

## Heavy Industrial RS-422/485 Isolated Repeater

Model BB-485OPDRI-PH

ADVANTECH



Model BB-485OPDRI-PH is a premium, heavy industrial RS-422/485 isolated repeater. Designed for rugged industrial environments, it meets some of the most exacting compliance tests in the industry. IEC 61850-3 and IEEE 1613 rated, it is suitable for installation in electrical substations. (These specifications are more stringent than NEMA TS1/TS2 requirements for transportation applications).

Powerful isolation on both data ports protects your equipment and data from damaging ground loops and surges. Additional isolation on the power supply circuits adds a third degree of protection.

Packaged in a rugged IP30 metal case, it extends full or half-duplex RS-422/485 signals an additional 4000 feet and allows you to add another 32 nodes to your network. Bit-wise enabled circuitry automatically detects the data rate without setting a DIP switch.

10-48 VDC power is externally sourced (power supply required, not included, sold separately).

### PRODUCT FEATURES

- Extends RS-422/485 an extra 1.2km (4000 ft)
- Add 32 more network nodes
- 2kV, 3-way isolation (input/output/power)
- Data rates: 1.2 to 115.2 Kbps
- Wide operating temperature range: -40 to +85 °C
- FCC, CE, RoHS, IEC-61850-3, IEEE-1613
- 10 to 48 VDC input power (power supply required, sold separately)

### ORDERING INFORMATION

MODEL NUMBER	DESCRIPTION
<b>BB-485OPDRI-PH</b>	Heavy Industrial RS-232 to RS-422/485 Isolated Repeater

### ACCESSORIES – sold separately

**BB-MDR-40-24** - Power Supply 24VDC, 1.7 A output power, DIN rail mount

**BB-DRAD35** - DIN Rail Mounting Kit, 35mm

**BB-TBKT1** - Replacement Terminal Block - 2-position, 5.08mm, 8A, 30

**BB-TBKT2** - Replacement Terminal Block - 5-position, 5.08mm, 8A, 30

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### SPECIFICATIONS

SERIAL TECHNOLOGY	
RS-422	TDA(-), TDB(+), RDA(-), RDB(+)
RS-485 4-Wire	TDA(-), TDB(+), RDA(-), RDB(+)
RS-485 2-Wire	Data A(-), Data B(+)
RS-422/485 CON.	5-position Removable Terminal Block
Data Rate	1.2 to 115.2 Kbps
Isolation	2 KV RMS, 1 minute
Surge Protection	600 W Peak Power Dissipation Clamping time < 1 pico-second
Industrial Bus	Modbus ASCII / RTU
Bias	Built-in, switchable 1.2K $\Omega$ XMT/RCV
Termination	Built-in, switchable 120 $\Omega$
POWER	
Source	External power required (not included, sold separately)
Power Connector	2-position Removable Terminal Block
Input Voltage	10 to 48 VDC (56 VDC, maximum)
Power Consumption	0.5 W, typical (2.3 W with termination)
TERMINAL BLOCKS	
Wire Size Accepted	28 to 12 AWG, Copper wire only
Pitch	5.08 mm
Insulation Resistance	$\geq 500$ M $\Omega$ @ 500 VDC
Maximum Torque	5 Kg / cm
Temperature Rating of field installed conductors +105 °C minimum	
INDICATORS	
Power	Red LED
TD / RD (Each Port)	Green LED

MECHANICAL	
Dimensions	13.24 x 9.29 x 3.30 cm (5.2 x 3.7 x 1.3 in)
Enclosure	IP30 Metal, Panel Mount
Weight	208.65 gm (0.46 lb)
MEANTIME BETWEEN FAILURES (MTBF)	
MTBF	122832 Hours
MTBF Calc. Method	Parts Count Reliability Prediction
ENVIRONMENTAL	
Operating Temperature	-40 to +85 °C (-40 to +176 °F)
Storage Temperature	-40 to +85 °C (-40 to +176 °F)
Operating Humidity	0 to 95%, non-condensing
REGULATORY	
Approvals	FCC, CE, UL C1/D2, IEC 61850-3, IEEE 1613
CE - Directives	2014/30/EU - Electromagnetic Compatibility Directive 2011/65/EU amended by (EU) 2015/863 Reduction of Hazardous Substances Directive 2012/19/EU - Waste Electrical and Electronic Equipment (WEEE)
CE - Approvals	EMC EN 55032 Class A Electromagnetic compatibility of multimedia equipment – Emission requirements EN 55024 Information Technology Equipment – Immunity Characteristics – Limits and methods of measurement
Other	EN 55011 + AC – Information Technology Equipment – Class A RF Emissions EN 61000-6-2 – Generic Immunity Standard for (Heavy) Industrial Environments

