

**I-7510**

Isolated RS-485 Repeater

**I-7510A**

Isolated RS-422/485 Repeater/Converter

**I-7510AR**

Three Way Isolated RS-422/485 Repeater/Converter

**I-7510P**

Three Way 5 kV Isolated 485 Repeater


**Features** ▶▶▶

- Automatic RS-485 Direction Control
- 3-way 3000 V<sub>DC</sub> Isolation Protection for I-7510AR
- Transmission Speed of up to 115200 bps
- Operating Temperatures, -25 °C ~ +75 °C
- 2-way 3000 V<sub>DC</sub> Isolation Protection for I-7510/I-7510A
- ESD Protection for RS-485 Data Line
- Power Input, +10 ~ +30 V<sub>DC</sub>
- DIN-Rail Mounting
- 3-way 5000 VDC Isolation Protection for I-7510P (IEC 60664-1 section 6.1.2.2.1)

**Introduction**

The I-7510/I-7510A provides 2-way optical isolation between one piece of RS-422/RS-485 equipment and the rest of the system. It can also be used as a repeater to extend the transmission of an existing network. Additionally, an RS-485 system can be expanded beyond the 256 node limitation imposed by the standard. It can also be used to convert a four-wire RS-422 signal into a 2-wire RS-485 signal, and vice versa.

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.

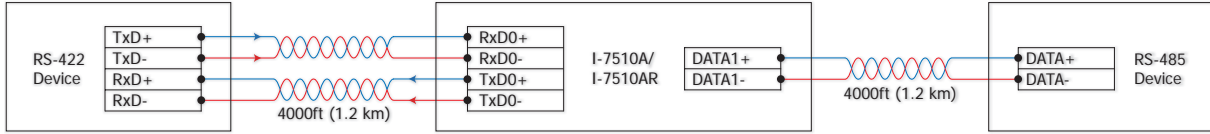
**System Specifications**

Models		I-7510	I-7510P	I-7510A	I-7510AR
<b>Interface</b>					
Serial Interface	RS-422	-		TxD+, TxD-, RxD+, RxD- 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 (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		2-way 3 kV Isolated	3-way 5 kV Isolated	2-way 3 kV Isolated	3-way 3 kV Isolated
Connector		Removable 10-Pin Terminal Block x 2			
<b>LED Indicators</b>					
Power/Communication		Yes			
<b>Power</b>					
Input Voltage Range		+10 V <sub>DC</sub> ~ +30 V <sub>DC</sub>			
Power Consumption		2.2 W			
<b>Mechanical</b>					
Casing		Plastic			
Dimensions (W x H x D)		72 mm x 122 mm x 35 mm			
Installation		DIN-Rail Mounting			
<b>Environment</b>					
Operating Temperature		-25 °C ~ +75 °C			
Storage Temperature		-30 °C ~ +75 °C			
Humidity		10 ~ 90% RH, non-condensing			

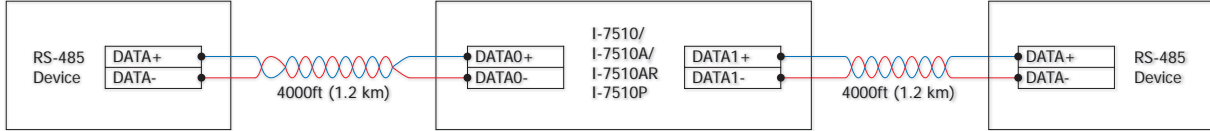
## Applications

### Applications for RS-422/485

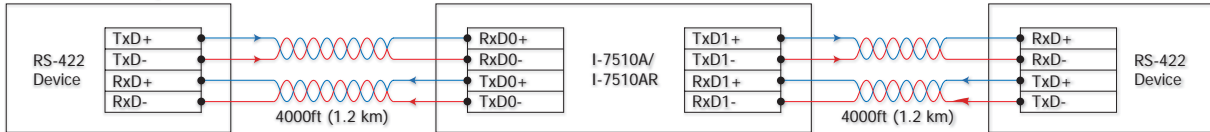
#### RS-422 to RS-485 Converter (Only for half duplex application)



