

# Solid-state Timer H3Y Series

## Miniature Timer Compatible with the MY Relay

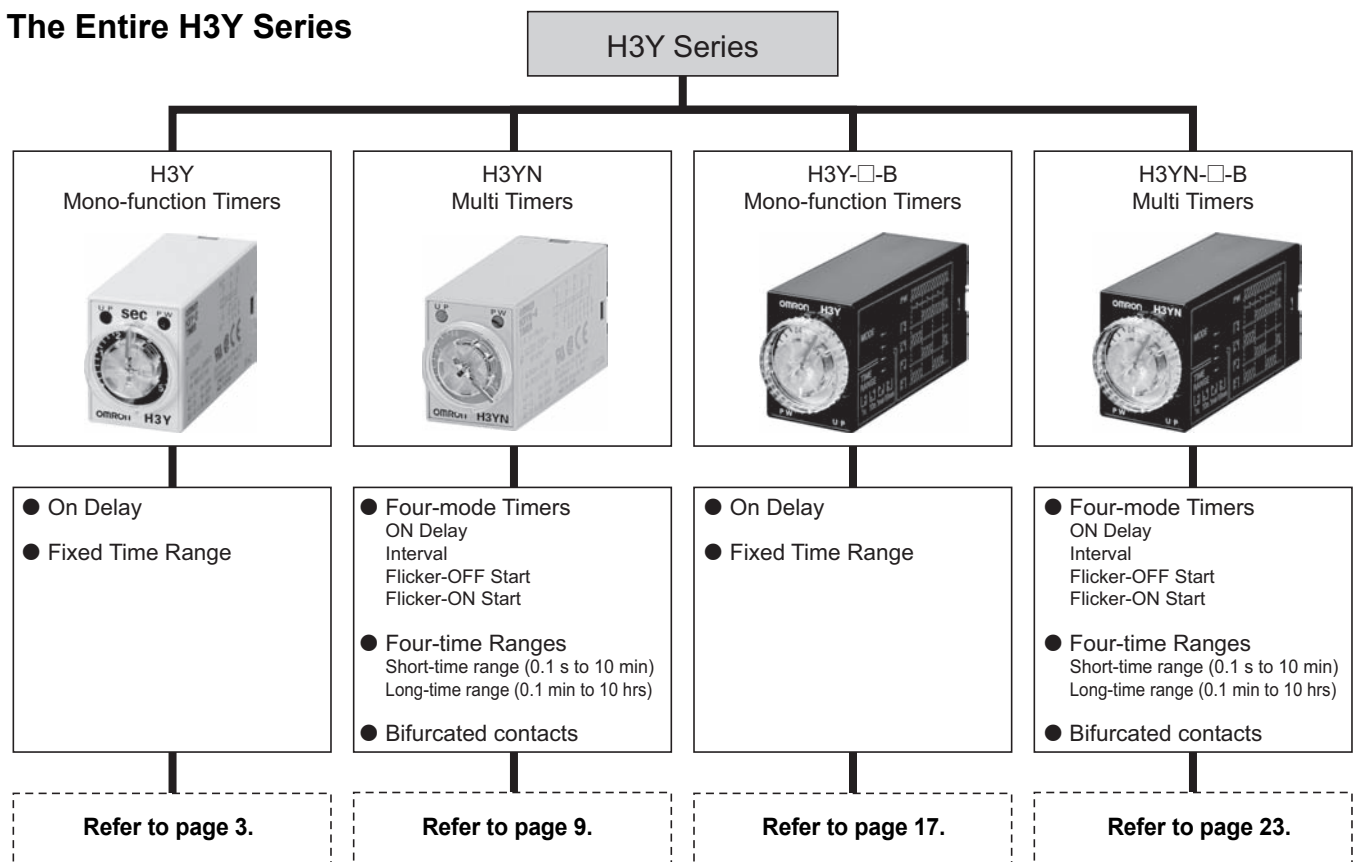
- The Push-In Plus Terminal Block Socket-compatible H3Y-□-B/H3YN-□-B Timers in a black design join the Single-mode H3Y and Multi-mode H3YN.
- The H3Y-□-B and H3YN-□-B are UL listed when they are used together with Push-In Plus Terminal Block Sockets.
- Large transparent time setting knob facilitates time setting.  
A flat-blade and Phillips screwdriver can also be used for time setting.
- 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.

