

DIN 48 × 48-mm Power OFF-delay Timer

- Long power OFF-delay times;
S-series: up to 12 seconds,
M-series: up to 12 minutes.
- Models with forced-reset input are available.
- 11-pin and 8-pin models are available.



Model Number Structure

Model Number Legend

Note: This model number legend includes combinations that are not available. Before ordering, please check the *List of Models* on page 1 for availability.

H3CR - H L
 1 2 3 4 5 6

1. Classification

H: Power OFF-delay timer

2. Configuration

None: 11-pin socket

8: 8-pin socket

3. Input

None: Without reset input

R: With reset input

4. Dimensions

L: Long-body model

5. Supply Voltage

100-120AC: 100 to 120 VAC

200-240AC: 200 to 240 VAC

48DC: 48 VDC

100-125DC: 100 to 125 VDC

6. Time Range

S: 0.05 to 12 s

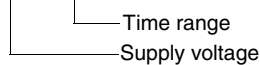
M: 0.05 to 12 min

List of Models

Input	Output	Supply voltage	S-series		M-series	
			11-pin models	8-pin models	11-pin models	8-pin models
Without reset input	DPDT	100 to 120 VAC	---	H3CR-H8L 100-120AC S	---	H3CR-H8L 100-120AC M
		200 to 240 VAC	---	H3CR-H8L 200-240AC S	---	H3CR-H8L 200-240AC M
		24 VAC/DC	---	H3CR-H8L 24AC/DC S	---	H3CR-H8L 24AC/DC M
		48 VDC	---	H3CR-H8L 48DC S	---	H3CR-H8L 48DC M
		100 to 125 VDC	---	H3CR-H8L 100-125DC S	---	H3CR-H8L 100-125DC M
With reset input	DPDT	100 to 120 VAC	H3CR-HRL 100-120AC S	---	H3CR-HRL 100-120AC M	---
		200 to 240 VAC	H3CR-HRL 200-240AC S	---	H3CR-HRL 200-240AC M	---
		24 VAC/DC	H3CR-HRL 24AC/DC S	---	H3CR-HRL 24AC/DC M	---
		48 VDC	H3CR-HRL 48DC S	---	H3CR-HRL 48DC M	---
		100 to 125 VDC	H3CR-HRL 100-125DC S	---	H3CR-HRL 100-125DC M	---
	SPDT	100 to 120 VAC	---	H3CR-H8RL 100-120AC S	---	H3CR-H8RL 100-120AC M
		200 to 240 VAC	---	H3CR-H8RL 200-240AC S	---	H3CR-H8RL 200-240AC M
		24 VAC/DC	---	H3CR-H8RL 24AC/DC S	---	H3CR-H8RL 24AC/DC M
		48 VDC	---	H3CR-H8RL 48DC S	---	H3CR-H8RL 48DC M
		100 to 125 VDC	---	H3CR-H8RL 100-125DC S	---	H3CR-H8RL 100-125DC M

Note: Specify the model number, supply voltage, and time range (S or M) when ordering.

Example: H3CR-H8L 100-120AC S



■ Accessories (Order Separately)

Name/specifications		Models
Flush Mounting Adapter		Y92F-30
		Y92F-70
		Y92F-71
Mounting Track	50 cm (l) × 7.3 mm (t)	PFP-50N
	1 m (l) × 7.3 mm (t)	PFP-100N
	1 m (l) × 16 mm (t)	PFP-100N2
End Plate		PFP-M
Spacer		PFP-S
Protective Cover		Y92A-48B
Track Mounting/ Front Connecting Socket	8-pin	P2CF-08
	8-pin, finger safe type	P2CF-08-E
	11-pin	P2CF-11
	11-pin, finger safe type	P2CF-11-E
Back Connecting Socket	8-pin	P3G-08
	8-pin, finger safe type	P3G-08 with Y92A-48G (See note 1)
	11-pin	P3GA-11
	11-pin, finger safe type	P3GA-11 with Y92A-48G (See note 1)
Hold-down Clip (See note 2)	For PL08 and PL11 Sockets	Y92H-1
	For PF085A Socket	Y92H-2

Note: 1. Y92A-48G is a finger safe terminal cover which is attached to the P3G-08 or P3GA-11 Socket.

2. Hold-down Clips are sold in sets of two.

Specifications

■ General

Item	H3CR-H8L	H3CR-H8RL	H3CR-HRL
Operating/Reset method	Instantaneous operation/Time-limit reset	Instantaneous operation/Time-limit reset/Forced reset	
Pin type	8-pin		11-pin
Input type	---		No-voltage
Output type	Relay output (DPDT)	Relay output (SPDT)	Relay output (DPDT)
Mounting method	DIN track mounting, surface mounting, and flush mounting		
Approved standards	UL508, CSA C22.2 No.14, NK, Lloyds Conforms to EN61812-1 and IEC60664-1 (VDE0110) 4kV/2. Output category according to EN60947-5-1.		

■ Time Ranges

Time unit	S-series		M-series
	s (sec)		min (min)
Setting	0.6	0.05 to 0.6	
	1.2	0.12 to 1.2	
	6	0.6 to 6	
	12	1.2 to 12	
Min. power ON time	0.1 s min.	2 s min.	
Time-up operation repeat period	3 s min.		
Forced-reset repeat period	3 s min.		

Note: 1. If the above minimum power ON time is not secured, the H3CR may not operate. Be sure to secure the above minimum power ON time.

2. Do not use the Timer with a repeat period of less than 3 s. Doing so may result in abnormal heating or burning. Refer to *Safety Precautions (H3CR-H)* on page 8 for details.

■ Ratings

Rated supply voltage (See notes 1 and 2.)	100 to 120 VAC (50/60 Hz), 200 to 240 VAC (50/60 Hz), 24 VAC/VDC (50/60 Hz), 48 VDC, 100 to 125 VDC
Operating voltage range	85% to 110% of rated supply voltage
No-voltage input (See note 3.)	ON-impedance: 1 k Ω max. ON residual voltage: 1 V max. OFF impedance: 500 k Ω min.
Power consumption	100 to 120 VAC: approx. 0.23 VA (0.22 W) at 120 VAC 200 to 240 VAC: approx. 0.35 VA (0.3 W) at 240 VAC 24 VAC/DC: approx. 0.17 VA (0.15 W) at 24 VAC approx. 0.1 W at 24 VDC 48 VDC: approx. 0.18 W at 48 VDC 100 to 125 VDC: approx. 0.5 W at 125 VDC
Control outputs	Contact output: 5 A at 250 VAC/30 VDC, resistive load ($\cos\phi = 1$)

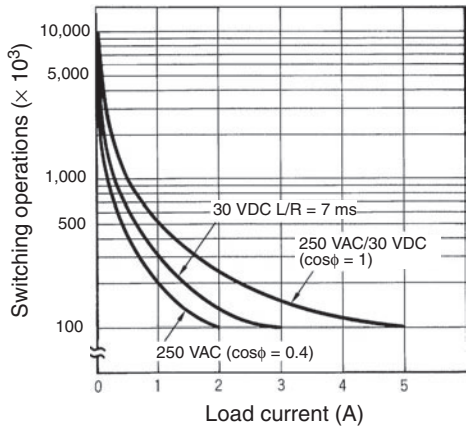
- Note:** 1. A power supply with a ripple of 20% max. (single-phase power supply with full-wave rectification) can be used with each DC Model.
2. Do not use an inverter output as the power supply. Refer to *Safety Precautions for All Timers* for details.
3. For contact input, use contacts which can adequately switch 1 mA at 5 V.

