Panasonic
ideas for life

DIN 48 SIZE
DIGITAL TIMER

LT4H-W Timers

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

mm inch

8-pin type | 11-pin type | Screw terminal type

RoHS Directive compatibility information
http://www.nais-e.com/

Features

1. Wide time range
The operation time range covers from 0.01 sec. to 9999 hours.
The individual setting can be performed on each of 1 and 2 timers.

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

2. Bright and Easy-to-Read Display
A brand new bright 2-color back light LCD display. The easy-to-read screen in any location makes checking and setting procedures a cinch.

3. Simple Operation
Seesaw buttons make operating the unit even easier than before.

4. Short Body of only 64.5 mm 2.539 inch (screw terminal type) or 70.1 mm 2.760 inch (pin type)
With a short body, it is easy to install in even narrow control panels.

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

6. Screw terminal (M3.5) and Pin Types are Both Standard Options
The two terminal types are standard options to support either front panel installation or embedded installation.

7. Changeable Panel Cover
Also offers a black panel cover to meet your design considerations.

8. Compliant with UL, c-UL and CE.

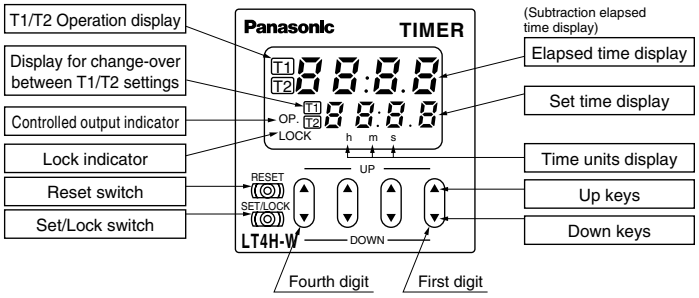
9. Low Price
All this at an affordable price to provide you with unmatched cost performance.

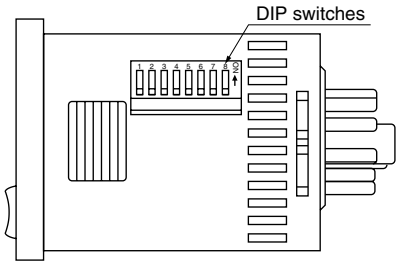
Product types

Time range	Operating mode	Output	Operating voltage	Power down insurance	Terminal type	Part number
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 to 240 V AC	Available	8 pins	LT4HW8-AC240V
					11 pins	LT4HW-AC240V
					Screw terminal	LT4HW-AC240VS
			24 V AC		8 pins	LT4HW8-AC24V
					11 pins	LT4HW-AC24V
					Screw terminal	LT4HW-AC24VS
			12 to 24 V DC		8 pins	LT4HW8-DC24V
					11 pins	LT4HW-DC24V
					Screw terminal	LT4HW-DC24VS
		Transistor (1 a)	100 to 240 V AC		8 pins	LT4HWT8-AC240V
					11 pins	LT4HWT-AC240V
					Screw terminal	LT4HWT-AC240VS
			24 V AC		8 pins	LT4HWT8-AC24V
					11 pins	LT4HWT-AC24V
					Screw terminal	LT4HWT-AC24VS
			12 to 24 V DC		8 pins	LT4HWT8-DC24V
					11 pins	LT4HWT-DC24V
					Screw terminal	LT4HWT-DC24VS

* A rubber gasket (ATC18002) and a mounting frame (AT8-DA4) are included.

Part names





(Same for 8-pin and screw terminal type)

