![Mercury Security logo]

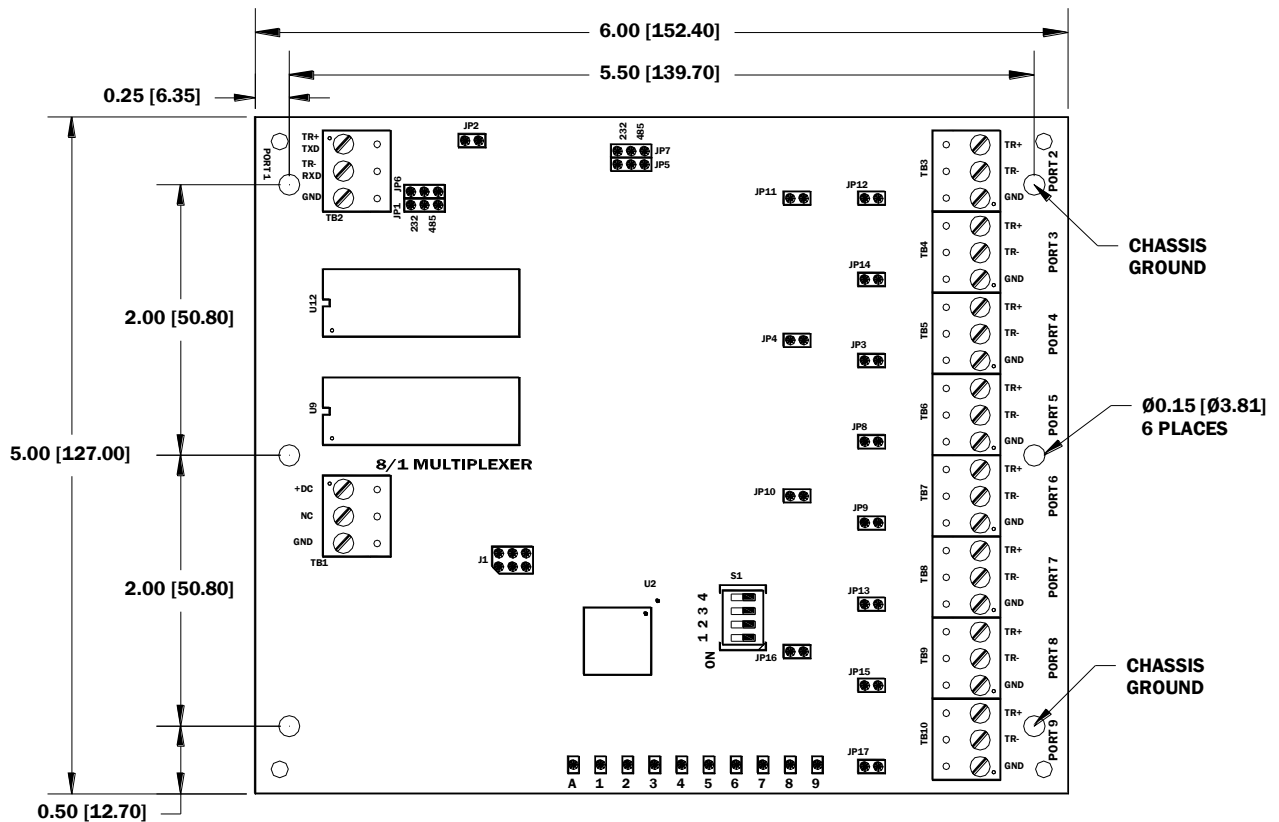## MUX8 8/1 RS-485 Multiplexer

Installation and Specifications:

1. General:

The Multiplexer allows a controller to expand a single communication port to 8 2-wire RS-485 channels, thus making it convenient to implement star wiring topology. All nine 2-wire channels on the multiplexer are universal with regard to master/slave devices.

The electrical interface for port 1 is jumper selectable as RS-232 or RS-485.

Ports 2, 4, 6 and 8 may be individually configured as receive-only channel. By pairing a receive-only channel with another channel, a 4-wire RS-485 channel may be formed.

