



## Industrial Port-Powered RS-232 ⇔ TTL 3.3V Converter

(Part Number: TTL33-232-1)



<http://www.CommFront.com>



### ■ INTRODUCTION

The TTL33-232-1 is a compact, rugged, industrial grade, port-powered RS-232 to 3.3VDC TTL converter, which can be used to convert RS-232 to 3.3VDC TTL compatible levels and vice versa. This product operates within a temperature range of -40°F to 185°F (-40°C to 85°C), and features 600W surge protection and 15kV static protection. The unit is efficiently powered from the RS-232 data line, and the full-duplex RS-232 to full-duplex TTL conversion eliminates the need of auto-turnaround feature. This RS232 to TTL converter also comes with the auto-sensing and self-adjusting features, which automatically adjust baud rate, parity, stop bit and other COM port parameters to the devices that they are connected to. Therefore, it requires no external power or software drivers, making the unit a highly reliable and truly plug-and-play device.

### ■ FEATURES

- Port-powered, no external power is required.
- Operates reliably from 300 to 115,200 baud.
- Industrial grade enclosed in a rugged, rustless ABS housing.
- Plug and play (hot-pluggable, data format auto-sensing and self-adjusting).
- Operating temperature: -40°F to 185°F (-40°C to 85°C).
- Built-in 600W surge protection, 15kV static protection and circuit protection.
- Surface Mount Technology manufactured to RoHS and ISO-9001 standards.
- Safety: Strictly certified by TUV (Cert No. SG-CE-090012).
- 5-year manufacturer's warranty.

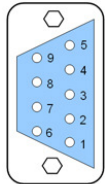
### ■ SPECIFICATIONS

Compatibility:	EIA/TIA RS-232C standard and TTL 3.3VDC level
Power Source:	Port power from RS-232 data line
Current Consumption:	Less than 10mA
Baud Rates:	300 to 115,200bps (auto-sensing and self-adjusting)
Distance:	RS-232 side: 16ft (5m); TTL side: 10ft (3m)
Connectors:	RS-232 side: DB-9 Female; TTL side: DB-9 Male; Termination Board: DB-9 Female and a 3-Way Terminal Block
Surge Protection:	600W
Static Protection (ESD):	Up to 15KV
Dimensions (H x W x D):	0.63 x 1.3 x 3.5 in (16 x 32 x 88 mm) (with termination board)
Weight:	1.27 oz (36 g) (with termination board)
Operating Temperature:	-40°F to 185°F (-40°C to 85°C)
Operating Humidity:	Up to 90% RH (no condensation)

■ **PIN ASSIGNMENT**

RS-232 Side (DB-9 Female Connector):

Pin:	1	4	6	7	8	2	3	5
Signal:	DCD	DSR	DTR	CTS	RTS	TX	RX	GND
Function:	tied together			tied together		TX	RX	GND

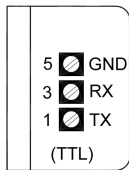


DB-9 FEMALE

Note: Some software requires handshake line acknowledgements. To satisfy the requirements, the TTL33-232-1's handshake lines (RS232 side) are tied together (DCD, DSR, and DTR tied together, CTS and RTS tied together). Therefore, you don't have to modify your existing software.

TTL Side (DB-9 Male Connector / Terminal Block):

DB-9 Pin:	1	3	5
Terminal Block:	TX	RX	GND
Function:	TTL OUT	TTL IN	GND



- The numbers on the left indicate the pin assignment of DB-9 male connector (TTL side).
- TX is the TTL Output, RX is the TTL Input.

■ **CONNECTIONS**

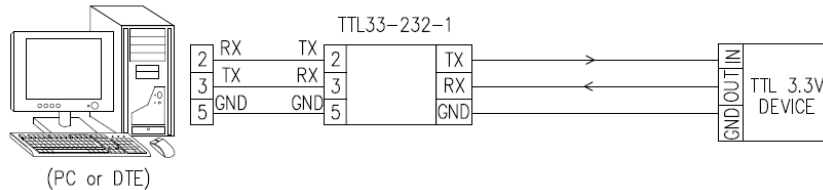


FIGURE 1: TTL33-232-1 CONNECTION DIAGRAM

■ **TTL SIGNAL LEVELS**

TTL Input	TTL Output
High (>2.0V)	High (3.3V)
Low (<0.8V)	Low (0.0V)

■ **TROUBLESHOOTING**

Perform a loopback test by using CommFront's 232Analyzer software: Connect TX (TTL Out) to RX (TTL In), and then send commands from the 232Analyzer software. You should receive an echo of the commands sent. By performing a simple loopback test like this, you can test both the transmitter and receiver of the RS-232/TTL converter. This is very helpful when you are in doubt about the performance of your converter.