■ Characteristics

Accuracy of operating time	$\pm 0.2\%$ FS max. ($\pm 0.2\%$ FS ± 10 ms max. in ranges of 0.6 and 1.2 s)
Setting error	$\pm 5\%$ FS ± 50 ms max.
Operation start voltage	30% max. of rated voltage
Influence of voltage	$\pm 0.2\%$ FS max. ($\pm 0.2\%$ FS ± 10 ms max. in ranges of 0.6 and 1.2 s)
Influence of temperature	$\pm 1\%$ FS max. ($\pm 1\%$ FS ± 10 ms max. in ranges of 0.6 and 1.2 s)
Insulation resistance	100 M Ω min. (at 500 VDC)
Dielectric strength	2,000 VAC, 50/60 Hz for 1 min (between current-carrying metal parts and exposed non-current-carrying metal parts) 2,000 VAC, 50/60 Hz for 1 min (between control output terminals and operating circuit) 2,000 VAC, 50/60 Hz for 1 min (between contacts of different polarities) 1,000 VAC, 50/60 Hz for 1 min (between contacts not located next to each other)
Impulse withstand voltage	3 kV (between power terminals) for 100 to 120 VAC, 200 to 240 VAC, 100 to 125 VDC; 1 kV for 24 VAC/DC, 48 VDC 4.5 kV (between current-carrying terminal and exposed non-current-carrying metal parts) for 100 to 120 VAC, 200 to 240 VAC, 100 to 125 VDC; 1.5 kV for 24 VAC/DC, 48 VDC
Noise immunity	± 1.5 kV (between power terminals) and ± 600 V (between input terminals), square-wave noise by noise simulator (pulse width: 100 ns/1 μ s, 1-ns rise); ± 1 kV (between power terminals) for 48 VDC
Static immunity	Malfunction: 8 kV, Destruction: 15 kV
Vibration resistance	Destruction: 10 to 55 Hz with 0.75-mm single amplitude for 2 hrs each in three directions Malfunction: 10 to 55 Hz with 0.5-mm single amplitude for 10 min each in three directions
Shock resistance	Destruction: 980 m/s ² three times each in six directions Malfunction: 98 m/s ² three times each in six directions
Ambient temperature	Operating: -10°C to 55°C (with no icing), Storage: -25°C to 65°C (with no icing)
Ambient humidity	Operating: 35% to 85%
Life expectancy	Mechanical: 10 million operations min. (under no load at 1,200 operations/h) Electrical: 100,000 operations min. (5 A at 250 VAC, resistive load at 1,200 operations/h) (See note)
EMC	(EMI) EN61812-1 Emission Enclosure: EN55011 Group 1 class A Emission AC Mains: EN55011 Group 1 class A (EMS) EN61812-1 Immunity ESD: IEC61000-4-2: 6 kV contact discharge (level 3) 8 kV air discharge (level 3) Immunity RF-interference from AM Radio Waves: IEC61000-4-3: 10 V/m (80 MHz to 1 GHz) (level 3) Immunity RF-interference from Pulse-modulated Radio Waves: IEC61000-4-3: 10 V/m (900 \pm 5 MHz) (level 3) Immunity Conducted Disturbance: IEC61000-4-6: 10 V (0.15 to 80 MHz) (level 3) Immunity Burst: IEC61000-4-4: 2 kV power-line (level 3) 2 kV I/O signal-line (level 4) Immunity Surge: IEC61000-4-5: 1 kV line to line (level 3) 2 kV line to ground (level 3)
Case color	Light Gray (Munsell 5Y7/1)
Degree of protection	IP40 (panel surface)
Weight	Approx. 120 g

Note: Refer to the *Life-test Curve*.

Life-test Curve

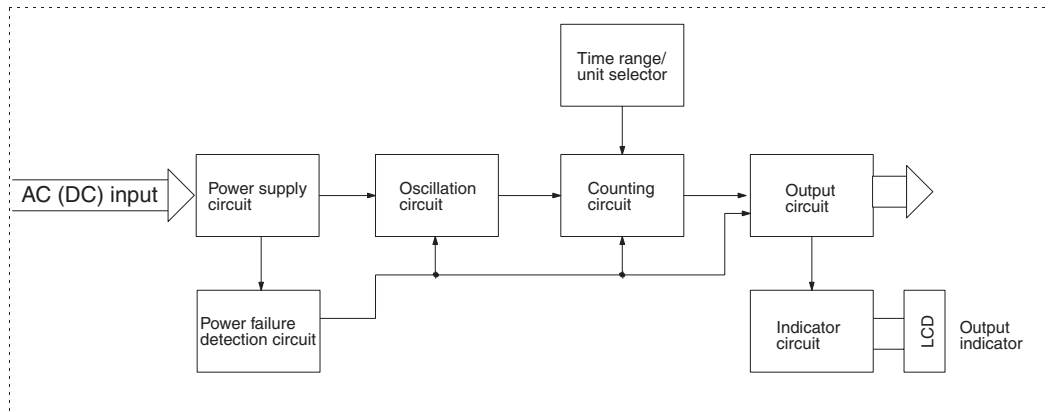


Reference: A maximum current of 0.15 A can be switched at 125 VDC (cosφ = 1) and a maximum current of 0.1 A can be switched if L/R is 7 ms. In both cases, a life of 100,000 operations can be expected. The minimum applicable load is 10 mA at 5 VDC for H3CR-H8L/H8RL and 100 mA at 5 VDC for H3CR-H8RL (failure level: P).

