# OMRON®

Motor Timer	H2C

1/16 DIN Size Motor Timer Offers Five Selectable Time Ranges

■ Each unit provides five field-selectable time ranges using the front panel time range selector

■ ON-delay or Signal OFF-delay from clutch input are available

■ Neon timing indicator and moving pointer show status

■ Panel mounting adapters, sockets, protective cover and other accessories may be ordered separately

℞Ⓤ ⓈⒶ C E
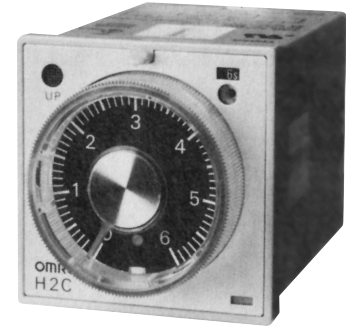
Ordering Information

■ TIMERS

Note: The complete part numbers shown here are the only H2C timers currently available.
Some time ranges and supply voltages have been discontinued.

Timing function		ON-delay	ON-delay	Signal OFF-delay
Contact type	Time limit	SPDT	SPDT	SPDT
	Instantaneous	SPDT	SPDT	–
Motor and clutch connection		Parallel	Independent	Independent
Terminal form		8-pin round socket	Front terminal screws	8-pin round socket
Time range codes		A = 1.25 sec to 30 hr, B = 0.2 sec to 6 hr, C = 0.5 sec to 12 hr		
Part number		**H2C-8-AC24-B**	**H2C-F-AC24-B**	**H2C-8R-AC24-A**
		H2C-8-AC120-A	**H2C-F-AC12-C**	**H2C-8R-AC120-A**
		H2C-8-AC120-B		**H2C-8R-AC120-B**
		H2C-8-AC120-C		**H2C-8R-AC120-C**
		H2C-8-AC240-A		**H2C-8R-AC240-A**
		H2C-8-AC240-B		**H2C-8R-AC240-B**
		H2C-8-AC240-C		**H2C-8R-AC240-C**

■ ACCESSORIES

Description			Part number
Sockets	8-pin (For H2C-8 and H2C-8R)	Bottom surface or track mounting, top screw terminals; order hold down clips separately	**PF085A**
		Bottom surface or track mounting, top screw terminals	**P2CF-08**
		Bottom surface or track mounting, top screw terminals, finger safe terminal conforms to VDE0106/P100	**P2CF-08-E**
		Back mounting, for use with Y92F-30 mounting adapter, bottom screw terminals	**P3G-08**
		Terminal cover for P3G sockets, conforms to VDE0106/P100	**Y92A-48G**
Hold-down clips		One pair; for surface mounting using PF085A socket	**Y92H-2**
Panel mounting adapters		Fits behind panel, ideal for side-by-side installation. Use P3G-08 socket	**Y92F-30**
		Flush mounting adapter (88 mm x 58 mm x 63.7 mm)	**Y92F-70**
		Flush mounting adapter (58 mm x 50 mm x 63.7 mm)	**Y92F-71**
Time setting ring		Use one or two to lock in settings	**Y92A-Y1**
Protective cover		Hard plastic cover protects against dust, dirt and water; not for use with panel adapters Y92F-70 and Y92F-71	**Y92A-48B**
NEMA 4 cover		Waterproof front cover	**Y92A-48N**
Mounting track		DIN rail, 50 cm (1.64 ft) length; 7.3 mm thick	**PFP-50N**
		DIN rail, 1 m (3.28 ft) length; 7.3 mm thick	**PFP-100N**
		DIN rail, 1m (3.28 ft) length; 16 mm thick	**PFP-100N2**
End plate			**PFP-M**
Spacer			**PFP-S**

Time range code	Range selector position					
A	Display	30 s	3 m	30 m	3 h	30 h
	Time range	1.25 to 30 sec	7.5 sec to 3 min	1.25 to 30 min	7.5 min to 3 hr	1.25 to 30 hr
B	Display	6 s	60 s	6 m	60 m	6 h
	Time range	0.2 to 6 sec	2 to 60 sec	0.2 to 6 min	2 to 60 min	0.2 to 60 hr
C	Display	12 s	120 s	12 m	120 m	12 h
	Timer range	0.5 to 12 sec	5 to 120 sec	0.5 to 12 min	5 to 120 min	0.5 to 12 hr

