

AnyWireASLINK system Product Guide

ASLINKAMP [Power Supply Unit for Analog Equipment] LB-S24

[Type]

LB-S24	Power supply unit for analog equipment	Isolated power supply for channel load
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This product is an analog power supply unit for AnyWireASLINK system.

[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 system power before installing or replacing/cleaning the product.
 - 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.
 - If the equipment is used with a method unspecified by the manufacturer, the protective function provided for the equipment may be disabled.

- 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 device.
Doing so may cause a failure.
 - Do not disconnect or reconnect between the transmission line and remote units when the transmission line is active.
Doing so may cause a malfunction.
 - Use the AnyWireASLINK within the range of the specifications and conditions shown below.
 - This unit is non-enclosed type and intended to be installed in an appropriate external enclosure for fire, shock, and mechanical protection.
 - Unit installation, wire insulation, wiring and separation shall comply with the requirements of NEC/CEC and the local authority.

[Warranty]

- Warranty period
The warranty period of the delivered product shall be one year after delivery to the place specified by the customer.
- Scope of warranty
If a fault occurs with the product under the normal operating conditions assumed in the product specifications and according to the instructions of this manual within the above warranty period, faulty parts shall be replaced or repaired free of charge.
Note: The following cases are exempted from the scope of warranty:
 - (1) User's improper handling or use of the product
 - (2) When the fault is caused by any factor other than the delivered product
 - (3) When the fault is caused by modification or repair of the product by any person other than the supplier
 - (4) When the fault is caused by a natural disaster or other factor which is not attributable to the supplier

The term "Warranty" mentioned here means warranty of the delivered product only. We shall not be liable for incidental damage resulting from a fault of the delivered product.

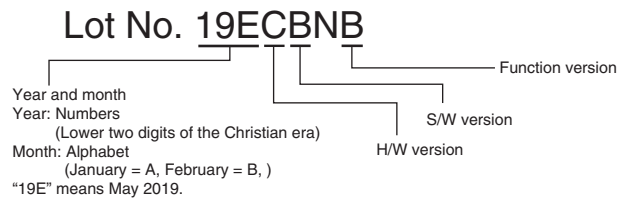
- Repair at user's cost
Investigations and repairs after elapse of the warranty period shall be conducted at user's cost.
Even in the warranty period, we shall accept order of repair of a fault or investigation of a cause of a fault beyond the above scope of warranty at user's cost.
- Changes in the product specifications and the descriptions in the manual
The descriptions in this manual may be subject to change without notice.

[Functions]

Model	Power supply unit for ASLINKAMP
Input	200mA*/24V DC
Output	100mA/24V DC
Functions	Power supply for 1 channel only Isolated power supply (Withstand voltage of insulation 100V DC)

* For H/W version "E" or later version. For H/W version "D" or former version, 188mA.

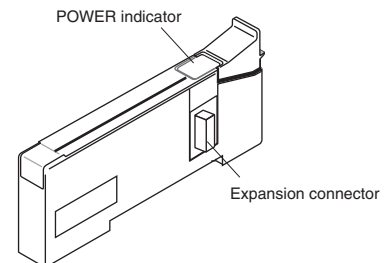
Example:



[Included in the Package]

LB-S24	Unit body ... 1
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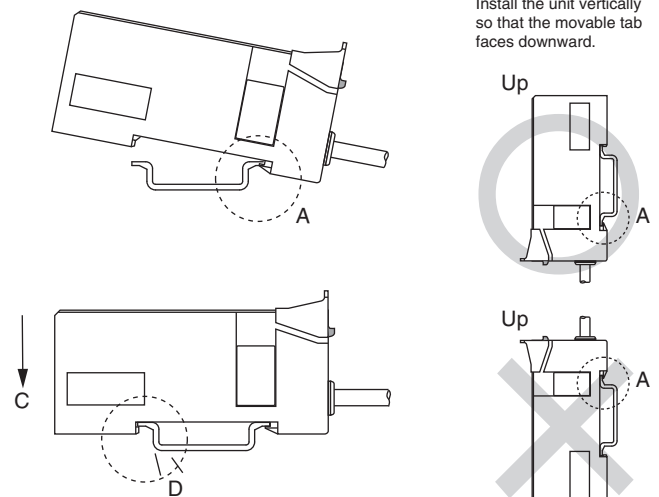
[Name of Each Part]



[Installation]

The method for mounting this unit to a DIN rail is as follows:

