(A) Photo electric sensor

(B) Fiber optic sensor

(C) Door/Area sensor

(D) Proximity

(E) Pressure sensor

(F) Rotary encoder

(G) Connector/ Socket

(H) Temp. controller

(I) SSR/

Power controller

(J) Counter

(K) Timer

(L) Panel

senso

## W72×H72mm, Weekly/Yearly timer

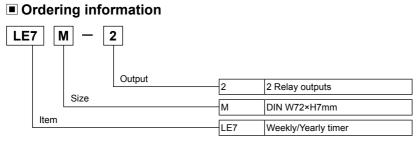
## Features

- Easy to check and change the program setting
- Customizable weekly or yearly unit time setting and control by user
- Includes daylight saving time function
- Built-in 2 independent control output (relay)
- Flush and surface mounting are in one unit
- Enable to mount on DIN rail with base plate

Please read "Caution for your safety" in operation



manual before using.



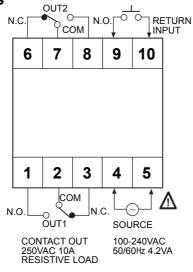
## Specifications

Model		LE7M-2		meter
Power supply		100-240VAC 50/60Hz		(M) Tacho/
Allowable voltage range		90 to 110% of rated voltage		Speed/ Puls meter
Power co	nsumption	Max. 4.2VA		(N)
RETURN	input	Short-circuit or open by switch or relay		Display unit
Timing program		48 steps for weekly, 24 steps for yearly		(0)
Operatior	n mode	ON/OFF mode, cycle mode, pulse mode		Sensor controller
Mounting		Front panel, surface, DIN rail		(P)
Time deviation		±15sec./month(ambient temperature: 25°C) (±4sec. /week)		Switching mode power
Temperature error		±0.01% ±0.05sec.(ratio by set time)		supply
Memory protection		Over 5 years(at 25°C)		(Q) Stepper motor&
_	Contact type	SPDT(Single Pole Double Throw)		Driver&Contro
Control Output	Contact capacity	250VAC 10A resistive load		(R) Graphic/ Logic
	Output number	Independent 2 output(1c × 2)		
Relay life cycle	Mechanical	Min. 5,000,000 operations(switching capacity: 30 times/min)		(S) Field network device
	Electrical	Min. 50,000 operations <switching 10a(resistive="" 20="" 250vac="" capacity:="" load)="" min,="" times=""></switching>		
Insulation resistance		Min. 100MΩ(at 500VDC megger)		
Dielectric strength		2000VAC 50/60Hz for 1minute		(T) Software
Noise strength		±2kV the square wave noise(pulse width: 1µs) by the noise simulator		
Environ -ment	Ambient temperature	e -10 to 55°C, storage: -25 to 65°C		(U) Other
	Ambient humidity	35 to 80%RH		
Unit weight		Approx. 272g		

c **A** us

\*Environment resistance is rated at no freezing or condensation.

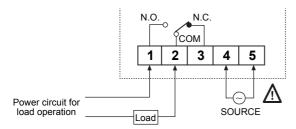
## Connections



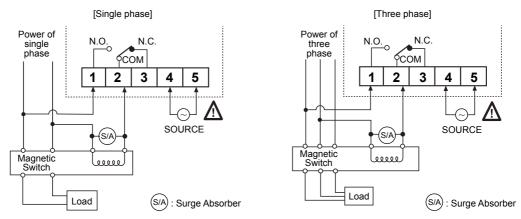
## Load connection

You must connect a surge absorber to the both ends of the load to prevent from damage or malfunction of this unit when controlling non-resistive load (ex: magnetic switch, etc).

