OMRON

Digital Daily Time Switch

H5F

Daily Time Switch for Precise Timer Control

- Precise control of both regular and special (e.g., half-day operation) ON/OFF times
- Can be set for timed or pulsed operation, and for multiple-day operation
- Two mounting types available: flush or track mounting
- Timing chart displayed for at-a-glance confirmation
- Din-sized 1/16 (48 x 48 mm)

Ordering Information

■ TIMERS

Wiring	Screw terminals	
Mounting	Flush mounting	Surface mounting / track mounting
Part number	**H5F-B**	**H5F-KB**

■ ACCESSORIES

Description	**Part number**
NEMA 4 cover	**Y92A-48N**

Specifications

■ RATINGS

Supply voltage	100 to 240 VAC, 50/60 Hz
Operating voltage range	85 to 110% of rated voltage
Power consumption	Approx. 5 VA
Control output	Contact output (SPST-NO) 250 VAC 15 A (resistive load)

Approved by Standards
UL (File No. E41515)
CSA (File No. LR22310)

■ CHARACTERISTICS

Repeat accuracy		±0.01% ±0.05 second max.*
Setting error		
Variation due to voltage change		
Variation due to temperature change		
Cyclic error		Monthly difference ± 15 seconds (25ºC)
Memory protection		5 years min (25ºC)
Insulation resistance		100 MΩ min. Measuring points: 1) Between terminals and non-current carrying metal parts 2) Between operating circuit and contact output circuit 3) Between non-continuous parts
Dielectric strength		2,000 VAC 50/60 Hz for 1 minute (measuring points 1 and 2 above) 1,000 VAC 50/60 Hz for 1 minute (measuring point 3 above)
Noise immunity		1.5 kV (Square wave noise having 100 ns width, 1 ns rise time, ± polarity and 0º to 360º phase is applied by noise simulator)**
Vibration	Mechanical durability	10 to 55 Hz, 0.75 mm double amplitude
	Malfunction durability	10 to 55 Hz, 0.5 mm double amplitude
Shock	Mechanical durability	300 m/s^2 (Approx. 30 G)
	Malfunction durability	100 m/s^2 (Approx. 10 G)
Life expectancy		50,000 operations min. (15 A, 250 VAC, resistive load) 50,000 operations min. (1HP, 250 VAC, motor load) 50,000 operations min. (10 A, 250 VAC, inductive load, cosφ = 0.7) 50,000 operations min. (100 W, 100 VAC, lamp load) 10,000 operations min. (300 W, 100 VAC, lamp load)
Weight		Approx. 115 g (H5F-B), approx. 160 g (H5F-KB)
Ambient temperature		-10º to 55º C (with no icing)
Humidity		35% to 85%

* The total error including the repeat accuracy, setting error, variation due to voltage change, and variation due to temperature change is ±0.01% ±0.05 second maximum. ±0.01% also indicates an error in the time interval of a set time.
** In addition to the above noise test, various other tests were conducted to check the level of noise immunity such as a relay oscillation noise direct-coupling test.

■ OPERATION

Operation method	Digital quartz
Operation	1) Daily operation (Multiple-day operation possible) 2) Pulse-output operation (pulse width can be set in units of 1 second from 1 to 59 seconds and in units of 1 minute from 1 to 60 minutes.) 3) Partial operation on specified day (one or some of operations for certain days can also be executed on other days.) 4) Forced ON/OFF operation
Display	1) Day, hours (a.m., p.m.), minutes (0:00 to 11:59 a.m., 0:00 to 11:59 p.m.) 2) Digital display by LCD. Character height: 8mm 3) Digital display of present time and time scheduled for operation 4) Timing chart display of present time and time scheduled for operation
Number of circuits	1 Independent circuit
Setting method	Pushbutton
Minimum setting unit	1 minute
Minimum set interval	1 minute
Number of operations that can be set	16

* Up to 8 ON/OFF operations are possible per day. (For pulse operation, the number is 16.)

