

LCD weekly/yearly time switch

LY7

Manual



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1 Before starting

Thank you for purchasing our product.

This manual clearly explains about the function of product, How to install, How to use, precautions and etc. Please read through this manual clearly before usage. Also, this manual must be delivered to the final user and it has to be placed where users can refer to it at anytime.

- * Information contained in this manual can be changed for improvement without prior notification.
- * If you have any question or find any error from this manual, please contact our company or business office.
- * It is prohibited to copy the information contained in this manual without notifying us.

■ Service (A/S)

- * When users want to get the A/S, please send the product to the nearest agency or to our head quarter.
- * When users want to bring the product to the company and get the A/S, please contact the person in charge and make the appointment.
- * Before users make the A/S appointment, please refer to the FAQ on our homepage first. Your questions are maybe answered in our FAQ.

1.1 Safety information

Please read safety information carefully before use and then use this product properly. Safety information described in this manual contains important contents related with safety. So please follow the instructions accordingly. Safety information is composed of DANGER, WARNING and CAUTION.

Danger

Do not touch or contact the input/output terminals because it may cause electric shock.

Warning

- If there is a possibility of an accident caused by errors or malfunctions of this product, install external protection circuit to prevent the accident.
- This product does not contain an electric switch or fuse, so the user needs to install a separate electric switch or fuse externally. (Fuse rating : 250V 0.5A)
- To prevent deflection or malfunction of this product, supply proper power voltage in accordance with the rating.
- To prevent electric shock or device malfunction of this product, do not supply the power until the wiring is completed.
- Since this product is not designed with explosion-protective structure, do not use it at any place with flammable or explosive gas.
- Do not decompose, modify, revise or repair this product. This may cause malfunction, electric shock or fire.
- Reassemble this product while the power is off. Otherwise, it may cause malfunction or electric shock.
- If you use the product with methods other than specified by the manufacturer, there may be bodily injuries or property damages.
- Due to the danger of electric shock, use this product installed onto a panel while an electric current is applied.
- Do not heat or incinerate this product because it has a built-in lithium battery. Otherwise it may cause explosion or fire.

Caution

- The contents of this manual maybe changed without prior notification.
- Before using the product you have purchased, check to make sure that it is exactly what you ordered.
- Check to make sure that there is no damage or abnormality of the product during delivery.
- Do not use this product at any place with corrosive(especially noxious gas or ammonia) or flammable gas.
- Do not use this product at any place with direct vibration or impact.
- Do not use this product at any place with liquid, oil, medical substances, dust, salt or iron contents. (Use at Pollution level 1 or 2)
- Do not polish this product with substances such as alcohol or benzene.

- Do not use this product at any place with excessive induction trouble, static electricity or magnetic noise.
- Do not use this product at any place with possible thermal accumulation due to direct sunlight or heat radiation.
- Install this product at place under 2,000 m in altitude.
- When the product gets wet, the inspection is essential because there is danger of an electric leakage or fire.
- If there is excessive noise from the power supply, using insulating transformer and noise filter is recommended. The noise filter must be attached to a panel grounded, and the wire between the filter output side and power supply terminal must be as short as possible.
- It is effective to use a twisted cable for power supply against noise.
- Do not connect anything to the unused terminals.
- After checking polarity of terminal, connect wires at the correct position.
- When this product is connected to a panel, use a circuit breaker or switch approved with IEC947-1 or IEC947-3.
- Install the circuit breaker or switch at near place for convenient use.
- Write down on a label that the operation of circuit breaker or switch disconnects the power since the device is installed.
- For the continuous and safe use of this product, the periodical maintenance is recommended.
- Some parts of this product have limited life span, and others are changed by their usage.
- The warranty period for this product including parts is one year if this product is properly used.
- When the power is on, the preparation period of contact output is required. In case of use for signals of external interlock circuit, use with a delay relay.

2 Suffix code

Model	Information
LY7	LCD weekly / yearly time switch (DIN 72(W) × 72(H) mm)

3 Specification

Model	LY7
Power supply voltage	100 – 240 V ac 50/60 Hz (Dual usage)
Allowable voltage variation	±10 % of the power supply voltage

Power consumption		Approx. 4.2 VA (220 V a.c 60 Hz)
Display method		LCD Display method(displayable digit : 4 Digits, 2 Lines) – 1st Display : Character height 12 mm – 2nd Display : Character height 7 mm
1 cycle time		Weekly setting : for 1 week (7days), Yearly setting : for 1 year (calendar until 2099)
Backup time		More than 5 consecutive years(25 °C)
External contact input(BOOT input)		Use the contact such as switch, relay and etc. (But please use the contact that can sufficiently ON/OFF 5 V 0.1 mA)
Setting steps	Number of program setting	weekly program : 64 STEP, yearly program : 32 STEP
	Number of season setting	4 seasons (Spring, Summer, Autumn, Winter)
	Number of holidays in one year	16 times
Installation type		Flush panel mount type, and exposed panel mount type(Dual usage) DIN rail installation and screw fixing
Cycle error		±15 sec/mon (25 °C)
Time error		Less than ±0.01 % ±0.05 sec(Setting error, Voltage error, Temperature error)
Control output	Contact composition	2 independent circuits. OUT1 : SPDT (1c), OUT2 : SPDT (1c)
	Contact capacity	NO contact : 250 V a.c 15 A resistive load, NC contact : 250 V a.c 15 A resistive load
Relay life expectancy	Mechanically	above 10 million times
	Electrically	above 50 thousand times (250 V a.c 15 A resistive load)
Insulation resistance		100 MΩ min 500 V d.c megastand (actuator terminal and exposed non-charged metal part)
Dielectric strength		2000 V a.c 50/60 Hz for 1 min (actuator terminal and exposed non-charged metal part)
Noise immunity		±2 kV (between the actuating power terminal), square wave shape noise by the noise simulator (Pulse width = 1 μs).
Vibration	Vibration resistance	10 ~ 55 Hz (for cycle 1 min) 0.75 mm double amplitude for 1 hour each in X, Y and Z
	Malfunction	10 ~ 55 Hz (for cycle 1 min) 0.5 mm double amplitude for 10 minutes each in X, Y and Z
Shock	Shock resistance	300 m/s ² X, Y, Z 3 times each in X, Y and Z directions
	Malfunction	100 m/s ² X, Y, Z 3 times each in X, Y and Z directions
Ambient temperature		-10 ~ 55 °C (With no icing)
Storage temperature		-20 ~ 65 °C (With no icing)
Ambient humidity		35 ~ 85 % RH
Weight		Approx. 275 g (Excluded the weight of box)

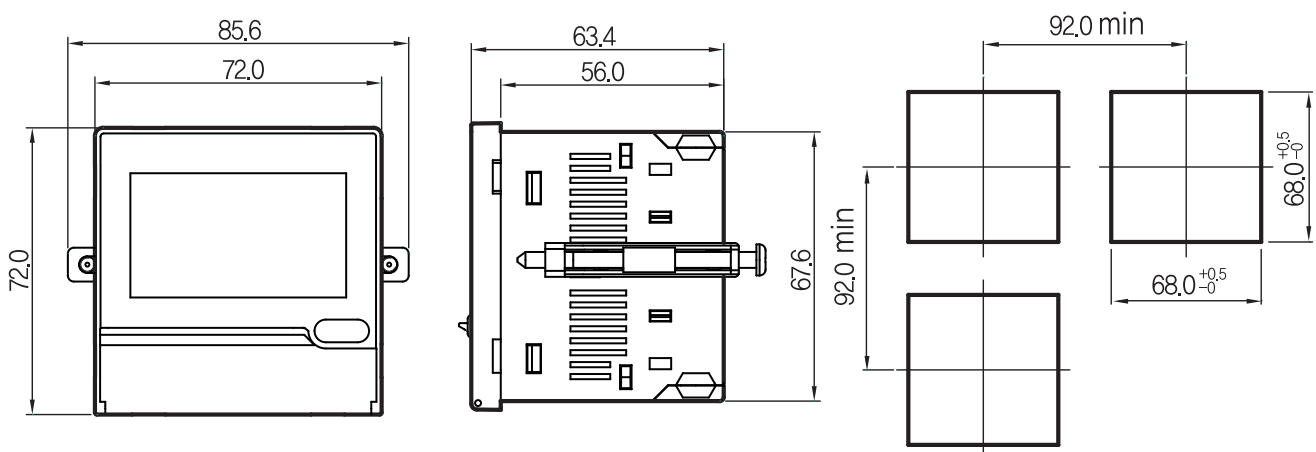
※ Customer can not exchange parts (including battery).

Ambient temperature	-10 ~ 55 °C (with no icing)
Storage temperature	-20 ~ 65 °C (with no icing)
Ambient humidity	35 ~ 85 % R.H.
Weight	approx. 275 g (excluded the weight of box)

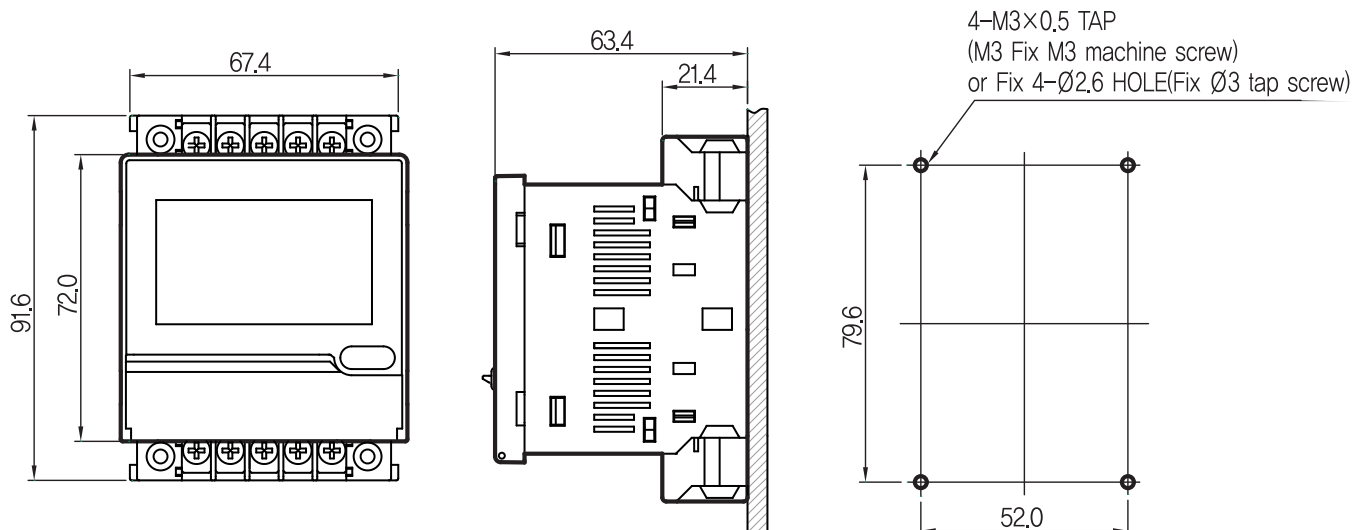
4 Appearance and panel cutout dimension

(Unit : mm)