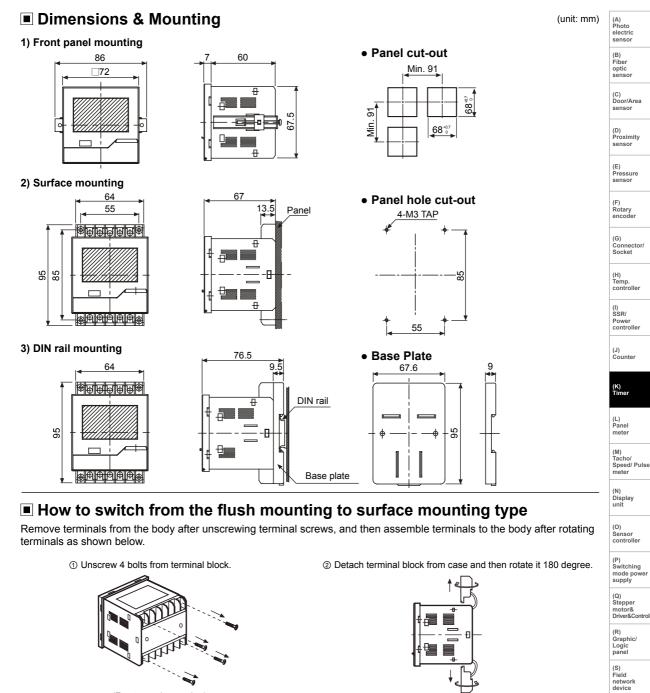
## • In case of controlling the load directly



#### • In case of controlling the load by using a magnetic switch



## Weekly/Yearly Timer

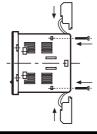


(Front panel mounting)



(Surface mounting)

 $\textcircled{\sc 3}$  Assemble terminal block to case by using the 4 bolts.



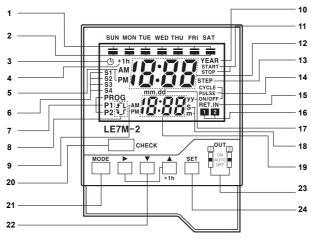


(T) Software

(U) Other

**Autonics** 

## Parts description



<ol> <li>Day indicator</li> <li>Day display         <ul> <li>Light : Day is selected.</li> <li>Light-out : Day is not selected.</li> <li>Current time setting mode indicator</li> <li>DST display(Daylight saving time)</li> <li>AM/PM display</li> <li>Season display</li> <li>Program display</li> <li>Display ON time/day, OFF time/day, ON time width, OFF time width</li> <li>AM/PM display</li> <li>YEAR display</li> <li>Iturns ON when set, check, modify, delete yearly program, set yearly holidays and operate yearly program.</li> </ul> </li> <li>Yearly START/STOP day display</li> </ol>	<ul> <li>13. Remaining step display</li> <li>14. Operation mode display</li> <li>15. Power restore input display</li> <li>16. Output mode display</li> <li>16. Output mode display</li> <li>17. Year, month, date display</li> <li>18. Unit of pulse width display</li> <li>19. Sub-display</li> <li>20. CHECK key</li> <li>21. MODE key</li> <li>22. Operation key</li> <li>23. Output selection switch <ul> <li>AUTO : Control output according to the set program.</li> <li>ON : Output is ON.(Operation)</li> <li>OFF : Output is OFF.</li> <li>※Output 1(OUT1) and Output 2(OUT2) are selected independently.</li> </ul> </li> </ul>
11. Yearly START/STOP day display 12. Main display	24. SET key

## Functions

## ○ Program setting and output operation

Output1/Output2 operates according to Program1 and Program2.

## **○** Definitions

- Record : A part of program that controls output operation.
- Step : Basic component of record.

## ○ Operation modes

If the operation mode of Program1(Program2) is set on pulse mode initially, the pulse mode is fixed for additional programs.

If the operation mode of Program1(Program2) is set on ON/OFF or cycle mode initially, pulse mode cannot be used for additional programs.

#### • Weekly ON/OFF mode

Output operation by ON/OFF set time.

