



**Industrial RS-232/485/422 ⇔ 4x RS-232/485/422
Opto-Isolated Hub/Splitter/Repeater
(Part Number: HUB-Serial-4)**



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■ INTRODUCTION

The HUB-Serial-4 is a rugged, industrial-grade, optically-isolated RS-232/485/422 Hub /Splitter/Repeater, which can be used to expand RS-232/RS-485/RS-422 networks by splitting one network into four, in turn increasing the maximum number of nodes and the distance covered by an RS-232/RS-485/RS-422 network. The unit comes with options for RS-232, RS-485, or RS-422 input, for easy installation. It was designed so that data coming from the input (RS-232, RS-485, or RS-422) will transmit to all four loops of networks. However, each loop of RS-232/RS-485/RS-422 devices will transmit data back to the input only, thus reducing any possible interference between each loop of the RS-232/RS-485/RS-422 devices. Also, the failure of any individual loop will not affect other loops, making the RS-485/RS-422 networks more robust and reliable. The product features opto-isolation circuitry, which effectively protects your RS-232/RS-485/RS-422 devices from transient surges, remote lightning and spikes. Opto-isolation also eliminates ground loop and noise problems. The unit supports data rates up to 115,200 bps and features data format auto-sensing and self-adjusting; therefore, no DIP switch or jumpers are required.

■ FEATURES

- Industrial-grade with wall/panel mounting design.
- Expands 3-wire RS-232 or 4-wire RS-422/RS-485 networks by splitting one network into four, thus making star-wiring possible for RS-232/RS-485/RS-422 networks.
- The failure of any individual loop will not affect the others, making the RS-485/RS-422 network more robust and reliable.
- Optical isolation effectively protects RS-232/RS-485/RS-422 devices from transient surges, remote lightning and spikes; it also eliminates ground loop and noise problems.
- Standards can be mixed and matched. For instance, input can be configured for RS-232 while outputs can be configured for RS-485 or RS-422.
- Supports up to 512 (4x 128) nodes of RS-485/RS-422 devices.
- Supports data rates up to 115,200bps.
- Plug and play (hot-pluggable), 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.
- Surface Mount Technology manufactured to RoHS and ISO-9001 standards.
- CE/FCC compliant.
- 5-year manufacturer's warranty.

■ SPECIFICATIONS

Compatibility:	EIA/TIA RS-232 and RS-485/RS-422 standards
Power Source:	5VDC (External AC to DC power adapter included)
External AC/DC Power Adapter:	5VDC/1A (Input: 100~240VAC 50/60Hz, US type A plug)
Current Consumption:	Less than 400mA
Optical Isolation:	2500Vrms (AC, 1 min)
Data Rates:	300 to 115,200bps (auto-sensing and self-adjusting)
Distances:	RS-232: 50ft (15m); RS-485/RS-422: up to 4000ft (1.2km)
Connectors:	5x DB9 male connector
Number of Maximum Nodes:	Input: 1; Output: 4x 128 nodes;
Surge Protection:	600W
Static Protection (ESD):	Up to 15kV
Dimensions (H x W x D):	9.5 x 3.6 x 1.1 in (241 x 92 x 28 mm)
Weight:	15.7 oz (445 g)
Operating Temperature:	-40°F to 185°F (-40°C to 85°C)
Operating Humidity:	Up to 90% RH (no condensation)

■ PIN ASSIGNMENT

RS-232/RS-485/RS-422 Input & Outputs (DB9 Male Connector):

Pin:	1	2	3	4	5	6	7
Signal:	TX+	RX+	TX-	RX-	GND	TX	RX
Port:	RS-485/RS-422				RS-232		

