

Fiber Optic Modem



LDM85 Series



- ✓ Data Rates to 5M Baud
- ✓ RS232, RS422, TTL System Interfaces
- ✓ Multipoint Capability
- ✓ LED Indicators
- ✓ DCE/DTE Switch
- ✓ Small Size
- ✓ SMA- or ST-Compatible Optic Connectors
- ✓ 120/220 Vac, 5 Vdc or 8 to 20 Vac/dc Power
- ✓ Connector Cables Available

The LDM85 is a small, inexpensive fiber optic transmitter/receiver. It features a complete RS232 port as well as high speed TTL/RS-422/RS423 data transmit and receive. It is capable of data rates from DC to 5M baud. A pair of these units allows most RS232C cable links to be replaced and extended with a duplex fiber optic cable. The normal 50-foot RS232 limit may be extended to 1.2 miles (2 km).

Fiber optic data communications provide complete EMI/RFI rejection, isolation, elimination of ground loops, and reduced error rates. Data security is enhanced by almost nonexistent electromagnetic emissions. A unique multipoint capability allows local area networks to be formed with the isolation and data security of a fiber optic data highway.

The LDM85 is packaged in a rugged aluminum enclosure small enough to mount on the back panel of typical computer equipment, saving valuable desk and floor space. The RS232 connection is through male or female EIA 25-pin connectors. The fiber optic connection is either through SMA (905) or ST connectors. Additional features include a TD/RD reversing switch for connection to DTE (Data Terminal Equipment) or DCE (Data Communication Equipment) ports, three diagnostic LED indicators, and locally connected handshake lines.

The TTL port combined with the RS232 port may be interfaced to RS422/423 ports.

Recommended Cables

The LDM85 optical transmitter is optimized for launching power into fiber sizes 85/125, 100/140, and 200µm plastic coated silica (PCS). Due to a lensed optical system, receiver response does not vary with fiber size.

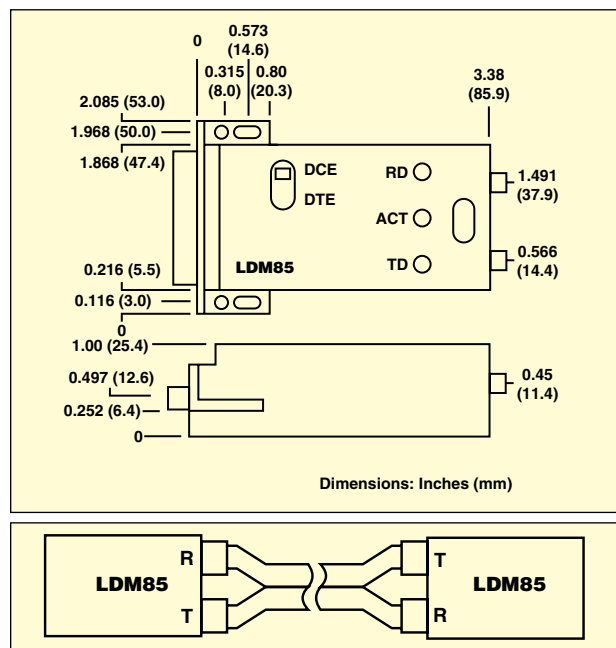
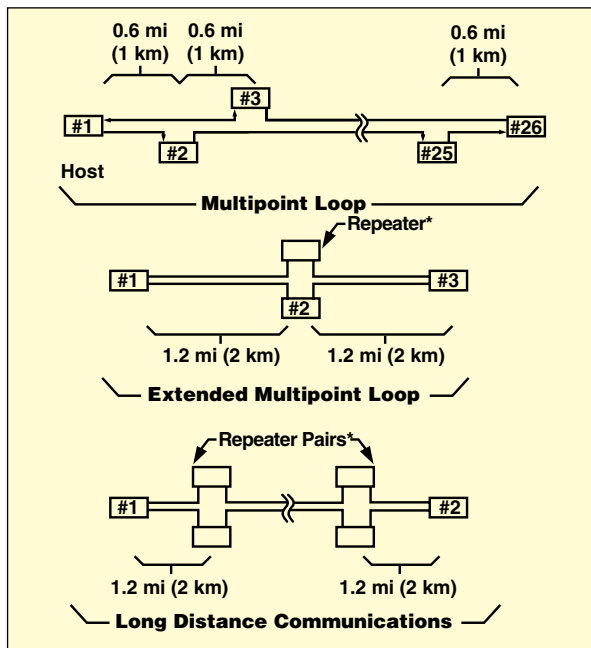
Multipoint Operation

Local area networks are easily implemented with LDM85. When a talker unit raises Request To Send (RTS), its data is communicated to all other devices on a common loop.

