W72×H72mm, Weekly/Yearly Timer

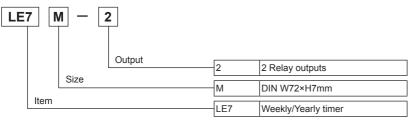
Features

- 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.

Ordering Information

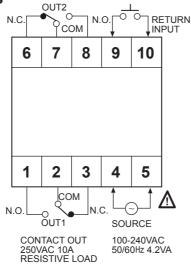


Specifications

Model		LE7M-2
Power supply		100-240VAC 50/60Hz
Allowable voltage range		90 to 110% of rated voltage
Power consumption		Max. 4.2VA (100-240VAC 50/60Hz)
RETURN input		Short-circuit or open by switch or relay
Timing program		48 steps for weekly, 24 steps for yearly
Operation mode		ON/OFF mode, cycle mode, pulse mode
Mounting		Front panel, surface, DIN rail
Time deviation		±15sec./month (ambient temperature: 25°C) (±4sec. /week)
Temperature error		±0.01% ±0.05sec. (ratio by set time)
Memory protection		Over 5 years (at 25°C)
Control Output	Contact type	SPDT (Single Pole Double Throw)
	Contact capacity	250VAC 10A resistive load
	Output number	Independent 2 output (1c × 2)
Relay life cycle	Mechanical	Min. 5,000,000 operations (switching capacity: 30 times/min)
	Electrical	Min. 50,000 operations <switching (resistive="" 10a="" 20="" 250vac="" capacity:="" load)="" min,="" times=""></switching>
Insulation resistance		Min. 100MΩ (at 500VDC megger)
Dielectric strength		2000VAC 50/60Hz for 1minute
Noise strength		$\pm 2kV$ the square wave noise (pulse width: $1\mu s)$ by the noise simulator
Environme	Ambient temperature	-10 to 55°C, storage: -25 to 65°C
	Ambient humidity	35 to 80%RH
Unit weight		Approx. 272g

*Environment resistance is rated at no freezing or condensation.

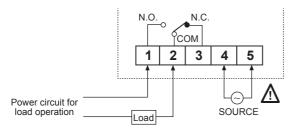
Connections



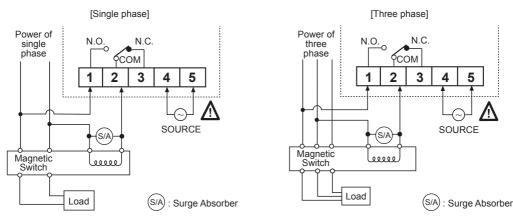
Load Connection

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



(A) Photoelectric Sensors

(D) Proximity Sensors

(E) Pressure Sensors

(F) Rotary Encoder

(G) Connectors/ Sockets

(H) Temperature Controllers

(I) SSRs / Power Controllers

(J) Counters

(K) Timers

(L) Panel Meters

(M) Tacho / Speed / Pulse Meters

(N) Display Units

(O) Sensor Controllers

(P) Switching Mode Power Supplies

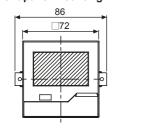
(Q) Stepper Motors & Drivers & Controllers

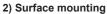
(R) Graphic/ Logic Panels

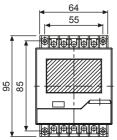
(S) Field Network Devices

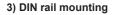


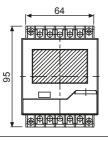


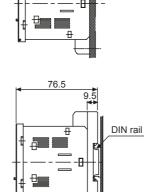












60

67

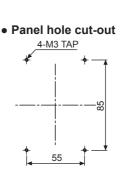
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13.5

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5

Panel



Panel cut-out

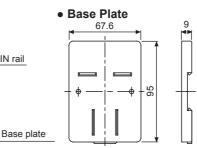
9

Min.

Min. 91

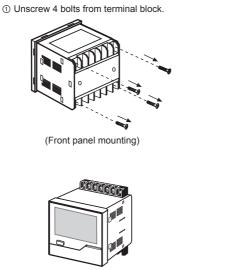
68^{+0.7}

68 ⁶⁷



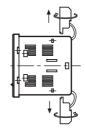
How To Switch From The Flush Mounting To Surface Mounting Type

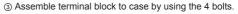
Remove terminals from the body after unscrewing terminal screws, and then assemble terminals to the body after rotating terminals as shown below.

