

## CAUTIONS FOR USE

## RT-3 UNIT RELAY 4-POINT TERMINAL

**1. Never install modules (relays) into this product other than those designated. Doing so will cause malfunction, breakdown, and breakdown of the connected product.**

**2. If a unit is dropped be sure to check its external appearance and characteristics before using it.**

**3. The operation and return voltage values when equipped with PA relays are based on the relay terminals being face down. (RT-3 Unit relay (PA type), 4-point Terminal)**

### 4. Switching lifetime (PA relay)

This characteristic depends on the relay and is effected by coil driving circuit, load type, activation frequency, activation phase, ambient conditions and other factors.

Also, be especially careful of loads such as those listed below.

1) When used for AC load-operating and the operating phase is synchronous, rocking and fusing can easily occur due to contact shifting.

2) Frequent switching under load condition

When high frequently switched under load condition that can cause arc at the contacts, nitrogen and oxygen in the air is fused by the arc energy and  $\text{HNO}_3$  is formed. This can corrode metal materials. Three countermeasures for these are listed here.

(1) Incorporate an arc-extinguishing circuit.

(2) Lower the operating frequency

(3) Lower the ambient humidity

### 5. Operating environment

1) Keep the product as far way as possible from power cables, high tension equipment, power equipment, equipment with transmitting devices such as amateur radios, or equipment which generates a large switching surge.

2) The main unit is made of resin; therefore, do not use it in areas where it may come in contact with (or be exposed to) organic solvents such as gasoline, thinner, and alcohol, or strong alkaline substances such as ammonia and caustic soda.

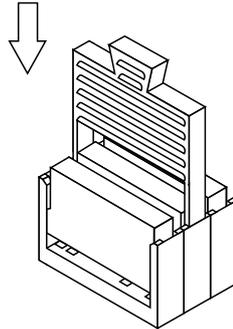
3) Do not use the product in areas where it may be exposed to flammable gases, corrosive gases, excessive dust, or moisture, or areas where it may be subjected to strong vibration or shock.

### 6. Installing and removing the module

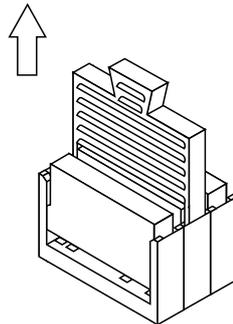
1) Firmly insert the module into the socket with the terminals going in the direction of the blade receptacles.

2) The module can be easily removed using the removal key.

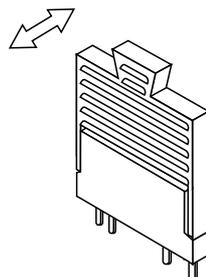
(1) Insert the removal key into the socket slots.



(2) Pull the removal key up to remove the module.



(3) Slide the removal key off of the module.



### 7. Wiring and circuit configuration

1) Perform wiring according to the internal schematic. Take care not to make any mistakes.

In particular, with the RT-3 Unit relay (PA relay type) and 4-point terminal, be careful of the polarity on the output side when equipped with AQZ10\*D (DC type). Also, with the RT-3 Unit relay (Power PhotoMOS type), be careful of the polarity on the output side of the DC type (RT3SP1-\*\*\*V for type equipped with AQZ102).

2) We recommend the use of wire-pressed terminals for connection to the terminal portion.

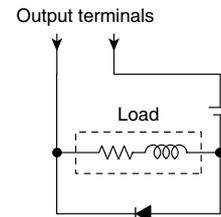
• Example of applicable wire-pressed terminal

Company Name	Part Name	Applicable wire-pressed terminal
J.S.T. Mfg Co., Ltd.	1.25 to C3A	0.25 to 1.65mm <sup>2</sup>

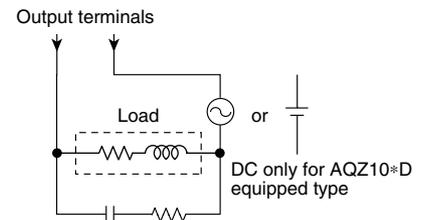
3) When the load is inductive, limit spike voltages generated from the load to less than the maximum load voltage.

Typical circuits are shown below.

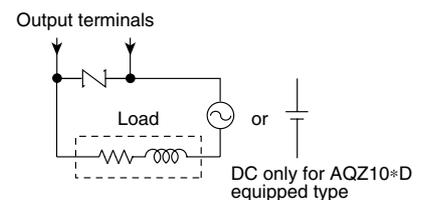
(1) Add a clamp diode to the load.