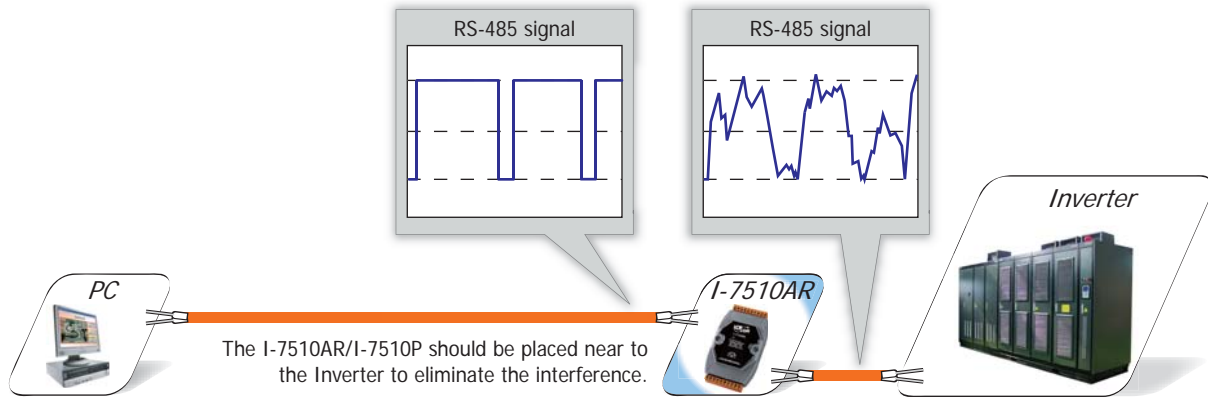
#### RS-485 to RS-485 Repeater (Only for half duplex application)



#### RS-422 to RS-422 Repeater



### Application for 3-way isolation



## Pin Assignments

I-7510/I-7510P				I-7510A		I-7510AR		I-7510A/7510AR	
Terminal No.	Pin Assignment	Terminal No.	Pin Assignment	Terminal No.	Pin Assignment	Terminal No.	Pin Assignment	Terminal No.	Pin Assignment
01	DATA+	20	DATA1+	RS-485	01 DATA0+	DATA0+	RS-485	20	DATA1+
02	DATA-	19	DATA1-		02 DATA0-	DATA0-		19	DATA1-
03	--	18	--		03 --	--		18	--
04	--	17	--	RS-422	04 RxDO+	TxD0+	RS-422	17	TxD1+
05	--	16	--		05 RxDO-	TxD0-		16	TxD1-
06	--	15	--		06 TxDO+	RxD0+		15	RxD1+
07	--	14	--		07 TxDO-	RxD0-		14	RxD1-
08	--	13	--		08 --	--		13	--
09	(R)+Vs	12	--		09 (R)+Vs	(R)+Vs		12	--
10	(B)GND	11	--		10 (B)GND	(B)GND		11	--

## Ordering Information

I-7510 CR	Isolated RS-485 Repeater (RoHS)	I-7510-G CR	Isolated RS-485 Repeater (Gray Cover) (RoHS)
I-7510A CR	Isolated RS-422/485 Repeater/Converter (RoHS)	I-7510A-G CR	Isolated RS-422/485 Repeater/Converter (Gray Cover) (RoHS)
I-7510AR CR	Three Way Isolated RS-422/485 Repeater/Converter (RoHS)	I-7510AR-G CR	Three Way Isolated RS-422/485 Repeater/Converter (Gray Cover) (RoHS)
I-7510P CR	Three Way 5 kV Isolated 485 Repeater (RoHS)		

## Accessories

GPSU06U-6	24 Vdc/0.25 A, 6 W Power Supply
DIN-KA52F	24 Vdc/1.04 A, 25 W Power Supply with DIN-Rail Mounting