

OM-24B

Fiber Optic Drop & Insert Modem

Applications

- Pipeline SCADA systems
- Refinery SCADA systems
- Data/voice link for mines
- Rapid transit systems



Description

Housed in a rugged case, the environmentally hardened OM-24B Fiber Optic Drop & Insert Modem allows you to communicate via voice or data to monitor and control the status of remote locations from one central point. The poll-response topology in a self-healing ring configuration is ideally

suited to provide reliable communications for pipeline and wellhead SCADA systems, traffic control systems, and industrial control SCADA systems. The OM-24B can handle extreme fluctuations in operating conditions and can be found in installations in the desert and the Arctic.

Features:

- Drop and Insert topology
- Virtually unlimited number of nodes
- Combined data & voice capability
- Transmits either RS-485 or RS-232 data
- Dial-in/dial-out telephone capability from each node
- Full duplex operation
- Use with either multi-mode or singlemode fiber
- Self-healing-ring reliability
- Front panel network integrity display
- Diagnostics monitor remote nodes from a central PC
- Lightning protection
- 12V, 24V or 48V DC power options
- Operates in extreme temperatures
- Built-in optical power meter

Functional Overview

The OM-24B contains a dual fiber optic system: one referred to as uplink and the other referred to as downlink; this allows a large number of modems to be connected together in a daisy-chain configuration using only two fibers between each modem. If fail-safe operation is desired, the last modem in the chain is looped back to the first modem through two fibers, so that in the event of a fiber break or modem failure, network communication is maintained. The modems can also be used as point-to-point communication links over a pair of fibers.

Each OM-24B has an extensive Status Display which shows the status of the system and the location of any failures. The advanced design of the OM-24B allows singlemode or multi-mode fibers to be used interchangeably, without adjustment.

The modem connected to the Head End is set to act as Master, and its input data is output at all Slave OM-24Bs. The Slave OM-24B's data only comes out at the Master OM-24B, in keeping with a poll-response protocol.

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Functional Overview (continued)

Data can be either RS-232 level, RS-485 two wire, or RS-485 four wire. For RS-232 data, handshaking is available using Request To Send and Clear To Send. Plugging a standard telephone set into the TEL port provides dial-up communication to all nodes within the fiber loop. The CO port allows connection to the public telephone network.

Using the CO ports, multiple rings can be connected together through a PBX for integrated voice communications.

A selectable anti-jabber (anti-streaming) function locks out malfunctioning controllers which would tie up the network. A special feature of the modem is that the received optical power of any node in the network can be viewed on the front panel display. This is valuable for pinpointing potential fiber problems.

Specifications

Optical

Light source 850 nm SLED M version
1300 nm SLED MM version
1300 nm ELED SM version

Optical connectors ST
Optical sensitivity -56 dBm (10⁻⁹ BER)

Operating distance

M version -18dBm launch, 62.5/125 fiber, 3 dB loss/km 12 Km
M version -36dBm launch, 9/125 fiber 2 dB loss/km 10 Km
MM version -18dBm launch, 62.5/125 fiber, .8 dB loss/km 47 Km
MM version -37dBm launch, 9/125 fiber, .4 dB loss/km 40 Km
SM version -16dBm launch, 9/125 fiber, .4 dB loss/km 100 Km

Electrical

Data rate DC to 160K Baud
Data connector DB-9S
Telephone connector RJ-11
Alarm & telephone ringing contacts Screw terminals
Power consumption < 2 Watts
Power source main 12V DC power cube
Power source auxiliary (optional) 12 V battery, 24 V, or 48V DC
Auxiliary power convertor Screw terminals

General

Operating temperature -40°C to +74°C
Dimensions (W*H*D) 14cm*4cm*20cm

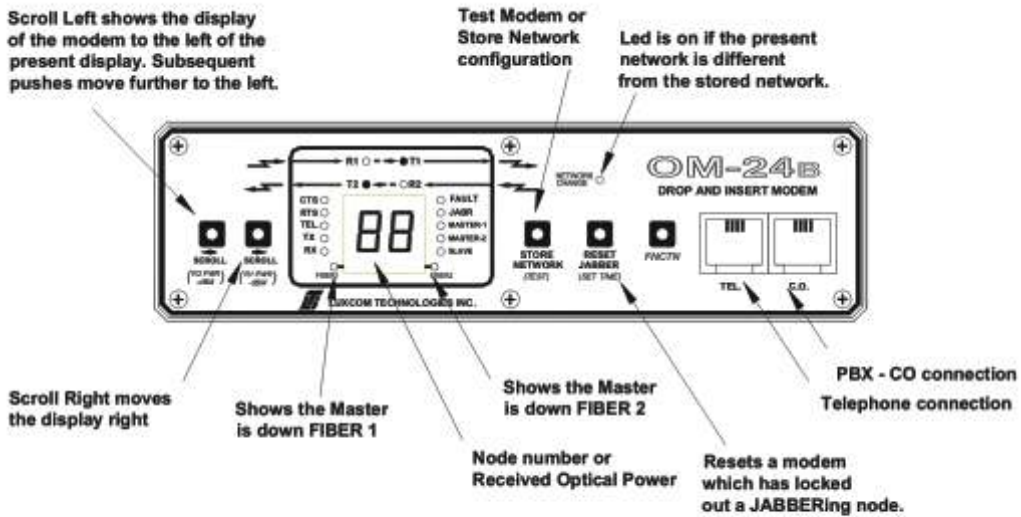
Specifications are subject to change without notice.

