

# 24-hour/Weekly Time Switch H2F

## Up to 96 ON/OFF Cycles from DIN-sized (72 x 72 mm) Timer

- Easy setting with color-coded programming tabs.
- Choose from 24-hour or 1-week models with either SPST-NO or SPDT control outputs.
- Minute dial assures accurate settings.
- Models with memory protection available.
- Control outputs can be manually turned ON/OFF.
- Designed for surface, flush, or track mounting.



## Model Number Structure

### ■ Model Number Legend

H2F-□□□□  
1 2 3 4

#### 1. Operation cycle

D: 24-hour  
W: 1-week

#### 2. Motor type

None: Synchronous motor  
M: Quartz motor

#### 3. Mounting method

None: Flush mounting  
F: Surface mounting, DIN track mounting

#### 4. Output type

None: SPST-NO  
C: SPDT

## Ordering Information

| Mounting method | Control output | 24-hour operation |                                       | 1-week operation                      |
|-----------------|----------------|-------------------|---------------------------------------|---------------------------------------|
|                 |                | Synchronous motor | Quartz motor (with memory protection) | Quartz motor (with memory protection) |
| Flush           | SPST-NO        | H2F-D             | H2F-DM                                | H2F-WM                                |
|                 | SPDT           | H2F-DC            | H2F-DMC                               | H2F-WMC                               |
| Surface/track   | SPST-NO        | H2F-DF            | H2F-DMF                               | H2F-WMF                               |
|                 | SPDT           | H2F-DFC           | H2F-DMFC                              | H2F-WMFC                              |

### ■ Accessories (Order Separately)

|                                    |                                      |         |
|------------------------------------|--------------------------------------|---------|
| Extra Programming Tabs             | 1 pair for each ON/OFF (See note 1.) | Y92S-21 |
| Rechargeable Battery (See note 2.) |                                      | Y92S-42 |

**Note:** 1. The 24-hour models are supplied with three pairs of programming tabs.

The 1-week models are supplied with seven pairs of programming tabs.

2. A Rechargeable Battery is provided in the H2F. When the life of the Battery has expired, order a replacement using this model number.

## Specifications

### ■ Time Ranges

| Operation period | Minimum division | Minimum set time | Maximum set time |
|------------------|------------------|------------------|------------------|
| 24-hour          | 15 min           | 15 min           | 23 h 45 min      |
| 1-week           | 1 h              | 2 h              | 166 h            |

### ■ ON/OFF Cycle

| Operation period | 24-hour | 1-week |
|------------------|---------|--------|
| Maximum cycles   | 96      | 84     |

### ■ Ratings

|                                  |                                                                                                                       |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Rated supply voltage             | Synchronous motor: 100/110/120 VAC, 200/220/240 VAC (50/60 Hz) (See note.)<br>Quartz motor: 100 to 240 VAC (50/60 Hz) |
| Operating voltage range          | 85% to 110% of rated supply voltage                                                                                   |
| Power consumption                | Synchronous motor: 3 VA max.<br>Quartz motor: 1 VA max. at 100 to 120 VAC, 4 VA max. at 200 to 240 VAC                |
| Control outputs                  | 15 A at 250 VAC, resistive load, SPST-NO, SPDT                                                                        |
| Terminal screw tightening torque | 0.98 N·m max.                                                                                                         |

**Note:** Select the appropriate frequency using the frequency selector switch provided on the upper part of the rear panel.

