

омрон, каталог, описание, технические, характеристики, datasheet, параметры, маркировка, габариты, фото, даташит,



61f-gp-n2 24ac ce

61f-gp-n2 24vac

61f-gp-n2 24v

omron 61f-gp-n2 купить

реле уровня omron 61f-gp-n2

61f-gp-n2 схема

61f-gp-n2 220v

61f-gp-n2 купить

omron 61f-gp-n2 характеристики

результат поискового запроса «61f-gp-n2» на einfo.ru

компонент описание

61f-gp-n2-ac120 omron automation and safety, cntrl liq lev 120vac socketable

61f-gp-n2110vac omron automation and safety

61f-gp-n2220vac omron automation and safety

61f-gp-n2240 omron automation and safety

61f-gp-n224vac omron automation and safety, controllers level control

61f-gp-n2-ac120 omron, controllers level control. мин.: 1шт.

61f-gp-n2-ac120 omron automation and safety, cntrl liq lev 120vac socketable. мин.: 1шт.

61fgpn200ac (61f-gpn 200ac) устройство контроля уровня токопроводящих веществ серии 61f, монтаж вставной, напряжение питания 200 v ac omron, оптовая цена от 1 шт.

61fgpn2110ассе (61f-gp-n2 110ас се) устройство контроля уровня токопроводящих веществ серии 61f, монтаж вставной, напряжение питания 110 v ас omron, оптовая цена от 1 шт.

61fgpn2120ассе (61f-gp-n2 120ас се) устройство контроля уровня токопроводящих веществ серии 61f, монтаж вставной, напряжение питания 120 v ас omron, оптовая цена от 1 шт.

61fgpn2220ас (61f-gp-n2 220ас) устройство контроля уровня токопроводящих веществ серии 61f, монтаж вставной, напряжение питания 220 v ас omron, оптовая цена от 1 шт.

61fgpn2230ас 1 (61f-gp-n2 230ас) устройство контроля уровня токопроводящих веществ серии 61f, монтаж вставной, напряжение питания 230 v ас omron, оптовая цена от 1 шт.

61fgpn224ассе (61f-gp-n2 24ас се) устройство контроля уровня токопроводящих веществ серии 61f, монтаж вставной, напряжение питания 24 v ас omron, оптовая цена от 1 шт.

61fgpn230вассе (61f-gp-n 230вас се) устройство контроля уровня токопроводящих веществ серии 61f, монтаж вставной, напряжение питания 230 v ас omron, оптовая цена от 1 шт.

61fgpn240ассе (61f-gp-n 240ас се) устройство контроля уровня токопроводящих веществ серии 61f, монтаж вставной, напряжение питания 240 v ас omron, оптовая цена от 1 шт.

61fgpn24ассе (61f-gp-n 24ас се) устройство контроля уровня токопроводящих веществ серии 61f, монтаж вставной, напряжение питания 24 v ас omron, оптовая цена от 1 шт.

61f-gp-n2-ас120 omron automation and safety, cntrl liq lev 120vac socketable

61f-gp-n2 110vac omron automation and safety, cntrl liq lev 110vac socketable

61f-gp-n2 110vac omron automation and safety, контроллеры level control

61f-gp-n2 220vac omron automation and safety, контроллеры level controller

61f-gp-n2 220vac omron automation and safety, cntrl liq lev 220vac socketable

61f-gp-n2 240 omron automation and safety, cntrl liq lev 240vac socketable

61f-gp-n2 24vac omron automation and safety, control liq lev 24vac socketable

61f-gp-n2 24vac omron automation and safety, контроллеры level control

61f-gp-n2-ас120 omron automation and safety, cntrl liq lev 120vac socketable

61f-gp-n 230вас се omron-ia, устройство контроля уровня токопроводящих веществ, общего назначения

61f-gp-n 240ас се omron-ia, устройство контроля уровня токопроводящих веществ, общего назначения

61f-gp-n2 110ас се omron-ia, устройство контроля уровня токопроводящих веществ, общего назначения

61f-gp-n2 120ас се omron-ia

61f-gp-n2 220ас omron-ia, устройство контроля уровня токопроводящих веществ, общего назначения

61f-gp-n2 230ас omron-ia, устройство контроля уровня токопроводящих веществ, общего назначения

61f-gp-n2 24ас се omron-ia, реле контроля уровня токопроводящей жидкости, 220-230в~

61f-gpn 200ас omron-ia, устройство контроля уровня токопроводящих веществ, общего назначения

61f-gpn2 240ac /omron industrial automation/ моq> 10 omron industrial automation

61f-gp-n2 110vac omron, cntrl liq lev 110vac socketable

61f-gp-n2 110vac omron automation and safety, контроллеры level control

61f-gp-n2 220vac omron automation and safety, контроллеры level controller

61f-gp-n2 220vac omron, cntrl liq lev 220vac socketable

61f-gp-n2 240 omron, cntrl liq lev 240vac socketable

61f-gp-n2 240 omron automation and safety, контроллеры level controller

61f-gp-n2 24vac omron, control liq lev 24vac socketable

61f-gp-n2 24vac omron automation and safety, контроллеры level control

61f-gp-n2-ac120 omron automation and safety, контроллеры level control

61f-gp-n2-ac120 omron, cntrl liq lev 120vac socketable

61f-gpn2 110ac omron, контроллер уровня жидкости, серия 61f-gp-n2, токопроводящий, 110в ас, 3.2вт, 80мс

61f-gpn2 240ac omron, контроллер уровня жидкости, серия 61f-gp-n2, токопроводящий, 240в ас, 3.2вт, 80мс

61fgpn2230ac omron, floatless level controlle

61fgpn224acce omron, floatless level controlle

61f-gp-n2 110vac omron industrial automation, контроллеры level control

61f-gp-n2 220vac omron industrial automation, контроллеры level controller

61f-gp-n2 240 omron automation and safety, контроллеры level controller

61f-gp-n2 24vac omron industrial automation, контроллеры level control

61f-gp-n2-24vac omron, 61f-gp-n2 24ac control modules

61f-gp-n2-ac120 omron industrial automation, контроллеры level control

61f-gp-n2220vac omron, контроллеры level controller

61f-gp-n2240 omron, контроллеры level controller

61f-gp-n224vac omron, контроллеры level control

61f-gpn2 110ac omron industrial automation, level controller, mini, 110v; supply voltage:110vac; response time:80ms; power consumption:3.2w; product range:-; ac coil power:3.2va; dielectric strength vac:1500v; external depth:70mm; external leng

61f-gpn2 240ac omron industrial automation, level controller, mini, 240v; supply voltage:240v; response time:80ms; power consumption:3.2w; product range:-; ac coil power:3.2va; dielectric strength vac:1500v; external depth:70mm; external length

61fgpn2240 omron industrial automation, level controller

61fgpn2ac220 omron, контроллеры

61f-gp-n2 24ac 61f-gp-n2 24ac реле уровня жидкости, 24vac

61f-gp-n2-ac120

61f-gp-n2220vac

61f-gp-n2240

61f-gp-n224vac

61fgpn2ac220

61f-gp-n 230vac ce

61f-gp-n 240ac ce

61f-gp-n 24ac ce

61f-gp-n2 110ac ce

61f-gp-n2 120ac ce

61f-gp-n2 220ac

61f-gp-n2 230ac

61f-gp-n2 24ac ce

61f-gp-n2 24ac ce устройство контроля уровня токопроводящих веществ

61f-gpn 200ac

61fgpn2110acce omron

61fgpn2230ac omron

61fgpn2ac120 omron

61fgpn2220vac omron automation & safety

61fgpn224vac omron automation & safety

61f-gp-n2 110vac omron automation and safety, cntrl liq lev 110vac socketable

61f-gp-n2 110vac-nd omron automation and safety, cntrl liq lev 110vac socketable

61f-gp-n2 220vac omron electronics inc-ia div, level controller серия: 61f · тип: level control - general purpose · сфера применения: supply and drain control, full and shortage alarms · тип монтажа: din rail/channel · напряжение питания: 220vac

