# BB-4850PDR-HS

## High-Speed, Isolated RS-422/485 Repeater

## Features

- Extends RS-422/RS-485 an extra 1.2 km (4000 ft)
- 2 kV isolation and IEC ESD protections
- Data rate: up to 1.5 Mbps
- -40 to +80°C wide operating temperature
- DIN rail mount (panel mount with optional brackets)

- Power supply required, not included, sold separately

## Introduction

Model BB-4850PDR-HS is a high speed, optically isolated RS-422/485 repeater that supports data rates up to 1.5 Mbps, making it suitable for use in fieldbus systems such as Profibus.

**Isolation** - Model BB-4850PDR-HS provides 2 kV digital isolation with 8 kV air ESD protection and 600 W transient voltage suppression on the data lines.

**Range Extension** - Model BB-4850PDR-HS can be used to extend the range of a network up to 1.2 km  (4000 ft), depending on data rates, and to add additional nodes. 2-wire RS-485, 4-wire RS-485 and RS-422 are supported. Data signals and the power inputs connect to built-in terminal blocks.

**Enclosure** - The enclosure has a DIN rail mount enclosure that is designed to easily fit on standard 35mm DIN rail.

**Power** - The repeater operates on externally sourced 10 to 30 Vdc power (power supply is required, not included, sold separately).

## Ordering Information

| Model No. | Description |
|---|---|
| **BB-4850PDR-HS** | High-Speed Isolated RS-422/485 Repeater |

### Accessories – Sold Separately

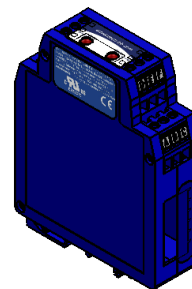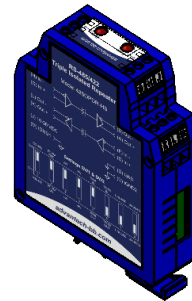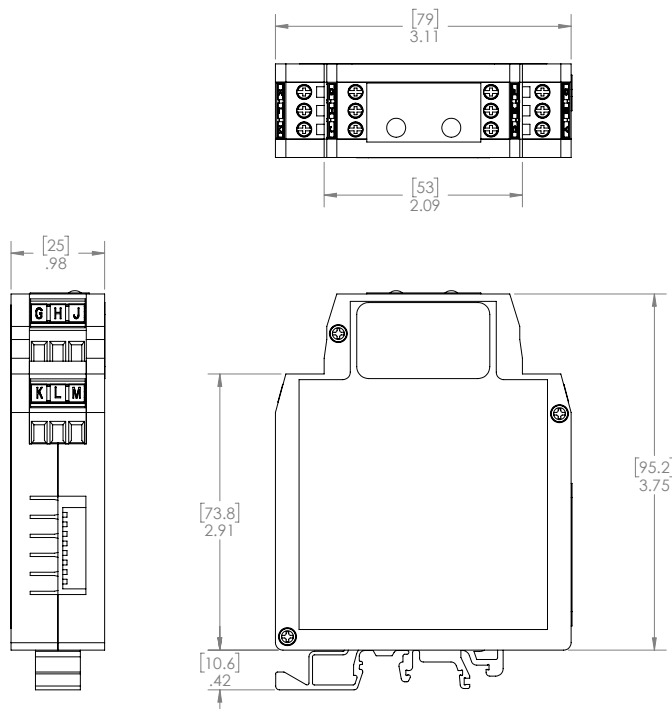BB-MDR-20-24 – Power supply, 24 Vdc, 1.0 A, DIN rail mount
BB-MDR-40-24 – Power supply, 24 Vdc, 1.7 A, DIN rail mount

## Specifications

| Serial Technology | |
|---|---|
| RS-422/485 Connector | Terminal block |
| Signals | TDA(-), TDB(+), RDA(-), RDB(+), GND<br>RS-422<br>RS-485 2-wire and 4-wire<br>Protected GND on isolated side |
| Data Rate | Up to 1.5 Mbps (bit-wise enabled) |
| Industrial Bus | Modbus ASCII / RTU |
| **Isolation** | |
| Method | Optical |
| Rating | 2000 V |
| **Surge Suppression** | |
| Method | TVS |
| Rating | 12 V bi-directional avalanche breakdown device<br>600 W peak power dissipation |
| Response Time | <1 pico-second |
| **LED Indicators** | |
| 2 Data LEDs (Green) | Data LED for each side of isolator<br>Flashes when data is transmitted |
| **Power** | |
| Connector | Terminal block |
| Voltage | 10 to 30 Vdc |
| Power Consumption | 1.9 W, 160 mA @ 12 Vdc |
| Source | External (power supply required, sold separately) |
| **Terminal Blocks** | |
| Wire Size | 24 to 14 AWG |
| Torque | 4-kgf-cm |

| Mechanical | |
|---|---|
| Enclosure Material | Plastic |
| IP Rating | 20 |
| Dimensions | 2.5 x 7.9 x 9.5 cm  (1.0 x 3.1 x 3.8 in) |
| Mounting | 35 mm DIN rail (optional panel mount adapter available) |
| **Environmental** | |
| Operating Temperature | -40 to +80 °C  (-40  to +176 °F) |
| Storage Temperature | -40 to +85 °C  (-40 to +185 °F) |
| Operating Humidity | 0 to 95%, non-condensing |
| **Meantime Between Failures (MTBF)** | |
| MTBF | 117376 hours |
| Calculation Method | MIL 217F Parts Count Reliability Prediction |
| **Regulatory – Approvals / Standards / Directives** | |
| Approvals | FCC Class B, CISPR Class B (EN55032) CE |
| CE Standards | 2014/30/EU - Electromagnetic Compatibility Directive<br>2011/65/EU amended by (EU) 2015/863 Reduction of Hazardous Substances Directive (RoHS)<br>2012/19/EU - Waste Electrical and Electronic Equipment (WEEE) |
| CE Directives | EN 5 5032 Class A Electromagnetic Compatibility of Multimedia Equipment – Emission Requirements<br>EN 55024 Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurement<br>EN 61000-6-1 - Generic Immunity Standard for Residential, Commercial and Light-industrial Environments |
| Other | EN61000-6-2 (Heavy Industrial)<br>IEC60068-2-27 (Shock) 15G Peak, 11 ms, 3 axes<br>IEC60068-2-6 (Vibration) 140-500 Hz, 1G, 3 axes<br>IEC60068-2-32 (Drop) 10 total drops from sides, corner, edges |

## Mechanical Diagram

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