

# Time Switch

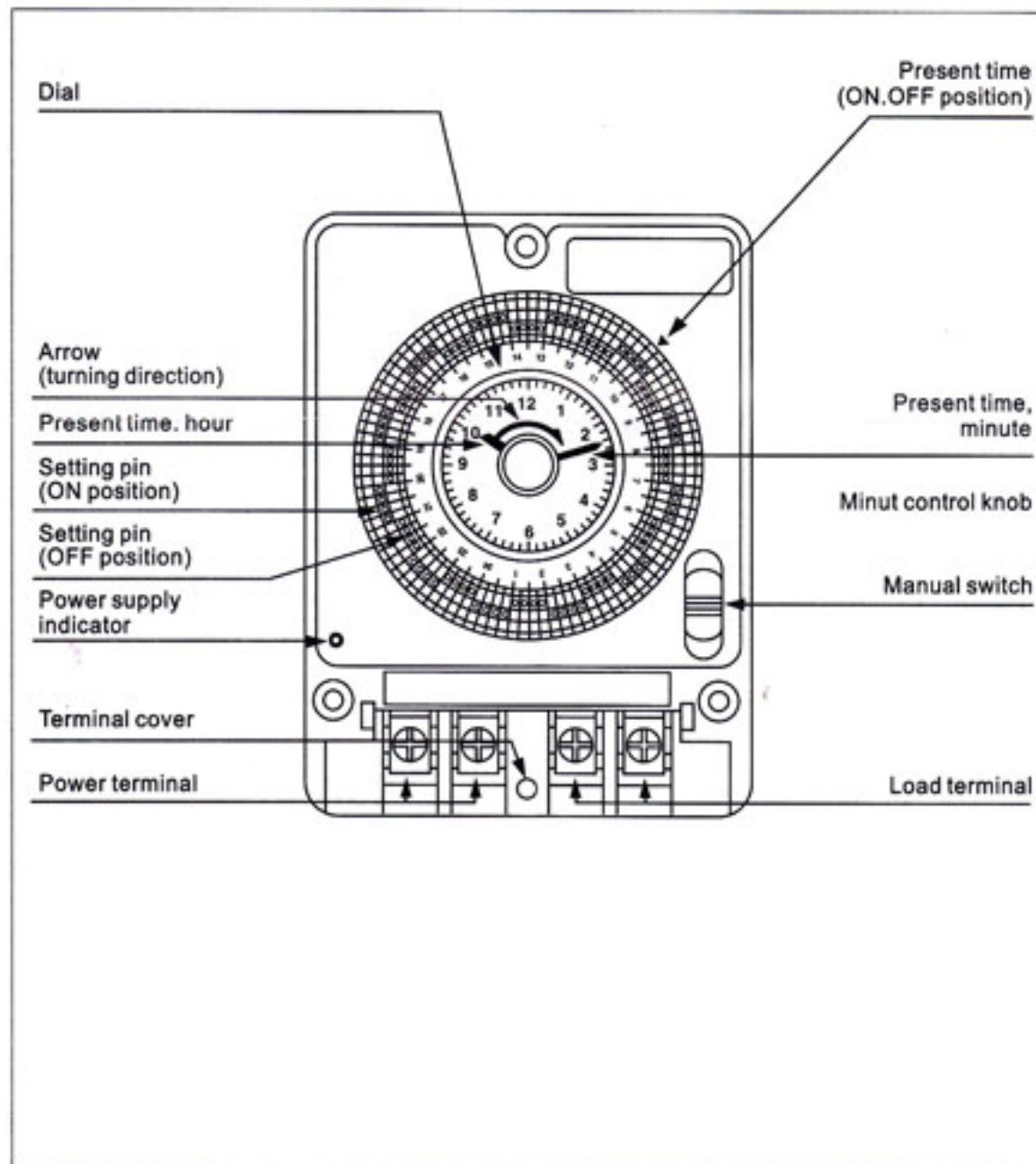
## Operating Instructions

# TB35 SERIES

110V-240VAC

Thank you very much for your purchase. Before operating this unit, please read these instructions completely.