- Min. time setting unit : 1 min.
- It is able to set ON/OFF day separately.
- One record in two Steps(ON day/ON time, OFF day/OFF time)



Weekly Cycle mode
 Output turns ON for ON time and turns

Output turns ON for ON time and turns OFF for OFF time. And the ON/OFF cycle is repeated.

(A) Photo electric

sensor

(B) Fiber optic sensor

(C) Door/Area

(D) Proximity

senso

(E) Pressure

(F) Rotary encoder

(G) Connector/ Socket

(H) Temp. controller

(I) SSR/

> Power controller

(J) Counter

(K) Timer

(L) Panel

mete

(M) Tacho/ Speed/ Pulse meter

(N) Display unit

(O) Sensor controller

(P) Switching mode power supply

(Q) Stepper

motor& Driver&Co

(R) Graphic/ Logic panel

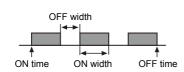
(S) Field network device

(T) Software

(U) Other

senso

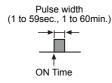
- Set range for ON/OFF time width : 1min. to 12 hour 59min.
- One record in 3 steps(ON day/ON time, OFF day/OFF time, ON time width/OFF time width)



Weekly pulse mode

Output turns ON at ON time for a specified pulse width. (Pulse width : 1 to 59sec., 1 to 60min.)

• One record in two steps(ON day/ON time, pulse width)



• Yearly ON/OFF mode

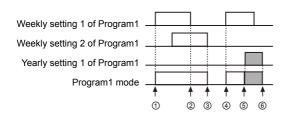
Output turns ON at ON time on START date and turns OFF at OFF time on STOP date.

- One record in three steps(START/STOP date, ON/OFF time)
- Yearly pulse mode

Output turns ON at ON time on START date and turns OFF at OFF time on STOP time for a specified pulse width repeatedly.(Pulse width : 1 to 59sec., 1 to 60min.).

 One record in three steps(START/STOP date, ON time, pulse width)

## O Program operation



- ① to ② : Operated by weekly setting 1 of Program 1.
- $\bullet$  ② to ③ : Operated by weekly setting 2 of Program 1.
- ④ to ⑤ : Operated by weekly setting 1 of Program 1.
- (5) to (6): Operated by yearly setting 1 of Program 1. (During weekly program operation at 12:00 AM on START date, the weekly program operation stops, and it changes to yearly program operation mode. The yearly program operation stops at 12:00 AM on the next day of STOP date.)

## ○ Display and change of next mode

• The day of next mode in Program1 or Program2 is displayed on the day indicator, and the time of next mode is displayed on the lower row of screen. Press <u>SET</u> + <u>CHECK</u> in RUN mode it is changed from program1 to program2 or from program2 to program1.

• In ON/OFF operation mode, set ON time and OFF time to next mode. In Pulse operation mode, set Pulse ON time to next mode.

## O Power restore mode

In setting group 2-Level 2(Power restore), select auto [ $R_L$ ] or normal [ $n_D r$ ] by (a) or (key, and press [SET] key to set. • Auto [ $R_L$ ] power restore mode

Output(OUT1, OUT2) operates according to program when power turns on again after power failure.

• Normal [npr] power restore mode

When power turns on again after power failure, output is kept OFF and **RET.IN** flashes on the panel. When power restore input is detected, **RET.IN** turns off and output operates according to program.

Power restore input

Input contact signal in external "Return input terminals ( to ())" by switch or relay, or press <u>SET</u> key for 3sec. in RUN mode.

Please use reliable contacts enough to flow 0.1mA of current at 5VDC when use switch or relay.

## Season switching mode

This feature uses for setting seasonal weekly operation mode.

