

DIEHL
Metering

2.533 m³/h

176.6 m³



HYDRUS 2.0 BULK

SMART WATER METERING

PRECISE ULTRASONIC METROLOGY &
PERFECT CONNECTIVITY:
THE BEST OF TWO WORLDS

Diehl Metering GmbH,
Nürnberg
Tel +49 911 6424-0
Donaustraße 120
90451 Nürnberg
Germany

diehl.com/metering

**EMPOWER A
SUSTAINABLE
FUTURE**

THE BEST OF TWO WORLDS.

The game changer for water utilities.
The first HYDRUS commercial water meter with the proven ultrasonic technology and integrated smart functions.

FOR METROLOGY AND ...

Measures. Just better.

Anything that cannot be measured cannot be billed accurately. So do not miss a drop. With HYDRUS 2.0 BULK and its advanced ultrasonic measuring technology, you can receive highly accurate water consumption data for billing, optimize water loss management, and reduce non-revenue water.

- Precise ultrasonic measuring technology with two measuring paths
- High measuring dynamic range of up to R 1000
- Minimal starting flow of 15 l/h for DN 50
- High overload flow rate of up to $2 \times Q_4$
- Full range from DN 50 to DN 200 with all common body lengths

Measures. Just longer.

HYDRUS 2.0 BULK is a smart and sustainable investment. Its robust design ensures long-term measurement accuracy, while easy installation and low maintenance keep costs low. With fewer meter replacements needed, you save time and resources over its entire lifetime.

- Long-term measuring stability
- Resistance towards particles
- Ultra-robust and waterproof design (IP 68)
- No calming sections (UOD0) and grounding required
- Less energy consumption of the pumps thanks to pressure loss class of 0.16 bar
- No magnetic manipulation possible
- No measurement of air
- Battery lifetime up to 16 years



... CONNECTIVITY.

Delivers information. Just smarter.

HYDRUS 2.0 BULK provides more than only the total water volume for billing. Its configuration enables you to detect unwanted events, such as leakages, and take timely action.

- Generates billing and metrological information as well as parameters for grid monitoring on-site at the meter or for the overall water network
- Easy-to-read display with new symbols, loops and error & alarm codes
- Extensive data logging functions with hourly, daily, weekly, monthly values and due dates
- Self-check monitoring

Transmits information. Just seamless.

The combination of HYDRUS 2.0 BULK and Diehl Metering's IZAR connectivity solutions makes a powerful system infrastructure that helps you to easily obtain the information of all meters in your distribution network.

- Integrated communication functions for mobile reading and fixed network
- Read-out via mioty® for Metering, OMS, wireless M-Bus, wired M-Bus, L-Bus or Pulse
- High radio range and robustness even for challenging meter installation locations such as pits
- High data granularity and timeliness
- OMS Generation 3 or 4, profile B
- Other IoT technologies possible like LoRaWAN® and NB-IoT – please contact our sales team for more details

Use of the LoRa Alliance® and LoRaWAN® marks is pursuant to license from the LoRa Alliance®.

HYDRUS 2.0 BULK

HIGH IMPACT THROUGH ROBUSTNESS.

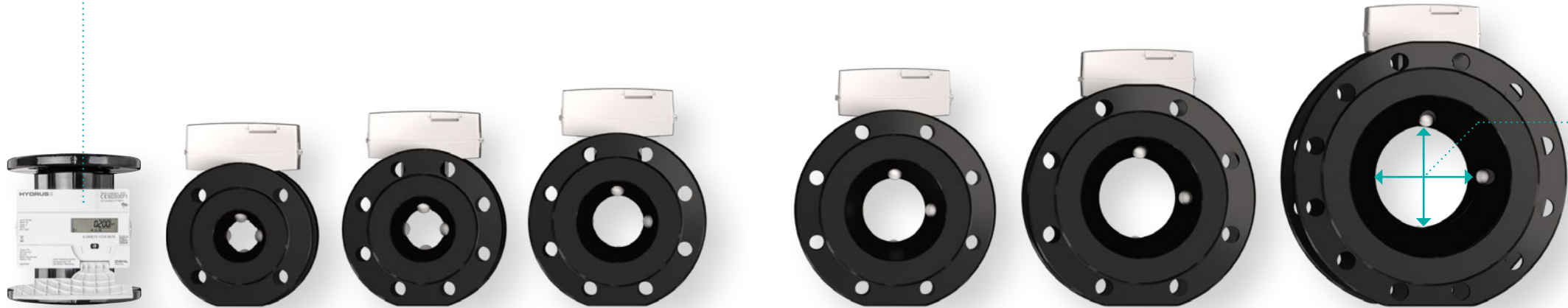
HYDRUS 2.0 BULK combines an ultra-robust build with high measurement accuracy, long-term stability, and easy installation. With its IP68 rating, UV resistance, and M2/E2 certification, it's designed for harsh environments and durable performance. Its free-flow design guarantees no internal obstructions, and installation is simplified with no need for grounding or calming sections (UODO). Backed by our Total Quality Approach and fully in-house manufacturing, HYDRUS 2.0 BULK delivers lasting reliability with every drop.

