LDM30

CE

General Purpose Limited Distance Modem

Description

The LDM30 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 aluminum enclosure small enough to mount on the back panel of VDT units, saving valuable desk and floor space.

The LDM30 series is designed for full-duplex, asynchronous operation over two, DC-continuity, non-loaded, twisted-wire pairs. Through special high-speed optically-coupled circuits they may communicate at data rates up to 57,600 baud. A self-powered model and a host-powered model are available. The self-powered unit uses 12VAC from a wall-mounted transformer while the host-powered unit takes ±DC power from pins 9 and 10 of the RS-232 connector. 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

- DC to 57,600 Baud
- Optical Isolation
- Surge Protectors
- LED Diagnostic Indicators
- Operation to 3 Miles (5km) at 9600 Baud, 1 Mile (1.7km) at 19,200, 0.5 Miles (0.8km) at 57,600
- Four-Wire Full Duplex, Two-Wire Simplex
- Self-Powered or Host-Powered
- Selection of Connectors
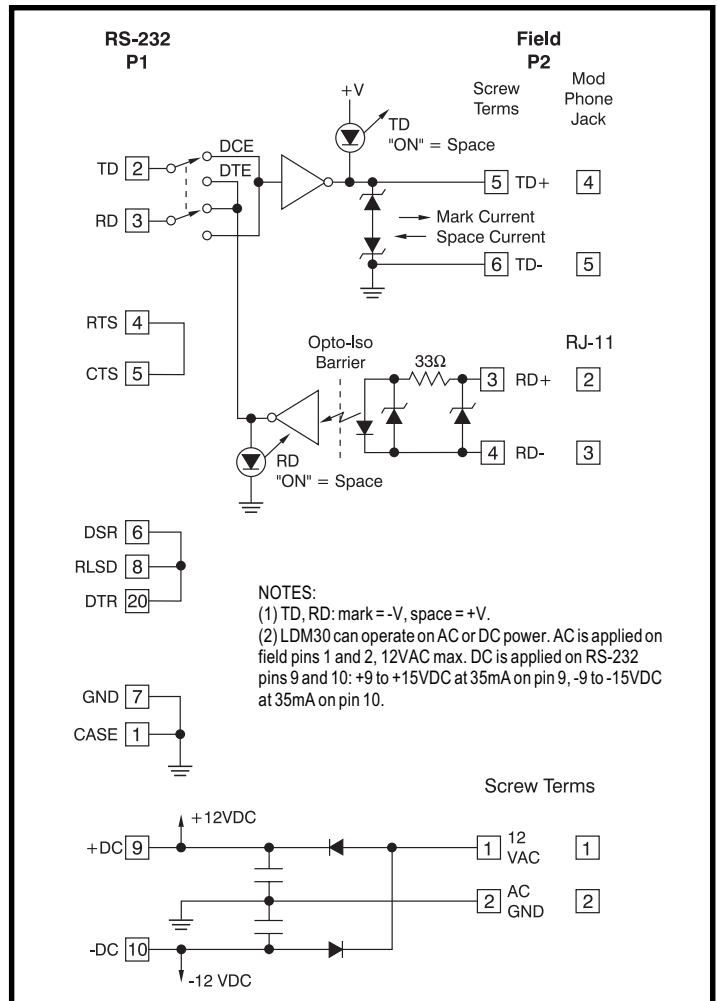- Wide Operating Temperature Range, 0 to +70°C
- CE Compliant

NOTES:
(1) TD, RD: mark = -V, space = +V.
(2) LDM30 can operate on AC or DC power. AC is applied on field pins 1 and 2, 12VAC max. DC is applied on RS-232 pins 9 and 10: +9 to +15VDC at 35mA on pin 9, -9 to -15VDC at 35mA on pin 10.

Figure 1: LDM30 Block Diagram

Specifications

Model	LDM30

Baud Rate Range
Baud Rate
   Distance(miles)
   Distance(km)
	0-57.6K
	57.6K 38.4K 19.2K 9.6K 4.8K 2.4K 1.2K-0
	  0.5 0.75 1.0 3.0 5.0 7.0 12.0
	  0.8 1.21 1.6 4.8 8.1 11.3 19.3

Common Mode Isolation Differential Mode Surge Protection (3 devices)	Surge: 500V Continuous: 300V ANSI/IEEE C37.90.1
Modes	Asynchronous 4-wire full-duplex, 2-wire simplex
Channel Lines[1] Control Lines[1]	TD, RD RTS, CTS, DTR, DSR, RLSD

Power
  AC operation[2]
  DC operation
	
	12VAC at 92mA
	±9VDC to ±15VDC, 35mA

Environmental:
  Operating Temperature Range
  Storage Temperature Range
  Relative Humidity
	
	0°C to +70°C
	-10°C to +85°C
	0-95%, non-condensing

Dimensions	3.6" x 2.1" x 1" (91.4mm x 53.3mm x 25.4mm)
Weight PT3 and PT3E	3.5 oz (100g) max 11.0 oz (312g) max
MTTF[3]	>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) 120VAC and 220VAC power transformers are available.
(3) Ground-benign environmental conditions (no salt atmosphere, <50°C ambient temperature).

