



SHARKY SERIES

COMPACT ULTRASONIC THERMAL ENERGY METERS

Flexible. Efficient. Durable.

OUR VISION

Empower a sustainable future

Global trends have an increasing effect on our planet. Across the planet, heating and cooling account for half of all our energy use, generating 40% of global CO₂ emissions. Today, decarbonizing buildings and industry has become one of the world's most pressing challenges.

At Diehl Metering we believe in our duty to help building a better world. We take on this responsibility by designing, developing, and producing smart solutions that reduce energy consumption and manage natural resources more efficiently. We empower and innovate for a sustainable future.



HOW WE MAKE A DIFFERENCE

CUSTOMER FOCUS. SUSTAINABILITY. STATE-OF-THE-ART TECHNOLOGY.

You're at the center – The value we bring you over the long term

We empower our customers to take control of their infrastructures, bringing greater efficiency, sustainability and responsibility to the way they manage water and energy. You receive a suitable solution for your specific requirement. Our passion for innovation supports your empowerment and creates added value for your enterprise. Therefore, every Diehl Metering employee considers themselves a 'solution provider' for you, our customers.

Long-lasting, high quality, future-proof, sustainable

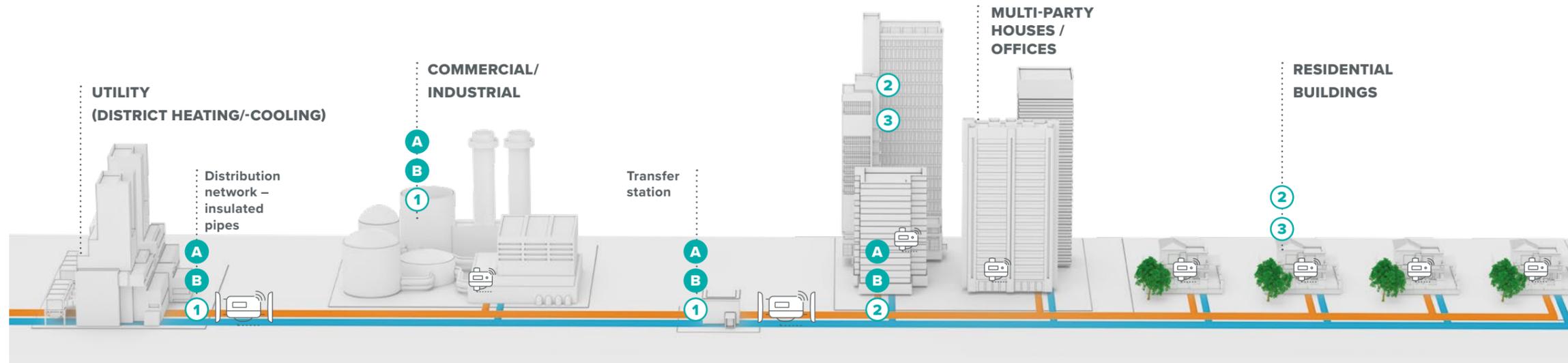
Our production follows the principles of sustainability. In 2021 we signed the United Nations Global Compact, the initiative for sustainable and responsible management. SHARKY energy meters contribute to more sustainability themselves: SHARKY 775 is durable, with replaceable batteries, and external power units can be integrated. SHARKY 775 is particularly flexible thanks to its modular communication concept: You can add or replace communication modules and be ready for future use cases.

State-of-the-art technology for optimized billing and energy efficiency

The SHARKY series offers you the right thermal energy meter for every application, with high-precision ultrasonic technology for long-term accuracy and stability. The meters meet current requirements such as the European Energy Efficiency Directive (EED). Thanks to the combination of precise measuring and innovative communication technology, meter data are transmitted reliably and securely – for correct billing and network optimization.

SHARKY

THE SMART ORIGINAL



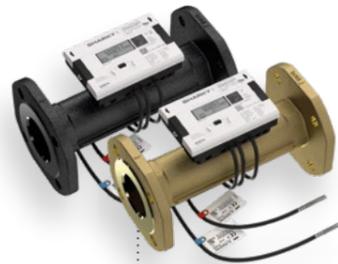
FOR EACH APPLICATION THE RIGHT THERMAL ENERGY METER

SHARKY RANGE



SHARKY 775:
DN 80-100
 Q_p 40-100 m³/h

1



SHARKY 775:
DN 65
 Q_p 25 m³/h

1



SHARKY 775:
DN 50
 Q_p 15 m³/h

1



SHARKY 775:
DN 25-40
 Q_p 3.5-10 m³/h

2



SHARKY 775:
DN 15-20
 Q_p 0.6-2.5 m³/h

2



SHARKY 774:
DN 15-20
 Q_p 0.6-2.5 m³/h

3

SPLIT DEVICES



SCYLAR INT 8
energy calculator

A



SHARKY FS 473
flow sensor
DN 15-100
 Q_p 0.6-100 m³/h

B

OUR SOLUTIONS PERFORM. A CUSTOMER SUCCESS STORY.

