

# LDM35

## Signal Powered Limited Distance Modem



### Description

The LDM35 series of products is designed to allow video display terminals (VDTs) and other RS-232 devices to be connected over distances sufficient to cover any industrial or institutional complex of buildings. These modems feature a rugged enclosure small enough to mount on the back panel of VDT units, saving valuable desk and floor space.

The LDM35 series does not require a power supply for operation. The use of low power circuits and a sensitive optical receiver allows the devices to derive all necessary power from the RS-232 data and control signal. They are designed for full-duplex, asynchronous operation over two, DC-continuity, non-loaded, twisted-wire pairs. Two-wire simplex operation may be accomplished over two wires. The modem 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 Data-Communication Equipment (DCE) to Data-Terminal Equipment (DTE) switch which reverses pins 2 and 3 of the RS-232 connector. For installation and 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 25-pin connector. Field connection is made through a modern, solderless, screw-termination assembly. Alternatively, a convenient four-wire modular phone jack (RJ-11) is available.

### ► 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
- Operation to Two Miles (3.3km) at 9600 Baud, One-Half Mile (0.8km) at 19,200 Baud, Seven Miles (11.7km) at 1200 Baud
- Four-Wire Full Duplex, Two-Wire Simplex
- Selection of Connectors
- Wide Operating Temperature Range, 0°C to +70°C
- Null Modem Switch
- CE Compliant

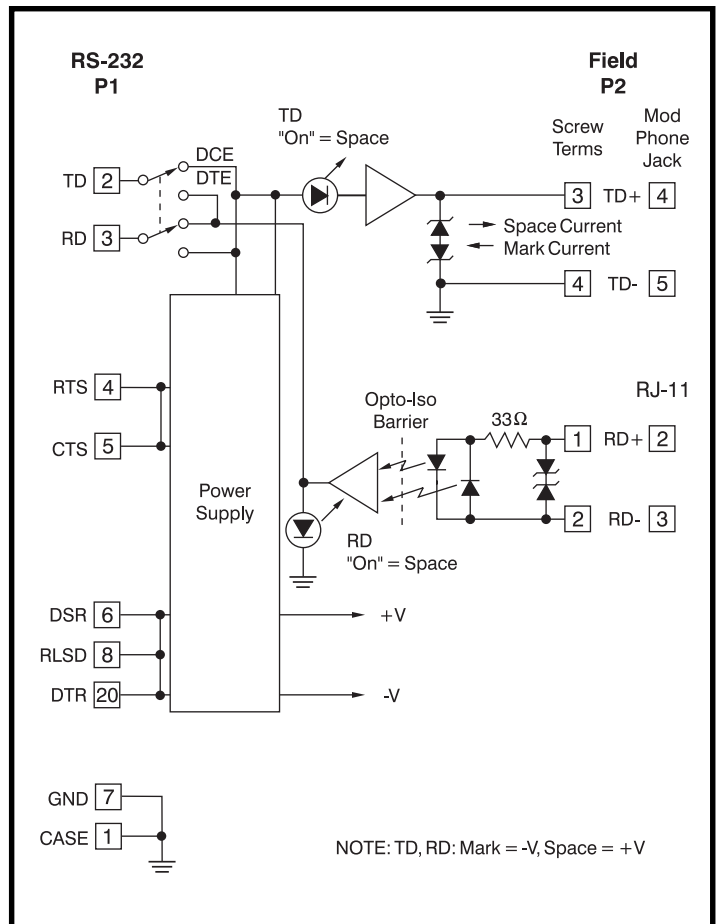


Figure 1: LDM35 Block Diagram

**Specifications**

Model	LDM35
Baud Rate Range	0-19.2K
Baud Rate	19.2K 9.6K 4.8K 2.4K 1.2K .6K .3K-0
Distance(miles)	0.5 2.0 3.0 5.0 7.0 10.0 12.0
Distance(km)	0.8 3.2 4.8 8.1 11.3 16.1 19.3
Common Mode Isolation	Surge: 500V Continuous: 300V
Differential Mode Surge Protection (3 devices)	ANSI/IEEE C37.90.1
Modes	Asynchronous 4-wire full-duplex, 2-wire simplex
Channel Lines <sup>(1)</sup>	TD, RD
Control Lines <sup>(1)</sup>	RTS, CTS, DTR, DSR, RLSD
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	0-95%, non-condensing
Dimensions	3.6" x 2.1" x 1" (91.4mm x 53.3mm x 25.4mm)
Weight	3.2 oz (91g) max
MTTF <sup>(2)</sup>	>150,000 hrs

