NAiS

DIN 48 SIZE
DIGITAL TIMER

LT4H Timers

Compact, Easy-to-read, Easy-to-use... A digital timer made to meet the market's needs.

Pin type

Screw terminal type

Features

1. 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.

2. Simple Operation
Seesaw buttons make setting and operation simple and easy.

3. 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.

4. Conforms to IP66's Weather Resistant Standards
The water-proof front panel keeps out water and dirt for reliable operation even in poor environments.

5. Screw terminal and Pin Type are Both Standard
The two terminal types are standard to support either through-panel installation or embedded installation.

6. Changeable Panel Cover
A black panel cover is also available to meet your design requirements.

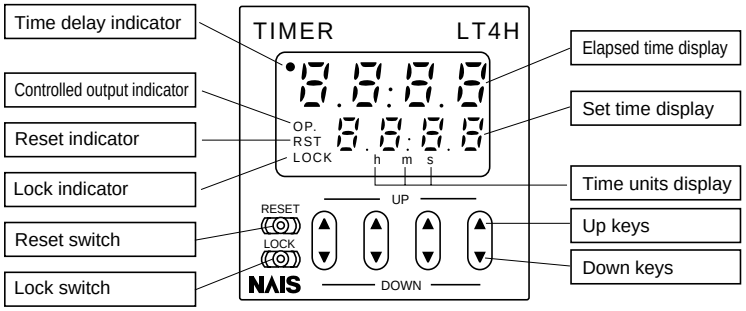
7. Conforms With EMC and Low Voltage Directives
Conforms with EMC directives (EN50081-2/EN50082-2) and low-voltage directives (VDE0435/Part 2021) for CE certification vital for use in Europe.

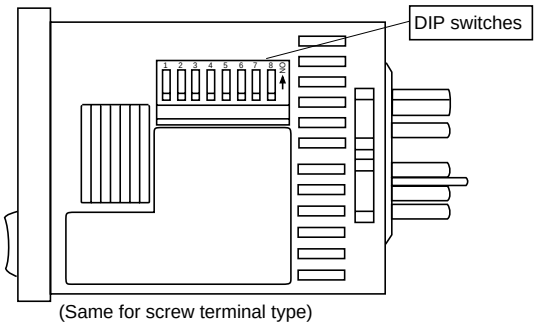
8. EE-PROM Power Failure Memory
EE-PROM memory retains setting and time data. Eliminates the need for battery replacement.

Product types

Time range	Operation mode	Output	Operation voltage	Power down insurance	Terminal	Part No.
9.999 s (0.001 s~) 99.99 s (0.01 s~) 999.9 s (0.1 s~) 9999 s (1 s~) 99 m 59 s (1 s~) 999.9 min (0.1 m~) 99 h 59 min (1 m~) 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)	100-240 V AC	Available	11 pin	LT4H-AC240V
					Screw	LT4H-AC240VS
			12-24 V DC		11 pin	LT4H-DC24V
					Screw	LT4H-DC24VS
		Transistor (1 a)	100-240 V AC		11 pin	LT4HT-AC240V
					Screw	LT4HT-AC240VS
			12-24 V DC		11 pin	LT4HT-DC24V
					Screw	LT4HT-DC24VS

Part names





(Same for screw terminal type)