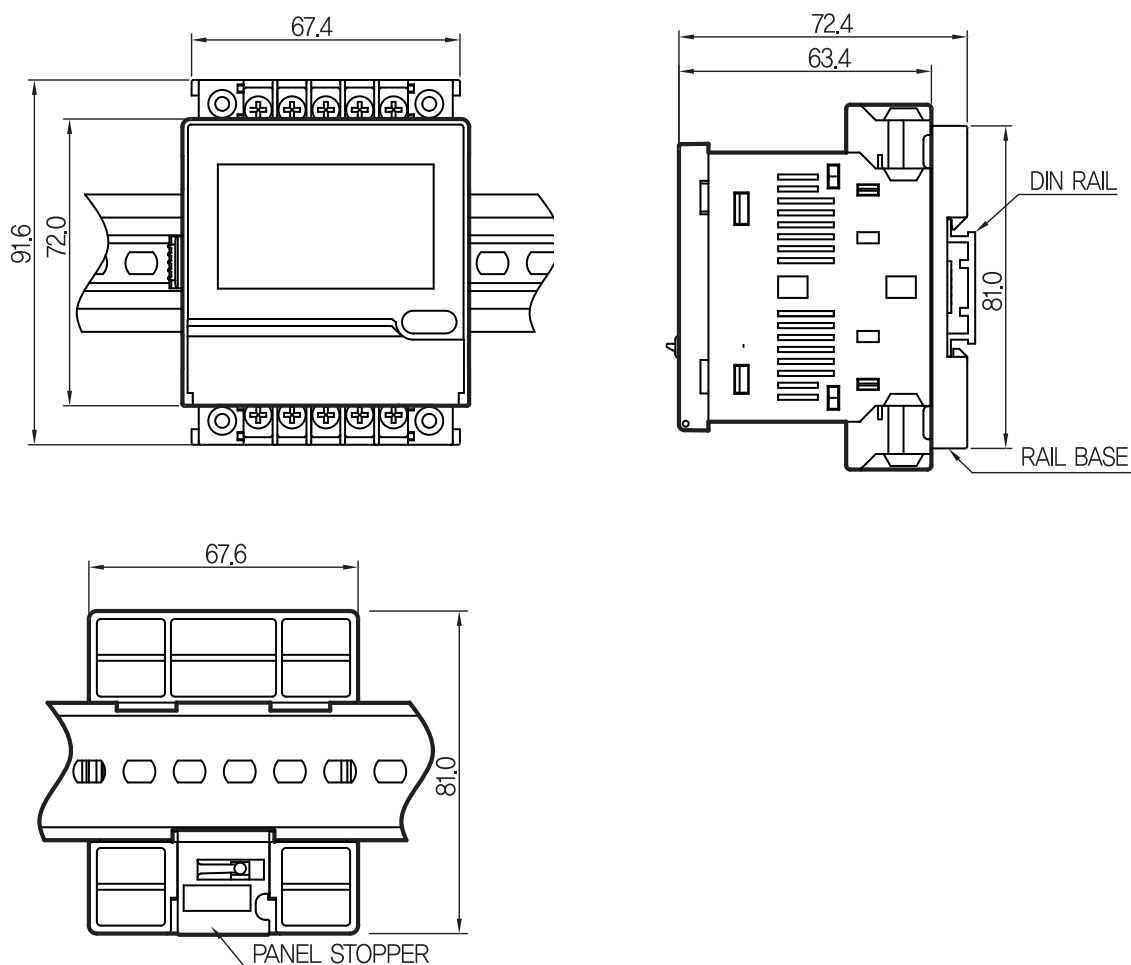
4.1 Flush panel type



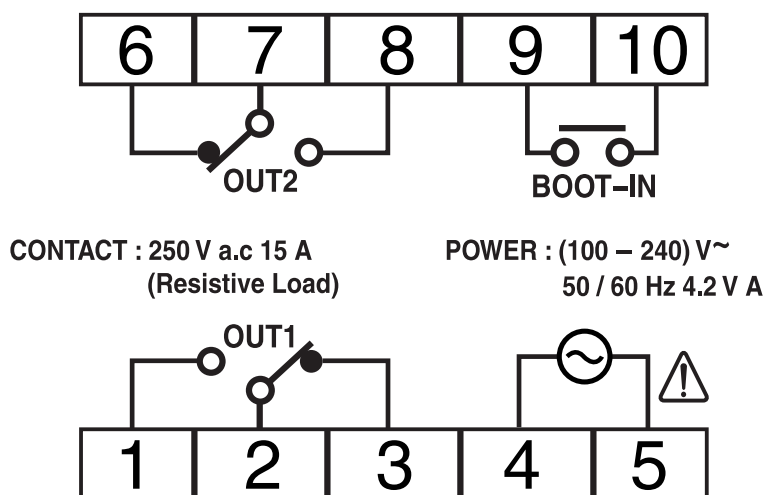
4.2 Exposed type



4.3 DIN rail mounting type

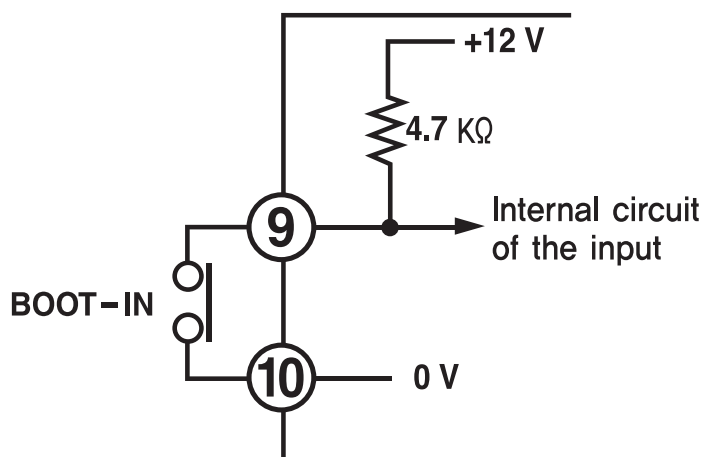


5 Connection diagram



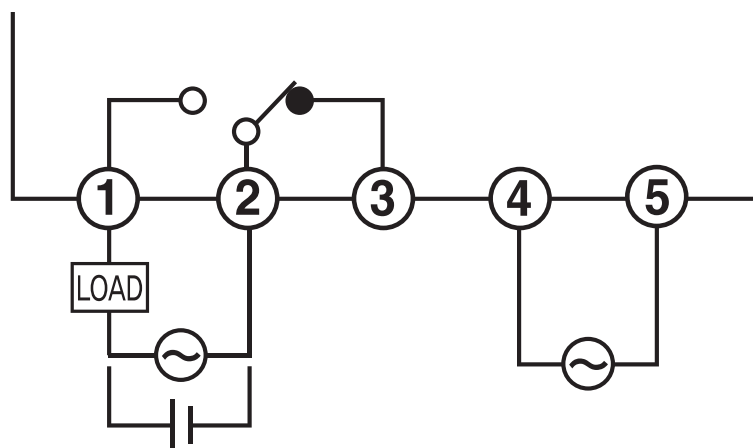
6 Contact input connection

- ※ Turning ON(Pulse input)the BOOT-IN when output is set as “Normal” will operate it as programmed state (After power is backed up)
For the input, please use the contact such as switch, relay and etc and please use the contact that can sufficiently flow 0.1 mA current and 5 V voltage.
(Minimum signal input width above 10 ms)

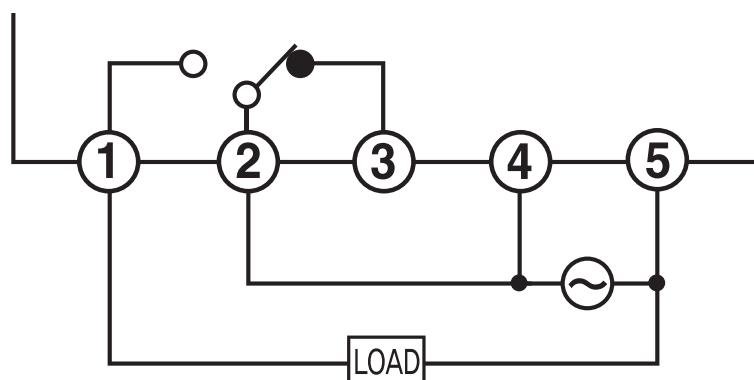


7 Output connection

7.1 In case when power and load power are different

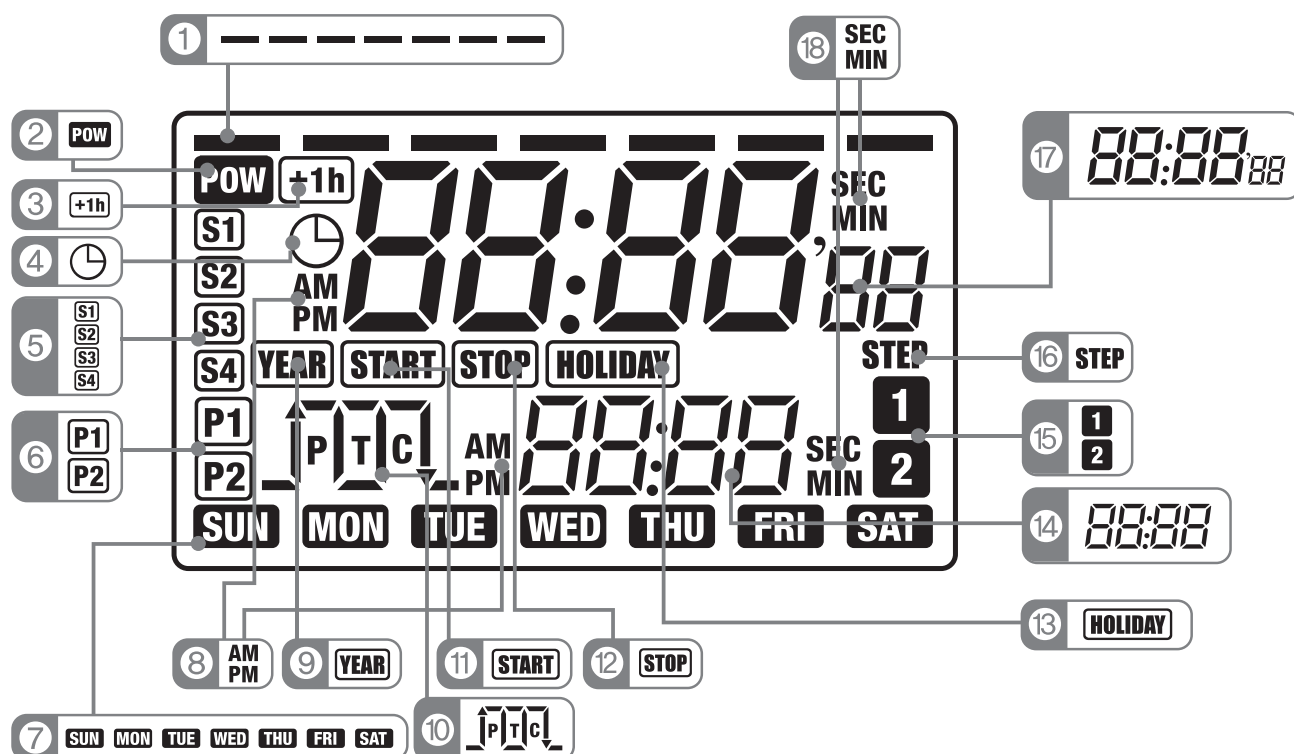









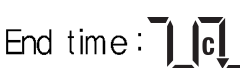
7.2 In case when power and load power are same



8 Front panel composition

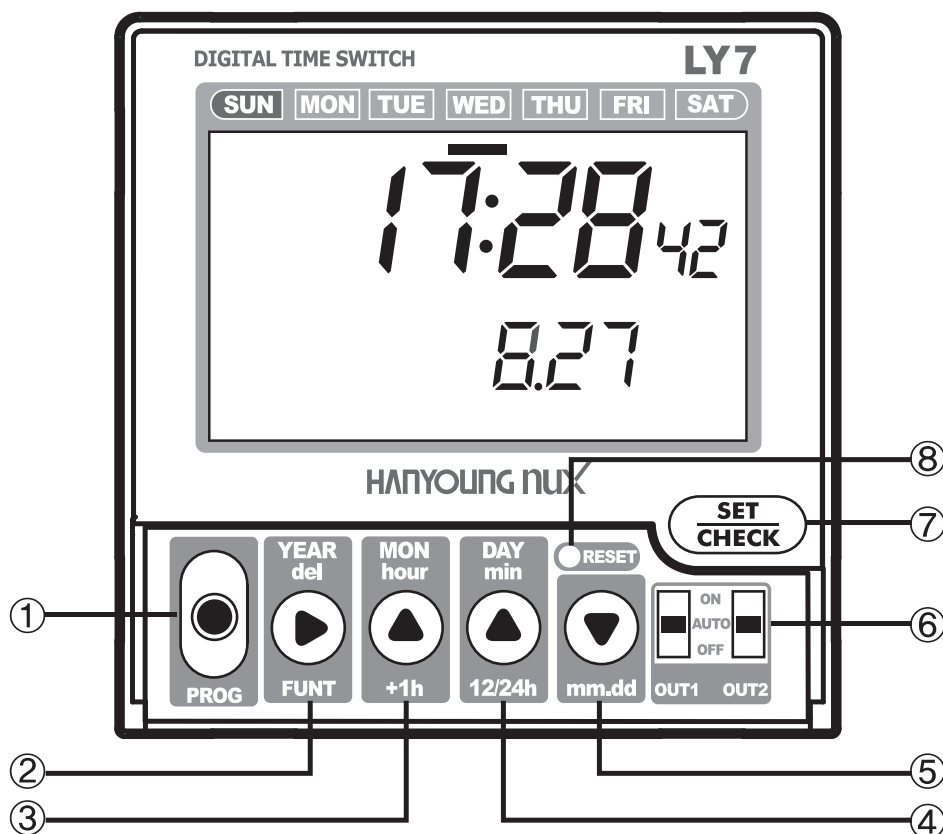
8.1 LCD display



Lists	Information
① Day indicator	Indicates current day and the set day cursor flickers
② Power backup input indicator	Display the state of power return input when power is restored
③ Summer time indication	Indicated in the summer time
④ Time adjustment indicator	Indicated when setting the current time
⑤ Season indication	Indicates the season
⑥ Setting port number indicator	Indicates the port number that has been set
⑦ Set day indicator	Indicates the set day
⑧ AM/PM indicator	Indicates AM/PM 12h
⑨ Yearly indicator	Indicates the yearly program setting status
⑩ Operation state indicator	Indicates the timer, pulse, cycle action setting and indicates the next action state operation ※ Timer action :  Start time :  End time :  ※ Pulse action :  Pulse time width :  ※ Cycle action :  Start time :  End time : 
⑪ Start date indicator	Indicated when setting the yearly start date
⑫ End date indicator	Indicated when setting the yearly end date

⑬ Holiday indicator	Indicated on the holiday or indicated when setting the holiday
⑭ Sub display	Indicates current month, date and next operation time
⑮ Output action indicator	Indicates the output number which of output action being ON
⑯ Remaining step indicator	Display the number of remaining steps
⑰ Main display	Indicates current time and indicated when setting the program
⑱ Pulse width unit indicator	Indicates the pulse range time unit within the pulse operation

8.2 Front panel

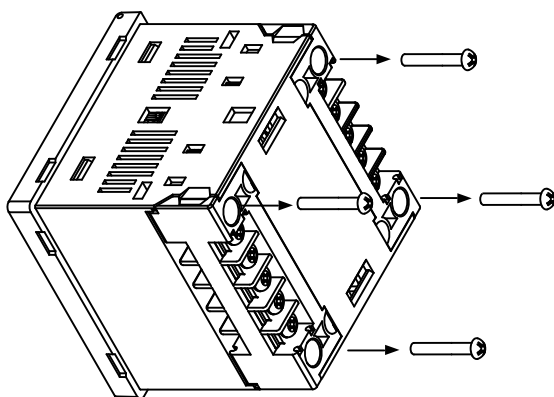


Lists	Information
① PROG (program key)	applied when setting the program (weekly / yearly program setting and editing, deleting, inspecting)
② FUNT (func wire key)	FUNT : applied when setting the function (time setting, holiday setting, season setting, summer time setting, power backup setting) YEAR : press UP key to set the year (yearly setting) del : applied as the program delete key in the weekly/yearly program setting edit mode. SHIFT : applied as the shift key when setting the weekly program operation date setting
③ +1h key	+1h : used when applying the summer time manually (operation mode) MON : press UP key to set the month (yearly setting) hour : press UP key to set an hour.