Specifications

Item			Type	Ralay output type		Transistor output type	
				AC type	DC type	AC type	DC type
Rating	Rated operating voltage			100 to 240 V AC, 24 V AC	12 to 24 V DC	100 to 240V AC, 24V AC	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		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			
	Start/Reset/Stop input			Min. input signal width: 1 ms, 20 ms (2 directions by selected by DIP switch) (The 8 pin type does not have a stop input.)			
	Lock input			Min. input signal width: 20 ms (The 8-pin type does not have a lock input.)			
	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			EEP-ROM (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 input signal start		[Operating voltage: 85% to 110% Temperature: –10°C to +55°C +14°F to +131°F Min. input signal width: 1ms]	
	Temperature error						
	Voltage error						
	Setting error						
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)			Min. 2×10^7 ope. (Except for switch operation parts)		—	
	Electrical (contact)			Min. 10^5 ope. (At rated control voltage)		Min. 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 live and dead metal parts (11-pin type only) 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 (Pin type only) 2,000 Vrms for 1 min: Between input and output	
	Insulation resistance (Initial value)			Min. 100 MΩ: Between live and dead metal parts Between input and output Between contacts (At 500V DC)		Min. 100 MΩ: Between live and dead metal parts Between input and output (At 500V DC)	
	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 (non-condensing)			
	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)			

Applicable standard

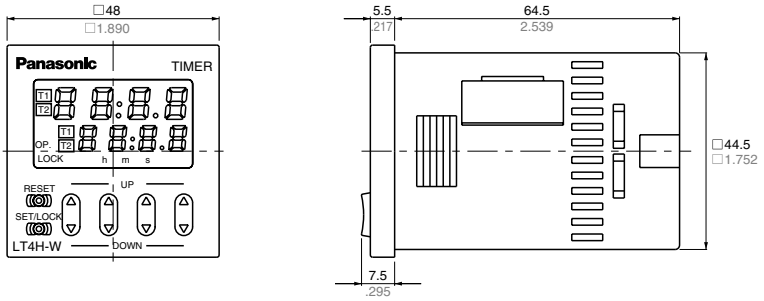
Safety standard	EN61812-1	Pollution Degree 2/Overvoltage Category II
EMC	(EMI)EN61000-6-4	
	Radiation interference electric field strength	EN55011 Group1 ClassA
	Noise terminal voltage	EN55011 Group1 ClassA
	(EMS)EN61000-6-2	
	Static discharge immunity	EN61000-4-2 4 kV contact 8 kV air
	RF electromagnetic field immunity	EN61000-4-3 10 V/m AM modulation (80 MHz to 1 GHz) 10 V/m pulse modulation (895 MHz to 905 MHz)
	EFT/B immunity	EN61000-4-4 2 kV (power supply line) 1 kV (signal line)
	Surge immunity	EN61000-4-5 1 kV (power line)
	Conductivity noise immunity	EN61000-4-6 10 V/m AM modulation (0.15 MHz to 80 MHz)
	Power frequency magnetic field immunity	EN61000-4-8 30 A/m (50 Hz)
	Voltage dip/Instantaneous stop/Voltage fluctuation immunity	EN61000-4-11 10 ms, 30% (rated voltage) 100 ms, 60% (rated voltage) 1,000 ms, 60% (rated voltage) 5,000 ms, 95% (rated voltage)

Dimensions

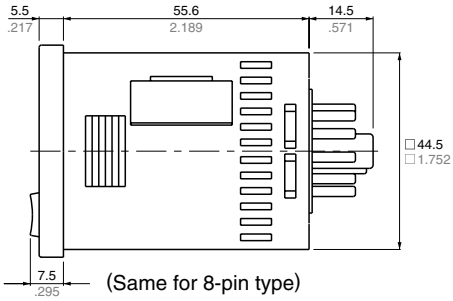
(units: mm inch)
Tolerance: ±1.0 ±.039

• LT4H-W digital timer

Screw terminal type
(Flush mount)



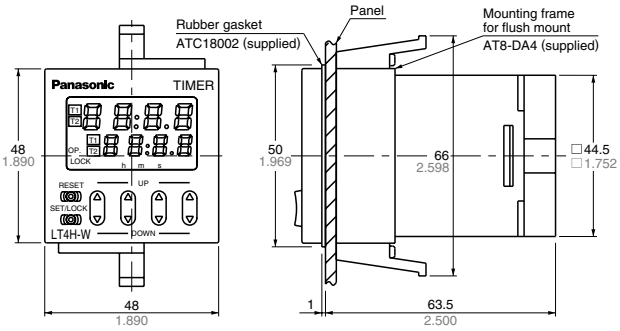
Pin type
(Flush mount/Surface mount)



