

PRODUCT CATALOGUE

product wall on OMS both – H7.2/A12

Paris 28.11. – 30.11.2023

OMS-Repeater



OMS repeater (LAN-WMBUS-R4-B-A1)

Issues with metering and range is a common phenomenon that complicates the process of controlling a building in a simple and cost-effective way. Insufficient range and difficulty receiving the correct data are two examples of these problems. Luckily, there is a simple solution to the problem - Lansen's repeaters.

With wireless M-bus technology, Lansen's collection of repeaters significantly extend the range between meters and the collector/gateway. The repeaters can, for example, be used to cover big areas outside for multiple buildings or be used indoors to cover multiple floors, depending on the variant. With just one repeater you can cover up to 932 meters and sensors.

Furthermore, multiple repeaters can be used to create a multi-hop chain, sending information from one building to another, before reaching the gateway. This chain enables information from a larger area to be collected, such as multiple apartment buildings or properties.

The repeater can either make use of two high performance internal antennas or one external antenna, depending on the model. The internal antennas are mounted at 90 degrees from each other to take advantage of both horizontal and vertical polarizations. This maximizes the range while minimizing multipath problems.

Our battery powered repeaters use a high-performance lithium battery to ensure the longest possible battery lifetime. For example, the expected battery lifetime for our standard repeater with default configuration is 10 years.

Additionally, the repeaters are highly immune to electrical disturbances that could be generated by, for example, LED lights. Our long-range repeater models also come with an industrial grade immunity. All repeaters can be used right out of the box and are highly configurable to fit specific needs. They are designed to be discrete and easily mounted on any wall, water tower, or lamppost.

Once a minute a packet is sent by the repeater with information such as number of routed packets and current battery level. This packet is used for time synchronizing between repeaters in a multihop system. The packet can also be used as an indication that a repeater is fully functional. The repeater can also be used to convert between different wireless M-Bus modes, for example, C-mode to S-or T-mode.

To summarize, the repeaters are a versatile product that can be used in most cases to solve range issues. With a long expected battery-lifetime, great coverage and easy installation the repeaters is a great complement to many ecosystems, providing and ensuring coverage for all meters and sensors.

Wireless Bridge to Cloud



Wireless bridge to cloud (LAN-WMBUS-B4-BE-LR-A2-CATM1)

The wireless M-Bus bridge is a highly configurable plug-and-play device used for collecting data from Wireless M-Bus meters and transmitting the data using LTE-M1. The data is sent directly to the cloud, ensuring a high degree of safety by transmitting the data untouched. The bridge supports up to 2.000 OMS units and can either be battery or mains powered.

Long range and high sensitivity are achieved by using the latest technology in radio transceivers with sharp filtering and a lowest noise amplifier. Even in urban environments where a lot of radio disturbances can occur, the performance is guaranteed thanks to the high-performance front-end filter. This gives an excellent blocking even when placed close to RF-transmitters. Furthermore, the enclosure is designed to make the bridge as discrete as possible.

The device has many options regarding antennas. Both an internal and external antenna interface is selectable to achieve maximum performance in each given installation. The internal antennas are mounted at 90 degrees from each other to take advantage of both horizontal and vertical polarizations. This maximizes the range while minimizing multipath problems. The antenna diversity is important since it prevents losses due to different polarizations, especially indoors since meters and gateways can be mounted both to the sides and above/below the bridge. The external SMA-interfaces are suitable for antennas to cover larger areas or long distances, both for collecting wireless M-Bus data or to transmit the data using LTE-M1.

The expected battery-lifetime of the battery-powered bridge is 10 years. To maximize the battery lifetime and still get the data when needed, a number of possible configuration parameters can be used. In addition, the bridge firmware can be upgraded remotely using MQTT. Below is a list of possible configuration parameters:

- Number of minutes to be active / not active
- Specific time during the day to start listen for meter data (e.g., at 12:30)
- Specific days to be active (e.g., Mondays and Wednesdays)
- Suppression timer (limit number of packets stored per meter/week/day/hour)

Configuration can be done in different ways and is easiest with a Lansen Wireless M-BUS programming dongle together with our program, Lansen Configurator. However, configuration can also be done with other wireless M-BUS transmitters or by doing remote configuration using the MQTT protocol.

The bridges are built for a seamless integration with Lansen's repeaters, which ensures an easy installation and integration to the meter reading system. To summarize, the bridge combines thoughtful design and high-performance to complement your sensors and repeaters, all to ensure 100% coverage.