## ■ Characteristics

| Item                                     | 24-hour operation                                                                                                                                                          |                          | 1-week operation |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------|
|                                          | Synchronous motor                                                                                                                                                          | Quartz motor             |                  |
| Accuracy of operating time (See note 1.) | ±3 min max.                                                                                                                                                                |                          | ±30 min max.     |
| Influence of voltage                     |                                                                                                                                                                            |                          |                  |
| Influence of temperature                 |                                                                                                                                                                            |                          |                  |
| Setting error (See note 2.)              | ±3 min max.                                                                                                                                                                |                          | ±30 min max.     |
| Cyclic error                             | ±3 min max.                                                                                                                                                                |                          | ±30 min max.     |
| Memory protection against power failure  | ---                                                                                                                                                                        | 180 h min. (See note 3.) |                  |
| Insulation resistance                    | 100 MΩ min. (at 500 VDC)                                                                                                                                                   |                          |                  |
| Dielectric strength                      | 2,000 VAC, 50/60 Hz for 1 min (between current-carrying terminals and non-current-carrying metal parts)<br>1,000 VAC, 50/60 Hz for 1 min (between non-continuous contacts) |                          |                  |
| Vibration resistance                     | Destruction: 16.7 Hz, 2-mm single amplitude<br>Malfunction: 10 to 55 Hz, 0.25-mm single amplitude                                                                          |                          |                  |
| Shock resistance                         | Destruction: 1,000 m/s <sup>2</sup><br>Malfunction: 200 m/s <sup>2</sup>                                                                                                   |                          |                  |
| Ambient temperature                      | Operating: -10°C to 55°C                                                                                                                                                   |                          |                  |
| Ambient humidity                         | Operating: 35% to 85%                                                                                                                                                      |                          |                  |
| Life expectancy                          | Contacts: 10,000 operations min.<br>Motor: 20,000 hours                                                                                                                    |                          |                  |
| Approved standards                       | UL917, CSA C22.2 No. 14                                                                                                                                                    |                          |                  |
| Case color                               | Light gray (Munsell 5Y7/1)                                                                                                                                                 |                          |                  |
| Weight                                   | Flush mounting: approx. 150 g<br>Surface mounting: approx. 200 g                                                                                                           |                          |                  |

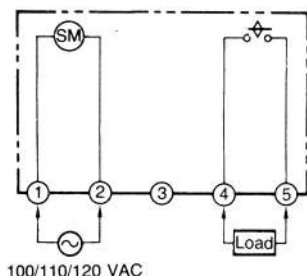
- Note:** 1. Accuracy of operating time of when the H2F is ON or when the H2F is OFF.  
 2. Difference between the set and actual operation time with the pointer set to the present time.  
 3. When the H2F is used for the first time after energization for 72 h.

# Connections

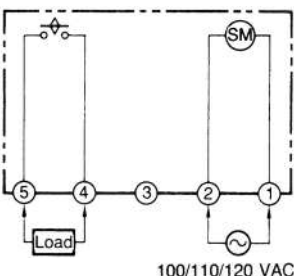
## Synchronous Motor Model

(SPST-NO Output)

H2F-D

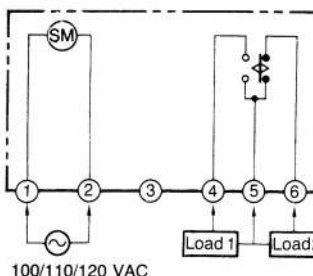


H2F-DF

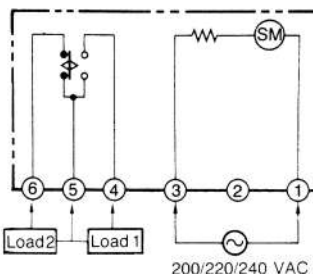
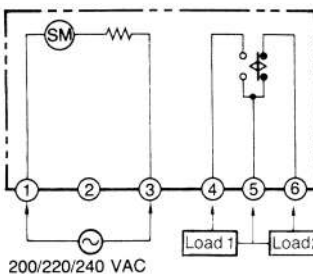
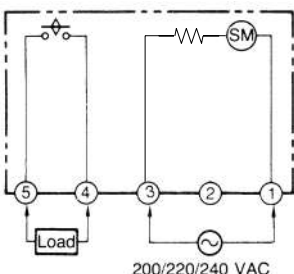
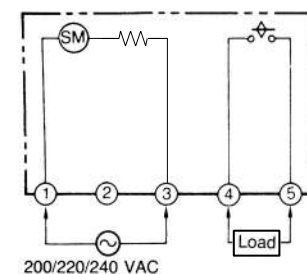
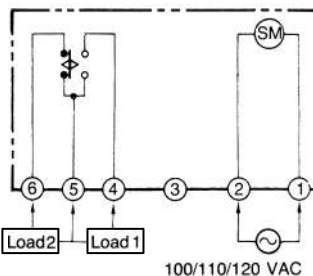


