

General Specification

GS 34M6H32-02E

FA-M3
F3LX02-1N
FL-net (OPCN-2) Interface
Module

FA-M3

Overview

FL-net (OPCN-2) is a vendor-independent, open FA network standard defined by the JOP work group of the Manufacturing Science and Technology Center (MSTC) of Japan for data exchange between programmable controllers (PLC), robot controllers (RC), computerized numerical control (CNC) machines, and other FA controllers. Up to 254 nodes (one module is counted as one node) can be connected.

The FL-net (OPCN-2) Interface Module (F3LX02-1N) is to be installed in an I/O slot of an FA-M3 system. It has the following features:

- Compliance to FL-net (OPCN-2) Ver. 2.00
- Up to 2 modules can be installed in an FA-M3 main unit, allowing for multi-layer data linking.
- The number of link points (8192 max. per module) can be configured independently for each module.
- Good expandability as it is based on Ethernet

Features

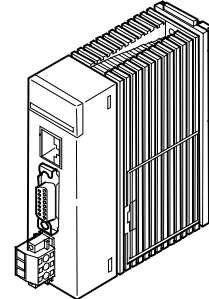
- Realizes super high-speed data transfer using proprietary RRR (triple-R) technology.
- FL-net is a vendor-independent high-speed network based on Ethernet, the de-facto communication standard
- Supports both cyclic transmission (data acquisition from each node at regular intervals) and message transfer (event notification).
- Guarantees data transfer within a given time frame by managing and controlling communication media access by individual nodes on the network.

* The RRR technology features Rapid Refresh and Reflection, thanks to fast data processing within the module and fast data exchange between the interface module and the CPU module that reduces the time taken for a ladder application program to recognize transferred data (delivery time).

Specifications

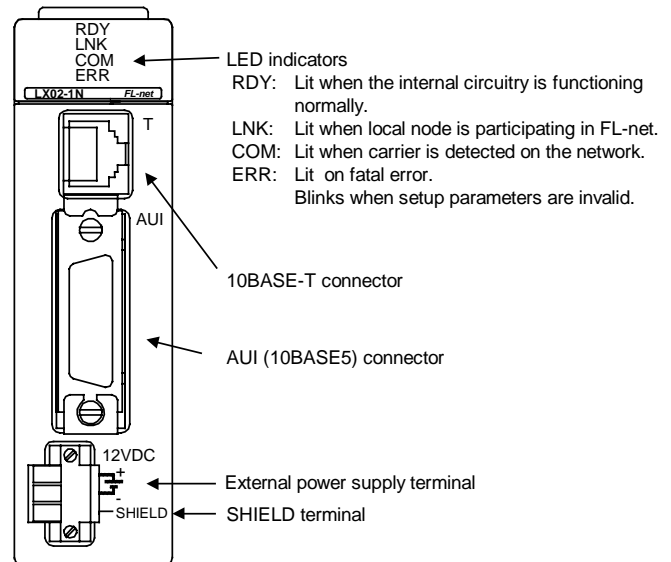
Item	Specification
Number of connected nodes	254 max.
Cyclic transmission	512 words in area 1 8192 words in area 2
Message transmission	1024 bytes max.
Number of installed modules	2 max. (modules cannot be installed in a sub-unit)
Transmission rate	10Mbps
Topology	Bus
Transmission distance	500m max. (2.5 km when using repeaters)
Transmission media	Compliant to IEEE802.3
External power supply	12V DC (when power is supplied using AUI port)
Fuse	2-A time lag fuse (not replaceable as it is embedded in the power supply terminal)
Current consumption	460 mA max.
External dimensions	28.9 (W) x 100 (H) x 83.2 (D) mm*
Weight	130 g

*: excluding protrusions (For details, see external dimensions diagram)

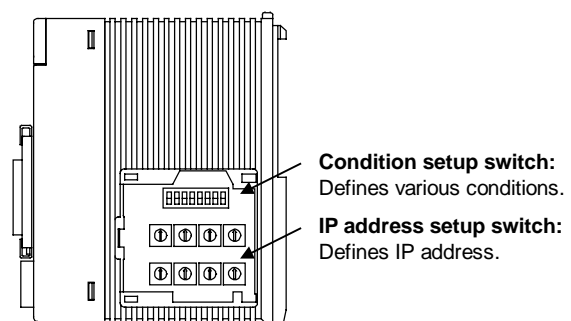


Components and Their Functions

Front View



Right view



Note: right side view with the cover removed.