Baud rate dependent turn around delay is set by DIP switches. The typical turnaround time is set to approximately 10 bit time (see DIP switch table 2-1). To avoid collision, a device must wait for this time before it can begin a new transmission.

2. Port Configuration:

Figures1-1 and 1-2 show the typical usage for 2-wire and 4-wire RS-485. To set a port as receive-only, remove the corresponding jumper, see table 2-2.
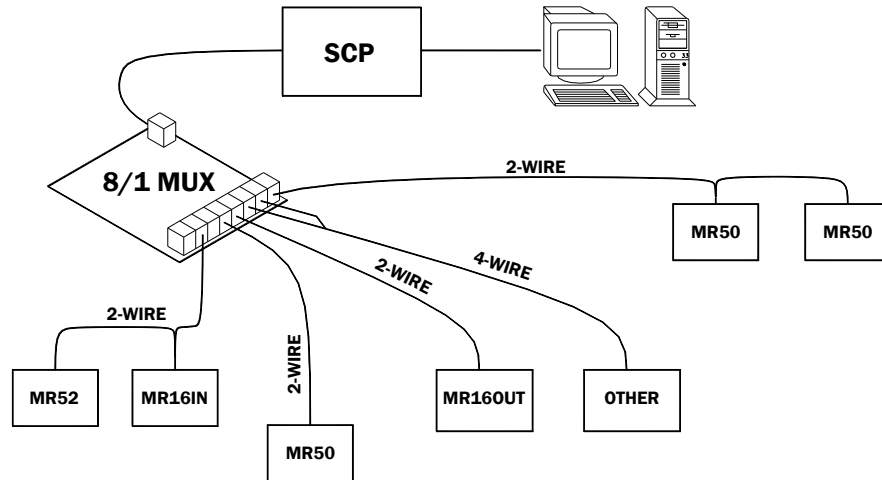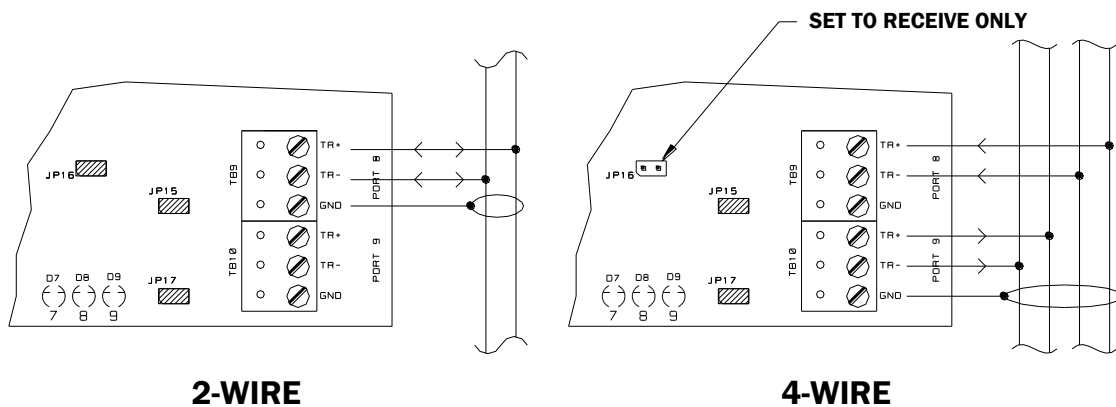

Figure 1-1

2-WIRE   **4-WIRE**

Figure 1-2

3. DIP Switch and Jumper Settings:

DIP switch settings:

S4	S3	S2	S1	SELECTION (TURN AROUND DELAY, APPROXIMATE)
OFF	OFF	OFF	OFF	300 BPS (35 ms)
OFF	OFF	OFF	ON	1200 BPS (9.58 ms)
OFF	OFF	ON	OFF	2400 BPS (4.79 ms)
OFF	OFF	ON	ON	4800 BPS (2.50 ms)
OFF	ON	OFF	OFF	9600 BPS (1.25 ms)
OFF	ON	OFF	ON	19200 BPS / 38400 BPS NORMAL (625 us)
OFF	ON	ON	OFF	38400 BPS FAST TURN (365 us)
OFF	ON	ON	ON	38400 BPS FAST TURN (365 us)

