USB ⟷ RS-485/RS-422/RS-232/TTL
E810-U15
Industrial-grade Photoelectric Isolation Converter Instruction Manual

❶ Product introduction

With the continuous development of the industrial automation industry, USB interfaces are gradually replacing various low-speed peripheral interfaces of old PCs. However, many devices in the current industrial environment are still designed using RS-232, RS-422, RS-485, and TTL interfaces. Therefore, many users use USB to RS-232, RS-422, RS-485, and TTL converters to realize data transmission between PCs and serial devices.

E810-U15 is a universal USB-RS-232, RS-422, RS-485, and TTL interface converter. It can convert USB signals to RS-232, RS-422, RS-485, TTL signaling with surge protection on every interface.

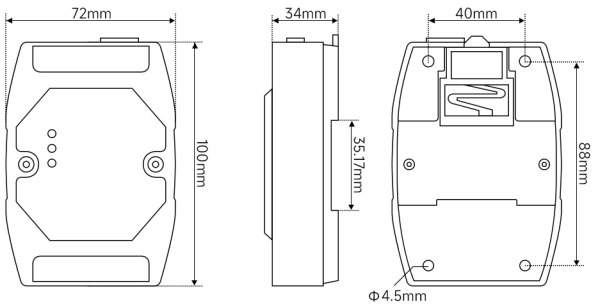
The E810-U15 interface converter can provide reliable connections for point-to-point and point-to-multipoint communications. Each point-to-multipoint converter can allow the connection of 128 RS-422 or RS-485 interface devices. The device has a power indicator light and The data flow indicator light can be used to observe the status of the device. The supported communication methods include USB to RS-232, RS-422, RS-485 and TTL conversion.

❷ Features

- The USB interface adopts Type-c interface, which is convenient, easy to use and highly reliable;
- Supports 3.3V and 5V TTL full-duplex communication, which can be switched through internal jumpers;
- Supports three-wire RS-232 full-duplex communication;
- Supports four-wire RS-422 full-duplex communication;
- Supports two-wire RS-485 half-duplex communication;
- When the converter is connected to multiple external devices or for long-distance

❸ Hardware installation and application

E810-U15 adopts guide rail and positioning hole installation method, and you can choose any method to use. When installing the guide rail, pay attention to the buckle width of 35mm. When installing the positioning holes, refer to the base size diagram.



❹ Shipping List

- one host machine
- one 10P 5.08 terminalblock
- one USB to type-c adapter cable
- one copy of product instruction manual

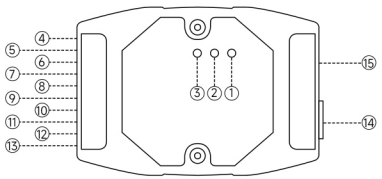
❺ Driver Installation

The CH340 version requires driver installation, which can be downloaded from https://www.wch.cn/downloads/CH341SER_EXE.html

❻ Performance parameters

USB protocol standard	USB2.0, backward compatible with USB1.0, USB1.1
USB interface standard	type-c interface
RS-232 interface standard	Standard DB9 male connector, full duplex 2:RXD 3:TXD 5:GND
RS-485 interface standard	2P 5.08mm terminal block, half duplex
RS-422 interface standard	5P 5.08mm terminal block, full duplex
TTL interface standard	3P 5.08mm terminal block, default 5V, can be switched to 3.3V through internal jumper
Power Output	2P5.08mm terminal block, default 100mA@5V, voltage is consistent with TTL level voltage
Isolation voltage	1.5KV
Electrostatic protection level	Contact 4KV, air 8KV
Pulse wave surge	Differential mode 1KV, common mode 2KV
Protection level	Industrial EMC Level 3
Baud rate range	RS-485/RS-422: 300~921600bps(E810-U15) 300~460800bps(E810-U15C)
	TTL: 300~921600bps(E810-U15) 300~460800bps(E810-U15C)
	RS-232: 300~460800bps(E810-U15) 300~230400bps(E810-U15C)
Product Size	122×62×26mm
Product weight	120±5g
Working temperature & humidity	-40~+85℃、5%~95%RH (No condensation)
Storage temperature & humidity	-40~+105℃、5%~95%RH (No condensation)

