

# Electrode Holder PS-□S(R)/-31

CSM\_PS\_S(R)\_-31\_DS\_E\_7\_6

## Separate Electrode Holders for Water Supply and Drainage Control in Buildings. Small, Lightweight Electrode Holders for Use as Built-in Components.

- The PS-□S(R) are separate Electrode Holders that allow the Electrodes to be withdrawn easily for inspection.
- The PS-□S(R) come in 3, 4, or 5 pole models for supply and drainage of tap water in buildings.
- PS-31 is a small and light-weight Electrode Holder that is suitable for installation in limited space and built-in components.



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

## Ordering Information

### ■ Electrode Holders

Application	Model
General applications for purified water	
For 3-pole electrode	PS-3S
For 3-pole electrode (2-wire)	PS-3SR
For 4-pole electrode	PS-4S
For 4-pole electrode (2-wire)	PS-4SR
For 5-pole electrode	PS-5S
For 5-pole electrode (2-wire)	PS-5SR
For small spaces (3-pole)	PS-31 (SUS304, 300 mm) PS-31 (SUS304, 1,000 mm)

### ■ Accessories (Order Separately)

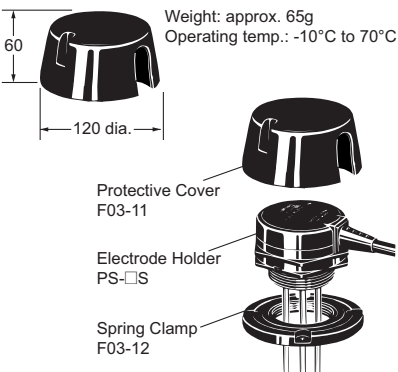
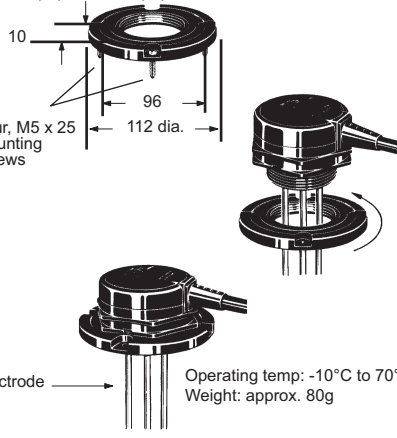
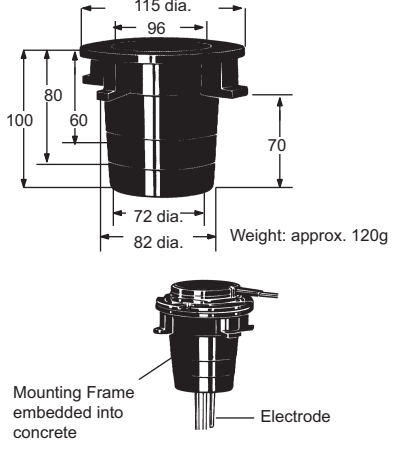
Application	Model
Protective Cover (for PS-□S and BF-3/-5)	F03-11
Mounting Frame (for PS-□S)	F03-12
Mounting Frame for Installing in Concrete (for PS-□S(R))	F03-13
Dust-proof Rubber Cap (for PS-31)	F03-31

## Specifications

Item	Model	PS-3S(R) (See note 1.)	PS-4S(R) (See note 1.)	PS-5S(R) (See note 1.)	PS-31 (See note 2.)
No. of Electrodes		3	4	5	3 (See note 3.)
Material		Resin (PBT = Polybutylene terephthalate)			
Insulation resistance		100 MΩ min.			
Operating temperature		-10 to 70°C (with no icing)			
Operating pressure		Atmospheric pressure			
Applications		Water supply and drainage control in buildings			Limited Mounting Space
Electrodes		Purchase F03-01 separately.			Single-piece construction

- Note:**
1. The Two-wire Electrode Holders (R models) have a built-in resistor of 6.8 kΩ. They should be used with the Two-wire 61F Controllers.
  2. Cut the electrodes to the desired length.
  3. PS-31 comes in a 3-pole model only.

