### OPTIMISE OPERATIONS AND REDUCE WATER LOSS

Digital solutions from AVK Smart Water turn real-time data into measurable efficiency. Insights from key points in the network help free up manpower, enable faster reactions to deviations and support better prioritisation of efforts. In this way, IoT sensors can reduce NRW, lower operational costs and contribute to a more sustainable and efficient water supply.

### DATA BECOMES VALUABLE WHEN USED

Combining data from the distribution network in one system makes it possible to analyse data from critical points in real time. This gives you a full overview of your network and a faster way to find the information you need.

# AVK SMART WATER IOT SENSORS

Battery-operated wireless IoT sensors are game-changing when talking transparent network. AVK Smart Water's sensors are set up with an interface that readies data, and makes it easily integrated into your preferred IT system. That way, data from multiple sources can be combined and create a collective overview of the water network.

Read more about our IoT sensors and choose the ones that accommodate your needs.

# Targeted monitoring for every part of the network

Each VIDI sensor delivers accurate data from its specific application point, supporting a stable and efficient water supply. The product range offers reliable monitoring of valves, hydrants, pressure zones, temperature levels and chambers, helping utilities maintain full operational control.

**1. VIDI Pressure**
Adjusting pressure to consumption will balance out pressure fluctuations, increase the lifetime of pipes and optimise the amount of energy used by pumps.

With VIDI Pressure, you can get an overview of the pressure levels in the distribution network, which makes it easier to discover fluctuations. Due to its battery and communication technology, VIDI Pressure can be installed in chambers, wells or pits, and still transmit data. Installation on pressure reducing valves or at critical end points provides important real-time data for optimising the distribution network.

**2. VIDI Flow**
Making DMA inlet meters remote read can help you continuously monitor the water balance and, in the end, detect leakages faster when combined with the VIDI leakage monitor software module.

With VIDI Flow connected to the pulse output of the flow meter, you will get an overview of the amount of water going into the DMA.

**3. VIDI Temperature**
Water temperature in the distribution network varies depending on different parameters, which makes it necessary to monitor the temperature on an ongoing basis to prevent bacterial pollution.

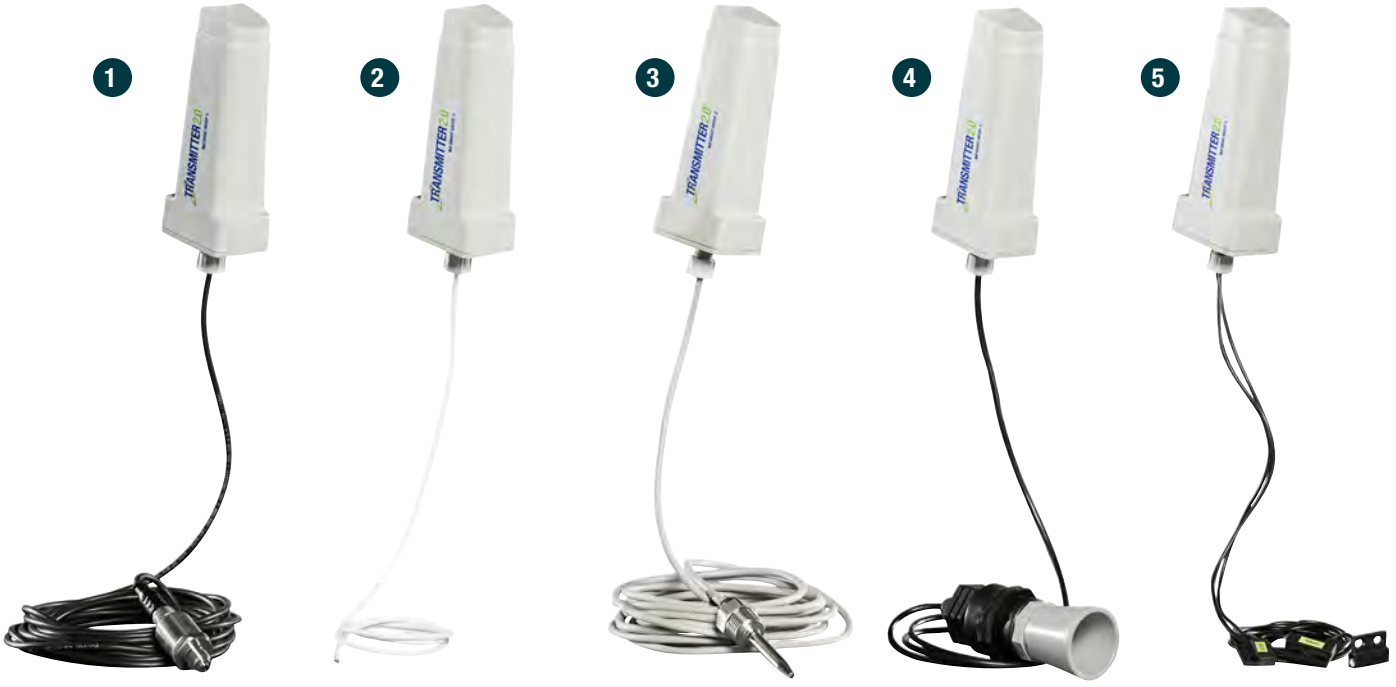
VIDI Temperature measures and transmits the water temperature to help you keep the recommended temperatures to avoid bacteria formation. Due to its flexible design, VIDI Temperature can easily be installed at selected points in the network.