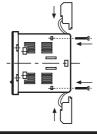


(Surface mounting)

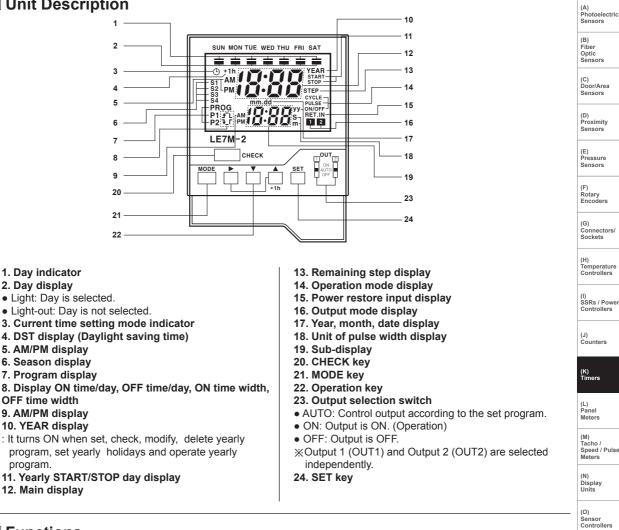
② Detach terminal block from case and then rotate it 180 degree.







Unit Description



Functions

O Program setting and output operation

Output 1/Output 2 operates according to Program 1 and Program 2.

O Definitions

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

Operation modes

If the operation mode of Program 1 (Program 2) is set on pulse mode initially, the pulse mode is fixed for additional programs.

If the operation mode of Program 1 (Program 2) 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 OFF for OFF time. And the ON/OFF cycle is repeated.

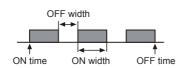
(P) Switching Mode Power Supplies (Q) Stepper Motors

& Drivers & Controllers

(R) Graphic/ Logic Panels

(S) Field Network Devices

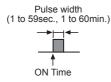
- Set range for ON/OFF time width : 1min. to 12 hour 59min.
- One record in 3 steps (ON day/ON time, OFF day/OFF time, ON time width/OFF time width)



• 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

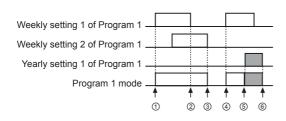
Output turns ON at ON time on START date and turns OFF at OFF time on STOP date.

- 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.
- 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 Program 1 or Program 2 is displayed on the day indicator, and the time of next mode is displayed on the lower row of screen. Press SET + CHECK in RUN mode it is changed from program 1 to

program 2 or from program 2 to program 1.

 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 $[\Re L]$ or normal $[\pi \Box r]$ by (a) or (v) key, and press (SET) key to set. • Auto $[\Re L]$ 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 SET 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, $\Box FF$ flashes), select ON [$\Box n$] by pressing **(**) or **(**) key and press **(SET)** key to complete the

season switching.

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

ON [__ n] mode

Weekly program is switched automatically by season switching.

- Period setting per season
- ① At the season switching selection LEVEL 2 status in setting 2 group (5En 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 [DFF].
- If season terms are overlapped, these are prioritized in S4>S3>S2>S1 order.

\odot 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 (d5t turns ON, Rt or nar flashes.), select Auto [Rt] or Normal [nar] by \blacktriangle or \bigtriangledown key and press <u>SET</u> 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 [nor] 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

(E.g.) 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. (A) Photoelectric Sensors

(B) Fiber Optic Sensors

(C) Door/Area Sensors

(D) Proximity

(E) Pressure Sensors

(F) Rotary Encoder

(G) Connectors/ Sockets

(H) Temperature Controllers

(I) SSRs / Power Controllers

(J) Counters

(K) Timers

(L) Panel Meters

(M) Tacho / Speed / Pulse Meters

(N) Display Units

(O) Sensor Controllers

(P) Switching Mode Power Supplies

(Q) Stepper Motors

& Drivers & Controllers

(R) Graphic/ Logic Panels

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



setting Press ▲ or ▼ key to select PM and move the flashing digit to position hour by ▶

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.

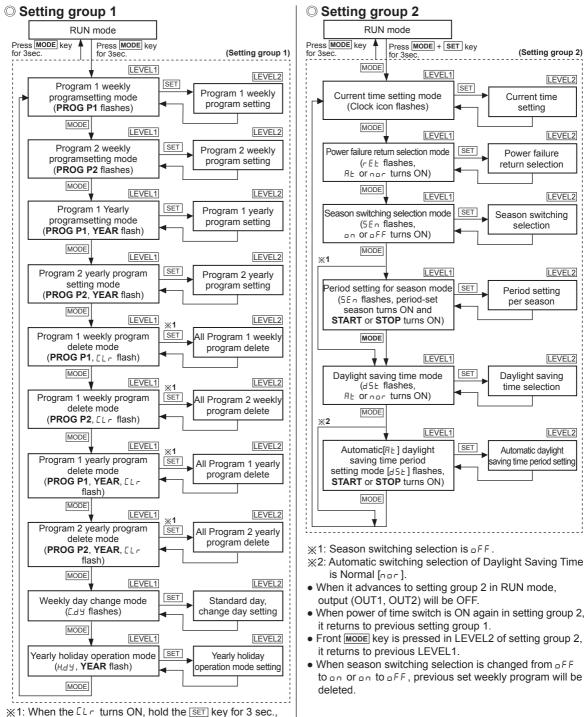
 It advances to "①Current time setting mode" in ON status and set current time as shown above ② to ④ by SET key.

key.

