

Relay Terminal Block (1-point)

ABS Series INSTRUCTION MANUAL

TCD210104AA

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 Relay 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.

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.
- 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 × 10 (PA, TN: × 14)
- Instruction manual × 10 (PA, TN: × 14)

Ordering Information

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

ABS - S 01 ① ② - C N

① Relay type

PA: MATSUSHITA(Panasonic) PA
 TN: TAKAMISAWA(Fujitsu) NYP
 PQ: MATSUSHITA(Panasonic) PQ
 R6: OMRON G6B
 PH: MATSUSHITA(Panasonic) AHN
 R2: OMRON G2R

② Voltage specification of relay coil

No mark: 24 VDC≒
 5: 200/220VAC~ or 220VAC~
 6: 100/110VAC~

Specifications

Model	3 A model	5 A model	10 A model		
	ABS-S01□-CN	ABS-S01□-CN	ABS-S01□-CN	ABS-S01□-CN	ABS-S01□-CN
Applied relay ⁽²⁾	PA: APAN3124 (MATSUSHITA (Panasonic)) TN: NYP24W-K (TAKAMISAWA (Fujitsu))	PQ: PQ1a-24V (MATSUSHITA (Panasonic)) R6: G6B-1174P-FD-US (OMRON)	PH: AHN12024 (MATSUSHITA (Panasonic)) R2: G2R-1-S24VDC (OMRON)	PH6: AHN11000 (MATSUSHITA (Panasonic)) R26: G2R-1-S100/ (110)VAC (OMRON)	PH5: AHN110Y2 (MATSUSHITA (Panasonic)) R25: G2R-1-S200/ (220)VAC (OMRON)
Output method	1a	1a	1c	1c	1c
Power supply	≤ 24VDC≒ ±10%	≤ 24VDC≒ ±10%	≤ 24VDC≒ ±10%	100/110 VAC~	PH5: 220 VAC~ R25: 200/220 VAC~
Current consumption	PA: ≤ 8 mA TN: ≤ 8.5 mA	≤ 20 mA	≤ 25 mA	≤ 15 mA	PH5: ≤ 9 mA R25: ≤ 10 mA
Rated load voltage & current ⁽²⁾	250 VAC~ 3A, 30 VDC≒ 3A	250 VAC~ 5A, 30 VDC≒ 5A	250 VAC~ 5A, 30 VDC≒ 5A	250 VAC~ 5A, 30 VDC≒ 5A	250 VAC~ 5A, 30 VDC≒ 5A
Terminal type	Screw	Screw	Screw	Screw	Screw
Indicator	Operation indicator: blue	Operation indicator: blue	Operation indicator: blue	Operation indicator: blue	Operation indicator: blue
Varistor	None	None	None	None	None
Material	CASE, BASE: PA6, terminal pin: brass	CASE, BASE: PA6, terminal pin: brass	CASE, BASE: PBT, terminal pin: brass, phosphor bronze	CASE, BASE: PBT, terminal pin: brass, phosphor bronze	CASE, BASE: PBT, terminal pin: brass, phosphor bronze
Approval	CE Ⓢ ENEC ⁽⁴⁾	CE Ⓢ ENEC ⁽⁴⁾	CE Ⓢ ENEC ⁽⁴⁾	CE Ⓢ ENEC ⁽⁴⁾	CE Ⓢ ENEC ⁽⁴⁾
Unit weight (packaged) ⁽⁵⁾	PA: ≈ 21.5 g (≈ 314.5 g) TN: ≈ 22.2 g (≈ 324.5 g)	PQ: ≈ 31 g (≈ 430 g) R6: ≈ 30 g (≈ 416 g)	PH: ≈ 53 g (≈ 720 g) R2: ≈ 53 g (≈ 719 g)	≈ 52 g (≈ 711 g)	PH5: ≈ 52 g (≈ 715 g) R25: ≈ 52 g (≈ 712 g)

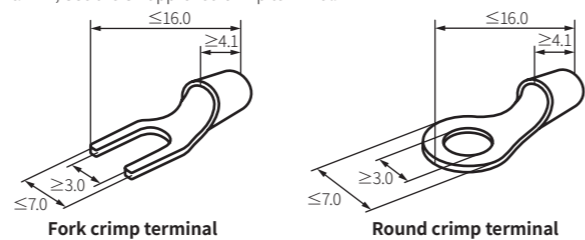
- 01) For the detailed information about each relay, please refer to 'Power Relay' or data sheet from the manufacturer.
 02) This value is rated with resistive load.
 03) When connecting loads to output part, please connect loads of same power type. Connecting loads of different power type may cause safety issues.
 04) 30 VDC≒ of rated load voltage is not subjected to UL Listed.
 05) It is weight per product. The weight in parentheses is for 10 packing units (PA, TN: 14) including packing materials.

Insulation resistance	≥ 1,000 MΩ (500 VDC≒ megger)
Dielectric strength (coil-contact)	PA, TN: 3,000 VAC~ 50/60 Hz for 1 minute PQ, R6: 4,000 VAC~ 50/60 Hz for 1 minute PH (5, 6), R2 (5, 6): 5,000 VAC~ 50/60 Hz for 1 minute
Dielectric strength (same polarity contact)	PA: 1,000 VAC~ 50/60 Hz for 1 minute, TN: 750 VAC~ 50/60 Hz for 1 minute PQ: 1,000 VAC~ 50/60 Hz for 1 minute, R6: 3,000 VAC~ 50/60 Hz for 1 minute PH (5, 6), R2 (5, 6): 1,000 VAC~ 50/60 Hz for 1 minute
Vibration	0.75 mm amplitude at frequency of 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 2 hours
Vibration (malfunction)	0.75 mm amplitude at frequency of 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 10 min
Shock	PA, TN: 500 m/s ² (≈ 50 G) in each X, Y, Z direction for 3 times PQ, R6, PH (5, 6), R2 (5, 6): 1,000 m/s ² (≈ 100 G) in each X, Y, Z direction for 3 times
Shock (malfunction)	PA, TN: 147 m/s ² (≈ 15 G) in each X, Y, Z direction for 3 times PQ, R6, PH (5, 6), R2 (5, 6): 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)

