

## CON-485-PE9

### RS-232 to RS-485 Converter – 9 Pin

SERIALCOMM.COM

Datasheet Revision 2.5

#### GENERAL FEATURES:

- Plug-and-Play (hot-pluggable)
- Both rugged and built-in 120-ohm RS-485 terminal blocks are included 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:

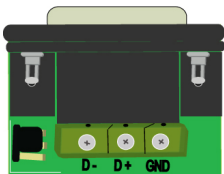
The SerialComm CON-485-PE9 is a bi-directional port powered RS-232 to RS-485 converter which converts a full-duplex RS-232 port to a half-duplex two-wire RS-485 port. A built-in data direction auto-turnaround feature automatically enables the RS-485 driver when data is present from the RS-232 port, eliminating the need for software drivers, and making the device fully plug-and-play. The CON-485-PE9 has a DB9 female connector on the RS-232 serial port, and DB9 male connector on the RS-485 port. Two separate terminal blocks, a rugged terminal block and a terminal block with built-in 120-ohm termination are included with the product for maximum flexibility. The terminal blocks plug into the RS-485 port, providing an optional 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.

#### CERTIFICATIONS:



#### TERMINAL BLOCK SELECTION GUIDE:

The CON-485-PE9 comes with two terminal blocks for maximum performance and flexibility. One terminal block is a rugged terminal block which is sealed to provide protection from the elements and vibration. The other terminal block has a built-in 120 Ohm termination selectable by a jumper on the terminal block. Both terminal blocks include fastening hardware.



**TERMINAL BLOCK WITH 120 OHM TERMINATION**

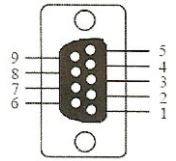


**RUGGED SEALED TERMINAL BLOCK**

#### 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

#### FEM. DB9



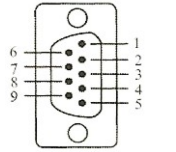
#### RS-485 SIDE – DB9 MALE OR TERMINAL BLOCK

SIGNAL	D-	D+	GND
PIN #	1	2	5
FUNCTION	D-	D+	GND

#### TERMINAL BLOCKS

Includes two terminal blocks - one for rugged applications and the other with selectable 120-ohm termination.

#### MALE DB9

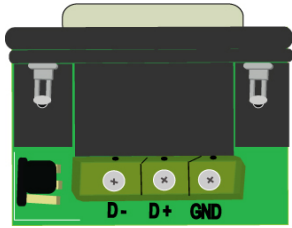


#### SPECIFICATIONS:

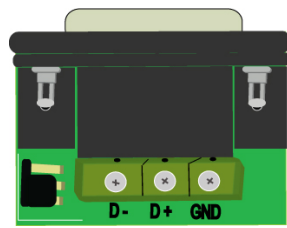
COMMUNICATION	
<b>STANDARDS:</b>	EIA/TIA RS-232C Standard and RS-485 Standard
<b>BAUD RATES:</b>	From 300 bps to 115,200 bps
<b>CONNECTOR TYPES:</b>	RS-232 Side: DB9 Female and RS-485 Side: either DB9 Male or 3-way Terminal Block
<b>DISTANCE:</b>	RS-232 Side: 16 ft (5m) and RS-485 Side: up to 4000 ft (1.2km)
<b>MAX # OF CONNECTIONS:</b>	32 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> 3.15" X 1.33" X 0.70" (80.0 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>	-4° F to 140° F (-20° C to 60° 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>RELIABILITY:</b>	Low Failure Rate – 99+% Reliability Since Inception
<b>WARRANTY:</b>	5 Year Replacement Warranty

## TERMINATION GUIDE:

The CON-485-PE9 terminal block has an optional built-in 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 turned off but can be turned on using the convenient jumper setting located on the left bottom of the terminal block.



3 POSITION WITH 120-OHM OFF



3 POSITION WITH 120-OHM ON

## TROUBLESHOOTING INSTRUCTIONS:

Using two CON-485-PE9 units:

1. Check that all connections comply with the connection diagrams.
2. Perform a loop back test:
  - a) Connect the two RS-485 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-PE9 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-485-PE9 units are working properly.

## APPLICATIONS:

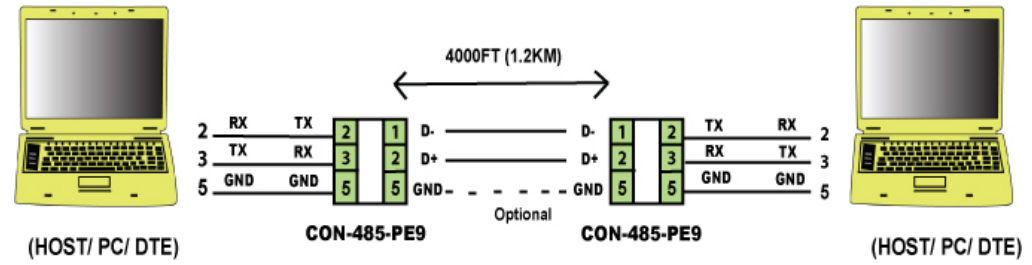


FIGURE 1: EXTENDING RS-232 DATA DISTANCE

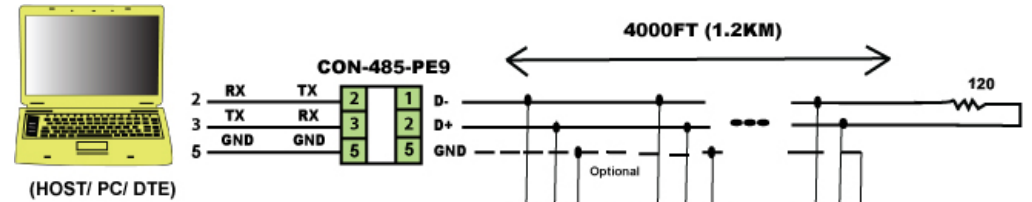


FIGURE 2: MASTER/SLAVE MULTIPLE DROP CONFIGURATION