

NAiS

MULTI-RANGE ANALOG TIMER

PM4S Timers



Features

1. An affordable new series of timers.
2. 20 types with a variety of voltage ratings, contact arrangements and time settings are available to cover a wide range of applications, and allow you to stock efficiently.
3. Compliant with UL, C-UL and CE.

Typical Applications

- Control panels
- Molding machines
- Packaging machines
- Wire winding machines
- Machine tools

Specifications

| Item | | Type | PM4S | | | |
|---------------------|---------------------------------------|-------------|---|---|-----------------------------|-----------------------------|
| Rating | Rated operating voltage | | 100 to 120V AC | 200 to 240V AC | 24V DC | 12V DC |
| | Rated power consumption | | Approx. 2.5VA/3.0VA (at 100V AC) Approx. 3.5VA/4.5VA (at 120V AC) | Approx. 3.8VA/4.5VA (at 200V AC) Approx. 5.5VA/6.5VA (at 240V AC) | Approx. 1.0W (at 24V DC) | Approx. 0.8W (at 12V DC) |
| | Rated frequency | | 50/60 Hz | | | |
| | Output rating | | 5A 250V AC | | | |
| | Operating mode | | Power ON-delay | | | |
| | Time range | | Each 4 time settings switchable in 5 types | | | |
| Time accuracy | Operating time fluctuation | | ±1% (power off time change at the range of 0.1s to 1h) | | | |
| | Setting error | | ±5% | | | |
| | 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 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) | | 10 ⁷ | | | |
| | Electrical (contact) | | 10 ⁵ | | | |
| 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 Between input and output Between contacts of different poles Between contacts of same pole | | |
| | Breakdown voltage (Initial value) | | 2,000Vrms for 1 min Between live and dead metal parts 2,000Vrms for 1 min Between input and output 2,000Vrms for 1 min Between contacts of different poles 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 | Shock resistance | Functional | Min. 98m/s ² (4 times on 3 axes) | | | |
| | | Destructive | Min. 980m/s ² (5 times on 3 axes) | | | |
| | Vibration resistance | Functional | 10 to 55Hz: 1 cycle/min double amplitude of 0.5mm (10min on 3 axes) | | | |
| | | Destructive | 10 to 55Hz: 1 cycle/min double amplitude of 0.75mm (1h on 3 axes) | | | |
| Operating condition | Ambient temperature | | -10 to +50°C +14 to +122°F | | | |
| | Ambient humidity | | Max. 85%RH | | | |
| | Atmospheric pressure | | 860 to 1,060hPa | | | |
| | Ripple factor (DC type) | | 20% | | | |
| Others | Weight | | Approximately 110 g 3.880 oz | | | |
| | Operation display | | Red LED | During count down: blinking At time up: lit | | |

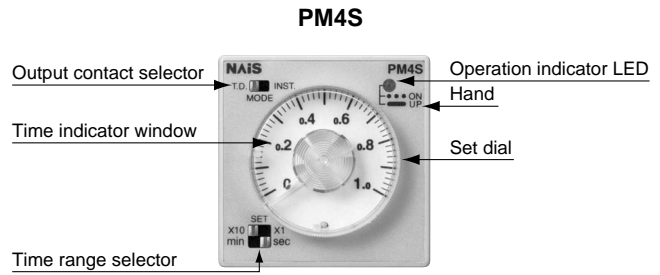
PM4S

Ordering information



| Max. time range | Max. rated operating voltage |
|-----------------|------------------------------|
| 10M | 12V DC |
| 30M | 24V DC |
| 60M | 120V AC |
| 10H | 240V AC |
| 30H | |

Parts name



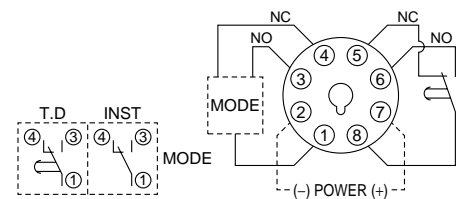
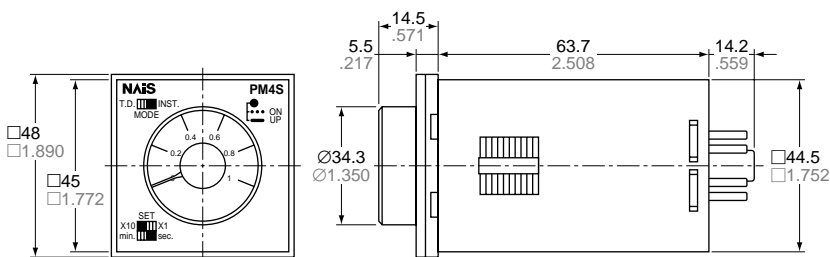
PRODUCT TYPE