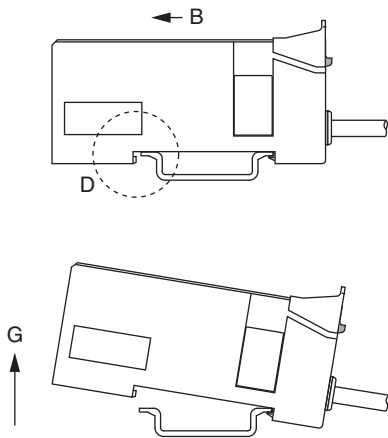
- Hook the movable tab on the A side on the DIN rail.
- Push the unit in the direction of C until the fixed tab D on the opposite side clicks.



[Dismounting]

The method for dismounting this unit from a DIN rail is as follows:

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]

Install this unit at an indoor dry place.

- 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

* For installation

The installation posture is not particularly specified, excepting that the fixed tab D should face up. When this unit is mounted to the DIN rail and it is necessary that the unit body should be fixed, use the DIN rail stopper. Particularly when this unit is mounted to a vertical rail, use of the stopper is recommended.

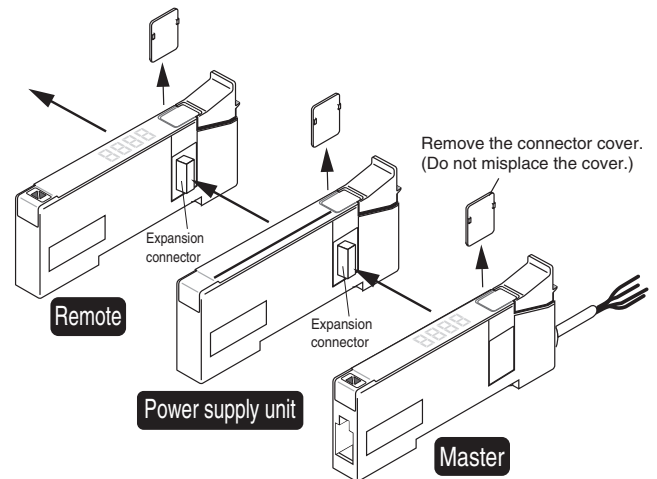
[Notes on the Use]

To connect the unit to the transmission line or add a new remote 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.

When complying with the UL Standard, make sure to use a 24V DC stabilized power supply of "NEC/CEC Class 2 Output."

[Expansion]

When a 24V power supply is required for analog equipment that is connected to master and remote analog units of Ch-to-Ch isolated type, use this power supply unit. Remove the connector covers of the master and remote units and this power supply unit, and connect the units via the built-in expansion connectors. Expansion shall be conducted in a range that meets the following conditions.



Conditions for expansion)

■ Current consumption

LA-A1AW LB-A1AW	Common	DP-DN	20mA ①
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■ Number of occupied points

LA-A1AW	16 points ②
LB-A1AW	16 points ③

■ Conditions to be considered for expansion

Maximum allowable number of expansion units in case where this power supply unit and remote units are connected to master unit	31 units ④
Total of DP-DN current consumption per block (1 block: Master unit + expansion units)	DP-DN: 800mA max. ⑤
Total of 24V-0V current consumption of power supply unit per the above block	24V-0V: 800mA max. ⑥

■ Conditions to be considered for 1 system

Total number of occupied points of connected equipment must not exceed the maximum allowable number of transmission points specified for the master unit per system.	Input: 256 points max. ⑦ Output: 256 points max.
Total of DP-DN current consumption of connected equipment must not exceed the maximum allowable supply current per system.	When transmission distance is 50m and transmission cable diameter is 1.25mm ² 2A max. ⑧

Example)

Conditions of transmission line:
Transmission distance 50m (Total extension), Transmission cable diameter 1.25mm²,
Number of input/output points 256 each
Equipment condition: LA-A1AW (1 unit) and LB-A1AW (7 units) only
Analog sensor 24V current consumption 50mA × 8 units ⑨

(1) Verification by limitation on number of occupied points

LA-A1AW: 16 input points × 1 unit ②,
LB-A1AW: 16 input points × 7 units ③
Maximum number of input points: 256 points ⑦ ÷ 16 points = 16
16 × 1 + 16 × 7 = 128 ≤ 256 points ⑦ (Maximum number of input points)

