B&B ELECTRONICS

PRODUCT INFORMATION

485DRCI-PH

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

- ✓IEEE-61850-3
- ✓IEEE 1613
- ✓-40 to 85°C Operating Temperature
- ✓Rugged IP30 Metal Panel Mount Case
- ✓50G Shock, 4G Vibration
- ✓2kV Triple Isolation
- ✓10 to 48 VDC Input Power
- ✓Complies with NEMA TS1 & TS2 Environmental requirements for Traffic Control Equipment

The ILinx™485DRCI-PH is our 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 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 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. Our bit-wise enabled circuitry automatically detects the data rate without setting a DIP switch.

Remember, when it comes to reliable communications in harsh industrial environments, B&B Electronics' ILinx™ brand converters and isolators are your number one choice.

Specifications

Serial Technology	
RS-232	TD, RD, GND
RS-422	TDA(-), TDB(+), RDA(-), RDB(+)
RS-485 4-Wire	TDA(-), TDB(+), RDA(-), RDB(+)
RS-485 2-Wire	Data A(-), Data B(+)
RS-232 CON.	DB9 Female (DCE)
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 1.2KΩ XMT/RCV
Termination	Built-in, switchable 120Ω
Power	
Source	External
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
Maximum Torque	5 Kg / cm
Indicators	
Power	Red LED
TD / RD (Each Port)	Green LED
Mechanical	
Dimensions	5.2 x 3.7 x 1.3 in 132.4 x 92.9 x 33.0 mm
Enclosure	IP30 Metal, Panel Mount
Weight	0.46 lbs (208.65 grams)
MTBF	163611 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
NEMA TS1 & TS2	Complies with NEMA TS1 & TS2 Environmental requirements for Traffic Control Equipment
Regulatory	
Approvals	FCC, CE, IEC 61850-3, IEEE 1613 UL C1 D2, File: E245458

Ordering Information

485DRCI-PH	Heavy Industrial RS-232 to RS-422/485 Isolated Converter
Optional Accessories	
Power Supply	MDR-20-24
DIN Rail Adapter	DRAD35

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IEC 61850-3 Electro Magnetic Interference Specifications

Test	Description		Test Level	Level
61000-4-2	ESD	Enclosure Contact	8 kV	4
		Enclosure Air	15 kV	4
61000-4-3	Radiated RFI	Enclosure Ports	10 V/m	3
61000-4-4	Burst (Fast Transient)	Signal Ports	4 kV @ 2.5 Khz	---
		DC Power Ports	4 kV	4
61000-4-5	Surge	Signal Ports	2 kV line to earth, 1 kV line to line	4
		DC Power Ports	2 kV line to earth, 1 kV line to line	3
61000-4-6	Induced (Conductive) RFI	Signal Ports	10 V RMS	3
		DC Power Ports	10 V RMS	3
61000-4-12	Damped Oscillatory	Signal Ports	2.5 kV common, 1 kV diff mode @ 1MHz	3
		DC Power Ports	2.5 kV common, 1 kV diff mode @ 1MHz	3
61000-4-16	Mains Frequency Voltage	Signal Ports	30 V Continuous, 300 V for 1 s	4
		DC Power Ports	30 V Continuous, 300 V for 1 s	4
61000-4-17	Ripple on DC Power Supply	DC Power Ports	10%	3

IEEE 1613 C37.90 Electromagnetic Interference Specifications

Test	Description		Test Level	Level
C37.90.3	ESD	Enclosure Contact	8 kV	---
		Enclosure Air	15 kV	---
C37.90.2	Radiated RFI	Enclosure Ports	10 v/m	---
C37.90.1	Fast Transient	Signal Ports	4 kV @ 2.5 kHz	---
		DC Power Ports	4 kV	---

Environmental Specifications

Test	Description		Test Level	Level
60068-2-1	Cold Temperature	Test Ad	(-)40 C, 16 Hours	---
60068-2-2	Dry Heat	Test Bd	(+)85 C, 16 Hours	---
60068-2-30	Humidity (damp heat cycle)	Test Dd	90% (non-condensing) (+)55C, 6 Cycles	---
IEC 60068-2-6	Vibration	Test Fc	4G	Class 2
IEC 60068-2-27	Shock	Test Ea	50G	Class 2
IEC 60068-2-32	Drop	---	6 faces, 3 edges, 1 corner total 10 drops at 1 m	---