

UL File No.: E122222  
CSA File No.: LR39291



8 Pin type



11 Pin type



Screw terminal  
type

### Features

#### 1. Wide time range

The operation time range covers from 0.01 sec. to 999 hours. The individual setting can be performed on each of the timers.

99.99s 99min59s 99h59min  
999.9s 999min 999.9h  
9999s 9999h

#### 2. Bright and Easy-to-Read Display

A brand new bright 2-color back-lit LCD display. The screen is easy-to-read in any location, makes checking and setting procedures a cinch.

#### 3. Simple Operation

Seesaw buttons make setting and operation simple and easy.

#### 4. Short Body of only 64.5 mm 2.54 inch (screw terminal type) or 70.1 mm 2.76 inch (pin type)

With a short body, it is easy to install even in shallow control panels.

#### 5. Conforms to IP66's Weather Resistant Standards

The water-proof front panel keeps out water and dirt for reliable operation even in poor environments.

#### 6. Screw terminal and Pin Type are Both Standard

The two terminal types are standard to support either through-panel installation or embedded installation.

#### 7. Changeable Panel Cover

A black panel cover is also available to meet your design requirements.

#### 8. Conforms With EMC and Low Voltage Directives

Conforms with EMC directives (EN50081-2/EN50082-2) and low-voltage directives (VDE0435/Part 221) for CE certification vital for use in Europe.

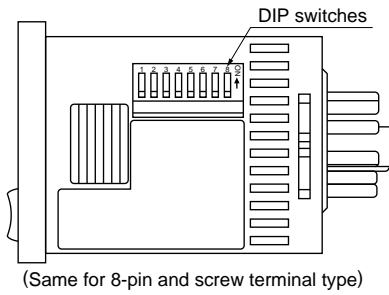
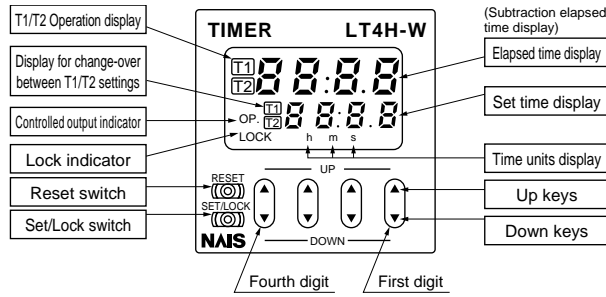
#### 9. EE-PROM Power Failure Memory

EE-PROM memory retains setting and time data. Eliminates the need for battery replacement.

## Product types

Time range	Operation mode	Output	Operation voltage	Power down insurance	Terminal	Part No.
99.99s 999.9s 9999s 99min59s 999.9min 99h59min 999.9h 9999h	Pulse input: • Delayed one shot • OFF-start flicker • ON-start flicker Integrating input: • Delayed one shot • OFF-start flicker • ON-start flicker	Relay (1 c)	100-240 V AC	Available	8 pin	LT4HW8-AC240V
			24 V AC		11 pin	LT4HW-AC240V
					Screw	LT4HW-AC240VS
			12-24 V DC		8 pin	LT4HW8-DC24V
					11 pin	LT4HW-DC24V
			Screw		LT4HW-DC24VS	
		Transistor (1 a)	100-240 V AC		8 pin	LT4HWT8-AC240V
			24 V AC		11 pin	LT4HWT-AC240V
					Screw	LT4HWT-AC240VS
			12-24 V DC		8 pin	LT4HWT8-DC24V
					11 pin	LT4HWT-DC24V
			Screw		LT4HWT-DC24VS	

## Part names



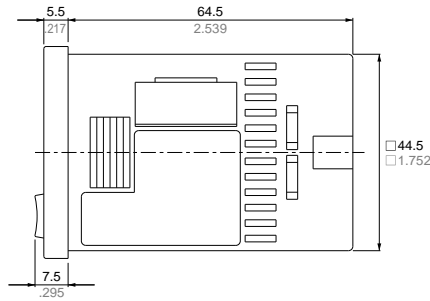
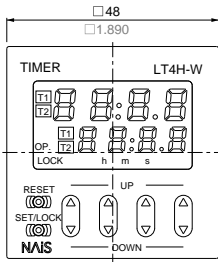
## Specifications

