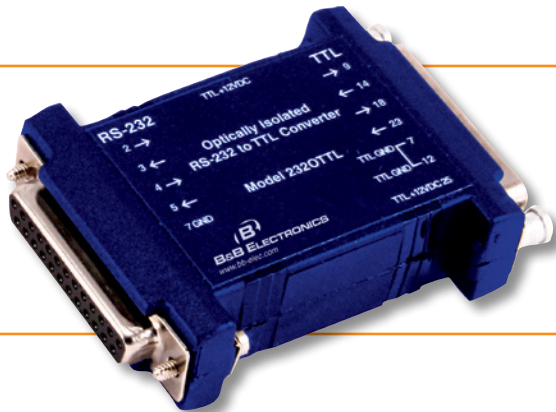


Port Powered TTL/RS-232 Converters

232TTL, 2320TTL



PRODUCT FEATURES

- Convert 2 channels in each direction from TTL to RS-232
- Baud rates up to 115.2 kbps (38.4 kbps on isolated model)
- Powered from RS-232 data/handshake lines - no power supply required
- Optically isolated version (Model 2320TTL)

Models 232TTL and 2320TTL convert RS-232 signals to 0-5 VDC TTL levels. The 2320TTL provides 1500V optical isolation. Two channels are used to convert from RS-232 to TTL signals and two channels are used to convert from TTL signals to RS-232.

These converters support RD, TD, RTS, and CTS. The DB25P male connector (DCE) is for the RS-232 side. The DB25S female connector is for the TTL side. The 232TTL supports baud rates up to 115K baud, the 2320TTL supports up to 38.4K baud.

It is important that only TTL logic (0 to +5V) is used for the TTL side of the converter. The maximum sinking current for one TTL output is 8 mA. The maximum source current for one TTL is 0.8 mA. Signal levels are inverted by the converter in its standard configuration as shown in Table 1.

Table 1: Standard inverted Outputs

TTL Input	RS-232 Output
high (>2.0V)	-5 V maximum, -9V typical
low (<0.8V)	+5 V minimum, +9V typical
TTL Output	RS-232 Input
high (>2.0V)	-5 V maximum, -9V typical
low (<0.8V)	+5 V minimum, +9V typical

The 2320TTL has the option for non-inverted outputs. See table 2, "Operations Requiring Modification" if non-inverted outputs are desired.

Power

The 232TTL requires an external +12VDC power supply connected either through 2.5mm jack or pins 12(GND) and 25 (+12VDC) on the TTL side.

The 2320TTL requires both Port Power on the RS-232 side, and external +12VDC power supply connected either through 2.5mm jack or pins 12(GND) and 25 (+12VDC) on the TTL side.

Port power is derived from the outputs of the host RS-232 port. TD, RTS, and DTR lines may be used to port power the RS-232 side. A minimum of two of these lines in either high or low states is required for proper operation. To externally power the RS-232 side, connect the positive lead of the +12VDC power supply to pin 25 and the GND lead to pin 12 of the DB25 female connector.

ORDERING INFORMATION

MODEL NUMBER	RS-232 CONNECTOR	TTL CONNECTOR	TTL VDC	ISOLATION
232TTL	DB25 Male	DB25 Female	5V	
2320TTL	DB25 Female	DB25 Male	5V	1500V

ACCESSORIES

232PS - 12VDC@100mA wall transformer power supply, 2.5mm plug

E1250BL-BB3 - 220-240 VAC to 12 VDC wall power supply, 2.5mm plug Euro CEE7/7 plug

232CAMS - DB25 male to DB9 female adapter cable, 15.24 cm/6 in

232SGF - 25-pin gender reverser - changes male port to female

Options Requiring Modification

The 2320TTL may be modified to non-inverted signals as shown in Table 2 by placing a jumper wire across JP1:A labeled "NI"

Table 2: Modified to Non-Inverted Outputs

TTL Input	RS-232 Output
high (>2.0V)	-5 V maximum, -9V typical
low (<0.8V)	+5 V minimum, +9V typical
TTL Output	RS-232 Input
high (>2.0V)	-5 V maximum, -9V typical
low (<0.8V)	+5 V minimum, +9V typical

The 2320TTL may also be modified to accept a +5V supply on the TTL side. Remove the 0 ohm surface mount resistor labeled R13 and place a jumper wire across JP1:B labeled +5V. A +4.75 to +5.25V at a maximum of 25mA is necessary to power the TTL side of the converter when this modification is made.

Port Powered TTL/RS-232 Converters

232TTL, 2320TTL



SPECIFICATIONS

SERIAL TECHNOLOGY

Data Rate 232TTL: 115.2 kbps maximum
2320TTL: 38.4 kbps maximum

RS-232

Connector 232TTL: DB25 male (DCE)
2320TTL: DB25 female (DCE)
Signals TD, RD, RTS, CTS, GND

TTL

Connector 232TTL: DB25 female
2320TTL: DB25 male
Signals 2 Input/2 Output Channels, GND

Logic CMOS

VDC Level 5V

ISOLATION

Isolation 2,000 V optical

POWER

232TTL Source 232TTL: External +12VDC power supply on 2.5mm jack for pins 25 (+) and 12 (-) on TTL DB25

2320TTL Source RS-232: port-powered from RS-232 handshake lines
TTL: requires +12 VDC external power supply

Input Voltage 12 VDC (<100 mA)

MECHANICAL

Dimensions, 232TTL: 5.4 x 5.6 x 1.7 cm (2.1 x 2.2 x 0.7 in)
2320TTL: 7.8 x 5.4 x 2.1 cm (3.1 x 2.1 x 0.8 in)

Enclosure 232TTL: GE LEXAN POLYCARBONATE GRADE 920

2320TTL: Plastic, ABS - Inline

Weight .011 lbs (49.9 g)

MTBF 232TTL: 1367614
2320TTL: 517206

MTBF Calc. Method 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 - 232TTL

FCC Part 15, CISPR, EN 55022: 2010 + AC:2011 Class A 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

APPROVALS / CERTIFICATIONS - 2320TTL

FCC Part 15, CISPR, EN 55022: 2010 + AC:2011 Class A Emissions

CE

Download complete Declaration of Conformity at www.bb.elec.com

MECHANICAL DIAGRAM

