DCP485

RoHS III COMPLIANT 2015/863 | DIN Rail MOUNT | CE

Fully-isolated DIN-rail RS-232 to RS-485 Converters/Line Drivers

DESCRIPTION

The DCP485 is a compact RS-232 to RS-485 converter which features a complete electrical isolation barrier and heavy-duty electrical surge protectors. These devices feature a DIN-rail mountable enclosure for application to a junction box, a panel, a relay rack, the sides of computer equipment, or anywhere a DIN-rail can be mounted. Isolation is provided by optical couplers and a transformer isolated DC-to-DC converter. The RS-232 connection is through male or female EIA 9-pin D-sub connectors, or a 3-wire RS-232 connection can be made through convenient pluggable screw terminals. The RS-485 connections are made through convenient pluggable, solderless screw terminals.

The DCP485 series is designed for full-duplex operation over two-wire pairs. Outputs are tri-state, allowing multidropping of up to 32 units over one pair. Data rates are DC to 115.2k bits per second. Four diagnostic LED indicators are provided for installation guidance and system troubleshooting. The RS-232 interface includes Request To Send (RTS) and Data Terminal Ready (DTR) either of which can be used via DIP switches to enable the RS-485 transmitter. Alternately, the DCP485 offers automatic line switching in which the RS-485 transmitter is enabled automatically by each character sent on the RS-232 Transmit Data (TD) line. Additionally, the RS-485 transmitter and receiver may be independently enabled continuously or under RS-232 control. A convenient null modem switch is provided for the data lines. Also, line termination switches independently connect line termination and line bias resistors to the RS-485 lines. The units are powered from wide-range voltages of +10 to +30VDC through pluggable solderless screw terminals.

FEATURES

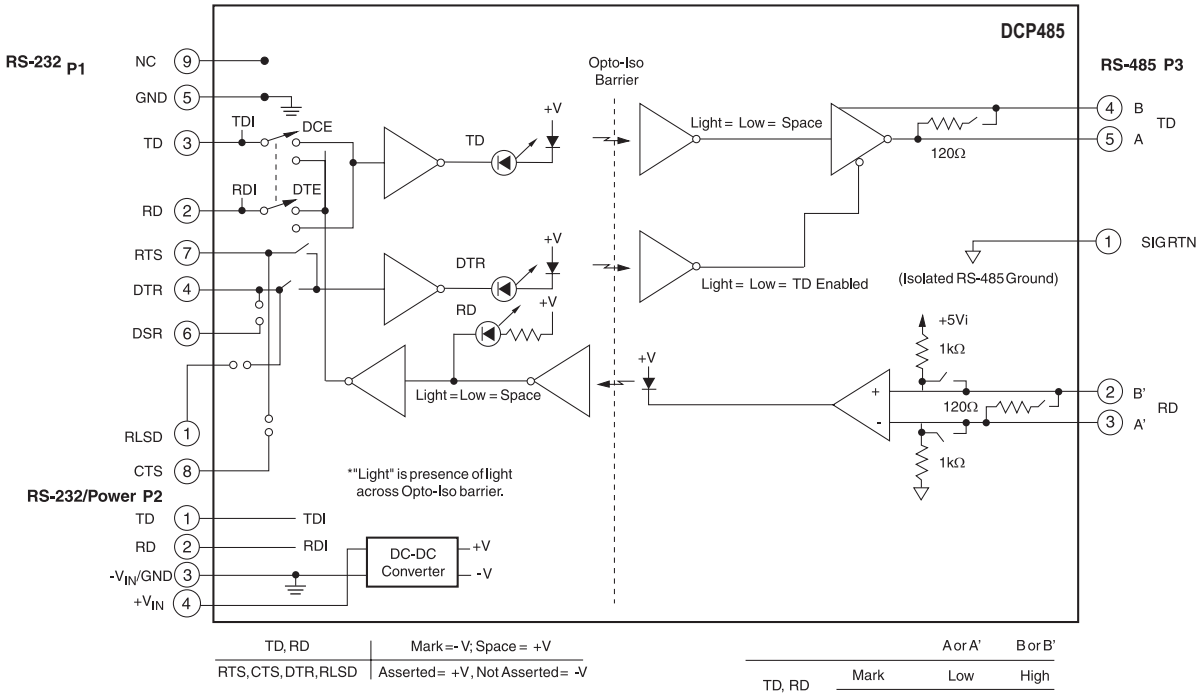
- Complete Isolation with Optical Couplers and Transformer-coupled DC-to-DC Converter
- Industrial Surge Protection Devices and 15kV ESD Protected RS-232 Inherent
- Four LED Diagnostic Indicators
- 38.4kbps at 1 Mile (1.6km), 115.2kbps at 0.8 Mile (1.3km)
- RTS, DTR, or Auto RS-485 Transmitter Control
- Tri-state Outputs for Multidrop Applications, up to 32 Devices
- Selection of Connectors
- Wide Operating Temperature Range
- Pluggable Solderless Screw Terminal Field Connections
- CE Compliant
- Manufactured per RoHS III Directive 2015/863