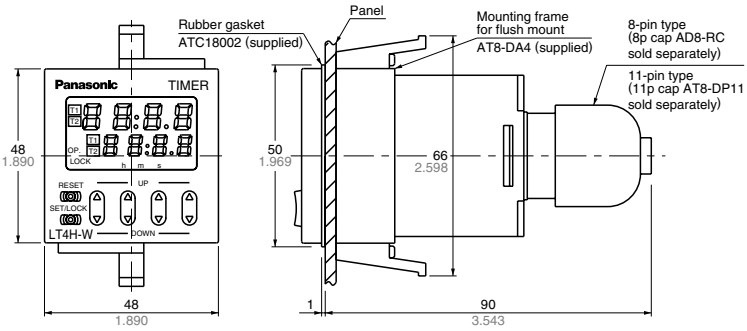
(Same for 8-pin type)

• Dimensions for flush mount (with adapter installed)

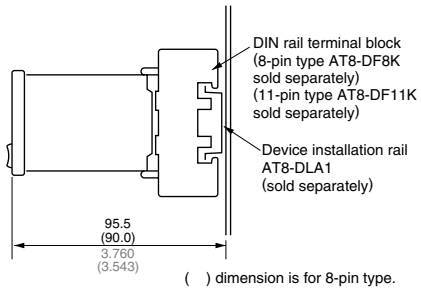
Screw terminal type



Pin type



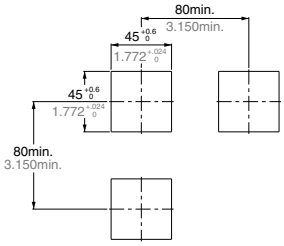
• Dimensions for front panel installations



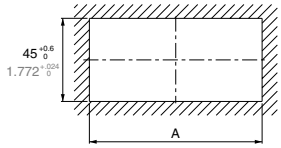
( ) dimension is for 8-pin type.

• Installation panel cut-out dimensions

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



• For connected installations



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):

$A=(48 \times n - 2.5)^{+0.6}_{0}$ $A=(1.890 \times n - .098)^{+.024}_{0}$

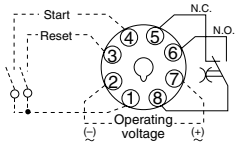
Note) 1: The installation panel thickness should be between 1 and 5 mm .039 and .197 inch.

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

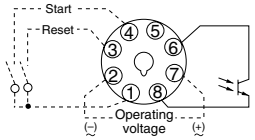
Terminal layouts and Wiring diagrams

• 8-Pin type

Relay output type

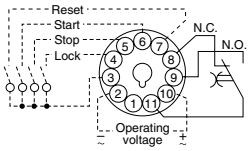


Transistor output type

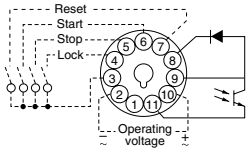


• 11-Pin type

Relay output type

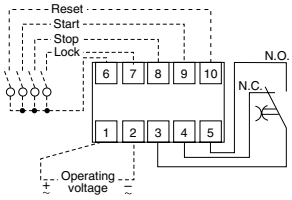


Transistor output type

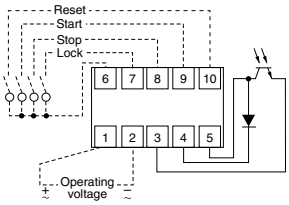


• Screw terminal type

Relay output type



Transistor output type



Note) For connecting the output leads of the transistor output type, refer to 5) Transistor output on page 48.

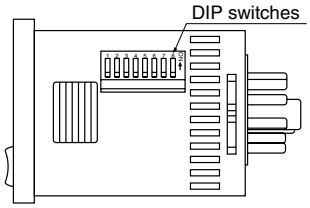
Setting the operation mode and time range

Setting procedure 1) Setting the time range (Timer T_1/Timer T_2)

Set the time range with the DIP switches on the side of the LT4H-W timer.