## ■PS-□S(R) Electrode Holder Accessories (Order Separately)

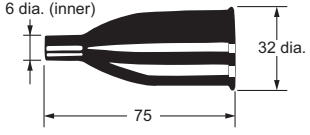
F03-11 Protective Cover	F03-12 Spring Clamp	F03-13 Mounting Frame for installing in concrete
<p>Use this Cover for PS-series Electrode Holders with Mounting Frames (upper one in the following illustration). This Cover can also be used when installing the BF-series Electrode Holders outdoors. This Cover is for protection from rain and wind. It is not waterproof.</p> <p>Applicable Electrode Holders: BF-3, BF-4, BF-5, PS-3S(R), PS-4S(R), PS-5S(R)</p>  <p>Weight: approx. 65g Operating temp.: -10°C to 70°C</p> <p>Labels: Protective Cover F03-11, Electrode Holder PS-□S, Spring Clamp F03-12</p>	<p>Used to clamp an Electrode Holder with ease, as shown in the illustrations, when the Electrode Holder is applied to a tank without a coupling.</p> <p>Squeeze the mounting frame into the Holder as shown below.</p> <p>Applicable Electrode Holders: PS-3S(R), PS-4S(R), PS-5S</p>  <p>Four, M5 x 25 mounting screws</p> <p>Operating temp: -10°C to 70°C Weight: approx. 80g</p> <p>Labels: Electrode</p>	<p>Firmly secure the F03-12 Spring Clamp to the F03-13 Mounting Frame with M5 x 25 screws and embed it into the concrete production water tank. Cut the F03-13 to match the depth of the concrete.</p>  <p>Weight: approx. 120g</p> <p>Labels: Mounting Frame embedded into concrete, Electrode</p> <p>Commonly used with Mounting Frame</p>

**Note:** If the F03-11 and F03-12 are used together, the screws and bolts that are provided with the F03-11 cannot be used.

## ■PS-31 Electrode Holder Accessories (Order Separately)

**F03-31 Dust-proof Rubber Bushing**

**Note:** This Bushing is not waterproof.



Material: Silicon rubber

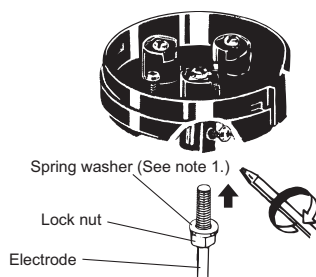
## ■Accessories Required for Connecting the PS-□S(R) and Electrodes (Order Separately)

### Electrodes Shorter than 1 m

The following items are required for each pole.

- 1 × F03-01 Electrode
- 1 × F03-03 Lock Nut

The Electrode can be cut anywhere based on the control level.

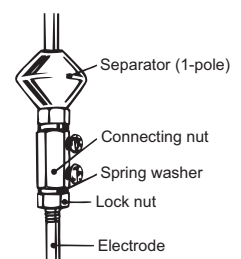


### Electrode Longer than 1 m

The following items are required for every additional meter of electrode for each pole.

- 1 × F03-01 Electrode
- 1 × F03-02 Connecting Nut
- 2 × F03-03 Lock Nuts

Use F03-14 1P, 3P, and 5P Separators to prevent the electrodes from touching each another.

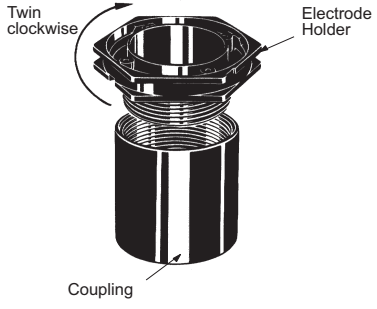
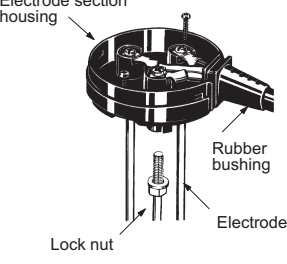
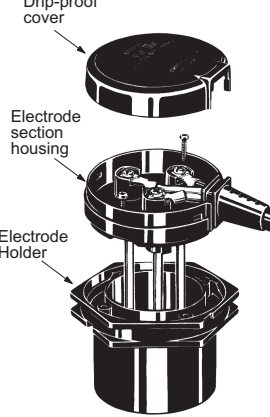