■ OPERATION FUNCTION

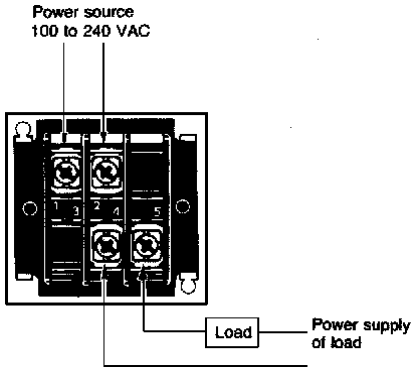
Timer operation	Controls the output according to preset of ON and OFF times (time can be set in units of 1 minute).
Pulse-output	Produces output for a fixed duration at the preset ON time (pulse width: 1 to 59 seconds, or 1 minute to 59 minutes). The pulse width can be set in units of 1 second or 1 minute.
Forced ON/OFF operation	Forcibly turns ON/OFF the output by a slide switch.
Partial operation on specified day	Part of one day's operation programmed for any weekday from Sun. through Sat. can be executed. (Convenient, for example, for executing a half-day operation on Saturday.)

NOTE: Both the timer operation and the pulse operation cannot be programmed together.

Connections

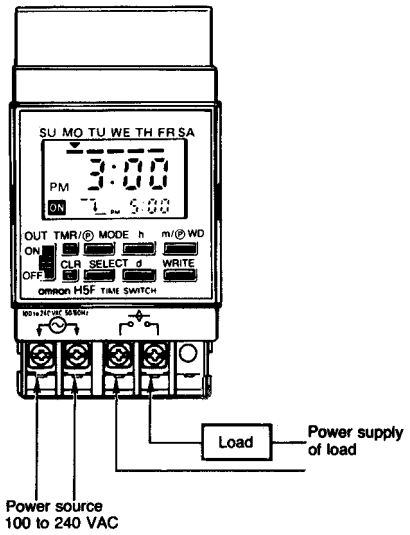
■ H5F-B

Flush mounting type



■ H5F-KB

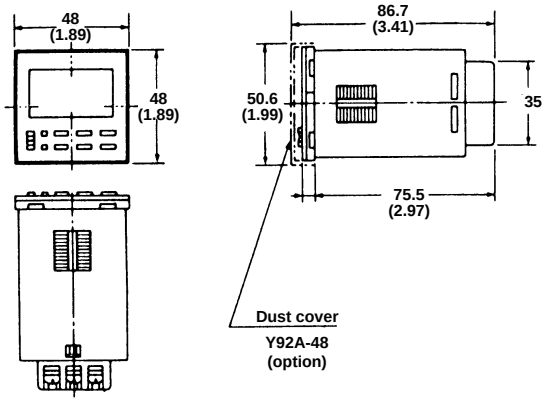
Surface/track mounting type



Dimensions

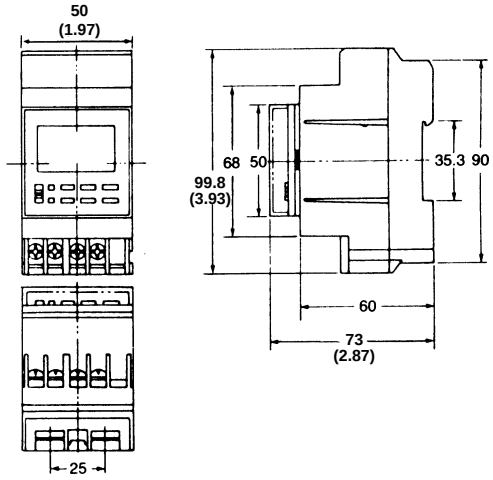
■ H5F-B

Flush mounting type



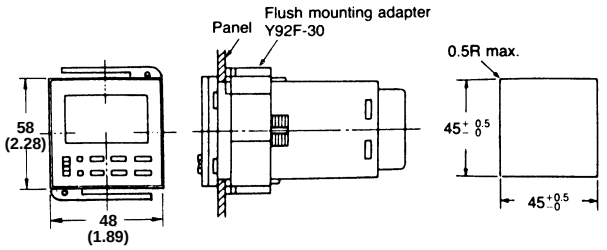
■ H5F-KB

Surface/track mounting type



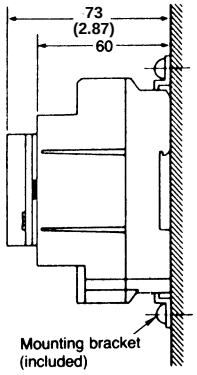
Mounting dimensions

Flush mounting (H5F-B)

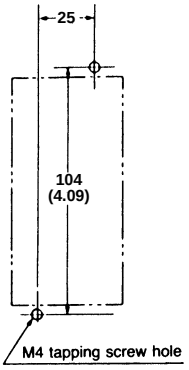


Panel cutout

Surface mounting (H5F-KB)