Interoperability, automated readings, customer satisfaction

Izmir Jeothermal operates one of the largest geothermal district heating networks worldwide. In 2011, its network comprised heat meters of different brands, each using their own radio system which made automatic meter readings impossible. Manual data collection, though, was time-consuming, labor-intensive and prone to billing errors. In the same year, the utility ordered 2,500 units of SHARKY 775 from our Turkish partner, Madernji, to enable remote data reading for the first time. Today Izmir Jeothermal relies exclusively on us: Over 30,000 SHARKY heat meters are installed and data collection is done via walk-by solution (AMR)*, leading to reliable monthly billing, satisfied customers and an efficient network through optimized flow rates and leak detection.

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

CHALLENGES

- ▶ Difficult monthly billing
- ▶ No advanced analyses possible
- ▶ Low meter reliability

SOLUTION

- ▶ SHARKY 775 thermal energy meter
- ▶ Drive-by solution (AMR)*; planned for the future: fixed network (AMI)**

BENEFITS

- ▶ Interoperability
- ▶ Robust & reliable: performance to highest standards even over 10 years after installation
- ▶ Network optimization thanks to richer data and regular monitoring



IZMIR
GEOTHERMAL
DISTRICT
HEATING

ONE OF THE LARGEST
NETWORKS IN THE WORLD



> 30,000
SHARKY 775 THERMAL
ENERGY METERS

PROVIDE LONG-TERM RELIABILITY
EVEN IN HARSH CONDITIONS

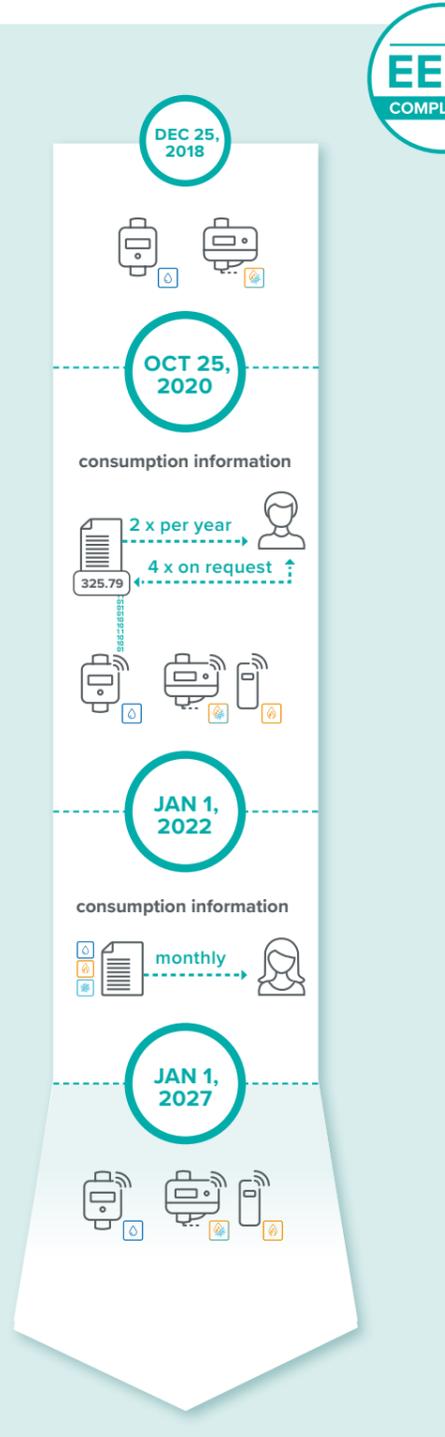


MONTHLY BILLING
AND INSIGHTFUL
ANALYSES

DUE TO COMMUNICATING METERS AND
IZAR DATA-ANALYTICS PLATFORM

MARKET DRIVERS

THERMAL ENERGY METERS



EU ENERGY EFFICIENCY DIRECTIVE (EED)

In DEC 2018, the EED introduced new requirements for the real estate industry and district heating and cooling providers. To increase savings potential in energy consumption, since OCT 25, 2020, remotely readable measuring devices became mandatory for new installations. In addition, consumers must be informed about their consumption data at least twice a year, on request four times a year. As of JAN 1, 2022, consumers with remotely readable hot water and energy meters as well as heat cost allocators must receive monthly updated consumption information if technically feasible. And by JAN 1, 2027, all installed measuring devices must be remotely readable. With our communicating SHARKY thermal energy meters combined with our end consumer app you meet the EED's requirements.

