

Solid-state Power OFF-delay Timer

H3CR-H

1/16 DIN, Analog-Set Timer with Power-OFF Delay, Four Selectable Ranges

- Extended power-OFF delay timer, up to 12 seconds, for S-type and 12 minutes for M-type models
- Forced resetting type provides a manual override of the timing function
- 11-pin and 8-pin models are available
- Red LED output indicator



Ordering Information

■ TIMERS

| | | | | | | |
|------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|
| Timing function | Power-OFF delay | | | | | |
| Contact type | DPDT | | | | SPDT | |
| Forced resetting | Available | | | | Available | |
| Timing units | S-series (seconds) | M-series (minutes) | S-series (seconds) | M-series (minutes) | S-series (seconds) | M-series (minutes) |
| Terminal form | 11-pin models | | | 8-pin models | | |
| Supply voltages | 100 to 120 VAC, 200 to 240 VAC, 24 VAC/DC | | | | | |
| Part number | H3CR-HRL | | H3CR-H8L | | H3CR-H8RL | |

Note: Specify both the supply voltage and time unit code (S or M) in addition to the model number when ordering.

Example: H3CR-H8L 24 VAC/DC M

Time unit code
 Supply voltage

■ MODEL NUMBER LEGEND

H3CR -

1 2 3 4

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

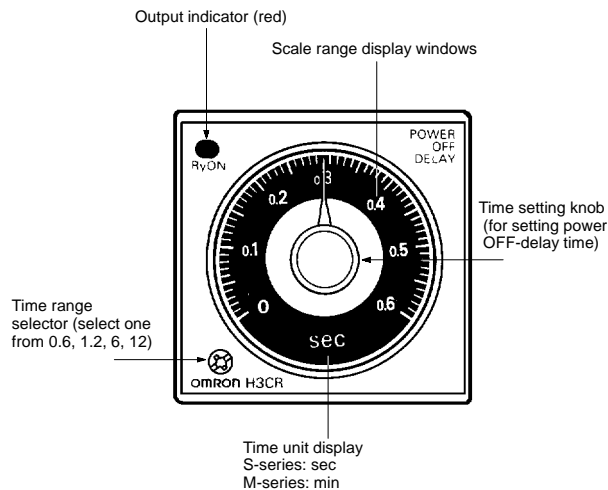
4. Dimensions

L: Long-body model

■ ACCESSORIES (ORDER SEPARATELY)

| Description | Part Number |
|-------------------------|--|
| Panel mounting adapters | Fits behind panel, ideal for side by side installation. Use P3G-08 socket. Y92F-30 |
| | Installs through panel front; timer face fits bezel, rear of timer clips to adapter. Use P3G-08 socket, Fits 65-66 mm (2.56 - 2.59 in) x 52-53 (2.04 x 2.09 in) panel cutout. Charcoal gray face plate measures 88 H x 58 W mm (3.46 x 2.28 in) Y92F-70 |
| | Installs through panel front; timer face fits bezel, rear of timer clips to adapter. Use P3G-08 socket, Fits 55 x 45 mm (2.17 x 1.77 in) panel cutout. Charcoal gray face plate measures 58 H x 50 W mm (2.28 x 1.97 in) Y92F-71 |
| Mounting Track | DIN rail, 50 cm (1.64 ft) length, 7.3 mm (0.29 in) depth PFP-50N |
| | DIN rail, 1 m (3.28 ft) length, 7.3 mm (0.29 in) depth PFP-100N |
| | DIN rail, 1 m (3.28 ft) length, 16 mm (0.63 in) depth PFP-100N2 |
| | End Plate PFP-M |
| | Spacer PFP-S |
| Protective Cover | Hard plastic cover protects against dust dirt and water: not for use with panel covers. Y92A-48B |
| Sockets | Bottom surface or track mounting, top screw terminals. Use with 8-pin terminal form timer. P2CF-08 |
| | Bottom surface or track mounting, top screw terminals. Use with 11-pin terminal form timer. P2CF-11 |
| | Back mounting, for use with Y92F-30 mounting adapter, bottom screw terminals. Use with 8-pin terminal form timer. P3G-08 |
| | Back mounting, for use with Y92F-30 mounting adapter, bottom screw terminals. Use with 11-pin terminal form timer. P3GA-11 |

■ RANGE SELECTION



| Time range | S-series | M-series |
|--------------------|--------------|-------------|
| | seconds | minutes |
| Setting | 0.6 | 0.05 to 0.6 |
| | 1.2 | 0.1 to 1.2 |
| | 6 | 0.5 to 6 |
| | 12 | 1 to 12 |
| Min. power ON time | 0.1 sec min. | 2 sec min. |

