



Industrial Port-Powered RS232 ⇔ RS485 Converter

(Part Number: CVT-485A-1)



<http://www.CommFront.com>



■ INTRODUCTION

The CVT-485A-1 is a slim, rugged, industrial grade, port-powered RS-232 to RS-485 converter, which can be used to convert any standard RS-232C port into a two-wire half-duplex RS-485 port and vice versa. It supports multi-drop RS-485 networks and can be used to communicate with one loop of up to 128 units of RS-485 devices. The unit features very high power efficiency (less than 8mA) and supports data direction auto-turnaround. It comes with a 5-way terminal block which can be attached to the converter securely without using screws and nuts, and the innovative selectable 120-Ohm end-of-line terminator design makes the termination easier than ever before, thus making the unit an ideal solution for quick installation and space-restricted applications.

■ FEATURES

- Port-powered with higher sensitivity and higher power efficiency.
- Designed for quick installation and space-restricted applications.
- Supports 128 nodes of RS-485 devices.
- Operates reliably from 300 to 115,200 baud.
- Industrial grade enclosed in a rugged, rustless ABS housing.
- Plug and play (hot-pluggable, data format auto-sensing and self-adjusting).
- Data direction auto-turnaround, no software drivers or flow control is required.
- Operating temperature: -40°F to 185°F (-40°C to 85°C).
- Built-in 600W surge protection, 15kV static protection and circuit protection.
- Built-in selectable 120Ω terminator for system reliability and easy installation.
- Rugged 5-way terminal block requires no screws and nuts.
- 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.

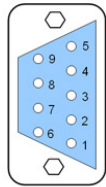
■ SPECIFICATIONS

Compatibility:	EIA/TIA RS-232C standard and RS-485 standard
Power Source:	Port power from RS-232 data line
Current Consumption:	Less than 8mA
Baud Rates:	300 to 115,200bps (auto-sensing and self-adjusting)
Distance:	RS-232 side: 16ft (5m); RS-485 side: Depending on power from RS-232 port, will transmit up to 4000ft (1.2km) at 19,200bps
Connector:	RS-232 side: DB-9 Female; RS-485 side: 5-Way Terminal Block
Max. number of drops:	128
End-of-Line Terminator:	120Ω (built-in, selectable)
Surge Protection:	600W
Static Protection (ESD):	Up to 15KV
Dimensions (H x W x D):	0.63 x 1.3 x 2.7 in (16 x 32 x 69 mm) (with termination board)
Weight:	1.0 oz (28 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):

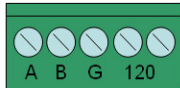
Pin:	1	4	6	7	8	2	3	5
Signal:	DCD	DSR	DTR	CTS	RTS	TX	RX	GND
Function:	tied together			tied together		TX	RX	GND



DB-9 FEMALE

Note: Some software requires handshake line acknowledgements. To satisfy the requirements, the CVT-485A-1's handshake lines (RS232 side) are tied together (DCD, DSR, and DTR tied together, CTS and RTS tied together). Therefore, you don't have to modify your existing software.

RS-485 Side (Terminal Block):



Terminal Block:	A	B	G	120
Function:	RS485+	RS485-	GND	Tie to turn ON the 120Ω end-of-line terminator

CONNECTIONS

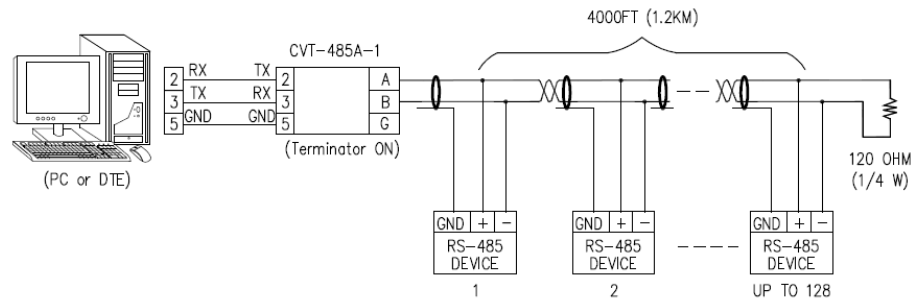


FIGURE 1: MASTER-SLAVE MULTI-DROP CONNECTIONS

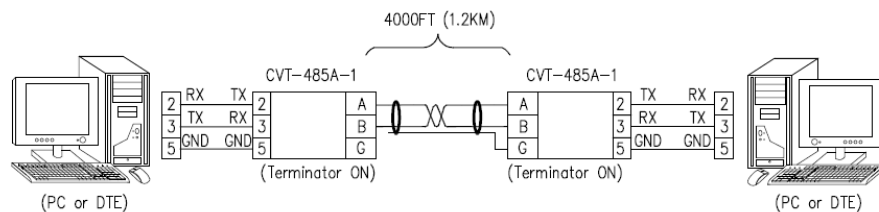
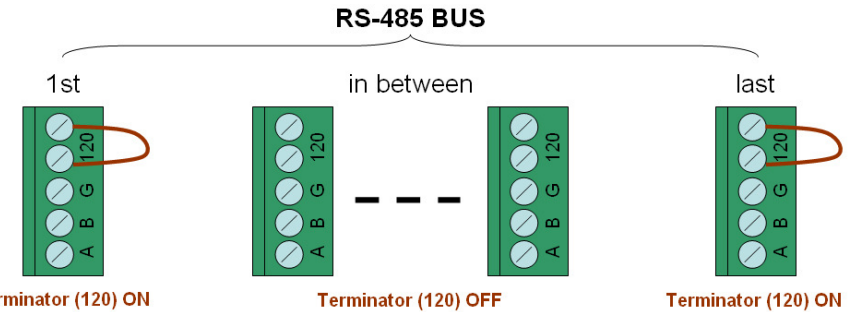


FIGURE 2: EXTENDING HALF-DUPLEX RS-232 DISTANCE (DATA ONLY)

120-OHM END-OF-LINE TERMINATION



Turn on the 120Ω end-of-line terminator (default: OFF) on both ends of the RS-485 bus when the data rate is over 19.2kbps or the RS-485/RS-422's distance exceeds 660ft (200m).

TROUBLESHOOTING

Perform a loopback test by using CommFront's 232Analyzer software: Connect two numbers of CVT-485A-1 to your PC's COM ports and run two instances of the 232Analyzer software, then send commands from one COM port, you should receive an echo of the commands sent on the other COM port. 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.