Panasonic TB11N Programmable Mechanical Timer Instruction Manual

Contents

Panasonic TB11N Programmable Mechanical Timer

Product Information

Specifications

- **Model:** TB11N, TB17N
- **Installation:** Indoor use only
- **Compatibility:** Suitable for medical equipment or large-scale facilities
- **Safety Features:** Redundant circuit for added safety

Product Usage Instructions

Precautions for Installation

Before installing the TB11N or TB17N, please take note of the following precautions:

- Ensure the installation is performed indoors only.
- Do not attempt to install this product in medical equipment or large-scale facilities.

Safety Precautions

When using this product, it is important to follow these safety precautions:

- Obey all safety guidelines and regulations applicable to your specific industry or environment.
- Ensure that safety devices, such as redundant circuits, are built into the machine (e.g., heater, refrigerator) where this product is being used.
- Avoid using the product if it is malfunctioning, as it may cause damage to the property.

Frequently Asked Questions (FAQ)

- **Q: Can I install the TB11N or TB17N outdoors?**

A: No, these products are designed for indoor use only. Installing them outdoors may result in damage or malfunction.

- **Q: Can I use the TB11N or TB17N with medical equipment?**
  A: No, it is prohibited to use these products with medical equipment. Please refer to the appropriate equipment guidelines for suitable products.
- **Q: What should I do if the TB11N or TB17N is not functioning properly?**
  A: If the product is not working correctly, it is recommended to stop using it and contact our customer support for assistance. Continuing to use a malfunctioning product may lead to property damage.

Before starting to use this switch, please read through this instruction manual to be familiar with the working procedure. The personnel for constructing the present machine shall be qualified electric worker. The back is an instruction manual for the customer, and never fail to hand this to him or her after the electric work.

Safety precautions

WARNING

- Do not use this product for the machinery which will affect people's life or society seriously if it gets out of order (medical equipment or large-scale facility, for instance).
- Never fail to reserve safety margin in rating and performance and to build in safety devices such as redundant circuits when this product is used for the machine (heater, refrigerator etc.) which may affect the property if the switch gets out of order.
- Do not use this switch at a place to cause bedewing. Might cause an electric shock, a fire or other failures.
- Do not disassemble nor revamp this time switch. Might cause electric shock, fire or other failures.
- Do not use this switch for a location exposed to water or oil. Might cause electrc shock, fire or other failures
- Never fail to turn off the power supply when installing or checking out.
- If installed or checked without turning off the power, the operator may be struck by electricity.

CAUTION

- Never control directly the load over the rated. Might cause electric shock, fire or other failures. In such a case, use an electromagnetic contactor.
- Use proper cable. If used improper cable or wire, it will cause a burn or a fire.
- Clamp firmly the terminal screws. If loosened, a fire might break out
- Never connect to the power source out of the rated. Might cause a fire or other failures.

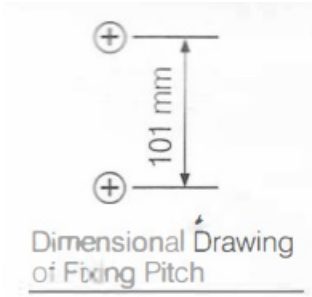
Precautions for installation

- Do not set up in a place with the following conditions to prevent wrong operation, failure, and fault current.
  - a place at -10 °C or less. – 50 °C or more.
  - outdoor and exposed to rain or direct sunlight.
  - a place to cause bedewing.
  - a place with corrosive gasses such as sulfurous acid or ammonia.
  - a place full of humidity or dust.
  - a place causing oscillation or impact.

    - a place with high frequency, electric field or strong magnetic field.
- The output circuit configuration is the same circuit type (voltage-applied contact output).
- The same voltage as the power terminal is applied to the output terminal.
- Do not confuse the power terminal and the output terminal.
- If confused, shortcircuit, wrong operation or some other failures may occur at the load circuit.
- In case of the load capacity is over the rated or of three-phase, use an electromagnetic contactor.
- After he installation, never fail to make sure the connection is correct.
- Then turn on the main power supply to make a performance test.
- After the installation, never fail to use this time switch without the terminal cover. Might cause electric shock.