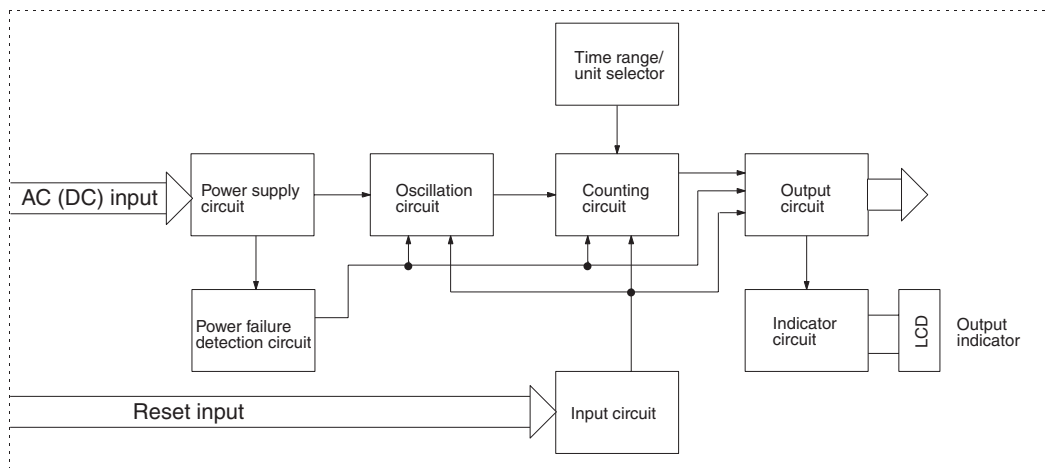
Connections

Block Diagrams

Without Reset Input (H3CR-H8L)



With Reset Input (H3CR-H8RL/H8RL)



I/O Functions

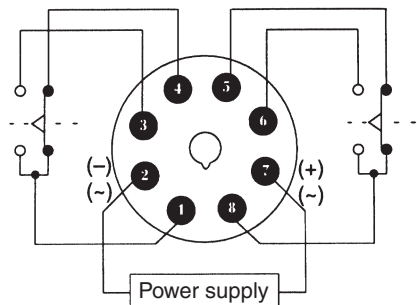
Inputs	Reset	Turns off the control output and resets the elapsed time.
Outputs	Control output	Operates instantaneously when the power is turned on and time-limit resets when the set time is up after the power is turned off.

Terminal Arrangement

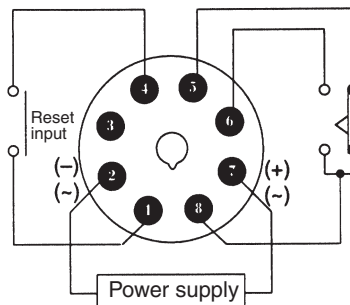
Note: DC models, including 24 VAC/DC models, have polarity.

8-pin Models

Without Reset Input (H3CR-H8L)



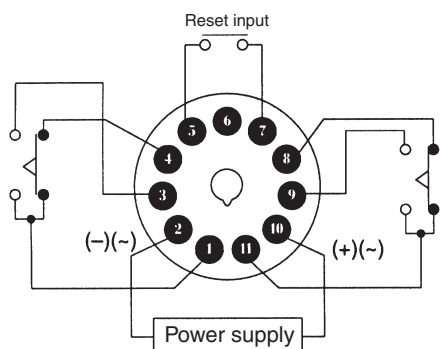
With Reset Input (H3CR-H8RL)



Note: Leave terminal 3 open. Do not use them as relay terminals.

11-pin Model

With Reset Input (H3CR-HRL)



Note: Leave terminal 6 open. Do not use them as relay terminals.

