

DCP35

DIN-rail Signal-powered RS-232 Line Drivers



DESCRIPTION

The DCP35 series of products is designed to allow RS-232 devices to be inter-connected over distances sufficient to cover any industrial or institutional complex of buildings. These line drivers 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.

The DCP35 series does not require a power supply for operation. The use of low-power circuits and a sensitive optically isolated receiver allows the devices to derive all necessary power from the RS-232 data and control signals. They are designed for full-duplex, asynchronous operation over two, DC-continuous, non-loaded, twisted-wire pairs. Two-wire simplex operation may be accomplished over one twisted-wire pair. The line driver circuits — and, consequently, the host device — are protected from electrical transients due to lightning strikes or operation of heavy industrial equipment.

Each device features a convenient DCE (Data Communication Equipment) to DTE (Data Terminal Equipment) switch which reverses pins 2 and 3 of the RS-232 connector. For installation and system troubleshooting each unit has diagnostic Light Emitting Diodes (LEDs) on the transmit and receive lines.

The RS-232 connector may be ordered as a male or female 9-pin connector. Field connection is made through pluggable solderless screw terminals.

FEATURES

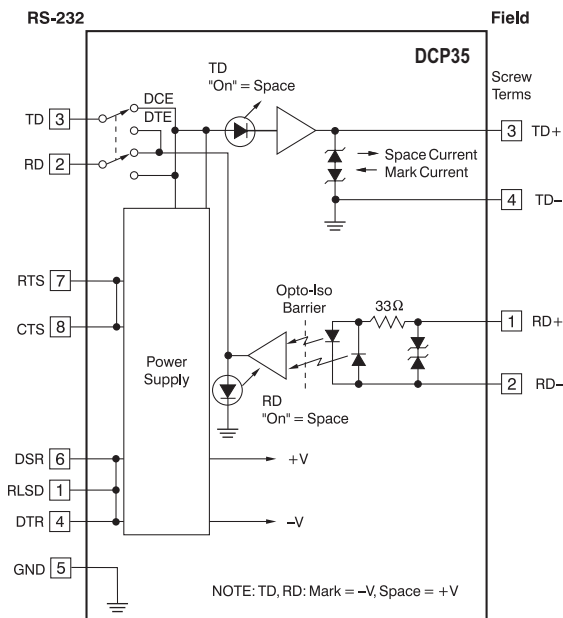
- Signal-powered: No Power Source Required
- Optical Isolation: Breaks Ground Loops
- Heavy-duty Surge Protectors: Prevents Lightning Damage
- LED Diagnostic Indicators: Simplifies Installation and System Troubleshooting
- 19.2kbps to 0.5 Mile (0.8km), 9.6kbps to 2.0 Miles (3.2km), 1.2kbps to 7.0 Miles (11.3km)
- Four-wire Full-duplex, Two-wire Simplex
- Pluggable Solderless Screw Terminal Field Connections
- Null Modem Switch
- CE Compliant
- Manufactured per RoHS III Directive 2015/863

BENEFITS

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

APPLICATIONS

- Industrial Data Communication
- Factory Automation and Control
- Building Automation



DCP35 Block Diagram

RS-232 Pin Descriptions			Field Pin Descriptions	
Pin 1	RLSD [8]	Receive Line Signal Detect	Pin 1	RD+ Receive Data +
Pin 2	RD [3]	Receive Data	Pin 2	RD- Receive Data -
Pin 3	TD [2]	Transmit Data	Pin 3	TD+ Transmit Data +
Pin 4	DTR [20]	Data Terminal Ready	Pin 4	TD- Transmit Data -
Pin 5	SG [7]	Signal Ground		
Pin 6	DSR [6]	Data Set Ready		
Pin 7	RTS [4]	Request To Send		
Pin 8	CTS [5]	Clear To Send		

Pin Numbers Given are for the 9-pin Connector with the 25-pin Equivalent in [].