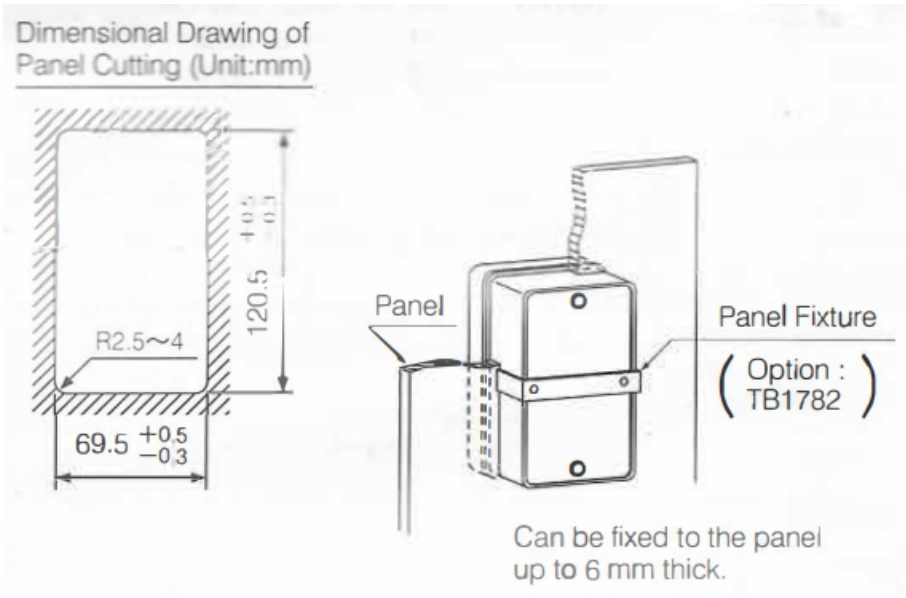
How to install

1. When mounted (exposed) on a surface.



   Take off the protective cover and fix the switch. to, the man body with screws of 30 mm long or the M4 screw or the like When fixing with another device reserve enough space for the cover to be removed.

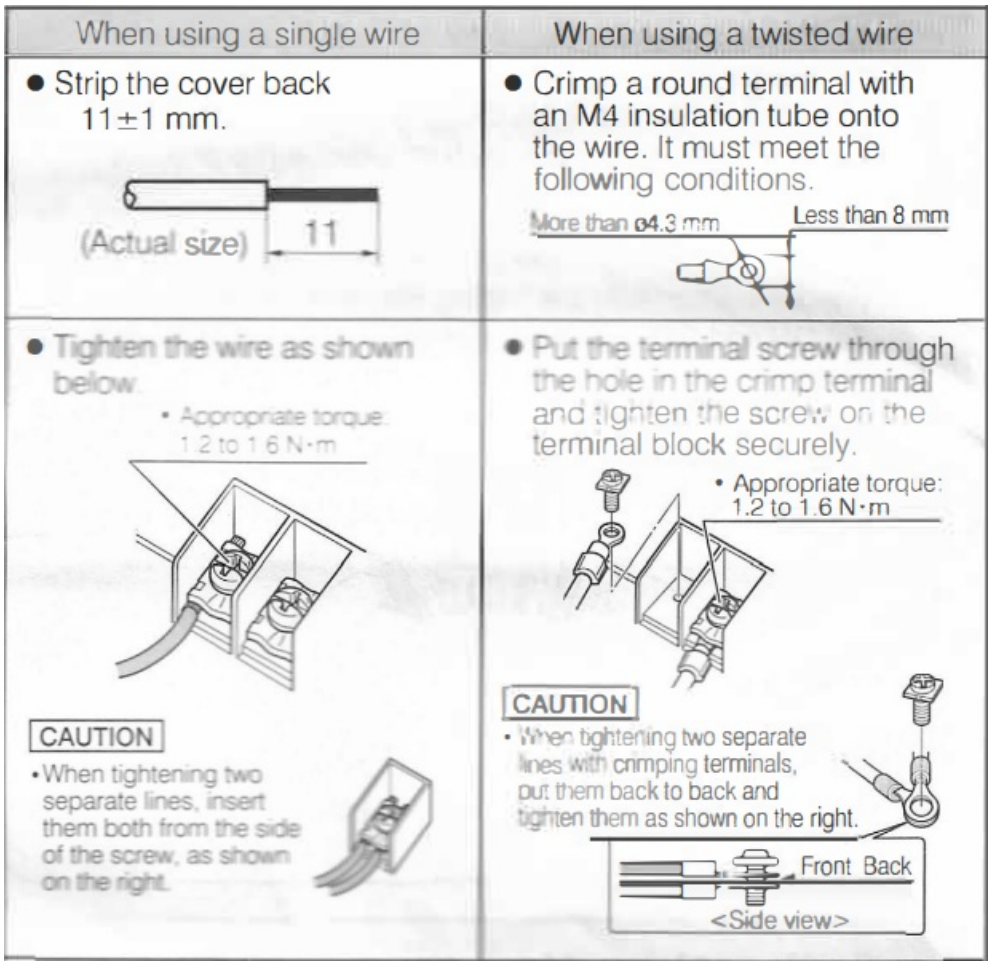
2. When fixing to the panel.