61f-gp-n2 240 omron electronics inc-ia div, level controller серия: 61f · тип: level control - general purpose · сфера применения: supply and drain control, full and shortage alarms · тип монтажа: din rail/channel · напряжение питания: 240vac

61f-gp-n2 24vac omron electronics inc-ia div, level control серия: 61f · тип: level control - general purpose · сфера применения: supply and drain control, full and shortage alarms · тип монтажа: din rail/channel · напряжение питания: 24vac

61f-gp-n2-24vac omron, 61f-gp-n2 24ac control modules

61f-gp-n2-ac120 omron electronics inc-ia div, level control серия: 61f · тип: level control - general purpose · сфера применения: supply and drain control, full and shortage alarms · тип монтажа: din rail/channel · напряжение питания: 120vac

61f-gp-n2-ac120-nd omron automation and safety, cntrl liq lev 120vac socketable

61f-gp-n2220vac omron, контроллеры level controller

61f-gp-n2220vac-nd omron automation and safety, cntrl liq lev 220vac socketable

61f-gp-n2240 omron, контроллеры level controller

61f-gp-n2240-nd omron automation and safety, cntrl liq lev 240vac socketable

61f-gp-n224vac omron, контроллеры level control

61f-gp-n224vac-nd omron automation and safety, cntrl liq level 24vac socketable

61f-gpn2 110ac omron industrial automation, level controller, mini, 110v; supply voltage:110vac; response time:80ms; power consumption:3.2w; svhc:no svhc (16-jun-2014); ac coil power:3.2va; dielectric strength vac:1500v; external depth:70mm; ex

61f-gpn2 240ac omron industrial automation, level controller, mini, 240v; supply voltage:240v; response time:80ms; power consumption:3.2w; svhc:no svhc (16-jun-2014); ac coil power:3.2va; dielectric strength vac:1500v; external depth:70mm; exte

61fgpn2240 omron industrial automation, level controller

61fgpn2ac220 omron, контроллеры

61f-gp-n2 110vac omron automation and safety, cntrl liq lev 110vac socketable

61f-gp-n2 110vac-nd omron automation and safety, cntrl liq lev 110vac socketable

61f-gp-n2 220vac omron automation and safety, контроллеры level controller

61f-gp-n2 240 omron automation and safety, контроллеры level controller

61f-gp-n2 24vac omron automation and safety, контроллеры level control

61f-gp-n2-24vac omron, 61f-gp-n2 24ac control modules

61f-gp-n2-ac120 omron automation and safety, контроллеры level control

61f-gp-n2-ac120-nd omron automation and safety, cntrl liq lev 120vac socketable

61f-gp-n2220vac omron, контроллеры level controller

61f-gp-n2220vac-nd omron automation and safety, cntrl liq lev 220vac socketable

61f-gp-n2240 omron, контроллеры level controller

61f-gp-n2240-nd omron automation and safety, cntrl liq lev 240vac socketable

61f-gp-n224vac omron, контроллеры level control

61f-gp-n224vac-nd omron automation and safety, cntrl liq level 24vac socketable

61f-gpn2 110ac omron industrial automation, level controller, mini, 110v; supply voltage:110vac; response time:80ms; power consumption:3.2w; svhc:no svhc (16-jun-2014); ac coil power:3.2va; dielectric strength vac:1500v; external depth:70mm; ex

61f-gpn2 240ac omron industrial automation, level controller, mini, 240v; supply voltage:240v; response time:80ms; power consumption:3.2w; svhc:no svhc (16-jun-2014); ac coil power:3.2va; dielectric strength vac:1500v; external depth:70mm; exte

61fgpn2240 omron industrial automation, level controller

61fgpn2ac220 omron, контроллеры

Conductive Level Controller 61F-GP-N8

Compact Plug-in Level Controllers for Single or Two-point Level Control of Conductive Materials (Liquids and Solids)

- Wide range of models: long-distance, high and low-sensitivity, and two-wired types available.
- 24/100/110/120/200/220/230/240 VAC operation possible.
- Easy installation on DIN track.
- Low-voltage (AC) electrodes.
- Red LED operation indicator provided.
- Conforms to EMC and LVD Directives.
- UL/CSA approved.



Level Controllers

Model Number Structure

Model Number Legend

61F-GP-N8□
1 2 3

1. Plug-in Type
2. Compact 8-pin Type

3. Applications
 - None: General-purpose type
 - L: Long-distance type
 - H: High-sensitivity type (reverse acting)
 - HY: High-sensitivity type (standard acting)
 - D: Low-sensitivity type
 - R: Two-wired type

Ordering Information

List of Models

Application	Model number	
General-purpose type	61F-GP-N8	
Long-distance type	2 km	61F-GP-N8L 2KM
	4 km	61F-GP-N8L 4KM
High-sensitivity type	61F-GP-N8H	
Low-sensitivity type	61F-GP-N8D	
Two-wired type	61F-GP-N8R	

■ Accessories (Order Separately)

Selection Guide for Electrode Holders and Separators

Electrode Holders

Applications	For city water and other general-use electrodes. Easy-to-replace separate versions facilitate maintenance of electrodes.	When mounting space is limited. Special 3-pole holder of small size and light weight. Ideal for soft drink vendors, etc., where only limited space is available.	For low specific liquids. Used for sewage, sea water, etc., having a low specific resistance. In sewage use, electrode holders must be installed 10 to 20 cm apart from one another. For acids, alkalis and sea water, electrode holders may be as much as 1 meter apart to operate properly.	When resistance to high pressure is required. Ideal for use in tanks where temperature or pressure inside the tank is high, e.g. 250°C	
Mounting style	Flange	Screw	Flange	Screw	
Insulator material	Phenol resin	Phenol resin	Ceramics	Teflon	
Max. temperature	70°C		150°C (without water drips or vapor on the surface of the electrode holder)	250°C (without water drips or vapor on the surface of the electrode holder)	
No. of electrodes	1	---	---	BF-1	BS-1
	3	PS-3S	PS-31	---	---

Electrode Separators

No. of electrodes	Model
1	F03-14 1P
3	F03-14 3P

Selection Guide for Electrodes, Connecting, and Lock Nuts

Applicable liquids	Material	Models for individual electrode assembly components					
		Electrode (1m long)		Connecting nut		Lock nut	
		Model	Indication mark	Model	Inscription	Model	Inscription
Purified city water, industrial water, sewage	Equivalent to SUS 304 (AISI-304)	F03-01 SUS201	1 line	F03-02 SUS201	---	F03-03 SUS201	---
Purified city water, industrial water, sewage, dilute alkaline solution	SUS316 (AISI-316)	F03-01 SUS316	2 lines	F03-02 SUS316	6	F03-03 SUS316	316

