

# Autonics INTERFACE TERMINAL BLOCK AFL/AFR Series

## MANUAL



Thank you very much for selecting Autonics products.  
For your safety, please read the following before using.

### Caution for your safety

※Please keep these instructions and review them before using this unit.

※Please observe the following for safety.

**Warning** Serious injury may result if instructions are not followed.

**Caution** Product may be damaged, or injury may result if instructions are not followed.

※The following is an explanation of the symbols used in the operation manual.

**Caution:** Injury or danger may occur under special conditions.

### Warning

1. In case of using this unit with machinery (Ex: nuclear power control, medical equipment, ship, vehicle, train, airplane, combustion apparatus, safety device, crime/disaster prevention equipment, etc) which may cause damages to human life or property, it is required to install fail-safe device.

It may cause a fire, human injury or damage to property.

2. Do not repair or check units during power on.

It may cause a fire or electric shock.

3. Do not use this unit in place where there are flammable or explosive gas, humidity, direct ray of the sun, radiant heat, vibration, impact etc.

It may cause a fire or explosion.

4. Do not disassemble and modify this unit. Please contact us if it is required.

It may cause a fire, electric shock, or damage to the product.

### Caution

1. This unit shall not be used outdoors.

It may shorten the life cycle of the product or cause electric shock.

2. Please observe the rated specifications.

It may shorten the life cycle of the product and cause a fire.

3. In cleaning the unit, do not use water or organic solvents. And use dry cloth.

It may cause electric shock or damage to the product.

4. Do not inflow dust or wire dregs into the unit.

It may cause a fire or malfunction.

### Précautions pour la sécurité.

※Après avoir lu ce guide, s'il vous plaît, placez-le dans un lieu où vous pouvez récemment le trouver.

※S'il vous plaît suivre les conseils suivants pour la sécurité.

**Avertissement** L'inaccomplissement des instructions peut provoquer des blessures graves.

**Précaution** Le produit peut être endommagé ou de provoquer des blessures si les consignes ne sont pas respectées.

※La signification des icônes utilisées dans le produit et le manuel sont les suivants:

**Précaution:** Blessure ou danger peuvent se produire dans des conditions particulières.

### Avertissement

1. Utilisez le produit seulement après avoir relié un double dispositif de sécurité pour les instruments qui ont un grand effet pour le corps humain et la propriété, comme sont les dispositifs d'énergie atomique, mets en oeuvre Médecine, de véhicules, Rails, avions, Brûleurs ou produits de sécurité.

L'inaccomplissement peut causer des incendies, lésions personnelles ou dommages à la propriété.

2. Ne pas réparer ou vérifier le produit tout alimenté.

L'inaccomplissement peut provoquer un incendie ou des décharges électriques.

3. Utilisez le produit avec l'environnement comme il est décrit dans le manuel. Évitez le lieu d'émission de gaz corrosifs, gaz inflammables, incorporation température, haute humidité, vibrations, choc, etc.

L'inaccomplissement peut provoquer un incendie ou une explosion.

4. Ne pas démonter et modifier cet appareil. S'il vous plaît nous contacter si cela est nécessaire.

L'inaccomplissement pourrait causer des décharges électriques, incendies, lésions personnelles ou dommages à la propriété.

### Précaution

1. Cette unité ne doit pas être utilisée à l'extérieur.

Peut raccourcir le cycle de vie du produit ou causer un choc électrique.

2. S'il vous plaît respecter les spécifications nominales.

L'inaccomplissement peut raccourcir le cycle de vie du produit et provoquer un incendie.

3. Dans nettoyer l'appareil, n'utilisez pas d'eau ou de solvants organiques. Et utiliser un chiffon sec.

L'inaccomplissement peut donner lieu des décharges électriques ou des dommages au produit.

4. Ne pas laisser de poussière pénétrer l'unité.

Cela pourrait provoquer un incendie ou un dysfonctionnement.

### Ordering information

AF R H 40 L N

Input logic

Operation indicator

Connector

Number of connectors

Connector type

Terminal type

Item

No-mark	None
N	NPN
P	PNP
No-mark	None
L	LED indicator
No-mark	HIF3BA
B	HIF3BB
40	40-pin
50	50-pin
H	Hirose
L	Screwless
R	Rising Clamp
AF	Interface terminal block

※The above specifications are subject to change without notice.

