Technical Data Sheet

Photoelectric Liquid-level Sensor   FS-IR22

## Characteristics

- No mechanical moving components and with high reliability
- Small in size and low in cost
- High liquid level control precision and can be installed from any direction
- Satisfying the requirements in Safety Standards
- The sensor itself satisfies RoHS requirements

Applications

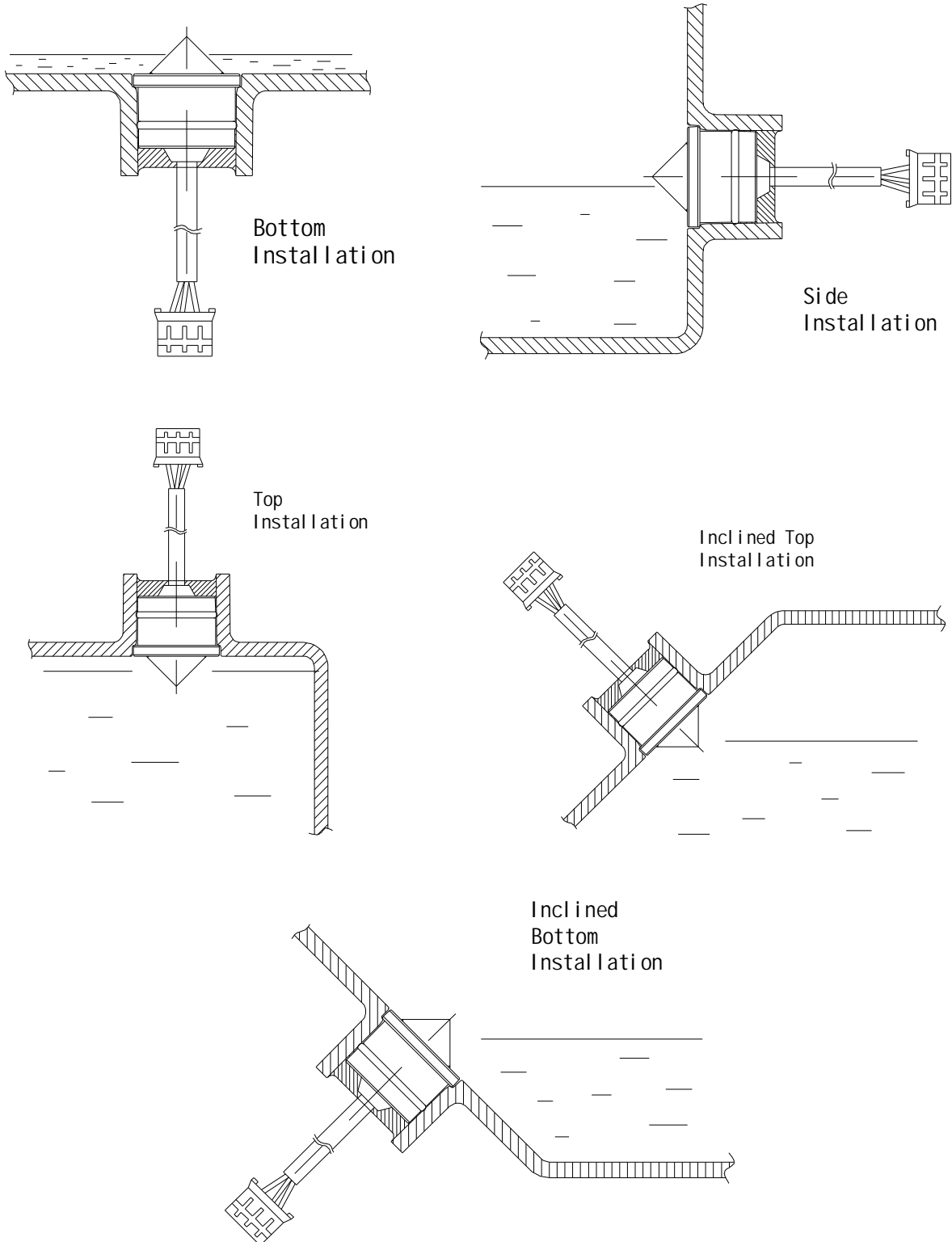- Electrical appliances and equipments etc. requiring liquid-level control

Dimensions
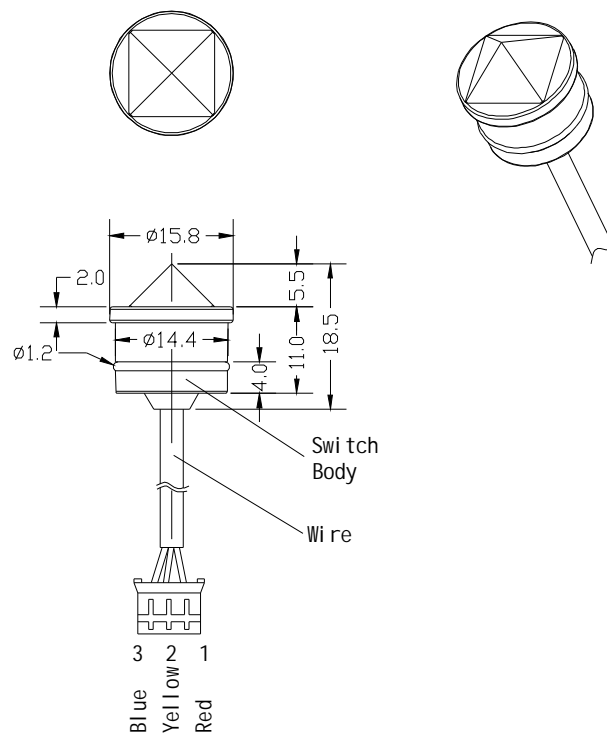
Notes: 1. The unit for each dimension is mm.
2. The tolerance for unindicted dimensions is ±0.20 mm.

