

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		5 time settings			
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		0.1 second			
	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

Ex. PM4S-A2C

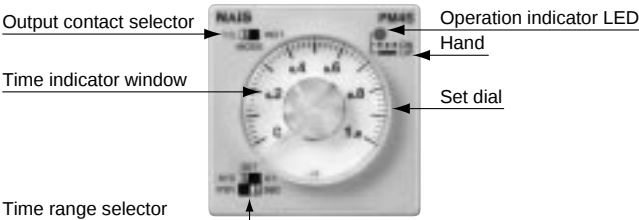
Max. time range	Max. rated operating voltage
10M 30M 60M 10H 30H	12V DC 24V DC 120V AC 240V AC

PRODUCT TYPE

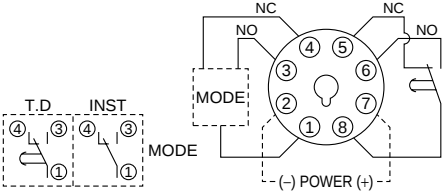
Type	Contact arrangement	Time range	Operating voltage	Part No.
A	Selected by front switch T.D.: Timed-out 2C INST.: Timed-out 1C Instantaneous 1C	1sec	200 to 240V AC	PM4S-A2C10M-AC240V
		10sec	100 to 120V AC	PM4S-A2C10M-AC120V
		1min	24V DC	PM4S-A2C10M-DC24V
		10min	12V DC	PM4S-A2C10M-DC12V
B		3sec	200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

Parts name

PM4S



Wiring diagram



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

OUTPUT CONTACT & TIME SETTING AND PRECAUTIONS

Operation method

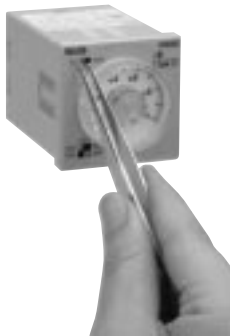
1. Setting the output contact

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

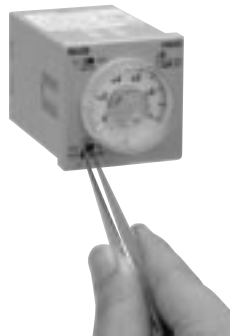
Be sure to set the switch so that it is securely in the desired setting position. If you leave the switch in the halfway position between the settings, unreliable operation will result.



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

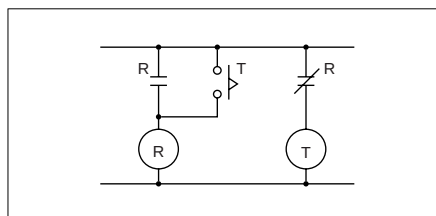
1. Timer contact protection circuit

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).

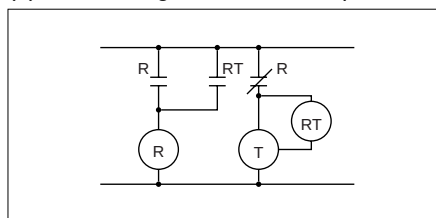
2. Continuous conduction

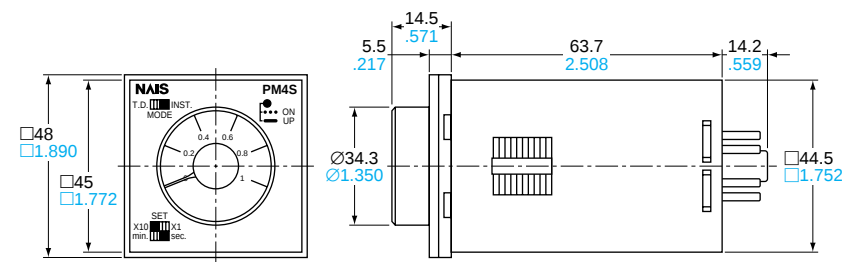
If the timer conducts for long periods (i.e., more than one month) in the timed up state, the heat generated will cause the electronic components to deteriorate. In cases such as this, use the timer in combination with a relay to prevent long periods of continuous conduction.

(1) When using contact output

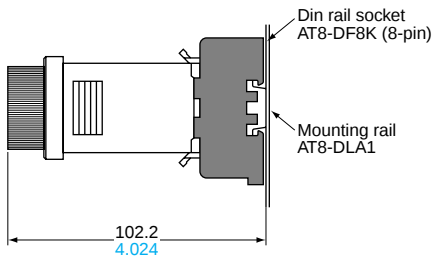


(2) When using non-contact output



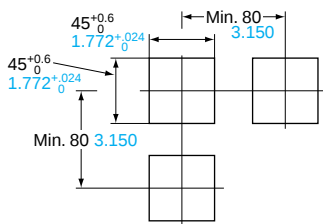


• Surface mount dimensions

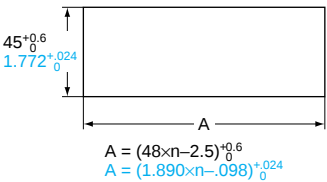


• Panel cut out dimensions

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).

These materials are printed on ECF pulp.
These materials are printed with earth-friendly vegetable-based (soybean oil) ink.



Please contact

Matsushita Electric Works, Ltd.

Automation Controls Company
■ Head Office: 1048, Kadoma, Kadoma-shi, Osaka 571-8686, Japan
■ Telephone: Japan (81) Osaka (06) 6908-1050
■ Facsimile: Japan (81) Osaka (06) 6908-5781
<http://www.nais-e.com/>