

CON-485-PE9

RS-232 To RS-485 Converter – DB9
Datasheet Revision 2.4

GENERAL FEATURES:

- Plug-and-Play (hot-pluggable)
- Both rugged or terminal block with optional 120 Ohm termination
- Data direction auto-turnaround - no flow control necessary
- Port powered - no external power needed
- Built-in surge and static protection
- 5 year manufacturer's warranty
- RoHS, CE, and FCC certified



DESCRIPTION:

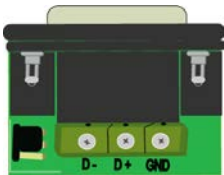
The SerialComm CON-485-PE9 is a bi-directional port powered RS-232 to RS-485 converter which converts a full-duplex RS-232C port to a half-duplex two-wire RS-485 port. A built-in data direction auto-turnaround feature automatically enables the RS-485 driver when data is present from the RS-232 port, eliminating the need for software drivers, and making the device fully plug-and-play. The CON-485-PE9 has a db-9 female connector on the RS-232 serial port, and db-9 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 plugs into the RS-485 port, providing screw-lug wire terminations 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

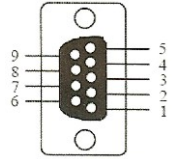


RUGGED SEALED TERMINAL BLOCK

**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



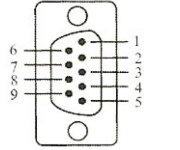
RS-485 SIDE – DB9 MALE OR TERMINAL BLOCK

| 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

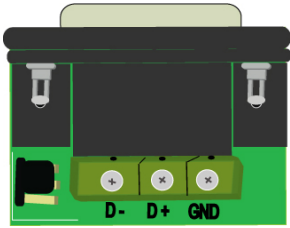


SPECIFICATIONS:

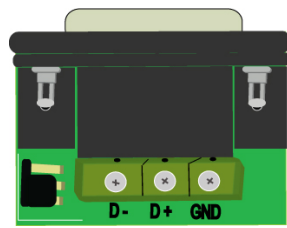
| COMMUNICATION | |
|------------------------------|---|
| STANDARDS: | EIA/TIA RS-232C Standard and RS-485 Standard |
| BAUD RATES: | From 300 bps to 115,200 bps |
| CONNECTOR TYPES: | RS-232 Side: DB9 Female and RS-485 Side: either DB9 Male or 3-way Terminal Block |
| DISTANCE: | RS-232 Side: 16 ft (5m) and RS-485 Side: up to 4000 ft (1.2km) |
| MAX # OF CONNECTIONS: | 32 Connection Drops |
| ELECTRICAL | |
| POWER SOURCE: | Port Powered From RS-232 Data Lines |
| CURRENT CONSUMPTION: | Less Than 10 mA |
| STATIC PROTECTION: | 15KV Electric Static Discharge (ESD) Protection |
| SURGE PROTECTION: | 600W Surge Protection |
| MECHANICAL | |
| HOUSING: | Rugged ABS |
| WEIGHT: | With Terminal Block: 1.2oz (36 grams) Without Terminal Block: 0.8oz (24 grams) |
| DIMENSIONS: | With Terminal Block: 3.15" X 1.33" X 0.70" (80.0 mm X 33.8 mm X 17.8 mm) Without Terminal Block: 2.47" X 1.33" X 0.70" (62.8 mm X 33.8 mm X 17.8 mm) |
| ENVIRONMENTAL | |
| OPERATING TEMP: | -4° F to 140° F (-20°C to 60° C) |
| STORAGE TEMP: | -40° F to 185° F (-40°C to 85° C) |
| OPERATING HUMIDITY: | 5% To 95% - No Condensation |
| QUALITY | |
| PRODUCT SAFETY: | CE, FCC and RoHS Conformance Certified |
| QUALITY MANAGEMENT | Manufactured and Distributed to ISO 9001:2008 |
| RELIABILITY: | Low Failure Rate – 99+% Reliability Since Inception |
| WARRANTY: | 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 noisy environment. The terminal blocks are shipped with 120 Ohm termination 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 2nd 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:

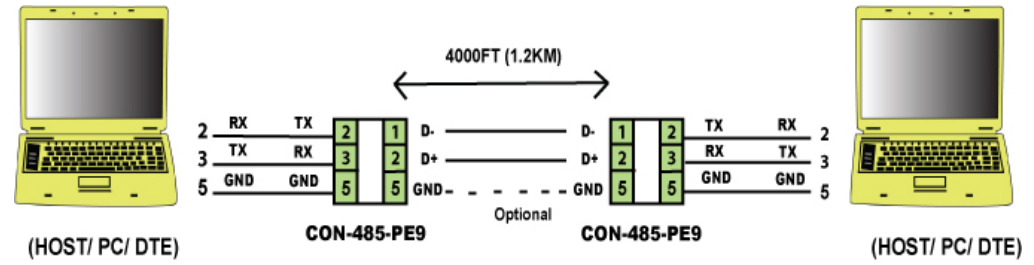


FIGURE 1: EXTENDING RS-232 DATA DISTANCE

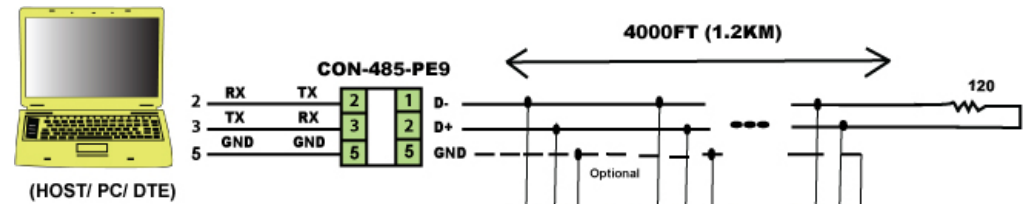


FIGURE 2: MASTER/SLAVE MULTIPLE DROP CONFIGURATION