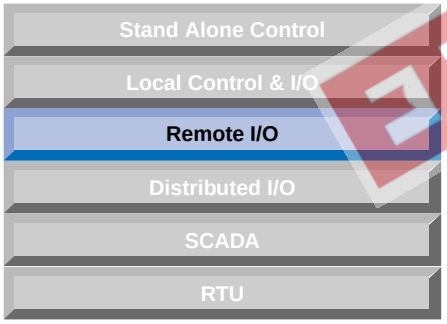
NETWORK INTERFACES
Microlon® (LonWorks)

FEATURES

- LonWorks Technology Integrated with Standard Industrial I/O Racks and Modules
- Extend Isolated Analog (G5 Only) and Digital Signals over Twisted Pair Network without Signal Loss
- Mix and Match Analog and Digital Modules in any Configuration
- LonMark 2.0 Compliant– Interoperable with other LonWorks Products
- Multiple Communication Media Types Available
- Peer-to-Peer Communications
- Uses Network Variables of SNVT (Standard Network Variable Type) to Control/Read Modules

APPLICATIONS



GENERAL DESCRIPTION

The Microlon® network interface combines the power of LonWorks™ technology with Grayhill standard industrial I/O racks and modules. Microlon® controllers may be distributed over great distances yet provide seamless interoperability. The robust communication protocol LonTalk® is built into the firmware of the Neuron® chip, the heart of LonWorks technology. The LonTalk® protocol follows the (7 layer) OSI Reference Model for network protocols. This technology is becoming the de facto standard for interoperability. This frees the user from worrying about network communication protocols.

In applications where the inputs and outputs that need to be monitored and controlled are spread out over a large area, running long signal lines from the sensors and actuators to a central controller can lead to numerous costly problems. First, there is the time and expense of routing the signal lines and shielding them from cross-talk, EMI, and RFI. If this is not done properly, the cost and time required to troubleshoot the wiring can be exorbitant. Finally, making a change to the system after installation is costly.

To alleviate this problem, install Microlon® units and I/O modules near the sensors or actuators and network the Microlon® units back to the host computer (if a host is necessary). Peer-to-peer communications, inherent with LonWorks™ technology, make it easy to extend signals digitally, without signal loss.

Up to 63 Microlon® controllers (nodes) can be networked together on a physical segment. Units can be added with the aid of repeaters or routers. Each node may contain up to 8 isolated modules, configured as input or output, digital or analog.

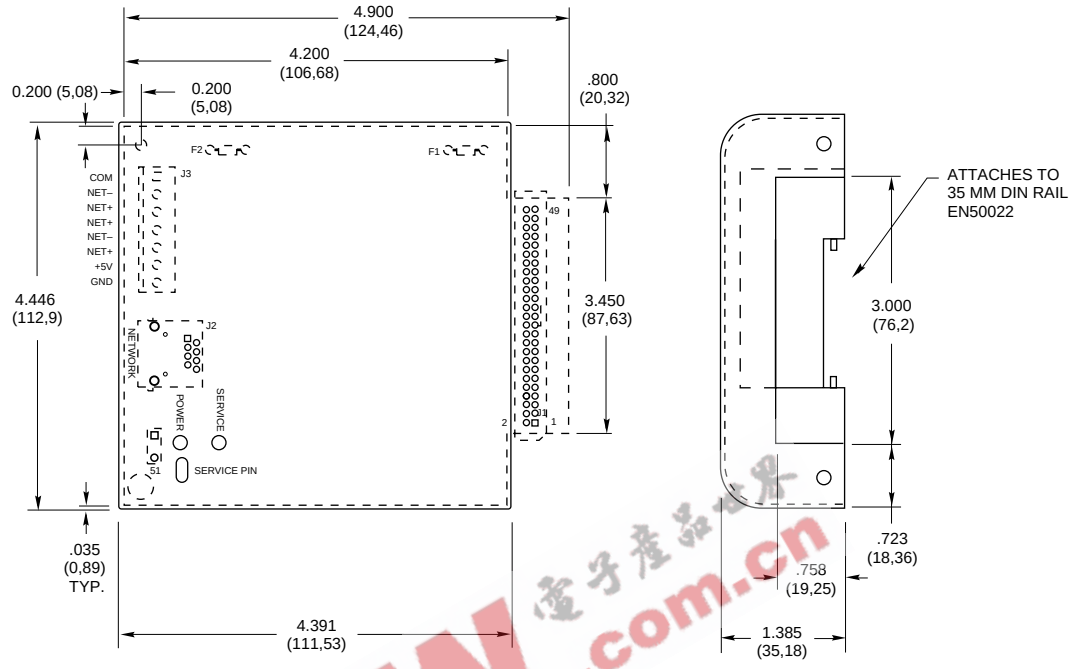
Microlon® controllers use one of two different physical media types to communicate over the network. Twisted pair, transformer isolated (TP/XF) networks operate at 78 Kbps at distances up to 6500 feet (2000 meters). In addition, FTT-10 operating at 78 Kbps at distances up to 1500 feet (500 meters) is supported. Routers and Bridges may be used to change the communication media type from node to node. For example, a Router may connect a group of nodes operating over the FTT-10 medium to another group utilizing the TPT-XF/78 medium.

