Tunnel Water Flooding Monitoring System

Ideal For Traffic Safety

Model: WH-WFD-0N-41

Introduction

Water Level/Flooding Detector, using leading capacitive sensor to detect water surface position, built-in WiiHey™ Bore™ IoT operating system and NB-IoT communication module. If the water reaches the specified position, the system detects a change in the sensor signal, after filtering and analyzing, it will send the message to WiiHey IoT server.

Water Level/Flooding Monitoring system applies to: tap water, domestic water, river water, waste water, weak acid and alkaline water, water treatment chemicals, textile printing and dyeing water, industrial wastewater, etc. Special models can also be used in ultrapure water, reverse osmosis water or distillation.

Main Features

- Non-contact detection, so the water won't damage the electronic parts;
- No mechanical parts, so not afraid of the floating objects to stem the sensor;
- Water-proof, can work in hostile environment;
- Resist tilt, stain, weak acid, and alkali salt;
- Able to work in the influence of magnetic field, metal body, water pressure changes and raid of light, no dead zone;
- With real-time clock function, it can perform periodic self-test reporting;
- Support for setting reporting interval;
- Support to report the battery usage level;
- Support the remote configuration.

TECHNICAL SPECIFICATION

Item		Content
Model No.		WH-WFD-0N-41
Battery	Input voltage range	3.6V DC
	Lowest working voltage	2.8V DC
	Battery capacity	6000mAH
Power consumption	Sleep current	≤ 15 uA
	Maximum power consumption	≤ 2W@ 3.6V
	Duration	1 year (good network, 1 heartbeat per 3 days)
Communication	Mobile Network	NB-IoT
Measurement	Detection cycle	30 seconds to 1 hour can be set
	Battery voltage	Measuring range is 2.8-3.6V, error is ±0.2V
Number of alarms	Configurable	1-10 times or continuous alarm until manual release
Indicator	LED	Inside the device (Represent the status of running or networking)
Appearance and dimensions	DIM.	Sensor: Φ 20X150mm (Diameter*Height) (Cable to sensor 0.5m-4m, can be customized)
	Antenna	Built-in FPC antenna mode
	Material	PC
	Pressure resistance	Within 20kg/cm2
	Assembly	Bolting
Safety	Water-Proof	IP68

ENVIRONMENTAL CONDITIONS

Item	Detailed Parameters
Normal operating temperature (°C)	-40°C ~ 85°C
Storage Temperature (°C)	-45°C ~ 90°C
Relative Humidity	5 % ~ 100%
Atmospheric Pressure kPa	63.0～106.0 (below 4000m altitude)

Safety

Communication response time	< 60s
MTBF	≥ 30,000 hours
Alarm data false positive rate	≤ 0.1%
Alarm data false negative rate	≤ 0.1%
Electromagnetic compatibility	Comply with IEC 61000-4-2, 3, 4, 5
Normal insulation resistance	≥ 100M Ω
Insulation resistance under wet heat	≥ 2M Ω
Leakage current	< 5mA

Appearance

Standard Version

3-Level Version

INSTALLATION

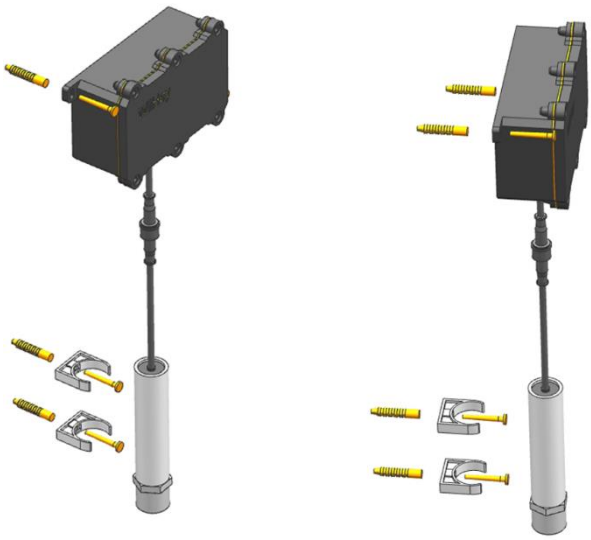
1) Assembly method: The Detector can be installed freely, such as horizontal, vertical, oblique or other irregular and convenient method.
2) Fixed method: The easiest way is to hang the detector from upside.
if it required to be fixed: it supports to use the threaded interface (DN20, ie 4 threaded interface) or used the pipe clamp

*Note: The Detector should not be too close to the wall, keep a certain distance from the wall, to prevent sundries form getting stuck.