The approved measuring range up to R1000 allows accurate measurement across a wide range of water flows, effectively reducing non-revenue water. Powered by Diehl Metering's proven ultrasonic technology, HYDRUS 2.0 BULK ensures long-lasting accuracy with minimal need for calibration or replacement.



HYDRUS 2.0 BULK RANGE

HYDRUS 2.0 BULK
DN 50 up to DN 200

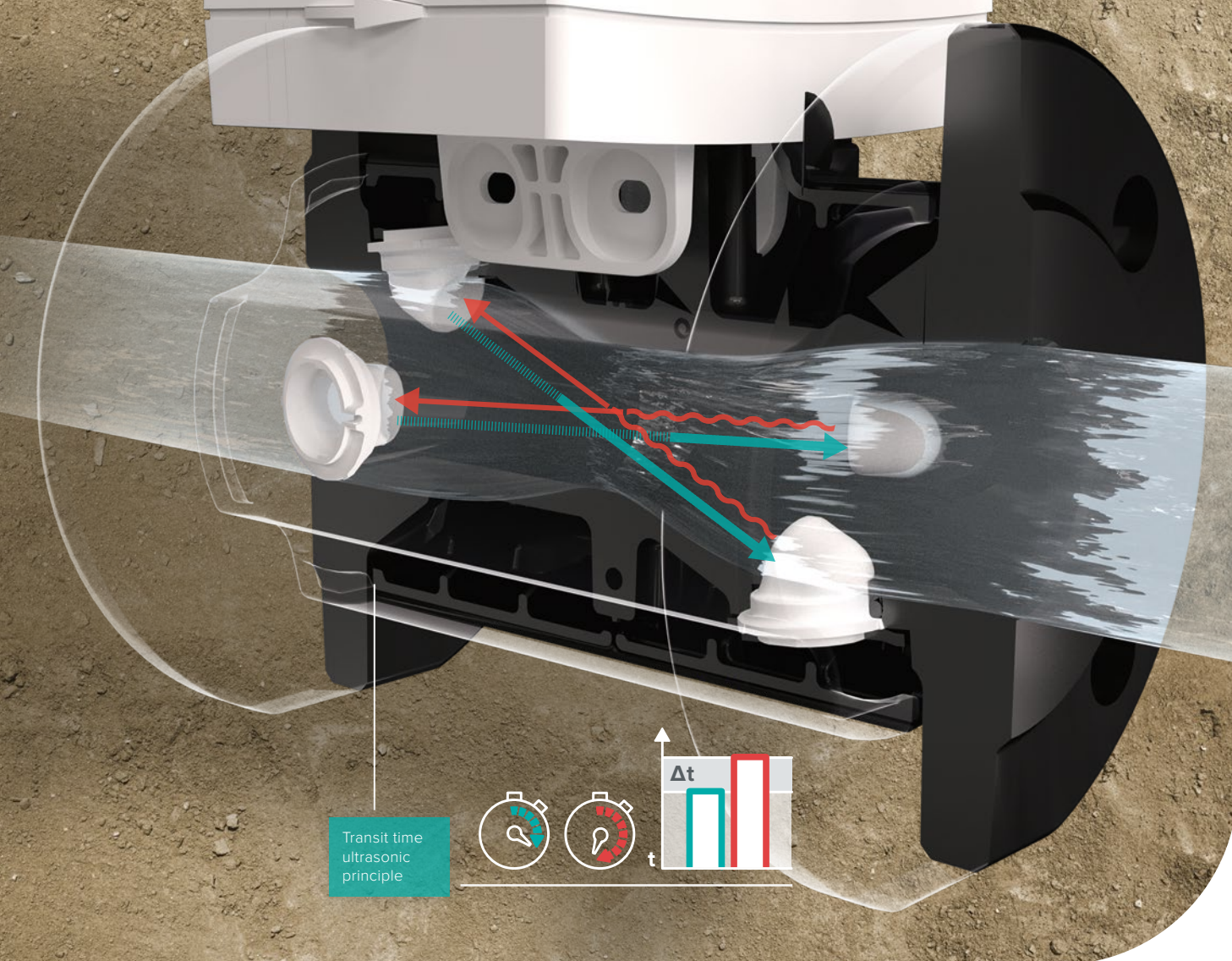


Integrated calculator unit

The meter includes a robust, built-in calculator unit for processing and displaying key metering data.

Free-flow design

The robust design of the HYDRUS 2.0 BULK meter features a free-flow path with no components protruding into the measuring tube.



Transit time
ultrasonic
principle



Ultrasonic technology for ultra performance

HYDRUS 2.0 BULK as the first ultrasonic bulk meter of the HYDRUS series applies its proven Diehl Metering measuring technology based on the transit time difference principle. With its four transducers and therefore two measuring paths in an patented orthogonal set-up, metrological high-performance is assured.

MEASURES. JUST BETTER.

METROLOGY AT ITS BEST

