

## Screwless Interface Terminal Block

# AFL Series

## INSTRUCTION MANUAL

TCD210098AA

**Autonics**

Thank you for choosing our Autonics product.

**Read and understand the instruction manual and manual thoroughly before using the product.**

**For your safety, read and follow the below safety considerations before using.**

**For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.**

Keep this instruction manual in a place where you can find easily.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

Follow Autonics website for the latest information.

### Safety Considerations

- Observe all 'Safety Considerations' for safe and proper operation to avoid hazards.
- ⚠ symbol indicates caution due to special circumstances in which hazards may occur.

**⚠ Warning** Failure to follow instructions may result in serious injury or death.

**01. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)**

Failure to follow this instruction may result in personal injury, economic loss or fire.

**02. Do not use the unit in the place where flammable/explosive/corrosive gas, high humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.**

Failure to follow this instruction may result in explosion or fire.

**03. Do not connect, repair, or inspect the unit, or remove connector while connected to a power source.**

Failure to follow this instruction may result in fire or electric shock.

**04. Do not disassemble or modify the unit.**

Failure to follow this instruction may result in fire or electric shock.

**⚠ Caution** Failure to follow instructions may result in injury or product damage.

**01. Use the unit within the rated specifications.**

Failure to follow this instruction may result in fire or product damage.

**02. Use dry cloth to clean the unit, and do not use water or organic solvent.**

Failure to follow this instruction may result in fire or electric shock.

**03. Keep the product away from metal chip, dust, and wire residue which flow into the unit.**

Failure to follow this instruction may result in fire or product damage.

### Cautions during Use

Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.

Keep away from high voltage lines or power lines to prevent inductive noise.

In case installing power line and input signal line closely, use line filter or varistor at power line and shielded wire at input signal line.

Do not use near the equipment which generates strong magnetic force or high frequency noise.

This unit may be used in the following environments.

- Indoors (in the environment condition rated in 'Specifications')
- Altitude max. 2,000m
- Pollution degree 2
- Installation category II

### Product Components

- Product
- Instruction manual

### Sold Separately

- I/O cable

### Ordering Information

This is only for reference, the actual product does not support all combinations. For selecting the specified model, follow the Autonics website.

**AFL - H ① ② - ③ ④**

#### ① The number of connector pin

20: 20-pin  
26: 26-pin  
40: 40-pin  
50: 50-pin

#### ② Connector

No-mark: HIF3BA, XG4A-2031, XG4A-2631  
B: HIF3BB

#### ③ Indicator

No-mark: no LED  
L: LED equipped

#### ④ Input logic

No-mark: None  
N: NPN  
P: PNP

### Specifications

Model	AFL-H20	AFL-H26	AFL-H40	AFL-H50	AFL-H50B
The number of connector pin	20	26	40	50	50
The number of terminal	20	26	40	50	50
Terminal type	Screwless	Screwless	Screwless	Screwless	Screwless
Terminal pitch	5.0 mm	5.0 mm	5.0 mm	5.0 mm	5.0 mm
Connector for controller side	20-pin Omron (XG4A-2031)	26-pin Omron (XG4A-2631)	40-pin Hirose (HIF3BA-40PA-54DSA)	50-pin Hirose (HIF3BA-50PA-2.54DSA)	50-pin Hirose (HIF3BB-50PA-2.54DSA)
Material	Case, Base: PC				
Approval	CE, RoHS, ENEC	CE, RoHS, ENEC	CE, RoHS, ENEC	CE, RoHS, ENEC	CE, RoHS, ENEC
Unit weight (packaged)	≈ 48.5 g (≈ 86.2 g)	≈ 60 g (≈ 89 g)	≈ 89 g (≈ 156 g)	≈ 110 g (≈ 177 g)	≈ 110 g (≈ 177 g)

Model	AFL-H20-LN, AFL-H20-LP	AFL-H40-LN, AFL-H40-LP
The number of connector pin	20	40
The number of terminal	16 <sup>01)</sup>	32 <sup>02)</sup>
Terminal type	Screwless	Screwless
Terminal pitch	5.0 mm	5.0 mm
Connector for controller side	20-pin Omron (XG4A-2031)	40-pin Hirose (HIF3BA-40PA-2.54DSA)
Input logic	NPN / PNP model	
Indicator	Power indicator: red, operation indicator: blue	
Material	Case, Base: PC	
Approval	CE, RoHS, ENEC	CE, RoHS, ENEC
Unit weight (packaged)	≈ 48.6 g (≈ 86.3 g)	≈ 91 g (≈ 158 g)

01) Four terminals among twenty terminals are used for LED power.