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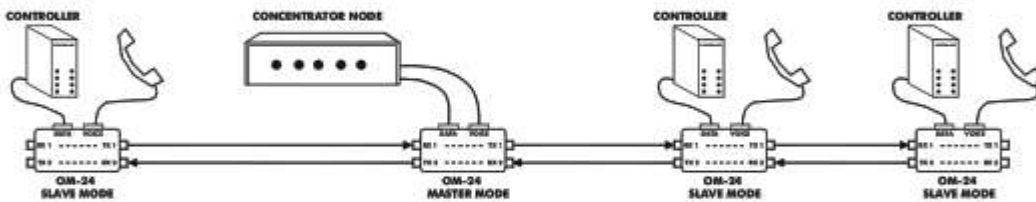


Indicators



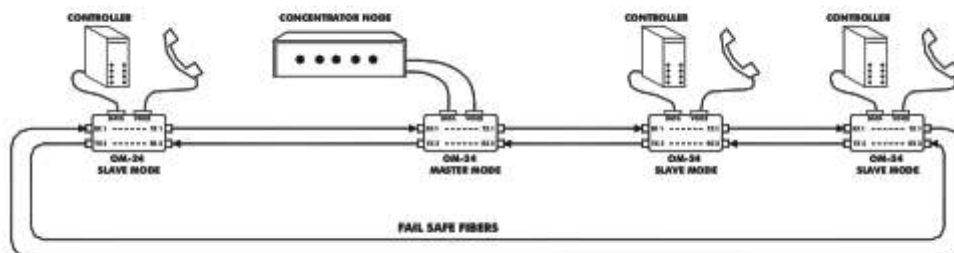
Unterminated Network

This is the simplest connection, but offers no self-healing.



Failsafe Ring (self-healing ring)

This self-healing topology offers high network reliability; a broken fiber results in no loss of communications. A single node failure results in loss of communications with the failed node only.



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Mounting Options

The OM-24B can be used stand-alone or it can be rack mounted in a 19" 1U high rack mount panel (MP-OM24/44HSM), which is available as a separate order. This bracket will mount up to two OM-24Bs, and comes complete with all necessary hardware.

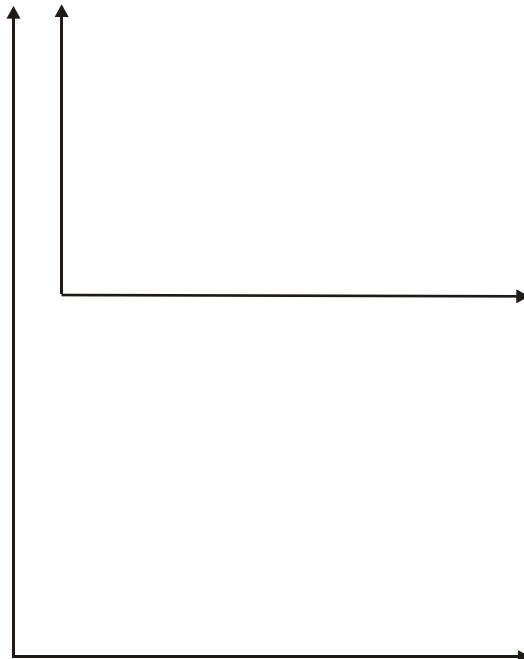
Alternatively, the modem can be mounted to a flat surface, using an optional mounting plate (MB-24/44HSM). The mounting plate is attached to the OM-24B with four supplied screws and may be mounted to the desired surface using customer supplied screws.

How to Order

When constructing part numbers, please refer to operating distances under SPECIFICATIONS - OPTICAL. Modems equipped with ELEDs will work with devices equipped with 1300nm SLEDs; however, modems equipped with 850nm light sources will not work with modems equipped with 1300nm light sources.

Part Numbers

OM24B - W - X



Power Options

- 0 = PWR 1: 12V DC unregulated
PWR 2: unused
- 1 = PWR 1: 12V DC unregulated
PWR 2: 24V DC connected to screw terminals
- 2 = PWR 1: 12V DC unregulated
PWR 2: 48V DC connected to screw terminals
- 3 = PWR 1: 15V DC regulated
PWR 2: 12V 4 AH battery (16 hours operation)
- 4 = PWR 1: 12V DC regulated
PWR 2: 12V DC connected to screw terminal

Light Source

- M = 850nm (standard)
- MM = 1300nm SLED
- SM = 1300nm ELED

MP-OM24 / 44HSM
MB-24 / 44HSM

Rack mount kit for 2 OM-24B modems
Surface mounting plate for OM-24B modems

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