Model:UT-820E

USB to RS-485/422 opto-isolated interface converter

Datasheet

1. Overview

With the continuous development of the PC industry, the USB interface is gradually replacing the various low-speed peripheral interfaces of older PCs, however, many important devices in the current industrial environment still use RS-485/RS-422 interface design, so many users use USB to RS-485/RS-422 converters to realize the data transfer between PCs and RS-485/RS-422 devices Data transfer.

UT-820E is a universal USB/RS-485/422 converter with no external power supply, built-in opto-isolated and DC/DC power isolation module. Compatible with USB, RS-422, RS-485 standards, it is capable of converting single-ended USB signals to balanced differential RS-422 or RS-485 signals with built-in opto-isolated capable of providing isolation voltages up to 2500Vrms with fast transient voltage suppression protector and discharge tube, which is designed to protect RS-422/RS-485 .This protector is designed to protect RS-422/RS-485 interface with today's advanced TVS (TRANSIENT VOLTAGE SUPPRESSOR) transient voltage suppressor and discharge tube, which is a high resistance state under normal conditions. Clamped in a predetermined value, to protect the back of the circuit components from damage due to transient high-voltage shock. This protector can effectively suppress lightning (LIGHTNING) and ESD, providing 1500W of lightning protection per line, surge protection power, and various reasons for surge voltage and transient overvoltage generated on the line, and the extremely small inter-pole capacitance ensures high-speed transmission of RS-422/RS-485 interface, RS-422, RS-485 end through RJ-45 and DB9. The RS-422 and RS-485 terminals are connected via RJ-45 and DB9 male connectors. The converter is equipped with zero-latency automatic transceiver, and the unique I/O circuitry automatically controls the data flow direction without any handshaking signal (such as RTS, DTR, etc.) .No jumper setting is required to achieve full-duplex (RS-422) and half-duplex (RS-485) mode conversion, plug-and-play. Ensure that all existing communication software and interface hardware is suitable.

UT-820E opto-isolated interface converter can provide reliable connection for point-to-point and point-to-multipoint communication, each converter can connect 128 RS-422 or RS-485 interface devices from point to multipoint, with data communication rate 300-128000bps, with power indicator and data flow indicator to indicate the fault condition, supported communication methods are USB to RS-422, USB to RS-485 conversion.

2. Major Functions & Features

- Support USB to RS-485/422 opto-isolated interface converter

3. Technical Parameters

- Standard: Compliant with USBV1.1, 1.0 standard EIA RS-485, RS-422 standard, forward compatible with 2.0.
- USB signals: VCC, DATA+, DATA-, GND, FG.
- RS-485 signals: T+, T-, GND.
- RS-422 signals: T+, T-, R+, R-, GND.
- Working modes: Asynchronous, point-to-point or point-to- multipoint, 2-port half duplex and 4-port full duplex.
- Direction control: Adoption of automatic data stream control for automatic recognition and control of data transmission direction.

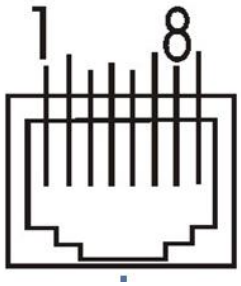
- Baud rate: 300-128,000bps, automatic detection of the transmission rate of the serial interface signal.
- Load capacity: Support point to multipoint each converter can allow the connection of 128 RS-422 or RS-485 interface devices.
- Transmission distance: RS-485/422 end 5000 meters (9600bps), USB port no more than 5 meters
- Interface protection: 1500W lightning, surge protection, ±15KV electrostatic protection
- Interface form: USB B-type female, RJ-45 and DB9 male connector.
- Signal indication: three signal indicators power (PWR) transmit (TXD) receive (RXD)
- Transmission medium: twisted pair or shielded wire
- Transmission rate: 128000bps to 300m
  38400bps to 2.4Km
  9600bps to 5Km
- Dimension: 96mm×64mm×26mm
- Operating environment: -40 ~ 85°C, relative humidity 5 ~ 95%
- Transmission distance: 0~5,000m (128000bps~9600bps)
- Support Win98/Win2000/WinXP/Vista/Win7/Linux etc.

4. Hardware definition and initial settings

- RS-485/RS-422 output signal and terminal pin assignment

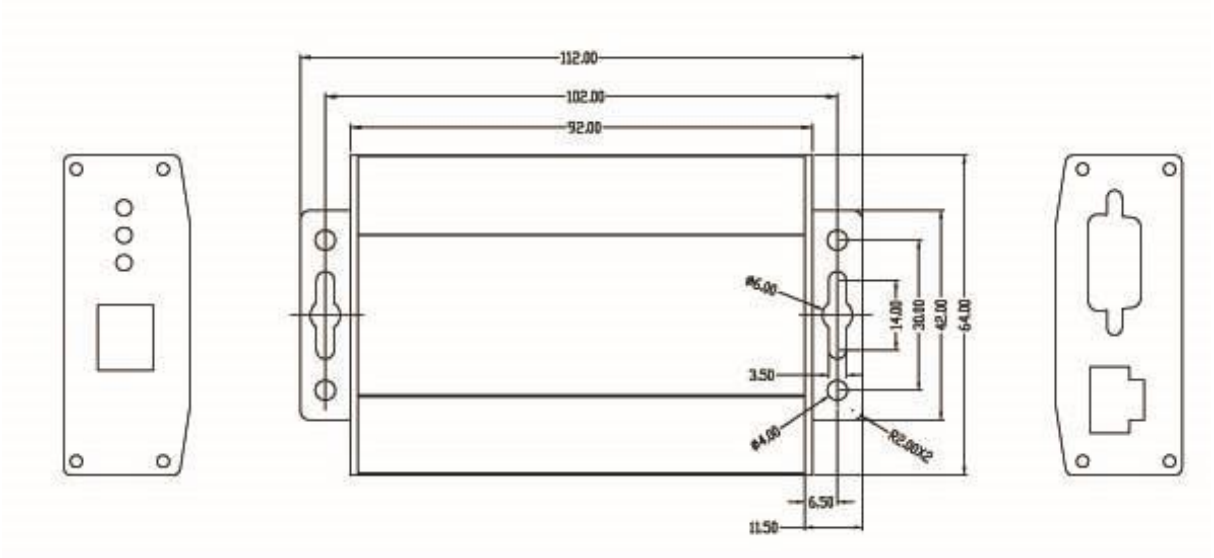
DB9 Male (PIN)	RJ-45 (PIN)	output signals	RS-422 full duplex cabling	RS-485 half duplex cabling
1	5	T/R+	Transmitting(A+)	RS-485 (A+)
2	4	T/R-	Transmitting (B-)	RS-485 (B-)
3		RXD+	Receiving (A+)	Null
4		RXD-	Receiving (B-)	Null
5	2，7	GND	grounding	grounding
6	1	N/A		
7	3	N/A		
8	6，8	N/A		
9		EARTH	Protective grounding	Protective grounding

RJ-45 socket pin assignment diagram



5. Product View (Appearance)

6. Structure Dimensions



7.Ordering Information

Model	Signal/ Interface			Protection level		Baud rate	Operating Environment			Power	
	USB	RS-232	RS-485/422				Temperature		Humidity		
	USB B type			RS232	RS-485/ 422		-25~70℃	-40~85℃	5~95%	plug and play	External power
UT-820E	√		BD9 male/RJ-45		1500W surge	300bps-128kbps		√	√	√	