Specifications

■ Ratings and Characteristics

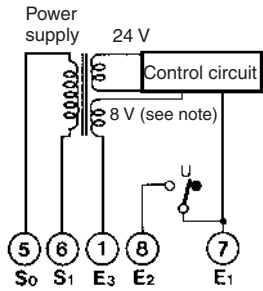
Model/Items	General-purpose Controller 61F-GP-N8	Long-distance Controllers 61F-GP-N8L 2KM (for 2 km) 61F-GP-N8L 4KM (for 4 km)	High-sensitivity Controllers 61F-GP-N8H 61F-GP-N8HY (see note 1)	Low-sensitivity Controller 61F-GP-N8D	Two-wired Controller 61F-GP-N8R
Controlling materials and operating conditions	For control of ordinary purified water or sewage water	For control of ordinary purified water in cases where the distance between sewage pumps and water tanks or between receiver tanks and supply tanks is long or where remote control is required.	For control of liquids with high specific resistance such as distilled water	For control of liquids with low specific resistance such as salt water, sewage water, acid chemicals, alkali chemicals	For control of ordinary purified water or sewage water used in combination with two-wired-type electrode holder (incorporating a resistor of 6.8 kΩ)
Supply voltage	24, 100, 110, 120, 200, 220, 230 or 240 VAC; 50/60 Hz				
Operating voltage range	85% to 110% of rated voltage				
Interelectrode voltage	8 VAC		24 VAC	8 VAC	
Interelectrode current	Approx. 1 mA AC max.		Approx. 0.4 mA AC max.	Approx. 1 mA AC max.	
Power consumption	Approx. 3.5 VA max.				
Interelectrode operate resistance	Approx. 0 to 4 kΩ	Approx. 0 to 1.3 kΩ (for 2 km) Approx. 0 to 0.5 kΩ (for 4 km)	Approx. 15 kΩ to 70 kΩ (see note 3)	Approx. 0 to 1.3 kΩ	Approx. 0 to 2 kΩ
Interelectrode release resistance	Approx. 15 k to ∞ Ω	Approx. 4 k to ∞ Ω (for 2 km) Approx. 2.5 k to ∞ Ω (for 4 km)	Approx. 300 k to ∞ Ω	Approx. 4 k to ∞ Ω	Approx. 15 k to ∞ Ω
Response time	Operate: 80 ms max. Release: 160 ms max.				
Cable length (see note 2)	1 km max.	2 km max. 4 km max.	50 m max.	1 km max.	800 m max.
Control output	1 A, 250 VAC (Inductive load: $\cos\phi = 0.4$) 3 A, 250 VAC (Resistive load)				
Ambient temperature	Operating: -10°C to 55°C				
Ambient humidity	Operating: 45% to 85% RH				
Insulation resistance (see note 3)	100 MΩ max. (at 500 VDC)				
Dielectric strength (see note 4)	2000 VAC, 50/60 Hz for 1 min.				
Life expectancy	Electrical: 100,000 operations min. Mechanical: 5,000,000 operations min.				

- Note:**
1. The relay in the 61F-GP-N8H de-energizes when there is water present across the electrodes, whereas the relay in the 61F-GP-N8HY energizes when there is water present across the electrodes.
 2. The length when using completely-insulated, 600-V, 3-conductor (0.75 mm²) cable type cables. Usable cable lengths will become shorter as the cable diameter or number of conductors becomes larger.
 3. The insulation resistance and dielectric strength indicate values between power terminals and electrode terminals, between power terminals and contact terminals, and between electrode terminals and contact terminals.
 4. Possible to use with 10 kΩ or less, however, this may cause reset failure.

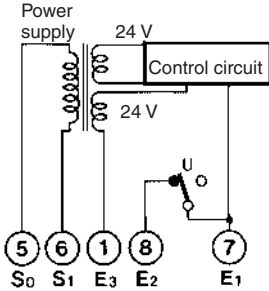
Connections

Internal Circuit Diagrams

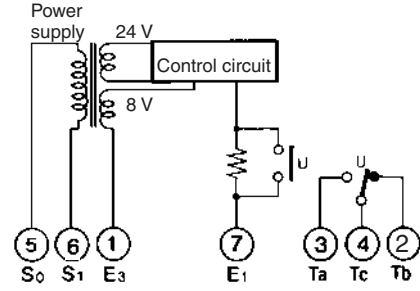
61F-GP-N8/-N8L/-N8D/-N8HY



61F-GP-N8H



61F-GP-N8R



Note: 24 V for the 61F-GP-N8HY.

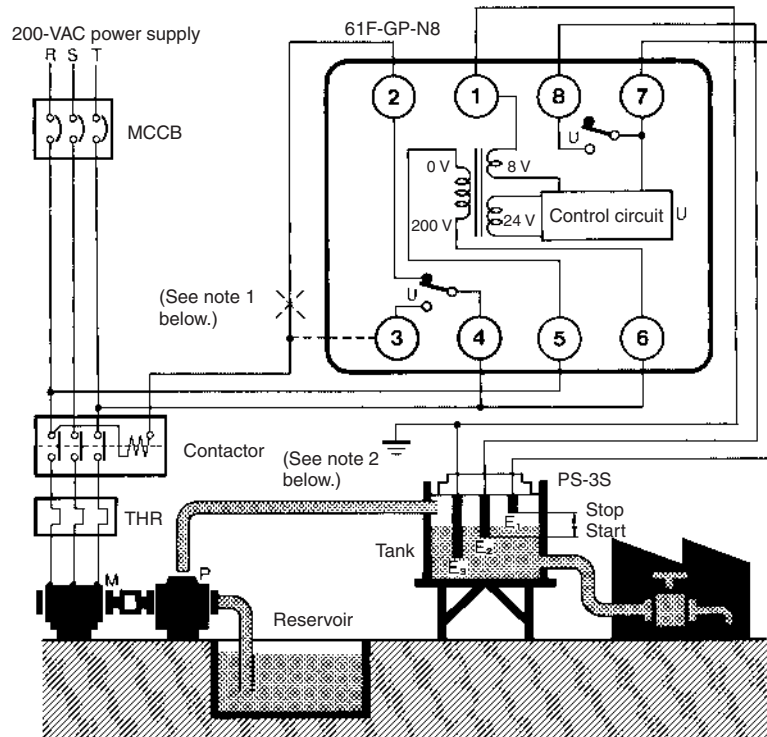
Automatic Water Supply and Drainage Control

1. Water Supply

- Connect electromagnetic switch coil terminal A to terminal 2.
- The pump stops when the water level reaches E1 and starts when the water level drops below E2.

2. Drainage

- Connect the electromagnetic switch coil terminal A to terminal 3.
- The pump starts when the water level reaches E1 and stops when the water level drops below E2.



- Note: 1. The diagram shows the connections for water supply. When draining, change the connection from terminal 2 to terminal 3.
 2. The earth terminal must be earthed.

Operation

The Conductive Level Controller consists of a plug-in controller connected to a set of stainless steel probes. These are cut to length and inserted vertically into the liquid. A low voltage is applied between these probes and the earth probe (or tank, if it is electrically conductive). The water provides a current between the earth probe and the high-level probe. The output relay in the Controller is energized when the water level reaches the high-level probe and de-energized when the water level falls below it.

For two-point control a low-level probe is used as well. In this case the relay does not de-energize until the water level falls below the low-level probe. Using the low-level probe allows a wide differential between switching a pump on and off, and can avoid excessive pump operation during tank emptying or filling. If this differential is not required, the low-level probe need not be connected.