Specifications

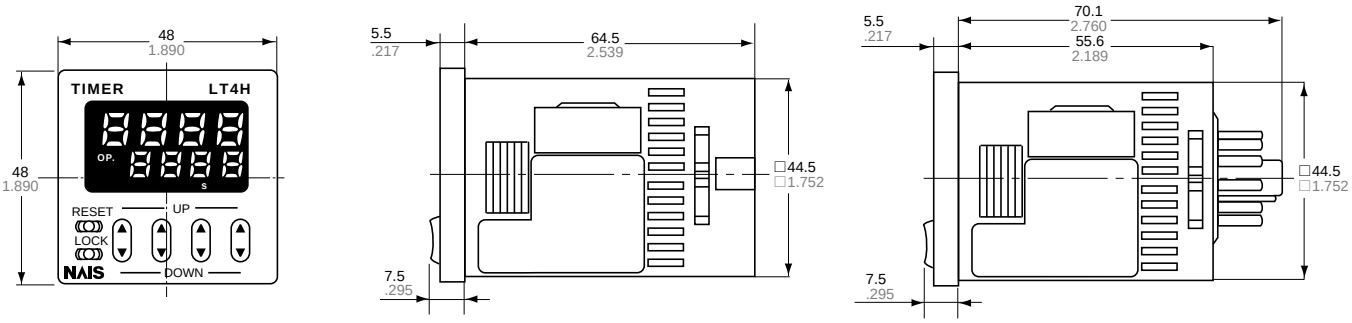
Item			Ralay output type		Transistor output type	
			AC type	DC type	AC type	DC type
Rating	Operating voltage		100 to 240 V AC	12 to 24 V DC	100 to 240 V AC	12 to 24 V DC
	Frequency		50/60 Hz common	—	50/60 Hz common	—
	Power consumption		Max. 10 V A	Max. 3 W	Max. 10 V A	Max. 3 W
	Control capacity (resistive)		5 A, 250 V AC		100 mA, 30 V DC	
	Time range		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), A2 (Power ON delay), B (Signal ON delay), C (Signal OFF delay), D (Pulse one-shot), E (Self-hold), F (Flicker), G (Totalizing) (Selectable by DIP switch)			
	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. 2 V Open impedance: 100kΩ or less, Max. energized voltage: 40V DC			
	Indication		7-segment LCD, Elapsed value (backlight red LED), Setting value (backlight yellow LED)			
	Power failure memory method		EE-PROM (Min. 10^5 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					
	Power off time change error		100 ms			
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		2.0×10^7 ope. (Except for switch operation parts)		—	
	Electrical		1.0×10^5 ope. (At rated control voltage)		1.0×10^7 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./s² (4 times on 3 axes)			
		Destructive	Min. 294 m 964.567 ft./s² (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			11-pin/screw terminal			
Protective construction			IP66 (front panel with rubber gasket)			

Dimensions (units: mm inch)

• LT4H digital timer

Screw-down terminal type
(through-panel installation)

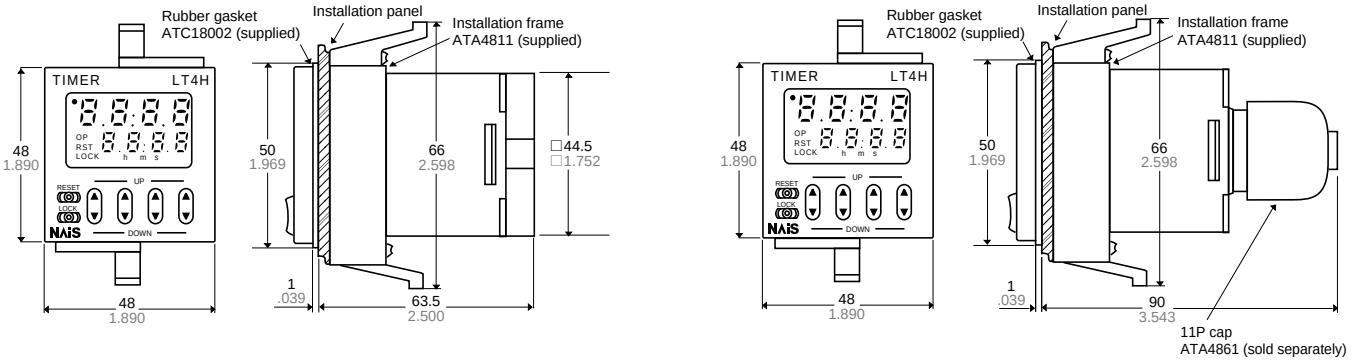
Pin type (through-panel or
surface mount installation)



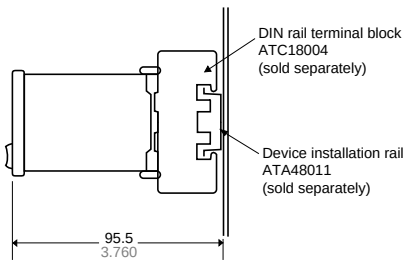
• Dimensions for through-panel installation (with adapter installed)

Screw-down terminal type

Pin type

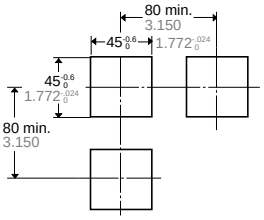


• Dimensions for surface mount installations

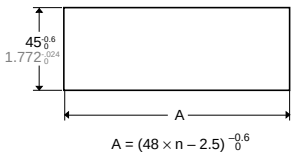


• Installation panel cut-out dimensions

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



• For connected installations



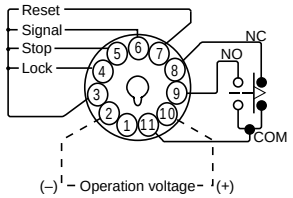
Note 1: The installation panel thickness should be between 1 and 5 mm .039 and .197 inch.

