

# Motor Time Switch H2F-WM

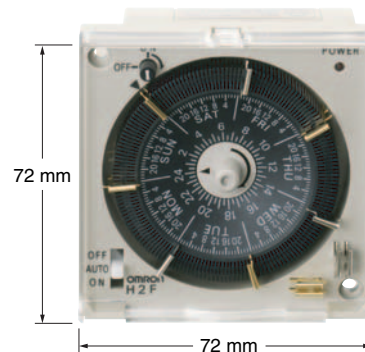
CSM\_H2F-WM\_DS\_E\_2\_1


## Weekly ON/OFF Control in 1-h Increments



The H2F-WM is a Compact Weekly Time Switch in a DIN 72 × 72-mm Body Equipped with Power Interruption Backup Providing Protection for Crucial Times.

- Just insert the trippers for easy setup.
- Wide power supply range: 100 to 240 VAC.
- Equipped with power interruption backup.
- Three mounting methods.
- Safety standards: UL and CSA (except for H2F-43).



 The H2F-WM uses a nickel metal hydride battery. Dispose of the battery at a battery recycling location. Replacement batteries are not available for previous H2F Time Switches from March 2006 and earlier. Replace the entire H2F Time Switch. Refer to *Notice* on page 6.

For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

## Ordering Information

Control cycle	Drive method	Power interruption backup	Power supply voltage	Mounting method	Flush mounting		Surface mounting/track mounting	
					Control output	SPST-NO	SPDT	SPST-NO
Weekly	Quartz motor (See note 2.)	Yes	100 to 240 VAC	Model	H2F-WM	H2F-WMC	H2F-WMF	H2F-WMFC
			12 to 24 VDC		H2F-43 (See note 1.)	---	---	---

- Note:** 1. Special model. Consult with you OMRON representative for details.  
2. Always use the Time Switch with the Y92S-42 Battery mounted.

## Accessories (Order Separately)

Name	Model
Trippers (1 set for ON and OFF) (See note 1.)	Y92S-21
Battery (See note 2.)	Y92S-42

- Note:** 1. Seven gold-colored trippers for ON and seven silver-colored trippers for OFF are enclosed with the H2F-WM. Separately order trippers if more are required.  
2. The battery is built into the H2F-WM. When the battery is nearing the end of its service life, order the model number listed at the left.

## Specifications

### Time Specifications

Type	Cycle	Minimum scale graduation	Minimum set time	Maximum set time
Weekly	Weekly	1 h	2 h	166 h

### Ratings

<b>Power supply voltage</b>	Quartz motor: 100 to 240 VAC, 50/60 Hz (common), 12 to 24 VAC
<b>Operating voltage range</b>	85% to 110% of rated supply voltage
<b>Power consumption (See note.)</b>	Quartz motor: 1 VA max. at 100 to 120 VAC, 4 VA max. at 200 to 240 VAC, 1 W max. at 12 to 24 VDC
<b>Control output</b>	15 A at 250 VAC, resistive load
<b>Ambient operating temperature</b>	-10 to 55°C (with no icing)
<b>Ambient operating humidity</b>	35% to 85%

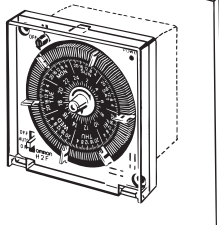
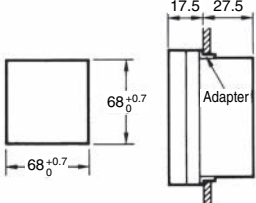
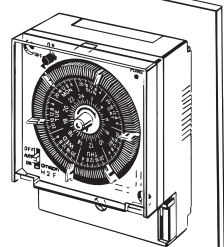
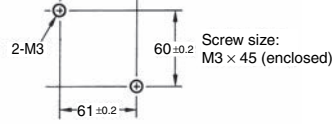
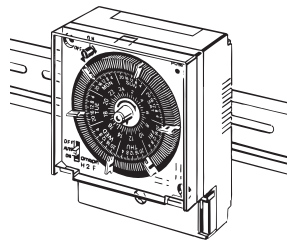
**Note:** Inrush current will briefly flow when the power supply is turned ON. For details, refer to *Technical Guide for Timers and Time Switches*.

