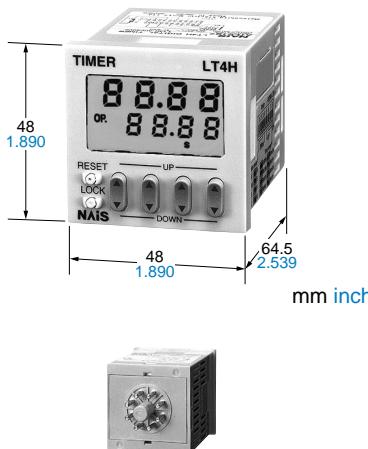


UL File No.: E122222
C-UL File No.: E122222



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Features

1. Economically priced in anticipation of market needs.

- Economically priced to provide excellent cost performance.

2. Display is a bright reflective-type LCD.

3. Inherits all of the characteristics of the LT4H digital timer.

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- IP66 environmental protection.

- Shortened body (70.1 mm 2.760 inch underhead).

4. UL, C-UL rating approved. CE compliant.

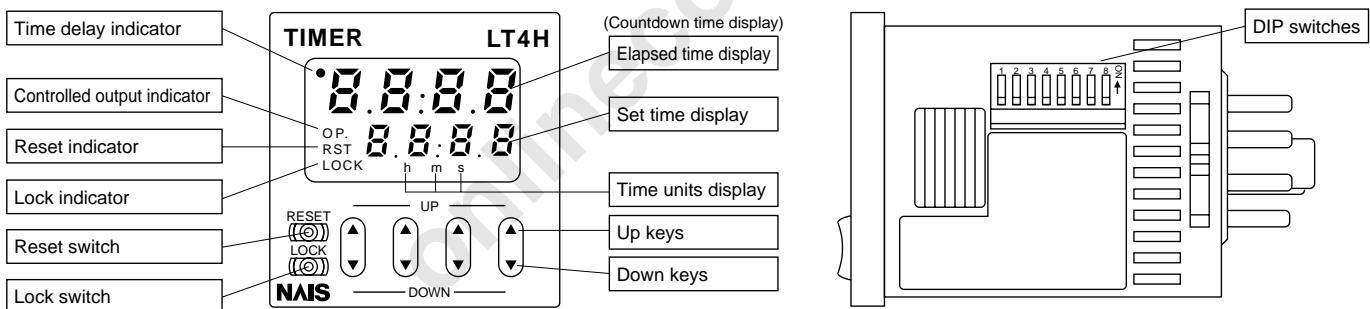
5. Simultaneous release of DIN48 protective cover (soft type).

- Provides protection for surface and buttons in dusty environments and from dirty hands and gloves.

Product types

Product name	Time range	Operating mode	Output	Operating voltage	Power down insurance	Terminal type	Part number
LT4H-L digital timer	9.999 s (0.001 s~) 99.99 s (0.01 s~) 999.9 s (0.1 s~) 9999 s (1 s~) 99 min 59 s (1 s~) 99.9 min (0.1 min~) 99 h 59 min (1 min~) 999.9 h (0.1 h~)	Power ON delay (1) Power ON delay (2) Signal ON delay Signal OFF delay Pulse One-shot Pulse ON-delay Signal Flicker Totalizing ON-delay (8 modes)	Relay (1 c)	100 to 240 V AC	Available	8 pins	LT4HL8-AC240V
	24 V AC/DC	LT4HL8-AC24V					
	12 to 24 V DC	LT4HL8-DC24V					
	Transistor (1 a)	100 to 240 V AC	LT4HLT8-AC240V				
		24 V AC/DC	LT4HLT8-AC24V				
		12 to 24 V DC	LT4HLT8-DC24V				
Option		DIN48 protective cover (soft type)	For the LT4H Series				

