

# AnyWireASLINK System Products Guide

## ASLINKAMP [Fiber Amplifier (with 7-segment Display)]

### L□-F1011

#### ■Note on use

For setting addresses and other parameters, ARW-04 (Ver. 04-1.01 or later version) is required. Prepare the Address Writer separately.

#### [Notes on Safety]

Precautions that must be observed in order to use this system safely are indicated as shown below. You must observe these precautions.

**WARNING** A WARNING indicates a potentially hazardous situation which, if not handled correctly, could result in death or serious injury.

**CAUTION** A CAUTION indicates a potentially hazardous situation which, if not handled correctly, may result in personal injury or property damage.

**WARNING**

- System Safety  
This system is intended for general industrial applications. It does not have functions for supporting applications requiring higher levels of safety such as safety-related devices or accident prevention systems. The product must not be used for these purposes.
- Always turn off the power in installing or replacing the system.
- Prolonged continuous flow of a rated load current or higher or a transit current due to load short-circuit, etc., in the hybrid unit including the output unit and the output circuit may result in smoking or firing. An external safety device such as a fuse must be installed.

**CAUTION**

- System power supply  
Use a stable, 24V DC power supply. Use of an unstable power supply may cause problems with the system.
- Separately route high-voltage and power cables  
Although the AnyWireASLINK has a high noise margin, install the transmission line and I/O cables away from high-voltage and power cables.
- Connectors and terminals
  - Consider the length and securing method of cables so that the cables and connectors would not be subjected to any stress and, even if they are under stress, they would not become loose.
  - Make sure to prevent any metal objects from getting inside the connectors or the terminal blocks.
  - Short-circuits caused by metal objects or mis-wiring are likely to damage the device.
- Do not impose any external loads on the units. Doing so may cause a failure.
- Do not disconnect or reconnect between the transmission line and slave units when the transmission line is active. A malfunction may occur.
- Use the AnyWireASLINK within the range of the specifications and conditions shown below.

#### [Warranty]

##### ■ Warranty period

The warranty on the delivered Product shall continue to be effective for one (1) year after the delivery thereof to a location as designated by the original owner.

##### ■ Scope of warranty

Should a defect occur in any part of the Product during the foregoing warranty period when it is used normally in accordance with the specifications described in this Products Guide, the Company shall replace or repair the defect free of charge, except when it arises as a result of:

- [1] Misuse or abuse of the Product by the owner;
- [2] Fault caused by other than the delivered Product;
- [3] The unauthorized modification or repair of the Product by any person other than the Company's personnel;
- [4] Any unusual force of nature, disaster or other cause beyond the Company's control.

The term "warranty," as used herein, refers to the warranty applicable to the delivered product alone. The Company shall not be liable for consequential or incidental damages resulting from any malfunction.

##### ■ Repair at cost

After the expiration of the warranty period, the owner shall be responsible for all costs and expenses incurred for the troubleshooting and repair of the Product. Even during the warranty term, the Company shall repair any defects arising from causes other than within the scope of the warranty as specified above, at the owner's cost.

##### ■ Changes in the product specifications and the descriptions in the manual

The descriptions in this manual may be subject to change without notice.

#### [Type]

##### Bit operation

LA-F1011	Fiber amplifier	1CH (Master unit)
LB-F1011	(with 7-segment display)	1CH (Slave unit)

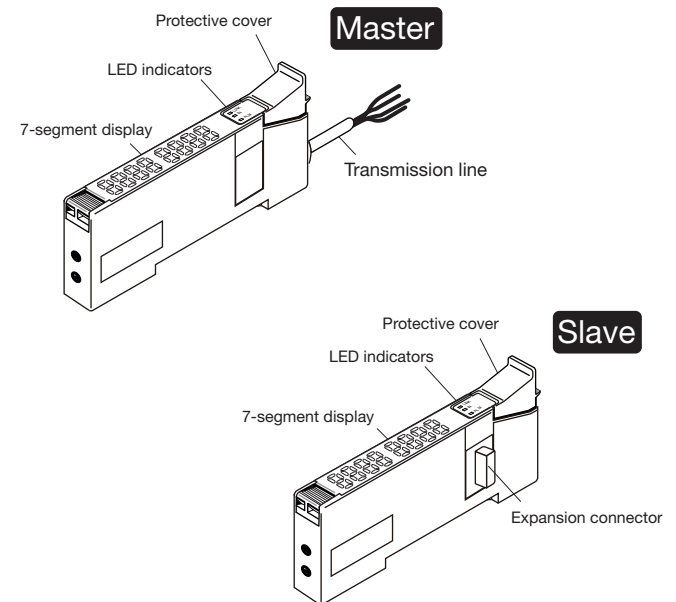
#### [Functions]

Model	ASLINKAMP 4-wire type (isolated)
Unit to connect (example)	General-purpose fiber unit
Features	Sensitivity adjustment (threshold)
	Hysteresis
	Light ON/Dark ON
	Light receiving level indication changeover
	Light emitting power
	Delay timer
	One-shot
	Automatic address/parameter setting
	7-segment display orientation
	Sensing level drop
	Slave unit voltage drop

#### [Included in the Package]

LA-F1011 (Master)	Amplifier body ... 1
LB-F1011 (Slave)	Amplifier body ... 1

#### [Name of Each Part]

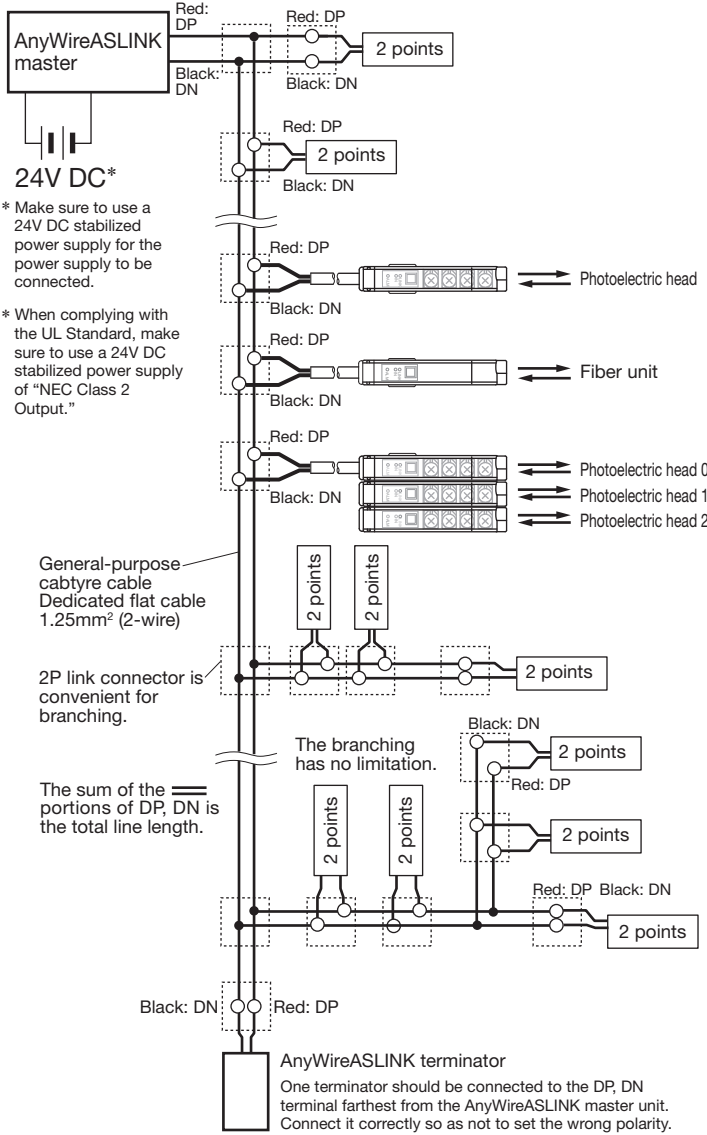


[How to Connect AnyWireASLINK]

The AnyWireASLINK system enables selection of 2-wire type slave unit or 4-wire type slave unit depending on load current. When the load current is small, simplified wiring is enabled by using the 2-wire type (non-isolated) slave unit, without necessity of local power supply. In the case where load concentration is expected, or to give priority to the number of units to connect, the 4-wire type (isolated) slave unit that supports local power supply can be connected in combination with the 2-wire type. For input or driving load with an external power supply, be sure to use the 4-wire type (isolated) slave unit.