Specifications

Part number			H2C-8	H2C-F	H2C-8R
Supply voltage	AC		24 V, 120 V or 240 V; 50/60 Hz		
Operating voltage			85% to 110% of rated voltage		
			90% to 110% of rated voltage if voltage continues to be applied after set time elapses		
Power consumption			3.5 VA		
Motor and clutch connection			Parallel	Independent	Independent
Timing functions			ON-delay	ON-delay	Signal OFF-delay (clutch)
Inputs			–	–	Voltage clutch signal
Control output	Type	Time limit	SPDT	SPDT	SPDT
		Instantaneous	SPDT	SPDT	–
	Max. load		6 A, 250 VAC (p.f. = 1)		
	Min. load		100 mA, 5 VDC		
Repeat accuracy			±0.5% max.; ±1% max. for 0.2 to 6 second range and 0.5 to 12 second range		
Setting error			±2% max.		
Resetting system			Self resetting	Electric resetting	
Resetting time			0.5 sec max.		
Indicators			Timing (red), moving pointer		
Materials			Plastic case, knob		
Mounting			Panel, surface, track	Surface or track	Panel, surface track
Connections			8-pin round socket	Front terminal screws	8-pin round socket
Weight			180 g (6.3 oz)	270 g (9.5 oz)	180 g (6.3 oz)
Approvals	UL		Recognized, File No. E52800		
	CSA		Certified, File No. LR22310		
	Others		SEV, File No. 1021		
Operating ambient temperature			-10° to 50°C (14° to 122°F)		
Humidity			45% to 85% RH		
Vibration	Mechanical durability		10 to 55 Hz, 0.75 mm (0.03 in) double amplitude		
	Malfunction durability		10 to 55 Hz, 0.5 mm (0.02 in) double amplitude		
Shock	Mechanical durability		100G		
	Malfunction durability		15 G		
Variation due to voltage change			±1% max.		
Variation due to temperature change			±1% max.		
Insulation resistance			100 MΩ min. at 500 VDC		
Dielectric strength			2,500 VAC, 50/60 Hz for 1 minute between current-carrying and non-current carrying parts		
			2,000 VAC, 50/60 Hz for 1 minute between contact and control circuit and between contacts of different poles		
Service life	Mechanical		30 million operations minimum		
	Electrical		200,000 operations at 6 A, 250 VAC (p.f. = 1)		

Engineering Data

■ ELECTRICAL SERVICE LIFE

Electrical operations (thousands) vs Load current (A)

250 VAC (p.f. = 1)
24 VDC (p.f. = 1)

Electrical operations (thousands) vs Load current (A)

250 VAC (p.f. = 0.4)
24 VDC L/R = 7 ms
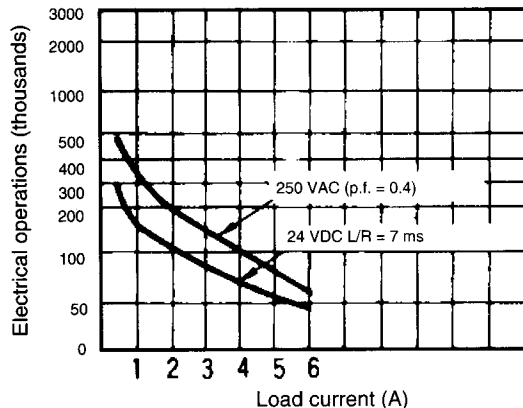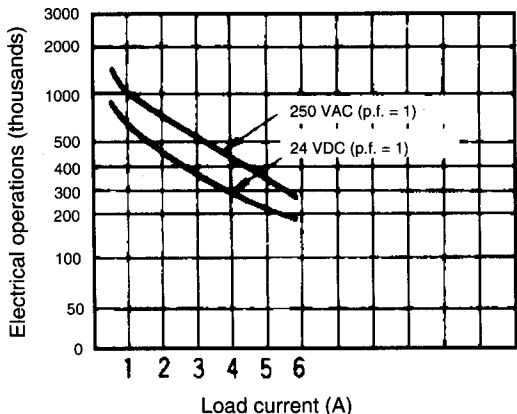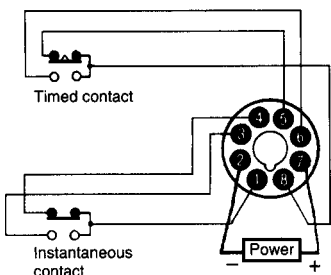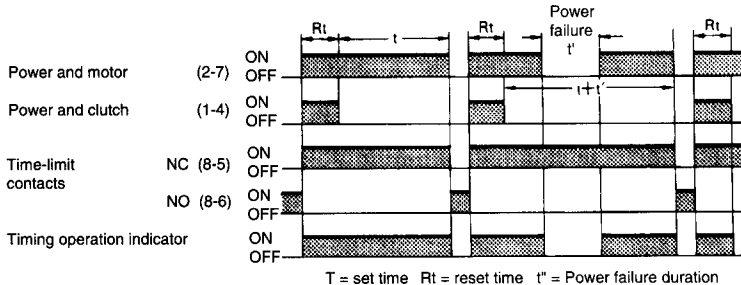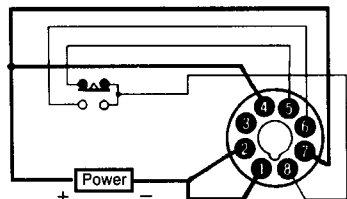
Timing Charts

In the schematic diagrams, each **thick line** indicates the external wiring.

