

Screwless SSR Terminal Block (4-point)

ASL Series
INSTRUCTION MANUAL

TCD210110AD

Autonics

Thank you for choosing our Autonics product.
Read and understand the instruction manual and manual thoroughly before using the product.
For your safety, read and follow the below safety considerations before using.
For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.
Keep this instruction manual in a place where you can find easily.
The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.
Follow Autonics website for the latest information.

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, remove connector, or change SSR while connected to a power source.**
Failure to follow this instruction may result in fire or electric shock.
- 04. Do not disassemble or modify the unit.**
Failure to follow this instruction may result in fire or electric shock.

⚠ 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 or electric shock.
- 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.

Cautions during Use

- Follow instructions in ‘Cautions during Use’. Otherwise, it may cause unexpected accidents.
- Check the polarity of power or COMMON before connecting PLC or other controllers.
- Do not touch the unit immediately after the load power is supplied or cut.
It may cause burn by high temperature.
- 24VDC≒ power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
- Wire as short as possible and keep away from high voltage lines or power lines, to prevent surge and inductive noise. Do not use near the equipment which generates strong magnetic force or high frequency noise (transceiver, etc.). In case installing the product near the equipment which generates strong surge (motor, welding machine, etc.), use diode or varistor to remove surge.
- This unit may be used in the following environments.
 - Indoors (in the environment condition rated in ‘Specifications’)
 - Altitude max. 2,000 m
 - Pollution degree 2
 - Installation category II

Product Components

- Product
- Instruction manual
- 6.0 mm pitch jumper bar (JB-6.0-04L)
- Two Way Ejector

Sold Separately

- 6.0 mm pitch jumper bar (JB-6.0-04L)
- DIN Rail Stopper

Ordering Information

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

ASL - ① ② ③ - ④ ⑤

- ① Connector type**
L: Screwless
- ② Number of SSR**
04: 4-point
- ④ Input logic**
U: Universal
- ⑤ Varistor**
N: None
Y: Equipped

- ③ SSR type**
MP0: AQZ202D [Panasonic]
SP0: AQG12124 [Panasonic]
ST0: SN-24A01C [Fujitsu]

Specifications

Model	ASL-L04MP0-U□	ASL-L04SP0-U□	ASL-L04ST0-U□
Applied SSR ⁽⁰¹⁾	AQZ202D [Panasonic]	AQG12124 [Panasonic]	SN-24A01C [Fujitsu]
Output method	1a	1a	1a
Power supply	≤ 24 VDC≒ ± 10 %	≤ 24 VDC≒ ± 10 %	≤ 24 VDC≒ ± 10 %
Current consumption ⁽⁰²⁾	≤ 3 mA	≤ 18 mA	≤ 10 mA
SSR output rated spec. ^{(03) (04)}	24 VAC~ 50/60 Hz 2.7A, 24 VDC≒ 2.7A	75-240 VAC~ 50/60 Hz 1A	24-240 VAC~ 50/60 Hz 1A
Terminal type	Screwless		
Terminal pitch	5.0 mm		
Indicator	Operation indicator: blue		
Varistor	Equipped ⁽⁰⁵⁾ / not equipped model		
Input logic	NPN / PNP selectable with jumper bar		
Material	Terminal block: PA66, CASE, BASE: PPS, conducting plate: brass		
Approval	CE ⁰¹ ENEC ⁰² ENEC ⁰³ ENEC ⁰⁴	CE ⁰¹ ENEC ⁰² ENEC ⁰³ ENEC ⁰⁴	CE ⁰¹ ENEC ⁰² ENEC ⁰³ ENEC ⁰⁴
Unit weight (packaged)	≈ 65 g (≈ 118 g)	≈ 69 g (≈ 122 g)	≈ 172 g (≈ 126 g)

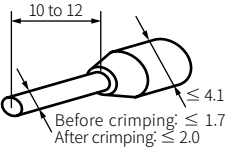
- 01) For the detailed information about each SSR, please refer to ‘SSR’ or data sheet from the manufacturer.
- 02) It is current consumption for a SSR including LED current.
- 03) This value is rated with resistive load, when the conditions of the temperature characteristic graph are satisfied.
- 04) When connecting loads to output part, please connect loads of same power type.
Connecting loads of different power type may cause safety issues.
- 05) Since the varistor type is for protecting the contact, it is recommended to use with an inductive load.

Insulation resistance	≥ 1,000 MΩ (500 VDC≒ megger)
Dielectric strength (coil-contact)	2,500 VAC~ 50/60 Hz for 1 minute
Dielectric strength (same polarity contact) ⁽⁰¹⁾	1,000 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 2 hours
Vibration (malfunction)	0.75 mm amplitude at frequency of 10 to 55 Hz in each X, Y, Z direction for 10 minutes
Shock	1,000 m/s ² (≈ 100 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)
Protection structure	IP20 (IEC standard)
01) Varistor type is 300 VAC~.	
Applicable wire - solid ⁽⁰¹⁾	Ø 0.6 to 1.25 mm
Applicable wire - stranded ^{(01) (02)}	AWG 22-18 (0.30 to 0.80 mm ²)
Stripped length	8 to 10 mm

- 01) Use the cable of copper conductor in 60 °C temperature class.
- 02) When using the stranded wire, use End Sleeve (wire ferrule).