## Model Number Structure

### The Entire H3Y Series



## H3Y Series

### Model Number Structure

H3Y- □ - □ - □  
(1) (2) (3)

#### (1) Output

| Symbol | Meaning |
|--------|---------|
| 2      | DPDT    |
| 4      | 4PDT    |

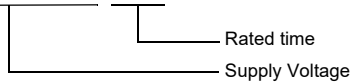
#### (2) Terminal Type

| Symbol | Meaning           |
|--------|-------------------|
| None   | Plug-in terminals |
| 0      | PCB terminals     |

#### (3) Body Color and Terminal Arrangement

| Symbol | Meaning                                                                 |
|--------|-------------------------------------------------------------------------|
| None   | Beige with output terminals on top and power supply terminals on bottom |
| B      | Black with power supply terminals on top and output terminals on bottom |

Ex) H3Y-2 100 to 120VAC 0.5S



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

H3YN - □□□ - □  
(1) (2) (3) (4)

#### (1) Output

| Symbol | Meaning |
|--------|---------|
| 2      | DPDT    |
| 4      | 4PDT    |

#### (2) Time Range

| Symbol | Meaning          |
|--------|------------------|
| None   | Short-time range |
| 1      | Long-time range  |

#### (3) Contact Type

| Symbol | Meaning        |
|--------|----------------|
| None   | Single contact |
| Z      | Twin contacts  |

#### (4) Body Color and Terminal Arrangement

| Symbol | Meaning                                                                 |
|--------|-------------------------------------------------------------------------|
| None   | Beige with output terminals on top and power supply terminals on bottom |
| B      | Black with power supply terminals on top and output terminals on bottom |

Ex) H3YN-2 100 to 120VAC  
Supply Voltage

**Note:** Specify both the model number, supply voltage when ordering.

# 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 38.

## 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);<br>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, Hold-down Clips, Terminal covers

| Name/specification        | Model                               |
|---------------------------|-------------------------------------|
| Flush mounting adapter    | Y92F-78                             |
| Mounting Plate for Socket | For 1 Socket<br>PYP-1               |
|                           | For 18 Sockets<br>PYP-18            |
| Hold-down Clips           | For PYFZ-□ and PYF□A<br>Y92H-3      |
|                           | For PY□ and PYF□M<br>Y92H-4         |
| Terminal covers           | For PYFZ-08<br>PYCZ-C08 (2 pcs/set) |
|                           | For PYFZ-14<br>PYCZ-C14 (1 pcs/set) |

**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                               | PYFZ-08   |
|         |       |                |                  | DIN track mounting (Finger Protection Structure) | PYFZ-08-E |
|         |       |                | Back Connecting  | Screw mounting                                   | PYF08M    |
|         |       |                |                  | Solder terminal                                  | PY08      |
| 4PDT    | H3Y-4 | 14-pin         | Front Connecting | PCB terminal                                     | PY08-02   |
|         |       |                |                  | DIN track mounting                               | PYFZ-14   |
|         |       |                | Back Connecting  | DIN track mounting (Finger Protection Structure) | PYFZ-14-E |
|         |       |                |                  | Solder terminal                                  | PY14      |
|         |       |                |                  | PCB terminal                                     | PY14-02   |

- Note:**
1. Cannot be used with the H3Y-□-0 (PCB terminals).
  2. The PYFZ-□-E and PYF□A-E have 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.

## 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)                                                                                                                                                                                                                                                                                                                            |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rated supply voltage *6, *7   | 100 to 120 (50/60 Hz), 200 to 230 VAC (50/60 Hz), 24 VAC (50/60 Hz) *1<br>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<br>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)<br>200 to 230 VAC: 1.8 VA (at 230 VAC)<br>24 VAC: 1.5 VA (at 24 VAC)<br>12 VDC: 0.9 W (at 12 VDC)<br>24 VDC: 0.9 W (at 24 VDC)<br>48 VDC: 1.0 W (at 48 VDC)<br>100 to 110 VDC: 1.3 W (at 110 VDC)<br>125 VDC: 1.3 W (at 125 VDC)                                                                           |
| Control outputs               | H3Y-2(-0):<br>5 A at 250 VAC, resistive load ( $\cos\phi = 1$ )<br>The minimum applicable load is 1 mA at 5 VDC (P reference value).<br>Contact materials: Ag<br>H3Y-4(-0):<br>3 A at 250 VAC, resistive load ( $\cos\phi = 1$ )<br>The minimum applicable load is 1 mA at 1 VDC (P reference value).<br>Contact materials: Au-clad + Ag-alloy |
| Ambient operating temperature | -10°C to 50°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 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

