

DIEHL
Metering

17,212 m³

3.6 m³/h

19 °C



HYDRUS 2.0

DOMESTIC SMART WATER METERING

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

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**EMPOWER A
SUSTAINABLE
FUTURE**

THE BEST OF TWO WORLDS.

HYDRUS 2.0 sets new standards in water metering with a brand new design and optimized features.

FOR METROLOGY AND ...

Measures. Just better.

Everything that cannot be measured will not be billed. So do not miss a drop. With HYDRUS 2.0 and its enhanced measuring performance, you can provide your customers even more accurate consumption values for billing and decrease non-revenue water.

- Precise ultrasonic measuring technology
- Extended measuring dynamic range of up to R 800
- Minimal starting flow of 1.4 l/h for DN 15
- High overload flow rate of up to 2x Q₄
- Full range from DN 15 to DN 50 with all common body lengths

Measures. Just longer.

HYDRUS 2.0 is a sustainable investment. This quality product ensures endurance and durability over its entire lifetime. Benefit from exact measuring results for a long time and save costs for meter exchanges.

- Long-term measuring stability
- Resistance towards particles
- Ultra-robust and waterproof design (IP 68)
- No calming sections (UOD0) and grounding required
- Lead-free brass or composite body
- No magnetic manipulation possible
- No measurement of air
- Battery lifetime up to 16 years



... CONNECTIVITY.

Generates information. Just smarter.

HYDRUS 2.0 provides more than only the total water volume for billing. Its smartness creates valuable information about unwanted events which need quick measures, e.g. leakages inside the building.

- 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, e.g. regarding transducers, temperature sensor functionality, occurrence of measurement interferences

Transmits information. Just more efficient.

The combination of HYDRUS 2.0 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®4OMS, mioty® for Metering, LoRaWAN®, OMS, wireless M-Bus, wired M-Bus, L-Bus or Pulse
- High radio range and robustness even for challenging meter installation locations
- High data granularity and timeliness
- High level data security
- Other IoT technologies possible like 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

EXCELLENCE
THROUGH PRECISION.

HYDRUS 2.0 is a static ultrasonic water meter designed for all applications of domestic cold water supply enabling accurate measuring under difficult conditions. The domestic meter with its approved measuring range up to R800 allows you to measure a wide range of water flows, effectively reducing non-revenue water. Diehl Metering's proven ultrasonic measurement technology also sets new standards in water metering, with high accuracy and stability over a long service life. This minimizes the need for frequent calibration or replacement.

