# General Specifications

FA-M3
FA Link Modules

GS 34M06H43-01E

## Contents

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# General Specifications

F3LP32-0N
FA Link H2 Module

FA-M3

## General

The F3LP32-0N FA Link H2 Module provides a high-speed network that allows information exchange between the FA-M3 Range-free Multi-controllers.

The F3LP32-0N is an FA link H2 interface module that provides a maximum of 32 stations of data link (one module is counted as one station).

- It allows a maximum of eight modules to be installed in a single FA-M3 main unit, to make up a multi-layer data link. The module can be accessed only from a designated CPU.
- The number of link points can be specified arbitrarily for each CPU.
- Bus-type communication channels are employed to facilitate the expansion of modules.
- FA Link H2 Modules can be connected easily using a two-twisted-pair (4-wire) shielded cable.
- Only F3LP32-0N modules can be connected with each other. F3LP32-0N modules cannot be connected to F3LP01-0N or F3LP02-0N modules.

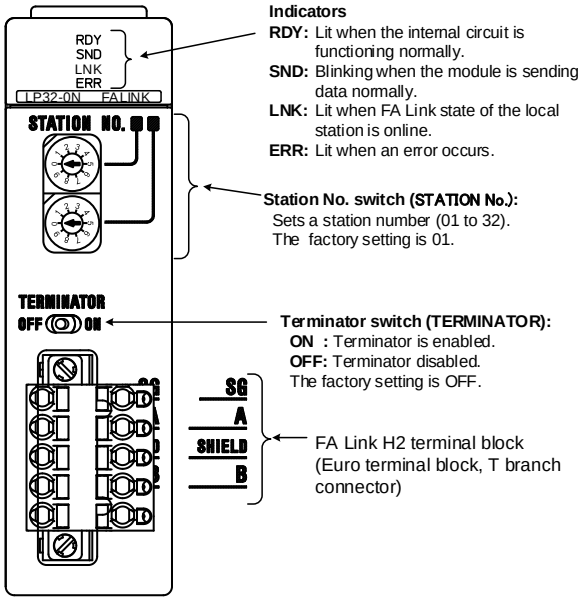
## Specifications

| Item | Specification |
|---|---|
| Number of stations | 32 max. |
| Link relays | 2048 per module<br>- F3SP22-0S/F3SP28-3S/F3SP53-4S/F3SP66-4S and F3SP71-4S:8192 (non-continuous)<br>- F3SP38-6S/F3SP58-6S /F3SP59-7S/F3SP67-6S, and F3SP76-7S:16,384 (non-continuous) |
| Link register | 2048 per module<br>- F3SP22-0S/F3SP28-3S/F3SP53-4S/F3SP66-4S and F3SP71-4S:8192 (non-continuous)<br>- F3SP38-6S/F3SP58-6S /F3SP59-7S/F3SP67-6S, and F3SP76-7S:16,384 (non-continuous) |
| Maximum. Number of links per station | Same as above. |
| Link relay and link register assignments | Link relay: on 16-relay basis<br>Link register: on per register basis |
| Number of modules | 8 max. |
| Transmission speed | 125 K, 250 K, 625 K or 1.25 Mbps (switch selectable) |
| Transmission channel type | 1-bus type |
| Termination resistance | 110 Ω at both ends (specified by a built-in switch when the line is terminated) |
| Transmission distance | 1 km, 500 m, 250 m or 100 m (depends on transmission speed) |
| Communication system | Token-bus system |
| Synchronization | Frame synchronization |
| Transmission format | Conforms to HDLC. |
| Modulation and encoding system | NRZI system |
| Error detection | CRC-CCITT, timeout |
| RAS features | hardware self-diagnostics, special relay and register functions |
| Transmission media | Two-twisted-pair (4-wire) shielded cable |
| Current consumption | 220 mA |
| External connection | Euro terminal block, T branch connector |
| External dimensions | 28.9 (W) x 100 (H) x 83.2 (D) mm (Note) |
| Weight | 105 g |
| Surrounding air temperature range | Operating : 0 to 55°C<br>Storage : -20°C to 75°C |
| Surrounding humidity range | Operating : 10 to 90% RH (non-condensing)<br>Storage : 10 to 90% RH (non-condensing) |
| Surrounding atmosphere | Must be free of corrosive gases, flammable gases or heavy dust. |

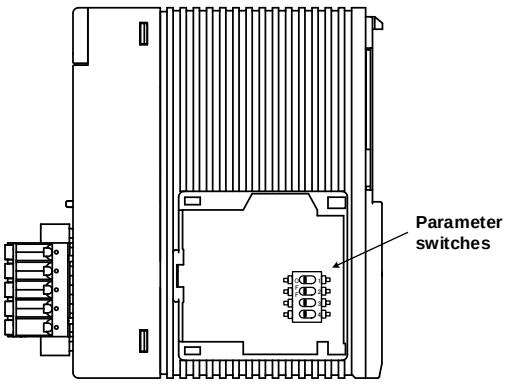
Note: The given dimensions exclude protrusions (See "External Dimensions" for details).

