

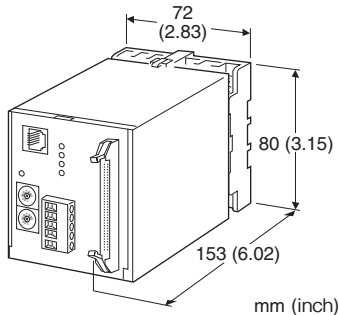
Field Network Modules 60-UNIT Series

ANALOG I/O MODULE

(Fuji Electric T-Link use)

Functions & Features

- Interfacing analog I/O signals from/to 10-RACK or 18-RACK modules with T-Link
- Saving power and I/O wiring inside an instrumentation panel



MODEL: 60F-16[1]-[2][3]

ORDERING INFORMATION

- Code number: 60F-16[1]-[2][3]
- Specify a code from below for each [1] through [3].
(e.g. 60F-161-K/Q)
- Specify the specification for option code /Q
(e.g. /C01/S01)

NO. OF CHANNELS

16: 16 points

[1] I/O TYPE

- 1: Input
- 2: Output

[2] POWER INPUT

AC Power

K: 85 - 132 V AC
(Operational voltage range 85 - 132 V, 47 - 66 Hz)

DC Power

R: 24 V DC
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)

[3] OPTIONS

blank: none

/Q: With options (specify the specification)

SPECIFICATIONS OF OPTION: Q (multiple selections)

COATING (For the detail, refer to M-System's web site.)

- /C01: Silicone coating
- /C02: Polyurethane coating
- /C03: Rubber coating

TERMINAL SCREW MATERIAL

- /S01: Stainless steel

RELATED PRODUCTS

- Special cable (model: MCN34)

GENERAL SPECIFICATIONS

Construction: Plug-in

Connection

T-Link: Euro type connector terminal (applicable wire size: 0.2 to 2.5 mm², stripped length 7 mm)

I/O: 34-pin connector (OMRON XG4A-3434)

Power input: M3.5 screw terminal

Screw terminal: Chromated steel (standard) or stainless steel

Housing material: Flame-resistant resin (black)

Isolation: I/O to T-Link to power to FG1

Power indicator: Green LED turns on with power supplied.

T-Link SPECIFICATIONS

Configuration: Multi-drop

Communication: Half-duplex

Baud rate: 500 kbps

Transmission media/distance:

KPEV-SB 0.75 mm² × 1 pair, 700 m

T-KPEV-SB, 1.25 mm² × 1 pair, 1000 m

Station No.: Rotary switch; 00 - 99

(Factory default setting: 00)

L RUN indicator: Red LED ON at normal communication

L ERR. indicator: Red LED ON/blinking at communication abnormality

L I/O indicator: Red LED blinking at normal I/O

L COM indicator: RED LED blinking at T-Link normal communication

■ NUMBER OF CONNECTABLE UNITS WITH T-Link

Up to a maximum of 32 T-Link devices can be connected in a single T-Link system. There is a limit of 100 words in processor memory. Make sure that the configured word area to be occupied does not exceed the 100-word range. (According to the Fuji Electric MICREX-F Users Manual) It is necessary to consider these criteria when connecting to this device.

The below describes the number of words occupied per device by number of modules.

- For input 16 / output 16 modules: 16

INPUT SPECIFICATIONS

■ Analog Input

Input range: 1 - 5 V DC

Input resistance: $\geq 1\text{ M}\Omega$

10-RACK and 18-RACK I/O modules must be isolated types. Non-isolated modules such as 10BW and 18BW are not usable.

A/D conversion output: Signed binary

Signal range 0 - 100 % is converted into hexadecimal 0000 - 2710 (0 - 10000). -15 to 0 % is a negative range represented by 2's complements.

Overall range is represented by hexadecimal FA24 - 2CEC (-1500 - +11500), for -15 - +115 %.