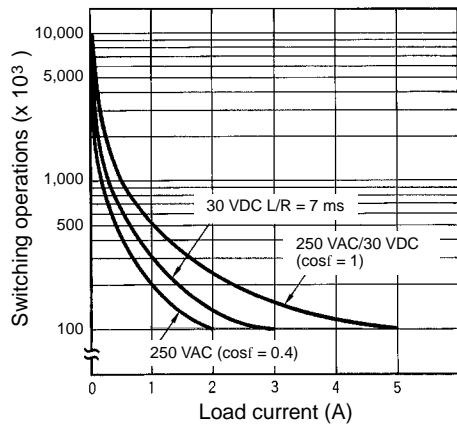
Note: If the above minimum power ON time is not secured, the H3CR may not operate. Be sure to secure the above minimum power ON time.

Specifications

| Part number | | H3CR-H8L | H3CR-H8RL | H3CR-HRL |
|-------------------------------------|-----------------------|--|---|------------|
| Supply voltage (see note) | AC | 100 to 120 VAC (50/60 Hz), 200 to 240 VAC (50/60 Hz) | | |
| | AC/DC | 24 VAC/VDC (50/60 Hz) | | |
| Operating voltage | | 85% to 110% of rated supply voltage | | |
| Power consumption | AC | 100 to 120 VAC: 0.18 VA (100 VAC applied) 200 to 240 VAC: 0.25 VA (200 VAC applied) | | |
| | AC/DC | 24 VAC/DC: 0.24 VA (24 VAC applied)/140 mW (24 VDC applied) | | |
| Start, Reset, Gate inputs | | ON-impedance: 1k Ω max. ON residual voltage: 1 V max. OFF impedance: 500 k Ω min | | |
| Control outputs | Type | DPDT relay | SPDT relay | DPDT relay |
| | Max. load | 5 A at 250 VAC, p.f. = 1 | | |
| | Min. load | 10 mA at 5 VDC | | |
| Repeat accuracy | | \pm 0.3% full scale max. (\pm 0.3% full scale max. \pm 10 ms in ranges of 0.6 and 1.2 s) | | |
| Setting error | | \pm 5% full scale \pm 0.05 s max. | | |
| Resetting system | | Instantaneous operation/ Time-limit reset | Instantaneous operation/Time-limit reset/ Forced reset | |
| Resetting time | | 50 ms min. | | |
| Indicators | | Output ON indicator (red LED) | | |
| Materials | | Plastic case (light gray Munsell 5Y7/1) | | |
| Mounting | | Panel, track, or surface depending on socket selected | | |
| Connections | | 11-pin round socket | 8-pin round socket | |
| Weight | | Approx. 120 g (4.23 oz.) | | |
| Approvals | | UL/CSA/CE (EMC) (LV) | | |
| Ambient temperature | Operating | -10° to 55°C (14° to 131°F) with no icing | | |
| | Storage | -25° to 65°C (-13° to 149°F) with no icing | | |
| Humidity | | 35% to 85% | | |
| Vibration | Mechanical durability | 10 to 55 Hz with 0.75-mm single amplitude each in three directions | | |
| | Malfuction durability | 10 to 55 Hz with 0.5-mm single amplitude each in three directions | | |
| Shock | Mechanical durability | 980 m/s ² (100G) each in three directions | | |
| | Malfuction durability | 98 m/s ² (10G) each in three directions | | |
| Variation due to voltage change | | \pm 0.5% full scale max. (\pm 0.5% full scale max. \pm 10 ms in ranges of 0.6 and 1.2 s) | | |
| Variation due to temperature change | | \pm 2% full scale max. (\pm 2% full scale max. \pm 10 ms in ranges of 0.6 and 1.2 s) | | |
| Service life | 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) | | |
| Insulation resistance | | 100 M Ω min. (at 500 VDC) | | |

Note: A power supply with a ripple of 20% max. (single-phase power supply with full-wave rectification) can be used with each DC model.