Item	Relay output type		Transistor output type		
	AC type	DC type	AC type	DC type	
Rating	Operating voltage	100 to 240 V AC / 24 V AC	12 to 24 V DC	100 to 240V AC	12 to 24 V DC
	Frequency	50/60 Hz common	—	50/60 Hz common	—
	Power consumption	Max. 10 V A	Max. 3 W	Max. 10 V A	Max. 3 W
	Control capacity (resistive)	5 A, 250 V AC		100 mA, 30 V DC	
	Time range	99.99s, 999.9s, 9999s, 99min59s, 999.9min, 99h59min, 999.9h, 9999h (selected by DIP switch)			
	Time counting direction	Addition (UP)/Subtraction (DOWN) (2 directions selectable by DIP switch)			
	Operation mode	Pulse input: Delayed one shot, OFF-start flicker or ON-start flicker Integrating input: Delayed one shot, OFF-start flicker or ON-start flicker			
	Signal, Reset, Stop input	Min. input signal width: 1 ms, 20 ms (2 directions by selected by DIP switch)			
	Lock input	Min. input signal width: 20 ms			
	Input signal	Open collector input Input impedance: Max. 1 kΩ; Residual voltage: Max. 2V Open impedance: 100 kΩ or less, Max. energized voltage: 40 V DC			
	Indication	7-segment LCD, Elapsed value (backlight red LED), Setting value (backlight yellow LED)			
Power failure memory method	EE-PROM (Min. 10 <sup>5</sup> overwriting)				
Time accuracy (max.)	Operating time fluctuation	± (0.005% + 50 ms) in case of power on start ± (0.005% + 20 ms) in case of reset or input signal start (at fixed power off time)			
	Temperature error				
	Voltage error				
	Setting error				
Contact	Contact arrangement	Timed-out 1 Form C	Timed-out 1 Form A (Open collector)		
	Initial contact resistance	100 mΩ (at 1 A 6 V DC)	—		
	Contact material	Ag alloy/Au flash	—		
Life	Mechanical	2.0 × 10 <sup>7</sup> ope. (Except for switch operation parts)		—	
	Electrical	1.0 × 10 <sup>6</sup> ope. (At rated control voltage)		1.0 × 10 <sup>7</sup> ope. (At rated control voltage)	
Electrical	Operating voltage range	85 to 110 % of rated operating voltage			
	Initial breakdown voltage	2,000 Vrms for 1 min: Between live and dead metal parts 2,000 Vrms for 1 min: Between input and output 1,000 Vrms for 1 min: Between contacts		2,000 Vrms for 1 min: Between live and dead metal parts 2,000 Vrms for 1 min: Between input and output	
	Initial insulation resistance (At 500 V DC)	Min. 100 MΩ: Between live and dead metal parts Between input and output Between contacts		Min. 100 MΩ: Between live and dead metal parts Between input and output	
	Operating voltage reset time	Max. 0.5 s			
	Temperature rise	Max 65° C (under the flow of nominal operating current at nominal voltage)			
Mechanical	Vibration resistance	Functional	10 to 55 Hz: 1 cycle/ min single amplitude of 0.35 mm .014 inch (10 min on 3 axes)		
		Destructive	10 to 55 Hz: 1 cycle/ min single amplitude of 0.75 mm .030 inch (1 h on 3 axes)		
	Shock resistance	Functional	Min. 98 m 321.522 ft./s <sup>2</sup> (4 times on 3 axes)		
		Destructive	Min. 294 m 964.567 ft./s <sup>2</sup> (5 times on 3 axes)		
Operating conditions	Ambient temperature	-10° C to 55° C +14° F to +131° F			
	Ambient humidity	Max. 85 % RH			
	Air pressure	860 to 1,060 h Pa			
	Ripple rate	—	20 % or less	—	20 % or less
Connection	8-pin/11-pin/screw terminal				
Protective construction	IP66 (front panel with rubber gasket)				

