Model: UT-2003A

(Product Name：USB to RS-485/422 8 Ports Converter with Isolation(USB V2.0))

Datasheet

1. Overview

UT-2003A is a universal USB/RS-485/422 converter, which is with built-in optoelectronic isolator and DC/DC power isolated module. It complies with USB, RS422, and RS-485 standards; it converts single side USB signal to a balanced differential RS-422 or RS-485 signal. The built-in optoelectronic isolator can provide as high as 2,500Vrm isolated voltage; the fast transient voltage suppression is designed to protect RS-422/RS-485 interface; it adopts advanced TVS (TRANSIENT VOLTAGE SUPPRESSOR); normally, TVS tube is in high impedance state; when both sides of TVS tube suffer from high power impact in a sudden, the voltage suppression will fast lower the impedance from both sides, and soak in big current; with this, the voltage on both sides are fixed at presupposed value, protects the component of circuit from damage. This voltage suppression provides 600W each wire with lightning and ESD protection, and surge voltage and transient overvoltage protection on circuit which causing by all reasons; the tiny inter-electrode capacitance ensures high speed transmission for RS-422/485 ports. RS-422/RS-485 adopts DB9 male connector. This converter is with built-in zero delay auto receiving and transmitting conversion and unique I/O circuit auto control data flow direction without any handshake signal (RTU, DTR); there is no need jumper wire setting for full duplex (RS-422) and half duplex (RS-485) mode, plug & play. It is compatible with current communication software and hardware.

UT-2003A optoelectronic isolated converter provides connection for point to point, point to multipoint communication. For point to multipoint mode, each converter is allowed to connect 128 sets RS-422 or RS-485 devices with baud rate 300-128,000bps. The power and data flow indicators indicate the working status.

2. Major Functions & Features

● Supports USB to RS-485/422 8 Ports Converter with Isolation(USB V2.0).
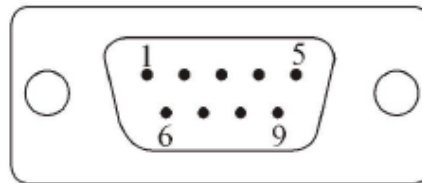
3. Technical Parameters

● Standards: USBV1.1, 1.0, 2.0 EIA RS-485, RS-232

● USB signal: VCC, DATA-, DATA+, GND, FG

● RS-485 signal: T/R+, T/R-, GND

● RS-232 signal: T/R+, T/R-, RXD+, RXD-, GND

● Working mode: Asynchronous, point-to-point or multi-point, 2-wire half-duplex, 4-wire full-duplex

● Direction control: Adopting automatic data flow control technology to automatically identify and control the direction of data transmission

● Baud rate:300bps~128,000bps

● Load capacity: supports point-to-multipoint connection of up to 128 RS-422 or RS-485 interface devices per converter

● Interface protection: RS-485 each line with 600W lightning, surge, ±15KV ESD protection

- Interface mode: USB-B female port, RS-422/485 DB9 male

- Signal indicators: signal indicators power(PWR), send(TXD), receive (RXD)

- Transmission media: twisted-pair or shielded cable

- Baud rate: 128000bps to 300M

  38400bps to 2.4KM
  9600bps to 5KM

- Operating temperature: -25°C to 70°C; Relative humidity: 5% to 95 %

- Transmission distance: 0-5,000m (128000bps-9600bps)
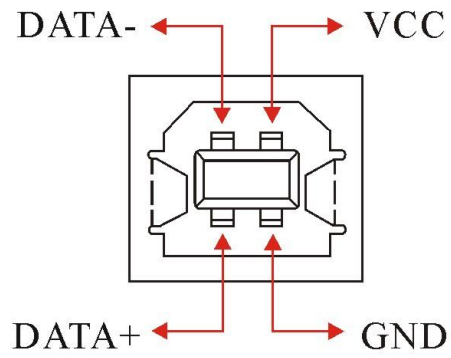
- Supports WinXP/ Vista/Win7/8/8.1/Linux