To operate this mode, save starting month and date, ending month and date of each season which displays S1, S2, S3, S4 then set day and time of each season in weekly program setting. It is also able to operate only in summer and winter season. (S1: set summer season, S2: set winter season, S3/S4: do not set)

At the season switching selection LEVEL 2 status in setting 2 group (5En turns ON, DFF flashes), select ON [Dn] by

pressing  $\blacktriangle$  or  $\blacktriangledown$  key and press  $\fbox$  key to complete the season switching.

Be sure that if changing season switching from  $_{D}FF$  to  $_{D}n$  or,  $_{D}n$  to  $_{D}FF$ , the weekly program 1(P1) and the weekly program 2 (P2) which are set before are deleted.

• ON [un] mode

Weekly program is switched automatically by season switching.

- Period setting per season
- At the season switching selection LEVEL 2 status in setting 2 group (5E n flashes, the set season turns ON, START and STOP turn ON), press SET key.

② Advance to the flashing position of season selection among S1, S2, S3, S4 by ▲ or ▼ key and press SET key.

- ③ After set START month, date per season and press SET key.
- ④ SET key is pressed after set STOP month, date per season, it is advanced to LEVEL1 of period setting per season. Add or adjust the period setting by SET key.
- It is disable to use when it is OFF [\_\_FF].
- If season terms are overlapped, these are prioritized in S4>S3>S2>S1 order.

## $\ensuremath{\mathbb{O}}$ Daylight saving time

To utilize daylight during the summer season, daylight saving time is adjusted forward one hour from standard time.

In setting group 2-LEVEL  $2(d5 \pm \text{ turns ON}, B \pm \text{ or } nor flashes.)$ , select Auto  $[B \pm ]$  or Normal [nor] by  $\blacktriangle$  or  $\bigtriangledown$  key and press SET key to set.

• Auto[RE] Daylight Saving Time mode

Current time will be faster as an hour when it is started and slower as an hour when it is finished.

- Automatic Daylight Saving Time period setting
- ① Automatic Daylight Saving Time period setting LEVEL 1 of setting group 2. (d5t flashes and START and STOP turn ON.)
- ② Set START date(Month, date) of automatic Daylight Saving Time mode and press SET key.
- ③ Set START time(AM/PM, Hour) of automatic Daylight Saving Time mode and press SET key. But, the minute will be fixed as 00.
- ④ Set STOP date(Month, date) of automatic Daylight Saving Time mode and press SET key.
- ⑤ Set STOP time(AM/PM, Hour) of automatic Daylight Saving Time mode and press SET key. But, the minute will be fixed as 00.
- Normal [npr] daylight saving time mode

Press  $\pm 1h$  key over 3sec. in RUN mode,  $\pm 1h$  turns ON and current time is faster as an hour and  $\pm 1h$  turns ON out or vice versa, when press  $\pm 1h$  key over 3sec. again.

## O Current time setting

(Ex) Set the current time as 10, Mar, 2008, 5:10 PM.

## Advance to the current time setting mode

SUN MON TUE WED THU FRI SAT



MODE + SET keys are pressed over 3sec. in RUN mode, it is advanced to current time setting of setting group 2 and clock will be flashed and *L*,*R*,*J* will be lighted in second display part, press SET key.

### ② Year, month, date setting

SUN MON TUE WED THU FRI SAT



Press ▲ or ▼ key to set 08 (year 2008) and move the flashing digit to position month by ▶ key. Press SET key after press ▲ or ▼ key to set date 10.

#### ③ Current time(AM, PM) setting SUN MON TUE WED THU FRI SAT



Press A or vertex to select PM and move the flashing digit to position hour by key.