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■ Operating Environment

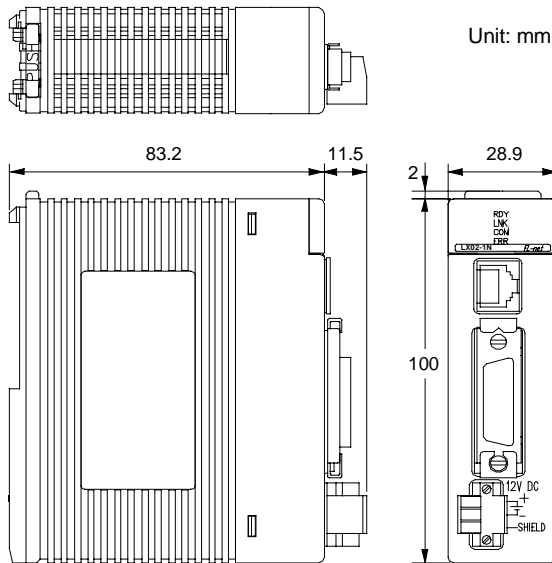
- This module is compatible with the following CPU modules.

CPU Module	Version
F3SP28-3N, F3SP38-6N, F3SP53-4H, F3SP58-6H	Rev:05.00 or later
F3SP28-3S, F3SP38-6S, F3SP53-4S, F3SP58-6S, F3SP59-7S	Rev:00.00 or later

■ Model and Suffix Codes

Model	Suffix Code	Style Code	Option Code	Description
F3LX02	-1N	10Mbps 10BASE5/10BAS E-T FL-net (OPCN-2) Ver.2.00

■ External Dimensions



■ Scope of Services

- This module supports the following FL-net (OPCN-2) services.

Functions		Supported or not		
		Write/send	Read/receive	
Data communication	Cyclic transmission	Area 1 ^{*1}	✓	✓
		Area 2 ^{*2}	✓	✓
	Message transmission	Byte block read	✓ ^{*3}	×
		Byte block write	✓ ^{*3}	×
		Word block read	✓ ^{*3}	✓ ^{*4}
		Word block write	✓ ^{*3}	✓ ^{*4}
		Read network parameters	✓ ^{*3}	✓ ^{*4}
		Write network parameters	✓ ^{*3} ^{*5}	✓ ^{*4}
		Stop command	✓ ^{*3}	✓ ^{*4}
		Start command	✓ ^{*3}	✓ ^{*4}
		Read profile	✓ ^{*3}	✓ ^{*4}
		Transparent message	✓ ^{*3}	✓ ^{*4}
		Read log data	✓ ^{*3}	✓ ^{*4}
		Clear log data	✓ ^{*3}	✓ ^{*4}
		Echo message	✓ ^{*3}	✓ ^{*4}
		Vendor specific message	✓ ^{*3}	✓ ^{*4}
Network management	Set up network parameters		✓	
	Read parameters for local node management information		✓	
	Read parameters for participating node management information		✓	
	Read parameters for network management information		✓	
	Read node statuses		✓	

✓: Supported

×: Not supported

*1: Allocated to a maximum of 8192 link relays (L)

*2: Allocated to a maximum of 8192 link registers (W)

*3: Using transparent messages

*4: Automatic processing by the module (such as receiving request messages and sending response messages)

*5: FA-M3 Program Development Tool WideField2 may be used for transmission.