■ H2C-8 ON-DELAY TIMER

Timed contact

Instantaneous contact

Power − +

Motor and clutch	(2-7)	ON / OFF
Time-limit contacts	NC (8-5)	ON / OFF
	NO (8-6)	ON / OFF
Instantaneous contacts	NC (1-4)	ON / OFF
	NO (1-3)	ON / OFF
Timing operation indicator		ON / OFF

T = set time   Rt = reset time
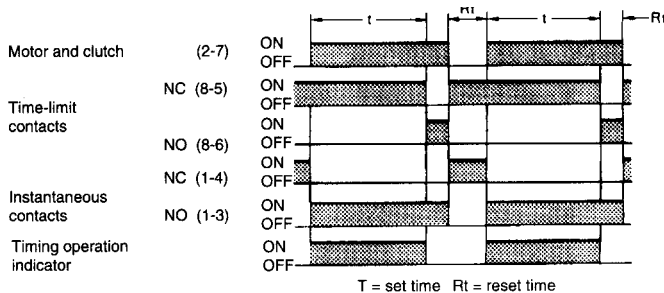
■ H2C-8R SIGNAL OFF-DELAY TIMER

Power + −

Power and motor	(2-7)	ON / OFF
Power and clutch	(1-4)	ON / OFF
Time-limit contacts	NC (8-5)	ON / OFF
	NO (8-6)	ON / OFF
Timing operation indicator		ON / OFF

T = set time   Rt = reset time   t" = Power failure duration

Power failure t'

■ H2C-F ON-DELAY TIMER

Power − +

A1 15 21 B1 B2

Timed contact

Instantaneous contact

16 18 22 24 A2

Power and motor	(2-7)	ON / OFF
Power and clutch	(1-4)	ON / OFF
Time-limit contacts	NC (8-5)	ON / OFF
	NO (8-6)	ON / OFF
Instantaneous contacts	NC (1-4)	ON / OFF
	NO (1-3)	ON / OFF
Timing operation indicator		ON / OFF

T = set time   Rt = reset time

Dimensions

Unit: mm (inch)

■ TIMERS

H2C-8 and H2C-8R
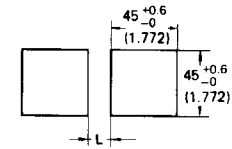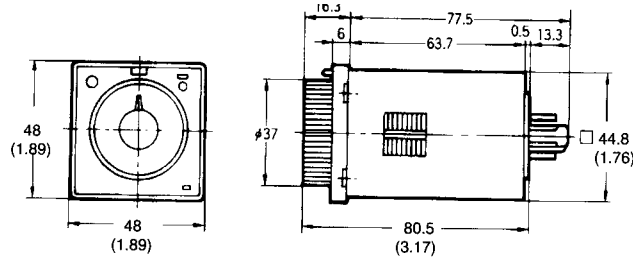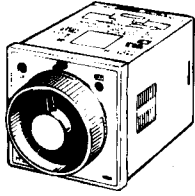
Dimension L	Max. load
3 mm (0.12 in)	3 A
8 mm (0.32 in)	6 A

H2C-F

Mounting holes
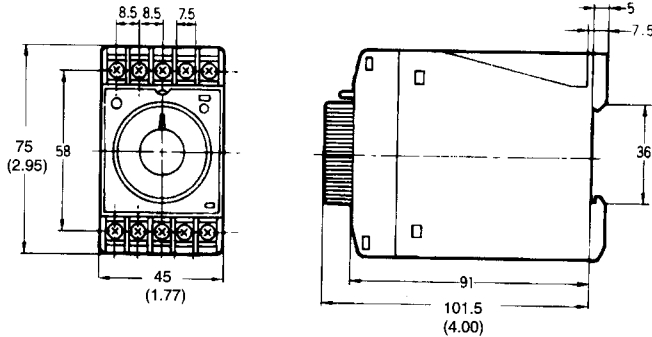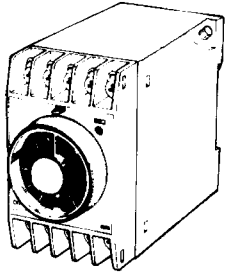
Two M4 or two 4.5 dia. mounting holes
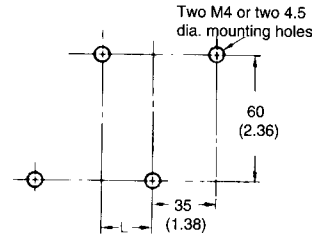
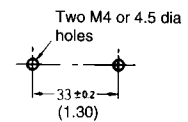| Dimension L	Max. load
10 mm (0.39 in)	1 A
15 mm (0.59 in)	3 A
20 mm (0.79 in)	6 A