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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<br>(between current-carrying terminals and exposed non-current-carrying metal parts) *2<br>2,000 VAC, 50/60 Hz for 1 min (between operating power circuit and control output) *2<br>2,000 VAC, 50/60 Hz for 1 min (between different pole contacts; 2-pole model) *2<br>1,500 VAC, 50/60 Hz for 1 min (between different pole contacts; 4-pole model)<br>1,000 VAC, 50/60 Hz for 1 min (between non-continuous contacts) |
| Impulse withstand voltage  | Between power terminals:<br>3 kV for 100 to 120 VAC, 200 to 230 VAC, 100 to 110 VDC, 125 VDC<br>1 kV for 12 VDC, 24 VDC, 48 VDC<br>Between exposed non-current-carrying metal parts:<br>4.5 kV for 100 to 120 VAC, 200 to 230 VAC, 100 to 110 VDC, 125 VDC<br>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<br>Malfunction: 4 kV                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Vibration resistance       | Destruction: 10 to 55 Hz, 0.75-mm single amplitude<br>Malfunction: 10 to 55 Hz, 0.5-mm single amplitude                                                                                                                                                                                                                                                                                                                                                |
| Shock resistance           | Destruction: 1,000 m/s <sup>2</sup> (approx. 100G) *3<br>Malfunction: 100 m/s <sup>2</sup> (approx. 10G)                                                                                                                                                                                                                                                                                                                                               |
| Life expectancy            | Mechanical: 10,000,000 operations min. (under no load at 1,800 operations/h)<br>Electrical:<br>H3Y-2: 500,000 operations min. (5 A at 250 VAC, resistive load at 1800 operations/h)<br>H3Y-4: 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)<br>Emission Enclosure: EN 61812-1<br>Emission AC Mains: EN 55011 Group 1 class A<br>(EMS)<br>Immunity ESD: EN 61812-1<br>Immunity RF-interference: IEC 61000-4-2<br>Immunity Burst: IEC 61000-4-3<br>Immunity Surge: IEC 61000-4-4<br>Immunity Conducted Disturbance: IEC 61000-4-5<br>Immunity Voltage Dip/Interruption: IEC 61000-4-6<br>IEC 61000-4-11                                                                                        |
| Approved standards         | UL 508, CSA C22.2 No. 14, Lloyds, CCC: GB/T 14048.5 *6<br>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.