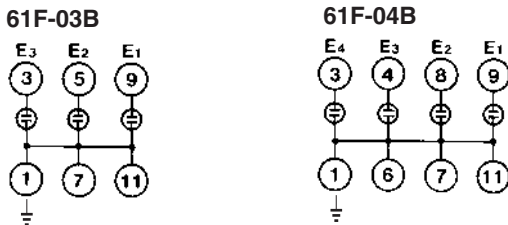
Surge Suppressor Unit (61F-03B/04B)

A high-capacity protective device is available which protects 61F-series Floatless Level Controllers against faults arising from electrical surges (such as indirect strokes of lightning) when the Controllers are employed in elevated water tanks or in high-altitude locations.

Specifications

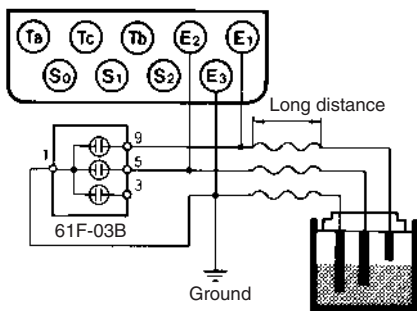
Discharge start voltage	90 V ±20 VDC
Impulse withstand voltage	200,000 V (1 x 40 μs)
Impulse withstand current	6,000 A (1 x 40 μs)

Internal Connections

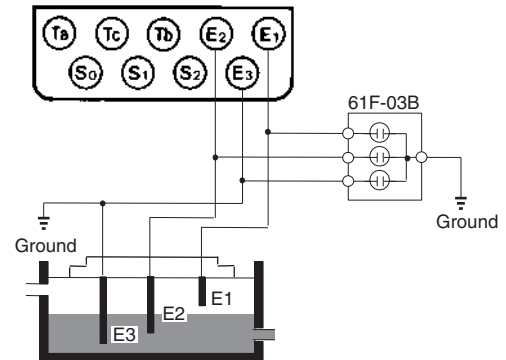


Precautions

1. Mount the Surge Suppressor Unit as close to the Controller as possible.
2. When grounding the Surge Suppressor Unit in the vicinity of the Controller, connect the ground side of the Surge Suppressor Unit to electrode E3.



3. When connecting the Surge Suppressor Unit, wire as shown in the following example (with three electrodes).



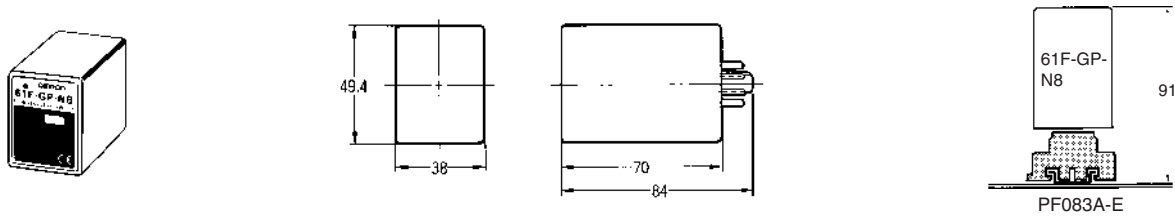
Connection Sockets

- PF113A-E Track-mounted Socket
- PL11 Back-connecting Socket

Level Controllers

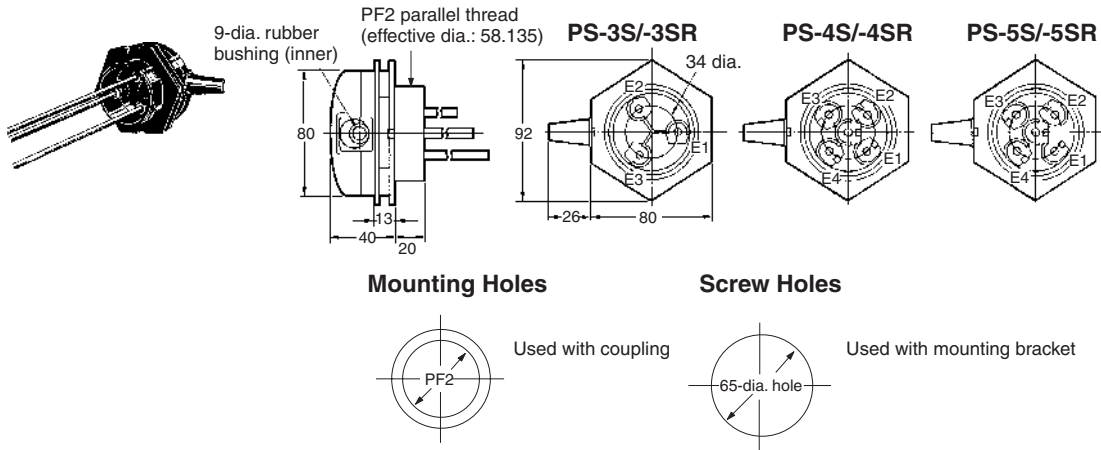
Dimensions

Note: All units are in millimeters unless otherwise indicated.