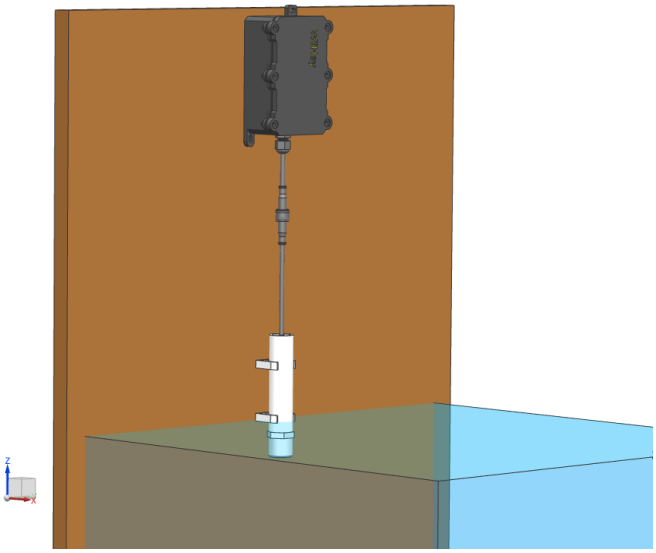
Please refer to the diagram below:

Preparations

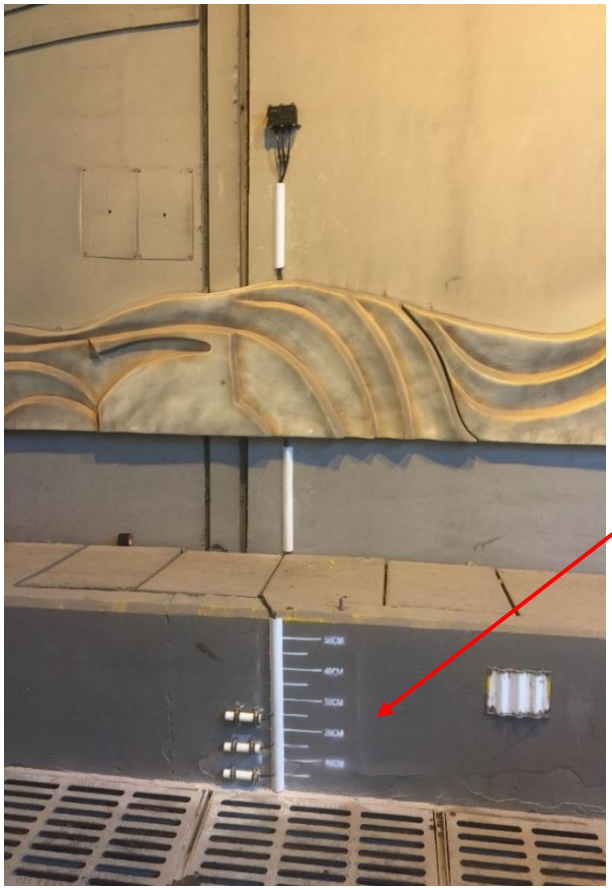
Use existing water pipes to secure with buckles as below:



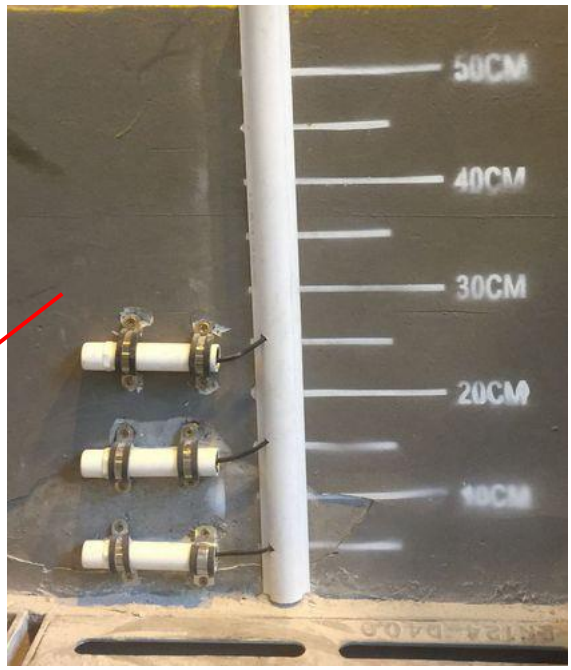
Use the wall pipe clamp directly on the wall as below



On site pictures:



Enlarged View



Integrating with information notice LED display and solar power system