

Sensor Connector Terminal Block

■ Features

- Quicker and easier wiring with sensor connectors [wire mount plug (CNE-P□-□, sold separately)]
- Wire stripping and other tools not required
- Compact, space-saving design
- Easily check operation status and cable connection with LED light
- 2 mounting methods (DIN rail, screw mount)
- Choose NPN or PNP input with NPN/PNP selection switch

※ Autonics sensor connector wire plug (CNE Series) is recommended. Please refer to page D-2 to 5.

※ Autonics I/O cable CJ Series is recommended. Please refer to page C-52.



⚠ Please read "Caution for your safety" in operation manual before using.

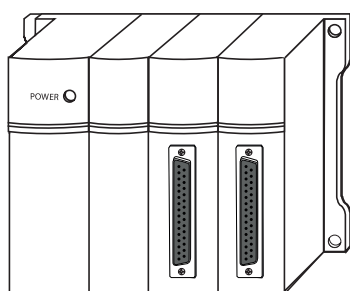


■ Model

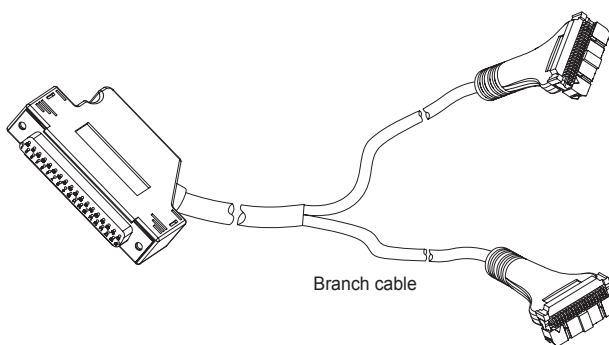
| Model | Item | Connector type for primary | For secondary | | No. of sensor connectors | LED | Case |
|---------------|--------------------------|-------------------------------|------------------|-----------------------|--------------------------|-----|----------------|
| | | | Connector type | No. of connector pins | | | |
| AFE4-H20-16LF | Interface terminal block | Sensor connector 4-pin socket | Hirose connector | 20-pin | 16 EA | Yes | Full case type |
| AFE4-H40-32LF | | | | 40-pin | 32 EA | | |

■ Example Of Sensor Connector Terminal Block Connection

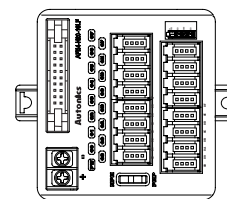
◎ Connection AFE4-H20-16LF and 40-point I/O module PLC using branch cable



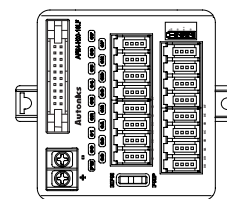
PLC I/O Unit



Branch cable



AFE4-H20-16LF




AFE4-H20-16LF

- Control Switches
 - Ø22/25
 - Ø30
 - Ø30
- Round Push Button Switches
- Square Push Button Switches
- Selector Switches
- Key Selector Switches
- Double Push Button Switches
- Mushroom-head Push Button Switches
- Emergency Switches
- Pilot Lights
- Accessories
- Buzzers
- Modular Terminal Blocks
 - TUM(Spring Type)
 - TUW1(Dual Spring Type)
 - TM(Manual Type)
- I/O Terminal Blocks
 - AFS(Interface Terminal Block)
 - AFJ/AFR(Interface Terminal Block)
 - ACS(Common Terminal Block)
 - AFE(Sensor Connector Terminal Block)
 - ABS(Relay Terminal Block)
 - ABL(Relay Terminal Block)
 - Power Relay
- I/O Cables
 - MITUBISHI
 - LSIS
 - Autonics
 - RS Automation
 - YOKOGAWA
 - FUJI
 - KDT
 - OMRON
 - TELEMECANIQUE
 - For SERVO
 - Open Type Cables
 - Cable Appearance
- Remote I/O Terminal Blocks
 - ARD(DeviceNet Digital Standard Terminal Type)
 - ARD(DeviceNet Digital Sensor Connector Type)
 - ARD(DeviceNet Analog Standard Terminal Type)
 - ARM(Modbus Digital Sensor Connector Type)
- Others
 - Sensor Connectors
 - Sockets
 - Sensor Distribution Boxes
 - Valve Plugs
 - Thumbwheel Switches