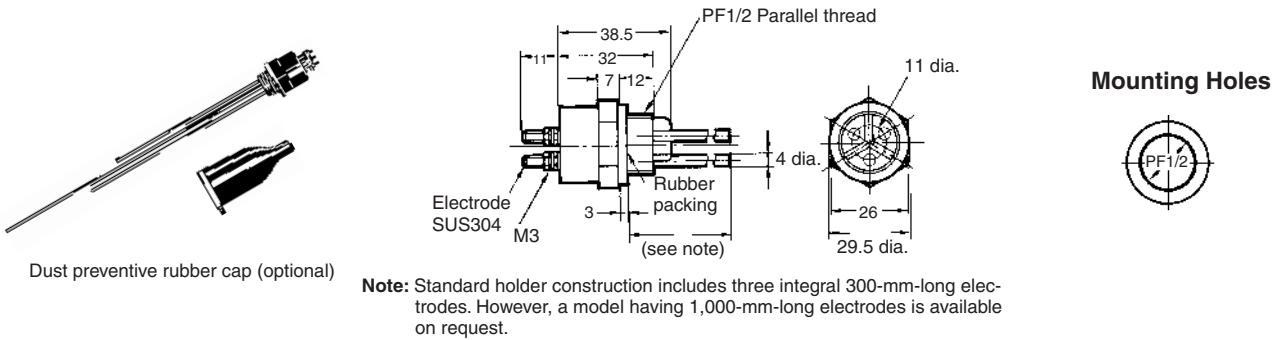


Electrode Holders

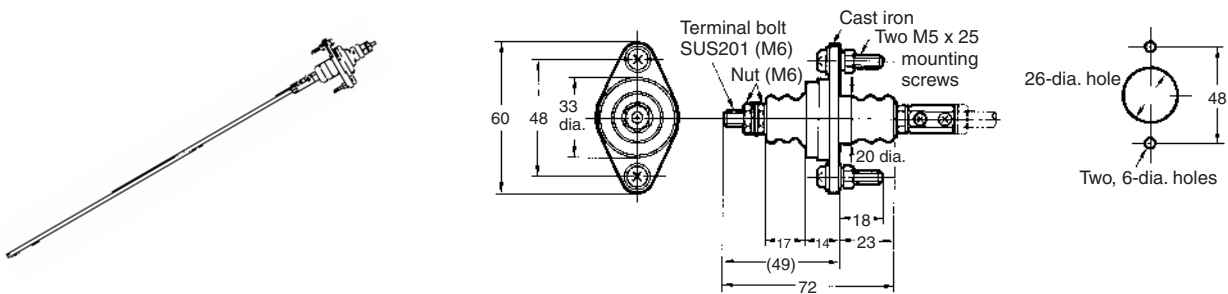
PS-□S



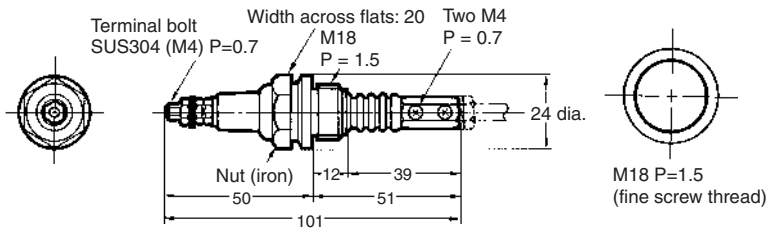
PS-31



BF-1

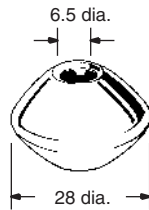


BS-1

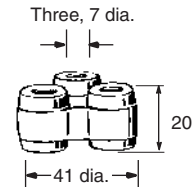


Electrode Separators

F03-14 1P (for Single Pole)



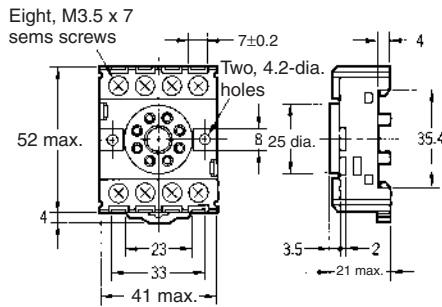
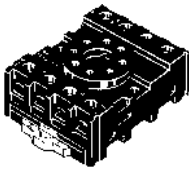
F03-14 3P (for Three Poles)



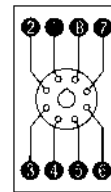
Connecting Sockets

Track Mounted Socket

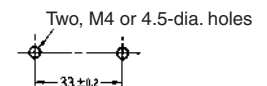
PF083A-E



Terminal Arrangement/
 Internal Connections
 (Top View)

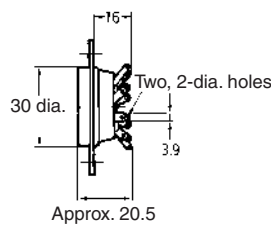
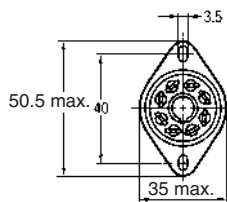


Mounting Holes

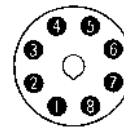


Back Connecting Socket

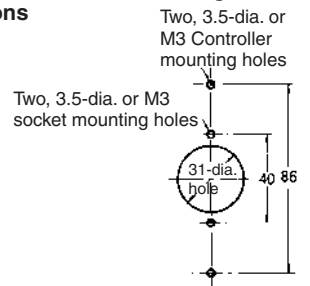
PL08



Terminal arrangement/
 Internal Connections
 (Bottom View)



Mounting Holes

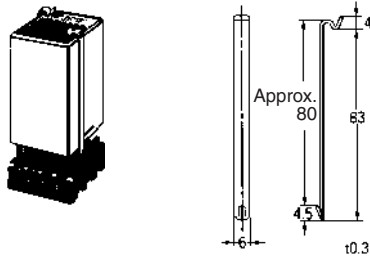


Level
 Controllers

Holding Brackets

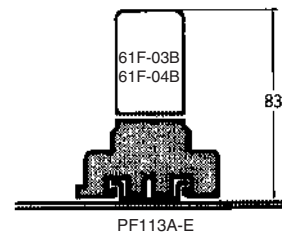
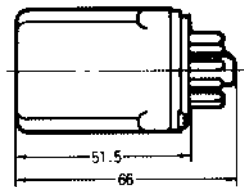
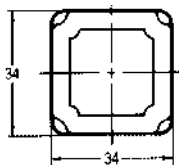
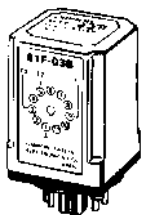
To mount the 61F-GP-N8 Conductive Level Controller on the PF083A Track Mounted Socket, use the PFC-N8 Mounting Brackets attached to the Socket as an accessory.

PFC-N8



Surge Suppressor Unit

61F-03B
61F-04B



Application Examples

- Level control in tanks, reservoirs, sewage plants, underground wells, mixing plants etc.
- Level control for element protection in pipes, channels, and irrigation systems.
- Flow detection in pipes, channels, and irrigation systems.
- Ice bank control in cold drink dispensers, ice makers, water chillers, bulk milk tanks, etc.
- Dispensing of liquids by volume.
- Indication of liquid buildup due to filter blockages.
- Pollution/foul water detection for rivers, drains, etc.
- Alarm control warning of abnormal or dangerously high or low levels.

Application

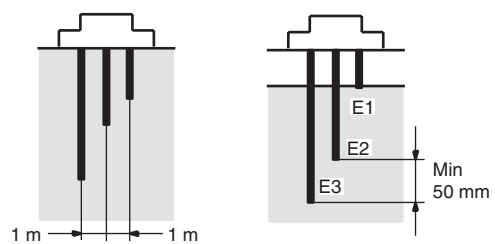
When using electrodes in sea water or sewage, provide a sufficient interval (normally 1 m) between the electrodes. If the sufficient interval cannot be provided, employ a low-sensitivity-type Floatless Level Controller.

When taping one of the electrodes to prevent it from contacting the other electrodes in water, do not tape the electrode entirely but leave at least 100 mm of its end uncovered.

When the required length of the electrode is more than 1 m, use a separator at each joint of two electrodes so as to prevent the electrodes from contacting one another.

Note: Avoid use of the separators in dust-containing liquids.

Usually, electrodes are used in a set of three: long, medium, and short. Connect the short electrode to E1, the medium electrode to E2, and the long electrode to E3. Make E3 at least 50 mm longer than E2.



Electrodes are in actual contact with the liquid. Standard electrodes are made of stainless steel and usable in purified water, sea water, sewage, acid (except acetic acid, sulfuric acid, etc.) and alkaline liquids, although they may corrode depending upon the temperature and working conditions.

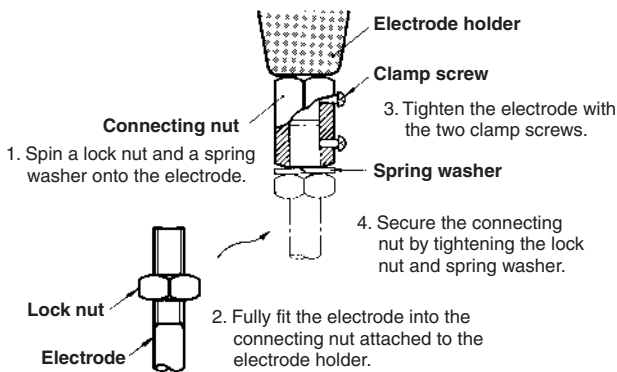
Note that the 61F-GP-N8 Conductive Level Controller is capable of controlling liquids with specific resistances of up to 30 kΩ-cm when the Controller employs a PS-3S electrode holder with the electrode(s) submerged to a depth of 30 mm max.

