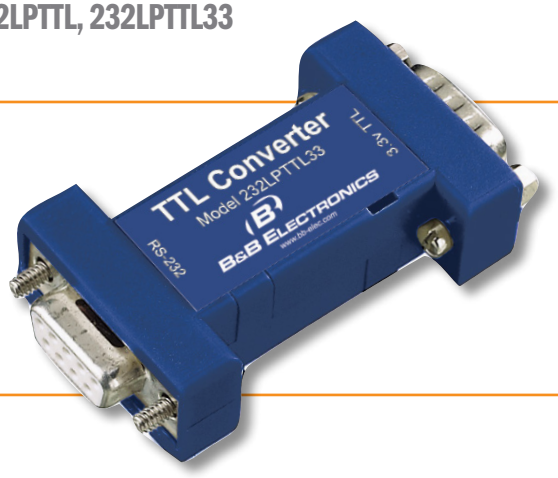
Port Powered TTL/RS-232 Converters

232LPTTL, 232LPTTL33



PRODUCT FEATURES

- Convert 2 channels in each direction from TTL ("Transistor Transistor Logic)" to RS-232
- 5V and 3.3V TTL options
- Baud rates up to 115.2 kbps
- Powered from RS-232 data/handshake lines - no power supply required

These non-isolated, four channel TTL/CMOS converters make easy connections between TTL equipment and RS-232 ports and run at a maximum baud rate speed of 115.2 kbps. All models convert two channels (TX and RX) in each direction (bi-directional) from TTL to RS-232. Use these converters with almost any micro controller or programmable logic controller that supports TTL.

Model 232LPTTL converts RS-232 to 5VDC TTL/CMOS competitive levels. Model 232LPTTL33 converts RS-232 to 3.3VDC TTL/CMOS compatible levels. Two channels are used to convert from RS-232 to TTL/CMOS signals and two channels are used to convert from TTL/CMOS signals to RS-232. These converters support TD, RD, RTS, and CTS. DB9S female connector on the RS-232 side. DB9P male connector on the TTL/CMOS side. This unit is powered from the
RS-232 data and handshake lines, whether the lines are high or low.

Pins used are:

RS-232 DB9S Female Pin	Function	TTL/CMOS DB9P Male Pin
3 (input)	TD	3 (output)
2 (output)	RD	2 (input)
7 (input)	RTS	7 (output)
8 (output)	CTS	8 (input)
5 (signal gnd)	GND	5 (signal gnd)

Pin 5 is signal ground for both connectors. Both models are powered by the signals on pins 7(RTS), 4 (DTR), and 3(TD). These handshake lines can be in either the high or low condition, but must be present to power the converter. The unit can work at baud rates up to 115.2 kbps.

It is important that TTL/CMOS logic, and only TTL/CMOS logic (0 to +5 VDC for the 232LPTTL, and 0 to +3.3 VDC for the 232LPTTL33) is used for the TTL/CMOS side of the converter. The maximum sinking current for one TTL/CMOS output is 3.2 mA. The maximum source current for one TTL/CMOS is 1 mA. Signal levels are inverted by the converters. Please refer to the table under Specifications.

ORDERING INFORMATION

MODEL NUMBER	RS-232 CONNECTOR	TTL CONNECTOR	TTL VDC
232LPTTL	DB9 Female	DB9 Male	5V
232LPTTL33	DB9 Female	DB9 Male	3.3V

ACCESSORIES

9PAMF6 - DB9 Male to DB9 Female, 1.8 m (6 ft.)

MMNM9 - Null Modem Adapter - DB9 Male / DB9 Male

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SPECIFICATIONS

SERIAL TECHNOLOGY	
Data Rate	115.2 kbps maximum
RS-232	
Connector	DB9 female
Signals	TD, RD, RTS, CTS
TTL	
Connector	DB9 male
Signals	2 Input/2 Output Channels, GND
Logic	CMOS
VDC Level	232LPTTL: 5V 232LPTTL33: 3.3V
POWER	
Source	Port-powered: from RS-232 handshake lines
MECHANICAL	
Dimensions	5.29 x 3.33 x 1.74 cm (2.08 x 1.31 x 0.66 in)
Enclosure	Plastic, In-line
Weight	0.08 lbs (36.2 g)
MTBF, 232LPTTL33	1674682
MTBF Calc. Method, 232LPTTL33	Parts Count Reliability Prediction

ENVIRONMENTAL	
Operating Temperature	0 to +70 °C (+32 to +158 °F)
Storage Temperature	-40 to +85 °C (-40 to +185 °F)
Operating Humidity	0 to 95% Non-Condensing

APPROVALS / CERTIFICATIONS - 232LPTTL
FCC Part 15, CISPR, EN 55022: 2010 + AC:2011 Class B Emissions
CE
EN 61000-6-1: 2007 Generic Standards for Residential, Commercial and Light-Industrial Environments
EN 61000-4-2: 2009 Electro-Static Discharge (ESD)
EN 61000-4-3: 2006 +A1 +A2 +IS1 Radiated Field Immunity (RFI)
EN 61000-4-4: 2012 Electrical Fast Transients-Burst Immunity (EFT)
EN 61000-4-6: 2009 Conducted Immunity
Download complete Declaration of Conformity at www.bb.elec.com

POLARITY

5VDC TTL/CMOS Input	3.3VDC TTL/CMOS Input	RS-232 Output
Low (< .8V)	Low (< .8V)	+5V minimum, +9V typical
High (> 2V)	High (> 2V)	-5V minimum, -+9V typical
5VDC TTL/CMOS Output	**3.3VDC TTL/CMOS Output**	**RS-232 Input**
+3.45V minimum, +4.6V typical	+2.4V minimum, +3.0V typical	Low (< .2V)
+.55V maximum, +.1V typical	+.55V maximum, +.1V typical	High (> 2.4V)

MECHANICAL DIAGRAM – 232LPTTL, 232LPTTL33