BENEFITS

- Extends Communication Distances
- Protects Sensitive Communication Ports
- Wide Power Supply Range

APPLICATIONS

- Utility Meters
- Industrial, Process, and Building Automation



DCP485 Block Diagram

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

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RS-232 P1 Pin Descriptions		
Pin 1	RLSD (DCD)	Receive Line Signal Detect (Data Carrier Detect)
Pin 2	RD	Receive Data
Pin 3	TD	Transmit Data
Pin 4	DTR	Data Terminal Ready
Pin 5	SG	Signal Ground
Pin 6	DSR	Data Set Ready
Pin 7	RTS	Request To Send
Pin 8	CTS	Clear To Send
Pin 9	NC	Not Connected

RS-232/POWER P2 Pin Descriptions		
Pin 4	TD	Transmit Data
Pin 3	RD	Read Data
Pin 2	GND	Ground (also Signal Ground)
Pin 1	+V	+10 to +30VDC

RS-485 P3 Pin Descriptions		
Pin 5	TD A	Transmit Data A
Pin 4	TD B	Transmit Data B
Pin 3	RD A'	Receive Data A'
Pin 2	RD B'	Receive Data B'
Pin 1	RTN	Return, Isolated

Specifications

Typical* at T_A = +25°C

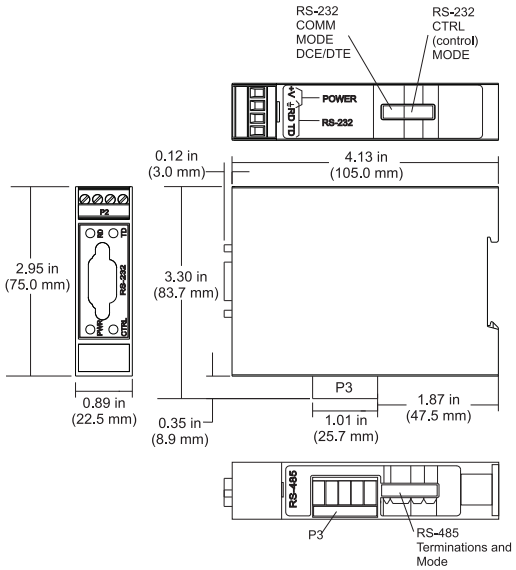
Model	DCP485
Bit Rate (bps) bps vs Distance Distance(miles) Distance(km)	0-115.2kbps 115.2k 57.6k 38.4k 19.2k 9.6k 4.8k 2.4k-0 0.8 0.9 1.0 2.0 3.0 4.0 7.0 1.3 1.5 1.6 3.2 4.8 6.4 11.3
Wire Capacitance Max Multidrop Units	Equal to 25pf Per Foot and Up to 32 Multidrop Units 32
Common-mode Isolation Differential Mode Surge Protection (9 devices)	Surge: 3000Vp, 1 (min) Continuous: 1500Vrms (DC Input and RS-232 Inputs and Outputs) ANSI/IEEE C37.90.1 (all RS-485 Inputs and Outputs)
Modes	Asynchronous 4-wire Full-duplex, 2-wire Half-duplex, 2-wire Simplex
Channel Lines(1) Control Lines(1)	TD, RD RTS, DTR
Null Modem Switch	1 (Reverses RS-232 Pins 2 and 3)
RS-485 Output Drive RS-485 Input Impedance	28mA (max) Output 12kΩ (min) Input
Power	+10 to +30 VDC at 150mA (max)
Environmental: Operating Temperature Range Storage Temperature Range Relative Humidity Altitude	 –40°C to +60°C –40°C to +70°C 0 to 95% Noncondensing to 15000 ft (4574 m)
Dimensions (h)x(w)x(d)	4.3" x 3.3" x 0.89" (109mm x 84mm x 22.5mm)
Weight	4.6 oz (130g)
MTTF(2)	>100,000 Hrs

NOTES:
*Contact factory or your local Dataforth sales office for maximum values.
(1) TD = Transmit Data, RD = Receive Data, RTS = Request To Send, DTR = Data Terminal Ready.
(2) Ground-benign environmental conditions (no salt atmosphere, <50°C ambient temperature).

Ordering Information

Model	Description
DCP485-P DCP485-S	Male RS-232 Connector Female RS-232 Connector

Model	Description
Power Supply PWR-PS5R7W	DIN-rail Mount 85-264VAC, 47-63Hz In 24VDC, 0.3A Out



DCP485 Dimensions

SECTION 8 - Data Comm

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