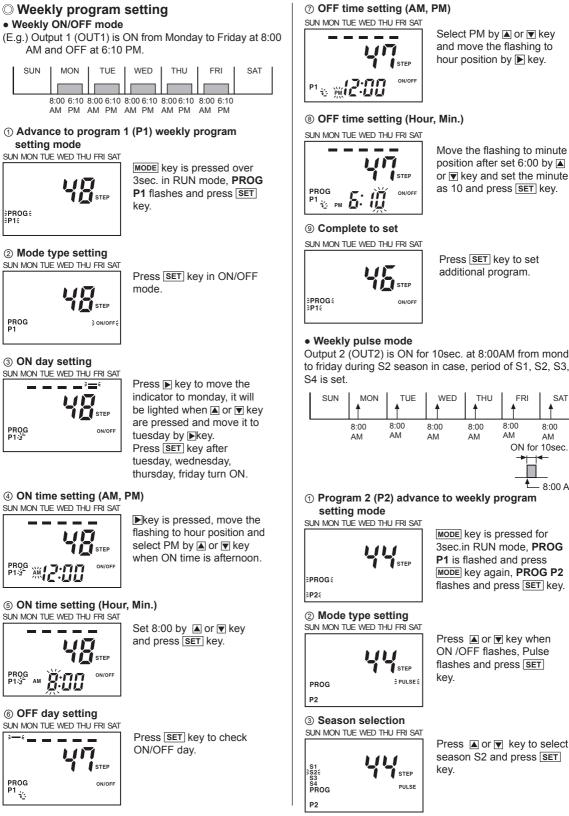
- Current time is set up to 31, Dec., 2099.
- Check current year/month/date in RUN mode When key is pressed over 3sec. in RUN mode, it advances to current year/month/date display. After display current year/month/ date for 3sec., it returns to RUN mode displaying current display.

(S) Field Network Devices

Program Setting



- 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, current setting will be canceled and it returns to previous LEVEL1.



(B) Fiber Optic Sensors (C) Door/Area Sensors (D) Proximity Sensors (E) Pressure Sensors (F) Rotary Encoder (G) Connectors/ Sockets (H) Temperature Controllers (I) SSRs / Power Controllers

(A) Photoelectric Sensors

Output 2 (OUT2) is ON for 10sec. at 8:00AM from monday to friday during S2 season in case, period of S1, S2, S3,





(N) Display Units

(O) Sensor Controllers

(M) Tacho / Speed / Pulse Meters

(J) Counters

(K) Timers

(L) Panel Meters

(P) Switching Mode Power Supplies

(Q) Stepper Motors

& Drivers & Controllers

(R) Graphic/ Logic Panels

(S) Field Network Devices

S2

PROG

Ρ2

S2

P2

S2

P2

S2

PROG

P2

PROG

PROG

④ ON day setting SUN MON TUE WED THU FRI SAT Press key to move the _ **> __** { indicator to Monday, it will be lighted when ▲ or ▼ key STEP is pressed and move it to PULSE Tuesday by key. Press SET key after light Tuesday, Wednesday, Thursday and Friday. (5) ON time setting (AM, PM) SUN MON TUE WED THU FRI SAT Press key, move the flashing to hour position 11 and select PM by A or V STEP PULSE ₩**[2:00** 6 ON time setting (Hour, Min.) SUN MON TUE WED THU FRI SAT Set 8:00 by or key and press SET key. STEF PULSE ⑦ Pulse width setting SUN MON TUE WED THU FRI SAT Press A or key to select pulse duration as 10s and press SET key. STEP PULSE

⑧ Complete to set SUN MON TUE WED THU FRI SAT



Press SET key to set additional program.

Weekly cycle mode

(E.g.) Output 1 (OUT1) is ON for 10min and OFF for 5min from monday 6:00AM to saturday 5:30PM. SAT



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

SUN MON TUE WED THU FRI SAT



In RUN mode, press MODE key for 3 sec. and PROG P1 flashes. Press SET key.

② Mode type setting SUN MON TUE WED THU FRI SAT



Press A or key when ON/OFF flashes, CYCLE flashes and press SET key.

③ to ⑧

Refer to 3 to 8 of ". Weekly ON/OFF mode" to set ON day, ON time, OFF day and OFF time.

