



Many of the models within the Integra product portfolio feature an integral RS485 communication port, allowing direct connection to SCADA systems via Modbus RTU or Johnson Controls Metasys NII protocols. 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 RS-485 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.

## 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

- Integra 2000
- Integra 1530
- Integra 1540
- Integra 1000
- Integra 1560/1580

## Applications

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

## Specification

Protocols Supported:	Modbus RTU or Johnson Controls Metasys NII
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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