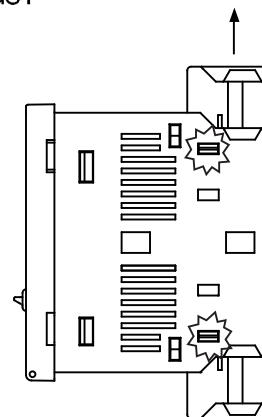
④ 12/24h key	12/24h : applied as the time changing key (operation mode) – Display the current time as 24h and convert to the AM/PM 12h. DAY : press UP key to set the day (yearly setting) min : press UP key to set the min.
⑤ mm.dd key	mm.dd : applied as the key to change the 2nd display [current date display (month, day) to the [next operation time display] (operation mode state) DOWN : apply as the DOWN KEY regarding the previous time value.
⑥ Output setting switch	ON : Forcedly turn ON the output disregarding the program setting information. AUTO : Output operated depending on the program setting information. OFF : Forcedly turn OFF the output operation dsregarding the program setting information.
⑦ SET /CHECK key	SET : Use SET key in the setting mode. CHECK : used as the weekly/yearly program check key in the operation mode.
⑧ RESET key	Reset (initialize) all settings including the current time.

9 Flush Panel type/exposed type converting method

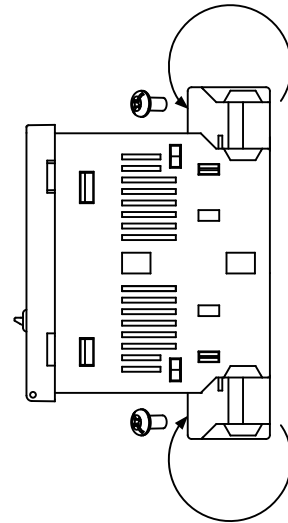
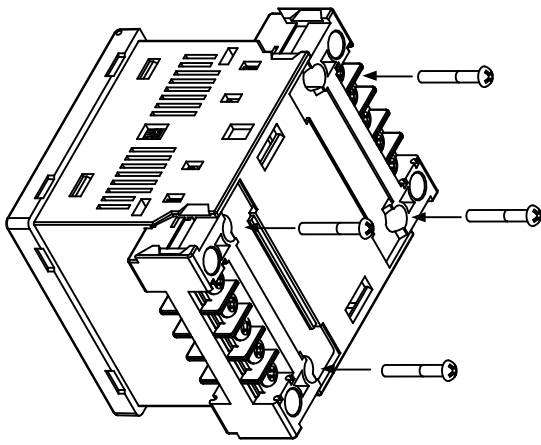
- Unloosen the terminal tightening bolt from the case, hold the case / terminal and pull them in the direction of up and down just like an image provided in the below then it will be converted to the exposed type.
- In order to fix the terminal, please retighten the fixing bolt, switch left/right side terminal volt and then tighten them.
- When switching the type from exposed type to the panel type, please follow the image provided in the below but only in a reverse order



1. unloosen the terminal fixing bolt
(flush panel type)

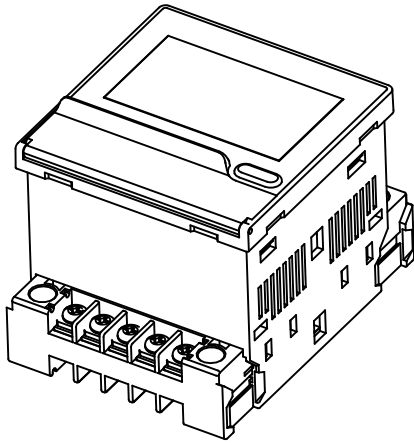


2. pull the terminal in the
direction of up and down.



3. retighten the terminal fixing bolt.

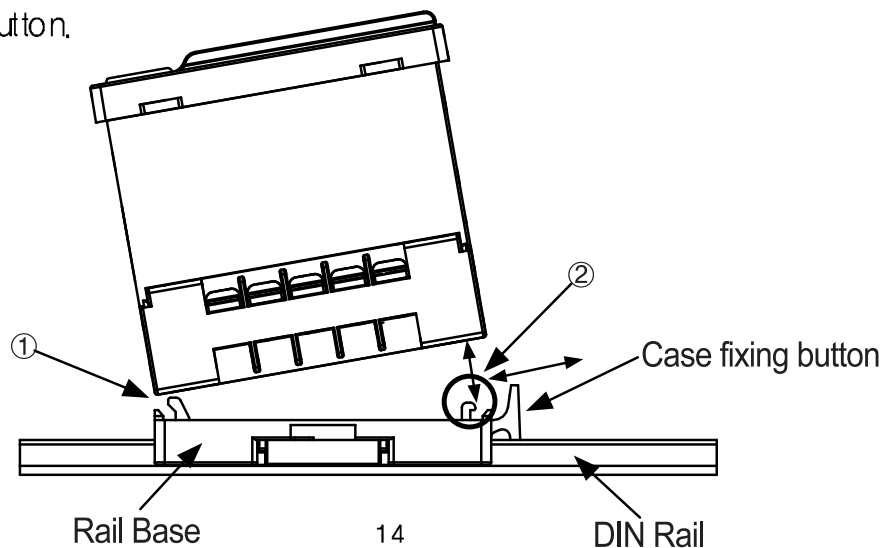
4. switch left / right side terminal bolt and tighten them.



5. Exposed type

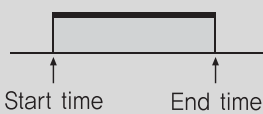
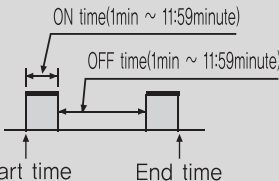
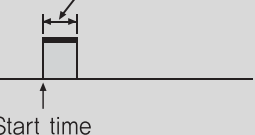
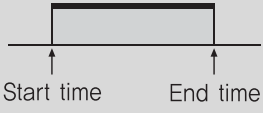
10 Rail base installing and uninstalling method

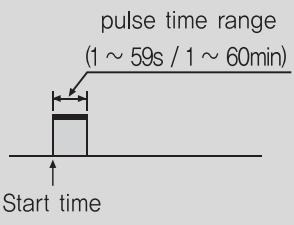
1. When installing the rail base, firstly mount the indicated number ① and press the indicated number ② just like an image provided below.
2. When uninstalling from the rail base, pull out the indicated number ② by pressing the CASE fixing button.



11 Function explanation

11.1 Operation function explanation

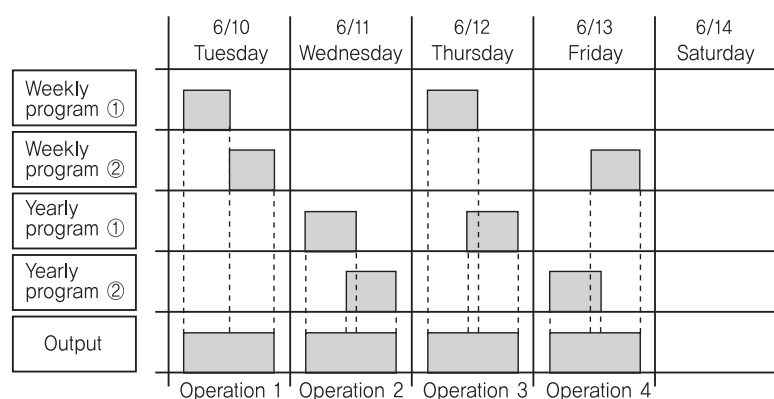
Lists	Information
<p>Weekly timer operation</p> 	<p>Control the output depending on the set start / end time. (After setting the weekly timer operation and when setting the additional program, users will not be able to use the pulse operation setting.)</p> <ul style="list-style-type: none"> • minimum setting time unit : 1 min. • weekly timer operation setting is composed of 2 STEP. <ul style="list-style-type: none"> – start day / start time (1 STEP) – end day / end time (1 STEP)
<p>Weekly cycle operation</p> 	<p>It repeats the ON/OFF operation with the range of ON time and OFF time within the time from start set time to the end set time. (After setting the cycle operation and when setting the additional setting, users will not be able to use the weekly pulse operation setting.)</p> <ul style="list-style-type: none"> • minimum set time unit : 1 min. • ON time range, OFF time range : 00:01 ~ 11:59 • Weekly cycle operation setting is composed of 4 STEP. <ul style="list-style-type: none"> – Start day / end time (1 STEP) – End day / end time (1 STEP) – ON time range (1 STEP) – OFF time range (1 STEP)
<p>Weekly pulse operation</p> <p>pulse time range (1 ~ 59s / 1 ~ 60min)</p> 	<p>Operate the output as an ON operation which starts from the start set time until it reaches a certain period of time. (After setting the weekly pulse operation and when setting the additional setting, users will not be able to use the weekly timer operation setting and weekly cycle operation setting)</p> <ul style="list-style-type: none"> • pulse time range : 1 ~ 59 s (1 sec unit), 1 ~ 60 min (1 min unit) • weekly pulse operation setting is composed of 2 STEP. <ul style="list-style-type: none"> – start day / start time (1 STEP) – pulse time range (1 STEP)
<p>Yearly timer operation</p> 	<p>It controls the output depending on the start/ end time which had been set in between the start time and the end time (Possible to set the operation every year)</p> <ul style="list-style-type: none"> • Able to add the yearly timer operation to the weekly timer operation. • Minimum set time unit : 1 min. • Yearly timer operation is composed of 4 STEP. <ul style="list-style-type: none"> – Start day (1 STEP) – End day (1 STEP) – Start time (1 STEP) – End time (1 STEP)

<p>Yearly pulse operation</p>  <p>pulse time range (1 ~ 59s / 1 ~ 60min)</p> <p>Start time</p>	<p>Operate the output as an ON operation at the start time that had been set in between of start time and end time. (Operation setting function yearly)</p> <ul style="list-style-type: none"> • Able to add the yearly pulse operation to the weekly pulse operation. • Pulse range : 1 ~ 59 s (1sec unit), 1 ~ 60 min (1min unit) <ul style="list-style-type: none"> – 1sec → 2sec • • • 59sec → 1min → 2min • • • 59min → 60min → 1sec • • • • Yearly timer operation is composed of 4 STEP. <ul style="list-style-type: none"> – Start day (1 STEP) – End day (1 STEP) – Start time (1 STEP) – Pulse time range (1 STEP)
<p>Current time setting</p>	<p>Applied when setting the current time.</p> <ul style="list-style-type: none"> • When using this for the first time or performing the reset function, the screen will be switched to the time adjusting screen so please set to the current time and use it.
<p>Holiday setting</p>	<p>By setting the date for weekend, national holiday and etc, users can set the holiday (non-operating day) temporarily without revising the program.</p> <ul style="list-style-type: none"> • Possible to set holiday every year
<p>Season setting</p>	<p>By setting terms for the season, users can set the weekly operation program to become changed automatically when season changes.</p> <ul style="list-style-type: none"> • Use it same as the yearly operation setting. • When changing the season setting, all of the weekly programs will be deleted.
<p>Output when power is backed up</p>	<p>Assigns the output state when power is backed up.</p> <ul style="list-style-type: none"> • AUTO setting : when re-supplying in the power after experiencing the power failure, output will be operated depending on the set program. • Normal set : when re-supplying in the power after experiencing the power failure, POW <p>Indication will start to flicker and disregarding the set program, output will maintain the OFF state. (with the BOOT input, output will be operated by following the set program)</p>

Summer time switch	<p>Summer time setting can be set automatically and manually .</p> <ul style="list-style-type: none"> • current time \Leftrightarrow switch to current time + 1h (summer time)
Program check	<p>Applied when needs to check the program setting information in the operation mode state.</p> <ul style="list-style-type: none"> • operated depending on the program setting information and output does not get blocked • displayed in the order of program input • if there are no key input for 1 min then it will return to the operation mode automatically
Program edit	<p>Able to edit and delete the program setting</p> <ul style="list-style-type: none"> • unable to revise the setting for tire operation, pulse operation and cycle operation. • displayed in the order of program input
Program test	<p>Check the day for actual output to start and end for 1 week.</p> <ul style="list-style-type: none"> • within the same output program, if program and operation time are duplicated then it may be ignored • It continuously displays from the output 1 until the date reaches 1 week in the consecutive operation time order.

11.2 Operation explanation

- Operation 1 : when inputting the additional weekly program ② to the weekly set program ①, output will be operated just like an operation 1.
- Operation 2 : when inputting the additional yearly program ② to the yearly set program ①, output will be operated just like an operation 2.
- Operation 3 : when inputting the additional yearly program ① to the weekly set program ①, output will be operated just like an operation 3.
- Operation 4 : when inputting the additional weekly program ② to the yearly set program ②, output will be operated just like an operation 4.

