SMARTHUB

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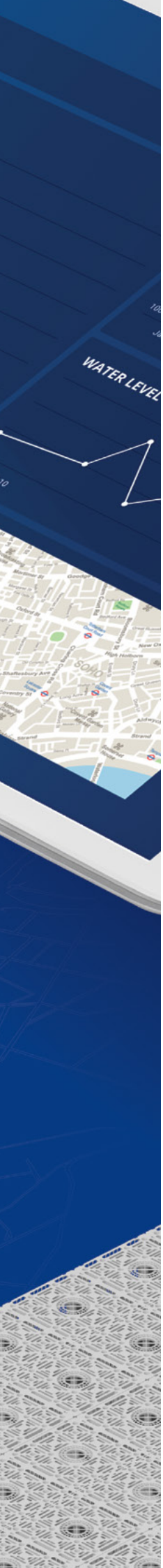
DESIGN, SPECIFICATIONS AND INSTALLATION GUIDELINES

WATER LEVEL MONITORING FOR POTABLE WATER, WASTEWATER AND STORMWATER SYSTEMS

PIPELIFE
always part of your life

ACTIVE
LAST UPDATE
10:45
13.06.2022 10:45:13
WATER LEVEL
1.65 m
13.06.2022 22:10:13
OCCUPIED VOLUME
5.70 m³
13.06.2022 22:10:13
FREE VOLUME
2.10 m³
13.06.2022 22:10:13
VISUALISATION



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WATER LEVEL METER 20021 WITH SIM

APPLICATION AND OPERATION

APPLICATION AREAS

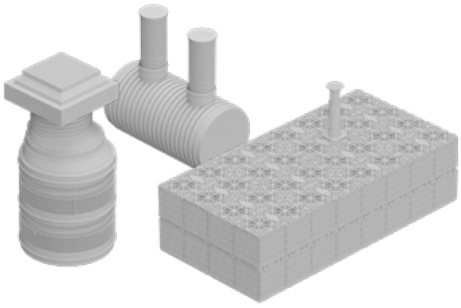
Water tanks

Attenuation and infiltration systems

Pumping stations

Sedimentation tanks

Grease separators



KEY INSIGHTS

Fill level (mm)

Filled capacity (%)

Filled and free volume (m^3)

Ambient temperature (°C)

Distance to water surface

Device angle warnings

Battery status (mV)

Alarms can be customized for each data category.

DEVICE OPERATION AND MANAGEMENT VIA SMARTHUB

SmartHub is a cloud-based data and software platform that provides a user interface for configuring your device, visualizing processes and data, and harnessing operational tools such as reports, alarms, logbooks and archives.

The water level meter measures several parameters at preset intervals and sends the data to SmartHub via the NB-IoT network. Measuring frequency can be changed remotely by choosing from a range of predefined intervals from 2 minutes to 18 hours.

Measurements can also be set to increase in frequency when alarm levels are reached.

PRODUCT OVERVIEW

Included materials		
	Water level meter	The device has an integrated primary lithium battery and SIM Card
	Magnetic attachments	Two magnets fit into the back of the device for attaching to metal surfaces

Additional materials*		
	Hanger	Composed of clear plastic and metal parts (AISI304) (AISI316) (KS)
	Angle iron	Zinced to prevent rusting and enable magnetic attachment

*not included

TECHNICAL SPECIFICATIONS

CONNECTIVITY:	4G Cat M1 & NB-IoT NFC 13.56 MHz
DIMENSIONS:	90 x 90 x 28.5 mm (without magnets) 95 x 95 x 34.5 mm (with magnets)
OPERATING TEMPERATURE:	–25 to +60 °C –40 to +85 °C (with reduced accuracy)
CASING:	Waterproof to IP67 standards
POWER:	1 x 3.6V C primary lithium battery
BATTERY LIFE:	5 years if the device is set to 12 measurement transmissions per day. Battery life varies depending on data transmission frequency.
RADAR SPECIFICATIONS:	Offset distance: from min. 200 mm to max. 8900 mm Maximum measurable distance: 9 m Accuracy: ± 10 mm 10° radar cone arc Multiple object detection Distance and amplitude are unaffected by dirt or rain

