Solid-state Timer

H3Y-□-B

Miniature Timer Compatible with the MY Relay

- UL listed when used with a Push-In Plus Terminal Block Socket. ✻ Conforms to CSA, CE Marking, CCC and LR.
- Black design with power supply terminals on top and contact output terminals on bottom.
- Large transparent time setting knob facilitates time setting. A flat-blade and Phillips screwdriver can also be used for time setting.
- Semi-multi power supply voltage.

✻ When used in combination with a Push-In Plus Terminal Block Socket (PYF-□-PU-L).

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 38.

Ordering Information

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

Note: Sockets and Hold-down Clips are not included with the H3Y-B. They must be ordered separately.
✻ Use the H3Y-4-B Series when switching micro loads.

Accessories (Order Separately)

Hold-down Clips

Name/specification		Model
Hold-down Clips	For PYF-□-PU-L	Y92H-3

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

Socket

Timer		Square Sockets				
Contact	Model	Pin	Connection	Terminal	Model	Terminal Type
DPDT	H3Y-2-B	8-pin	Front Connecting	DIN track mounting	PYF-08-PU-L	Push-In Plus Terminal Block
4PDT	H3Y-4-B	14-pin	Front Connecting	DIN track mounting	PYF-14-PU-L	Push-In Plus Terminal Block

Note: 1. Cannot be used with the H3Y-□-0 (PCB terminals).
2. For details, refer to *Precautions for H3Y-series Timers* on page 31.

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-B/H3Y-4-B
Rated supply voltage ✻6, ✻7	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
Operating voltage range	All rated voltages except 12 VDC: 85% to 110% of rated supply voltage 12 VDC: 90% to 110% of rated supply voltage ✻4
Reset voltage	10% min. of rated supply voltage ✻5
Power consumption	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)
Control outputs	H3Y-2-B: 5 A at 250 VAC, resistive load (cosϕ = 1) The minimum applicable load is 1 mA at 5 VDC (P reference value). Contact materials: Ag H3Y-4-B: 3 A at 250 VAC, resistive load (cosϕ = 1) The minimum applicable load is 1 mA at 1 VDC (P reference value). Contact materials: Au-clad + Ag-alloy
Ambient operating temperature	-10°C to 55°C (with no icing)
Storage temperature	-25°C to 65°C
Ambient operating humidity	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-B 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

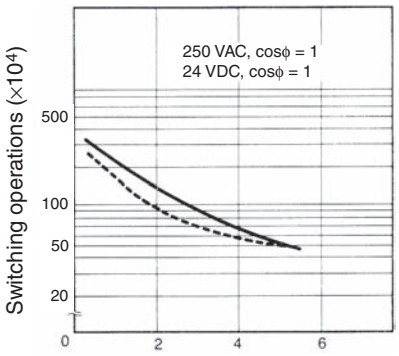
Accuracy of operating time	±1% FS max. (0.5 s range: ±1%±10 ms max.) ✱1
Setting error	±10%±50 ms FS max.
Reset time	Min. power-opening time: 0.1 s max. (including halfway reset)
Influence of voltage	±2% FS max. ✱1
Influence of temperature	±2% FS max. ✱1
Insulation resistance	100 MΩ min. (at 500 VDC)
Dielectric strength	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)
Impulse withstand voltage	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
Noise immunity	±1.5 kV, square-wave noise by noise simulator (pulse width: 100 ns/1 μs, 1-ns rise)
Static immunity	Destruction: 8 kV Malfunction: 4 kV
Vibration resistance	Destruction: 10 to 55 Hz, 0.75-mm single amplitude Malfunction: 10 to 55 Hz, 0.5-mm single amplitude
Shock resistance	Destruction: 1,000 m/s^2 (approx. 100G) ✱3 Malfunction: 100 m/s^2 (approx. 10G)
Life expectancy	Mechanical:10,000,000 operations min. (under no load at 1,800 operations/h) Electrical: H3Y-2-B: 500,000 operations min. (5 A at 250 VAC, resistive load at 1800 operations/h) H3Y-4-B: 200,000 operations min. (3 A at 250 VAC, resistive load at 1800 operations/h) ✱4
Enclosure rating	IP40
Weight	Approx. 50 g
EMC	(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
Approved standards	UL 508/CSA C22.2 No.14 ✱5, CSA C22.2 No.14, Lloyds, CCC: GB/T 14048.5 ✱7 Conforms to EN 61812-1 and IEC 60664-1. (2.5 kV/2 for H3Y-2-B ✱6, 2.5 kV/1 for H3Y-4-B ✱6)

✱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. cULus listing applies when the OMRON PYF-□-PU-L is used.
cURus recognition applies when any other socket is used.
✱6. Overvoltage category II.
✱7. CCC certification requirements

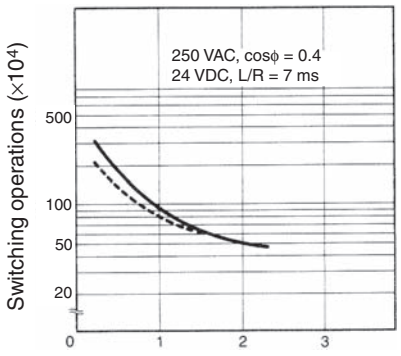
Model	H3Y-2-B	H3Y-4-B
Recommended fuse	RT14-20/6A (380 VAC 6 A), manufactured by DELIXI	RT14-20/4A (380 VAC 4 A), manufactured by DELIXI
Rated operating voltage Ue Rated operating current Ie	AC-15: Ue: 250 VAC, Ie: 3 A AC-13: Ue: 250 VAC, Ie: 5 A DC-13: Ue: 30 VDC, Ie: 0.5 A	AC-15: Ue: 250 VAC, Ie: 2 A AC-13: Ue: 250 VAC, Ie: 3 A DC-13: Ue: 30 VDC, Ie: 0.5 A
Rated insulation voltage	250 V	
Rated impulse withstand voltage (altitude: 2,000 m max.)	2.5 kV (at 240 VAC)	
Conditional short-circuit current	1000 A	

