

PMH-RS485/USB

CONVERTER

USER MANUAL



- Communication type : Asynchronous communication, Point to point or point to multi-points, 2 lines of half-duplex, 4 lines of full-duplex.
- Communication control : use auto-control technology to transfer the data, automatic determine and control the direction of data transfer.
- Baud Rate : 300~921600 bps, automatic detect the serial port speed.
- Load ability : In point to multi-points each converter can connects 32 units of RS-422 or RS-485 interface equipments.
- Communication distance : RS-422/RS-485 5000 meter (9600 bps), USB less than 5 meter
- Type of communication line : Double twist line or cover line.
- Communication speed : 921600 bps 300 M 38400 bps 2.4 KM 9600 bps 5 KM
- Dimension : 55mm × 36mm × 18mm
- Operation environment : -25℃~ 70℃, humidity 5% ~ 95%
- Support Windows 95/98/2000/xp/vista/7

III 、 Connection and signal

RS-422/RS-485 export signal

I 、 Description

Developing by PC industry, USB interface replacing many kind of old PC interface step by step. However, many types of important equipment still use RS-422/RS-485 interface, in order to transfer the data between PC and RS-422/RS-485 interface. That's why we need to use USB/RS-422/485 converter. PMH-RS485/USB is a converter in common use; it does not need extra power. It also conforms to the standard of USB, RS-422 and RS-485, and be able to transfer USB signal to RS-422 or RS-485 signal. There has no delay automatic transfer inside, the unique I/O electric auto-control the direction of data transfer, and need no handshake signal (like RTS, ETR) to transfer with full duplex (RS-422) and half duplex (RS-485). PMH-RS485/USB can provide the reliable connection between point to point and point to multipoints. In point to multi-points each converter can connects 32 units of RS-422 or RS-485 interface equipment. The speed of data transformation is 300~921600 bps and the communication types are USB to RS-422, USB to RS-485.

II 、 Property argument

- Standard : Conform to the standard of USB V1.1, EIA RS-485, RS-422.
- USB signal : VCC 、 DATA+ 、 DATA- 、 GND 、 FG
- RS-485 signal : T+ 、 T- 、 GND
- RS-422 signal : T+ 、 T- 、 R+ 、 R- 、 GND

DB9 PIN	Output	RS-422 Duplex	RS-485 Half Duplex
1	T/R+	Transfer(A+)	RS-485(A+)
2	T/R-	Transfer(B-)	RS-485(B-)
3	RXD+	Receive(A+)	Empty
4	RXD-	Receive(B-)	Empty
5	GND	Ground	Ground
6	N/A		
7	N/A		
8	N/A		
9	N/A		

IV 、 Hardware installment and application

Please read the user manual carefully before install PMH-RS485/USB, connect the USB to PC. PMH-RS485/USB use USB/DB-9 connector, and needs no crossover set to automatic do RS-422 or RS-485 communication type. You can use double twist line or cover line, so it's very convenience to combine it. T/R+ T/R- represent the transfer and receive A+/B-, RXD+/RXD- represent the receive A+/B-, GND represent the public ground line, point to point, point to multi-points half-duplex connect to 2 lines T/R+, T/R-, point to point, point to multi-points full-duplex connect to 4 lines T/R+, T/R-, RXD+, RXD-.

PMH-RS485/USB provides 4 types of communication as below :

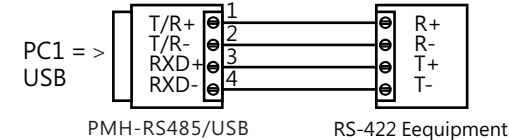
- point to point/4 lines full-duplex
- point to multi-points/4 lines full-duplex
- point to point/2 lines half-duplex
- point to multi-points/2 lines full-duplex

When connects to full-duplex or half-duplex, in order to prevent the reflection or interference of signal. You need to connect electric resistance at the end of line(120Ω 1/4W).

