



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

### Features

**1. Economic pricing that promptly reflects market demands**

Remarkable economic pricing is implemented in pursuit of cost performance.

**2. Output contacts switchable between timed out 2C and timed out 1C/Instantaneous 1C**

The timed out 1C/Instantaneous 1C output contact enables the efficient addition of self-maintenance circuits.

**3. 4 different time ranges selectable on a single unit**

Five types of timers cover the full range of time settings from 1 second to 30 hours.

**4. Equipped with zero-setting instantaneous output**

Set the dial all the way to "0" for instantaneous operation, so circuit testing can be easily accomplished.

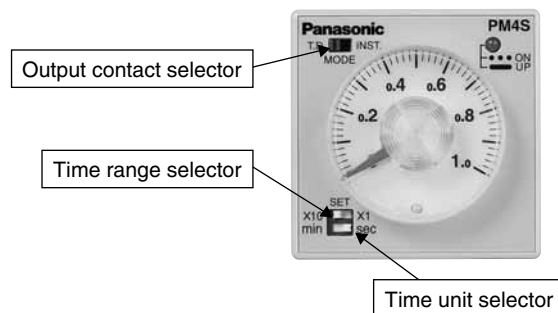
**5. Compliant with UL, c-UL and CE.**

### Product types

| Type                          | /////          | Contact arrangement                                                                               | Time range                                      | Operating voltage | Part No.           |
|-------------------------------|----------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------|-------------------|--------------------|
| PM4S Multi-range Timer A type | Power ON-delay | T.D.:<br>Timed-out 2C<br>INST.:<br>Timed-out 1C<br>Instantaneous 1C<br>(Selected by front switch) | 1s/10s/1min/10min<br>(4 time ranges selectable) | 100 to 120V AC    | PM4S-A2C10M-AC120V |
|                               |                |                                                                                                   |                                                 | 200 to 240V AC    | PM4S-A2C10M-AC240V |
|                               |                |                                                                                                   |                                                 | 12V DC            | PM4S-A2C10M-DC12V  |
|                               |                |                                                                                                   |                                                 | 24V DC            | PM4S-A2C10M-DC24V  |
| PM4S Multi-range Timer B type |                |                                                                                                   | 3s/30s/3min/30min<br>(4 time ranges selectable) | 100 to 120V AC    | PM4S-A2C30M-AC120V |
|                               |                |                                                                                                   |                                                 | 200 to 240V AC    | PM4S-A2C30M-AC240V |
|                               |                |                                                                                                   |                                                 | 12V DC            | PM4S-A2C30M-DC12V  |
|                               |                |                                                                                                   |                                                 | 24V DC            | PM4S-A2C30M-DC24V  |
| PM4S Multi-range Timer C type |                |                                                                                                   | 6s/60s/6min/60min<br>(4 time ranges selectable) | 100 to 120V AC    | PM4S-A2C60M-AC120V |
|                               |                |                                                                                                   |                                                 | 200 to 240V AC    | PM4S-A2C60M-AC240V |
|                               |                |                                                                                                   |                                                 | 12V DC            | PM4S-A2C60M-DC12V  |
|                               |                |                                                                                                   |                                                 | 24V DC            | PM4S-A2C60M-DC24V  |
| PM4S Multi-range Timer D type |                |                                                                                                   | 1min/10min/1h/10h<br>(4 time ranges selectable) | 100 to 120V AC    | PM4S-A2C10H-AC120V |
|                               |                |                                                                                                   |                                                 | 200 to 240V AC    | PM4S-A2C10H-AC240V |
|                               |                |                                                                                                   |                                                 | 12V DC            | PM4S-A2C10H-DC12V  |
|                               |                |                                                                                                   |                                                 | 24V DC            | PM4S-A2C10H-DC24V  |
| PM4S Multi-range Timer E type |                |                                                                                                   | 3min/30min/3h/30h<br>(4 time ranges selectable) | 100 to 120V AC    | PM4S-A2C30H-AC120V |
|                               |                |                                                                                                   |                                                 | 200 to 240V AC    | PM4S-A2C30H-AC240V |
|                               |                |                                                                                                   |                                                 | 12V DC            | PM4S-A2C30H-DC12V  |
|                               |                |                                                                                                   |                                                 | 24V DC            | PM4S-A2C30H-DC24V  |

### Parts name

- The PM4S Multi-Range timer allows time units and output contacts to be selected via front switches.



PM4S

Specifications

| Item                |                                       |                                              | Type                                                                                                                                                                                                                  | PM4S Multi-range Timer                                                                                                                |                |              |              |
|---------------------|---------------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------|--------------|
| Rating              | Rated operating voltage               |                                              | 100 to 120V AC                                                                                                                                                                                                        |                                                                                                                                       | 200 to 240V AC | 12V DC       | 24V DC       |
|                     | Rated frequency                       |                                              | 50/60 Hz                                                                                                                                                                                                              |                                                                                                                                       |                | —            |              |
|                     | Rated power consumption               |                                              | Approx. 3.0VA/3.6VA<br>(at 100V AC)<br>Approx. 4.5VA/5.25VA<br>(at 120V AC)                                                                                                                                           | Approx. 5.6VA/6.8VA<br>(at 200V AC)<br>Approx. 7.5VA/9.8VA<br>(at 240V AC)                                                            |                | Approx. 1.3W | Approx. 1.7W |
|                     | Output rating                         |                                              | 5A 250V AC (resistive load)                                                                                                                                                                                           |                                                                                                                                       |                |              |              |
|                     | Operating mode                        |                                              | Power ON-delay                                                                                                                                                                                                        |                                                                                                                                       |                |              |              |
|                     | Time range                            | A type                                       | 1s/10s/1min/10min (4 time ranges selectable)                                                                                                                                                                          |                                                                                                                                       |                |              |              |
|                     |                                       | B type                                       | 3s/30s/3min/30min (4 time ranges selectable)                                                                                                                                                                          |                                                                                                                                       |                |              |              |
|                     |                                       | C type                                       | 6s/60s/6min/60min (4 time ranges selectable)                                                                                                                                                                          |                                                                                                                                       |                |              |              |
| D type              |                                       | 1min/10min/1h/10h (4 time ranges selectable) |                                                                                                                                                                                                                       |                                                                                                                                       |                |              |              |
| Time accuracy Note) | Operating time fluctuation            |                                              | ±1% (power off time change at the range of 0.1s to 1h)                                                                                                                                                                |                                                                                                                                       |                |              |              |
|                     | Setting error                         |                                              | ±5% (Full-scale value)                                                                                                                                                                                                |                                                                                                                                       |                |              |              |
|                     | Voltage error                         |                                              | ±1% (at the operating voltage changes between 85 to 110%)                                                                                                                                                             |                                                                                                                                       |                |              |              |
|                     | Temperature error                     |                                              | ±2% (at 20°C ambient temp. at the range of −10 to +50°C +14 to +122°F)                                                                                                                                                |                                                                                                                                       |                |              |              |
| Contact             | Contact arrangement                   |                                              | T.D.: Timed-out 2 Form C<br>INST.: Timed-out 1 Form C, instantaneous 1 Form C (Selected by front switch)                                                                                                              |                                                                                                                                       |                |              |              |
|                     | Contact resistance (Initial value)    |                                              | Max. 100mΩ (at 1A 6V DC)                                                                                                                                                                                              |                                                                                                                                       |                |              |              |
|                     | Contact material                      |                                              | Silver alloy                                                                                                                                                                                                          |                                                                                                                                       |                |              |              |
| Life                | Mechanical (contact)                  |                                              | Min. 10 <sup>7</sup>                                                                                                                                                                                                  |                                                                                                                                       |                |              |              |
|                     | Electrical (contact)                  |                                              | Min. 10 <sup>5</sup> (at rated control capacity)                                                                                                                                                                      |                                                                                                                                       |                |              |              |
| Electrical function | Allowable operating voltage range     |                                              | 85 to 110% of rated operating voltage                                                                                                                                                                                 |                                                                                                                                       |                |              |              |
|                     | Insulation resistance (Initial value) |                                              | Min. 100MΩ                                                                                                                                                                                                            | Between live and dead metal parts<br>Between input and output<br>Between contacts of different poles<br>Between contacts of same pole |                |              | (At 500V DC) |
|                     | Breakdown voltage (Initial value)     |                                              | 2,000Vrms for 1 min Between live and dead metal parts<br>2,000Vrms for 1 min Between input and output<br>2,000Vrms for 1 min Between contacts of different poles<br>1,000Vrms for 1 min Between contacts of same pole |                                                                                                                                       |                |              |              |
|                     | Min. power off time                   |                                              | 100 ms                                                                                                                                                                                                                |                                                                                                                                       |                |              |              |
|                     | Max. temperature rise                 |                                              | 55°C 131°F                                                                                                                                                                                                            |                                                                                                                                       |                |              |              |
|                     | Mechanical function                   | Vibration resistance                         | Functional                                                                                                                                                                                                            | 10 to 55Hz: 1 cycle/min double amplitude of 0.25mm (10min on 3 axes)                                                                  |                |              |              |
| Destructive         |                                       |                                              | 10 to 55Hz: 1 cycle/min double amplitude of 0.375mm (1h on 3 axes)                                                                                                                                                    |                                                                                                                                       |                |              |              |
| Shock resistance    |                                       | Functional                                   | Min. 98m/s <sup>2</sup> (4 times on 3 axes)                                                                                                                                                                           |                                                                                                                                       |                |              |              |
|                     |                                       | Destructive                                  | Min. 980m/s <sup>2</sup> (5 times on 3 axes)                                                                                                                                                                          |                                                                                                                                       |                |              |              |
| Operating condition | Ambient temperature                   |                                              | −10 to +50°C +14 to +122°F                                                                                                                                                                                            |                                                                                                                                       |                |              |              |
|                     | Ambient humidity                      |                                              | 30 to 85%RH (non-condensing)                                                                                                                                                                                          |                                                                                                                                       |                |              |              |
|                     | Atmospheric pressure                  |                                              | 860 to 1,060hPa                                                                                                                                                                                                       |                                                                                                                                       |                |              |              |
|                     | Ripple factor (DC type)               |                                              | 20%                                                                                                                                                                                                                   |                                                                                                                                       |                |              |              |
| Others              | Weight                                |                                              | Approximately 110 g 3.880 oz                                                                                                                                                                                          |                                                                                                                                       |                |              |              |

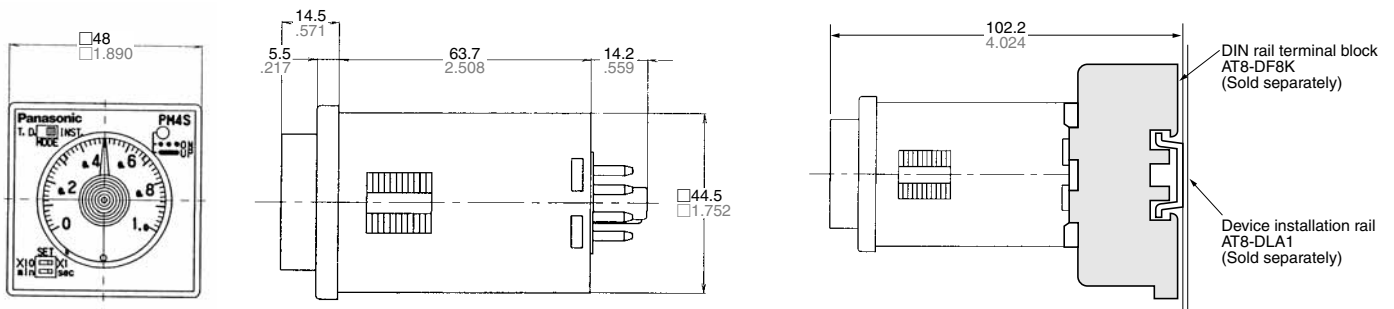
Notes) 1. Unless otherwise specified, the measurement conditions at the maximum scale time standard are specified to be the rated operating voltage (within 5% ripple factor for DC), 20°C 68°F ambient temperature, and 1s power off time.  
2. For the 1s range, the tolerance for each specification becomes ±10ms.

Applicable standard

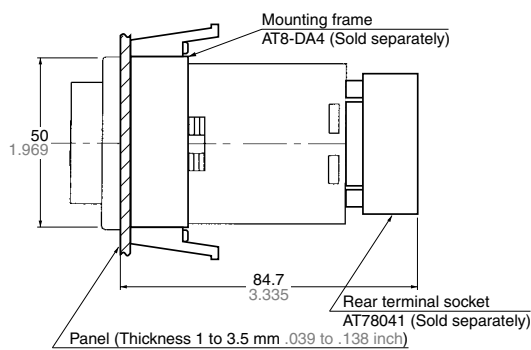
| Safety standard | EN61812-1                                                          | Pollution Degree 2/Overvoltage Category III                                                                                              |
|-----------------|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| EMC             | (EMI)EN61000-6-4<br>Radiation interference electric field strength | EN55011 Group1 ClassA                                                                                                                    |
|                 | Noise terminal voltage                                             | EN55011 Group1 ClassA                                                                                                                    |
|                 | (EMS)EN61000-6-2<br>Static discharge immunity                      | EN61000-4-2 4 kV contact<br>8 kV air                                                                                                     |
|                 | RF electromagnetic field immunity                                  | EN61000-4-3 10 V/m AM modulation (80 MHz to 1 GHz)<br>10 V/m pulse modulation (895 MHz to 905 MHz)                                       |
|                 | EFT/B immunity                                                     | EN61000-4-4 2 kV (power supply 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)<br>100 ms, 60% (rated voltage)<br>1,000 ms, 60% (rated voltage)<br>5,000 ms, 95% (rated voltage) |
|                 |                                                                    |                                                                                                                                          |

## Dimension (Unit: mm inch) Tolerance: $\pm 0.5 \pm .020$

### • Surface mount dimensions



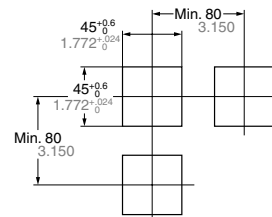
### • Panel mount dimensions (with mounting frame)



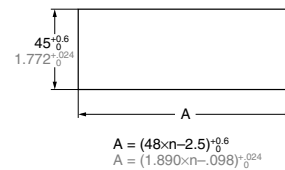
### • Panel cut out dimensions

Standard cut out dimensions are shown below.

