

**GENERAL FEATURES:**

- Plug-and-Play (hot-pluggable)
- Optional selectable built-in 120-ohm terminal block for maximum flexibility
- Data direction auto-turnaround - no flow control necessary
- Port powered - no external power needed
- Built-in surge and static protection
- 5-year replacement manufacturer's warranty
- CE, FCC, RoHS and REACH certified



**DESCRIPTION:**

The SerialComm CON-485/422-PI9 is an industrial grade bi-directional port-powered RS-232 to RS-485 or RS-422 converter which converts a full-duplex RS-232 port to a half-duplex two-wire RS-485 port or to a full-duplex four-wire RS-422 port. A built-in data direction auto-turnaround feature automatically enables the RS-485/RS-422 driver when data is present from the RS-232 port, eliminating the need for software drivers, and making the device fully plug-and-play. The CON-485/422-PI9 has a DB9 female connector on the RS-232 serial port, and DB9 male connector on the RS-485/RS-422 port. A separate terminal block with built-in selectable 120-ohm termination is included with the product for maximum flexibility. The terminal block plugs into the RS-485/RS-422 port, providing screw-lug wire termination for the port. The unit is enclosed in a rugged ABS housing and is powered from the RS-232 data lines; no external power is required.

**PINOUT CONFIGURATION:**

**RS-232 SIDE – DB9 FEMALE**

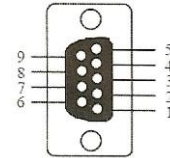
SIGNAL	DCD	DTR	DSR	RTS	CTS	TX	RX	GND
PIN #	1	4	6	7	8	2	3	5
FUNCT.	TIED		TIED		TX	RX	GND	

**RS-485 / RS-422 SIDE – DB9 MALE OR TERMINAL BLOCK**

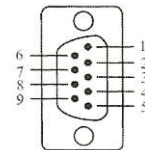
SIGNAL	T+	T-	R-	R+	GND
PIN #	1	2	3	4	5
RS-485			485-	485+	GND
RS-422	T+	T-	R-	R+	GND

**INDUSTRIAL CONVERTER**  
128 RS-485/RS-422 Drops, High Temp Range

**FEM. DB9**



**MALE DB9**



**CERTIFICATIONS:**



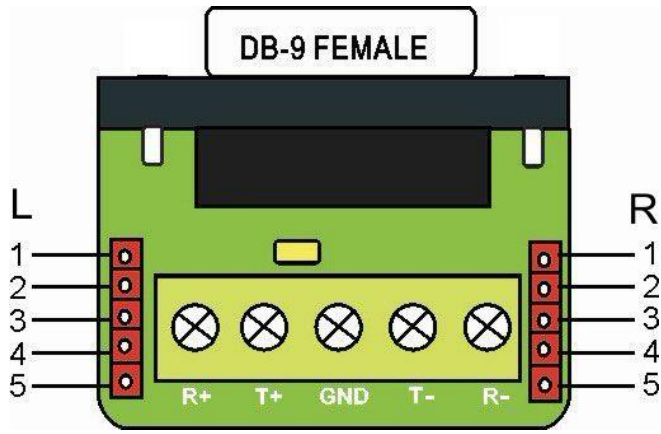
**TERMINATION GUIDE:**

The CON-485/422-PI9 terminal block has an optional built-in selectable 120-ohm termination. 120-ohm termination is an advanced feature typically used to reduce noise and signal reflections. It is recommended to use 120-ohm termination if you are exceeding 600 feet in distance, 19.6K baud or in a electrically noisy or industrial environment. The terminal blocks are shipped with 120-ohm termination off but can be turned on using the convenient jumper setting of the terminal block.