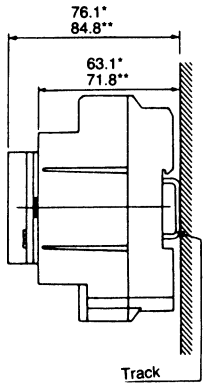


Mounting hole



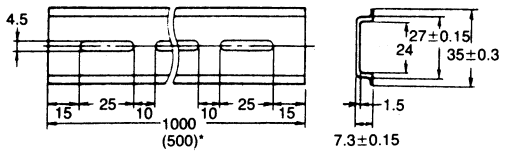
■ H5F-KB

Track mounting



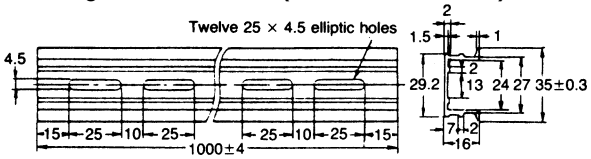
*With mounting tracks PFP-100N or PFP-50N
**With mounting track Model PFP-100N2

Mounting track PFP-100N/PFP-50N (meets DIN EN 50022)



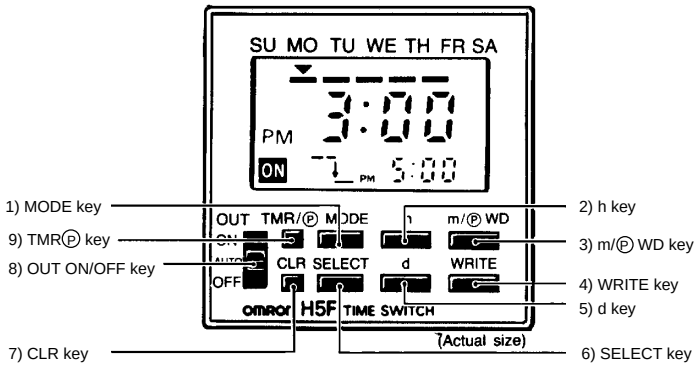
*This dimension applies to FPF-50N.

Mounting track PFP-100N2 (meets DIN EN 50022)



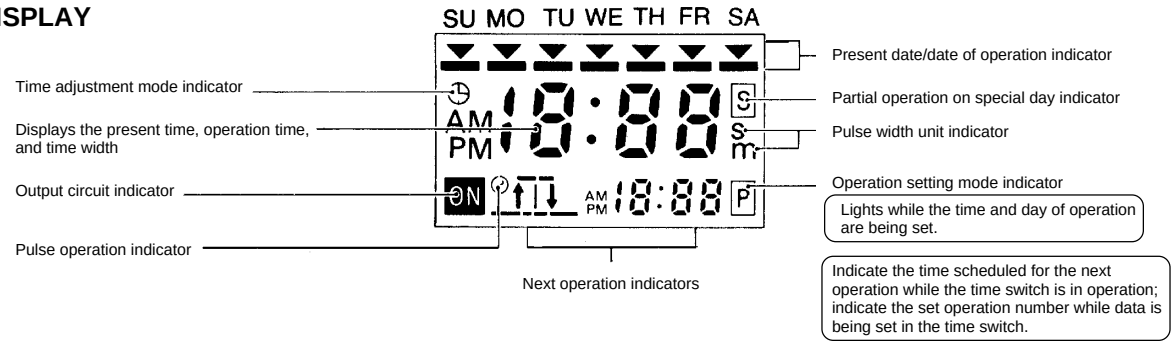
Nomenclature

■ FRONT PANEL

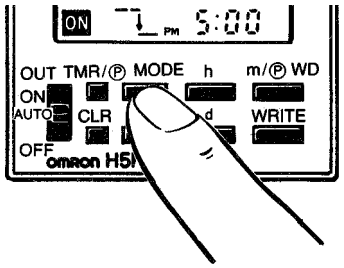


No.	Name	Function
1	MODE key	Selects an operation mode.
2	h (Hour) key	Sets hours.
3	m/Ⓟ WD (Minute/Pulse time width) key	Sets minutes or a pulse time width.
4	WRITE key	Writes the set data to memory.
5	d (Day shift) key	Moves the cursor to specify a date.
6	SELECT key	Specifies or cancels a specified day.
7	CLR (Clear) key	Erases the set data and initializes the date of operation.
8	OUT ON/OFF key	ON: Turns on the output regardless of the setting. OUT: Turns on the output according to the setting. OFF: Turns off the output regardless of the setting.
9	TMR/Ⓟ (Timer/Pulse output) key	Selects timer operation or pulse operation.