Engineering Data

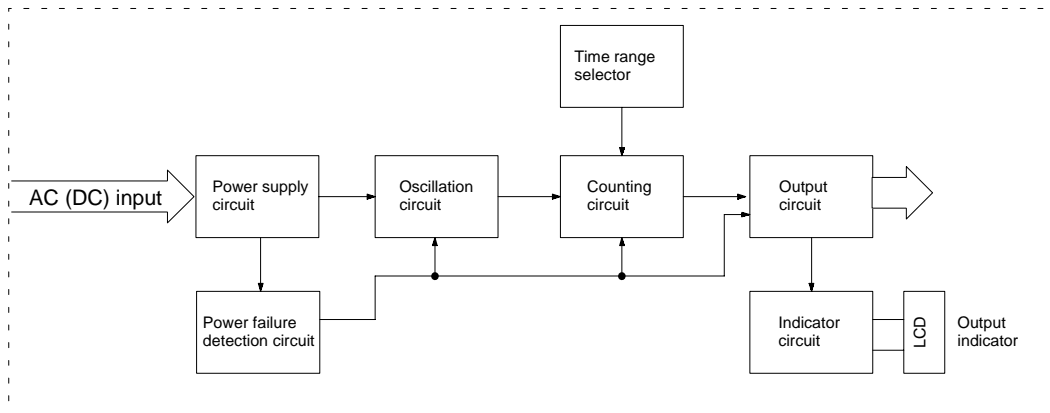


Note: A maximum current of 0.15 A can be switched at 125 VDC (cosφ = 1) and a maximum current of 0.1 A can be switched if L/R is 7 ms. In both cases, a life of 100,000 operations can be expected. The minimum applicable load is 10 mA at 5 VDC (failure level: P).

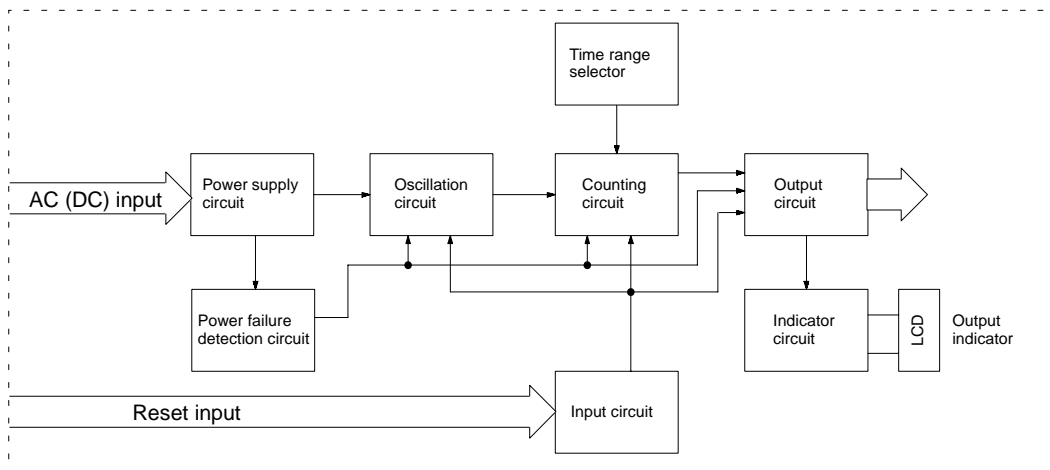
Operation

■ BLOCK DIAGRAMS

Without Reset Input (H3CR-H8L)

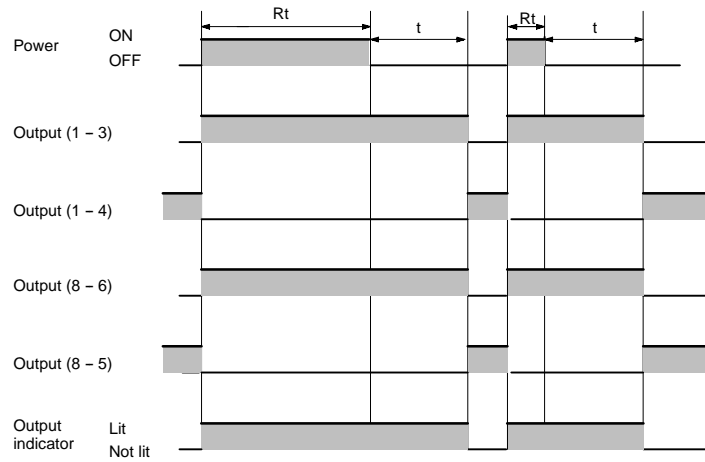
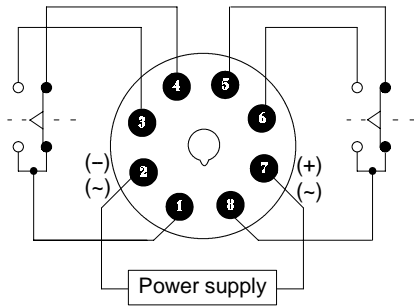


With Reset Input (H3CR-H8RL-HRL)

