



I-7520/I-7520A/I-7520R/I-7520AR

Isolated RS-232 to RS-422/485 Converter

Features

- Automatic RS-485 Direction Control
- ESD Protection for the RS-232/422/485 Data Line
- Transmission Speed of up to 115200 bps



Introduction

Most industrial computer systems provide standard RS-232 serial ports. Though widely accepted, RS-232 has limited transmission speed, range, and networking capabilities. The RS-422 and RS-485 standards overcome these limitations by using differential voltage lines for data and control signals, which transparently converts RS-232 signals into isolated RS-422 or RS-485 signal with no need to change any hardware or software. The I-7520AR lets you easily build an industrial grade, long-distance communication system using standard PC hardware.

System Specifications

Models		I-7520	I-7520R	I-7520A	I-7520AR
Interface					
Serial Interface	RS-232	TxD, RxD, GND			
	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			
3000 VDC Isolated Voltage		on RS-232 side	on RS-485 side	on RS-232 side	on RS-422/485 side
Connector	RS-232	9-Pin Female D-Sub			
	RS-422/485	Removable 10-Pin Terminal Block			
LED Indicators					
Power/Communication		Yes			
Power					
Input Voltage Range		+10 VDC ~ +30 VDC (Non-isolated)			
Power Consumption		1.2 W			
Mechanical					
Casing		Plastic			
Dimensions (W x L x H)		72 mm x 35 mm x 118 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

How to choose the isolation side ?

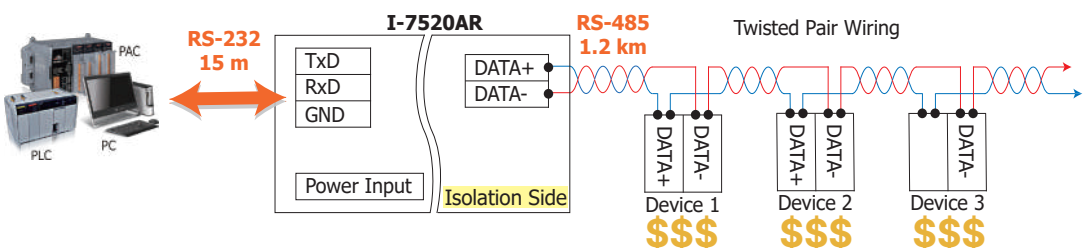
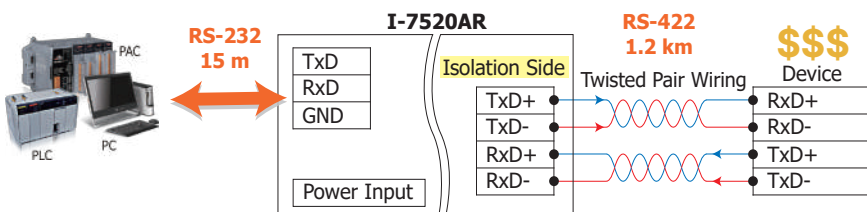
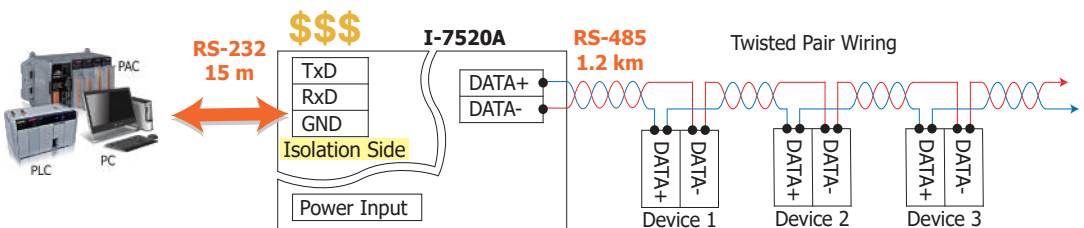
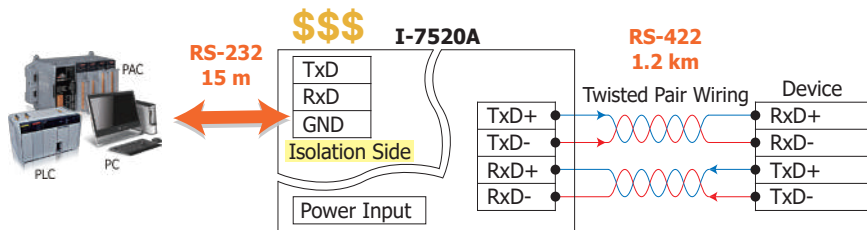
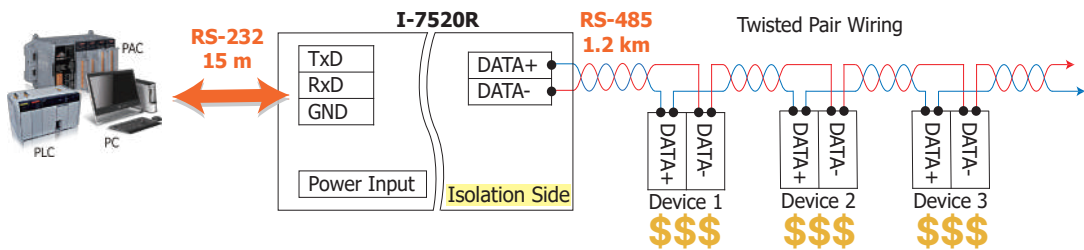
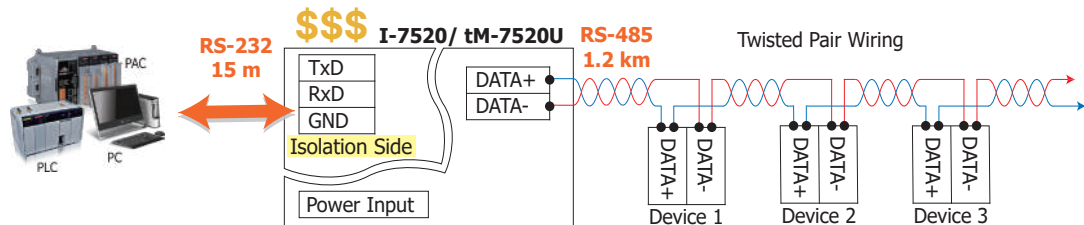
1. Most circuit damage is caused by the noise from power input.
2. Consider the devices connected to which side are more expensive, choose this side isolated.