4. Pin Definition

DB9 Male(PIN)	Output signal	RS-422 Full-duplex	RS-485 Half-duplex
1	T/R+	Sending(A+)	RS-485(A+)
2	T/R-	Sending(B-)	RS-485(B-)
3	RXD+	Receive(A+)	-
4	RXD-	Receive(B-)	-
5	GND	GND	GND
6	N/A	-	-
7	N/A	-	-
8	N/A	-	-
9	N/A	-	-

DB9 Male

USB-B: The picture of USB signal input and pin assignment
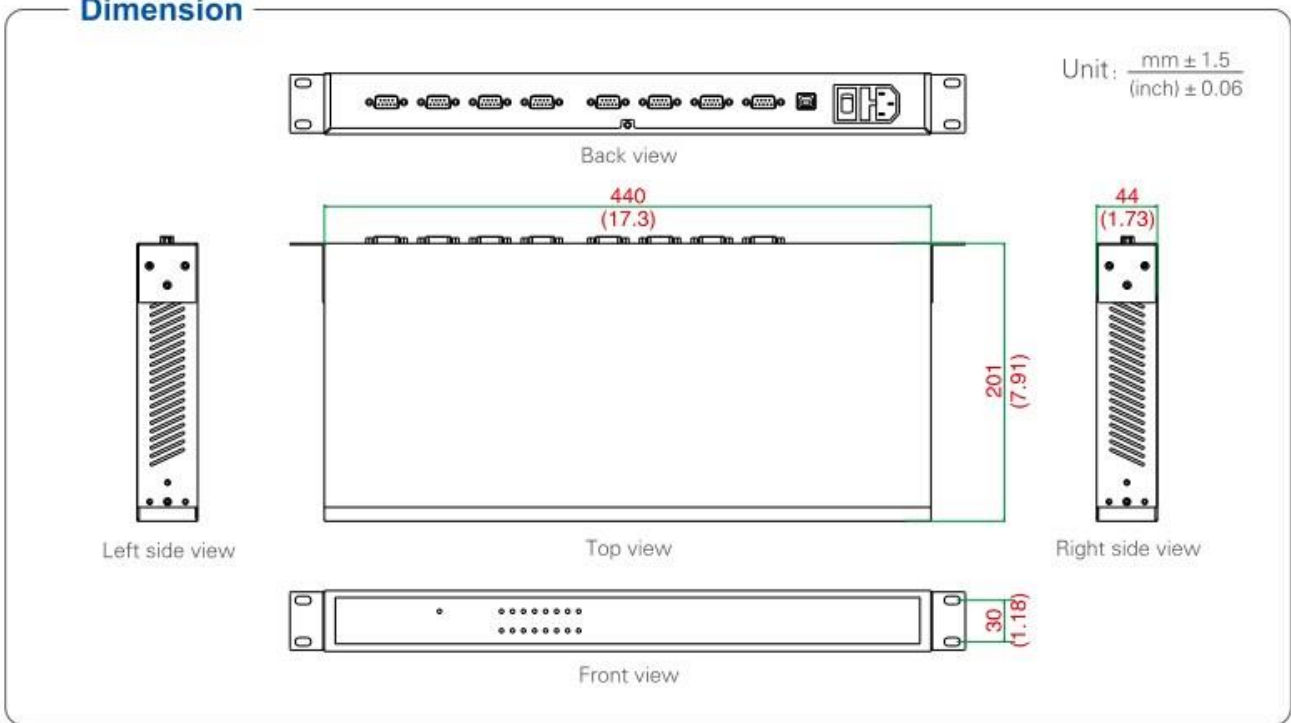
DATA- ← → VCC

DATA+ ← → GND

5. Product View (Appearance)

6. Structure dimensions

Dimension

7. Ordering

Model	Signal/Port			Protection		Baudrate	Environment			Power	
	USB	RS-232	RS-485/422				Temperature		Humidity		
	USB-B	DB9 male		RS-232	RS-485/422		-25/70℃	-40/85℃	5-95%	Port-Powered	External Power
UT-2003A	✓		✓		600W Surge	300bps-128kbps		✓	✓		100-240VAC
UT-2003B	✓	✓		±15KV ESD		300bps-921.6kbps		✓	✓		100-240VAC

Accessaries: Power cord/USB cable/terminal block/Fixed piece (UT-2003A); power cord/USB cable /Fixed piece (UT-2003B)