• Input Connector Pin Assignment

PIN NO.	ASSIGNMENT	PIN NO.	ASSIGNMENT
1	Input 1	2	COM
3	Input 2	4	COM
5	Input 3	6	COM
7	Input 4	8	COM
9	Input 5	10	COM
11	Input 6	12	COM
13	Input 7	14	COM
15	Input 8	16	COM
17	Input 9	18	COM
19	Input 10	20	COM
21	Input 11	22	COM
23	Input 12	24	COM
25	Input 13	26	COM
27	Input 14	28	COM
29	Input 15	30	COM
31	Input 16	32	COM
33	No connection	34	No connection

OUTPUT SPECIFICATIONS

■ Analog Output

Output must be isolated with signal conditioners.

When the transmission line is open, the last value sampled before failure is held.

Output range: 1 - 5 V DC

Load resistance: 20 k Ω minimum

10-RACK and 18-RACK I/O modules must be isolated types. Non-isolated modules such as 10BW and 18BW are not usable.

D/A conversion output: Signed binary

Signal range 0 - 100 % is converted into hexadecimal 0000 - 2710 (0 - 10000). -15 to 0 % is a negative range represented by 2's complements.

Overall range is represented by hexadecimal FA24 - 2CEC (-1500 - +11500), for -15 - +115 %.

• Output Connector Pin Assignment

PIN NO.	ASSIGNMENT	PIN NO.	ASSIGNMENT
1	Output 1	2	COM
3	Output 2	4	COM
5	Output 3	6	COM
7	Output 4	8	COM
9	Output 5	10	COM
11	Output 6	12	COM
13	Output 7	14	COM
15	Output 8	16	COM
17	Output 9	18	COM
19	Output 10	20	COM
21	Output 11	22	COM
23	Output 12	24	COM
25	Output 13	26	COM
27	Output 14	28	COM
29	Output 15	30	COM
31	Output 16	32	COM
33	No connection	34	No connection

INSTALLATION

Power consumption

•AC: Approx. 3 VA

•DC: Approx. 4 W (160 mA)

Operating temperature: -5 to +55°C (23 to 131°F)

Operating humidity: 30 to 90 %RH (non-condensing)

Atmosphere: No corrosive gas or heavy dust

Mounting: Surface or DIN rail

Weight: 450 g (0.99 lb)

PERFORMANCE in percentage of span

A/D conversion: $\pm 0.1\%$

D/A conversion: $\pm 0.1\%$

Temp. coefficient: $\pm 0.015\%/^{\circ}\text{C}$ ($\pm 0.008\%/^{\circ}\text{F}$)

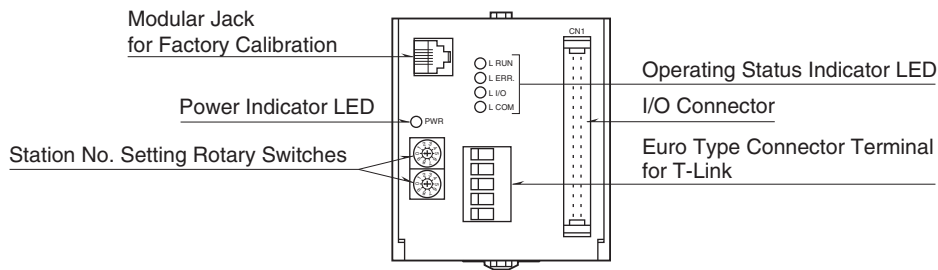
Permissible power failure duration: $\leq 10\text{ msec.}$