Part names



LT4H-L

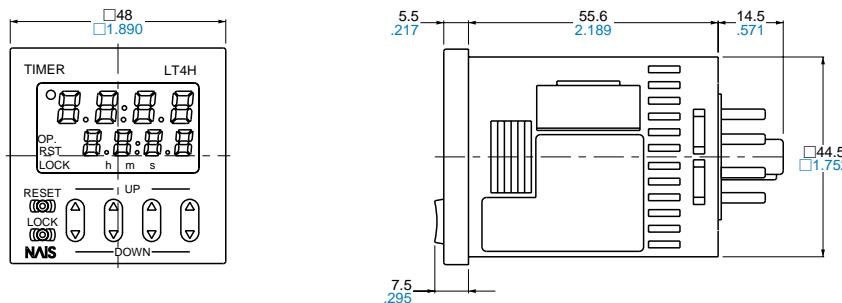
Specifications

Item	Type	Relay output type		Transistor output type						
		AC type, AC/DC type	DC type	AC type, AC/DC type	DC type					
Rating	Rated operating voltage	100 to 240 V AC, 24 V AC/DC	12 to 24 V DC	100 to 240 V AC, 24 V AC/DC	12 to 24 V DC					
	Rated frequency	50/60 Hz common	—	50/60 Hz common	—					
	Rated power consumption	Max. 10 V A	Max. 3 W	Max. 10 V A	Max. 3 W					
	Rated control capacity	5 A, 250 V AC (resistive load)		100 mA, 30 V DC						
	Time range	9.999 s, 99.99 s, 999.9 s, 9999 s, 99 min 59 s, 999.9 min, 99 h 59 min, 999.9 h (selected by DIP switch)								
	Time counting direction	Addition (UP)/Subtraction (DOWN) (2 directions selectable by DIP switch)								
	Operation mode	A (Power ON delay 1), A2 (Power ON delay 2), B (Signal ON delay), C (Signal OFF delay), D (Pulse one-shot), E (Pulse ON delay), F (Signal Flicker), G (Totalizing ON delay) (selectable by DIP switch)								
	Start/Reset input	Min. input signal width: 1 ms, 20 ms (2 directions by selected by DIP switch)								
	Input signal	Contact or open collector input Input impedance: Max. 1 kΩ; Residual voltage: Max. 2 V Open impedance: 100kΩ or less, Max. energized voltage: 40V DC								
	Indication	7-segment LCD								
Time accuracy (max.)	Power failure memory method	EEP-ROM (Min. 10 ⁵ overwriting)								
	Operating time fluctuation	$\pm (0.005\% + 50\text{ ms})$ in case of power on start								
	Voltage error	$\pm (0.005\% + 50\text{ ms})$ in case of power on start								
	Temperature error	$\pm (0.005\% + 50\text{ ms})$ in case of power on start								
Contact	Contact arrangement	Timed-out 1 Form C		Timed-out 1 Form A (Open collector)						
	Contact resistance (Initial value)	100 mΩ (at 1 A 6 V DC)		—						
	Contact material	Ag alloy/Au flash		—						
Life	Mechanical (contact)	2.0 × 10 ⁷ ope. (Except for switch operation parts)		—						
	Electrical (contact)	1.0 × 10 ⁵ ope. (At rated control voltage)		1.0 × 10 ⁷ ope. (At rated control voltage)						
Electrical	Allowable operating voltage range	85 to 110 % of rated operating voltage								
	Breakdown voltage (Initial value)	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						
	Insulation resistance (Initial value)	Between live and dead metal parts Min. 100 MΩ: Between input and output (At 500V DC) Between contacts								
	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)							
Operating conditions	Shock resistance	Functional	Min. 98 m 321.522 ft./s ² (4 times on 3 axes)							
		Destructive	Min. 294 m 964.567 ft./s ² (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 type								
Protective construction		IEC standards IP66 (front panel with rubber gasket)								

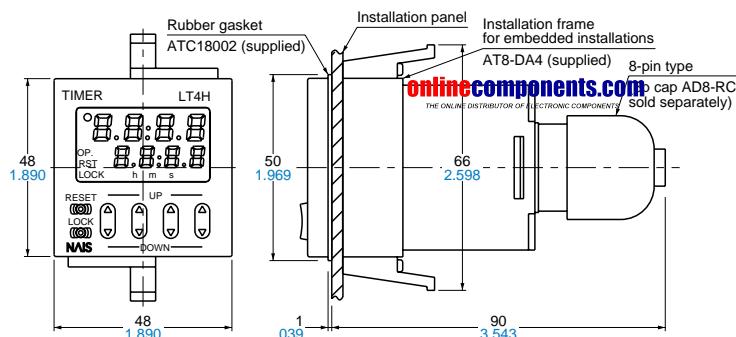
Dimensions

• LT4H-L digital timer

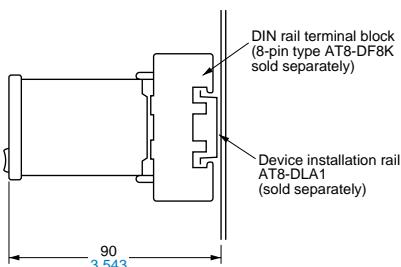
Embedded installation/front panel installation



• Dimensions for embedded installation (with adapter installed)

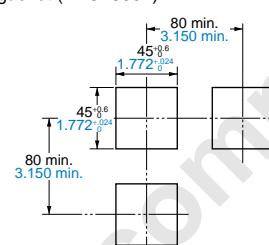


• Dimensions for front panel installations

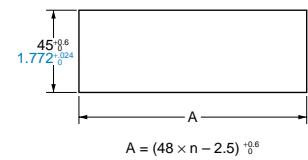


• Installation panel cut-out dimensions

The standard panel cut-out dimensions are shown below. Use the installation frame (AT8-DA4) and rubber gasket (ATC18002).



• For connected installations

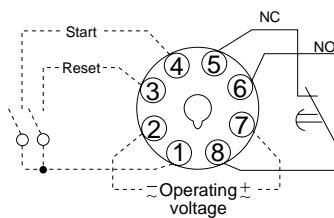


Note) 1: The installation panel thickness should be between 1 and 5 mm .039 and .197 inch.

