

Photo sensor

FS-3A

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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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.
- 종류수나 기름성분을 함유한 더러워진 물과 같은 도전성이 거의 없는 액체에는 사용할 수 없습니다.
- 기술린, 등유, 중유 등의 인화성 액체에는 사용할 수 없습니다.
- 전극봉 레벨센서의 배선은 동력선과 동일 덕트에 넣지 마십시오. 유도에 의한 오동작이 발생할 수 있으므로 분리하여 배선하여 주십시오. 전선과 대지간의 부유용량에 따라 오동작이 발생할 수 있으므로 땅속에 물을 경우에는 확실하게 절연하여 주십시오.
- 진동이나 충격이 심한 장소에 설치하지 마십시오.
- 전극봉은 수직으로 설치하여 주십시오.
- 전극봉 레벨센서를 실외에서 사용하는 경우 물이 튀는 장소, 분진, 먼지가 많은 장소에서 사용하면 오동작의 원인이 됩니다.
- 전극봉은 설치 후, 6개월 정도 경과한 시점에서 전극봉(대)을 끌어 내어 청소하여 주십시오. 그 후에도 1년에 1~2회 청소하여 주십시오.
- 탱크 속에서 전극봉 간의 접촉을 방지하기 위하여 전극봉 마다 1m 정도에 세퍼레이터를 사용하여 주십시오.
- 전극봉 E1, E2, E3 의 길이가 크게 차이 나도록 설치하여 주십시오.
- 바닷물 등에는 사용하지 마십시오.

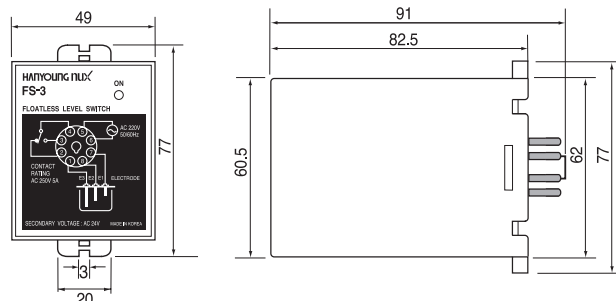
※ Please follow the above contents described in the safety information if not it may lead to a product failure.

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 MΩ 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	300 %	
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.	

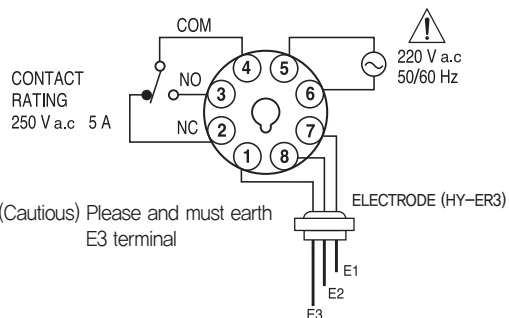
Dimension

[Unit : mm]



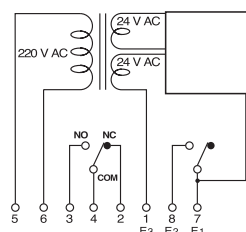
Connections

External connection

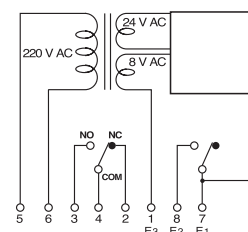


Internal connection

① High sensitivity

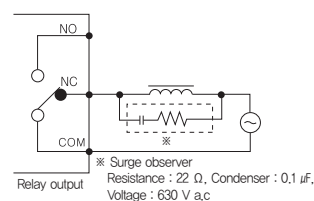


② Low sensitivity



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