(2) Add an R-C snubber to the load.



(3) Add a varistor between the output terminals.

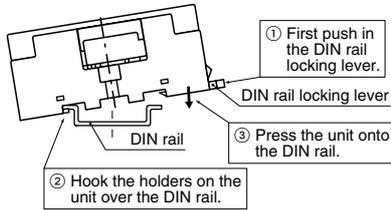


4) Even if spike voltages generated from the load are limited by a clamp diode or R-C snubber, inductances in long circuit wires will still create spike voltages. Keep wires as short as possible to minimize inductance.

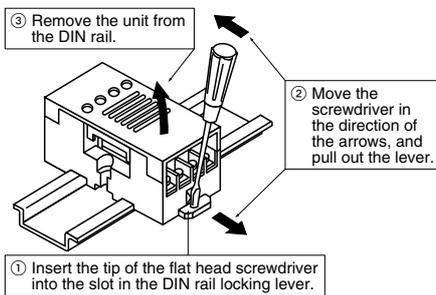
# CAUTIONS FOR USE

## 8. Installation

- 1) Perform mounting hole cutout according to the panel cutout drawings.
- 2) When installing the unit on a DIN rail, use the DIN rail locking lever on the side of the unit. Installation is accomplished by simply fitting the unit onto the rail and pressing gently.



- 3) To remove the unit from the DIN rail, use a flat head screwdriver to pull out the DIN rail locking lever.



## 9. Transporting and storage

- 1) If the product is subjected to extreme vibration while being transported, the relays may become detached, the lead may become bent, and the unit may become damaged. Handle the carton and case with care.
- 2) If the product is stored in an extremely adverse environment, visible defects and deterioration of performance characteristics may result. We recommend the following storage conditions.
  - Temperature: 5 to 30°C 41 to 86°F
  - Humidity: Max. 60% R.H.
  - Environment: No hazardous substances such as sulfurous acid gases and little dust.

## 10. When equipped with Power PhotoMOS voltage drive type [RT-3 Unit relay (PA relay type), 4-point Terminal]

Since the Power PhotoMOS voltage sensitive type does not require the current-controlling resistance on the input side, it can be used together with PA relays on RT-3 unit relay (PA relay type) or RT-2 relay terminals. When connecting Power PhotoMOS voltage sensitive types, since it will be a close connection, it will be necessary to be careful of load currents. Be sure to refer to the information given regarding "Load currents vs ambient temperature characteristics" in the precautions given for use of 4-point terminals.

## TERMINAL BLOCK

We recommend using wire-pressed terminals for connection to the terminal portion.

- Applicable electrical wire: 0.25 to 1.65 mm<sup>2</sup> .01 to .065 inch
- Applicable wire-pressed terminals (mm inch)

Company Name	Part Name	Part Name
J.S.T. Mfg Co., Ltd.	1.25 to C3A	1.25 to 3
NICHIFU	1.25Y to 3N	1.25 to 3
Nippon Tanshi Co., Ltd.	VD1.25 to 3L	R1.25 to 3

## ACCESSORIES

### Short circuit plate for RT-3 Unit relay

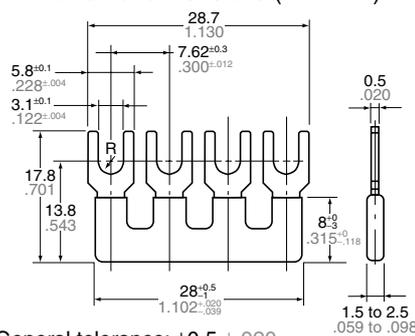
Use when you want to bridge terminals.

< With insulator >



AY3802

External dimensions (mm inch)



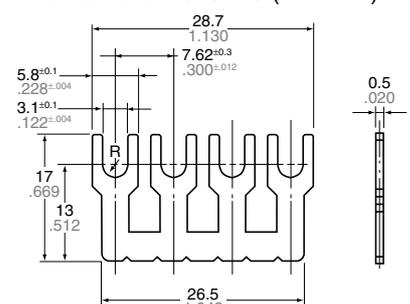
General tolerance:  $\pm 0.5 \pm 0.20$

< Without insulator >



AY3803

External dimensions (mm inch)



General tolerance:  $\pm 0.5 \pm 0.20$