Specification Document

Water leakage detection sensor cable

Flat Type Water Leakage Sensor

AD-FH

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<<<Important safety instructions>>>

⚠Warning

Improper handling of the sensor in non-compliance to any of the following warning precautions or instructions given on a WARNING label can result in death, serious injury, fire, electric shock, and/or sensor failure.

⚠ Warning Precautions

⚠ Strictly Prohibited !

□Never use the sensor as electric cable.

⚠ Confirm !

□The sensor length must not exceed 100 m per circuit.

□Handle the sensor carefully; it will not work if soiled or damaged.

□Take precautions to ensure the sensor does not become wet.

□Before use, be sure to read the precautions on the rear of the sensor case.

⚠ Caution on Installation !

□Do not install the sensor directly on any surface where dew can form.

□Attach the sensor as tightly as possible to the mounting surface. Any unavoidable gap such as on an uneven floor or the like horizontal surface must not exceed 2 mm, and on a pillar, beam or the like vertical surface the gap must not exceed 1 mm.

□To minimize the influence of external electromagnetic induction, the sensor comprises two electrodes twisted in a braid form. However, avoid installing the sensor over a long distance in parallel with a power cable or other electromagnetic induction sources.

□Where the sensor intersects a power cable of 300 V or higher service voltage, surround the sensor completely with an insulating protective barrier, such as plastic molding.

□Install the sensor so that it can be easily replaced. After detection of water leakage, the sensor is reset when the water has evaporated. However, if the sensor absorbs water that contains conductive or water-repellent material, it possibly cannot be reset and needs to be replaced.

□To prevent electrical corrosion of the sensor, be sure to connect it to an alternate-current water leakage detector.

□Do not allow wax or other oil-based material on the sensor; water is repelled from the surface and may not be detected.

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1. Scope of application

The specification document is applicable for the flat type water leakage sensor (AD-FH). It can be used to quickly detect the water leakage.

2. Construction

Fig. 1 and Fig. 2 show the construction of the AD-FH sensor.

Electrode: 0.33 mm^2 tinned annealed copper wire

Inner sheathing: Vinylon

Outer sheathing: Polypropylene

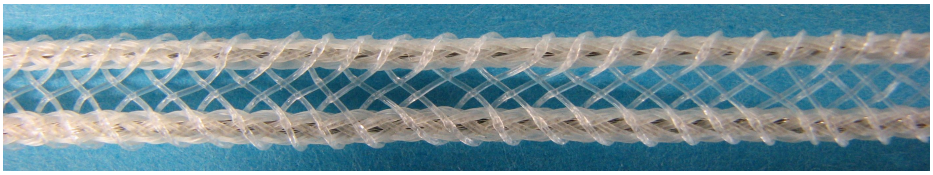

Figure 1: Schematic Diagram of AD -FH Sensor

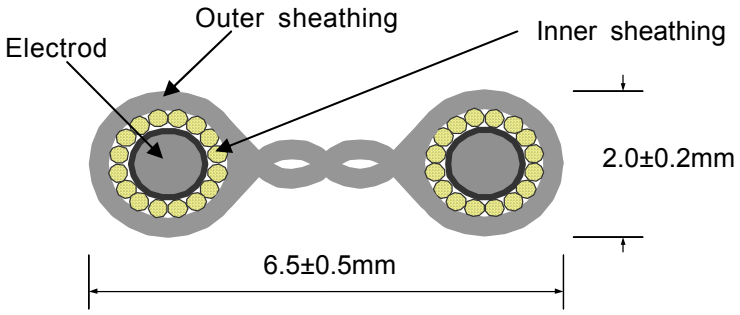

Fig. 2: Cross-section Diagram of the AD-FH Sensor

3. Specifications

The specifications of AD-FH sensor are shown in Table 1.

Table 1

<table>
<tr><th>Item</th><th>Specification</th></tr>
<tr><td>Construction</td><td>Material: Tinned annealed copper stranded wire
Composition: Copper wire 0.18mm in diameter × 13 (0.33 mm^2)</td></tr>
<tr><td>Detection characteristic</td><td>Relation of the moistening length (electrode immersion) of Detector manufactured by the Company with the detection water capacity
Measuring ambient temperature: 24□, humidity: 60％RH
<table>
<tr><th>Conductivity water temperature: 24℃, 200μS/cm [5.0kΩ·cm] Water leakage detection Level setting</th><th>Break detection terminal (20kΩ)</th><th>During water leakage detection, the resistance between the sensor electrodes</th><th>Moistening length of the sensor (electrode immersion)</th><th>Detection water capacity □ Reference</th></tr>
<tr><td rowspan="2">5kΩ</td><td>Connection · without</td><td>5.0kΩ</td><td>70～120mm</td><td>12～23ml</td></tr>
<tr><td>Connection · with</td><td>6.7kΩ</td><td>60～100mm</td><td>7～17ml</td></tr>
<tr><td rowspan="2">8.0kΩ (Recommended)</td><td>Connection · without</td><td>8.0kΩ</td><td>50～80 mm</td><td>4～14ml</td></tr>
<tr><td>Connection · with</td><td>13.3kΩ</td><td>30～60 mm</td><td>2～5 ml</td></tr>
</table>
Testing equipment: Water leakage detector AD-AS-10DRM manufactured by our company.
□ The relationship between wet length (electrode immersion) of the induction sensor and the detection water capacity corresponded to wet length will change according to laying surface status, environment and water quality for the sensor.</td></tr>
<tr><td>Resetting characteristic</td><td>After the water leakage detection, the sensor is reset by natural drying or moisture removal. However, if there are conductive or water-repellent substances in the leaking water, the sensor should be cleaned. According to the state after cleaning, it can be used again.</td></tr>
<tr><td>Resistance between electrodes (AC)</td><td>20 MΩ min. /100m (measuring ambient temperature: 24℃, humidity: 60％RH)</td></tr>
<tr><td>Humidity resistance</td><td>In the high humidity condition, the resistance between electrodes is 100kΩ or above /100m (measuring ambient temperature: 60℃, humidity: 95％RH) provided that there is no moisture condensation.</td></tr>
<tr><td>Heat resistance</td><td>60℃ max. for continuous operation (heat-resistant temperature: 80□)</td></tr>
<tr><td>Weight</td><td>8.5±1.0 g/m</td></tr>
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