

Sensor Connector Terminal Block



AFE Series PRODUCT MANUAL

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

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

Features

- Save installation time and work with Autonics CNE series sensor connectors
- Wire stripping and tools not required
- Compact, space-saving design
- LED Operation status indicator
- DIN rail mount and screw mount installation
- Switch between NPN and PNP input with switch

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.
- 04. Do not disassemble or modify the unit.**
Failure to follow this instruction may result in fire.

⚠ 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 a dry cloth to clean the unit, and do not use water or organic solvent.**
Failure to follow this instruction may result in fire.
- 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.
- 04. Do not use the product when a screw of terminal is loosened.**
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.
- Power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
- Check setting of the NPN/PNP selection switch, and use the proper type of product for the setting.
Failure to follow this instruction may result in shortening the life cycle of the product or malfunction.
- 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

- Sensor connector wire mount plug (CNE-P04-□)
- I/O cable CH/CO Series

Ordering Information

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

AFE ① - ② ③ - ④ ⑤ ⑥

① Connector type for primary

4: Sensor connector 4-pin socket

② Connector type for secondary

H: Hirose connector

③ Number of connector

20: 20-pin

40: 40-pin

④ Number of sensor connectors

16: 16-connector

32: 32-connector

⑤ Operation indicator

L: Supported

⑥ Case shape

F: Full case integral type

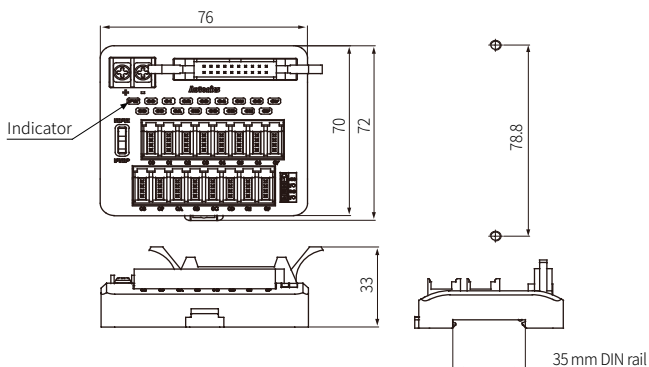
Specifications

	AFE4-H20-16LF	AFE4-H40-32LF
No. of connector pins	20	40
No. of sensor connectors	16	32
Connector for controller side	20-pin Hirose (HIF3BA-20PA-2.54DSA)	40-pin Hirose (HIF3BA-40PA-2.54DSA)
Indicator	Power indicator: red, operation and disconnection indicator: blue	
Material	CASE, BASE: PC	
Approval	CE UKCA ENEC ETL	
Unit weight (Packaged)	≈ 69 g (≈ 121 g)	≈ 119 g (≈ 203 g)
Voltage	12-24 VDC ≒ ±10%	
Current	≤ 1 A ⁰¹⁾	
Insulation resistance	≥ 1,000 MΩ (500 VDC ≒ megger)	
Input logic	NPN/PNP switch	
Dielectric strength	600 VAC ~ 50/60 Hz for 1 minute	
Vibration	0.75 mm amplitude at frequency of 10 to 55 Hz in each X, Y, Z direction for 1 hour	
Vibration (malfunction)	0.75 mm amplitude at frequency of 10 to 55 Hz in each X, Y, Z direction for 10 minutes	
Shock	150 m/s ² (≈ 15 G) in each X, Y, Z direction for 3 times	
Shock (malfunction)	100 m/s ² (≈ 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)	
<small>01) It includes LED current of terminal block.</small>		
Tightening torque	0.7 to 0.8 N · m	