■ ACCESSORIES

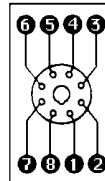### PF085A Bottom Surface or Track Mounting Socket

Terminal arrangement

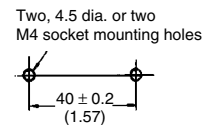(Top view)

Mounting holes

Two M4 or 4.5 dia holes

33 ±0.2
(1.30)
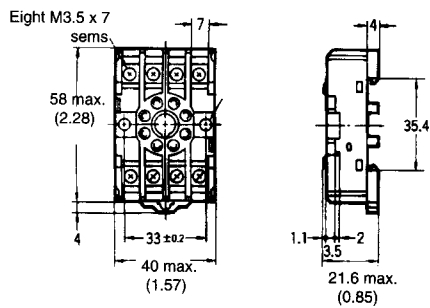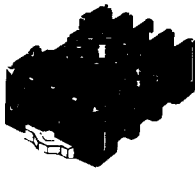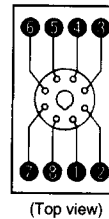
P2CF-08 Track Mounting/Front Connecting Socket
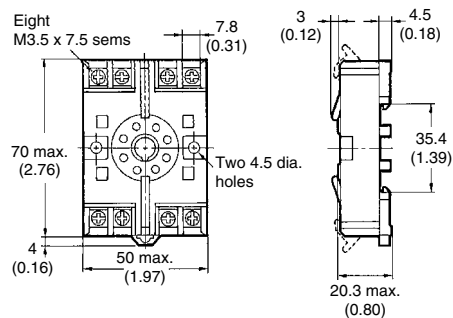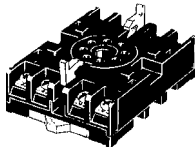
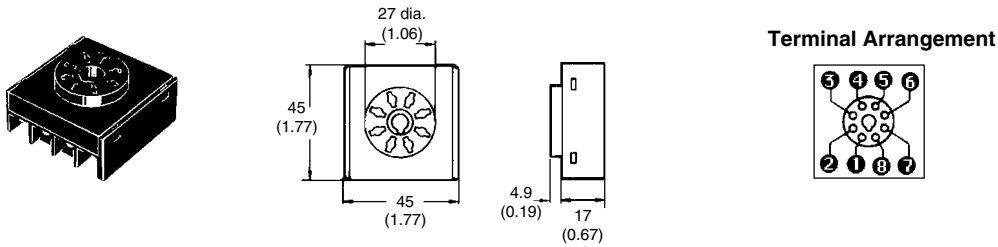**Terminal Arrangement/Internal Connections (Top View)**

Surface Mounting Holes

Two, 4.5 dia. or two M4 socket mounting holes

40 ± 0.2
(1.57)

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

Eight
M3.5 x 7.5 sems
7.8 (0.31)
5
4.5 (0.18)
3
70 max. (2.76)
1.3
35.4 (1.39)
Two 4.5 dia. holes
40±0.2
50 max. (1.97)
19
20.3
21.5 max
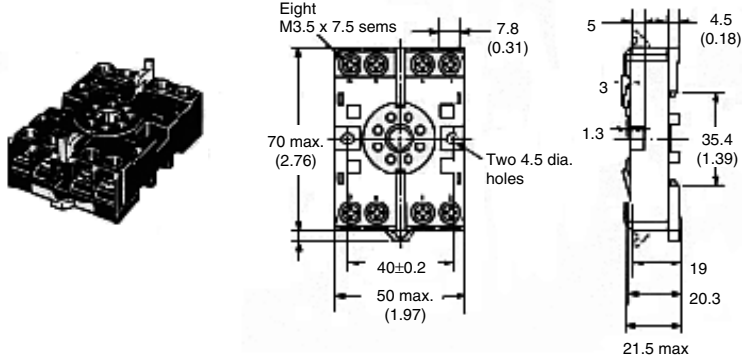
P3G-08 Back Connecting Socket

27 dia. (1.06)
45 (1.77)
45 (1.77)
4.9 (0.19)
17 (0.67)

