

TTL-232-33P
RS-232 To 3.3V TTL Converter - DB9

SERIALCOMM.COM

Datasheet Revision 2.5



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-232-33P is a bi-directional port powered RS-232 to 3.3V TTL converter which converts a full-duplex RS-232 port to a 3.3V 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-232-33P 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:



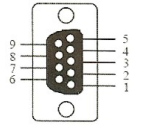
TTL VOLTAGE LEVELS:

| TTL INPUT | TTL OUTPUT |
|---------------|-------------|
| HIGH (> 2.0V) | HIGH (3.3V) |
| LOW (< 0.8V) | LOW (0.0V) |

PINOUT CONFIGURATION:
RS-232 SIDE – DB9 FEMALE

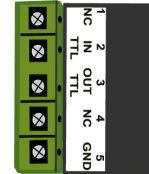
| SIGNAL | DCD | DTR | DSR | RTS | CTS | T X | R X | GND |
|--------|------|-----|-----|------|-----|--------|--------|-----|
| PIN # | 1 | 4 | 6 | 7 | 8 | 2 | 3 | 5 |
| FUNCT. | TIED | | | TIED | | T X | R X | GND |

FEM. DB9

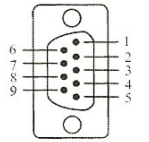


TTL SIDE – DB9 MALE OR TERMINAL BLOCK

| SIGNAL | NC | TTL I N | TTL O UT | NC | GND |
|----------|----|------------|-------------|----|-----|
| PIN # | 1 | 2 | 3 | 4 | 5 |
| FUNCTION | NC | TTL IN | TTL OUT | NC | GND |



MALE DB9



SPECIFICATIONS:

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

TROUBLESHOOTING INSTRUCTIONS:

Using one TTL-232-33P 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-232-33P 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-232-33P unit is working properly.

Using two TTL-232-33P 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-232-33P 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-232-33P units are working properly.

APPLICATIONS:

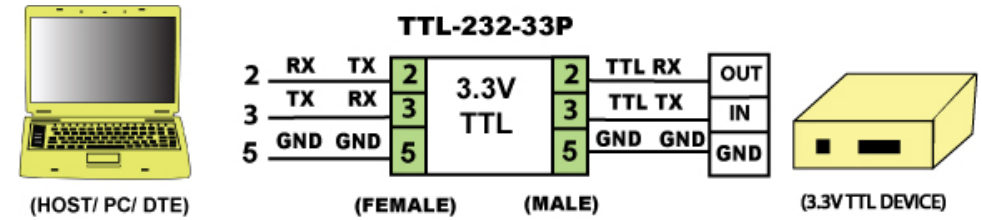


FIGURE 1: CONNECTING THE RS-232 PORT TO A 3.3V TTL DEVICE