02) Eight terminals among forty terminals are used for LED power or N.C (Not Connected) terminals.

Rated voltage <sup>01)</sup>	Basic model: ≤ 125VDC≒, 125VAC~50/60 Hz Indicator equipped model: ≤ 24VDC≒ ± 10%
Rated current	≤ 1 A
Insulation resistance	≥ 1,000 MΩ (500VDC≒ megger)
Dielectric strength	2,700 VAC ~ 50/60 Hz for 1 minute
Vibration	0.75 mm amplitude at frequency of 10 to 55 Hz (for 1 minute) in each X, Y, Z direction for 2 hours
Vibration (malfunction)	0.75 mm amplitude at frequency of 10 to 55 Hz (for 1 minute) in each X, Y, Z direction for 10 minutes
Shock	150 m/s <sup>2</sup> (≈ 15 G) in each X, Y, Z direction for 3 times
Shock (malfunction)	100 m/s <sup>2</sup> (≈ 10 G) in each X, Y, Z direction for 3 times
Ambient temperature	-15 to 55 °C, storage: -25 to 65 °C (no freezing or condensation)
Ambient humidity	35 to 85 %RH, storage: 35 to 85 %RH (no freezing or condensation)
Protection structure	IP20 (IEC standard)

01) When connecting loads to output part, connect loads of same power type. Connecting loads of different power type may cause safety issues.

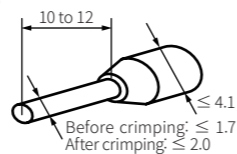
Applicable wire - solid <sup>01)</sup>	∅ 0.6 to 1.25 mm
Applicable wire - stranded <sup>01) 02)</sup>	AWG 22-18 (0.30 to 0.80 mm <sup>2</sup> )
Wire ferrule connection tensile strength	≥ 30 N
Stripped length	8 to 10 mm

01) Use the cable of copper conductor in 60 °C temperature class.

02) When using the stranded wire, use End Sleeve (wire ferrule).

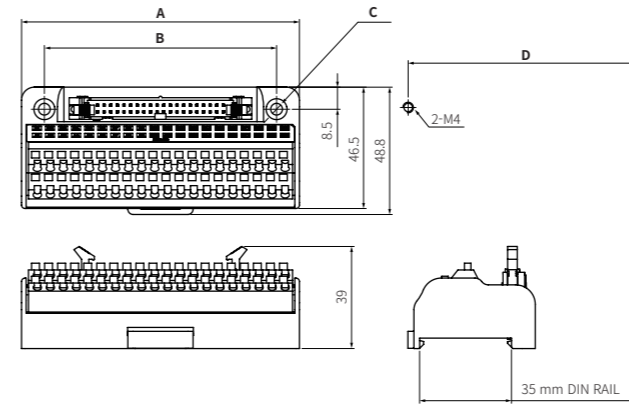
### Wire Ferrule Specifications

- Unit: mm, Use the UL approved wire ferrule.



### Dimensions

- Unit: mm, For the detailed dimensions of the product, follow the Autonics web site.



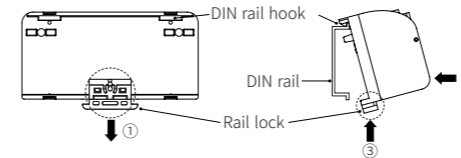
	A	B	C	D
20-pin	57.5	53	2-∅4.2	53
26-pin	72.5	64	2-∅4.2	64
40-pin	106.5	89	2-∅4.5	89
50-pin	131.5	102	2-∅4.5	102

### Installation

#### ■ DIN RAIL

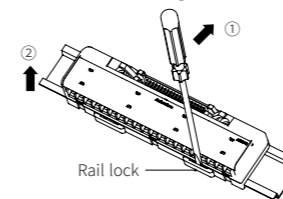
- Mounting

- Pull the Rail lock on the rear of the product to the direction ①.
- Hang DIN rail hook on the rear of the product onto DIN rail.
- Push the product to the direction ②, and push the Rail lock to the direction ③ to fix onto the DIN rail.