[System Configuration Example]

■ Connection with 2-wire (non-isolated) terminals only



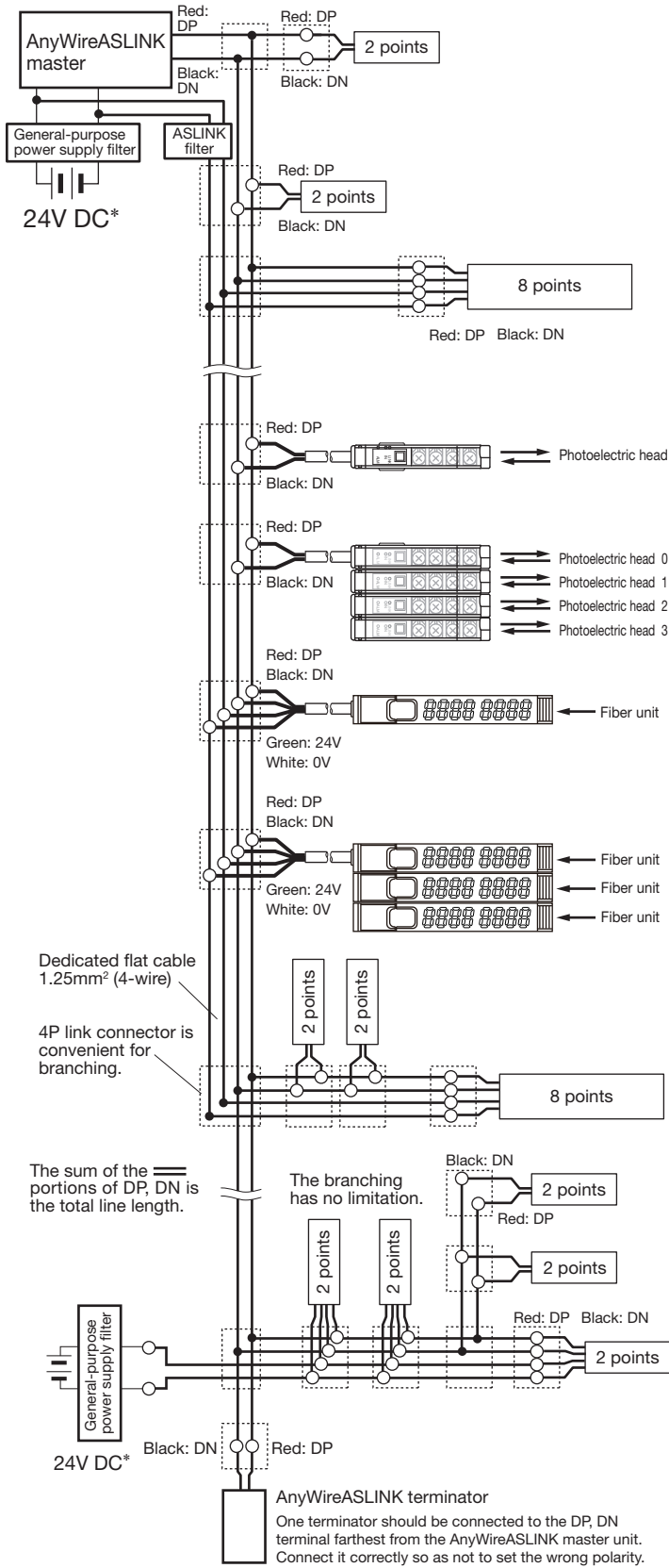
■ Relationship between the size and length of the transmission line and the supply current (Table 1)

Size of the transmission line (DP, DN)	Supply current on the transmission line (DP, DN)		
	Total length: 50m or less	Total length: Over 50m, no longer than 100m	Total length: Over 100m, no longer than 200m
1.25mm <sup>2</sup>	MAX 2A	MAX 1A	MAX 0.5A
0.75mm <sup>2</sup>	MAX 1.2A	MAX 0.6A	MAX 0.3A
0.5mm <sup>2</sup>	MAX 0.8A	MAX 0.4A	MAX 0.2A



- Refer to Table 1 so that the size and length of the transmission line and the allowable supply current lie within an appropriate range.
- Connect the same symbols (DP, DN) correctly between the AnyWireASLINK master unit and each device.
- The branching length or branch number has no limitation.
- Include the length of the cable provided with the terminal in the "total line length."
- Connect the terminator (with polarity) on the transmission line terminal farthest from the AnyWireASLINK master unit.

■ Example of mixed installation with 2-wire (non-isolated) and 4-wire (isolated) terminals



To connect loads (e.g. I/O ports) that are controlled with a power supply other than the one used for the AnyWireASLINK system, always use a 4-wire (isolated) terminal. Otherwise, malfunction may be caused.

[Notes on Combined Use of 4-Wire (Isolated) Terminal]

If the total length of the sections where all the DP, DN, 24V, and 0V lines run in parallel in the power supply system is more than 50m, connect an ASLINK filter (Type ANF-01) or a filter manufactured by COSEL Co., Ltd. (Type EAC-06-472) in series to the 24V and 0V lines at a position where these four lines start running in parallel.

This will improve noise resistance, suppress the adverse effects of crosstalk caused by transmitted signals, and stabilize signals.

The above filters must be inserted regardless of whether power is supplied to all terminals collectively from the power supply for the master or power is supplied to each terminal individually from their local power supply.