Specifications

Baud Rate Range TTL	0-5M, 0-2.5M NRZ
Baud Rate Range RS-232	0-100K
Distance (miles)	Up to 1.2 depending on cable
Distance (km)	Up to 2 depending on cable
Channel Lines⁽¹⁾	TD, RD, TTL TD, TTL RD
Control Lines⁽¹⁾	RTS, CTS, DSR, DTR, RLSD
Modes	Asynchronous 2-fiber full duplex, 1-fiber simplex
Optical Transmitter	820 nm wavelength -11.5dBm typical output from 1 m cable, -16dBm minimum output (-40 to 85°C)
Transmitter Numerical Aperture	0.49
Transmitter Optical Port Diameter	290 µm
Optical Receiver	-25dBm to -12dBm dynamic range for logic 1, -24dBm minimum input logic 1 (-40 to 85°C), -40dBm maximum input logic 0

Notes: (1) TD = Transmit Data, RD = Receive Data, TTL TD and TTL RD are DCE referenced TTL signals, RTS = Request To Send, CTS = Clear To Send, DTR = Data Terminal Ready, DSR = Data Set Ready, RLSD = Received Line Signal Detect.



Specifications

Receiver Equivalent Numerical Aperture	0.50
Receiver Optical Port Diameter	400 μm
Power Budget	8dB (-40°C to +85°C), 10dB (-20°C to +55°C)
Optical Connectors	SMA (905), ST
DCE/DTE Switch	1
Diagnostic LEDs	3
Power: AC operation⁽²⁾ DC operation	120 Vac or 220 Vac (3W wall transformer) 10 Vac to 20 Vac (3W transformer rating) +8 Vdc to +24 Vdc @ 130 mA +5 Vdc ±0.25 Vdc @ 130 mA
Operating Environment	-40 to 85°C, 0 to 95% relative humidity non-condensing
Dimensions	95.3 x 53.3 x 25.4 mm (3.75 x 2.1 x 1")
Weight AC Transformer	3.7 oz (105 g) maximum 11.0 oz (311.8 g)
MTBF	>120,000 hrs

Data returns to the sending unit, verifying physical integrity of the loop. Alternately, if pin 16 is strapped to pin 17, echo will be inhibited. Units may be ordered with this connection made internally.

For multipoint installations, it is important that power be applied to all LDM85s. For small networks it will likely be acceptable to power each unit from a local source. Larger networks may benefit from routing a common low voltage power bus along with the fiber optic cable. An AC bus with isolation transformers at each unit will preserve system resistance to electrical disturbances. The wide low voltage AC and DC tolerance makes voltage drop on this bus easily accommodated.

Power

AC or DC power may be applied to the screw terminals or to pin 9 of the 25-pin connector. Alternatively the unit may be powered by +5 Vdc on pin 18.



OMEGACARESM extended warranty program is available for models shown on this page. Ask your sales representative for full details when placing an order. OMEGACARESM covers parts, labor and equivalent loaners.

To Order

Model No.	RS232 Connector	Field Connector	Power Source
LDM85-S	25 Pin female	SMA(905) fiber optic connector	5 Vdc
LDM85-PT	25 Pin male	SMA(905) fiber optic connector	Transformer
LDM85-ST	25 Pin female	SMA(905) fiber optic connector	Transformer
LDM85-P-025	25 Pin male	ST fiber optic connector	5 Vdc
LDM85-S-025	25 Pin female	ST fiber optic connector	5 Vdc
LDM85-PT-025	25 Pin male	ST fiber optic connector	Transformer
LDM85-ST-025	25 Pin female	ST fiber optic connector	Transformer

Includes operator's manual. Transformer powered units also include 120 Vac wall mount transformer. OMEGACARESM extended warranty is available for models shown on this page. Ask your sales representative for full details when placing order.

Ordering Example: LDM85-ST converter and OCW-1, OMEGACARESM extends standard 1-year warranty to a total of 2 years.