HYDRUS 2.0 BULK – the right bulk meter for extremely low and high water flows with ultrasonic performance and long-term operation.

From supply to consumption – full water network insight

HYDRUS 2.0 BULK is ideal for both accurate billing and monitoring water volumes in main supply lines or specific zones such as district metered areas (DMAs). When combined with HYDRUS domestic meters, it enables complete visibility of the water network – from supply to consumption – supporting precise water balancing and efficient water loss detection.

MEASURING DYNAMIC

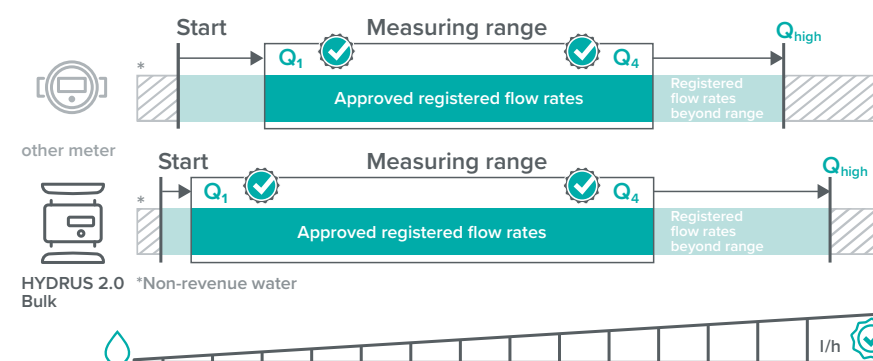
- Approved measuring range of up to R 1000
- A wide range of water flows used in practice can be covered

STARTING + OVERLOAD FLOW RATE

- Registers very low and high flow rates
- High overload flow rate up to $2 \times Q_4$
- Lowest approved minimum flow rate of 25 l/h for DN 50

MEASURING ACCURACY

- Less deviations at all measured water flows
- The typical measurement deviation meets Accuracy Class I standards ($\pm 1\%$ error margin)



Your benefit

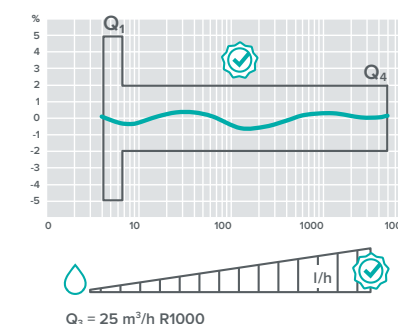
Only what is measured can be billed accurately. The higher the measuring range, the lower the level of non-revenue water.

