High-Speed, Isolated, RS-422/485 Repeater
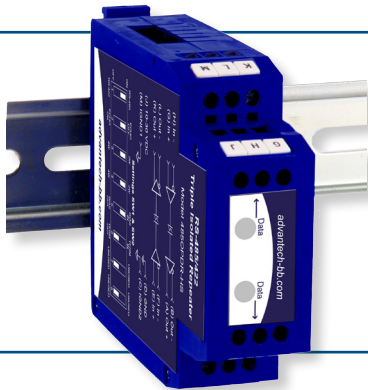
Model BB-485OPDR-HS

B+B SmartWorx

Powered by **ADVANTECH**

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FEATURES

- Extends RS-422/RS-485 an extra 1.2 km (4000 ft)
- 2 kV Isolation, IEC ESD protections
- Data Rate: 1.5 Mbps
- -40 to +80°C Wide Operating Temperature
- DIN Rail Mount (panel mount with optional brackets)
- Suitable for fieldbus systems such as Profibus
- Power supply required, not included, sold separately

Model BB-485OPDR-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-485OPDR-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-485OPDR-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 NUMBER	
BB-485OPDR-HS	High Speed Isolated RS-422/485 Repeater

ACCESSORIES - sold separately

BB-MDR-20-24 - DIN rail mount power supply, 24VDC, 1.0 A output power

BB-MDR-40-24 - DIN rail mount power supply, 24VDC, 1.7 A output power

Profibus Overview

PROFIBUS "Process Field Bus" is communication standard for automation technologies and applications.

PROFIBUS DP ("Decentralized Peripherals") is the most common version of Profibus. It is used for deterministic communication between Profibus masters and their remote I/O slaves and supports numerous standard diagnostic options. Applications include production automation processes and operating sensors/actuators via centralized controllers.

PROFIBUS PA ("Process Automation") is less prevalent and tends to be application specific. It is often used to monitor measurement equipment via process control systems. PA and DP can be used together to help bridge application networks. PA uses the same protocol as DP so it can be linked to a faster DP backbone network to better transmit process signals from equipment to controllers. PA can also be used in hazardous areas. The IEC 61158-2 rated physical layer can bus-power instruments and limit current flow to prevent explosive conditions.

PROFIBUS FMS ("Field Bus Message Specification") is a complex communication protocol for more sophisticated communication needs. It supports non-deterministic data communication between Profibus masters.

485OPDR-HS_4818ds

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SPECIFICATIONS

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

Bit-Wise Enabled	Up to 1.5 Mbps

ISOLATION

Method	Optical
Rating	2000 V

SURGE SUPRESSION

Method	TVS
Rating	12 V bi-directional avalanche breakdown device
	600 W peak power dissipation
Response Time	< 1 pico-second

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

LED INDICATORS

2 Data LEDs (Green)	Data LED for each side of isolator
	Flashes when data transmitted

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 (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
MTBF	117316
MTBF Calculation Method	MIL217F Parts Count Reliability

APPROVALS AND CERTIFICATIONS

Agency Approvals	CE, FCC
	EN61000-6-2 (Heavy Industrial)
Other	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
	Emissions FCC Class B, CISPR Class B (EN55032)

MECHANICAL DIAGRAM

B&B SmartWorx
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