   Use panel fixture (TB1782), optional one, to fix with.

How to wire

Applicable wire: Single wire; 01.2 to 2.0 mm
Twisted wire: 1.25 to 2.5 mm?



- Do not put 3 or more wires on one terminal The heat generated may cause a fire if the connections are not good enough
- The time switch is intended to be incorporated into equipment/built-in into the control box etc.
- In case of surface mounting the terminal area may need to be covered by an external panel, to fulfill the requirements of class II.

Replacing the nickel-hydrogen battery (TB11 N only)

- **Power Failure Compensating Time**

  TB11N series are equipped with a built-in Ni-MH battery to work in service interruption

  - When turned on the time switch, the Ni-MH battery is to be charged automatically.
  - The battery is charged fully to be able to compensate for power failure for 300 hours when supplied with power 3 days in succession.

    NOTE Frequent power failure and service interruption for a long time will shorten the life span of the storage battery.
- **Replacement**

  The life span of the Ni-MH battery is about 5 years. However, the hotter the service temperature, the shorter the life Please replace it with a new one earlier. (Parts No. : TB380N2457)

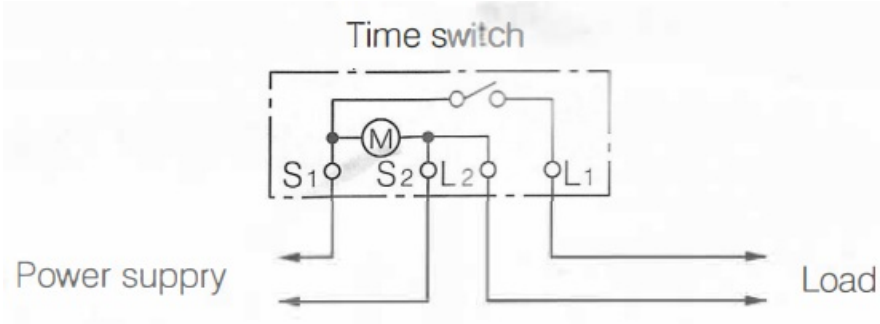
  CAUTION Never fail to turn off the power when replacing the cell… You might be struck by electricity.

1. Open the battery cover with a flathead screwdriver. (screwdriver size: less than 4.5 mm width).
2. Take the nickel-hydrogen battery out of the battery compartment and disconnect the connector.