Your benefit

Every flow rate encountered in real-world operation is accurately recorded.

Your benefit

No matter the consumption profile, the meter's accuracy ensures minimal deviations and leads to more precise billing.



$Q_3 = 25 \text{ m}^3/\text{h R1000}$



Long-term measuring operation and accuracy

HYDRUS 2.0 BULK features a circular, free-flow cross-section with no internal parts or edges where particles carried by the water can cause blockages or wear. Its patented orthogonal arrangement of the measuring path ensures precise averaging of flow velocity, even in distorted or irregular flow profiles.

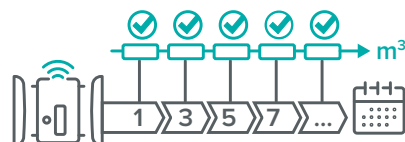


MEASURES. JUST LONGER.

MEASURING STABILITY

The accuracy of traditional mechanical meters can decrease over time due to wear and lead to unreliable measurements.

- HYDRUS 2.0 BULK ensures precise and reliable measuring results throughout its entire lifetime.
- Strong battery life of up to 16 years (depending on meter configuration).
- Measures only water, eliminating air detection errors.



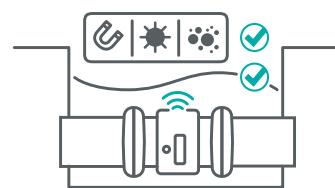
Your benefit

Long-term measurement accuracy ensures reliable consumption data for billing and monitoring, while reducing non-revenue water.

ROBUSTNESS

HYDRUS 2.0 BULK performs even under extreme environmental conditions. It is resistant towards:

- Particles such as sand in the pipe
- Pressure surges
- Vibrations
- Magnetic manipulation
- UV radiation
- Flooding



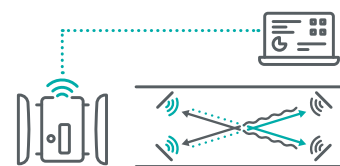
Your benefit

Robust design and long-term smooth operation extends the meter lifetime, saving you costs and effort of replacing meters.

FREE-FLOW DESIGN

Ultrasonic meters use advanced electronic and acoustic technology for precise measurement.

- No moving parts like impellers or turbines
- Self-cleaning transducers prevent buildup and ensure long-term accuracy
- Self-monitoring capabilities automatically detect and alert users to leaks, anomalies, or malfunctions



Your benefit

A maintenance-free meter with smart, self-sustaining technology that minimizes the need for manual inspections.

OUR SOLUTIONS PERFORM – PROVEN SUCCESS IN THE MIDDLE EAST

Transforming Water Networks in the Middle East with HYDRUS BULK

Diehl Metering has enhanced the performance of major water distribution networks across the Middle East by deploying over 5000 HYDRUS BULK ultrasonic meters (DN 50 to DN 200). These installations have helped utilities achieve fully automated network monitoring and management, ensure accurate billing, and significantly reduce water losses.

HYDRUS BULK meters continue to deliver reliable performance in some of the Middle East's harshest environments, where extreme heat and challenging conditions demand exceptional durability and precision.



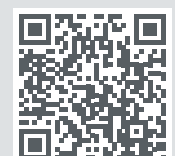
MILLIONS OF PEOPLE

rely on the water networks managed by our customers.



5000+ BULK METERS

supplied to the Middle East.



INTERESTED?
READ MORE

CONNECTIVITY AT ITS BEST

Digitized processes and valuable information about your distribution network, enabled by optimized connectivity functions.

Connectivity for digitized processes

HYDRUS 2.0 BULK meters support major communication protocols in the metering sector, including mioty® for Metering, LoRaWAN®, wireless M-Bus, wired M-Bus and L-Bus. Diehl Metering's multiconnectivity solutions enable utilities to efficiently collect, transmit, and analyze data for a wide range of applications—including billing, water network monitoring, and water loss management. Our software platform turns this data into actionable insights, helping to detect anomalies in the water distribution network. It also provides real-time alerts and detailed consumption history for households, supporting faster response and smarter decision-making.