HYDROSONIC-M1



HYDRODIGIT S1



- **HYDROSONIC-M1**: Ultrasonic water meter designed for measuring of cold water consumption in households, blocks of flats and for industrial applications.

- High accuracy up to R500 (Q3/Q1)
- Mounting in any installation position
- No measurement of air
- Wireless M-BUS integrated transmission module

- **HYDRODIGIT-S1**: Single jet, digital display with 8 digits, inductive transmission. Produced in the versions for cold water or hot water in the diameters DN15 and DN20 mm (1/2"- 3/4"). 360° rotating dial. Wireless M-BUS integrated transmission module.



Water

GWF



Sonico[®] NANO

smart meter family

Product description

The Sonico[®] NANO smart meter family has been developed for accurate and flexible measurements of drinking water and warm water up to 70°C. The ultrasonic based water meter is equipped with the latest GWF 4D technology[®] to provide worldwide leading measurement accuracy, highest installation and communication flexibility.

The GWF 4D technology[®] is a unique development of a robust and sustainable design, a patented methodology for ultrasound signal processing, a flexible communication interface and a high-performance electronic hardware.

The robust utility grade IP68 design and excellent material selection result in highest product robustness and hygienic standards. Furthermore, the symmetric, clean and free 4D-shape channel design has best in class low pressure loss and reduces operating costs. The sustainable and robust design enables a possible exchange of the internal battery, to increase the lifetime of the product and to ensure end of life recycling.

The patented methodology of ultrasound signal processing captures the entire flow channel. Also, instead of using cumbersome and sensitive correction tables, the GWF 4D technology[®] uses proprietary correction algorithms based on the physical flow profile. This enhances measuring stability and repeatability of results even in adverse conditions such as strong flow turbulences. The turn down ratio up to R1000 is confirmed over the entire bi-directional measurement range to prevent contamination of the drinking water.

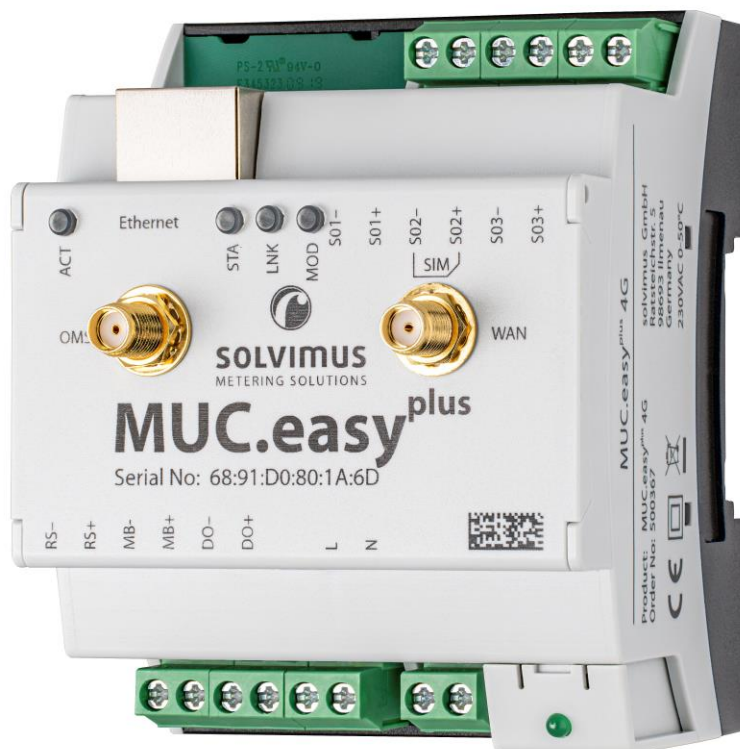
The flexible communication interface and product concept is simple to use and smart in terms of installation flexibility. The implemented dual mode 868 MHz LoRaWAN or wireless MBus communication interface reduces installation costs and allows plug and play functionality. The WELMEC 7.2 certified software can be updated over the air to increase the lifetime and to update for new features or radio settings. Using the GWF mobile app over the meter NFC interface, encrypted meter configurations or data read outs can be made. The GWF Infin.io data management backend software processes the data from the app or sent by the meter radio and processes the meter information secure by a graphical dashboard. Various alarms inform the user on demand at any time.

The high performance electronic operates on a single battery cell for more than 16 years while communicating in 15s interval during the lifetime of the product. The internal memory can log 400 data packages including min./max. values of flow and temperatures including alarms and measured bi-directional volumes.