(SPDT Output)

H2F-DC



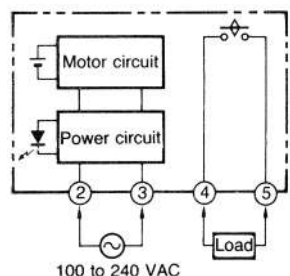
H2F-DFC



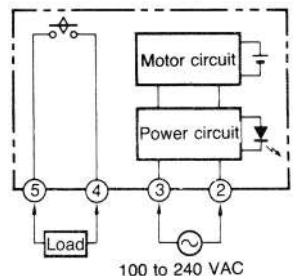
## Quartz Motor Model

(SPST-NO Output)

H2F-DM/H2F-WM

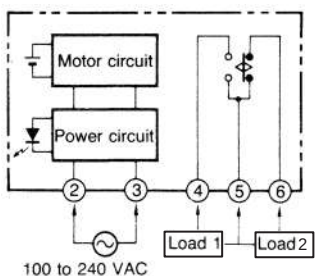


H2F-DMF/H2F-WMF

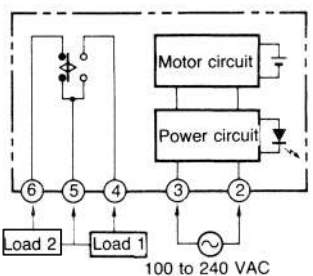


(SPDT Output)

H2F-DMC/WMC



H2F-DMFC/WMFC



- Note 1:** Connect an independent power source to the load.
- 2:** Do not exceed the following torque when tightening the screws.  
Specified torque: 0.8 N·m  
Maximum torque: 0.98 N·m
- 3:** When connecting leads to the terminal block, use the same wire size for all leads. If different wire sizes are used, the thinner leads may come off during operation.
- 4:** Recommended lead wires: AWG18 to AWG24 (cross-section: 0.205 to 0.823 mm<sup>2</sup>), solid or twisted wire
- 5:** When using crimp terminals, connect a maximum of two crimp terminals to any one terminal.

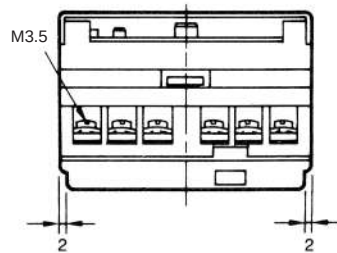
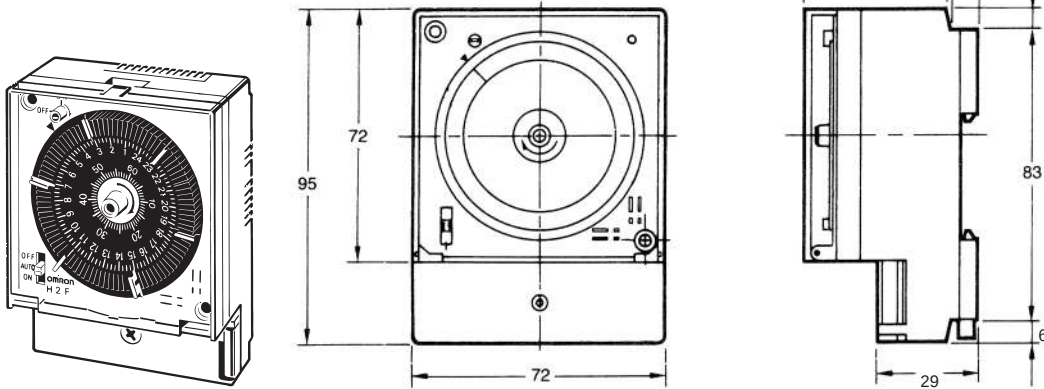
# Dimensions