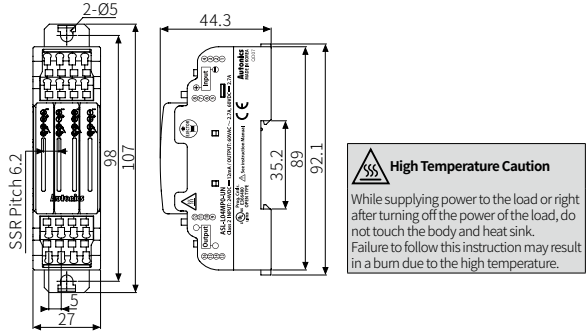
Wire Ferrule Specifications

- Unit: mm, Use the UL approved wire ferrule.



Dimensions

- Unit: mm, For the detailed drawings, follow the Autonics website.

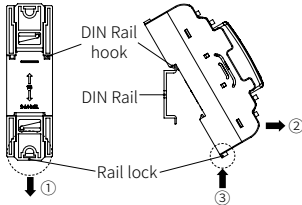


Installation

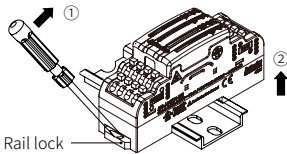
DIN Rail

When installing the product, refer to the example to keep the distance between units.

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



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



Panel

With the DIN rail lock at the top/bottom of the body, the product can be installed on panel with screw.

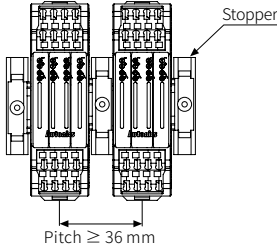
It is recommended to use M4 × 10 mm of spring washer screws.

If you use flat washer, its diameter should be Ø 9 mm.

Tighten the screw with the tightening torque of 1.0 to 1.5 N·m.

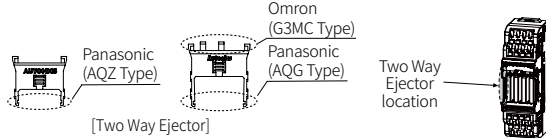
Example

- 1 unit individual installation
Pitch between each SSR: ≥ 6.2 mm

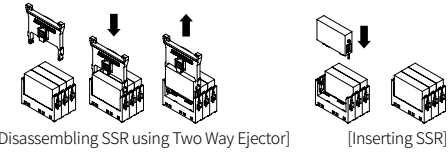


Replacing SSR

- 1. Disassemble a SSR by using Two Way Ejector for SSR replacement inside the product.



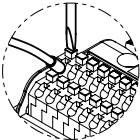
- 2. After checking the location of the SSR socket, insert the SSR to be replaced.



Wiring

- Connecting
Insert the wire ferrule into the terminal hole.

- Removing
 - Put the (-) screwdriver at the groove on the clamp lever and press it.
 - Pull the cable to disassemble.

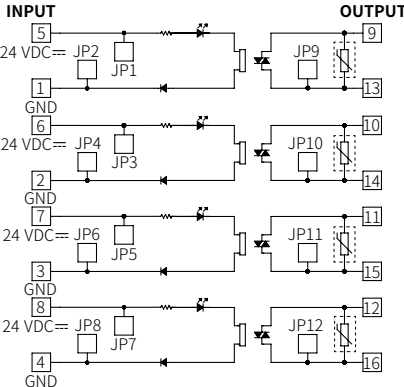


Wire Connection

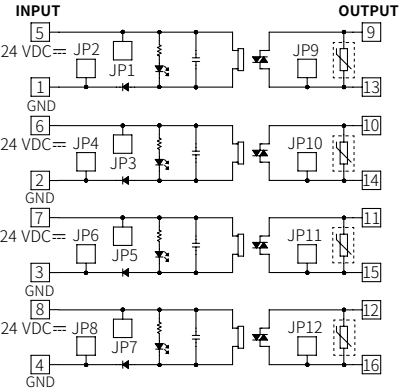
- is only for the varistor type.
- In case of POWER COMMON(NPN : +COM), the JP1, JP3, JP5, JP7 terminals are connected.
- In case of POWER COMMON(PNP : -COM), JP2, JP4, JP6, JP8 terminals are connected.
In case of LOAD COMMON, JP9, JP10, JP11, JP12 terminals are connected.

Wire Connection

- MP0

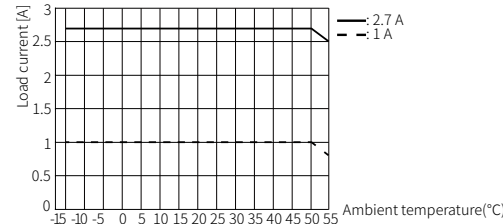


- SP0 / SP1 / SR0 / ST0

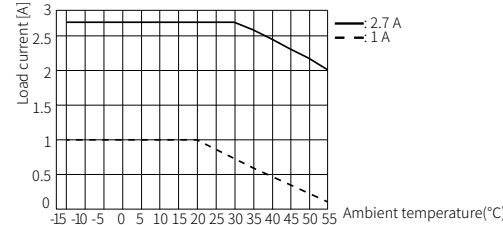


Temperature Characteristic Graph

- Load current by ambient temperature for each rated current



- Load current by ambient temperature for SSRs interval



6.0 mm Pitch Jumper Bar (JB-6.0-04L)

Remove the protection cover and use the jumper bar accordingly.

- NPN (+ COM): insert the jumper bar to see NPN mark below terminals 8, 7, 6, 5.
- PNP (- COM): insert the jumper bar to see PNP mark below terminals 8, 7, 6, 5.
- LOAD COMMON: insert the jumper bar above terminals 12, 11, 10, 9.