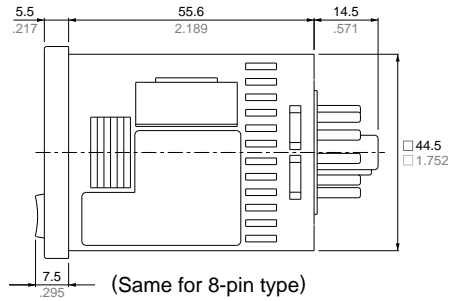
# Dimensions (units: mm inch)

## • LT4H-W digital timer

Screw-down terminal type  
(through-panel installation)



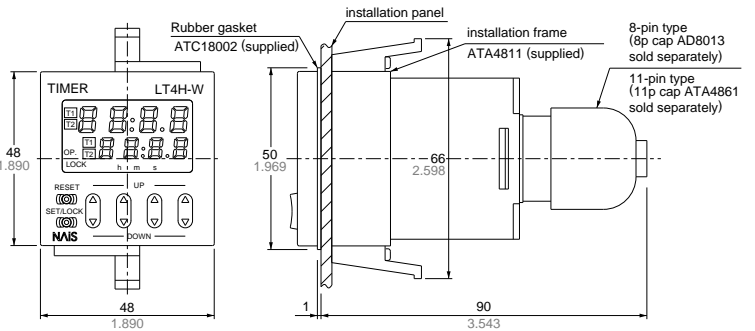
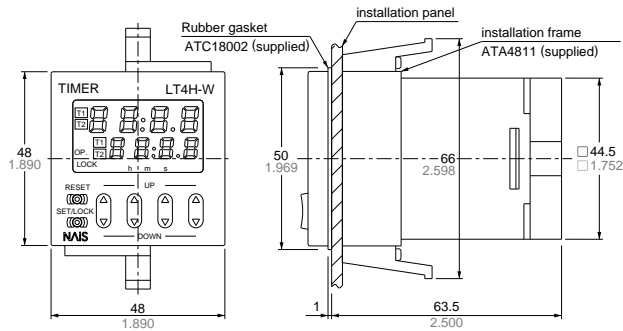
Pin type (through-panel or  
surface mount installation)



## • Dimensions for through-panel installation (with adapter installed)

Screw-down terminal type

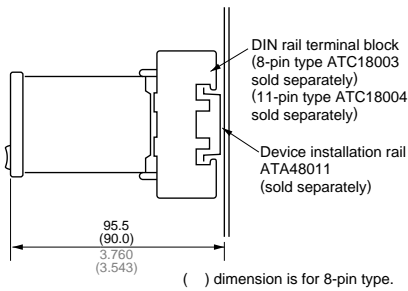
Pin type



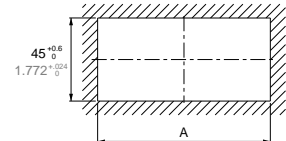
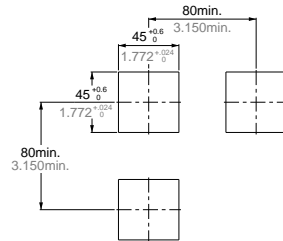
## • Dimensions for surface mount installations

## • Installation panel cut-out dimensions

## • For connected installations



The standard panel cut-out dimensions are shown below. Use the installation frame (ATA4811) and rubber gasket (ATC18002).



When n timers are continuously installed, the dimension (A) is calculated according to the following formula (n: the number of the timers to be installed):

$$A = (48 \times n - 2.5) \text{ mm} \quad A = (1.890 \times n - .098) \text{ inch}$$

Note 1: The installation panel thickness should be between 1 and 5 mm .039 and .197 inch.

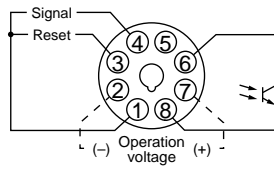
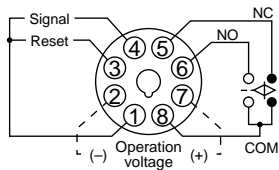
Note 2: For connected installations, the waterproofing ability between the unit and installation panel is lost.