	Item	DIP switch	
		OFF	ON
1	Time range (Timer T_1)	Refer to table 1	
2			
3			
*4	Minimum input reset, start, and stop signal width	20 ms	1 ms
5	Time delay direction	Addition	Subtraction
6	Time range (Timer T_2)	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 start inputs. The signal range of the lock input is fixed (minimum 20 ms).



(same for screw terminal type and 8-pin type.)

Table 1: Setting the time range (Timer T_1)

DIP switch No.			Time 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 time range (Timer T_2)

DIP switch No.			Time 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

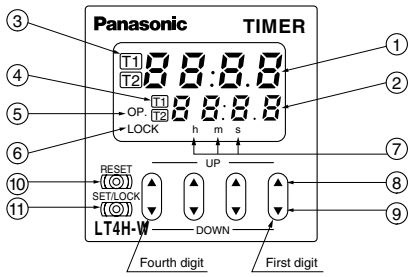
Notes: 1) Set the DIP switches before installing the timer.
2) When the DIP SW setting is changed, turn off the power once.
3) The DIP switches are set as ON before shipping.

Setting procedure 2) Setting the operation mode

Set the operation mode with the keys on the front of the LT4H-W timer.

Front display section

① Elapsed time display
② Set time display
③ T_1/T_2 operation indicator
④ T_1/T_2 setting value selectable indicator
⑤ Controlled output indicator
⑥ Lock indicator
⑦ Time units display

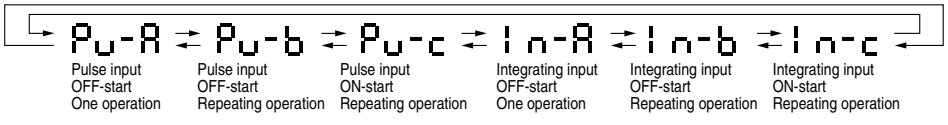


⑧ UP keys
Changes the corresponding digit of the set time in the addition direction (upwards)
⑨ DOWN keys
Changes the corresponding digit of the set time in the subtraction direction (downwards)
⑩ RESET switch
Resets the elapsed time and the output
⑪ SET/LOCK switch
Changes over the display between T_1/T_2 settings, sets the operation mode, checks the operation mode and locks the operation of each key (such as up, down or reset key).

1) Setting or changing the operation 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.
(2) Now release the SET/LOCK switch.
(3) The operation 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.

Ex: Setting operation mode display (PULSE-A example)



(4) The operational mode displayed at present is set by pressing the RESET switch, and the display returns to the normal condition.

2) Setting (changing) the time

(1) Pressing the SET/LOCK key switches the set value display between T1 and T2. Display the timer (T1 or T2) which is to be set (or changed).
(2) After displaying the timer (T1 or T2) which is to be set, press the UP or DOWN key to change the time.

• Checking the operation 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.)

• 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_1 and T_2, respectively.

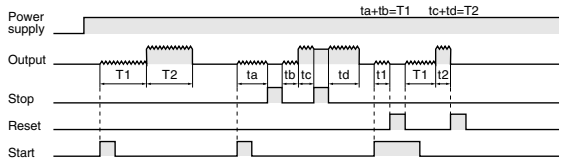
• Changing over the T_1/T_2 setting display

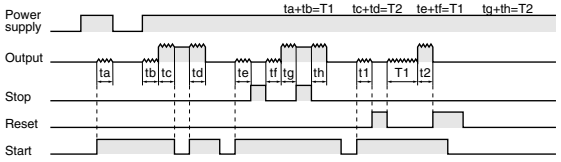
The T1/T2 setting display is changed over by pressing the SET/LOCK switch. (This operation gives no effect on the other operations. The set time and elapsed time (residual time) at T_1 are linked with those at T_2.)

