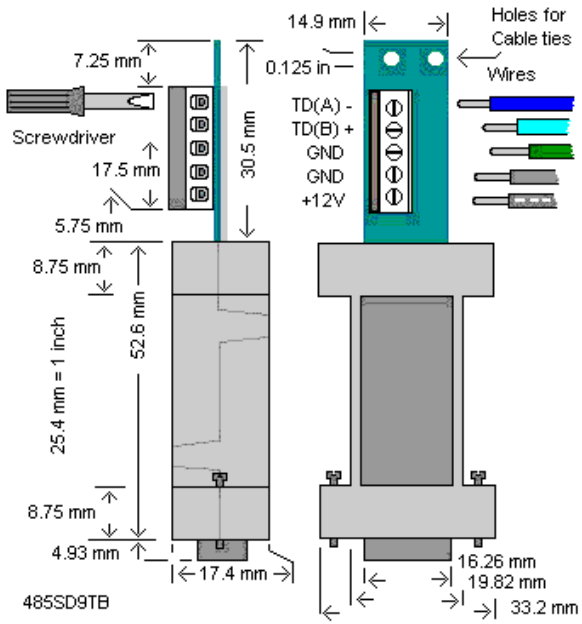
6 Technical Notes

Although these products use handshake lines to power the converter, no handshaking is required to control the RS-485 driver. The RS-485 driver is automatically enabled during each spacing state on the RS-232 side. During the marking or idle state, the RS-485 driver is disabled and the data lines are held in the marking state by the 4.7K Ohm pull-up and pull-down resistors.

See the Advantech B+B SmartWorx free RS-422/RS-485 Application Note for more information on termination and DC biasing of an RS-485 network.

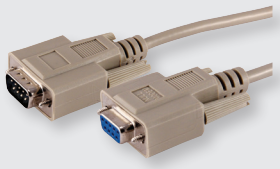
No external power is required if two RS-232 output handshake lines are available. If the handshake lines are raised and no termination is used, the power efficiency is greatly increased. Less than 3mA is required to operate the converter plus the load current.

Model BB-485SD9TB may be externally powered. (Power supply model# BB-SMi6-12-V-ST, available from Advantech, recommended.)



Recommended Accessories

Serial Cable
DB9 male to DB9 female
Model BB-9PAMF6



Industrial Power Supply
Model BB-SMi6-12-V-ST

ADVANTECH

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Document Number: 20BB710-10585-00_r2_BB-485SDxxx_4919qsg

QUICK START GUIDE

Models BB-485SD9R, BB-485SD9RJ, BB-485SD9TB

RS-485 Converter, Port-powered

Before you begin, be sure you have the following:

+ Model BB-485SD9XX Converter
+ Required, but not included:
  - Serial cables

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Product Overview

RS-232
DB9 female
(all models)

(BB-485SD9R shown)

RS-485
DB9 Female,
RJ11,
Terminal Board
(model dependent)

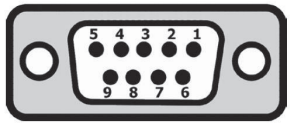
1 RS-232 Side

- Connector: DB-9 female
- Signals: Passes through pins 3 (TD) and 2 (RD)
- Pins 7 (RTS) and 8 (CTS) are tied together.
- Pins 4 (DTR), 6 (DSR), and 1 (CD) are tied together.

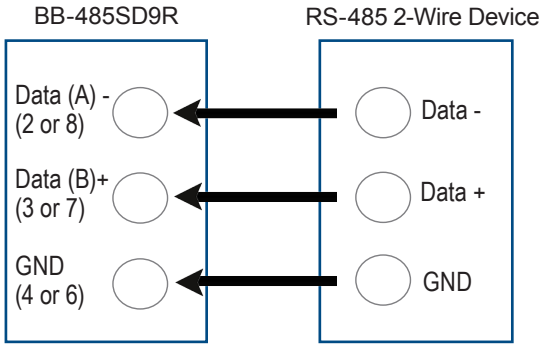
2 RS-485 Side

- Connector: DB-9 female, RJ11 or Terminal Board (by model)
- Signals: 2 wire, half-duplex operation only.
- Automatic Send Data Control circuit enables driver only when transmitting.
- Receiver is disabled when transmitting to prevent echo back to RS-232 device.

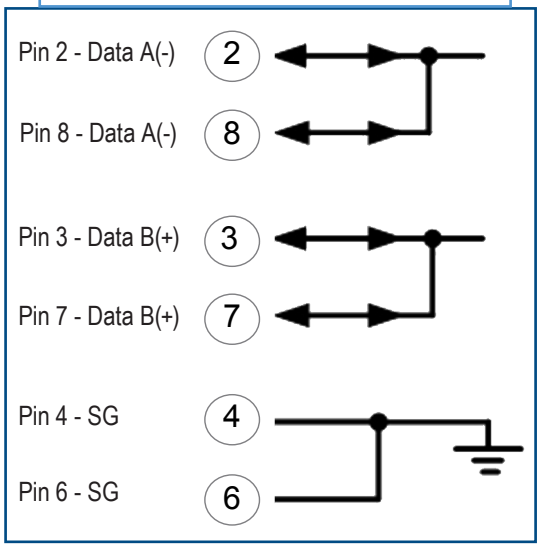
3 Model BB-485SD9R



DB9 Pinouts	
Signal	DB9 Pin #
Data A (-)	2 or 8
Data B (+)	3 or 7
Signal Ground	4 or 6



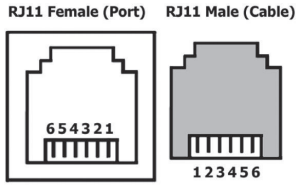
BB-485SD9R
DB9 Female DCE RS-232 Connector



+ Note: Control signals are looped back as shown. They are not used for flow control. However, they provide power to the converter. Advantech recommends connecting all control signals.

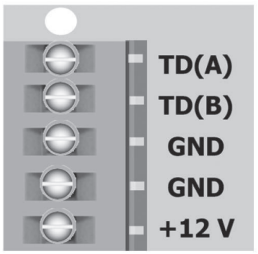
Note: TD is also used to power the converter.

4 Model BB-485SD9RJ



RJ11 Pinouts	
Signal	RJ11 Pin #
Data A (-)	2
Data B (+)	5
Signal Ground	4

5 Model BB-485SD9TB



Terminal Board Pinouts	
TD (A)	1
TD (B)	2
GND	3
GND	4
+12V	5