Industrial RS-485/RS-422 Repeater/Converter

Part Number: RPT-485_422-2

CommFront®
Communications made easy

INTRODUCTION

The RPT-485_422-2 is an industrial grade (wide temperature range with surge & static protection) RS-485/RS-422 repeater/converter, which can be used to extend the RS-485 or RS-422 distance to up to 4000 ft (1.2km), it can also can be used to convert a two-wire RS-485 signal into a four-wire RS-422 signal, and vice versa.

This product features data direction auto-turnaround. Therefore, no flow control is required.

FEATURES

- Industrial grade with wide temperature range, surge and static protection.
- Data direction auto-turnaround, no flow control is required.
- 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

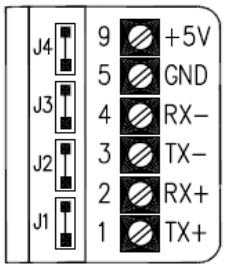
Compatibility:	EIA/TIA RS-485 and RS-422 standard
Power Source:	+5VDC (±5%) Regulated Power Supply (not included)
Current Consumption:	Less than 30mA
Baud Rates:	300 to 115,200bps (auto-sensing and self-adjusting)
Distance:	Up to 4000ft (1.2km) at 19,200bps
Connector:	2x DB-9 Male Connectors; 2x Termination Boards: DB-9 Female and a 6-Way Terminal Block
Surge Protection:	600W
Static Protection (ESD):	Up to 15KV
Dimensions (H x W x D):	0.63 x 1.3 x 4.6 in (16 x 32 x 118 mm) (with termination boards)
Weight:	2.0 oz (57 g) (with termination boards)
Operating Temperature:	-40ºF to 185ºF (-40ºC to 85ºC)
Operating Humidity:	Up to 90% RH (no condensation)

PIN ASSIGNMENT

RS-485/RS-422 (DB-9 Male Connector / Termination Board):

DB-9 Pin:	1	2	3	4	5	6	7	8	4
Jumper:	J2 (default: ON)		J3 (default: ON)			J1 (default: ON)		J4 (default: ON)	
RS-485:	A+ (J2 ON)		B- (J3 ON)		GND	(J1 ON)		Terminate/remove Jumper J4 to turn ON/OFF the 120Ω end-of-line terminator	
RS-422:	(J2 OFF)		(J3 OFF)		GND	(J1 OFF)			
	TX+	RX+	TX-	RX-					

Termination Board (two nos.):



- The numbers on the left indicate the pin assignment of the DB-9 male connectors.
- Connect external +5VDC power to the +5V and GND pins on one of the termination boards.
- The unit comes with a built-in 120Ω end-of-line terminator; use it (Jumper J4 ON) only when the distance is over 660ft (200m).

■ CONNECTIONS

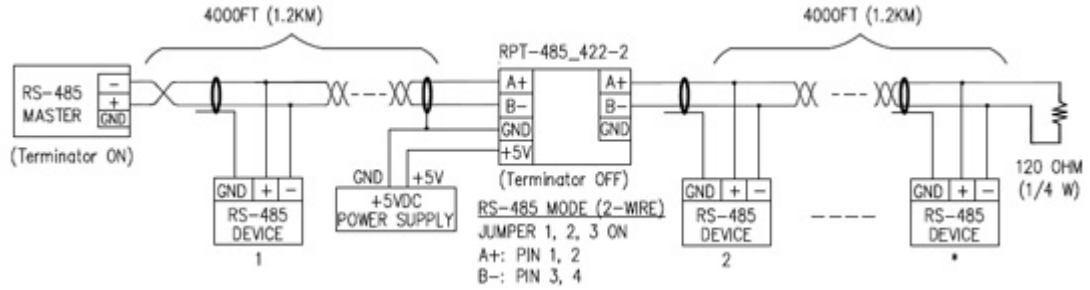


FIGURE 1: TWO-WIRE RS-485 REPEATER

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

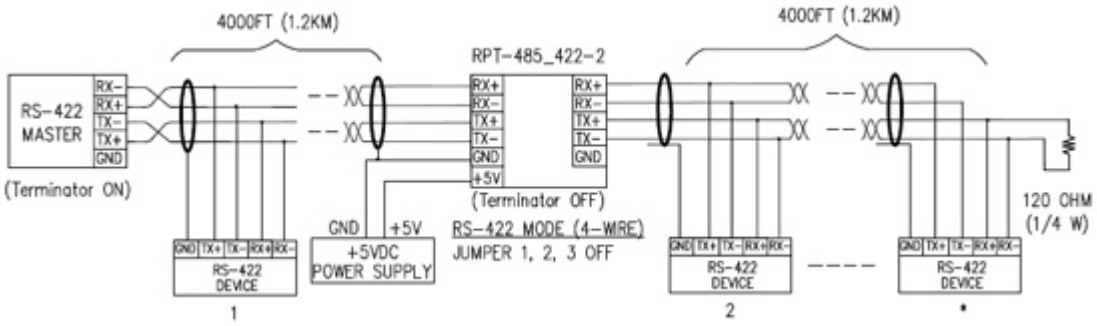


FIGURE 2: FOUR-WIRE RS-422 REPEATER

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

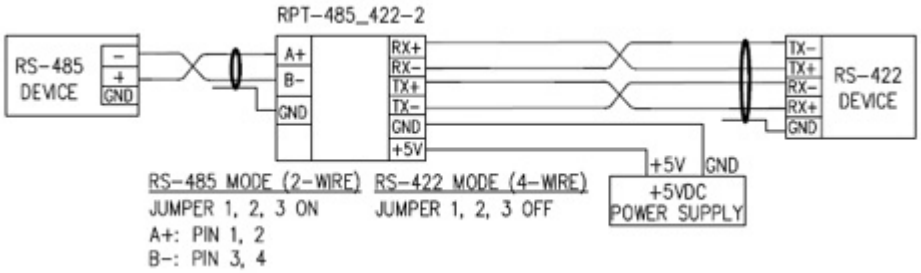


FIGURE 3: TWO-WIRE RS-485 ⇔ FOUR-WIRE RS-422

■ INSTALLATION NOTES

- **CAUTION: Be sure that the DC power applied to pin +5V and GND is within the range of +4.75V to +5.25V (5V ±5%). Excessive input voltage or incorrect polarity connection could damage the converter.**
- The 120Ω end-of-line terminator adds heavy DC loading to a system; connect it only when the RS-485/RS-422's distance is over 660ft (200m).
- If RPT-485_422-2 is connected to any outdoor devices, please ensure that proper lightning protection is employed to prevent your devices from being damaged by lightning strikes.

■ TROUBLESHOOTING

- Perform a loopback test by using CommFront's 232Analyzer software: Remove Jumper 1 and terminate Jumper 2 and 3 on the loopback-side termination board, then send commands from the 232Analyzer software (Note: You will need a RS232 to RS422 converter if there is no RS422 port on your PC). 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.