Unlock diverse use cases

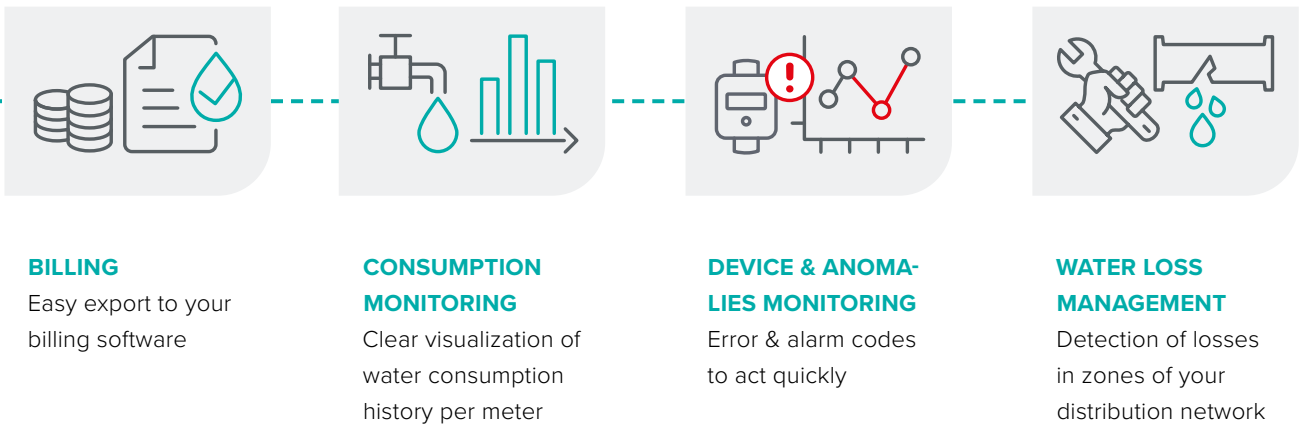
- **Water distribution network monitoring** – Reliably record metering data and receive alerts for events like reverse flow, leaks, bursts, and zero usage.
- **Water consumption billing** – Automatically collect highly granular consumption data. A single meter type covers all applications, from detecting very low-start flows to measuring high-volume usage, including firefighting applications.
- **Water loss management & NRW reduction** – Identify and locate water losses by comparing data from HYDRUS 2.0 BULK meters installed at District Metered Areas (DMAs) and HYDRUS 2.0 Domestic meters at the household level.



IZAR PROVIDES YOU WITH ...



VALUABLE INFORMATION FOR YOUR USE CASES





Smart functions for a complete view

HYDRUS 2.0 BULK provides you a considerable amount and variety of valuable information you would miss without this smart device installed. Not only does it save the due date consumption volume for billing, with also metrological information and other parameters generated permanently along its operation, it creates a water consumption history and informs about possible anomalies of the water

network on-site. Leakage or reverse flow alerts could give a hint that the water supply grid has a defect.

Network losses can be easily determined by aligning the recorded volumes from the District Metering Area (DMA) meters with those from individual billing meters. This comparison helps quickly pinpoint discrepancies -such as leaks or unauthorized usage – so that corrective actions can be taken promptly

01	+ 24 1503.23 m ³	Total volume
02	17.03.2041	Battery lifetime
04	+ 49.899 m ³ /h	Current flow
05	E-----05	Error/Alarm
09	8.174 m ³	Reverse volume

DELIVERS INFORMATION. JUST SMARTER.

SMART INFORMATION

Billing & metrological information

- Total volume
- Due date volume
- Current & reverse flow volume
- Temperature (ambient/medium)

Error & alarm codes

For grid anomalies on-site, e.g.

- Leakages
- Air in the pipe
- Reverse flow

For device status, e.g.

- Low battery
- Measurement interferences



DISPLAY

Easy to read on-site with the electronic display.

- Customizable display
- Switching loops for more information
- Helpful symbols, e.g. leakage or low battery



Your benefit

Obtain the consumption volume on the due date for billing and information about water grid or meter anomalies to reduce or avoid severe damages.

