Time Switch

A-TB72/72Q

Flat time switches Flush mounting type and Surface mounting type / DIN rail mounting type

CE RoHS compliance

Related Information ■Precautions in using ..... P.1256 ■Options P.1292

Flush mounting type

Surface mounting type/
DIN rail mounting type

panasonic-electric-works.net/sunx

DIN 72 size, 21.7 mm 0.854 in deep control panel time controllers

Features

- **DIN72 size depth in the box 21.7 mm 0.854 in smart time switch (Flush mounting type)**
- **One-touch installation. Can also be installed by screws (Surface mounting type / DIN rail mounting type)**
- **Easy to read directly readable clock**
- **No worry of loss thanks to internal setting elements**
  Load can be turned on and off every 15 minutes with the 96 setting elements
- **Equipped with ON color dial**
  The set time can be seen at a glance
- **Compatible with AC power supplies (quartz power failure compensation type)**
  Power failure compensation using secondary battery
- **Flat terminals for easy wiring**
  To weld the #187 flat connection terminals (receptacles), please use a "YC-051" tool manufactured by J.S.T. Mfg. Co. Ltd.

PRODUCT TYPES

Drive system	Operating voltage	Flush mounting type	Surface mounting type / DIN rail mounting type
		Part No.	Part No.
A-TB72 (AC motor type)	100 V AC	**A-TB72-D-HR1A-100V**	**A-TB72-DD-HR1C-100V**
	110 V AC	**A-TB72-D-HR1A-110V**	**A-TB72-DD-HR1C-110V**
	120 V AC	**A-TB72-D-HR1A-120V**	**A-TB72-DD-HR1C-120V**
	200 V AC	**A-TB72-D-HR1A-200V**	**A-TB72-DD-HR1C-200V**
	220 V AC	**A-TB72-D-HR1A-220V**	**A-TB72-DD-HR1C-220V**
	240 V AC	**A-TB72-D-HR1A-240V**	**A-TB72-DD-HR1C-240V**
A-TB72Q (Quartz power-failure compensation type)	100 to 240 V AC	**A-TB72-Q-HR1A-ACF**	**A-TB72-QD-HR1C-ACF**
Options	Front protective cover	for A-TB72/TB72Q flat time switches	**AQM7801**

Notes: 1) In addition to these, 24 V AC and 48 V models can be manufactured. Please inquire for details.
2) A protective cover is included with **A-TB72/72Q** flat time switch. If you need an extra one, please order it as an option.

PRECAUTIONS DURING USAGE

Output setting

- ON setting: Turn the setting element inward, and red mark appear around the dial.
- OFF setting: Turn the setting element outward, and the above red mark will disappear.
- Turn the setting element sufficiently until the click action is felt.

Clock setting

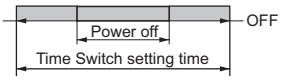
- Be sure to turn the knob at the clock center in the arrow direction to set the clock to the present time. (The dial also turns together with the clock.) Be sure to prevent reverse turning.
- Do not turn the dial to set the clock.

Attachment

- Insert Time Switch from the front of the attachment panel. (One-touch system: Flush mounting type)
- Either use 3.8 or M4 wood screws for attachment, or use DIN rails with a width of 35 mm 1.378 in (**AT8-DLA1**). (Surface mounting type)

Contact relay operation if the power fails

Contact relays remain closed while the power is off.



Power failure compensation (A-TB72Q)

- An internal secondary (Ni-NH) battery is provided to compensate for power failures, but the power supply should be left on as much as possible. Turning the power supply on and off shortens the service life of the battery.
- After continuous charging for 48 hours, the battery provides 200 hours of power failure compensation. The internal battery is fully charged, but if the battery capacitance has dropped because of natural discharging, or if the battery has discharged completely, there may be times when the switch does not operate immediately when the power is turned on. If this happens, set the clock to the proper time after the power has been back on for three to four hours.
- Secondary batteries are a valuable commodity which can be recharged. They cannot be replaced, but if being discarded after use, please make sure they are recycled if possible. When discarding the battery, turn off the power supply to Time Switches, and use radio pliers to disassemble the overall connections and remove the battery.

Precautions concerning wiring

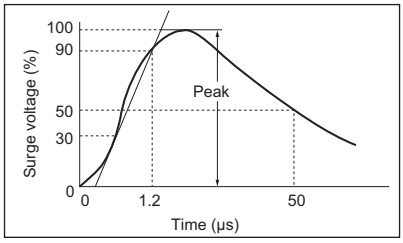
With flush mounting types, wiring should be connected by soldering it directly, or using the #187 flat connecting element provided as an accessory.

For cautions regarding each product, please refer to the respective "Precautions in using" sections.