## ■ Characteristics

Item	Type	Weekly
	Quartz motor	
Operating time deviation (See note 1.)	±30 min max.	
Voltage influence and temperature influence		
Setting error (See note 2.)	±30 min max.	
Cyclic error	±30 min max.	
Power interruption backup time	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 metal parts and non-current-carrying metal parts and between control output and operating circuit) 1,000 VAC, 50/60 Hz for 1 min (between non-continuous contacts)	
Vibration resistance	Destruction	16.7 Hz with 2-mm single amplitude for 1 hour each in three directions
	Malfunction	10 to 55 Hz with 0.25-mm single amplitude for 10 minutes each in three directions
Shock resistance	Destruction	1,000 m/s <sup>2</sup> 5 times each in 6 directions
	Malfunction	200 m/s <sup>2</sup> once each in 6 directions
Life expectancy	Contacts: 10,000 operations min., Motor: 20,000 h	
Weight	Flush-mounting model: Approx. 150 g, Surface-mounting model: Approx. 200 g	
Case color	Light gray (Munsell 5Y7/1)	

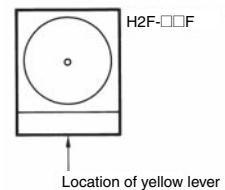
- Note:**
1. Deviation in the ON time or OFF time.
  2. Time difference between the set time and time required to start operation when the pointer is set to the present time.
  3. Value when power has been supplied for at least 72 h at initial use.

## Mounting Method

Flush Mounting	Surface Mounting	DIN Track Mounting
 <p>72 × 72 × 45 mm (H × W × D) (below faceplate: 29 mm)</p> <p>Panel Cutout Dimensions (according to DIN 43700)</p>  <p>Panel thickness: 1 to 3.2 mm</p> <p><b>Note:</b> The mounting adapter and mounting screws are enclosed.</p>	 <p>95 × 72 × 50 mm (H × W × D)</p> <p>Mounting Screw Dimensions</p>  <p>Screw size: M3 × 45 (enclosed)</p>	

## Removing the H2F-WM from the DIN Track

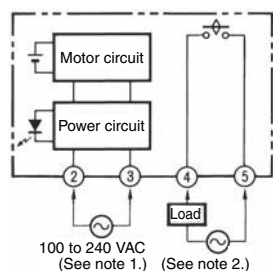
Use a flat-blade screwdriver to pull down the yellow lever at the back of the bottom and remove the Time Switch.



