

RS232 TO RS485/RS422 BOX (Non-Radioactive Surge Arrester)

OPERATION MANUAL



DECISION
Computer International Co., Ltd.

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CHAPTER 1

INTRODUCTION

The RS232 to RS485/RS422 box provides bi-direction RS232 signals to RS485/RS422 signals conversion features, which are used to expand long haul distance communication for RS422 and multi-drop RS485 communication. The RS232 to RS485/RS422 box allows the input signals to be completely prevent up to 5000Vrms, which offers customers a unique combination of protection, speed, and versatility for industrial data communications applications. There are 3 LED indicators correspond to Tx, Rx, and power signals.

The features of the RS232 to RS485/RS422 box are:

- EIA RS232 to EIA RS485/RS422 isolator input and output.
- Heavy-duty optical couplers and a transformer isolated DC-to-DC converter to provide significantly higher electrical isolation - 5000V DC surge (1 minute), 5000V rms continuous.
- Support Tx, Rx, RTS, CTS, SG signals for RS232, Tx+, Tx-, Rx+, Rx-, SG signals for RS422, and TRD+, TRD-, SG signals for RS485.
- Communication speeds up to 230 K bps.
- Transmit distance up to 4000ft.
- Three LED indicators correspond to Tx(green), Rx(yellow), and power(red) signals.
- 250mA, 9 VDC power input.
- Life expectancy for relay: 100 million operations at signal level load.
- Allow the photo input signals to be completely floated and prevent the ground loops.
- Operating temperature from 0C° to 70C°.

CHAPTER 2

UNPACKING INFORMATION

Check that your RS232 to RS485/RS422 package includes the following items:

- RS232 to RS485/RS422 box.
- User manual.
- Warranty form.

CHAPTER 3

HARDWARE CONFIGURATION

The on boards jumpers can be used to set RS422/RS485 mode and select delay transmit time.

JP1 (Jumper 1)

Select delay transmit time.

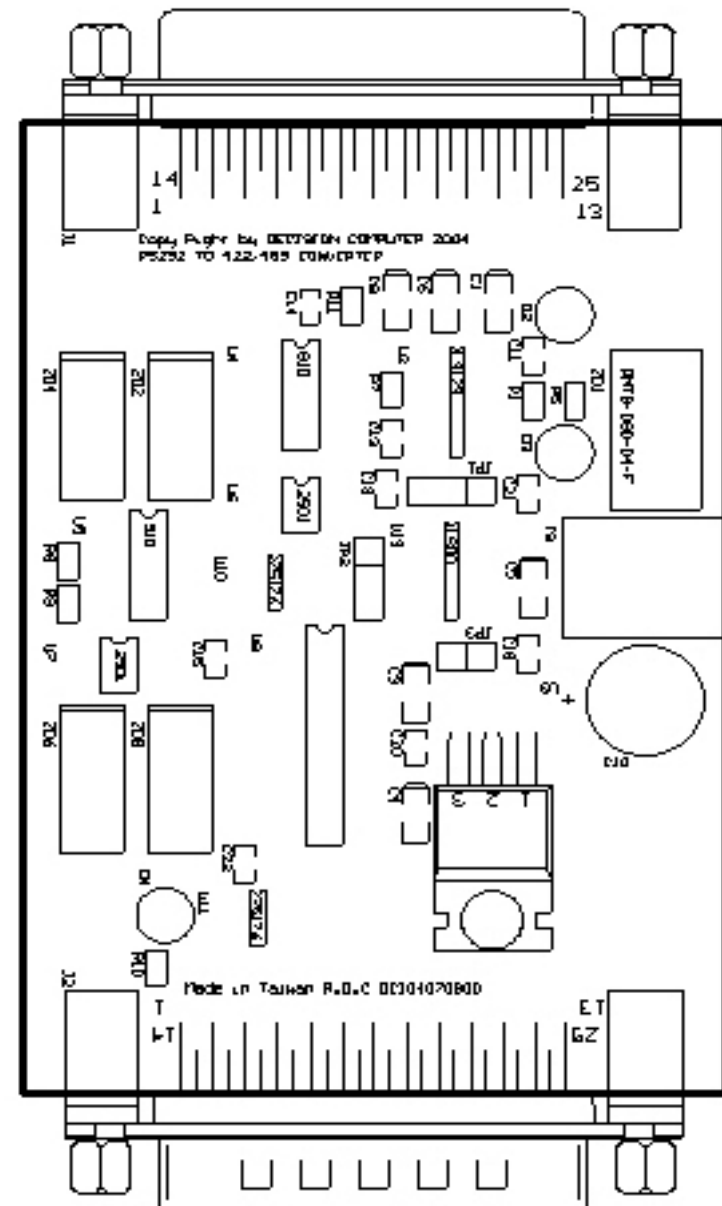
JP2 (Jumper 2)

Select auto flow control.