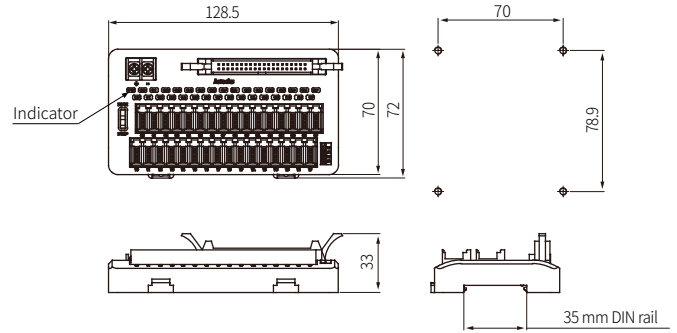
Dimensions

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

■ AFE4-H20-16LF



■ AFE4-H40-32LF

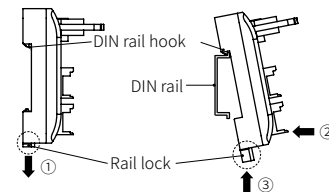


Installation

■ DIN RAIL

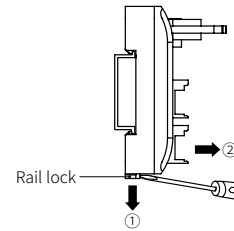
- Mounting

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



- Removing

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



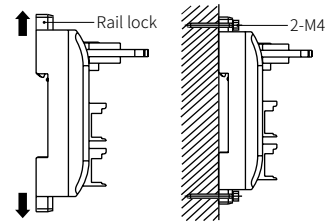
■ Panel

Using the rail lock on the top/bottom, product can be installed on panel with screw.

It is recommended to use M4×15 mm of spring washer screws.

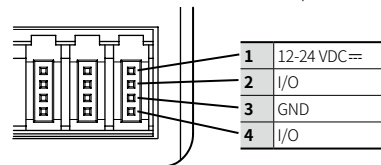
If you use flat washer, its diameter should be Ø 6 mm.

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



Sensor Connector Wire Connection

Pin 2 and 4 are connected inside of the product.

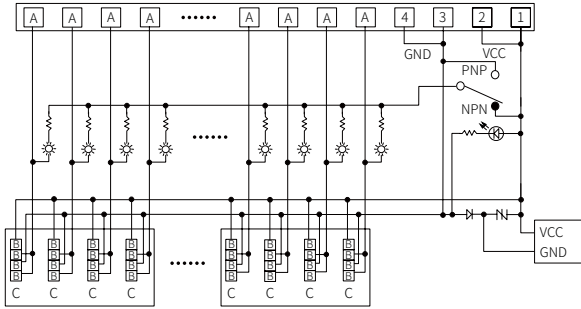


Wire Connection

■ Wire connection

- AFE4-H20-16LF

Controller side (connector)

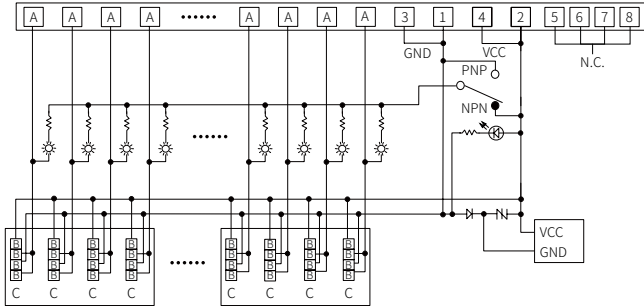


Terminal side

A	Pin	20	18	16	14	12	10	8	6	4	3	2	1				
B	Sensor connector	V	V	V	V	V	V	V	V	V	V	V	V				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
C	Output	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F

- AFE4-H40-32LF

Controller side (connector)



Terminal side

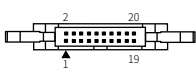
A	Pin	40	38	36	34	32	30	28	26	24	22	20	18	16	14	12	10
B	Sensor connector	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
C	Output	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F

A	Pin	39	37	35	33	31	29	27	25	23	21	19	17	15	13	11	9
B	Sensor connector	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
		17	18	19	20	21	22	23	24	25	29	27	28	29	30	31	32
		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
C	Output	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F

■ Hirose connector pin arrangement

- 20-pin connector

Hirose (HIF3BA-20PA-2.54DSA)



- 40-pin connector

Hirose (HIF3BA-40PA-2.54DSA)