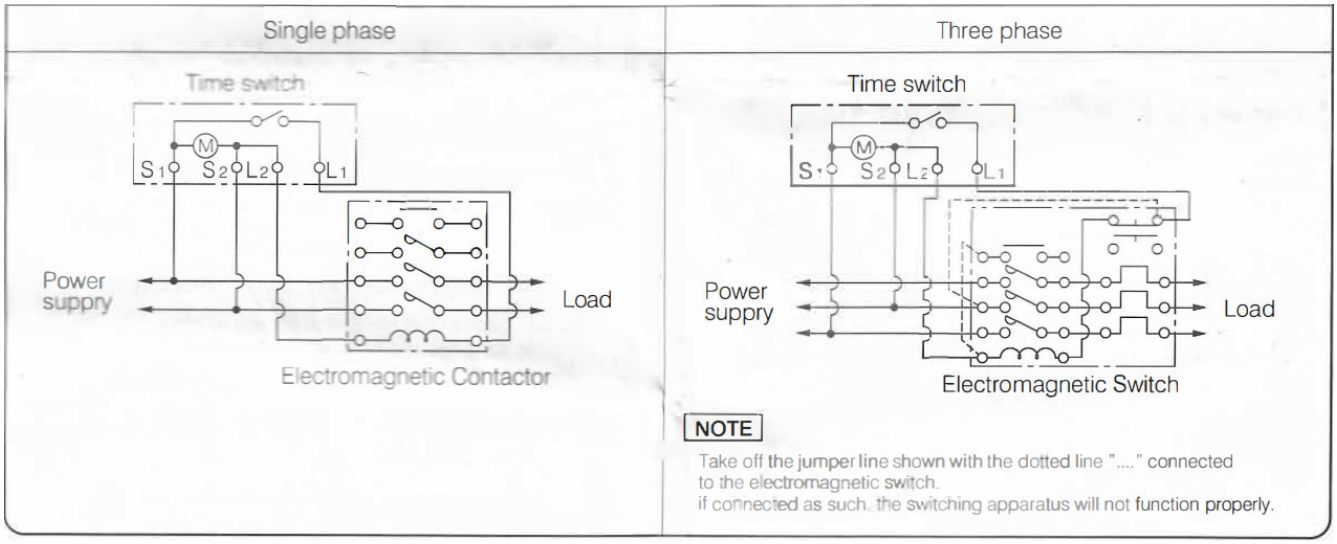
3. Connect the connector to the new battery, and store the battery in the compartment.
4. Make sure to put the battery cover back on. Parts No. of battery: 1B380N2457

Wiring examples

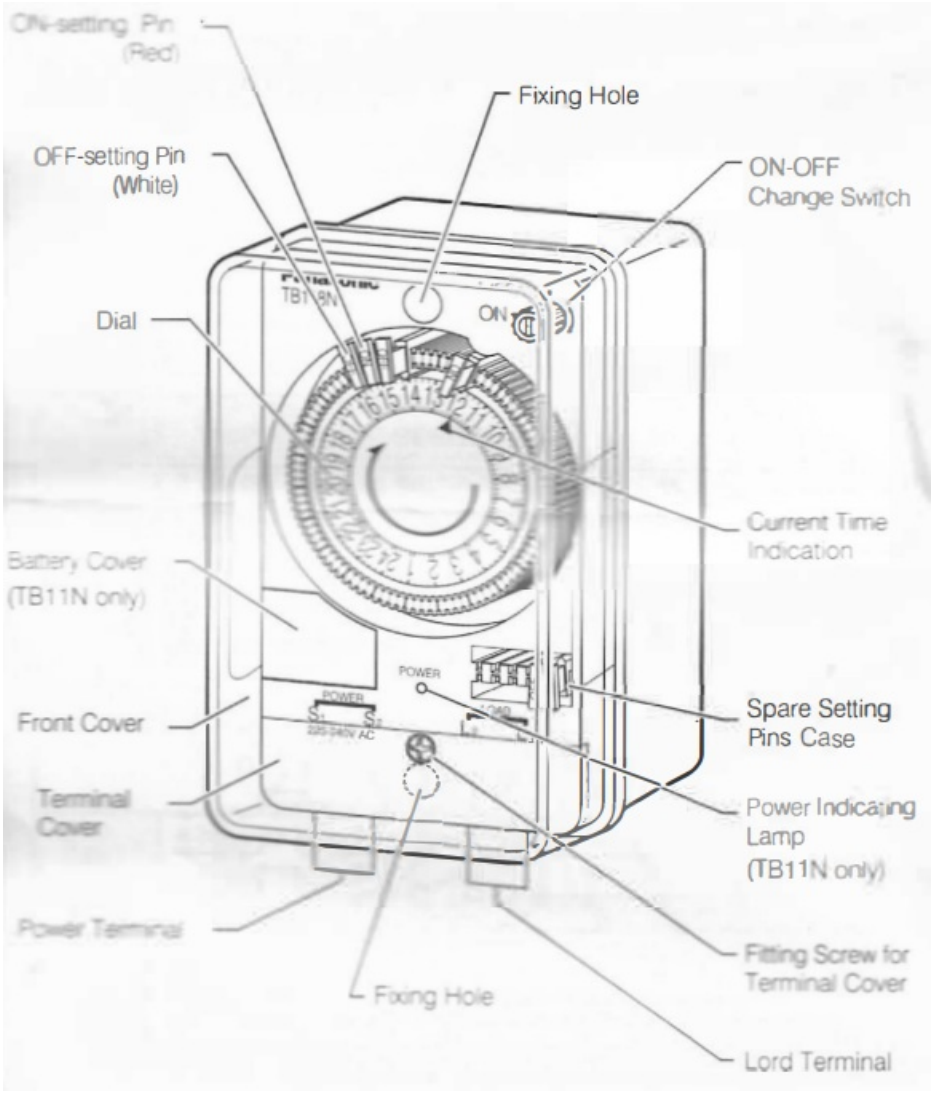
- Before wiring, draw the connecting diagram of the whole system including the devices to be controlled by the time switch.
  In case the time switch controls direct load.



