

Hardware Setting & Mode Configuration

Outside the unit, there are four 4-pin DIP switches which are set to select the mode of operation. You will need to set the switch settings to RS-422 mode, or RS-485 mode, as per the requirements of your application. After setting of switches and connecting power supply to the adapter, you then plug the adapter to USB port to start driver installation. The RS-422 & RS-485 Mode Block Configuration Settings are listed as follows.

RS-422 & RS-485 Mode Block Configuration

SW1 (PORT1), SW2 (PORT2), SW3 (PORT3), SW4 (PORT4)

	Operation Mode	S1	S2	S3	S4
RS-422	4 wire with handshaking	ON	ON	OFF	OFF
RS-485	Full Duplex (4 wire)	ON	OFF	OFF	OFF
	Half Duplex (2 wire) with Echo	OFF	OFF	OFF	ON Note
	Half Duplex (2 wire) without Echo	OFF	OFF	ON	ON Note

Note : In the most common situation , a 120 Ohm termination resistor of TxD (S4 is ON) is required in a RS485 Half Duplex configuration. Otherwise it is rarely used.

Inside the unit, there are four 6x2 (8pin) header blocks which are jumpered to enable Rx, CTS 120 Ohm termination resistors and Rx, Tx 750 Ohm biasing resistor. You will need to open up the case and set the jumper setting for RS-422 mode or RS-485 mode as per the requirements of your application. Settings are listed as follows.

JP5(PORT1), JP6(PORT2), JP7(PORT3), JP8(PORT4) for Termination and Biasing Option Configuration

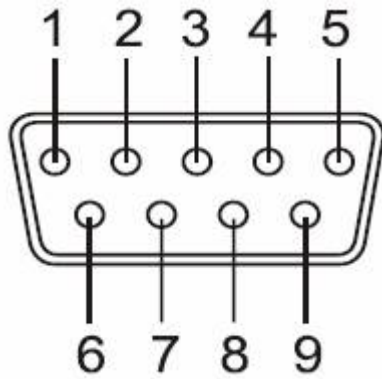
Jumper	Function
1-2	Pull-up Tx+ to VCC by 750 Ohm Bias resistor. This jumper should be populated for pull-up Tx+.
3-4	Pull-down Tx- to GND by 750 Ohm Bias resistor. This jumper should be populated for pull-down Tx-.
5-6	Rx+/- Termination of 120 Ohm. This jumper should always be populated for RS-422 and RS485 Full-Duplex mode.
7-8	Pull-up Rx+ to VCC by 750 Ohm Bias resistor. This jumper should be populated for pull-up Rx+.
9-10	Pull-down Rx- to GND by 750 Ohm Bias resistor. This jumper should be populated for pull-down Rx-.
11-12	CTS Termination of 120 Ohm. This jumper should always be populated for RS-422 mode.

Note : Sometimes, when operating in RS-422 or RS-485, it is necessary to configure termination and biasing of the data transmission lines. Generally this must be done in the cabling, since this depends on the installation of connections. Before applying the option, check your cable specification for proper impedance matching.

Biasing of data lines must only occur at a single point anywhere in the cabling. USB-4COMi-M and USB-4COMi-SI-M provide biasing for ease of installation. Please be sure to disable this inside the unit, if your cabling already provides biasing.

Termination must not be installed in the middle of the cable. It is only permitted at both ends. Since a computer controlled serial port is almost always at one end of the cable, termination is enabled by default. Rx-Termination is inside the box, because you hardly ever need to change it. Tx-Termination is used in Half-Duplex modes. In this situation data is sent *and* received via Tx+/- lines. Therefore Tx-Termination is done via DIP-Switch (see S4 above).

