BB-485DRCI-PH

Heavy Industrial RS-232 to RS-422/485 Isolated Converter



Features

- Converts RS-232 data signals to RS-422/RS-485
- 2 KV 3-way isolation (input/output/power)
- Data rate: 1.2 to 115.2 Kbps
- Wide operating temperature: -40 to +85 °C
- Rugged IP30 metal panel mount case
- 10-48 Vdc power (external power supply required, sold separately)
- UL Class 1/Division 2

Introduction

Model BB-485DRCI-PH is a premium, heavy industrial RS-232 to RS-422/485 isolated converter. Designed for rugged industrial environments, it has been put through some of the most exacting compliance tests in the industry. Meeting the requirements of IEC 61850-3 and IEEE 1613, it is suitable for installation in electrical substations. These specifications are more stringent than the NEMA TS1/TS2 requirements for transportation applications.

Powerful isolation on both data ports protects equipment and data from damaging ground loops and surges. Additional isolation on the power supply circuits adds a third degree of protection. An external power supply is required (not included, sold separately).

Packaged in a rugged IP30 metal case, it converts unbalanced, full or half-duplex RS-232 signals to balanced RS-422/485 signals. Featuring Automatic Send Data Control circuitry, it does not require special software control of handshake signals in RS-485 mode. Bit-wise enabled circuitry automatically detects the data rate without setting a DIP switch.

Ordering Information

Model No.	Description
BB-485DRCI-PH	Heavy Industrial RS-232 to RS-422/485 Isolated Converter

Accessories – Sold Separately

BB-MDR-40-24 – Power Supply, 24 Vdc, 1.7 A output power, DIN rail mount

BB-TBKT1 – Replacement terminal block, 2-position, 5.08mm, 8A, 300V

BB-TBKT2 – Replacement terminal block, 5-position, 5.08mm, 8A, 300V

All product specifications are subject to change without notice.

Specifications

Serial Technology	
Data Rate	1.2 to 115.2 Kbps
RS-232 Connector	DB9 female (DCE)
RS-422/485 Connector	5-position, removable terminal block
RS-232 Signals	TD, RD, GND
RS-422 Signals	TDA(-), TDB(+), RDA(-), RDB(+)
RS-485 4-Wire Signals	TDA(-), TDB(+), RDA(-), RDB(+)
RS-485 2-Wire Signals	Data A(-), Data B(+)
Industrial Bus	Modbus ASCII / RTU
Biasing	Built-in, switchable 1.2KΩ XMT/RCV
Termination	Built-in, switchable 120Ω
Isolation & Surge Protection	
Isolation	2 KV RMS, 1 minute
Surge Protection	600W peak power dissipation. Clamping time <1 picosecond.
Power	
Source	External power source 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 (1.9 W with termination)
Terminal Blocks	
Wire Size Accepted	28 to 12 AWG, copper wire only
Pitch	5.08 mm
Insulation Resistance	≥500 MΩ @ 500 Vdc
Torque	5 Kg / cm (maximum)

LED Indicators	
Power	Red LED
TD / RD (each port)	Green LED
Mechanical	
Dimensions	132.4 x 92.9 x 33.0 mm (5.2 x 3.7 x 1.3 in)
Enclosure	IP30 metal, panel mount
Weight	208.65 gm (0.46 lb)
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
Meantime Between Failures (MTBF)	
MTBF	163611 hours
Calculation Method	Parts Count Reliability Prediction
Regulatory – Approvals / Standards / Directives	
FCC, CE UL C1/D2 (IEC 61850-3, IEEE 1613)	
CE – Directives	2004/108/EC – Electromagnetic Compatibility Directive 2011/65/EU amended by (EU) 2015/863 Reduction of Hazardous Substances (RoHS) 2012/19/EU – Waste Electrical and Electronic Equipment
CE – Standards	EN 55011 + AC – Information Technology Equipment – Class A RF Emissions EN 61000-6-2 – Generic Immunity Standard for (Heavy) Industrial Environments

Schematic