- In case of load over the rated capacity or three-phase load control.

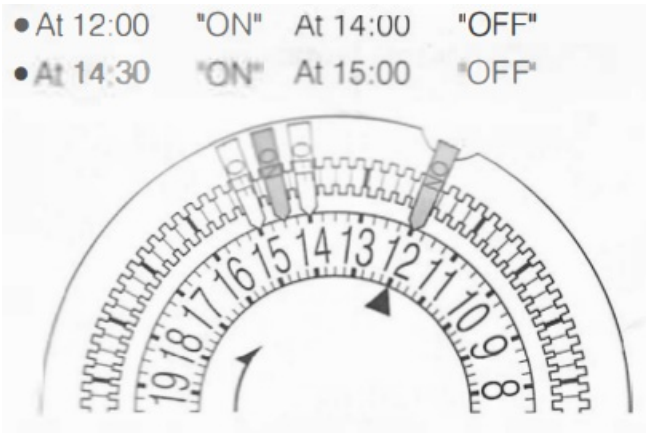


Name of each Parts



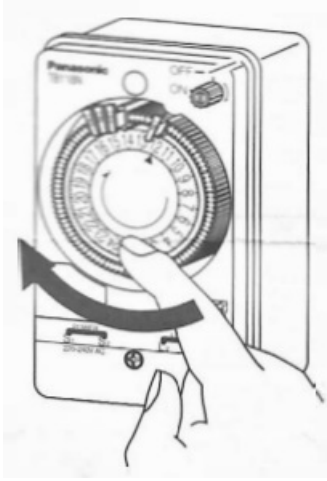
Setting the operating time

- Set the Setting Pin at the required time. Insert the Setting Pin at the division of the required time. Insert the (Fed) Setting Pin at the time to be ON and the (White) one at the time to be OFF. (3 ON-OFF setting Pins are each included in this product.)
  NOTE Ensure to insert fully the Setting Pin. Set the ON and OFF pieces alternately. [Ex] In the case shown on the right;



Adjusting the current time

- Turn the dial in the arrow direction (clockwise) to set the dial at the current time indication(▼).



NOTE Never fail to turn the dial in the arrow direction. If turned by force in the opposite direction, it be damaged.

Setting of ON -OFF Change Switch

- Set the load ON and OFF with the ON/OFF Switch. With this switch, you can make sure ON/OFF status and switch ON or OFF temporarily. Use this for the test after wiring.