Kind of water	Specific resistance	Applicable type
City water	5 to 10 kΩ-cm	Standard type
Well water	2 to 5 kΩ-cm	Standard type
Industrial water	5 to 15 kΩ-cm	Standard type
Rainwater	15 to 25 kΩ-cm	Standard type
Sea water	0.03 kΩ-cm	Low-sensitivity type
Sewage	0.5 to 2 kΩ-cm	Low-sensitivity type
Distilled water	100 kΩ-cm or less	High-sensitivity type
	Over 100 kΩ-cm	Consult OMRON

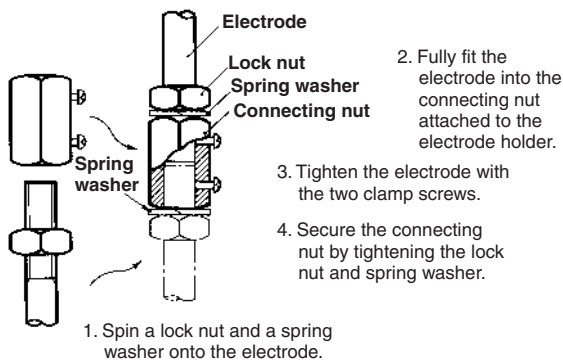
Precautions

■ How to Mount Electrodes

Connecting Electrodes to Electrode Holders



Connecting One Electrode to Another



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

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

Cat. No. F043-E1-02

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

Conductive Level Controller

61F-GP-N2

Automatic Water Supply and Drainage Control

- Ideal for level control of any conductive liquid.
- Compact plug-in controller for single- or two-point control of conductive liquid level.
- 24/110/120/220/230/240 VAC operation possible.
- Easy installation on DIN rail.
- Low voltage (AC) electrodes.
- Full surge protection.



Ordering Information

Compact plug-in conductive level controller	61F-GP-N2
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When placing your order, be sure to specify the desired operating voltage.

Example: 61F-GP-N2 120 VAC
└───┬───┘ Rated supply voltage

■ Accessories (Order Separately)

Selection Guide for Electrode Holders and Separators

Electrode Holders

Applications	For city water and other general-use electrodes. Easy-to-replace separate versions facilitate maintenance of electrodes.	When mounting space is limited. Special 3-pole holder of small size and light weight. Ideal for soft drink vendors, etc., where only limited space is available.	For low specific liquids. Used for sewage, sea water, etc., having a low specific resistance. In sewage use, electrode holders must be installed 10 to 20 cm apart from one another. For acids, alkalis and sea water, electrode holders may be as much as 1 meter apart to operate properly.	When resistance to high pressure is required. Ideal for use in tanks where temperature or pressure inside the tank is high, e.g. 250°C
Mounting style	Flange	Screw	Flange	Screw
Insulator material	Phenol resin	Phenol resin	Ceramics	Teflon
Max. temperature		70°C (without water drips or vapour on the surface of the electrode holder)	150°C (without water drips or vapour on the surface of the electrode holder)	250°C (without water drips or vapour on the surface of the electrode holder)
No. of electrodes	1	---	BF-1	BS-1
	3	PS-3S	PS-31	---

Electrode Separators

No. of electrodes	Model
1	F03-14-1P
3	F03-14-3P

Selection Guide for Electrodes, Connecting and Lock Nuts

Applicable liquids	Material	Models for individual electrode assembly components					
		Electrode (1m long)		Connecting nut		Lock nut	
		Model	Indication mark	Model	Inscription	Model	Inscription
Purified city water, industrial water, sewage	SUS-304 (AISI-304)	F03-01-SUS304	1 line	F03-02-SUS304	---	F03-03-SUS304	---
Purified city water, industrial water, sewage, dilute alkaline solution	SUS316 (AISI-316)	F03-01-SUS316	2 lines	F03-02-SUS316	6	F03-03-SUS316	6

Application Example

- Level control in tanks, reservoirs, sewage plants, underground wells, mixing plants etc.
- Level control for element protection in pipes, channels, and irrigation systems.
- Flow detection in pipes, channels, and irrigation systems.
- Ice bank control in cold drink dispensers, ice makers, water chillers, bulk milk tanks, etc.
- Dispensing of liquids by volume.
- Indication of liquid buildup due to filter blockages.
- Pollution/foul water detection for rivers, drains, etc.
- Alarm control warning of abnormal or dangerously high or low levels.

Specifications

Supply voltage	24, 110, 120, 220, 230, 240 VAC; 50/60 Hz
Operating voltage range	85% to 110% of rated voltage
Interelectrode voltage*	8 VAC
Power consumption	Approx. 3.2 VA
Operate resistance	Approx. 4 K Ω min. Between electrode E1 and E3
Release resistance	Approx. 15 K Ω max. Between electrode E2 and E3
Response time	Operate: 80 ms max., Release: 160 ms max.
Control output	10 A, 250 VAC (at 40°C) 3 A, 250 VAC (at 55°C)
Insulation resistance	100 M Ω max. (at 500 VDC) between power terminals and electrode terminals, and between electrode terminals and contact terminals
Dielectric strength	2,000 VAC, 50/60 Hz for 1 min., between power terminals and electrode terminals, and between electrode terminals and contact terminals
Ambient temperature	Operating: -10°C to 55°C
Ambient humidity	Operating: 45% to 85%
Life expectancy	Mechanical: 10,000,000 operations min.
Weight	Approx. 190 g

*Secondary voltage of transformer

Connections

Automatic Water Supply and Drainage Control

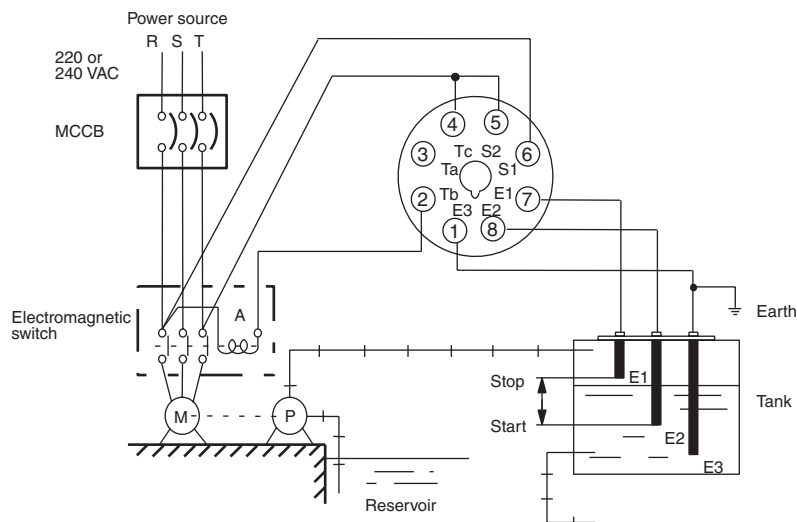
1. Water supply

- Connect electromagnetic switch coil terminal A to Tb.
- The pump stops when the water level reaches E1 and starts when the water level drops below E2.

2. Drainage

- Connect the electromagnetic switch coil terminal A to Ta.
- The pump starts when the water level reaches E1 and stops when the water level drops below E2.

- Note:**
1. The diagram shows the connections for water supply. When draining, change the connection Tb to Ta.
 2. The earth terminal must be grounded.