Across Europe, regulations like Germany's FFVAV (Fernwärme- oder Fernkälte- Verbrauchserfassungs- und -Abrechnungsverordnung) mandate remotely readable meters for district heating/cooling. Metering devices installed after OCT 5, 2021 must be remotely readable. Metering devices installed before OCT 5, 2021, that are not remotely readable must be retrofitted with the remote readability function or replaced with remotely readable meters by 31 December 2026.



DISTRICT COOLING

District cooling becomes increasingly relevant because the demand for clean cooling is growing worldwide. Air condition and electric fans account for nearly 20% of the total electricity used in buildings around the world today. Without taking action, e.g., switching to district cooling for more energy efficiency, the energy demand for space cooling will more than triple by 2050. Metering solutions are important for the success of district cooling systems.

Not only do they enable more accurate billing but they also help to optimize energy consumption and minimize production costs.

Diehl Metering's SHARKY ultrasonic cooling meters meet strict regulatory standards. SHARKY meters are approved according to national cooling approvals that ensures accuracy and durability of the meter in challenging environmental conditions like humidity and electromagnetic radiation.

INTEGRATED COMMUNICATION
for readout of metrological information as well as error and alarm alerts. M-Bus or wM-Bus Radio (OMS version 4, profile B).

STATE-OF-THE-ART ULTRASONIC METROLOGY
for a failure-free operation with stable measuring accuracy over the entire service life.

EXCHANGEABLE TEMPERATURE SENSORS
for maximum flexibility

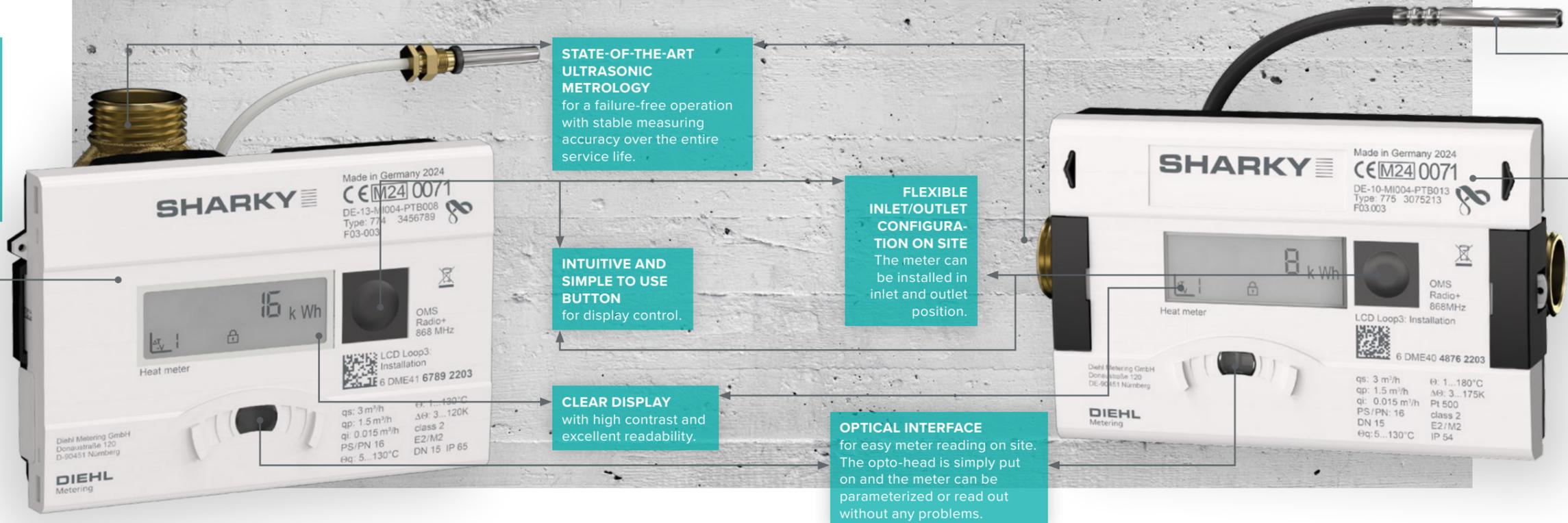
CONNECTIVITY AT ITS BEST
Integrated wM-Bus Radio (OMS version 4, profile B) + two additional slots allow customers to easily integrate further connectivity modules such as mioty®4OMS, M-Bus, LoRaWAN® or NB-IoT.

