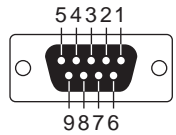


RS-232 Pinouts

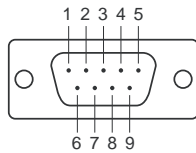
The female DB9 port and RS-232 pinouts for the port are shown below.



PIN	RS-232
1	DCD
2	TxD
3	RxD
4	DSR
5	GND
6	DTR
7	CTS
8	RTS

← shorted (pins 1, 2, 3, 4, 5, 6, 7, 8)

The male DB9 port and RS-232 pinouts for the port are shown below.



PIN	RS-232
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS

← shorted (pins 1, 2, 3, 4, 5, 6, 7, 8)

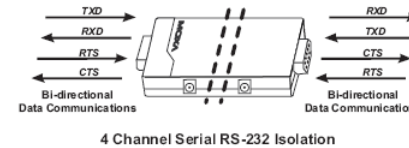
Note: The DTR, DSR and DCD pins are shorted as shown above so that users do not need to worry about signal control cable wiring.

TCC-82 V2.0

4-channel, self-powered RS-232 signal isolator (4KV RMS for 1 min. isolation) with 15 KV ESD protection

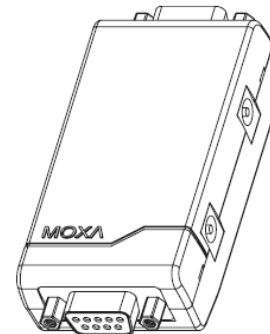
Overview

The TCC-82 is a signal isolator that provides bi-directional serial communication with full electrical isolation between two RS-232 devices. This compact isolator isolates both sides of the connection, providing perfect protection from ground loops, lightning surge coupling, and accidental high voltage shorts. The internal magnetic coupler is tested to ensure that it can withstand more than 4 KV rms input-to-output for 1 minute. This guarantees that the TCC-82 not only meets the requirements of general serial data communications, but also the high standards required by industrial automation and medical applications. In addition to the TxD and RxD data lines, the TCC-82 also protects the RTS/CTS handshake lines on its two D-type connectors.



Package Checklist

- TCC-82 RS-232 Signal Isolator
- 2 USB Power Cords
- User's Manual



Applications

- Medical facilities
- Terminal connections
- Factory automation
- Remote serial device control
- Building security automation
- Critical industrial control
- Surveillance systems

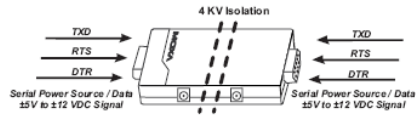
Features and Specifications

- Serial interface: RS-232
- Serial port type: DB9 (1 male, 1 female)
- Compact size
- Auto senses baud rates up to 115.2 Kbps
- Signals:
 - RS-232 Isolation: TxD, RxD, RTS and CTS;
 - RS-232 loop back: DTR to DSR and DCD
- 15 KV ESD protection for all RS-232 signals
- Serial Power Source: TxD, RTS, or DTR
- External Power (jack connector): DC +5V to +12V adaptors or by USB power cords.
- Operating temperature: 0 to 60°C (32 to 140°F)
- Dimensions: 42 x 80 x 23.6 mm
- Casing: ABS + PC
- Weight: 60 ± 5g
- CE, FCC Class B approval
- Power Consumption: 20 mA at +5 VDC
- Warranty: 5 years

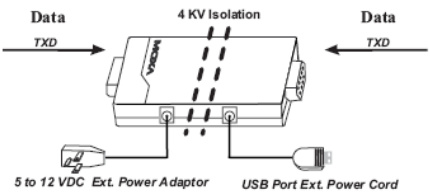
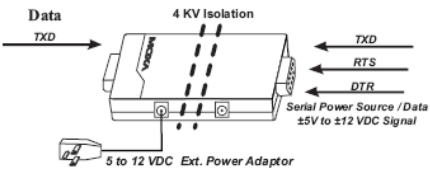
Installation

Independent Serial Port Power

TCC-82 has two power inputs, which means that both sides of the isolator must be powered independently and separately to maintain the isolation. Ideally, both sides can get power directly from the RS-232 Tx/D data lines and the RTS/DTR handshake lines, regardless of whether the signal is high or low. This also eliminates the need to use external power supplies for most systems. The configuration of the wires and the entire system can be maintained easily.