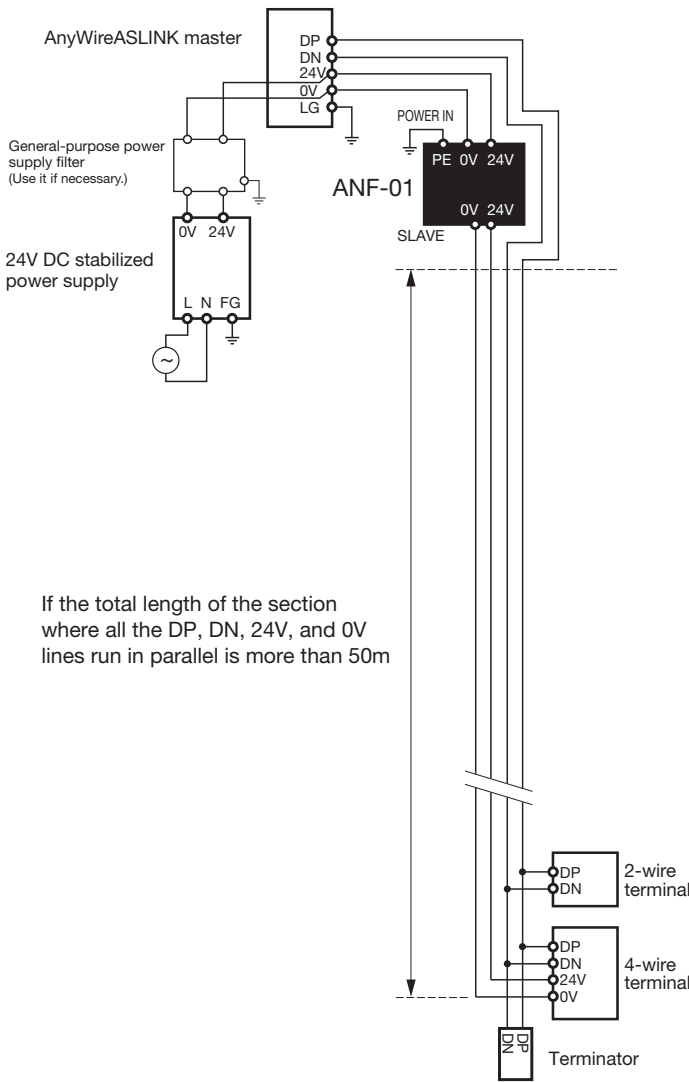
Insert the “ASLINK filter [Type ANF-01]” regardless of installation method and distance when complying with CE Standard.

Filter allowable current

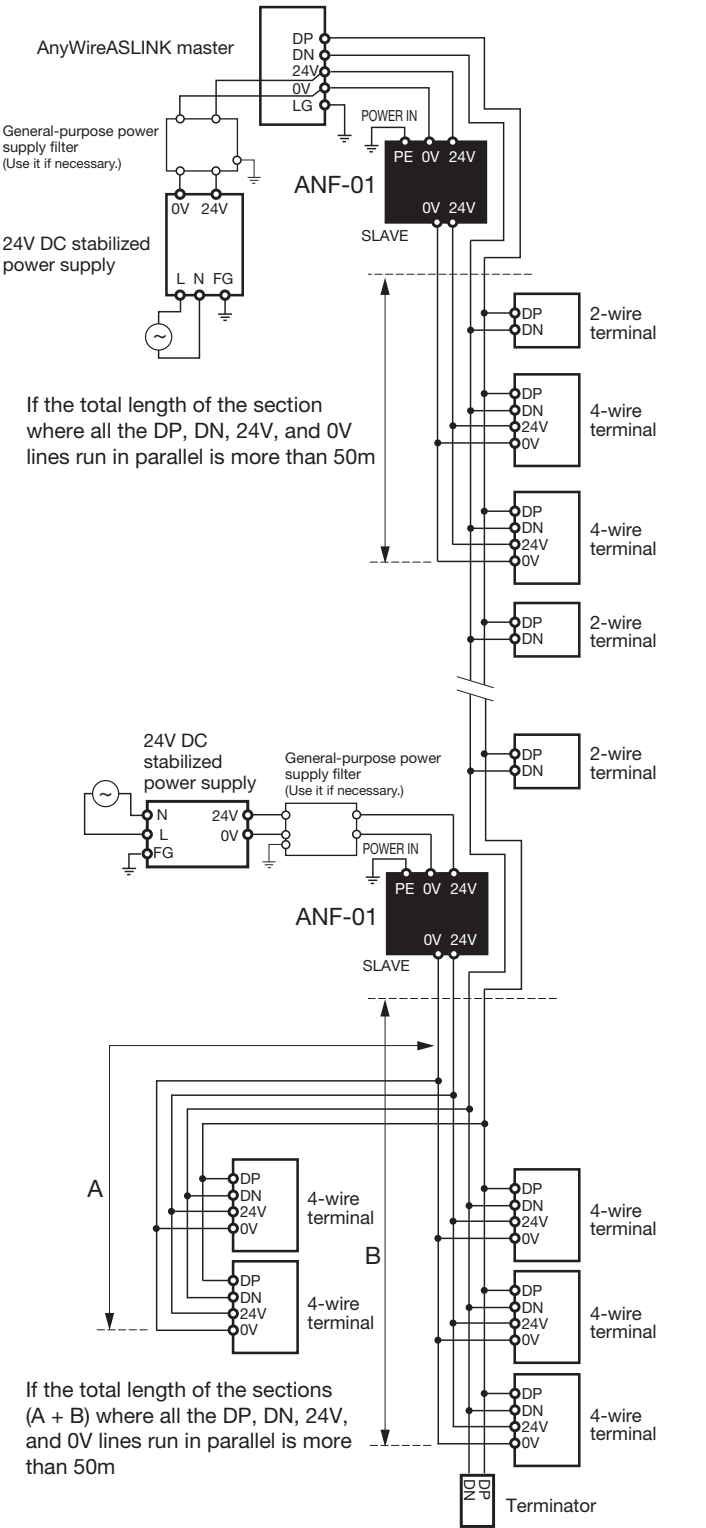
Product	Type	Allowable power current
ASLINK filter	ANF-01	MAX 5A/24V DC
Filter of COSEL Co., Ltd.	EAC-06-472	MAX 6A/24V DC