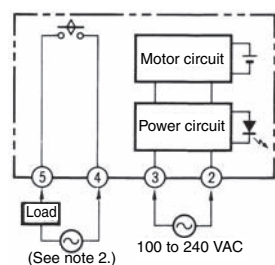
# Connections

## Quartz Motor Models: SPST-NO Output

H2F-WM, H2F-43

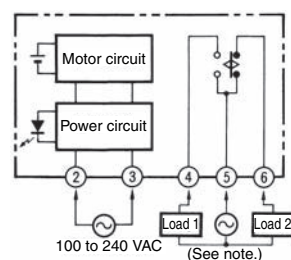


H2F-WMF

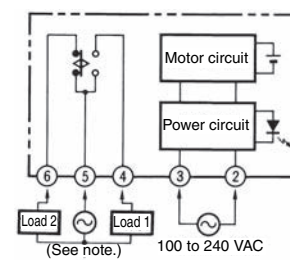


## Quartz Motor Models: SPDT Output

H2F-WMC



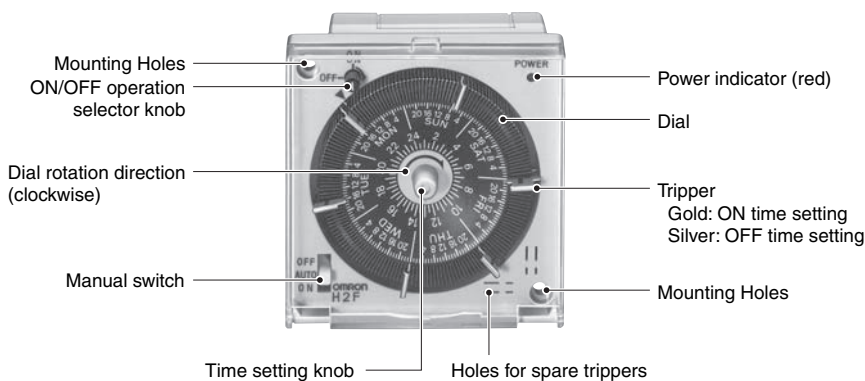
H2F-WMFC



- Note: 1.** On the H2F-43 (12 to 24 VDC), terminal number 2 is positive and terminal number 3 is negative.
- 2.** Use a separate power supply for the load.
- 3.** Screw tightening torque:  
Maximum torque: 0.98 N•m
- 4.** Use the same type of lead wires when connecting lead wires to the terminal block. If different wire types are used, it will not be possible to tighten the thin lead wires, and the wires may become disconnected during use.
- 5.** Recommended wire: AWG 18 to 24 (cross-sectional area: 0.205 to 0.823 mm<sup>2</sup>), solid wire or twisted wire.
- 6.** Do not connect more than two crimp terminals to the same terminal.

**Note:** Use a separate power supply for the load.

# Nomenclature



## Time Setting

Insert the trippers into the scale graduation at the desired times.

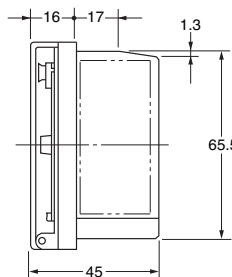
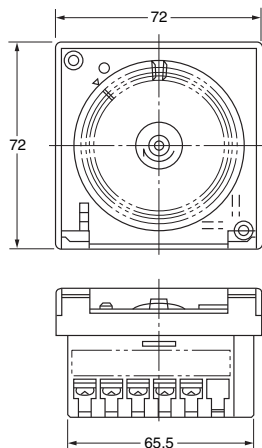
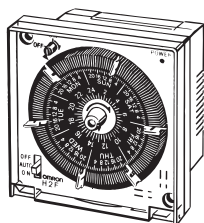
- Insert gold trippers for times the load is to be turned ON and silver trippers for times the load is to be turned OFF.

- Note: 1.** Be sure to insert the trippers all the way.
- 2.** Set the trippers in alternating positions only after thoroughly checking the ON and OFF positions.

# Dimensions

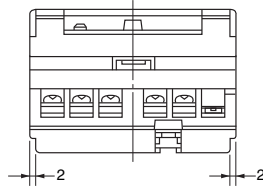
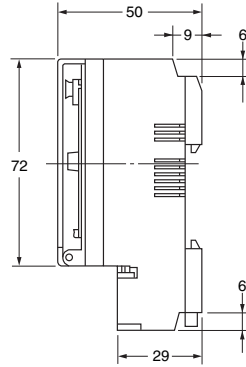
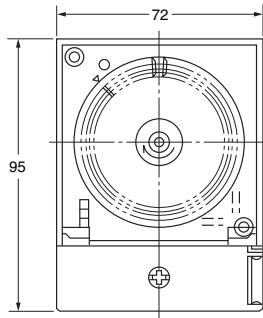
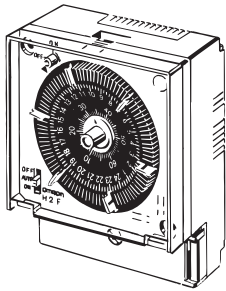
**Note:** All units are in millimeters unless otherwise indicated.

H2F-WM (C)  
H2F-43



**Note:** The terminal screws are M3.5.

H2F-WMF (C)



**Note:** The terminal screws are M3.5.

## Safety Precautions

Refer to *Safety Precautions for All Timers*.

### WARNING

Minor injury may occasionally occur due to the battery bursting, igniting, or leaking. Never short-circuit the positive and negative terminals, disassemble the battery, deform it under pressure, or dispose of it in fire.



### CAUTION

Minor injury by electric shock may occasionally occur. Do not touch any of the terminals while power is being supplied. Be sure to mount the terminal cover after wiring.



Unexpected operation may occasionally occur. 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.



Fire may occasionally occur. Tighten the terminal screws to the rated torque.



Minor electric shock, fire, or product failure may occasionally occur. Do not allow metal fragments, copper wire scraps, or shavings from installation work to fall inside the Time Switch.



Minor electric shock, fire or product failure may occasionally occur. Never attempt to disassemble, modify, or repair the product or touch any of the internal parts.



