IFD8510 RS-485/RS-422 Isolated Repeater

User's Manual

INTRODUCTION:

The Delta IFD8510 repeater simply amplifies, or boots, existing RS-485/RS-422 signals to enable them to cover longer distances. It extends the communication distance by 4000ft(1200m) or extends the number of connected nodes by 32. Support RS-485 half-duplex and RS-422 full-duplex communication, and can automatically senses the direction of data flow and switches the transmission direction.

SPECIFICATIONS :

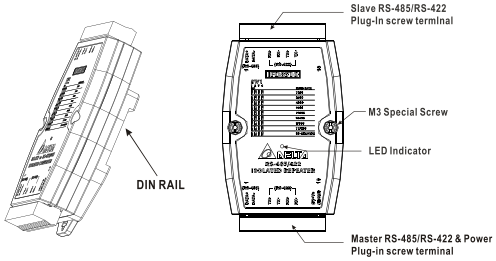
1.Power Requirement：+9V — +35Vdc.
2.Power Consumption：1.6W.
3.Isolated Voltage：3000Vdc.
4.Baud Rate：1200,2400,4800,9600,19200,38400,57600 or 115200bps.
5.RS-485/RS-422 Terminal Type：10PIN ，AWG1-#12 to #24 wires accepted.
6.Dimension（L x W x H）：4.80in x 2.79in x 0.87in (122mm x 71mm x 22mm).
7.Weight： 0.31lb (140 g).

INSTALLATION：

1.ACCESSORY

Mounting Panel x1.
User Manual x 1.

2.APPEARANCE



3.DATA FORMAT SETTING：

Set baud rate and data format to control the data flow

Baud rate	SW1 1 2 3 4	Baud rate	SW1 1 2 3 4
1200bps	ON	38400bps	ON
2400bps	ON	57600bps	ON
4800bps	ON	115200bps	ON
**9600bps	ON	RS-422 Mode	ON
19200bps	ON		

Length	SW2 1 2	Length	SW2 1 2
9bit	ON	11 bit	ON
**10 bit	ON	12 bit	ON

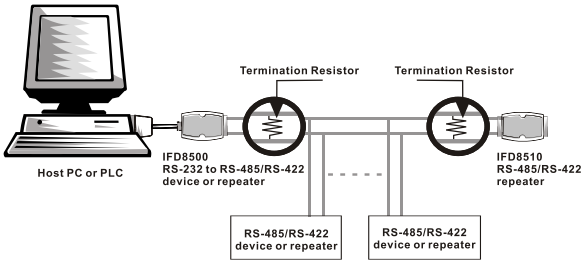
Notes : **default setting.

Calculation for length of data frame：
LENGTH＝START BIT＋DATA LENGTH＋PARITY BIT＋STOP BIT
Ex：DATA LENGTH ＝ 8 bits，None parity，STOP BIT ＝ 1bit
LENGTH ＝ 1＋8＋0＋1 ＝ 10

4.TERMINATION RESISTOR

The action to terminate the cable is system dependent and is affected by the choice of the maximum cable length and signal rate. The length of RS-485 network cable can be extended up to 4000 ft or 1.2km. It is necessary to match the line impedance of network to avoid signal distortion by adding to termination resisters on both ends of RS-485/RS-422 network cable.

Hint for termination resistor：
a.The longer the length of transmission cable , the worse the signal quality.
b.Two transmission resistors are recommended to install on both ends of the main cable of RS-485/RS-422 network . It's not necessary to add termination resistors on each nodes in the same network.



c.If the transmission wire of RS-485 is using AWG#24 twisted pair cable with 1.2km, We recommend you to use 120 Ohm resistor.

5.CONNECTORS PINS ASSIGNMENT

a. Master RS-485/RS-422 interface connector: plug-in screw terminal Plug-in screw terminal wiring: Accepts AWG 1-#12 to #24 wires.

Pin Description :

PIN	Signal Name
1	RS-485 DATA+
2	RS-485 DATA-
3	NC
4	RS-422 TX+
5	RS-422 TX-

PIN	Signal Name
6	RS-422 RX+
7	RS-422 RX-
8	NC
9	+VS(POWER)
10	GND(GROUND)

b. Slave RS-485/RS-422 interface connector: plug-in screw terminal Plug-in screw terminal wiring: Accepts AWG 1-#12 to #24 wires .

Pin Description :

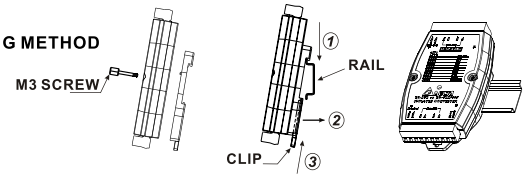
PIN	Signal Name
1	RS-485 DATA+
2	RS-485 DATA-
3	-NC
4	RS-422 RX+
5	RS-422 RX-

PIN	Signal Name
6	RS-422 TX+
7	RS-422 TX-
8	NC
9	NC
10	NC

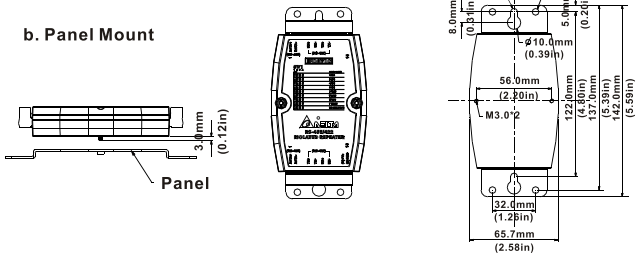
Notes :
1. IFD8510 provides 50Vdc reverse power protection。
2. To reduce interference , it is recommend using twisted pair cable。

6.MOUNTING METHOD

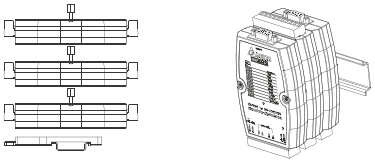
a. DIN Rail



b. Panel Mount



c. Piggy back



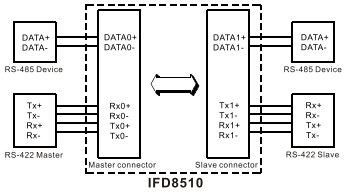
OPERATION :

1.LED Display

Green LED "ON " for power indicator
Red LED "Flash " for received data from master RS-485/RS-422 terminal
Green LED "Flash " for data received data from slave RS-485/RS-422 terminal.

2.Data transfer with RS-485

The RS-485 allows for multiple drivers and receivers on single cable, facilitating half duplex communication。Before sending data to RS-485 bus cable, Programmer has to make sure there is no data transmitted on the bus, else you will lose your data.

3.Wiring

Before using this module in a network, the module should be properly wiring connected. The following diagram shows the wiring layout.