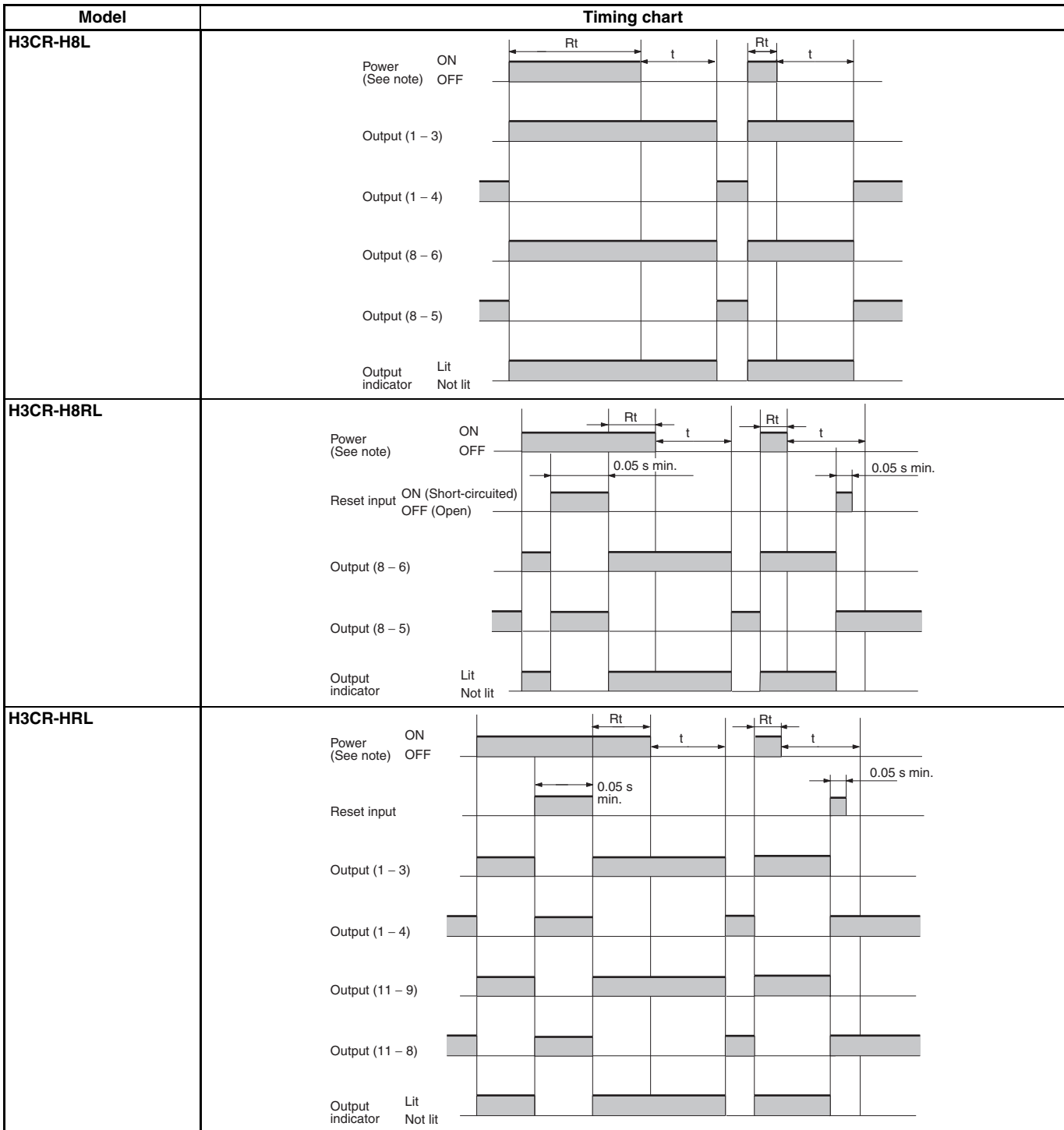
Operation

■ Timing Chart

t: Set time

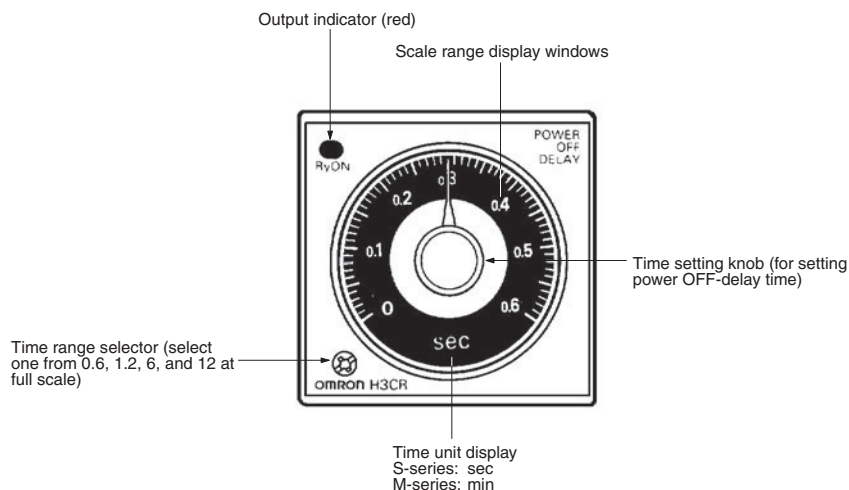
Rt: Minimum power ON time (S-series: 0.1 s min.; M-series: 2 s min.)

If the power ON time is less than this value, the Timer may not operate (i.e., output may not turn ON).



Note: If the power is turned ON until the set time is up, the timer will be retriggered.

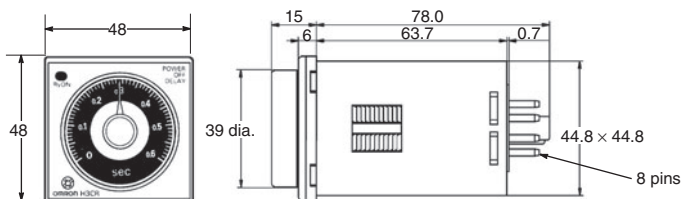
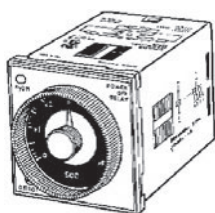
Nomenclature



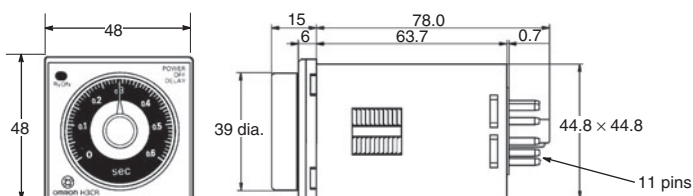
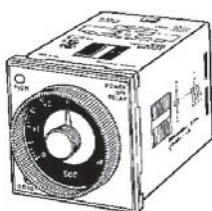
Dimensions

Note: All units are in millimeters unless otherwise indicated.

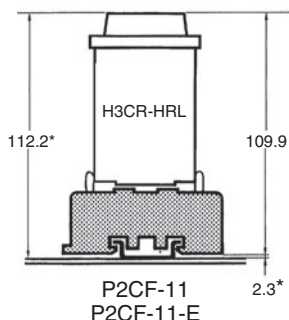
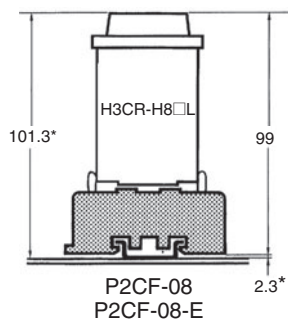
H3CR-H8L H3CR-H8RL



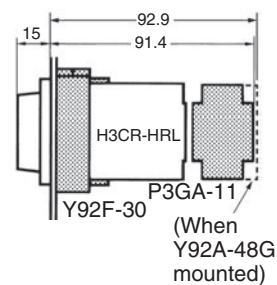
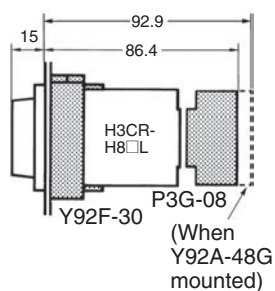
H3CR-HRL



Dimensions with Front Connecting Socket P2CF-08-□/ P2CF-11-□



Dimensions with Back Connecting Socket P3G-08/P3GA-11



*These dimensions vary with the kind of DIN track (reference value).

Safety Precautions (H3CR-H)

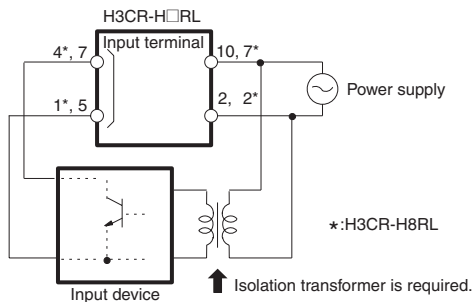
Note: The undermentioned is common for all H3CR-H models.

Power Supplies

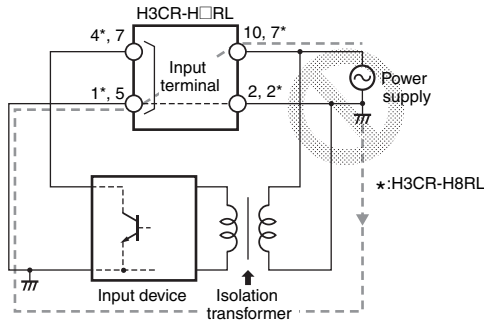
The H3CR-H has a large inrush current; provide sufficient power supply capacity. If the power supply capacity is too small, there may be delays in turning ON the output.

With the H3CR-H□RL, for the power supply of an input device, use an isolating transformer, of which the primary and secondary windings are mutually isolated and the secondary winding is not grounded.

Correct



Incorrect

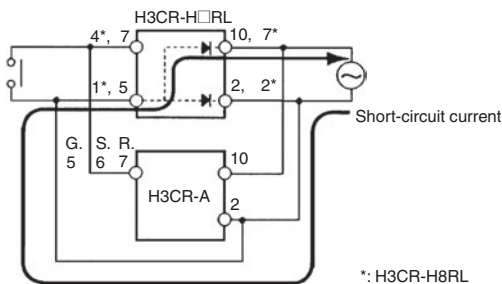


Input/Output (H3CR-H□RL)

An appropriate input is applied to the input signal terminal of the Timer when the input terminal for the input signal is short-circuited. Do not attempt to connect any input terminal to any terminal other than the input terminal or to apply voltage across other than the specified input terminals or the internal circuits of the Timer may be damaged.

The H3CR-H□RL uses transformerless power supply. When connecting a relay or transistor as an external signal input device, pay attention to the following points to prevent short-circuiting due to a sneak current to the transformerless power supply.

If input is made simultaneously from one input contact or a transistor to the H3CR-H and a Timer whose common input terminals are used as power terminals, such as the H3CR-A, a short-circuit current will be generated. Either input through isolated contacts, or isolate the power supply for one of the Timers.



