

# MODE TCR

Thank you for purchasing Shenler product. This manual primarily describes precautions required in installing and wiring the timer. Before operating the product, read this manual thoroughly to acquire sufficient knowledge of the product. Keep this manual for future reference.

\*Please keep these instructions and review them before using this unit

\*Please observe the cautions that follow:

**⚠ Warning** Serious injury may result if instructions are not followed

**⚠ Caution** Product may be damaged, or injury may result if instructions are not followed

\*The following is an explanation of the symbols used in the operation manual.

**⚠ Caution: injury or danger may occur under special conditions**

### Warning

**1.In case of using this unit with machineries(Nuclear power control, medical equipment, vehicle, train, airplane, combustion apparatus, entertainment or safety device etc),it requires installing fall-safe device. or contact us for information required.**

It may result in serious damage, or human injury

**2. This unit be mounted on panel**

It may give an electric shock.

**3. Do not repair or checkup when power on**

It may give an electric shock.

**4. Do not disassemble and modify this unit, when it requires.**

**If needs, please contact us.**

It may give an electric shock.

### Caution

**1.This unit shall not be used outdoors**

It might shorten the life cycle of the product or give an electric shock.

**2. Please observe specification rating**

It might shorten the life cycle of the product and cause a fire

**3. During the cleaning of the unit, do not use water or an organic solvents.**  
It might cause an electric shock or fire that will result in damage to the product

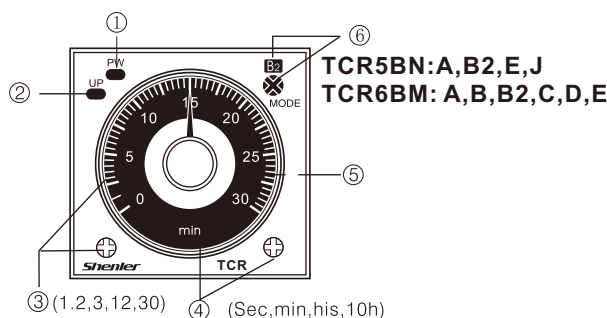
**4. Do not use this unit at place where there are flammable or explosive gas humidity, direct ray of the sun, radiant heat, vibration, impact etc.**

It may cause explosion.

**5. Do not inflow dust or wire dregs into this unit**

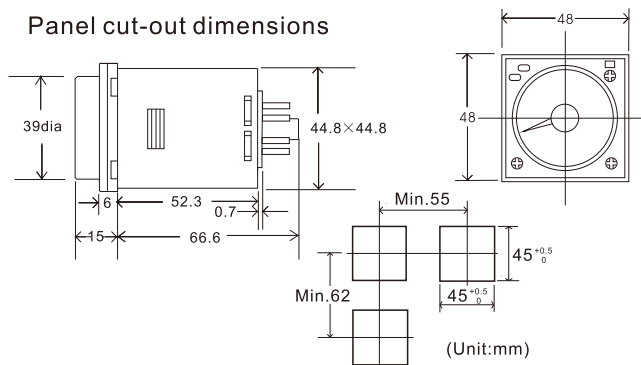
It may cause a fire or mechanical trouble

Item	TCR6BM	TCR5BN	TCR5HN		
Operating mode	A:ON-delay B:Flicker OFF start B2:Flicker ON start C:SingleON/OFF-delay D:SingleON-delay E:Interval	A:ON-delay(power supply bstart) B2:Flicker ON start(power supply bstart) E:Interval(power supply start) J:One-shot(power supply start)			
Pin type	11-Pin	8-Pin			
Rated supply voltage (see note 1)	100-240VAC 100-125VDC, 24-48VAC 12-48VDC				
Operating voltage range	85% to 110% of rated supply voltage(90% to 110% at 24 VDC)				
Power reset	Minimum power-opening time: 0.1 s				



① Power indicator                      ④ Time unit selector  
② Output indicator                    ⑤ Setting dial (setting time value)  
③ Rated time selector                ⑥ Operating mode selector

### Panel cut-out dimensions

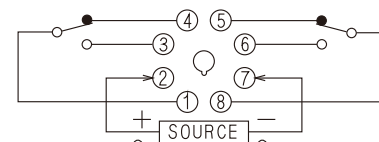


### Standard (0.05-s to 300-h) Models

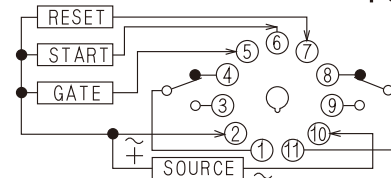
Time Unit		s (sec)	min	h (hrs)	x10 h (10 h)
Full scale Setting	1.2	0.05 to 1.2	0.12 to 1.2		1.2 to 12
	3	0.3 to 3			3 to 30
	12	1.2 to 12			12 to 120
	30	3 to 30			30 to 300

