

**TTL-485-5P**  
**EXTERNALLY POWERED**  
**RS-485 To 5V TTL Converter - DB9**  
Datasheet Revision 2.3



**GENERAL FEATURES:**

- Plug-and-Play (hot-pluggable)
- Externally 5V powered
- Included UL listed 5V/120VAC/220VAC power adapter
- Data direction auto-turnaround - no flow control necessary
- Built-in surge and static protection
- 5 Year manufacturer's warranty
- RoHS, CE, and FCC certified

**DESCRIPTION:**

The SerialComm TTL-485-5P is a bi-directional 5V externally powered RS-485 to 5V TTL converter which converts a half-duplex RS-485 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-485 port, eliminating the need for software drivers, and making the device fully plug-and-play. The TTL-485-5P has a db-9 male connector on the RS-485 port, and db-9 male connector on the TTL port. Two separate terminal blocks are included with the product - one for the RS485 port and the other for the TTL port. The terminal blocks plug into the RS-485 and TTL ports, providing screw-lug wire terminations for the ports. The unit is enclosed in a rugged ABS housing, and is externally powered.

**CERTIFICATIONS:**



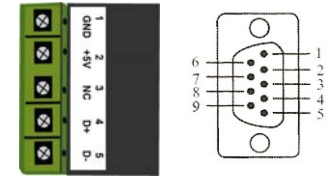
**TTL VOLTAGE LEVELS:**

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

**PINOUT CONFIGURATION:**

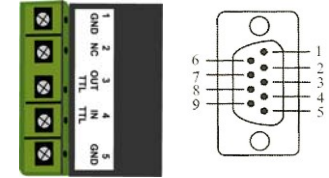
**RS-485 SIDE: DB9 MALE OR TERMINAL BLOCK**

SIGNAL	GND	+5V	NC	D+	D-
PIN #	1	2	3	4	5
FUNCTION	GND	+5V	NC	D+	D-



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

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



**SPECIFICATIONS:**

COMMUNICATION	
<b>STANDARDS:</b>	RS-485 Standard
<b>BAUD RATES:</b>	From 300 Baud To 115,200 Baud
<b>CONNECTOR TYPES:</b>	RS-485 Side: either DB9 Male or 5-way Terminal Block 5V TTL Side: either DB9 Male or 5-way Terminal Block
<b>DISTANCE:</b>	RS-485 Side: 4000 ft (1.2km) & 5V TTL Side: 10 ft (3m)
ELECTRICAL	
<b>POWER SOURCE:</b>	Included 5VDC/(100VAC-240VAC) Power Adapter
<b>CURRENT CONSUMPTION:</b>	Less Than 10 mA
<b>STATIC PROTECTION:</b>	15KV Electric Static Discharge (ESD) Protection
<b>SURGE PROTECTION:</b>	600W/Sec Surge Protection
MECHANICAL	
<b>HOUSING:</b>	Rugged ABS
<b>WEIGHT:</b>	<b>With Terminal Block:</b> 1.7oz (50 grams) <b>Without Terminal Block:</b> 0.8oz (24 grams)
<b>DIMENSIONS:</b>	<b>With Terminal Blocks:</b> 3.98" X 1.35" X 0.70" (99.8 mm X 34.1 mm X 17.6 mm) <b>Without Terminal Blocks:</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 and RoHS Conformance Certified
<b>QUALITY MANAGEMENT:</b>	Manufactured and Distributed to ISO 9001:2008
<b>RELIABILITY:</b>	Low Failure Rate – 99+% Reliability Since Inception
<b>WARRANTY:</b>	5 Year Replacement Warranty

## APPLICATIONS:

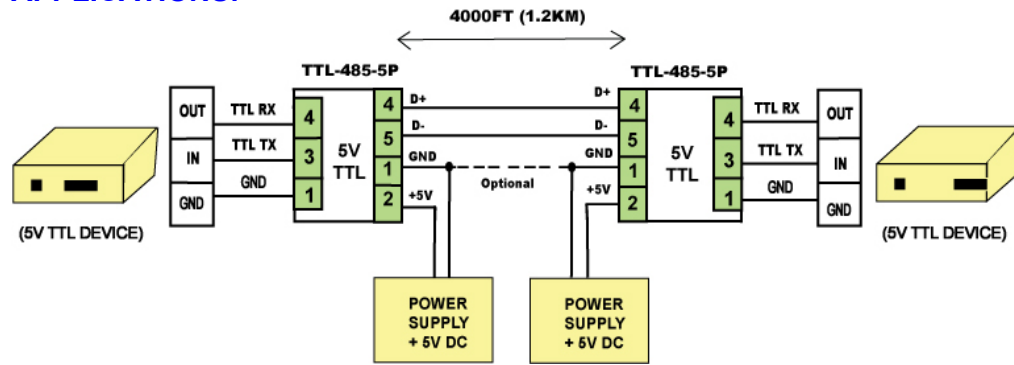


FIGURE 1: EXTENDING TTL DATA DISTANCE

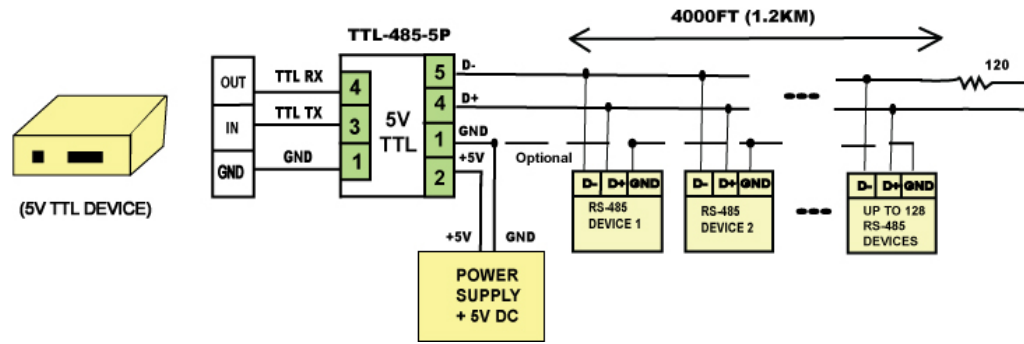


FIGURE 2: MASTER/SLAVE MULTIPLE DROP CONFIGURATION

## TROUBLESHOOTING INSTRUCTIONS:

Using one TTL-485-5P 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-485 port to the PC RS-485 port.
  - c) Running a hyper terminal program on the PC, send ASCII characters to the TTL-485-5P 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-485-5P unit is working properly.

Using two TTL-485-5P 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-485 ports to two PC RS-485 ports.
  - c) Running hyper terminal programs on both PCs, send ASCII characters to the TTL-485-5P 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-485-5P units are working properly.