## ④ Current time(Hour, Min.) setting

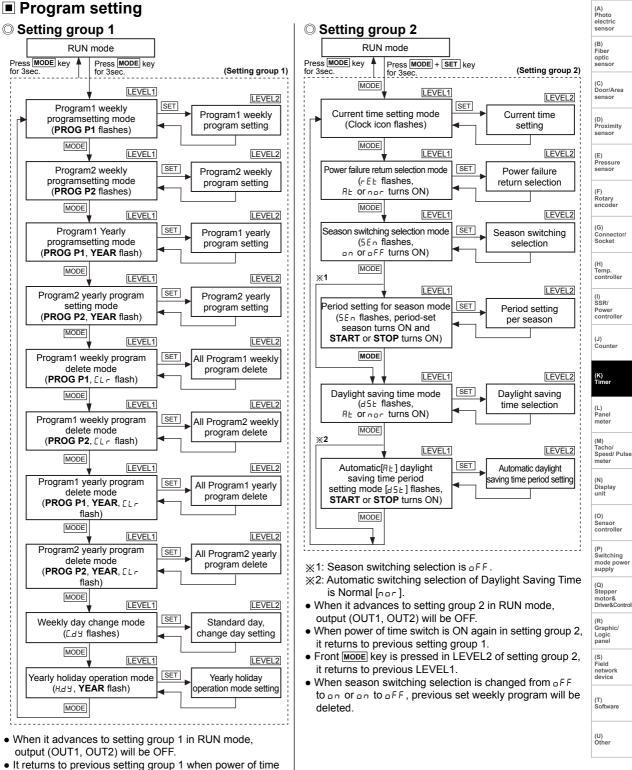
SUN MON TUE WED THU FRI SAT



Press A or key to set 5 PM and move the flashing digit to position min. by key. Press or key to set 10min. and press SET key and it is returned to RUN mode when press MODE key over 3sec.

- It advances to "①Current time setting mode" in ON status and set current time as shown above ② to ④ by SET key.
- Current time is set up to 31, Dec., 2099.
- Check current year/month/date in RUN mode When key is pressed over 3sec. in RUN mode, it advances to current year/month/date display. After display current year/month/ date for 3sec., it returns to RUN mode displaying current display.

## Weekly/Yearly Timer



- It returns to previous setting group 1 when power of time switch is ON again in setting group 1.
   When MODE key is pressed in LEVEL2 of setting group 1,
- When MODE Key is pressed in LEVEL2 of setting group 1, current setting will be canceled and it returns to previous LEVEL1.

## ○ Weekly program setting

#### Weekly ON/OFF mode

(Ex) Output1(OUT1) is ON from Monday to Friday at 8:00 AM and OFF at 6:10 PM.

L	SUN	MON	TUE	WED	THU	FRI	SAT	
L								

8:00 6:10 8:00 6:10 8:00 6:10 8:00 6:10 8:00 6:10 AM PM AM PM AM PM AM PM AM PM

mode.

#### ① Advance to program1(P1) weekly program setting mode

#### SUN MON TUE WED THU FRI SAT

SPROG:

MODE key is pressed over 3sec. in RUN mode, **PROG P1** flashes and press <u>SET</u> key.

Press SET key in ON/OFF

#### ② Mode type setting

SUN MON TUE WED THU FRI SAT



## ③ ON day setting



Press key to move the indicator to monday, it will be lighted when or key are pressed and move it to tuesday by key. Press SET key after tuesday, wednesday, thursday, friday turn ON.

#### ④ ON time setting(AM, PM) SUN MON TUE WED THU FRI SAT

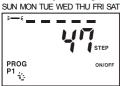


▶key is pressed, move the flashing to hour position and select PM by ▲ or ♥ key when ON time is afternoon.

## (5) ON time setting(Hour, Min.)



## 6 OFF day setting



Set 8:00 by 
or 
key
and press 
SET key.

Press **SET** key to check ON/OFF day.

#### ⑦ OFF time setting(AM, PM)

SUN MON TUE WED THU FRI SAT



Select PM by ▲ or ▼ key and move the flashing to hour position by ▶ key.

Move the flashing to minute

position after set 6:00 by

or key and set the minute

as 10 and press SET key.