Terminal Arrangement

Y92A-48G Finger Safe Terminal for P3G-08
Conforming to VDE0106/P100

Twelve, 6.4 dia. holes
34
47.7 x 4.47
48 x 48
16.5
27.6
47.4
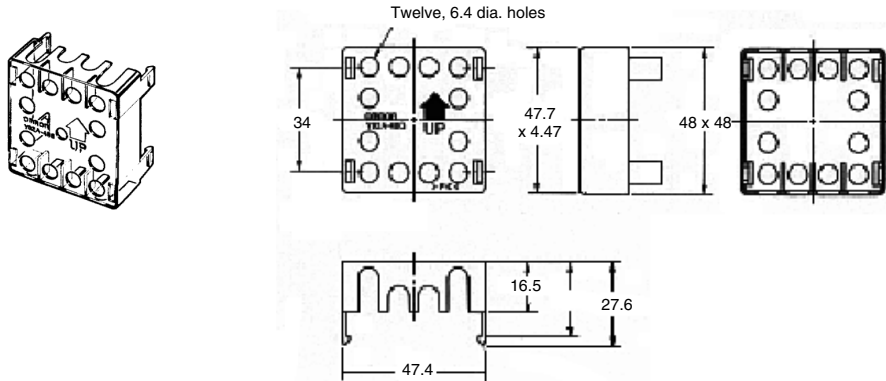
Y92F-30 Mounting Adapter (For H2C-8 and H2C-8R)
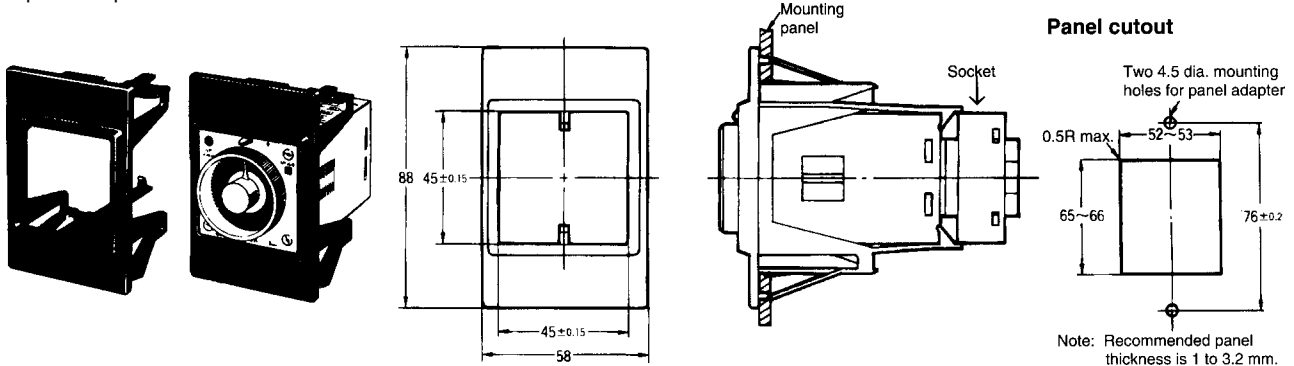Adapter installs behind the panel. It is ideal for side by side installation. Use P3GA-08 socket.

Mounting panel
Y92F-30 adapter
Socket
58
48
16.3
85.7

Panel cutout

45 $^{+0.6}_{-0}$ (1.772)
45 $^{+0.6}_{-0}$ (1.772)
L

Dimension L	Max. load
3 mm (0.12 in)	3 A
8 mm (0.32 in)	6 A

Note: Recommended panel thickness is 1 to 3.2 mm.
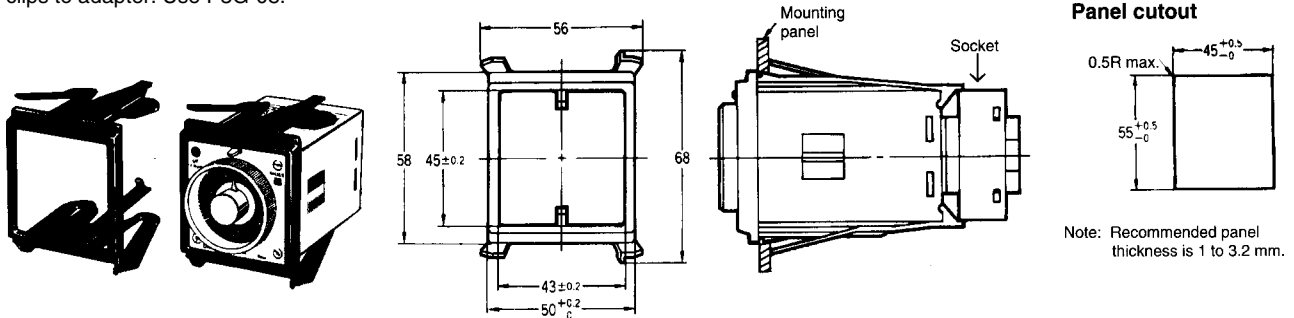
5
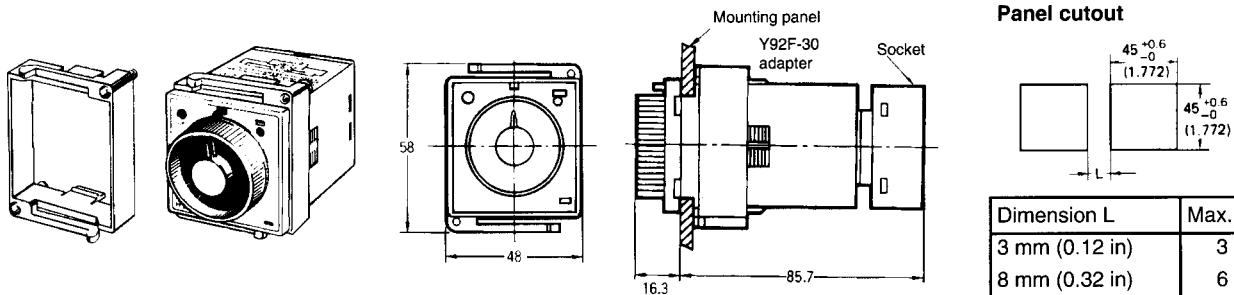
Unit: mm (inch)