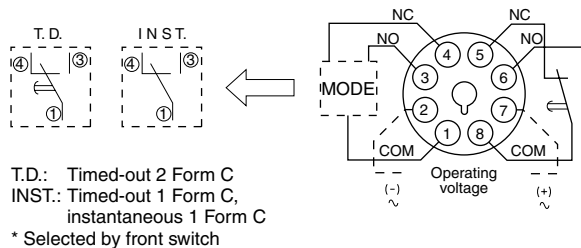
Use mounting frame (AT8-DA4) and rubber gasket (ATC18002).



### • Adjacent mounting



### • Terminal layouts and wiring diagrams



#### Notes:

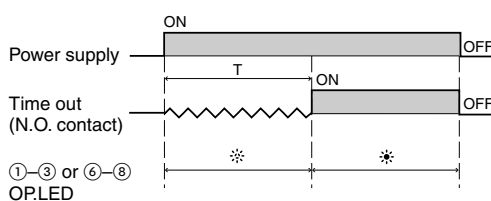
1. Operating voltage signs in parentheses ( ) indicate the polarity of the DC type.

2. is a time delay contact.

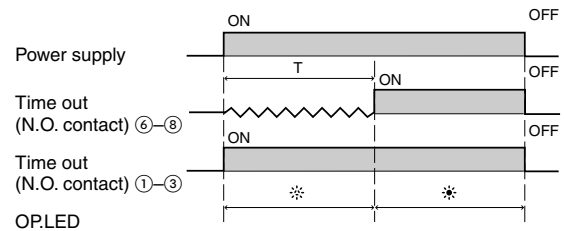
is an instantaneous contact.

## Operation mode

### 1. T.D. mode



### 2. INST. mode



Note: Keep 0.1s or more for power off time.

Precautions during usage

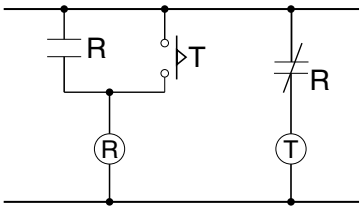
- 1. Avoid locations subject to flammable or corrosive gases, excessive dust, oil, vibrations, or excessive shocks.
- 2. Since the main-unit is made of polycarbonate resin, avoid contact with or use in environments containing methyl alcohol, benzene, thinners, and other organic solvents; and ammonia, caustic sodas, and other alkaline substances.
- 3. Power supply superimposed surge protector

Although a surge protector will withstand standard-waveform voltage with the values in the next table, anything above this will destroy the internal circuit. You should therefore use a surge absorber.

|                    |                                    |
|--------------------|------------------------------------|
| 12 V DC<br>24 V DC | 100 to 120 V AC<br>200 to 240 V AC |
| 500 V              | 4,000 V                            |

• Surge waveform  
[±(1.2×50) μs uni-polar full wave voltage]

- 4. In order to maintain the characteristics, do not remove the timer case.
- 5. When installing the panel, use the ATA4811 mounting frame (Sold separately).
- 6. If you change the operating voltage, be sure not to allow leak current into the timer.
- 7. Avoid leaving the unit powered continuously. Leaving the unit powered up with output set to ON continuously for a long period of time (about 1 month or more) will wear out the electronic components. If you will be keeping it powered continuously, combine with a relay to create the circuit shown below:



- 8. The timer setting dial should only be turned within the range indicated on the dial face. Turning it too far may break the stopper and cause damage to internal components.

Acquisition of CE marking

Please abide by the conditions below when using in applications that comply with EN61812-1.

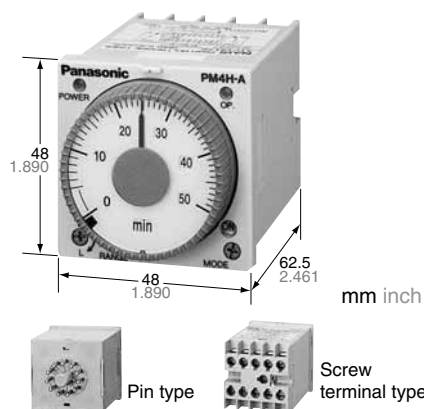
- 1. Overvoltage category III, pollution level 2
- 2. The load connected to the output contact should have basic insulation. This timer is protected with basic insulation and can be double-insulated to meet EN/IEC requirements by using basic insulation on the load.

- 3. Please use a power supply that is protected by an overcurrent protection device which complies with the EN/IEC standard (example: 250 V 1 A fuse, etc.).
- 4. You must use a terminal socket or socket for the installation. Do not touch the terminals or other parts of the timer when it is powered. When installing or un-installing, make sure that no voltage is being applied to any of the terminals.

- 5. Do not use this timer as a safety circuit. For example when using a timer in a heater circuit, etc., provide a protection circuit on the machine side.

## DIN48 SIZE MULTI-RANGE ANALOG TIMER

PM4H-A  
PM4H-S  
PM4H-M



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



### Features

- 100-240V AC free-voltage input, 48-125V DC type available
- Short body — 62.5mm 2.461 inch (screw terminal type)
- Front panel of IP65 type is protected against water-splash and dust
- Built-in Screw terminals  
Screw terminal type is used for easy wiring and reducing additional cost for accessories.
- 0 setting instantaneous output operation
- Multiple time ranges — 1 s to 500 h (Max.)
- 8 different operation modes: (PM4H-A)
- Compliant with UL/CSA, CE and LLOYD

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

## Product types

| Type   | Operation mode                                                                                                                                                                       | Contact arrangement                                         | Time range                         | Protective construction | Rated operating voltage | Terminal type  | Part number      |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------------|-------------------------|-------------------------|----------------|------------------|
| PM4H-A | 8 operation modes<br>• Pulse ON-delay<br>• Pulse Flicker<br>• Pulse ON-flicker<br>• Differential ON/OFF-delay (1) (2)<br>• Signal OFF-delay<br>• Pulse One-shot<br>• Pulse One-cycle | Relay<br>Timed-out<br>2 Form C                              | 16 selectable ranges<br>1s to 500h | IP65                    | 100 to 240V AC          | 11 pins        | PM4HA-H-AC240VW  |
|        |                                                                                                                                                                                      |                                                             |                                    |                         | 48 to 125V DC           | Screw terminal | PM4HA-H-AC240VSW |
|        |                                                                                                                                                                                      |                                                             |                                    |                         | 24V AC/DC               | 11 pins        | PM4HA-H-DC125VW  |
|        |                                                                                                                                                                                      |                                                             |                                    |                         | 12V DC                  | Screw terminal | PM4HA-H-DC125VSW |
|        |                                                                                                                                                                                      |                                                             |                                    | IP50                    | 100 to 240V AC          | 11 pins        | PM4HA-H-AC240V   |
|        |                                                                                                                                                                                      |                                                             |                                    |                         | 48 to 125V DC           | Screw terminal | PM4HA-H-AC240VS  |
|        |                                                                                                                                                                                      |                                                             |                                    |                         | 24V AC/DC               | 11 pins        | PM4HA-H-DC125V   |
|        |                                                                                                                                                                                      |                                                             |                                    |                         | 12V DC                  | Screw terminal | PM4HA-H-DC12V    |
| PM4H-S | Power ON-delay                                                                                                                                                                       | Relay<br>Timed-out<br>2 Form C                              | 16 selectable ranges<br>1s to 500h | IP65                    | 100 to 240V AC          | 8 pins         | PM4HS-H-AC240VW  |
|        |                                                                                                                                                                                      |                                                             |                                    |                         | 48 to 125V DC           | Screw terminal | PM4HS-H-DC125VSW |
|        |                                                                                                                                                                                      |                                                             |                                    |                         | 24V AC/DC               | 8 pins         | PM4HS-H-24VW     |
|        |                                                                                                                                                                                      |                                                             |                                    |                         | 12V DC                  | Screw terminal | PM4HS-H-DC12VSW  |
|        |                                                                                                                                                                                      |                                                             |                                    | IP50                    | 100 to 240V AC          | 8 pins         | PM4HS-H-AC240V   |
|        |                                                                                                                                                                                      |                                                             |                                    |                         | 48 to 125V DC           | Screw terminal | PM4HS-H-DC125V   |
|        |                                                                                                                                                                                      |                                                             |                                    |                         | 24V AC/DC               | 8 pins         | PM4HS-H-24VS     |
|        |                                                                                                                                                                                      |                                                             |                                    |                         | 12V DC                  | Screw terminal | PM4HS-H-DC12V    |
| PM4H-M | 5 operation modes<br>(With instantaneous contact)<br>• Power ON-delay<br>• Power Flicker<br>• Power ON-flicker<br>• Power One-shot<br>• Power One-cycle                              | Relay<br>Timed-out<br>1 Form C<br>Instantaneous<br>1 Form C | 16 selectable ranges<br>1s to 500h | IP65                    | 100 to 240V AC          | 8 pins         | PM4HM-H-AC240VW  |
|        |                                                                                                                                                                                      |                                                             |                                    |                         | 48 to 125V DC           | Screw terminal | PM4HM-H-AC240VSW |
|        |                                                                                                                                                                                      |                                                             |                                    |                         | 24V AC/DC               | 8 pins         | PM4HM-H-DC125VSW |
|        |                                                                                                                                                                                      |                                                             |                                    |                         | 12V DC                  | Screw terminal | PM4HM-H-24VSW    |
|        |                                                                                                                                                                                      |                                                             |                                    | IP50                    | 100 to 240V AC          | 8 pins         | PM4HM-H-AC240V   |
|        |                                                                                                                                                                                      |                                                             |                                    |                         | 48 to 125V DC           | Screw terminal | PM4HM-H-DC125V   |
|        |                                                                                                                                                                                      |                                                             |                                    |                         | 24V AC/DC               | 8 pins         | PM4HM-H-24VS     |
|        |                                                                                                                                                                                      |                                                             |                                    |                         | 12V DC                  | Screw terminal | PM4HM-H-DC12V    |

If you use this timer under harsh environment, please order above sealed type (IP65 type). IP65 type — Protection dust and water jet splay on the front face.

# PM4H-A/S/M

## Time range

| Time unit |                       | sec         | min               | hrs         | 10h         |
|-----------|-----------------------|-------------|-------------------|-------------|-------------|
| Scale     |                       |             |                   |             |             |
| 1         | Control<br>time range | 0.1s to 1s  | 0.1 min to 1 min  | 0.1h to 1h  | 1.0h to 10h |
| 5         |                       | 0.5s to 5s  | 0.5 min to 5 min  | 0.5h to 5h  | 5h to 50h   |
| 10        |                       | 1.0s to 10s | 1.0 min to 10 min | 1.0h to 10h | 10h to 100h |
| 50        |                       | 5s to 50s   | 5 min to 50 min   | 5h to 50h   | 50h to 500h |

Note: 0 setting is for instantaneous output operation.

PM4H-A/PM4H-S/PM4H-M  
All types of PM4H timer have multi-time range.  
16 time ranges are selectable.  
1s to 500h (Max. range) is controlled.