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

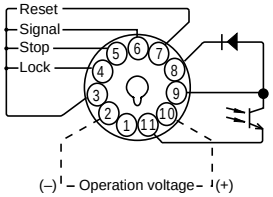
Terminal layout and wiring

• Pin type

Relay output type

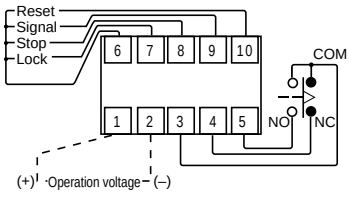


Transistor output type

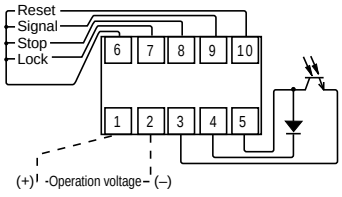


• Screw-down terminal type

Relay output type



Transistor output type



Setting the operation mode, timer range, and time

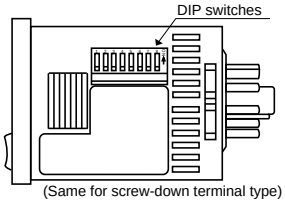
Setting procedure 1) Setting the operation mode and timer range

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	Operation mode	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	Timer range	Refer to table 2	
7			
8			



(Same for screw-down terminal type)

Table 1: Setting the operation mode

DIP switch No.			Operation mode
1	2	3	
ON	ON	ON	A: Power on delay
OFF	OFF	OFF	A2: Power on delay
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 timer range

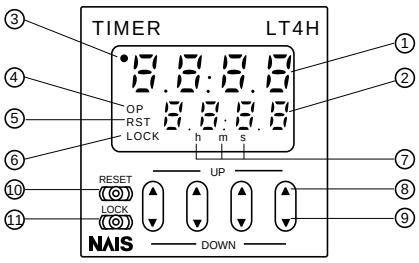
DIP switch No.			Timer range
6	7	8	
ON	ON	ON	0.001 s to 9.999 s
OFF	OFF	OFF	0.01 s to 99.99 s
ON	OFF	OFF	0.1 s to 999.9 s
OFF	ON	OFF	1 s to 9999 s
ON	ON	OFF	0 min 01 s to 99 min 59 s
OFF	OFF	ON	0.1 min to 999.9 min
ON	OFF	ON	0 h 01 min to 99 h 59 min
OFF	ON	ON	0.1 h to 999.9 h

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 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.

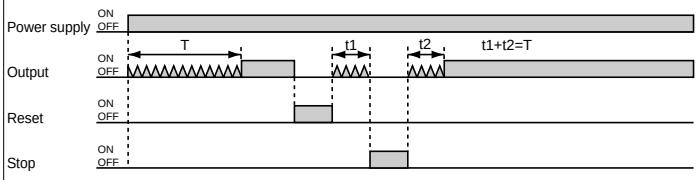
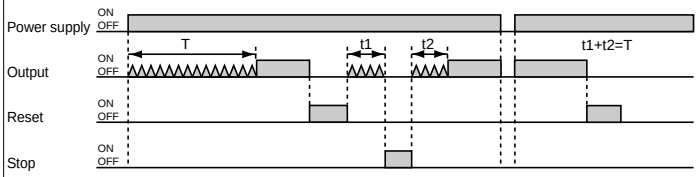
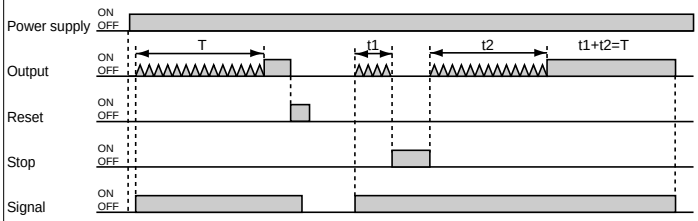
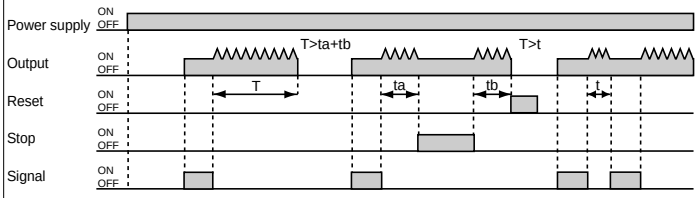
2. If the set time is changed to "0," the unit will operate differently depending on the operation mode.

1) If the operation mode is set to A (power on delay) or A2 (power on delay), 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 signal is input. When the operation mode is C (signal off delay), D (one shot), or F (flicker), only when the signal input is on does the output turn on. Also, when the reset is being input, the output is off.