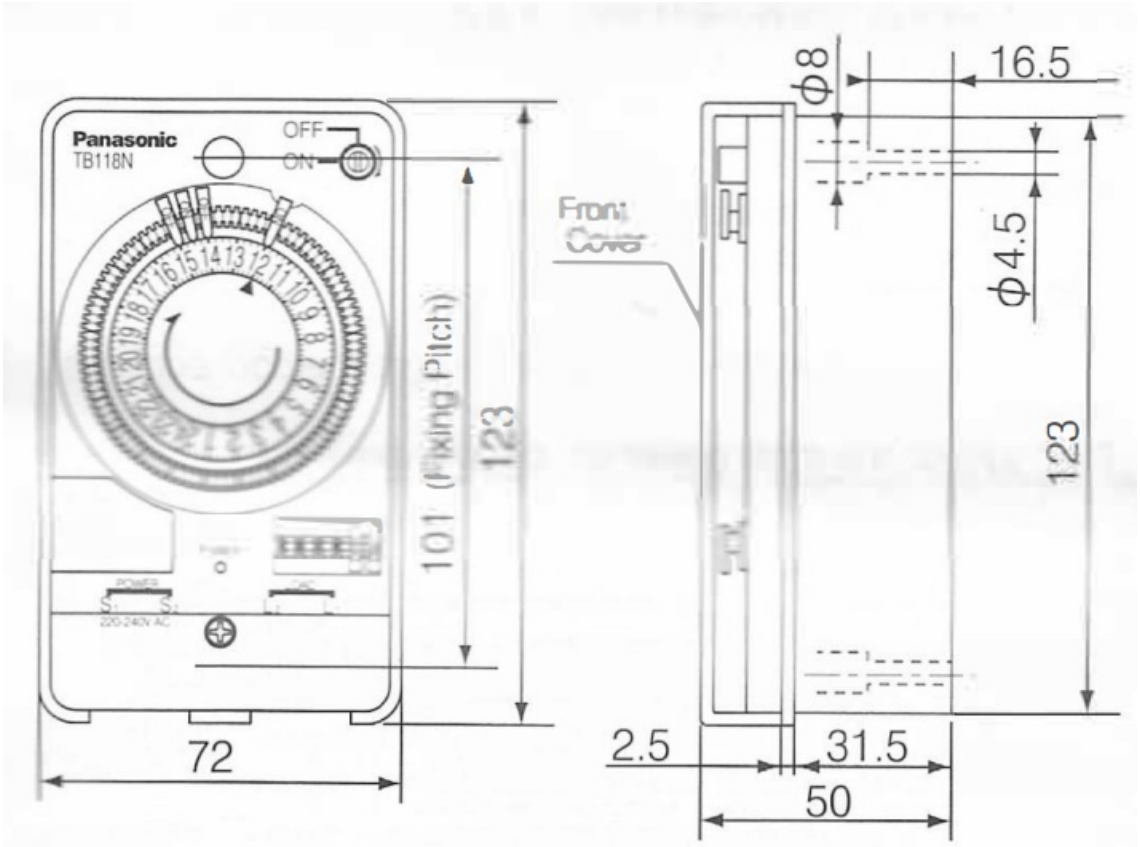
NOTE

- Never fail to tug the switch knob in the arrow direction.
- Do not operate an ON/OFF Switch in cases where the Setting Pin is in the range of 1 hour before/after the current time indication (▼).
- If operates under such a situation, it might cause failure.
- When setting ON (or OFF) in succession for a long time, take all the Setting Pins off the dial and then set the switch knob.

Caution for use

- Ni-MH battery for Power Failure Compensation is built in only TB11N Series.
- The Ni-MH battery sometimes maybe reduced in capacity due to the self-discharge when you purchase the present switch.
- If discharged completely, the clock will not work even when turned on the power supply.
- In such a case, take one or two hours for charging and then set the current time.

Dimensions



Before judging failure

Phenomena	Cause and Remedies
The load will not start at the preset time:	This time switch is divided into 24 hours. Don't you mis-set the time in the afternoon into the time in the morning? Make sure the present time of the time switch.
	This is a mechanical time switch and there might be an error in the range of ±7.5 minutes.
	★ If the wiring is wrong, the Time Switch does not work correctly. Refer to the connecting examples of the reverse side, and wire it correctly.
The clock gets out of order: (case of TB17N)	TB17N doesn't have a Power Failure back-up. In case of the power failure, the clock stops. Set again the present time in such a case.
The clock gets out of order: (case of TB11N)	If the power failure lasts more than the back-up time (300 hours), the clock stops to cause deviation in the present time. Set again the present time in such a case.
Clock stops/ Power indication lamp flashes: (case of TB11N)	★ Ni-MH battery is at the end of its life span. The battery need to be replaced with a new one. Please ask the working store. (Parts No. : TB380N2457)
NOTE	As for the ★-marked items, please ask the working store for replacement.