**Note:** 1. The spring washer comes with the lock nut.

2. Refer to F03-□ for details on Electrodes, Connecting Nuts, Lock Nuts, and Separators.

# Mounting

## ■ PS-3S Electrode Holders

1. Mounting Electrode Holder	2. Attaching Electrode(s) to Electrode section	3. Inserting Electrode section into Electrode Holder
<ul style="list-style-type: none"> <li>Screw the Electrode Holder into the coupling secured at the installation location.</li> </ul>	<ul style="list-style-type: none"> <li>Insert each Electrode into the connecting nut, secure the Electrode with the clamp screws, and then tighten the lock nut.</li> <li>Connect the leads, inserted through the hole of the rubber bushing, into the respective terminals.</li> </ul>	<ul style="list-style-type: none"> <li>Fit the Electrode section into the Electrode Holder and secure it with the two screws.</li> <li>Check the Electrode section for proper wiring, fit the rubber bushing in position, and then cover the Electrode Holder with the drip-proof cover.</li> </ul>
		

**Note:** 1. OMRON does not sell couplings.

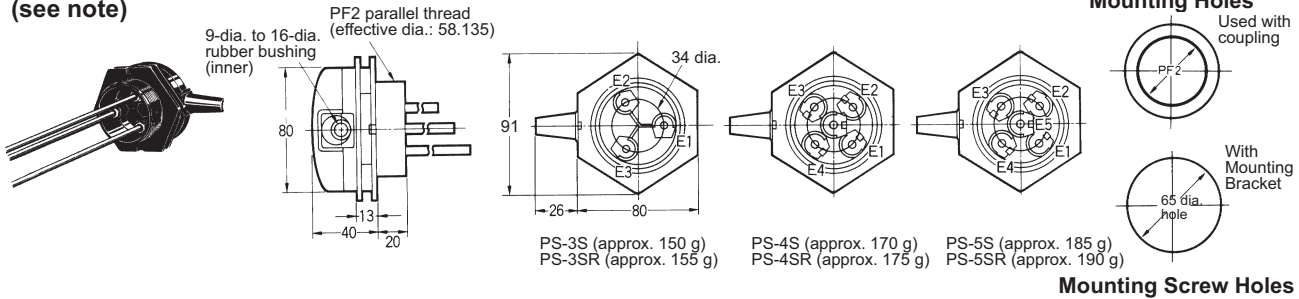
2. Screw in the Electrode until it reaches the bottom of the nut. Insufficient insertion will cause a faulty connection.

# Dimensions

Note: All units are in millimeters unless otherwise indicated.

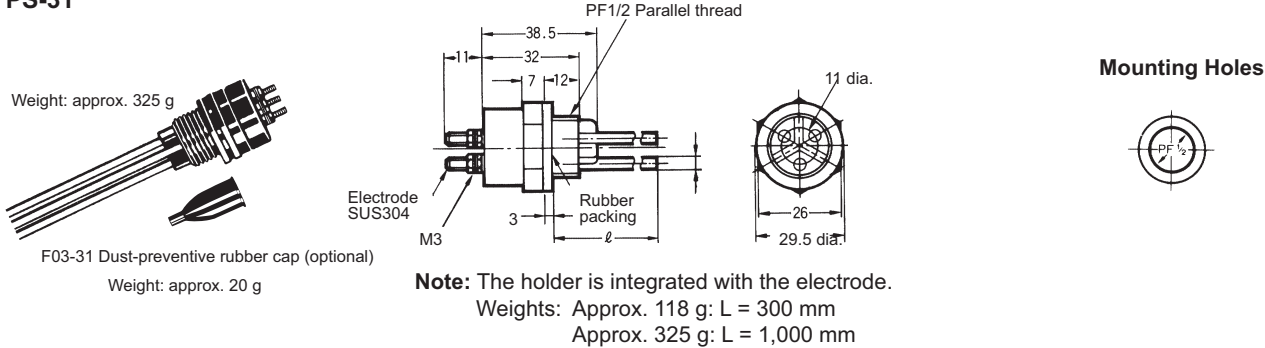
## Electrode Holders

PS-3S/-4S/-5S  
PS-3SR/-4SR/-5SR  
(see note)



Note: The PS-3SR, PS-4SR, and PS-5SR have built-in resistor of 6.8 kΩ and used for the two-wire 61F models.