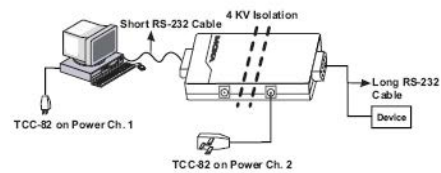


In most situations, the TCC-82 can get enough power from the attached Tx line. If the attached serial device does not provide enough power through the Tx line, additional handshake lines can be used to power the TCC-82.

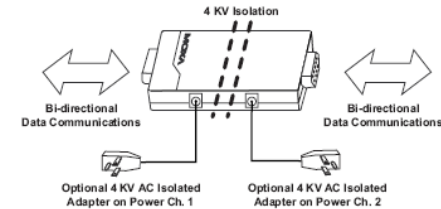


Implementing External Power

When connecting the TCC-82, all output signals should be connected, since the TCC-82 derives power from these signals, even if they are not used by your system to transmit data signals. Care should be taken when implementing the external power supply. Usually, one side of the TCC-82 is attached to the host PC by a short serial cable. On the other side, the serial cable may be too long and the power from the remote device will not be sufficient to activate the other end of the TCC-82. Refer to the following figure to see an example that implements external power.

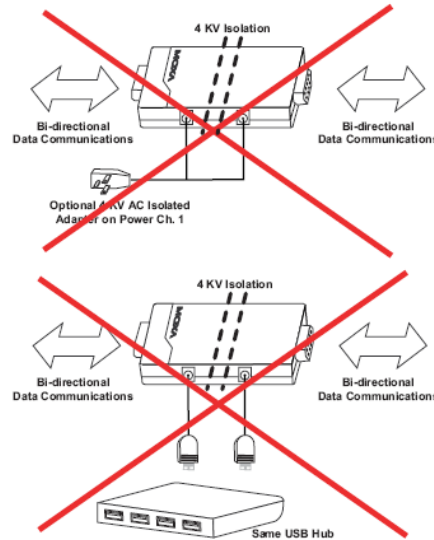


It is also important to use the external power supply if the TCC-82's full 4 KV of isolation is required to operate correctly. Most of the commercial power supplies that are available on the market only provide 1500 VAC or less of isolation between the primary and secondary windings. If both sides of the isolator require external power, then two separate isolated 4 KV protected power supplies are required.



NOTE: Be sure to connect the two power adaptors to different power channels.

Using different power inputs for the two power channels is an integral part of the isolation design. DO NOT implement your power system as follows:



Compatibility of Serial Interfaces

Different kinds of serial ports use different interface chips, and provide different power levels. In fact, some ports will not provide enough power to activate the TCC-82.

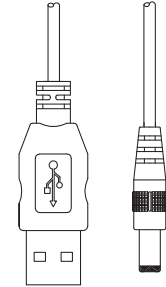
You will seldom encounter problems with a PC's onboard COM1 and COM2 ports. Refer to the following table for add-on cards and serial-to-Ethernet device server that are guaranteed to provide sufficient power.

Multiport Serial Boards	Serial Device Servers
Moxa Boards	Moxa NPort Servers
CP-168U Series	CN2510
CP-104U Series	CN2610
CP-102U Series	NPort5110
C168H Series	NPort5210
C104H Series	NPort5410
	NPort5610
	NPort6150
	NPort6250
	NPort6450
	NPort6650

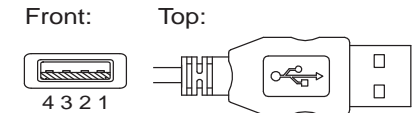
Optional USB Power Cord

If additional external power is required, the TCC-82 can be connected to a standard 5 to 12 VDC power supply, or a USB power cord.

CBL-USBAP-50



USB "A" Male Connector



TCC-82 USB Connector

Connector Pinouts	Signals
1	+5 VDC
2	--
3	--
4	GND

