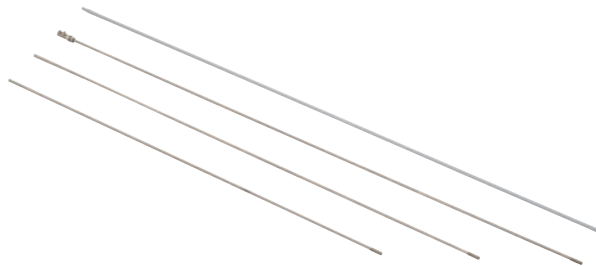


## A Wide Variety of Electrodes for Long Lasting Reliability

- Standard Electrodes are made of stainless steel (SUS 304) and can be used in applications for purified water.
- SUS316 Electrodes can be used in applications where resistance to corrosion is required. Titanium and Hastelloy Electrodes can be used in applications where resistance to acid is required.
- For applications where long electrodes are required, a connection nut and two Lock Nuts can be used to extend the electrodes 1 m at a time.



**Refer to Safety Precautions for Electrodes and Electrode Holders.**

## Ordering Information

Material indications are provided on all OMRON electrodes, connection nuts, and Lock Nuts.

### Electrodes

Select an electrode appropriate for the type of liquid. Refer to *Technical Guide for Level Controllers*.

Model	Material	Weight (g)	Material indication lines
F03-01 SUS304	SUS304	Approx. 170	1 line
F03-01 SUS316	SUS316		2 lines
F03-01 HAS B (See note 1.)	N10665 (See note 2.)	Approx. 195	3 lines
F03-01 HAS C (See note 1.)	N10276 (See note 2.)	Approx. 190	4 lines
F03-01 TITANIUM	Titanium	Approx. 100	5 lines

Electrodes

Material indication lines

**Note: 1.** HAS: HALSTELLOY is a registered trademark of Haynes International, Inc.

**2.** UNS No. (Unified Numbering System No.) is an international metal designation system that specifies a unique number for each material.

### Insulated Electrodes

Electrodes are insulated with a plastic sheath to prevent them from touching each other and to isolate them from debris in the liquid. Before application, strip back about 10 cm of the sheath at the end to ensure sufficient conductivity.

Model	Material
F03-01 SUS304	Vinyl Tubing
F03-01 SUS304	Fluororesin Tubing
F03-01 SUS316	Vinyl Tubing
F03-01 SUS316	Fluororesin Tubing

**Note:** Tubing comes in 1-m lengths with a sheath thickness of 0.5 mm.

### Connecting Nuts

Model	Material	Weight (g)	Material indication
F03-02 SUS304	SUS303 (Equivalent to SUS304)	Approx. 12	Blank
F03-02 SUS316	SUS316		6
F03-02 HAS B	N10665 (See note.)	Approx. 20	B
F03-02 HAS C	N10276 (See note.)		C
F03-02 TITANIUM	Titanium	Approx. 6	T

**Note:** UNS No. (Unified Numbering System No.) is an international metal designation system that specifies a unique number for each material.

## Electrode Sets

An Electrode Set consists of an electrode, a connecting nut, and two Lock Nuts.

Set model	Components	No. of parts in an set	Weight (g)
F03-60 SUS304	F03-01 SUS304	1	Approx. 190
	F03-02 SUS304	1	
	F03-03 SUS304	2	
F03-60 SUS316	F03-01 SUS316	1	Approx. 190
	F03-02 SUS316	1	
	F03-03 SUS316	2	

**Note:** Hastelloy and titanium Electrodes do not come in sets.

## Lock Nuts

Model	Material	Weight (g)	Material indication
F03-03 SUS304 (See note 1.)	SUS303 (Equivalent to SUS304)	Approx. 2	Blank
F03-03 SUS316 (See note 1.)	SUS316		6
F03-03 HAS B	N10665 (See note 2.)	Approx. 5	B
F03-03 HAS C	N10276 (See note 2.)		C
F03-03 TITANIUM	Titanium	Approx. 2	T

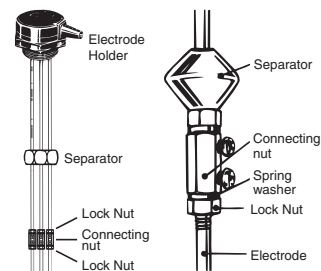
- Note:**
- Only SUS304 and SUS316 Lock Nuts come with spring washers made of the same material. HAS B, HAS C and TITANIUM don't come with spring washer.
  - UNS No. (Unified Numbering System No.) is an international metal designation system that specifies a unique number for each material.