Accuracy of operating time	$\pm 0.3\%$ FS max. ( $\pm 0.3\% \pm 10$ ms max. in a range of 1.2 s)	
Setting error	$\pm 5\%$ FS $\pm 50$ ms (see note)	
Reset time	Min. Power-opening time: 0.1 s max.	
Reset voltage	10% max. Of rated voltage	
Influence of voltage	$\pm 0.5\%$ FS max. ( $\pm 0.5 \pm 10$ ms max. in a range of 1.2 s)	
Influence of temperature	$\pm 2\%$ FS max. ( $\pm 2\% \pm 10$ ms max. in a range of 1.2 s)	
Insulation resistance	100 M. min. (at 500 VDC)	
Life expectancy	Mechanical: 20,000,000 operations min. (under no load at 1,800 operations/h) Electrical: 100,000 operations min. (5 A at 250 VAC, resistive load at 1,800 operations/h)	
Ambient temperature	Operating	-10°C to 55°C with no icing
	Storage	-25°C to 65°C with no icing
Ambient humidity	Operating	35% to 85%
Vibration resistance	Destruction: 10 to 55 Hz with 0.75-mm double amplitude each in 3 directions for 2 hours each Malfunction: 10 to 55 Hz with 0.5-mm double amplitude each in 3 directions for 10 minutes each	
Shock resistance	Destruction: 1,000 m/s <sup>2</sup> (approx. 100G) 3 times each in 6 directions Malfunction: 100 m/s <sup>2</sup> (approx. 10G) 3 times each in 6 directions	
Static immunity	Malfunction: 8 kV Destruction: 15 kV	
Dielectric strength	2,000 VAC, 50/60 Hz for 1 min between current-carrying metal parts and exposed non-current-carrying metal parts 2,000 VAC, 50/60 Hz for 1 min between control output terminals and operating circuit 2,000 VAC, 50/60 Hz for 1 min between contacts of different polarities 1,000 VAC, 50/60 Hz for 1 min between contacts not located next to each other 2,000 VAC, 50/60 Hz for 1 min between input and control output terminals and operation circuit	
Impulse withstand voltage	3 kV (between power terminals) for 100 to 240 VAC/100 to 125 VDC; 1 kV for 24 to 48 VAC/12 to 48 VDC 4.5 kV (between current-carrying terminal and exposed non-current-carrying metal parts) for 100 to 240 VAC/100 to 125 VDC, 1.5 kV for 24 to 48 VAC/12 to 48 VDC and 24 to 48 VAC/VDC	
Degree of protection	IP40 (panel surface)	
Weight	Approx. 90 g	

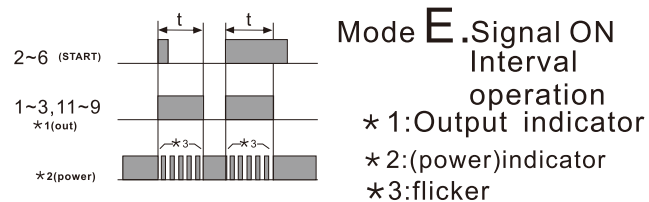
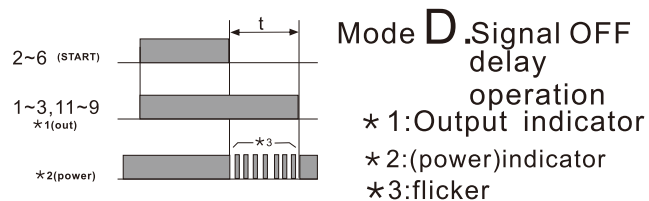
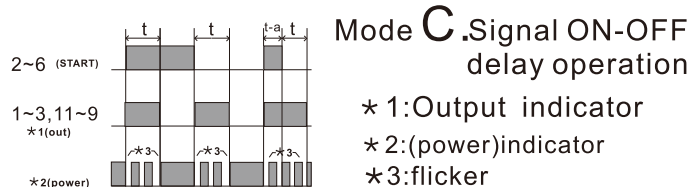
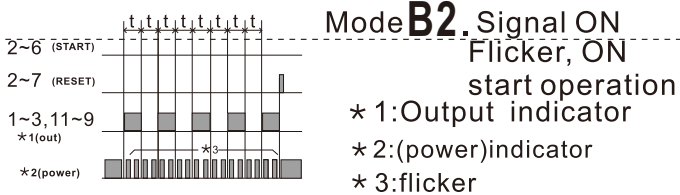
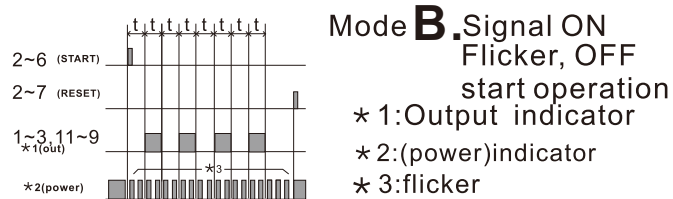
## TCR5BN