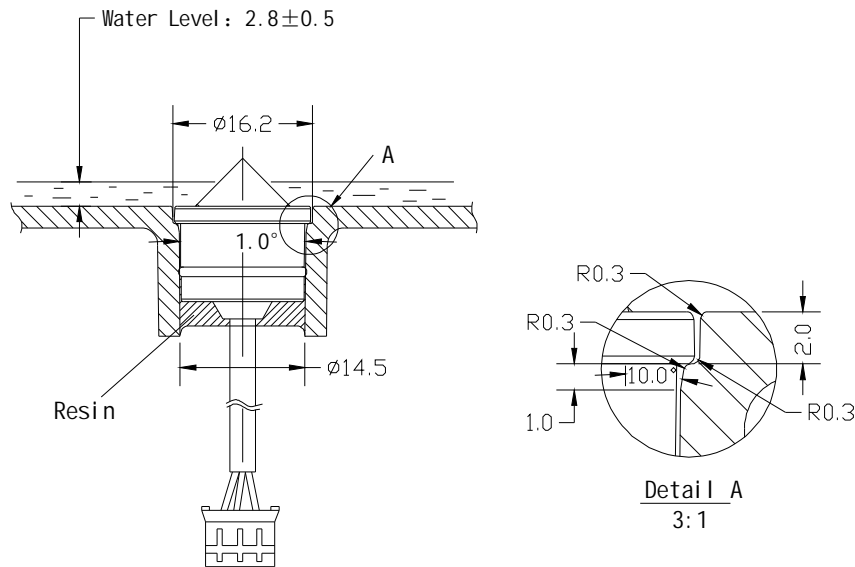## Installation & Liquid-level Control

Typical installation modes

Bottom Installation

Side Installation

Top Installation

Inclined Top Installation

Inclined Bottom Installation

Dimensions of bottom installation

Water Level：2.8±0.5

Ø16.2

A

1.0°

Ø14.5

Resin

R0.3

R0.3

2.0

10.0°

1.0

R0.3

Detail A
3:1

**Note:** 1. The unit for each dimension is mm.

       2. The tolerance for unindicted dimensions is ±0.20 mm.

       3. According to this drawing, the residual water level is to be controlled within 2.8±0.5 mm.

Application & Detection

Install the liquid-level sensor according to one of the typical modes mentioned above, and connect it according to the following circuit; the signal end will output a level signal corresponding to the water level, which is accessed to the MCU A/D port or other control circuits as liquid-level control signal. In case of liquid level above the critical liquid level and submerging the sensor body, the signal output is in low voltage; In case of liquid level below the critical liquid level and exposing the sensor body, the signal output is in high voltage. Specific parameters refer to the following table.

+5V

Red ①

FS-IR22

② Yellow **Signal Output**

Blue ③
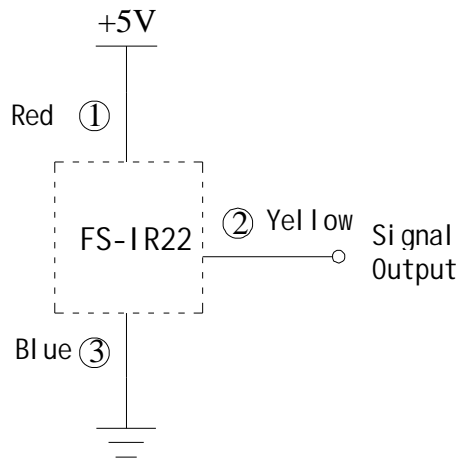
DC 5V application typical circuit

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Working Parameters (Ta=25℃)

Liquid level	Output voltage of signal Output (V)	True value	Total current (mA)	power dissipation (mW)
Above critical liquid level	< 0.1	0	< 12	< 60
Below critical liquid level	> 4.6	1	< 12	< 60

Water Level Detection Function:

In practical application, taking into consideration of the influence of steam and dirt, the liquid level threshold voltage is set as V_T, that is, if the output voltage of signal end is higher than V_T, the liquid level is decided to be lower than the critical liquid level; and if the output voltage of signal end is lower than V_T, the liquid level is decided to be higher than the critical liquid level. V_T is set between 0.25 and 0.5 V, and the specific value is determined by the generation speed of dirt.

Limit Parameters (Ta=25℃)

Parameter	Symbol	Specification
Working temperature	T_{opr}	-25℃-120℃ (Head)
Storage temperature	T_{stg}	-40℃-85℃
Life	T	50,000 h

Packaging Specification

20 sensors for each bag; and 50 bags for each container.