## Electrode Separators

When long electrodes are required, use Separators at each joint (every 1 m) to prevent the Electrodes from touching each other. Use a 1-pole Separator with BF Electrode Holders. The five-pole model can be used with PS-5S and PS-4S Electrode Holders. Separators cannot be used with PS-31 Electrode Holders.

Model	No. of Electrodes	Dimensions	Applicable Electrode Holder	Weight (g)	Material	Operating Temperature
F03-14 1P	1	6.5 dia. 28 dia.	BF-□(R)	Approx. 15	Ceramic	250°C max.
F03-14 3P	3	Three, 7-dia. holes 20 41	PS-3S(R)	Approx. 30		
F03-14 5P	5	Five, 7-dia. holes 20 46	PS-4S(R) PS-5S(R)			

**Note:** The Electrode Separators cannot be used unless the Electrodes are coupled.



**Note:** When using two or more Separators, be careful with the mounting direction of the connecting nut screws which connect electrodes. Avoid the screws from touching each other.

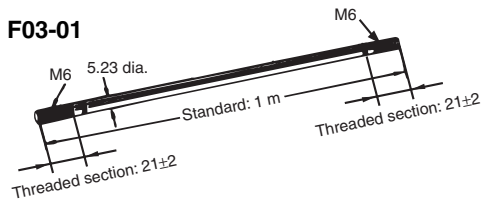
## Accessories (Order Separately)

Application	Model
Protective Cover (for PS-□S and BF-3/-5)	F03-11
Mounting Frame (for PS-□S)	F03-12
Mounting Frame for Installing in Concrete (for PS-□S)	F03-13
Dust-proof Rubber Cap (for PS-31)	F03-31

# Dimensions of Electrodes and Accessories

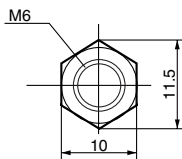
Note: All units are in millimeters unless otherwise indicated.

## Electrode

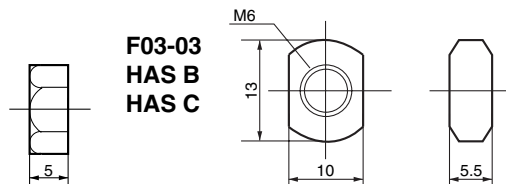


## Lock Nut

**F03-03**  
SUS304  
SUS316  
Titanium

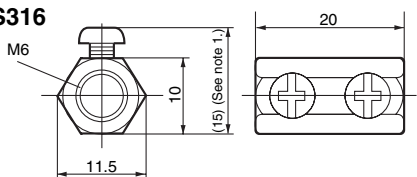


**F03-03**  
HAS B  
HAS C

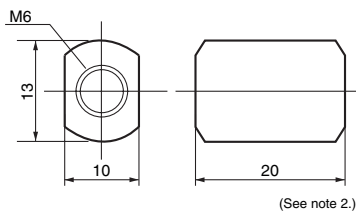


## Connecting nut

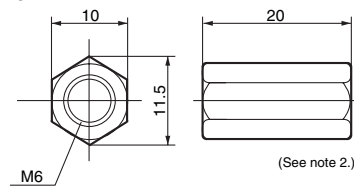
**F03-02**  
SUS304  
SUS316



**F03-02**  
HAS B  
HAS C



**F03-02**  
Titanium



Note: 1. Dimension when mounting Electrodes.

2. Clamp screws are not provided for Hastelloy B, Hastelloy C, or titanium models. F03-03 Lock Nuts are used to mount Electrodes.

## ■ Safety Precautions

Refer to *Safety Precautions for All Level Controllers*.

## ■ Precautions for Correct Use

### Cleaning Electrodes

Electrodes are clean when they are dispatched. In the rare occasion that they become dirty during transit or storage, such as forming an oil film on the surface, clean them again before using them.

### Operating Environment

Use the Electrode within the ambient operating temperature range of the Holder.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

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

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

## Read and Understand This Catalog

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

## Warranty and Limitations of Liability

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## Application Considerations

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At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

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

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

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

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

### PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

## Disclaimers

### CHANGE IN SPECIFICATIONS

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

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

### DIMENSIONS AND WEIGHTS

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

### PERFORMANCE DATA

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

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