## Specifications

| Item                    |                                       | Type        | PM4H-A                                                                                                                                                                                                                | PM4H-S                                                                                                                                | PM4H-M                                                                                                                   |
|-------------------------|---------------------------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Rating                  | Rated operating voltage               |             | 100 to 240V AC, 48 to 125V DC, 12V DC, 24V AC/DC                                                                                                                                                                      |                                                                                                                                       |                                                                                                                          |
|                         | Rated frequency                       |             | 50/60Hz common (AC operating type)                                                                                                                                                                                    |                                                                                                                                       |                                                                                                                          |
|                         | Rated power consumption               |             | Approx. 10VA (100 to 240V AC)<br>Approx. 2.5VA (24V AC)<br>Approx. 1.5W (12V DC, 24V DC, 48 to 125V DC)                                                                                                               |                                                                                                                                       |                                                                                                                          |
|                         | Rated control capacity                |             | 5A 250V AC (resistive load)                                                                                                                                                                                           |                                                                                                                                       |                                                                                                                          |
|                         | Operating mode                        |             | Pulse ON-delay<br>Pulse Flicker<br>Pulse ON-Flicker<br>Differential ON/OFF-delay (1) (2)<br>Signal OFF-delay<br>Pulse One-shot<br>Pulse One-cycle                                                                     | Power ON-delay                                                                                                                        | Power ON-delay<br>Power Flicker<br>Power ON-flicker<br>Power One-shot<br>Power One-cycle<br>(with instantaneous contact) |
|                         | Time range                            |             | 1s to 500h (Max.) 16 time ranges switchable                                                                                                                                                                           |                                                                                                                                       |                                                                                                                          |
|                         | Operating time fluctuation            |             | ±0.3% (power off time change at the range of 0.1s to 1h)                                                                                                                                                              |                                                                                                                                       |                                                                                                                          |
| Time accuracy<br>Note:) | Setting error                         |             | ±5% (Full-scale value)                                                                                                                                                                                                |                                                                                                                                       |                                                                                                                          |
|                         | Voltage error                         |             | ±0.5% (at the operating voltage changes between 85 to 110%)                                                                                                                                                           |                                                                                                                                       |                                                                                                                          |
|                         | Temperature error                     |             | ±2% (at 20°C ambient temp. at the range of -10 to +50°C +14 to +122°F)                                                                                                                                                |                                                                                                                                       |                                                                                                                          |
|                         |                                       |             |                                                                                                                                                                                                                       |                                                                                                                                       |                                                                                                                          |
| Contact                 | Contact arrangement                   |             | Timed-out 2 Form C                                                                                                                                                                                                    |                                                                                                                                       | Timed-out 1 Form C<br>Instantaneous 1 Form C                                                                             |
|                         | Contact resistance (Initial value)    |             | Max. 100mΩ (at 1A 6V DC)                                                                                                                                                                                              |                                                                                                                                       |                                                                                                                          |
|                         | Contact material                      |             | Silver alloy                                                                                                                                                                                                          |                                                                                                                                       | Au flash on Silver alloy                                                                                                 |
| Life                    | Mechanical (contact)                  |             | 2×10 <sup>7</sup>                                                                                                                                                                                                     |                                                                                                                                       |                                                                                                                          |
|                         | Electrical (contact)                  |             | 10 <sup>5</sup> (at rated control capacity)                                                                                                                                                                           |                                                                                                                                       |                                                                                                                          |
|                         |                                       |             |                                                                                                                                                                                                                       |                                                                                                                                       |                                                                                                                          |
| Electrical function     | Allowable operating voltage range     |             | 85 to 110% of rated operating voltage (at 20°C coil temp.)                                                                                                                                                            |                                                                                                                                       |                                                                                                                          |
|                         | Insulation resistance (Initial value) |             | Min. 100MΩ                                                                                                                                                                                                            | Between live and dead metal parts<br>Between input and output<br>Between contacts of different poles<br>Between contacts of same pole | (At 500V DC)                                                                                                             |
|                         | Breakdown voltage (Initial value)     |             | 2,000Vrms for 1 min Between live and dead metal parts<br>2,000Vrms for 1 min Between input and output<br>2,000Vrms for 1 min Between contacts of different poles<br>1,000Vrms for 1 min Between contacts of same pole |                                                                                                                                       |                                                                                                                          |
|                         | Min. power off time                   |             | 100ms                                                                                                                                                                                                                 |                                                                                                                                       |                                                                                                                          |
|                         | Max. temperature rise                 |             | 55°C 131°F                                                                                                                                                                                                            |                                                                                                                                       | 65°C 149°F                                                                                                               |
|                         |                                       |             |                                                                                                                                                                                                                       |                                                                                                                                       |                                                                                                                          |
| Mechanical function     | Vibration resistance                  | Functional  | 10 to 55Hz: 1 cycle/min double amplitude of 0.25mm (10min on 3 axes)                                                                                                                                                  |                                                                                                                                       |                                                                                                                          |
|                         |                                       | Destructive | 10 to 55Hz: 1 cycle/min double amplitude of 0.375mm (1h on 3 axes)                                                                                                                                                    |                                                                                                                                       |                                                                                                                          |
|                         | Shock resistance                      | Functional  | Min. 98m/s <sup>2</sup> (4 times on 3 axes)                                                                                                                                                                           |                                                                                                                                       |                                                                                                                          |
|                         |                                       | Destructive | Min. 980m/s <sup>2</sup> (5 times on 3 axes)                                                                                                                                                                          |                                                                                                                                       |                                                                                                                          |
| Operating condition     | Ambient temperature                   |             | -10 to +50°C +14 to +122°F                                                                                                                                                                                            |                                                                                                                                       |                                                                                                                          |
|                         | Ambient humidity                      |             | 30 to 85%RH (at 20°C 68°F, non-condensing)                                                                                                                                                                            |                                                                                                                                       |                                                                                                                          |
|                         | Atmospheric pressure                  |             | 860 to 1,060hPa                                                                                                                                                                                                       |                                                                                                                                       |                                                                                                                          |
|                         | Ripple factor (DC type)               |             | 20%                                                                                                                                                                                                                   |                                                                                                                                       |                                                                                                                          |
| Others                  | Protective construction               |             | IP65 on front panel (using rubber gasket ATC18002) <only for IP65 type>                                                                                                                                               |                                                                                                                                       |                                                                                                                          |
|                         | Weight                                |             | 100g 3.527 oz (Pin type)                                                                                                                                                                                              |                                                                                                                                       |                                                                                                                          |
|                         |                                       |             | 110g 3.880 oz (Screw terminal type)                                                                                                                                                                                   |                                                                                                                                       |                                                                                                                          |

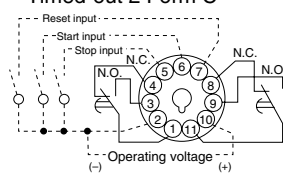
Note: 1) Unless otherwise specified, the measurement conditions at the maximum scale time standard are specified to be the rated operating voltage (within 5% ripple factor for DC), 20°C 68°F ambient temperature, and 1s power off time.  
2) For the 1s range, the tolerance for each specification becomes ±10ms.

## Terminal layouts and Wiring diagrams

### PM4H-A

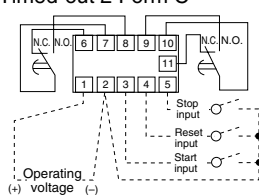
#### Pin type

- Timed-out 2 Form C



#### Screw terminal type

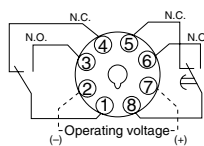
- Timed-out 2 Form C



### PM4H-M

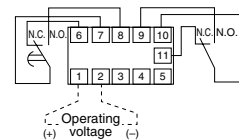
#### Pin type

- Timed-out 1 Form C
- Instantaneous 1 Form C



#### Screw terminal type

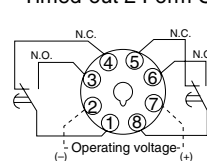
- Timed-out 1 Form C
- Instantaneous 1 Form C



### PM4H-S

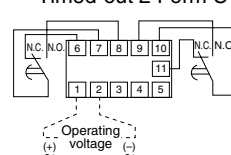
#### Pin type

- Timed-out 2 Form C



#### Screw terminal type

- Timed-out 2 Form C



### 1) DC Type

| Type   | Pin                                                                         | Screw terminal                                                              |
|--------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| PM4H-A | Connect the terminal ② to negative (-), and the terminal ⑩ to positive (+). | Connect the terminal ② to negative (-), and the terminal ① to positive (+). |
| PM4H-S | Connect the terminal ② to negative (-), and the terminal ⑦ to positive (+). |                                                                             |
| PM4H-M | Connect the terminal ② to negative (-), and the terminal ⑦ to positive (+). |                                                                             |

### 2) Contact



- 3) Voltage should not be applied to the various inputs (reset, start, and stop) of the PM4H-A multi-range timer. These inputs should be input without voltage.

## Parts name

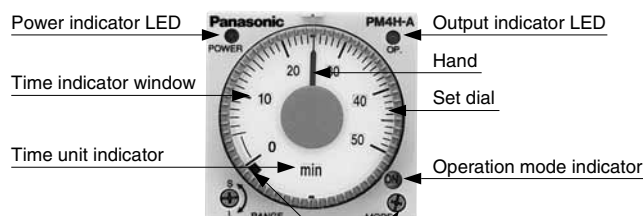
### PM4H-S



#### Time range selector

16 time settings selectable  
(1 s to 500 h)  
1s 5s 10s 50s  
1min 5min 10min 50min  
1h 5h 10h 50h  
10h 50h 100h 500h

### PM4H-A



#### Instantaneous output area

When the hand is in this area, instantaneous operation starts.

### PM4H-M



#### Operation mode selector

Selectable from 5 operation modes  
ON : Power ON-delay  
FL : Power flicker  
FO : Power ON-flicker  
OS : Power One-shot  
OC : Power One-cycle

#### Operation mode selector

Selectable from 8 operation modes  
ON : Pulse ON-delay  
FL : Pulse Flicker  
FO : Pulse ON-flicker  
OF1 : Differential ON/OFF-delay (1)  
SF : Signal OFF-delay  
OS : Pulse One-shot  
OF2 : Differential ON/OFF-delay (2)  
OC : Pulse One-cycle

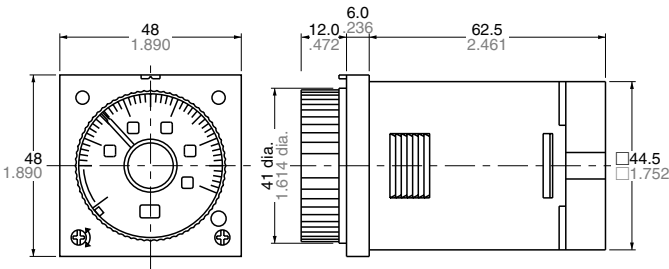
PM4H-A/S/M

Dimensions

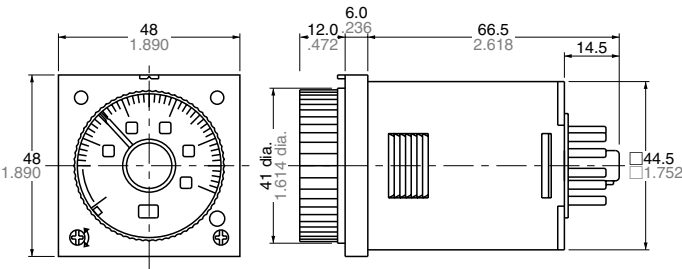
mm inch  
Tolerance: ±0.5 ±.020

• PM4H-□

Screw terminal type  
(Flush mount)

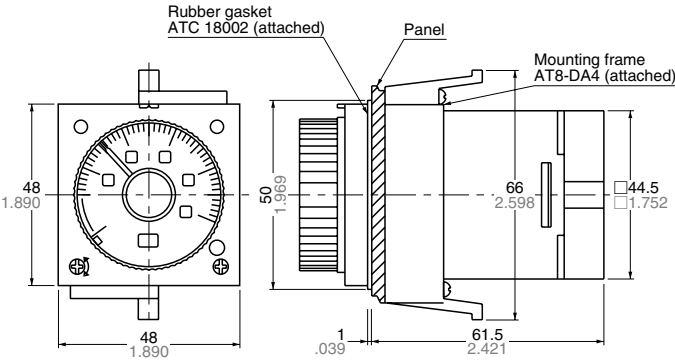


Pin type  
(Flush mount/Surface mount)

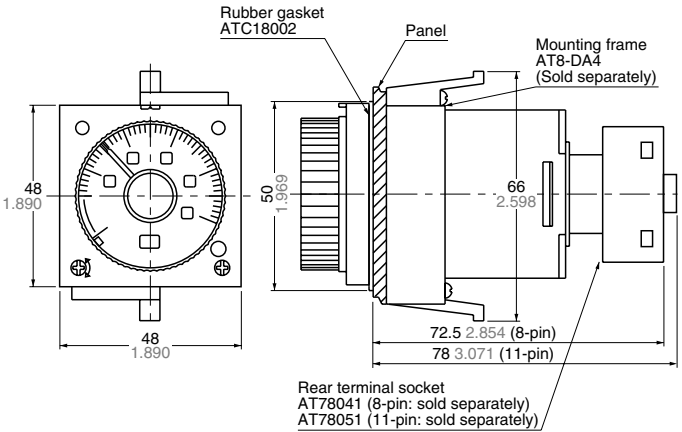


• Panel mount dimensions (with mounting frame)

Screw terminal type

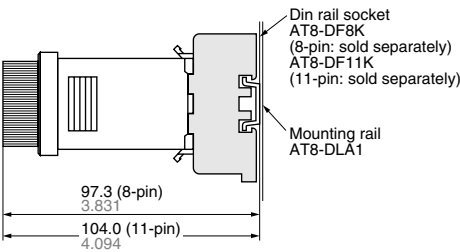


Pin type



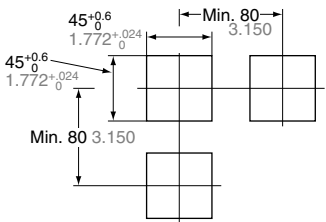
• Surface mount dimensions

Pin type

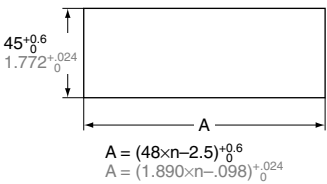


• Panel cut out dimensions

Standard cut out dimensions are shown below.  
Use mounting frame (AT8-DA4) and rubber gasket (ATC18002).



• Adjacent mounting



Note) 1. The proper thickness of mounting panel is between 1 to 5mm.  
2. Adjacent mount is less water-resistant.