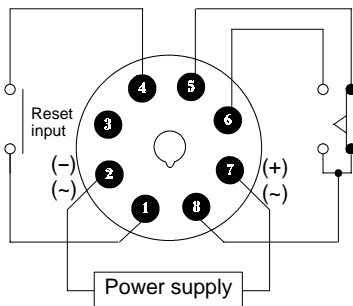


Timing Charts

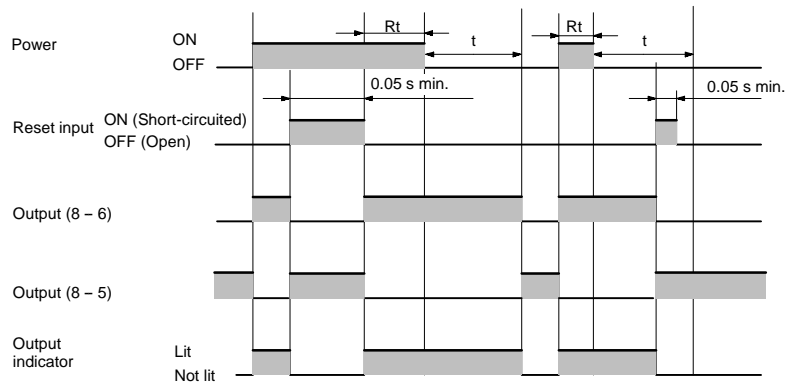
■ H3CR-H8L



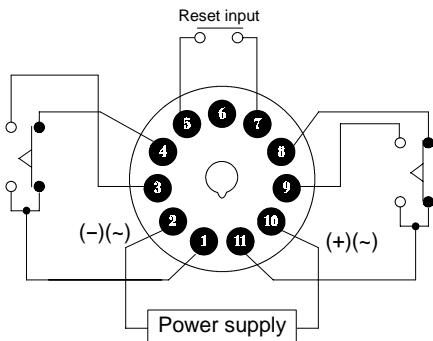
■ H3CR-H8RL



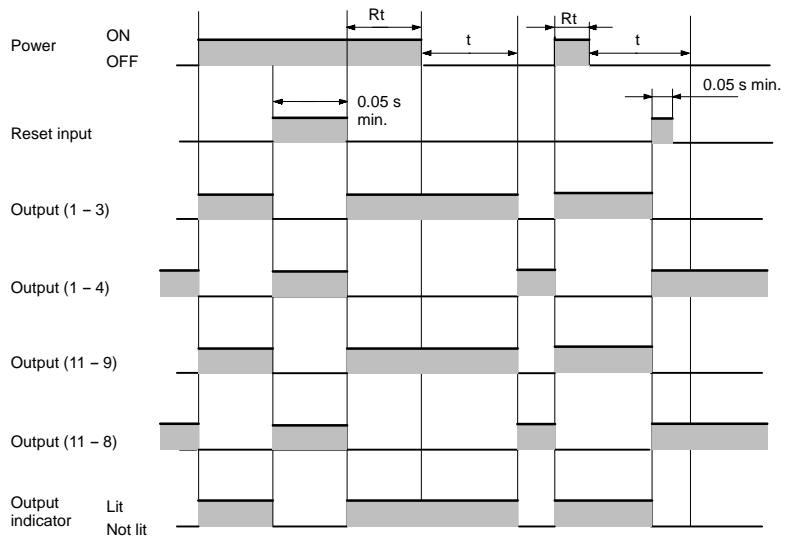
Note: Leave terminal 6 open. Do not use them as relay terminals.



■ H3CR-H8RL



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



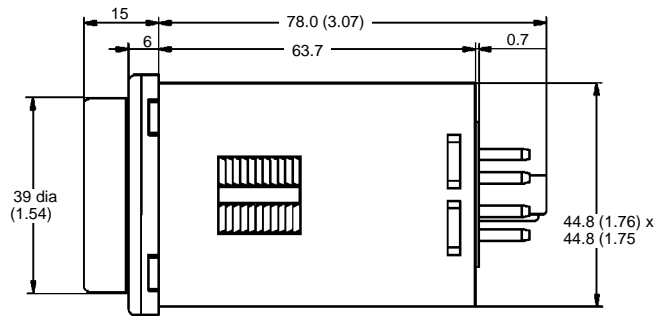
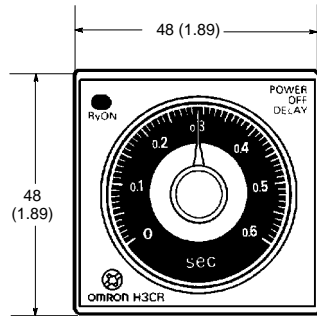
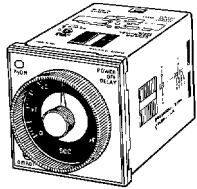
Note: t: Set time
 R_t : Minimum power ON time (S-series: 0.1 s min.; M-series: 2 s min.)