### Specifications

Model	AFL-H40	AFL-H50	AFL-H50B	AFL-H40-LN AFL-H40-LP	AFR-H40	AFR-H50	AFR-H50B	AFR-H40-LN AFR-H40-LP
Rated voltage	Max. 125VDC, 125VAC 50/60Hz			24VDC ±10%	Max. 125VDC, 125VAC 50/60Hz			24VDC ±10%
Rated current	Max. 1A							
Terminal type	Screwless				Rising Clamp			
No. of terminals	40EA	50EA		32EA*1	40EA	50EA		32EA*1
Terminal pitch	5.0mm							
Connector type	HIF3BA		HIF3BB	HIF3BA	HIF3BB		HIF3BA	
Operation indicator	—			Blue LED	—			Blue LED
Applied cable	Solid wire Ø0.3 to Ø1.2mm							
	Stranded wire*2 AWG 22-16(0.30 to 1.25mm <sup>2</sup> )							
Stripped wire length	8 to 10mm				6 to 8mm			
Insulation resistance	Min. 1,000MΩ (at 500VDC megger)							
Dielectric strength	600VAC 50/60Hz for 1 min.							
Vibration	0.75mm amplitude at frequency of 10 to 55Hz(for 1 min.) in each of X, Y, Z directions for 2 hours							
Shock	150m/s <sup>2</sup> (approx. 15G) in each of X, Y, Z directions for 3 times							
Environment	Ambient temp. -15 to 55°C, storage: -25 to 65°C							
	Ambient humi. 35 to 85%RH, storage: 35 to 85%RH							
Material	CASE: PC, BASE: PC							
Tightening torque	— 0.5 to 0.6N-m							
Protection	IP20							
Approval	CE							
Weight*3	Approx. 156g (approx. 89g)	Approx. 177g(approx. 110g)	Approx. 158g (approx. 91g)	Approx. 183g (approx. 116g)	Approx. 210g(approx. 143g)	Approx. 185g (approx. 118g)	Approx. 185g (approx. 118g)	Approx. 185g (approx. 118g)

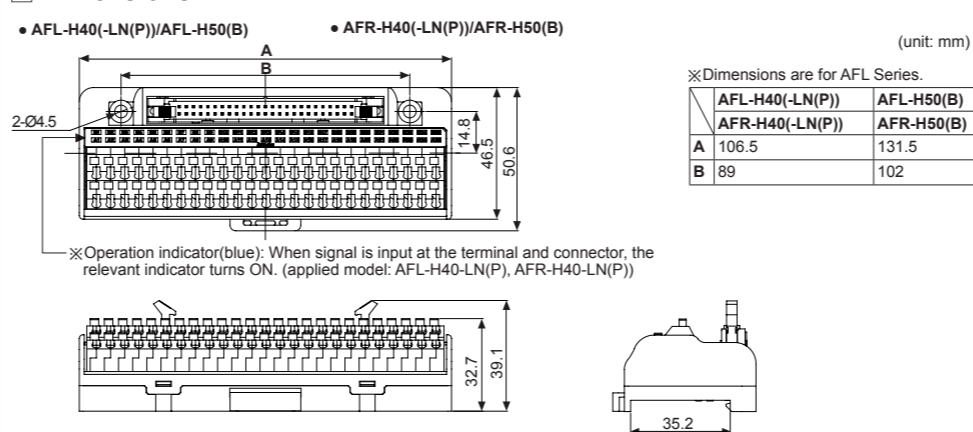
※1: Among 40 terminals, 32 terminals are available for I/O and 8 terminals are LED power and N-C(Not Connect) terminals.

※2: When using stranded wire, use End Sleeve(ferrule terminal) crimp terminals.

※3: The weight is with packaging and the weight in parentheses is only unit weight.

※Environment resistance is rated at no freezing or condensation.