Insulation resistance: $\geq 100\text{ M}\Omega$ with 500 V DC

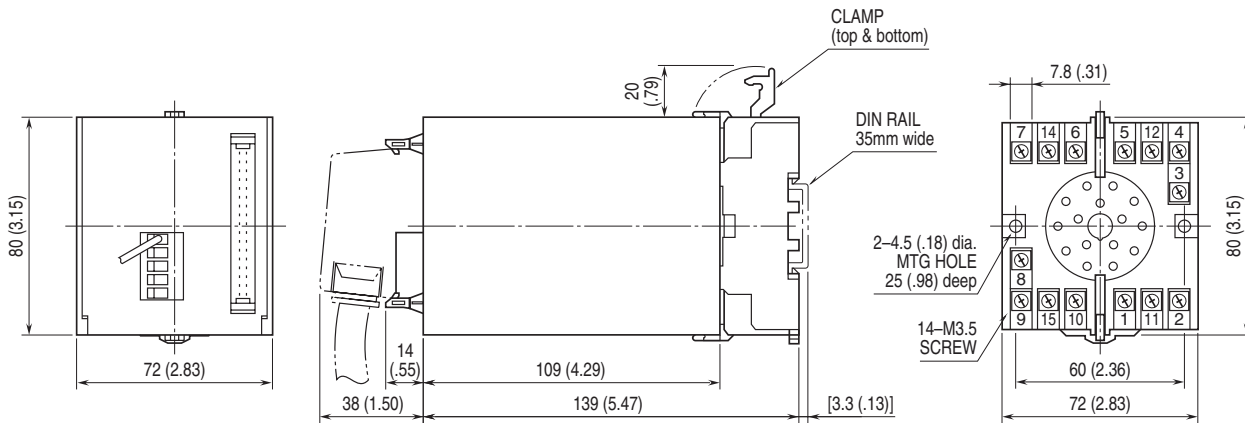
Dielectric strength: 1500 V AC @ 1 minute (input or output to T-Link to power)

2000 V AC @ 1 minute (input or output or T-Link or power to FG1)

EXTERNAL VIEW

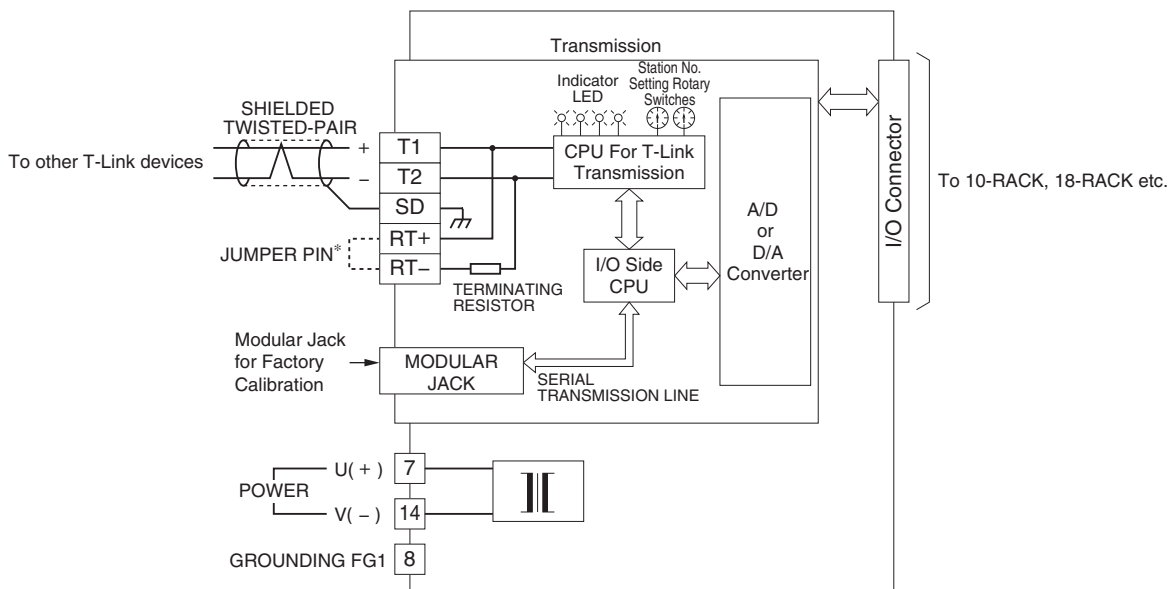


EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



•When mounting, no extra space is needed between units.

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



* When the unit is located at the end of transmission line via twisted-pair cable (= no cross-wiring), short across terminals RT+, RT- with the jumper pin (or wire) provided with the unit. Remove the jumper pin for the one not located at the end.
Note: Use T1, T2, SD terminals for cross-wiring.



Specifications are subject to change without notice.