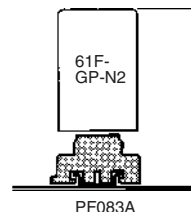
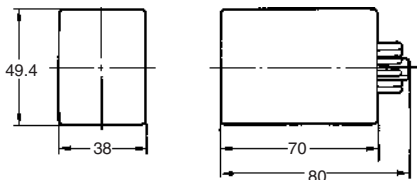
Operation

The conductive type level controller consists of a plug-in controller connected to a set of stainless steel probes. These are cut to length and inserted vertically into the liquid. A low voltage is applied between these probes and the earth probe (or tank, if it is electrically conductive). The water provides a current between the earth probe and the high-level probe. The output relay in the controller is energized when the water level reaches the high-level probe and de-energized when the water level falls below it.

For two-point control a low-level probe is used as well. In this case the relay does not de-energize until the water level falls below the low-level probe. Using the low-level probe allows a wide differential between switching a pump on and off, and can avoid excessive pump operation during tank emptying or filling. If this differential is not required, the low-level probe need not be connected.

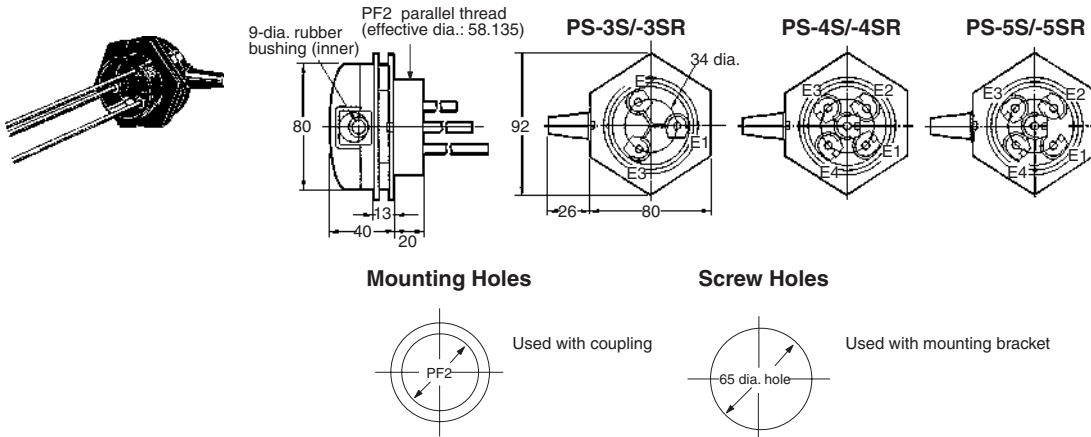
Dimensions

Note: All units are in millimeters unless otherwise indicated.

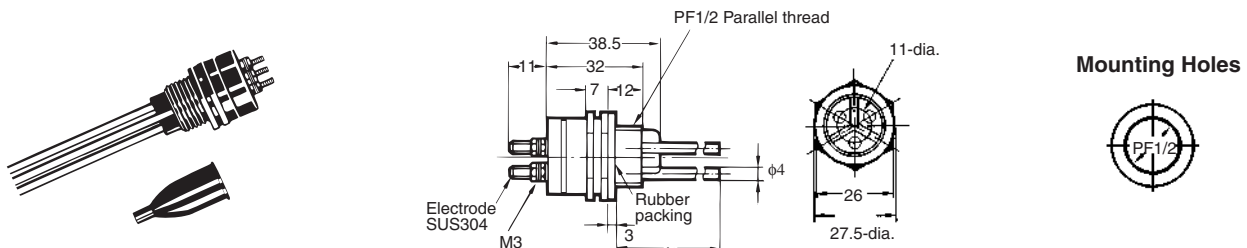


■ Electrode Holders

PS-3S



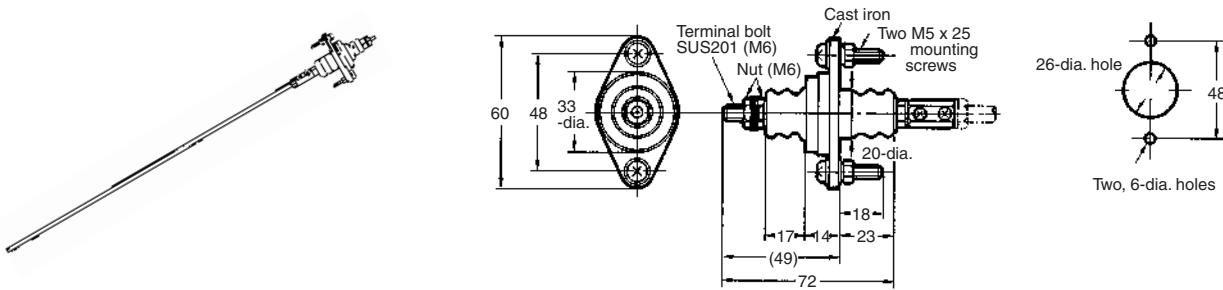
PS-31



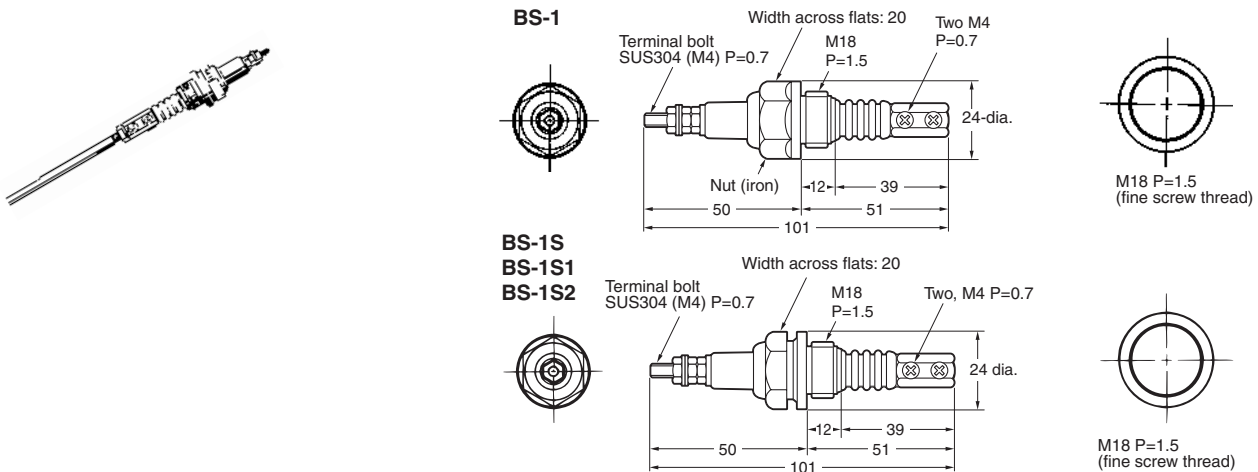
Dust preventive rubber cap (optional)

* Standard holder construction includes three integral 300 mm length electrodes. However, a type having 1,000 mm length electrodes is available on request.

