# BB-485BAT3

**Battery Powered
RS-232 to RS-485 Serial Converter**

## Features

- Change RS-232 TD and RD to RS-485 signals
- Extend RS-232 data signals up to 1.2 km (4000 ft)
- Data rates up to 115.2 kbps
- 3 powering options:  battery (2) AAA, RS-232 handshake lines, or external power supply (not included, sold separately)
- Quick, easy inline installation
- Automatic Send Data Control – no software drivers necessary

## Introduction

**Three Versatile Powering Options**
Model BB-485BAT3 features power versatility, making it perfect for field testing solutions. It can be powered in three ways:  batteries, port-powered, or by an external power supply (not included, sold separately).

Use the battery power option with a low-power RS-232 port (found on many laptops) or no handshake lines or when it is inconvenient to use a power supply. Model BB-485BAT3 will draw as much power as possible from the RS-232 port and get any additional current necessary from the batteries.

If you have a full power-port and all your handshake lines, turn Off the battery switch. This allows you to run full port-powering and save the batteries for emergencies. Note: The battery On/Off switch conserves battery life. It does not turn on and off all power to the unit.

Lastly, a stripped and tinned +12VDC external power supply may be used. Simply attach it to the terminal blocks and plug it in. (Power supply not included, sold separately.)

Model BB-485BAT3 converts unbalanced RS-232 signals to balanced RS-422 or RS-485 signals. RS-485 is an enhanced version of the RS-422 standard, allowing multiple drivers and receivers on a 2-wire system.

**Why Use  An "Optional" Power Supply With a Port-powered Converter?**
Simply put, all RS-232 ports are not created equal. Many laptop PC's, for example, deliberately reduce power to the RS-232 port to save the battery. And, if you are working at the distance limits of RS-422 or 485, you might need an extra boost. For the majority of applications though, the converter's port powering is sufficient to accomplish the task.

**Automatic Send Data Control Explained**
As operating systems become more complex, it is increasingly difficult to control an RS-485 driver with standard software and the RTS line. This is especially true in Windows and multi-tasking operating systems. With Advanatech's Automatic Send Data Control circuit, driver control is in the converter hardware, so you do not have to work with software at all.

The circuit monitors data flow and enables the driver during transmission and automatically disables it when no data is being sent. There is no need to rework software or install new drivers. Most Advantech's RS-232 to RS-485 converters and RS-485 serial cards include Automatic Send Data Control.

## Ordering Information

| Model No. | RS-232 | RS-485 | Output | Optional Power Supply |
|---|---|---|---|---|
| BB-485BAT3 | DB9 Female | Terminal Block | RS-485 2 or 4-wire or RS-422 | (2) AAA batteries or port powered or external source* |

*\* External power supply not included, sold separately.*

**Accessories – Sold Separately**

BB-SMi6B-12-V-ST – Power Supply, 12 VDC, 500 mA, switching, stripped, tinned

BB-9PAMF6 – DB9 male to DB9 female adapter cable, 1.8 m (6 ft)

**BB-485BAT3**

## Specifications

| Serial Technology | |
|---|---|
| Data Rate | 115.2 kbps, maximum |

| RS-232 | |
|---|---|
| Connector | DB9 female (DCE) |
| Signals | RD, TD, GND, DCD, DTR, DSR, RTS, CTS |
| Port Power * | Pins 7 (RTS) and 8 (CTS) are tied together, and pins 6 (DSR), 1 (CD), and 4 (DTR) are also tied together. |

| RS-422/485 | |
|---|---|
| Connector | Terminal block |
| Signals | TDA (-), TDB (+), RDA (-), RDB (+), GND |
| Operation | Dipswitch selectable RS-422 or RS-485. RS-485, 2 or 4-wire. RS-422, 4-wire. |
| Biasing Resistors | 4.7k Ohms |
| Termination | None |

| Power | |
|---|---|
| Power Source - 3 options | (2) AAA batteries (not included). Port-powered from RS-232 handshake lines. * External 12-16 Vdc power supply, optional, not included, sold separately.) |
| Power Connector | Terminal block |
| Input Voltage | 12 Vdc @ 100 mA |
| Battery Life | 7 hours fully loaded with no port power available. 100 to 250 hours, typical |

*\* Port-powering requires 7 to 12 Vdc supplied on at least one handshake line.*

| Mechanical | |
|---|---|
| Dimensions | 9.0 x 6.5 x 2.8 cm (3.6 x 2.6 x 1.1 in) |
| Enclosure | Plastic, ABS inline |
| Weight | 104.3 g  (0.23 lb) |

| Meantime Between Failures (MTBF) | |
|---|---|
| MTBF | 241370 hours |
| MTBF Calculation 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 | 95%, non-condensing |

| Regulatory – Approvals / Standards / Directives |
|---|
| FCC Part 15, CISPR |
| EN 55022 + AC Class A Emissions |
| EN 61000-6-1 Generic Standards for Residential, Commercial and Light-Industrial Environments |
| 2011/65/EU amended by (EU) 2015/863 Reduction of Hazardous Substances Directive (RoHS) |