

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 BINIL	Vinyl Tubing
F03-01 SUS304 FLUORORESIN	Fluororesin Tubing
F03-01 SUS316 BINIL	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.

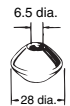

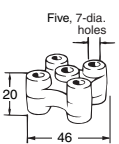
Lock Nuts

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

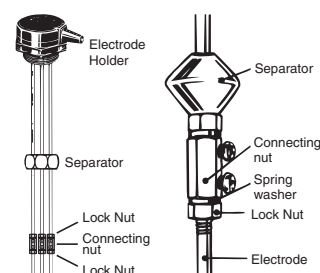
When long electrodes are required, use Separators at each joint (every 1 m) to prevent the Electrodes from touching each other. Use a 1-pole Separator with BF Electrode Holders. The five-pole model can be used with PS-5S and PS-4S Electrode Holders. Separators cannot be used with PS-31 Electrode Holders.

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



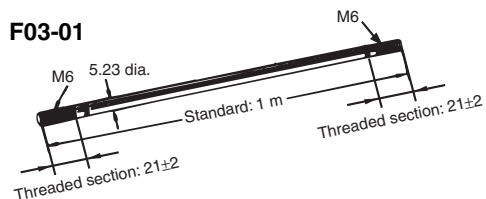
Note: When using two or more Separators, be careful with the mounting direction of the connecting nut screws which connect electrodes. Avoid the screws from touching each other.

Dimensions of Electrodes and Accessories

Note: All units are in millimeters unless otherwise indicated.

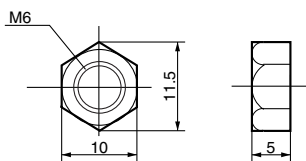
Electrode

F03-01

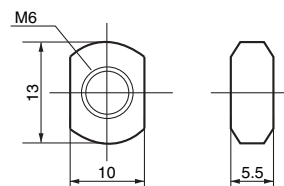


Lock Nut

F03-03
SUS304
SUS316
Titanium

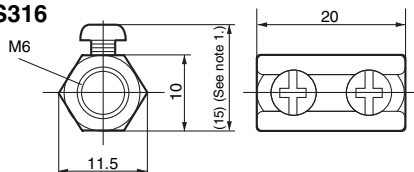


F03-03
HAS B
HAS C

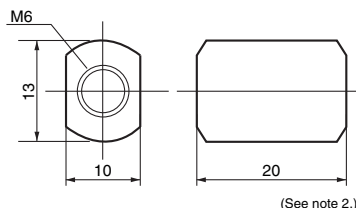


Connecting nut

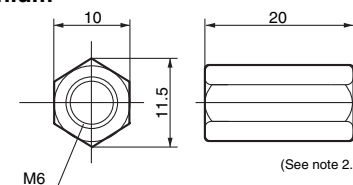
F03-02
SUS304
SUS316



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.

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.