AnyWire Type: ANF-01 Connection example

① Power supply to the entire system



② Local power supply/branching

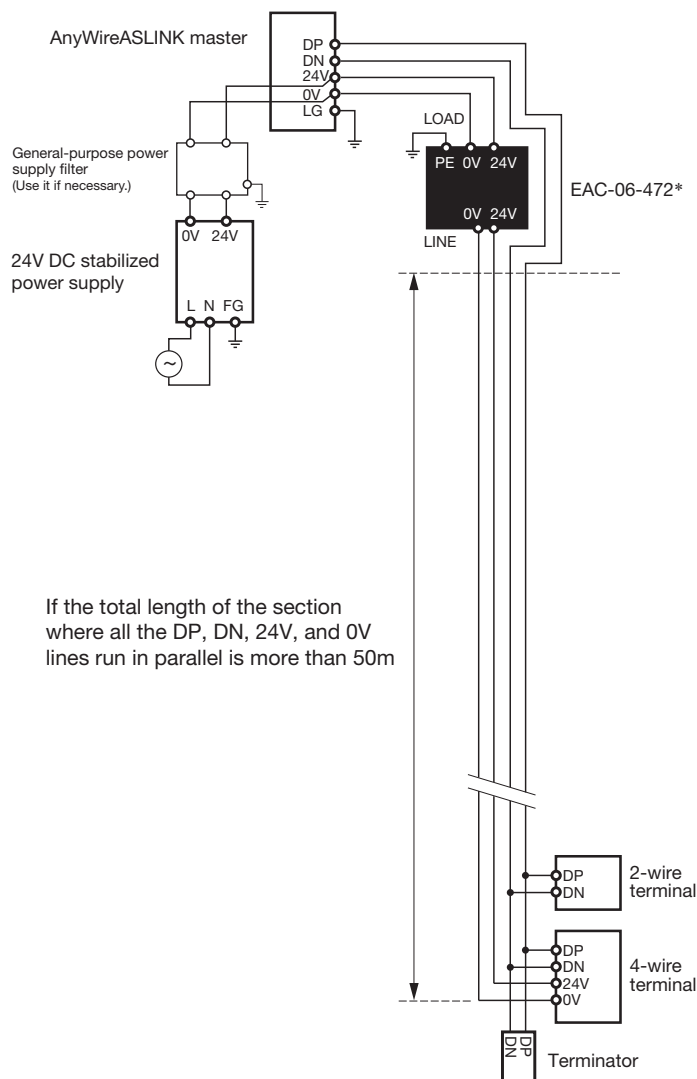


Filter representation in the drawing

ANF-01

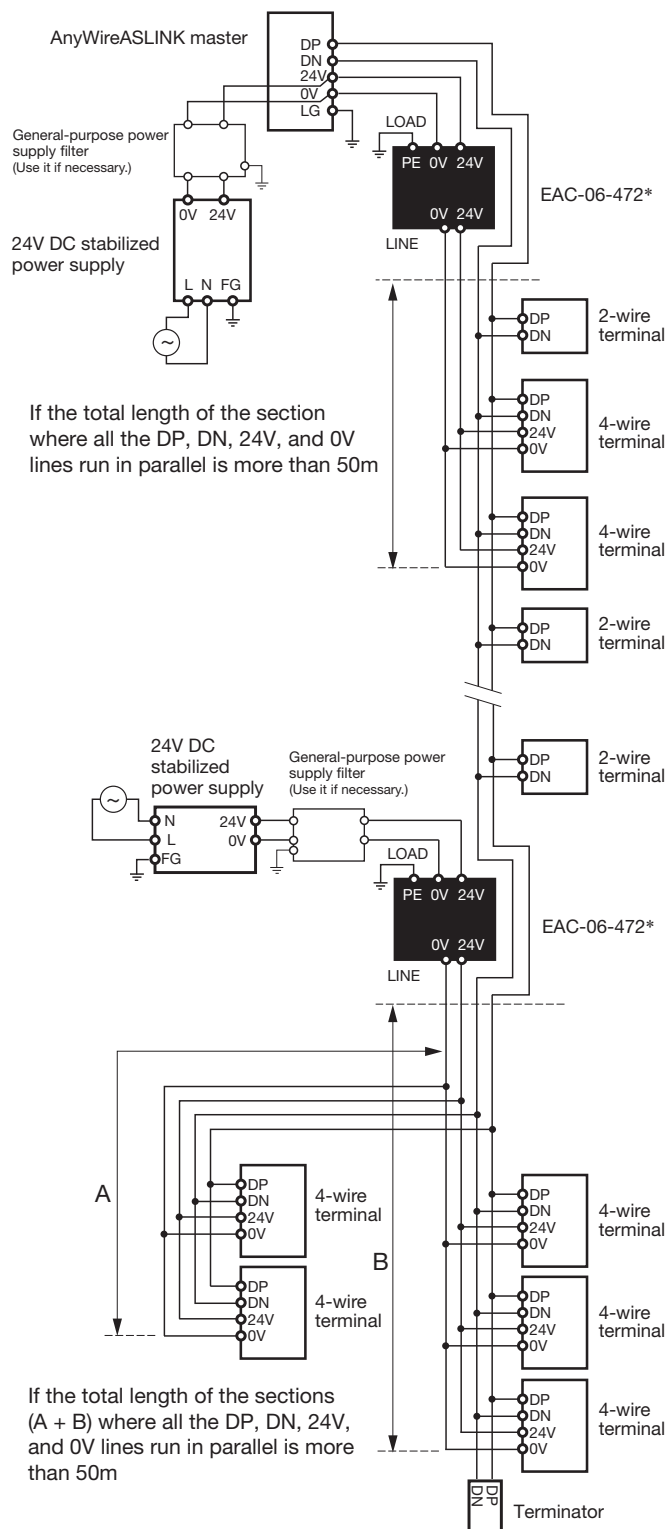
For further information on ANF-01, refer to the product guide on ANF-01.

① Power supply to the entire system



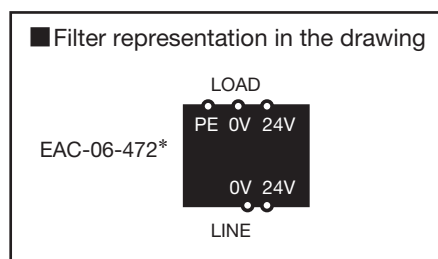
\* When using this filter, please be careful of the positions of LOAD and LINE.

② Local power supply/branching



\* When using this filter, please be careful of the positions of LOAD and LINE.

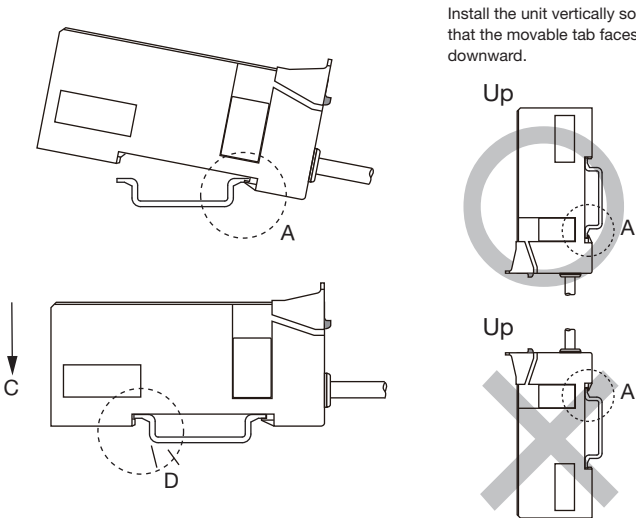
■ Filter representation in the drawing



[Installation]

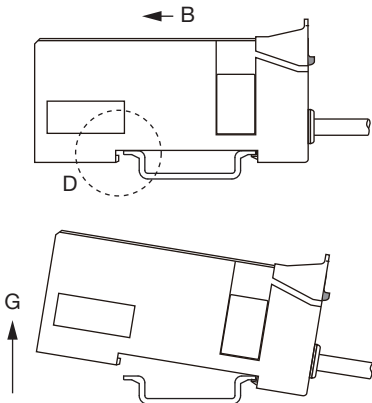
The installation and removal methods are the same for master and slave units. **Master** **Slave**

Hook the movable tab A on the DIN rail.  
Push the unit in the direction of C until the fixed tab D on the opposite side clicks.



[Removal]

Push the unit in the direction of B and free the fixed tab D from the DIN rail.  
While keeping the unit pushed, pull it up in the direction of G to lift the body and take it off the rail.



[Installation Location]

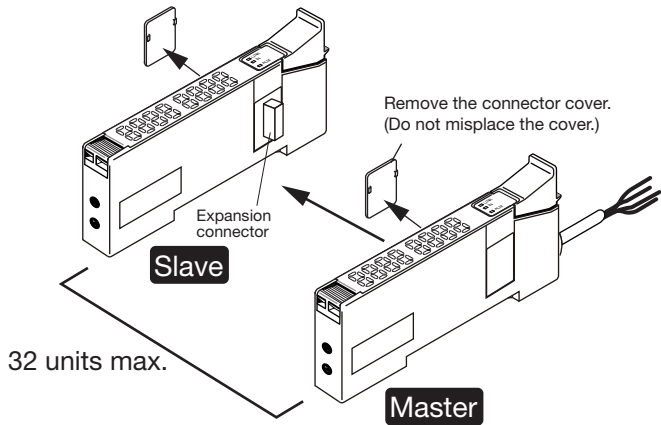
- Locations where this product is not directly subject to vibration or shock
- Locations where this product is not directly exposed to dust
- Locations where this product is not directly exposed to conductors, such as metal chips or spatters
- Locations without condensation
- Locations where the atmosphere is free of corrosive gases, flammable gases, and sulfur
- Locations far from high-voltage or high-current cables
- Locations far from servos, inverters, and other cables and controllers that generate high-frequency noise

[Notes on the Use]

To connect the unit to the transmission line or add a new slave unit to the master unit, always stop the transmission signal.  
If the connection is made with a live wire, the unit may stop working by interpreting the chattering caused during the connection as an error.