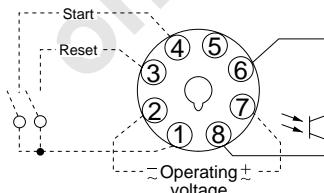
2: For connected installations, the waterproofing ability between the unit and installation panel is lost.

Terminal layouts and Wiring diagrams

Relay output type



Transistor output type



LT4H-L

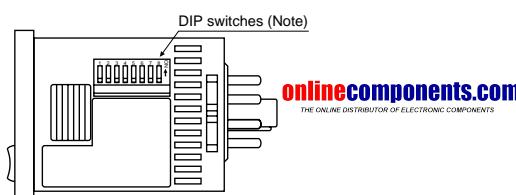
Setting the operation mode, time range, and time

Setting procedure 1) Setting the operation mode and time range

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

DIP switches

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



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Table 1: Setting the operation mode

DIP switch No.			Operation mode
1	2	3	
ON	ON	ON	A: Power on delay 1
OFF	OFF	OFF	A2: Power on delay 2
ON	OFF	OFF	B: Signal on delay
OFF	ON	OFF	C: Signal off delay
ON	ON	OFF	D: Pulse One shot
OFF	OFF	ON	E: Pulse On delay
ON	OFF	ON	F: Signal Flicker
OFF	ON	ON	G: Totalizing On delay

Table 2: Setting the time range

DIP switch No.			Time range
6	7	8	
ON	ON	ON	0.001 s to 9.999 s
OFF	OFF	OFF	0.01 s to 99.99 s
ON	OFF	OFF	0.1 s to 999.9 s
OFF	ON	OFF	1 s to 9999 s
ON	ON	OFF	0 min 01 s to 99 min 59 s
OFF	OFF	ON	0.1 min to 999.9 min
ON	OFF	ON	0 h 01 min to 99 h 59 min
OFF	ON	ON	0.1 h to 999.9 h

Notes: 1) The DIP switches are set as ON before shipping.

2) Set the DIP switches before installing the timer.

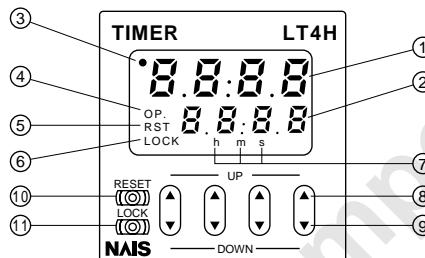
3) When the DIP SW setting is changed, turn off the power once.

Setting procedure 2) Setting the time

Set the set time with the keys (UP and DOWN keys) on the front of the timer.

Front display section

- ① Elapsed time display
- ② Set time display
- ③ Time delay indicator
- ④ Controlled output indicator
- ⑤ Reset 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 LOCK switch

Locks the operation of all keys on the unit

• 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. If the set time is changed to "0," the unit will operate differently depending on the operation mode.

1) If the operation mode is set to A (power on delay 1) or A2 (power on

delay 2), the output will turn on when the power supply is turned on. However, the output will be off while reset is being input.

2) In the other modes, the output turns on when the start is input. When the operation mode is C (signal off delay), D (Pulse one shot), or F (Signal flicker), only when the start input is on does the output turn on. Also, when the reset is being input, the output is off.

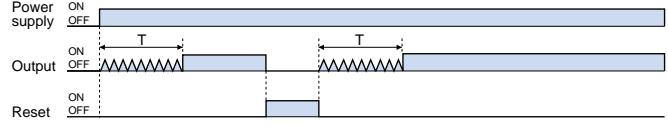
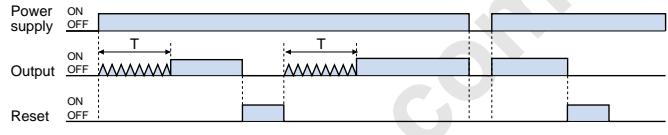
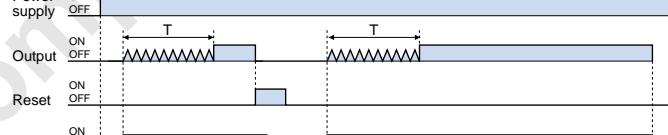
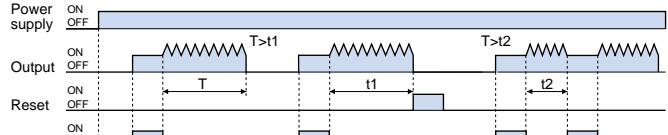
• Power failure memory

The EEPROM is used for power failure memory. It has a life of Min. 10^5 over-writings.