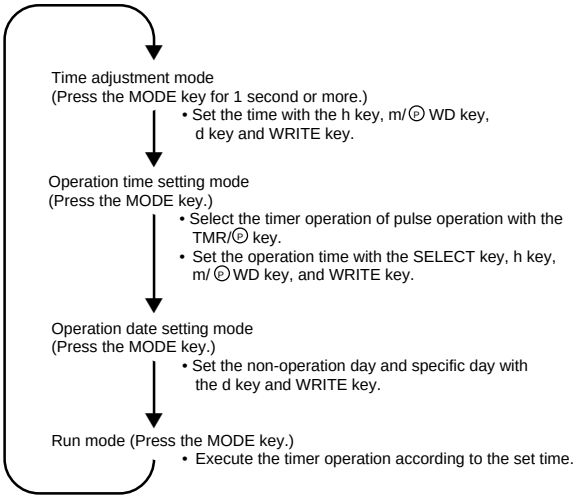
■ DISPLAY



Programming

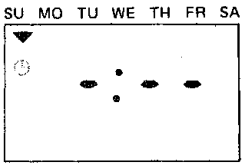
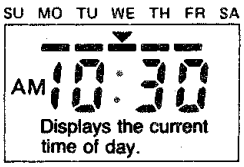
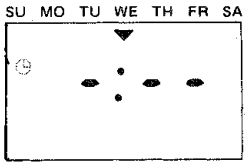
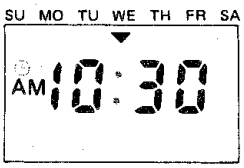
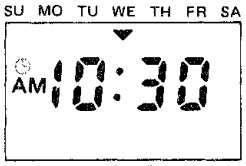
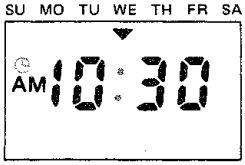
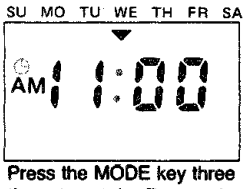


Change the mode by pressing the MODE key for setting each of operations



The time and date setting procedures in various operation modes are illustrated with display and key operation examples. (The shaded portion in the display indicates that indicator is blinking.)

Time Adjustment

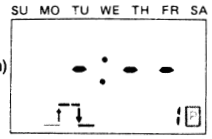
Example: Set Wed. 10:30 a.m. Initial time adjustment after purchase	Example: Set the time to Wed. 11:00 a.m. Time adjustment during operation
① (Initial screen)  Specify the day of the week with the d key.	① (Initial screen)  Displays the current time of day. Hold down the MODE key for 1 second or more.
②  Set the present time with the h and m/Ⓟ WD keys.	②  Set the present time with the h and m/Ⓟ WD keys.
③  Press the WRITE key to complete.	③  Press the WRITE key.
④  (The colon blinks and time measurement starts.)	④  Press the MODE key three times to set the Run mode.

Ordinary Timer Operation

Example: ON at 8:30 a.m. and OFF at 5:15 p.m. each day from Mon. thru Fri.
First set the Operation time setting mode with the MODE key.

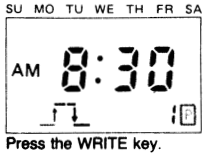
Display and key operation
(Shaded portion indicates blinking of the indicator.)

① (Initial screen)



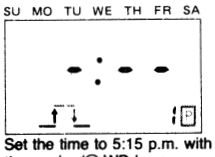
Set the time to 8:30 a.m. with the h and m/Ⓟ WD keys.

②



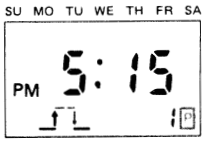
Press the WRITE key.

③



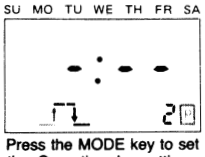
Set the time to 5:15 p.m. with the and m/Ⓟ WD keys

④



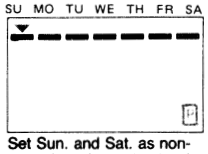
Press the WRITE key.

⑤



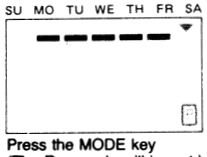
Press the MODE key to set the Operation day setting mode.

⑥



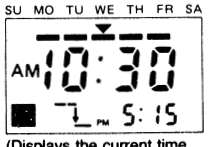
Set Sun. and Sat. as non-operation days with the d and WRITE keys.

