

4.2. RS-422/485 Repeater



I-7510/I-7510A/I-7510AR

I-7510: Isolated RS-485 Repeater
 I-7510A: Isolated RS-422/485 Repeater/Converter
 I-7510AR: Three Way Isolated RS-422/485 Repeater/Converter

Features

- Auto Switching Baud Rate, 300 – 115200 bps
- 2-way 3000 V_{DC} Isolation Protection for I-7510/I-7510A
- 3-way 3000 V_{DC} Isolation Protection for I-7510AR
- ESD Protection for RS-485 Data Line
- Transmission Speed of up to 115200 bps
- Power Input of +10 – +30 V_{DC}
- Supports Operating Temperatures from -25 °C – +75 °C
- DIN-Rail



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.

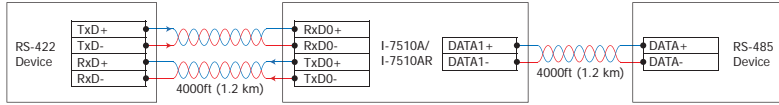
The I-7510AR is exactly the same as the I-7510A, except for the isolation site. The isolation site of the I-7510A is located in the input interface circuit, but the isolation site of the I-7510AR is located in the input and output interface circuit. In other words the I-7510AR is 3-way isolation repeater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

Specifications

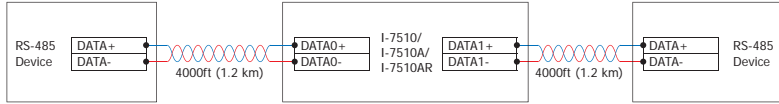
Models	I-7510	I-7510A	I-7510AR
Interface			
Serial Interface	RS-422	-	TxD+, TxD-, RxD+, RxD- The RS-422 and RS-485 cannot be used simultaneously
	RS-485	Data+, Data-	
2-wire Cabling/4-wire Cabling	Belden 8941 (2P twisted-pair cable)/Belden 8942 (4P twisted-pair cable), if different cables are used, the transmission distance may change		
Transfer Distance	Max. 1,200 m at 9.6 kbps; Max. 400 m at 115.2 kbps		
Max. Devices Supported	256		
Self-Tuner ASIC Inside	Yes		
Speed	300 – 115200 bps		
ESD Protection	Yes		
3000 V _{DC} Isolated Voltage	2-way Isolated		3-way Isolated
Connection	Removable 10-Pin Terminal Block x 2		
LED Indicators			
Power/Communication	Yes		
Power			
Input Voltage Range	+10 V _{DC} – +30 V _{DC} (Non-isolated)		
Power Consumption	2.16 W		
Mechanical			
Casing	Plastic		
Flammability	Fire Retardant Materials (UL94-V0 Level)		
Dimensions (W x H x D)	72 mm x 122 mm x 35 mm		
Installation	DIN-Rail		
Environment			
Operating Temperature	-25 °C – +75 °C		
Storage Temperature	-30 °C – +75 °C		
Humidity	10 – 90% RH, non-condensing		

Applications

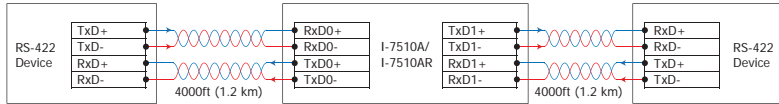
RS-422 to RS-485 Converter (Only for half duplex application)




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



RS-422 to RS-422 Repeater

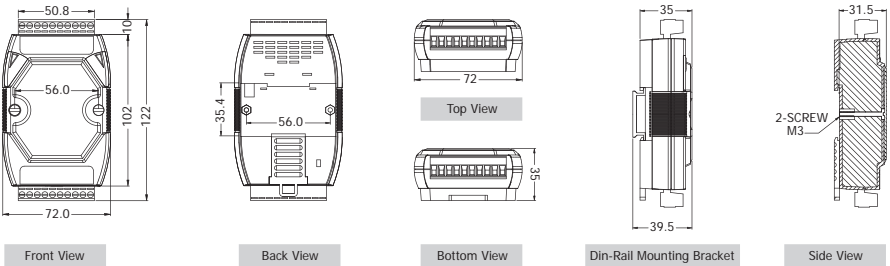


Pin Assignments



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

Dimensions (Unit: mm)



Ordering Information

I-7510 CR	Isolated RS-485 Repeater (RoHS)
I-7510A CR	Isolated RS-422/485 Repeater/Converter (RoHS)
I-7510AR CR	Three Way Isolated RS-422/485 Repeater/Converter (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