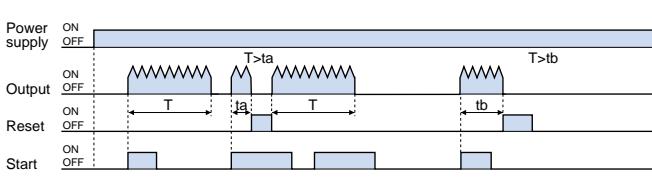
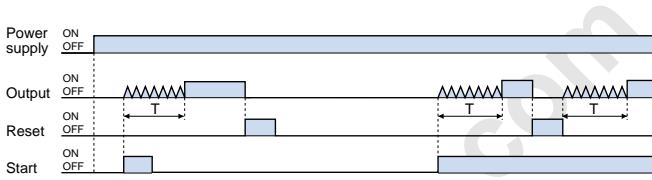
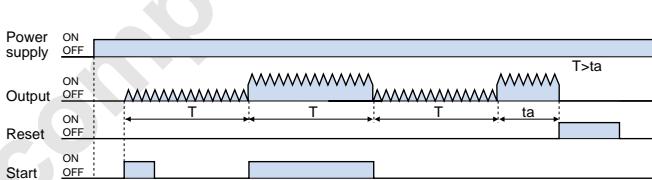
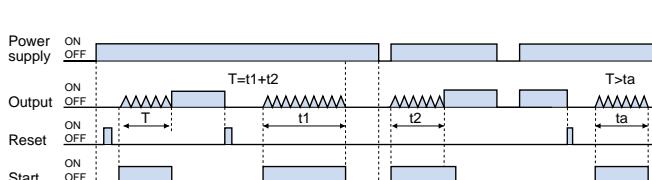
The EEPROM is overwriting with the following timing.

Output mode	Overwrite timing
Power ON delay (2) A2	When power is OFF
Addition G	Change of preset value or start, reset input When power is OFF after being ON
Other modes	When power is OFF after changing preset value

Operation mode

Operation type	Explanation	Time chart			
Power on delay (1) Ⓐ	<ul style="list-style-type: none"> Set the operation mode section of the DIP switches (no.'s 1, 2, and 3) on the side of the timer as shown. Clears elapsed time value and starts time delay at power ON. After timer completion, stops at the display of the set value (addition), or stops at "0" (subtraction). Ignores start input. 	<p>1 2 3</p> <table border="1"> <tr> <td>ON</td> <td>ON</td> <td>ON</td> </tr> </table> 	ON	ON	ON
ON	ON	ON			
Power on delay (2) Ⓐ2	<ul style="list-style-type: none"> Set the operation mode section of the DIP switches (no.'s 1, 2, and 3) on the side of the timer as shown. Elapsed time value does not clear at power ON. (power outage countermeasure function) The output remains ON even after the power is cut and restarted. After timer completion, stops at the display of the set value (addition), or stops at "0" (subtraction). Ignores start input. 	<p>1 2 3</p> <table border="1"> <tr> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> </table> 	OFF	OFF	OFF
OFF	OFF	OFF			
Signal on delay Ⓑ	<ul style="list-style-type: none"> Set the operation mode section of the DIP switches (no.'s 1, 2, and 3) on the side of the timer as shown. Clears elapsed time value at power ON. Time delay starts at start ON and elapsed time value or output resets at start OFF. Instantaneous time delay start at reset OFF and power ON while start is ON. In order to have the time delay start at power ON or reset at power OFF, short out the start input beforehand. 	<p>1 2 3</p> <table border="1"> <tr> <td>ON</td> <td>OFF</td> <td>OFF</td> </tr> </table> 	ON	OFF	OFF
ON	OFF	OFF			
Signal off delay Ⓒ	<ul style="list-style-type: none"> Set the operation mode section of the DIP switches (no.'s 1, 2, and 3) on the side of the timer as shown. Clears elapsed time value at power ON. Output control ON at start ON and time delay start at start OFF. Elapsed time value clears when start goes ON again during time delay. 	<p>1 2 3</p> <table border="1"> <tr> <td>OFF</td> <td>ON</td> <td>OFF</td> </tr> </table> 	OFF	ON	OFF
OFF	ON	OFF			

Note: Each signal input (start and reset) is applied by shorting their input terminal to the common terminal ①.

Operation type	Explanation	Time chart						
Pulse One-shot (D)	<ul style="list-style-type: none"> Set the operation mode section of the DIP switches (no.'s 1, 2, and 3) on the side of the timer as shown. Clears elapsed time value at power ON. Time delay starts and output control ON at start ON. Control output OFF at time up, and elapsed value cleared. Ignores start input during time delay. In order to have the time delay start at power ON or reset at power OFF, short out the start input beforehand. 	<table border="1"> <tr> <td>1</td><td>2</td><td>3</td></tr> <tr> <td>ON</td><td>ON</td><td>OFF</td></tr> </table> 	1	2	3	ON	ON	OFF
1	2	3						
ON	ON	OFF						
Pulse On delay (E)	<ul style="list-style-type: none"> Set the operation mode section of the DIP switches (no.'s 1, 2, and 3) on the side of the timer as shown. Clears elapsed time value at power ON. Time delay starts at start ON. Ignores start input during time delay. In order to have the time delay start at power ON or reset at power OFF, short out the start input beforehand. 							
Signal Flicker (F)	<ul style="list-style-type: none"> Set the operation mode section of the DIP switches (no.'s 1, 2, and 3) on the side of the timer as shown. Clears elapsed time value at power ON. Time delay starts at start ON. Ignores start input during time delay. Output control reverses, elapsed time value clears, and timer delay starts at timer completion. In order to have the time delay start at power ON or reset at power OFF, short out the start input beforehand. 							
Totalizing On delay (G)	<ul style="list-style-type: none"> Set the operation mode section of the DIP switches (no.'s 1, 2, and 3) on the side of the timer as shown. Elapsed time value does not clear at power ON. (power outage countermeasure function) The output remains ON even after the power is off and restarted. 							