⑦



Press the MODE key
(The Run mode will be set.)

⑧



(Displays the current time and the next operation time.)

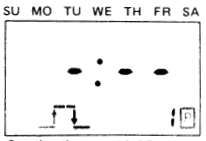
* If the initial display is different from that shown above, press the WRITE key several times until "—:——" appears.

Multiple-day Operation

Example: ON at 10:00 p.m. each day from Mon. thru Fri. and OFF at 7:00 a.m. on the following day.

Display and key operation
(Shaded portion indicates blinking of the indicator.)

① (Initial screen)

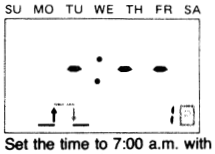


Set the time to 10:00 p.m. with the h and m/Ⓟ WD keys.

②

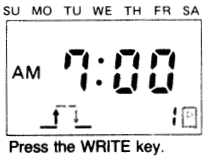
Press the WRITE key.

③



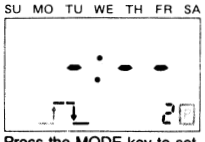
Set the time to 7:00 a.m. with the h and m/Ⓟ WD keys.

④



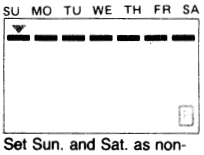
Press the WRITE key.

⑤



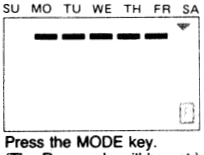
Press the MODE key to set the Operation day setting mode.

⑥



Set Sun. and Sat. as non-operation days with the d and WRITE keys.

⑦



Press the MODE key.
(The Run mode will be set.)

⑧

(Displays the current time and the next operation time.)

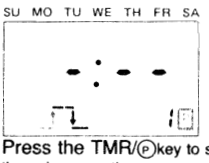
* If the initial display is different from that shown above, press the WRITE key several times until "—:——" appears.

Pulse Output Operation

Example: To turn on the output for 30 seconds at 8:25 a.m., Mon. thru Fri.
First set the Operation time setting mode with the MODE key.

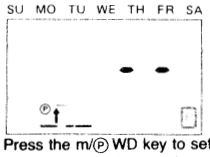
Display and key operation
(Shaded portion indicates blinking of the indicator.)

① (Initial screen)



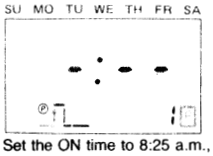
Press the TMR/Ⓟ key to specify the pulse operation.

②



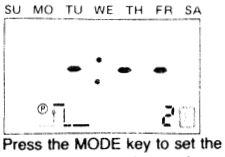
Press the m/Ⓟ WD key to set a pulse width of 30 seconds.
Press the WRITE key.

③



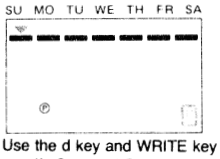
Set the ON time to 8:25 a.m., by using the h and m/Ⓟ WD keys.
Press the WRITE key.

④



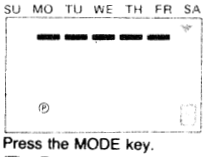
Press the MODE key to set the operation date setting mode.

⑤



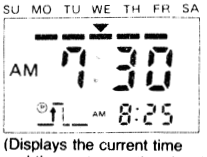
Use the d key and WRITE key to specify Sun. and Sat. as non-operation days.

⑥



Press the MODE key.
(The Run mode will be set.)

⑦



(Displays the current time and the next operation time.)

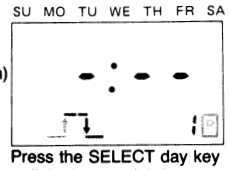
* The initial display may be different from that shown above, but disregard this and continue the key operation.

Partial Operation on Specified Day

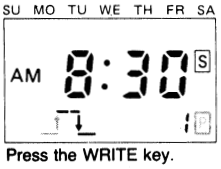
ON at 8:30 a.m. and OFF at 0:30 p.m.
ON at 1:15 p.m. and OFF at 5:15 p.m. on Mon. thru Fri.
ON at 8:30 a.m. and OFF at 0:30 p.m. on Sat.
(To specify Sat. as a special day)
First set the Operation time setting mode with the MODE key.

Display and key operation
(Shaded portion indicates blinking of the indicator.)

