

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

Electrodes

**Note:** 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	Sheath
F03-01 SUS304	Vinyl Tubing
F03-01 SUS304 FLUORORESIN	Fluororesin Tubing
F03-01 SUS316	Vinyl Tubing
F03-01 SUS316 FLUORORESIN	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 (See note 1.)	SUS303 (Equivalent to SUS304)	Approx. 12	Blank
F03-02 SUS316 (See note 1.)	SUS316		6
F03-02 HAS B	N10665 (See note 2.)	Approx. 20	B
F03-02 HAS C	N10276 (See note 2.)		C
F03-02 TITANIUM	Titanium	Approx. 6	T

- Note: 1.** Spring washers made of the same material are included with the F03-02 SUS304 and F03-02 SUS316. Spring washers are not included with the other models. OMRON does not sell spring washers by themselves.
- 2.** 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 ELECTRODE	1	Approx. 190
	F03-02 SUS304	1	
	F03-03 SUS304	2	
F03-60 SUS316	F03-01 SUS316 ELECTRODE	1	Approx. 190
	F03-02 SUS316	1	
	F03-03 SUS316	2	

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

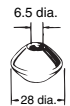

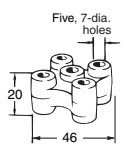
## Lock Nuts

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: 1.** 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.
- 2.** UNS No. (Unified Numbering System No.) is an international metal designation system that specifies a unique number for each material.

## Electrode Separators

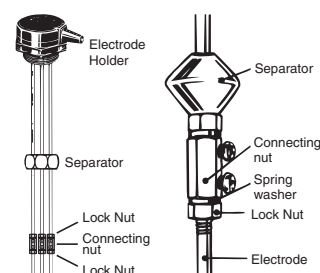
When long electrodes are required, use Separators at each joint (every 1 m) to prevent the Electrodes from touching each other. Use a 1-pole Separator with BF Electrode Holders. The five-pole model can be used with PS-5S and PS-4S Electrode Holders. Separators cannot be used with PS-31 Electrode Holders.

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

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

## 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(R))	F03-13
Dust-proof Rubber Cap (for PS-31)	F03-31

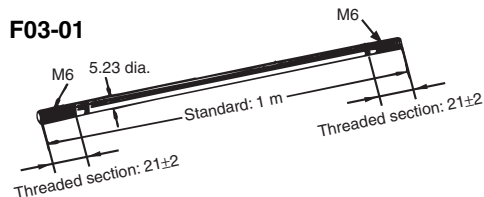


**Note:** When using two or more Separators, be careful with the mounting direction of the connecting nut screws which connect electrodes. Avoid the screws from touching each other.

# Dimensions of Electrodes and Accessories

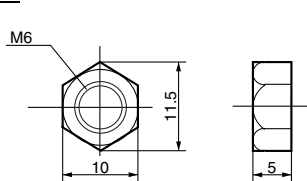
**Note:** All units are in millimeters unless otherwise indicated.

## Electrode

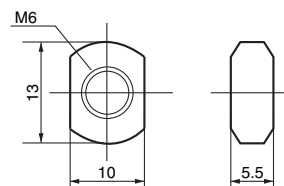


## Lock Nut

**F03-03**  
**SUS304**  
**SUS316**  
**Titanium**

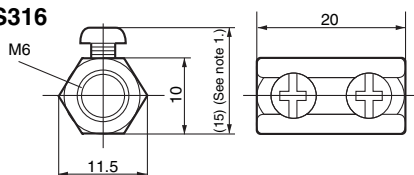


**F03-03**  
**HAS B**  
**HAS C**

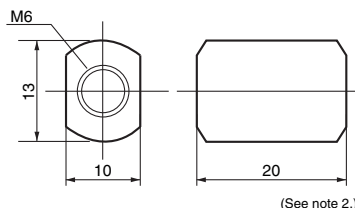


## Connecting nut

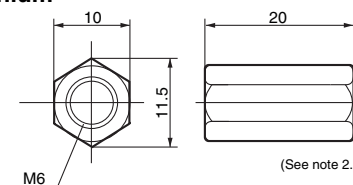
**F03-02**  
**SUS304**  
**SUS316**



**F03-02**  
**HAS B**  
**HAS C**



**F03-02**  
**Titanium**



**Note: 1.** Dimension when mounting Electrodes.

**2.** Clamp screws are not provided for HAS B, HAS 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.

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