RECOMMENDED POWER SUPPLY
12V OR 24V / 40W, DIN-RAIL, SLIM
MODEL: CF-MDR-40-12 OR CF-MDR-40-24

Industrial Externally-Powered RS-232 ⇔ RS-485/422 High-speed Opto-isolated Converter (Part Number: CVT-485_422-4)

CE FC

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Communications made easy

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INTRODUCTION

The CVT-485_422-4 is a rugged, industrial-grade, high-speed (300 to 115,200bps), optically-isolated RS-232 to RS-485 / RS-232 to RS-422 converter, which can be used to convert any standard RS-232C port into a two-wire half-duplex RS-485 port or a four-wire full-duplex RS-422 port and vice versa. This product features opto-isolation circuitry, which effectively protects your RS-232 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.

FEATURES

- Industrial grade enclosed in a rugged, rustless ABS housing.
- Direct DIN-Rail or wall / panel mounting without using any unsecured brackets or adapters.
- External 9-30VDC powered, no port power from the RS-232 port is required.
- Optical isolation effectively protects RS-232 devices from ground loops, transient surges, remote lightning and spikes. It also eliminates ground loop and noise problems.
- Supports high-speed serial data rates: 300 to 115,200bps.
- Supports up to 128 nodes of RS-485/422 devices.
- Operating temperature: -40ºF to 185ºF (-40ºC to 85ºC).
- 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).
- Built-in 600W surge protection, 15kV static protection and circuit protection.
- Built-in selectable 120Ω end-of-line terminator for system reliability and easy installation.
- Surface Mount Technology manufactured to RoHS and ISO-9001 standards.
- Safety: Strictly certified by TUV (Cert No. SG-CE-100005; SG-FCC-100002).
- 5-year manufacturer's warranty.

SPECIFICATIONS

Compatibility:	EIA/TIA RS-232C standard and RS-485/RS-422 standard
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-232 side: 16ft (5m); RS-485/RS-422 side: up to 4000ft (1.2km) at 19,200bps
Connectors:	RS-232: DB-9 Female; RS-485/422: 10-way Terminal Block
Number of Maximum Nodes:	RS-485/422: 128 nodes
End-of-Line Terminator:	120Ω (built-in, selectable)
Surge Protection:	600W
Static Protection (ESD):	Up to 15kV
Dimensions (H x W x D):	4.7 x 3.6 x 0.9 in (120 x 73 x 33 mm)
Weight:	4.6 oz (130 g) (with termination board)
Operating Temperature:	-40ºF to 185ºF (-40ºC to 85ºC)
Operating Humidity:	Up to 90% RH (no condensation)

PIN ASSIGNMENT

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

Pin:	1	4	6	7	8	2	3	5
Function/Internal Wiring:	Tied together			Tied together		TX	RX	GND

RS-485/RS-422 Side (Terminal Block):

Pin:	TX+/A+	TX-/B-	GND2	RX+	RX-	J1	J2	J3	J4	9~30V	GND1
RS-485:	485+	485-	RS-485 GND	-	-	-		Tie to ON 120Ω		DC +	DC/RS-232 GND
RS-422:	TX+	TX-	RS-422 GND	RX+	RX-	Tie to ON 120Ω		-		DC +	DC/RS-232 GND

■ CONNECTIONS

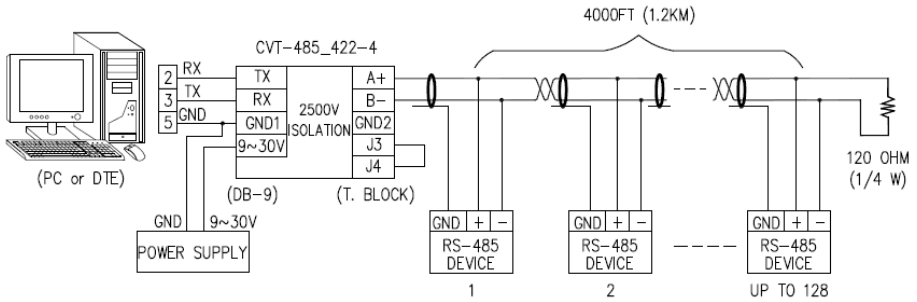


FIGURE 1: MASTER-SLAVE MULTI-DROP CONNECTIONS (RS-485)

