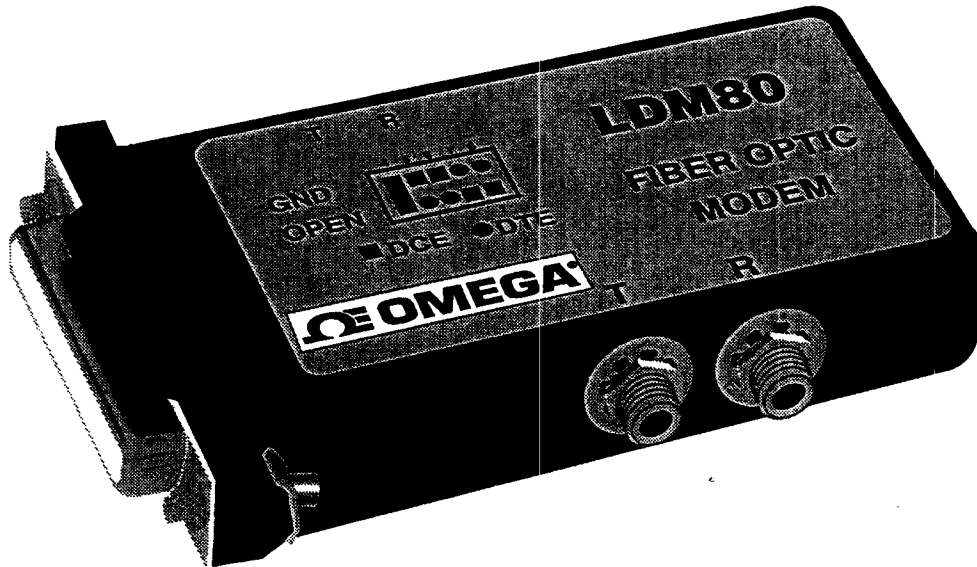




LDM80



Signal-Powered, Fiber-Optic Modem



Operator's Manual



| | |
|---|--|
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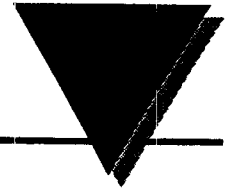
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It is the policy of OMEGA to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.



Remove the Packing List and verify that you have received all equipment, including the following (quantities in parentheses):

- LDM80 Modem
- Operator's Manual.

If you have any questions about the shipment, please call the OMEGA Customer Service Department. When you receive the shipment, inspect the container and equipment for signs of damage. Note any evidence of rough handling in transit. Immediately report any damage to the shipping agent.

NOTE

The carrier will not honor damage claims unless all shipping material is saved for inspection. After examining and removing contents, save packing material and carton in the event reshipment is necessary.

From the Technical Library of _____

LDM80

Signal-Powered, Fiber-Optic Modem

Description

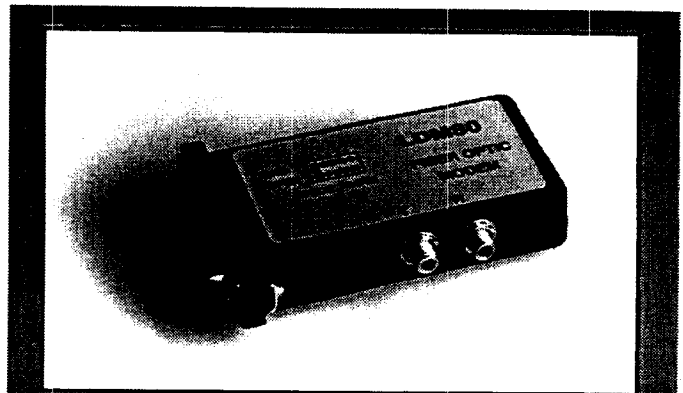
The LDM80 is a small, inexpensive fiber optic transmitter/receiver completely powered by the host RS-232 port. The enclosure for the LDM80 is a conductive shell that greatly reduces RF radiation and susceptibility. The rugged metal enclosure is small enough to mount on the back panel of typical computer equipment saving valuable desk and floor space. A pair of these units allows most RS-232C cable links to be replaced and extended with a duplex fiber optic cable. The normal 50-foot RS-232 limit may be extended to 2.2 miles (3.5 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. The RS-232 connection is through male or female EIA 25-pin connectors. The fiber optic connection is either through SMA (905) or ST connectors.

The LDM80 is equivalent to a 3-wire, full duplex, RS-232 circuit. Handshake signals are locally connected as in Figure 1. Indicating LEDs come on during a "SPACE" on transmit or receive data. A TD/RD reversing DIP switch is provided for connection to DTE (Data Terminal Equipment) or DCE (Data Communication Equipment) ports.