AFE Series

Specifications

| Model | AFE4-H20-16LF | | AFE4-H40-32LF |
|--------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-----------------------------|
| Power supply | 12-24VDC | | |
| Allowable voltage range | 90 to 110% of rated voltage | | |
| Rated current | Max. 1A ※ ¹ | | |
| No. of connector pins | 20-pin | 40-pin | |
| No. of sensor connectors | 16 EA | 32 EA | |
| Insulation resistance | Min. 1,000MΩ (at 500VDC megger) | | |
| Dielectric strength | 600VAC 50/60Hz for 1 min. | | |
| Vibration | Mechanical | 0.75mm amplitude at frequency of 10 to 55 Hz (for 1 min.) in each X, Y, Z direction for 1 hour | |
| | Malfunction | 0.75mm amplitude at frequency of 10 to 55 Hz (for 1 min.) in each X, Y, Z direction for 10 min. | |
| Shock | Mechanical | 150m/s ² (15G) in each X, Y, Z direction for 3 times | |
| | Malfunction | 100m/s ² (10G) in each X, Y, Z direction for 3 times | |
| Environment | Ambient temperature | -15 to 55°C, storage: -25 to 65°C | |
| | Ambient humidity | 35 to 85%RH, storage: 35 to 85%RH | |
| Material | CASE, BASE: PC | | |
| Tightening torque | 7.14 to 8.16 kgf·cm (0.7 to 0.8 N·m) | | |
| Approval |  | | |
| Weight※ ² | Approx. 121g (approx. 69g) | | Approx. 203g (approx. 119g) |

※1: The rated current includes LED current of terminal block.

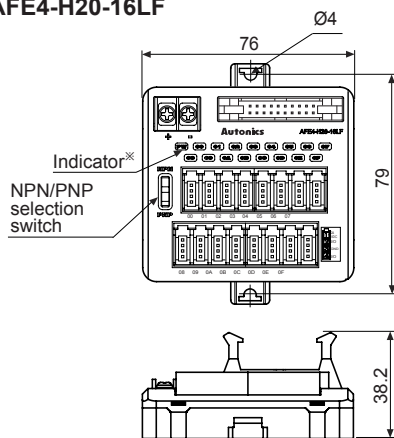
※2: The weight includes packaging. The weight in parentheses is for unit only.

※Environment resistance is rated at no freezing or condensation.

Dimensions

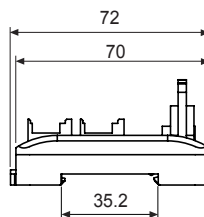
• AFE4-H20-16LF

(unit: mm)

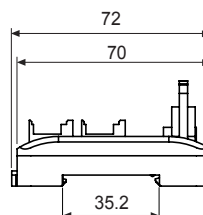
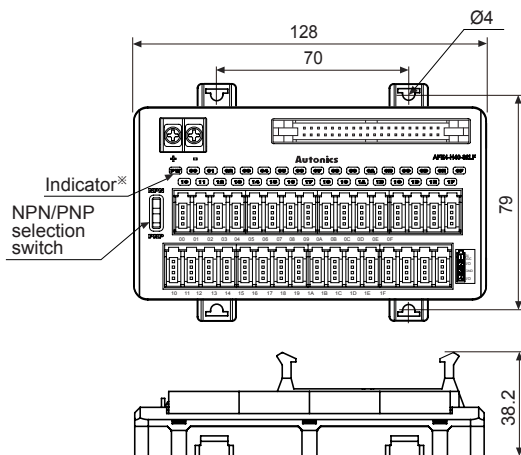


※Factory default of NPN/PNP selection switch is NPN.