[Expansion]

Slave units can be additionally connected to the master unit.  
Remove the connector cover on the master unit and connect a slave unit to the built-in expansion connector.



Up to 31 units of LB-F1011 can be connected to one unit of LA-F1011.

Specifications of LA-F1011 and LB-F1011 are as follows:

■ Current consumption

LA-F1011	DP-DN	1.9mA
LB-F1011 (common)	24V-0V	25mA

■ Number of occupied points

LA-F1011	1 point
LB-F1011 (common)	1 point

The block with 31 units of LB-F1011 connected to LA-F1011 occupies 32 points of input.  
DP-DN current consumption is 60.8mA.

If fiber inputs of 32 or more optical axes are required, provide an additional block.

When a system comprises LA-F1011 and LB-F1011 only, the maximum number of connectable units is 128 per system.

[Transmission Line Connection]

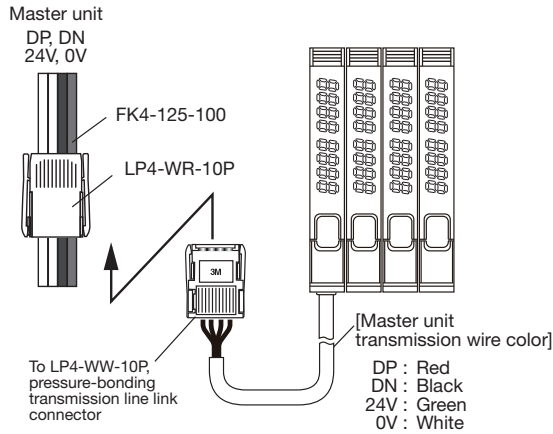
The transmission line from the fiber amplifier master unit is connected to the transmission line of the AnyWireASLINK master unit. This terminal is 4-wire (isolated) type. To use this terminal, connect the DP, DN, 24V and 0V pins.

■Description of attached wires

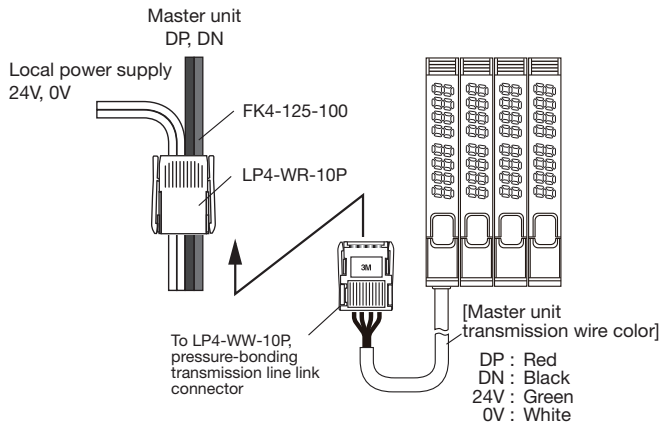
Wire color	Description
Red	DP: Transmission line (+)
Black	DN: Transmission line (-)
Green	24V: Unit drive power supply (+)
White	0V: Unit drive power supply (-)

[Connection via link connector (example)]

■Power supply to the entire system



■Local power supply



■Link connector pin assignment

Pin No.	Description	Wire color
1	DN	Black
2	DP	Red
3	0V	White
4	24V	Green

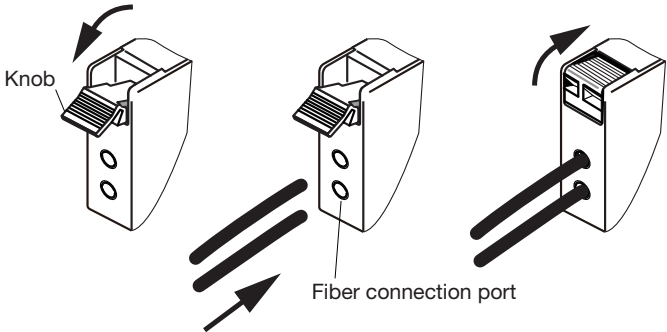
The LP connector (link connector) is a connector that integrates male and female terminals. It makes it easy to “connect” and “branch” the line simply by connecting two connectors of the same type.

[Connection of Fiber]

Fiber diameter (mm)	Connecting method
$\phi$ 2.2	Direct connection
$\phi$ 1.0	Connection via attachment (E39-F9)

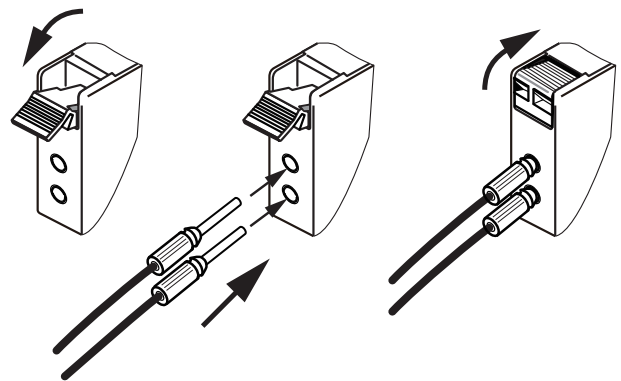
■Direct connection of fiber (Fiber diameter:  $\phi$  2.2)

Push the knob of the amplifier’s fiber connection port downward, and insert the fiber into the fiber connection port until it touches the end, and then raise the knob to the original position.

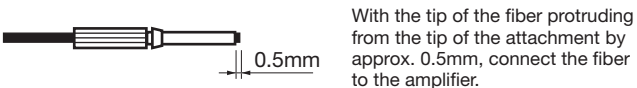


■Connection of fiber via attachment (Fiber diameter:  $\phi$  1.0)

Push the knob of the amplifier’s fiber connection port downward, and insert the fiber into the fiber connection port until it touches the end, and then raise the knob to the original position.

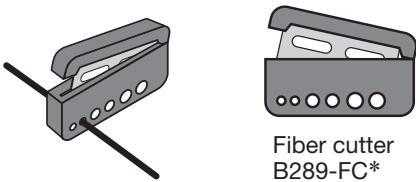


Attachment for fine fiber (E39-F9), manufactured by OMRON E39-F9 shall be separately purchased.



■Cutting a fiber

To cut a fiber, use the fiber cutter included in the fiber unit. Insert the fiber through a hole of the fiber cutter that fits the fiber diameter, and cut the fiber at a right angle. Do not use a hole that has been used once.



\* The fiber cutter (B289-FC) is included in the AnyWireASLINK fiber unit (AFT-4, AFT-1, AFT-2 and AFT-1-1) (one piece each).

**CAUTION** To reuse a fiber that has already been connected, cut the tip of of the fiber. Failure to observe this instruction causes reduction in light emitting/receiving quantity.

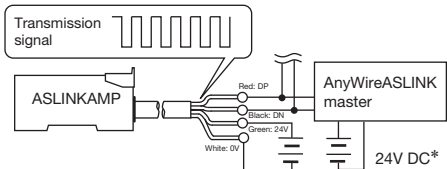


- Address setting
- Teaching
- Parameter setting

Common procedure for address writer operation

Be sure to connect to the AnyWireASLINK master unit to use. Address Writer ARW-04 (Ver. 04-1.01 or later) is required for operation.  
For details about the operation method, refer to the address writer's Products Guide.