Dimensions

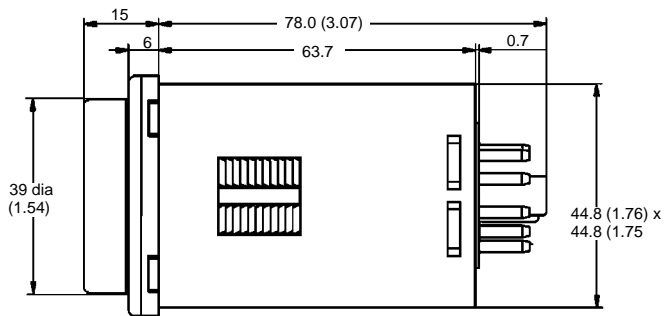
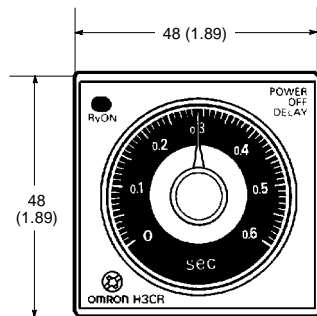
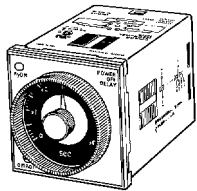
Unit: mm (inch)

■ TIMERS

**H3CR-H8L
H3CR-H8RL**



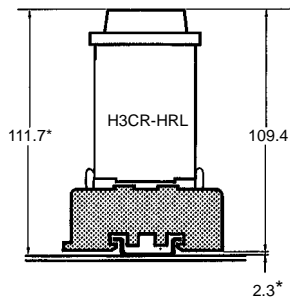
H3CR-HRL



■ TRACK MOUNTING

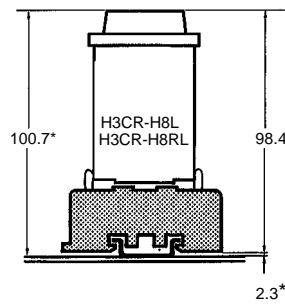
11-Pin models

P2CF-11



8-Pin models

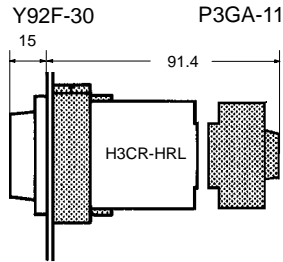
P2CF-08



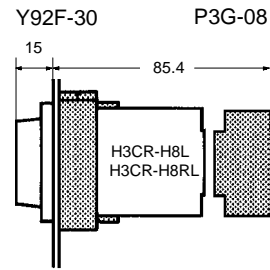
*These dimensions vary with the kind of DIN track (reference value).

