tM-7520U

Tiny Isolated RS-232 to RS-485 Converter

Features

- 2-way 2500 V_{DC} Isolation Protection
- ESD Protection for RS-485 Data Line
- 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
- Tiny packaging fits on your DIN-Rail Mounting

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.
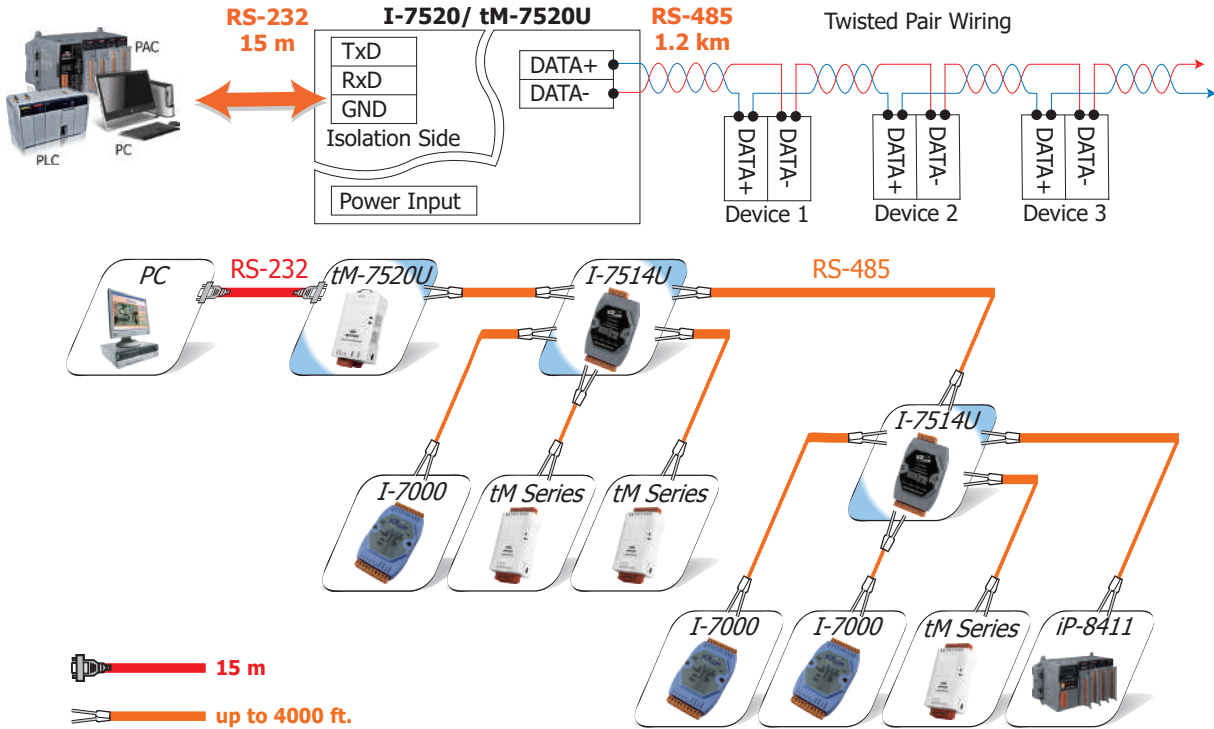
Baud rate 1200 ~ 115200 bps

Comparison Table of Converter

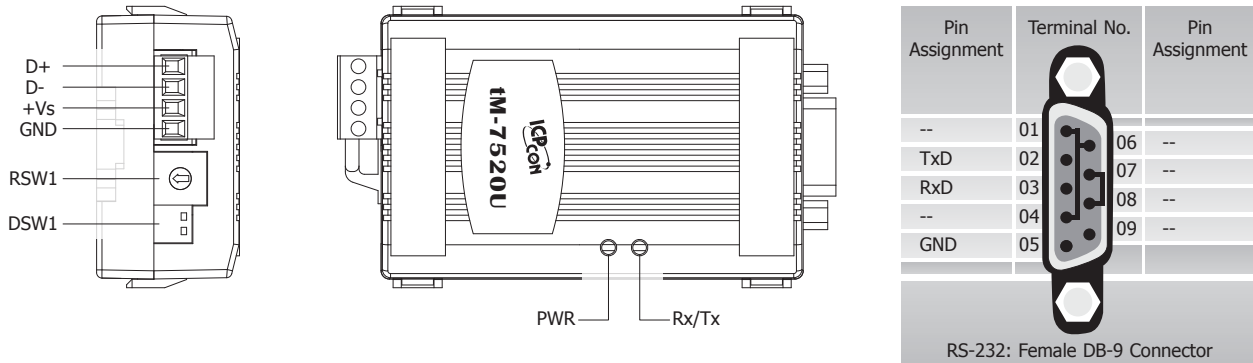| Mode name	tM-7520U	I-7520
RS-485 Direction Control	Fixed baud rate setting and Automatic RS-485 Direction Control (Self-Tuner, default)	Automatic RS-485 Direction Control (Self-Tuner)
Baud rate	300 ~ 115200 bps for Self-Tuner 1200 ~ 115200 bps for Fixed baud rate setting	300 ~ 115200 bps
Dimensions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

System Specifications

Interface	
Input	RS-232: TxD, RxD and GND
Output	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)
2500 V_{DC} Isolated Protection	Yes
Connector	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 (Units: mm)

| Left Side View | Front View | Right Side View | Rear View | Bottom View |

Top View
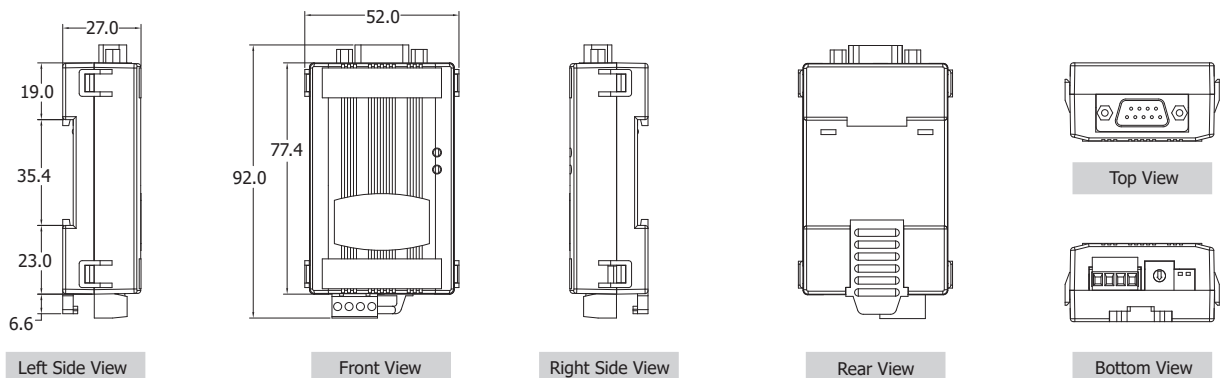
■ Ordering Information

tM-7520U CR	Tiny Isolated RS-232 to RS-485 Converter (RoHS)
tM-7520U-CA CR	Tiny Isolated RS-232 to RS-485 Converter with CA-0915 Cable (RoHS)

■ Accessories

GPSU06U-6	Power Supply, 110~240 V_{AC} to 24 V_{DC}/0.25 A, 6 W, two pins USA plug (RoHS)
tM-7510U CR	Tiny Isolated RS-485 Repeater (RoHS)