#### (8) OFF time setting(Hour, Min.)





#### ③ Complete to set

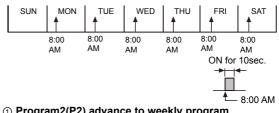
SUN MON TUE WED THU FRI SAT



Press **SET** key to set additional program.

#### Weekly pulse mode

Output2(OUT2) is ON for 10sec. at 8:00AM from monday to friday during S2 season in case, period of S1, S2, S3, S4 is set.



#### Program2(P2) advance to weekly program setting mode

SUN MON THE WED THU FRI SAT



MODE key is pressed for 3sec.in RUN mode, **PROG P1** is flashed and press MODE key again, **PROG P2** flashes and press <u>SET</u> key.

② Mode type setting SUN MON TUE WED THU FRI SAT



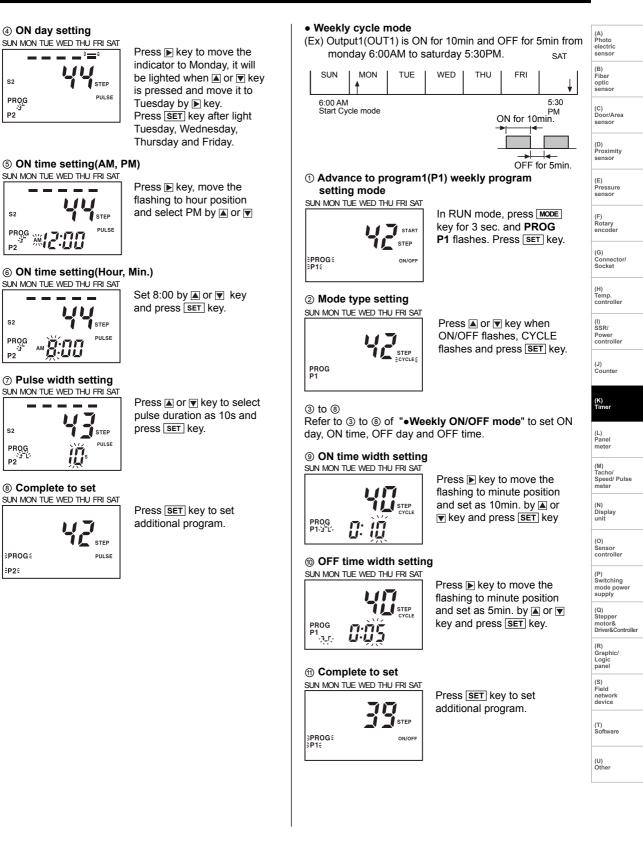
③ Season selection SUN MON TUE WED THU FRI SAT



Press a or vertice when ON /OFF flashes, Pulse flashes and press SET key.

Press ▲ or ▼ key to select season S2 and press SET key.

# Weekly/Yearly Timer



## ○ Weekly day change

It operates when the specified day mode is required to install in other day from the set day and it returns to previous program setting automatically when it is finished. It is applied to program1(P1) and program2(P2).

#### Weekly day change cancellation

- Change current year, month, date in current time setting mode
- ② Change standard day
- ③ Delete all program in program1(P1) and program2 (P2)
- ④ Season switching

### Setting example

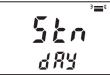
Output1(OUT1) is ON in Saturday at 9:00AM and OFF at 12:00PM and it is ON 8:30AM and OFF at 6:00PM from Monday to Friday and the mode of Monday and Tuesday is operated temporarily as Saturday(standard) program.

#### ① Advance to weekly day change mode



Press MODE key over 3sec. to move to the setting group1 in RUN mode and press it repeatedly until [.d'] is flashed in second display part and press SET key.

#### ② Standard day selection SUN MON TUE WED THU FRI SAT



Press ▶ key to move the indicator to saturday and press SET key. after select saturday as standard day (Sat turns ON) by ▲ or ▼ key.