- Removing

- Insert a tool such as screwdriver into the hole of Rail lock.
- Push the toll to the direction ① and pull the Rail lock.
- Lift bottom of the product to the direction ② and remove the product from DIN rail.



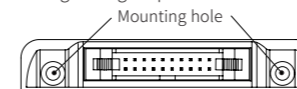
#### ■ Panel

Product with the mounting hole can be installed on panel with screw.

It is recommended to use M4 × 25 mm of spring washer screws.

If you use flat washer, its diameter should be ∅ 8 mm.

Tighten the screw with the tightening torque of 0.7 to 1.0 N · m.



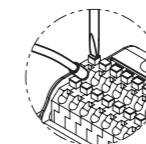
### Wiring

- Connecting

Insert the wire ferrule into the terminal hole.

- Removing

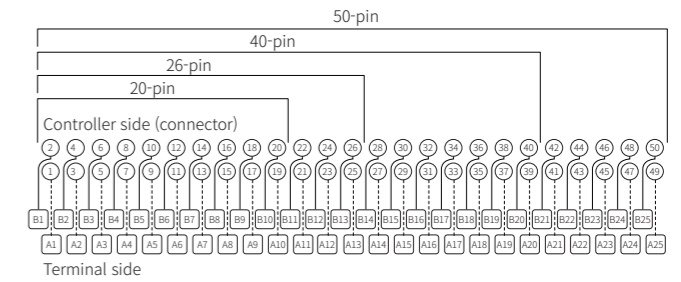
- Put the (-) screwdriver at the groove on the clamp lever and press it.
- Pull the cable to disassemble.



### Wire Connection

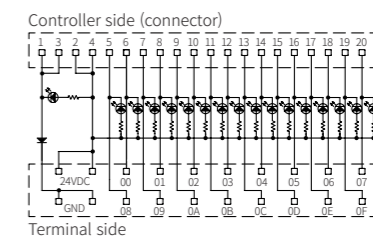
#### ■ Wire connection

- Basic model

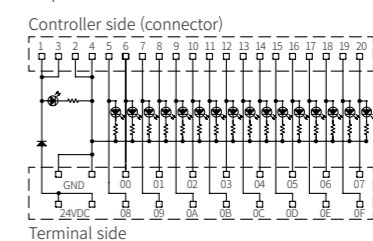


- Indicator equipped model

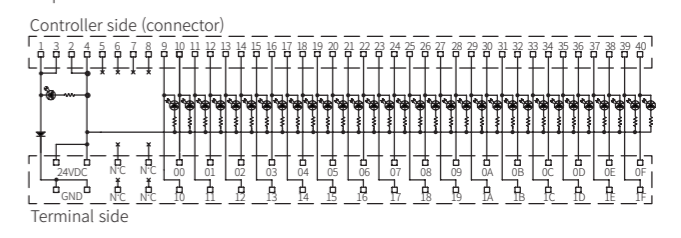
20-pin NPN model



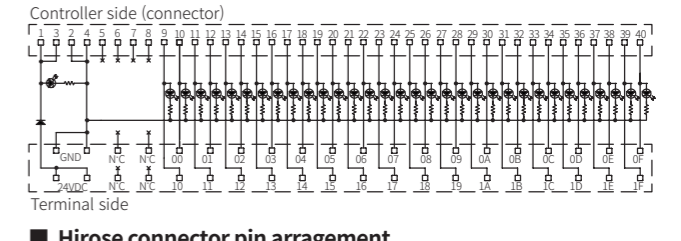
20-pin PNP model



40-pin NPN model

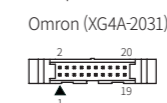


40-pin PNP model

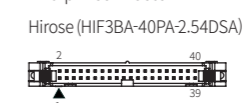


#### ■ Hirose connector pin arrangement

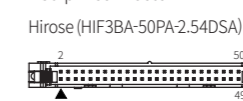
- 20-pin connector



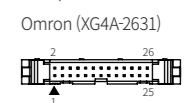
- 40-pin connector



- 50-pin connector



- 26-pin connector



- 50-pin connector