FLEXIBLE INLET/OUTLET CONFIGURATION ON SITE
The meter can be installed in inlet and outlet position.

INTUITIVE AND SIMPLE TO USE BUTTON
for display control.

OPTICAL INTERFACE
for easy meter reading on site. The opto-head is simply put on and the meter can be parameterized or read out without any problems.

CLEAR DISPLAY
with high contrast and excellent readability.



KEY FEATURES

SHARKY 774

PERFECT FOR SUBMETERING

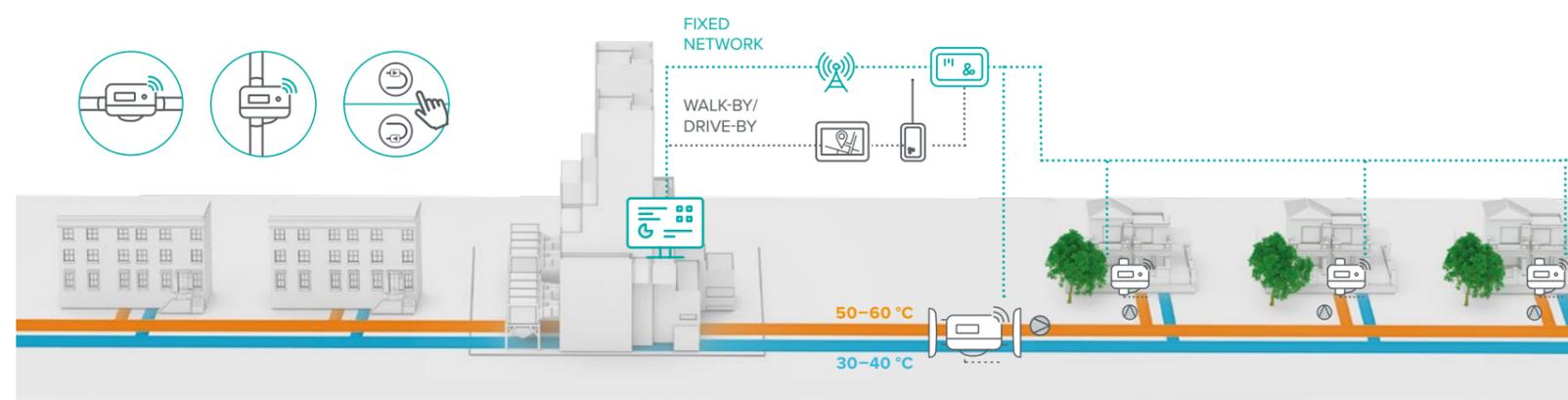
SHARKY 774 Compact is ideal for individual consumption metering in apartments but also suitable for main metering applications. Its compact design guarantees easy installation even where space is limited. And: The meter can be individually configured on site for inlet and outlet installation position via the front button. This facilitates planning and reduces storage costs. The precise heating and cooling volume measurement with ultrasonic technology and a high dynamic range ensures accurate consumption-based billing. The integrated communication capability simplifies the meter reading process: Billing values can be received easily and promptly via mobile or fixed network solutions.

	Approval	Sizes	Flow range	Exchangeable temperature sensor	Temperature range heating	Temperature range cooling	Temperature range heating & cooling	Connectivity	Battery lifetime
SHARKY 774	MID (EN 1434)	DN 15 – DN 20	qp 0.6 ... 2.5 m³/h	No	5 ... 105/130 °C	2 ... 50 °C	5 ... 105 °C	M-Bus or radio (OMS Generation 4, Profile B)	Up to 11 years (not exchangeable)
SHARKY 775	MID (EN 1434)	DN 15 – DN 100	qp 0.6 ... 100 m³/h	Yes	5 ... 130/150 °C	2 ... 50 °C	5 ... 105 °C	OMS Generation 4, Profile B + 2 Slots	Up to 11/16 years (A-/D-cell) (exchangeable)

