

# Solid-state Timer H3Y

CSM\_H3Y\_DS\_E\_2\_1

## Miniature Timer Compatible with the MY Relay

- Semi-multi power supply voltage.
- Large transparent time setting knob facilitates time setting. A flat-blade and Phillips screwdriver can also be used for time setting.
- Pin configuration compatible with MY Power Relay.
- LED indication for power and output statuses.
- Conforms to EMC standards.
- Conforms to EN61812-1 and approved by UL and CSA.



## Ordering Information

Operation/ resetting system	Time-limit contact	Time ranges	Supply voltage	Mounting	
				Surface/DIN-track mounting (with socket)	Surface mounting (with PCB terminals)
Time-limit operation/ self-resetting	DPDT (for power switching)	0.04 s to 3 h	24, 100 to 120, 200 to 230 VAC (50/60 Hz); 12, 24, 48, 125, 100 to 110 VDC	H3Y-2	H3Y-2-0
	4PDT			H3Y-4 (See note 3.)	H3Y-4-0 (See note 3.)

**Note: 1.** Specify both the model number, supply voltage, and rated time when ordering.

Ex. H3Y-2 100 to 120 VAC 0.5 s

└──────────────────┘  
Supply voltage

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Rated time

**2.** Sockets and Hold-down Clips are not included with the H3Y. They must be ordered separately.

**3.** Use the H3Y-4 or H3Y-4-0 Series when switching micro loads.

## Accessories (Order Separately)

Timer	Track-mounted Socket (See note.)	Back-connecting Socket		
		Solder terminal	Wire-wrap terminal	PC terminal
H3Y-2	PYF08A, PYF08A-N, PYF08A-E	PY08	PY08QN(2)	PY08-02
H3Y-4	PYF14A, PYF14A-N, PYF14A-E	PY14	PY14QN(2)	PY14-02

**Note:** Track-mounted Socket can be used as a front-connecting socket.

## Specifications

### Time Ranges

Rated time	Time setting range	Rated time	Time setting range
0.5 s	0.04 to 0.5 s	3 min	0.1 to 3 min
1 s	0.1 to 1 s	5 min	0.2 to 5 min
5 s	0.2 to 5 s	10 min	0.5 to 10 min
10 s	0.5 to 10 s	30 min	1 to 30 min
30 s	1.0 to 30 s	60 min	2 to 60 min
60 s	2.0 to 60 s	3 h	0.1 to 3 h
120 s	5.0 to 120 s	---	--

## ■ Ratings

Item	H3Y-2(-0)/H3Y-4(-0)
<b>Rated supply voltage (See note 6.)</b>	24, 100 to 120 (50/60 Hz), 200 to 230 VAC (50/60 Hz) (See note 1.), 12, 24, 48, 125, 100 to 110 VDC (See notes 2 and 3.)
<b>Operating voltage range</b>	All rated voltages except 12 VDC: 85% to 110% of rated supply voltage 12 VDC: 90% to 110% of rated supply voltage (See note 4.)
<b>Reset voltage</b>	10% min. of rated supply voltage (See note 5.)
<b>Power consumption</b>	100 to 120 VAC: Relay ON: Approx. 1.8 VA (1.6 W) at 120 VAC, 60 Hz Relay OFF: Approx. 1 VA (0.6 W) at 120 VAC, 60 Hz 200 to 230 VAC: Relay ON: Approx. 2.2 VA (1.8 W) at 230 VAC, 60 Hz Relay OFF: Approx. 1.5 VA (1.1 W) at 230 VAC, 60 Hz 24 VAC: Relay ON: Approx. 1.8 VA (1.4 W) at 24 VAC, 60 Hz Relay OFF: Approx. 0.3 VA (0.2 W) at 24 VAC, 60 Hz 12 VDC: Relay ON: Approx. 1.1 W at 12 VDC Relay OFF: Approx. 0.1 W at 12 VDC 24 VDC: Relay ON: Approx. 1.1 W at 24 VDC Relay OFF: Approx. 0.1 W at 24 VDC 48 VDC: Relay ON: Approx. 1.2 W at 48 VDC Relay OFF: Approx. 0.3 W at 48 VDC 100 to 110 VDC: Relay ON: Approx. 1.6 W at 110 VDC Relay OFF: Approx. 0.4 W at 110 VDC 125 VDC: Relay ON: Approx. 1.6 W at 125 VDC Relay OFF: Approx. 0.4 W at 125 VDC
<b>Control outputs</b>	H3Y-2(-0): 5 A at 250 VAC, resistive load ( $\cos\phi = 1$ ) H3Y-4(-0): 3 A at 250 VAC, resistive load ( $\cos\phi = 1$ )