# Terminal layout and wiring

## • 8-Pin type

Relay output type

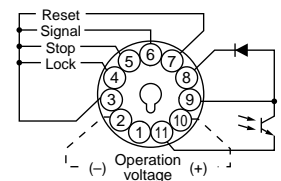
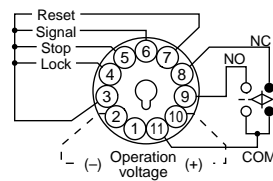
Transistor output type



## • 11-Pin type

Relay output type

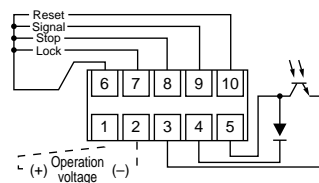
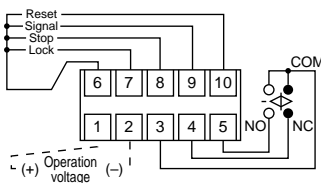
Transistor output type



## • Screw terminal type

Relay output type

Transistor output type



# Setting the operation mode, timer range, and time

## Setting procedure 1) Setting the operation mode and timer range (Timer T<sub>1</sub>/Timer T<sub>2</sub>)

Set the operation mode and timer range with the DIP switches on the side of the unit.

### DIP switches

Note: Set the DIP switches before installing the unit.

Item	DIP switch		
	OFF	ON	
1	Refer to table 1		
2			
3			
4	Minimum input reset, signal, and stop signal width	20 ms	1 ms
5	Time delay direction	Addition	Subtraction
6	Refer to table 2		
7			
8			

\* The 8-pin type does not have the stop input, so that the dip switch can be changed over between reset and signal inputs. The signal range of the lock input is fixed (minimum 20 ms).

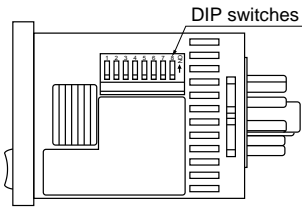


Table 1: Setting the timer range (Timer T<sub>1</sub>)

DIP switch No.			Timer range
1	2	3	
ON	ON	ON	0.01 s to 99.99 s
OFF	OFF	OFF	0.1 s to 999.9 s
ON	OFF	OFF	1 s to 9999 s
OFF	ON	OFF	0 min 01 s to 99 min 59 s
ON	ON	OFF	0.1 min to 999.9 min
OFF	OFF	ON	0 h 01 min to 99 h 59 min
ON	OFF	ON	0.1 h to 999.9 h
OFF	ON	ON	1 h to 9999 h

Table 2: Setting the timer range (Timer T<sub>2</sub>)

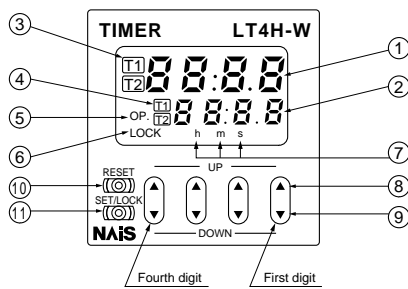
DIP switch No.			Timer range
6	7	8	
ON	ON	ON	0.01 s to 99.99 s
OFF	OFF	OFF	0.1 s to 999.9 s
ON	OFF	OFF	1 s to 9999 s
OFF	ON	OFF	0 min 01 s to 99 min 59 s
ON	ON	OFF	0.1 min to 999.9 min
OFF	OFF	ON	0 h 01 min to 99 h 59 min
ON	OFF	ON	0.1 h to 999.9 h
OFF	ON	ON	1 h to 9999 h

## Setting procedure 2) Setting the time

Set the set time with the keys on the front of the unit.

