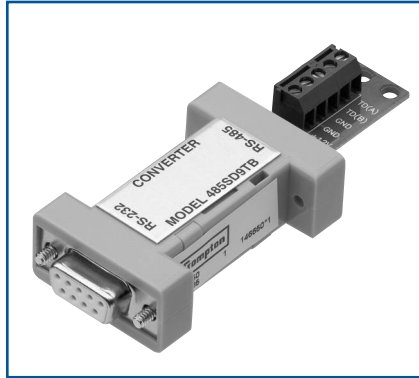


# RS232 to RS485 Serial Converter



## Features

- Direct connection to PC RS232 serial port
- 9 way female D type connector
- Port powered or externally powered
- Balanced RS485 signals
- Very high noise immunity
- Two wire half duplex
- Prevents echo-back to RS232

## Compatible With

SPR System Protection Relay

## Applications

- PC based communication systems
- SCADA Systems
- PLC interfacing
- Energy management systems

The SPR system protection relay features an integral RS485 communication port, allowing direct connection to SCADA systems via Modbus RTU protocol. However, the SCADA systems or PC based equipment used for remote monitoring of electrical and power parameters often incorporate RS232 communication ports, therefore conversion to RS485 is necessary. The 9D-485 module is a simple non-isolated two wire half duplex RS485 converter which fits into any PC based system.

This port powered two-channel module converts the TD and RD RS232 lines to balanced half-duplex RS485 signals via a 9 way female D type connector on the RS232 side, and a screw clamp terminal block connector on the RS485 side. The module has an internal connection to prevent data transmitted from the RS232 port from being echoed back to the RS232 port.

## Operation

The 9D-485 module is powered from two RS232 output handshake lines. However, an external 12V DC power supply can be connected to two terminals on the RS485 connector if no handshake lines are available. When using an external supply, the supply should be connected only to specifically labeled power inputs (power jack, terminal block, etc.).

Note: Connecting an external power supply to the handshake lines may damage the unit.

Although the 9D-485 module uses handshake lines to power the converter, no handshaking is required to control the RS485 driver. The RS485 driver is automatically enabled during each spacing state on the RS232 side. During the marking or idle state, the RS485 driver is disabled and the data lines are held in the marking state by pull-up and pull-down resistors.

## Specification

Protocols Supported	Modbus RTU
Internal Power	2 x RS232 handshake lines
External Power	12V DC to RS485 side if handshake lines unavailable
Current Draw	35mA max when externally powered
RS232 Connector	9 way female D Type
RS232 Signals	Passes through pins 3 (TD) and 2 (RD) Pins 7 (RTS) and 8 (CTS) are tied together Pins 4 (DTR), 6 (DSR), and 1 (CD) are tied together
RS485 Connector	Screw clamp terminal block
RS485 Signals	Automatic control circuit enables driver only when transmitting
RS485 Receiver	Disabled when transmitting to prevent echo back to RS232
RS485 Communications	Half duplex two wire operation
RS485 Baud Rate	Up to 115.2k baud
Maximum Distance	Up to 1200 meters (4000 feet)
Multidrop Connections	Up to 32
Compliant With	EN 55022, EN 61000-6-1, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11
Dimensions	89mm long x 34mm wide x 17mm deep 3.50" long x 1.34" wide x 0.67" deep

## Product Code

9D-485	Port powered RS232 to RS485 serial converter
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