

THE ESSENTIAL GUIDE TO

UK Water Meters

Metering with accuracy



mwa
TECHNOLOGY

The essential guide to UK water meters

Water meters are devices used to measure the volume of water usage in residential, commercial, and industrial settings. They accurately record the amount of water flowing through a property's water supply system, enabling water utility companies to bill customers based on their actual consumption.

Water meters help promote water conservation by making users aware of their consumption and encouraging more efficient water use. This guide aims to provide comprehensive information on UK water meters, including information on domestic and commercial models available from MWA.

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Hot water meters

Hot water meters play a crucial role in accurately measuring and managing heated water consumption. Their robust construction and temperature-resistant materials make them indispensable for monitoring hot water usage effectively.

Call 0121 327 7771 to find out more

How it works

- 1 Water flow** Hot water flows through the meter's inlet.
- 2 Temperature tolerance** Internal components are designed to withstand higher temperatures without affecting accuracy.
- 3 Measurement mechanism** The meter uses either mechanical gears or electronic sensors to measure the volume of hot water passing through.
- 4 Output** The recorded data is typically displayed on a register or transmitted electronically for billing or monitoring purposes.

Key advantages

- Temperature resistance** Hot water meters can accurately measure hot water flow without distortion or damage to internal components.
- Reliability** They are designed to handle prolonged exposure to high temperatures, ensuring consistent performance.
- Compatibility** Suitable for integration into hot water systems in various settings, hot water meters are suitable for a variety of locations, from homes to industrial facilities.



Cold water meters

Cold water meters are essential tools for measuring and managing untreated water consumption. Their reliability and accuracy contribute to efficient water management practices, promoting sustainability and conservation efforts.

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How it works

- 1 Inlet flow** Cold water enters the meter through its inlet.
- 2 Mechanical or digital measurement** Depending on the type, the meter employs either mechanical components such as turbines or digital sensors to measure flow.
- 3 Flow calculation** Water flow causes mechanical parts to rotate or generates electronic signals proportional to the flow rate.
- 4 Data display** The volume of water used is displayed on an analog or digital register, or is sent wirelessly for remote monitoring.

Key advantages

- Accuracy** These types of meters provide precise measurements of cold water consumption.
- Durability** Cold water meters are designed to withstand varying environmental conditions and water qualities.
- Economic efficiency** Cold water meters have helped many utilities and consumers monitor and manage water usage effectively.



Water saving meters

Water saving meters are pivotal in promoting water conservation by providing actionable data and fostering awareness about individual water consumption habits. Their role extends beyond measurement, influencing behaviours towards sustainable water use.

