Integrity Instruments

P.O. Box 451
Pine River Minnesota
56474 USA

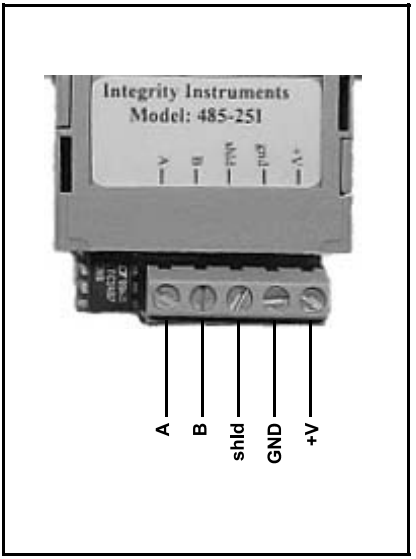
Order Phone 800-450-2001
Fax Phone 218-587-3414
Tech Phone 218-587-3120

www.integrityusa.com

485-25I
RTS Enabled

RS-232 to RS-485 Converter

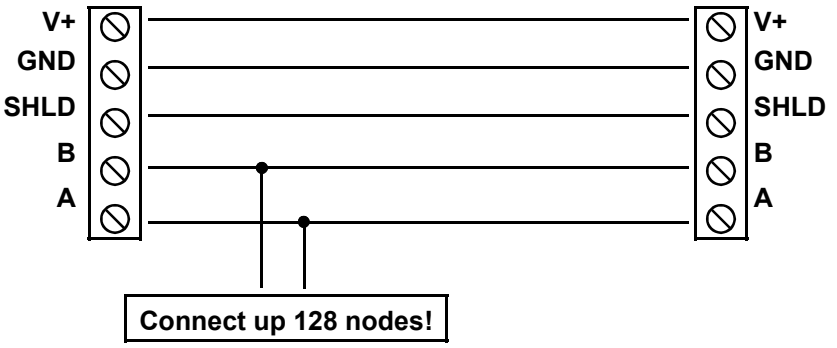
485-25I Connector pin out



Electrical Characteristics:

* Opto-isolation is rated at 5 kV
* **V+** voltage 7.5Vdc to 12Vdc rated 250 ma.nominal
* Power consumption is nominally 45 ma.
* 39 V ZNR device between **V+** and **GND**
* 15 V bi-directional TransZorb® between **A** and **GND**
* 15 V bi-directional TransZorb® between **B** and **GND**

485-25I half-duplex cabling diagram



General Operational Notes:

1) TxD is connected to DB25 pin 2
2) RxD is connected to DB25 pin 3
3) RS-232 GND is connected to DB25 pin 7
4) DTR - DB25 pin 20 must be active (UART MSR bit 0 = 1) during operation of the **485-25I**
5) RTS - DB25 pin 4 must be active (UART MSR bit 1 = 1) during transmit on the **485-25I**
6) RTS - DB25 pin 4 must be inactive (UART MSR bit 1 = 0) during receive on the **485-25I**
7) **V+** reverse polarity is diode protected
8) A power source is required for proper operation
9) **Reminder: This is a half-duplex device**

Performance Characteristics:

1) Data rates of up to 57.6 KBPS can be sustained when using compliant RS-232 interface drivers.
2) Opto-isolation is rated at 5000 volts
3) The RS-485 driver is low EMI and capable of driving 250 ma.

Transient Protection:

Transient protection for the **485-25I** comes in the form of bi-directional TransZorbs® protecting each of the **A and B** signal lines. Also a 39 V ZNR device protects the power input **V+**.

DTE vs. DCE:

The **485-25I** expects the transmitted data to be present on pin 2 of the DB25 connector. Conversely, the received data is output on pin 3 of the DB25 connector. If the inverse is required, use a NULL MODEM cable, or switch the TxD and RxD signals.

RS-232 TxD transmitted data:	**DB25 pin 2**
RS-232 RxD received data:	**DB25 pin 3**

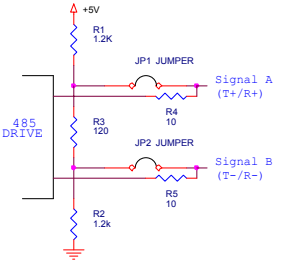
NOTICE:
DTR must be set active (+12 V)

RTS must be set active (+12 V) for transmit
RTS must be set inactive (-12 V) for receive

BUS Termination:

1) RS-485 nodes at the extreme ends of the cable require termination.
2) **Passive Termination** is a 120 ohm resistor placed across the RS-485 data lines A and B.
3) **Active Termination** is a 1.2K ohm resistor from signal A to +5V and a 1.2K ohm resistor between signal B and GND. **This ensures a stable RxD signal. No false start bits!**
4) **FACTORY TERMINATION:** The **485-25I** does not have built-in termination.

Active Termination Schematic



RTS Transmit/Receive:

1) The **485-25I** uses the RTS line to activate transmit drive on the RS-485 bus.
2) Transmit/Receive turn-around time is typically less than 1 µs
3) Receive/Transmit turn-around time is typically less than 1 µs

Notes:

1) Some Laptop computers do not provide a consistent +/-12 Vdc RS-232 signal and as such the converter may not work well at the maximum rated 57.6 KBPS.
2) The **GND** and **shield** signals are connected and therefore electrically equivalent.
3) We suggest our PS9CST 9 Vdc 400 ma power supply.
4) For longer distances we highly recomend that twisted pair wire be used at least 24 AWG.

Warranty:

Integrity Instruments warranties **all** products against defective workmanship and components for the life of the unit. Integrity Instruments agrees to repair or replace, at it's sole discretion, a defective product if returned to Integrity Instruments with proof of purchase.