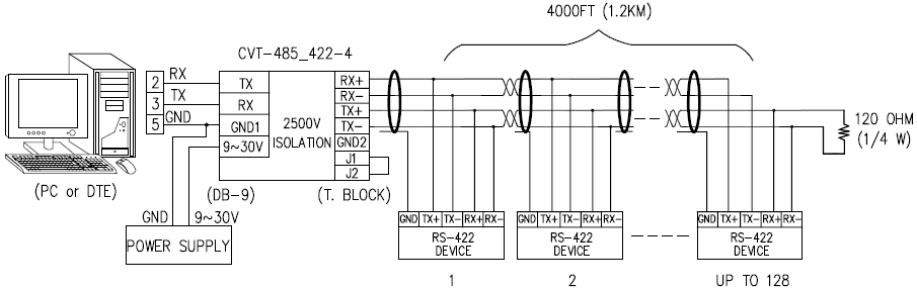


FIGURE 2: MASTER-SLAVE MULTI-DROP CONNECTIONS (RS-422)

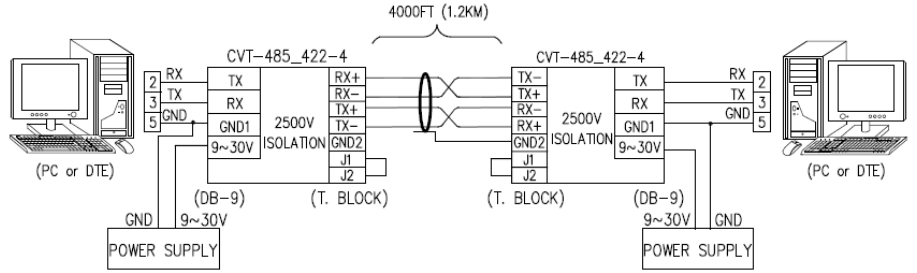
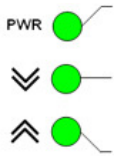


FIGURE 3: EXTENDING FULL-DUPLEX RS-232 DISTANCE WITH OPTO-ISOLATION

■ LED INDICATIONS



PWR Indicator
Steady: Power on.
Off: Power off.

DOWN Indicator
Flashing: Receiving data from RS-232 port.

UP Indicator
Flashing: Receiving data from RS-485/422 port.

FIGURE 4: LED INDICATIONS

■ INSTALLATIONS

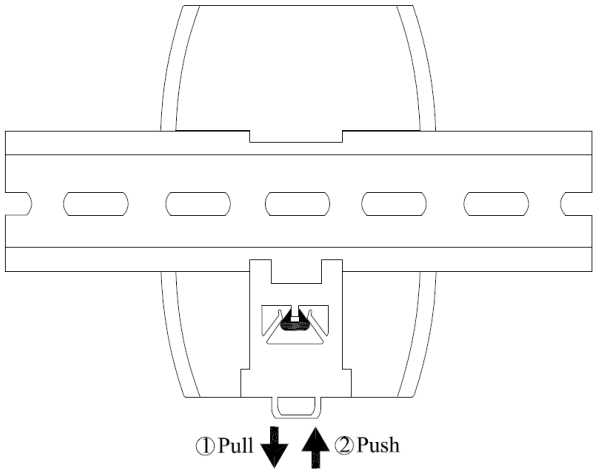


FIGURE 5: DIN-RAIL MOUNTING

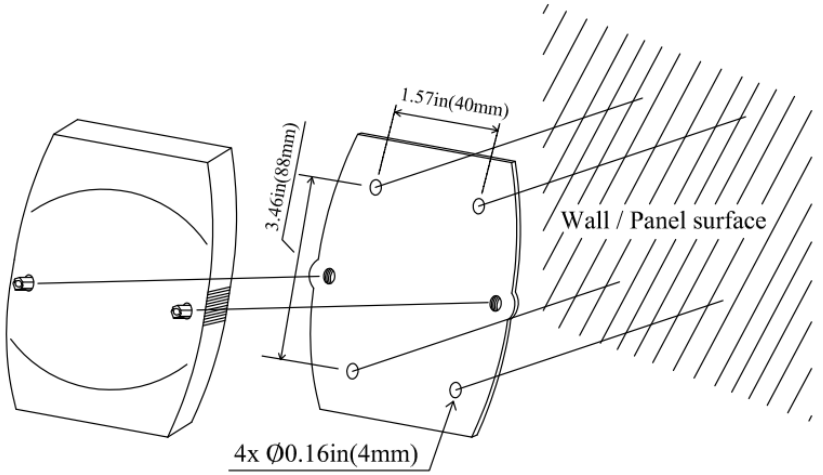


FIGURE 6: WALL MOUNTING

■ 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 TX+ to RX+ and TX- to RX-, 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 the converter. This is very helpful when you are in doubt about the performance of your converter.