Note: Each signal input (start and reset) is applied by shorting their input terminal to the common terminal ①.

PRECAUTIONS IN USING THE LT4H-L

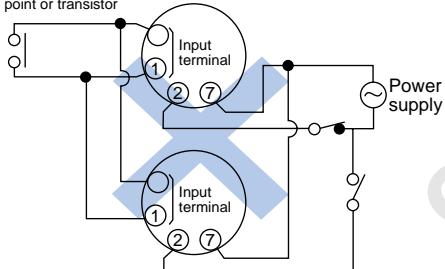
1. Terminal wiring

- When wiring the terminals, refer to the terminal layout and wiring diagrams and be sure to perform the wiring properly without errors.
- When using the instrument with an embedded installation, use either the rear terminal block (AT78041) or the 8P cap (AD8-RC). Avoid soldering directly to the round pins on the unit.
- When using the instrument with a front panel installation, use the DIN rail terminal block (AT8-DF8K).
- After turning the unit off, make sure that any resulting induced voltage or residual voltage is not applied to power supply terminals ② through ⑦. (If the power supply wire is wired parallel to the high voltage wire or power wire, an induced voltage may be generated between the power supply terminals.)
- Have the power supply voltage pass through a switch or relay so that it is applied at one time. If the power supply is applied gradually, the counting may malfunction regardless of the settings, the power supply reset may not function, or other such unpredictable occurrence may result.

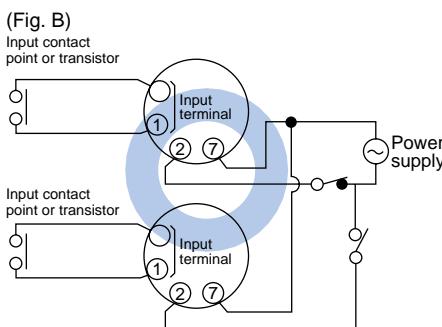
2. Input connections

The power circuit has no transformer. When an input signal is fed to two or more timers at once, do not arrange the power circuit in an independent way. If the timer is powered on and off independently as shown in Fig. A, the timer's internal circuitry may get damaged. Be careful never to allow such circuitry.

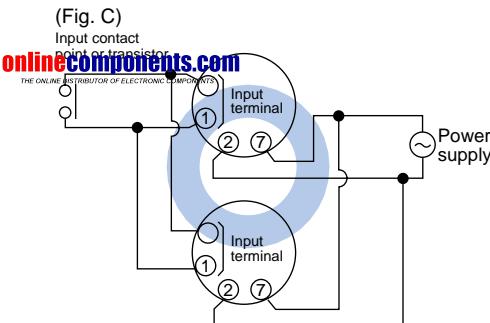
(Fig. A)
Input contact point or transistor



If independent power circuitry must be used, keep the input contacts or transistors separate from each other, as shown in Fig. B.



When power circuitry is not independent, one input signal can be fed to two or more timers at once, as shown in Fig. C.

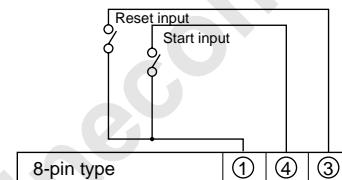


3. Input and output

1) Signal input type

(1) Contact point input

Use highly reliable metal plated contacts. Since the contact point's bounce time leads directly to error in the timer operations, use contacts with as short a bounce time as possible. Also, select a minimum input signal width of 20 ms.



(2) Non-contact point input

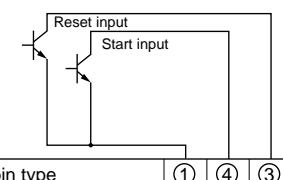
Connect with an open collector. Use transistors whose characteristics satisfy the criteria given below.

$$V_{CEO} = 20 \text{ V min.}$$

$$I_C = 20 \text{ mA min.}$$

$$I_{CBO} = 6 \mu\text{A max.}$$

Also, use transistors with a residual voltage of less than 2 V when the transistor is on.

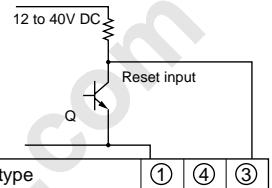


* The short-circuit impedance should be less than 1 kΩ.