Y92F-70 Mounting Adapter

Charcoal gray panel adapter installs through panel front. Timer face fits bezel, rear of timer clips to adapter. Use P3G-08.
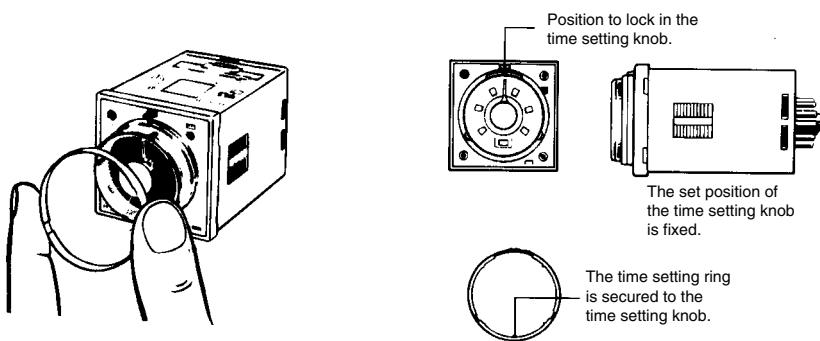
Mounting panel

Socket

Panel cutout

88 45±0.15

Two 4.5 dia. mounting holes for panel adapter

0.5R max. 52~53

65~66 76±0.2

45±0.15

58

Note: Recommended panel thickness is 1 to 3.2 mm.

Y92F-71 Mounting Adapter

Charcoal gray panel adapter installs through panel front. Timer face fits bezel, rear of timer clips to adapter. Use P3G-08.

Mounting panel

Socket

Panel cutout

56

58 45±0.2 68

43±0.2

50 +0.2

0.5R max. $45^{+0.5}_{-0}$

$55^{+0.5}_{-0}$

Note: Recommended panel thickness is 1 to 3.2 mm.

Y92A-Y1 Time Setting Ring

The time setting ring allows the operator to lock in a selected, preset time. A recess in the ring engages a notch in the lock ring tab, stopping movement of the dial. The time setting ring minimizes setting error by repeatedly stopping at the same point on the dial. For machines that are regularly set for two time settings, two Y92A-Y1 Time Setting Rings may be installed for two setpoints.

Position to lock in the time setting knob.

The set position of the time setting knob is fixed.

The time setting ring is secured to the time setting knob.

Y92A-48B Protective Cover

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 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.
3. When using a front cover for flush mounting, use the Y92F-30 Adapter. The Y92F-73 or Y92F-74 Flush Mounting Adapter cannot be used.

50.5 (1.99)
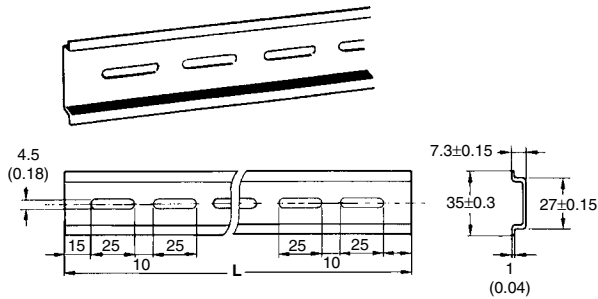
50.5 (1.99)

16 overall depth (0.63)
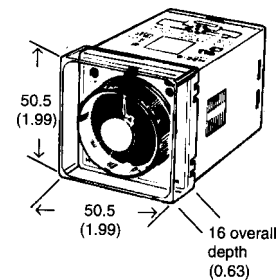
Y92H-1 Hold Down Clips