■ PANEL MOUNTING

11-Pin models



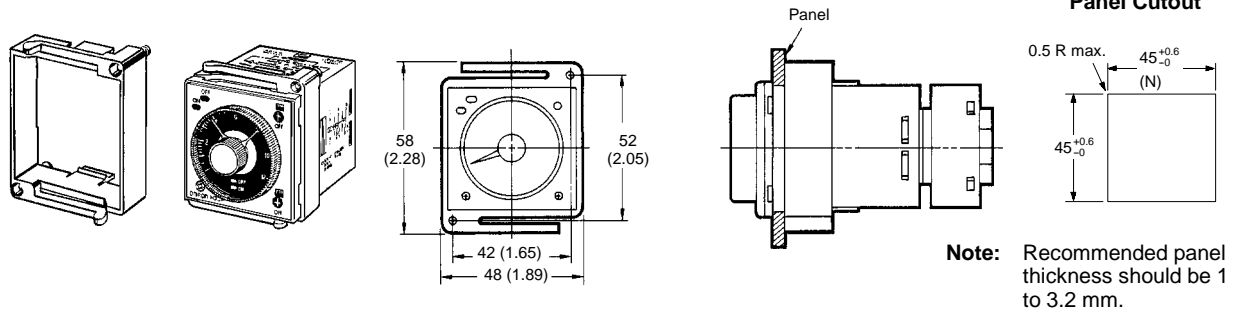
8-Pin models



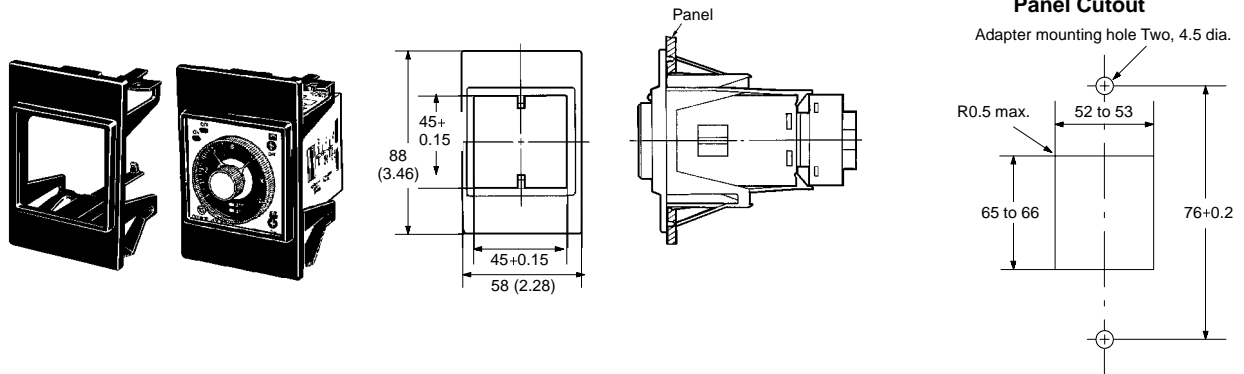
■ PANEL MOUNTING ADAPTERS

Y92F-30

Adapter installs behind the panel. It is ideal for side by side installation. Use P3G-08 sockets

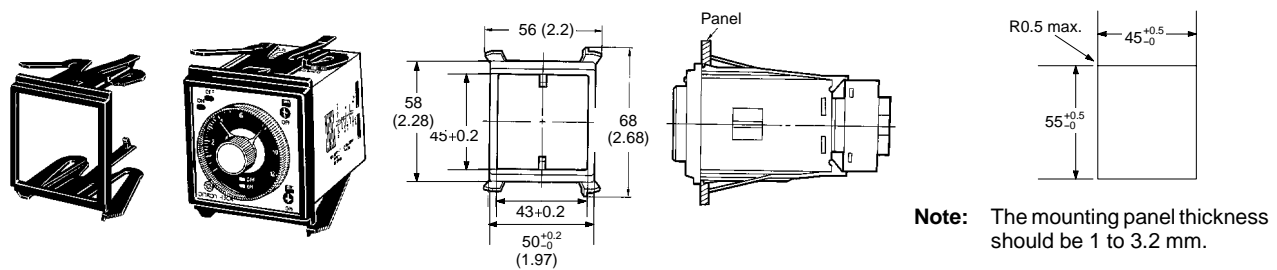


Y92F-70



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

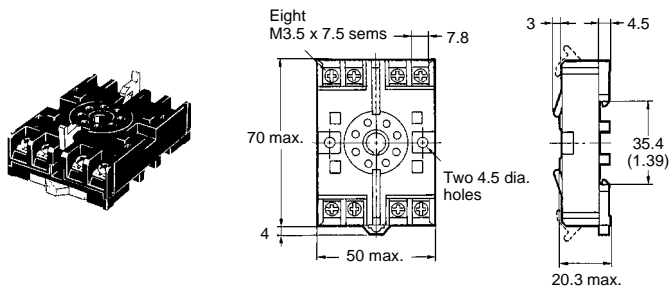
Y92F-71



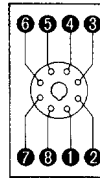
■ SOCKETS

Track mounting/front connecting socket

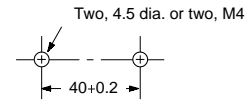
P2CF-08



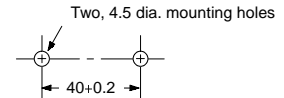
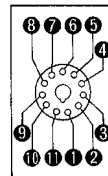
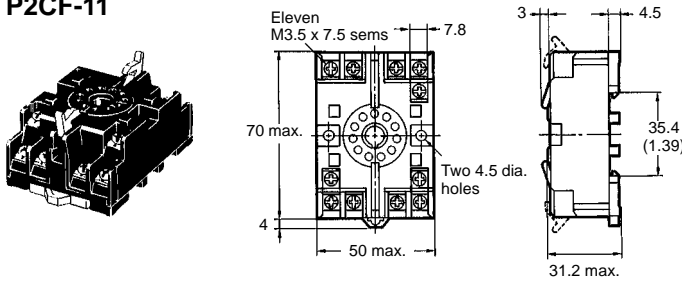
Terminal Arrangement/
Internal Connections
(Top View)



Surface Mounting Holes

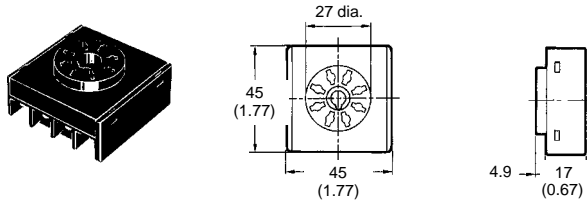


P2CF-11

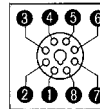


Back mounting socket

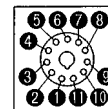
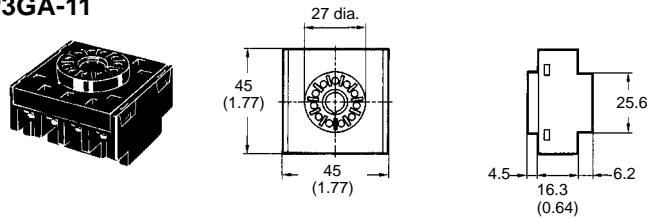
P3G-08