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

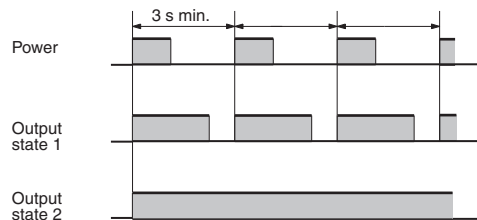
In the interest of product improvement, specifications are subject to change without notice.

Wiring

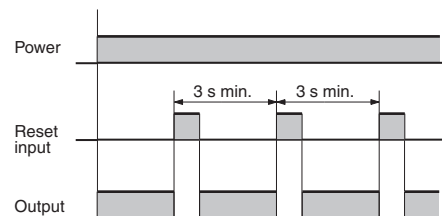
The H3CR-H has a high impedance circuit. Therefore, the H3CR-H may not be reset if the H3CR-H is influenced by inductive voltage. In order to eliminate any influence of inductive voltage, the wires connected to the H3CR-H must be as short as possible and should not be installed alongside power lines. If the H3CR-H is influenced by inductive voltage that is 30% or more of the rated voltage, connect a CR filter with a capacitance of approximately 0.1 μF and a resistance of approximately 120 Ω or a bleeder resistor between the power supply terminals. If there is any residual voltage due to current leakage, connect a bleeder resistor between the power supply terminals.

Operation

An interval of 3 s minimum is required to turn on the H3CR-H after the H3CR-H is turned off. If the H3CR-H is turned on and off repeatedly with an interval of shorter than 3 s, abnormal heating or burning may occur in internal elements.



After the forced reset function of the H3CR-H is activated, an interval of 3 s minimum is required to activate the forced reset function again. If the forced reset function is activated repeatedly with an interval of shorter than 3 s, the internal parts of the H3CR-H may deteriorate and the H3CR-H may malfunction.



If it is required that the output be turned on repeatedly with an interval of shorter than 3 s, consider use of the H3CR-A in mode D (signal OFF-delay).

Others

If the H3CR-H is dropped or experiences some other kind of shock, because a latching relay is used for output, contacts may be reversed or go into a neutral state. If the H3CR-H is dropped, reconfirm correct operation.

Note: The undermentioned is common for all H3CR models.

Basic Setting

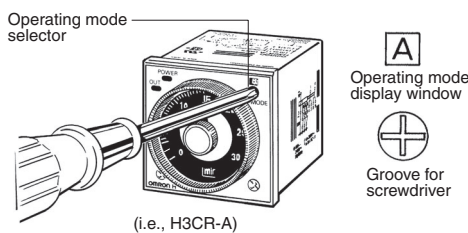
Setting of Selectors

The selectors can be turned clockwise and counterclockwise to select the desired time unit, time range, or operating mode. Each selector has a snap mechanism that secures the selector at a given position. Set the selector at a position at which it is secured. Do not set it midway between two securing positions or a malfunction could result from improper setting.

Selection of Operating Mode

• H3CR-A Multifunctional Timer

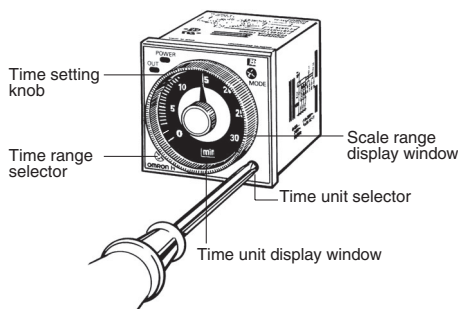
Turn the operating mode selector with a screwdriver until the desired operating mode (H3CR-A/AP/AS: A, B, B2, C, D, or E, H3CR-A8/A8S/A8E: A, B2, E or J, H3CR-A-300: G or J) appears in the display window located above the selector.



Selection of Time Unit and Time Range

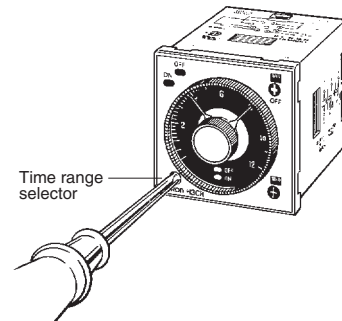
• H3CR-A Multifunctional Timer

The desired time unit (sec, min, hrs, or 10h) is displayed in the window below the time setting knob by turning the time unit selector located at the lower right corner of the front panel. A time range (1.2, 3, 12, or 30/2.4, 6, 24, or 60 for H3CR-A□-301) is selected with the time range selector at the lower left corner of the front panel, and the selected time range appears (in the window at the lower right part) within the plastic frame of the time setting knob.

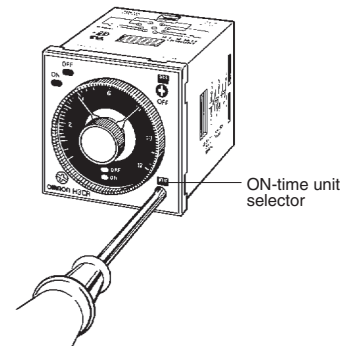


• H3CR-F Twin Timers

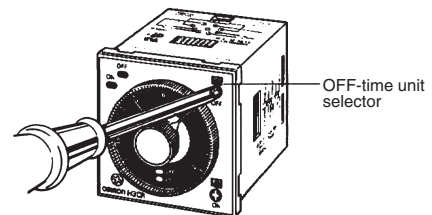
A time range (0 to 1.2, 0 to 3, 0 to 12, or 0 to 30) is selected for ON- and OFF-time using the time range selector at the lower left corner of the front panel, and the selected time range appears within the plastic frame of the time setting knob (= scale range display windows).



For ON-time, the desired time unit (sec, 10 s, min, and hrs, or 10 s, 10 min, hrs, and 10 h) is indicated in the ON-time unit display window at the lower right corner of the front panel and can be changed by turning the ON-time unit selector located below the ON-time unit display window.

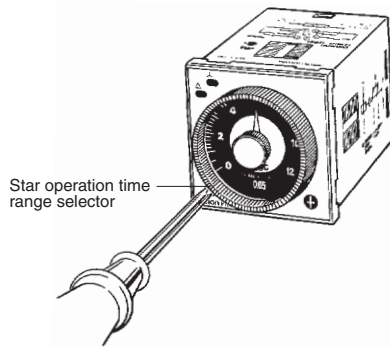


For OFF-time, the desired time unit (sec, 10 s, min, and hrs, or 10 s, 10 min, hrs, and 10 h) is indicated in the OFF-time unit display window at the upper right corner of the front panel and can be changed by turning the OFF-time unit selector located below the OFF-time unit display window.

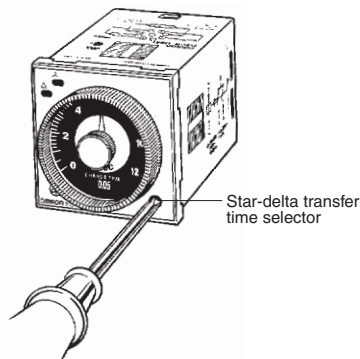


• H3CR-G Star-delta Timers

A star operation time range (0 to 6, 0 to 12, 0 to 60, or 0 to 120 seconds) is selected with the star operation time range selector at the lower left corner of the front panel.

