

# Solid-state Timer H3Y

## 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 EN 61812-1 and approved by UL and CSA.



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

Refer to *Safety Precautions* on page 36.

## 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, 240 VAC (50/60 Hz); 12, 24, 48, 125, 100 to 110 VDC	H3Y-2	H3Y-2-0
	4PDT			H3Y-4 *	H3Y-4-0 *

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

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

## Accessories (Order Separately)

### Adapter, Mounting Plate, Clip

Name/specification		Model
Flush mounting adapter		Y92F-78
Mounting Plate for Socket	For 1 Socket	PYP-1
	For 18 Sockets	PYP-18
Clip	For PYF□A	Y92H-3
	For PY□ and PYF□M	Y92H-4

**Note:** For details, refer to *Precautions for H3Y-series Timers* on page 31.

### Socket

Timer		Square Sockets			
Contact	Model	Pin	Connection	Terminal	Model
DPDT	H3Y-2	8-pin	Front Connecting	DIN track mounting	PYF08A
				DIN track mounting (Finger-safe type)	PYF08A-E
				Screw mounting	PYF08F
			Back Connecting	Solder terminal	PY08
				PCB terminal	PY08-02
4PDT	H3Y-4	14-pin	Front Connecting	DIN track mounting	PYF14A
				DIN track mounting (Finger-safe type)	PYF14A-E
				Solder terminal	PY14
			Back Connecting	PCB terminal	PY14-02

- Note:**
1. Cannot be used with the H3Y-□-0 (PCB terminals).
  2. The PYF□□A-E has a finger-protection structure. Round crimp terminals cannot be used. Use forked crimp terminals.
  3. For details, refer to *Precautions for H3Y-series Timers* on page 31.

# H3Y

## 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 *6, *7</b>	100 to 120 (50/60 Hz), 200 to 230 VAC (50/60 Hz), 24 VAC (50/60 Hz) *1 12, 24, 48, 125, 100 to 110 VDC *2, *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 *4
<b>Reset voltage</b>	10% min. of rated supply voltage *5
<b>Power consumption</b>	100 to 120 VAC: 1.5 VA (at 120 VAC) 200 to 230 VAC: 1.8 VA (at 230 VAC) 24 VAC: 1.5 VA (at 24 VAC) 12 VDC: 0.9 W (at 12 VDC) 24 VDC: 0.9 W (at 24 VDC) 48 VDC: 1.0 W (at 48 VDC) 100 to 110 VDC: 1.3 W (at 110 VDC) 125 VDC: 1.3 W (at 125 VDC)
<b>Control outputs</b>	H3Y-2(-0): 5 A at 250 VAC, resistive load ( $\cos\phi = 1$ ) The minimum applicable load is 1 mA at 5 VDC (P reference value). Contact materials: Ag H3Y-4(-0): 3 A at 250 VAC, resistive load ( $\cos\phi = 1$ ) The minimum applicable load is 1 mA at 1 VDC (P reference value). Contact materials: Au-clad + Ag-alloy
<b>Ambient operating temperature</b>	-10°C to 50°C (with no icing)
<b>Storage temperature</b>	-25°C to 65°C
<b>Ambient operating humidity</b>	35% to 85%

\*1. Do not use the output from an inverter as the power supply. Refer to *Safety Precautions for All Timers* for details on your OMRON website.

\*2. With DC ratings, single-phase full-wave rectified power sources may be used.

\*3. Only the H3Y-2 and H3Y-2-0 Series include 12 VDC models.

\*4. 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.

\*5. 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.

\*6. Refer to *Safety Precautions for All Timers* on your OMRON website when combining the Timer with an AC 2-wire proximity sensor.

\*7. A diode to prevent reverse voltages is provided only on models with a DC power supply.

## Characteristics

<b>Accuracy of operating time</b>	±1% FS max. (0.5 s range: ±1%±10 ms max.) *1
<b>Setting error</b>	±10%±50 ms FS max.
<b>Reset time</b>	Min. power-opening time: 0.1 s max. (including halfway reset)
<b>Influence of voltage</b>	±2% FS max. *1
<b>Influence of temperature</b>	±2% FS max. *1
<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) *2 2,000 VAC, 50/60 Hz for 1 min (between operating power circuit and control output) *2 2,000 VAC, 50/60 Hz for 1 min (between different pole contacts; 2-pole model) *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>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>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) *3 Malfunction: 100 m/s <sup>2</sup> (approx. 10G)
<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) *4
<b>Enclosure rating</b>	IP40
<b>Weight</b>	Approx. 50 g
<b>EMC</b>	(EMI) EN 61812-1 Emission Enclosure: EN 55011 Group 1 class A Emission AC Mains: EN 55011 Group 1 class A (EMS) EN 61812-1 Immunity ESD: IEC 61000-4-2 Immunity RF-interference: IEC 61000-4-3 Immunity Burst: IEC 61000-4-4 Immunity Surge: IEC 61000-4-5 Immunity Conducted Disturbance: IEC 61000-4-6 Immunity Voltage Dip/Interruption: IEC 61000-4-11
<b>Approved standards</b>	UL 508, CSA C22.2 No. 14, Lloyds, CCC Conforms to EN 61812-1 and IEC 60664-1. (2.5 kV/2 for H3Y-2/-2-0, 2.5 kV/1 for H3Y-4/-4-0) *5