[When the impedance is 0 Ω, the current coming from the start input and stop input terminals is approximately 12 mA, and from the reset input and lock input terminals is approximately 1.5 mA.]

Also, the open-circuit impedance should be more than 100 kΩ.

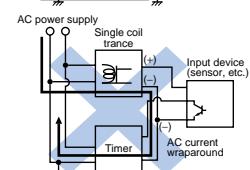
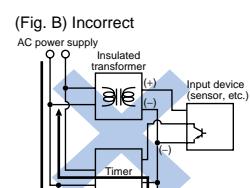
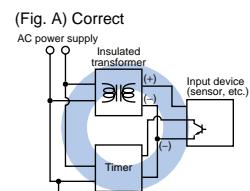
* As shown in the diagram below, from a non-contact point circuit (proximity switches, photoelectric switches, etc.) with a power supply voltage of between 12 and 40 V DC, the signal can be input without using an open collector transistor. In the case of the diagram below, when the non-contact point transistor Q switches from off to on (when the signal voltage goes from high to low), the signal is input.



(The above example is for reset input)

2) The input mode and output mode change depending on the DIP switch settings. Therefore, before making any connections, be sure to confirm the operation mode and operation conditions currently set.

3) Input device power supply does not use a transformer, so to prevent short circuits when connecting the signal inputs, use a power supply for input devices such as sensors that has its primary and secondary isolated as shown in Fig. A, and in which the secondary is not earthed.

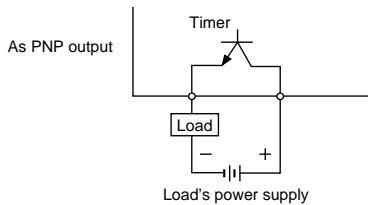
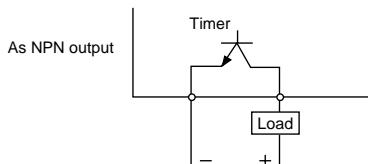


PRECAUTIONS IN USING THE LT4H SERIES

4) The input signal is applied by the shorting of each input terminal with the common terminal. Never connect other terminals or voltages higher than 40V DC, because it may destroy the internal circuitry.

5) Transistor output

(1) Since the transistor output is insulated from the internal circuitry by a photocoupler, it can be used as an NPN output or PNP (equal value) output.



6) When wiring, use shielded wires or metallic wire tubes, and keep the wire lengths as short as possible.

7) For the load of the controlled output, make sure that it is lower than the rated control capacity.

4. Operation of LT4H digital timer

1) Turning on and off the power supply while operating in A2* (Power on delay 2) or G (Totalizing On delay) will result in a timer error to be generated due to the characteristics of the internal circuitry. Therefore, use the start input or stop input.

* Not related to the start input.

2) When controlling the timer by turning on the power supply, use only A (Power on delay 1) or A2 (Power on delay 2). Use of other modes in this situation will result in timer errors. When using the other modes, control the timer with the start input or stop input.

5. Operation mode and time range setting

The operation mode and time range can be set with the DIP switches on the side of the timer. Make the DIP switch settings before installing the timer on the panel.

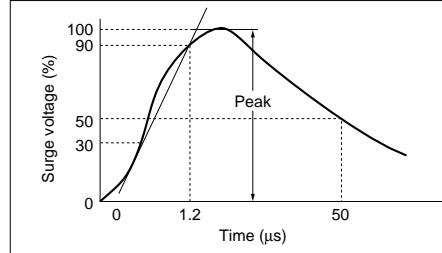
6. Conditions of usage

- Avoid locations subject to flammable or corrosive gases, excessive dust, oil, vibrations, or excessive shocks.
- Since the cover of the timer is made of polycarbonate resin, avoid contact with or use in environments containing methyl alcohol, benzene, thinners, and other organic solvents; and ammonia, caustic sodas, and other alkaline substances.
- If power supply surges exceed the values given below, the internal circuits may become damaged. Be sure to use surge absorbing element to prevent this from happening.

Operating voltage	Surge voltage (peak value)
AC type	6,000V
DC type	1,000V
AC/DC type	

• Surge wave form

[\pm 10% maximum permissible error of full wave voltage]



4) Regarding external noise, the values below are considered the noise-resistant voltages. If voltages rise above these values, malfunctions or damage to the internal circuitry may result, so take the necessary precautions.

	Power supply terminals		Input terminals
	AC type	DC type AC/DC type	
Noise voltage	1,500V	1,000V	600V

Noise wave form (noise simulator)

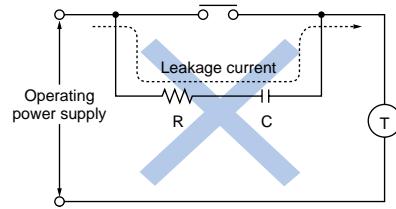
Rise time: 1 ns

Pulse width: 1 μs, 50 ns

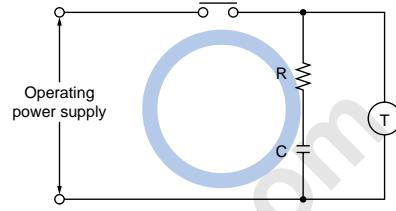
Polarity: ±

Cycle: 100 cycles/second

5) When connecting the operating power supply, make sure that no leakage current enters the timer. If you use a contact protection circuit such as that shown in Fig. A, leak current can flow back through the CR circuit and cause erroneous operation. For this reason, use the circuit shown in Fig. B.