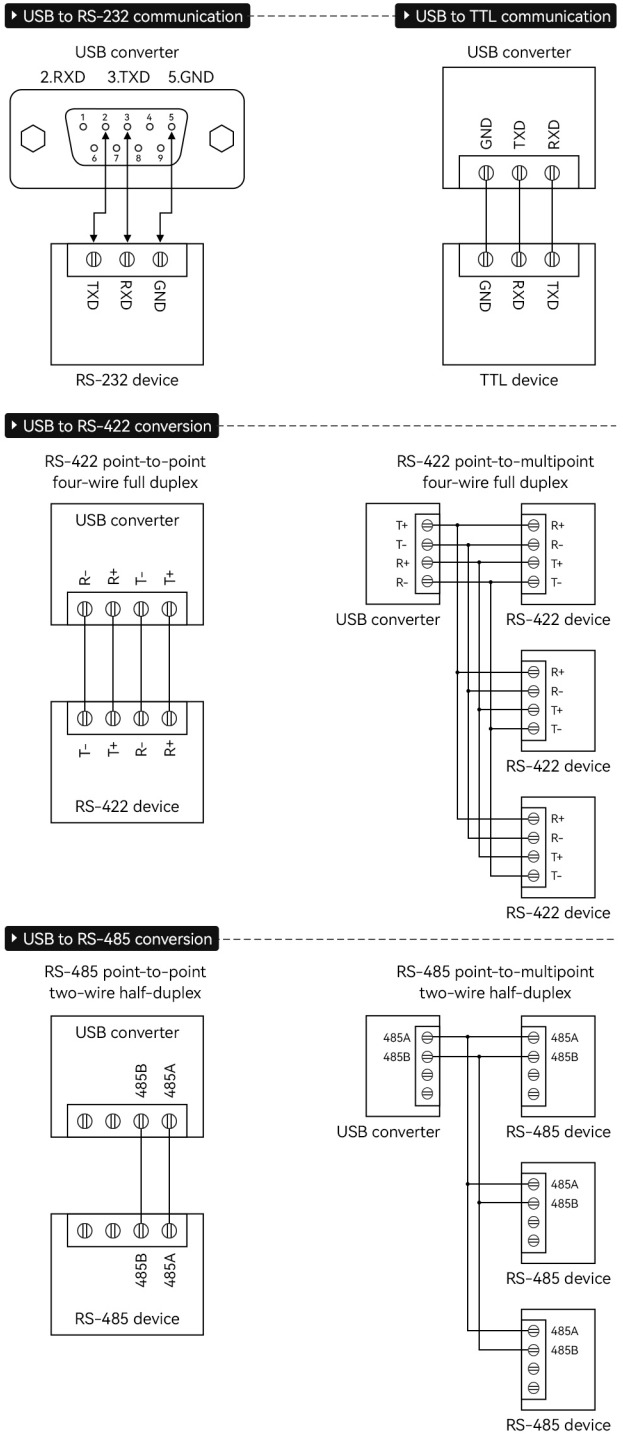
❼ Interface definition



NO	Name	Description
1	PWR	Power indicator light, red, lights up when powered on
2	TXD	Data sending indicator light, yellow, flashes when USB sends data
3	RXD	Data receiving indicator light, yellow, flashes when USB receives data
4	PE	Ground terminal, can be connected to the earth
5	T+/A	RS422 T+ terminal is connected to the R+ terminal when used as RS422 and connected to the A terminal when used as 485
6	T-/B	RS422 T- terminal is connected to the R- terminal when used as RS422 and connected to the B-terminal when used as 485
7	R+	RS422 R+ terminal, connected to T+ terminal when used as RS422
8	R-	RS422 R-terminal, connected to T-terminal when used as RS422
9	GND	Digital ground signal interface
10	TXD	TTL TXD interface, connected to the external RXD interface
11	RXD	TTL RXD interface, connected to the external TXD interface
12	VCC	Power output positive interface, maximum output current 100mA
13	GND	Power output negative interface or digital ground signal interface, which can be used in conjunction with VCC
14	RS232	DB9 male connector, pin 2 is the RXD interface, pin 3 is the TXD interface, and pin 5 is the GND interface
15	USB	Standard Type-C interface

TTL defaults to 5V level, which can be modified to 3.3V level through the internal jumper cap of the device.
The default output of VCC is 5V, which can be modified to 3.3V through the internal jumper cap of the device.
The output voltage is consistent with the TTL level voltage.

❽ Communication connection diagram



LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000