### Front display section

- ① Elapsed time display
- ② Set time display
- ③ T<sub>1</sub>/T<sub>2</sub> operation indicator
- ④ T<sub>1</sub>/T<sub>2</sub> setting value selectable indicator
- ⑤ Controlled output indicator
- ⑥ Lock indicator
- ⑦ Time units display

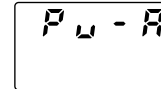


- ⑧ UP keys  
Changes the corresponding digit of the set time in the addition direction (upwards)
- ⑨ DOWN keys  
Changes the corresponding digit of the set time in the subtraction direction (downwards)
- ⑩ RESET switch  
Resets the elapsed time and the output
- ⑪ Set/lock switch  
Changes over the display between T<sub>1</sub>/T<sub>2</sub> settings, sets the operational mode, checks the operational mode and locks the operation of each key (such as up, down or reset key).

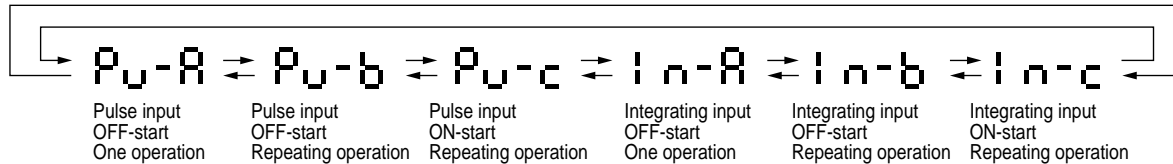
### 1) Setting or changing the operational mode

1. When the UP or DOWN key at the first digit is pressed with the set/lock switch pressed, the mode is changed over to the setting mode.

Ex: Setting mode display



2. The operational mode in the setting mode is changed over sequentially in the left or right direction by pressing the up or down key at the first digit, respectively.



3. The operational mode displayed at present is set by pressing the RESET key, and the display returns to the normal condition.

### 2) Checking the operational mode

When the UP or DOWN key at the second digit is pressed with the set/lock switch pressed, the operational mode can be checked.

The display returns to the normal condition after indicating the operational mode for about two seconds. (While the display indicates the operational mode for about two seconds, the other indicators continue to operate normally.)

### 3) Setting the lock

When the UP or DOWN key at the fourth digit is pressed with the set/lock switch pressed, all keys on the unit are locked.

The timer does not accept any of UP, DOWN and RESET keys.

To release the lock setting, press the UP or DOWN key at the fourth digit again with the set/lock switch pressed.

\* Operational mode, adding and subtracting and minimum input signal range cannot be set at T<sub>1</sub> and T<sub>2</sub>, respectively.

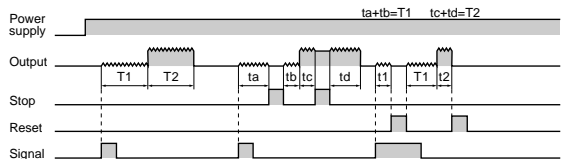
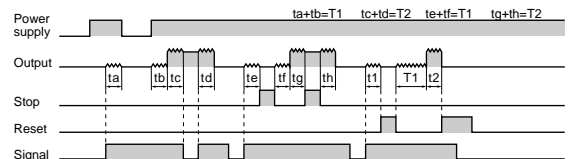
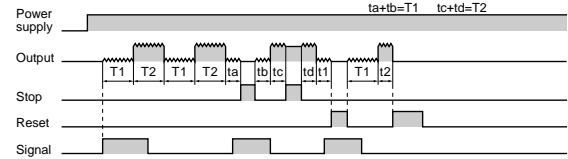
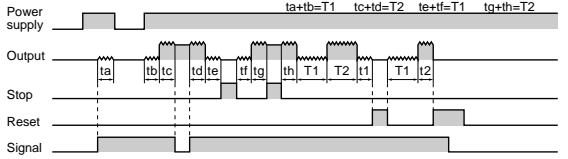
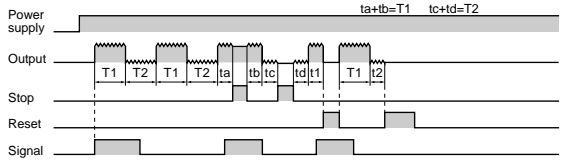
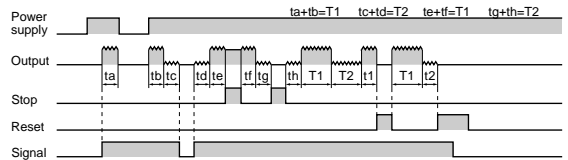
### 4) Changing over the T<sub>1</sub>/T<sub>2</sub> setting display

The T<sub>1</sub>/T<sub>2</sub> setting display is changed over by pressing the SET/LOCK switch. (This operation gives no effect on the other operations. The set time and elapsed time (residual time) at T<sub>1</sub> are linked with those at T<sub>2</sub>.)