SHARKY 775

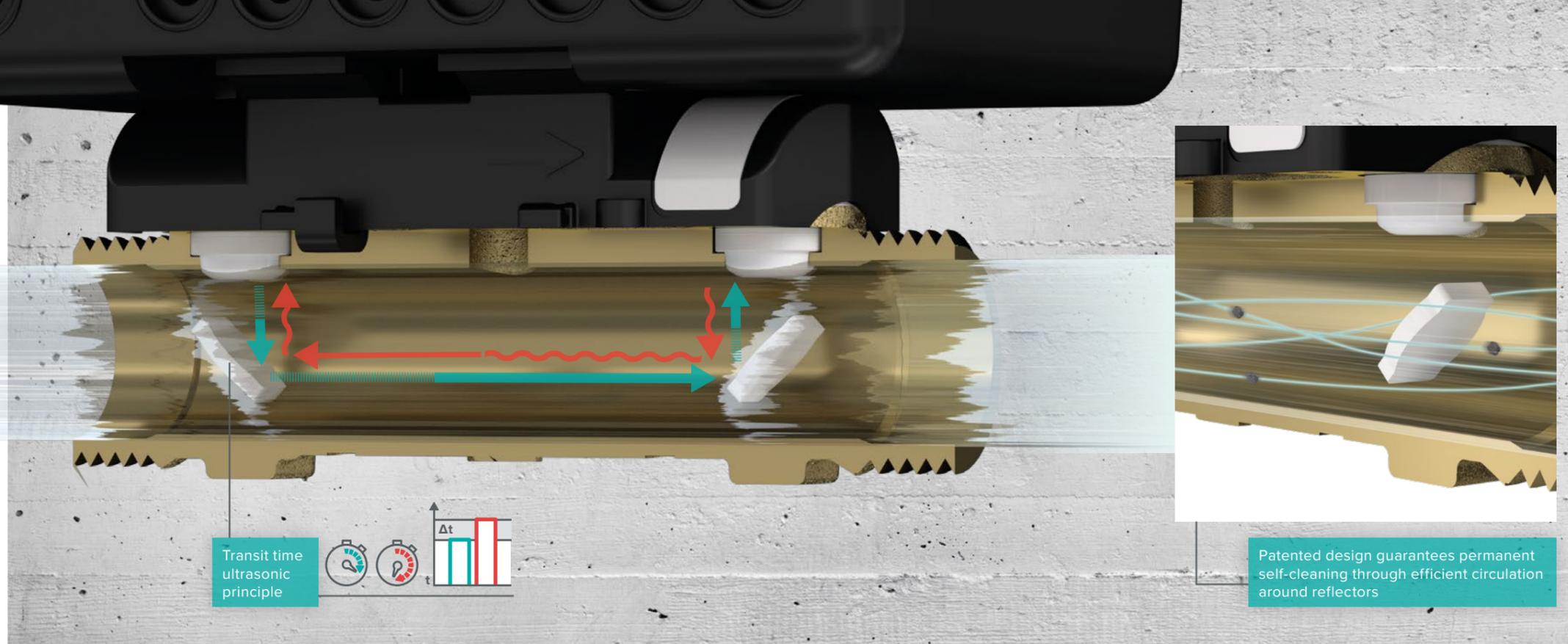
FOR ADVANCED ANALYSES

A true all-rounder: SHARKY 775 meets all requirements of district as well as local heating, cooling, main and submetering. A wealth of accurate data is provided continuously: forward and return temperatures, flow rates, energy consumption and alarms. The integrated radio communication based on the state-of-the-art security standard OMS Generation 4, Mode 7, Security Profile B enables interoperability with other systems, meters and sensors. Two additional slots are available for the integration of further connectivity modules such as M-/L-Bus, LoRaWAN® or NB-IoT, so that SHARKY 775 is future proof and can be used for additional communication technologies as needed.



ULTRA- PRECISE METROLOGY

LONG-TERM STABILITY.
PRECISE, NO MATTER WHAT.