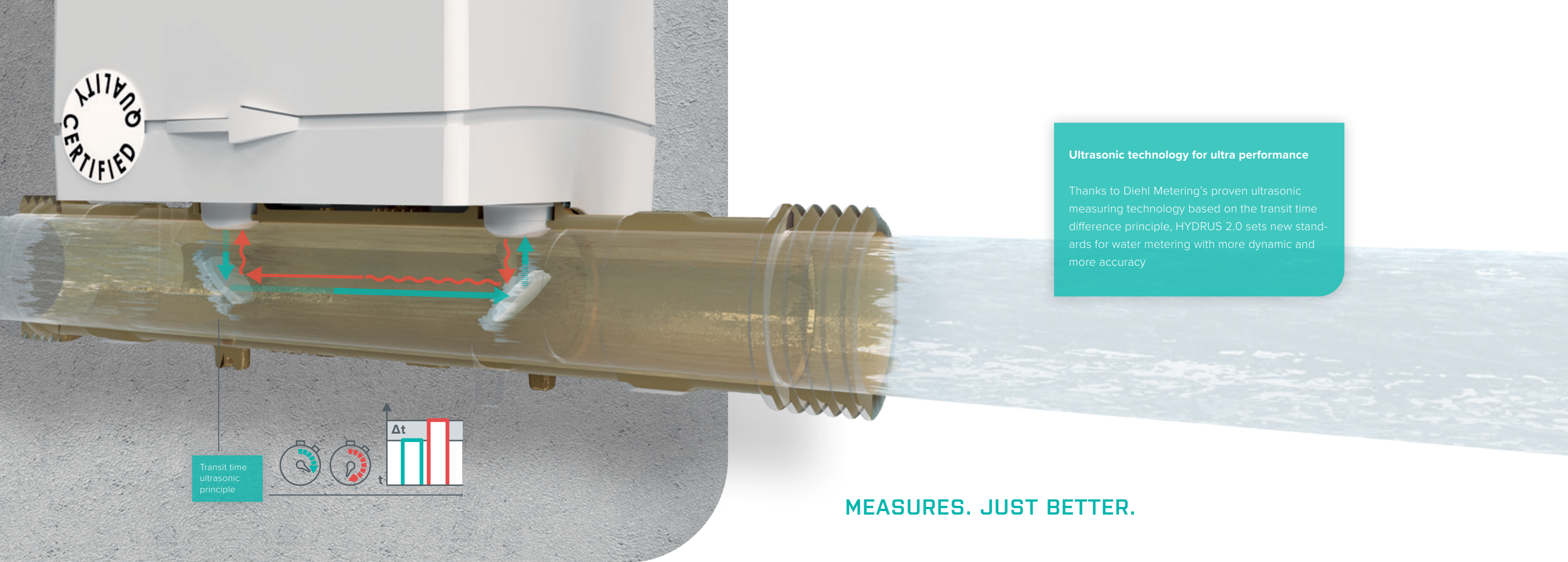


Eco-design with composite materials

The development of the new HYDRUS 2.0 composite version is eco-designed to reduce the environmental impact of the meter at all stages of its life cycle. Most importantly, composite is lighter than brass. This has enabled us to minimize the carbon footprint and reduce transportation costs. The eco-design is characterized by a reduction in material and energy consumption, as well as a weight reduction of the meter (depending on the variant) of up to 33%.

HYDRUS 2.0 RANGE

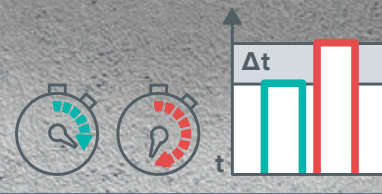




Ultrasonic technology for ultra performance

Thanks to Diehl Metering's proven ultrasonic measuring technology based on the transit time difference principle, HYDRUS 2.0 sets new standards for water metering with more dynamic and more accuracy

Transit time ultrasonic principle



METROLOGY AT ITS BEST

HYDRUS 2.0 – enhanced meter technology with optimized ultrasonic performance and long-term operation.

From the smallest detail to the big picture – you keep an eye on everything

HYDRUS 2.0 water meters can be used for billing or for water consumption monitoring in stand-alone houses, high-rise buildings as well as apartments (depending on applicable pipe and meter sizes). In combination with HYDRUS 2.0 BULK meters you can record the supply and consumption of your entire water network. This is helpful for the water balance or the detection of water losses.

MEASURING DYNAMICS

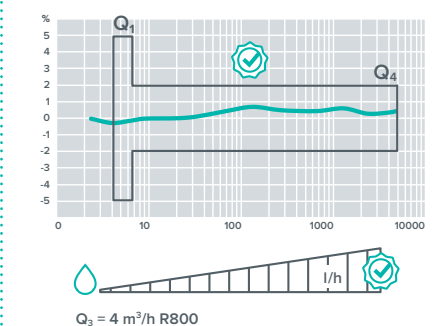
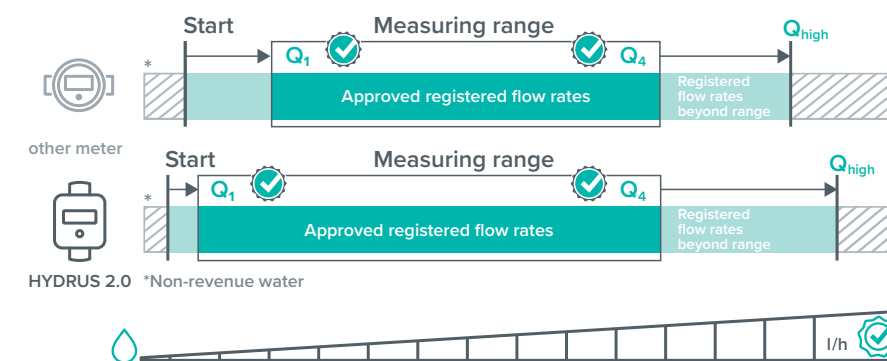
- Approved measuring range of up to R 800
- A wide range of water flows used in practice can be covered

STARTING + OVERLOAD FLOW RATE

- Registers very low and high flow rates
- High overload flow rate up to $2 \times Q_4$
- Minimal starting flow of 1.4 l/h for DN 15

MEASURING ACCURACY

- Less deviations at all measured water flows
- More accurate results
- Repeatability and reproducibility tests prove the precision