Specifications Typical* at T_A = +25°C

Model	DCP35				
Bit Rate (bps)	0-19.2kbps				
bps vs Distance	19.2k	9.6k	4.8k	2.4k	1.2k-0
Distance (miles)	0.5	2.0	3.0	5.0	7.0
Distance (km)	0.8	3.2	4.8	8.1	11.3
Common-mode Isolation	Surge: 500Vp, 1 min. Continuous: 300Vrms				
Differential-mode Surge Protection (3 devices)	ANSI/IEEE C37.90.1				
Modes	Asynchronous 4-wire Full-duplex, 2-wire Simplex				
Channel Lines ⁽¹⁾	TD, RD				
Control Lines ⁽¹⁾	RTS, CTS, DTR, DSR, RLSD(DCD)				
Null Modem Switch	1 (Reverses RS-232 Pins 2 and 3)				
Power	RS-232 Data and Control Signals				
RS-232 Data	±5V to ±15V, 3.0mA to 10.0mA				
RS-232 Control Signals	±6V to ±15V, 3.0mA to 10.0mA				
Environmental:					
Operating Temperature Range	0°C to +70°C				
Storage Temperature Range	-10°C to +85°C				
Relative Humidity	0 to 95% Noncondensing				
Dimensions (h)x(w)x(d)	4.2" x 3.3" x 0.89" (107mm x 84mm x 22.5mm)				
Weight	4.2 oz (119g)				
MTTF ⁽²⁾	>150,000 hrs				

Ordering Information

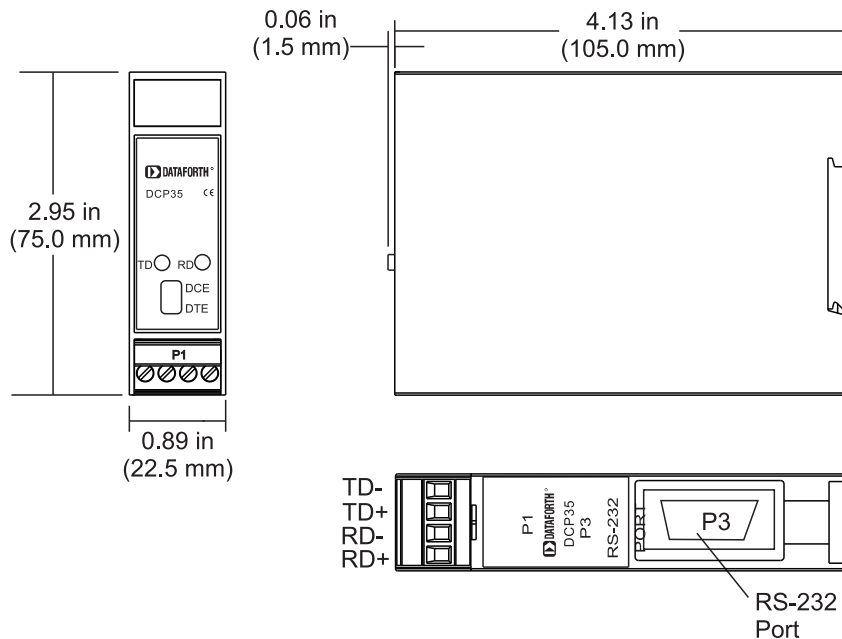
Model	9-pin Connector	Termination
DCP35-P	1-ch Male	Screw Terminals
DCP35-S	1-ch Female	Screw Terminals

NOTES:

*Contact factory or your local Dataforth sales office for maximum values.

(1) TD = Transmit Data, RD = Receive Data, RTS = Request To Send, CTS = Clear To Send, DTR = Data Terminal Ready, DSR = Data Set Ready, RLSD = Received Line Signal Detect (DCD = Data Carrier Detect).

(2) Ground-benign environmental conditions (no salt atmosphere, <50°C ambient temperature).



DCP35 Dimensions