Transit time ultrasonic principle

Patented design guarantees permanent self-cleaning through efficient circulation around reflectors

ULTRASONIC ACCURACY

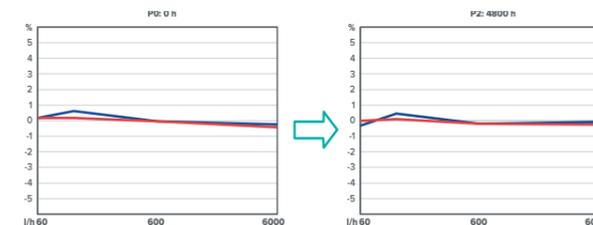
All SHARKY energy meters are based on high-precision ultrasonic technology. They measure the flow using bidirectional ultrasonic pulses based on the time-of-flight method and with proven long-term accuracy and stability. A unique free-flow principle without any moving parts excludes interfering signals and minimizes measuring errors: Only water is measured; air in the pipes is reliably detected and an alarm will be generated. SHARKY energy meters are manufactured and tested according to the latest European standard for thermal energy meters, EN 1434:2022.

AGFW

The independent AGFW regularly conducts heat meter tests in which the SHARKY 775 energy meter regularly receives top marks for its measurement quality.

MEASURES. JUST MORE ACCURATE.

MEASURING ACCURACY

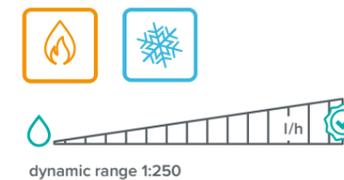


- ▶ Less deviations at all measured flows
- ▶ Stress tests within AGFW (German Energy Efficiency Association for District Heating) heat meter tests demonstrated that the SHARKY maintained excellent measurement accuracy even after 4,800 hours of operation showing that our meter enables long-term measuring stability for many years.

Your benefits

Precise billing and reliable data for network optimization.

MEASURING DYNAMICS



- ▶ Accurate at the lowest and highest flow rates
- ▶ Approval for ultrasonic meter with dynamic range up to 1:250 (qi:qp) in class 2 (according to size), standard 1:100

Your benefits

Only what is measured can be billed. Reduce costs and non-revenue heat.

MEASURES. JUST MORE STABLE.

MEASURING STABILITY



- ▶ No loss of measuring accuracy over time due to increasing wear and tear
- ▶ Long-term stable measurement and resistance to particles thanks to the static free-flow principle without moving parts

Your benefits

Constant measuring performance over the meters' lifetime. Always reliable results.

MEASURING VALIDITY



- ▶ Intelligent self-monitoring: SHARKY automatically signals air in the pipe, incorrect installation or swapped temperature sensors
- ▶ SHARKY guarantees always reliable measuring values.