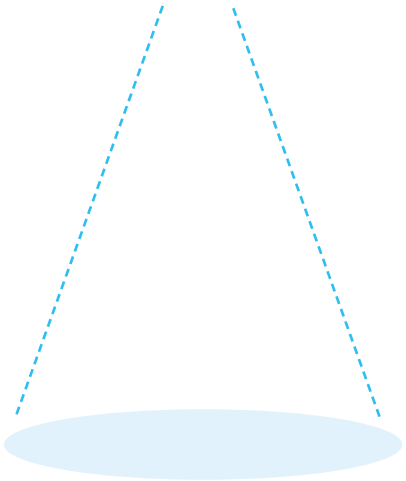
NTC TEMPERATURE SENSOR:

By default, the NTC is installed inside the casing. It can also be fitted on the outside of the casing for faster reactions to changes in outside temperatures.

Range: –40 to +125 °C

Accuracy: ± 1 °C

RADAR BEAM:



Distance (m)	Beam diameter (cm)
1	17
2	35
3	52
4	70
5	87
6	105
7	122
8	140
9	157

CE: 2014/53/EU, 2014/30/EU

Recycle devices according to EU directive (WEEE) (2012/19/EU).

STORAGE AND TRANSPORT:

Store in dry, room temperature conditions to maximize battery life. Deactivate device via SmartHub app in case of air shipment.

INSTALLATION GUIDELINES

This guide will demonstrate how to install the water level meter correctly. Make sure to read all guidelines before installation and choose the correct accessories for your operating site and purpose.

NETWORK

The water level meter can be mounted underground but the signal must be able to reach the network for the device to function. The signal can usually pass through air pockets or small air holes and can be checked remotely.

Please note that fully sealed metal covers without ventilation holes may block the signal. In these cases, external antennas are available.

BATTERIES

The water level meter is powered by exchangeable batteries.

Battery life varies according to measurement and transmission frequency.

Battery life can be maximized with less frequent data transmissions. These can be customized in SmartHub.

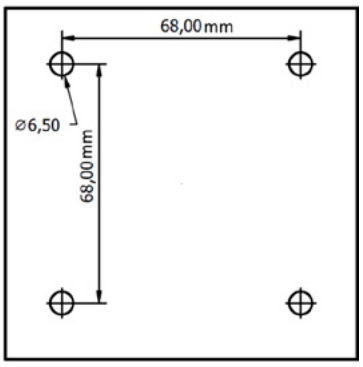
Only use approved batteries:

Primary lithium battery with axial pin connectors, PKCELL 3.6V Model (ER26500M) 6500 mAh.

The device includes an in-built PTC (pressure, temperature, current) protection to prevent battery overheating.

To exchange the batteries: Deactivate the device, remove the magnets, unscrew the 4 bolts and lift the battery cover.

The back cover screws each have a small O-ring seal around them. Make sure not to lose these as they may come loose when removing the screws.

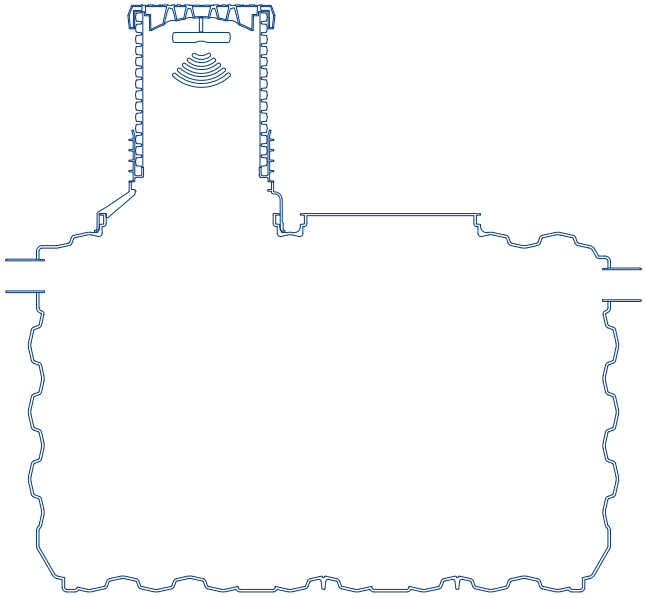


OPTIMAL MEASURING ENVIRONMENT

Radar technology is used to measure the distance to the water level. There must be an unobstructed view between the sensor and the water level for an accurate reading.