※Indicator (PW: red LED, operation and disconnection: blue LED)

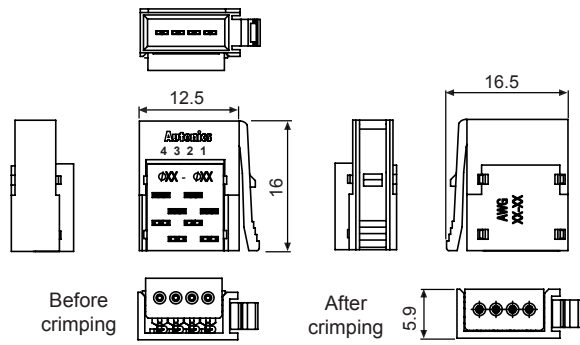


• AFE4-H40-32LF



Sensor Connector Terminal Block

■ Sensor Connector Wire Mount Plug Specifications



(unit: mm)

※ Sensor connector wire mount plug is sold separately. Please refer to page D-2 to 5.

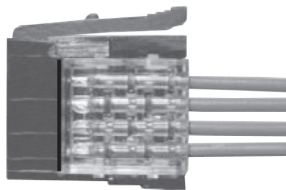
● Cover color and wire specifications for sensor connector wire mount plug

| Model | Cover color | Applicable wire | |
|------------|-------------------|----------------------------------------------|---------------------|
| | | Normal cross section area (mm ²) | Cover diameter (mm) |
| CNE-P04-WT | Transparent (WT) | 0.05 to 0.08 (AWG30 to 28) | 0.6 to 0.8 |
| CNE-P04-YG | Yellow-Green (YG) | | 0.8 to 1.0 |
| CNE-P04-VT | Violet (VT) | | 1.0 to 1.2 |
| CNE-P04-RE | Red (RE) | 0.13 to 0.21 (AWG26 to 24) | 0.8 to 1.0 |
| CNE-P04-YW | Yellow (YW) | | 1.0 to 1.2 |
| CNE-P04-OG | Orange (OG) | | 1.2 to 1.6 |
| CNE-P04-GN | Green (GN) | 0.32 to 0.5 (AWG22 to 20) | 1.0 to 1.2 |
| CNE-P04-BL | Blue (BL) | | 1.2 to 1.6 |
| CNE-P04-GY | Gray (GY) | | 1.6 to 2.0 |

■ How To Crimp Sensor Connector Wire Plug

1) Inserting the wires

- Check the pin numbers and insert the wires into the according holes.
- Check that the wires are fully inserted to the end of the cover.



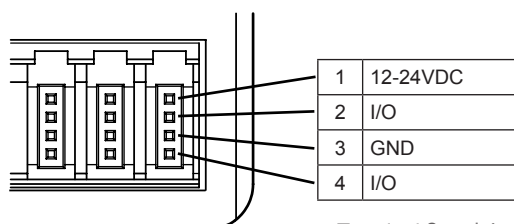
2) Crimping

- Insert the cover into the body with a jig (press fitting plier, etc).

※ Apply pressure with the jig from the side, as shown in the figure |



■ Terminal Arrangement Of Sensor Connector Socket



※ Terminal 2 and 4 are connected inside.

Control Switches

Ø22/25

Ø30

□30

Round Push Button Switches

Square Push Button Switches

Selector Switches

Key Selector Switches

Double Push Button Switches

Mushroom-head Push Button Switches

Emergency Switches

Pilot Lights

Accessories

Buzzers

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ARD(DeviceNet Digital Standard Terminal Type)

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ARM(Modbus Digital Sensor Connector Type)