## PS-31



## Safety Precautions

Refer to *Safety Precautions for All Level Controllers*.

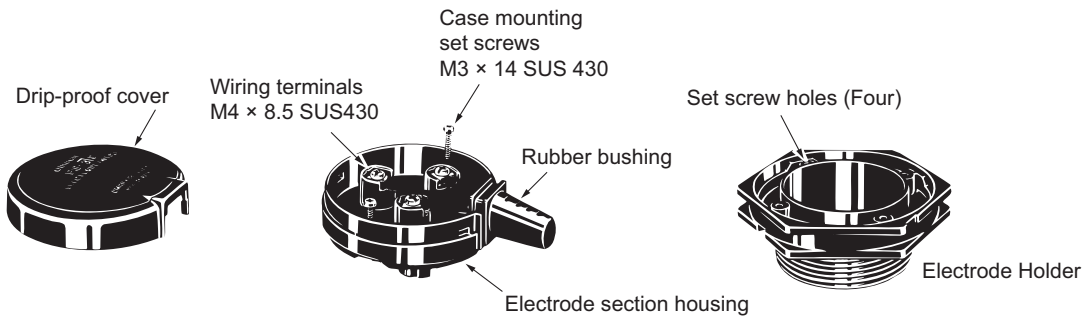
ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.  
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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

# Level Controller Installation

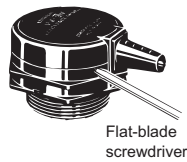
## ■ Attaching Electrodes to the Electrode Holder

### Appearance

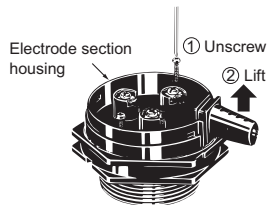


### 1. Removing the cover

1. Wedge a flat-blade screwdriver into the groove on either side of the rubber bushing and lever it off alternately. (The cover may break if you lever it too much on one side.)

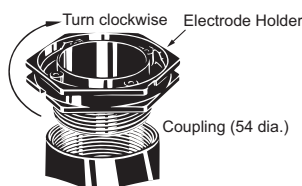


2. Undo the two set screws and lift off the electrode section.

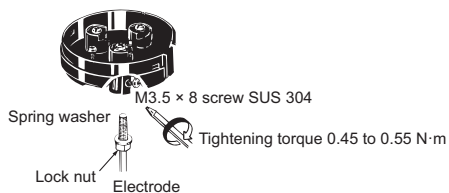


### 2. Mounting

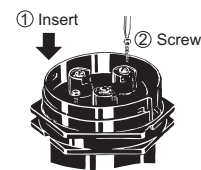
1. Screw the Electrode Holder into the coupling (54 dia.) secured at the installation location.



2. Screw in the electrodes until it cannot be turned any further, tighten the lock nut, and then secure them with the clamp screws (M3.5).



3. Attach the electrode section to the Electrode Holder.

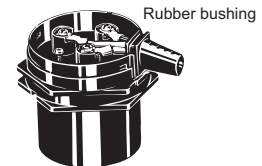


(Secure with the two case mounting screws. Tightening torque 0.7 N·m)

4. The rubber bushing can be cut with a utility knife if the hole size requires adjustment to fit the cables.



5. Connect the leads to the respective terminals. (Fit the rubber bushing in position as shown in the diagram below.)



6. Put the claw at the back of the cover into the hole at the back of the electrode section housing and push it close until you hear a click.

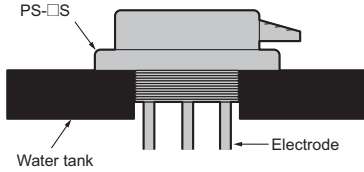


## ■ Installing an Electrode Holder on a Tank

**Note:** Electrode Holders should always be installed from above the tank.

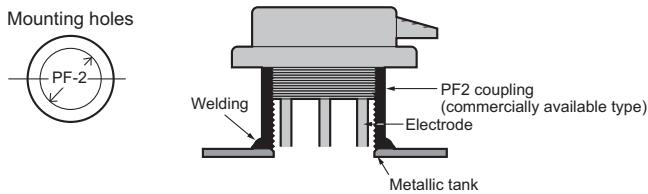
### Method 1

Fabricate screw threads of the same size as PF2 in the tank.