Terminal Arrangement/
Internal Connections
(Bottom View)

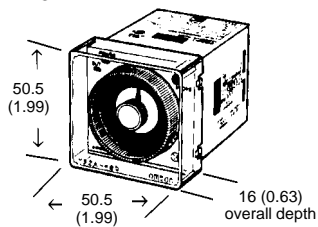


P3GA-11



■ PROTECTIVE COVER

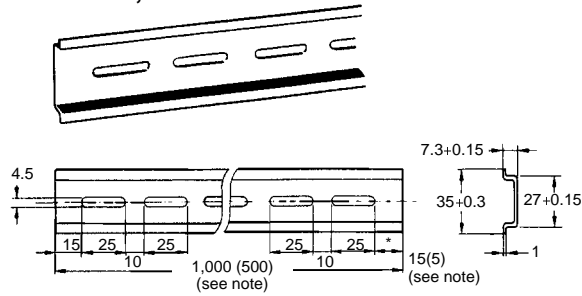
Y92A-48B



The hard plastic protective cover prevents accidental resetting. It also shields the front panel from dirt and water. The cover is intended for use in areas where unusual service conditions do not exist. The Y92A-48B cover cannot be used with the Y92P Panel Covers below.

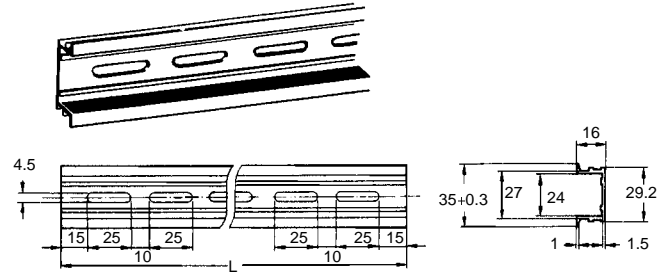
■ MOUNTING TRACK AND ACCESSORIES

PFP-100N, PFP-50N

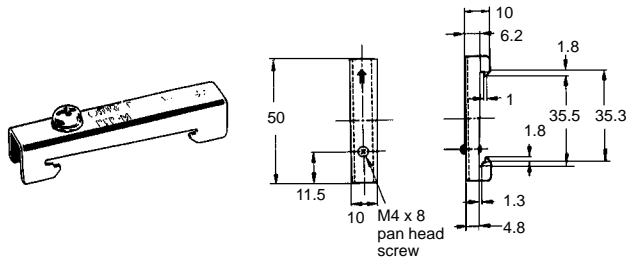


Note: The values shown in parentheses are for the PFP-50N.

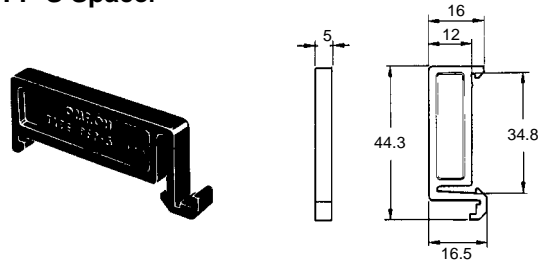
PFP-100N2



PFP-M End Plate



PFP-S Spacer



Connections

| Part number | Input terminal number | | Power supply terminal numbers | | Output terminal numbers | | |
|-------------|-----------------------|-------|-------------------------------|---------------|-------------------------|--------|--------|
| | COM | Reset | AC (common), DC- | AC (hot), DC+ | COM | NC | NO |
| H3CR-H8L | — | — | 2 | 7 | 1 8 | 4 5 | 3 6 |
| H3CR-H8RL | 1 | 4 | 2 | 7 | 8 | 5 | 6 |
| H3CR-HRL | 5 | 7 | 2 | 10 | 1 11 | 4 8 | 3 9 |

Installation

■ INPUT CONNECTIONS

(H3CR-H□□-□□□)

The neutral or common of the power supply is connected to terminal 2. Terminal 7 of H3CR-H8L/H8RL and terminal 10 of H3CR-HRL should be connected to the "hot" or positive of the power supply. Terminals 1 and 4 of H3CR-H8RL and terminals 5 and 7 of H3CR-HRL are used for no-voltage forced resetting. Do not connect these terminals to power.