**Note:** All units are in millimeters unless otherwise indicated.

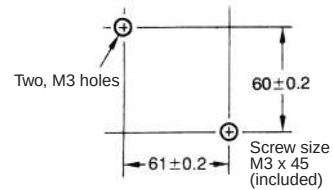
## Mounting Dimensions

**Surface Mounting:** H2F-DF/DMF-WMF

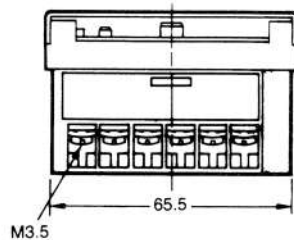
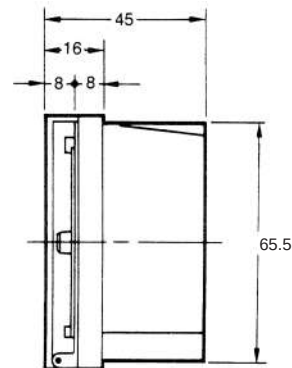
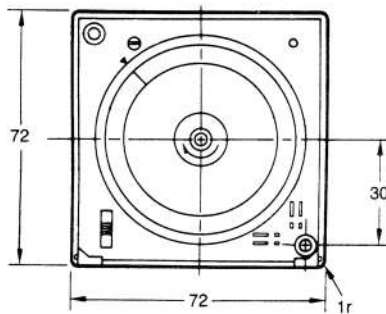
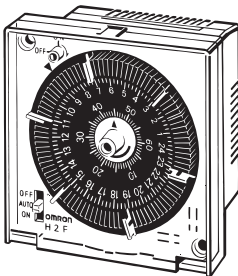
**Track Mounting:** H2F-DFC/DMFC-WMFC



### Mounting Holes

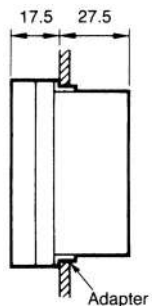
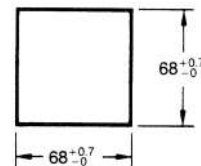