Table 2-1

Jumper settings:

JUMPERS	SET AT	SELECTED
JP1,JP5,JP6,JP7	232	PORT 1 IS RS-232
	485	PORT 1 IS RS-485
JP11	OFF	PORT 2 IS RECEIVE ONLY FOR 4-WIRE RS-485
	ON	PORT 2 IS 2-WIRE RS-485
JP4	OFF	PORT 4 IS RECEIVE ONLY FOR 4-WIRE RS-485
	ON	PORT 4 IS 2-WIRE RS-485
JP10	OFF	PORT 6 IS RECEIVE ONLY FOR 4-WIRE RS-485
	ON	PORT 6 IS 2-WIRE RS-485
JP16	OFF	PORT 8 IS RECEIVE ONLY FOR 4-WIRE RS-485
	ON	PORT 8 IS 2-WIRE RS-485
JP2	ON/OFF	PORT 1 RS-485 TERMINATION – DO NOT USE
JP12	ON/OFF	PORT 2 RS-485 TERMINATION
JP14	ON/OFF	PORT 3 RS-485 TERMINATION
JP3	ON/OFF	PORT 4 RS-485 TERMINATION
JP8	ON/OFF	PORT 5 RS-485 TERMINATION
JP9	ON/OFF	PORT 6 RS-485 TERMINATION
JP13	ON/OFF	PORT 7 RS-485 TERMINATION
JP15	ON/OFF	PORT 8 RS-485 TERMINATION
JP17	ON/OFF	PORT 9 RS-485 TERMINATION

Table 2-2

⚠ **IMPORTANT NOTE** Install the termination jumper ONLY on the panel at each end of the RS-485 bus. Failure to do so will compromise the proper operation of the communication channel. Port 1: It is recommended that the termination jumper (J2) not be installed and remove all other termination jumpers on the units connected to this communication bus.

4. Specifications:

The multiplexer is for use in low voltage, class 2 circuits only.

Primary power:

    DC input: 12 to 24 Vdc ± 10 %, 200 mA maximum

Interfaces:

    Port 1:   RS-232/RS-485, selectable
    Port 3,5,7,9   RS-485, Transmit/Receive
    Port 2,4,6,8   RS-485, Transmit/Receive, or Receive Only

Wire requirement:

    Power: 1 twisted pair, 18 AWG
    RS-485:   24 AWG, 4,000 feet (1,200 m) maximum, twisted pair(s) with shield.
    RS-232:   24 AWG, 50 feet (15 m) maximum

Environmental:

    Temperature: 0 to 70 °C, operating
                   -55 to +85 °C, storage

    Humidity: 0 to 95 % RHNC

Mechanical:

    Dimension: 5 in. (127 mm) L x 6 in. (15 2mm) W x 1 in. (25 mm) H

    Weight: 4 oz (180 g) nominal

Warranty

Mercury Security warrants the product is free from defects in material and workmanship under normal use and service with proper maintenance for one year from the date of factory shipment. Mercury Security assumes no responsibility for products damaged by improper handling or installation. This warranty is limited to the repair or replacement of the defective unit.

There are no expressed warranties other than set forth herein. Mercury Security does not make, nor intends, nor does it authorize any agent or representative to make any other warranties, or implied warranties, and expressly excludes and disclaims all implied warranties of merchantability or fitness for a particular purpose.

Returns must be accompanied by a Return Material Authorization (RMA) number obtained from customer service, and prepaid postage and insurance.

Liability

The Interface should only be used to control exits from areas where an alternative method for exit is available. This product is not intended for, nor is rated for operation in life-critical control applications. Mercury Security is not liable under any circumstances for loss or damage caused by or partially caused by the misapplication or malfunction of the product. Mercury Security's liability does not extend beyond the purchase price of the product.