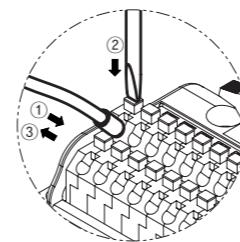
### Dimensions



### How to wire crimp terminal

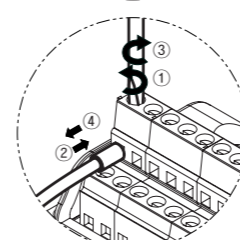
#### 1. For screwless type terminal block, wiring and removing End Sleeve(Ferrule Terminal) crimp terminals

- Wiring
- 1) Push an End Sleeve(ferrule terminal) crimp terminal to the ① direction and it is wired.
- Removing
- 1) Press an upper groove with a flat head driver to the ② direction.
- 2) Remove an End Sleeve(ferrule terminal) crimp terminal to the ③ direction.



#### 2. For rising clamp type terminal block, wiring and removing End Sleeve(ferrule terminal) crimp terminals

- Wiring
- 1) Rotate a screw to the ① direction (CCW) by using a flat head driver at an upper groove.
- 2) Push an End Sleeve(ferrule terminal) crimp terminal to the ② direction.
- 3) Rotate the screw to the ③ direction (CW) by using a flat head driver at an upper groove. Tightening torque should be 0.4 to 0.6N-m.
- Removing
- 1) Rotate a screw to the ① direction (CCW) by using a flat head driver at an upper groove.
- 2) Remove an End Sleeve(ferrule terminal) crimp terminal to the ④ direction.

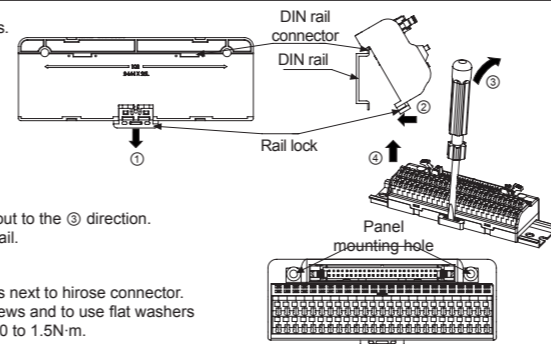


### Installation

※This example figures are AFL Series.

#### 1. Mounting to and removing from DIN rail.

- Mounting
- 1) Push rail lock to the ① direction.
- 2) Hook DIN rail connector onto DIN rail.
- 3) Push the unit down to the ② direction and then push up the rail lock to the unit body.



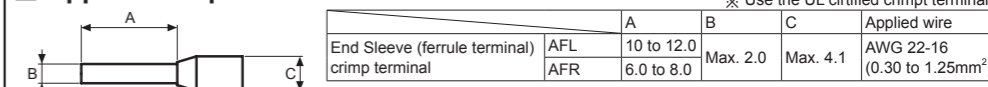
#### • Removing

- 1) Insert a screwdriver into hole of rail lock and pull the lock out to the ③ direction.
- 2) Removing the unit by pulling to the ④ direction from DIN rail.

#### 2. Mounting to panel

- 1) This unit is able to mount on the panel with mounting holes next to Hirose connector.
- 2) It is recommended to use M4×25mm of spring washer screws and to use flat washers which are diameter ø8. The tightening torque should be 1.0 to 1.5N-m.

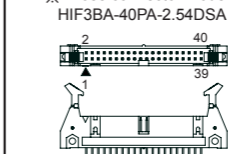
### Applied crimp terminal



### Wire connections

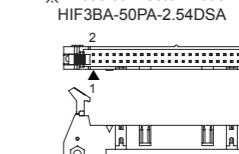
#### • AFL-H40(-LN(P)) / AFR-H40(-LN(P))

※Hirose connector model: HIF3BA-40PA-2.54DSA

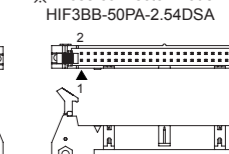


#### • AFL-H50(B) / AFR-H50(B)

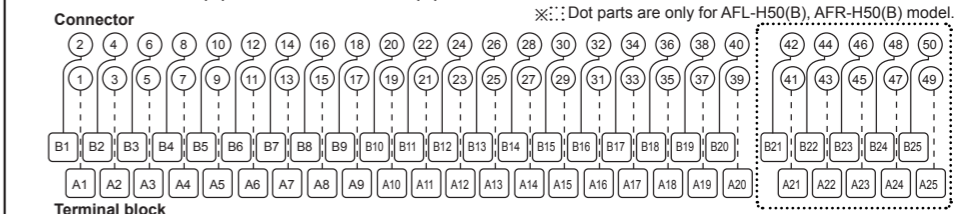
※Hirose connector model: HIF3BA-50PA-2.54DSA