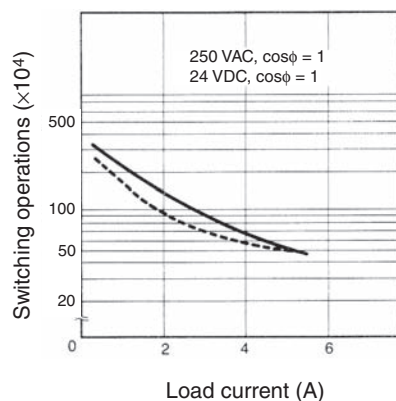
\*6. CCC certification requirements

| Model                                                                            | H3Y-2 (-0)                                                                                                                                                               | H3Y-4 (-0)                                                                                                                                                               |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 U <sub>e</sub><br>Rated operating current I <sub>e</sub> | AC-15: U <sub>e</sub> : 250 VAC, I <sub>e</sub> : 3 A<br>AC-13: U <sub>e</sub> : 250 VAC, I <sub>e</sub> : 5 A<br>DC-13: U <sub>e</sub> : 30 VDC, I <sub>e</sub> : 0.5 A | AC-15: U <sub>e</sub> : 250 VAC, I <sub>e</sub> : 2 A<br>AC-13: U <sub>e</sub> : 250 VAC, I <sub>e</sub> : 3 A<br>DC-13: U <sub>e</sub> : 30 VDC, I <sub>e</sub> : 0.5 A |
| Rated insulation voltage                                                         | 250 V                                                                                                                                                                    |                                                                                                                                                                          |
| Rated impulse withstand voltage<br>(altitude: 2,000 m max.)                      | 2.5 kV (at 240 VAC)                                                                                                                                                      |                                                                                                                                                                          |
| Conditional short-circuit current                                                | 1000 A                                                                                                                                                                   |                                                                                                                                                                          |

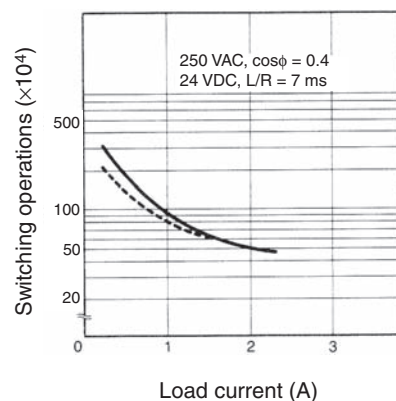
# H3Y

## Engineering Data

H3Y-2, H3Y-2-0

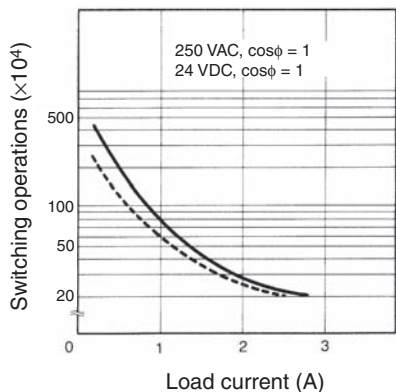


H3Y-2, H3Y-2-0

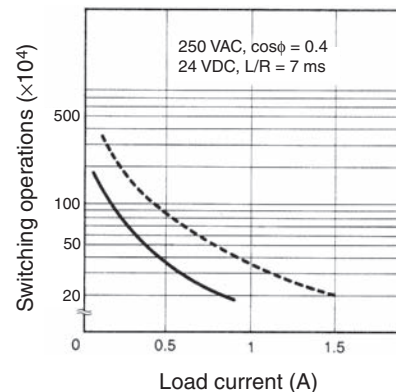


Reference: A maximum current of 0.6 A can be switched at 125 VDC ( $\cos\phi = 1$ ).  
Maximum current of 0.2 A can be switched if L/R is 7 ms. In both cases, a life of 100,000 operations can be expected. The minimum applicable load is 1 mA at 5 VDC (P reference value).

H3Y-4, H3Y-4-0



H3Y-4, H3Y-4-0

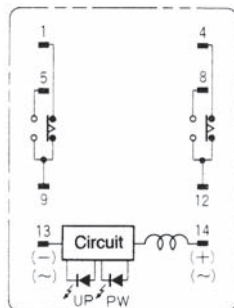


Reference: A maximum current of 0.5 A can be switched at 125 VDC ( $\cos\phi = 1$ ).  
Maximum current of 0.2 A can be switched if L/R is 7 ms. In both cases, a life of 100,000 operations can be expected. The minimum applicable load is 1 mA at 1 VDC (P reference value).

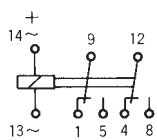
## Connections

### Connections

H3Y-2, H3Y-2-0



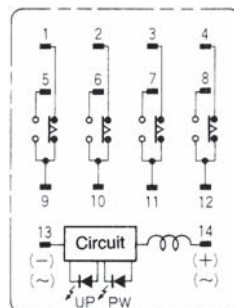
(Bottom View)



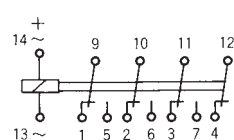
(DIN notation)

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

H3Y-4, H3Y-4-0



(Bottom View)