I-7520: RS-232 isolated (devices at RS-232 side are protected)

I-7520R: RS-485 isolated (devices at RS-485 side are protected)

I-7520A: RS-232 isolated (devices at RS-232 side are protected)

I-7520AR: RS-422/485 isolated (devices at RS-422/485 side are protected)



Pin Assignments

I-7520/I-7520R				
Terminal No.	Pin Assignment	Pin Assignment	Terminal No.	Pin Assignment
RS-485	01	DATA+	01	06
	02	DATA-		
03	--	--	03	08
04	--	TxD	04	09
05	--	RxD	05	--
06	--	--		
07	--	GND		
08	--			
09	(R)+Vs			
10	(B)GND			

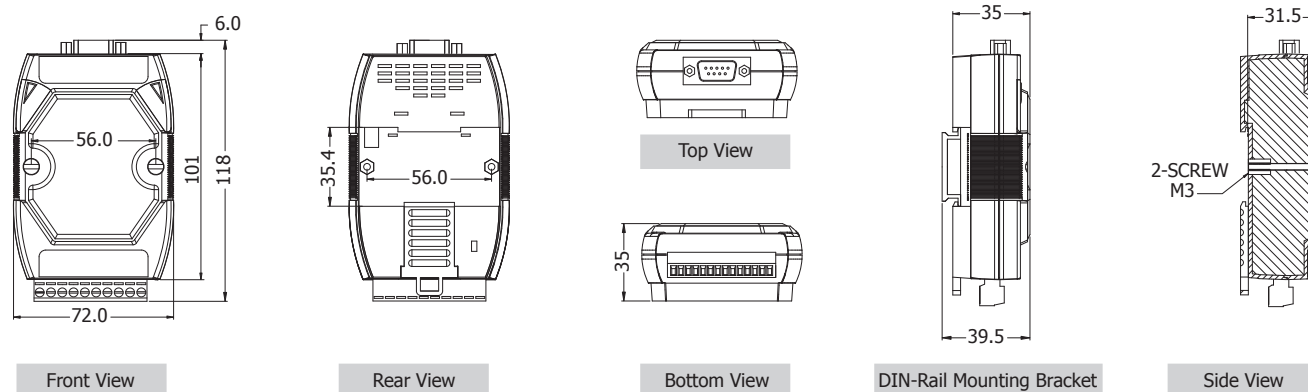
RS-232: Female DB-9 Connector



I-7520A/I-7520AR				
Terminal No.	Pin Assignment	Pin Assignment	Terminal No.	Pin Assignment
RS-485	01	D1+	01	06
	02	D1-		
03	--	--	03	08
RS-422/485	04	TxD+	TxD	02
	05	TxD-	RxD	03
	06	RxD+/D2+	--	04
07	RxD-/D2-	GND	05	09
08	--			
09	(R)+Vs			
10	(B)GND			

RS-232: Female DB-9 Connector

Dimensions (Units: mm)