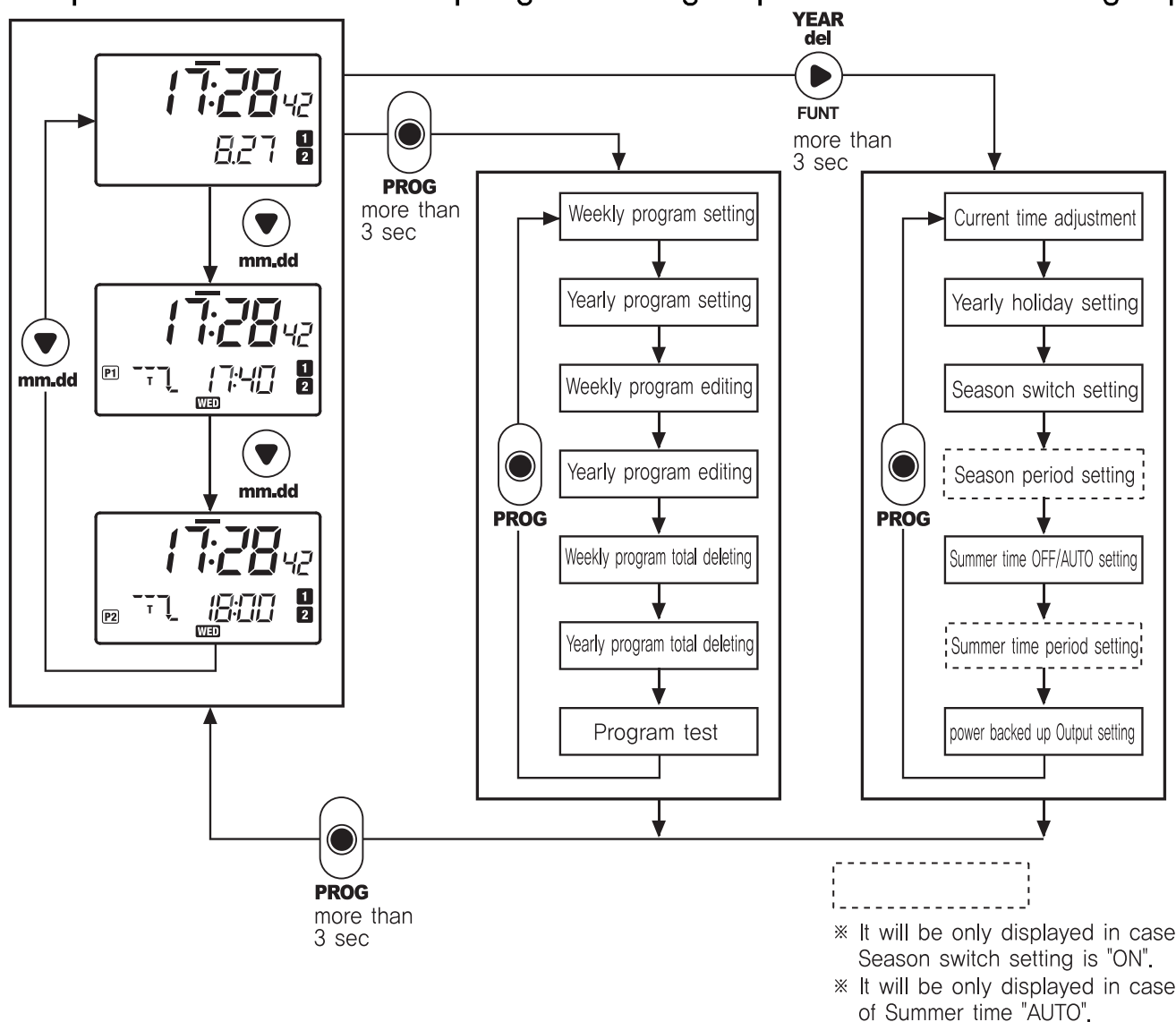


12 Parameter formation

1. operation screen

2. program set group

3. function set group



※ What is operation screen?

A certain time will be displayed once supplying in the power. This screen is known as the operation screen. (Pressing the front reset key will initialize all settings so please set the current time and use it)

※ Return to the operation screen

Pressing the 「**PROG**」 key for more than 3 sec within the program set mode / function set mode will return to the operation screen.

※ Shift within each parameter

1) Enter into the program set group

Press the 「PROG」 key for more than 3 sec within the operation screen (time indication).

2) Enter into the function set group

Press the 「FUNC」 key for more than 3 sec within the operation screen (time indication).

3) Return to the running state from the set group

Press the 「PROG」 key for more than 3 sec within the function set group and program set group.

4) Switch to other modes within the set group

Pressing the 「PROG」 key shortly will display the set modes sequentially.

5) Change the screen

Pressing the decrement (mm, dd) key for more than 1 sec within the operation screen (time indication) will change the operation screen.

6) Change the summer time manually


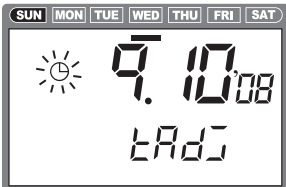

Pressing the increment (+1h) key for more than 1 sec within the operation screen (time indication) will display +1h and it will change the current time 1 hour faster.
(Repeating this step one more time will return to current time)

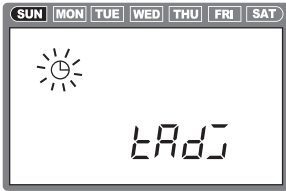
7) 12/24h selection

Every time when pressing the increment (12/24h) key for more than 1 sec within the operation screen (time indication), it will switch 24h indication \Leftrightarrow AM/PM 12h indication

13 Time adjusting method

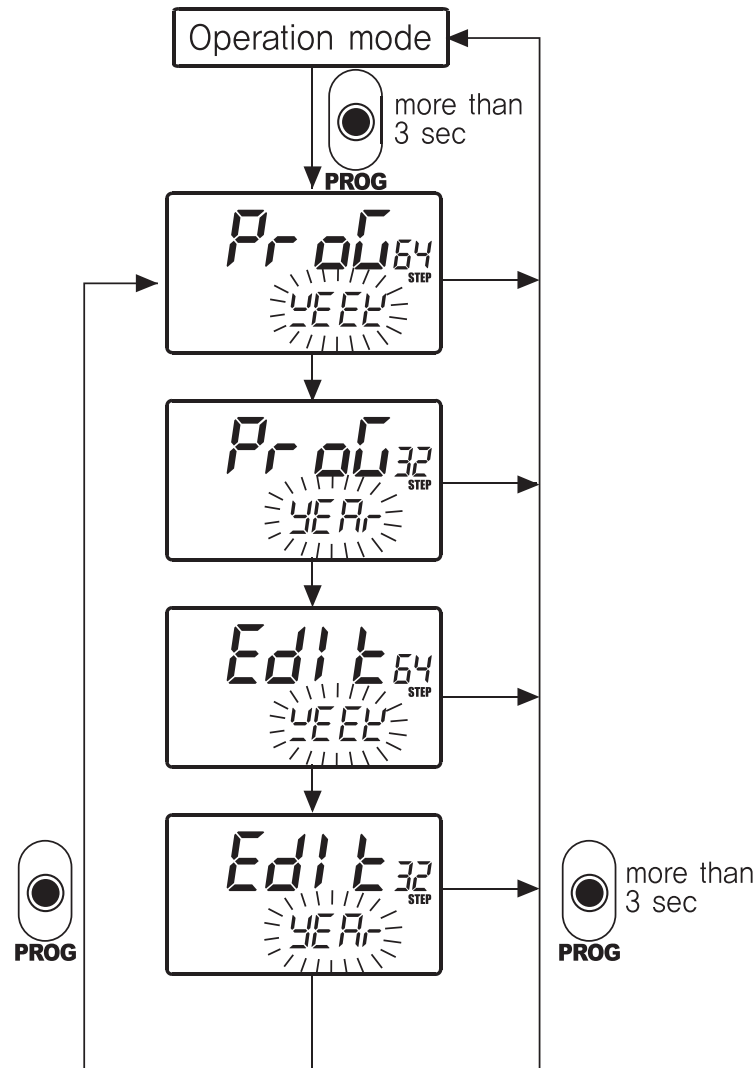
(Setting example) set the current time to 13:20 on september 15, 2008

Parameter	Explanation
<p>①</p> 	<p>① Enter into the current time set mode</p> <ul style="list-style-type: none"> Pressing the FUNC key for more than 3 sec within the operation mode will enter into the "time set mode." (☀ flickers) Press the SET key
<p>②</p> 	<p>② Set current year, month, day</p> <ul style="list-style-type: none"> Set year, month and day by pressing the YEAR, MON and DAY key but (▼) key is applied when decreasing the previous value. Once setting the current year, month and day are completed, press the SET key.
<p>③</p> 	<p>③ Set current time</p> <ul style="list-style-type: none"> Set hour and min by pressing the hour and min key but (▼) key is applied when decreasing the previous time. Once setting the current time is completed, press the SET key.

<p>④</p> 	<p>④ Return to the operation mode</p> <ul style="list-style-type: none"> • Since setting has been completed, pressing the PROG key for more than 3 sec will confirm the setting and return to the operation mode. • When revising the setting, please repeat the given steps ①~④
<ul style="list-style-type: none"> • When running the program for the first time or after resetting the program, it will display the time adjusting screen so please set the current time by following the steps ② and ③. • Pressing the UP and DOWN key for more than 1 sec will change the setting quickly. • Allowable range of current time setting is maximum 2099/12/31 	

14 Set group formation

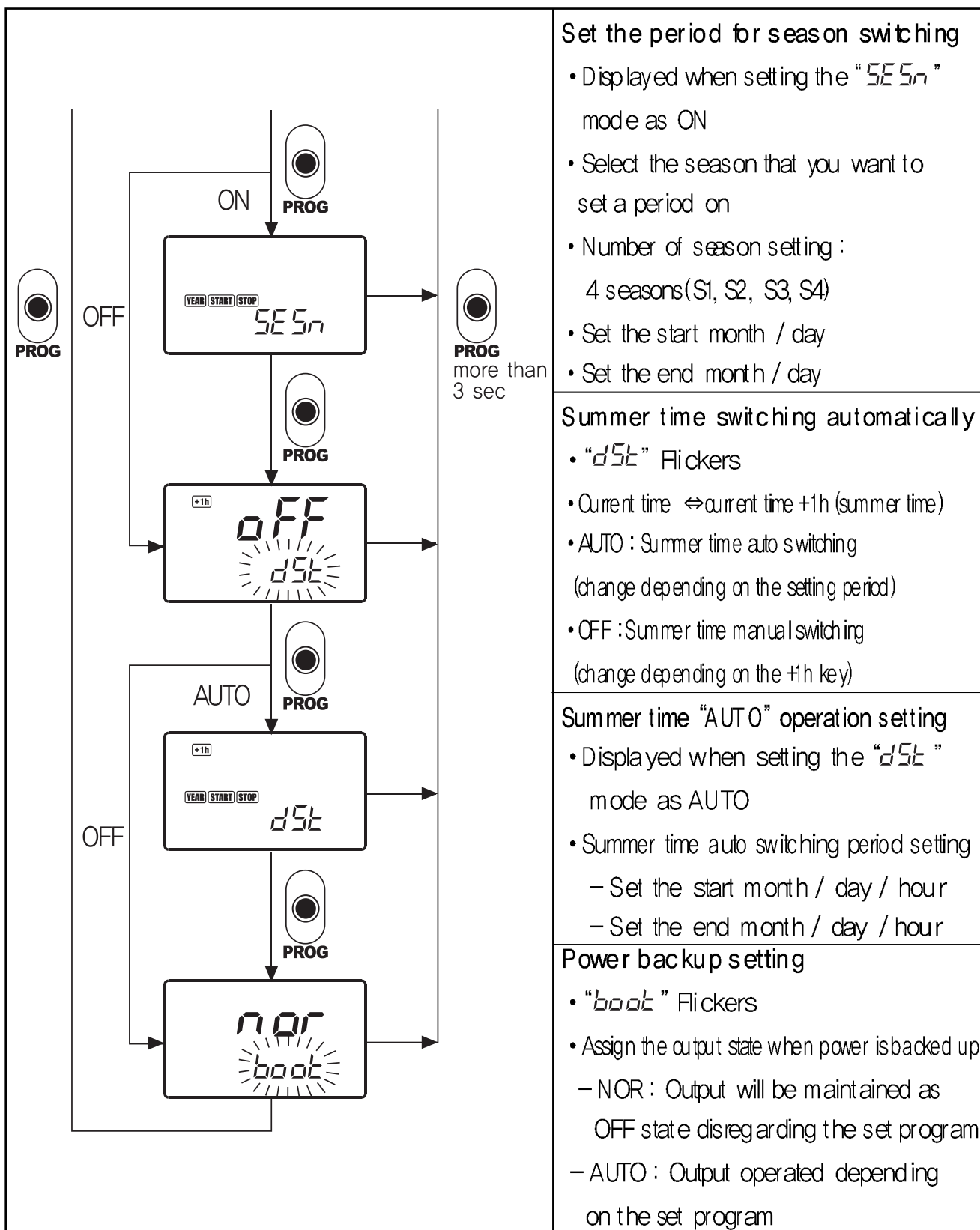
14.1 Program set group formation

Parameter	Explanation
	<p>Operation mode</p> <ul style="list-style-type: none"> • Display current time and day
	<p>Weekly program set mode</p> <ul style="list-style-type: none"> • “<i>YEEL</i>” Flickers • Display weekly remaining STEP
	<p>Yearly program set mode</p> <ul style="list-style-type: none"> • “<i>YEAr</i>” Flickers • Display yearly remaining STEP
	<p>Weekly program edit and delete mode</p> <ul style="list-style-type: none"> • “<i>YEEL</i>” Flickers • Display weekly total STEP
	<p>Yearly program edit and delete mode</p> <ul style="list-style-type: none"> • “<i>YEAr</i>” Flickers • Display yearly total STEP