Use these clips with H2C-8 and H2C-8R timers mounted in a PF085A socket. The pair of clips secure the timer to the socket in installations with significant vibration.
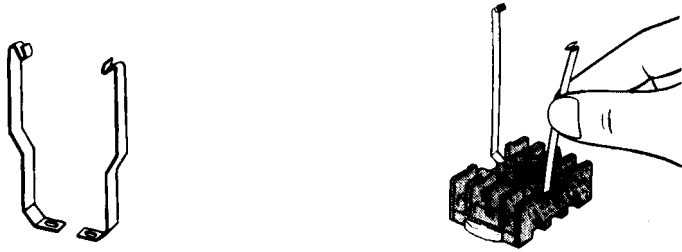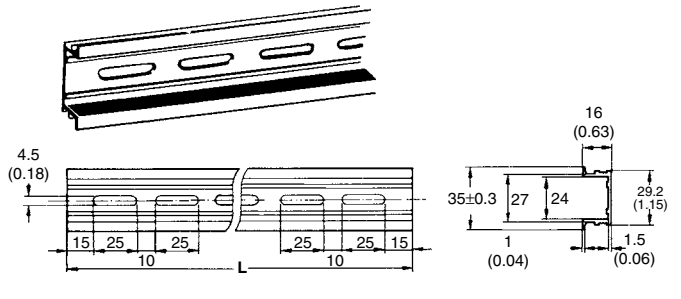
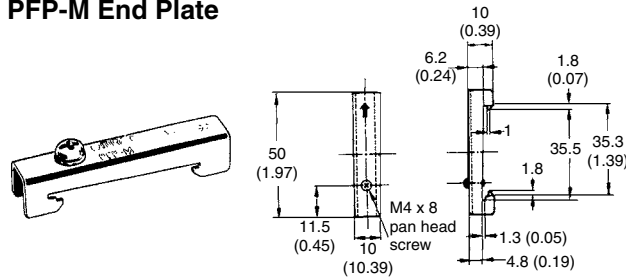### PFP-100N, PFP-50N Mounting Track

PFP-100N2 Mounting Track

L: Length

1 m	PFP-100N
50 cm	PFP-50N
1 m	PFP-100N2

PFP-M End Plate

PFP-S Spacer
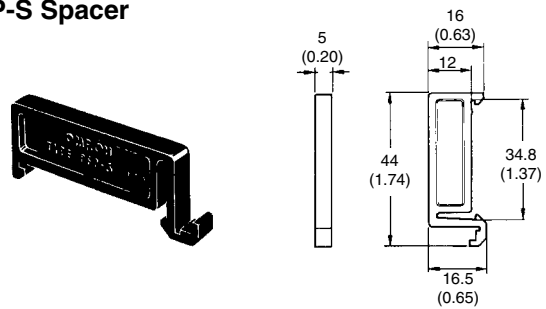
Connections

| Part number	Input (clutch) terminal numbers		Power supply terminal numbers		Output terminal number			
	AC common	AC hot	AC common	AC hot	Type	COM	NC	NO
H2C-8	–	–	2	7	Time limit	8	5	6
					Instantaneous	1	4	3
H2C-8R	1	4	2	7	Time limit	8	5	6
H2C-F	B2	B1	A2	A1	Time limit	15	16	18
					Instantaneous	21	22	24

Installation

■ SELECTING POWER FREQUENCY

H2C motor timers are designed to operate accurately on either 50 Hz or 60 Hz. A selector switch is located on the rear of the case in the lower left-hand corner. Set the proper frequency for your installation before mounting the timer. If the power frequency does not match the setting, the time measurement will be inaccurate.
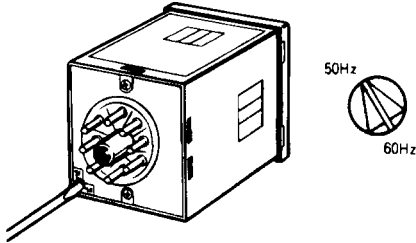
Operation

■ SELECTING TIME RANGES

The time range selector is a rotary switch located on the top right corner of the front panel. Use a screwdriver or Allen wrench to turn the switch. First, turn power OFF to the timer. The five time range choices are 60 degrees apart. Above the switch is a small window that shows the range selection.
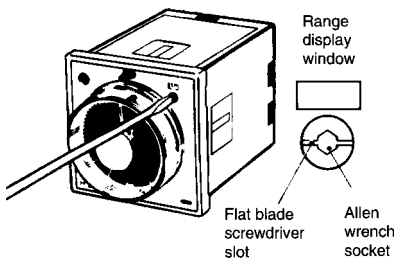

> **WARNING**
> Do not change the time range while the timer is operating. This will cause the timer to malfunction.
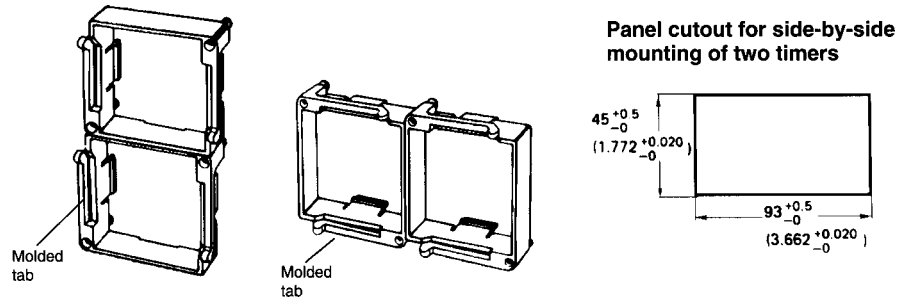
Mounting