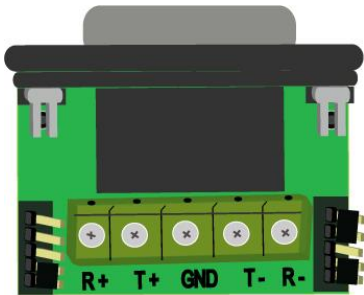
**SPECIFICATIONS:**

COMMUNICATION	
<b>STANDARDS:</b>	EIA/TIA RS-232C Standard RS-485 and RS-422 Standards
<b>BAUD RATES:</b>	From 300 bps to 115,200 bps
<b>CONNECTOR TYPES:</b>	RS-232 Side: DB9 Female and RS-485/RS-422 Side: either DB9 Male or 5-way Terminal Block
<b>DISTANCE:</b>	RS-232 Side: 16 ft (5m) and RS-485/RS-422 Side: up to 4000 ft (1.2km)
<b>MAX # OF CONNECTIONS:</b>	128 Connection Drops
ELECTRICAL	
<b>POWER SOURCE:</b>	Port Powered From RS-232 Data Lines
<b>CURRENT CONSUMPTION:</b>	Less Than 10 mA
<b>STATIC PROTECTION:</b>	15KV Electric Static Discharge (ESD) Protection
<b>SURGE PROTECTION:</b>	600W Surge Protection
MECHANICAL	
<b>HOUSING:</b>	Rugged ABS
<b>WEIGHT:</b>	<b>With Terminal Block:</b> 1.2oz (36 grams) <b>Without Terminal Block:</b> 0.8oz (24 grams)
<b>DIMENSIONS:</b>	<b>With Terminal Block:</b> 3.80" X 1.33" X 0.70" (96.5 mm X 33.8 mm X 17.8 mm) <b>Without Terminal Block:</b> 2.47" X 1.33" X 0.70" (62.8 mm X 33.8 mm X 17.8 mm)
ENVIRONMENTAL	
<b>OPERATING TEMP.:</b>	-40° F to 185° F (-40°C to 85° C)
<b>STORAGE TEMP.:</b>	-40° F to 185° F (-40°C to 85° C)
<b>OPERATING HUMIDITY:</b>	5% To 95% - No Condensation
QUALITY	
<b>PRODUCT SAFETY:</b>	CE, FCC, RoHS and REACH Third-Party Certified
<b>QUALITY MANAGEMENT</b>	Manufactured and Distributed to ISO 9001:2015 QMS
<b>MEAN TIME BEFORE FAILURE:</b>	251,862 Hours
<b>RELIABILITY:</b>	Low Failure Rate – 99+% Reliability Since Inception
<b>WARRANTY:</b>	5 Year Replacement Warranty

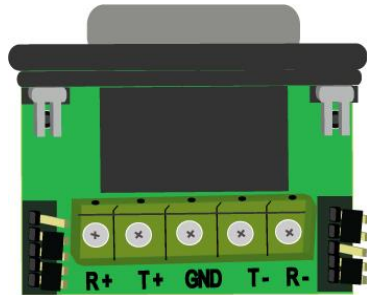
**JUMPER CONFIGURATION:**



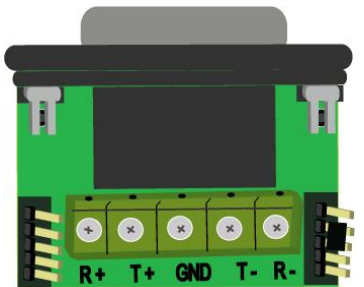
<b>RS-485 MODE</b>	Jumper (L4 to L5), (R1 to R2) and (R4 to R5)
<b>RS-422 MODE</b>	Jumper (R2 to R3)
<b>120 OHM ACTIVE</b>	Jumper (L2 to L3)