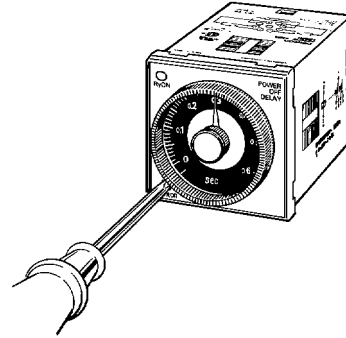
■ OUTPUT CONNECTIONS

(H3CR-H□□-□□□)

Design your control circuit using the relay contacts to switch the load. **Never switch a load with the contact that is being used as an input signal.** The timer's circuitry may be damaged.

SELECTING TIME RANGES

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).

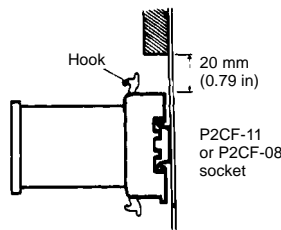


TRACK MOUNTING

Using P2CF-□□ Socket

Mounting

The P2CF-□□ socket has two hooks that secure the timer to the socket. Be sure to allow at least 20 mm (0.79 in) clearance above and below the socket to gain access to release the hooks for servicing and maintenance. Then clip rear of the socket to the track. Push the bottom onto the track until the latch hooks securely.



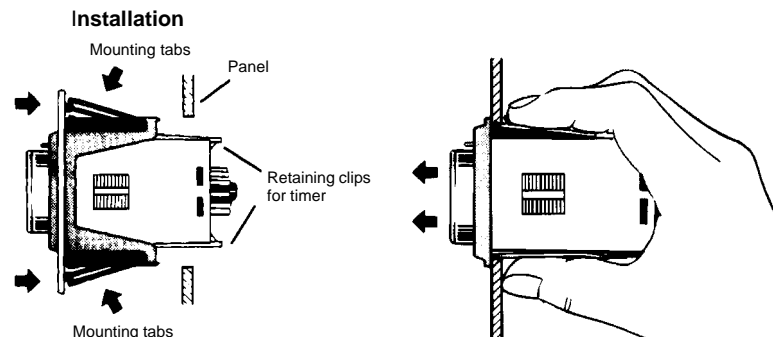
Removal

Pull the latch on the socket with a flat-blade screwdriver and remove the timer and socket as one unit.

Using Y92F-70 and Y92F-71 Adapters

Install the H3CR-H timer, face first, into the back side of the Y92F-70 or Y92F-71 adapter so the bezel fits snugly. Be sure the retaining clips at the back of the adapter fit into the slots on either side of the timer. Compress the top and bottom tabs of the adapter then push the adapter through the front side of the panel cutout. Be sure the tabs extend after the installation for a secure fit.

To remove the timer from the adapter, unclip the two retaining clips at the back of the adapter. To remove the adapter and timer from the panel as a unit, compress the tabs behind the panel and push the unit out the front of the panel.



Precautions

CAUTIONS

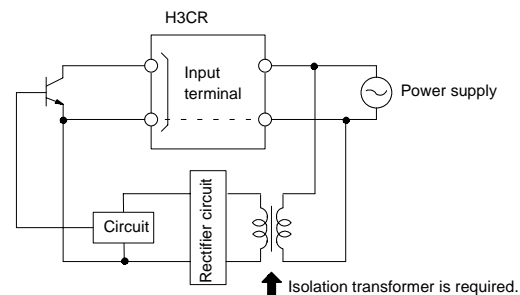
To avoid malfunction or damage, do not change the time unit or time range while the timer is in operation. Be sure to turn off the power supply to the timer before changing any of the selections.

WIRING PRECAUTIONS

Except for the wiring of the power supply circuit, avoid laying input signal wires in parallel or in the same conduit with high tension or power lines. Use shielded wires or wiring with independent metal conduits for the shortest possible distance.

Never touch the input terminals while power is being applied to the timer to prevent electric shock.

Use an isolation transformer for the power supply of an input device. The transformer's primary and secondary windings should be mutually isolated and the secondary winding not grounded.



■ ENVIRONMENT

When using the Timer in an area with excess electronic noise, separate the Timer, wiring, and the equipment which generates the input ference..signals as far as possible from the noise sources. It is also recommended to shield the input signal wiring to prevent electronic interference.

Organic solvents (such as paint thinner), as well as very acidic or basic solutions can damage the outer casing of the Timer

■ OTHERS

If the Timer is mounted on a control board, remove the timer from the control board or short-circuit the circuitry of the power board before carrying out a voltage withstand test between the electric circuitry and non current-carrying metal part of the Timer, to prevent the internal circuitry of the Timer from damage.

NOTE: DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters to inches divide by 25.4.

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