Rating List

SERIES	TB11N SERIES	TB17N SERIES	
MODEL NO.	TB118NE7	TB178NE5	TB178NE6
Rated Voltage	220-240 V AC	220-240 V AC	
Allowable Operating Voltage	170～260 V AC	170～260 V AC	
Frequency	50-60 Hz	50 Hz	60 Hz
Driving Method	Quartz Motor	AC Motor	
Power Failure back-up time	300 h (at 20 ℃)	———	
Time Precision	±15 s / month (at 25 ℃)	same as AC frequency	
Cycle	24 h	24 h	
Power Consumption	2 W	1.5 W	
OUTPUT			
Circuit Quantity	1 circuit		
Circuit Configuration	Same Circuit (voltage-applied contact output)		
Contact Configuration	Single Pole, Single-through (—o/o—)		
Manual ON/OFF	with ON/OFF Switch		
＊Contact Capacity			
Resistance	250 V AC 15 A		
Incandescent Lamp	250 V AC 15 A		
Induction ($\cos\phi=0.6$)	250 V AC 12 A		
Motor ($\cos\phi=0.6$)	220 V AC 1500 W		
Method	Setting pin fitting (red : ON, white : OFF)		
Minimum Setting Unit	15 min Unit		
Minimum Setting Interval	30 min Interval		
Number of Operations	6 for standard, Max. 48		
Ambient operating Temperature	-10 ℃ ～50 ℃		
Ambient operating Humidity	85 %RH, or less (no condensing)		
Weight	200 g	200 g	
Class of protection	——		
Pollution degree	2		
Overvoltage category	Ⅲ		
Classification	1BSTU	1BRTU	

＊A standard of number of lamps to be connected with mercury vapor lamp or fluorescent lamp load is as follows.

H: High Power Pin L: Low Power Pin

TYPE	Mercury Vapor Lamp															
Watt	40 W		100 W		200 W		250 W		300 W		400 W		700 W		1000 W	
Power Factor	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L
100 V AC	26	11	10	5	5	2	5	2	2	2	2	0	0	—	0	—
200 V AC	37	32	18	15	10	7	9	7	8	6	6	4	3	—	2	—

TYPE	Fluorescent Lamp											
Watt	10 W		20 W		30 W		40 W		60 W		110 W	
Power Factor	H	L	H	L	H	L	H	L	H	L	H	L
100 V AC	65	65	52	40	27	22	25	15	17	10	10	—
200 V AC	—	—	—	—	—	—	40	35	20	11	—	—

Life span

The average life span under normal conditions is as follows;

- **Contact Switching Times:** 50.000 times (Resistance load: 250 V AC 15 A)
- **Duration of Service:** 5 years (at 25 °C, Relative Humidity 65 %)
- **Ni-MH battery:** 5 years (at 25 °C, Relative Humidity 65 %)

We suggest you, if the product reaches either of the above described, to replace it with a new one.

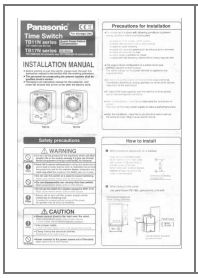
Repair parts (for damage, loss, replacement)

PARTS NAME	PARTS NO.	REMARKS
Front Cover	TB17803127	———
Panel Fixture	TB1782	Fixture : 1, Fitting Screws: 2
Setting Pin Set	TB1781	ON-setting & OFF-setting 1each
Ni-MH battery	TB380N2457	TB11N only

About for repair, checkout, and repair parts, please ask the selling or working store.

Panasonic Corporation
1048, Kadoma, Osaka. 571-8686. Japan
Tel. +81-6-6908-1131

Documents / Resources



Panasonic TB11N Programmable Mechanical Timer [pdf] Instruction Manual
TB11N Programmable Mechanical Timer, TB11N, Programmable Mechanical Timer, Mechanical Timer, Timer

References

- User Manual