1. Connect the terminal to the AnyWireASLINK master unit.  
With the transmission signal (DP/DN) and power supply (24V/0V) being connected, set parameters with the address writer.



\* Use a 24V DC stabilized power supply.

2. This setting procedure is required for all terminals.  
After opening the protective cover of the terminal subject to setting, direct the address writer toward the setting port as shown in Fig. 1, and conduct setting.  
(Hold the light emitting/receiving part as close to the setting port as possible.)  
For a terminal that is not subject to setting, keep the protective cover closed.

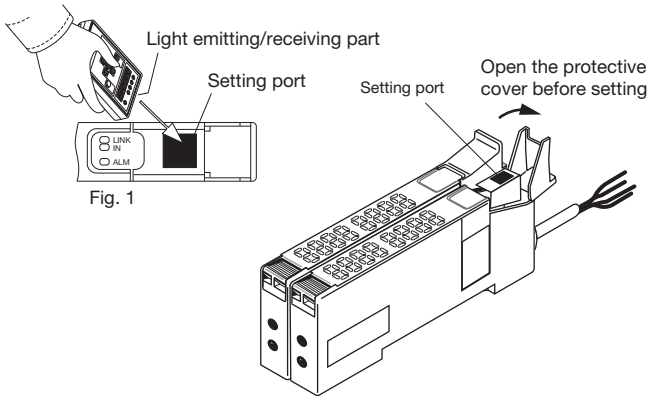


Fig. 1

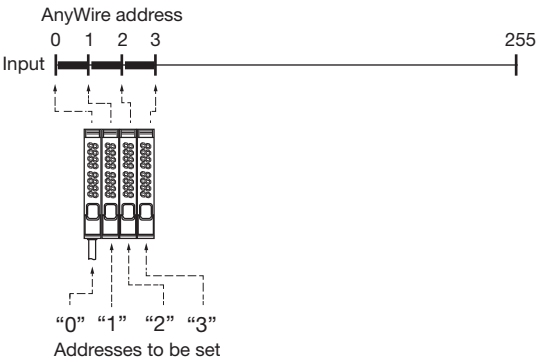
Address setting

For address numbers, specify the leading number of the transmission frames to be allocated to the terminal.  
The address numbers of this device are set between 0 and 254.



The factory setting of the terminal is "255," which means no setting.  
If the address number is set to 255, the terminal does not perform I/O operations.  
Before using the terminal, be sure to set an address number between 0 and 254.

Example) Address assignment to four fiber amplifiers in series connection

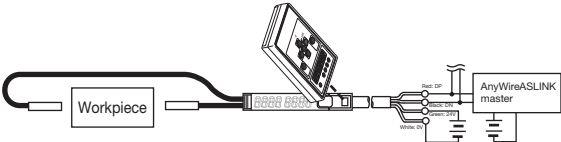


Teaching operation is intended to register workpiece presence/absence status in the ASLINKSENSOR.

The setting procedure should be conducted with a workpiece to be actually used.  
To select the "0-100%" mode for the light receiving level indication setting (equipment parameter 08), be sure to conduct teaching.

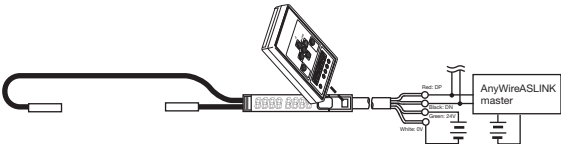
[SET ON setting]

With a target workpiece placed in the detecting area, conduct this setting.



[SET OFF setting]

With no target workpiece placed in the detecting area, conduct this setting.



[Automatic setting for teaching]

If you conduct teaching when "AD value indication" is selected for the light receiving level indication setting (equipment parameter 08), "threshold," "hysteresis," "alarm Hi" and "alarm Lo" values will be automatically calculated and set at the following ratio, based on the difference in AD value between SET ON status (workpiece is present) and SET OFF status (no workpiece).

\* When the "0-100%" mode is selected for light receiving level indication setting (equipment parameter 08), the automatic setting function for teaching is disabled.

Threshold	50%
Hysteresis	5%
Alarm Hi	80%
Alarm Lo	20%

Example)

- ① SET ON AD value for workpiece present status is "0."
- ② SET OFF AD value for workpiece absent status is "980."

With the difference in AD value between SET ON status and SET OFF status defined as the reference (100%), the following parameters will be automatically set.  
Threshold (Equipment parameter 01): 490 (50%)  
Hysteresis (Equipment parameter 02): 49 (5%)  
Alarm Hi (Equipment parameter 03): 784 (80%)  
Alarm Lo (Equipment parameter 04): 196 (20%)

### ■ Changing the threshold setting

This parameter specifies a threshold of light receiving level for judgment of detection status.

\* The difference in detection status registered by teaching is defined as 100%.

- Address Writer (ARW-04): Parameter 01

AD value	0-100%
0-4095	0-100%

Factory setting: 50 (AD value)

### ■ Changing the hysteresis setting

This parameter specifies a change in light receiving quantity required to turn the detection status from ON to OFF.

- Address Writer (ARW-04): Parameter 02

AD value	0-100%
0-4095	0-100%

Factory setting: 5 (AD value)

### ■ Alarm Hi setting

This parameter specifies an upper limit value for alarm judgment.

\* Make sure that Alarm Hi setting is larger than Alarm Lo setting.

- Address Writer (ARW-04): Parameter 03

AD value	0-100%
0-4095	0-100%

Factory setting: 0 (AD value)

\* The setting range depends on the setting of parameter 8.

### ■ Alarm Lo setting

This parameter specifies a lower limit value for alarm judgment.

\* Make sure that Alarm Hi setting is larger than Alarm Lo setting.

- Address Writer (ARW-04): Parameter 04

AD value	0-100%
0-4095	0-100%

Factory setting: 0 (AD value)

### ■ Alarm monitoring time setting

This parameter specifies a monitoring time for alarm judgment.

- Address Writer (ARW-04): Parameter 05

Variable	Unit
3-255	100ms

Factory setting: 50

### ■ Light ON / Dark ON setting

This parameter specifies the Light ON or Dark ON mode.

- Address Writer (ARW-04): Parameter 06

Variable	Description
0	Through-beam type, Dark (interrupt) ON
1	Through-beam type, Light (transmit) ON
2	Reflection type, Dark (no reflection) ON
3	Reflection type, Light (reflection) ON

Factory setting: 0

### ■ Operation mode change enable/disable setting

This parameter specifies whether the diagnosis function is enabled or disabled.

- Address Writer (ARW-04): Parameter 07

Variable	Description
0	Disabled (Simplified mode)
1	Enabled (Normal mode)

Factory setting: 0

### ■ Light receiving level indication setting

This parameter specifies the light receiving level indication mode.