Ordering Information

Model	Type	Power	Termination
LDM30-P	Male	Host-powered	Screw termination
LDM30-S	Female	Host-powered	Screw termination
LDM30-PJ	Male	Host-powered	RJ-11 phone jack
LDM30-SJ	Female	Host-powered	RJ-11 phone jack
LDM30-PT	Male	U.S. transformer	Screw termination
LDM30-ST	Female	U.S. transformer	Screw termination
LDM30-PJT	Male	U.S. transformer	RJ-11 phone jack
LDM30-SJT	Female	U.S. transformer	RJ-11 phone jack
LDM30-PE	Male	European transformer	Screw termination
LDM30-SE	Female	European transformer	Screw termination
LDM30-PJE	Male	European transformer	RJ-11 phone jack
LDM30-SJE	Female	European transformer	RJ-11 phone jack

Model	Description
PT3	U.S. style wall mount transformer, 120VAC
PT3E	Euro style wall mount transformer, 220VAC

RS-232 P1 Pin Descriptions   Field P2 Pin Description

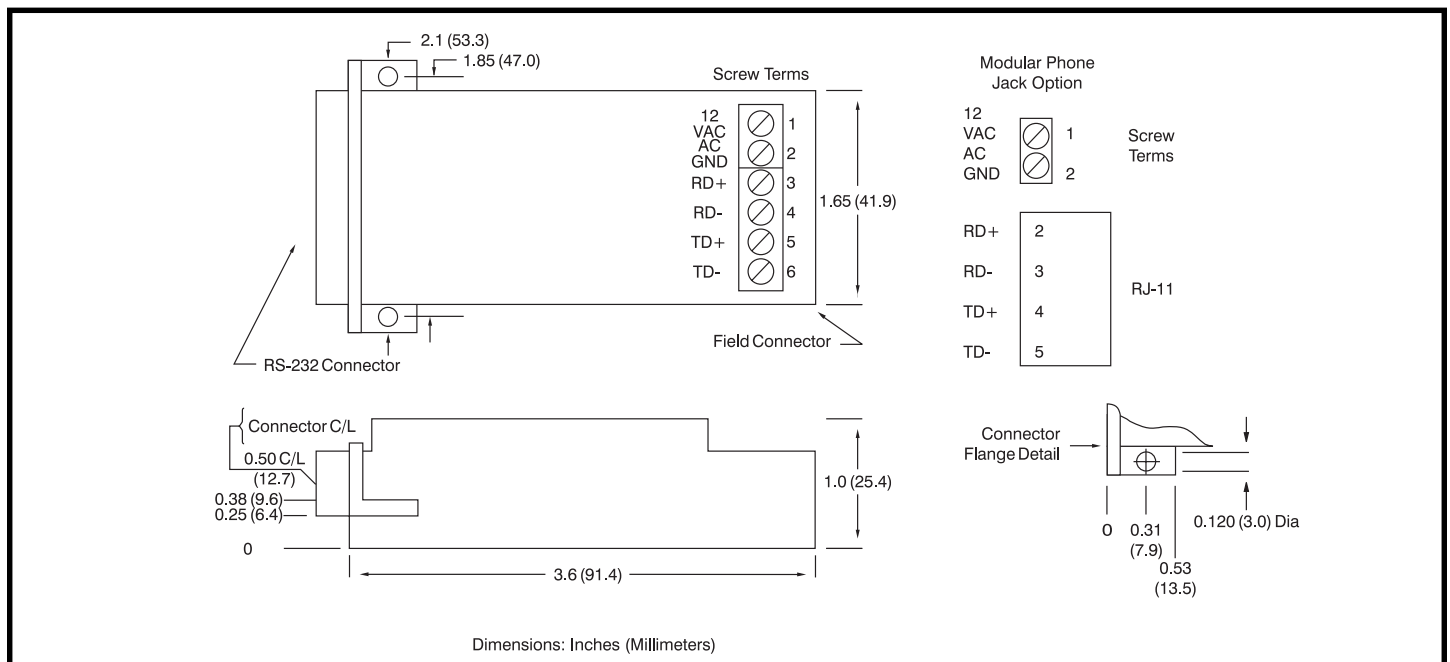|				Screw Terms	Phone Jack	
Pin 1	CASE		Case Ground	Pin 1 12VAC	Pin 1 12VAC	⎤ Screw
Pin 2	TD	[3]	Transmit Data	Pin 2 AC GND	Pin 2 AC GND	⎦ Terms
Pin 3	RD	[2]	Receive Data	Pin 3 RD+	Pin 2 RD+	
Pin 4	RTS	[7]	Req. To Send	Pin 4 RD-	Pin 3 RD-	
Pin 5	CTS	[8]	Clear To Send	Pin 5 TD+	Pin 4 TD+	RJ-11
Pin 6	DSR	[6]	Data Set Ready	Pin 6 TD-	Pin 5 TD-	
Pin 7	GND	[5]	Signal Ground			
Pin 8	RLSD	[1]	Receive Line Signal Detect		RD+ = Receive Data +	
Pin 9	+DC		Positive DC Supply Input		RD- = Receive Data -	
Pin 10	-DC		Negative DC Supply Input		TD+ = Transmit Data +	
Pin 20	DTR	[4]	Data Terminal Ready		TD- = Transmit Data -	

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

Figure 2: LDM30 Dimensions