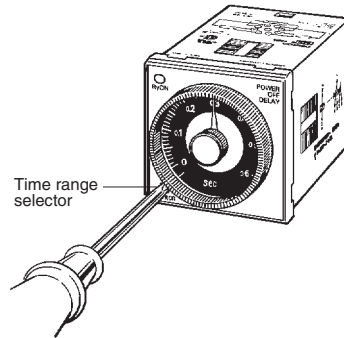


The time required for switching (0.05, 0.1, 0.25, or 0.5 second) from the star operation to the delta operation of the H3CR-G can be selected with the star-delta transfer time selector at the lower right corner of the front panel.



• H3CR-H Power OFF-delay Timers

A time range (0 to 0.6, 0 to 1.2, 0 to 6, and 0 to 12) is selected with the time range selector at the lower left corner of the front panel. No time unit selector is available. When ordering the H3CR-H, specify S (for the second unit) or M (for the minute unit) for your H3CR-H.



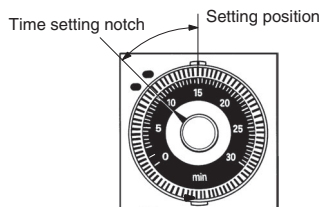
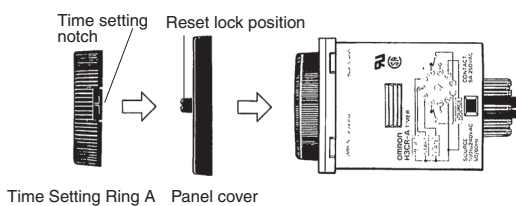
Setting of Time

Use the time setting knob to set the desired time.

■ Using the Time Setting Ring for H3CR-A/G

Setting a Specific Time

Mount the Panel Cover on the Timer, set the desired time with the time setting knob, and place Time Setting Ring A onto the time setting knob so that the time setting notch of Time Setting Ring A is in the center of the reset lock position of the Panel Cover.

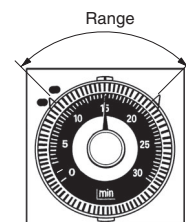
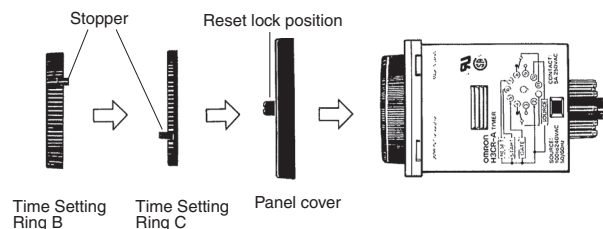


Example: To set the time to 10 s.

Limiting the Setting Range

Example: To set a range of 10 and 20 s.

Mount the Panel Cover on the Timer, set the time setting knob to 10 s (the lower limit of the setting range), and place Time Setting Ring C onto the time setting knob so that the stopper of Time Setting Ring C is on the right edge of the reset lock position of the Panel cover. Next, set the time setting knob to 20 s (the upper limit of the setting range), place Time Setting Ring B onto the time setting knob so that the stopper of Time Setting Ring B is on the left edge of the reset lock position of the Panel Cover.



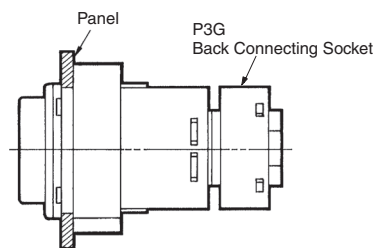
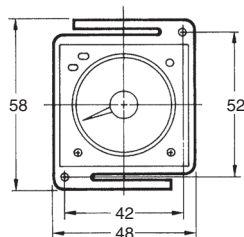
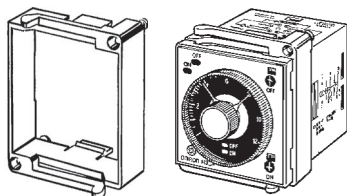
Accessories (Order Separately) (Common)

Note: The undermentioned is common for all H3CR models.

Note: All units are in millimeters unless otherwise indicated.

Flush Mounting Adaptor

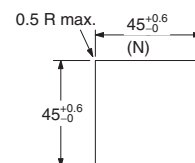
Y92F-30



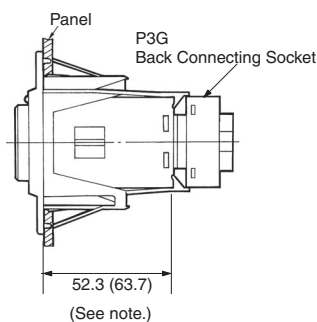
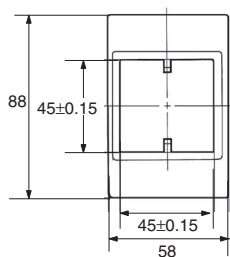
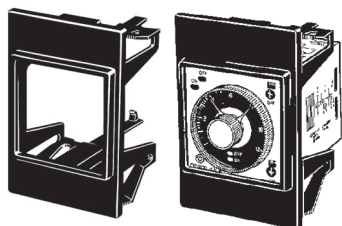
Note: The adapters for two or more timers mounted in a vertical line are different in orientation from those mounted in a horizontal line.

N can be obtained as follows (n: the number of H3CR models arranged side by side)
 Without a Cover: $N = (48n - 2.5)^{+1}/_{-0}$
 With the Protective Cover: $N = (51n - 5.5)^{+1}/_{-0}$
 With the Panel Cover: $N = (50n - 4.5)^{+1}/_{-0}$

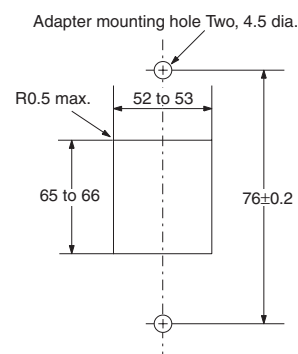
Panel Cutout



Y92F-70/73



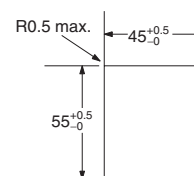
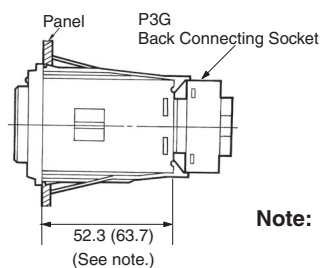
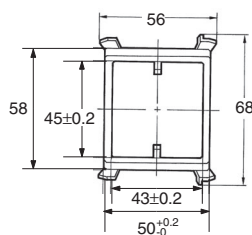
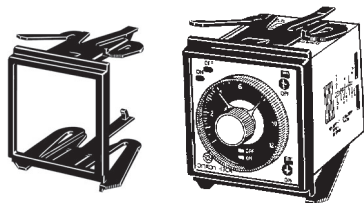
Panel Cutout



Note: The value shown in parentheses is for the Y92F-70.