Call 0121 327 7771 to find out more

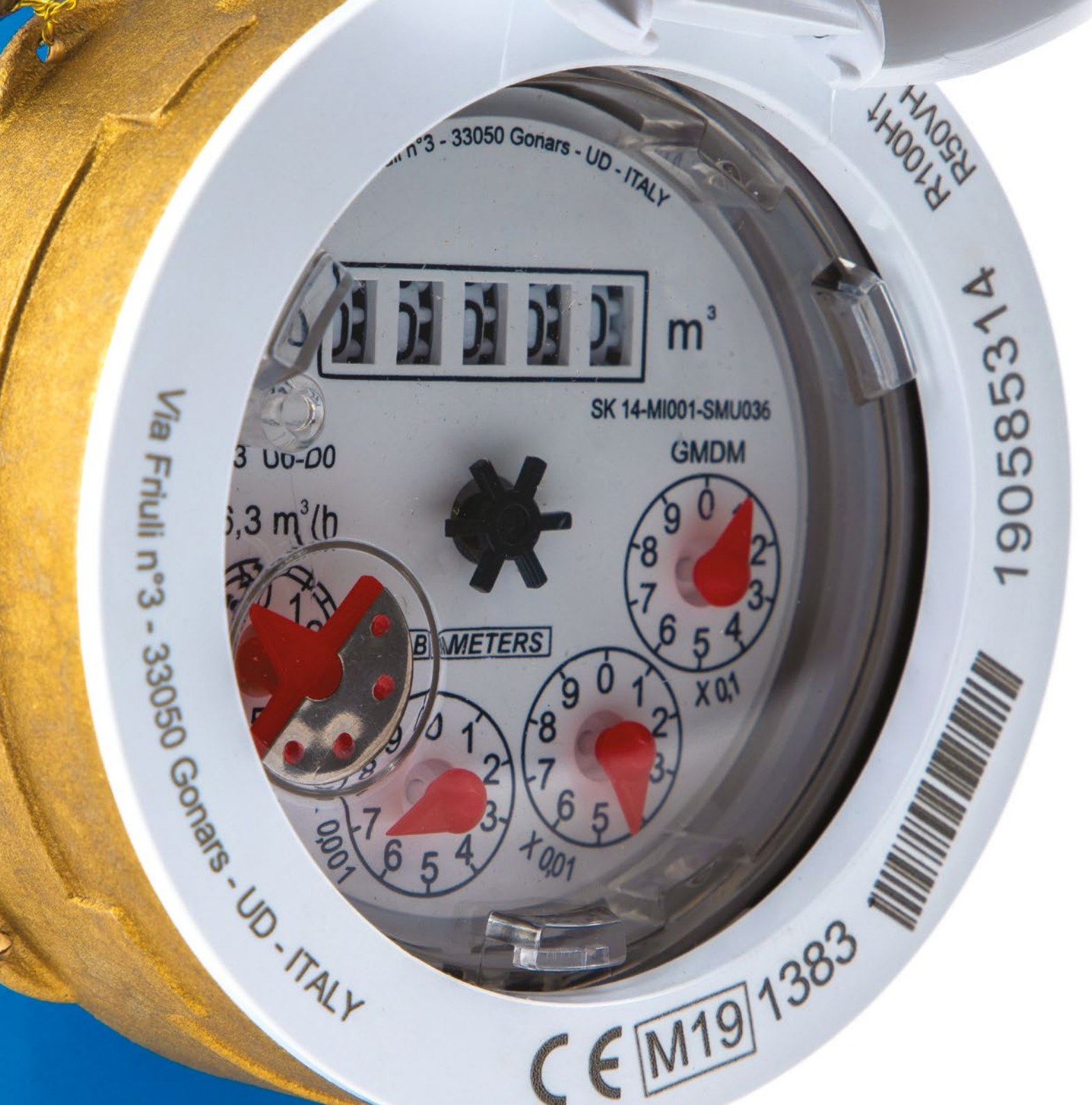
How it works

- 1 Flow detection** Water saving meters detect and measure the flow of water, often at low rates typical of efficient fixtures.
- 2 Real-time monitoring** Sensors or electronic components are incorporated in these sensors to monitor and transmit data on water consumption in real-time.
- 3 Feedback mechanism** Water saving meters provide feedback to users through displays or apps, encouraging conscious water usage habits.
- 4 Data analysis** Such meters collect and analyse usage data to identify opportunities for further conservation and efficiency improvements.

Key advantages

- Conservation focus** Water saving meters encourage users to reduce water consumption through real-time feedback.
- Precision** These meters measure even small flows accurately, which is crucial for monitoring low-flow fixtures.
- Education and awareness** Water saving meters raise awareness about water usage habits and encourages sustainable practices.





"As a leader in smart meter technology, MWA Technology empowers both households and businesses, with our intelligent meters delivering actionable insights for improved efficiency."

Matthew Rose
SALES MANAGER

Turbine flow meters

Turbine flow meters offer reliable and accurate measurement of water flow in diverse applications. Their versatility and durability make them a preferred choice for industries and utilities requiring precise flow monitoring and control.

Call 0121 327 7771 to find out more

How it works

- 1 Fluid flow** Fluid, such as water, flows through the meter and encounters a turbine rotor.
- 2 Rotor rotation** The fluid flow causes the turbine rotor to spin at a speed proportional to the flow rate.
- 3 Sensor detection** Sensors detect the rotational speed of the turbine rotor.
- 4 Flow calculation** The rotational speed data is converted into volumetric flow rate measurements using calibration factors specific to the meter's design and the fluid being measured.

Key advantages

- Accuracy** Turbine flow meters provide accurate flow measurements across a wide range of flow rates.
- Versatility** These meters are suitable for various liquids, including clean water and fluids with moderate viscosity.
- Reliability** The robust construction of turbine flow meters ensures long-term performance with minimal maintenance.



Electromagnetic meters

Electromagnetic meters excel in accuracy and durability, making them ideal for applications requiring reliable flow measurement in challenging environments. Their ability to handle large pipe sizes and varied flow conditions ensures consistent performance over time.

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How it works

1

Magnetic field generation Electromagnetic meters create a magnetic field within the flow tube.

2

Fluid flow Conductive fluid (water) flows through the meter's magnetic field.

3

Induced voltage As the fluid passes through the magnetic field, it generates a voltage proportional to its flow rate due to Faraday's Law of Electromagnetic Induction.

4

Measurement Sensors measure the induced voltage and convert it into a flow rate measurement, providing accurate data without direct contact between the fluid and moving parts.

Key advantages



High accuracy Electromagnetic meters provide precise measurements, especially in large pipe sizes and varying flow conditions.



Minimal maintenance There are no moving parts in contact with the fluid, which reduces wear and tear.



Durability These meters are resistant to factors such as corrosion and sediment buildup, ensuring long-term reliability.