#### • Changing the set time


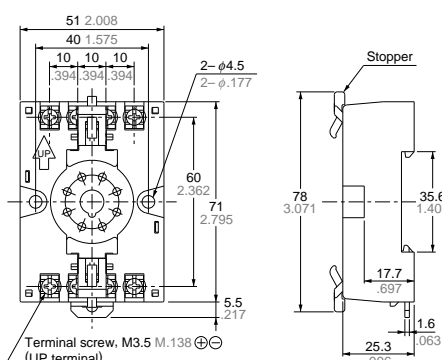
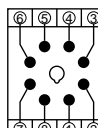
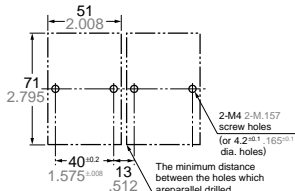
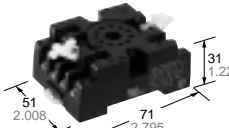
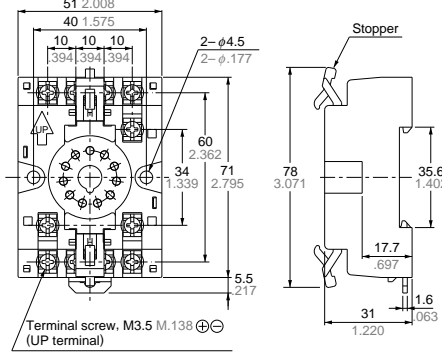
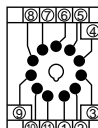
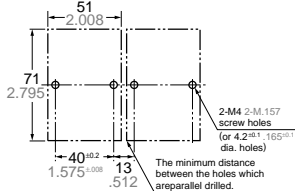
1. It is possible to change the set time with the up and down keys even during time delay with the timer. However, be aware of the following points.

- 1) If the set time is changed to less than the elapsed time with the time delay set to the addition direction, time delay will continue until the elapsed time reaches full scale, returns to zero, and then reaches the new set time. If the set time is changed to a time above the elapsed time, the time delay will continue until the elapsed time reaches the new set time.
  - 2) If the time delay is set to the subtraction direction, time delay will continue until "0" regardless of the new set time.
2. When the set times at T<sub>1</sub> and T<sub>2</sub> are set to 0, the output becomes ON only while the signal input is carried out. However, while the reset input is carried out, the output becomes OFF.

