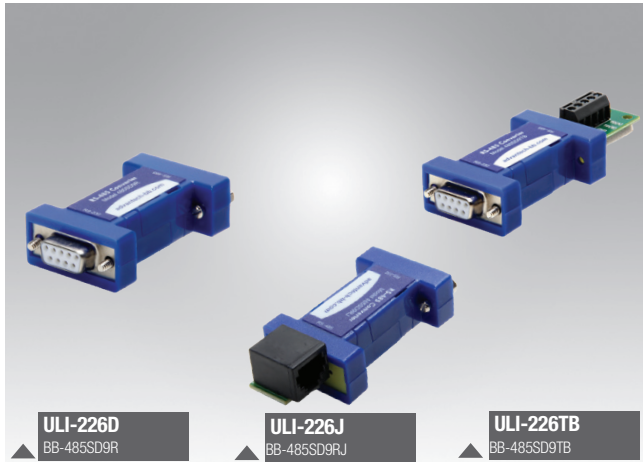


**ULI-226D** BB-485SD9R  
**ULI-226J** BB-485SD9RJ  
**ULI-226T** BB-485SD9TB

## RS-232 to RS-485 Port-powered Converters



### Features

- Extend RS-232 data signals up to 1.2 km
- Convert RS-232 TD and RD to RS-485 signals
- Automatic Send Data Control - no software drivers necessary
- Baud rates up to 115.2 kbps
- Powered from RS-232 handshake lines - no power supply required



### Introduction

These port-powered serial adapters convert TD and RD RS-232 to RS-485 allowing signals to transmit longer distances. RS-485 provides multi-drop capability. Automatic Send Data Control enables the driver when data is present on the RS-232 side. Converters are powered from the RS-232 data/handshake lines whether the lines are high or low. No handshake line change is necessary to control the data lines. The RS-485 driver is enabled with each bit of data. The RS-485 receiver is disabled when the driver is enabled and enabled when the driver is disabled. Model ULI-226T can also be powered by an external 12 Vdc PSU.

### Specifications

#### Serial Technology

- **RS-485 Operation** RS-485 2-wire

| Model:   | RS-232 Connector: | RS-485 Connector: | Data Rate, max: | Biasing Resistors: |
|----------|-------------------|-------------------|-----------------|--------------------|
| ULI-226D | DB9 female        | DB9 female        | 115.2 kbps      | 4.7k Ohms          |
| ULI-226J |                   | RJ11              |                 |                    |
| ULI-226T |                   | Terminal board    |                 |                    |

Refer to Quick Start Guide for wiring, terminal and pin identification, information. Available on website.

#### Power

- **Port Power** RS-232 handshake lines

| Model:   | Source:                           | Connector:     | Input Voltage:          | Power Consumption: |
|----------|-----------------------------------|----------------|-------------------------|--------------------|
| ULI-226D | Port-power                        | -              | -                       | <40 mA, max.       |
| ULI-226J |                                   |                |                         |                    |
| ULI-226T | Port-power <i>OR</i> external PSU | Terminal block | External PSU: 12-16 Vdc |                    |

#### Mechanical

| Model:   | Enclosure: | Installation: | Dimensions, mm:    | Weight, gm: |
|----------|------------|---------------|--------------------|-------------|
| ULI-226D | Plastic    | Inline        | 60.0 x 32.0 x 16.0 | 82          |
| ULI-226J |            |               | 73.0 x 32.0 x 16.0 |             |
| ULI-226T |            |               | 87.0 x 32.0 x 16.0 |             |

#### Meantime Between Failures (MTBF)

- **Calculation Method** MIL217F Parts Count Reliability Prediction

| Model:   | MTBF, hours: |
|----------|--------------|
| ULI-226D | 986473 hours |
| ULI-226J | 897656 hours |
| ULI-226T | 968410 hours |

#### Environmental

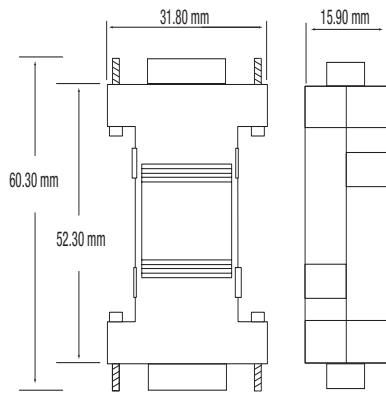
- **Operating Temperature** 0 to +70 °C (+32 to +158 °F)
- **Storage Temperature** -40 to +85 °C (-40 to +185 °F)
- **Operating Humidity** 95%, non-condensing