Note: The mounting panel thickness should be 1 to 3.2 mm.

Y92F-71/74

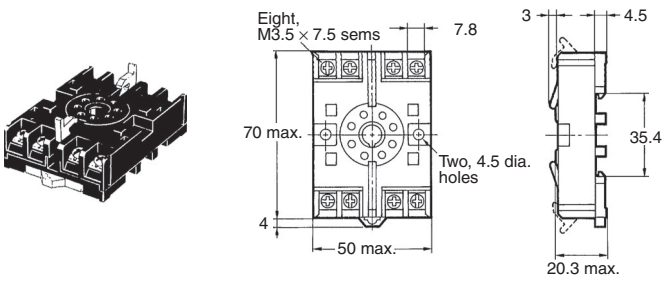


Note: The value shown in parentheses is for the Y92F-71.

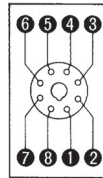
Note: The mounting panel thickness should be 1 to 3.2 mm.

Track Mounting/Front Connecting Socket

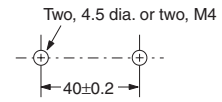
P2CF-08



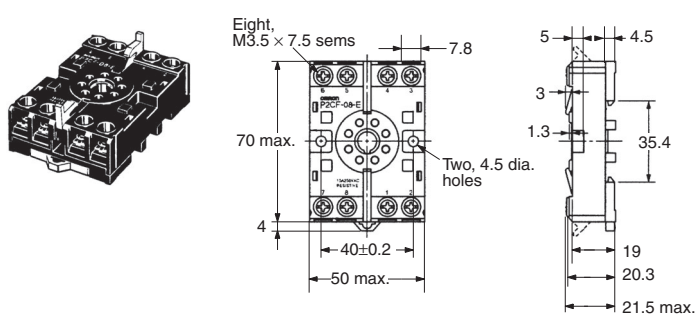
Terminal Arrangement/
Internal Connections
(Top View)



Surface Mounting Holes

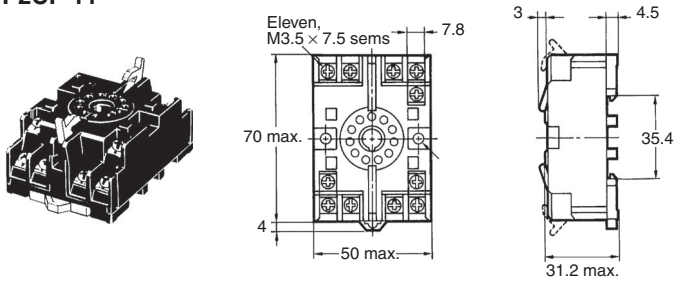


P2CF-08-E (Finger Safe Terminal Type) Conforming to VDE0106/P100

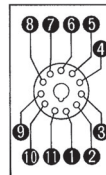


Track Mounting/Front Connecting Socket

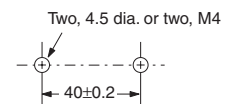
P2CF-11



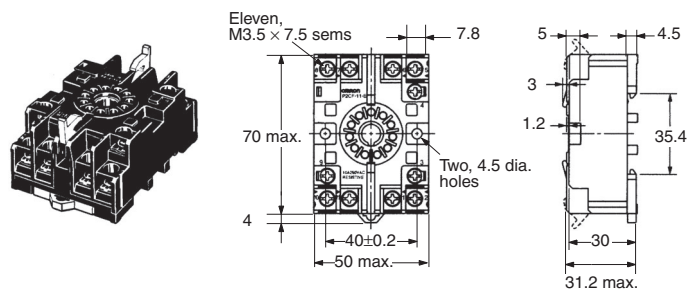
Terminal Arrangement/
Internal Connections
(Top View)



Surface Mounting Holes

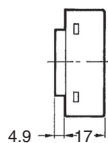
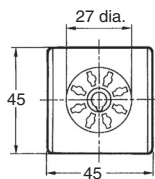
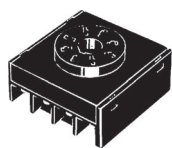


P2CF-11-E (Finger Safe Terminal Type) Conforming to VDE0106/P100

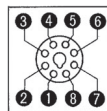


Back Connecting Socket

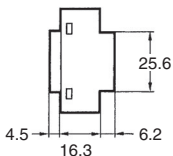
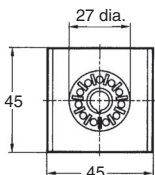
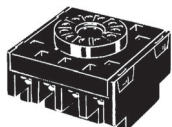
P3G-08



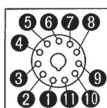
Terminal Arrangement/
Internal Connections
(Bottom View)



P3GA-11



Terminal Arrangement/
Internal Connections
(Bottom View)

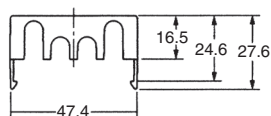
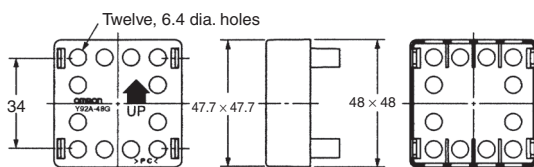
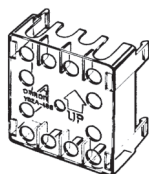


Finger Safe Terminal Cover

Conforming to VDE0106/P100

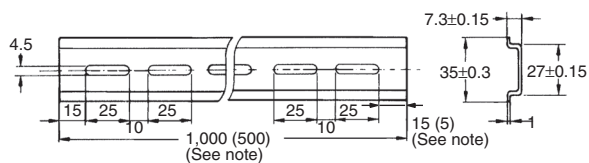
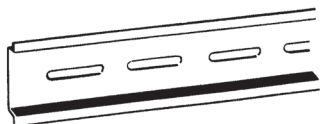
Y92A-48G

(Attachment for P3G-08/P3GA-11
Socket)

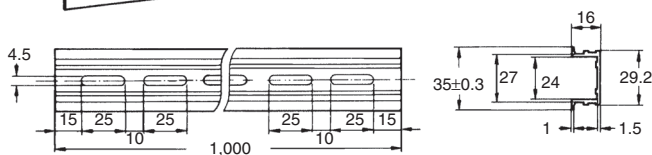
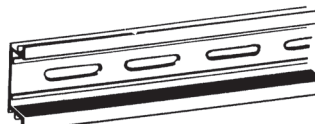


Mounting Track

PFP-100N, PFP-50N



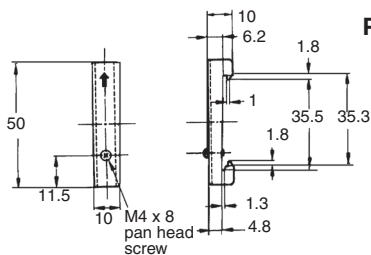
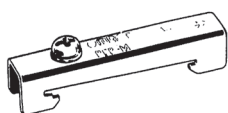
PFP-100N2



Note: The values shown in parentheses are for the PFP-50N.