	<div style="text-align: center;"> <span style="border: 1px solid black; padding: 2px;">PULSE</span> : Pulse input         </div>	<div style="text-align: center;"> <span style="border: 1px solid black; padding: 2px;">INTEGRATION</span> : Integrating input         </div>
<div style="text-align: center;"> <span style="border: 1px solid black; padding: 2px;">A</span>            Delayed one shot         </div>	<div style="text-align: center;"> <span style="border: 1px solid black; padding: 2px;">PULSE</span> <span style="border: 1px solid black; padding: 2px;">A</span> OFF-start/1 operation <math>t_1 &lt; T_1</math>, <math>t_2 &lt; T_2</math> </div>  <ul style="list-style-type: none"> <li>• When the power is turned on, the timer value is cleared.</li> <li>• Timing operation will start when the signal becomes ON, and the signal input is ignored during timing operation.</li> <li>• The timer value is cleared after one operation.</li> </ul>	<div style="text-align: center;"> <span style="border: 1px solid black; padding: 2px;">INTEGRATION</span> <span style="border: 1px solid black; padding: 2px;">A</span> OFF-start/1 operation <math>t_1 &lt; T_1</math>, <math>t_2 &lt; T_2</math> </div>  <ul style="list-style-type: none"> <li>• When the power is turned on, the timer value is not cleared. (Power failure compensation function)</li> <li>• The control output is held even if the power is turned off and turned on again.</li> <li>• After one operation, the elapsed value is cleared.</li> </ul>
<div style="text-align: center;"> <span style="border: 1px solid black; padding: 2px;">B</span>            OFF-start flicker         </div>	<div style="text-align: center;"> <span style="border: 1px solid black; padding: 2px;">PULSE</span> <span style="border: 1px solid black; padding: 2px;">B</span> OFF-start/repeating operation <math>t_1 &lt; T_1</math>, <math>t_2 &lt; T_2</math> </div>  <ul style="list-style-type: none"> <li>• When the power is turned on, the timer value is cleared.</li> <li>• Timing operation will start when the signal becomes ON, and the signal input is ignored during timing operation.</li> </ul>	<div style="text-align: center;"> <span style="border: 1px solid black; padding: 2px;">INTEGRATION</span> <span style="border: 1px solid black; padding: 2px;">B</span> OFF-start/repeating operation <math>t_1 &lt; T_1</math>, <math>t_2 &lt; T_2</math> </div>  <ul style="list-style-type: none"> <li>• When the power is turned on, the timer value is not cleared. (Power failure compensation function)</li> <li>• The control output is held even if the power is turned off and turned on again.</li> </ul>
<div style="text-align: center;"> <span style="border: 1px solid black; padding: 2px;">C</span>            ON-start flicker         </div>	<div style="text-align: center;"> <span style="border: 1px solid black; padding: 2px;">PULSE</span> <span style="border: 1px solid black; padding: 2px;">C</span> ON-start/repeating operation <math>t_1 &lt; T_1</math>, <math>t_2 &lt; T_2</math> </div>  <ul style="list-style-type: none"> <li>• When the power is turned on, the timer value is cleared.</li> <li>• Timing operation will start when the signal becomes ON, and the signal input is ignored during timing operation.</li> </ul>	<div style="text-align: center;"> <span style="border: 1px solid black; padding: 2px;">INTEGRATION</span> <span style="border: 1px solid black; padding: 2px;">C</span> ON-start/repeating operation <math>t_1 &lt; T_1</math>, <math>t_2 &lt; T_2</math> </div>  <ul style="list-style-type: none"> <li>• When the power is turned on, the timer value is not cleared. (Power failure compensation function)</li> <li>• The control output is held even if the power is turned off and turned on again.</li> </ul>
<div style="text-align: center;">           Remarks and notes         </div>	<ul style="list-style-type: none"> <li>• The pulse input mode starts the operation when the signal input turns on.</li> <li>• For power-on start operation jumper the signal terminal (8-pin: ① to ④, 11-pin: ③ to ⑥ and screw: ⑥ to ⑨).</li> <li>• Each signal input such as signal, reset, stop and lock inputs is applied by a contact closure between the input terminal and common terminal (8-pin type: terminal ①, 11-pin type: terminal ③ and screw terminal: terminal ⑥) respectively.</li> <li>• The 8-pin type has no step mode.</li> </ul> <ul style="list-style-type: none"> <li>• The integrating input mode is controlled by the total on-time of the signal input.</li> <li>• When the elapsed value is cleared by the reset input, the output is reset.</li> <li>• For power-on start operation jumper the signal terminal (8-pin: ① to ④, 11-pin: ③ to ⑥ and screw: ⑥ to ⑨).</li> </ul>	

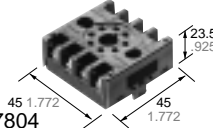
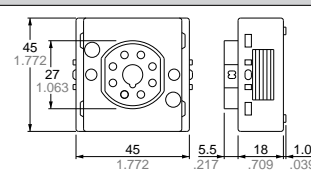
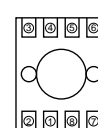

