

# BB-4850PDR-HS

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



### 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).

### 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

### 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 RS-422 RS-485 2-wire and 4-wire 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 600 W peak power dissipation
Response Time	<1 pico-second
LED Indicators	
2 Data LEDs (Green)	Data LED for each side of isolator 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 2011/65/EU amended by (EU) 2015/863 Reduction of Hazardous Substances Directive (RoHS) 2012/19/EU - Waste Electrical and Electronic Equipment (WEEE)
CE Directives	EN 5 5032 Class A Electromagnetic Compatibility of Multimedia Equipment – Emission Requirements EN 55024 Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurement EN 61000-6-1 - Generic Immunity Standard for Residential, Commercial and Light-industrial Environments
Other	EN61000-6-2 (Heavy Industrial) IEC60068-2-27 (Shock) 15G Peak, 11 ms, 3 axes IEC60068-2-6 (Vibration) 140-500 Hz, 1G, 3 axes IEC60068-2-32 (Drop) 10 total drops from sides, corner, edges

**Mechanical Diagram**