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

**Ordering Information**

Model	25-Pin Connector	Termination
LDM35-P	Male	Screw terminals
LDM35-S	Female	Screw terminals
LDM35-PJ	Male	RJ-11 phone jack
LDM35-SJ	Female	RJ-11 phone jack

RS-232 P1 Pin Descriptions		Field P2 Pin Descriptions	
Pin 1	CASE	Case Ground	Screw Terms
Pin 2	TD [3]	Transmit Data	Pin 1 RD+
Pin 3	RD [2]	Receive Data	Pin 2 RD-
Pin 4	RTS [7]	Req. To Send	Pin 3 TD+
Pin 5	CTS [8]	Clear To Send	Pin 4 TD-
Pin 6	DSR [6]	Data Set Ready	
Pin 7	GND [5]	Signal Ground	RD+ = Receive Data +
Pin 8	RLSD [1]	Receive Line Signal Detect	RD- = Receive Data -
Pin 20	DTR [4]	Data Terminal Ready	TD+ = Transmit Data +
			TD- = Transmit Data -

Pin numbers given are for the 25-pin connector with the 9-pin equivalent in [ ].

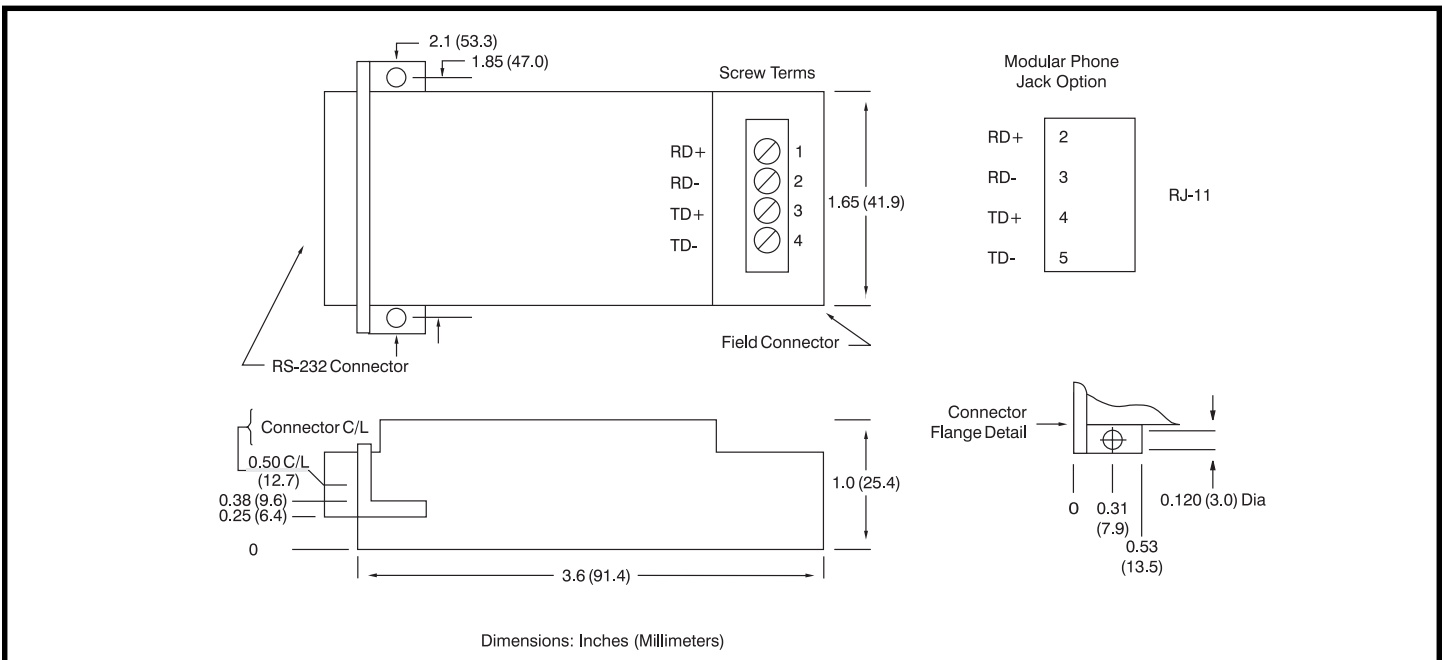


Figure 2: LDM35 Dimensions