

4 | Troubleshooting

Are My Devices Wired As DTE or DCE?

How to check:

1. **Use Rule of Thumb** - If the device plugs into the computer serial port and works normally, the device is wired as DCE (or the connection cable is a crossover type that makes it work as a DCE).

If the device connects to the computer port using a "null modem" crossover cable, it is wired as DTE.

2. **Use RS-232 Line Tester** - A quick and easy way to determine the DTE/DCE port type is to use an RS-232 line tester such as the 9PMTT. The tester can show the signal state of any active RS-232 data lines using LEDs lighting Red or Green. Active data lines are output from a device. They may be either High or Low.

5 | UL Class1/Division 2 Warning Information

POWER, INPUT AND OUTPUT (I/O) WIRING MUST BE IN ACCORDANCE WITH CLASS I, DIVISION 2 WIRING METHODS [ARTICLE 501.10(B) OF THE NATIONAL ELECTRICAL CODE, NFPA 70] AND IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION.

WARNING – EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.

ATTENTION - DANGER D'EXPLOSION - LA SUBSTITUTION DE COMPOSANTS PEUT ENTRAÎNER UNE ADÉQUATION À LA CLASSE I, DIVISION 2.

WARNING – EXPLOSION HAZARD – WHEN IN HAZARDOUS LOCATIONS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES.

ATTENTION - DANGER D'EXPLOSION - LORSQU'IL EST DANS DES ENDROITS DANGEREUX, COUPER L'ALIMENTATION AVANT DE REMPLACER OU DE RACCORDER LES MODULES.

WARNING – EXPLOSION HAZARD – DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NONHAZARDOUS.

ATTENTION - DANGER D'EXPLOSION - NE PAS DÉCONNECTER L'ÉQUIPEMENT PENDANT QUE LE CIRCUIT EST VIVANT OU À MOINS QUE LA ZONE NE SAIT ÊTRE EXEMPTÉ DE CONCENTRATIONS IGNIFIABLES.

Recommended Accessories

Industrial DIN Rail Power Supply

Model# MDR-20-24



RS-232 3-Stage Surge Protector

Model# 232HESP



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+ QUICK START GUIDE



Model 232OPDRI

RS-232 Repeater with 3-Way Isolation

Before you begin, be sure you have the following:

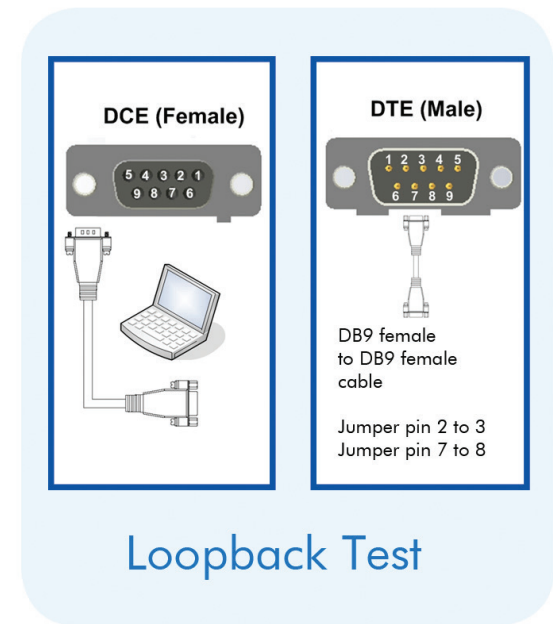
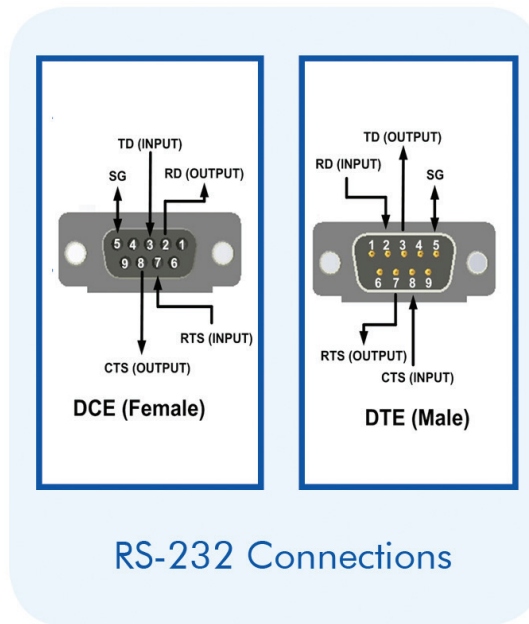
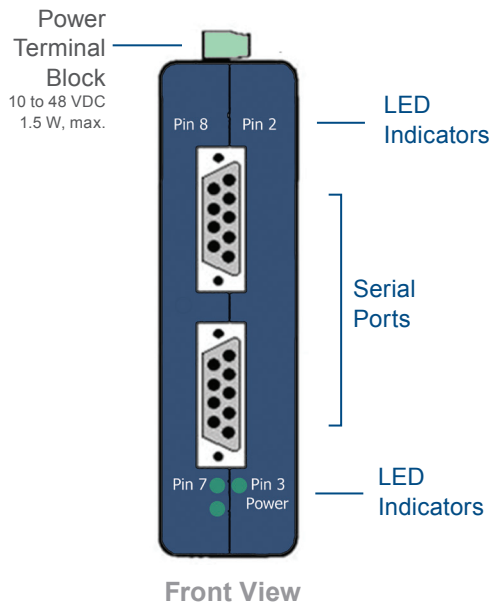
- + 232OPDRI Isolated Repeater
- + Required but not included:
 - 10 to 48 VDC Power Supply
 - Two RS-232 Cables
 - Ground Cable

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Product Overview



1 | Connect Your RS-232 Devices

A DTE device is “Data Terminal Equipment” and includes computers, PLCs, and most devices that are not used to extend communications.

(Think “COMPUTER” for DTE.)

A DCE device is “Data Communications Equipment” and includes modems and other devices that extend communications, like RS-422, RS-485, fiber optic converters or radio modems.

(Think “MODEM” for DCE.)

When connecting a DTE device to a DCE device, use a straight-through connection. When connecting a DTE device to a DTE device, or a DCE device to a DCE device, use a crossover (null) connection.

2 | Loopback Test

- Use a DB9 female to DB9 male cable to connect a PC to the DCE port. (Recommended)
- Connect a DB9 female to DB9 female cable to the DTE port. On the DTE port, jumper pin 2 to 3 and pin 7 to 8 on the female end of the cable. This loops TD to RD and CTS to RTS.
- Using HyperTerminal or a similar program, connect to the appropriate COM port. (Remember to set the baud rate to 9600.)
- Turn off HyperTerminal local echo.
- Type some characters in HyperTerminal. The same characters should appear on your screen. The LED indicators will light up to indicate that data is being transmitted.

3 | Check LEDs

Pin 2 LED	Red - Flashes when RD present on DTE port
Pin 3 LED	Red - Flashes when TD present on DCE port
Power LED	Red - ON when power applied
Pin 7 LED	Red - Flashes when RTS raised on DCE port
Pin 8 LED	Red - Flashes when CTS raised on DTE port