**4. VIDI Level**
Measuring the distance to the nearest surface is important when monitoring chambers.

VIDI Level allows you to measure e.g. water levels without the need for direct contact with the medium. Due to its flexible design, VIDI Level can easily be installed in chambers and warn about flooding with instant notifications.

**5. VIDI Open/Close**
Detecting the open/close status of different assets in the distribution network makes it easy to maintain an overview.

VIDI Open/Close is a flexible solution that can be installed on many different assets and in different applications, where there is a moving and a fixed part. A signal is transmitted every time the asset changes position.



**VIDI Positioner**
Avoid time-consuming tasks such as searching for anomalies caused by a wrongly opened or closed valve. With VIDI Positioner installed, you get continuous monitoring of critical valves, which will increase reliability of flow and pressure measurements in the distribution network.

VIDI Positioner indicates in percentages how much the valve is open, making it easy to detect whether valves are positioned correctly. Due to its battery and communication technology, it is easy to install and can transmit data to any preferred IT system, even from underground installations. This makes VIDI Positioner an excellent choice for boundary valves.

**VIDI Cap**
Monitoring fire hydrants is a great way to detect tampering. With sensors installed on fire hydrants, it becomes easier to distinguish between real water loss or necessary use of water.

VIDI Cap provides valuable insights into the use of hydrants by remotely monitoring any operation of the cap. That way, you will be able to monitor any attempt to tamper with the hydrant, and even get an immediate warning in case of a collision. In addition, monitoring fire hydrants can help to control the risk of contamination.

# SENSOR APPLICATIONS

**Pressure monitoring**
An essential part of pressure management is to monitor the pressure level throughout the network. To be able to rely on these measurements, it is important to verify that valves in the network are either completely open or closed, as a partly closed valve will increase demand from pumps to keep the correct pressure to all customers. It is also important to monitor the use of hydrants as an abnormal water flow will cause a pressure drop in the connected pipes, and thereby at the end-consumers.

By installing pressure sensors throughout the network, utilities can monitor fluctuations and minimise wear and tear on pipes.

**Leakage monitoring**
In efficient leakage detection, it is important to know the position of boundary valves as a wrongly opened or closed valve will interfere with pressure and flow measurements. As a result, it can disrupt the leakage detection system.

By implementing sensors to measure flow and pressure throughout the network, it is easy to set up automatic monitoring of the water balance in each section and detect leakages or bursts.

**Tamper detection**
A major contributor to water loss is theft through hydrants or from temporary outlets. Therefore, it is important to monitor water outlets that are more accessible than others. For example, assets located in solitary places in the network or on development sites.

By installing sensors on high-risk assets in the network, utilities can detect hydrant accidents, vandalism and water theft. With continuous monitoring, it will become easier to separate water loss through fire hydrants from water loss through bursts with data directly from the hydrants.

**Operation insight**
In the daily operation of the distribution network, general insights are important to ensure full functionality of the system. Regular maintenance of hydraulic assets is necessary to ensure that the assets will stay operational and will work as intended in case of an emergency or during repair work.

If a valve is not operated at all, it may get stuck or become difficult to operate, making the repair work difficult and time-consuming, and lead to longer disruptions for the consumers. By installing sensors on selected points in the system, you can gain insights that can be used to reduce down-time.

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