



SERIALCOMM.COM

**TTL-232-5P**  
RS-232 To 5V TTL Converter - DB9

Datasheet Revision 2.6



**GENERAL FEATURES:**

- Plug-and-Play (hot-pluggable)
- Port powered - no external power needed
- Data direction auto-turnaround - no flow control necessary
- Built-in surge and static protection
- 5-year replacement manufacturer's warranty
- CE, FCC, RoHS and REACH certified

**DESCRIPTION:**

The SerialComm TTL-232-5P is a bi-directional port powered RS-232 to 5V TTL converter which converts a full-duplex RS-232C port to a 5V TTL signal. A built-in data direction auto-turnaround feature automatically enables the TTL 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 TTL-232-5P has a DB9 female connector on the RS-232 serial port, and DB9 male connector on the TTL port. A separate terminal block is included with the product. The terminal block plugs into the TTL 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:**



**TTL VOLTAGE LEVELS:**

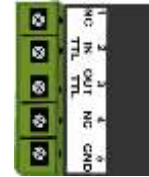
TTL INPUT	TTL OUTPUT
HIGH (> 2.0V)	HIGH (5.0V)
LOW (< 0.8V)	LOW (0.0V)

**PINOUT CONFIGURATION:**  
RS-232 SIDE – DB9 FEMALE

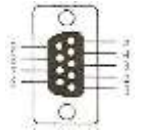
SIGNAL	DCD	DTR	DSR	RTS	CTS	T X	R X	GND
PIN #	1	4	6	7	8	2	3	5
FUNCT.	TIED			TIED		T X	R X	GND

**TTL SIDE – DB9 MALE OR TERMINAL BLOCK**

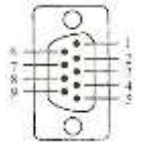
SIGNAL	NC	TTL N	TTL OUT	NC	GND
PIN #	1	2	3	4	5
FUNCTION	NC	TTL IN	TTL OUT	NC	GND



**FEM. DB9**



**MALE DB9**



**SPECIFICATIONS:**

COMMUNICATION	
<b>STANDARDS:</b>	EIA/TIA RS-232C Standard
<b>BAUD RATES:</b>	From 300 bps to 115,200 bps
<b>CONNECTOR TYPES:</b>	RS-232 Side: DB9 Female and TTL Side: either DB9 Male or 5 Way Terminal Block
<b>DISTANCE:</b>	RS-232 Side: 16 ft (5m) and TTL Side: up to 10 ft (3m)
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> 3.16" X 1.32" X 0.73" (80.3 mm X 33.4 mm X 18.6 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 Third-party Third-party Certified
<b>QUALITY MANAGEMENT:</b>	Manufactured and Distributed to ISO 9001:2015 QMS
<b>MEAN TIME BEFORE FAILURE:</b>	249,914 Hours
<b>RELIABILITY:</b>	Low Failure Rate – 99+% Reliability Since Inception
<b>WARRANTY:</b>	5 Year Replacement Warranty

## TROUBLESHOOTING INSTRUCTIONS:

Using one TTL-232-5P unit:

1. Check that all connections comply with the connection diagrams.
2. Perform a loop back test on one unit:
  - a) Connect the TTL IN to TTL OUT on the TTL port.
  - b) Connect the RS-232C port to the PC RS-232 port.
  - c) Running a hyper terminal program on the PC, send ASCII characters to the TTL-232-5P 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 TTL-232-5P unit is working properly.

Using two TTL-232-5P units:

1. Check that all connections comply with the connection diagrams.
2. Perform a loop back test on two units:
  - a) Connect the two TTL ports. Connect TTL IN to TTL OUT and TTL OUT to TTL IN.
  - 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 TTL-232-5P 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 TTL-232-5P units are working properly.

## APPLICATIONS:

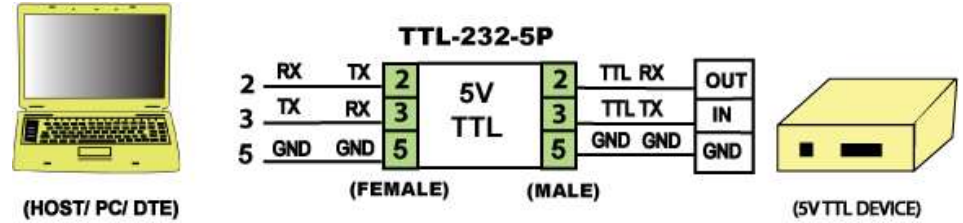


FIGURE 1: CONNECTING THE RS-232 PORT TO A 5V TTL DEVICE