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

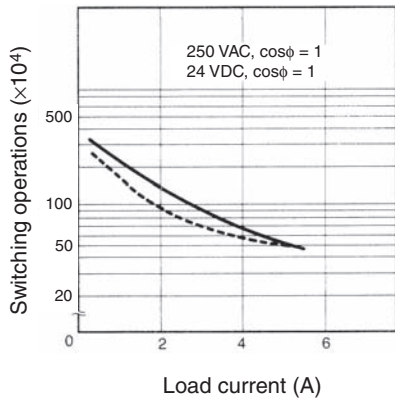
\*2. Terminal screw sections are excluded.

\*3. The destructive shock resistance test was performed on the Timer.

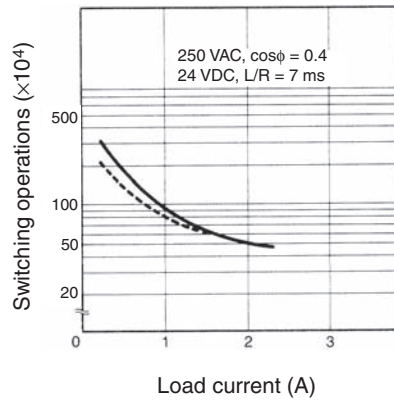
\*4. Check the electrical life curve.

\*5. Overvoltage category II.

H3Y-2, H3Y-2-0

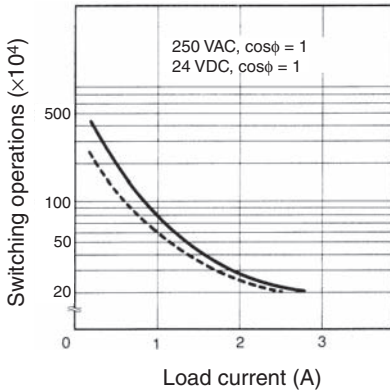


H3Y-2, H3Y-2-0

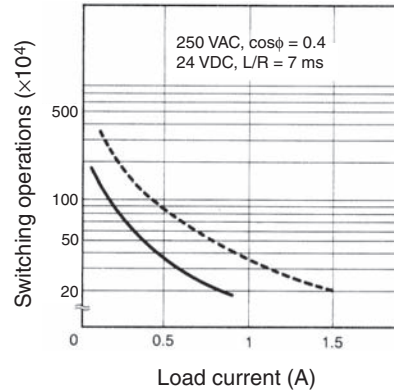


Reference: A maximum current of 0.6 A can be switched at 125 VDC ( $\cos\phi = 1$ ).  
Maximum current of 0.2 A can be switched if L/R is 7 ms. In both cases, a life of 100,000 operations can be expected. The minimum applicable load is 1 mA at 5 VDC (P reference value).

H3Y-4, H3Y-4-0



H3Y-4, H3Y-4-0

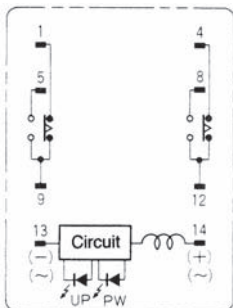


Reference: A maximum current of 0.5 A can be switched at 125 VDC ( $\cos\phi = 1$ ).  
Maximum current of 0.2 A can be switched if L/R is 7 ms. In both cases, a life of 100,000 operations can be expected. The minimum applicable load is 1 mA at 1 VDC (P reference value).

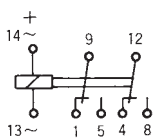
## Connections

### Connections

H3Y-2, H3Y-2-0



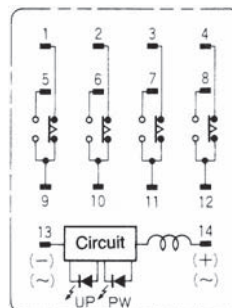
(Bottom View)



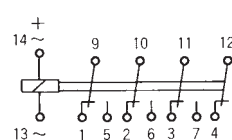
(DIN notation)

Connect the DC power supply to terminals 13 and 14 according to the polarity marks.