Minor injury due to explosion may occasionally occur. Do not use the product where it is subject to flammable or explosive gas.

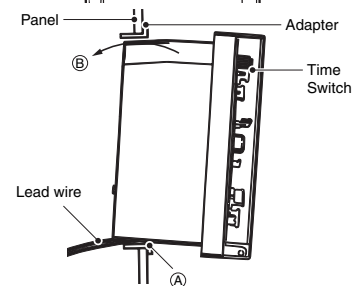
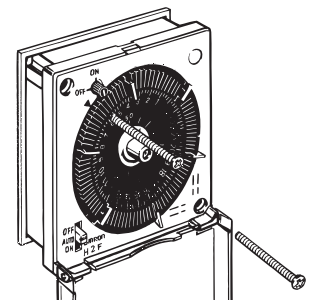
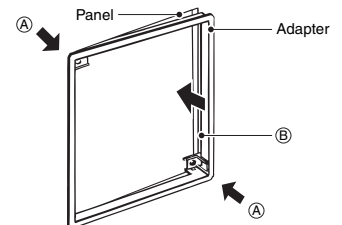


## Precautions for Correct Use

### Mounting

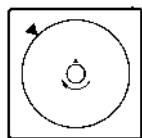
#### Panel Flush Mounting

- As illustrated at the right, bend the enclosed adapter in the direction of A, and then push part B in the direction of the arrow (i.e., toward the back of the panel cut).
- Once the adapter has been mounted, insert the Time Switch as illustrated at the right. Secure the Time Switch in two places using the enclosed screws (M3 × 16) tightened with a torque of 0.58 N·m max.
- If the lead wire has been installed in front of the panel, place the Time Switch on part A of the adapter and push it in toward B. Then secure the Time Switch by tightening the screws as described in step 2.

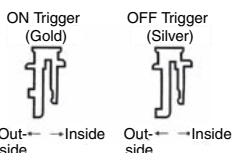


## Setting the Time

- Turn the center knob clockwise to set the time. Product failure may occur if the knob is turned counterclockwise or the knob is turned while the triggers are being pressed.



- Set the hour to the arrow at the upper left and set minutes to the arrow on the center knob.
- The gold-colored triggers are for ON and the silver-colored triggers are for OFF. Securely push in the triggers with the wider part facing the outer part of the dial.
- Insert the spare triggers into the holes at the lower right for storage.

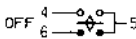
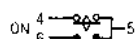


## Manual Switch

### Models with SPST-NO Output

The output will turn OFF regardless of trigger settings when the manual switch at the lower left of the front panel is set to OFF. The output will turn ON regardless of trigger settings when the manual switch is set to ON. The output will turn ON and OFF according to the trigger settings when the manual switch is set to AUTO.

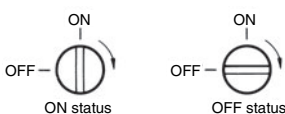
### Models with SPDT Output

- Load 1 (terminals 4 and 5) and load 2 (terminals 5 and 6) will both turn OFF when the manual switch at the lower left of the front panel is set to OFF. 
- The output will turn ON and OFF according to the trigger settings when the manual switch is set to AUTO. Load 1 (terminals 4 and 5) will turn ON and load 2 (terminals 5 and 6) will turn OFF when the manual switch is set to ON. 
- Check the output indicator when returning operation to AUTO. If the knob has been touched or the output indicator has changed because of vibration or shock, turn the knob, switch the output, and then return operation to AUTO.

## Output Display

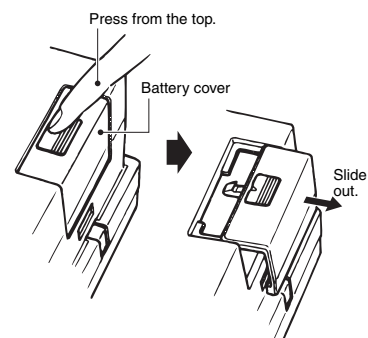
The output indicator at the upper left of the front panel shows the output status when the manual switch is set to AUTO.

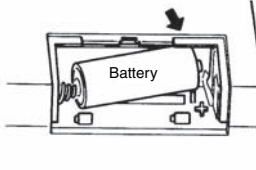
The output can also be manually switched ON or OFF by turning the knob clockwise (i.e., in the direction of the arrow). Do not turn the knob counterclockwise.



