

Solid-state Timer H3YN

Miniature Timer with Multiple Time Ranges and Multiple Operating Modes

- Minimizes stock.
- Pin configuration compatible with MY Power Relay.
- Standard multiple operating modes and multiple time ranges.
- Conforms to EN61812-1 and IEC60664-1 for Low Voltage, and EMC Directives.



Model Number Structure

Model Number Legend

H3YN-□□-□
1 2 3

1. Output

- 2: DPDT
- 4: 4PDT

2. Time Range

- None: Short-time range (0.1 s to 10 min)
- 1: Long-time range (0.1 min to 10 hrs)

3. Contact Type

- None: Single contact
- Z: Twin contacts

Ordering Information

List of Models

| Supply voltage | Time-limit contact | Short-time range model (0.1 s to 10 min) | Long-time range model (0.1 min to 10 h) |
|--|----------------------|---|--|
| 24, 100 to 120, 200 to 230 VAC; 12, 24, 48, 100 to 110, 125 VDC | DPDT | H3YN-2 | H3YN-21 |
| | 4PDT | H3YN-4 | H3YN-41 |
| 24 VDC | 4PDT (Twin contacts) | H3YN-4-Z | H3YN-41-Z |

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

Example: H3YN-2 24 VAC

Supply voltage

Note: 1. Sockets and Hold-down Clips are not included with the H3YN. They must be ordered separately.

2. Only models with 24-VDC power supply are available.

3. Use the H3YN-4 or H3YN-41 Series when switching micro loads, and use the H3YN-4-Z or H3YN-41-Z Series when switching even smaller loads.

Accessories (Order Separately)

Connecting Socket

| Timer | Track-mounting/Front-connecting Socket | Back-connecting Socket | | |
|------------------------------|--|------------------------|--------------------|-------------|
| | | Solder terminal | Wire-wrap terminal | PC terminal |
| H3YN-2/-21 | PYF08A, PYF08A-N, PYF08A-E | PY08 | PY08QN(2) | PY08-02 |
| H3YN-4/-41 H3YN-4-Z/-41-Z | PYF14A, PYF14A-N, PYF14A-E | PY14 | PY14QN(2) | PY14-02 |

Hold-down Clips

| Model | Applicable Socket |
|--------|--|
| Y92H-3 | PYF08A, PYF08A-N, PYF08A-E PYF14A, PYF14A-N, PYF14A-E |
| Y92H-4 | PY08, PY08QN(2), PY08-02 PY14, PY14QN(2), PY14-02 |

Specifications

■ Ratings

| Item | H3YN-2/-4/-4-Z | H3YN-21/-41/-41-Z |
|------------------------------------|---|---|
| Time ranges | 0.1 s to 10 min (1 s, 10 s, 1 min, or 10 min max. selectable) | 0.1 min to 10 h (1 min, 10 min, 1 h, or 10 h max. selectable) |
| Rated supply voltage (See note 5.) | 24, 100 to 120, 200 to 230 VAC (50/60 Hz) (See note 1.) 12, 24, 48, 100 to 110, 125 VDC (See note 2.) | |
| Pin type | Plug-in | |
| Operating mode | ON-delay, interval, flicker OFF start, or flicker ON start (selectable with DIP switch) | |
| Operating voltage range | 85% to 110% of rated supply voltage (12 VDC: 90% to 110% of rated supply voltage) (See note 3.) | |
| Reset voltage | 10% min. of rated supply voltage (See note 4.) | |
| Power consumption | 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 | |
| Control outputs | DPDT: 5 A at 250 VAC, resistive load ($\cos\phi = 1$) 4PDT: 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.
 - Single-phase, full-wave-rectified power supplies can be used.
 - When using the H3YN continuously in any place where the ambient temperature is in a range of 45°C to 50°C, supply 90% to 110% of the rated supply voltages (supply 95% to 110% with 12 VDC type).
 - 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