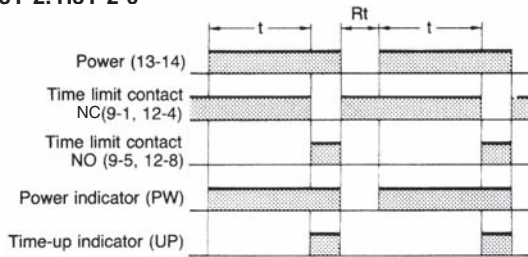
(DIN notation)

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

## Operation

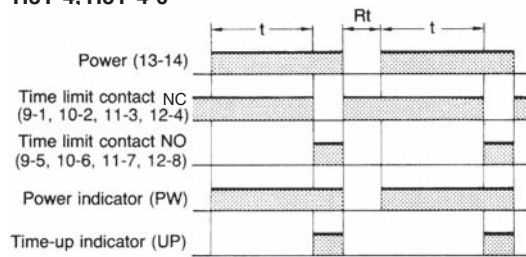
### Timing Chart

H3Y-2, H3Y-2-0



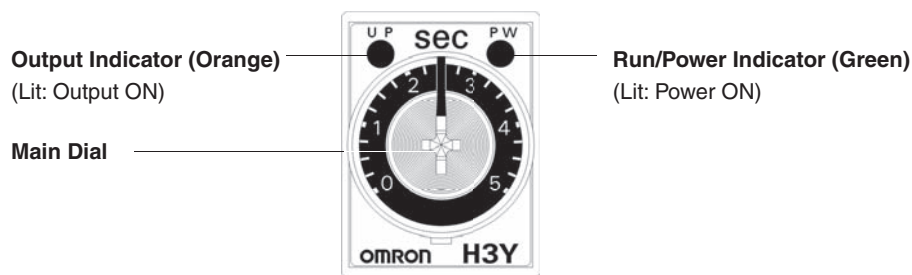
Note:  $t$  = Set time  
 $Rt$  = Reset time

H3Y-4, H3Y-4-0



Note:  $t$  = Set time  
 $Rt$  = Reset time

### Nomenclature

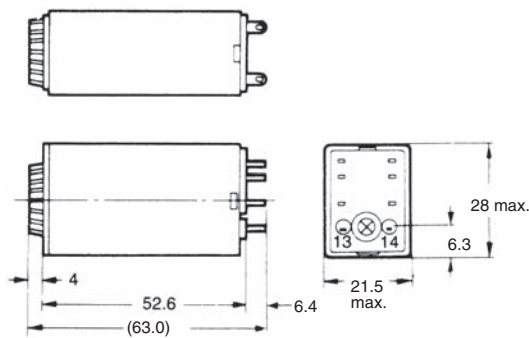


H3Y  
Dimensions

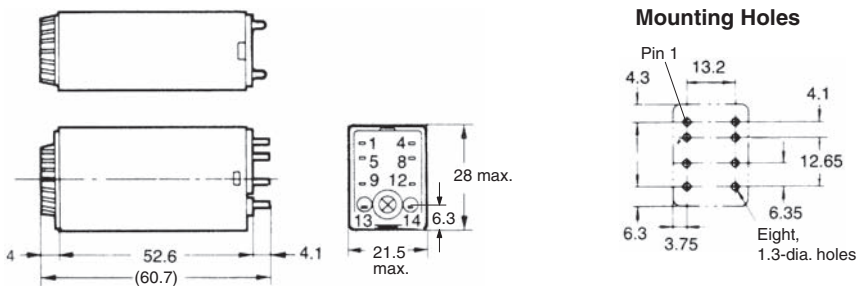
(Unit: mm)

Timers

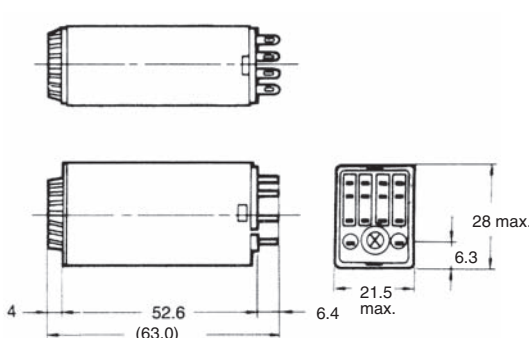
H3Y-2



H3Y-2-0



H3Y-4



H3Y-4-0