	<p>Weekly program total delete mode</p> <ul style="list-style-type: none"> • “YEE” Flickers • Delete weekly program 1 and program 2 individually <p>Yearly program total delete mode</p> <ul style="list-style-type: none"> • “YEA” Flickers • Delete yearly program 1 and program 2 individually <p>Program test mode</p> <ul style="list-style-type: none"> • “L E S T ” Flickers • Display 1 week and 1 minute continuously in the operation time order
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14.2 Function set group formation

Parameter	Explanation
	<p>Operation mode</p> <ul style="list-style-type: none"> • Display current time and day <p>Time adjustment setting</p> <ul style="list-style-type: none"> • “☀” Flickers • Set current year / month / day 「00 year, 00 month, 00 day」 • Set current time 「00 hour, 00 min」 <p>Holiday setting</p> <ul style="list-style-type: none"> • “HdAY” Flickers • Used when setting the holiday (non-operating day) • Number of holiday setting : 16 times • Set the start year / month / day • set the end year / month / day • Possible to set every year <p>Season selection</p> <ul style="list-style-type: none"> • “SE S n” Flickers • Set seasons by considering the weekly program <p>Cautious) when changing the season, settings in the weekly program will be deleted.</p>

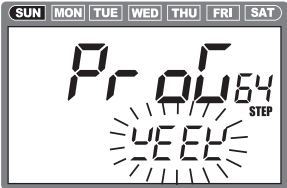
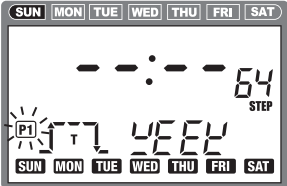


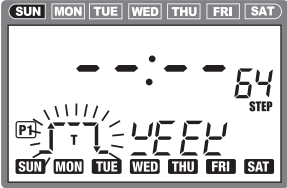


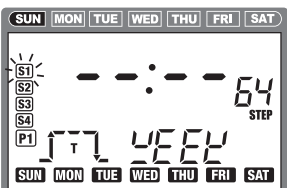


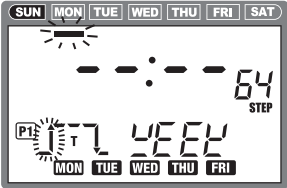









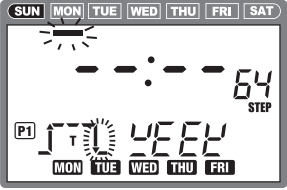



15 Program setting (program set group)

15.1 Normal timer operation

Example) Output 1 operates as ON from Monday to Friday at 8:30 to 17:40 Parameter

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8:30 ~ 17:40 8:30 ~ 17:40 8:30 ~ 17:40 8:30 ~ 17:40 8:30 ~ 17:40						


Parameter	Explanation
① 	① Enter into the weekly program setting <ul style="list-style-type: none"> Press the PROG key within the operation mode state then. "WEEK" will flicker. Once flickers, please press the SET key
② 	② Port 1 and port 2 setting <ul style="list-style-type: none"> When setting the port, set by pressing the  or  key. Once "P1" (port 1) flickers, press the SET key.
③ 	③ Operation mode setting <ul style="list-style-type: none"> Since it is in the timer operation mode, press the SET key right away (when changing the operation setting, press the  or  key)
④ 	④ Season setting <ul style="list-style-type: none"> When setting the season, press  or  key to set. Once "S1" starts to flicker, press the SET key. But only able to set when season switching is set as ON. If season switching is not set as ON, it will go to the day setting mode.
⑤ 	⑤ Start day setting <ul style="list-style-type: none"> Because the position of cursor (—) is on the Sunday (SUN), turn OFF "SUN" that is on the set day position by pressing the  or  key After moving the position of cursor to the Saturday (SAT) by pressing the  key, turn OFF "SAT" that is on the set day position by pressing  or  key. Once the start day setting is completed, press the SET key

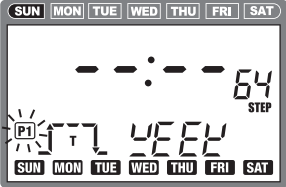


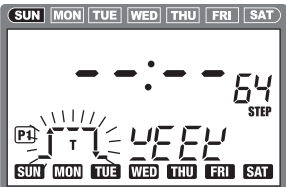


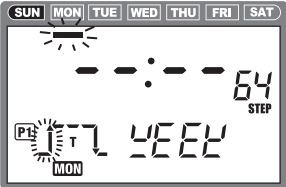





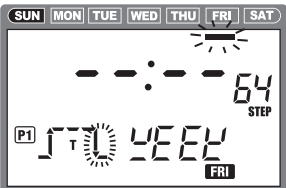





<p>⑥</p> 	<p>⑥ Start time setting</p> <ul style="list-style-type: none"> Set the start time by using the hour and min key but  key is only used when decreasing the previous value. Once the start time setting is completed, press the SET key.
<p>⑦</p> 	<p>⑦ End day setting</p> <ul style="list-style-type: none"> End day is same as the start day so press the SET key. (Follow the start day setting ⑤)
<p>⑧</p> 	<p>⑧ End time setting</p> <ul style="list-style-type: none"> Set the end time by using the hour and min key but  key is only used when decreasing the previous value. Once the end time setting is completed, press the SET key.
<p>⑨</p> 	<p>⑨ Return the weekly program setting</p> <ul style="list-style-type: none"> Press the PROG key for more than 3 sec in order to return to the operation mode.
<ul style="list-style-type: none"> Pressing the UP and DOWN key for more than 1 sec will change the time value instantly When adding additional programs to the set program, please repeat steps from ② to ⑨. Weekly timer setting is composed of 2 STEP and once setting is completed then it will display number of remaining STEP that can be set 	


15.2 Days timer operation

Example) Continuous output 1 ON operation from Monday 8:30 to Friday 17:40

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	<div style="display: flex; justify-content: space-between; width: 100%;"> 8:30 17:40 </div>					

Parameter	Explanation
<p>①</p> 	<p>① Enter into the weekly program setting</p> <ul style="list-style-type: none"> Pressing the PROG key for more than 3 sec within the operation mode will flicker the “WEEK”. Here, press the SET key.

<p>②</p> 	<p>② Port 1 and port 2 setting</p> <ul style="list-style-type: none"> • When setting the port, set by pressing the  or  key. • Once “P1” (port 1) flickers, press the SET key.
<p>③</p> 	<p>③ Operation mode setting</p> <ul style="list-style-type: none"> • Since it is in the timer operation mode, press the SET key right away (when changing the operation setting, press the  or  key)
<p>④</p> 	<p>④ Start day setting</p> <ul style="list-style-type: none"> • Because the position of cursor (—) is on the Sunday (SUN), turn OFF “SUN” that is on the set day position by pressing the  or  key. • Shift the position of cursor to the Saturday (SAT) by using  key and turn OFF. • Once the start day setting is completed, press the SET key.
<p>⑤</p> 	<p>⑤ Start time setting</p> <ul style="list-style-type: none"> • Set the start time by using the hour and min key but  key is only used when decreasing the previous value. • Once the start time setting is completed, press the SET key.
<p>⑥</p> 	<p>⑥ End day setting</p> <ul style="list-style-type: none"> • Shift the position of cursor (—) to the Monday (MON) by using  key and turn off “MON” that is on the set day position by pressing  or  key. • Shift the position of cursor to the Friday (FRI) and turn ON “FRI” • Once the end day setting is completed, press the SET key.
<p>⑦</p> 	<p>⑦ End time setting</p> <ul style="list-style-type: none"> • Set the end time by using the hour and min key but  key is only used when decreasing the previous value. • Once the end time setting is completed, press the SET key.

<p>⑧</p> 	<p>⑧ Return the weekly program setting</p> <ul style="list-style-type: none"> Press the PROG key for more than 3 sec in order to return to the operation mode.
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• Pressing the UP and DOWN key for more than 1 sec will change the time value instantly.


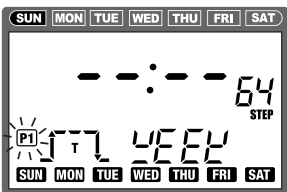
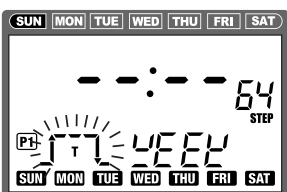

• When adding additional programs to the set program, please repeat steps from ② to ⑧.


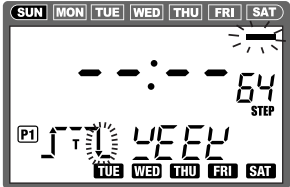


Caution) Please do not overlap operation time with other programs' one, when setting to add program within the same output port.

15.3 The next day timer operation

Example) Output 1 operation from Mon ~ Fri, 20:30 to the next day 6:30

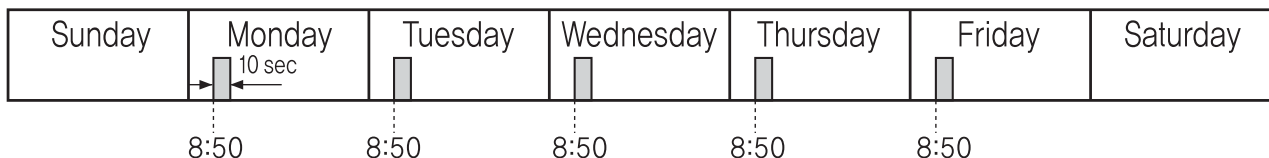
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	20:30 6:30	20:30 6:30	20:30 6:30	20:30 6:30	20:30 6:30	20:30 6:30


Parameter	Explanation
<p>①</p> 	<p>① Enter into the weekly program setting</p> <ul style="list-style-type: none"> Pressing the PROG key for more than 3 sec within the operation mode will flicker the "YEEH". Here, press the SET key.
<p>②</p> 	<p>② Port 1 and port 2 setting</p> <ul style="list-style-type: none"> When setting the port, set by pressing the or key. Once "P1" (port 1) flickers, press the SET key.
<p>③</p> 	<p>③ Operation mode setting</p> <ul style="list-style-type: none"> Since it is in the timer operation mode, press the SET key right away (when changing the operation setting, press the or key)
<p>④</p> 	<p>④ Start day setting</p> <ul style="list-style-type: none"> Because the position of cursor (—) is on the Sunday (SUN), turn OFF "SUN" that is on the set day position by pressing the or key. Shift the position of cursor to the Saturday (SAT) by using key and turn OFF "SAT" that is on the set day position by pressing or key. Once the start day setting is completed, press the SET key.

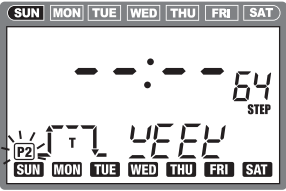


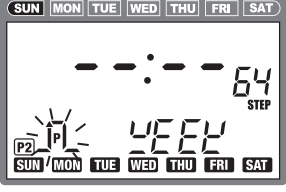


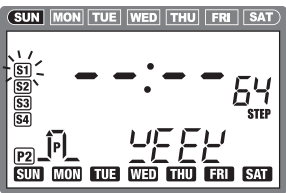


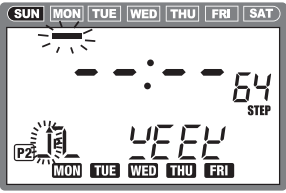









<p>⑤</p> 	<p>⑤ Start time setting</p> <ul style="list-style-type: none"> Set the start time by using the hour and min key but (▼) key is only used when decreasing the previous value. Once the start time setting is completed, press the SET key.
<p>⑥</p> 	<p>⑥ End day setting</p> <ul style="list-style-type: none"> Shift the position of cursor (—) to the Monday (MON) by using (▶) key and turn OFF “MON” that is on the set day position by pressing (▲) or (▼) key. Shift the position of cursor to the Saturday (SAT) and turn ON “SAT” Once the end day setting is completed, press the SET key.
<p>⑦</p> 	<p>⑦ End time setting</p> <ul style="list-style-type: none"> Set the end time by using the hour and min key but (▼) key is only used when decreasing the previous value. Once the end time setting is completed, press the SET key.
<p>⑧</p> 	<p>⑧ Return the weekly program setting</p> <ul style="list-style-type: none"> Press the PROG key for more than 3 sec in order to return to the operation mode.
<ul style="list-style-type: none"> Pressing the UP and DOWN key for more than 1 sec will change the time value instantly. When adding additional programs to the set program, please repeat steps from ② to ⑧. 	

15.4 Weekly pulse operation

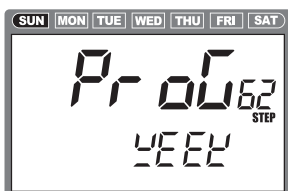
Example) Output 2 ON operation from Monday to Friday at 8:50 for only 10 sec



Parameter	Explanation
<p>①</p> 	<p>① Enter into the weekly program setting</p> <ul style="list-style-type: none"> Pressing the PROG key for more than 3 sec within the operation mode will flicker the “WEEK”. Here, press the SET key.