Your benefit

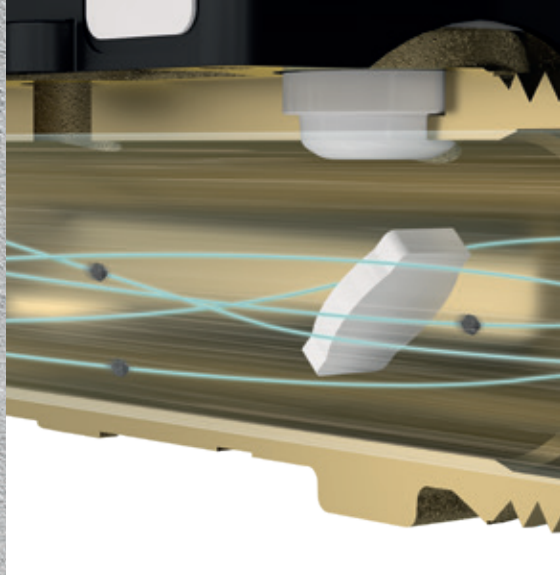
The higher the dynamics, the lower the level of non-revenue water.

Your benefit

Whether the flow rate is very low or extremely high – every registered flow reduces non-revenue water.

Your benefit

Regardless of the consumption profile – accuracy ensures fewer deviations and leads to more precise billing.



Long-term measuring operation and accuracy

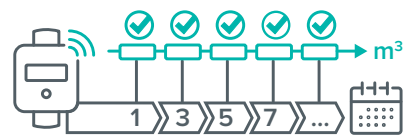
The static free-flow principle of HYDRUS 2.0 without any moving parts guarantees an unaffected measurement. Even better – the flow-dynamic design of the ultrasonic reflectors ensures their permanent self-cleaning through efficient circulation of water flow around reflectors. The meter complies with protection class IP 68, it is robust, water and dust proof. With all these features, HYDRUS 2.0 maintains its measuring function with accurate results over a long period of time.

MEASURES. JUST LONGER.

MEASURING STABILITY

The measuring accuracy of typical mechanical meters can decrease over time due to increasing wear.

- HYDRUS 2.0 assures precise measuring results during the entire meter lifetime
- Strong battery that lasts for up to 16 years (depending on meter configuration)



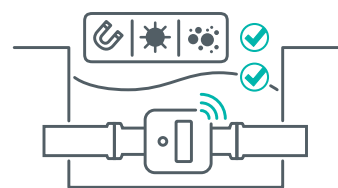
Your benefit

Permanent measuring accuracy over the entire meter lifetime guarantees reliable results and reduces non-revenue water.

ROBUSTNESS

HYDRUS 2.0 performs even under extreme environmental conditions. It is made of robust lead-free brass or composite and is resistant to:

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



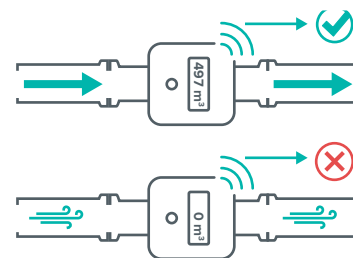
Your benefit

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

MEASURING VALIDITY

HYDRUS 2.0 guarantees always reliable measuring values.

- Measures the volume precisely
- Only water will be registered, not air



Your benefit

The validity of the consumption values for billing is ensured.



OUR SOLUTIONS PERFORM. CUSTOMER CASE

 **1.5 MIO PEOPLE**

rely on the water network of EWA.

Transforming Bahrain's water network with HYDRUS meters

Diehl Metering revolutionized Bahrain's water supply for 1.5 million residents by integrating HYDRUS meters into the Electricity and Water Authority (EWA) system. With 257,000 meters installed, EWA has automated billing and minimized water losses. The solution, featuring IZAR RDC receivers and IZAR@NET software, provides continuous monitoring and data analysis, ensuring high accuracy and enhanced customer satisfaction.

 **257,000 METERS**

supplied to Bahrain.



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

The integrated communication function of HYDRUS 2.0 enables the gathering of data (e.g. for billing) via AMR*/AMI** meter read-outs. This makes HYDRUS 2.0 the smart key component of the complete connectivity solution which – together with the IZAR system and software – eliminates effortful and time-consuming meter reading processes.