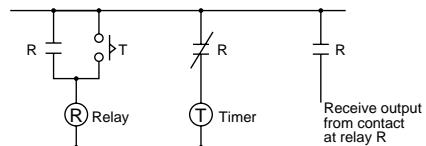


(Fig. A)



(Fig. B)

6) Long periods of continuous operation in the time-up completed condition (one month or more) will result in the weakening of the internal electrical components from the generated heat and, therefore, should be avoided. If you do plan to use the unit for such continuous operation, use in conjunction with a relay as shown in the circuit in the diagram below.



7. Self-diagnosis function

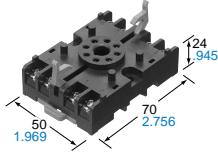
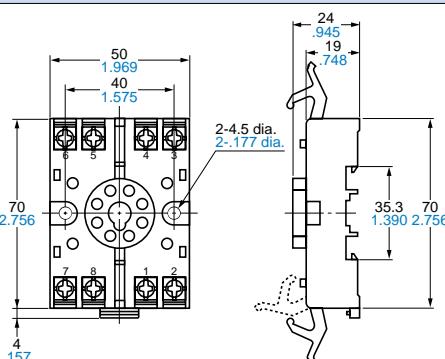
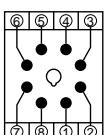
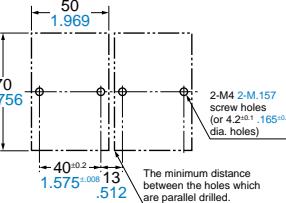
If a malfunction occurs, one of the following displays will appear.

Display	Contents	Output condition	Restoration procedure	Preset values after restoration
	Malfunctioning CPU.	OFF	Enter reset input, RESET key, or restart unit.	The values at start-up before the CPU malfunction occurred.
	Malfunctioning memory. See note.			0

Note: Includes the possibility that the EEPROM's life has expired.

DIN SIZE TIMERS COMMON OPTIONS

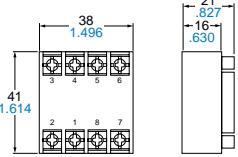
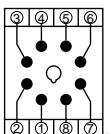
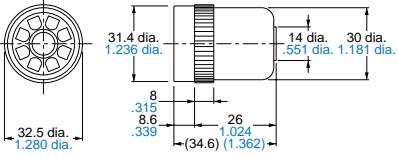
Terminal sockets (Unit: mm inch, Tolerance: $\pm 1 \pm .039$)

Appearance	Dimensions	Terminal wiring (Top view)	Mounting hole dimensions
<ul style="list-style-type: none"> DIN rail socket (8-pin)  <p>Part No.: ATC180031</p>		 <p>Note: Terminal No. on the main body are identical to those on the terminal socket.</p>	

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

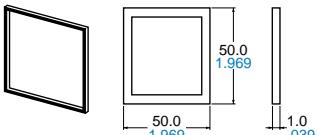
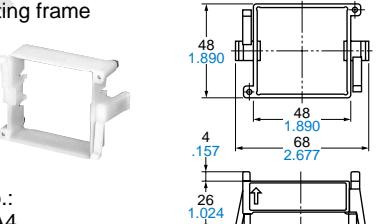
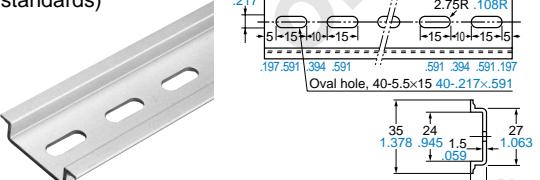
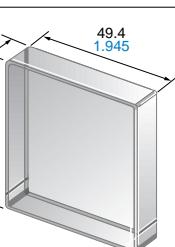
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Sockets (Unit: mm inch, Tolerance: $\pm 1 \pm .039$)

Appearance	Dimensions	Terminal wiring (Top view)	Mounting hole dimensions
<ul style="list-style-type: none"> Rear terminal socket  <p>Part No.: AT78041</p>			—
<ul style="list-style-type: none"> 8P cap  <p>Part No.: AD8-RC</p>			—

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

Mounting parts

<ul style="list-style-type: none"> Rubber gasket  <p>Part No.: ATC18002</p>	<ul style="list-style-type: none"> Mounting frame  <p>Part No.: AT8-DA4</p>
<ul style="list-style-type: none"> Mounting rails (Applicable for DIN and IEC standards)  <p>Part No.: AT8-DLA1 Length: 1 m aluminum</p>	<ul style="list-style-type: none"> Fastening plate  <p>Part No.: ATA4806</p>
	<ul style="list-style-type: none"> DIN48 protective cover (soft type) 

Accessories

• Panel cover (Black)

 <p>Part No.: ATL58011</p>

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.