### ■ PARTS IDENTIFICATION



### ■ SPECIFICATIONS

Model No.	TB35
Movement type	AC type
Voltage tolerance	110V-240VAC
Frequency	50/60Hz(Selectable)
Power consumption	1.5W
Time precision	Same as AC current frequency
Manual ON/OFF	ON/AUTO/OFF switch
Ambient temperature	-10°C ~ +50°C
Resistive load	250V AC 20A
Lamp load	10A
Inductive load	12A ( $\cos\phi = 0.7$ or more)
Motor load	110V AC 750W, 220V AC 1500W
Switch construction	SPST
Minimum setting unit	15 minutes/unit
Minimum setting interval	15 minutes
No. of ON/Off operations	96 operations
Weight	485g

## ■ CAUTIONS

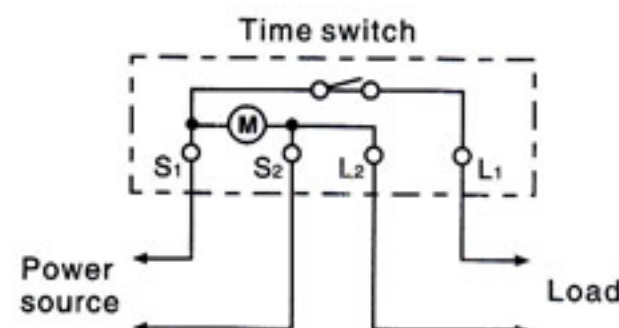
1. Turn the minute control knob in the direction (clockwise) indicated by the arrows. It cannot be turned in the opposite direction.
2. When the time switch is used for loads exceeding its rated capacity, it is imperative that the time switch should be used in combination with one or more magnetic contactors according to each load.
3. The precision and life of the Time Switch are affected by the environmental conditions. Please do not use it in the following areas:
  - The ambient temperature is below  $-10^{\circ}\text{C}$  or over  $+50^{\circ}\text{C}$ .
  - A place where dew condensates.
  - The humidity is high.
  - There is dust or gas
  - There is vibration or shock.
  - There is exposure to direct sunlight
  - A place where the unit is exposed to direct rainfall and water-drops outdoors.

In unavoidable cases, use a protective cover to cover the unit, and take care so that the unit is not exposed to direct dust or dirt and waterdrops.

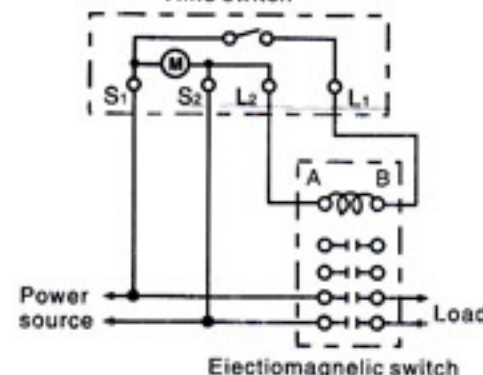
4. When the time error occurs due to power failure, for example, turn the minute control knob in the direction of the arrow, and adjust to the present time.
5. Do not push in the setting pin forcibly

## ■ CIRCUIT DIAGRAMS

For light load

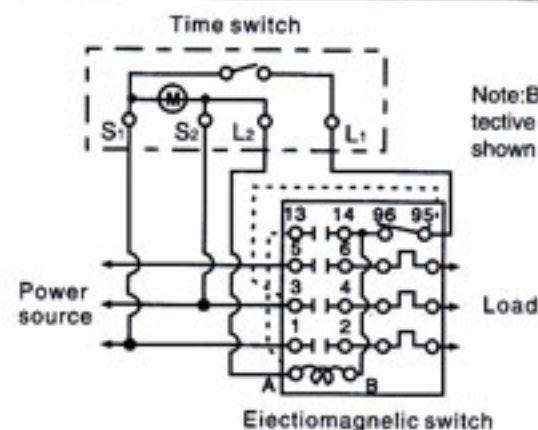


Time switch



Electromagnetic switch

For three-phase



Note: Before operating, take off all protective wires of electromagnetic switch shown with dotted lines in diagram.

1. When a heater is used as a load, be sure to insert a thermoswitch into the load circuit,
2. Use a timer suitable for the specified voltage of operation circuit (between A and B) of electromagnetic switch.
3. After completion of wiring connections, turn the manual switch ON once and check the wiring connections.

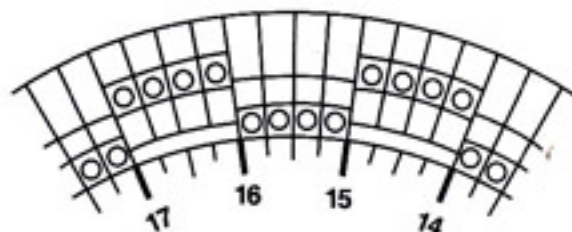


## ■ OPERATING INSTRUCTIONS

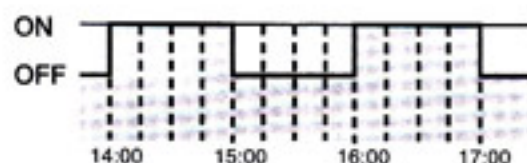
- Before turning power ON, check that your unit conforms to the operating voltage.
- Adjust the frequency selector knob to the adequate frequency.