RS-422/485 Pin-outs & Signal Wiring

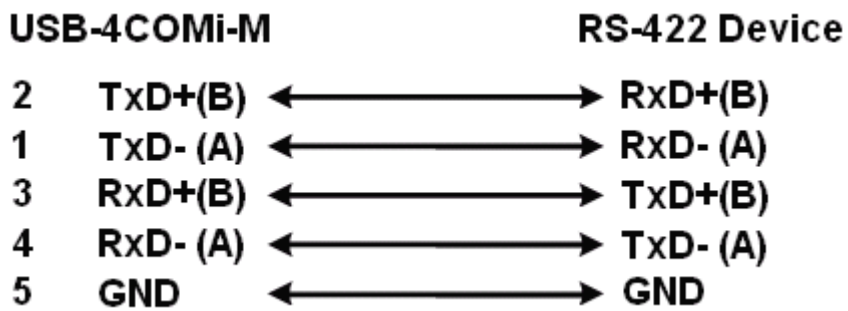


RS-422 Signal Pin-outs of DB-9 Male

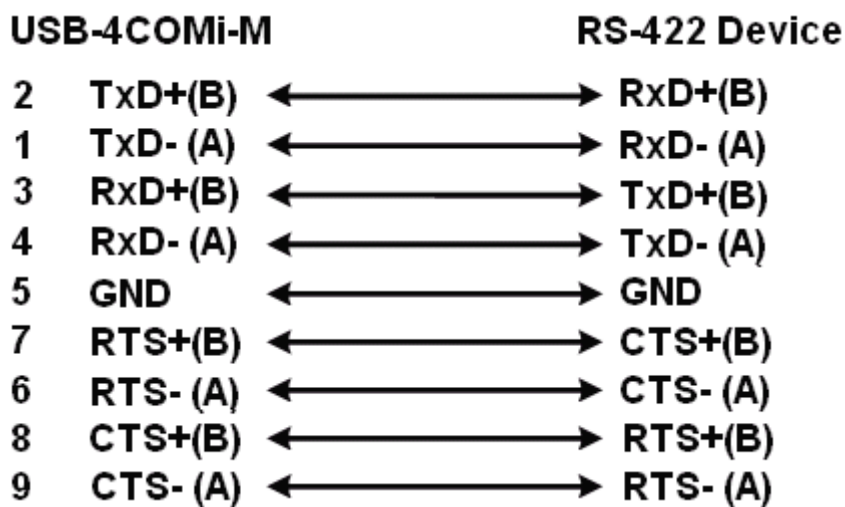
Pin 1	TxD- (A)
Pin 2	TxD+(B)
Pin 3	RxD+(B)
Pin 4	RxD-(A)
Pin 5	GND
Pin 6	RTS- (A)
Pin 7	RTS+(B)
Pin 8	CTS+(B)
Pin 9	CTS- (A)

RS-422 Signal Wiring

● Point-to-Point 4-Wire Full Duplex



● RS-422 with Handshaking



RS-485 4-Wire (Full duplex) Signal Pin-outs of DB-9 Male Connector

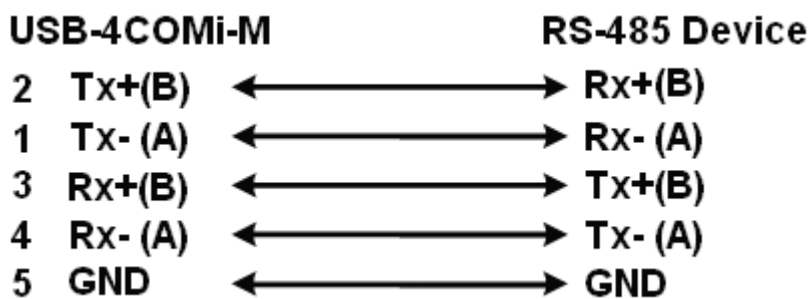
Pin 1	TxD- (A)
Pin 2	TxD+(B)
Pin 3	RxD+(B)
Pin 4	RxD-(A)
Pin 5	GND

RS-485 2-Wire (Half duplex) Signal Pin-outs of DB-9 Male Connector

Pin 1	Data- (A)
Pin 2	Data+(B)
Pin 5	GND

RS-485 Signal Wiring

● Point-to-Point 4 Wire Full Duplex



● Multidrop RS-485 2-Wire Half-duplex