• DIN48 protective cover (soft type)

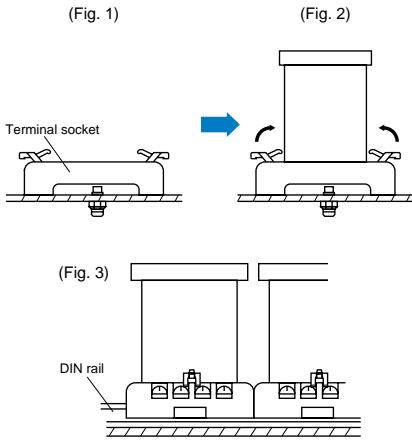
Part No.: N-TC-48-1

INSTALLATIONS

Installations

1. Surface mount

- 1) Put the terminal socket on the board directly or put it on the DIN rail (Fig. 1).
- 2) Insert the timer into the terminal socket and fix it with clip (Fig. 2)
- 3) On DIN rail mounting, mount the timer on the DIN rail tightly to get the proper dimension. (Fig. 3)



4) 8-pin type should be connected with terminal socket (AT8-DF8K).

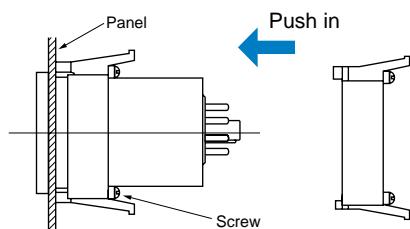
5) DIN rail (AT8-DLA1) is also available (1 m).

2. Flush mount

1) The mounting frame (AT8-DA4) and rubber gasket (ATC18002 for surface waterproofing) that are available at extra costs are necessary. If the pin connection socket is the 8-pin type, use the 8P cap (AD8-RC).

2) How to mount the timer

From the panel front, pass the timer through the square hole. Fit the mounting frame from the rear, and then push it in so that the clearance between the mounting frame and the panel surface is minimized. In addition, lock the mounting frame with a screw.



3) Caution in mounting the timer

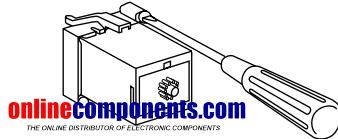
- If the PM4H and the LT4H series are used as the waterproof types, tighten the reinforcing screws on the mounting frames so that the timers, the rubber gaskets, and the panel surfaces are tightly contacted with each other.

(Tighten the two screws with uniform force and make sure that there is no rattling. If the screws are tightened too excessively, the mounting frame may come off.)

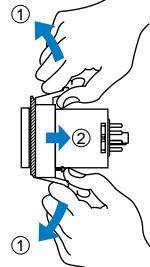
- If the timer is installed with the panel cover and the rubber gasket removed, the waterproofing characteristic is lost.

4) Installation

Loosen the screws on the mounting frame, spread the edge of frame and remove it.



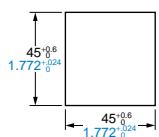
Pull the mounting frame backward while spreading out its hooks with your thumbs and index fingers.



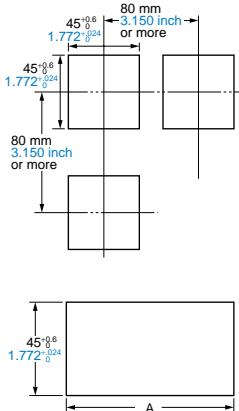
5) Correctly connect the pins while seeing the pin connection diagram.

6) The rear terminal block (ATC78041) or the 8P cap (AD8-RC) is necessary to connect the pins, and avoid directly soldering the round pins on the timer.

7) Panel cutout dimensions



The standard panel cutout dimensions are shown in the left figure. (Panel thickness: 1 to 5 mm .039 to .197 inch)



8) Although the timers can be mounted adjacent to each other in this case, it is recommended to arrange the mounting holes as shown in the right figure to facilitate attaching and detaching the mounting frame.

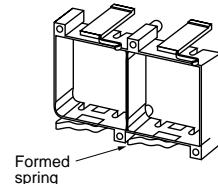
9) Adjacent mounting

Although the timers can be mounted adjacent to each other, remember that the panel surface of timer will lose its water-resistant effect. (Panel thickness: 1 to 5 mm .039 to .197 inch)

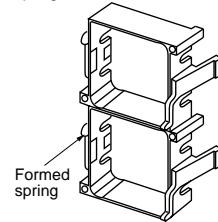
Guideline values for dimension A when installing n units in sequence are as follows:

$$A = (48 \times n - 2.5)^{+0.6} \text{ (mm)}$$

When lining up the timers horizontally, set the frames in such a position so the formed spring areas are at the top and bottom.



When lining up the timers vertically, set the frames in such a position as the formed spring areas are at the right and left.



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