TCC-82

Port-powered RS-232 4-channel isolators

Features and Benefits

- Four channels of 4 kV RMS isolation for 1 minute

- External power source supported but not required

- Automatic baudrate detection

- Compact size

Certifications

Introduction

The TCC-82 provides full electrical isolation for bidirectional serial communication between two RS-232 devices in a compact, industrial-grade package. Both sides of an RS-232 connection are isolated optically to provide perfect protection against lightning surges, accidental high-voltage shorts, and ground loops. The built-in, wide range isolators are tested to ensure that they can withstand more than 4 kV rms input to output for one minute. This means 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. The TCC-82 protects the TxD and RxD data lines, and it also protects the RTS and CTS handshake lines for a total of four isolated channels to provide complete protection of your RS-232 applications.
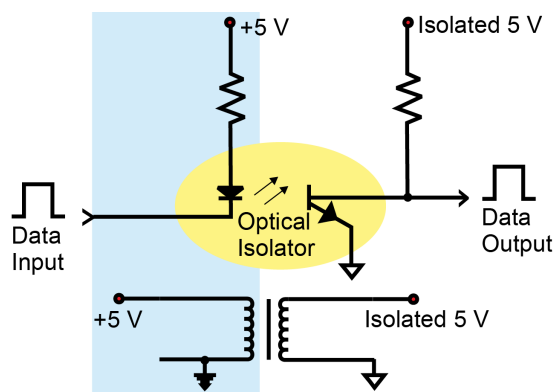
External Power Source Not Required

The TCC-82 supports port-powered operation, which means that it can obtain power directly from the attached serial devices. Power is obtained from the RS-232 TxD, RTS, or DTR lines, regardless of whether the signal is high or low, eliminating the need for an external power supply. However, external power can be used if handshake lines are not available, if the serial cable is too long, or if the serial device is a low-power device. For external power, the TCC-82 can use a 5 to 12 VDC adapter or a USB power cord. Note that both sides of the connection are powered independently, so if necessary, one side can rely on port power and the other on an external power source.

When installing the TCC-82, we recommend that you connect all output signals. The TCC-82 obtains power from these signals even if they are not used by your system. Care should be taken when choosing the external power supply if your application requires the full 4 kV of isolation. Most commercial power supplies provide only 1500 VAC isolation between the primary and secondary windings. If you are using external power for both sides of the TCC-82, make sure that separate power sources are used, each with sufficient isolation protection.

Datasheet
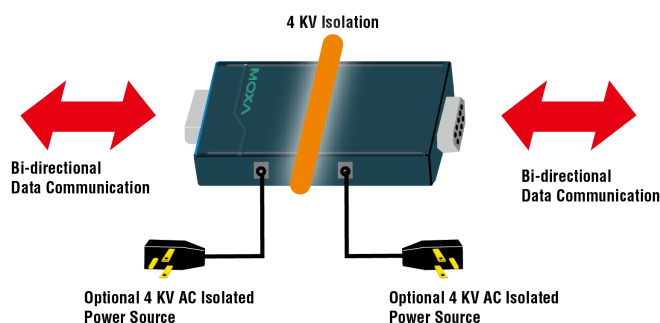
Specifications

Serial Interface

Connector	DB9 male
No. of Ports	2
Serial Standards	RS-232
Baudrate	50 bps to 921.6 kbps (supports non-standard baudrates)

Serial Signals

RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND

Power Parameters

Input Current	20 mA @ 5 VDC
Input Voltage	5 to 12 VDC
No. of Power Inputs	1
Overload Current Protection	Supported
Power Consumption	20 mA @ 5 VDC
Source of Input Power	Power input jack

Physical Characteristics

Housing	Plastic
IP Rating	IP30
Dimensions	42 x 80 x 23.6 mm (1.65 x 3.15 x 0.93 in)
Weight	60 g (0.13 lb)
Installation	Desktop

Environmental Limits

Operating Temperature	0 to 60°C (32 to 140°F)
Storage Temperature (package included)	-20 to 75°C (-4 to 167°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications

EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class B
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 0.5 kV IEC 61000-4-5 Surge: Power: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF
Environmental Testing	IEC 60068-2-1 IEC 60068-2-2 IEC 60068-2-3
Safety	EN 60950-1, IEC 60950-1
Vibration	IEC 60068-2-6

MTBF

Time	959,780 hrs
Standards	MIL-HDBK-217F

Warranty

Warranty Period	5 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x TCC-82 isolator
Cable	1 x USB power cord, 50 cm
Documentation	1 x quick installation guide 1 x warranty card

Dimensions

Unit: mm (inch)
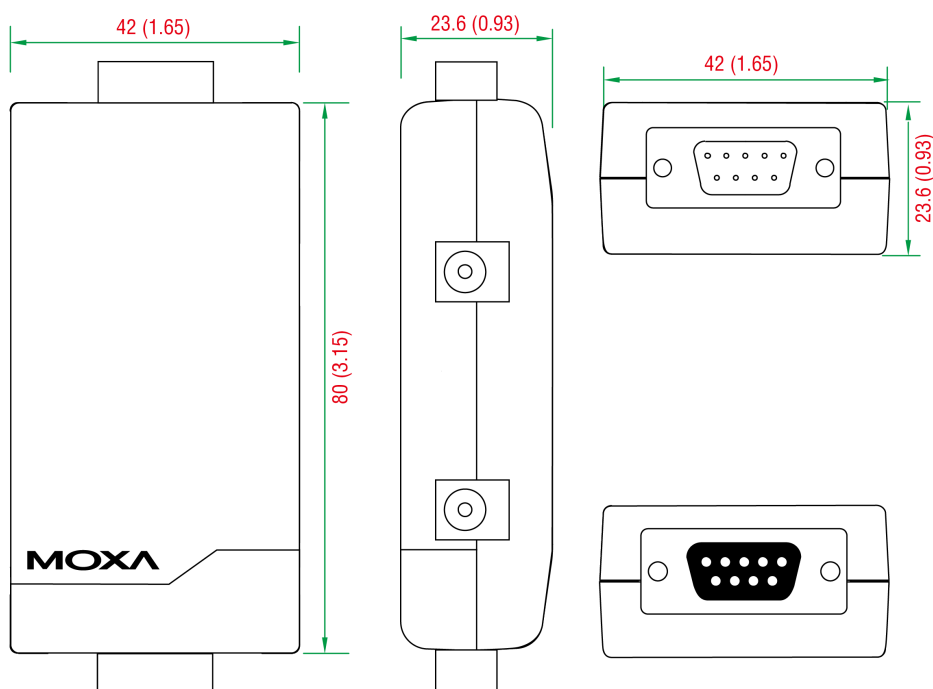
Ordering Information

Model Name	Port Power	Isolation	Serial Connector
TCC-82	✓	4 kV	DB9

Accessories (sold separately)

Cables

CBL-USBAP-50	USB A male/2.1 mm DC Jack cable, 50 cm

Connectors

ADP-RJ458P-DB9F	DB9 female to RJ45 connector
Mini DB9F-to-TB	DB9 female to terminal block connector

Power Adapters

PWR-12050-WPAU-S2	Non-locking barrel plug, 12 VDC, 0.5 A, 100-240 VAC, Australia (AU) plug, 0 to 40°C operating temperature
PWR-12050-WPCN-S2	Non-locking barrel plug, 12 VDC, 0.5 A, 100-240 VAC, China (CN) plug, 0 to 40°C operating temperature
PWR-12050-WPEU-S2	Non-locking barrel plug, 12 VDC, 0.5 A, 100-240 VAC, Continental Europe (EU) plug, 0 to 40°C operating temperature
PWR-12050-WPUK-S2	Non-locking barrel plug, 12 VDC, 0.5 A, 100-240 VAC, United Kingdom (UK) plug, 0 to 40°C operating temperature
PWR-12050-WPUSJP-S2	Non-locking barrel plug, 12 VDC, 0.5 A, 100-240 VAC, United States/Japan (US/JP) plug, 0 to 40°C operating temperature