Ordering Information

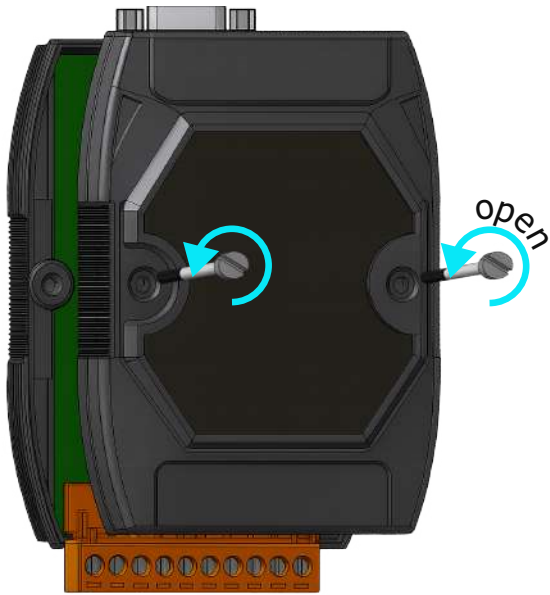
I-7520 CR	Isolated RS-232 to RS-485 Converter (Blue Cover) (RoHS)
I-7520-G CR	Isolated RS-232 to RS-485 Converter (Gray Cover) (RoHS)
I-7520A CR	Isolated RS-232 to RS-422/485 Converter (Blue Cover) (RoHS)
I-7520A-G CR	Isolated RS-232 to RS-422/485 Converter (Gray Cover) (RoHS)
I-7520R CR	RS-232 to Isolated RS-485 Converter (Blue Cover) (RoHS)
I-7520R-G CR	RS-232 to Isolated RS-485 Converter (Gray Cover) (RoHS)
I-7520AR CR	RS-232 to Isolated RS-422/485 Converter (Blue Cover) (RoHS)
I-7520AR-G CR	RS-232 to Isolated RS-422/485 Converter (Gray Cover) (RoHS)

Accessories

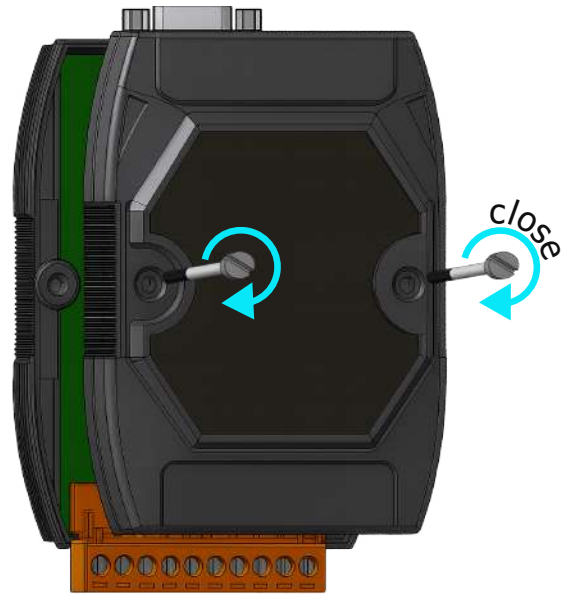
GPSU06U-6 CR	Power Supply, 110~240 VAC to 24 VDC/0.25 A, 6 W, two pins USA plug (RoHS)
I-7510 CR	Isolated RS-485 Repeater (Blue Cover) (RoHS)
I-7510A CR	Isolated RS-422/485 Repeater/Converter (Blue Cover) (RoHS)
CA-0915 CR	DB9 Male to DB9 Female Cable [RS-232; Pin1-Pin9], 1.5M (RoHS)

Jumper

1. Module Cover Removal and Installation



Remove the top cover of the module before adjusting the jumper.



After adjusting the jumper, reinstall the top cover of the module.

2. I-7520A & I-7520AR Pin Assignment



Pin Assignment For **type1** and **type2**:

1	D1+	2	D1-	3		4	TX+	5	TX-	6	RX+	7	RX-	8		9	(R)+Vs	10	(B)GND
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RS-485 Pin define:
D1+ and D1-

RS-422 Pin define:
TX+, TX-, RX+ and RX-

Pin Assignment For **type3**:

1	D1+	2	D1-	3		4		5		6	D2+	7	D2-	8		9	(R)+Vs	10	(B)GND
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Channel one Pin define:
D1+ and D1-

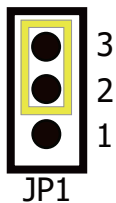
Channel two Pin define:
D2+ and D2-

3. The I-7520A & I-7520AR output type and Jumper Settings.

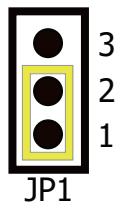
Note:

1. The RS-422 and RS-485 output types couldn't be used simultaneously, which means that you can only select 1 type to output.

Type	Output Description	JP1 Jumper Setting
Type 1	1-channel RS-485 output	Set JP1 jumper to positions 2 and 3
Type 2	1-channel RS-422 output	Set JP1 jumper to positions 2 and 3
Type 3	2-channel RS-485 output <i>Support star network</i>	Set JP1 jumper to positions 1 and 2



Types 1 and 2:
Default setting RS-422 or RS-485.



Types 3:
2-channel RS-485.

