○ 1. Product Description

Aqua-Scope Monitor for LoRaWAN

SKU: AQSLWE02
Version: 2.0.0

LoRaWAN

1. Product Description

The Aqua-Scope water monitor **detects water leaks** and records the total **water consumption** in the house as well as the **pressure and temperature** of the water. The device applies advanced signal processing and analyzes the sound waves, which move in the domestic water distribution pipes when water is taken or there are leaks. Water is a very good conductor of sound. A **single sensor is therefore sufficient, to monitor the whole house** or apartment. However, a pressure reduction valve (PRV) must be installed in the home for proper measurements.In addition, to the sensor other peripheral devices such as valve motors or flood sensors can be associated to extend the functionality of the overall system.

The device consists of two parts:

- Main housing for signal processing and radio communication with battery compartment.

- The external sensor head is connected to the water pipe. The stainless steel sensor head has a silicon sensor mounted in silicone oil for highly accurate and low-noise pressure measurements in a wide operating range. The measuring range for pressure is between 1 and 10 bar. The sensor values are converted into digital values directly in the measuring head to suppress interference from the connection to the main housing. In addition, the temperature of the liquid medium is measured directly at the stainless steel diaphragm and is therefore very precise.

The sensor can send an alarm message if freely definable threshold values are exceeded or not reached. The sensor's polling frequency can be set between 0.1 second and several minutes and defines the battery life. For a measuring interval of 1 second, a battery life of approx. 10 years is calculated.

The device can be powered either by an external power supply with a USB-C adapter or by an optional internal ER26500 battery (Bobbin Cell C). Both the sensor head and the main housing are waterproof, allowing them to be used outdoors or in particularly damp and/or dirty environments.

The device is controlled via LoRaWAN commands and operates as a LoRaWAN Class A/C device. The use of the device requires LoRaWAN network coverage. Otherwise, you need to install and operate your own LoRaWAN gateway.

- Pipe-Check-Sensitivity: < 4ml/h