Make sure to set the endpoint for the radar range approximately 100 mm longer than the measured distance from sensor to the bottom of the tank or manhole to ensure a strong enough radar echo when the tank is empty.

For challenging mounting sites, we recommend setting the longest-possible offset area to avoid echoes and spikes in the reading. This can be performed in SmartHub.



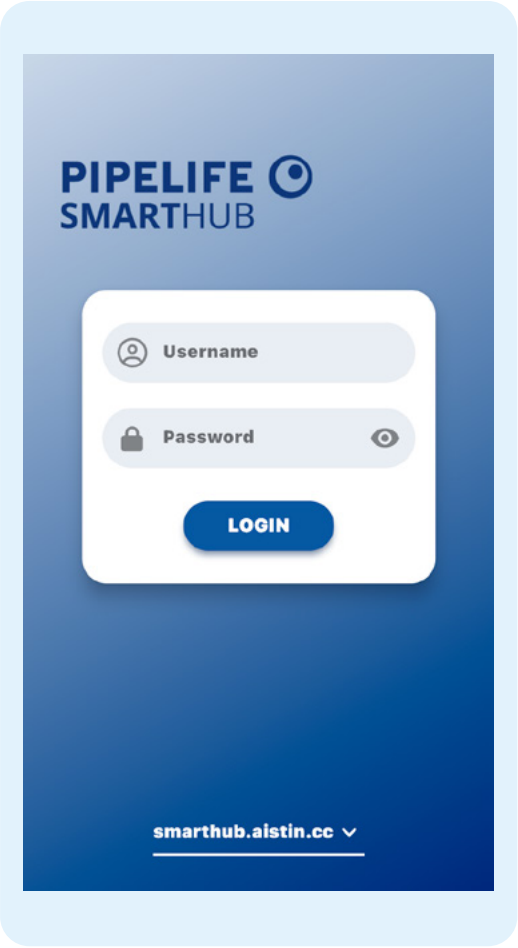
MOUNTING WITH RELEVANT ACCESSORIES

- For accurate readings, mount the water level meter at a horizontal, flat and level position. Mounts with a 0° angle are accurate to +-1 cm. Assembly can be carried out on site.
- Mount with 6 mm bolts.
- Do not completely cover the sensor with a metal mounting plate directly attached to the back of the device as it may block the signal.
- Do not mount the device directly underneath metal covers or lids as this may block the signal. Ensure a minimum distance of 60 mm or more if possible.
- Signal strength can be checked remotely in SmartHub.

ACTIVATION

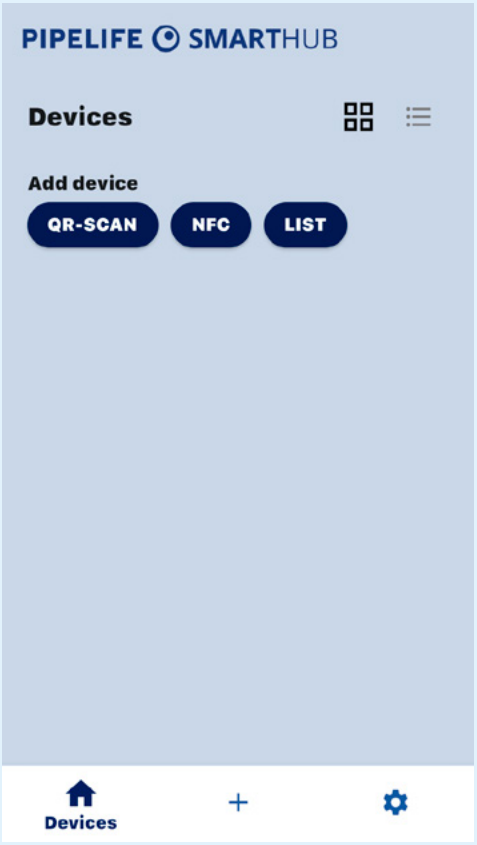
The water level meter requires NFC activation via our SmartHub mobile app before installation. Search for SmartHub App.