# Operation mode

## PM4H-A

( \* LED lighting \* LED flickering  
T: Setting time  $t_1$ ,  $t_2$ ,  $t_a$ ,  $t_b < T$   $t_1 + t_2 = T$  )

| Operation type                                       | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Time chart                                      |
|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Pulse ON-delay</b><br><b>(ON)</b>                 | <ul style="list-style-type: none"> <li>If using a time-limit start when the power is turned on, and a reset when the power is turned off, pins ② to ⑥ (screw-tightening pins ② and ③) should be shorted ahead of time.</li> <li>Turn the operation mode selector switch to the (ON) position.</li> <li>If pins ② to ⑥ (screw-tightening pins ② and ③) are shorted (the start input is turned on) with the power supply on, the output will go on after the set time has elapsed.</li> <li>If the power supply is turned off, or pins ② to ⑦ (screw-tightening pins ② to ④) are shorted (the reset input is turned on), a reset is carried out.</li> <li>Note) During time-limited operation, the time-limited operation is stopped while the pins ② to ⑤ (screw-tightening pins ② to ⑤) are being shorted (the stop input is on). When the pins are released, time-limited operation resumes.</li> </ul>                                                                                                                                                                                                                                   | <p>△Note: * LED lighting or No LED lighting</p> |
| <b>Pulse Flicker</b><br><b>(FL)</b>                  | <ul style="list-style-type: none"> <li>If using a time-limit start when the power is turned on, and a reset when the power is turned off, pins ② to ⑥ (screw-tightening pins ② and ③) should be shorted ahead of time.</li> <li>Turn the operation mode selector switch to the (FL) position.</li> <li>When pins ② to ⑥ (screw-tightening pins ② and ③) are shorted (the start input is turned on) with the power supply on, the limited time interval begins, and the output goes on after the set time has elapsed. After the output has gone on, it goes off when the set time has elapsed, and this process is subsequently repeated.</li> <li>If the power supply is turned off, or pins ② to ⑦ (screw-tightening pins ② to ④) are shorted (the reset input is turned on), a reset is carried out.</li> <li>Note) During time-limited operation, the time-limited operation is stopped while the pins ② to ⑤ (screw-tightening pins ② to ⑤) are being shorted (the stop input is on). When the pins are released, time-limited operation resumes.</li> </ul>                                                                          | <p>△Note: * LED lighting or No LED lighting</p> |
| <b>Pulse ON-flicker</b><br><b>(FO)</b>               | <ul style="list-style-type: none"> <li>If using a time-limit start when the power is turned on, and a reset when the power is turned off, pins ② to ⑥ (screw-tightening pins ② and ③) should be shorted ahead of time.</li> <li>Turn the operation mode selector switch to the (FO) position.</li> <li>When pins ② to ⑥ (screw-tightening pins ② and ③) are shorted (the start input is turned on) with the power supply on, the output goes on, and after the set time has elapsed, it goes off. This process is subsequently repeated.</li> <li>If the power supply is turned off, or pins ② to ⑦ (screw-tightening pins ② to ④) are shorted (the reset input is turned on), a reset is carried out.</li> <li>Note) During time-limited operation, the time-limited operation is stopped while the pins ② to ⑤ (screw-tightening pins ② to ⑤) are being shorted (the stop input is on). When the pins are released, time-limited operation resumes.</li> </ul>                                                                                                                                                                           | <p>△Note: * LED lighting or No LED lighting</p> |
| <b>Differential ON/OFF-delay (1)</b><br><b>(OF1)</b> | <ul style="list-style-type: none"> <li>Turn the operation mode selector switch to the (OF1) position.</li> <li>When pins ② to ⑥ (screw-tightening pins ② and ③) are shorted (the start input is turned on) with the power supply on, the output goes on, and after the set time has elapsed, it goes off.</li> <li>Also, when pins ② to ⑥ are released (the start input goes off), the output goes on, and after the set time has elapsed, it goes off.</li> <li>If the status of pins ② to ⑥ (screw-tightening pins ② and ③) changes during the time-limit interval (the start input goes from on to off, or from off to on), the time-limit interval is restarted from the point at which the change took place.</li> <li>If the power supply is turned off, or pins ② to ⑦ (screw-tightening pins ② to ④) are shorted (the reset input is turned on), a reset is carried out.</li> <li>Note) During time-limited operation, the time-limited operation is stopped while the pins ② to ⑤ (screw-tightening pins ② to ⑤) are being shorted (the stop input is on). When the pins are released, time-limited operation resumes.</li> </ul> | <p>△Note: * LED lighting or No LED lighting</p> |
| <b>Signal OFF-delay</b><br><b>(SF)</b>               | <ul style="list-style-type: none"> <li>Turn the operation mode selector switch to the (SF) position.</li> <li>When pins ② to ⑥ (screw-tightening pins ② and ③) are shorted (the start input is turned on) with the power supply on, the output goes on, and when pins ② to ⑥ (screw-tightening pins ② and ③) are released (the start input is turned off), the time limit interval begins. After the set time has elapsed, the output goes off. If start input is entered at any point during the time limit interval, the time limit interval is reset.</li> <li>Note) During time-limited operation, the time-limited operation is stopped while the pins ② to ⑤ (screw-tightening pins ② to ⑤) are being shorted (the stop input is on). When the pins are released, time-limited operation resumes.</li> </ul>                                                                                                                                                                                                                                                                                                                         | <p>△Note: * LED lighting or No LED lighting</p> |

Note: Keep 0.1s or more for power off time.

Keep 0.05s or more for start, stop, reset input time.

PM4H-A/S/M

| Operation type                                          | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Time chart                                                                              |
|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| <div>Pulse One-shot</div> <div>OS</div>                 | <ul style="list-style-type: none"><li>• If using a time-limit start when the power is turned on, and a reset when the power is turned off, pins ② to ⑥ (screw-tightening pins ② and ③) should be shorted ahead of time.</li><li>• Turn the operation mode selector switch to the OS position.</li></ul> <p>When pins ② to ⑥ (screw-tightening pins ② and ③) are shorted (the start input is turned on) with the power supply on, the output goes on for the set time limit interval.</p> <p>If the power supply is turned off, or pins ② to ⑦ (screw-tightening pins ② to ④) are shorted (the reset input is turned on), a reset is carried out.</p> <p>Note) During time-limited operation, the time-limited operation is stopped while the pins ② to ⑤ (screw-tightening pins ② to ⑤) are being shorted (the stop input is on). When the pins are released, time-limited operation resumes.</p>                                                                                                                                                                                                                                                                    | <p>△Note: * LED lighting or No LED lighting</p>                                         |
| <div>Differential ON/OFF-delay (2)</div> <div>OF2</div> | <ul style="list-style-type: none"><li>• Turn the operation mode selector switch to the OF2 position.</li></ul> <p>When pins ② to ⑥ (screw-tightening pins ② and ③) are shorted (the start input is turned on) with the power supply on, the time limit interval begins, and after the set time interval has elapsed, the output goes on.</p> <p>Also, when pins ② to ⑥ are released (the start input goes off), the time limit interval begins, and after it has elapsed, the output goes off.</p> <p>If the status of pins ② to ⑥ (screw-tightening pins ② and ③) changes during the time-limit interval (the start input goes from on to off, or from off to on), the time limit interval is restarted from the point at which the change took place.</p> <p>If the power supply is turned off, or pins ② to ⑦ (screw-tightening pins ② to ④) are shorted (the reset input is turned on), a reset is carried out.</p> <p>Note) During time-limited operation, the time-limited operation is stopped while the pins ② to ⑤ (screw-tightening pins ② to ⑤) are being shorted (the stop input is on). When the pins are released, time-limited operation resumes.</p> | <p>△Note: * LED lighting or No LED lighting</p>                                         |
| <div>Pulse One-cycle</div> <div>OC</div>                | <ul style="list-style-type: none"><li>• If using a time-limit start when the power is turned on, and a reset when the power is turned off, pins ② to ⑥ (screw-tightening pins ② and ③) should be shorted ahead of time.</li><li>• Turn the operation mode selector switch to the OC position.</li></ul> <p>When pins ② to ⑥ (screw-tightening pins ② and ③) are shorted (the start input is turned on) with the power supply on, the output goes on after the set time limit interval has elapsed. After it has gone on, it goes off after one pulse (approximately 0.8 seconds).</p> <p>If the power supply is turned off, or pins ② to ⑦ (screw-tightening pins ② to ④) are shorted (the reset input is turned on), a reset is carried out.</p> <p>Note) During time-limited operation, the time-limited operation is stopped while the pins ② to ⑤ (screw-tightening pins ② to ⑤) are being shorted (the stop input is on). When the pins are released, time-limited operation resumes.</p>                                                                                                                                                                       | <p>One pulse time (t): Approx. 0.8s</p> <p>△Note: * LED lighting or No LED lighting</p> |

Note: Keep 0.1s or more for power off time.  
Keep 0.05s or more for start, stop, reset input time.

PM4H-S

( \* LED lighting \* LED flickering  
T: Setting time

| Operation type            | Explanation                                                                                                                                                                                                | Time chart                                      |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <div>Power ON-delay</div> | <p>Time limit contact relay</p> <p>When the power supply is turned on, the output goes on after the set time interval has elapsed.</p> <p>When the power supply is turned off, a reset is carried out.</p> | <p>△Note: * LED lighting or No LED lighting</p> |

PM4H-M

| Operation type                                                                                                                                                                                            | Explanation                                                                                                                                                                                                                                                    | Time chart                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <div>Power ON-delay</div> <div>ON</div> <div>Power Flicker</div> <div>FL</div> <div>Power ON-flicker</div> <div>FO</div> <div>Power One-shot</div> <div>OS</div> <div>Power One-cycle</div> <div>OC</div> | <p>Turn the operation mode selector switch to display the various operations.</p> <p>When the power supply is turned on, the time limit interval begins, and operation is carried out.</p> <p>When the power supply is turned off, a reset is carried out.</p> | <p>△Note: * LED lighting or No LED lighting</p> |

Note: Keep 0.1s or more for power off time. PM4H-M timers do not have each input which is start, reset and stop.

# PM4H SERIES MODES AND TIME SETTING

## 1. Operation method

### 1) Operation mode setting

#### [PM4H-A type]

8 operation modes are selectable with operation mode selector.

Turn the operation mode selector with screw driver.

Operation mode is shown up through the window above the mode selector. The marks are (ON), (FL), (FO), (OF), (SF), (OS), (OF2), (OC). Turn the mode selector to the mark until you can check by clicking sound.

Confirm the mode selector position if it is correct.

If the position is not stable, the timer might mis-operate.



### 2) Time range setting

#### [PM4H series common]

16 time ranges are selectable between 1s to 500h.

Turn the time range selector with the screw driver.

Clockwise turning increases the time range, and Counter-clockwise turning decrease the time range.

Confirm the range selector position if it is correct.

If the position is not stable, the timer might mis-operate.



### 3) Time setting [common]

To set the time, turn the set dial to a desired time within the range.

Instantaneous output will be on when the dial is set to "0".

When the instantaneous output is used, the dial should be set under "0" range.

(Instantaneous output area)

When power supply is on, the time range, setting time and operation mode cannot be changed.

Turn off the power supply or a reset signal is applied to set the new operation mode.

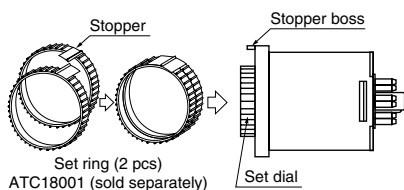
If the position is not stable, the timer might mis-operate.

## 2. How to use "Set ring" [PM4H series common]

### 1) Fixed time setting

Set the desired time and put 2 set rings together.

Insert the rings into stopper to fix the time.



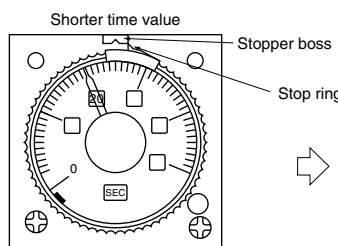
### 2) Time range setting

Example: Time range 20s to 30s.

#### ① Shorter time value setting

Set the dial to 20s.

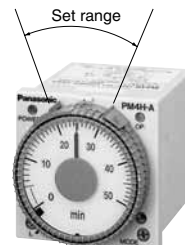
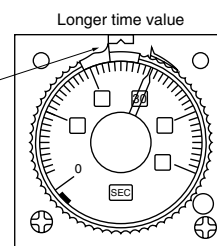
Place the stop ring at the right side of stopper.



#### ② Longer time value setting

Set the dial to 30s.

Place the stop ring at the left side of stopper.



Note) The stoppers for the lower limit setting set ring and the upper limit setting set ring face the opposite directions.

## Applicable standard (PM4H series common)

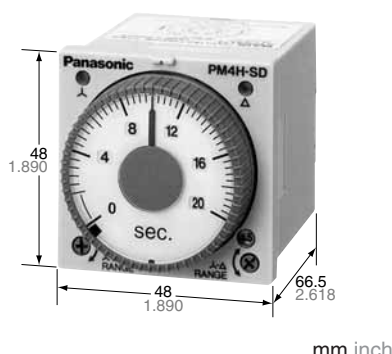
| Safety standard | EN61812-1                                                                                                                                                                                                      | Pollution Degree 2/Overvoltage Category III                            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

# Panasonic

ideas for life

DIN48 SIZE ANALOG  
STAR (⋈)-DELTA (Δ) TIMERS

# PM4H-SD/SDM



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



## Features

1. Select four types of time ranges between 0.2 s and 100 s on a single unit.
2. Select between five types of time ranges between 0.04 s and 0.7 s for the ⋈-Δ switching times.
3. There is a ⋈-Δ switching indicator so you can check the operation at a glance.
4. The AC free power supply and shorter body make it easier to use.
5. Compliant with UL, CSA, CE and LLOYD.