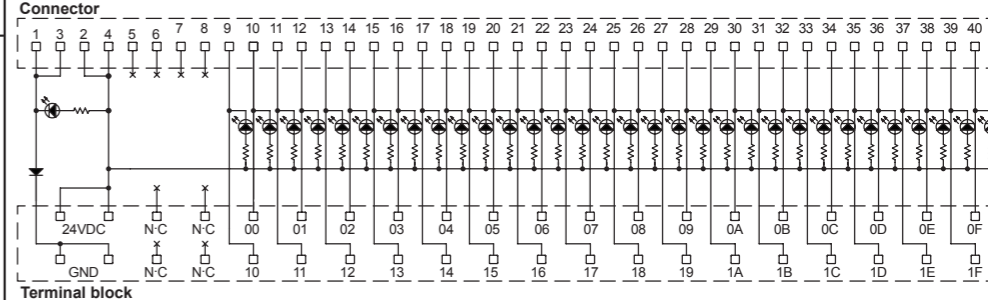
※Hirose connector model: HIF3BB-50PA-2.54DSA



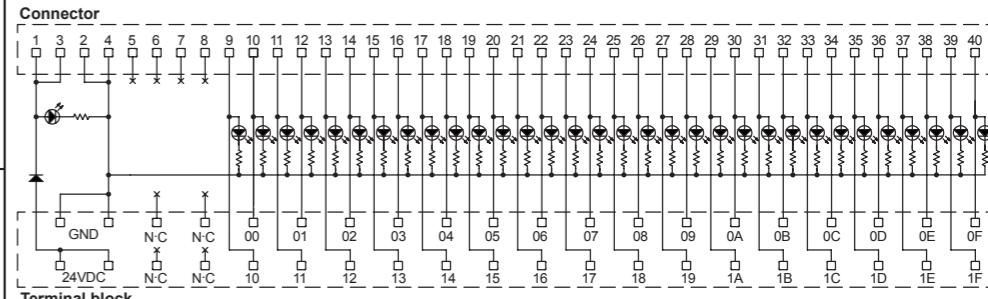
#### • AFL-H40 / AFL-H50(B) / AFR-H40 / AFR-H50(B)



#### • AFL-H40-LN / AFR-H40-LN



#### • AFL-H40-LP / AFR-H40-LP



### Caution for using

1. This unit shall not be used beyond specified temperature or humidity range.
2. Maintain voltage fluctuations in the power supply within specified range.
3. When connecting PLC or other controllers, check the polarity of power before wiring.
4. Use the rated applied wire and use the appropriate crimp terminals for the rated wire.
5. Turn OFF the power supply before wiring or removing connectors.
6. Do not use this unit at below places.
  - ① Place where there is severe vibration or impact.
  - ② Place where strong alkalis or acids are used.
  - ③ Place where there are direct ray of the sun.
  - ④ Place where strong magnetic field or electric noise are generated.
7. Installation environment
  - ① It shall be used indoor
  - ② Altitude Max. 2,000m
  - ③ Pollution Degree 2
  - ④ Installation Category II

※It may cause malfunction if above instructions are not followed.

### Major products

- Photoelectric sensors
- Fiber optic sensors
- Door sensors
- Door side sensors
- Area sensors
- Proximity sensors
- Pressure sensors
- Rotary encoders
- Connector/Sockets
- Switching mode power supplies
- Control switches/Lamps/Buzzers
- I/O Terminal Blocks & Cables
- Stepper motors/drivers/motion controllers
- Graphic/Logic panels
- Field network devices
- Laser marking system(Fiber, CO<sub>2</sub>, Nd:YAG)
- Laser welding/soldering system
- Temperature controllers
- Temperature/Humidity transducers
- SSR/Power controllers
- Counters
- Timers
- Panel meters
- Tachometer/Pulse(Rate) meters
- Display units
- Sensor controllers

**Autonics Corporation**  
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