

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.

OMRON Corporation

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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 while power is being supplied. Doing so may possibly result in electric shock.



Precautions for Safe Use

- Do not disassemble, repair, or modify the product.
- When attaching the product to the DIN rail, attach it firmly with screws.
- When attaching the product to the DIN rail, ensure that the product has been attached firmly.
- If the 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 the product, ensure that the wiring is correct before turning on the power.
- Use a 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.
- Do not install near heat-generating devices (coils, or devices that use coils).
- Be sure to confirm terminal numbers for correct wiring.
- Ensure that wiring is correct. Double-check materials such as connection charts and circuit diagrams.
- Properly ground the grounding terminal. Ensure that the common electrode terminal has been properly grounded. Doing so can alleviate effects from noise.
- If electrodes make contact with liquid, purchase and use a separator to prevent such contact.
- 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 connect anything to unused terminals.
- Use SELV power supply with over load protection function for DC power supply. The insulation of SELV power supply must be a double or reinforced between input and output. The output voltage shall be 30Vr.m.s and 42.4V at peak, or use the power supply of 60VDC max. Recommended power supply : type SBVS-06024□ (OMRON made)

- 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 the allowable range of the product specifications.
 - (3) Places where there are extreme changes in temperature and humidity, or icing or condensation may occur.
 - (4) Places subject to static electricity or inductive noise.
 - (5) Places subject to electrical fields.
 - (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 splashes.

Precautions for Correct Use

- During insulation resistance measurements, never apply the megohmmeter across the Electrode terminals.
- Use a power supply that will reach rated voltage within 1 second.
- 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.
- This is a class A product. In residential areas it may cause radio interference, in which case the user may be required to take adequate measures to reduce interference.

Specifications

Rating

Supply Voltage	24VAC/DC , 100-240VAC
Operate voltage range	85 to 110% of rated voltage
Power Consumption	2W max. (24VDC) 4VA max. (24VAC) 5VA max.(100-240VAC)
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

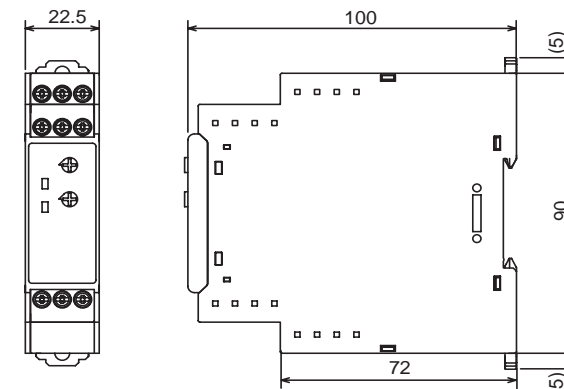
Relay Output	Rated Load	Resistance Load : AC250V 6A, DC30V 6A
	Maximum Contact Point Voltage	AC250V, DC30V
	Maximum Contact Point Current	AC6A, DC6A
	Maximum Opening and Closing Capacity	1500VA, 180W
	Minimum Applicable Load (P Level)	DC5V, 10mA *Reference value
	Mechanical Life	10 million times min.
	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.

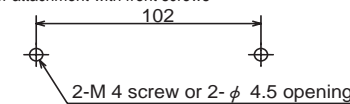
Installation

Diagram of Outside Dimensions Unit : mm



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

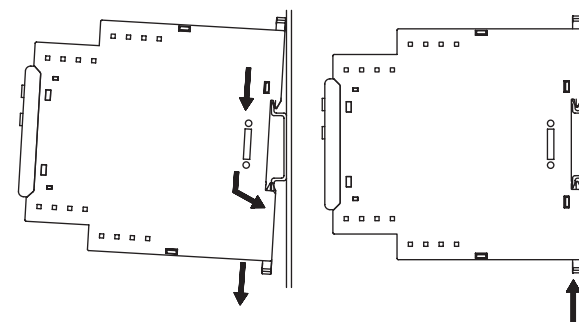
*Measurements for attachment with front screws



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

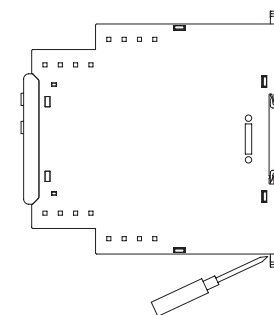
Installation Procedure

- 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)

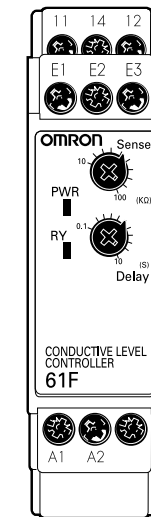
Separator

- Type F03-14

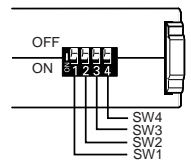
Recommended Crimp Terminal

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

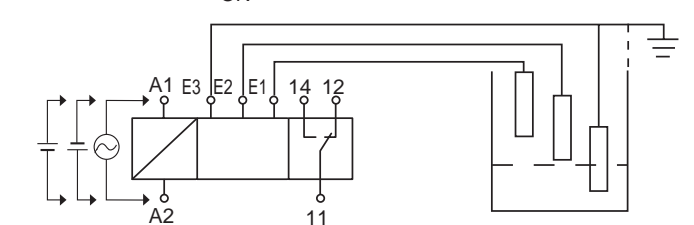
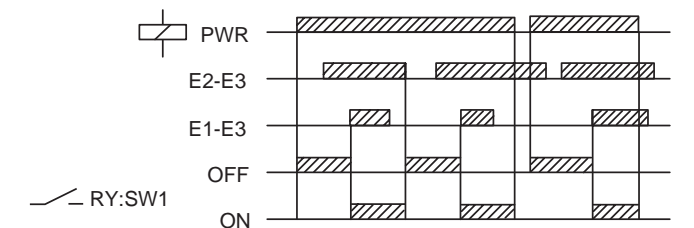
Terminal Diagram/ DIP SW Setting/Operations Chart



ON	OFF
OFF	ON
NOT USED	NOT USED
NOT USED	NOT USED
NOT USED	NOT USED



SW	Function	Default
SW1	Supply/drainage selection	OFF
	ON	Automatic liquid drainage operation
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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