H3Y-4, H3Y-4-0



(Bottom View)



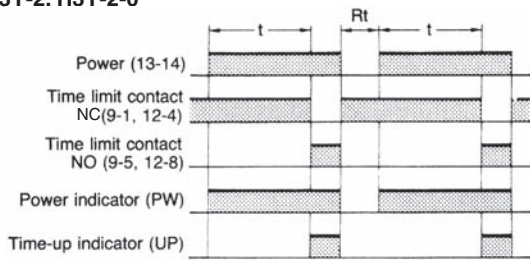
(DIN notation)

Connect the DC power supply to terminals 13 and 14 according to the polarity marks.

# Operation

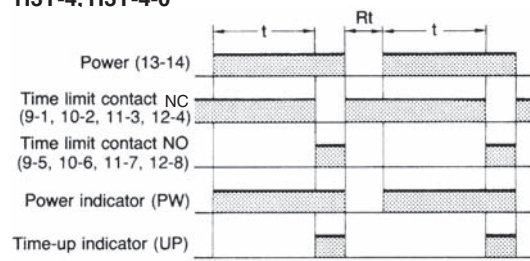
## Timing Chart

H3Y-2, H3Y-2-0



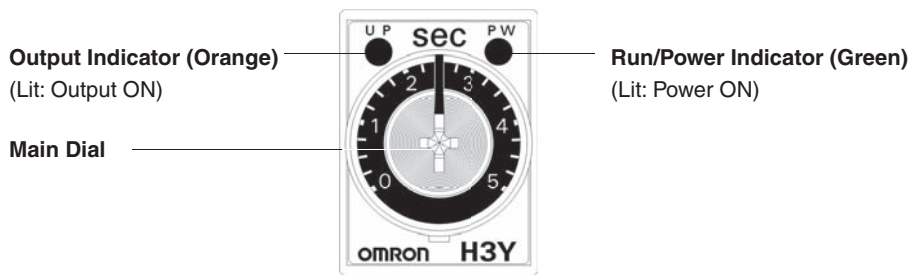
Note: t = Set time  
Rt = Reset time

H3Y-4, H3Y-4-0



Note: t = Set time  
Rt = Reset time

## Nomenclature



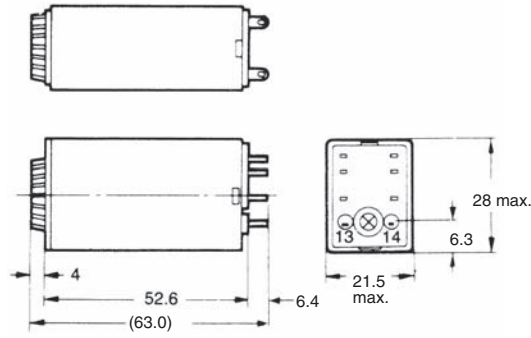
# H3Y

## Dimensions

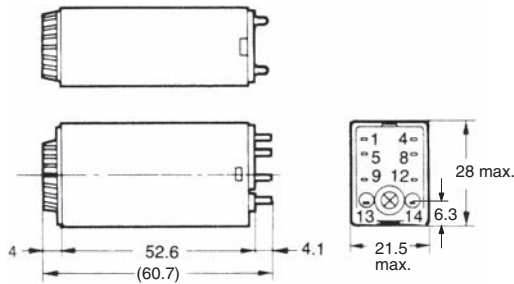
(Unit: mm)

### Timers

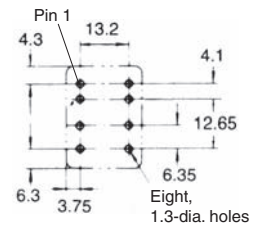
#### H3Y-2



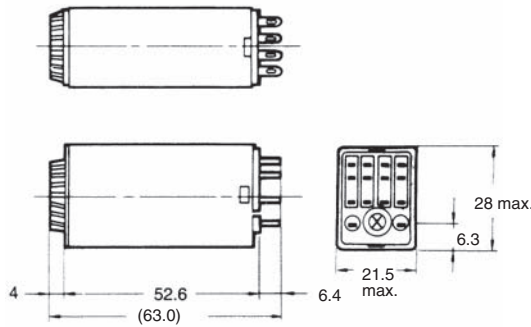
#### H3Y-2-0



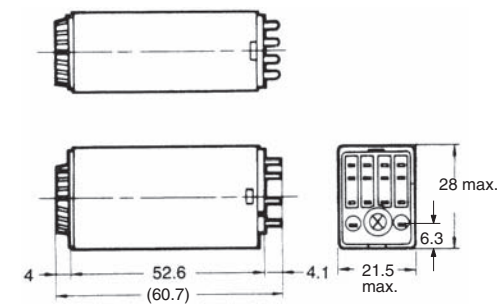
#### Mounting Holes



#### H3Y-4



#### H3Y-4-0



#### Mounting Holes

