

INSTRUCTION MANUAL

Thank you for purchasing HANYOUNG product.
Please check whether the product is the exactly same as you ordered.
Before using the product, please read this instruction manual carefully.
Please keep this manual where you can view at any time

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ML0201KE230427

Safety information

Before using the product, please read the safety information thoroughly and use it properly.
Alerts declared in the manual are classified to Danger, Warning and Caution by their criticality

⚠ DANGER	DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury
⚠ WARNING	WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury
⚠ CAUTION	CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury

⚠ WARNING

- If the user use the product with methods other than specified by the manufacturer, there may be bodily injuries or property damages.
- If there is a possibility of an accident caused by errors or malfunctions of this product, install external protection circuit to prevent the accident.

⚠ CAUTION

- Do not touch or connect any undesirable conductive part to input-output terminal since there is a possibility of electric shock.
- Please do not supply the overload larger than the rating to the output contact of the relay.
- The wire length should be as short as possible from the instrument to the electrode.
- Please use a thick wire as possible between the instrument and the electrode.
- Please do not put the input signal wires and other load wires in the same conduit.
- If the input wire is longer, please use the shielded wire.
- Please avoid installing a controller in a place where there is steam, dust, corrosive gas and water splash.
- Please install AC power lines in a metal conduit with separating input sensor signal wires.
- Never disassemble, modify, or repair the product. There is a possibility of a malfunction, an electric shock, or a risk of fire.
- It cannot be used for liquids with little conductivity such as distilled water or dirty water containing oil.
- It cannot be used with flammable liquids such as gasoline, kerosene, and heavy oil.
- Do not put the wire of the electrode level sensor in the same duct as the power line.
- Since malfunction due to induction may occur, please wire them separately.
- Since malfunction due to the stray capacitance may occur, in case of burying it underground, please make sure to insulate it.
- Do not install in a place subject to severe vibration or impact.
- Please install the electrodes vertically.
- Please do not use it in the place splashed with water or dust. It can be a reason of malfunction.
- Please clean the electrode(large) every 6 months.
- In order to prevent contact between the electrodes in the tank, use a separator at about 1 meter for each.
- Install electrodes E1, E2, and E3 so that they have a large difference in length.
- Do not use in seawater, etc.

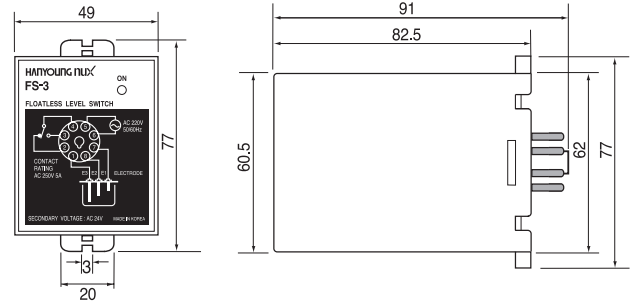
* Please follow the above contents described in the CAUTION, If not it may lead to a product failure.

Specification

Model	FS-3 A (High sensitivity)	FS-3 A (Low sensitivity)
Power supply Voltage	110 V a.c. / 220 V a.c. 50/60 Hz	
Allowable voltage fluctuation range	±10 % of the power supply voltage	
Voltage between the electrodes secondary voltage	24 V a.c.	8 V a.c.
Power consumption	Approx. 3.2 VA	
Response time	Max 80 ms when operating, max 160 ms when returning	
Operation resistance between electrodes	0 - approx. 27 kΩ	0 - approx. 7 kΩ
Return resistance between electrodes	approx. 38 kΩ - ∞Ω	approx. 15 kΩ - ∞Ω
Control output	Relay contact output (1c) : 250 V a.c. 5 A (Resistive load)	
Insulation resistance	100 kΩ min (With 500 V d.c. mega) electric conduction part and exposed non-charged metal part	
Dielectric strength	2000 V a.c. 50 - 60 Hz for 1 min (Between the two poles recharging part terminal)	
Vibration resistance	10-55 Hz (For cycle 1 min) Peak amplitude for 2hrs each in X, Y and Z direction 0.76 mm	
Shock resistance	approx. 300 m/s ²	
Life expectancy	Mechanically more than 5 million times (Relay type), electrically more than 500 thousand times (Load resistance)	
Ambient temperature	-10 ~ 50 °C (With no icing or condensation)	
Ambient humidity	35 ~ 85 % R.H.	

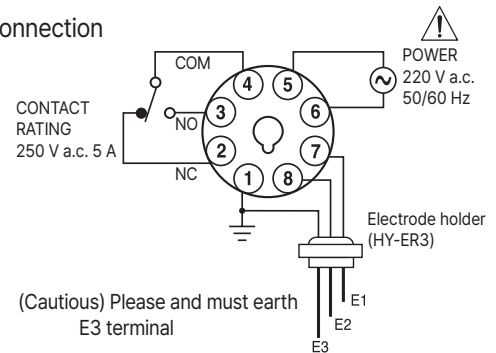
Dimension

[Unit : mm]



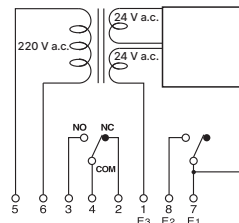
Connections

■ External connection

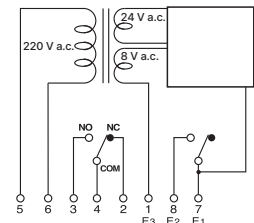


■ Internal connection

① High sensitivity

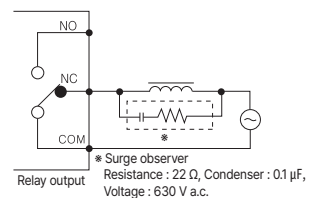


② Low sensitivity



■ Regarding the connection of load

- Attaching the surge observer at the each and of inducible load (motor, solenoid and etc) just like an image given on the right side will restrain noise to occur



■ HY-ER3