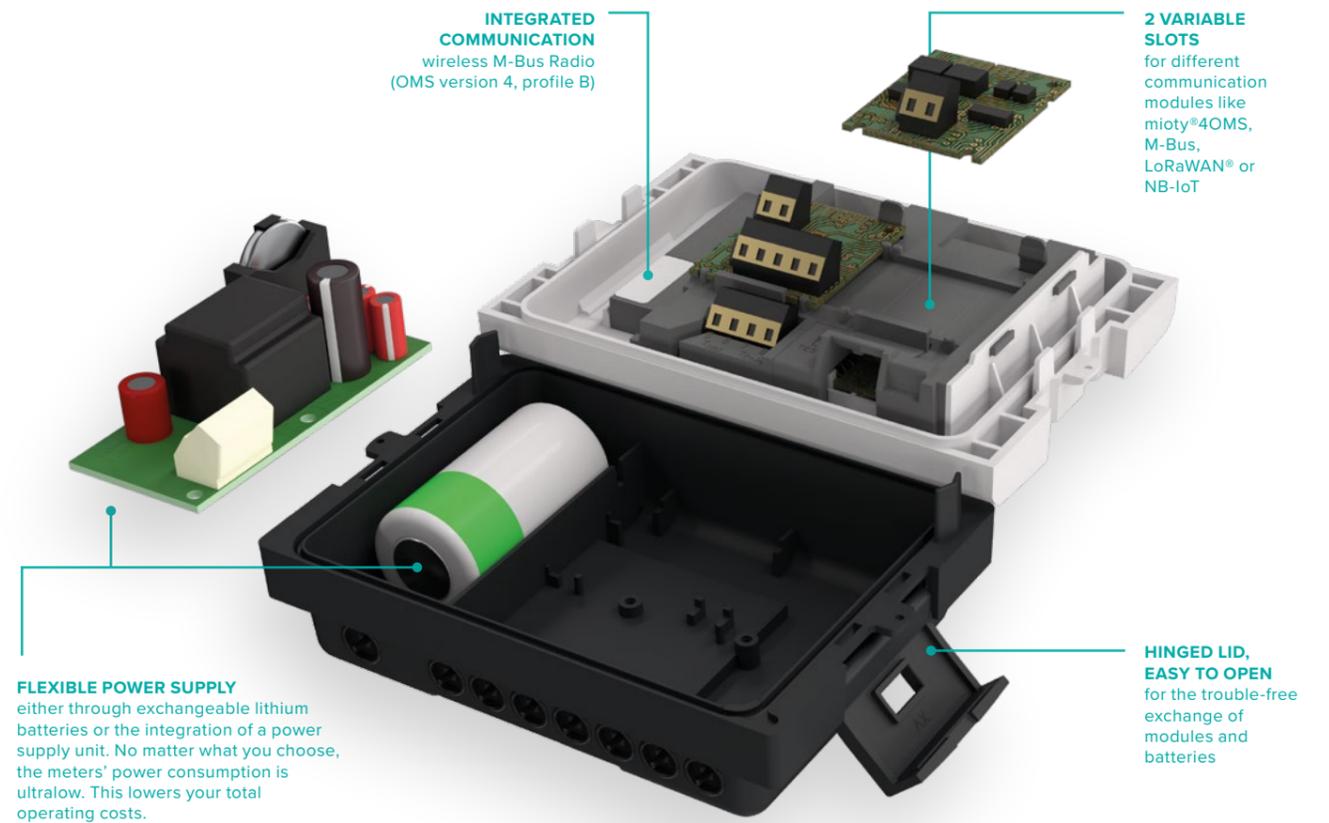
Your benefits

Ensured accuracy of meter data for billing and network optimization.



