

Model 61F-D21T-V1 Conductive Level Controller

Instructions Manual

Thank you for purchasing an OMRON product. In this Instructions Manual, you will find information about this product's features, capabilities, and operating instructions.

Please observe the following when using this product.

- This product is designed for use by qualified electrical engineer.
- Read and understand this Instructions Manual thoroughly, and make proper use of this product.
- Keep this Instructions Manual for future reference.

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Safety Precautions

Definition of Precautionary Information

CAUTION Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.

Precautionary Information

CAUTION

Do not touch the terminals. Doing so may possibly result in electric shock.



Precautions for Safe Use

- There is a remote risk of electrical shocks, fire, or failure occurring. Do not disassemble, repair, or modify the product.
- When attaching the product to the DIN rail, attach it firmly with screws. When the screws are not tightened firmly, the product of wiring may become disconnected due to vibrations or shocks.
- When attaching the product to the DIN rail, ensure that the product has been attached firmly.
- When thickness of a mounting panel is not adequate, or a mistake has been made during installation, the product may become disconnected.
- Ensure that terminal screws have been tightened firmly. Recommended torque : 0.49N · m Assured torque : 0.59N · m
- When using this product, ensure that the wiring is correct before turning on the power. Incorrect wiring may result in electrical shocks, injuries, accidents, failure, or malfunctions.
- Use the power-supply voltage that is within the range of specifications.
- Use the control source and power supply or power lines that provide inputs with appropriate specifications. Failure to do so may result in failures, burnings, or electrical shocks.
- Do not install near heat-generating devices (coils, or devices that use coils).
- Make sure to confirm terminal numberings for correct wiring.
- Ensure that you have correct wiring. Double-check mate-rials such as connection charts and circuit diagrams.
- Properly ground the grounding terminal. Ensure that common electrode terminal has been properly grounded. Doing so can alleviate effects from noise to a certain extent.
- When electrodes make contacts in liquids, purchase and use a separator to prevent such contacts.
- Keep appropriate distance from devices that generate high-frequency noise (e.g., high-frequency welders, electronic sewing machines).
- Do not turn a setting volume beyond the scope of movement.

- Do not keep, install, or use this product in the following environments.
 - (1) Outdoors, or places subject to direct sunlight or wearing weather.
 - (2) Places where temperature and humidity exceed allowable range of product specifications.
 - (3) Places where there is extreme change in temperature and humidity, or icing or condensation may occur.
 - (4) Places subject to static electricity or inductive noise.
 - (5) Places subject to electrical field.
 - (6) Places where vibrations or physical shocks are strong.
 - (7) Places where flammable gasses or flammable liquids exist.
 - (8) Places where corrosive gases (in particular, sulfuric or ammonia gas) exist.
 - (9) Places with large amounts of dust or iron powders.
 - (10) Places where water or oil come in contact with the product.
 - (11) Places subject to salt-water splash.

Precautions for Correct Use

- To avoid damage to the exterior of the product, do not use organic solvents (thinner, benzene) or agents with strong alkalinity or acidity.
- When discarding, properly dispose of the product as industrial waste.
- Only use this product within a board whose structure allows no possibility for fire to escape.

Specifications

Rating

Supply Voltage	24VAC, 115VAC, 220-230VAC
Operate voltage range	85 to 110% of rated voltage
Power Consumption	5VA max.
Insulation Resistance	100MΩ min. (at 500VDC) Between power-supply terminal, electrode terminal, and contact terminal
Interelectrode operating resistance	10 kΩ to 100 kΩ (variable)
Interelectrode release resistance	250 kΩ max.
Response time	Approx. 0.1 to 10 s (variable)
Cable length	100 m max. with completely insulated (600V) cable with 3 conductors (0.75mm ²)
Ambient temperature	Operating : -20 to 60°C Storage : -30 to 70°C (with no condensation or icing)
Ambient humidity	Operating : 25% to 85% Storage : 25% to 85%

Output Rating

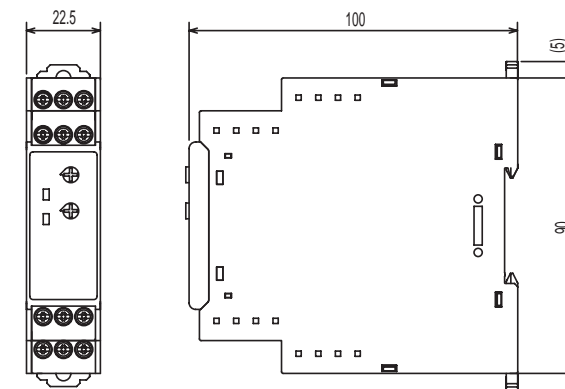
Relay Output	Rated Load	Resistance Load : AC250V 6A, DC30V 6A
	Maximum Contact Point Voltage	AC250V, DC30V
	Maximum Contact Point Current	AC6A, DC6A
	Maximum Opening and Closing Capacity	1500VA, 180W
	Minimum Applicable Load (P Level)	DC5V, 10mA *Reference value
	Mechanical Life	10 million times min.
	Electrical Life (Ambient temperature condition : +20°C)	Make : 50 thousand times Break : 30 thousand times

Over view

This product is an electric machine equipment that does the automatic water supply and drainage control.