*AMR - Automated Meter Reading
**AMI - Advanced Metering Infrastructure

Unlock diverse use cases

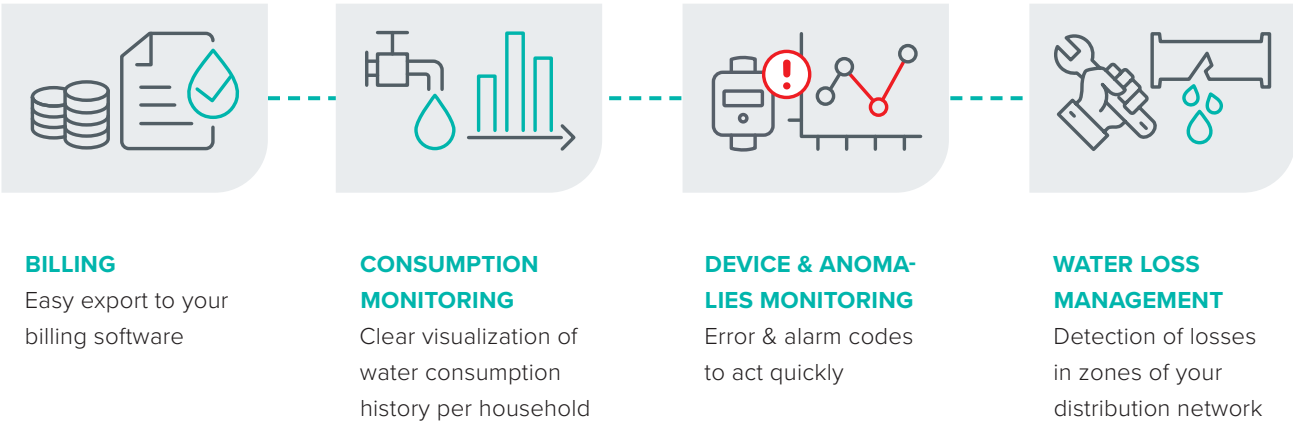
HYDRUS 2.0 meters support all major communication protocols in the metering sector, including OMS, mioty®4OMS, mioty® for Metering, LoRaWAN®, wireless M-Bus, wired M-Bus, L-Bus, and Pulse. With Diehl Metering's multiconnectivity solutions, utilities can efficiently generate, transmit, and analyze data for various use cases such as leak detection in distribution networks, efficient meter reading, and tracking water consumption. Our software platform visualizes, analyzes, and transforms collected data into actionable insights, enabling the monitoring of anomalies in water distribution networks and providing real-time alerts and consumption history analysis for households.



IZAR PROVIDES YOU WITH ...



VALUABLE INFORMATION FOR YOUR USE CASES





Smart functions for a complete overview

HYDRUS 2.0 provides you with a wealth of valuable information. It records consumption volumes for billing purposes, measurement data, and other parameters that are continuously generated during operation. It also creates a water consumption history and provides information on possible anomalies in the household's water network.

Leakage or reverse flow alerts could give a hint that the grid at the consumer's needs to be checked. Thanks to the continuous self-monitoring function of HYDRUS 2.0, error and warning codes are immediately generated if something is wrong with the device. This allows you to avoid prolonged malfunctions by acting quickly.

01	+	1766 m ³	Total volume
02		17.03.2041	Battery lifetime
04	+	2533 m ³ /h	Current flow
05		E-----05	Error/Alarm
09		0433 m ³	Reverse volume

GENERATES 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 new display design.

- 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.