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

## Specifications

| Item                     |                                       | Type        | PM4H-SD/SDM                                                                                                                                                                                                                |
|--------------------------|---------------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rating                   | Rated operating voltage               |             | 100 to 240V AC, 24V AC                                                                                                                                                                                                     |
|                          | Rated frequency                       |             | 50/60Hz common                                                                                                                                                                                                             |
|                          | Rated power consumption               |             | Approx. 6VA (100 to 240V AC), Approx. 1.4VA (24V AC)                                                                                                                                                                       |
|                          | Rated control capacity                |             | 5A 250V AC (resistive load)                                                                                                                                                                                                |
|                          | Operation mode                        |             | ⋈-Δ star-delta switching (Power ON-delay)                                                                                                                                                                                  |
|                          | ⋈ operation control time range        |             | 2s to 100s, 4 time ranges switchable                                                                                                                                                                                       |
| Time accuracy<br>(Note:) | ⋈-Δ switching time                    |             | 0.04, 0.1, 0.3, 0.5, 0.7s (5 time range selectable)                                                                                                                                                                        |
|                          | Operation time fluctuation            |             | ±0.3% (power off time change at the range of 0.5s to 1h)                                                                                                                                                                   |
|                          | Setting error                         |             | ±5% (Full-scale value)                                                                                                                                                                                                     |
|                          | Voltage error                         |             | ±0.5% (at the operating voltage changes between 85 to 110%)                                                                                                                                                                |
|                          | Temperature error                     |             | ±2% (at 20°C ambient temp. at the range of -10 to +50°C +14 to +122°F)                                                                                                                                                     |
| Contact                  | Contact arrangement                   |             | Star (⋈) side: Timed-out 1 Form A, Delta (Δ) side: Timed-out 1 Form A<br>Instantaneous: 1 Form A (Instantaneous for PM4H-SDM type only)                                                                                    |
|                          | Contact resistance (Initial value)    |             | Max. 100mΩ (at 1A 6V DC)                                                                                                                                                                                                   |
|                          | Contact material                      |             | Au flash on Silver alloy                                                                                                                                                                                                   |
| Life                     | Mechanical (contact)                  |             | 2×10 <sup>7</sup>                                                                                                                                                                                                          |
|                          | Electrical (contact)                  |             | 10 <sup>5</sup> (at rated control capacity)                                                                                                                                                                                |
| Electrical function      | Allowable operating voltage range     |             | 85 to 110% of rated operating voltage (at 20°C coil temp.)                                                                                                                                                                 |
|                          | Insulation resistance (Initial value) |             | Min. 100MΩ<br>Between live and dead metal parts<br>Between input and output<br>Between contacts of different poles (*3) (At 500V DC)<br>Between contacts of same pole                                                      |
|                          | Breakdown voltage (Initial value)     |             | 2,000Vrms for 1 min Between live and dead metal parts<br>2,000Vrms for 1 min Between input and output<br>2,000Vrms for 1 min Between contacts of different poles (*3)<br>1,000Vrms for 1 min Between contacts of same pole |
|                          | Min. power off time                   |             | 500ms                                                                                                                                                                                                                      |
|                          | Max. temperature rise                 |             | 65°C 131°F                                                                                                                                                                                                                 |
| Mechanical function      | Vibration resistance                  | Functional  | 10 to 55Hz: 1 cycle/min double amplitude of 0.25mm (10min on 3 axes)                                                                                                                                                       |
|                          |                                       | Destructive | 10 to 55Hz: 1 cycle/min double amplitude of 0.375mm (1h on 3 axes)                                                                                                                                                         |
|                          | Shock resistance                      | Functional  | Min. 294m/s <sup>2</sup> (4 times on 3 axes)                                                                                                                                                                               |
|                          |                                       | Destructive | Min. 980m/s <sup>2</sup> (5 times on 3 axes)                                                                                                                                                                               |
| Operating condition      | Ambient temperature                   |             | -10 to +50°C +14 to +122°F                                                                                                                                                                                                 |
|                          | Ambient humidity                      |             | Max. 85%RH (non-condensing)                                                                                                                                                                                                |
|                          | Atmospheric pressure                  |             | 860 to 1,060hPa                                                                                                                                                                                                            |
| Others                   | Protective construction               |             | IP65 on front panel (using rubber gasket ATC18002) <only for IP65 type>                                                                                                                                                    |
|                          | Weight                                |             | 100g 3.527 oz (Pin type), 110g 3.880 oz (Screw terminal type)                                                                                                                                                              |

Notes: 1) Unless otherwise specified, the measurement conditions at the maximum scale time standard are specified to be the rated operating voltage, 20°C 68°F ambient temperature, and 1s power off time.

2) For the 2s range, the tolerance for each specification becomes ±10ms.

3) Between contacts of different poles for PM4H-SDM type only.

# PM4H-SD/SDM

## Time range

| Time range unit | Operating (s) | △-△ switching time (s) |
|-----------------|---------------|------------------------|
| 2               | 0.2 to 2      | 0.04                   |
| 10              | 1 to 10       | 0.1                    |
| 20              | 2 to 20       | 0.3                    |
| 100             | 10 to 100     | 0.5                    |
|                 |               | 0.7                    |

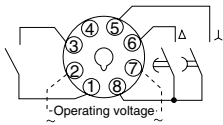
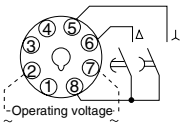
## Product types

| Type                                                             | Operation mode               | Contact arrangement                                                                | Time range                                                                             | Protective construction | Rated operating voltage | Terminal type            | Part number                             |
|------------------------------------------------------------------|------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-------------------------|-------------------------|--------------------------|-----------------------------------------|
| PM4H-SD<br>Star (△)-Delta (△) switching                          | Star (△)-Delta (△) switching | Relay Timed-out<br>△ side: 1 Form A<br>△ side: 1 Form A                            | 4 selectable ranges over 2s to 100s<br>(△-△ switching time: 0.04, 0.1, 0.3, 0.5, 0.7s) | IP65                    | 100 to 240V AC          | 8 pins<br>Screw terminal | PM4HSD-S-AC240VW<br>PM4HSD-S-AC240VSW   |
| PM4H-SDM<br>Star (△)-Delta (△) switching (Instantaneous contact) |                              | Relay Timed-out<br>△ side: 1 Form A<br>△ side: 1 Form A<br>Instantaneous: 1 Form A |                                                                                        |                         | 24V AC                  | 8 pins<br>Screw terminal | PM4HSD-S-AC24VW<br>PM4HSD-S-AC24VSW     |
| PM4H-SDM<br>Star (△)-Delta (△) switching (Instantaneous contact) |                              | Relay Timed-out<br>△ side: 1 Form A<br>△ side: 1 Form A<br>Instantaneous: 1 Form A |                                                                                        |                         | 100 to 240V AC          | 8 pins<br>Screw terminal | PM4HSDM-S-AC240VW<br>PM4HSDM-S-AC240VSW |
| PM4H-SDM<br>Star (△)-Delta (△) switching (Instantaneous contact) |                              | Relay Timed-out<br>△ side: 1 Form A<br>△ side: 1 Form A<br>Instantaneous: 1 Form A |                                                                                        |                         | 24V AC                  | 8 pins<br>Screw terminal | PM4HSDM-S-AC24VW<br>PM4HSDM-S-AC24VSW   |
| PM4H-SD<br>Star (△)-Delta (△) switching                          |                              | Relay Timed-out<br>△ side: 1 Form A<br>△ side: 1 Form A                            |                                                                                        | IP50                    | 100 to 240V AC          | 8 pins<br>Screw terminal | PM4HSD-S-AC240V<br>PM4HSD-S-AC240VS     |
| PM4H-SDM<br>Star (△)-Delta (△) switching (Instantaneous contact) |                              | Relay Timed-out<br>△ side: 1 Form A<br>△ side: 1 Form A<br>Instantaneous: 1 Form A |                                                                                        |                         | 24V AC                  | 8 pins<br>Screw terminal | PM4HSD-S-AC24V<br>PM4HSD-S-AC24VS       |
| PM4H-SDM<br>Star (△)-Delta (△) switching (Instantaneous contact) |                              | Relay Timed-out<br>△ side: 1 Form A<br>△ side: 1 Form A<br>Instantaneous: 1 Form A |                                                                                        |                         | 100 to 240V AC          | 8 pins<br>Screw terminal | PM4HSDM-S-AC240V<br>PM4HSDM-S-AC240VS   |
| PM4H-SDM<br>Star (△)-Delta (△) switching (Instantaneous contact) |                              | Relay Timed-out<br>△ side: 1 Form A<br>△ side: 1 Form A<br>Instantaneous: 1 Form A |                                                                                        |                         | 24V AC                  | 8 pins<br>Screw terminal | PM4HSDM-S-AC24V<br>PM4HSDM-S-AC24VS     |

## Terminal layouts and Wiring diagrams

### Pin type

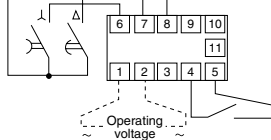
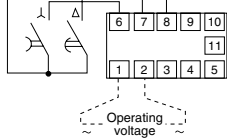
- No instantaneous contact
- With instantaneous contact



⑤—⑧: △ side time-delay contact  
⑥—⑧: △ side time-delay contact  
①—③: Instantaneous contact  
(PM4H-SDM type)

### Screw terminal type

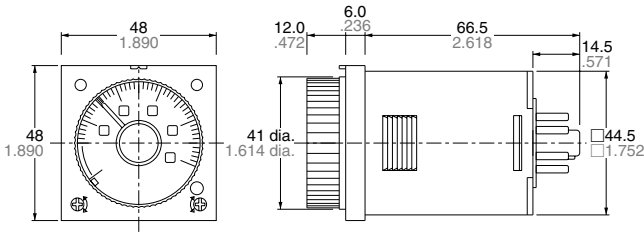
- No instantaneous contact
- With instantaneous contact



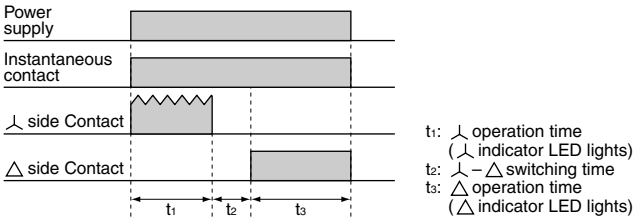
⑥—⑦: △ side time-delay contact  
⑧—⑦: △ side time-delay contact  
④—⑤: Instantaneous contact  
(PM4H-SDM type)

## Dimensions

mm inch



## Operation



# PM4H SERIES MODES AND TIME SETTING

## 1. Operation method

### 1) Operation mode setting

#### [PM4H-A type]

8 operation modes are selectable with operation mode selector.

Turn the operation mode selector with screw driver.

Operation mode is shown up through the window above the mode selector. The marks are (ON), (FL), (FO), (OF), (SF), (OS), (OF2), (OC). Turn the mode selector to the mark until you can check by clicking sound.

Confirm the mode selector position if it is correct.

If the position is not stable, the timer might mis-operate.



### 2) Time range setting

#### [PM4H series common]

16 time ranges are selectable between 1s to 500h.

Turn the time range selector with the screw driver.

Clockwise turning increases the time range, and Counter-clockwise turning decrease the time range.

Confirm the range selector position if it is correct.

If the position is not stable, the timer might mis-operate.



### 3) Time setting [common]

To set the time, turn the set dial to a desired time within the range.

Instantaneous output will be on when the dial is set to "0".

When the instantaneous output is used, the dial should be set under "0" range.

(Instantaneous output area)

When power supply is on, the time range, setting time and operation mode cannot be changed.

Turn off the power supply or a reset signal is applied to set the new operation mode.

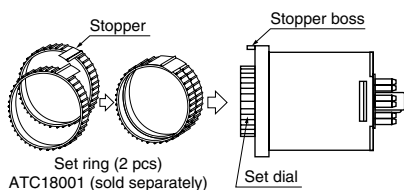
If the position is not stable, the timer might mis-operate.

## 2. How to use "Set ring" [PM4H series common]

### 1) Fixed time setting

Set the desired time and put 2 set rings together.

Insert the rings into stopper to fix the time.



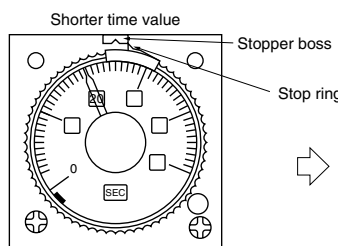
### 2) Time range setting

Example: Time range 20s to 30s.

#### ① Shorter time value setting

Set the dial to 20s.

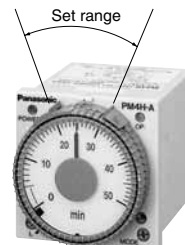
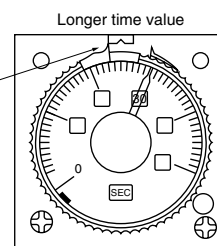
Place the stop ring at the right side of stopper.



#### ② Longer time value setting

Set the dial to 30s.

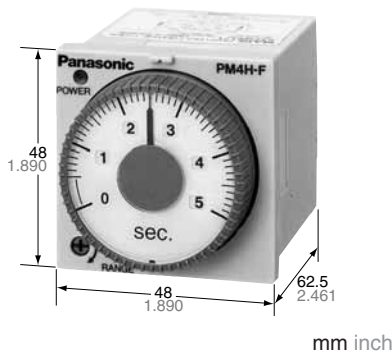
Place the stop ring at the left side of stopper.



Note) The stoppers for the lower limit setting set ring and the upper limit setting set ring face the opposite directions.

## Applicable standard (PM4H series common)

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



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



### Features

1. Switch operation times between three types of time ranges of 1 s to 10 s and 1 min to 10 min.
2. Instantaneous reset available.
3. The shorter body makes it easier to use.
4. Compliant with UL, CSA, CE and LLOYD.