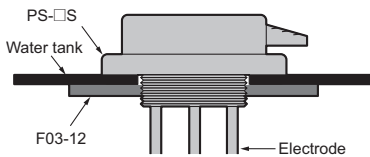
### Method 2

Use a commercially available coupling (PF2 parallel thread (effective dia.: 58.135) JIS B0202).



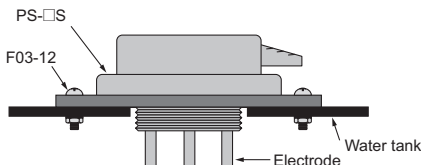
### Method 3

Drill a hole (65 dia.) in the tank and insert the Electrode Holder. Use an F03-12 Frame (sold separately) as a nut from below and secure in place.

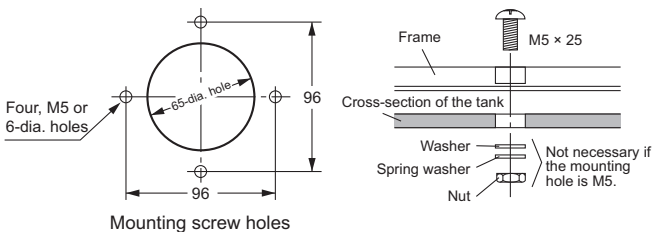


### Method 4

Use the F03-12 Frame (sold separately) as a flange.

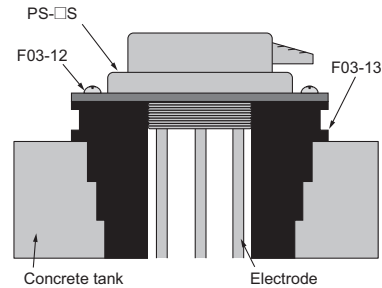


1. Drill a hole in the tank.
2. Attach the Frame over the hole.  
(Tighten the four F03-12 mounting screws.)



### Method 5

Use F03-12 and F03-13 Frames (both sold separately) together and embed them in the concrete.



## ■ Mounting the F03-11 Protective Cover (Sold Separately)

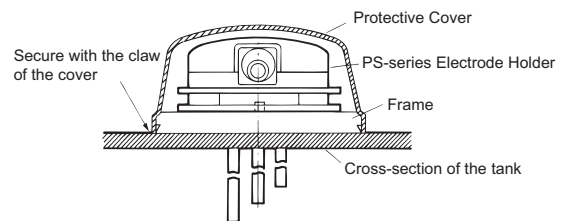
The protective cover can only be used for methods 4 and 5 described in the previous section.

### PS-□S(R) Series

Attach the F03-12 Frame to the bottom of the PS-series Electrode Holder. (See diagram below.)

Next, place the F03-11 Protective Cover on top of the Electrode Holder and press on it until it clicks into place.

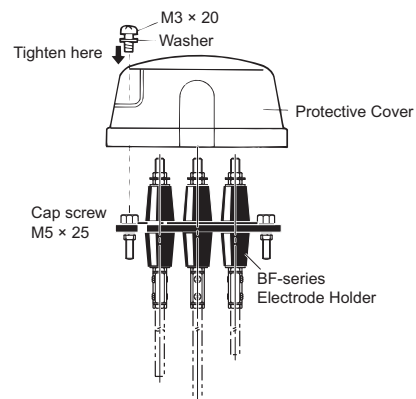
**Note:** The cap screw attached to the protective cover is not required for mounting.



### BF-series Electrode Holder (Applicable to BF-3(R), -5(R))

Remove the two mounting screws (M5 × 25) of the BF-series Electrode Holder and attach the two cap screws (M5 × 25) provided with the F03-11 Protective Cover.

Next, put the Protective Cover over the top of the BF-series Electrode Holder, and then tighten the two enclosed screws (M3 × 20 with washers). See diagram below.



**Note:** The Protective Cover cannot be mounted on the BF-1.

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