■ LED INDICATIONS

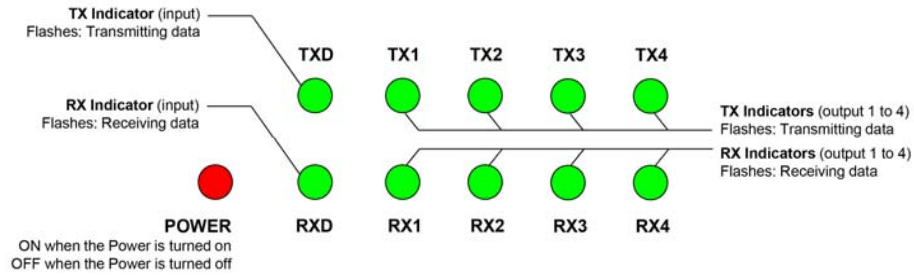


FIGURE 1: LED INDICATIONS

■ CONNECTIONS

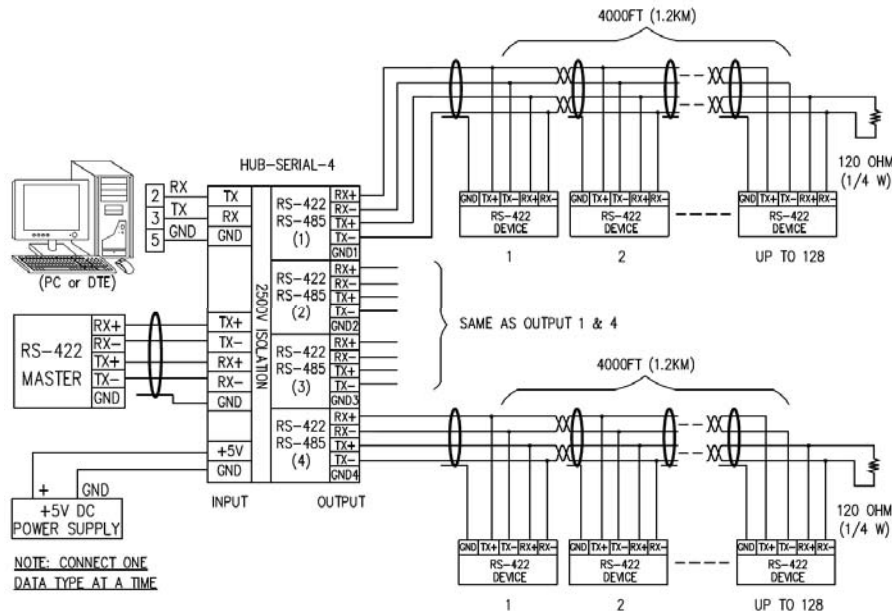


FIGURE 2: CONNECTION DIAGRAM (4-WIRE RS-485/RS-422 HUB)

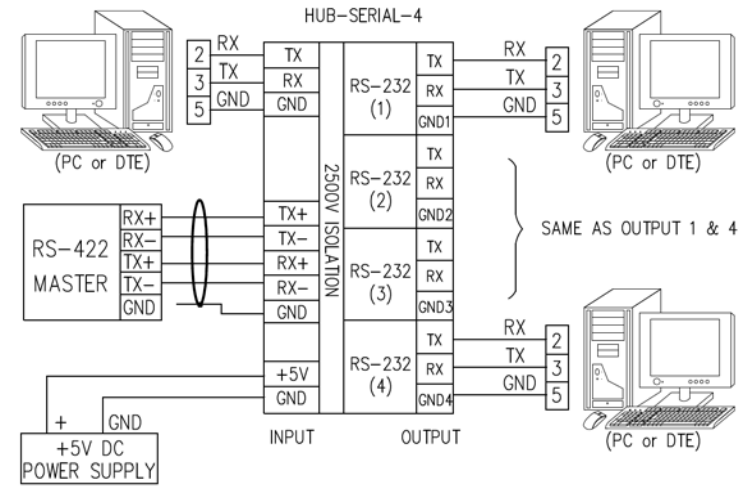


FIGURE 3: CONNECTION DIAGRAM (RS-232 HUB)

■ INSTALLATIONS

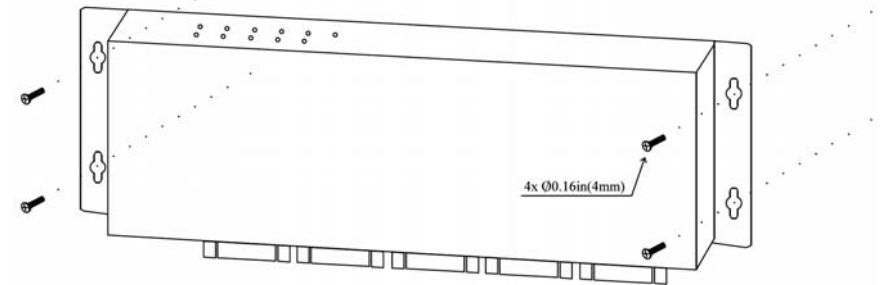


FIGURE 4: WALL/PANEL MOUNTING

■ TROUBLESHOOTING

- Make sure the power is connected and turned on.
- Check the connections according to the above "CONNECTIONS" diagrams.
- Connect one data type at a time and leave the unused port open (not connecting any wires).
- Perform a loopback test by using CommFront's 232Analyzer software: Connect one of your PC's RS-232 or RS-485/RS-422 ports to the input of HUB-Serial-4. Now connect another RS-232 or RS-485/RS-422 port from your PC to one of the HUB-Serial-4's outputs. Send a command from one COM port, and you should receive an echo of the command 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.