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

Model 485DRCI-PH

B+B SmartWorx
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PRODUCT FEATURES

- IEEE-61850-3, IEEE-1613
- NEMA TS2
- -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

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

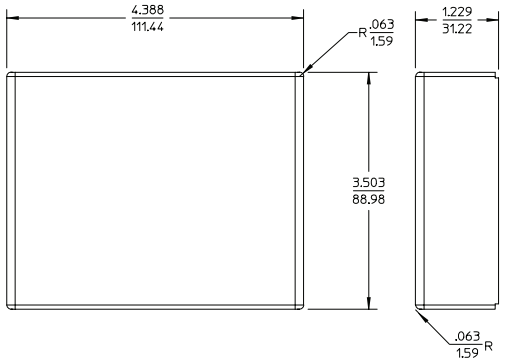
Packaged in a rugged IP30 metal case, it converts unbalanced, full or half-duplex RS-232 signals to balanced RS-422/485 signals. Featuring Automatic Send Data Control circuitry, it does not require special software control of handshake signals in RS-485 mode. Bit-wise enabled circuitry automatically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

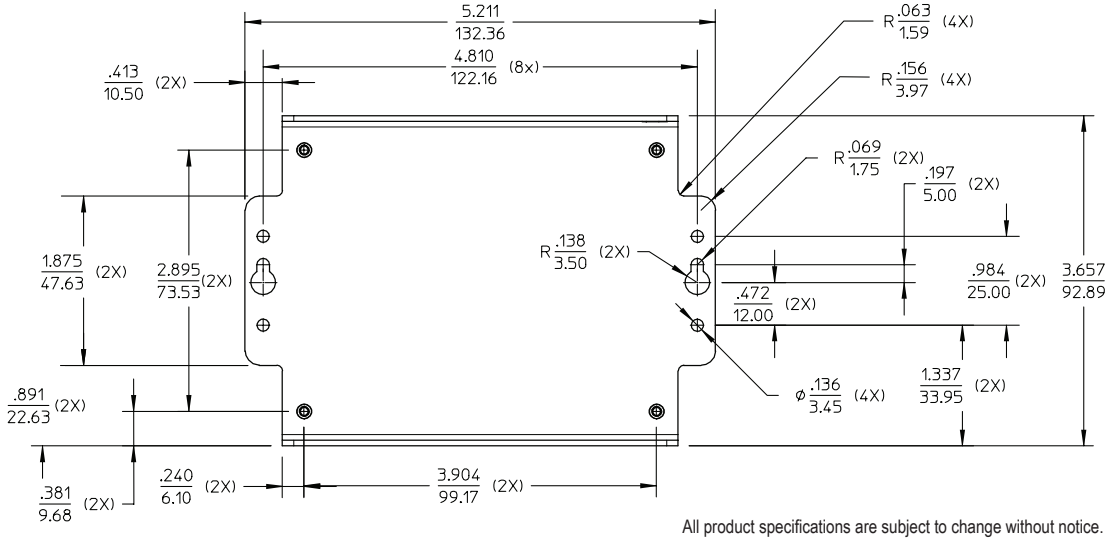
ORDERING INFORMATION

MODEL NUMBER	DESCRIPTION
485DRCI-PH	Heavy Industrial RS-232 to RS-422/485 Isolated Converter

ACCESSORIES

MDR-40-24 - DIN Rail Mount Power Supply 24VDC, 1.7 A output power





All product specifications are subject to change without notice.
485DRCI-PH_2817ds

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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 Connector	DB9 Female (DCE)
RS-422/485 Connector	5 position, removable terminal block
Data Rate	1.2 to 115.2 Kbps
Isolation	2 KV RMS, 1 minute
Surge Protection	600W peak power dissipation. Clamping time <1 picosecond
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 m aximum)
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
REGULATORY	
Approvals	FCC, CE, IEC 61850-3, IEE 1613, UL C1 D2, File: E245458, NEMA TS2

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	------