The RS232-RS485 Serial Converter

Converts a standard RS232 data signal to an RS485 data signal and vice versa. This allows devices with an RS232 port, such as ObSys and Commander, to connect to RS485 devices and systems.

This document relates to the North RS232-RS485 converter module version 1.0

Please read the driver manual for connected RS485 devices alongside this document, available from *www.northbt.com*

Contents

Introduction

An RS232 to RS485 serial converter converts a standard RS232 data signal to an RS485 data signal and vice versa. This allows devices with an RS232 port, such as ObSys and Commander, to connect to RS485 devices and systems.

The RS232-RS485 converter from North (Fig. 1) is externally powered and has a DB9 female RS232 connector on a 0.5m cable, and a two-way screw terminal for connecting the RS485 two-wire network. It is ideal for use within panels, alongside North devices such as ObSys and Commander.

The converter's opto-isolators provide 1500 VDC isolation on the RS485 port. This simplifies installation, as well as protecting connected electrical equipment from ground loops and destructive voltage spikes. The converter has automatic transmitter-enable (ATE) circuitry, requiring only a three-wire connection to the RS232 device.

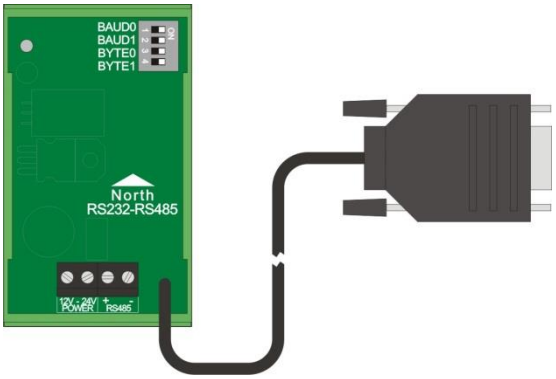

Fig. 1 RS232-RS485 Serial Converter

Using the Converter

Connect to North Device

Connect the converter's RS232 cable to the North device's COM port. If necessary, use an RS232 DB9 extension to extend the cable length up to a maximum of 15 metres.

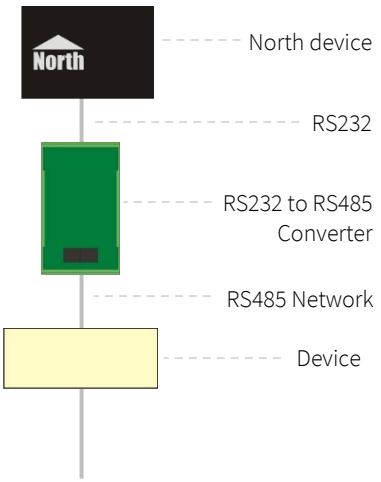

Fig. 2 North to RS485 network via RS232 Converter

Connect to RS485 Network

Connect the RS485 two-wire bus to the converter's two-way screw terminal labelled '+' and '-'.

For details of connecting to RS485 equipment, refer to the specific driver manual.

Setting up the Converter

The serial communication baud rate and data format is configured using the 4-way DIP-switch.

All connected devices must have the same baud rate and byte format. Refer to the specific driver manual for details of the baud rate and byte format used by the equipment.

Set the baud rate of the converter using switches BAUD0 and BAUD1:

Baud Rate	BAUD0	BAUD1
1200	OFF	OFF
9600	OFF	ON
19200	ON	OFF
38400	ON	ON

Set the data format of the converter using switches BYTE0 and BYTE1:

Data Format	BYTE0	BYTE1
9-bits (e.g. N71)	OFF	OFF
10-bits (e.g. N81, N72, O71, E71)	OFF	ON
11-bits (e.g. N82, O72, E81,E72, O81)	ON	OFF
12-bits (e.g. O82, E82)	ON	ON

Power the Converter

Connect the 12-24V power supply to the converter and power on. Refer to the *Technical Data* section below for details of power requirements.

Checking Communication

The tri-colour LED on the RS232-RS485 converter shows when, and in which direction, data is flowing (on faster baud rates this may be difficult to see):

LED Colour	Converter state
Orange	Converter powered, no data
Green	Receiving RS485 data
Red	Sending RS485 data

Technical Data

Power rating	Nominally 12-24V AC/DC, 0.5VA (40mA at 12VDC)
Mounting	Standard symmetrical 'Top Hat' DIN-rail (TS35) or asymmetrical G-type DIN-rail (TS32)
Dimensions	45 x 76 x 34 mm (W x H x D)
RS232	DB9 female (DCE) on 0.5m flying lead
RS485	Isolated with 2-way screw terminal connector
Baud rate	Switch selectable choice of 1200, 9600, 19200 or 38400 baud
Data format	Switch selectable choice of 9, 10, 11, or 12 bits
LED	Tri-colour indicating data flow

Next Steps…

If you require help, contact support on 01273 694422 or visit *www.northbt.com/support*

North Building Technologies Ltd
+44 (0) 1273 694422
support@northbt.com
www.northbt.com

Author: BS
Checked by: TM

Document issued 13/06/2018.