## ③ Change day selection



Press ▶ key to move the indicator to monday and select monday to change (Mon turns ON) by ▲ or ▼ key and repeat the procedure to select tuesday to change (Tue turns ON) and press SET key to complete.

## O Yearly holiday mode

It operates to off the output without program adjustment during previously set yearly holiday period available from present year to 31, Dec. of the next year. Designate the start date of yearly holiday and year of end date as every year [- - ] to repeat the holiday mode for specified in every year.

#### Setting example

Set every year 5, May to off the output(OUT1, OUT2).

#### ① Advance to yearly holiday mode

SUN MON TUE WED THU FRI SAT

**¥YEAR**€ -**H.d.Y**-

Press MODE key over 3sec. to move to the setting group1 in RUN mode and press it repeatedly until H.d.Y flashes in second display part and press SET key.

#### ② Yearly holiday No. display SUN MON TUE WED THU FRI SAT



Press **SET** key after check yearly holiday No.

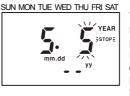
## ③ Start date of yearly holiday setting

SUN MON TUE WED THU FRI SAT



Press ▶ key until month position flashes and set May by ▲ or ▼ key and press ▶ key until date position flashes. Press <u>SET</u> key after set 5th by ▲ key.

## ④ End date of yearly holiday setting



The flashing is moved to month position directly and press ▲ or ▼ key to set May and press ▶ key until date position flashes. Press SET key after set 5th by ▲ or ▼ key.

#### ⑤ Complete to yearly holiday SUN MON TUE WED THU FRI SAT



Press MODE key to finish the additional yearly holiday setting and press SET key to set .

% It is able to set yearly holiday up to 12 times.

## ○ Yearly program setting

## • Yearly ON/OFF mode

(Ex) Output1(OUT1) is ON from every 5, Apr to 7, Apr at 9:00AM and OFF 5:10PM.

## ① Advance to program1(P1) yearly program setting mode

SUN MON TUE WED THU FRI SAT



Press MODE key for 3sec. in RUN mode, **PROG P1** is flashed and press MODE key 3 times more until **PROG P2 YEAR** flashes and press SET key.

## ② Mode type setting



Press SET key when ON/ OFF flashes.

#### ③ Start date setting

SUN MON TUE WED THU FRI SAT



(4) End date setting

PROG P1

PROG P1

SUN MON TUE WED THU FRI SAT

YEAR

STOP

yy ON/OFF

Press ▶ key until month position flashes and set April by▲ or ▼ key and press ▶ key until date position flashes. Press SET key after set 5th by ▲ or ▼ key.

The flashing is moved to month position directly and press ▲ or ▼ key to set April and press ▲ or ▼ key until date position flashes. Press ▲ key after set 7th by SET key.

## ⑤ ON time setting(AM, PM)



\*\***?:]]** 

▶ key is pressed, move the flashing to hour position and select PM by ▲ or ♥ key when ON time is afternoon.

#### ⑥ ON time setting(Hour, Minute) SUN MON TUE WED THU FRI SAT



Minute) Press ▲ or ▼ key to set 9

YEAR YEAR YEAR NOR SEP VEAR VE

## ⑦ OFF time setting(AM, PM)



Select PM by ▲ or ▼ key and move the flashing to hour position by ► key.

#### ③ OFF time setting(Hour, Minute) SUN MON TUE WED THU FRI SAT



Move the flashing to minute position after set 5:00 by ▲ or ▼ key and set the minute as 10 and press SET key.

## ③ Complete to set

SUN MON TUE WED THU FRI SAT



Press SET key to set additional program.

#### • Yearly pulse mode

(Ex)Output2(OUT2) is ON from 2, Oct, 2008 to 4, Oct, 2008 at 10:00AM and OFF after 5sec. (Present is 2007.)