## Precautions for H2F-WM-series Quartz Motor Models

- Remove the battery cover on the back of the Time Switch. **Be sure to insert the battery before supplying power. Operating the Time Switch without the battery mounted will increase the time error. Always mount the battery.**



- Pay careful attention to the polarity when inserting the battery. Insert the battery following the polarity marked in the battery box of the Time Switch. Before using the Time Switch, be sure to close the battery cover after the battery is inserted. 
- The enclosed battery is fully charged. In the rare event that battery performance decreases due to natural discharging, the 180-hour power interruption backup function will back up operation if power has been continuously supplied for 72 hours after installing the battery in the Time Switch. If the battery is completely discharged, the Time Switch may not operate when the battery is installed. If the Time Switch does not operate, supply power for at least 3 min, and then set the time.
- Turning the power supply ON and OFF will extremely shorten the service life of the battery. Use the Time Switch with the power supplied continuously.
- The service life of the battery is approximately three years (at room temperature). If the battery has been used for three years or more, replace it as soon as possible. Using the battery close to the end of its service life will increase the time error.
- The battery may leak or cause corrosion due to excessive discharge if the H2F is left unused for an extended period with the battery mounted. Be sure to remove the battery before storing the H2F.
- Turn OFF the power supply before replacing the battery.
- Use only the specified battery (Y92S-42). The battery may leak or burst if any other battery is used, possibly resulting in equipment damage or injury.

## Other Precautions

- Always use a thermo-switch on the load circuit when a heater is used.
- Operate the Time Switch within the specified rating ranges for vibration and shock.
- The H2F is not waterproof or oil resistant. Do not use the H2F in locations subject to water splashing or oil contact.

---

## **Notice**

**There is no alternative product for the Y92S-22 Nickel-Cadmium Battery. Replace the entire H2F Time Switch.**

### **CAUTION**

As the result of design changes in March 2006, the backup battery for the H2F Motor Time Switches was changed from the Y92S-22 Nickel-Cadmium Battery to the Y92S-42 Nickel-Hydrogen Battery.

The Y92S-22 Nickel-Cadmium Battery and the Y92S-42 Nickel-Hydrogen Battery are not compatible as replacement batteries. If you attempt to use the Y92S-42 Nickel-Hydrogen Battery with H2F Time Switches from before the design change (i.e., Switches designed for a Y92S-22 Nickel-Cadmium Battery), an insufficient charge may prevent operation.

Or, if you use the Y92S-22 Nickel-Cadmium Battery in an H2F Time Switch designed for the Nickel-Hydrogen Battery, an overcharge may cause the battery to leak.

Check the internal battery specifications on the label on the battery cover on the H2F and on the external markings on the battery.

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.

## Terms and Conditions Agreement

### 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.

### Warranties.

(a) Exclusive Warranty. Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied.

(b) Limitations. OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE.

Omron further disclaims all warranties and responsibility of any type for claims or expenses based on infringement by the Products or otherwise of any intellectual property right. (c) Buyer Remedy. Omron's sole obligation hereunder shall be, at Omron's election, to (i) replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product, (ii) repair the non-complying Product, or (iii) repay or credit Buyer an amount equal to the purchase price of the non-complying Product; provided that in no event shall Omron be responsible for warranty, repair, indemnity or any other claims or expenses regarding the Products unless Omron's analysis confirms that the Products were properly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any Products by Buyer must be approved in writing by Omron before shipment. Omron Companies shall not be liable for the suitability or unsuitability or the results from the use of Products in combination with any electrical or electronic components, circuits, system assemblies or any other materials or substances or environments. Any advice, recommendations or information given orally or in writing, are not to be construed as an amendment or addition to the above warranty.

See <http://www.omron.com/global/> or contact your Omron representative for published information.

### Limitation on Liability; Etc.

OMRON COMPANIES SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY.

Further, in no event shall liability of Omron Companies exceed the individual price of the Product on which liability is asserted.

### Suitability of Use.

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

### Programmable Products.

Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.

### Performance Data.

Data presented in Omron Company websites, catalogs and other materials 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 user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.

### 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 part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

### Errors and Omissions.

Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.