CAUTIONS FOR USE

- Use the time switch in ambient temperatures of -10 °C to +50 °C +14 °F to +122 °F.
- Use Time Switch in ambient humidity of 85 % R.H. or less.
- Prevent using Time Switch in such places where inflammable or corrosive gas is generated, much dust exists, oil is splashed and considerable shock and vibration occur.
- Since the main body cover is made of polycarbonate resin, prevent contact with organic solvents such as methyl alcohol, benzine and thinner, or strong alkaline materials such as ammonia and caustic soda.
- External surge protection
  At a standard waveform the voltage of surge resistance against external surges is 4,000 V (7,000 V for Flat Time Switch), however, a surge voltage in excess of that may damage the internal circuit, therefore, please use a surge absorbing element.

Surge waveform [Unipolar full wave voltage of ±(1.2 × 50) μs]



- Provide chattering absorbing circuit to control the circuit in which chattering is a problem.
- Provide circuit breaker, fuse or other protective devices for the side of power supply.
- The power failure compensation function provides compensation if power is supplied continuously to the time switches. The internal battery is fully charged, but if the battery capacitance has dropped because of natural discharging, or if the battery has discharged completely, there may be times when the switch does not operate immediately when the power is turned on. If this happens, check to make sure that the clock is operating normally immediately after the power is turned on, and then set the clock to the proper time.

LIFE FOR TIME SWITCH

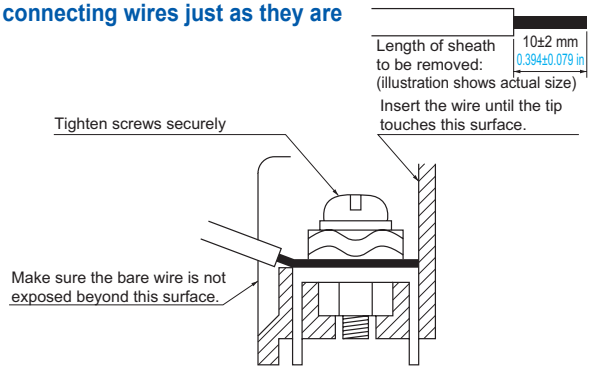
Item	Average life	Conditions
Contact switching times	Approx. 2 × 10^4 times	Resistive load 250 V AC 15 A
Years of use*	Approx. 5 years	Normal temperature (+25 °C +77 °F)

When the value on the left has been reached, we recommend replacing the product with a new one.
* Average working life will decrease the higher the operating temperature gets (20,000 hours when +50 °C +122 °F).

PRECAUTIONS CONCERNING WIRING

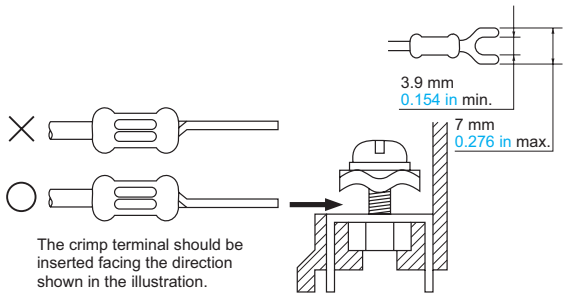
Connections should be made using wiring of ø 1 to ø 1.6 ø 0.039 to ø 0.063, or 1.25 to 2 mm² 2 to 3 × 10^{-3} in², with a 600 V vinyl insulating sheath.

If connecting wires just as they are

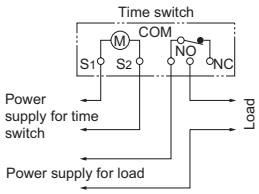
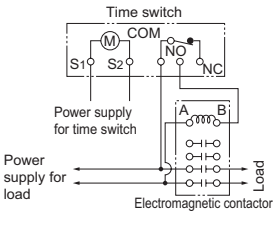
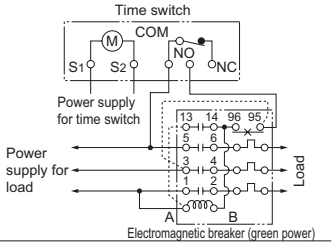
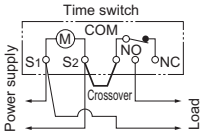
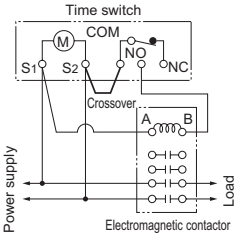
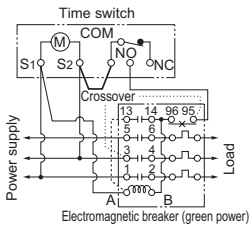
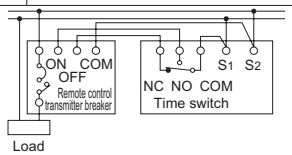


Using crimp terminals

- Use a crimp terminal with an insulating tube and an open tip (for M3.5 screws).



CONNECTION METHODS

	When time switches are directly controlled	When the electromagnetic breaker and contactor are used in combination	
		Single-phase	3-phase
If the power supplies for time switches and the load are separate			
If the same power supply is used for time switches and the load (Connect a crossover between S2 and COM.)			
Example of connecting time switches and remote control transmitter breaker (The output from Time Switches is a stand-alone circuit, and is applied to 1 C.)			

Note: Please remove the crossover (dotted line) connected to the electromagnetic breaker with case cover.