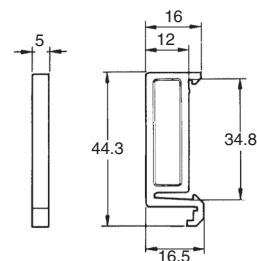
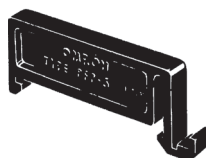
End Plate

PFP-M



Spacer

PFP-S



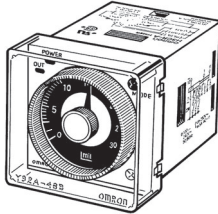
Protective Cover

Y92A-48B

The protective cover protects the front panel, particularly the time setting section, against dust, dirt, and water. It also prevents the set value from being altered due to accidental contact with the time setting knob.

- Note:**
1. The Y92A-48B Protective Cover is made of a hard plastic and therefore it must be removed to change the timer set value.
 2. The Protective Cover cannot be mounted if the Panel Cover (sold separately) is used on the Timer.

Y92A-48B



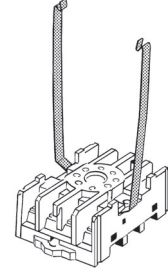
Hold-down Clip

Hold-down clips are sold in sets of two.

Y92H-7/-1
For PL08 and PL11 Sockets



Y92H-8/-2
For PF085A Socket



Time Setting Ring/Panel Cover for H3CR-A/-G

There are three types of Panel Covers (Y92P-48GL, Y92P-48GB, and Y92P-48GM), all of which are available in three colors. Use the most suitable type of Panel Cover with the design of the scaling plate according to the application.

When setting a given time for the Timer, use of the Y92S-27 or Y92S-28 Time Setting Ring facilitates the time setting operation and minimizes possible setting errors by operators.

The Y92F-73 or Y92-F-74 Flush Mounting Adapter or the Protective Cover cannot be used.

The Time Setting Ring and Panel Cover should be used as a pair.

Setting a specific time	Time Setting Ring A (Y92S-27) and Panel Cover (Y92P-48GL, -48GB, or -48GM)
Limiting the setting range	Time Setting Ring B or C (Y92S-28), and Panel Cover (Y92P-48GL, -48GB, or -48GM)

Y92S-27
Time Setting A



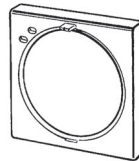
Y92S-28
Time Setting B



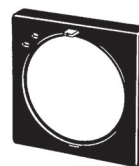
Y92S-28
Time Setting C



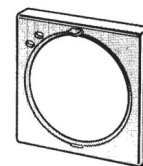
Y92P-48GL
Light Gray



Y92P-48GB
Black



Y92P-48GM
Medium Gray



Safety Precautions for All H3CR Models

Note: The undermentioned is common for all H3CR models.

■ Precautions for Safe Use

Do not use the Timer in the following locations.

- Locations with radical temperature changes.
- Locations with high humidity that may result in condensation.
- Locations with excessive vibration or shock.
- Locations with corrosive gas or dust.
- Locations where the Timer is exposed to sprayed water, oil, or chemicals.

Organic solvents (such as paint thinner) as well as strong acid or alkali solutions will damage the outer casing of the Timer.

If the Timer is used in an area with excessive electronic noise, be sure to separate the Timer, wires, and input device as far as possible from the noise sources. Furthermore, it is recommended that the input signal wiring be shielded to prevent electronic interference.

Using a surge absorber is recommended if surge voltages occur.

Pay the utmost attention not to make mistakes in polarity when wiring the Timer.

The H3CR Series uses a transformerless power supply. Do not touch the input terminals while the supply voltage is applied, otherwise an electric shock may be received.

■ Precautions for Correct Use

Changing the Setting

Do not change the time unit, time range, or operation mode while the Timer is in operation, otherwise the Timer may malfunction.

The time unit and time range can be set with the respective selectors turned clockwise or counterclockwise.

The selectors are of notched so that they will snap when they are properly set. Do not set the selectors midway between notches, otherwise the Timer may break or malfunction.

Do not use H3CR-A models (except for H3CR-A□S) in flicker mode, or H3CR-F models at the lowest selector setting. Doing so may result in damage to contacts.

Power Supplies

A DC power supply can be connected if its ripple factor is 20% or less and the mean voltage is within the rated operating voltage range of the Timer.

An AC power supply can be connected to the power input terminals without regard to polarity. A DC power supply must be connected to the power input terminals as designated according to the polarity of the terminals.

Make sure that the voltage is applied within the specified range, otherwise the internal elements of the Timer may be damaged.

Connect the power supply voltage through a relay or switch in such a way that the voltage reaches a fixed value at once, otherwise the Timer may not be reset or a timer error may result.

Be aware that the operating voltage will rise by 5% if the rated voltage is applied to the Timer continuously while the ambient temperature is close to the maximum permissible ambient temperature.

The power supply circuit of any H3CR-A model (except for H3CR-A□S), H3CR-F 100-to-240-VAC model, and H3CR-G model is a switching circuit. If the power line connected to the power supply circuit has a transformer with high inductance, a counter-electromotive voltage will be induced by the inductance. To suppress the voltage, apply a CR filter to the power supply line.

Precautions for EN61812-1

Conformance

The H3CR Series as a built-in timer conforms to EN61812-1 provided that the following conditions are satisfied.

Make sure that no voltage is applied to any terminals before dismantling the Timer from the Socket.

The output section of the H3CR is provided only with basic isolation.

The H3CR itself is designed under the following conditions:

- Overvoltage category III
- Pollution degree 2
- Isolation
 - Operation parts: Reinforced isolation
 - With clearance of 5.5 mm and creepage distance of 5.5 mm at 230 VAC
 - Output: Basic isolation (See note)
 - With clearance of 3 mm and creepage distance of 3 mm at 230 VAC

Note: The 11-pin model ensures basic isolation by itself and also ensures basic isolation with the 11-pin model mounted to the OMRON P2CF-11-□ or P3GA-11 Socket.

Connect the two output contacts different in polarity to the loads so that they will be the same in potential.

Others

If the Timer is mounted to a control board, dismantle the Timer from the control board or short-circuit the control board circuitry before carrying out a voltage withstand test between the electric circuitry and non-charged metal part of the Timer. This protects the internal circuitry of the Timer from damage.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

In the interest of product improvement, specifications are subject to change without notice.

Read and Understand This Catalog

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

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OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

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The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

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Disclaimers**CHANGE IN SPECIFICATIONS**

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

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[31L48TPM240](#) [RC302](#) [RC312](#) [REV-201M](#) [RG](#) [ETR4-51-A](#) [AT78041](#) [AT78051](#) [ATC180041](#) [TMM1](#)