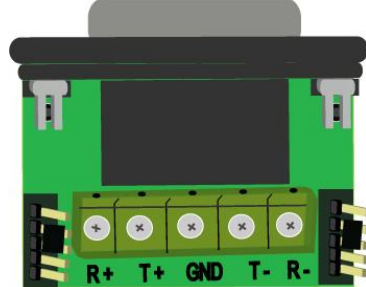
RS-485 - No 120 Ohm



RS-485 - With 120 Ohm



RS-422 - No 120 Ohm



RS-422 - With 120 Ohm

**APPLICATIONS:**

**RS-232 TO RS-485 MODE OPTION:**

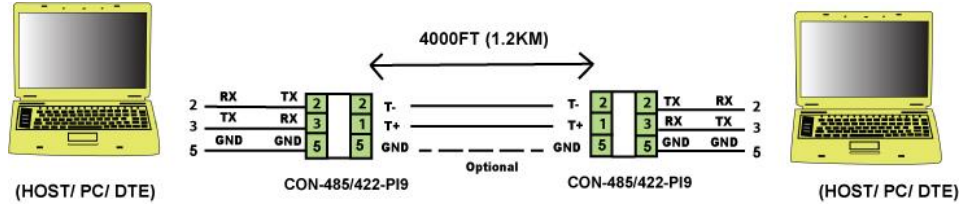


FIGURE 1: EXTENDING RS-232 DATA DISTANCE IN RS-485 MODE

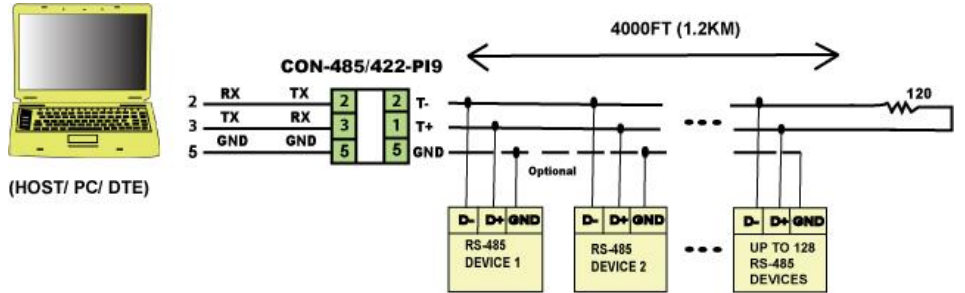


FIGURE 2: MASTER/SLAVE MULTIPLE DROP CONFIG. IN RS-485 MODE

**RS-232 TO RS-422 MODE OPTION:**

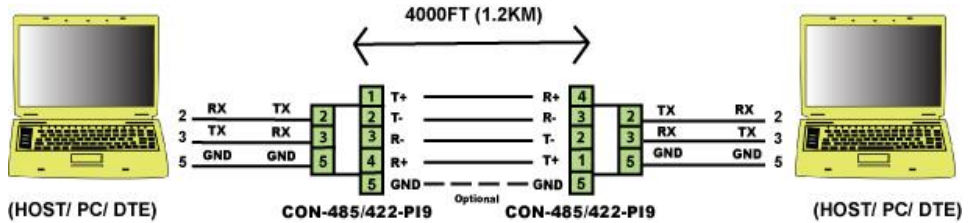


FIGURE 3: EXTENDING RS-232 DATA DISTANCE IN RS-422 MODE

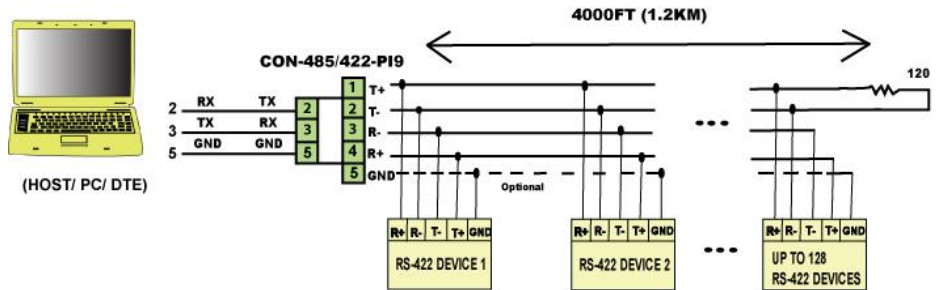


FIGURE 4: MASTER/SLAVE MULTIPLE DROP CONFIG. IN RS-422 MODE

## TROUBLESHOOTING INSTRUCTIONS:

Using one CON-485/422-PI9 unit:

1. Configure the jumpers on the terminal block for RS-422 mode
2. Check that all connections comply with the connection diagrams.
3. Perform a loop back test on one unit:
  - a) Connect the TX+ to RX+ and TX- to RX- on the RS-422 port.
  - b) Connect the RS-232 port to the PC RS-232 port.
  - c) Running a hyper terminal program on the PC, send ASCII characters to the CON-485/422-PI9 converter from one PC port, and check that the characters are received at the same PC port. This tests that the transmit and receive functions of the CON-485/422-PE9 unit is working properly in RS-422 mode.

Using two CON-485/422-PI9 units:

1. Configure the jumpers on the terminal block for RS-485 or RS-422 mode depending on which function you want to test.
2. Check that all connections comply with the connection diagrams
3. Perform a loop back test on two units:
  - a) Connect the two RS-485 or RS-422 ports.
  - b) Connect the two RS-232 ports to two PC RS-232 ports.
  - c) Running hyper terminal programs on both PCs, send ASCII characters to the CON-485/422-PI9 converter from one PC port, and check that the characters are received at the 2<sup>nd</sup> PC port. Repeat the test in the opposite direction. This tests that the transmit and receive functions of both CON-445/422-PE9 units are working properly.