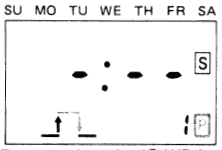
① (Initial screen) *1



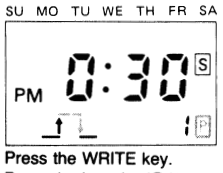
Press the SELECT day key to light the special day operation (S) indicator. *2
Set the ON time to 8:30 a.m. with the h and m/Ⓟ WD keys.

② 

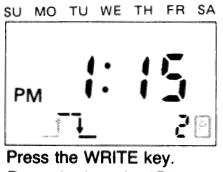
Press the WRITE key.

③ 

Press the h and m/Ⓟ WD keys to set the OFF time to 0:30 p.m.

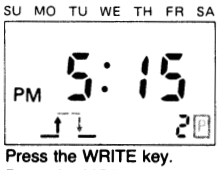
④ 

Press the WRITE key.
Press the h and m/Ⓟ WD keys to set the ON time to 1:15 p.m.

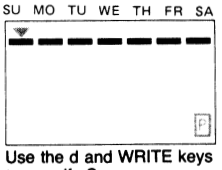
⑤ 

Press the WRITE key.
Press the h and m/Ⓟ WD keys to the specify 5:15 p.m.

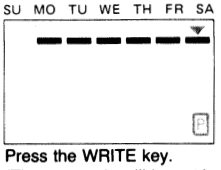
Display and key operation
(Shaded portion indicates blinking of the indicator.)

⑥ 

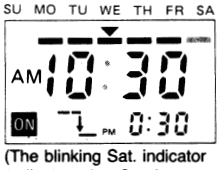
Press the WRITE key.
Press the MODE key to set the Operation date setting mode.

⑦ 

Use the d and WRITE keys to specify Sun. as a non-operation day and Sat. as a special day. *3

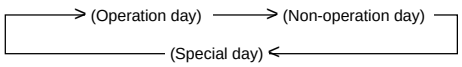
⑧ 

Press the WRITE key.
(The run mode will be set.)

⑨ 

(The blinking Sat. indicator indicates that Sat. is a special day.)

NOTE:
* 1. If the display is for the pulse operation, change the operation mode to the timer operation with the TMR/Ⓟ key.
* 2. Even in the pulse operation, a specified day may be specified by displaying the special day indicator with the SELECT key.
* 3. At each depression of the WRITE key, "—" mark shifts as follows:

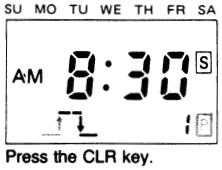


Canceling the Setting

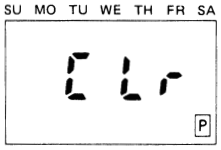
To cancel the setting of the circuit.

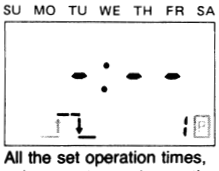
Display and key operation
(Shaded portion indicates blinking of the indicator.)

① Press the MODE key to specify the Operation date setting or Operation time setting mode.

② 

Press the CLR key.

③ (Displayed for 1 second) 

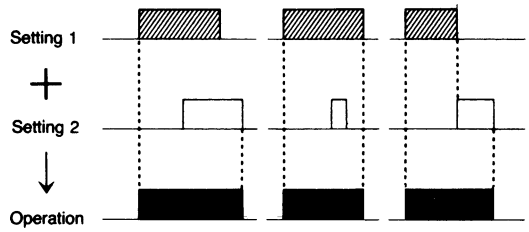
④ 

All the set operation times, pulse widths, and operation days are erased.

Precautions

■ OPERATION

If two or more ON or OFF times have been specified at the same time, the first input ON time or the last input OFF time take precedence over the other ON or OFF times.



* With the above setting, the output is continuously produced without interruption, because the ON time of program 1 and OFF time of program 2 are valid.

The ON and OFF times can be set to the same value, but the timer will not operate.
(Example: If both the ON and OFF times are set to 10:30 a.m., Monday, the timer does not produce any output.)

After the data has been set, note that pressing the TMR/Ⓟ key to change the operation between the timer and pulse operation will cause the set data to be lost.

If a power failure occurs, the output is turned off and the indicators go off during the power failure.

Warning

The H5F has a built-in lithium battery. When disposing of an entire timer containing a lithium battery, be sure to do so properly.

Lithium batteries may explode if incinerated, causing fire or severe burns.

Also, do not touch the input terminals of any H5F timer while power is being sent to the timer.

NOTE: DIMENSIONS ARE SHOWN IN MILLIMETERS. To convert millimeters to inches divide by 25.4.

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