



**Industrial RS-485/RS-422
Isolator/Repeater/Converter
(Part Number: RPT-485_422-4)**



[Http://www.CommFront.com](http://www.CommFront.com)

INTRODUCTION

The RPT-485_422-4 is a rugged, industrial-grade, optically-isolated RS-485/RS-422 isolator/repeater/converter, which can be used isolate one group of RS-485/RS-422 equipment from another, or to extend the RS-485 or RS-422 distance to up to 4000 ft (1.2km); it can also be used to convert a two-wire RS-485 signal into a four-wire RS-422 signal, and vice versa. This product features opto-isolation circuitry, which effectively protects your RS-485/RS-422 devices from ground loops, noise problems, transient surges, remote lightning and spikes. The unit supports serial data rates up to 115,200bps and features data format auto-sensing and self-adjusting, and, therefore, no DIP switch or jumpers are required. When working with RS-485 signals, the CommFront's auto-turnaround feature eliminates the need for flow control.

FEATURES

- Industrial grade enclosed in a rugged, rustless ABS housing.
- Direct DIN-Rail or wall/panel mounting without using any unsecured bracket or adapters.
- Optical isolation effectively protects RS-485/RS-422 devices from ground loops, transient surges, remote lightning and spikes.
- Optical isolation eliminates ground loop and noise problems.
- Supports up to 128 nodes of RS-485/RS-422 devices.
- Supports serial data rates up to 115,200bps.
- RS-485/RS-422 auto-detection, no jumper setting is required.
- Data direction auto-turnaround, no software drivers or flow control is required.
- Plug and play (hot-pluggable, data format auto-sensing and self-adjusting).
- Operating temperature: -40°F to 185°F (-40°C to 85°C).
- 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-100004; SG-FCC-100001).
- 5-year manufacturer's warranty.

SPECIFICATIONS

Compatibility:	EIA/TIA RS-485 and RS-422 standards
Power Source:	9 to 30VDC (External AC to DC power adapter included)
External AC/DC Power Adapter:	9VDC/500mA (Input: 100–240VAC 50/60Hz, US type A plug)
Current Consumption:	Less than 30mA
Optical Isolation:	2500Vrms (AC, 1 min)
Data Rates:	300 to 115,200bps (auto-sensing and self-adjusting)
Distances:	RS-485/RS-422: up to 4000ft (1.2km) at 19,200bps
Connectors:	2x 10-way Terminal Block
Number of Maximum Nodes:	RS-485: 128 nodes; RS-422: 128 nodes
Surge Protection:	600W
Static Protection (ESD):	Up to 15kV
Dimensions (H x W x D):	4.9 x 3.6 x 0.9 in (125 x 73 x 33 mm)
Weight:	4.5 oz (128 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-485/RS-422 (Terminal Block):

Pin:	TX+/A+	TX-/B-	GND2	RX+	RX-	9–30V	GND1
RS-485:	485+	485-	RS-485 GND #2	-	-	DC +	DC/RS-485 GND #1
RS-422:	TX+	TX-	RS-422 GND #2	RX+	RX-	DC +	DC/RS-422 GND #1

■ CONNECTIONS

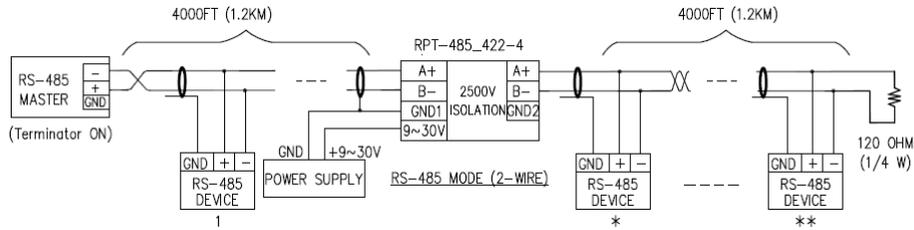


FIGURE 1: TWO-WIRE RS-485 ISOLATOR / REPEATER

(Note: The maximum number of supported nodes depends on the RS-485 master)

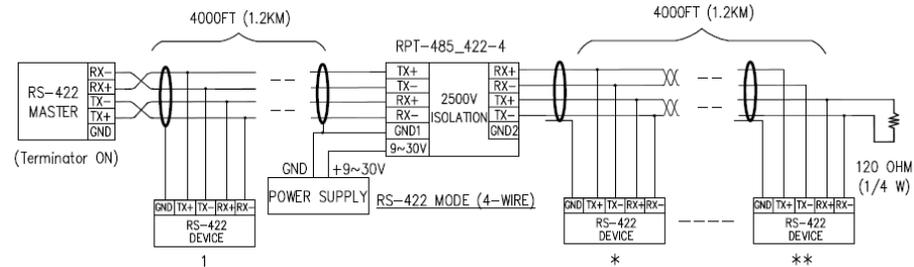


FIGURE 2: FOUR-WIRE RS-422 ISOLATOR / REPEATER

(Note: The maximum number of supported nodes depends on the RS-422 master)