BF-1



BS-1(S)

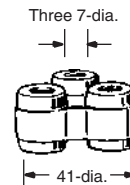


■ Electrode Separators

F03-14 1P (for Single Pole)



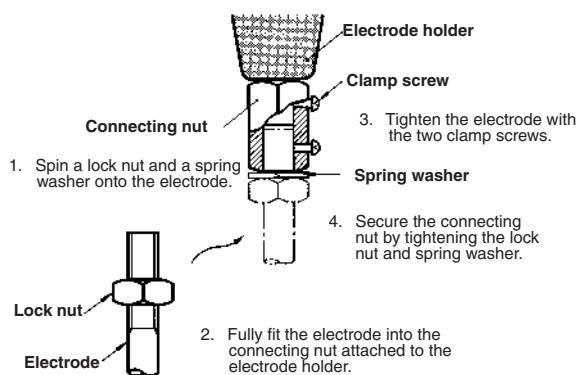
F03-14 3P (for Three Poles)



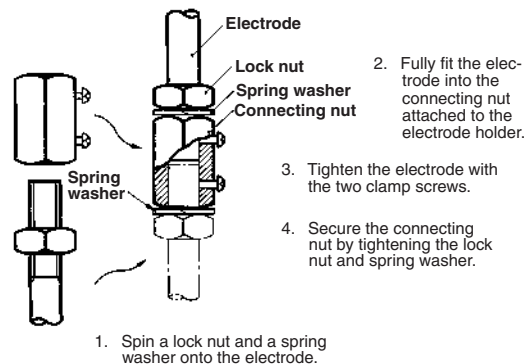
Precautions

■ How to Mount Electrodes

Connecting Electrodes to Electrode Holders



Connecting One Electrode to Another



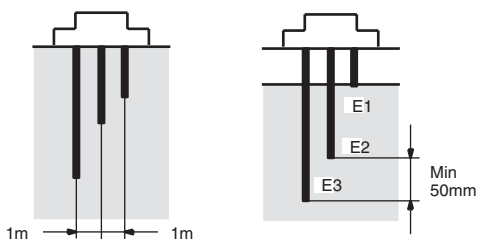
■ Application

When using electrodes in sea water or sewage, provide a sufficient interval (normally 1 m) between the electrodes. If the sufficient interval cannot be provided, employ a low-sensitivity type Floatless Level Controller.

When taping one of the electrodes to prevent it from contacting the other electrodes in water, do not tape the electrode entirely but leave at least 100 mm of its end uncovered.

When the required length of the electrode is more than 1 m, use a separator at each joint of two electrodes so as to prevent the electrodes from contacting one another. (NOTE: Avoid use of the separators in dust-containing liquids.)

Usually, electrodes are used in a set of three: long, medium, and short. Connect the short electrode to E1, the medium electrode to E2, and the long electrode to E3. Make E3 at least 50 mm longer than E2.



Electrodes are in actual contact with the liquid. Standard electrodes are made of stainless steel and usable in purified water, sea water, sewage, acid (except acetic acid, sulfuric acid, etc.) and alkaline liquids, although they may corrode depending upon the temperature and working conditions.

Note that the Conductive Level Controller 61F-GP-N2 is capable of controlling liquids with specific resistances of up to 30 kΩ-cm when the controller employs a type PS-3S electrode holder with the electrode(s) submerged to a depth of 30 mm max.

Kind of water	Specific resistance	Applicable type
City water	5 to 10 kΩ-cm	General-purpose type
Well water	2 to 5 kΩ-cm	General-purpose type
Industrial water	5 to 15 kΩ-cm	General-purpose type
Rainwater	15 to 25 kΩ-cm	General-purpose type
Sea water	0.03 kΩ-cm	Low-sensitivity type
Sewage	0.5 to 2 kΩ-cm	Low-sensitivity type
Distilled water	100 kΩ-cm or less	High-sensitivity type
	Over 100 kΩ-cm	Consult OMRON

■ Precautions

⚠ WARNING

Do not touch the terminals while power is being supplied. Doing so may possibly result in electric shock. Make sure that the terminal cover is installed before using the product.



⚠ CAUTION

Do not attempt to disassemble, repair, or modify the product. Doing so may occasionally result in minor or moderate injury due to electric shock.



- Before using, recheck the application, wiring, power supply, etc.
- Check the application and power supply. Power supply (AC 220 V, AC 230 V) consists of other specifications. If the power voltage is not AC 200 V or AC 100 V, follow the instructions described on the device.
- Firmly ground the earth terminal No.4.
- Make sure that electrode probes in the liquid do not come in contact one another as it may cause malfunction. Use separator when connecting.
- Tighten nuts for electrode probe(s) firmly.
- Prevent flottage from attaching to electrode.
- This device is not available when the resistance is too high and is not conductive such as oil.

Precautions for Safe Use

1. Precautions for the environment

- Use and preserve within the proper temperature and humidity described in the specifications.
- Temperature of surroundings for preservation (including during transportation) and use: -10 to 55°C, humidity: 45 to 85%.
- Do not install, among others, near heat devices such as coils or other devices having coils, etc.
- Avoid preserving (including during transportation) and using in a humid place, in a corrosive gas environment, outdoors and in a place which receives direct sunlight.
- Preserve and use without exposing to danger of explosion, flammable dust, gas and vapor, excessive dust, and saline spray or droplets.
- Avoid preserving (including during transportation) and using in a place which is vulnerable to flooding or oil spillage.
- Avoid preserving (including during transportation) and using in a place where vibrations and impacts are strong. Similarly, avoid using next to a high-capacity contactor which may impacts at operation. Doing so causes malfunctions such as chattering, etc.
- Do not install the product near devices generating strong high-frequency waves or surges. When using a noise filter, check the voltage and current and install it as close to the product as possible.

2. Cautions for Use

- Read the instruction manual and catalog before operating and maintaining the product.
- Fit socket(s) and DIN rail(s) so that the screws are tight. If the screws are not tight, DIN rail(s), socket(s), the product and cable(s) may lead to come off.
- Be sure to fit socket(s) to DIN rail(s) without fail.
- Use metal strengthener(s) to maintain a firm connection between the product and socket(s).
- Read the instructions manual and catalog before the operation and maintenance of the product.
- When fitting crimping terminal(s) to terminal screw(s), use a tightening torque of between 0.45 and 0.6 N·m
- Use power supply of appropriate specifications to provide control source(s), inputs, etc., and to wire cables.
[Recommended cable to wire between the model 61F and electrode(s) when using three-core cable(s) of completely insulated 600 V 0.75 mm VCT: 50 m max.]
- Do not put power line(s), high-voltage cable(s) and wire(s) of electrode circuit(s) in the same duct nor wire closely. Doing so causes malfunctions by getting vulnerable to induction noise.
- Shorten the distance for wiring between the model 61F and electrode holders as much as possible. Long distance for wiring may cause malfunctions because stray capacitance may influence operation, or abnormal surges or noise may run through electrode circuit(s).
- Be sure to ground common electrode terminal(s). Doing so can reduce some effects of noise.
- Use the product within the noted supply voltage and rated load.

Warranty and Application Considerations

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

Warranty and Limitations of Liability

WARRANTY

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Application Considerations

Application Considerations

BASIC CONSIDERATIONS

At OMRON, we are constantly working to improve the quality and reliability of our products. SSRs, however, use semiconductors, which are prone to malfunction. Be sure to use SSRs within their rated values. Use the SSRs only in systems that are designed with redundancies, flame protection, countermeasures to prevent operation errors, and other countermeasures to prevent accidents involving human life or fires.

SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products.
 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.

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- 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.

Disclaimers

Disclaimers

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 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.

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Cat. No. N071-E1-03 **In the interest of product improvement, specifications are subject to change without notice.**

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