■ PANEL MOUNTING

Using Y92F-30 Adapter

Insert the timer through the panel cutout. Push the Y92F-30 adapter from the rear of the timer as far forward toward the panel as possible. Wire the P3G-08 socket, then push it onto the rear of the timer. The tighten the two retaining screws. To release the adapter, lift the tab at the rear of the adapter.
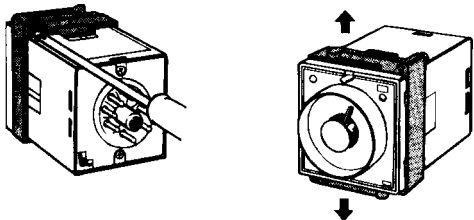
Several timers may be panel mounted close together using the Y92F-30 adapter as shown here. When mounting two or more timers in a vertical line, arrange the adaptors so that their molded tabs are positioned on the right and left sides. When mounting two or more timers in a horizontal line, arrange the adapters so that their molded tabs are positioned on the top and bottom sides.

Molded tab

Molded tab

Panel cutout for side-by-side mounting of two timers

$45^{+0.5}_{-0}$
$(1.772^{+0.020}_{-0})$

$93^{+0.5}_{-0}$
$(3.662^{+0.020}_{-0})$

Using Y92F-70 and Y92F-71 Adapters

Install the H2C-8 and H2C-8R 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 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.


Mounting tabs   Panel

Retaining clips for timer

Mounting tabs
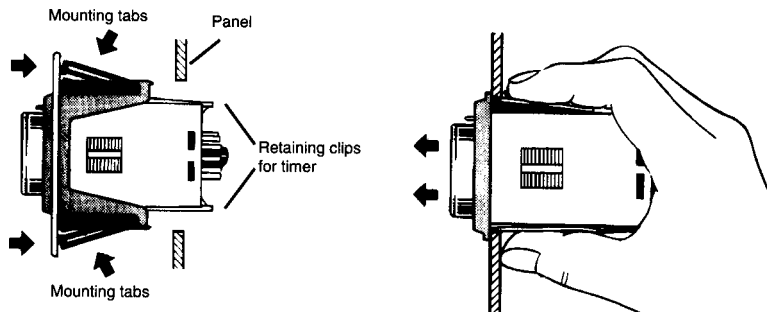
■ TRACK MOUNTING

H2C-F with Built-in Track Adapter

Mounting
First, hook portion "A" on the rear of the timer onto and edge of the track. Then, press the timer in direction "B" until the latch on the bottom rear of the timer latches securely.

Removal
Pull the latch "C" with a flat blade screwdriver and remove the timer from the mounting track.
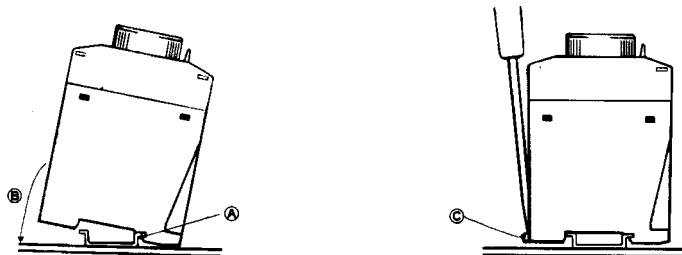
P2CF-08 Socket (For H2C-8 and H2C-BR)

Mounting
The P2CF-08 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 and to release the hooks for servicing and maintenance. Insert timer into the socket. Latch hooks. Then clip the 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.
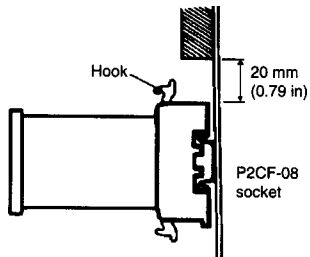
■ **TRACK MOUNTING**
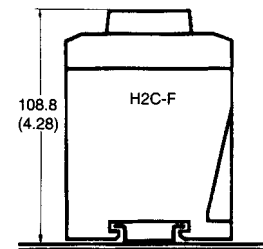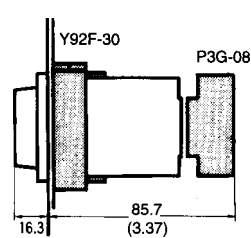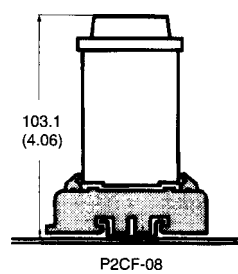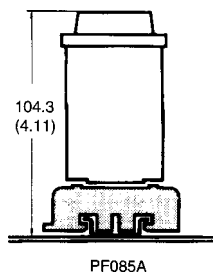
NOTE: DIMENSIONS ARE SHOWN IN MILLIMETERS. To convert millimeters to inches divide by 25.4.