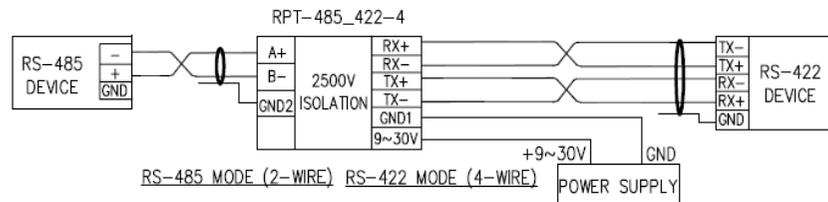


FIGURE 3: TWO-WIRE RS-485 ⇔ FOUR-WIRE RS-422 CONVERTER

■ LED INDICATIONS

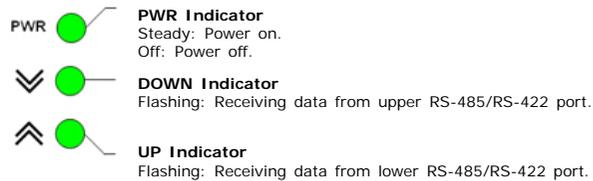


FIGURE 4: LED INDICATIONS

■ INSTALLATIONS

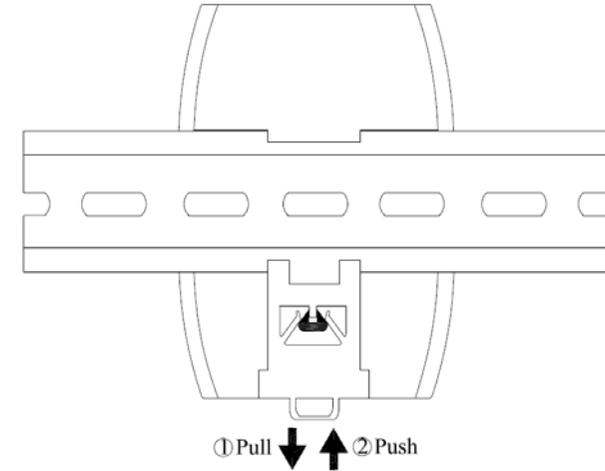


FIGURE 5: DIN-RAIL MOUNTING

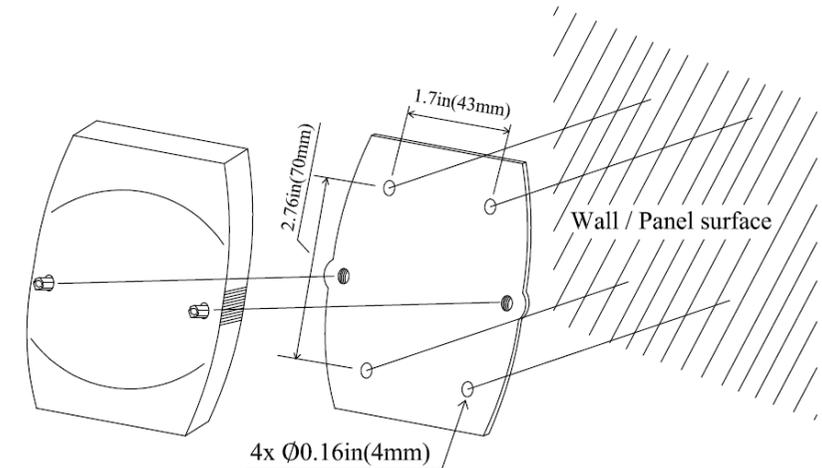


FIGURE 6: WALL/PANEL MOUNTING

■ TROUBLESHOOTING

- Make sure the power is connected and turned on.
- Check the connections according to the above "CONNECTIONS" diagrams.
- Perform a loopback test by using CommFront's 232Analyzer software: Connect an RPT-485_422-4 to your PC's RS-485 or RS-422 port, and then connect TX+ to RX+ and TX- to RX- on the other side of the RPT-485_422-4. Send commands from the 232Analyzer software, and 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 the converter. This is very helpful when you are in doubt about the performance of your converter.