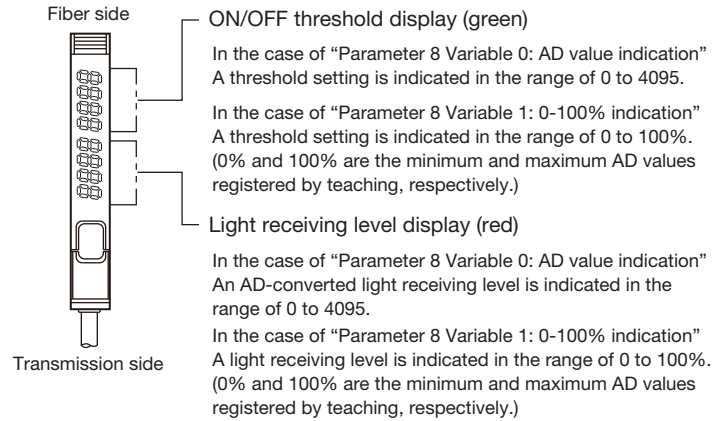
Sensing levels of parameter 01, 02, 03 and 04 are automatically converted into AD value or 0-100%, depending on the setting of this parameter.

- Address Writer (ARW-04): Parameter 08

Variable	Description
0	AD value indication (0-4095 Digit)
1	0-100% indication

Factory setting: 0

#### [7-segment display]



\* Once a set value is changed by rewriting from the host, the values of parameters 01, 02, 03 and 04 will not be automatically converted.

### ■ Light emitting power setting

This parameter specifies a light emitting level.

- Address Writer (ARW-04): Parameter 09

Variable	Description
0	High
1	Middle
2	Low

Factory setting: 0

### ■ ON Delay setting

This parameter specifies an ON delay time.

- Address Writer (ARW-04): Parameter 10

Variable	Description
0-999	100ms

Factory setting: 0

### ■ OFF Delay setting

This parameter specifies an OFF delay time.

- Address Writer (ARW-04): Parameter 11

Variable	Description
0-999	100ms

Factory setting: 0

### ■ One Shot setting

This parameter specifies a one-shot time.

- Address Writer (ARW-04): Parameter 12

Variable	Description
0-999	100ms

Factory setting: 0



## ■ Automatic address/parameter setting (for master unit only)

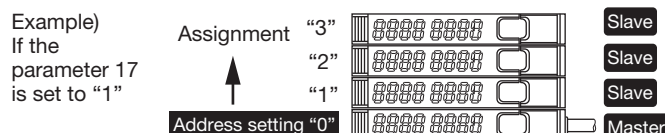
This parameter specifies whether the automatic address/parameter setting is enabled or not.

- Address Writer (ARW-04): Parameter 17

Variable	Description
0	Automatic setting is disabled.
1	Only automatic address setting is enabled.
2	Only automatic parameter setting is enabled. * Linked with the parameters of the master unit.
3	Automatic address and parameter settings are enabled.

Factory setting: 0

This function enables address and parameter settings of the master unit to be automatically reflected on slave units. When the automatic setting mode is enabled (value 1, 2 or 3), an address and/or parameter registered in the master unit will be automatically assigned to each slave unit.



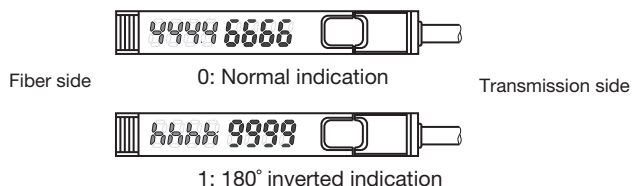
## ■ 7-segment display orientation change setting (for master unit only)

This function is used to turn the 7-segment display orientation by 180°. This function is useful when indication is difficult to see due to orientation of the unit.

- Address Writer (ARW-04): Parameter 18

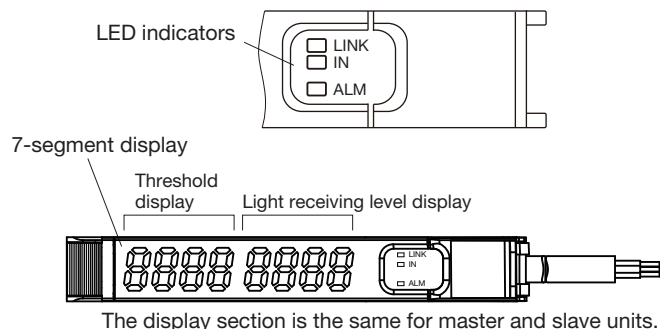
Variable	Description
0	Normal indication
1	180° inverted indication

Factory setting: 0



## [Monitor Display]

LED name	Display status	Description
LINK (Green)	Lit	Transmission error, I/O power supply drop
	Flashing	The transmission signal and the 24V power are both supplied.
	Unlit	No power
ALM (Red)	Lit	I/O power supply drop, sensing level drop
	Flashing	Slave unit voltage drop (disconnection and reverse connection of DP and DN lines included)
	Unlit	Normal
LINK ALM	Alternate flashing	When the master unit has detected that the unit ID (address) is either duplicated or unregistered.
IN (Orange)	Lit	ON
	Unlit	OFF

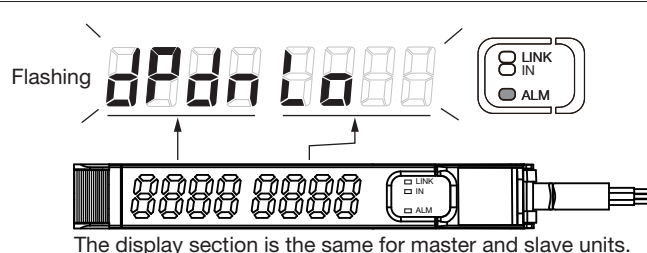


## [Troubleshooting]

If the following errors are indicated on the display window of ASLINKAMP, take the following actions.

LINK	IN	ALM	Cause	Remedy
○ Unlit	○ Unlit	○ Unlit	- The AnyWireASLINK transmission signal is not connected. - The AnyWireASLINK system is not turned on.	- Check if there is a disconnection between the ASLINKAMP and the AnyWireASLINK system and restore the connection. - Check the power supply of AnyWireASLINK system and turn ON the power.
● Lit	○ Unlit	○ Unlit	- The transmission signal wave is not received because the DP-DN line is connected directly to the 24-0V line.	- Reconnect the power to the AnyWireASLINK system.
⊙ Flashing (alternates with a 0.5 sec interval)	○ Unlit	⊙ Flashing (alternates with a 0.5 sec interval)	- The address of ASLINKAMP remains to be "255" (factory setting). - The address of ASLINKAMP is duplicated.	- Assign an address other than 255. - Look for a unit that has the same error and assign an address different from the address of that unit.
—	—	⊙ Flashing (Lit for 0.2 sec, unit for 1.0 sec)	- The internal voltage of ASLINKAMP is low. - Disconnection or reverse connection of DP-DN line	- Reduce the number of units connected to the same AnyWireASLINK system. - Make the transmission line between the ASLINKAMP and the master unit shorter.

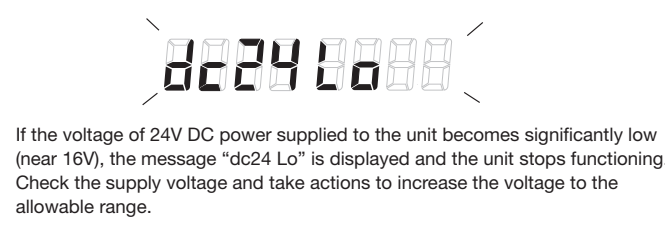
## ■ Unit voltage (DP-DN) drop detection



Check the following and eliminate the relevant cause.

- If the 24V DC power supply voltage to the AnyWireASLINK master unit is in the allowable voltage range
- If there is any loose terminal or poor contact on the trunk and branch lines
- If the current on the unit and connected load current satisfy the system conditions

## ■ Abnormal voltage detection



If the following error is indicated on the address writer, take the following action.

