



## I-7510AR

Three Way Isolated RS-422/485 Repeater/Converter

### Features

- Automatic RS-485 Direction Control
- Transmission Speed of up to 115200 bps
- 3-way 3000 Vdc Isolation Protection
- ESD Protection for RS-485 Data Line



### Introduction

The I-7510AR is a high-speed, three-way isolation repeater designed to enhance and extend serial communication networks. It provides robust electrical isolation between the two RS-422/485 ports and the power input circuits, protecting connected devices. Additionally, it offers effective noise suppression and signal waveform enhancement on its RS-422/485 ports, ensuring reliable and high-quality data transmission. Each repeater extends transmission distances by an additional 1.2 km (4,000 feet) at speeds of up to 115,200 bps and overcomes the 256-node limitation of RS-485 systems, enabling larger networks. Furthermore, the I-7510AR facilitates seamless conversion between four-wire RS-422 and two-wire RS-485 signals, providing exceptional flexibility in network configuration. This makes the I-7510AR a valuable tool for anyone working with RS-422/485 networks, offering enhanced reliability, extended range, and greater flexibility.

The I-7510AR is exactly the same as the I-7510A, except for the isolation side. The isolation side of the I-7510A is located in the input interface circuit, but the isolation side of the I-7510AR is located in the input and output interface circuit. In other words the I-7510AR is 3-way isolation repeater module.

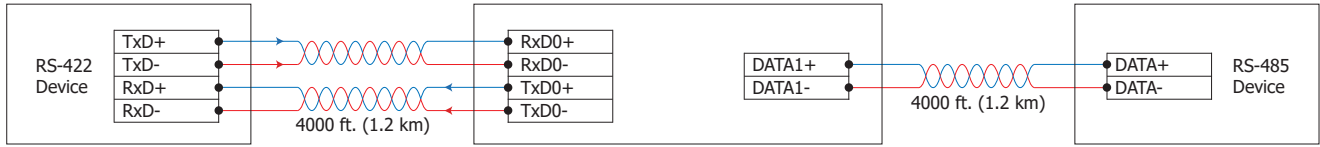
### System Specifications

| Interface              |   |   |
|------------------------|---|---|
| Serial Interface       | RS-422  | TxD+, TxD-, RxD+, RxD-<br>The RS-422 and RS-485 cannot be used simultaneously |
|                        | RS-485  | Data+, Data-  |
| Transmission Distance  | Max. 1,200 m at 9.6 kbps; Max. 400 m at 115.2 kbps<br>(Belden 9841 2P twisted-pair cable, if different cables are used, the transmission distance may change) |   |
| Self-Tuner Asic Inside | Yes   |   |
| Speed                  | 300 ~ 115200 bps  |   |
| ESD Protection         | Yes   |   |
| Isolated Voltage       | 3-way 3 kV Isolated   |   |
| Connector              | Removable 10-Pin Terminal Block x 2   |   |
| LED Indicators         |   |   |
| Power/Communication    | Yes   |   |
| Power                  |   |   |
| Input Voltage Range    | +10 VDC ~ +30 Vdc   |   |
| Power Consumption      | 2.2 W   |   |
| Mechanical             |   |   |
| Casing                 | Plastic   |   |
| Dimensions (W x L x H) | 72 mm x 35 mm x 122 mm  |   |
| Installation           | DIN-Rail Mounting   |   |
| Environment            |   |   |
| Operating Temperature  | -25 °C ~ +75 °C   |   |
| Storage Temperature    | -30 °C ~ +75 °C   |   |
| Humidity               | 10 ~ 90% RH, non-condensing   |   |

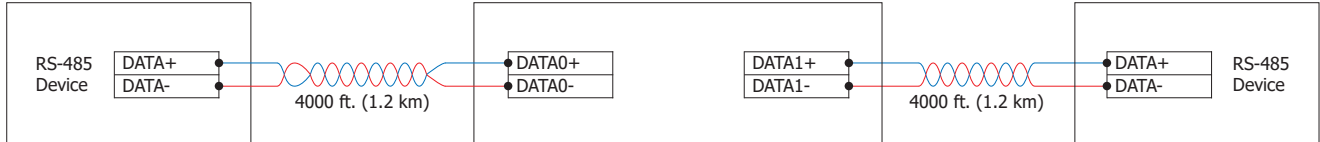
## Applications

### Applications for RS-422/485

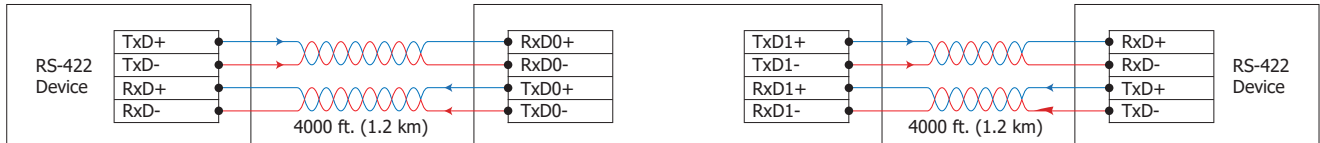
RS-422 to RS-485 Converter (Only for half duplex application)



