. Configure communication format (according to section 4)
3. Configure RS-485 (according to section 4)
4. Insert Modbus card into the intelligent slot in the UPS (/according to figure 1)
5. Connect AC input to the UPS
6. Connect Modbus card to the computer (an external converter could be necessary)

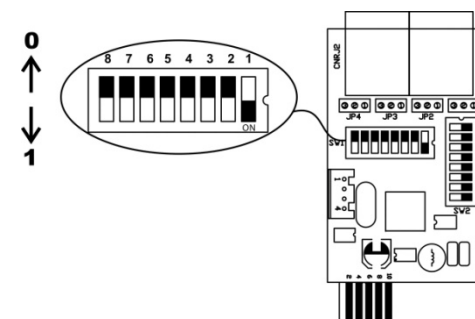
Figure 1: Remove slot cover & Insert Modbus card into the slot



4. Configuration

4.1. Configure Modbus ID:

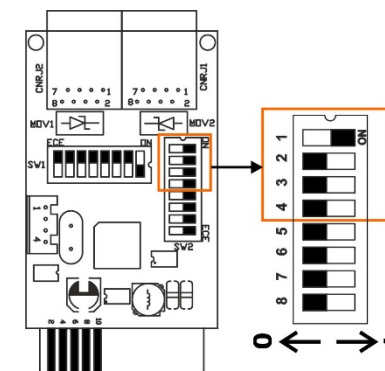
Configure using SW1:
Switch down = ON = 1.
Switch up = OFF = 0.
First bit is in the right switch.



4.2. Configure Communication format:

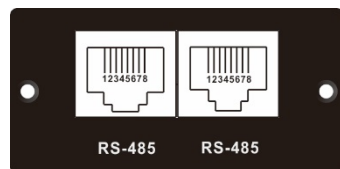
Configure using switches from 1 to 4 in SW2

Function	Bit Setting		Configuration
Baud rate	# 2	# 1	
	OFF	OFF	2400bps
	OFF	ON	4800bps
	ON	OFF	9600bps
	ON	ON	19200bps (default)
Parity check	# 4	# 3	
	OFF	OFF	Even parity
	ON	OFF	Odd parity
	OFF	ON	No parity check 1 stop bits (default)
	ON	ON	No parity check 2 stop bits



4.3. Interface Pin-out:

Pin	Function
4	RS-485-B
5	RS-485-A
8	GND

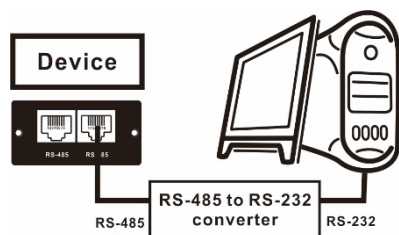


5. PC Communication

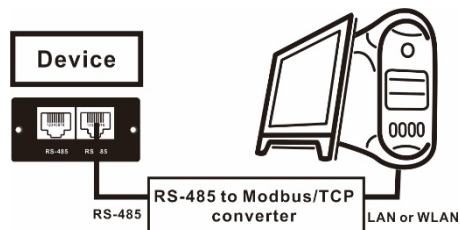
SERIAL COMMUNICATION:

For connecting serial communication to a PC, an external converter must be used. There are 2 types: (1) RS485 to RS232 converter or (2) RS485 to Modbus/TCP converter as indicated in below figures. These converters are not included with this RS485 card.

RS485 to RS232 converter:



RS485 to TCP (LAN) converter:



Configure RS-485 Resistance:

Configure using switches from 6 to 8 in **SW2**

Function	Bit #	Set	Configuration
Push up resistance	# 6	ON	Enable (Default)
		OFF	Disable
Push down resistance	# 7	ON	Enable (Default)
		OFF	Disable
Terminate resistance	# 8	ON	Enable (Default)
		OFF	Disable