## Components and Functions

### ■ Front View




### ■ Right Side View



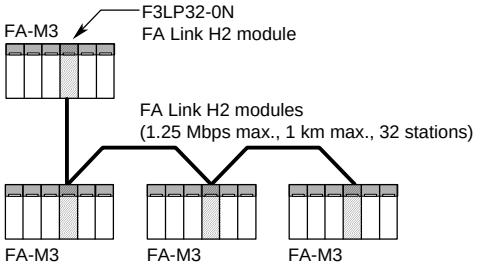

Note: This figure is drawn with the panel cover removed.

| No. | Parameter | OFF | ON | Factory setting |
|---|---|---|---|---|
| 1 | Transmission speed | See table to the right. | | OFF |
| 2 | | | | OFF |
| 3 | Operation mode | Normal | High speed | OFF |
| 4 | (Not used) | — | — | OFF |

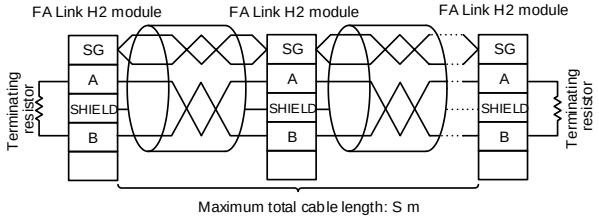
| Switch | | No. 2 | |
|---|---|---|---|
| | | OFF | ON |
| No.1 | OFF | 1.25 Mbps | 250 Kbps |
| | ON | 625 Kbps | 125 Kbps |

## System Configuration Example

- Connecting between FA-M3 Controllers
  The F3LP32-0N can be used to configure a system in which communication speed can be as high as 1.25 Mbps.




## External Connection Diagram




1. The maximum total cable length (S) varies depending on the transmission speed used.
2. The SHIELD terminal of this module is internally connected to the FG terminal of the FA-M3 power supply module.
3. This module has a built-in terminator. When configuring the module at the end of the cable, set the terminator switch to ON.
4. The lower end terminal of the module is not used. Do not connect any cable to this terminal.

## Cables

Use two-pair (4-wire) shielded cable (impedance 100 Ω) when connecting FA Link H2 modules.
Recommended cables: KM80-□□□/KM81-□□□ (to be purchased separately)

* For details on KM80-□□□and KM81-□□□, see “FA-M3 YHLS Master Module, YHLS Slave Units and YHLS Communication Cables (for implementing high-speed remote I/O)” (GS 34M06H46-03E).

## Connector

The following T branch connector comes with the module.

- TFKC 2,5/ 5-STF-5,08 AU from Phoenix Contact

## Ferrule Terminal

It is recommended that you attach ferrule terminals to cables when connecting the cables to the T branch terminal that comes with the module.

For SG terminal, it is recommended to connect one-twisted-pair (2-wire) cable using ferrule terminal for 2-wire.

The recommended ferrule terminals differ depending on the diameters of the cables.
Note that no ferrule terminal comes with the module.

* The ferrule terminals supported for the recommended cables are as follows.
KM80(for 1-wire): AI 0,34 - 8 TQ from Phoenix Contact
KM80(for 2-wire): AI - TWIN 2 x 0,5 - 8 WH from Phoenix Contact
KM81(for 1-wire): AI 0,5 - 10 WH from Phoenix Contact
KM81(for 2-wire): AI - TWIN 2 x 0,5 - 8 WH from Phoenix Contact

## Operating Environment

The table below lists the CPU modules that can be used with the FA Link H2 module.

| CPU Module | Required REV. of FA Link H2 Module |
|---|---|
| F3SP22-0S,F3SP71-4S,F3SP76-7S | No restriction |
| F3SP28-3S,F3SP38-6S,F3SP53-4S, F3SP58-6S,F3SP59-7S,F3SP66-4S, F3SP67-6S | REV: 02:□□ or later |

The programming tool supported for the FA Link H2 module is as follows.

| FA-M3 Programming Tool WideField3 | Required REV. of the Tool | Restrictions |
|---|---|---|
| SF630-MCW | R4.03 or later | None |
| | R3.01 to R4.02 | Installation of FA Link Station Assignment and Monitoring, SF676-MDW (R4.02-Z01)*1 is required. |

*1: The setting tool supported for the FA Link H2 module. Download it from the Partner Portal, membership website of Yokogawa Electric Corporation.
URL: https://partner.yokogawa.com/global/itc/index.htm

## Model and Suffix Codes

| Model | Suffix Code | Style Code | Option Code | Description |
|---|---|---|---|---|
| F3LP32 | -0N | ..... | ..... | 32 stations max.<br>125 k, 250 k, 625 k or 1.25 Mbps<br>1 km, 500 m, 250 m or 100 m |

## External Dimensions

Unit:mm