Industrial Port-Powered Opto-Isolated RS232 Repeater

(Part Number: RPT-232-3)

CE

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■ INTRODUCTION

The RPT-232-3 is a compact, rugged, industrial-grade, optically-isolated, port-powered 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, noise problems, transient surges, remote lightning and spikes. Therefore, it provides an ideal solution for extending, protecting, and isolating RS-232 devices that are connected together and surrounded by ground loops, transient surges, remote lightning and spikes. The unit is efficiently powered from the RS-232 data line, no external power, software drivers, or flow control is required.

■ FEATURES

- Port-powered, no external power required.
- Industrial grade enclosed in a rugged, rustless ABS housing.
- 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).
- Optical isolation effectively protects your RS-232 devices from ground loops, transient surges, remote lightning and spikes.
- Optical isolation eliminates ground loop and noise problems.
- Current loop circuit provides better noise immunization.
- Plug and play (hot-pluggable, data format auto-sensing and self-adjusting).
- Operating temperature: -40ºF to 185ºF (-40ºC to 85ºC).
- Built-in 600W surge protection, 15kV static protection and circuit protection.
- Surface Mount Technology manufactured to RoHS and ISO-9001 standards.
- Safety: Strictly certified by TUV (Cert No. SG-CE-090012).
- 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:	-40ºF to 185ºF (-40ºC to 85ºC)
Operating Humidity:	Up to 90% RH (no condensation)

■ PIN ASSIGNMENT

DB-9 Female Connector:

| Pin:	1	4	6	7	8	2	3	5
Signal:	DCD	DSR	DTR	CTS	RTS	TX	RX	GND
Function:	tied together			tied together		TX	RX	GND
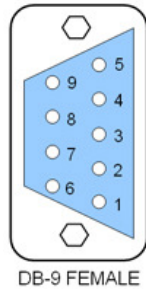
Note: Some software requires handshake line acknowledgements. To satisfy the requirements, the RPT-232-3's handshake lines are tied together (DCD, DSR, and DTR tied together, CTS and RTS tied together). Therefore, you don't have to modify your existing software.

DB-9 FEMALE

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	

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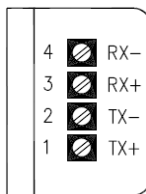
The numbers on the left indicate the pin assignment of DB-9 male connector.

4 RX−
3 RX+
2 TX−
1 TX+
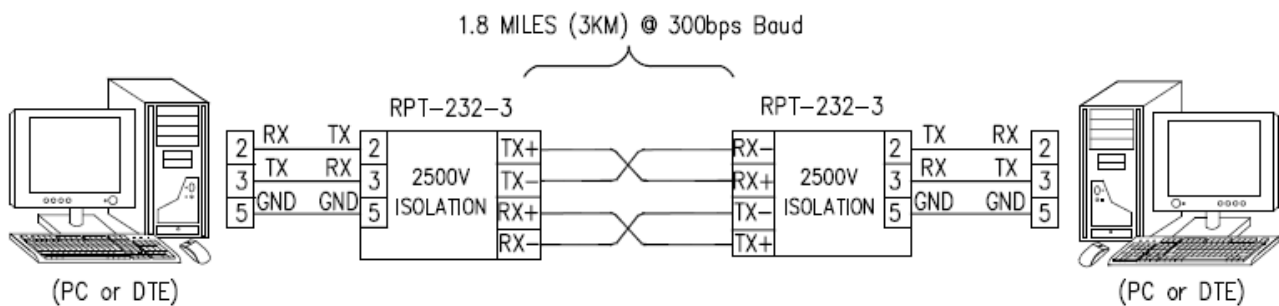
■ CONNECTIONS

1.8 MILES (3KM) @ 300bps Baud

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

■ TROUBLESHOOTING

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.