#### Regulatory/Approvals/Certifications

| Model:   | Approvals:             | CE - Directives:   | CE - Standards:  | Standards - other:  |
|----------|------------------------|--|--|---|
| ULI-226D | FCC Part 15, CISPR, CE | 2014/30/EU - Electromagnetic Compatibility (EMC)                                       | EN 55032 Class B - Electromagnetic Compatibility of Multimedia Equipment - Emission Requirements           | EN 61000-6-1 - Generic Immunity Standard for Residential, Commercial and Light-industrial Environments                |
| ULI-226J |                        | 2011/65/EU amended by 2015/863/EU - Reduction of Hazardous Substances Directive (RoHS) | EN 55024 - Information Technology Equipment - Immunity Characteristics - Limits and Methods of Measurement | EN 61000-6-3 + A1 (Class B) - Generic Emission Standard for Residential, Commercial and Light-industrial Environments |
| ULI-226T |                        | 2012/19/EU - Waste Electrical and Electronic Equipment (WEEE)                          | EN 61000-6-1 - Generic Immunity Standard for Residential, Commercial and Light-industrial Environments     |   |

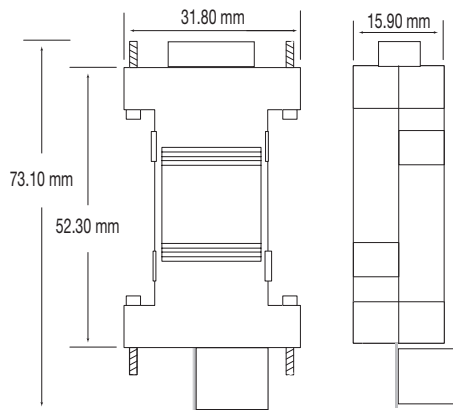
### Dimensions - ULI-226D

Unit = mm / in



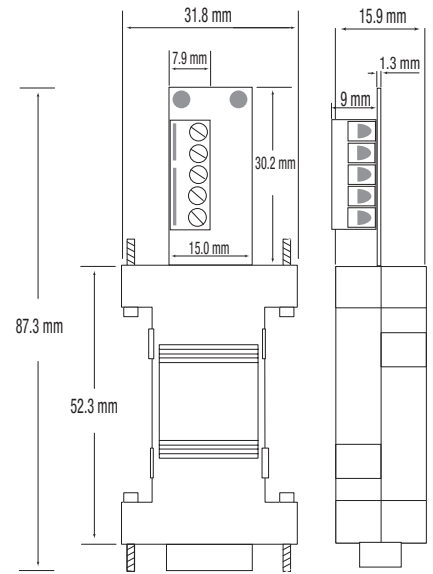
### Dimensions - ULI-226J

Unit = mm / in



### Dimensions - ULI-226T

Unit = mm / in



## Ordering Information

| Model    | Part Number to Order | Description  |
|----------|----------------------|--|
| ULI-226D | BB-485SD9R           | RS-485 Port Powered Converter, DB9F/DB9F                 |
| ULI-226J | BB-485SD9RJ          | RS-485 Port-Powered Converter, DB9F/RJ11                 |
| ULI-226T | BB-485SD9TB          | RS-485 Port-Powered (or external PSU) Converter, DB9F/TB |

# ULI-226 Series Selection Guide

## RS-232 to RS-485 Port-powered Converters



### Common Features

- Extend RS-232 data signals up to 1.2 km
- Convert RS-232 TD and RD to RS-485 signals
- Automatic Send Data Control - no software drivers needed
- Baud rates up to 115.2 kbps
- Powered from RS-232 handshake lines - no power supply required

### Serial Port-powered Converters Comparison Table

| Model Number                            | ULI-226D                                     | ULI-226J                    | ULI-226T                        |
|---|--|-----------------------------|---------------------------------|
| Part Number to Order                    | BB-485SD9R                                   | BB-485SD9RJ                 | BB-485SD9TB                     |
| Description                             | Port-powered, RS-232 to RS-485 Converters    |                             |                                 |
| Key Features                            | Inline Installation                          |                             |                                 |
| Industrial Rating                       | Light  |                             |                                 |
| RS-232 Connector                        | DB9 female                                   |                             |                                 |
| RS-485 Connector                        | DB9 female                                   | RJ11                        | Terminal block                  |
| Data Rate, max.                         | 115.2 kbps                                   |                             |                                 |
| Mode (RS-485 2 wire)                    | ✓  |                             |                                 |
| Automatic Send Data Control             | ✓  | ✓                           | ✓                               |
| Operating Temperature                   | 0 to +70 °C                                  |                             |                                 |
| Power Source                            | Port-power (RS-232 handshake lines)          |                             | Port-power or external PSU      |
| Power Input Voltage                     | -  |                             | External PSU: 12-16 Vdc         |
| Power Connector                         | -  |                             | Terminal block (external power) |
| Power Consumption, max.                 | <40 mA                                       |                             |                                 |
| Enclosure                               | Plastic                                      |                             |                                 |
| Mounting Installation                   | In-line                                      |                             |                                 |
| Dimensions, mm                          | 60.0 x 32.0 x 16.0                           | 73.0 x 32.0 x 16.0          | 87.0 x 32.0 x 16.0              |
| MTBF (MIL217F), hours                   | 986473                                       | 897656                      | 968410                          |
| Regulatory/Approvals/<br>Certifications | FCC Part 15, CISPR, CE<br>EN55032/B, EN55024 |                             |                                 |
|   | EN 61000-6-1                                 | EN 61000-6-3 + A1 (Class B) | EN 61000-6-1                    |

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