4-4 RS-232/RS-422/485 Converters

tM-7520U NEW

Isolated RS-232 to RS-485 Converter

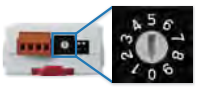
Features

- 2-way 2500 V_{DC} Isolation Protection
- ESD Protection for RS-485 Data Line
- Power Input, +10 ~ +30 V_{DC}
- Low power consumption
- Long-cable application
- Power and data flow indicator for troubleshooting
- Easy-to-use rotary switch for baud rate setting, 1200 ~ 115200 bps
- Operating Temperatures, -25 °C ~ +75 °C
- Tiny packaging fits on your DIN-Rail

Introduction

Most industrial computer systems provide standard RS-232 serial ports with limited transmission speed, range, and networking capabilities. The RS-485 standards overcome these limitations by using differential voltage lines for data and control signals. The tM-7520U transparently converts RS-232 signals into isolated RS-485 signal with no need to change any hardware or software. This lets you easily build an industrial grade, long-distance communication system using standard PC hardware. The module provides 2500 V_{DC} of optical isolation allowing you to separate and protect critical segments of the system from the rest of the RS-485 network.

The tM-7520U provides 2 modes of baud rate setting, one is Self-Tuner mode and the other is Fixed baud rate mode. The Self-Tuner mode can support Multiple Baud Rate and Multiple Data Format. The Self-Tuner design is exactly the same as I-7520 series. The Fixed baud rate mode offers a better quality for data transmission over long or lossy lines or electrically noisy environments.



Baud rate 1200 ~ 115200 bps

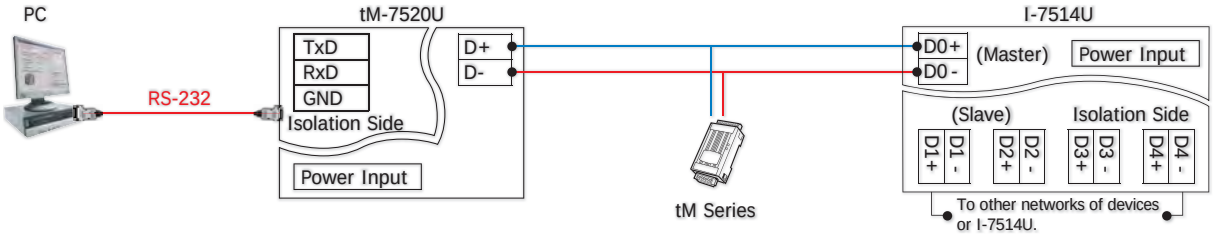
Comparison Table of Repeater

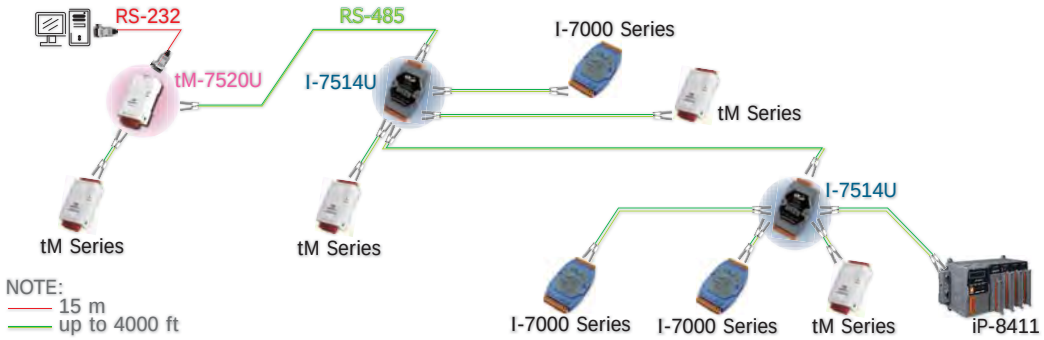
Mode name	tM-7520U	I-7520
RS-485 Direction Control	Fixed baud rate setting and Automatic RS-485 Direction Control (Self-Tuner, default)	Automatic RS-485 Direction Control (Self-Tuner)
Baud rate	300 ~ 115200 bps for Self-Tuner 1200 ~ 115200 bps for Fixed baud rate setting	300 ~ 115200 bps
Dimensions (W x H x D)	52 mm x 92 mm x 27 mm	72 mm x 118 mm x 35 mm
Remarks	Entry-level Long-cable application	Entry-level

System Specifications

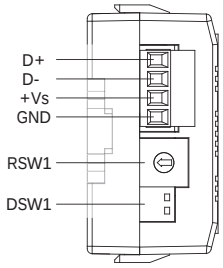
Interface	
Input	RS-232: TxD, RxD and GND
Output	RS-485: Data+, Data-
Transfer Distance	Max. 1,200 m at 9.6 kbps; Max. 400 m at 115.2 kbps (Belden 9841 2P twisted-pair cable, if different cables are used, the transmission distance may change)
2500 V_{DC} Isolated Protection	Yes
Connection	Removable 4-Pin Terminal Block x 1; 9-Pin Female D-Sub x 1
LED Indicators	
Power/TxD/RxD	Yes
Power	
Input Voltage Range	+10 V_{DC} ~ +30 V_{DC} (Non-isolated)
Power Consumption	0.5 W
Environment	
Operating Temperature	-25 °C ~ +75 °C
Storage Temperature	-30 °C ~ +75 °C
Humidity	10 ~ 90% RH, non-condensing

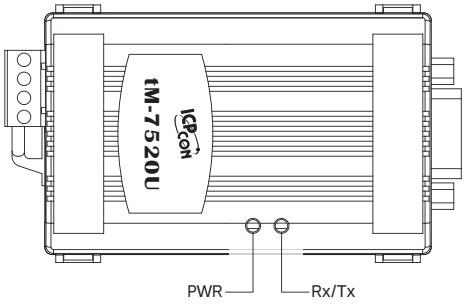
Applications





Pin Assignments

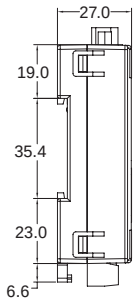




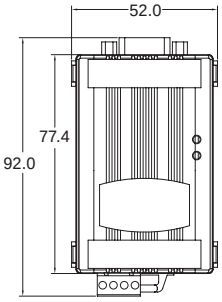
Pin Assignment	Terminal No.	Pin Assignment
--	01	06 --
TxD	02	07 --
RxD	03	08 --
--	04	09 --
GND	05	

RS-232: Female DB-9 Connector

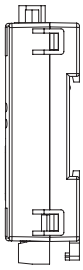
Dimensions (Unit: mm)



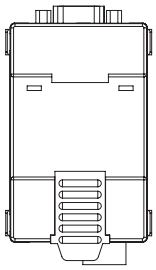
Left Side View



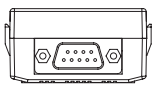
Front View



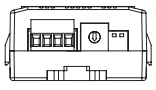
Right Side View



Rear View



Top View



Bottom View

Ordering Information

tM-7520U CR	Isolated RS-232 to RS-485 Converter (RoHS)
tM-7520U-CA CR	tM-7520U CR with CA-0915 cable x 1 (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
tM-7510U CR	Isolated RS-485 Repeater (RoHS)
CA-0915	9-Pin Male-Female D-Sub Cable, 1.5 m