

Port Powered TTL/RS-232 Converters

Models BB-232LPTTL, BB-232LPTTL33

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PRODUCT FEATURES

- Converts 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 four channel TTL/CMOS converters make easy connections between TTL equipment and RS-232 ports and operate at data rates up to 115.2 kbps. They 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 (PLC) that supports TTL.

Model BB-232LPTTL converts RS-232 to 5VDC TTL/CMOS competitive levels. Model BB-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.

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 BB-232LPTTL, and 0 to +3.3 VDC for the BB-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
BB-232LPTTL	DB9 Female	DB9 Male	5V
BB-232LPTTL33	DB9 Female	DB9 Male	3.3V

ACCESSORIES - sold separately

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

BB-MMN9 - Null Modem Adapter - DB9 Male / DB9 Male

All product specifications are subject to change without notice.
BB-232LPTTL, BB-232LPTTL33_1720ds

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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	BB-232LPTTL: 5V BB-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	36.2 g (0.08 lb)
MEANTIME BETWEEN FAILURES (MTBF) - BB-232PTTL33	
MTBF, BB-232LPTTL33	1674682
MTBF Calc. Method, BB-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 - BB-232LPTTL	
FCC Part 15, Class B Emissions, CE	
CE - Directives	2014/30/EU - Electromagnetic Compatibility 2011/65/EU – amended by (EU) 2015/863 Reduction of Hazardous Substances (RoHS) 2012/19/EU – Waste Electrical and Electronic Equipment (WEEE)
CE - Standards	EN 55032 (Class B) – Electromagnetic Compatibility of Multimedia Equipment - Emission Requirements EN 55024 - Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurement

POLARITY

5VDC TTL/CMOS Input

Low (< 0.8V)

High (> 2V)

5VDC TTL/CMOS Output

+3.45V minimum, +4.6V typical

+5.5V maximum, +.1V typical

3.3VDC TTL/CMOS Input

Low (< 0.8V)

High (> 2V)

3.3VDC TTL/CMOS Output

+2.4V minimum, +3.0V typical

+5.5V maximum, +.1V typical

RS-232 Output

+5V minimum, +9V typical

-5V minimum, -9V typical

RS-232 Input

Low (< .2V)

High (> 2.4V)

MECHANICAL DIAGRAM – BB-232LPTTL, BB-232LPTTL33