Display	Cause	Remedy
【E-0303】	The parameter setting is incorrect.	Refer to the parameter correspondence table and correct the setting.

Should any of the following apply, take the following actions.

Symptom	Remedy
Detection is disabled	- Is the wiring correct? → Re-check the connections of the transmission line and the power supply line. - Is the power supplied to the AnyWireASLINK system? → Check the power supply. - Are the addresses set? → Set the addresses. - Is the unit used in the specified input range? → Use it in the specified detection range.
Setting cannot be made with the address writer	- Is the wiring correct? → Re-check the connection of the transmission line and see if the transmission signal is sent. - Is the power supplied to the AnyWireASLINK system? → Check the power supply. - Is the protective cover opened during the setting? → Open the protective cover. Setting cannot be made with the cover closed. - Are the parameters set correctly? → Refer to the parameter correspondence table and correct the setting.

## [Equipment Parameters and Their Settings]

Equipment parameter	Variable	Description	Factory-set variable
【01.】 Threshold	0-4095 (0-100%)	Light receiving level setting for detection judgment	50
【02.】 Hysteresis	0-4095 (0-100%)	Setting of a change in light receiving quantity required to turn the detection status from ON to OFF	5
【03.】 Alarm Hi	0-4095 (0-100%)	Light receiving level alarm upper limit setting	0
【04.】 Alarm Lo	0-4095 (0-100%)	Light receiving level alarm lower limit setting	0
【05.】 Alarm monitoring time	3-255	Light receiving level alarm monitoring time setting (1 = 100ms)	50
【06.】 Light ON/Dark ON	0	Through-beam type, Dark (interrupt) ON	0
	1	Through-beam type, Light (transmit) ON	
	2	Reflection type, Dark (no reflection) ON	
	3	Reflection type, Light (reflection) ON	
【07.】 Operation mode	0	Simplified mode (Preventive maintenance function disabled)	0
	1	Normal mode (Preventive maintenance function enabled)	
【08.】 Light receiving level indication	0	AD value indication (0-4095 Digit)	0
	1	0-100% indication	
【09.】 Light emitting power	0	High	0
	1	Middle	
	2	Low	
【10.】 ON Delay	0-999	ON delay time setting (1=100ms)	0
【11.】 OFF Delay	0-999	OFF delay time setting (1=100ms)	0
【12.】 One Shot	0-999	One-shot time setting (1=100ms)	0
【17.】 Automatic address/parameter setting (for master unit only)	0	Automatic setting disabled	0
	1	Only automatic address setting enabled	
	2	Only automatic parameter setting enabled * Linked with the parameters of the master unit	
	3	Automatic address and parameter setting	
【18.】 7-segment display orientation change (for master unit only)	0	Normal indication	0
	1	180° inverted indication	

## [Specifications]

### ■ General specifications

Operating ambient temperature/humidity	0 – 55°C*1, 10 – 90%RH No condensation
Storing ambient temperature/humidity	-25 – 75°C, 10 – 90%RH No condensation
Vibration resistance	Based on JIS B 3502 and IEC 61131-2
Shock resistance	Based on JIS B 3502 and IEC 61131-2
Operating atmosphere	No corrosive gas
Operating altitude*2	0 – 2000m
Pollution level*3	2 or less

\*1 When 1 or 2 slave units are connected: 0 to 55°C

When 3 to 10 slave units are connected: 0 to 50°C

When 11 or more slave units are connected: 0 to 45°C

\*2 Do not use or store AnyWireASLINK devices in an environment where the pressure exceeds the atmospheric pressure at an altitude of 0 meters. Doing so may result in malfunction.

\*3 "Pollution level" is an index that indicates the degree of occurrence of conductive substances in the environment where the device is used.  
Pollution level 2 means the occurrence of only pollution by non-conductive substances. In such an environment, however, electrical conduction could occur due to accidental condensation.

### ■ Transmission specifications

Service power supply voltage	24V DC +15% to -10% (21.6 to 27.6V DC) with a ripple of 0.5Vp-p or less
Transmission method	DC power supply superimposed total frame/cyclic method
Synchronization method	Frame/bit synchronization method
Transmission procedure	AnyWireASLINK protocol
Connection mode	Bus type (Multi-drop method, T-branch method, Tree branch method)
Number of connection points	512 max. (IN: 256, OUT: 256)
Number of connection units	Up to 128 units
RAS function	Detection of transmission line disconnection, transmission line short-circuit, transmission power supply drop, and duplicated/unregistered ID

### ■ Individual specifications

Number of occupied points	Input 1 point	
Response time*4	1 or 2 cycles	
Current consumption	24V-0V	25mA
	DP-DN	1.9mA
Weight	22g (Master unit)	
	17g (Slave unit)	
Protection rating	IP40	
Operating ambient illuminance	Incandescent lamp	3000lx or less
	Sunlight	10000lx or less

\*4 A time required for ON/OFF detection until transmission signal output.

To update data, 1-cycle transmission time is required in addition to the response time.

## [Detecting Distance]

### ■ Fiber unit

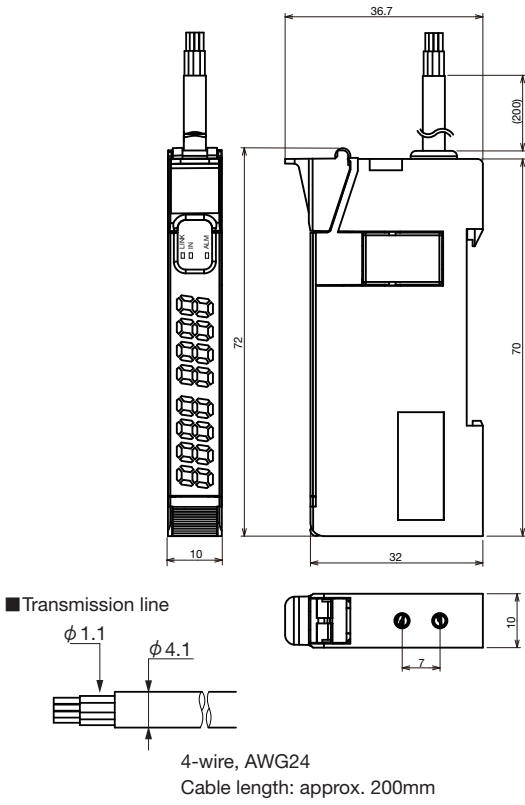
Model	Detecting distance (mm)	
	Diagnosis enabled*5	Diagnosis disabled*6
AFT-4	410	600
AFT-1	160	210
AFT-2	300	420
AFT-1-1	170	240

\*5 For 0-100% light receiving level indication setting

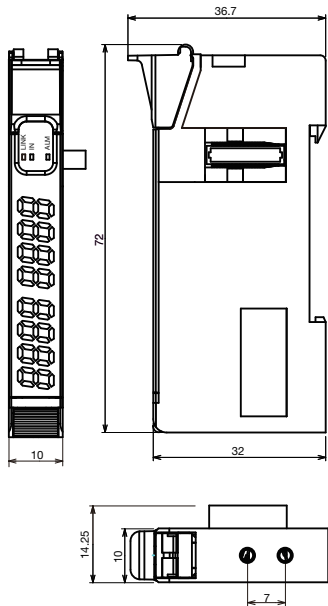
\*6 For ON/OFF setting

[Outside Dimensions] Unit: mm

■ LA-F1011 (Master unit)



■ LB-F1011 (Slave unit)



[Address] Unit: mm

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