

# Solid-state Timer H3YN

CSM\_H3YN\_DS\_E\_3\_2

## 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)

### 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 NTLPxREFERENCE *Socket and DIN Track Products*.

### Socket

Timer		Square Sockets			
Contact	Model	Pin	Connection	Terminal	Model
DPDT	H3Y-2 H3YN-2□	8-pin	Front Connecting	DIN track mounting	PYF08A
				DIN track mounting (Finger-safe tyape)	PYF08A-E
				DIN track mounting	PYF08F
			Back Connecting	Solder terminal	PY08
4PDT	H3Y-4 H3YN-4□	14-pin	Front Connecting	DIN track mounting	PYF14A
				DIN track mounting (Finger-safe tyape)	PYF14A-E
			Back Connecting	Solder terminal	PY14

- 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 *Socket and DIN Track Products*.

# 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:**
1. Do not use the output from an inverter as the power supply. Refer to *Safety Precautions for All Timers* for details.
  2. Single-phase, full-wave-rectified power supplies can be used.
  3. 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).
  4. 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.
  5. Refer to *Safety Precautions for All Timers* 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 <sup>2</sup> Malfunction: 100 m/s <sup>2</sup>
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*.