### 1. Set the operating time:

- Set the setting pin between the desired times to the inside or outside of dial.
- Set the setting pin to the outside of dial: ON-state is reached at that time. If the setting pin is set to the outside continuously, ON-state continues only for No. of setting pins X 15 minutes.
- Set the setting pin to the outside fully until a click is heard.
- If the setting pin is set to the inside, at that time, the output is placed in OFF-state.
- When your desired time is close to the present time position, turn the minute control knob and set it apart from the position before setting.



Set the setting pin as shown on the above:  
the time chart is as follows.



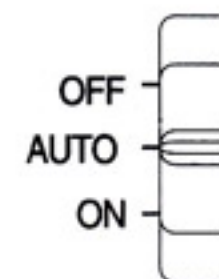
### 2. Adjust the present time:

Turn the minute control knob in the center clock unit in the direction of the arrow and adjust the time.

### 3. Set the manual switch:

Use this switch to select either turning ON or OFF in manual or ON/OFF in the operation program.

"AUTO": Output is turned ON and OFF according to the set program.

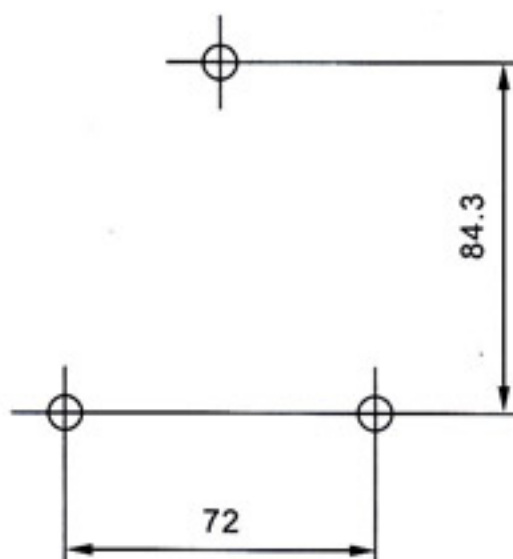
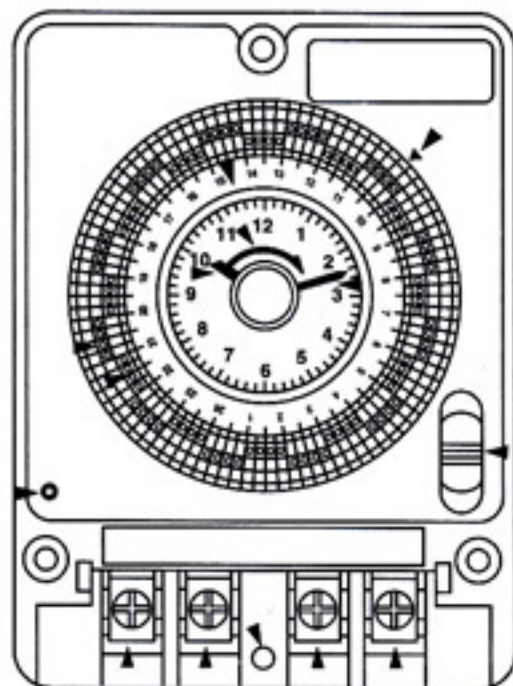


Manual "ON": Output is turned ON irrespective of the program. (Permanent ON)  
Use this mode for test operation.

Manual "OFF": Output is turned OFF irrespective of the program. (Permanent OFF)

After completion of test operation, set the manual switch to "AUTO".

## ■ DIMENSIONS (Unit: mm)



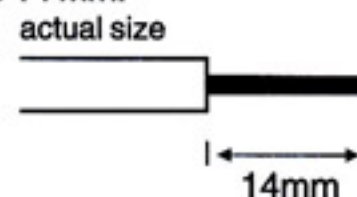
## ■ INSTALLATION

- Before installing, check that this unit conforms to the operating voltage.
- Adjust the frequency selector knob to the adequate frequency.
- Do not install this unit in a place as described in the "cautions 3 paragraph".

1. Hook the mounting hole (rounding-bellied hole) at the rear case on a wooden screw, and secure the two lower mounting holes (round), using wooden screws.
2. To connect an electric wire, break a vinyl chloride bushing and open the terminal cover. For the connection method, refer to the circuit diagram inside the case and the connecting method in the manual.
3. When making piping connections, using a conduit, remove a vinyl chloride bushing for use.
4. This unit is not of waterproof structure; therefore, protect the unit, using it in outdoors.

### • Wiring Precautions

1. Applicable cable:  
Single cable (φ 1.6, φ 2.0)  
IV stranded cable (2.0mm<sup>2</sup>)
2. The wire peeled length should be 14 mm.



3. Close the terminal cover securely after wiring.