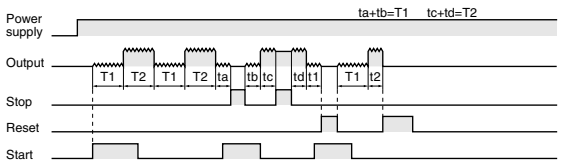
• Changing the set time

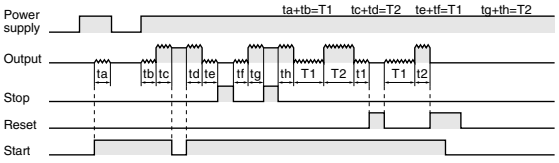
1) It is possible to change the set time with the UP and DOWN keys even during time delay with the timer. However, be aware of the following points.
(1) If the set time is changed to less than the elapsed time with the time delay set to the addition direction, time delay will continue until the elapsed 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_1 and T_2 are set to 0, the output becomes ON only while the start input is carried out. However, while the reset input is carried out, the output becomes OFF.

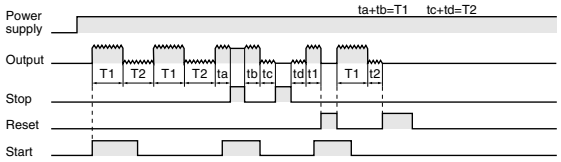
OPERATION MODE

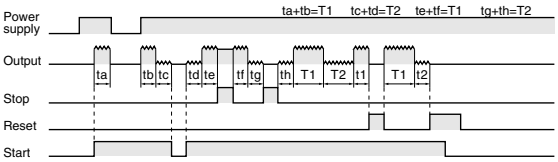
<table>
<tr><th></th><th>PULSE : Pulse input</th><th>INTEGRATION : Integrating input</th></tr>
<tr><td>A
Delayed one shot</td><td>PULSE A OFF-start/1 operation $t_1<T_1$, $t_2<T_2$
 

• Elapsed value cleared when power is turned on.
• Time limit start initiated when start input goes on; start input ignored if time limit interval is in progress.
• Elapsed value cleared when one operation has been completed.</td><td>INTEGRATION A OFF-start/1 operation $t_1<T_1$, $t_2<T_2$
 

• Elapsed value not cleared when power is turned on (power failure backup function).
• When power is turned back on, same status is maintained for output as that previous to power going off.
• Elapsed value cleared when one operation has been completed.</td></tr>
<tr><td>B
OFF-start flicker</td><td>PULSE B OFF-start/repeating operation $t_1<T_1$, $t_2<T_2$
 

• Elapsed value cleared when power is turned on.
• Time limit start initiated when start input goes on; start input ignored if time limit interval is in progress.</td><td>INTEGRATION B OFF-start/repeating operation $t_1<T_1$, $t_2<T_2$
 

• Elapsed value not cleared when power is turned on (power failure backup function).
• When power is turned back on, same status is maintained for output as that previous to power going off.</td></tr>
<tr><td>C
ON-start flicker</td><td>PULSE C ON-start/repeating operation $t_1<T_1$, $t_2<T_2$
 

• Elapsed value cleared when power is turned on.
• Time limit start initiated when start input goes on; start input ignored if time limit interval is in progress.</td><td>INTEGRATION C ON-start/repeating operation $t_1<T_1$, $t_2<T_2$
 

• Elapsed value not cleared when power is turned on (power failure backup function).
• When power is turned back on, same status is maintained for output as that previous to power going off.</td></tr>
<tr><td>Remarks and notes</td><td>• The pulse input mode starts the operation by starting the start input.
• When using the unit by starting it with the power on, short-circuit the start terminal (8-pin: ① to ④, 11-pin: ③ to ⑥ and screw terminal: 6 to 9).</td><td>• The integrating input mode is operated by the integrated time of the start input. In other word, the timer operates only when the start input is performed.
• When the elapsed value is cleared by the reset input, the output is reset.
• When using the unit by starting it with the power on, short-circuit the start terminal (8-pin: ① to ④, 11-pin: ③ to ⑥ and screw terminal: 6 to 9).</td></tr>
<tr><td></td><td colspan="2">• Each signal input such as start, reset, stop and lock inputs is applied by short-circuiting its input terminal and common terminal (8-pin type: terminal ①, 11-pin type: terminal ③ and screw terminal: terminal 6) respectively.
• The 8-pin type does not have a stop input or lock input.</td></tr>
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