SOLVIMUS
METERING SOLUTIONS

MUC.easy^{plus}



Having a compact design and featuring diverse meter interfaces and an intuitive and flexible software, the data concentrator of solvimus greatly facilitates the automatic capture of consumption data and load profiles in properties.

As powerful data hub, the MUC.easy^{plus} queries on its own data from sensors and meters of all sorts of media, analyses and transmits these.

To achieve that, the MUC.easy^{plus} disposes of an M-Bus interface supporting up to 80 unit loads. Additionally, three S0 pulse inputs can be read. It is further equipped with a wireless M-Bus interface compliant to OMS and also Modbus RTU via RS-485 as well as Modbus TCP for meter reading.

The connection of the MUC.easy^{plus} to the data acquisition system is established by an Ethernet interface, alternatively also by LTE (4G) or NB-IoT.

With its support of diverse XML formats, the MUC.easy^{plus} is compatible to numerous systems for automated meter reading (AMR) and energy data management systems (EDM). It also masters the data export to CSV or JSON files.

The data transmission itself can occur encrypted or unencrypted via FTP, MQTT, SMTP (e-mail) and TCP to an energy management system, billing system or for visualisation purpos.



SOLVIMUS
METERING SOLUTIONS

MUC.one



Cost-efficient communication platform for meter data in the mass market

At present, our products contribute substantially to enhance energy efficiency in industry and commerce, while the end-use consumer respectively private household with his single meter does not contribute significantly as of now. A disproportionate effort-benefit ratio entails a high price sensitivity. The MUC.one will fill this gap.

It transmits M-Bus respectively wM-Bus data of individual meters via NB-IoT in the internet (in the cloud). Meter data can thus be transmitted fast and easily even in case of bad mobile radio connection or without network connection.

The design optimising both investment and functions combined with globally acknowledged standard technologies makes it your adequate choice in the international mass market.

The MUC.one is configured locally via WLAN/WiFi.

With its support of diverse XML formats, the MUC.one is compatible to numerous systems for automated meter reading (AMR) and energy data management systems (EDM). It also masters the data export to CSV or JSON files.

The data transmission itself can occur encrypted or unencrypted via MQTT or HTTP to an energy management system, billing system or for visualisation purposes.

RelAir^{R2M} PRO



The **RelAir^{R2M} Pro** is a wM-Bus to M-Bus gateway and allows you to integrate up to 63 Wireless M-Bus meters into your existing M-Bus installation.

- Visit www.relay.de for full information
- Wireless M-Bus to M-Bus and USB gateway
- wM-Bus according to EN 13757-4 Mode S, T und C
- Frequency 868 MHz
- OMS conform and compatible (Spec 4.X.X)
- supports M-Bus application layer acc. to EN13757-3
- Optional encryption Mode 5 or 7, AES
- Power supply via M-Bus (6 unit loads) or USB
- Whitelist with up to 63 meters configurable
- Configuration with free Software via M-Bus or USB
- Internal antenna
- Pro version with robust housing for rough conditions

RelAir^{R2M} Home



The **RelAir^{R2M} Home** is a wM-Bus to M-Bus gateway and allows you to integrate up to 63 Wireless M-Bus meters into your existing M-Bus installation.

- Visit www.relay.de for full information
- Wireless M-Bus to M-Bus and USB gateway
- wM-Bus according to EN 13757-4 Mode S, T und C
- Frequency 868 MHz
- OMS conform and compatible (Spec 4.X.X)
- supports M-Bus application layer acc. to EN13757-3
- Optional encryption Mode 5 or 7, AES
- Power supply via M-Bus (6 unit loads) or USB
- Whitelist with up to 63 meters configurable
- Configuration with free Software via M-Bus or USB
- Internal antenna
- Home version with elegant housing for living rooms

PadPuls M2W



The **PadPuls M2W** is a 2 channel OMS conform pulse to wM-Bus converter.

- Visit www.relay.de for full information
- Wireless M-Bus according to standard EN 13757-4 Mode S, T and C
- OMS conform and compatible (Spec 4.X.X)
- Optional encryption Mode 5 or 7, AES
- Two separated pulse inputs (for reed contacts, optocouplers,...)
- Save detection of up to 18 pulses per second on both inputs
- Debouncing
- Free adjustable pulse value
- Free choice of units (e.g. Wh, kWh, MWh, kJ, m3, l,...)
- Configuration via USB-converter cable
- Transmission interval adjustable between 10 seconds and 2 hours
- Battery supplied
- Battery lifetime about 14 years at 15min transmitting
- Distributionbox for wallmounting

