Model:UT-861A

USB to RS-485/422 4-port opto-isolated converter USB V2.0

Datasheet

UTEK TECHNOLOGY (SHENZHEN) CO., LTD.

Add: Room 1001, Building 7, Skyworth Innovation Valley, No. 8, Tangtou No.1 Road, Shiyan Street, Shiyan Old Street, Bao 'an District, Shenzhen

Tel：+86-755-81202008

Fax：+86-755-27886083

Http：www.uotek.com

1. Overview

UT-861A is an USB/RS-485/422 converter with no external power supply, built-in opto-isolator and DC/DC power isolation module. Compatible with USB, RS-422, RS-485 standards, it can convert single-ended USB signals to balanced differential RS-422 or RS-485 signals with built-in opto-isolator, capable of providing isolation voltages up to 2500Vrms, with fast transient voltage suppression protector, which is designed to protect RS-422/RS-485 interfaces, using Today's advanced TVS (TRANSIENT VOLTAGE SUPPERSSOR) transient voltage suppressor, under normal conditions TVS tube is a high resistance state, when the two ends of the TVS tube is subjected to an instantaneous high-energy shock, it can reduce the impedance of the two ends at a very high rate, absorbing a large current, thus clamping the voltage at its two ends at a predetermined value to protect the back circuit components from damage due to transient high-voltage shock. This protector effectively suppresses lightning (LIGHTNING) and ESD, providing 600W per line of lightning strike, surge protection, and surge voltage and transient overvoltage from various causes on the line, and the extremely small inter-pole capacitance ensures high speed transmission of the RS-422/RS-485 interface, with the RS-422 and RS-485 ends connected via DB9 male connectors. The converter is equipped with zero delay automatic transceiver, unique I/O circuit 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 are suitable.

UT-861A opto-isolated interface converter can provide reliable connection for point-to-point and point-to-multipoint communication, each port of point-to-multipoint can allow connection of 128 RS-422 or RS-485 interface devices, data communication rate 300-128000bps, with power indicator and data flow indicator to indicate the fault situation, supported communication methods are USB to RS-422, USB to RS-485 conversion.

2. Main functions and feature

- Support USB to RS-422, USB to RS-485 conversion

3. Technical Parameters

- Standards: USBV1.1, 2.0 compliant EIA RS-485/422 compliant
- USB signal: VCC, DATA+, DATA-, GND, FG
- RS-485 signal: T/R+, T/R-, GND
- RS-422 signals: T/R+, T/R-, RXD+, RXD-, GND
- Working mode: Asynchronous work, point-to-point or multi-point, 2-wire half-duplex, 4-wire full-duplex
- Directional control: Adopting automatic data flow control technology to automatically identify and control the direction of data transmission
- Baud rate: 300-128000bps, automatic detection of serial signal rate
- 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 (128000bps-9600bps), USB port no more than 5 m
- Interface protection: 600W lightning, surge protection, ±15KV electrostatic protection per channel
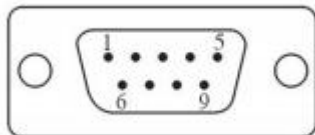
- Isolation degree: Isolation voltage 2500Vrms per circuit 500DC continuous dedicated DC/DC module
- Isolation mode: master/slave isolation, slave/slave isolation
- Interface form: USB end B female connector, DB9 male connector
- Signal indication: 9 signal PWR, TXD, RXD
- Transmission medium: twisted pair or shielded pair
- Transmission rate: 128000bps to 300m
            38400bps to 2.4Km,
            9600bps to 5Km
- Dimension: 210mm×130mm×32mm
- Operating environment: -40 ~ 85°C, relative humidity 5% ~ 95%
- Support Win8/Win10/Win2000/2003/2008/2012/XP/Vista/7/8/8.1/10/CE/Mac/Linux etc.
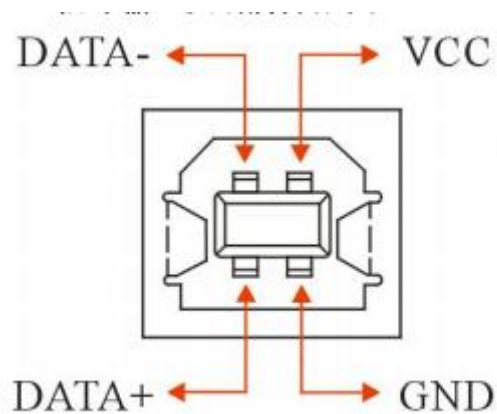
4. Hardware definition and initial definition

