RS485-USB Converter

1. General

U-485 is USB to RS485 converter to realize communication conversion from USB to RS485. The power supply of the product is from the USB port, and no external power. Use the unique zero-delay automatic sending and receiving conversion technique and baud rate adaptive technique. Plug-and-play, suit for all software, and a transceiver enable control. And in the high resistance state when not sending data. Support multi-point communication, which is different from other similar cheap products in market. There is a built-in anti-static anti-lightning circuit in the product. This product for micro-design, size is as the same with the flash, anti-static and anti-lightning circuit was built-in, uniquely with sending/receiving indicator lights.

2. Technical feature

1,   Applies to all USB ports on PC. Support U-485 operating system: Win98/2K/XP; MAC OS-9/X; Linux 2.40 and above
2,   USB port-powered, no external power, the current <50 mA
3,   Output for the second-line Connection-half-duplex RS485 interfaces
4,   Use the shielded twisted pair whose sectional area is over 0.5 mm2 as communication lines
5,   The largest communications distance is 3,000 meters (4800 bps), 2000 m (9600 bps) and 1000m(115.2Kbps).
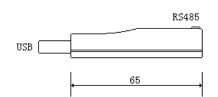6,   Group website is at least 32 points. For the most points of the group website site is depend on the input impedance of RS485.
7,   Communications rate of 300 bps ~ 1Mbps, standard baud rate adaptive
8,   Support for UART data format: data bits: 7-8, stop bit: 1, 2, check-bit: odd / even / no parity
9,   A transient voltage suppression, RS485/422 port can withstand the transient over-voltage whose power is up to 600 W and electrostatic discharge and lighting strikes impact
10,   The working temperature: -20 ~ 70C
11,   Dimensions: 65×22×12mm

3. Installation

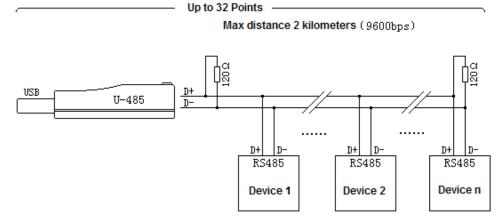| Signal	Note
D+	RS485 signals positive
D-	RS485 signals positive
SG	DGND
FG	AGND

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4.Application

U-485 can be used for point-to-point communications and multi-point communications. Except for linking several other RS485 interfaces, it can also make as many as 32 USB interfaces compose of RS485 communication network, its communication range is up to 3km-4800bps; 2km-9600bps. The addresses of each nodes are determined by the internal procedures of the equipment. Please connect the shield to the "FG" terminal of products when using shielded twisted pair.

1, Shielded twisted pair with. above 0.5 mm2 cross-sectional area and 120-ohm impedance should be used as the communication lines,
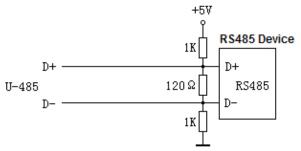
2, In order to prevent the common mode voltage of RS485 interface beyond the permitted range witch would impact the reliability of communication or even damage interfaces, you can use a low resistance wire whose cross-sectional area is 1 mm2 to connect the signal ground "SG" of each RS485 to remove the earth potential difference of each node on the network..

3, If you use unshielded twisted pair, will need connect all the shielding terminal FG (the chassis) of RS485 interfaces with the shield of twisted pair, and the bus will be the last point to shield of earth.

4, The cable length from each RS485 to the bus (extension) is no more than 15 m, otherwise will cause echoes and affect the normal communication of system. Best scheme is to parallel connect RS485 directly to the RS485 bus.

5, For the setting of terminal resistance, the role of terminal resistance is to eliminate the waveform distortion caused by the reflection of signal in the communication lines. Please turn the termination resistor setting switch K2 witch is on the RS485 of the communication line's terminal and initiating terminal to "R" (connect 120 ohm terminal resistance), the terminal resistance setting switch K2 of other RS485 to "OFF" (terminal resistance is unacceptable).

6, When the U-485 and other equipments' RS485 communication interface are connected, please connect 120 Europe terminal Resistance and two 1 K pull-up and pull-down resistances in the receiving terminal of the final equipment's RS485, as Shown below:

The 120 Ω resistances in the picture is terminal resistance. They are to prevent the signal reflection in the line. 1 K resistances are the level-pull-up resistor and level-pull-down resistor respectively. Its role is to ensure the line is logic "1" when the line is in leisure so that the data bits in cease - to prevent the reception error.

7 Annex: a CD-ROM drivers is with the product.

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