**Flush Mounting:** H2F-D/DM/WM/DC/DMC/WMC



### Panel Cutout

Recommended panel thickness: 1 to 3.2 mm

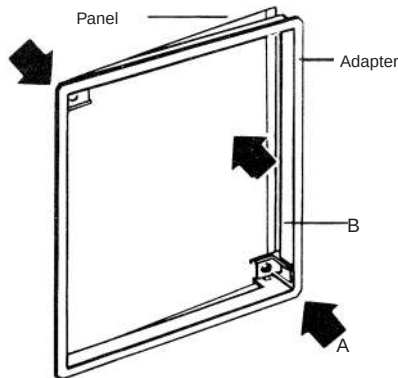


**Note:** The mounting adapter and screws are included.

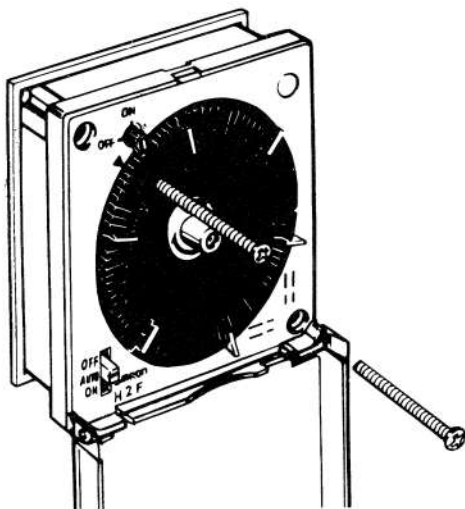
# Precautions

## Flush Mounting

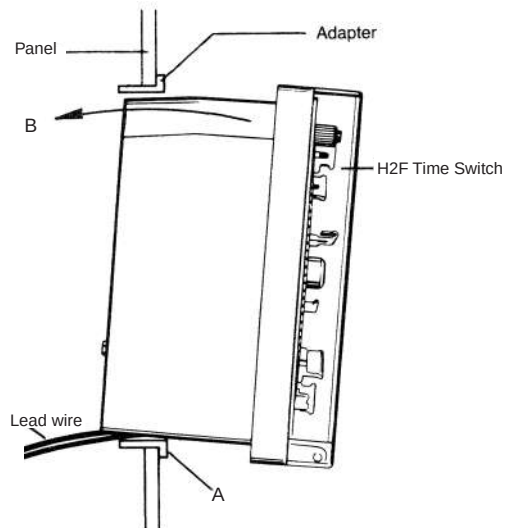
1. To mount the adapter to the panel cutout, first deform the adapter by pushing it on the two opposing corners (as indicated by arrows A. Then push part B into the cutout (i.e., toward the back of the panel).



2. After the adapter is mounted, insert the H2F as shown in the figure below. Secure the H2F by tightening the two mounting screws (M3 x 16) included as accessories.



3. If the lead wires have been connected to the H2F from the front of the panel before the H2F is mounted in the panel, engage the H2F to part A of the adapter and push it in the direction of B. Then tighten the two screws as described in 2.

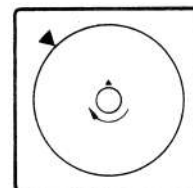


## Time Setting

To set the time, turn the center knob clockwise to the correct time. Turning it counterclockwise or turning it with your fingers hooked on the setting bracket may cause a malfunction.

With 24-hour models, set the hour to the arrow on the upper left corner of the front panel and the minute to the arrow on the center knob.

With 1-week models, set the day of the week to the arrow on the upper left corner of the front panel and the hour to the arrow on the center knob.



Use the gold setting tabs to set the ON time and the silver ones to set the OFF time. Position the thick leg of the tab toward the outside of the dial and insert the tab securely into the groove on the dial.

For ON (gold)



For OFF (silver)



Outside ← → Inside

Outside ← → Inside

Three pairs of setting tabs are attached.

Store the spare tabs in the compartment at the lower right corner of the front panel.

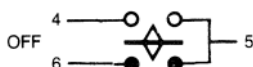
## Manual Switch

### SPST-NO Output

A 3-position selector switch, located at the lower left corner of the front panel, determines output operation. In the OFF position, the control output is forcibly turned OFF regardless of the setting of the programming tabs. Set to the AUTO position, the output is turned ON and OFF according to the settings of the programming tabs. In the ON position, the output is forcibly turned ON regardless of the setting of the programming tabs.

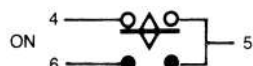
### SPDT Output

When the manual switch at the lower left corner of the front is set to the OFF position, both load 1 (connected across terminals 4 and 5) and load 2 (across 5 and 6) are turned OFF.



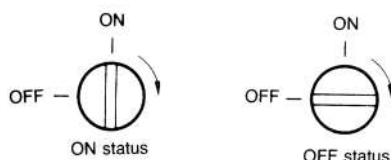
When it is set to the AUTO position, the output is turned ON and OFF according to the setting of the programming tabs.

When the manual switch is set to the ON position, load 1 (connected across terminals 4 and 5) is turned ON and load 2 (across 5 and 6) is turned OFF.