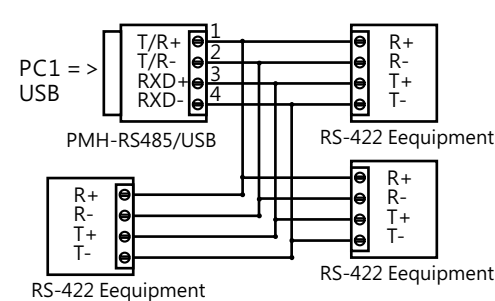
V、The connection diagram of communication

※USB/RS-422 transfer

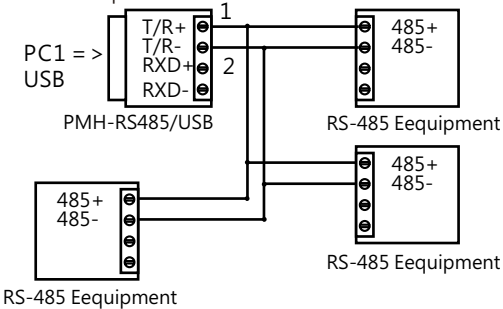
1. RS-422 point to point 4 lines full-duplex communication



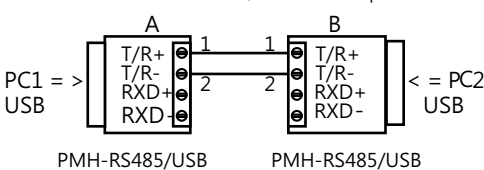
2. RS-422 point to multi-points 4 lines full-duplex



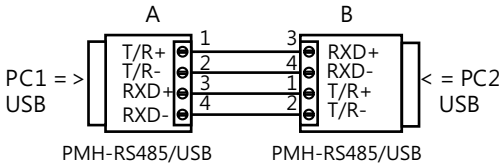
2. RS-485 point to multi-points/2 lines full-duplex



3. Between PMH-RS485/USB half-duplex

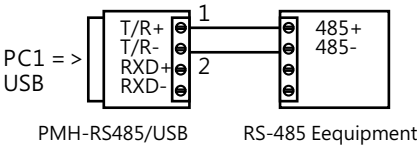


3. Between PMH-RS485/USB full-duplex



※USB/RS-485 transfer

1. RS-485 point to point 2 lines half-duplex



VI、Breakdown and elimination

1. The failure of data transfer

- A、Check the USB line connects right or not
- B、Check RS-422/RS-485 line connects right or not.
- C、Check the terminal connects well or not.

2. Data loss or mistake

- A、Check the transfer speed and format same or not of both two sides.

VII、Specifications

Name	RS485 USB Adapter w/RS422 to USB Support
Model	PMH-RS485/USB
Standard	Conform to the standards of USB V1.1, EIA RS-485, and RS-422.
USB signal	VCC, DATA+, DATA-, GND, FG
RS-485 signal	T+, T-, GND
RS-422 signal	T+, T-, R+, R-, GND
Communication type	Asynchronous communication, point to point or point to multi-point, 2 lines of half-duplex, and 4 lines of full-duplex.
Communication control	Uses auto-control technology to transfer data and automatically determines and controls the direction of data transfer.
Baud Rate	300~921600 bps, automatic detect the serial port speed.
Load ability	In point to multi-points each converter can connects 32 units of RS-422 or RS-485 interface equipment.
Communication distance	RS-422/RS-485 5000 meter (9600 bps), USB less than 5 meter
Type of communication line	Double twist line or cover line.
Communication speed	921600 bps 300 M 38400 bps 2.4 KM 9600 bps 5 KM
Operating Systems	Windows95/98/2000/XP/Vista/7
Surge Protection	15 KV ESD for all signals
Operation environment	-25℃ ~ 70℃, humidity 5% ~ 95%
Power Supply	USB 30 mA @DC5V
Product Weight	80g.
Dimension	55mm × 36mm × 18mm