- Note:**
- Do not use the output from an inverter as the power supply. Refer to *Safety Precautions for All Times* for details.
  - With DC ratings, single-phase full-wave rectified power sources may be used.
  - Only the H3Y-2 and H3Y-2-0 Series include 2-VDC models.
  - Use the Timer within 90% to 110% of the rated supply voltage (95% to 110% for 12 VDC) when using it continuously under an ambient operating temperature of 50°C.
  - Set the reset voltage as follows to ensure proper resetting.
    - 100 to 120 VAC: 10 VAC max.
    - 200 to 230 VAC: 20 VAC max.
    - 100 to 110 VDC: 10 VDC max.
  - Refer to *Safety Precautions for All Times* when combining the Timer with an AC 2-wire proximity sensor.

## ■ Characteristics

<b>Accuracy of operating time</b>	±1% FS max. (0.5 s range: ±1%±10 ms max.)
<b>Setting error (see note 1)</b>	±10%±50 ms FS max.
<b>Reset time</b>	Min. power-opening time: 0.1 s max. (including halfway reset)
<b>Reset voltage</b>	10% max. of rated supply voltage
<b>Influence of voltage (see note 1)</b>	±2% FS max.
<b>Influence of temperature (see note 1)</b>	±2% FS max.
<b>Insulation resistance</b>	100 MΩ min. (at 500 VDC)
<b>Dielectric strength</b>	2,000 VAC, 50/60 Hz for 1 min (between current-carrying terminals and exposed non-current-carrying metal parts) (see note 2) 2,000 VAC, 50/60 Hz for 1 min (between operating power circuit and control output) (see note 2) 2,000 VAC, 50/60 Hz for 1 min (between different pole contacts; 2-pole model) (see note 2) 1,500 VAC, 50/60 Hz for 1 min (between different pole contacts; 4-pole model) 1,000 VAC, 50/60 Hz for 1 min (between non-continuous contacts)
<b>Vibration resistance</b>	Destruction: 10 to 55 Hz, 0.75-mm single amplitude Malfunction: 10 to 55 Hz, 0.5-mm single amplitude
<b>Shock resistance</b>	Destruction: 1,000 m/s <sup>2</sup> (approx. 100G) Malfunction: 100 m/s <sup>2</sup> (approx. 10G)
<b>Ambient temperature</b>	Operating: -10°C to 50°C (with no icing) Storage: -25°C to 65°C (with no icing)
<b>Ambient humidity</b>	Operating: 35% to 85%
<b>Life expectancy</b>	Mechanical: 10,000,000 operations min. (under no load at 1,800 operations/h) Electrical: H3Y-2: 500,000 operations min. (5 A at 250 VAC, resistive load at 1800 operations/h) H3Y-4: 200,000 operations min. (3 A at 250 VAC, resistive load at 1800 operations/h)
<b>Impulse withstand voltage</b>	Between power terminals: 3 kV for 100 to 120 VAC, 200 to 230 VAC, 100 to 110 VDC, 125 VDC 1 kV for 12 VDC, 24 VDC, 48 VDC Between exposed non-current-carrying metal parts: 4.5 kV for 100 to 120 VAC, 200 to 230 VAC, 100 to 110 VDC, 125 VDC 1.5 kV for 12 VDC, 24 VDC, 48 VDC
<b>Noise immunity</b>	±1.5 kV, square-wave noise by noise simulator (pulse width: 100 ns/1 μs, 1-ns rise)
<b>Static immunity</b>	Destruction: 8 kV Malfunction: 4 kV
<b>Enclosure rating</b>	IP40
<b>Weight</b>	Approx. 50 g
<b>EMC</b>	(EMI) EN61812-1 Emission Enclosure: EN55011 Group 1 class A Emission AC Mains: EN55011 Group 1 class A (EMS) EN61812-1 Immunity ESD: EN61000-4-2: 8 kV air discharge (level 3) Immunity RF-interference from AM Radio Waves: EN61000-4-3: 10 V/m (80 MHz to 1 GHz) (level 3) Immunity Burst: EN61000-4-4: 2 kV power-line (level 3) 2 kV I/O signal-line (level 4) Immunity Surge: EN61000-4-5: 2 kV line to ground (level 3) 1 kV line to line (level 3)
<b>Approved standards</b>	UL508, CSA C22.2 No. 14, Lloyds Conforms to EN61812-1 and IEC60664-1. (2.5 kV/2 for H3Y-2/-2-0, 2.5 kV/1 for H3Y-4/-4-0) Output category according to EN60947-5-1.

**Note: 1.** Add ±10 mS to the above value for the 0.5-S range model.

**2.** Terminal screw sections are excluded.