<p>②</p> 	<p>② Port 1 and port 2 setting</p> <ul style="list-style-type: none"> • When setting the port, set by pressing the  or  key. • Once “P2” (port 2) flickers, press the SET key.
<p>③</p> 	<p>③ Operation mode setting</p> <ul style="list-style-type: none"> • Since it is in the timer operation mode, press  or  key to set the pulse operation mode • Once pulse operation setting is completed, press the SET key.
<p>④</p> 	<p>④ Season setting</p> <ul style="list-style-type: none"> • When setting the season, press  or  key to set it • Once “S1” starts to flicker, press the SET key. <p>But, able to set when season switching is set as ON. If season switching is not set as ON, it will go to the day setting.</p>
<p>⑤</p> 	<p>⑤ Start day setting</p> <ul style="list-style-type: none"> • Because the position of cursor (—) is on the Sunday (SUN), turn OFF “SUN” that is on the set day position by pressing the  or  key. • After moving the position of cursor to the Saturday (SAT) by pressing the , turn OFF SAT that is on the set day position by pressing  or  key. • Once the start day setting is completed, press the SET key.
<p>⑥</p> 	<p>⑥ Start time setting</p> <ul style="list-style-type: none"> • Set the start time by using the hour and min key but  key is only used when decreasing the previous value. • Once the start time setting is completed, press the SET key.
<p>⑦</p> 	<p>⑦ Pulse time range setting</p> <ul style="list-style-type: none"> • Set the pulse time range by using the min key, but  key is only used when decreasing the previous value. • Once pulse time range setting is completed, press the SET key.

⑧



⑧ Return the weekly program setting

- Press the **PROG** key for more than 3 sec in order to return to the operation mode.

- Pressing the UP and DOWN key for more than 1 sec will change the time value instantly.
- When adding additional programs to the set program, please repeat steps from ② to ⑧.

Cautious) If the weekly pulse operation is set within the same output port, it cannot use the weekly timer and weekly cycle operation setting when setting the additional program.

- Pulse time range: 1 ~ 59 s (1 sec unit), 1 ~ 60 min (1 min unit)

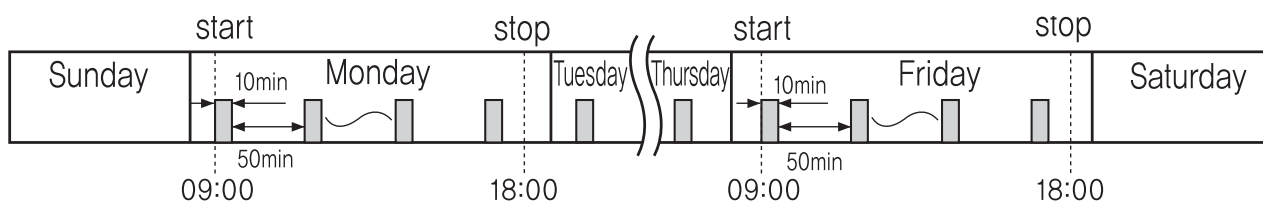
1 s → 2 s → . . . → 59 s → 1 m → . . . → 59 m → 60 m → 1 s → . . .

- Weekly pulse setting is composed of 2 STEP and once setting is completed then it will display number of remaining STEP that can be set.




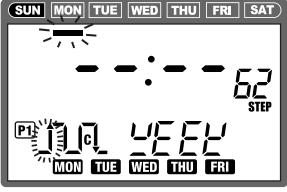







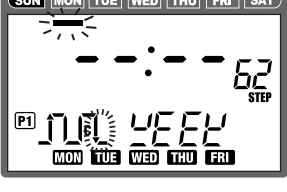




15.5 Weekly cycle operation



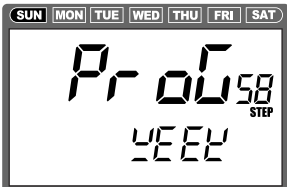
Example) From Monday to Friday at 9:00 to 18:00, it repeats following operation.

Output 1 ON for 10 min and output 1 OFF for 50 min



Parameter	Explanation
①	① Enter into the weekly program setting <ul style="list-style-type: none"> • Pressing the PROG key for more than 3 sec within the operation mode will flicker the "WEEK". Here, press the SET key.
②	② Port 1 and port 2 setting <ul style="list-style-type: none"> • When setting the port, set by pressing the ▲ or ▼ key. • Once "P1" (port 1) flickers, press the SET key.
③	③ Operation mode setting <ul style="list-style-type: none"> • Since it is in the timer operation mode, press ▲ or ▼ key to set the cycle operation mode. • Once cycle operation setting is completed, press the SET key.

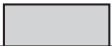
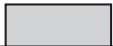
<p>④</p> 	<p>④ Season setting</p> <ul style="list-style-type: none"> • When setting the season, press  or  key to set it • Once “S1” starts to flicker, press the SET key. But, able to set when season switching is set as ON. If season switching is not set as ON, it will go to the day setting.
<p>⑤</p> 	<p>⑤ Start day setting</p> <ul style="list-style-type: none"> • Because the position of cursor(—) is on the Sunday (SUN), turn OFF “SUN” that is on the set day position by pressing the  or  key. • After moving the position of cursor to the Saturday (SAT) by pressing the , turn OFF SAT that is on the set day position by pressing  or  key. • Once the start day setting is completed, press the SET key.
<p>⑥</p> 	<p>⑥ Start time setting</p> <ul style="list-style-type: none"> • Set the start time by using the hour and min key but  key is only used when decreasing the previous value. • Once the start time setting is completed, press the SET key.
<p>⑦</p> 	<p>⑦ End day setting</p> <ul style="list-style-type: none"> • End day is same as the start day so press the SET key. (Follow the start day setting ⑤)
<p>⑧</p> 	<p>⑧ End time setting</p> <ul style="list-style-type: none"> • Set the end time by using the hour and min key but  key is only used when decreasing the previous value. • Once the end time setting is completed, press the SET key
<p>⑨</p> 	<p>⑨ ON time range setting</p> <ul style="list-style-type: none"> • Set the ON time range by using the hour and min key but  key is only used when decreasing previous value. • Once ON time range setting is completed, press the SET key.


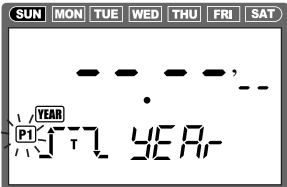


<p>⑩</p> 	<p>⑩ OFF time range setting</p> <ul style="list-style-type: none"> Set the OFF time range by using the hour and min key but  key is only used when decreasing previous value. Once OFF time range setting is completed, press the SET key
<p>⑪</p> 	<p>⑪ Return the weekly program setting</p> <ul style="list-style-type: none"> Press the PROG key for more than 3 sec in order to return to the operation mode.






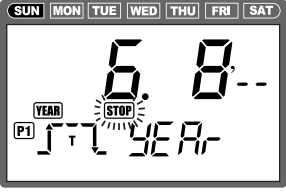






• Pressing the UP and DOWN key for more than 1 sec will change the time value instantly.
 • When adding additional programs to the set program, please repeat steps from ② to ⑪
 Caution) if the weekly pulse operation is set within the same output port, it cannot use the weekly timer and weekly cycle operation setting when setting the additional program.
 • Weekly pulse setting is composed of 4 STEP and once setting is completed then it will display the number of remaining STEP that can be set

15.6 Yearly timer operation

Example) From June 7 to June 8, output 1 ON at 18:00 and output 1 OFF at 19:40 for every year

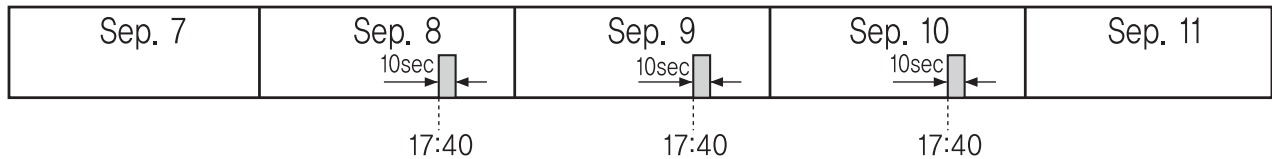
Jun. 6	Jun. 7	Jun. 8	Jun. 9
			
	18:00 19:40	18:00 19:40	


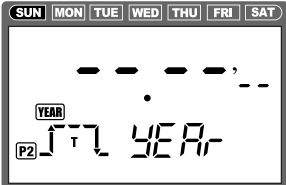


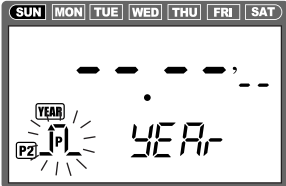


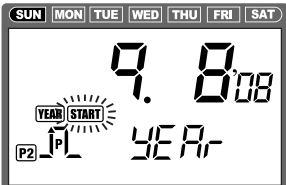

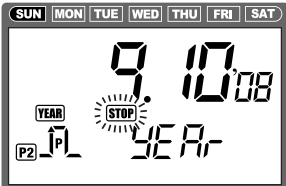

Parameter	Explanation
<p>①</p> 	<p>① Enter into the yearly program setting</p> <ul style="list-style-type: none"> Within the operation mode, press the PROG key for more than 3 sec to enter into the set mode and then press the PROG key one more time shortly then “YEEL” will start to flicker. Here, press the SET key.
<p>②</p> 	<p>② Port 1 and port 2 setting</p> <ul style="list-style-type: none"> When setting the port, set by pressing the  or  key. Once “P1” (port 1) flickers, press the SET key.






<p>③</p> 	<p>③ Operation mode setting</p> <ul style="list-style-type: none"> • Since it is in the timer operation mode, press the SET key right away (when changing the operation setting, press the  or  key)
<p>④</p> 	<p>④ Set the start year, month and day</p> <ul style="list-style-type: none"> • Set the start year, month and day by pressing the YEAR , MON and DAY key but  key is applied when decreasing the previous value. • Once setting the start year, month and day are completed, press the SET key (Cautious) within the year, the "--" indication is a setting for every year.
<p>⑤</p> 	<p>⑤ Set the end year, month and day</p> <ul style="list-style-type: none"> • Set the end year, month and day by pressing the YEAR , MON and DAY key but  key is applied when decreasing the previous value. • Once setting the end year, month and day are completed, press the SET key (Cautious) setting the year as the (- -) for every year within the start year, month and day will fix the end year as (- -) for every year.
<p>⑥</p> 	<p>⑥ Start time setting</p> <ul style="list-style-type: none"> • Set the start time by using the hour and min key but  key is only used when decreasing the previous value. • Once the start time setting is completed, press the SET key.
<p>⑦</p> 	<p>⑦ End time setting</p> <ul style="list-style-type: none"> • Set the end time by using the hour and min key but  key is only used when decreasing the previous value. • Once the end time setting is completed, press the SET key
<p>⑧</p> 	<p>⑧ Return the yearly program setting</p> <ul style="list-style-type: none"> • Press the PROG key for more than 3 sec in order to return to the operation mode.
<ul style="list-style-type: none"> • Pressing the UP and DOWN key for more than 1 sec will change the time value instantly. • When setting the year, it can set the year up to 2 years from the current year. Example) if current year is 2008, it can be set as follows. -- => 08 => 09 => 10 => -- => 08 => . . . • When adding additional programs to the set program, please repeat steps from ② to ⑧ • In the state where yearly program is being set, it can additionally set the weekly program. • Yearly timer setting is composed of 4 STEP and once setting is completed then it will display the number of remaining STEP that can be set. 	

15.7 Yearly pulse operation

Example) Output 2 ON for only 10 sec from 2008 sep8 to 2008 sep10 at 17:40



Parameter	Explanation
① 	① Enter into the yearly program setting • Within the operation mode, press the PROG key for more than 3 sec to enter into the set mode and then press the PROG key one more time shortly then “ YEAR ” will start to flicker. Here, press the SET key.
② 	② Port 1 and port 2 setting • When setting the port, set by pressing the  or  key. • Once “ P2 ” (port 2) flickers, press the SET key.
③ 	③ Operation mode setting • Since it is in the timer operation mode, press the  or  key to set the pulse operation mode. • Once the pulse operation setting is completed, press the SET key.
④ 	④ Set the start year, month and day • Set the start year, month and day by pressing the YEAR , MON and DAY key but  key is applied when decreasing the previous value. • Once setting the start year, month and day are completed, press the SET key Caution) within the year, the “--” indication is a setting for every year.
⑤ 	⑤ Set the end year, month and day • Set the end year, month and day by pressing the YEAR , MON and DAY key but  key is applied when decreasing the previous value. • Once setting the end year, month and day are completed, press the SET key Caution) setting the year as the (--) for every year within the start year, month and day will fix the end year as (--) for every year.

<p>⑥</p> 	<p>⑥ Start time setting</p> <ul style="list-style-type: none"> • Set the start time by using the YEAR, MON and DAY key but  key is only used when decreasing the previous value. • Once the start time setting is completed, press the SET key.
<p>⑦</p> 	<p>⑦ Pulse time range setting</p> <ul style="list-style-type: none"> • Set the pulse time range by using the min key but  key is only used when decreasing previous value. • Once the pulse time range setting is completed, press the SET key.
<p>⑧</p> 	<p>⑧ Return the yearly program setting</p> <ul style="list-style-type: none"> • Press the PROG key for more than 3 sec in order to return to the operation mode.


- Pressing the UP and DOWN key for more than 1 sec will change the time value instantly.
- When setting the year, it can set the year up to 2 years from the current year.
Example) if current year is 2008, it can be set as follows.
 - • ⇒ 08 ⇒ 09 ⇒ 10 ⇒ • • ⇒ 08 ⇒ • • •
- When adding additional programs to the set program, please repeat steps from ② to ⑧.
- In the state where yearly program is being set, it can additionally set the weekly program.
- Yearly timer setting is composed of 4 STEP and once setting is completed then it will display the number of remaining STEP that can be set.



16 Program editing (program setting group)

16.1 Weekly program edit

It is possible to check the program that had been set in the weekly program edit mode and use the same revising method as the weekly program setting.

In order to delete the set program individually in the weekly program edit mode, press the **del** key for 1 sec then “**DEL**” indication will start to flicker. Here, press the **SET** key to delete the program.



