

RS-232/RS-485 Interface Converter User Manual Model No. GM-10211-B

I. Summary

In order to carry through remote digital communication between computers with various standards serial interfaces and external equipments or intelligent instruments, standard serial conversion is necessary. This converter is compatible with RS-232 and RS-485 standards. It converts RS-232 signals into balanced differential RS-485 signals. The transmission distance can be extended to 1.2km. It is port-powered, adopts unique "RS-232 charge pump" technology to drive the system, and gains power without initializing RS-232 serial port; with internal zero delay auto transceiver and unique I/O circuit data flow direction automatic control, there is no need any handshake signals(such as RTS, DTR, etc), and this guarantees that there is no need to modify the programming under RS-232 half-duplex mode, it will runs smoothly and compatible with current software and hardware under RS-485 mode. The transmission rate is 300-115.2Kbps. It can be used between host computers, host computer and SCM, which building a point to point, point to multipoint long-distance communication networking. It is widely applied in industrial automation control system, all-in-one card, access control system, parking system, ATM system, bus charging system, canteen ticketing system, attendance system, and toll station system, etc.

II. Capabilities parameter

Standards: RS-232C, RS-485 EIA/TIA

Electrical interface: RS232DB9 male connector, RS-485 terminal block

Working mode: asynchronism half-duplex difference transmission

Transmission media: twisted -pair or STP

Transmission rate: 300-115.2KBPS

Dimension: 63mm X33mmX17mm

Working temperature:- 25°C to 70 °C,

Relative humidity:5% to 95%

Transmission distance: 1,200m (RS-485), 5m(RS-232)

III. Connector an signal

RS-232C Pin assignment

DB9 Female (PIN)	RS-232C Interface Signal
2	TXD SOUT
3	RXD SIN
5	GND

RS-485 data output & terminal block PIN assignment

DB9 Male (PIN)	Data Output	RS-485 Half-Duplex
1	T/R+	RS-485 (A+)
2	T/R-	RS-485 (B-)
3	GND	Ground Wire
4	VCC	+5V Standby Powerinput

IV. Hardware installation & application

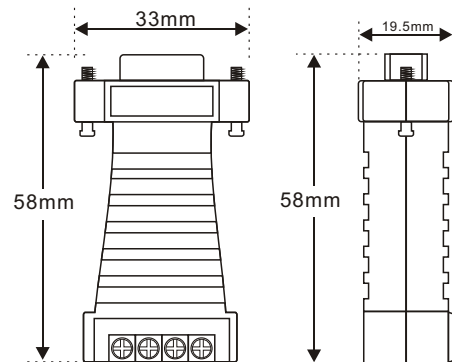
This product adopts DB-9 to terminal block universal connector, with terminal block output. It is convenient to connect with twisted pair or STP, easy installation. T/R+ stands for transmit-receive A+, B-; VCC stands for backup power input; GND stands for public ground wire.

GM-10211-B The converter supports below communication modes:

1. Point-to-point/2 wires half-duplex
2. Point-to-multipoint/2 wires half-duplex

When the converter works under half-duplex, to prevent signal reflection and interference, a matching resistance(120 ohm, 1/4w) needs to be installed in the end of the wire.

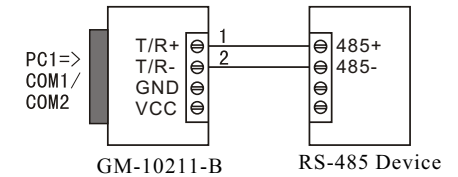
V. Dimension



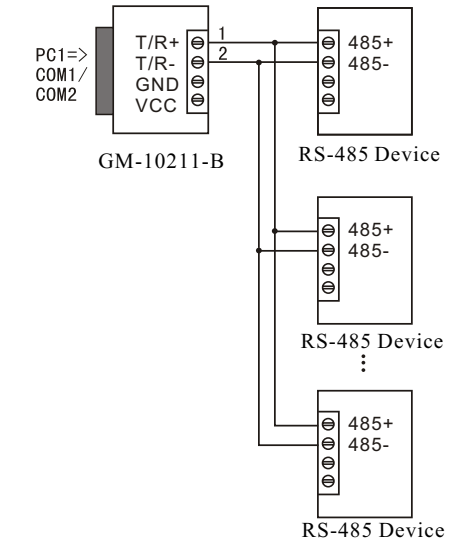
VI. Communication diagram

RS-232 to RS-485 conversion

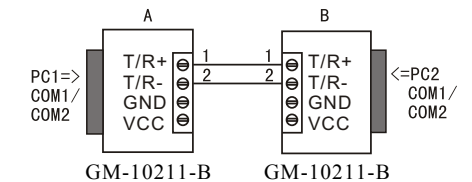
1. RS-485 point to point/two wires half-duplex



2. RS-485 point to multipoint/two wires half-duplex



3. Half-duplex communication connect between converters



VII. Problems and solutions

1. data communication failure
 - A. Check if RS-232 connection is correct or not.
 - B. Check if RS-485 output connection is correct or not.
 - C. Check if terminal block is connecting well or not.
2. data loss or mistake
 - A. Check if transmission rate and the format is consistent with both communication terminal.