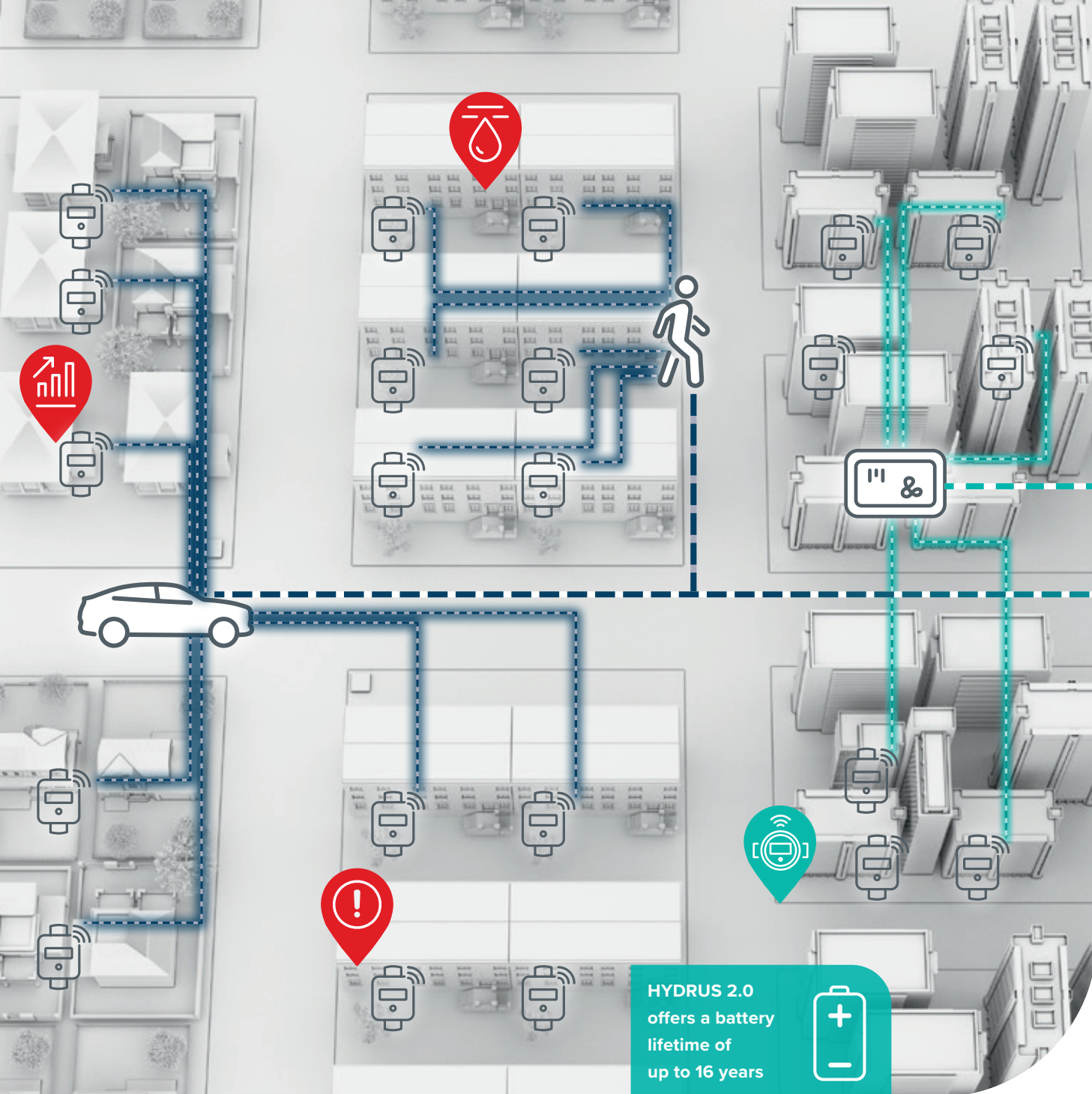
DATA LOGGING

- 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

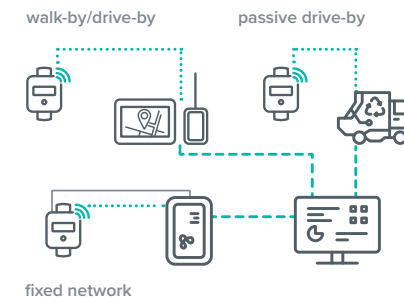
Imagine the possibilities with the aggregation of all smart HYDRUS 2.0 and HYDRUS 2.0 BULK meters in a fully automatic system infrastructure. A fixed network solution not only reads all meters at once, it also provides you with information about your entire distribution network. The highly granular (up 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.

TRANSMITS INFORMATION. JUST MORE EFFICIENT.

MOBILE READING AND FIXED NETWORK

- OMS, Wireless M-Bus for walk-by/drive-by and passive drive-by
- mioty®4OMS, mioty® for Metering or LoRaWAN® for fixed network
- M-Bus, L-Bus or Pulse for traditional systems
- Other IoT technologies possible like NB-IoT

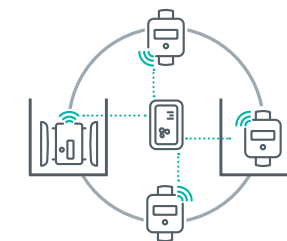


Your benefit

Efficient way to get values and information to take action in your distribution network. Choose the best communication technology for your needs.

RADIO PERFORMANCE

- Integrated radio communication
- Drive-by up to 50 km/h
- Uses mioty®4OMS as a fixed network solution for smart metering and smart city applications.
- For reaching meters in challenging installation situations like pits or other hard-to-read locations
- 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!