

+ QUICK START GUIDE



Model 232SPH14

High-Speed Port-Powered
RS-232 Optical Isolator

Before you begin, be
sure you have the following:

- + 232SPH14 RS-232 Optical Isolator
- + 12VDC Power Supply (required, sold separately; two may be required depending on application)

Recommended Accessories

12 VDC Power Supply, 6 W,
Int'l AC Input, 2.5mm Plug
SMI6-12-V-P230-C1



DB9 Female to DB25 Male
Serial Cable, 6 ft. (1.8 m)
232CAM



DB9 Male to DB25 Female
Cable, 6 in (15 cm)
232CAMR



DB9 Female to DB25 Male
Cable, 6 in (15 cm)
232CAMS



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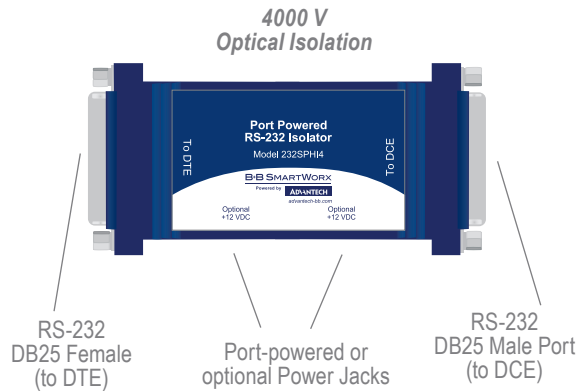
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Product Overview



232SPH14 SPECIFICATIONS

Isolation	4000 Volts RMS isolation for 1 minute (may be limited by external supply)
Transmission Mode	Asynchronous, half or full-duplex, point-to-point
Signals Supported	TD, RD, RTS, CTS
Data Rate	Up to 115.2 kbps
Power	Port-powered from RS-232 data and handshake lines
Optional External Power	+10 to +16 VDC @ 40 mA maximum
External Power Connections	2.5mm power jacks (tip positive) or DB25 connectors pins 11(+) and 12(-)
Air Clearance	0.197 in (5 mm) minimum between DTE & DCE sides
Creepage Distance	0.315 in (8 mm) minimum between DTE & DCE sides
Temperature	0 to 70°C
MTBF	351896 hours

1 Getting Started

Model 232SPH14 isolates and protects RS-232 equipment from lightning surges, accidental high voltage shorts, and ground loops. RS-232 data signals at up to 115.2 kbps and RTS and CTS handshake lines are supported. The 232SPH14 provides 4000 Volts isolation between sides and maintains creepage and air clearances required for double or reinforced insulation by IEC 60601-1.

2 Port Powering

The two sides of the isolator are powered *independently* to maintain isolation. Both sides are capable of deriving power from the RS-232 data and handshake lines, eliminating external powering requirements in nearly all systems. (If the isolator is to be used with low power ports or when no handshake lines are available, external power can also be supplied to either side - see Step #4.) This versatile powering configuration minimizes the number of supplies required by the system. Signal paths through the isolator are shown in Figure 1.

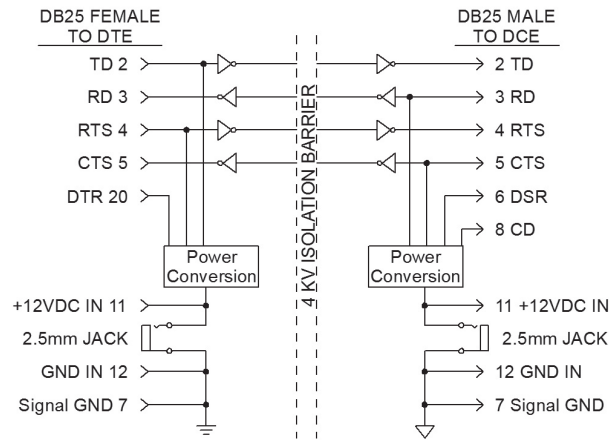


Figure 1. 232SPH14 Block Diagram

3 Signal Connections

When connecting the 232SPH14, it is recommended that all device output signals be connected. The 232SPH14 derives power from these signals, even if they are not used by your system.

On a DTE device, with a DB-25 pin connector, the following lines are outputs:

- TD(2)
- RTS(4)
- DTE READY(DTR) (20)

On a DCE device, with a DB-25 pin connector, the following lines are outputs:

- RD(3)
- CTS(5)
- DCE READY(DSR) (6)
- RLSD(CD) (8)

On a DB-9 pin IBM compatible computer/PC with a standard serial port, a standard 9 to 25-pin adapter can be used to connect to the 232SPH14. The outputs on a 9-pin DTE are:

- TD(3)
- RTS(7)
- DTE READY(DTR) (4)

Typical DTE devices include PCs, terminals, and printers. Typical DCE devices include modems and multiplexers. Most DTE ports are male and most DCE ports are female. If the 232SPH14 is inserted into a working system, it will only pass signals if inserted correctly. If the devices communicate with each other without the 232SPH14 in the line, but not when it is installed, simply reverse the isolator.

4 External Powering

If your port meets the low voltage requirements of RS-562, you may need to externally power the isolator. An RS-562 port will only produce about 3.7 Volts, which is not adequate to power the isolator. This type of port is generally found only on palmtop or very low power laptop computers.

Each side of the 232SPH14 can be powered independently. To externally power either side of the isolator, connect to a +12 V power supply. Power can be connected through either the power jacks or through the DB25 connectors on pins 11 (+) and 12 (-). Care should be taken when choosing the power supply if the full 4 kV isolation is required for your system. Many inexpensive power supplies, including the unregulated supplies sold by B+B SmartWrox, only provide 1500V AC isolation between the primary and secondary windings. If both sides of the isolator require external power, two separate isolated supplies are required.



When using an external supply, the supply should be connected only to specifically labeled power inputs. Connecting an external power supply to the handshake lines may damage the unit.