2, Oct ≜	3, Oct ∳	4, Oct ∳	ON for 5sec.
8:00 AM	8:00 AM	8:00 AM	

#### Advance to program2(P2) yearly program setting mode

SUN MON TUE WED THU FRI SAT

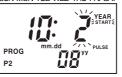


MODE key is pressed for 3sec.in RUN mode, PROG P1 is flashed and press MODE key again, PROG P2 YEAR is flashed and press SET key.

#### ② Mode type setting SUN MON THE WED THU FRI SAT



#### ③ Start date setting SUN MON TUE WED THU FRI SAT



④ End date setting



Press A or V key twice to set 08(year 2008) and move to month position by key. Set Oct. by a or V key and move to date position by key and press SET key after set 2nd by or V key.

The flashing is moved to month position directly by ▶ key and set 4th by ▲ or ▼ key after move it to date position by ▶ key, then press SET key. (B) Fiber optic sensor (C) Door/Area sensor (D) Proximity sensor (E) Pressure sensor (E) Pressure sensor (G) Connector/ Socket (H) Temp. controller (J) SSR/ Power controller (J) Counter

(A) Photo electric

senso

MODE key again, P YEAR is flashed a SET key. ▲ or ▼ key is pres

▲ or ▼ key is pressed when ON/OFF flashes to set pulse mode and press SET key.

> (P) Switching mode power supply

(O) Sensor controller

(N) Display unit

(K) Timer

(L) Panel

mete

(M) Tacho/ Speed/ Pulse meter

(Q) Stepper motor& Driver&Control

(R) Graphic/ Logic panel (S)

(S) Field network device

(T) Software

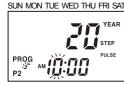
(U) Other

#### ⑤ ON time setting(AM, PM) SUN MON TUE WED THU FRI SAT



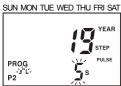
▶ key is pressed, move the flashing to hour position and select PM by ▲ or ▼ key when ON time is afternoon.

## ⑥ ON time setting(Hour, Minute)



Press a or v key twice to set 10 and press SET key after check 00min.

### ⑦ Pulse width setting



Press ▲ or ▼ key 4 times to select pulse width as 5s and press SET key.

#### ⑧ Complete to set

SUN MON TUE WED THU FRI SAT

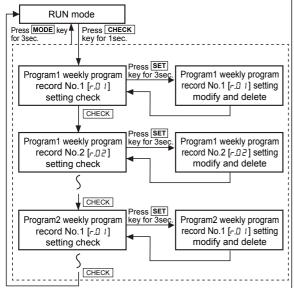


Press **SET** key to set additional program.

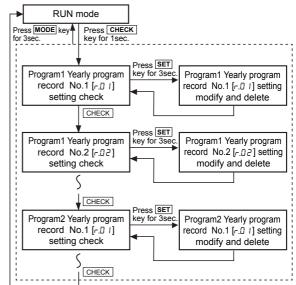
%It is able to set year of start/end date in yearly program setting up to 2 years later from the present year.

## Program check, modify and delete

## $\bigcirc$ Weekly program check, modify and delete



## ○ Yearly program check, modify and delete



YEAR turns ON when check, modify or delete yearly program.

- If any key is untouched for 60sec, it is returned to RUN mode in weekly or yearly program check.
- In weekly or yearly program check, it controls output according to program setting and output is OFF in modify or delete mode.
- When MODE key is pressed in weekly or yearly program record modify, delete stand by or delete mode, current work is cancelled and it is returned to check mode.
- Weekly or yearly program record modify and delete
- (1) Program record modify
- When press <u>SET</u> key over 3sec. in program check, Edb flashes in second display part, press <u>SET</u> key.
- ② It returns to check mode when finish the modify same as the above procedure.
- (2) Program record delete
- ① When press SET key over 3sec. in program check, EdE flashes in second display part, press ▲ or ▼ key until ELr flashes in second display part and press SET key.
- ② Press ELr key over 3sec. when SET turns ON in second display part, it returns to program check.