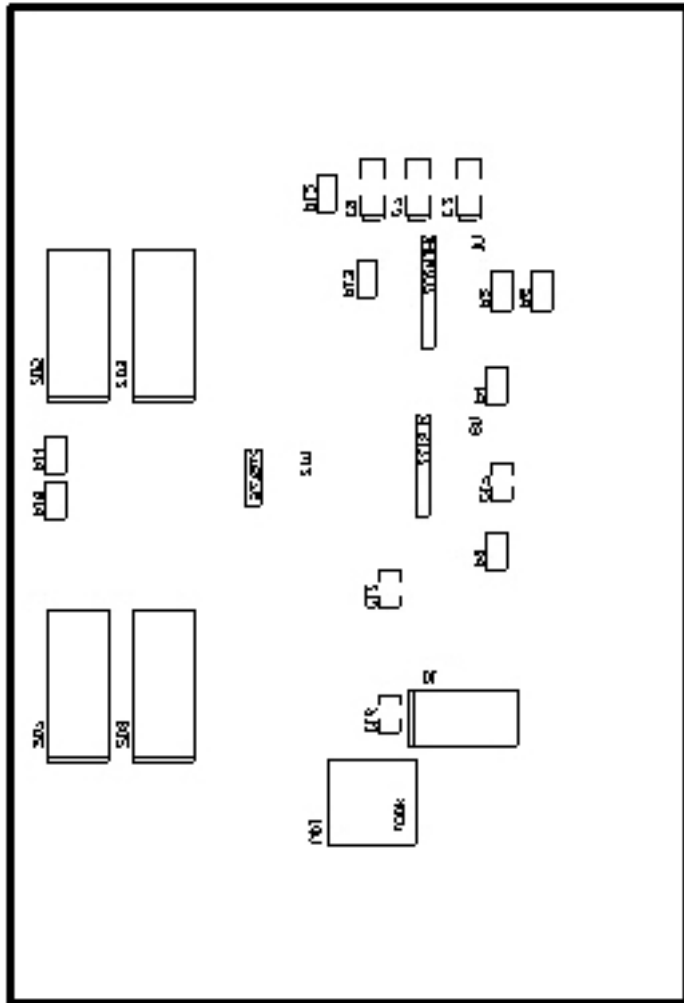
JP3 (Jumper 3)

Select RS422 or RS485mode.

The RS232 to RS485/RS422 box is shown in the following:



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1. Select RS422 or RS485 Mode

JP3



The JP1 is used to select RS422 or RS485 for port 2. To short pin means select RS485 mode.

Jumper	Mode
Short	RS485
Open	RS422

2. Select Auto Flow Control

JP2



The JP2 is used to select auto flow control. To short 2,3 means auto flow control, user only need to send data from Tx signal, the hardware will control RTS signal automatically. To short 1,2 means select RTS flow control, while user need to send data, it needs to set RTS to 1, to enter driver mode, then send message or data. After sending message, it needs to set the signal to 0 to enter receive mode again. The auto flow control is work for RS485 mode.

Enable by RTS	Receive always enable
Short 1,2	Short 2,3

3. Select Delay Transmit Time

JP1



The JP1 is used to select delay transmit time. To short the pin 1 and pin 2 means delay 4.6ms transmit time, and short the pin 2 and pin 3 means delay 40ms transmit time.

Jumper	Delay Time
Short pin 1,2	4.6ms
Short pin 2,3	40ms

CHAPTER 4

Signal Assignments and Cabling

1. DB25 Female Connector for RS232

Pin #	DB25 Signal Name	RS-232C Name	Signal Direction
1	Chassis Ground(GND)	AA	Common
2	Transmit Data(TxD)	BA	Output
3	Receive Data(RxD)	BB	Input
4	Request to Send(RTS)	CA	Output
5	Clear to Send(CTS)	CB	Input
7	Signal Ground(SG)	AB	Common