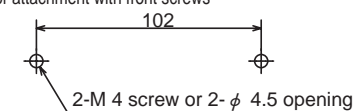
Installation

Diagram of Outside Dimensions Unit : mm



*Installation Procedure : Attaching to the DIN rail or attaching with front screws

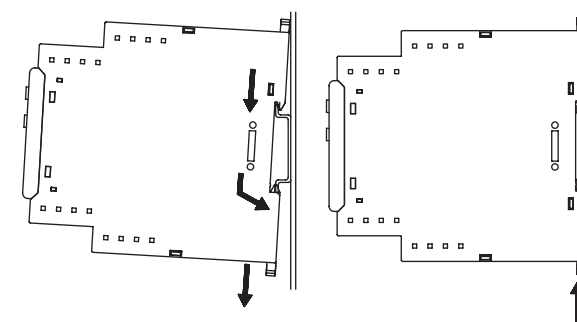
*Measurements for attachment with front screws



*When attaching with front screws, draw out hooks on the bottom of the product to the left and right sides.

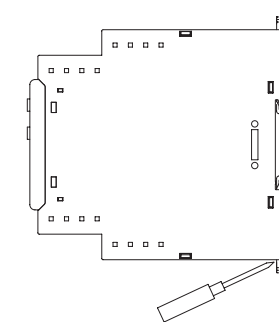
Installation Procedure

- Pull down the hook, and then fasten the upper tab onto the rail, fitting in the unit until the hook locks into place.



Uninstallation Procedure

- Using a flathead screwdriver or a similar tool, pull out the hook downward and lift the unit from the bottom.



Fixing Bracket

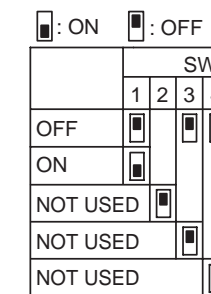
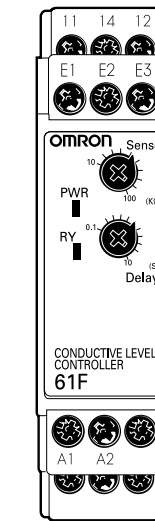
Attach the type 61F-D21T-V1 to the DIN rail.

- DIN Rail Type PFP-100N (1,000mm)
Type PFP-50N (500mm)

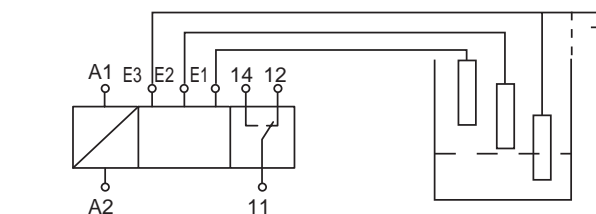
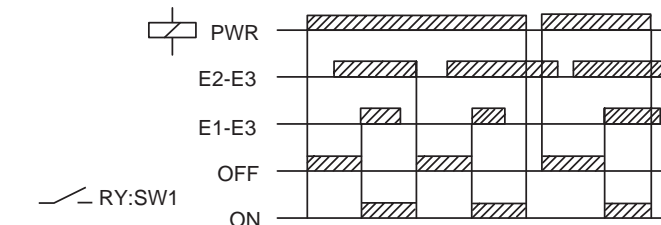
Recommended Crimp Terminal

Recommended Crimp Terminal	Recommended Cable Diameter
AI 1,5-8BK (Phoenix Contact product)	AWG#16
AI 1-8RD (Phoenix Contact product)	AWG#18
AI 0,75-8GY (Phoenix Contact product)	AWG#18

Terminal Diagram/ DIP SW Setting/Operations Chart



SW	Function	Function				Default
		1	2	3	4	
SW1	Supply/drainage selection	OFF	ON	ON	ON	OFF
		ON	OFF	OFF	OFF	ON
SW2	Not used	—	—	—	—	OFF
SW3	Not used	—	—	—	—	OFF
SW4	Not used	—	—	—	—	OFF



Suitability for Use

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of the products in the customer's application or use of the product. Take all necessary steps to determine the suitability of the product for the systems, machines, and equipment with which it will be used.

Know and observe all prohibitions of use applicable to this product.

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 PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

See also Product catalog for Warranty and Limitation of Liability.

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