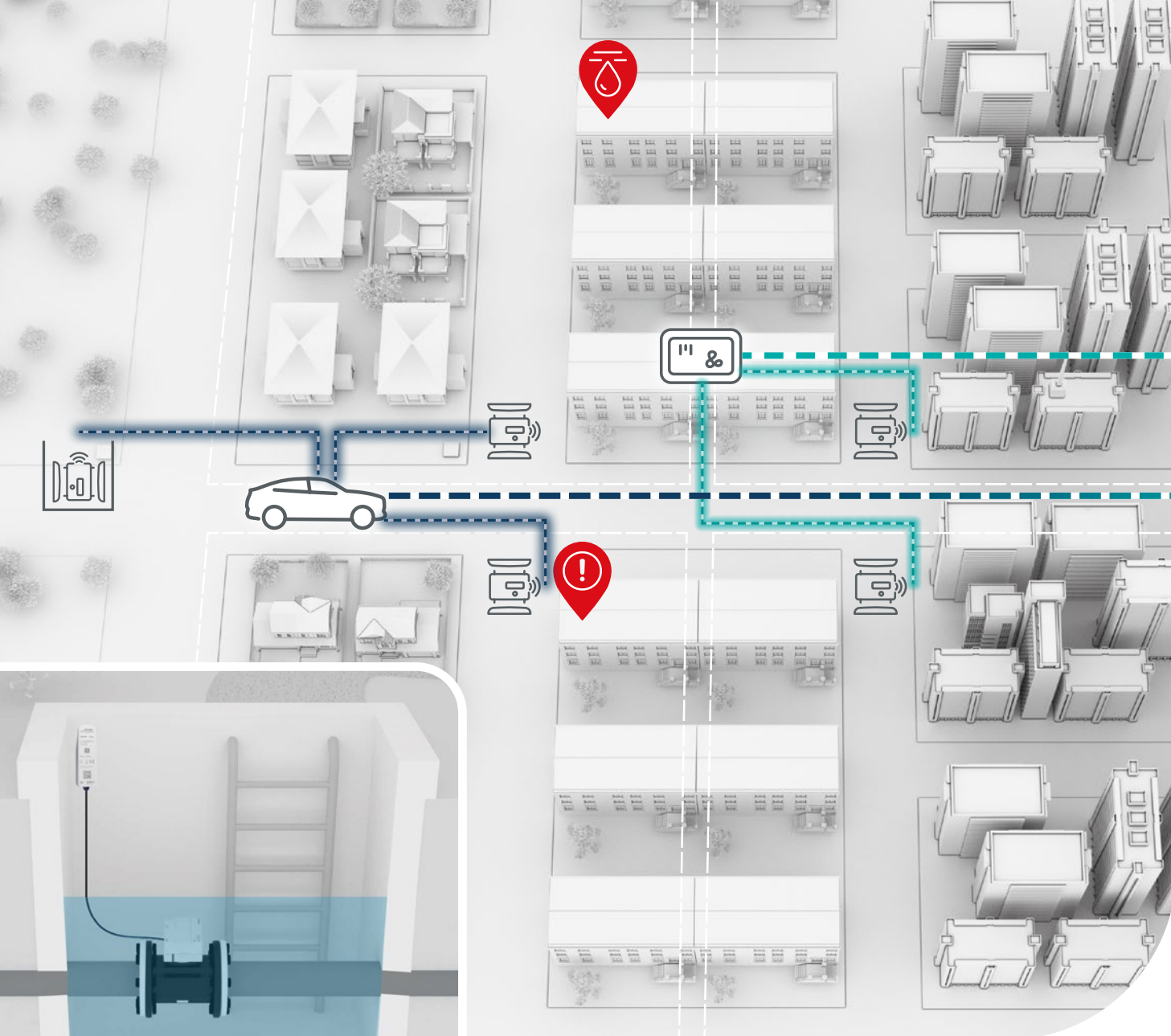
DATA LOGGING

- Data logging memory capability with hourly, daily, weekly, monthly values and due dates
- Stores measuring values, errors and alarms
- Logging can be read-out with an optical head on-site



Your benefit

In case of anomalies, you will get more transparency about what happened by tracking down past information to rectify the problem on-site.