2. DB25 Male Connector for RS422

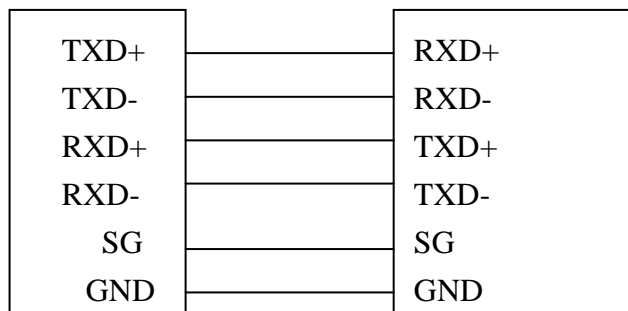
Pin	Description
1	Chassis Ground
2	Transmit Data+(TxD+)
3	Receive Data+(RxD+)
6	Receive Data-(RxD-)
7	Signal Ground(SG)
20	Transmit Data-(TxD-)

The applications of RS232 to RS422 conversion are shown in the following:

a. Connect to RS422 Device

RS232 to RS485/RS422 box

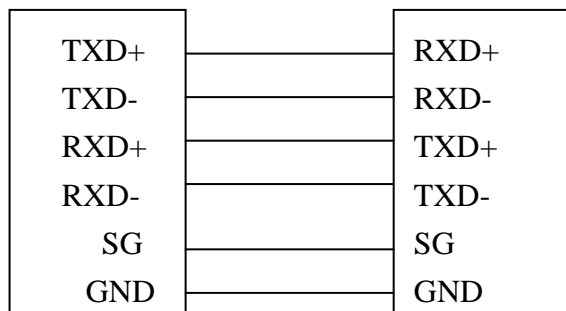
Device



b. For Long Haul Distance Communication

RS232 to RS485/RS422 box

RS232 to RS485/RS422 box



3. DB25 Male Connector for RS485

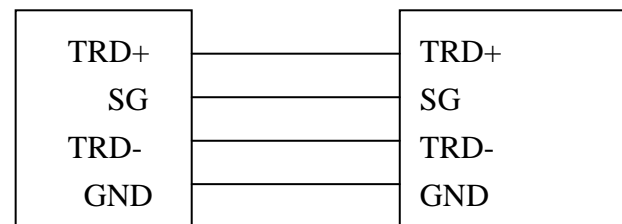
Pin	Description
1	Chassis Ground
2	Transmit Data+/ Receive Data+(TRD+)
20	Transmit Data-/Receive Data-(TRD-)
7	Signal Ground

The applications of RS232 to RS485 conversion are shown in the following:

a. Connect to RS485 Device

RS232 to RS485/RS422 box

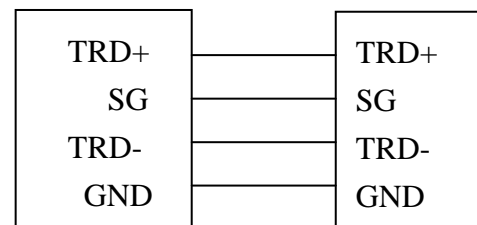
Device



b. For Long Haul Distance Communication

RS232 to RS485/RS422 box

RS232 to RS485/RS422 box



APPENDIX A

WARRANTY INFORMATION

A.1 Copyright

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Each piece of RS232 to RS485/RS422 box package permits user to use only on a single computer, a registered user may use the program on a different computer, but may not use the program on more than one computer at the same time.

Corporate licensing agreements allow duplication and distribution of specific number of copies within the licensed institution. Duplication of multiple copies is not allowed except through execution of a licensing agreement. Welcome call for details.

A.2 Warranty Information

DECISION warrants that for a period of one year from the date of purchase (unless otherwise specified in the warranty card) that the goods supplied will perform according to the specifications defined in the user manual. Furthermore that the RS232 to RS485/RS422 box product will be supplied free from defects in materials and workmanship and be fully functional under normal usage.

In the event of the failure of an RS232 to RS485/RS422 box product within the specified warranty period, DECISION will, at its option, replace or repair the item at no additional charge. This limited warranty does not cover damage resulting from incorrect use, electrical interference, accident, or modification of the product.

All goods returned for warranty repair must have the serial number intact. Goods without serial numbers attached will not be covered by the warranty.

Transportation costs for goods returned must be paid by the purchaser. Repaired goods will be dispatched at the expense of RS232 to RS232 box.

To ensure that your RS232 to RS485/RS422 box product is covered by the warranty provisions, it is necessary that you return the Warranty card.

Under this Limited Warranty, DECISION's obligations will be limited to repair or replacement only, of goods found to be defective as specified above during the warranty period. DECISION is not liable to the purchaser for any damages or losses of any kind, through the use of, or inability to use, the RS232 to RS485/RS422 box product.

DECISION reserves the right to determine what constitutes warranty repair or replacement.

Return Authorization: It is necessary that any returned goods are clearly marked with an RA number that has been issued by DECISION. Goods returned without this authorization will not be attended to.