

RS232-485 Converter

H-2 Technik UG (haftungsbeschränkt)

www.h-2technik.com

Version Information

| Version | Date | Modified By | Introduction |
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1. Overview

In order to communicate between the standard computers, peripheral equipment, smart instruments, we must first convert the communication signal. This converter is compatible with RS-232 and RS-485 standards. It converts single-ended RS232 signals to balanced RS-485 differential signals and extends communication distances up to 1,200 meters. This converter is passive and does not require external power. It uses current pump technology to take power from RS (RTS, DTR, TXD) without having to initialize the RS232 interface. Internal transceivers and special circuitry control the direction of this data stream automatically without the need for handshaking signals such as RTS, DTR. If the application works in RS232 half-duplex mode, the same functionality can be maintained in RS485 mode without any modification. The baud rate of 300-115200bps can be used between master computers, master computer and peripheral devices. Communication network such as point-to-point and point-to-multipoint can be set up using this convert.

2. Features

- Interface: Compatible with EIA / TIA RS-232 standard and RS-485 standard
- Electrical Interface: RS-232 terminal is DB9 female, RS-485 terminal is DB9 male with PCB terminal board.
- Working mode: Asynchronous, half-duplex, differential transmission
- Transmitted as of: Twisted pair or shielded twisted pair
- Communication speed: 300-115000bps
- Size: 95x33x17mm
- Working environment: 0-70 °
- Communication distance: 1200 meters (RS485), 5 meters (RS232)

3. Connector and signal definition

| RS232C Pin | | DB9 Male(PIN) to Terminal Board | |
|------------|-----|---------------------------------|------------------|
| 1 | DCD | 1 | T/R+ (RS-485 A+) |
| 2 | RXD | 2 | T/R- (RS-485 B-) |
| 3 | TXD | 3 | N/C |
| 4 | DTR | 4 | N/C |
| 5 | GND | 5 | GND |
| 6 | DSR | 6 | Vcc +5v |
| 7 | RTS | | |
| 8 | CTS | | |
| 9 | RI | | |

RS-232C: If the device is DCE mode, the definition of 2,3 pin swap

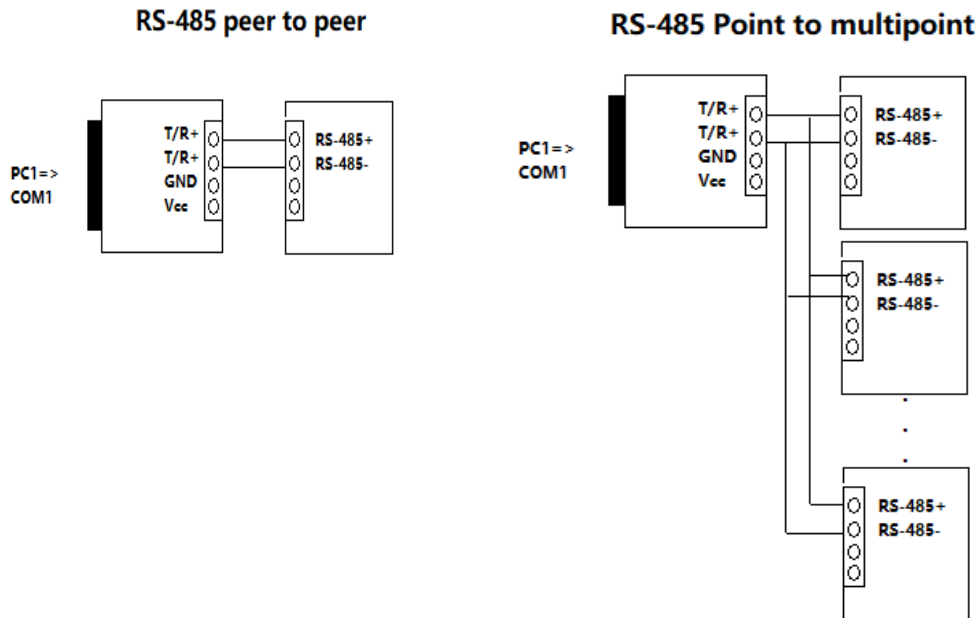
4. Installation and usage

D+/A is positive signal of differential line , D-/B is negative signal of differential line, +5/+6 is extra power supply (if it is necessary).

Communication needs at least two signals (D+/A, D-/B). If shielded twisted pair cable is used, please connect GND terminal for improving performance.

Two modes are supported by convert:

- Point-to-Point: two-line, half-duplex;
- Point-to-Multipoint: two-line, half-duplex;



If the converter locates at network terminal, you need to add a terminal resistance of 120 ohms, 1 / 4W, to prevent signal reflection.

5. FAQ

Data communication failed

- Check whether the RS232 interface is connected correctly;
- Check the RS232 output signal is normal;
- Check the transfer PCB board is connected well;

Data loss or error

- Check if each communication device uses the same data rate and format