1.



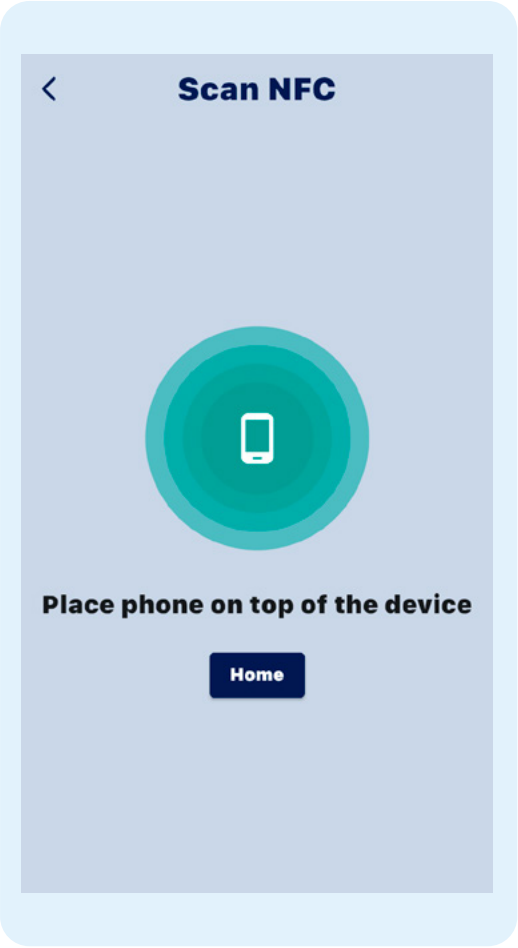
Login to the SmartHub app. Your username and password will be provided by your PIPELIFE contact representative.

2.



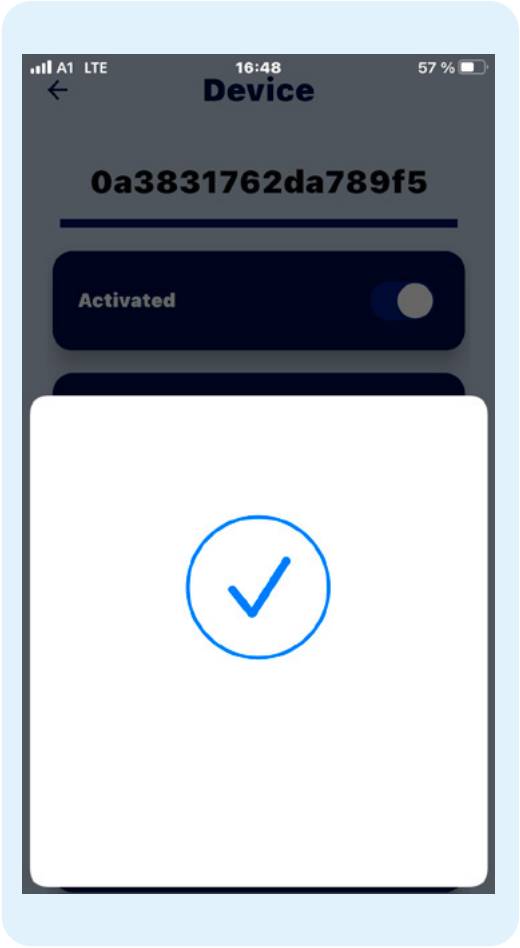
Once logged in, tap NFC.

3.



Place your phone on top of the water level meter to start the activation process.

4.



Your device is now activated.

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