| Item | H3YN-2/-21/-4/-41 |
|----------------------------|---|
| Accuracy of operating time | ±1% FS max. (1 s range: ±1%±10 ms max.) |
| 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. |
| Influence of temperature | ±2% FS max. |
| 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) (see note 1) 2,000 VAC, 50/60 Hz for 1 min (between operating power circuit and control output) 2,000 VAC, 50/60 Hz for 1 min (between different pole contacts; 2-pole model) 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) |
| Vibration resistance | Destruction: 10 to 55 Hz, 0.75-mm single amplitude for 1 h each in 3 directions Malfunction: 10 to 55 Hz, 0.5-mm single amplitude for 10 min each in 3 directions |
| Shock resistance | Destruction: 1,000 m/s ² Malfunction: 100 m/s ² |
| Ambient temperature | Operating: -10°C to 50°C (with no icing) Storage: -25°C to 65°C (with no icing) |
| Ambient humidity | Operating: 35% to 85% |
| Life expectancy | Mechanical: 10,000,000 operations min. (under no load at 1,800 operations/h) Electrical: DPDT: 500,000 operations min. (5 A at 250 VAC, resistive load at 1,800 operations/h) 4PDT: 200,000 operations min. (H3YN-4-Z/-41-Z: 100,000 operations min.) (3 A at 250 VAC, resistive load at 1,800 operations/h) (see note 2) |
| 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, 24 VAC 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, 24 VAC |
| 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 |
| Degree of protection | IP40 |
| Weight | Approx. 50 g |
| EMC | (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) |
| Approved standards | UL508, CSA C22.2 No. 14, Lloyds Conforms to EN61812-1 and IEC60664-1. (2.5 kV/2 for H3YN-2/-21, 2.5 kV/1 for H3YN-4/-41, H3YN-4-Z/-41-Z) Output category according to EN60947-5-1. |

Note: 1. Terminal screw sections are excluded.

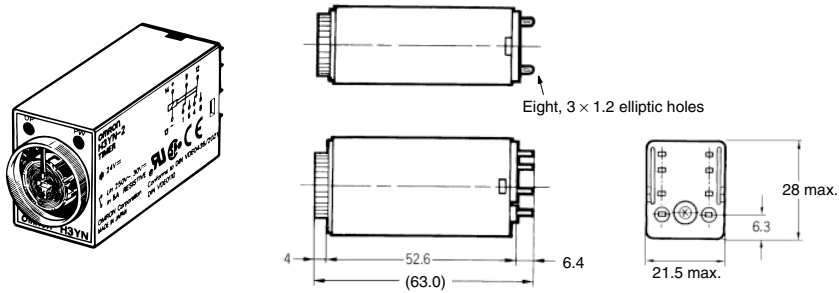
2. Refer to the *Life-test Curve*.

Dimensions

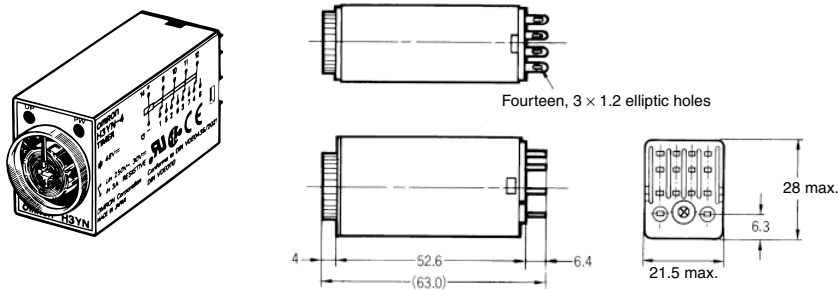
Note: All units are in millimeters unless otherwise indicated.

■ Timers

H3YN-2/-21 Front Mounting

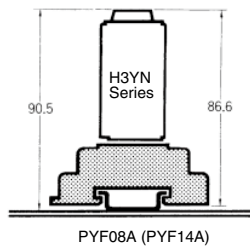


H3YN-4/-41 Front Mounting H3YN-4-Z/-41-Z

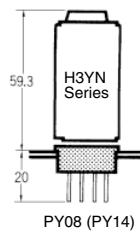


Mounting Height

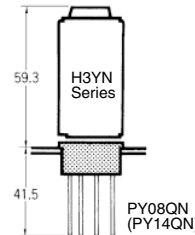
PYF08A/PYF08A-N/PYF08A-E
(PYF14A/PYF14A-N/PYF14A-E
(see note))



PY08 (PY14 (see note))



PY08QN (PY14QN (see note))



Note: Models in parentheses are Connecting Sockets to the H3YN-4/-41 or H3YN-4-Z/-41-Z.