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

## Specifications

| Item                |                                       | Type                 | PM4H-F8                                                                                                                                                                                                                  | PM4H-F8R                                                                                                                                                   | PM4H-F11R          |
|---------------------|---------------------------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Rating              | Rated operating voltage               |                      | 100 to 120V AC, 200 to 240V AC, 24V AC, 12V DC, 24V DC                                                                                                                                                                   |                                                                                                                                                            |                    |
|                     | Rated frequency                       |                      | 50/60Hz common (AC operating type)                                                                                                                                                                                       |                                                                                                                                                            |                    |
|                     | Rated power consumption               |                      | Approx. 1.6VA (100 to 120V AC, 200 to 240V AC), Approx. 2.3VA (24V AC)<br>Approx. 1.1W (12V DC, 24V DC)                                                                                                                  |                                                                                                                                                            |                    |
|                     | Rated control capacity                |                      | 3A 250V AC (resistive load)                                                                                                                                                                                              |                                                                                                                                                            |                    |
|                     | Operation mode                        |                      | Power OFF-delay                                                                                                                                                                                                          | Power OFF-delay (with reset)                                                                                                                               |                    |
|                     | Time range                            |                      | 1s to 10s: 3 range switchable 1 min to 10 min: 3 range selectable                                                                                                                                                        |                                                                                                                                                            |                    |
| Time accuracy *1    | Operation time fluctuation            |                      | ±0.3%                                                                                                                                                                                                                    |                                                                                                                                                            |                    |
|                     | Setting error                         |                      | ±5% (Full-scale value)                                                                                                                                                                                                   |                                                                                                                                                            |                    |
|                     | Voltage error                         |                      | ±0.5% (at the operating voltage changes between 85 to 110%)                                                                                                                                                              |                                                                                                                                                            |                    |
|                     | Temperature error                     |                      | ±2% (at 20°C ambient temp. at the range of -10 to +50°C +14 to +122°F)                                                                                                                                                   |                                                                                                                                                            |                    |
| Contact             | Contact arrangement                   |                      | Timed-out 2 Form C                                                                                                                                                                                                       | Timed-out 1 Form C                                                                                                                                         | Timed-out 2 Form C |
|                     | Contact resistance (Initial value)    |                      | Max. 100mΩ (at 1A 6V DC)                                                                                                                                                                                                 |                                                                                                                                                            |                    |
|                     | Contact material                      |                      | Au flash on Silver alloy                                                                                                                                                                                                 |                                                                                                                                                            |                    |
| Life                | Mechanical (contact)                  |                      | 10 <sup>7</sup>                                                                                                                                                                                                          |                                                                                                                                                            |                    |
|                     | Electrical (contact)                  |                      | 10 <sup>5</sup> (at rated control capacity)                                                                                                                                                                              |                                                                                                                                                            |                    |
| Electrical function | Allowable operating voltage range     |                      | 85 to 110% of rated operating voltage (at 20°C coil temp.), 90 to 110% (DC Type)                                                                                                                                         |                                                                                                                                                            |                    |
|                     | Insulation resistance (Initial value) |                      | Min. 100MΩ                                                                                                                                                                                                               | Between live and dead metal parts<br>Between input and output<br>Between contacts of different poles (*3)<br>Between contacts of same pole<br>(At 500V DC) |                    |
|                     | Breakdown voltage (Initial value)     |                      | 1,500Vrms for 1 min Between live and dead metal parts<br>1,500Vrms for 1 min Between input and output<br>1,000Vrms for 1 min Between contacts of different poles (*3)<br>750Vrms for 1 min Between contacts of same pole |                                                                                                                                                            |                    |
|                     | Min. power supply width               |                      | s range type: 100ms<br>min range type: 2s                                                                                                                                                                                |                                                                                                                                                            |                    |
|                     | Min. reset time                       |                      |                                                                                                                                                                                                                          | 50ms                                                                                                                                                       |                    |
|                     | Max. temperature rise                 |                      | 55°C 131°F                                                                                                                                                                                                               |                                                                                                                                                            |                    |
|                     | Mechanical function                   | Vibration resistance | Functional                                                                                                                                                                                                               | 10 to 55Hz: 1 cycle/min double amplitude of 0.25mm (10min on 3 axes)                                                                                       |                    |
| Destructive         |                                       |                      | 10 to 55Hz: 1 cycle/min double amplitude of 0.375mm (1hr on 3 axes)                                                                                                                                                      |                                                                                                                                                            |                    |
| Shock resistance    |                                       | Functional           | Min. 98m/s <sup>2</sup> (4 times on 3 axes)                                                                                                                                                                              |                                                                                                                                                            |                    |
|                     |                                       | Destructive          | Min. 980m/s <sup>2</sup> (5 times on 3 axes)                                                                                                                                                                             |                                                                                                                                                            |                    |
| Operating condition | Ambient temperature                   |                      | -10 to +50°C +14 to +122°F                                                                                                                                                                                               |                                                                                                                                                            |                    |
|                     | Ambient humidity                      |                      | 30 to 85%RH (non-condensing)                                                                                                                                                                                             |                                                                                                                                                            |                    |
|                     | Atmospheric pressure                  |                      | 860 to 1,060hPa                                                                                                                                                                                                          |                                                                                                                                                            |                    |
|                     | Ripple factor (DC type)               |                      | 20%                                                                                                                                                                                                                      |                                                                                                                                                            |                    |
| Others              | Protective construction               |                      | IP65 on front panel (using rubber gasket ATC18002) <only for IP65 type>                                                                                                                                                  |                                                                                                                                                            |                    |
|                     | Weight                                |                      | 100g 3.527 oz (Pin type), 110g 3.880 oz (Screw terminal type)                                                                                                                                                            |                                                                                                                                                            |                    |

\*Notes: 1) Unless otherwise specified, the measurement conditions at the maximum scale time standard are specified to be the rated operating voltage (within 5% ripple factor for DC), 20°C 68°F ambient temperature.

2) For the 1s range, the tolerance for each specification becomes ±10ms. When the power goes on, in rush current (0.3A) flows. Cautions should be taken. The minimum power supplying time after forced reset input is 2s or more.

3) Between contacts of different pools for PM4H-F8, PM4H-F11R types only.

# PM4H-F

## Time range

| <div>Time range</div> <div>Time range unit</div> | s range type | min range type    |
|--------------------------------------------------|--------------|-------------------|
| 1                                                | 0.04s to 1s  | 0.04 min to 1 min |
| 5                                                | 0.2s to 5s   | 0.2 min to 5 min  |
| 10                                               | 0.4s to 10s  | 0.4 min to 10 min |

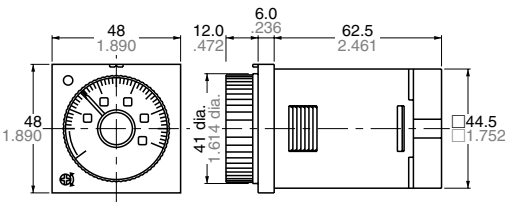
## Product types

| Type           | Operation mode                             | Contact arrangement      | Time range                                    | Protective construction | Rated operating voltage | Terminal type     | Part number       |
|----------------|--------------------------------------------|--------------------------|-----------------------------------------------|-------------------------|-------------------------|-------------------|-------------------|
| PM4H-F8        | Power OFF-delay (without reset)            | Relay Timed-out 2 Form C | 3 selectable time ranges over 1s to 10s       | IP65                    | 100 to 120V AC          | 8 pins            | PM4HF8-S-AC120VW  |
|                |                                            |                          |                                               |                         | 200 to 240V AC          | 8 pins            | PM4HF8-S-AC240VW  |
|                |                                            |                          |                                               |                         | 24V AC                  | 8 pins            | PM4HF8-S-AC24VW   |
|                |                                            |                          |                                               |                         | 12V DC                  | 8 pins            | PM4HF8-S-DC12VW   |
|                |                                            |                          | 24V DC                                        |                         | 8 pins                  | PM4HF8-S-DC24VW   |                   |
|                |                                            |                          | 100 to 120V AC                                |                         | 8 pins                  | PM4HF8-M-AC120VW  |                   |
|                |                                            |                          | 200 to 240V AC                                |                         | 8 pins                  | PM4HF8-M-AC240VW  |                   |
|                |                                            |                          | 24V AC                                        |                         | 8 pins                  | PM4HF8-M-AC24VW   |                   |
|                |                                            |                          | 12V DC                                        | 8 pins                  | PM4HF8-M-DC12VW         |                   |                   |
|                |                                            |                          | 24V DC                                        | 8 pins                  | PM4HF8-M-DC24VW         |                   |                   |
|                |                                            |                          | 3 selectable time ranges over 1 min to 10 min | IP50                    | 100 to 120V AC          | 8 pins            | PM4HF8-S-AC120V   |
|                |                                            |                          |                                               |                         | 200 to 240V AC          | 8 pins            | PM4HF8-S-AC240V   |
|                |                                            |                          |                                               |                         | 24V AC                  | 8 pins            | PM4HF8-S-AC24V    |
|                |                                            |                          |                                               |                         | 12V DC                  | 8 pins            | PM4HF8-S-DC12V    |
|                |                                            |                          | 24V DC                                        |                         | 8 pins                  | PM4HF8-S-DC24V    |                   |
|                |                                            |                          | 100 to 120V AC                                |                         | 8 pins                  | PM4HF8-M-AC120V   |                   |
| 200 to 240V AC | 8 pins                                     | PM4HF8-M-AC240V          |                                               |                         |                         |                   |                   |
| 24V AC         | 8 pins                                     | PM4HF8-M-AC24V           |                                               |                         |                         |                   |                   |
| 12V DC         | 8 pins                                     | PM4HF8-M-DC12V           |                                               |                         |                         |                   |                   |
| 24V DC         | 8 pins                                     | PM4HF8-M-DC24V           |                                               |                         |                         |                   |                   |
| PM4H-F8R       | Power OFF-delay (with instantaneous reset) | Relay Timed-out 1 Form C | 3 selectable time ranges over 1s to 10s       | IP65                    | 100 to 120V AC          | 8 pins            | PM4HF8R-S-AC120VW |
|                |                                            |                          |                                               |                         | 200 to 240V AC          | 8 pins            | PM4HF8R-S-AC240VW |
|                |                                            |                          |                                               |                         | 24V AC                  | 8 pins            | PM4HF8R-S-AC24VW  |
|                |                                            |                          |                                               |                         | 12V DC                  | 8 pins            | PM4HF8R-S-DC12VW  |
|                |                                            |                          | 24V DC                                        |                         | 8 pins                  | PM4HF8R-S-DC24VW  |                   |
|                |                                            |                          | 100 to 120V AC                                |                         | 8 pins                  | PM4HF8R-M-AC120VW |                   |
|                |                                            |                          | 200 to 240V AC                                |                         | 8 pins                  | PM4HF8R-M-AC240VW |                   |
|                |                                            |                          | 24V AC                                        |                         | 8 pins                  | PM4HF8R-M-AC24VW  |                   |
|                |                                            |                          | 12V DC                                        | 8 pins                  | PM4HF8R-M-DC12VW        |                   |                   |
|                |                                            |                          | 24V DC                                        | 8 pins                  | PM4HF8R-M-DC24VW        |                   |                   |
|                |                                            |                          | 3 selectable time ranges over 1 min to 10 min | IP50                    | 100 to 120V AC          | 8 pins            | PM4HF8R-S-AC120V  |
|                |                                            |                          |                                               |                         | 200 to 240V AC          | 8 pins            | PM4HF8R-S-AC240V  |
|                |                                            |                          |                                               |                         | 24V AC                  | 8 pins            | PM4HF8R-S-AC24V   |
|                |                                            |                          |                                               |                         | 12V DC                  | 8 pins            | PM4HF8R-S-DC12V   |
|                |                                            |                          | 24V DC                                        |                         | 8 pins                  | PM4HF8R-S-DC24V   |                   |
|                |                                            |                          | 100 to 120V AC                                |                         | 8 pins                  | PM4HF8R-M-AC120V  |                   |
| 200 to 240V AC | 8 pins                                     | PM4HF8R-M-AC240V         |                                               |                         |                         |                   |                   |
| 24V AC         | 8 pins                                     | PM4HF8R-M-AC24V          |                                               |                         |                         |                   |                   |
| 12V DC         | 8 pins                                     | PM4HF8R-M-DC12V          |                                               |                         |                         |                   |                   |
| 24V DC         | 8 pins                                     | PM4HF8R-M-DC24V          |                                               |                         |                         |                   |                   |

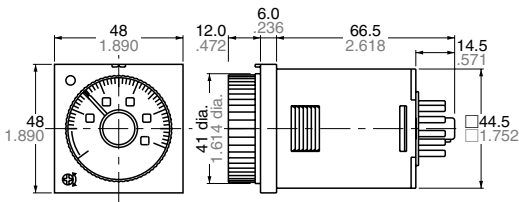
| Type      | Operation mode                             | Contact arrangement      | Time range                                    | Protective construction | Rated operating voltage | Terminal type  | Part number         |
|-----------|--------------------------------------------|--------------------------|-----------------------------------------------|-------------------------|-------------------------|----------------|---------------------|
| PM4H-F11R | Power OFF-delay (with instantaneous reset) | Relay Timed-out 2 Form C | 3 selectable time ranges over 1s to 10s       | IP65                    | 100 to 120V AC          | 11 pins        | PM4HF11R-S-AC120VW  |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-S-AC120VSW |
|           |                                            |                          |                                               |                         | 200 to 240V AC          | 11 pins        | PM4HF11R-S-AC240VW  |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-S-AC240VSW |
|           |                                            |                          |                                               |                         | 24V AC                  | 11 pins        | PM4HF11R-S-AC24VW   |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-S-AC24VSW  |
|           |                                            |                          |                                               | IP50                    | 12V DC                  | 11 pins        | PM4HF11R-S-DC12VW   |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-S-DC12VSW  |
|           |                                            |                          |                                               |                         | 24V DC                  | 11 pins        | PM4HF11R-S-DC24VW   |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-S-DC24VSW  |
|           |                                            |                          |                                               |                         | 100 to 120V AC          | 11 pins        | PM4HF11R-S-AC120V   |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-S-AC120VS  |
|           |                                            |                          |                                               |                         | 200 to 240V AC          | 11 pins        | PM4HF11R-S-AC240V   |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-S-AC240VS  |
|           |                                            |                          |                                               |                         | 24V AC                  | 11 pins        | PM4HF11R-S-AC24V    |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-S-AC24VS   |
|           |                                            |                          |                                               |                         | 12V DC                  | 11 pins        | PM4HF11R-S-DC12V    |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-S-DC12VS   |
|           |                                            |                          |                                               |                         | 24V DC                  | 11 pins        | PM4HF11R-S-DC24V    |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-S-DC24VS   |
|           |                                            |                          | 3 selectable time ranges over 1 min to 10 min | IP65                    | 100 to 120V AC          | 11 pins        | PM4HF11R-M-AC120VW  |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-M-AC120VSW |
|           |                                            |                          |                                               |                         | 200 to 240V AC          | 11 pins        | PM4HF11R-M-AC240VW  |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-M-AC240VSW |
|           |                                            |                          |                                               |                         | 24V AC                  | 11 pins        | PM4HF11R-M-AC24VW   |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-M-AC24VSW  |
|           |                                            |                          |                                               | IP50                    | 12V DC                  | 11 pins        | PM4HF11R-M-DC12VW   |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-M-DC12VSW  |
|           |                                            |                          |                                               |                         | 24V DC                  | 11 pins        | PM4HF11R-M-DC24VW   |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-M-DC24VSW  |
|           |                                            |                          |                                               |                         | 100 to 120V AC          | 11 pins        | PM4HF11R-M-AC120V   |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-M-AC120VS  |
|           |                                            |                          |                                               |                         | 200 to 240V AC          | 11 pins        | PM4HF11R-M-AC240V   |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-M-AC240VS  |
|           |                                            |                          |                                               |                         | 24V AC                  | 11 pins        | PM4HF11R-M-AC24V    |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-M-AC24VS   |
|           |                                            |                          |                                               |                         | 12V DC                  | 11 pins        | PM4HF11R-M-DC12V    |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-M-DC12VS   |
|           |                                            |                          |                                               |                         | 24V DC                  | 11 pins        | PM4HF11R-M-DC24V    |
|           |                                            |                          |                                               |                         |                         | Screw terminal | PM4HF11R-M-DC24VS   |