## Output Indicator

The output indicator at the upper left corner of the front panel shows the status of the output when the manual switch is set to the AUTO position.



In addition, the output can be manually turned ON or OFF by rotating the knob clockwise (in the arrow direction). The knob will not turn counterclockwise.

### Precaution for the H2F-D, -DF Series (Synchronous Motor Models)

Before using the H2F, select the appropriate frequency of your area by the frequency selector switch provided on the upper part of the rear panel.

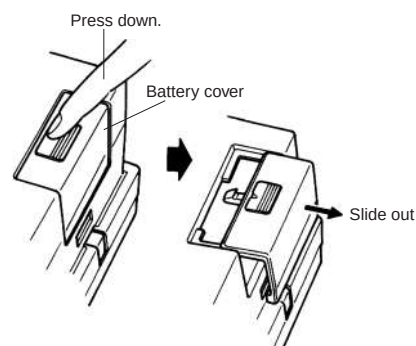


Upper part of rear panel  
(cycles per second)

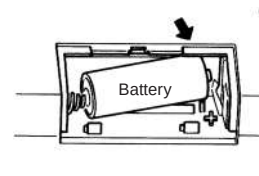
## H2F-□M Series (Quartz Motor Models)

### Battery

Remove the battery cover on the rear panel of the H2F, load the provided Battery into the battery box, then turn ON the H2F. Be sure to load the Battery before using the H2F. If the Battery is not loaded, the H2F will not work properly.



Be sure to load the Battery with the correct polarity. The polarity is indicated in the battery box. After loading the Battery, be sure to place the cover on the battery box.



The Battery is fully charged before shipment. The Battery may lose its charge while the Battery is stored. Therefore, there is a backup function that is guaranteed for 180 hours on condition that the Battery is loaded into the H2F and charged continuously for 72 hours. If the Battery has no charge, the H2F may not operate immediately after it is turned ON. In that case, continue providing power to the H2F for three or more minutes before setting the time.

If the H2F is turned ON and OFF frequently, the Battery life will be greatly reduced. Use the H2F with a continuous supply of power.

The Battery has a life of approximately three years at room temperature. If three years have passed since the Battery was loaded, replace the Battery as soon as possible with a AAAA-size NiCd rechargeable battery.

If the H2F is idle over a long time, unload the Battery from the H2F and store the Battery separately in order to prevent the Battery from being overly discharged.

Always turn OFF the power supply before replacing the Battery.

Use only the specified Replacement Battery (Y92S-42). Using any other battery may result in leakage of battery fluid or battery rupture, possibly causing equipment damage or injury.

## Other Precautions

When connecting to a heater, always use a thermal switch in the load circuit.

Do not exceed the specified ranges for vibration and shock.

The H2F is neither waterproof nor oil-proof. Do not use the H2F where it would be subjected to water or oil.

**⚠ WARNING**

Do not short the terminals of, disassemble, deform under pressure, or incinerate the Battery. Doing so may result in minor injury due to bursting, ignition, or leakage of fluid.



**⚠ CAUTION**

Do not touch any of the terminals or the back panel while power is being supplied. Doing so may result in electric shock. Be sure to mount the terminal cover after wiring.



Before changing times or other settings while power is being supplied, either turn OFF the power on the load side or set the output ON/OFF switch to OFF and confirm the safety of the system. Unexpected operation may occasionally result.



Tighten the terminal screws to the specified torque. Loose screws may occasionally result in fire or malfunction.



Do not allow metal fragments or lead wire scraps to fall inside the Product. This may occasionally cause electric shock, fire, or malfunction.



Never disassemble, repair, or modify the Product. This may occasionally cause electric shock, fire, or malfunction.



Do not use the Product where flammable or explosive gas is present. There may occasionally be a risk of explosion resulting in minor injury.



**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**

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

Cat. No. L013-E1-05 **In the interest of product improvement, specifications are subject to change without notice.**

**OMRON Corporation**

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