Connectivity for analysis

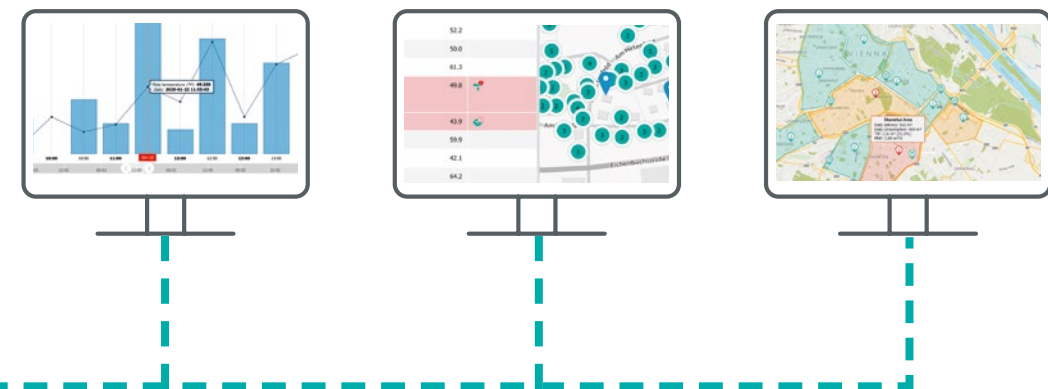
Imagine the possibilities with the aggregation of all smart HYDRUS 2.0 and HYDRUS 2.0 BULK meters in a fully automatic system infrastructure. A fixed network solution not only reads all meters at once, it also provides you with information about your entire distribution network. The highly granular (up to hourly) consumption history and other metrological information is visualized in the IZAR software which supports you in analyzing water supply and usage. You receive alerts about device status or leaks in zones or houses in real time, thanks to the high data timeliness. Make smart and fast decisions to reduce costs and non-revenue water. Save resources and optimize your water network to make a decisive contribution to sustainability.

- Secured investment

HYDRUS 2.0 BULK meters come with a 5-meter signal cable and an L-Bus interface. External radio modules can be easily connected at flood-prone measuring points without additional configuration. Additionally, modems for future LPWAN technologies can be connected via the L-Bus, ensuring that you can fully maximize the HYDRUS 2.0 BULK's technical service life.

HYDRUS 2.0 BULK offers a battery lifetime of up to 16 years

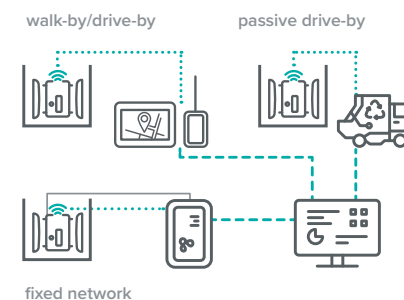
- Reading technology
- Climatic environment
- Interferences by other radio networks



TRANSMITS INFORMATION. JUST SEAMLESS.

MOBILE READING AND FIXED NETWORK

- OMS, Wireless M-Bus for walk-by/drive-by and passive drive-by
- mioty® for Metering for fixed network
- Wired M-Bus, L-Bus or Pulse for traditional systems
- Other IoT technologies possible like LoRaWAN® and NB-IoT

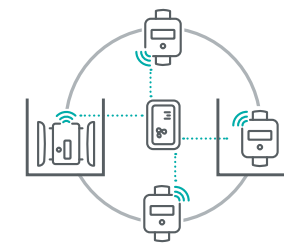


Your benefit

Have efficiencies in the way you get values and obtain information to take actions in your distribution network. Choose the best communication technology for your needs.

RADIO PERFORMANCE

- Integrated radio communication
- Drive-by reading up to 50 km/h
- Uses mioty® for Metering as a fixed network solution for smart metering and smart city applications.
- Meters read using the drive-by method can be migrated to mioty® for Metering networks without any configuration effort
- High data granularity and timeliness
- Configurable telegram content



Your benefit

Reliable coverage for large areas with less receivers to lower the total cost of ownership for your system infrastructure.

DATA SECURITY & PRIVACY

- High level data security with individual keys for each meter
- Role concept to give the right person the right access key



Your benefit

Your customers appreciate a safe data flow and their privacy.



INTERESTED?

LET'S TALK
ABOUT **YOUR**
CHALLENGES!