+ Additional Information

Surge Protection Standards

IEC 1000-4-5: 1995 "Surge Immunity Test" and IEEE C62.41-1991 "IEEE Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits" are the recognized standards for surge protection. Advantech B+B SmartWorx' heavy duty surge protectors have been tested at 6 kV to meet these two specifications.

Learn more about surge suppression & isolation at:
www.advantech-bb.com

• "Isolation: Your Best Investment for Reliability"

• "Dataline Isolation Theory"

• "Dataline Surge Protection"

+ Recommended Accessories

**Serial Cable,
DB9M to DB9F, 1.8m (6 ft)**
9PAMF6

**Null Modem Adapter,
DB9M to DB9M**
MMNM9

RS-232 Surge Protector
232HESP

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+ QUICK START GUIDE

Model 9SPOP2

Port-Powered RS-232 Optical Isolator

Before you begin, be sure you have the following:

+ 9SPOP2 Optical Isolator
+ Serial Cable (optional, sold separately)
+ Null Modem (optional, sold separately)

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Product Overview

2500 V, 2-way Isolation

RS-232 DB9 Female Port (DTE)

RS-232 Isolator
Model 9SPOP2
advantech-bb.com

Port Powered To DTE
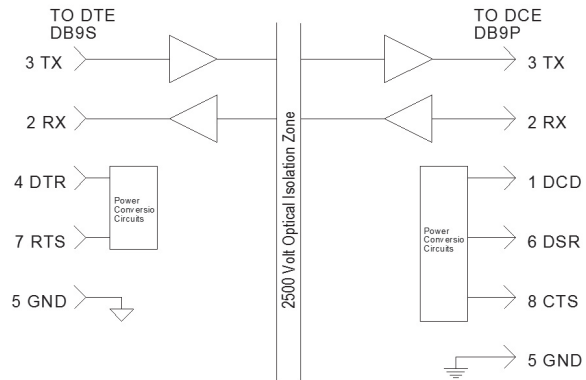To DCE

RS-232 DB9 Male Port (DCE)

9SPOP2 - SPECIFICATIONS	
Interface	RS-232 asynchronous, half or full duplex, point-to-point
Signals Supported	Transmit Data (TD) and Receive Data (RD)
Isolation	2500V RMS (for 1 minute)
Power	Port-powered from RS-232 data and handshake lines
Temperature	0 to 70 °C (operating)
MTBF	674717 hours

1 Getting Started

Model 9SPOP2 optically isolates both the RS-232 Transmit Data and Receive Data lines. Signals pass through the isolator as shown below.

TO DTE DB9S | TO DCE DB9P

3 TX → 3 TX
2 RX ← 2 RX
4 DTR — Power Conversion Circuits
7 RTS
5 GND
2500 Volt Optical Isolation Zone
Power Conversion Circuits
1 DCD
6 DSR
8 CTS
5 GND

2 Connecting the Isolator

When connecting the isolator, it is recommended that all signals that are outputs be connected. The isolator derives power from these signals, even if they are not used by your system.

On a DTE device with a DB9 pin connector, the following lines are outputs:
    3 TX (Transmit)
    4 DTR (Data Terminal Ready)
    7 RTS (Request To Send)
Typical DTE devices include PCs, terminals, and printers.

On a DCE device with a DB9 pin connector, the following lines are outputs:
    1 DCD (Data Carrier Detect)
    2 RX (Receive)
    6 DSR (Data Set Ready)
    8 CTS (Clear To Send)
Typical DCE devices include modems and multiplexers.

Most DTE ports are male and most DCE ports are female. If the 9SPOP2 isolator is inserted into a working system, it will only pass signals if inserted correctly. If the devices communicate with each other without the 9SPOP2 isolator inline, but not when it is installed, simply reverse the isolator.

If your port meets the low voltage requirements of RS-562, you will not be able to use this isolator. An RS-562 port will only produce about 3.7 Volts, which is not adequate to power the isolator. Typically the only devices that have this type of port are palmtop or very low power laptop computers.

Connecting an external power supply to the handshake lines may damage the isolator. Contact B+B SmartWorx Technical Support for more information on connecting an external power supply to the handshake lines.