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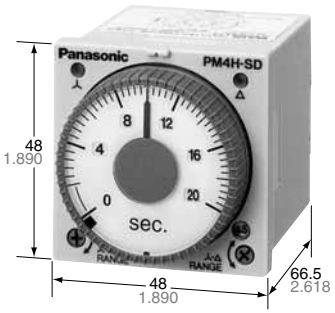
DIN48 SIZE ANALOG STAR (⅄)-DELTA (△) TIMERS

PM4H-SD/SDM



mm inch

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 ⅄-△ switching times.**
3. **There is a ⅄-△ 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		⅄-△ star-delta switching (Power ON-delay)
	⅄ operation control time range		2s to 100s, 4 time ranges switchable
	⅄-△ switching time		0.04, 0.1, 0.3, 0.5, 0.7s (5 time range selectable)
Time accuracy Note:)	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 (△) side: Timed-out 1 Form A 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)		2×10^7
	Electrical (contact)		10^5 (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 (At 500V DC) Between live and dead metal parts Between input and output Between contacts of different poles (*3) 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 (*3) 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/s² (4 times on 3 axes)
		Destructive	Min. 980m/s² (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)	人-△ 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

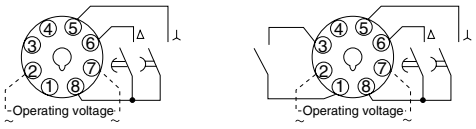
Product types

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

Terminal layouts and Wiring diagrams

Pin type

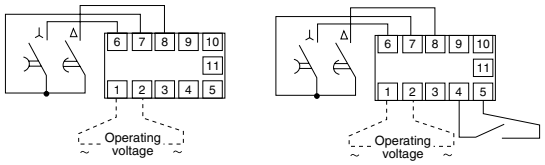
• No instantaneous contact • With instantaneous contact



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

Screw terminal type

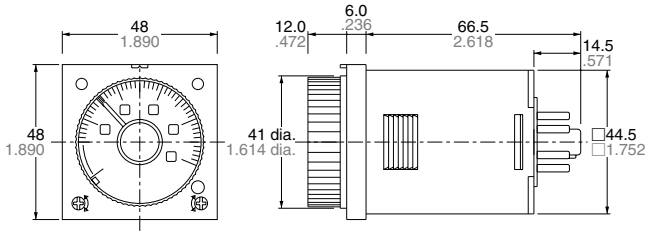
• No instantaneous contact • With instantaneous contact



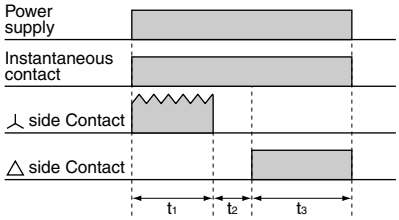
6—7: 人 side time-delay contact
8—7: △ side time-delay contact
4—5: Instantaneous contact
(PM4H-SDM type)

Dimensions

mm inch



Operation



t_1: 人 operation time
(人 indicator LED lights)
t_2: 人 – △ switching time
t_3: △ operation time
(△ indicator LED lights)

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 Ⓞ, Ⓕ, Ⓕ, Ⓕ, Ⓢ, Ⓞ, Ⓕ, Ⓒ.
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.

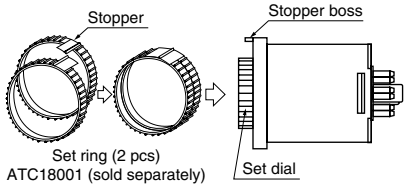
3) Time setting [common]

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.

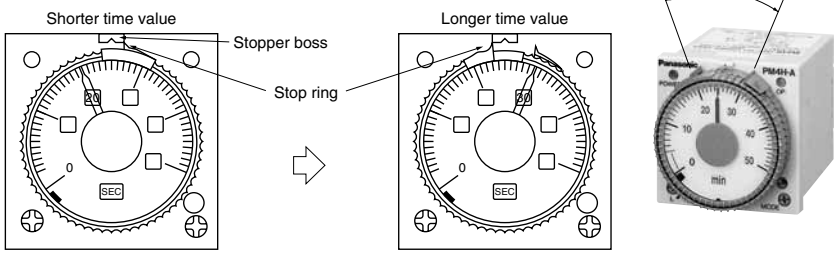


2) Time range setting

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

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