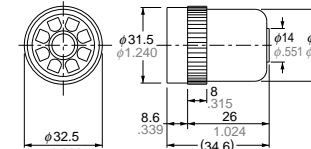
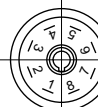
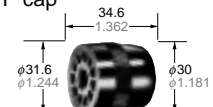
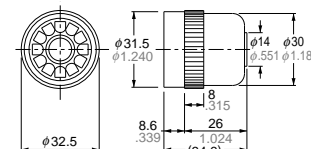

# DIN SIZE TIMERS COMMON OPTIONS

## TERMINAL SOCKETS (Unit: mm inch, Tolerance: $\pm 1 \pm .039$ )

Type	Appearance	Dimensions	Terminal wiring (Top view)	Mounting hole dimensions
LT4H LT4H-W (8-pin type)	<ul style="list-style-type: none"> <li>DIN rail socket (8-pin)</li> </ul>  <p>ATC18003</p>	 <p>Terminal screw, M3.5 M.138 (UP terminal)</p>	 <p>Note: Terminal No. on the main body are identical to those on the terminal socket.</p>	 <p>The minimum distance between the holes which are parallel drilled.</p>
LT4H LT4H-W (11-pin type)	<ul style="list-style-type: none"> <li>DIN rail socket (11-pin)</li> </ul>  <p>ATC18004</p>	 <p>Terminal screw, M3.5 M.138 (UP terminal)</p>	 <p>Note: Terminal No. on the main body are identical to those on the terminal socket.</p>	 <p>The minimum distance between the holes which are parallel drilled.</p>

Note: The socket's numbering system matches that of the timer terminals.

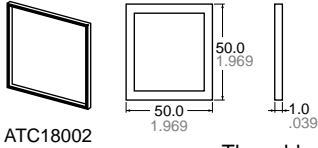
## SOCKETS (Unit: mm inch, Tolerance: $\pm 1 \pm .039$ )

Type	Appearance	Dimensions	Terminal wiring (Top view)	Mounting hole dimensions
LT4H LT4H-W (8-pin type)	<ul style="list-style-type: none"> <li>Rear terminal socket</li> </ul>  <p>AT7804</p>			—
LT4H LT4H-W (8-pin type)	<ul style="list-style-type: none"> <li>8P cap</li> </ul>  <p>AD8013</p>			—
LT4H LT4H-W (11-pin type)	<ul style="list-style-type: none"> <li>11P cap</li> </ul>  <p>ATA4861</p>			—

Note: The terminal socket's numbering system matches that of the timer terminals.

# Mounting parts

**• Rubber gasket**

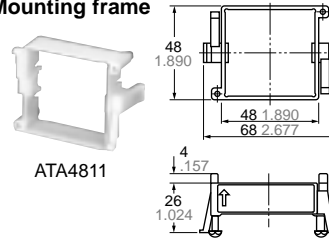


ATC18002

Applicable for PM4H and LT4H series

The rubber gasket is enclosed in the PM4H (screw terminal type) and the LT4H series.

**• Mounting frame**



ATA4811

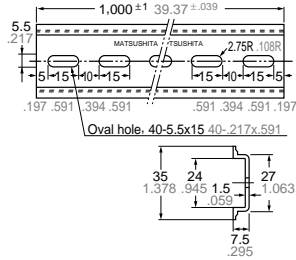
Applicable for PM4H and LT4H series

The rubber gasket is enclosed in the PM4H (screw terminal type) and the LT4H series.

**• Mounting rails (Applicable for DIN and IEC standards)**



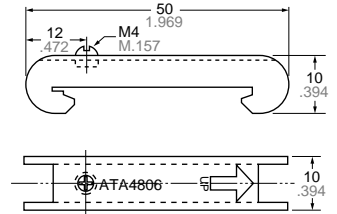
ATA48011  
Length: 1 m  
aluminum



**• Fastening plate**



ATA4806



For holding DIN rails

# ACCESSORIES

**LT4H series**

**• Panel cover (Black)**

LT4H



ATL58011

LT4H-W



ATL68011

The black panel cover is also available so that you can change the appearance of the panel by changing the panel cover. The color of the standard panel cover is ash gray.