Specifications

| Model | | LDM80 | |
|---|---|------------------|--|
| Baud Rate Range | 0 - 19.2K | | |
| Distance: Over Baud Rate Range | | | |
| Fiber Core Diameter (μm) | Max. Cable Length (km) | Loss Budget (dB) | |
| 100 (glass) | 3.5 | 17 | |
| 50 (glass) | 2.5 | 9 | |
| 62.5 (glass) | 2.0 | 11 | |
| 85 (glass) | 3.5 | 16 | |
| 200 (glass) | 3.5 | 23 | |
| 1000 (plastic) | 30 meters | 32 | |
| Channel Lines ⁽¹⁾ | TD, RD | | |
| Control Lines ⁽¹⁾ | RTS, CTS, DSR, DTR, RLSD | | |
| Modes | Asynchronous 2-fiber full duplex, 1-fiber simplex | | |
| Optical Transmitter | 850 nm wavelength | | |
| Output from 1 m cable | -26 dB typ., -27dB min, -18 dB max | | |
| Optical Receiver Power Input for 4μs Pulse Distortion | -44 dB min | | |
| Optical Connectors | ST, SMA (905) Compatible | | |

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.



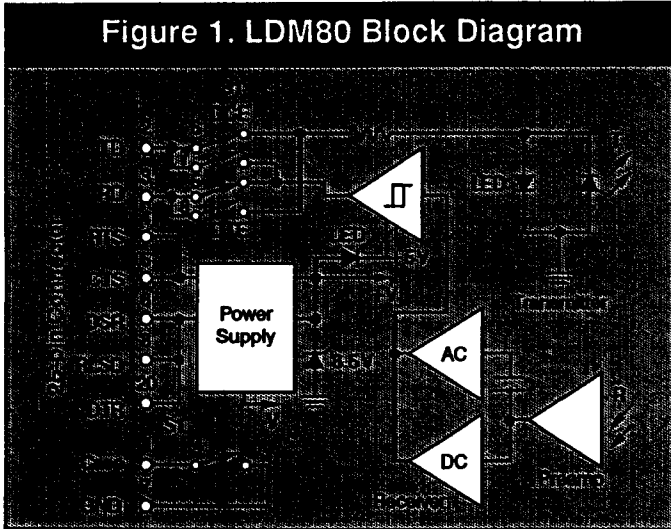
Features

- DATA RATES TO 19.2K BAUD AT 2.2 MILES (3.5 KM)
- FIBER OPTICAL LINK POWER BUDGET
- POWERED BY RS-232 HOST PORT SIGNALS
- FULL DUPLEX ASYNCHRONOUS OPERATION
- INDICATING LEDs
- DCE/DTE SWITCH
- DESIGNED FOR FCC CLASS A REQUIREMENTS
- COMPLIES WITH FCC CLASS A REQUIREMENTS
- PINNED OR SOCKETED RS-232 CONNECTORS

| Model | | LDM80 | |
|--------------------------------------|---|-------|--|
| RS-232 Output Voltage with 3kΩ Load | +5V logic 0, -5V logic 1 | | |
| DCE/DTE Switch | One | | |
| Diagnostic LEDs | Two | | |
| Power: | | | |
| Port Power and/or DC operation | +5.0 to +8.5 VDC, no current limit, 5 mA > +8.5 VDC, 10 mA current limit | | |
| Operating Environment non-condensing | -20°C to +70°C, 0 to 95% relative humidity, | | |
| Dimensions | 3.51 in x 1.88 in x 0.729 in (89.2 mm x 47.8 mm x 18.5 mm) | | |
| Weight | 8.1 oz (230 g) max | | |
| MTBF ⁽²⁾ | >100,000 hrs | | |

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

Figure 1. LDM80 Block Diagram



Recommended Cables

The LDM80 optical transmitter may be used with a wide range of fiber sizes. Specifications are for 100/140 μm . Other fiber sizes may be used with a resulting different cable loss budget.

| Pin Descriptions | | | Fiber Optic | |
|------------------|---------|----------------------------|-------------|---|
| Pin 1 | Case | Case Ground | T | R |
| Pin 2 | TD | Transmit Data | | |
| Pin 3 | RD | Receive Data | | |
| Pin 4 | RTS | Request To Send | | |
| Pin 5 | CTS | Clear To Send | | |
| Pin 6 | DSR | Data Set Ready | | |
| Pin 7 | SIG GND | Signal Ground | | |
| Pin 8 | RLSD | Receive Line Signal Detect | | |
| Pin 20 | DTR | Data Terminal Ready | | |



WARRANTY/DISCLAIMER

OMEGA warrants this unit to be free of defects in materials and workmanship and to give satisfactory service for a period of **13 months** from date of purchase. OMEGA Warranty adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product. If the unit should malfunction, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective it will be repaired or replaced at no charge. However, this WARRANTY is VOID, if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear or which are damaged by misuse are not warranted. These include contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. Nevertheless, OMEGA only warrants that the parts manufactured by it will be as specified and free of defects.

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1. P.O. number under which the product was **PURCHASED**,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS OR **CALIBRATION**, consult OMEGA for current repair/calibration charges. Have the following information available **BEFORE** contacting OMEGA:

1. P.O. number to cover the **COST** of the repair/calibration,
2. Model and serial number of the product, and
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OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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