Parameter	Explanation
<p>①</p> 	<p>① Enter into the weekly program edit mode</p> <ul style="list-style-type: none"> • Enter into the operation mode by pressing the PROG key for more than 3 sec and repeatedly press the PROG key to turn ON the “Edit” indication and once the “WEEK” indication flickers, press the SET key.

<p>②</p> 	<p>② weekly program edit</p> <ul style="list-style-type: none"> • Revise it same as the weekly program setting method. <ul style="list-style-type: none"> – Displayed in the order of program input • Once the “End” indication flickers, it is indicating the completion of program edit. <ul style="list-style-type: none"> – Pressing the SET key will return to the edit mode.
<p>③</p> 	<p>③ weekly program delete</p> <ul style="list-style-type: none"> • In order to individually delete the weekly program, press the del key for 1 sec then the “del” key will start to flicker. Here, press the SET key to delete the program.
<ul style="list-style-type: none"> • Pressing the PROG key in the middle of revising the weekly program, it will cancel the work and return to the weekly program edit mode. • Unable to revise the operation mode (timer, pulse, cycle) 	

16.2 Yearly program edit

It is possible to check the program that had been set in the yearly program edit mode and use the same revising method as the yearly program setting.

In order to delete the set program individually in the yearly program edit mode, press the **del** key for 1 sec then “del” indication will start to flicker. Here, press the **SET** key to delete the program.

Parameter	Explanation
<p>①</p> 	<p>① Enter into the yearly program edit mode</p> <ul style="list-style-type: none"> • Enter into the operation mode by pressing the PROG key for more than 3 sec and repeatedly press the PROG key to turn ON the “Edit” indication and once the “YEAR” indication flickers, press the SET key.
<p>②</p> 	<p>② Yearly program revise</p> <ul style="list-style-type: none"> • Revise it same as the yearly program setting method. <ul style="list-style-type: none"> – Displayed in the order of program input • Once the “End” indication flickers, it is indicating the completion of program edit. <ul style="list-style-type: none"> – Pressing the SET key will return to the edit mode.

③



③ Yearly program delete

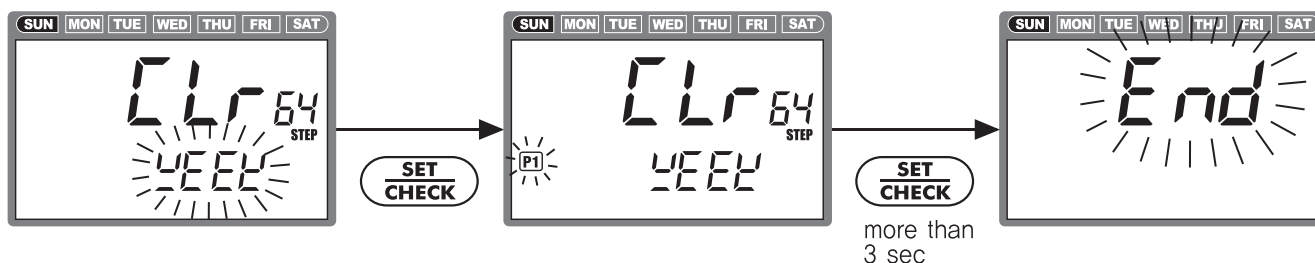
- In order to individually delete the yearly program, press the **del** key for 1 sec then the “**del**” key will start to flicker. Here, press the **SET** key to delete the program.

- Pressing the **PROG** key in the middle of revising the yearly program, it will cancel the work and return to the yearly program edit mode.
- Unable to revise the operation mode (timer, pulse).

17 Delete all programs

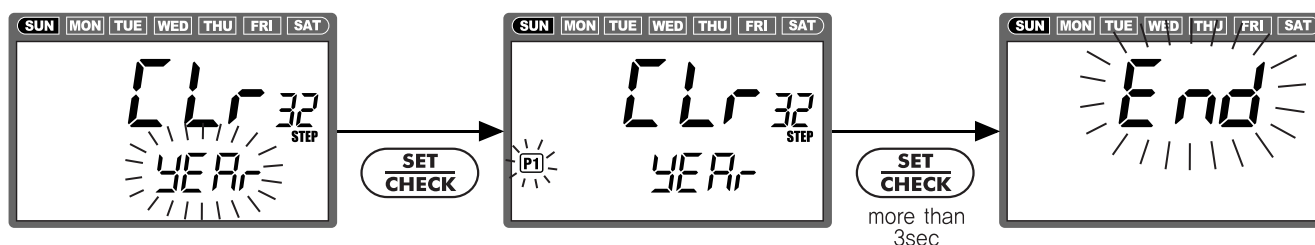
17.1 Delete all weekly programs

- Enter into the program setting mode by pressing the **PROG** key for more than 3 sec within the operation mode and repeatedly press the **PROG** key then “**CLr**” indication will be turned ON and “**YEAR**” indication will start to flicker. Here, press the **SET** key.
- Pressing the **PROG** key one more time will make it possible to delete all yearly programs. (“**YEAR**” indication flickers)
- Select the port 1 and port 2 by using \blacktriangle or \blacktriangledown key in the weekly program setting mode
- Pressing the **SET** key for more than 3 sec will only erase the program in the selected port. (“**End**” indication means complete of work)







17.2 Delete all yearly programs

- Enter into the program setting mode by pressing the **PROG** key for more than 3 sec within the operation mode and repeatedly press the **PROG** key then “**CLr**” indication will be turned ON and “**YEAR**” indication will start to flicker. Here, press the **SET** key.
- Select the port 1 and port 2 by using \blacktriangle or \blacktriangledown key in the yearly program setting mode.
- Pressing the **SET** key for more than 3 sec will only erase the program in the selected port. (“**End**” indication means complete of work)



18 Program test

Able to check the actual time and day for output start and output end about the set weekly program for 1 week period.

Parameter	Explanation
<p>①</p> 	<p>① Enter into the program test setting</p> <ul style="list-style-type: none"> Enter into the program setting mode by pressing the PROG key for more than 3 sec within the operation mode and repeatedly press the PROG key until “LESt” indication starts to flicker. Here, press the SET key.
<p>②</p> 	<p>② Start time indication</p> <ul style="list-style-type: none"> “LESt” indication flickers and the start time regarding the first output operation time will be displayed. In this state, pressing the SET key will display the end time.
<p>③</p> 	<p>③ End time indication</p> <ul style="list-style-type: none"> “LESt” indication flickers and the end time regarding the first output operation time will be displayed. In this state, pressing the SET key will display the next output operation time.
<p>④</p> 	<p>④ End the program test</p> <ul style="list-style-type: none"> Able to check the output operation time for 1 week period by pressing the SET key repeatedly Once the output operation time of set program completed, “End” indication will flicker.

19 Function setting (function setting group)

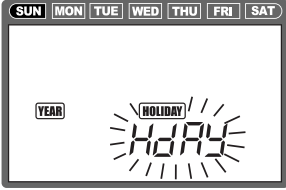
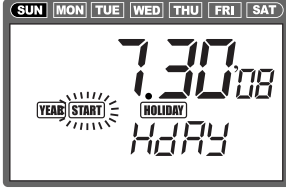
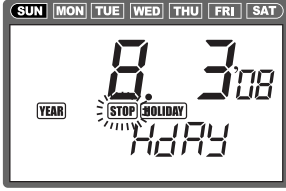
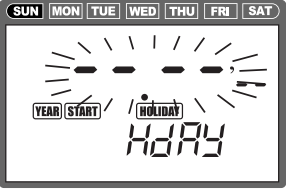
19.1 Current time setting (Refer to the time adjustment method Page 19)

19.2 Yearly holiday setting

Without changing the program it blocks the output by assigning the yearly holiday date.





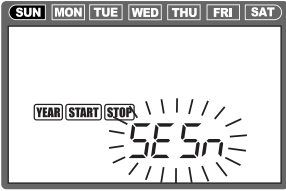





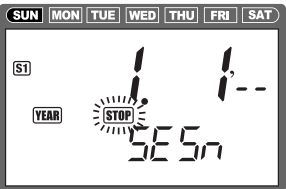

Users do not have to change the set program or operate the switch forcedly because once the yearly holiday setting date passes, it automatically cancels the function.


Example) set holiday from 2008 july30 to august3 and in the next year, it will be cancelled.

Parameter	Explanation
<p>①</p> 	<p>① Enter into the yearly holiday setting</p> <ul style="list-style-type: none"> Enter into the function setting mode by pressing the FUNC key for more than 3 sec within the operation mode and pressing the PROG key one more time will flicker the “HOLIDAY”. Here, press the SET key.
<p>②</p> 	<p>② Yearly holiday start year, month and day setting</p> <ul style="list-style-type: none"> Set the start year, month and day by using the YEAR, MON and DAY key. But, (▼) key is applied when decreasing the previous value. “START” indication flickers. Once completing the start year, month and day setting, press the SET key. <p>Cautious) in the year, “--” indication is yearly setting.</p>
<p>③</p> 	<p>③ Yearly holiday end year, month and day setting</p> <ul style="list-style-type: none"> Set the end year, month and day by pressing the YEAR, MON and DAY key but (▼) key is applied when decreasing the previous value. “STOP” indication flickers. Once completing the end year, month and day, press the SET key. <p>Cautious) setting the year as the (--) for every year within the start year, month and day will fix the end year as (--) for every year</p>
<p>④</p> 	<p>④ Return to the yearly holiday setting</p> <ul style="list-style-type: none"> “--.-.-” indication flickers, users can perform additional setting. In order to return to the operation mode, press the PROG key for more than 3 sec.
<ul style="list-style-type: none"> Yearly holiday setting can be set from current date to date after 2 years 12/31 and once passes the assigned date, it will automatically cancel the function. Able to set 16 times for the yearly holiday setting and if it is already being set, it will display with the current program and able to set additionally by pressing the SET key until “--.-.-” is displayed. (able to revise the yearly holiday) In order to delete the holiday setting, press the del key for 1 sec then “del” will flicker. Here, press the SET key to delete the program. 	

19.3 Season switch setting

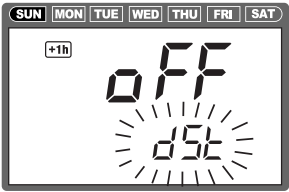

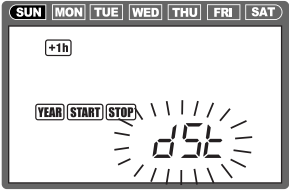
Depending on the season switch setting, weekly program automatically changed.

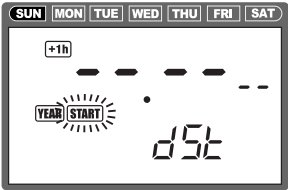

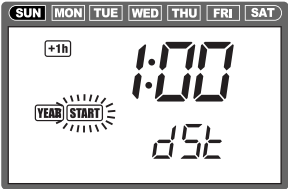

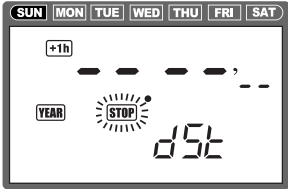

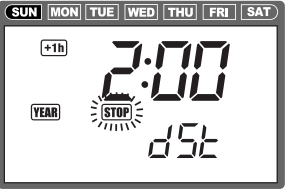

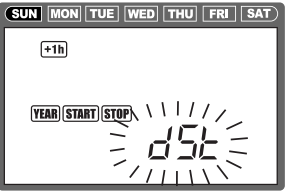
Parameter	Explanation
<p>①</p> 	<p>① Enter into the season switch setting</p> <ul style="list-style-type: none"> • Enter into the function setting mode by pressing the FUNC key for more than 3 sec within the operation mode and move to the "SE5n" setting screen by pressing the PROG key repeatedly. • Once the "SE5n" indication is displayed, press the SET key.
<p>②</p> 	<p>② Season switch setting selection</p> <ul style="list-style-type: none"> • Change OFF indication to the ON indication by using  or  key. • Once setting is completed, press the SET key.
<p>③</p> 	<p>③ Season period setting</p> <ul style="list-style-type: none"> • Move to the season period setting mode by pressing the PROG key. • Since it is in the season period setting mode, press the SET key.
<p>④</p> 	<p>④ Season selection</p> <ul style="list-style-type: none"> • Select the season among S1, S2, S3 and S4 by using  or  key. • Once selecting the season, press the SET key.
<p>⑤</p> 	<p>⑤ Start month and day setting</p> <ul style="list-style-type: none"> • Set the start month and day by using the MON and DAY key, but  key is only used when decreasing previous value. • "START" indication flickers • Once the start month and day setting is completed, press the SET key.
<p>⑥</p> 	<p>⑥ End month and day</p> <ul style="list-style-type: none"> • Set the end month and day by using the MON and DAY key, but  key is only used when decreasing previous value. • "STOP" indication flickers • Once the end month and day setting is completed, press the SET key.

<p>⑦</p> 	<p>⑦ Return to the season switch setting</p> <ul style="list-style-type: none"> • In order to return to the operation mode, press the PROG key for more than 3 sec.
<ul style="list-style-type: none"> • Season switch setting is for the weekly program. (Not yearly program). <p>Cautious) if the weekly program had already been set, changing the season switch setting from OFF to ON or ON to OFF will delete the all settings in the weekly program so please be cautious.</p> <ul style="list-style-type: none"> • If season period duplicated, it goes as following order. S1 < S2 < S3 < S4 <p>Example) Set S1 (1/1 ~ 12/31), S2 (7/20 ~ 8/1) then it goes as following order. S1 (1/1 ~ 7/19) < S2 (7/20 ~ 8/31) < S1 (9/1 ~ 12/31)</p>	

19.4 Summer time setting

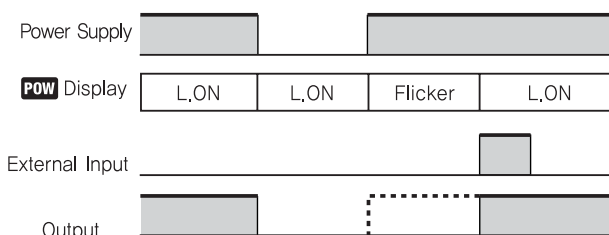
Switching manually and switching automatically are possible in the summer time setting
Setting the automatic switching period (time) will provide more convenient usage.