Engineering Data

H3Y-2-B

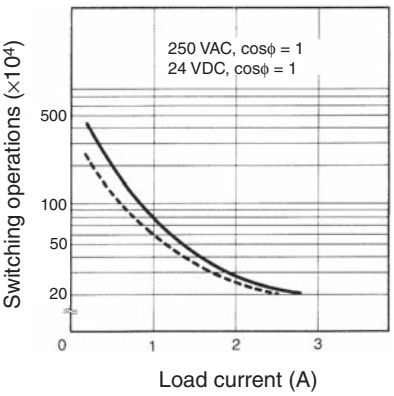


H3Y-2-B

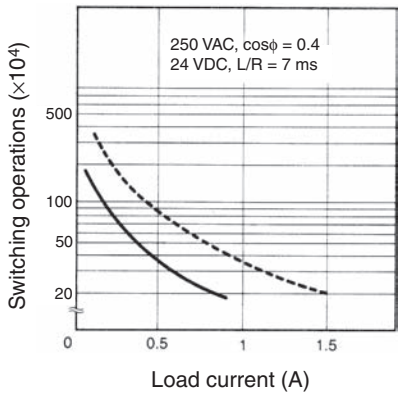


Reference: A maximum current of 0.6 A can be switched at 125 VDC (cosϕ = 1). Maximum current of 0.2 A can be switched if L/R is 7 ms. In both cases, a life of 100,000 operations can be expected.The minimum applicable load is 1 mA at 5 VDC (P reference value).

H3Y-4-B



H3Y-4-B

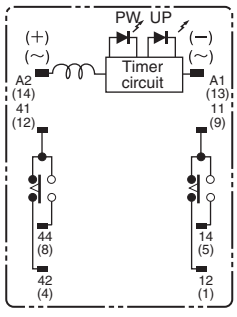


Reference: A maximum current of 0.5 A can be switched at 125 VDC (cosϕ = 1). Maximum current of 0.2 A can be switched if L/R is 7 ms. In both cases, a life of 100,000 operations can be expected.The minimum applicable load is 1 mA at 1 VDC (P reference value).

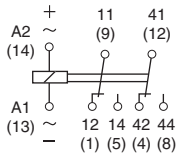
Connections

Connections

H3Y-2-B



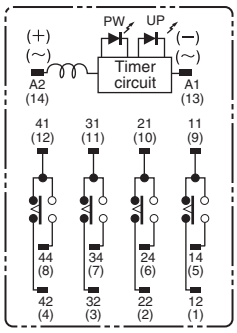
(Bottom View)



(DIN notation)

Connect the DC power supply to terminals A1(13) and A2(14) according to the polarity marks.

H3Y-4-B



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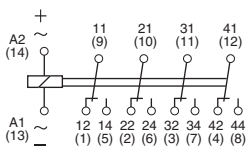

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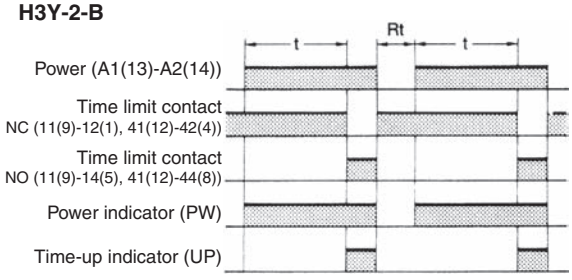
Operation

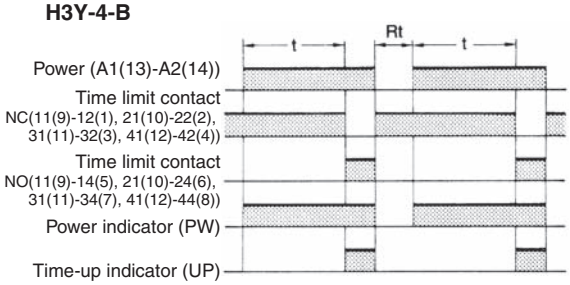
Timing Chart

H3Y-2-B



Note: t = Set time
Rt = Reset time

H3Y-4-B



Note: t = Set time
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Nomenclature

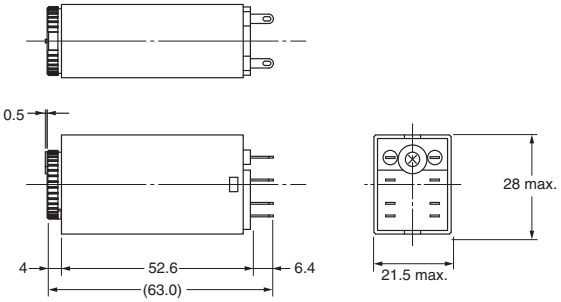
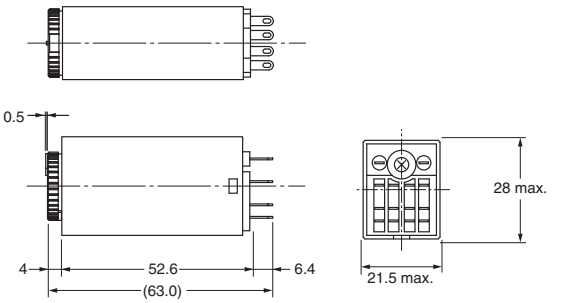
H3Y-□-B

Dimensions

(Unit: mm)

Timers

H3Y-2-B



H3Y-4-B