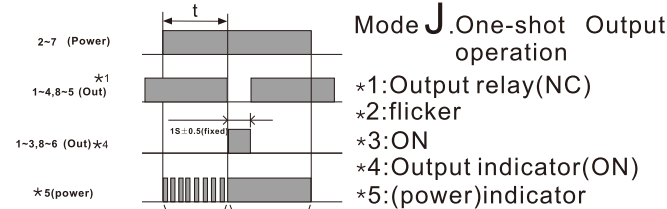
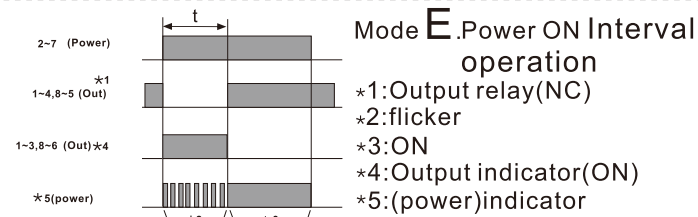
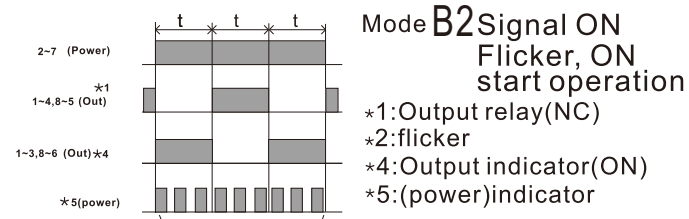
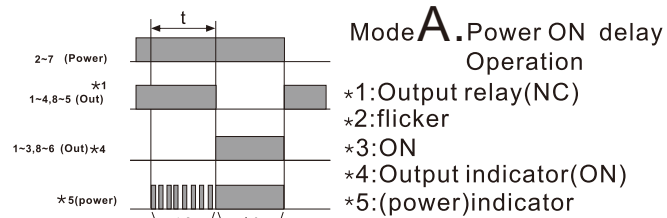
## TCR6BM



## TCR6BM Timing charts



## TCR5BN Timing charts



## Notice

Please follow carefully the below mentioned instructions which are intended to ensure safe operation of the controller.

(1) For correct use, do not subject the timer to the following conditions

- Dramatic temperature fluctuation
- High humidity or where condensation may occur
- Severe vibration and shock
- Corrosive gas or dusty environments
- Where there is danger of splashing of water, oil or any chemicals
- Where explosive or flammable gases may be present

(2) Load power supply

Make sure that the load power supply is within the rating

(3) Handling

Never disassemble, modify or repair

(4) Make sure the proper product is specified for the application

(5) Wire terminals with correct polarity

(6) Locate the timer, input devices and input signal wiring as far as possible from noise sources and conductors carrying high voltage

(7) Be sure to use the Timer at ambient temperature of -10 to 55°C and ambient humidity (relative humidity) of 35 to 85%

(8) Cleaning

Do not use paint thinner or the equivalent. Use standard grade alcohol to clean the product

(9) Do not change the time unit, time range or operation mode while the Timer is in operation, otherwise malfunction could result. Be sure to turn off the power before making such changes.

(10) Power supply connection

Use a DC power supply having a ripple factor of 20% or less and supplying a mean voltage that is within the rated operating voltage marked on the timer.

Make sure that the supply voltage is applied to the time all at once, using contacts such as of a switch or relay. Otherwise, the timer may not be able to perform power reset or its set time may be up when it should not.

(11) Please do not exceed the voltage rating marked on the timer. If voltage other than the rated voltage is applied, the internal components may be damaged

(12) Please refer to the diagram shown on below. Interlock the power to the timer with a relay so that the timer will not be left in a time-up condition for a month or longer, especially in places with high temperature, may result in deterioration to internal parts, such as an electrolytic capacitor