| Type | Contact arrangement | Time range | Operating voltage | Part No. |
|------|---|----------------|--------------------|--------------------|
| A | Selected by front switch T.D.: Timed-out 2C INST.: Timed-out 1C Instantaneous 1C | 1sec | 200 to 240V AC | PM4S-A2C10M-AC240V |
| | | 10sec | 100 to 120V AC | PM4S-A2C10M-AC120V |
| | | 1min | 24V DC | PM4S-A2C10M-DC24V |
| | | 10min | 12V DC | PM4S-A2C10M-DC12V |
| B | | 3sec | 200 to 240V AC | PM4S-A2C30M-AC240V |
| | | 30sec | 100 to 120V AC | PM4S-A2C30M-AC120V |
| | | 3min | 24V DC | PM4S-A2C30M-DC24V |
| | | 30min | 12V DC | PM4S-A2C30M-DC12V |
| C | | 6sec | 200 to 240V AC | PM4S-A2C60M-AC240V |
| | | 60sec | 100 to 120V AC | PM4S-A2C60M-AC120V |
| | | 6min | 24V DC | PM4S-A2C60M-DC24V |
| D | | 60min | 12V DC | PM4S-A2C60M-DC12V |
| | 1min | 200 to 240V AC | PM4S-A2C10H-AC240V | |
| | 10min | 100 to 120V AC | PM4S-A2C10H-AC120V | |
| E | 1h | 24V DC | PM4S-A2C10H-DC24V | |
| | 10h | 12V DC | PM4S-A2C10H-DC12V | |
| | 3min | 200 to 240V AC | PM4S-A2C30H-AC240V | |
| | 30min | 100 to 120V AC | PM4S-A2C30H-AC120V | |
| | | 3h | 24V DC | PM4S-A2C30H-DC24V |
| | | 30h | 12V DC | PM4S-A2C30H-DC12V |

Dimensions

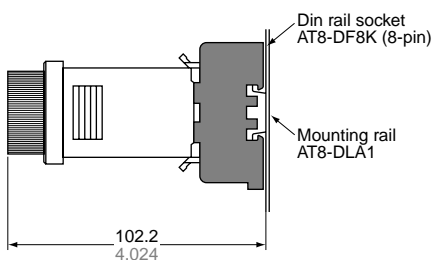
mm inch

Wiring diagram



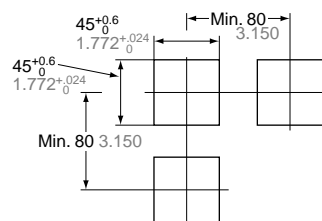
T.D.: Timed-out 2 Form C
INST: Timed-out 1 Form C,
instantaneous 1 Form C
* Selected by front switch

• Surface mount dimensions

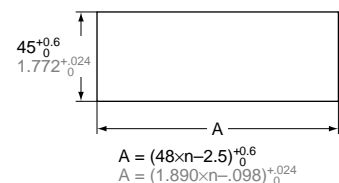


• Panel cut out dimensions

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



• Adjacent mounting



Note) The proper thickness of mounting panel is between 1 to 5 mm .039 to .197 inch.

OUTPUT CONTACT & TIME SETTING AND PRECAUTIONS

Operation method

1. Setting the output contact

There are two output contact modes, and the mode is set using the Output contact selector. Use a pair of tweezers or similar to set the Output contact selector to one of the following settings.

T.D.: Two time delay outputs

INST.: One time delay output and one instantaneous output

Be sure to set the switch so that it is securely in the desired setting position. If you leave the switch in the halfway position between the settings, unreliable operation will result.



2. Setting the time range

You can set the unit to one of four time ranges using the Time range selector. Use a pair of tweezers or similar to set the top (scale digit) and bottom (time range) of the Time range selector and set the time range that you desire.

Be sure to set the switches so that they are securely in the desired setting positions. If you leave the switches in halfway positions between settings, unreliable operation will result.



3. Setting the time

The time setting that you use must be within the setting range given on the ratings plate.

Do not make settings that are outside the scale range, as this will result in unreliable operation.

Note: Changing the time range or time setting when the unit is in operation can result in unreliable operation. Be certain to switch off the power before changing any of the settings.

Precautions

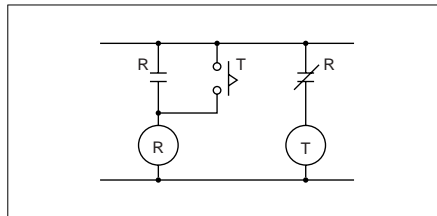
1. Timer contact protection circuit

The back e.m.f. and surge current that occurs with circuits used to interrupt inductive loads can damage the relay contacts. In cases such as this, we recommend that you insert a protection circuit to protect the contacts (e.g. CR circuit, diode circuit, or varistor).

2. Continuous conduction

If the timer conducts for long periods (i.e., more than one month) in the timed up state, the heat generated will cause the electronic components to deteriorate. In cases such as this, use the timer in combination with a relay to prevent long periods of continuous conduction.

(1) When using contact output



(2) When using non-contact output