Parameter	Explanation
<p>①</p> 	<p>① Enter into the summer time setting</p> <ul style="list-style-type: none"> • Enter into the function setting mode by pressing the FUNC key for more than 3 sec within the operation mode and move to the “dst” setting screen by pressing the PROG key repeatedly. • Once “dst” is indicated, press the SET key.
<p>②</p> 	<p>② Summer time selection</p> <ul style="list-style-type: none"> • Change OFF indication to the AUTO indication by using ▲ or ▼ key. • Once setting is completed, press the SET key.
<p>③</p> 	<p>③ Summer time period setting</p> <ul style="list-style-type: none"> • Move to the summer time period setting mode by pressing the PROG key. • Since it is in the summer time period setting mode, press the SET key.

<p>④</p> 	<p>④ Start month and day setting</p> <ul style="list-style-type: none"> • Set the start month, day by using the MON and DAY key but  key is only used when decreasing previous value. • “START” indication flickers. • Once completing the start month and day setting, press the SET key.
<p>⑤</p> 	<p>⑤ Start time setting</p> <ul style="list-style-type: none"> • Set the start time by using the hour key but  key is only used when decreasing previous value. • Once completing the start time setting, press the SET key.
<p>⑥</p> 	<p>⑥ End month and day setting</p> <ul style="list-style-type: none"> • Set the end month, day by using the MON and DAY key but  key is only used when decreasing previous value. • “STOP” indication flickers. • Once completing the end month and day setting, press the SET key.
<p>⑦</p> 	<p>⑦ End time setting</p> <ul style="list-style-type: none"> • Set the end time by using the hour key but  key is only used when decreasing previous value. • Once completing the end time setting, press the SET key.
<p>⑧</p> 	<p>⑧ Return to the summer time setting</p> <ul style="list-style-type: none"> • In order to return to the operation mode, press the PROG key for more than 3 sec.
<ul style="list-style-type: none"> • External +1h key will not operate in case summer time is set as “AUTO”. • It is available to check or change the summer time period which is set previously. • In case of Start time setting and End time setting, the value of [min] is fixed as “00 min” 	

19.5 Power backup operation setting

- Set "AUTO" in the power backup input setting then output will be operated according to the set program when re-supplying in the power after facing the electrical failure.
- Set "NOR" in the power backup input setting then the **POW** indication will start to flicker and the output will be maintained as OFF state disregarding the set program when re-supplying in the power after facing the electrical failure.
- Once the external input signal (BOOT) is supplied in, the **POW** indication will be turned OFF and output will be operated according to the program setting.





Parameter	Explanation
<p>①</p> <p>②</p> <p>③</p>	<p>① Enter into the power backup operation setting</p> <ul style="list-style-type: none"> • Enter into the function setting mode by pressing the FUNC key for more than 3 sec within the operation mode and move to the "boot" setting screen by pressing the PROG key repeatedly. • Once the indication "boot" is indicated, press the SET key. <p>② Power backup AUTO setting</p> <ul style="list-style-type: none"> • Set as "Auto" by using or key. • Power backup will be set as Auto if pressing the SET key. <p>③ Power backup Normal setting</p> <ul style="list-style-type: none"> • Set as "nor" by using or key. • Power backup will be set as if pressing the SET key.
<ul style="list-style-type: none"> • Please refer to the connection diagram for the power backup input (BOOT). • For the input, please use the contact such as switch, relay and etc. (But please use the contact that can sufficiently ON / OFF the 5 V 0.1 mA) (with a minimum signal input range : 10 ms) 	

20 Simple function (use front panel key)



20.1 Summer time external input

In the operation mode, pressing the **+1h** key for more than 1 sec will make the time either 1 hour faster or slower.

Parameter	Explanation
<p>①</p>  <p>②</p> 	<p>① Summer time application</p> <ul style="list-style-type: none"> In the operation mode, pressing the +1h key for more than 1 sec will turn ON the “+1h” indication and the current time will become 1 hour faster. <p>② Summer time cancellation</p> <ul style="list-style-type: none"> In the operation mode, pressing the +1h key for more than 1 sec will turn off the “+1h” indication and the current time will become 1 hour slower
<ul style="list-style-type: none"> Summer time can be set as yearly type (refer to the summer time setting) <p>Cautious) if setting the summer time as ON, “+1h” the key will not be operated</p>	


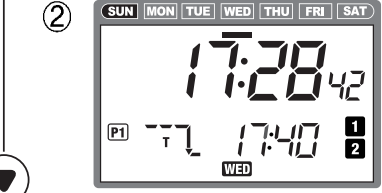
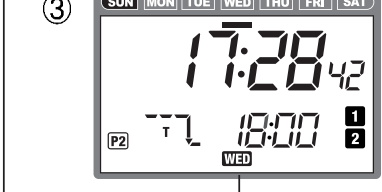
20.2 12/24h indication switch

In the operation mode, every time when you press the **12/24h** key for more than 1 sec, it will change the current time displaying method.

Parameter	Explanation
<p>①</p>  <p>②</p> 	<p>① 24 hour display => AM/PM 12 hour display</p> <ul style="list-style-type: none"> In the operation mode, pressing the 12/24h key for more than 1 sec will change from “24hour display” type to the “AM/PM 12 hour display” type. <p>② AM/PM 12 hour display => 24 hour display</p> <ul style="list-style-type: none"> In the operation mode, pressing the 12/24h key for more than 1 sec will change from “AM/PM 12 hour display” type to the “24 hour display” type.
<ul style="list-style-type: none"> Time display type in the operation mode: 24h display type => 0:00 ~ 23:59, 12h display type =>AM 0:00~11:59 / PM 0:00 ~ 11:59 	

20.3 Switch the screen indication

In the operation mode, every time when users press the **mm.dd** key for more than 1 sec, information in the second indicator will be changed.

Parameter	Explanation
	<p>① display the current month / day</p> <ul style="list-style-type: none"> • 1st indicator : display the current time (hour, min and sec) • 2nd indicator : display the current month / day (month and day)
	<p>② display the operation time after output 1</p> <ul style="list-style-type: none"> • 1st indicator : display the current time (hour, min and sec) • 2nd indicator : display the operation time after output 1 (hour, min)
	<p>③ display the operation time after output 2</p> <ul style="list-style-type: none"> • 1st indicator : display the current time (hour, min and sec) • 2nd indicator : display the operation time after output 2 (hour, min)
<ul style="list-style-type: none"> • Default value : “current month / day display”. • After setting the program, the set value displayed in the screen will be applied to the 2nd indicator within the operation mode. (display current month and day) 	

21 How do you want to use it?

1. Normal timer operation

Make the output ON from the start setting time to the end time.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8:30 ~ 17:40 8:30 ~ 17:40 8:30 ~ 17:40 8:30 ~ 17:40 8:30 ~ 17:40 8:30 ~ 17:40						

※ When setting the additional program after setting the weekly timer operation, users won't be able to use the “pulse operation” setting.

- weekly function selection (**EEEE**)
- program port selection (**P1** / **P2**)
- timer operation selection (**∫ T ∫**)
- season setting (when selecting the season operation)
- start day selection (mon ~ fri)
- start time selection (8:30)
- end day selection (mon ~ fri)
- end time selection (17:40)

2. Days (several days) timer operation

Make the output ON from the start setting time to the end time.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	8:30 17:40					

※ When setting the additional program after setting the weekly timer operation, users won't be able to use the "pulse operation" setting.

- weekly function selection (WEEK)
- program port selection (**P1** / **P2**)
- timer operation selection (□ □)
- start day selection (Only Monday selected)
- start time selection (8:30)
- end day selection (Only Friday selected)
- end time selection (17:40)

3. Next day timer operation

Make the output ON from the start time to the end time.

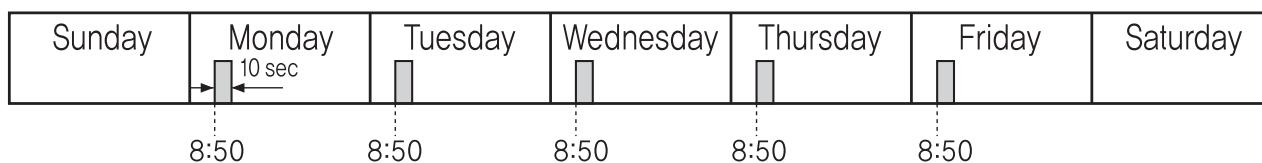
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	20:30	6:30	20:30	6:30	20:30	6:30

※ When setting the additional program after setting the weekly timer operation, users won't be able to use the "pulse operation" setting.

- weekly function selection (WEEK)
- program port selection (**P1** / **P2**)
- timer operation selection (□ □)
- start day selection (mon ~ fri)
- start time selection (20:30)
- end day selection (tue ~ sat)
- end time selection (6:30)

4. Weekly pulse operation

Make the output ON from the start setting time to a constant period of time.

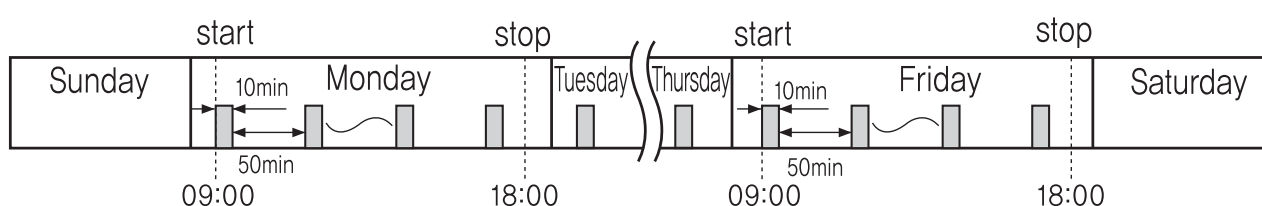


※ When setting the additional program after setting the weekly pulse operation, users won't be able to use the timer operation setting and cycle operation setting.

- weekly function selection (**WEEK**)
- program port selection (**P1** / **P2**)
- pulse operation selection (**P**)
- season setting (**S1**, **S2**, **S3**, **S4**)
- start day selection (mon ~ fri)
- start time selection (8:50)
- pulse time range setting (10sec)

5. Weekly cycle operation

It repeats the ON/OFF operation with the time range between the ON time and OFF time from start setting time to the end start time.



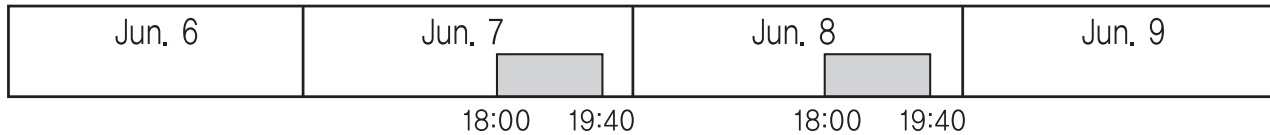
※ When setting the additional program after setting the weekly cycle operation, users won't be able to use the "pulse operation" setting.


- weekly function selection (**WEEK**)
- program port selection (**P1** / **P2**)
- cycle operation selection (**C**)
- season setting (**S1**, **S2**, **S3**, **S4**)
- start day selection (mon ~ fri)
- start time selection (9:00)
- end day selection (mon~fri)
- end time selection (18:00)
- ON time range setting (10 min)
- OFF time range setting (50 min)

6. Yearly timer operation

It controls the output depending on the start / end setting time in between the start day and end day.

※ Possible to set operation for every year



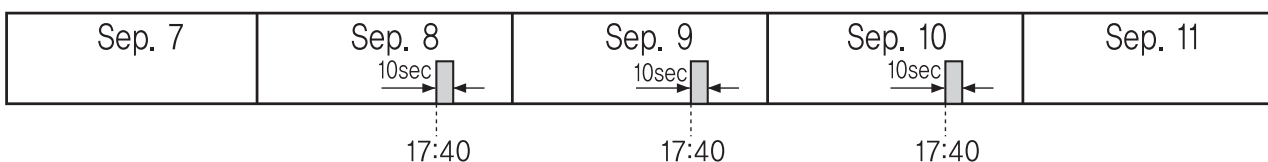
- yearly function selection (*Year*)
 - program port selection (**P1** / **P2**)
 - timer operation selection ()
 - Start year, month and day selection (6 / 7.09)
 - End year, month and day selection (6/8/09)
 - start time setting (18:00)
 - end time setting (19:40)
- (year setting “- -” indicates the operation state for every year)


※ In the start year, month and day, setting the year as every year (- -) will fix the end year as every year (- -).

7. Yearly pulse operation

It controls the output depending on the start / end setting time in between the start day and end day.

※ Possible to set operation for every year



- yearly function selection (*Year*)
 - program port selection (**P1** / **P2**)
 - pulse operation selection ()
 - Start year, month and day selection (sep 8/09)
 - End year, month and day selection (sep 10/09)
 - start time setting (17:40)
 - pulse time range setting (10 sec)
- (year setting “- -” indicates the operation state for every year)

※ In the start year, month and day, setting the year as every year (- -) will fix the end year as every year (- -)

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