Networks are installed and/or modified using the Echelon LonBuilder Development system, LonMaker installation tool or a third party tool. LonMaker is a software package that runs on a PC and communicates to Microlon controllers using a Serial LonTalk Adapter (SLTA) or a PC LonTalk Adapter (PCLTA). SLTAs are available for all types of network media and converts them to RS-232 at speeds up to 115,200 baud. PCLTAs are ISA-bus cards that offer higher performance. If the network contains other LonWorks based products, the NetProfiler (included with LonMaker[1]) is used to define the "parts catalogs" tailored to the network. Otherwise, for networks containing only Microlon® controllers, the "parts catalog" will be provided, eliminating the need for the NetProfiler package. Third party network management, control and monitoring tools and LonTalk Adapters are available, please contact Grayhill for more information.

The Microlon® controller is shipped with a standard application program which contains everything necessary to interface with all of Grayhill's I/O modules. Installation, Configuration, and Troubleshooting are outlined in the 72-LON-I8 manual (order separately). In addition, the Microlon® application disk is supplied with the manual and contains example source code and the interface files ("parts catalog"). The *readme* file contains information not found in this manual. If you have a LonBuilder or NodeBuilder Development Tool, you may wish to modify the application program and tailor it to your application.

[1] With metal enclosure installed

DIMENSIONS In inches (and millimeters)



Unless otherwise specified, tolerances are ± 0.010 (0,25).

SPECIFICATIONS

Microprocessor: Neuron 3150®
Clock Speed: 10 MHz
Power Supply: 4.75 Vdc to 5.25 Vdc
Supply Current: 200 mA max. (Controller only), 110 mA typical
Operating Temperature: 0°C to 70°C
Humidity:
95% non-condensing, non-operating
5% to 90% non-condensing, operating per IEC68-2-3
Vibration: IEC68-2-6, 10–50 Hz, 2 gS, 0.15 mm
Mechanical Shock: IEC68-2-7, 50 gS peak, 11 mS, sinusoidal
Housing Material: Painted steel
Connections:
Bus: RJ-45 or terminal block
Rack: 50-pin female plug connector or 50-pin male header connector

ORDERING INFORMATION

Part Number	Description
Microlon® Panel Mount Network Interface (Standoffs: plugs directly into I/O rack)	
72-LON-8AD-78P	TPT/XF-78 78 Kbps transformer isolated*, up to 2000 meters
72-LON-8AD-FTTP	FTT-10 78 Kbps transformer isolated*, up to 500 meters
Microlon® Panel or DIN Rail Mount Network Interface (Metal enclosure)	
72-LON-8AD-78C	TPT/XF-78 78 Kbps transformer isolated, up to 2000 meters
72-LON-8AD-FTTC	FTT-10 78 Kbps transformer isolated*, up to 500 meters
Microlon® User's Manual and Software	
72-LON8	Introduction to Microlon® controller
72-LON-I8	Installation, configuration, and troubleshooting manual with example source files, interface (.XIF) files, and parts catalog

* Isolation between controller and network 1000 Vrms for 60 seconds; 277 Vrms continuous. Isolation between controller and I/O is 4000V for digital; 2500V for analog.

Available from your local authorized Grayhill Distributor.

For prices and discounts, contact your local sales office, an authorized Distributor, or Grayhill.