(2) Verification by limitation on DP-DN current consumption per block

LA-A1AW: 20mA × 1 unit ①, LB-A1AW: 20mA × 7 units ①
i.e., LA-A1AW (1 unit × 20mA), LB-A1AW: (7 units × 20mA = 140mA)
As a result, 20mA + 140mA = 160mA ≤ 800mA ⑤ → No problem

(3) Verification by limitation on 24V-0V current consumption per block

Analog sensor: 50mA × 8 units ⑥ ⑨
i.e., Analog sensor (8 units × 50mA = 400mA)
As a result, 400mA ≤ 800mA ⑥ → No problem

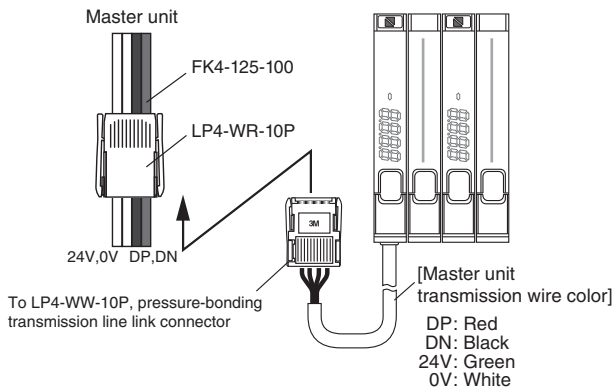
(4) Verification by limitation on DP-DN current consumption per system

LA-A1AW: 1 unit, LB-A1AW: 7 units
8 units in total → 160mA ①
As a result, 160mA ≤ 2A ⑧ → No problem

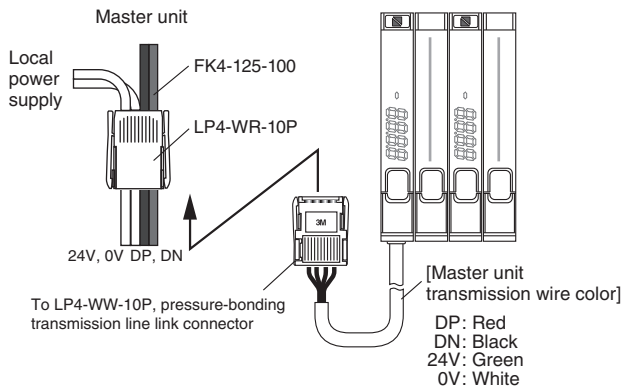
[24V Supply]

Connect the transmission line of the analog input master unit to the transmission line of the AnyWireASLINK master unit.
To supply 24V from an analog input connector of each channel to load equipment with the power supply unit, use the 24V and 0V lines of the master unit.

Example of batch power supply)



Example of local power supply)



■ Link connector pin assignment

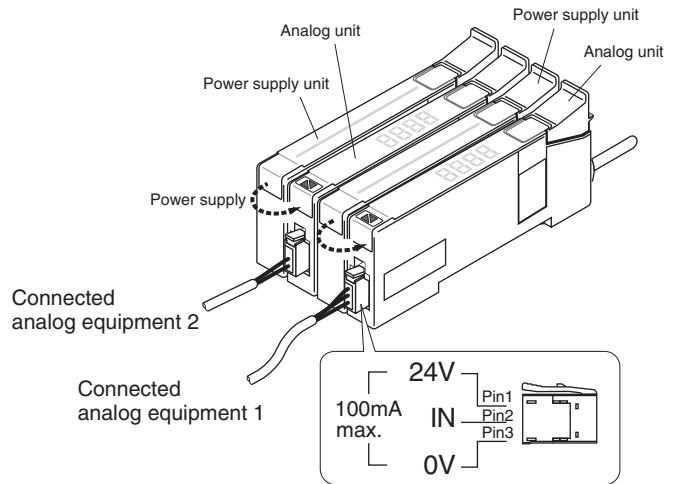
Pin No.	Description	Wire color
1	DN	Black
2	DP	Red
3	0V	White
4	24V	Green

The LP connector (link connector) is a connector that integrates male and female terminals. Both "connection" and "branching" can be made simply by connecting two connectors of the same type.

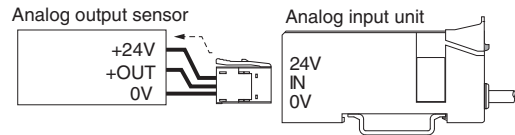
[Power Supply to Connected Load Equipment]

Connecting the power supply unit (LB-S24) enables 24V-0V isolated power supply from the connector of the adjacent analog unit to the connected load equipment.