Ultrasonic water meters

Ultrasonic water meters offer high precision and low maintenance, making them ideal for applications requiring accurate flow measurements. Their ability to measure bidirectional flow and operate without moving parts adds to their versatility and reliability.

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How it works

- 1 **Ultrasonic signal generation** These meters generate ultrasonic signals using piezoelectric transducers.
- 2 **Signal transmission** These signals are then transmitted through the water flowing in the pipe.
- 3 **Signal reception** Sensors positioned strategically detect the ultrasonic signals after they have passed through the water.
- 4 **Time measurement** The meter measures the time it takes for the ultrasonic signals to travel between the transmitting and receiving sensors.
- 5 **Flow calculation** Based on the time difference between the transmitted and received signals, the meter calculates the velocity of the water flow.
- 6 **Volume calculation** Using the cross-sectional area of the pipe and the velocity of the flow, the meter calculates the volume of water passing through.
- 7 **Output** The calculated volume data is typically displayed on a digital screen or transmitted electronically for remote monitoring and billing purposes.



Key advantages

-  **High precision** Ultrasonic water meters provide extremely precise measurements, even at very low flow rates.
-  **No moving parts** With minimal maintenance requirements needed, these meters are certain to have a long operational life.
-  **Bidirectional measurement** Ultrasonic water meters can measure flow in both directions, making it useful for complex water distribution systems.

Irrigation and wastewater meters

Irrigation and wastewater meters are essential tools in agricultural and environmental management, providing accurate flow data for efficient irrigation scheduling or wastewater treatment optimisation. Their durability and accuracy support sustainable practices in water resource management.

Call 0121 327 7771 to find out more

How it works

1

Flow management Water or wastewater flows through the meter's inlet.

2

Specialised design These meters are designed with materials and mechanisms that are suited to handle the specific characteristics of irrigation water or wastewater.

3

Measurement principle These meters utilise mechanical components, electronic sensors, or specialised technologies to accurately measure flow.

4

Application specific Irrigation or wastewater meters offer precise flow data crucial for irrigation scheduling in agriculture or monitoring wastewater flow in treatment plants, supporting efficient water resource management.

Key advantages



Compatibility These meters are designed to handle the unique flow characteristics of irrigation water or wastewater.



Robust construction Irrigation or wastewater meters are built to withstand exposure to debris, chemicals, and varying temperatures.



Accurate measurement These meters provide precise flow data crucial for irrigation management or wastewater treatment processes.





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"We are here to provide complete support to your business, so don't hesitate to get in touch with MWA with any metering queries. With over 20 years in the metering industry, you can trust MWA."

Steve Morris

ONSITE TECHNICAL ENGINEER

Why is it important to have accurate meter reading?



Fair billing

Accurate meter readings ensure that customers are charged correctly for their actual water usage, promoting fairness and transparency in billing practices.



Water conservation

With truer meter readings, users are able to monitor and manage their water consumption, encouraging conservation and the efficient use of water resources.



Leak detection

Accurate readings can identify discrepancies that may indicate leaks, allowing for timely repairs and prevention of water loss.



Resource management

Accurate meter readings enable water utilities to better manage and allocate water resources, ensuring a reliable supply for all users.



Operational efficiency

Because meter readings are more precise, this optimises the operation of water distribution systems, which reduces wastage and improves service reliability.



Environmental impact

Environmental footprints are reduced through more accurate meter readings, as more sustainable water use is promoted, helping to prevent unnecessary extraction from natural sources.



Infrastructure planning

Accurate water meter readings assist in planning and maintaining water infrastructure by providing insights into usage patterns and peak demand times.



Regulatory compliance

With more exact readings, this helps to ensure compliance with legal and regulatory requirements for water usage reporting and management.



Cost savings

More precise meter readings help both utilities and consumers save money by avoiding overuse, detecting leaks early, and optimising water usage.



Customer trust

Finally, more accurate meter readings build trust between water utilities and customers through accurate, transparent, and reliable billing and service provision.

About MWA Technology

MWA Technology is the leading independent meter provider in the UK offering the very best technical metering knowledge. Customer satisfaction is the key to our success; we take great pride in ensuring the product we recommend will be the perfect fit for your applications specification.

Call 0121 327 7771 to find out more

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Our experts are here to help



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With decades of industry experience, we pride ourselves on being able to provide you with detailed technical support and assist you with your choice of the right product for the right metering application.

MWA Technology has spent years searching the metering world and developing a comprehensive meter range for the Commercial, Industrial and Domestic markets. We have developed strong relationships with local distributors, as they are able to rely on us to provide, not only them, but also their customers with the very best technical metering knowledge. We take great pride in ensuring the product we recommend will be fit for your applications specification.

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