③ ON time width setting SUN MON TUE WED THU FRI SAT



Press key to move the flashing to minute position and set as 10min. by A or ▼ key and press SET key

OFF time width setting



Press key to move the flashing to minute position and set as 5min. by A or V key and press SET key.

(1) Complete to set SUN MON TUE WED THU FRI SAT



Press SET key to set additional program.

O 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 program 1 (P1) and program 2 (P2).

Weekly day change cancellation

- Change current year, month, date in current time setting mode
- ② Change standard day
- ③ Delete all program in program 1 (P1) and program 2 (P2)
- ④ Season switching

Setting example

Output 1 (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.y 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.

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



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 number display SUN MON TUE WED THU FRI SAT



Press **SET** key after check yearly holiday number.

yearly honday hamber.

③ Start date of yearly holiday setting SUN MON TUE WED THU FRI SAT



Press key until month position flashes and set May by for 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 SUN MON TUE WED THU FRI SAT



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

Hogy

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. (B) Fiber Optic Sensors (C) Door/Area Sensors (D) Proximity

(A) Photoelectric Sensors

> roximity ensors

(E) Pressure Sensors

(F) Rotary Encoders

(G) Connectors/ Sockets

(H) Temperature Controllers

(I) SSRs / Power Controllers

(J) Counters

(K) Timers

(L) Panel Meters (M) Tacho / Speed / Pulse Meters

(N) Display Units

011113

(O) Sensor Controllers (P)

(P) Switching Mode Power Supplies

(Q) Stepper Motors & Drivers & Controllers

(R) Graphic/ Logic Panels

(S) Field Network Devices

○ Yearly program setting

Yearly ON/OFF mode

(E.g.) Output 1 (OUT1) is ON from every 5, Apr to 7, Apr at 9:00AM and OFF 5:10PM.

Advance to program 1 (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

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



Press A or key to set 9 and press SET key after check 00min.

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

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



① Advance to program 2 (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 TUE WED THU FRI SAT

YEAR



③ Start date setting SUN MON TUE WED THU FRI SAT



(4) End date setting

PROG

P2

SUN MON TUE WED THU FRI SAT

YEAR

3STOP€

▲ or ▼ key is pressed when

pulse mode and press SET

ON/OFF flashes to set

Press ▲ or ▼ key twice to set 08 (year 2008) and move to month position by key. Set Oct. by ▲ or ▼ key and

key.

move to date position by ▶ key and press SET key after set 2nd by ▲ or ♥ key.

The flashing is moved to month position directly by le key and set 4th by a or le key after move it to date position by le key, then press SET key.

Autonics

(A) Photoelectric Sensors

(B) Fiber Optic Sensors

(C) Door/Area Sensors

(D) Proximity Sensors

(E) Pressure Sensors

(F) Rotary Encoders

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(Q) Stepper Motors & Drivers & Controllers

(R) Graphic/ Logic Panels

(S) Field Network Devices

⑤ ON time setting (AM, PM)	\odot Yearly program check, modify and delete	
SUN MON TUE WED THU FRI SAT VEAR PROG PULSE PROG PULSE PROG PULSE PROG PULSE PROG PULSE PROG PULSE PROG PULSE PROG PULSE PROG PULSE PLAN PULSE PLAN PL	RUN mode Press MODE key Press CHECK for 3sec. Press SET	
© ON time setting (Hour, Minute) SUN MON TUE WED THU FRI SAT VEAR VEAR PROG AM VEAR PULSE PULSE PULSE PULSE	Program 1 Yearly program record No.1 [r.] /] setting check Program 1 Yearly program record No.1 [r.] /] setting modify and delete Program 1 Yearly program record No.2 [r.]] setting check Program 1 Yearly program record No.2 [r.]] setting check	
⑦ Pulse width setting SUN MON TUE WED THU FRI SAT YEAR STEP PROG P2 PROG P2 S S S S S S S S S S S S S S S S S S	Program 2 Yearly program record No.1 [r.] /] setting check	
Orgential Constraints of the set of	 XYEAR 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 	
 Press MODE key I press CHECK 	 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 (1) When press SET key over 3sec. in program check, EdE flashes in second display part, press SET 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 SET key. 	
for 3sec. Program 1 weekly program record No.1 [r.] i] setting check Program 1 weekly program (CHECK) Program 1 weekly program record No.2 [r.] 2] setting check Program 1 weekly program record No.2 [r.] 2] setting check (CHECK)	 Press SET key for 3sec. Program 1 weekly program record No.1 [r.] 1] setting modify and delete Press SET key for 3sec. Program 1 weekly program record No.2 [r.] 2] setting modify and delete 	
Program 2 weekly program record No.1 [r.] /] setting check		