# Dimensions

• Screw terminal type (Flush mount)



• Pin type (Flush mount/surface mount)

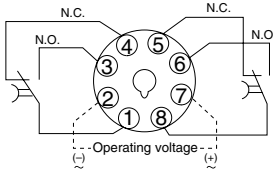


mm inch  
Toletance: ±0.5 ±.020

# PM4H-F

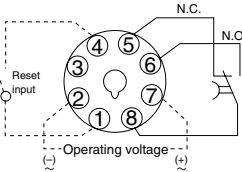
## Terminal layouts and Wiring diagrams

- **PM4H-F8 (without reset input)**  
Pin type  
Time-out 2 Form C



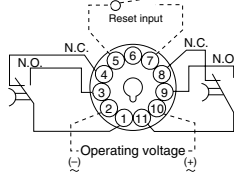
Screw-tightening pin type  
The PM4H-F11R should be used for the time-limit 2C.

- **PM4H-F8R (with reset input)**  
Pin type  
Time-out 1 Form C, with reset input

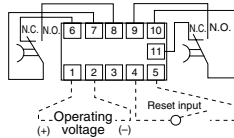


Screw-tightening pin type  
The PM4H-F11R should be used for the time-limit 1C and to connect reset input.

- **PM4H-F11R (with reset input)**  
Pin type  
Time-out 2 Form C, with reset input

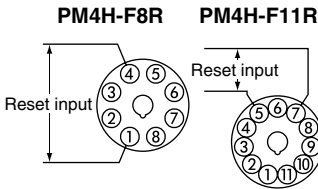


Screw terminal type  
Time-out 2 Form C, with reset input



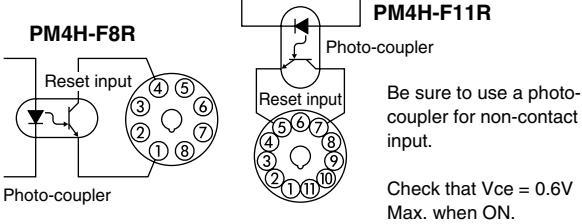
## PM4H-F (with reset) input conditions

### 1. Contact input (pin type example)



Use a contact with good contact reliability for the input. Contact bounce can lead to erroneous operation of the timer, so use a contact with short bounce time. Make the resistance between terminals for a short circuit less than 1k-ohms. Make the resistance between terminals for an open circuit greater than 100k-ohms.

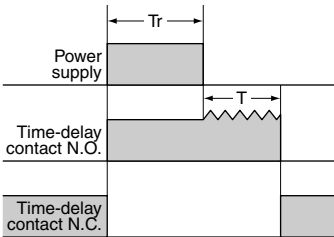
### 2. Non-contact input (pin type example)



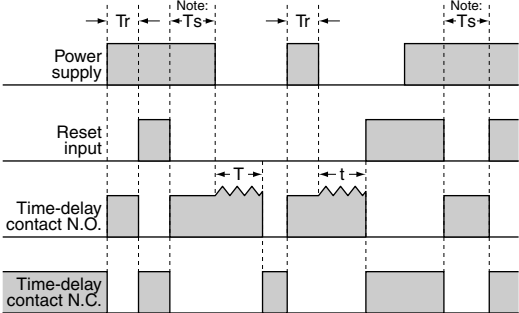
Be sure to use a photo-coupler for non-contact input.  
Check that  $V_{ce} = 0.6V$  Max. when ON.

## Operation

- **PM4H-F8 (without reset input)**



- **PM4H-F8R/F11R (with reset input)**



t<T: Time setting  
Tr: Minimum power supply application time  
Note: Ts: Min. 2s (Time to restart operation after reset input is set to OFF: both second type and minute type)

# PM4H SERIES MODES AND TIME SETTING

## 1. Operation method

### 1) Operation mode setting

#### [PM4H-A type]

8 operation modes are selectable with operation mode selector.

Turn the operation mode selector with screw driver.

Operation mode is shown up through the window above the mode selector. The marks are (ON), (FL), (FO), (OF), (SF), (OS), (OF2), (OC). Turn the mode selector to the mark until you can check by clicking sound.

Confirm the mode selector position if it is correct.

If the position is not stable, the timer might mis-operate.



### 2) Time range setting

#### [PM4H series common]

16 time ranges are selectable between 1s to 500h.

Turn the time range selector with the screw driver.

Clockwise turning increases the time range, and Counter-clockwise turning decrease the time range.

Confirm the range selector position if it is correct.

If the position is not stable, the timer might mis-operate.



### 3) Time setting [common]

To set the time, turn the set dial to a desired time within the range.

Instantaneous output will be on when the dial is set to "0".

When the instantaneous output is used, the dial should be set under "0" range.

(Instantaneous output area)

When power supply is on, the time range, setting time and operation mode cannot be changed.

Turn off the power supply or a reset signal is applied to set the new operation mode.

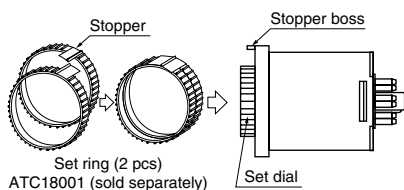
If the position is not stable, the timer might mis-operate.

## 2. How to use "Set ring" [PM4H series common]

### 1) Fixed time setting

Set the desired time and put 2 set rings together.

Insert the rings into stopper to fix the time.



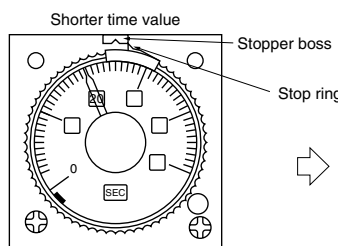
### 2) Time range setting

Example: Time range 20s to 30s.

#### ① Shorter time value setting

Set the dial to 20s.

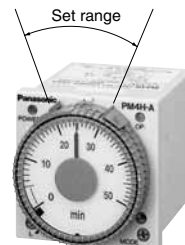
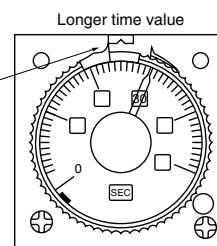
Place the stop ring at the right side of stopper.



#### ② Longer time value setting

Set the dial to 30s.

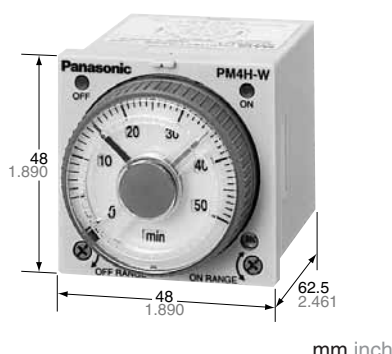
Place the stop ring at the left side of stopper.



Note) The stoppers for the lower limit setting set ring and the upper limit setting set ring face the opposite directions.

## Applicable standard (PM4H series common)

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



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



### Features

1. A single twin timer unit that repeats (variable) ON/OFF.
2. Multiple ranges with a 0.1 s to 500 h time specification on a single unit.
3. The output ON/OFF operation is indicated by red and green LED's. It's easy to check the operation at a glance.
4. The AC free power supply and shorter body make it easier to use.
5. A new screw terminal type has been added to the conventional pin type. Wiring can be done easily with a screwdriver.
6. Compliant with UL, CSA, CE and LLOYD.

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

## Specifications

| Item                     |                                       | Type        | PM4H-W                                                                                                                                                                                                           |
|--------------------------|---------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rating                   | Rated operating voltage               |             | 100 to 240V AC, 48 to 125V DC, 12V DC, 24V AC/DC                                                                                                                                                                 |
|                          | Rated frequency                       |             | 50/60Hz common (AC operating type)                                                                                                                                                                               |
|                          | Rated power consumption               |             | Approx. 10VA (100 to 240V AC)<br>Approx. 2.5VA (24V AC)<br>Approx. 1.5W (12V DC, 24V DC, 48 to 125V DC)                                                                                                          |
|                          | Rated control capacity                |             | 5A 250V AC (resistive load)                                                                                                                                                                                      |
|                          | Operation mode                        |             | Cyclic (OFF-start/Twin operation)                                                                                                                                                                                |
|                          | Time range                            |             | 1s to 500h 16 time ranges switchable (T <sub>1</sub> , T <sub>2</sub> time setting individually)                                                                                                                 |
| Time accuracy<br>(Note:) | Operation time fluctuation            |             | ±0.3% (power off time change at the range of 0.3s to 1h)                                                                                                                                                         |
|                          | Setting error                         |             | ±5% (Full-scale value)                                                                                                                                                                                           |
|                          | Voltage error                         |             | ±0.5% (at the operating voltage changes between 85 to 110%)                                                                                                                                                      |
|                          | Temperature error                     |             | ±2% (at 20°C ambient temp. at the range of -10 to +50°C +14 to 122°F)                                                                                                                                            |
| Contact                  | Contact arrangement                   |             | Timed-out 2 Form C                                                                                                                                                                                               |
|                          | Contact resistance (Initial value)    |             | Max. 100mΩ (at 1A 6V DC)                                                                                                                                                                                         |
|                          | Contact material                      |             | Silver alloy                                                                                                                                                                                                     |
| Life                     | Mechanical (contact)                  |             | 2×10 <sup>7</sup>                                                                                                                                                                                                |
|                          | Electrical (contact)                  |             | 10 <sup>5</sup> (at rated control capacity)                                                                                                                                                                      |
| Electrical function      | Allowable operating voltage range     |             | 85 to 110% of rated operating voltage (at 20°C coil temp.)                                                                                                                                                       |
|                          | Insulation resistance (Initial value) |             | Min. 100MΩ<br>Between live and dead metal parts<br>Between input and output<br>Between contacts of different poles (At 500V DC)<br>Between contacts of same pole                                                 |
|                          | Breakdown voltage (Initial value)     |             | 2,000Vrms for 1 min Between live and metal parts<br>2,000Vrms for 1 min Between input and output<br>2,000Vrms for 1 min Between contacts of different poles<br>1,000Vrms for 1 min Between contacts of same pole |
|                          | Min. power off time                   |             | 300ms                                                                                                                                                                                                            |
|                          | Max. temperature rise                 |             | 55°C 131°F                                                                                                                                                                                                       |
| Mechanical function      | Vibration resistance                  | Functional  | 10 to 55Hz: 1 cycle/min double amplitude of 0.25mm (10min on 3 axes)                                                                                                                                             |
|                          |                                       | Destructive | 10 to 55Hz: 1 cycle/min double amplitude of 0.375mm (1h on 3 axes)                                                                                                                                               |
|                          | Shock resistance                      | Functional  | Min. 98m/s <sup>2</sup> (4 times on 3 axes)                                                                                                                                                                      |
|                          |                                       | Destructive | Min. 980m/s <sup>2</sup> (5 times on 3 axes)                                                                                                                                                                     |
| Operating condition      | Ambient temperature                   |             | -10 to +50°C +14 to +122°F                                                                                                                                                                                       |
|                          | Ambient humidity                      |             | 30 to 85%RH (non-condensing)                                                                                                                                                                                     |
|                          | Atmospheric pressure                  |             | 860 to 1,060hPa                                                                                                                                                                                                  |
|                          | Ripple factor (DC type)               |             | 20%                                                                                                                                                                                                              |
| Others                   | Protective construction               |             | IP65 on front panel (using rubber gasket ATC18002) <only for IP65 type>                                                                                                                                          |
|                          | Weight                                |             | 120g 4.233 oz (Pin type), 130g 4.586 oz (Screw terminal type)                                                                                                                                                    |

Notes: 1) Unless otherwise specified, the measurement conditions at the maximum scale time standard are specified to be the rated operating voltage (within 5% ripple factor for DC), 20°C 68°F ambient temperature, and 1s power off time.

2) For the 1s range, the tolerance for each specification becomes ±10ms.

3) As internal components may become worn when using continuous conduction, the product should be replaced periodically.