1. DB9 male: RS-485/RS-422 output signal and terminal pin assignment

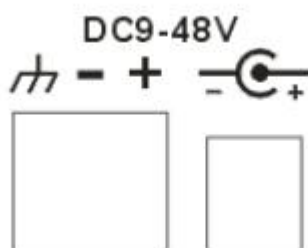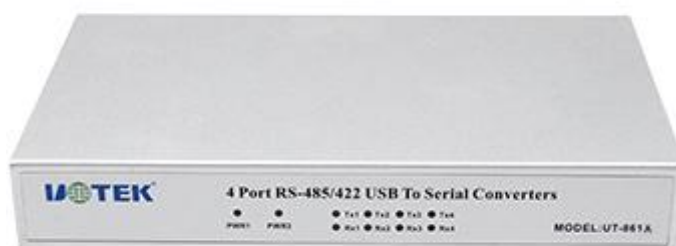| DB9 Male PIN	Output Signal	RS-422 Full-duplex	RS-485 Half-duplex
1	T/R+	Transmitting (A+)	RA-485 (A+)
2	T/R-	Transmitting (B-)	RS-485 (B-)
3	RXD+	Receiving (A+)	N/C
4	RXD-	Receiving (B-)	N/C
5	GND	GND	GND
6	N/A		
7	N/A		
8	N/A		
9	N/A		

DB9 Male

.

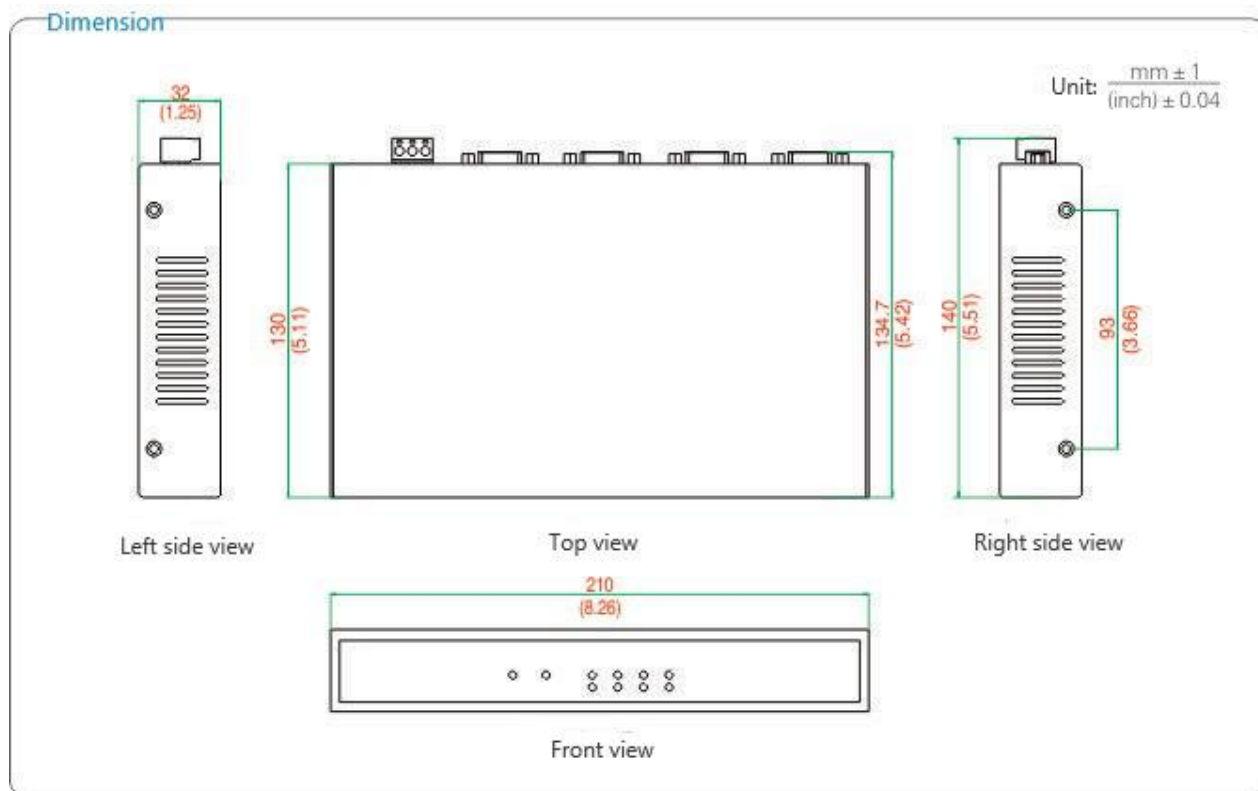2. USB-B Female: USB signal input and pin assignment

3. Power input: DC9-48V@350mA

5. Product View (Appearance)

6. Structure Dimensions

7. Ordering

Model	Signal/Interface			Protection level		Baud rate	Operating Environment			Power	
	USB	RS232	RS485/422				Temperature		Humidity		
	USB B type	DB9 male		RS-232	RS-485/422		0~70°C	-40~85°C	5~95%	plug and play	External power
UT-861A	√		√		600W Surge	300bps128kbps	√		√		9-48VDC