Others

Sensor Connectors

Sockets

Sensor Distribution Boxes

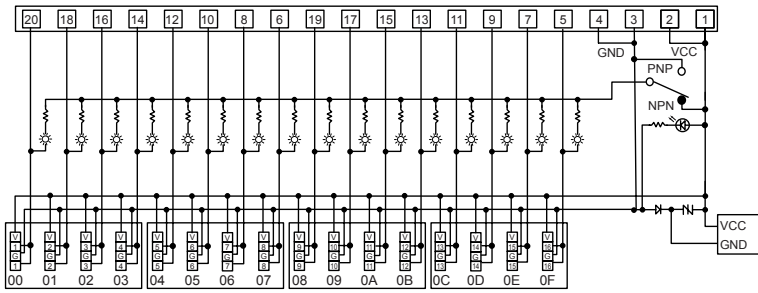
Valve Plugs

Thumbwheel Switches

AFE Series

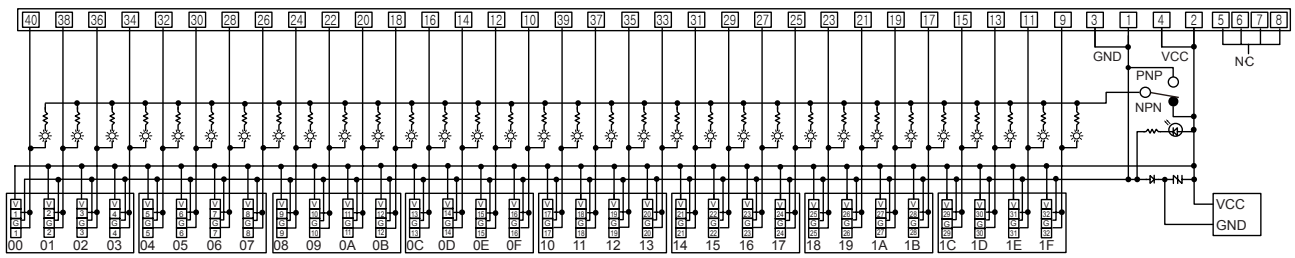
Connections

AFE4-H20-16LF



※Hirose connector Model : HIF3BA-20PA-2.54DSA

AFE4-H40-32LF



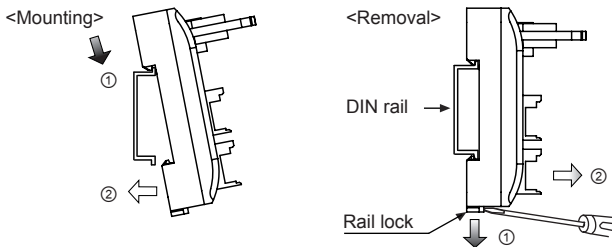
※Hirose connector Model : HIF3BA-40PA-2.54DSA

Installation

Mounting and removal at DIN rail

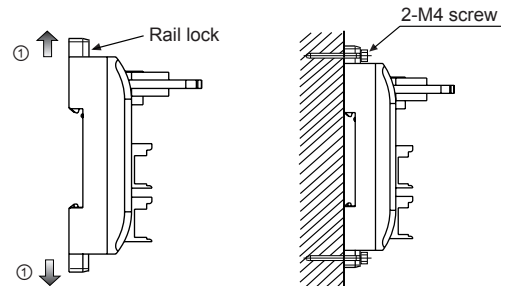
- Mounting
 - 1) Pull the rail lock towards direction ①.
 - 2) Attach the DIN rail connection hook onto the DIN rail.
 - 3) Push the unit towards direction ②, then push the rail lock in to lock into position.

- Removal
 - 1) Insert a screwdriver into the rail lock hole and pull it towards direction ①.
 - 2) Remove the unit by pulling the unit towards direction ②.



Mounting with screws

- 1) The unit can be mounted on panels using the mounting holes on the rear rail locks.
- 2) M4×15mm spring washer screws are recommended for installation. When using flat washers, use Ø6mm diameter washers. The tightening torque should be between 7.14 and 10.2 kgf·cm (0.7 to 1.0N·m).



Caution During Use

1. Do not use the product outside of rated temperature and humidity.
2. Check to make sure that voltage fluctuation in the power supply is within the rated range.
3. When connecting PLC or other controllers, check the power polarity before wiring.
4. Use AWG 16 (1.25mm²) wire for power.
5. Do not use NPN output sensor and PNP output sensor simultaneously..
6. Do not use the unit in the following environments.
 - ① Environments with high vibration or shock.
 - ② Environments where strong alkalis or acids are used.
 - ③ Environments with exposure to direct sunlight.
 - ④ Near machinery which produce strong magnetic force or electric noise
7. In case of 24VDC signal input, isolated and limited voltage/current or Class2 source should be provided for power supply.
8. This unit may be used in the following environments.
 - ① It shall be used indoor.
 - ② Altitude up to 2,000m
 - ③ Pollution degree 2
 - ④ Installation category II