

**Part Number: RPT-232-3**

## ■ INTRODUCTION

The RPT-232-3 is an industrial grade (wide temperature range with surge & static protection) port-powered optically isolated RS-232 data repeater (TX, RX, and GND), which works in pairs to extend the full-duplex RS-232 distance up to 1.8 miles (3 km).

This product features opto-isolation circuitry, which effectively protect your RS-232 devices from ground loops, transient surges and spikes. The unit is powered from the RS-232 data line, and therefore, no external power or RTS, DTR is required.

## ■ FEATURES

- Industrial grade with wide temperature range, surge and static protection.
- Port-powered, no external power or RTS, DTR required.
- Extend full-duplex RS-232 data over long distance (300bps -> 1.8 miles or 3km; 1.2kbps -> 1.5 miles or 2.4km; 9.6kbps -> 0.75 miles or 1.2km; 28.8kbps -> 1600 feet or 500m).
- Current loop circuit provides better noise immunization.
- Optical isolation effectively protects your RS-232 devices from ground loops, transient surges and spikes.
- Optical isolation eliminates ground loop and noise problems.
- Plug and play (hot-pluggable, data format auto-sensing and self-adjusting).
- Built-in surge protection, static protection and circuit protection.
- Surface Mount Technology manufactured to ISO-9001 standards.
- CE certified.
- 5-year manufacturer's warranty.

## ■ SPECIFICATIONS

|                          |   |
|--------------------------|---|
| Compatibility:           | EIA/TIA RS-232C standard  |
| Power Source:            | Port power from RS-232 data line  |
| Current Consumption:     | Less than 10mA  |
| Optical Isolation:       | 2500Vrms (AC, 1 min)  |
| Baud Rates:              | 300 to 28,800bps (auto-sensing and self-adjusting)  |
| Distance:                | RS-232: 16 ft (5m); Extended Distance: 1.8 miles (3km) for 300bps baud, 1.5 miles (2.4km) for 1.2kbps baud, 0.75 miles (1.2km) for 9.6kbps baud, and 1600 ft (500m) for 28.8kbps baud |
| Connector:               | RS-232 Side: DB-9 Female; Terminal Block Side: DB-9 Male; Termination Board: DB-9 Female and a 4-Way Terminal Block   |
| Surge Protection:        | 600W  |
| Static Protection (ESD): | Up to 15KV  |
| Dimensions (H x W x D):  | 0.63 x 1.3 x 3.4 in (16 x 32 x 86 mm) (with termination board)  |
| Weight:                  | 1.2 oz (34 g) (with termination board)  |
| Operating Temperature:   | -40°F to 185°F (-40°C to 85°C)  |
| Operating Humidity:      | Up to 90% RH (no condensation)  |

## ■ PIN ASSIGNMENT

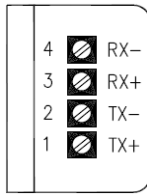
RS-232 Side (DB-9 Female Connector):

|                           |               |   |   |               |   |    |    |     |
|---------------------------|---------------|---|---|---------------|---|----|----|-----|
| DB-9 Pin:                 | 1             | 4 | 6 | 7             | 8 | 2  | 3  | 5   |
| Function/Internal Wiring: | tied together |   |   | tied together |   | TX | RX | GND |

Terminal Block Side (DB-9 Male Connector / Terminal Block):

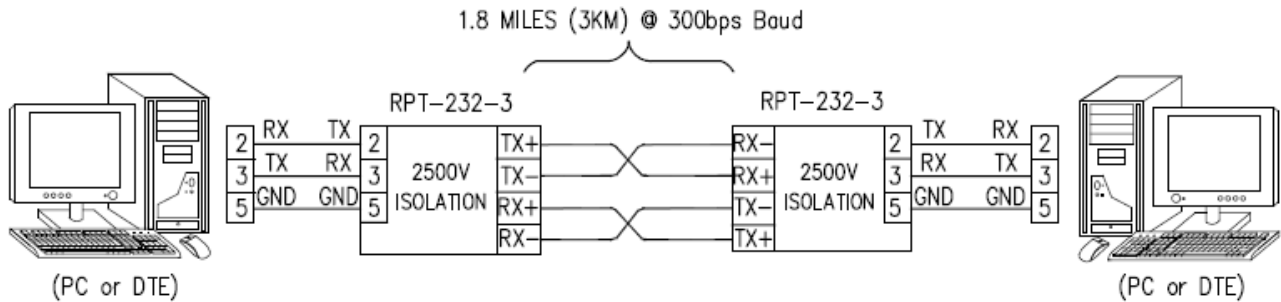
|                          |               |     |              |     |
|--------------------------|---------------|-----|--------------|-----|
| DB-9 Pin:                | 1             | 2   | 3            | 4   |
| Terminal Block (Signal): | TX+           | TX- | RX+          | RX- |
| Function:                | transmit data |     | receive data |     |

**Termination Board:**



The numbers on the left indicate the pin assignment of DB-9 male connector.

**■ CONNECTIONS**



**FIGURE 1: RPT-232-3 CONNECTION DIAGRAM**

**■ DB-25 CONNECTIONS**

RPT-232-3 can also be used for DB-25 connectors; please refer to the DB-9 to DB-25 conversion table below:

|                       |     |    |    |     |     |     |     |     |    |
|-----------------------|-----|----|----|-----|-----|-----|-----|-----|----|
| DB-9 Pin Assignment:  | 1   | 2  | 3  | 4   | 5   | 6   | 7   | 8   | 9  |
| DB-25 Pin Assignment: | 8   | 3  | 2  | 20  | 7   | 6   | 4   | 5   | 22 |
| Function:             | DCD | RX | TX | DTR | GND | DSR | RTS | CTS | RI |

**■ TROUBLESHOOTING**

- Measure the pin TX and GND of the RS-232 device with a voltmeter and be sure that the voltage is between -7V to -15V. Otherwise, please check the connection (e.g. for DCE devices, you need to swap the pin TX and RX).
- Perform a loopback test by using CommFront’s 232Analyzer software: Connect TX+ to RX+, TX- to RX- and then send commands from the 232Analyzer software. You should receive an echo of the commands sent. By performing a simple loopback test like this, you can test both the transmitter and receiver of your repeater. This is very helpful when you are in doubt about the performance of your repeater.