Operation mode

T: Set time t1, t2, t3, ta<T

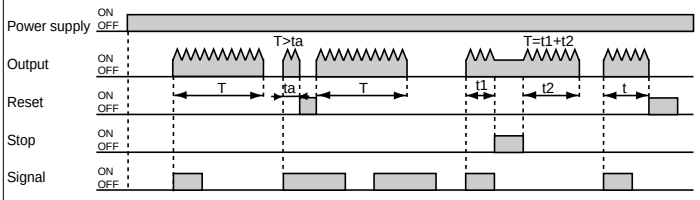
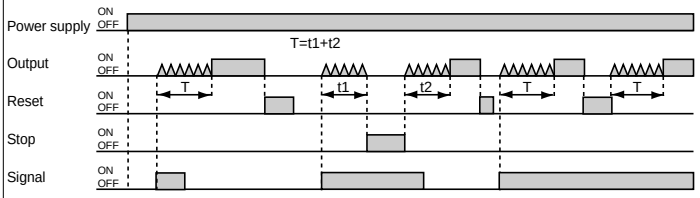
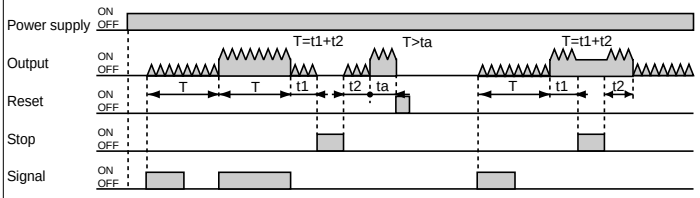
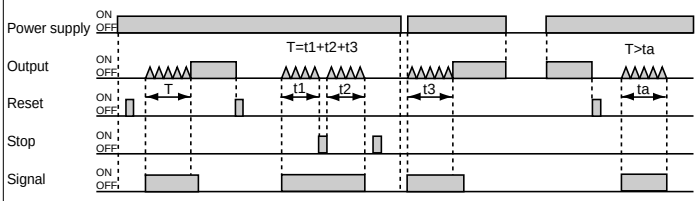
Operation type	Explanation	Time chart
Power on delay (1) Ⓐ	• Set the operation mode section of the DIP switches (no.'s 1, 2, and 3) on the side of the timer as shown. • Clears elapsed time value and starts time delay at power ON. • After time-out, stops at the display of the set value (addition), or stops at "0" (subtraction). • Ignores signal input. • Stops delay time operation at stop ON. Restarts delay time operation at stop OFF.	
Power on delay (2) Ⓐ2	• 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 time-out, stops at the display of the set value (addition), or stops at "0" (subtraction). • Ignores signal input. • Stops delay time operation at stop ON. Restarts delay time operation at stop OFF.	
Signal on delay Ⓑ	• 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 signal ON and elapsed time value or output resets at signal OFF. • Instantaneous time delay start at reset OFF and power ON while signal is ON. • Stops delay time operation at stop ON. Restarts delay time operation at stop OFF. • In order to have the time delay start at power ON or reset at power OFF, jumper the signal input beforehand.	
Signal off delay Ⓒ	• 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 signal ON and time delay start at signal OFF. • Elapsed time value clears when signal goes ON again during time delay. • Stops delay time operation at stop ON. Restarts delay time operation at stop OFF.	

1	2	3
ON	ON	ON

1	2	3
OFF	OFF	OFF

1	2	3
ON	OFF	OFF

1	2	3
OFF	ON	OFF

Operation type	Explanation	Time chart
Pulse One-Shot Ⓓ	• 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 signal ON. • Ignores signal input during time delay. • Stops delay time operation at stop ON. Restarts delay time operation at stop OFF.	
Pulse On delay Ⓔ	• 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 signal ON. • Ignores signal input during time delay. • Stops delay time operation at stop ON. Restarts delay time operation at stop OFF. • In order to have the time delay start at power ON or reset at power OFF, jumper the signal input beforehand.	
Signal Flicker Ⓕ	• 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 signal ON. • Ignores signal input during time delay. • Output control reverses, elapsed time value clears, and timer delay starts at timer completion. • Stops delay time operation at stop ON. Restarts delay time operation at stop OFF. • In order to have the time delay start at power ON or reset at power OFF, jumper the signal input beforehand.	
Totalizing On delay Ⓖ	• 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. • Stops delay time operation at stop ON. Restarts delay time operation at stop OFF.	

1	2	3
ON	ON	OFF

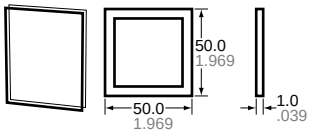
1	2	3
OFF	OFF	ON

1	2	3
ON	OFF	ON

1	2	3
OFF	ON	ON

MOUNTING PARTS

• Rubber gasket



ATC18002

ACCESSORIES

• Panel cover (Black)

ATL58011