PM4H-W

Time range

All types of PM4H-W timer have multi-time range.  
16 time ranges are selectable.  
1s to 500h (Max. range) is controlled.

| Time unit |                    | sec         | min               | hrs         | 10h         |
|-----------|--------------------|-------------|-------------------|-------------|-------------|
| Scale     | Control time range |             |                   |             |             |
| 1         |                    | 0.1s to 1s  | 0.1 min to 1 min  | 0.1h to 1h  | 1.0h to 10h |
| 5         |                    | 0.5s to 5s  | 0.5 min to 5 min  | 0.5h to 5h  | 5h to 50h   |
| 10        |                    | 1.0s to 10s | 1.0 min to 10 min | 1.0h to 10h | 10h to 100h |
| 50        |                    | 5s to 50s   | 5 min to 50 min   | 5h to 50h   | 50h to 500h |

Product types

| Type                 | Operating mode           | Contact arrangement            | Time range                           | Protective structure | Rated Operating voltage | Terminal type  | Part number      |
|----------------------|--------------------------|--------------------------------|--------------------------------------|----------------------|-------------------------|----------------|------------------|
| PM4H-W<br>Twin timer | Cyclic (OFF-start, Twin) | Relay<br>Timed-out<br>2 Form C | 16 selectable ranges<br>(1s to 500h) | IP65                 | 100 to 240V AC          | 8 pins         | PM4HW-H-AC240VW  |
|                      |                          |                                |                                      |                      |                         | Screw terminal | PM4HW-H-AC240VSW |
|                      |                          |                                |                                      |                      | 48 to 125V DC           | 8 pins         | PM4HW-H-DC125VW  |
|                      |                          |                                |                                      |                      |                         | Screw terminal | PM4HW-H-DC125VSW |
|                      |                          |                                |                                      |                      | 24V AC/DC               | 8 pins         | PM4HW-H-24VW     |
|                      |                          |                                |                                      |                      |                         | Screw terminal | PM4HW-H-24VSW    |
|                      |                          |                                |                                      | IP50                 | 12V DC                  | 8 pins         | PM4HW-H-DC12VW   |
|                      |                          |                                |                                      |                      |                         | Screw terminal | PM4HW-H-DC12VSW  |
|                      |                          |                                |                                      |                      | 100 to 240V AC          | 8 pins         | PM4HW-H-AC240V   |
|                      |                          |                                |                                      |                      |                         | Screw terminal | PM4HW-H-AC240VS  |
|                      |                          |                                |                                      |                      | 48 to 125V DC           | 8 pins         | PM4HW-H-DC125V   |
|                      |                          |                                |                                      |                      |                         | Screw terminal | PM4HW-H-DC125VS  |
|                      |                          |                                |                                      |                      | 24V AC/DC               | 8 pins         | PM4HW-H-24V      |
|                      |                          |                                |                                      |                      |                         | Screw terminal | PM4HW-H-24VS     |
|                      |                          |                                |                                      |                      | 12V DC                  | 8 pins         | PM4HW-H-DC12V    |
|                      |                          |                                |                                      |                      |                         | Screw terminal | PM4HW-H-DC12VS   |

Terminal layouts and Wiring diagrams

Pin Type  
Cyclic timed-out relay contact: 2C

Screw terminal type  
Cyclic timed-out relay contact: 2C

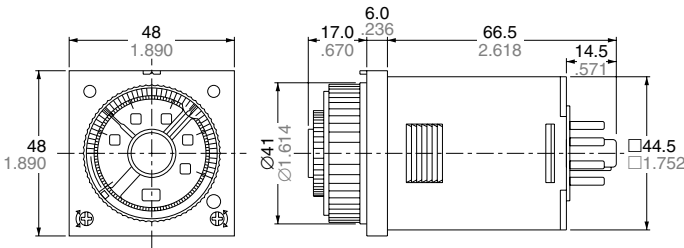
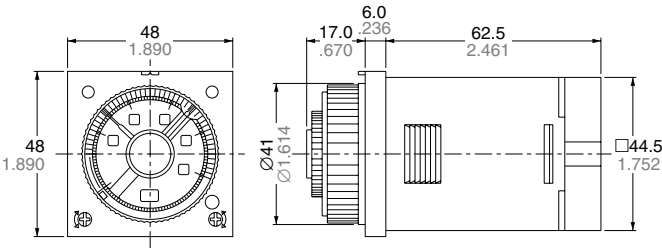


Dimensions

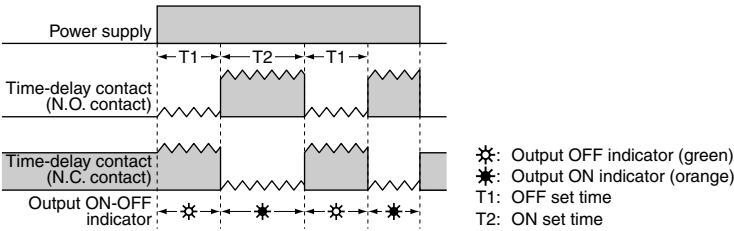
• Screw terminal type: M3.5

• Pin type

mm inch  
Toletance: ±0.5 ±.020



Operation



# PM4H SERIES MODES AND TIME SETTING

## 1. Operation method

### 1) Operation mode setting

#### [PM4H-A type]

8 operation modes are selectable with operation mode selector.

Turn the operation mode selector with screw driver.

Operation mode is shown up through the window above the mode selector. The marks are (ON), (FL), (FO), (OF), (SF), (OS), (OF2), (OC). Turn the mode selector to the mark until you can check by clicking sound.

Confirm the mode selector position if it is correct.

If the position is not stable, the timer might mis-operate.



### 2) Time range setting

#### [PM4H series common]

16 time ranges are selectable between 1s to 500h.

Turn the time range selector with the screw driver.

Clockwise turning increases the time range, and Counter-clockwise turning decrease the time range.

Confirm the range selector position if it is correct.

If the position is not stable, the timer might mis-operate.



### 3) Time setting [common]

To set the time, turn the set dial to a desired time within the range.

Instantaneous output will be on when the dial is set to "0".

When the instantaneous output is used, the dial should be set under "0" range.

(Instantaneous output area)

When power supply is on, the time range, setting time and operation mode cannot be changed.

Turn off the power supply or a reset signal is applied to set the new operation mode.

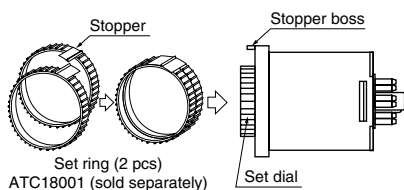
If the position is not stable, the timer might mis-operate.

## 2. How to use "Set ring" [PM4H series common]

### 1) Fixed time setting

Set the desired time and put 2 set rings together.

Insert the rings into stopper to fix the time.



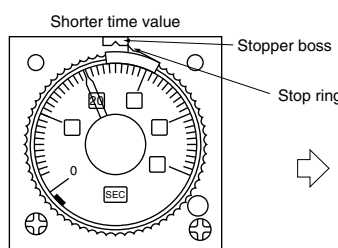
### 2) Time range setting

Example: Time range 20s to 30s.

#### ① Shorter time value setting

Set the dial to 20s.

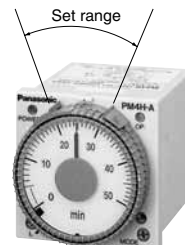
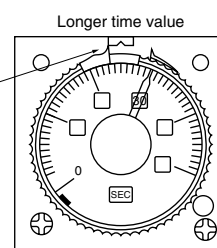
Place the stop ring at the right side of stopper.



#### ② Longer time value setting

Set the dial to 30s.

Place the stop ring at the left side of stopper.



Note) The stoppers for the lower limit setting set ring and the upper limit setting set ring face the opposite directions.

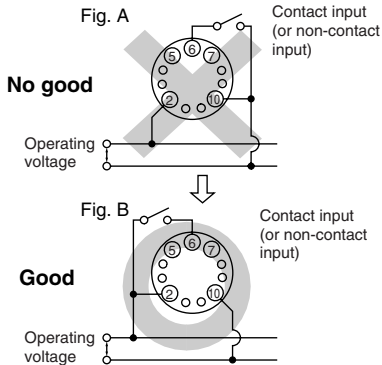
## Applicable standard (PM4H series common)

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

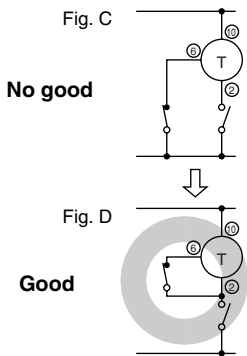
# PRECAUTIONS IN USING THE PM4H SERIES

## 1. Input connections (PM4H-A type)

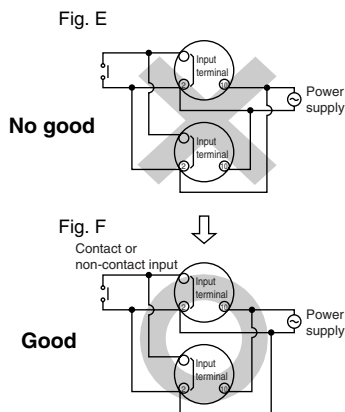
1) Be sure not to use terminal ⑩ as the common terminal of the input signal as shown in Fig. A. Otherwise, the internal circuit of the timer may be damaged. Use terminal ② as the common terminal as shown in Fig. B.



If the circuit is connected as in Fig. C, the internal circuits must be broken. Be sure to connect the circuit as in Fig. D.



2) When one input signal is simultaneously applied to more than one timer, be sure to avoid the wiring shown in Fig. E. Otherwise, the short-circuit current will flow and cause damage. Be sure to align the polarity of the power supply as shown in Fig. F.



3) Terminal ②-⑥ (screw terminal ②-③) should be connected as the start input. Connect terminals ②-⑦ (screw terminal ②-④) for reset signal input. Connect terminals ②-⑤ (screw terminal ②-⑤) for stop signal input. Be sure not to connect with other terminals and apply excessive voltage. The internal circuit will be damaged.

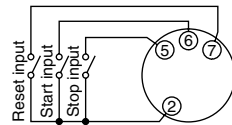
4) The input wiring other than the power supply circuit should avoid these conditions, high-voltage wiring and parallel wiring with power wire. Wire in short with using the shielding wire or metal wiring tube.

5) For start, reset and stop input, use gold-plated contact with high reliability. Since contact bouncing causes errors in the start, use an input contact less bounce time.

6) Keep the minimum signal input time over 0.05 s.

## 2. Input signal conditions (PM4H-A type)

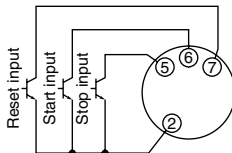
1) Connection of contact input (Pin type example)



Use gold-plated contacts with high-reliability. The bounce time at the contacts causes errors in the timer operation time. Accordingly, use start input contact whose bounce time is short. The resistance when shorted should be less than 1k $\Omega$ , and when open resistance should be more than 100k $\Omega$ .

For the screw terminal type, connect the terminal ② to the each input signal.

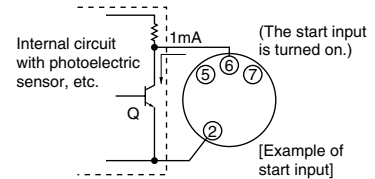
2) Connection of non-contact input (Pin type example) (open-collector)



Apply the open-collector connection. The characteristics of the transistor used must be  $V_{CE0}=10V$  or more,  $I_C=10mA$  or more, and  $I_{CBO}=6\mu A$  or less. Additionally, the input impedance must be 1k $\Omega$  or less, and the residual voltage must be 0.6V or less.

For the screw terminal type, connect the terminal ② to the each input signal.

3) Connection of non-contact input (Pin type example) (voltage input)



Even if the open collector is not used, input is also possible from the non-contact circuit of 6 to 30V DC. In this case, the start input is turned on when the signal is turned from H to L.

The residual voltage must be 0.6V or less when Q is on. On the AC type, an insulated transformer is required as the power supply for the photoelectric sensor, etc. (power supply for the input devices).

Note: Keep the minimum input signal time of each signal to 0.05s or more.

## 3. Checking the contacts before use (PM4H-F only)

When the power ON time is less than the minimum power application time, the contacts may remain in an ON state, so the state of the contacts should be checked before use. When the contacts are in an ON state, activating them once will return them to their normal state (the OFF state after time-out). (Be aware that relay characteristics may result in the contacts being in that same ON state if exposed to excessive vibration and impact during transport.)

## 4. Time setting

To set the time, turn the set dial to a desired time within the range. Instantaneous output will be on when the dial is set to "0".

When the instantaneous output is used, the dial should be set under "0" range. (Instantaneous output area)

Note) When power supply is on, the time range, setting time and operation mode cannot be changed.

Turn off the power supply or a reset signal is applied to set the new operation mode.

If the position is not stable, the timer might mis-operate.

## PRECAUTIONS IN USING THE PM4H SERIES

### 5. Superimposed surge of power supply (PM4H series common)

For the superimposed surge of power supply, the standard waveform is taken as the standard value for surge-proof voltage.

If external surge occurs exceeding the specified value, the internal circuit may break down. In this case, use a surge absorption element.

| Operation voltage                                                   | Surge voltage |
|---------------------------------------------------------------------|---------------|
| 100 to 240V AC<br>100 to 120V AC<br>200 to 240V AC<br>48 to 125V DC | 4,000V        |
| 12V DC, 24V DC<br>24V AC/DC                                         | 500V          |

The positive and negative voltages are applied each five times between the power pins.

The typical surge absorption elements include a varistor, a capacitor, and a diode. If a surge absorption element is used, use an oscilloscope to see whether or not the foreign surge exceeding the specified value appears.

### 6. Acquisition of CE marking

Please abide by the conditions below when using in applications that comply with EN61812-1.

1) Overvoltage category III, pollution level 2

2) This timer employs a power supply without a transformer, so the power and input signal terminals are not insulated.

(PM4H-A only)

(1) When a sensor is connected to the input circuit, install double insulation on the sensor side.

(2) In the case of contact input, use dual-insulated relays, etc.

3) The load connected to the output contact should have basic insulation.

This timer is protected with basic insulation and can be double-insulated to meet EN/IEC requirements by using basic insulation on the load.

4) Please use a power supply that is protected by an overcurrent protection device which complies with the EN/IEC standard (example: 250 V 1 A fuse, etc.).

5) You must use a terminal socket or socket for the installation. Do not touch the terminals or other parts of the timer when it is powered. When installing or un-installing, make sure that no voltage is being applied to any of the terminals.

6) Do not use this timer as a safety circuit. For example when using a timer in a heater circuit, etc., provide a protection circuit on the machine side.