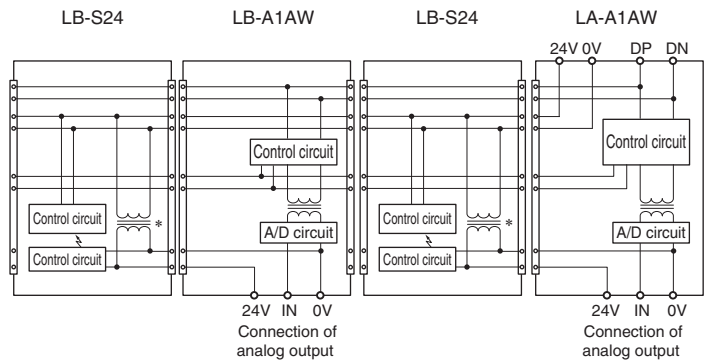
Example of configuration)



Example) Connection of analog equipment





■ Block diagram



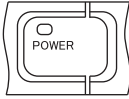
* Withstand voltage of insulation 100V DC

[LED Indication]

Power supply (POWER) indication LED is provided for this unit.

LED indication	LED name	Indication status	Description
	POWER	POWER	Lit 
Unlit 			24V power supply OFF

POWER display



[Specifications]

■ General specifications

Operating ambient temperature/humidity	0 to +55°C, 10 to 90%RH No condensation
Storing ambient temperature/humidity	-25 to +75°C, 10 to 90%RH No condensation
Operating atmosphere	No corrosive gas
Operating altitude*1	0 to 2000m
Pollution level*2	2 or less
Protective function	Class III

*1 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.

*2 "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.

■ Individual specifications

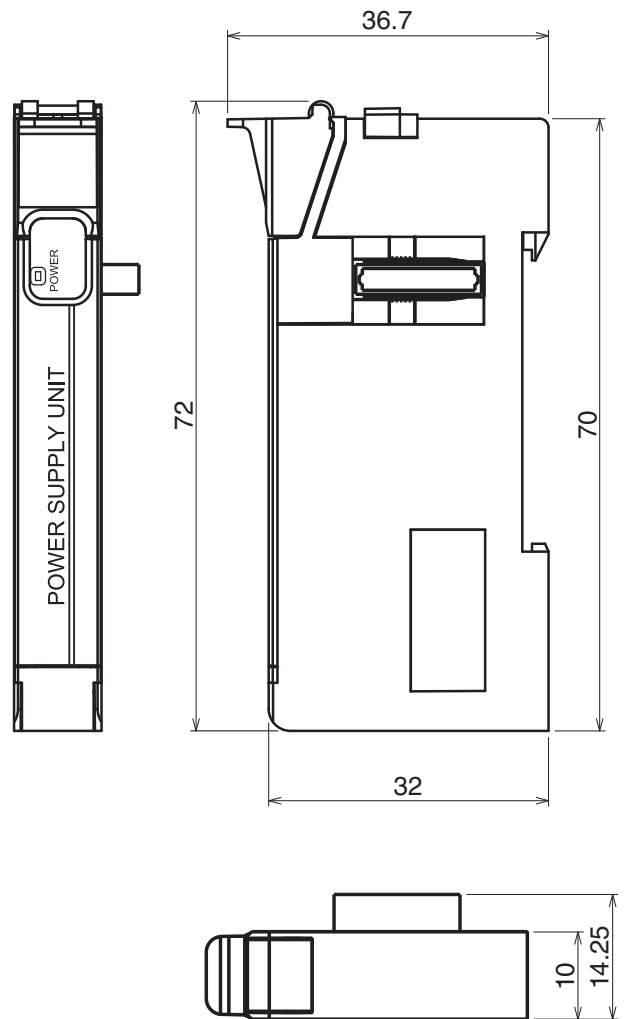
Input voltage range	24[V] DC -10% to +15% (21.6 to 27.6[V] DC) Ripple 0.5[V]p-p max.
Output voltage	24[V] DC -10% to +15%
Output current	0 to 100[mA]/channel
Ripple noise	1[V]p-p max.
Current consumption	200mA*3
Weight	17g
Number of expansion units	31 units max. (Note: Refer to [Expansion] on p. 2.)

*3 For H/W version "E" or later version.

For H/W version "D" or former version, 188mA.

[Outside Dimensions]

Unit: mm



[Address]

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