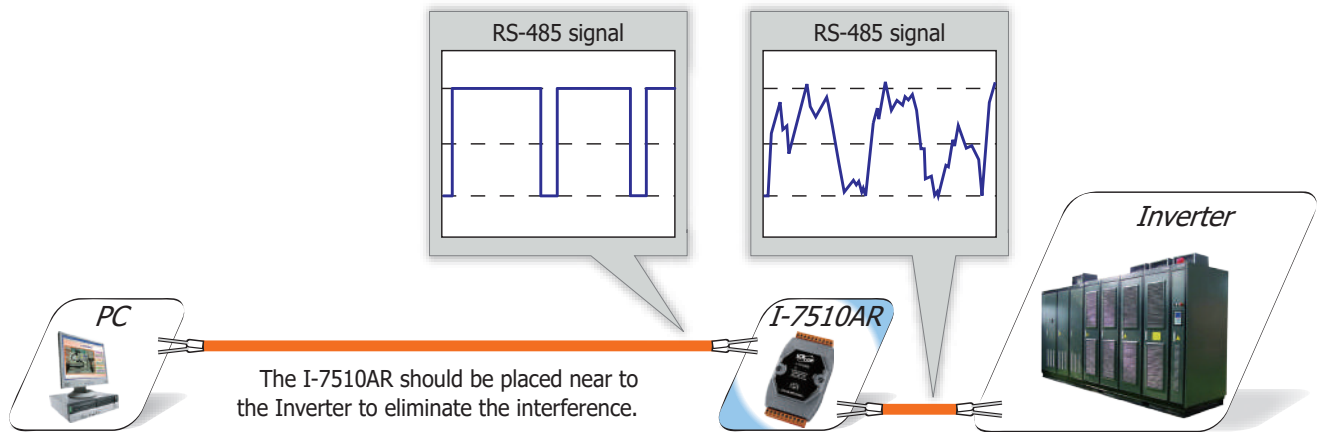
RS-485 to RS-485 Repeater (Only for half duplex application)



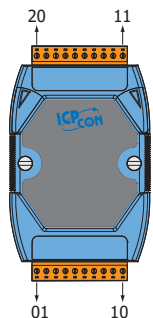
RS-422 to RS-422 Repeater



### Applications for 3-way isolation

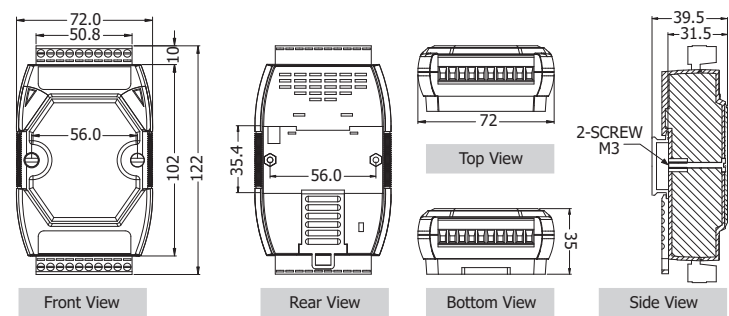


## Pin Assignments



| Terminal No. | Pin Assignment | Terminal No. | Pin Assignment |
|--------------|----------------|--------------|----------------|
| RS-485       | 01 DATA0+      | RS-485       | 20 DATA1+      |
|              | 02 DATA0-      |              | 19 DATA1-      |
|              | 03 --          |              | 18 --          |
| RS-422       | 04 TxD0+       | RS-422       | 17 TxD1+       |
|              | 05 TxD0-       |              | 16 TxD1-       |
|              | 06 RxD0+       |              | 15 RxD1+       |
|              | 07 RxD0-       |              | 14 RxD1-       |
|              | 08 --          |              | 13 --          |
|              | 09 (R)+Vs      |              | 12 --          |
|              | 10 (B)GND      |              | 11 --          |

## Dimensions (Units: mm)



## Ordering Information

|               |  |
|---------------|--|
| I-7510AR CR   | Three Way Isolated RS-422/485 Repeater/Converter (Blue Cover) (RoHS) |
| I-7510AR-G CR | Three Way Isolated RS-422/485 Repeater/Converter (Gray Cover) (RoHS) |

## Accessories

|              |  |
|--------------|--|
| GPSU06U-6 CR | Power Supply, 110~240 V <sub>AC</sub> to 24 V <sub>DC</sub> /0.25 A, 6 W, two pins USA plug (RoHS) |
|--------------|--|