SerialComm®
Data Conversion Experts

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TTL-485-5P
EXTERNALLY POWERED
RS-485 To 5V TTL Converter - DB9

Datasheet Revision 2.6

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 DB9 male connector on the RS-485 port, and DB9 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:

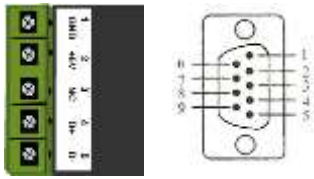
TTL VOLTAGE LEVELS:

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

PINOUT CONFIGURATION:

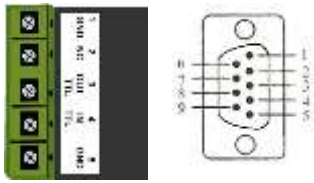
RS-485 SIDE: DB9 MALE OR TERMINAL BLOCK

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	
STANDARDS:	RS-485 Standard
BAUD RATES:	From 300 Baud To 115,200 Baud
CONNECTOR TYPES:	RS-485 Side: either DB9 Male or 5-way Terminal Block 5V TTL Side: either DB9 Male or 5-way Terminal Block
DISTANCE:	RS-485 Side: 4000 ft (1.2km) & 5V TTL Side: 10 ft (3m)
ELECTRICAL	
POWER SOURCE:	Included 5VDC/(100VAC-240VAC) Power Adapter
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**: 1.7oz (50 grams) **Without Terminal Block**: 0.8oz (24 grams)
DIMENSIONS:	**With Terminal Blocks:** 3.98" X 1.35" X 0.70" (99.8 mm X 34.1 mm X 17.6 mm) **Without Terminal Blocks**: 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, RoHS and REACH Third-party Certified
QUALITY MANAGEMENT:	Manufactured and Distributed to ISO 9001:2015 QMS
MEAN TIME BEFORE FAILURE:	267,812 Hours
RELIABILITY:	Low Failure Rate – 99+% Reliability Since Inception
WARRANTY:	5 Year Replacement Warranty

APPLICATIONS:

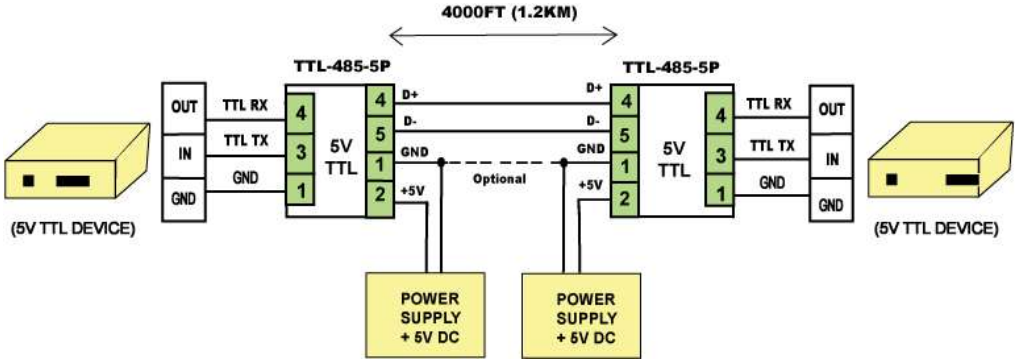


FIGURE 1: EXTENDING TTL DATA DISTANCE

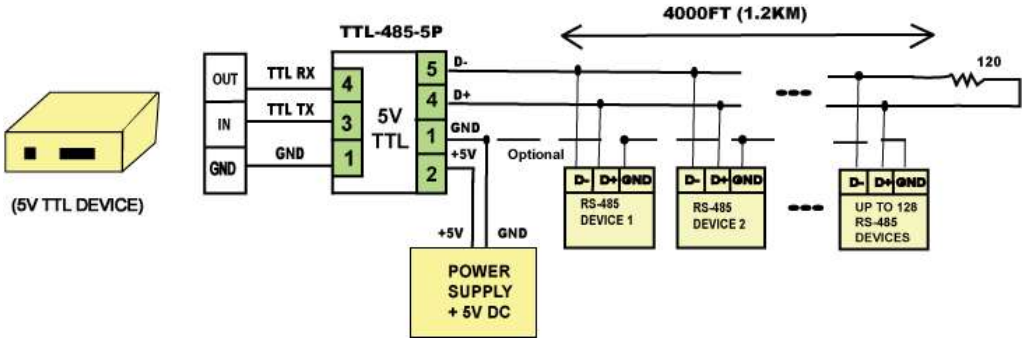


FIGURE 2: MASTER/SLAVE MULTIPLE DROP CONFIGURATION

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 2nd 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.