MODULAR CONNECTIVITY

READY FOR YOUR DATA DRIVEN BUSINESS

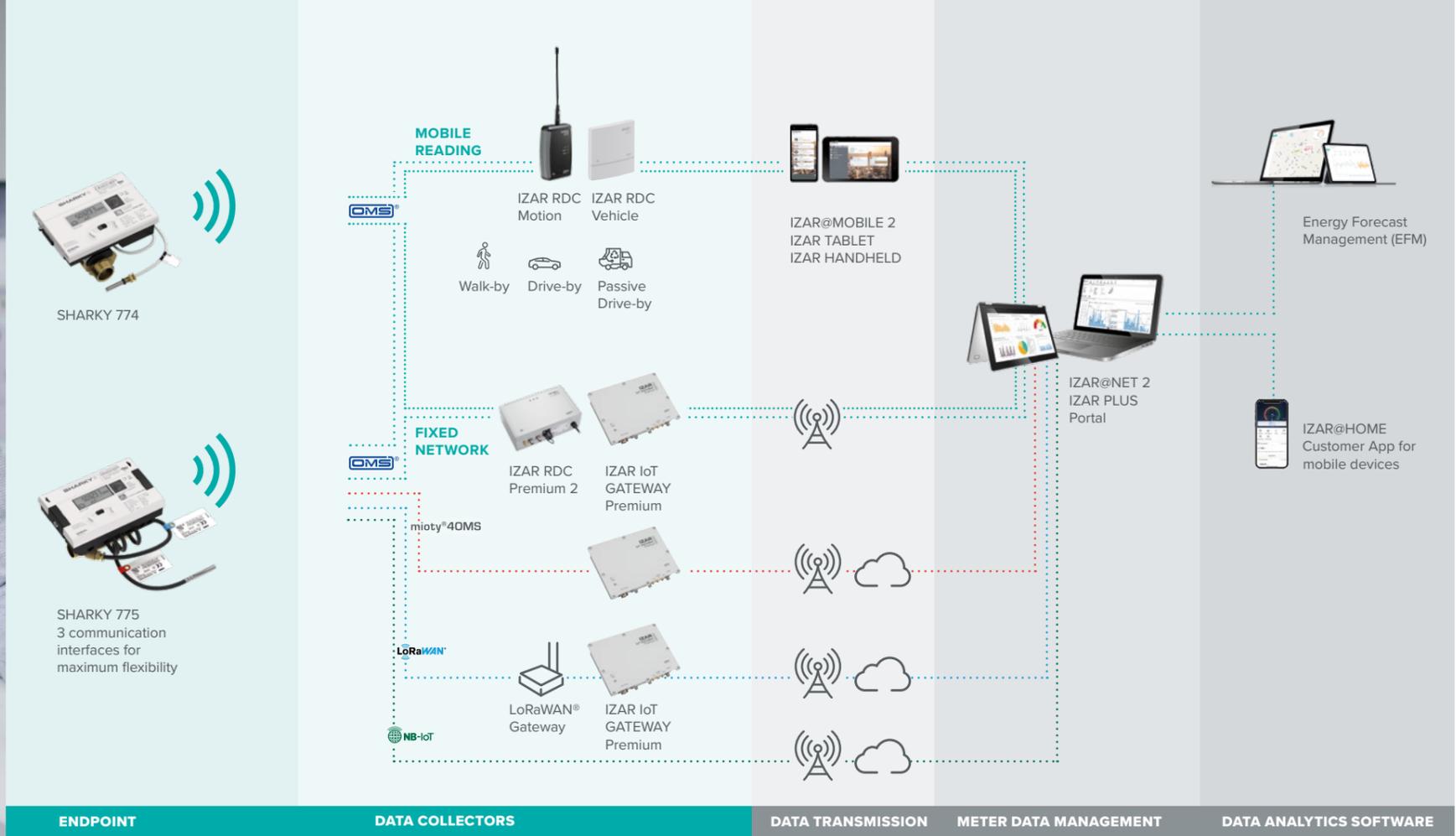


SMART INFORMATION

The SHARKY smart meters offers you a large quantity and variety of valuable data as basis for informed decision-making: billing and metrology information, forward and return temperatures, flow rates, energy consumption as well as various alarms are available. In a Diehl Metering fixed network, these readings are received fully-automatically and monitored regularly by our IZAR meter data management software. By reading all SHARKY meters at once, you also receive valuable information on the overall distribution network, such as consumption and supply history or anomalies. For deeper analysis we recommend our Energy Forecast Management (EFM) software. These insights help you to drive energy and cost efficiency and to create new services.

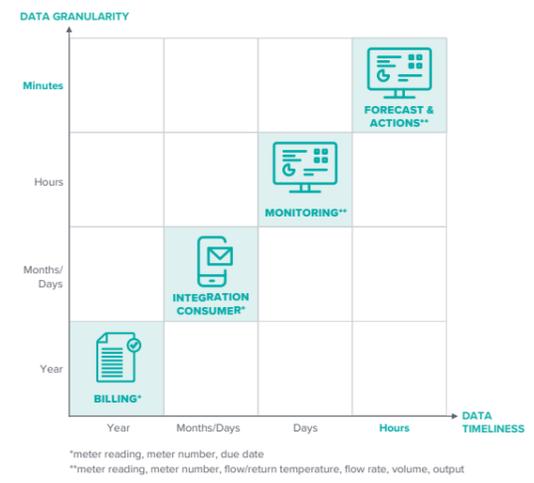
MAXIMUM CONNECTIVITY FLEXIBILITY

The SHARKY 775 offers highest flexibility in terms of connectivity as it has two internal slots that allow you to add various communication modules, including mioty®4OMS, LoRaWAN®, NB-IoT, M-Bus, and Modbus. This flexibility, along with the built-in OMS radio, provides three communication channels and ensures smooth interoperability across diverse systems. Once the meter is installed, it is ready for mobile readout or fully automatic readout via a fixed network without configuration.



POSSIBLE USE CASES BASED ON DATA GRANULARITY AND TIMELINESS

Our smart metering IoT technology IZAR delivers high data granularity and timeliness so that it goes beyond the billing use case and also allows for near-real-time monitoring, analytics and even forecasting.



CONNECTIVITY FOR ANALYSIS

The efficiency of District Heating & Cooling relies on a faultless technical system and a responsible consumer behaviour. For this, information is the key. Due to the insights you get from SHARKY's data and their analysis by our Energy Forecast Management (EFM) software you will be able to see parameters like Delta-T to optimize your network and forecast energy demand to align supply to consumers' demand. Consequently, the energy efficiency in both your network and your energy production will rise.



5+ MILLION
SHARKY SOLD
WORLDWIDE
SINCE 2006

OVER 30 YEARS
EXPERIENCE IN DEVEL-
OPING ULTRASONIC
TECHNOLOGY

AWARDS
GERMAN ENERGY EFFICIENCY
ASSOCIATION FOR DISTRICT
HEATING AGFW

60 MILLION
COMMUNICATIVE
METERS AND RADIO
MODULES INSTALLED
WORLDWIDE

MEMBER
OF THE UNITED NATIONS
GLOBAL COMPACT SINCE 2021

SUSTAINABLE DEVELOPMENT GOALS

INTERESTED?
LET'S TALK ABOUT
YOUR CHALLENGES!