Applicable wire -stranded	PA, TN: AWG 22-16 (0.30 to 1.25 mm ²) PQ, R6: AWG 19-14 (0.65 to 2.0 mm ²) PH (5, 6), R2 (5, 6): AWG 17-14 (1.0 to 2.0 mm ²)
Tightening torque	PA, TN: 0.5 to 0.6 N·m PQ, R6: 0.7 to 0.8 N·m PH (5, 6), R2 (5, 6): 0.7 to 0.8 N·m

Crimp Terminal Specifications

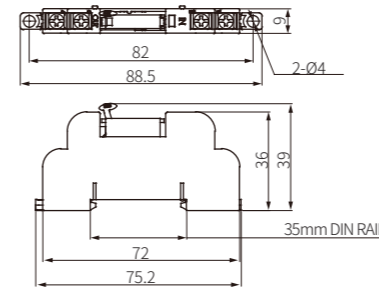
- Unit: mm, Use the UL approved crimp terminal.



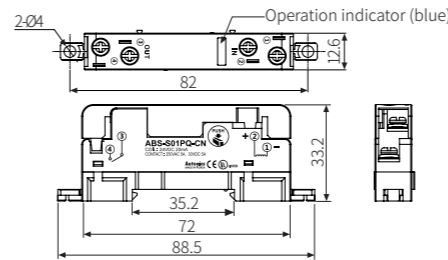
Dimensions

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

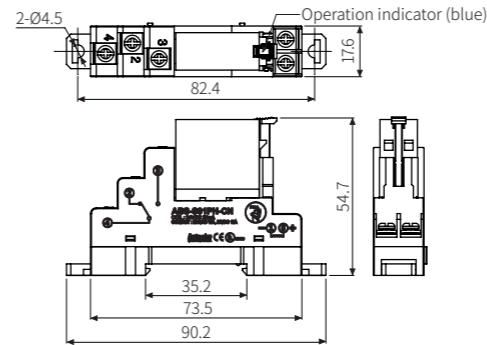
■ PA, TN



■ PQ, R6



■ PH, R2

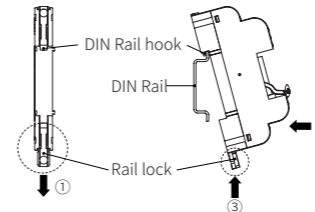


Installation

■ DIN Rail

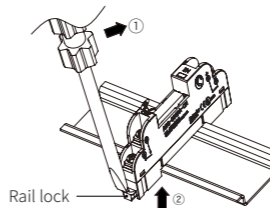
- Mounting

- 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 toll 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.

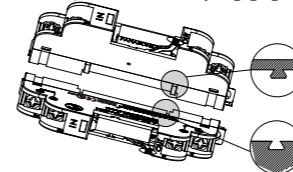
It is recommended to use M4 × 15 mm of spring washer screws.

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.

■ Connecting multiple units

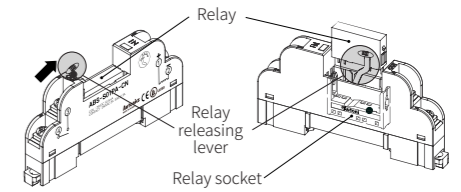
Connect the concave and convex parts of each unit by engaging each other.



Replacing Relay

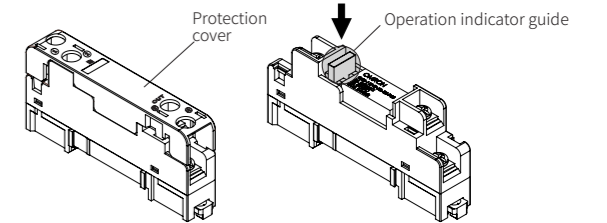
■ PA, TN

- Lower the relay releasing lever in the direction of the arrow.
 - If the relay comes up, remove it, then raise the relay releasing lever again.
 - After checking the location of the relay socket, insert the relay to be replaced.
- If you push or pull the relay releasing lever to the left or right, it may break.



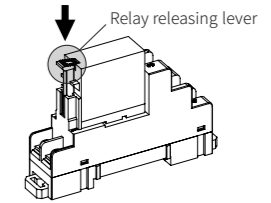
■ PQ, R6

- Disassemble the protection cover.
 - Release the relay by pushing the operation indicator guide.
 - Insert the relay to be replaced into the groove of the case.
- Operation indicator guide is for displaying the power status and releasing the relay.



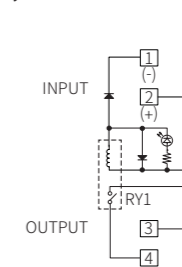
■ PH, R2

- Push down the relay releasing lever in the direction of the arrow.
- Insert the relay to be replaced into the groove of the case.

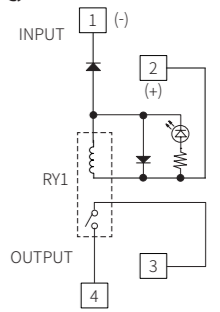


Wire Connection

■ PA, TN

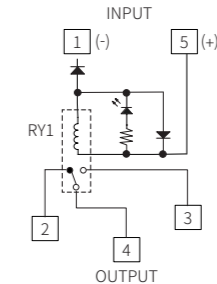


■ PQ, R6



■ PH, R2

- Rated voltage DC



- Rated voltage AC