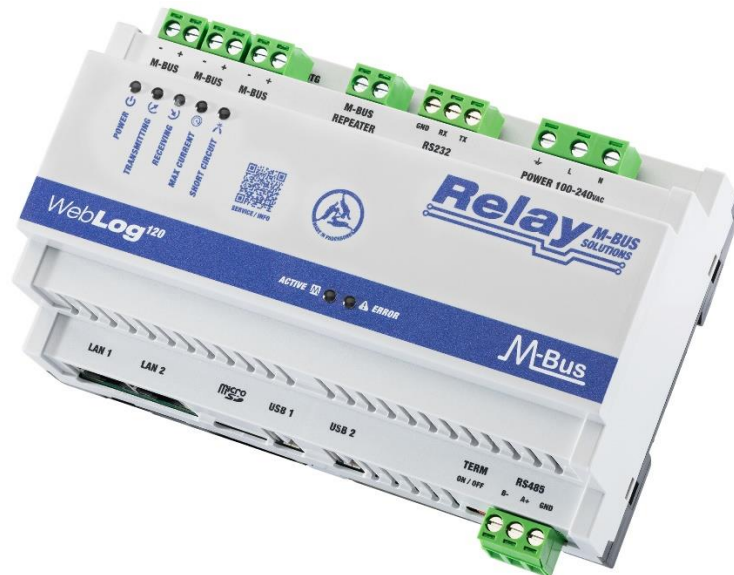
WebLog²⁵⁰



The **WebLog²⁵⁰** is an M-bus Datalogger with integrated web server for 250 meters with large touch display for use on site. The internal database allows you to organize the M-Bus data in a structure which fits your requirements. Another convenient feature is the automatic export of data via email or FTP upload. In addition to the standard interfaces (USB, RS-232C, Ethernet) the customer can also add a WiFi option. Due to three different user types, it is possible to send individual meter readings to for example tenants once a month or the energy controller once a day.

- Visit www.relay.de for full information
- Web enabled M-Bus Logger for 250 meters
- Ideally suited to work with **RelAir^{R2M}** wM-Bus Gateways
- USB, Ethernet, WiFi and RS232C interface
- Readout and administration by webbrowser
- Exports data as XML, XLSX or CSV via E-Mail, FTP or USB
- 4 GB internal memory
- integrated 110 .. 250 VAC power supply
- 3 different user types for different access levels
- Automatic monthly export of meter readings per tenant possible (EED)

WebLog¹²⁰



The **WebLog¹²⁰** now brings the full convenience and performance also to smaller installations. The M-Bus logger WebLog120 has an integrated web server, 4GB memory and adapts to your needs as flexibly as the WebLog250. The WebLog120 can supply M-Bus 120 meters with power and voltage and manage up to 1,000 meters. With the help of the implemented database, your data can already be structured individually in the central unit. A particularly convenient function is the automatic export of the read data via email or FTP upload. In addition to the standard interfaces (USB, RS232C, Ethernet, RS485, repeater), WiFi is also available as an option. Thanks to the integrated double LAN interface and the repeater input, very individual installations can be realized, for example with a second controller or with a second M-Bus master.

- Visit www.relay.de for full information
- M-Bus logger for 120 meters
- Integrated web server allows complete operation via web browser
- USB, Ethernet, W-LAN, RS232C, RS485, repeaters
- Data export as XML, XLS, CSV via email, FTP, USB or download
- Firmware update via web browser
- Compact dimensions and top-hat rail mounting
- Automatic, monthly export of meter readings per tenant possible (EED)
- Repeater input enables dual operation with a second M-Bus master



Q gateway 5.5 direct

QUNDIS Gateway

The Q gateway 5.5 direct enables the smart transition from walk-by meter reading to AMR remote readouts and is therefore ideal for small systems. The gateway receives data from all QUNDIS metering devices in C mode as well as wM-Bus compatible, uni-directional external meters from other manufacturers within the direct reception range.

The recorded consumption data from up to 1,000 metering devices are transmitted via 2G / 3G / 4G mobile radio transmission to the QUNDIS Smart Metering Platform (Q SMP). From there, the automatic data transmission by email or SSH FTP takes place at the desired interval directly to the metering service.

Thanks to its high-performance battery, the Q gateway 5.5 direct works without interruption throughout the entire contractual period. Depending on the operating scenario, a battery life of up to 10 years is possible. The product variant with power supply is the optimum solution for daily data retrievals.

More information: <https://qundis.com/products/network-nodes-gateways/>



Q caloric 5.5

Improved wireless transmission performance and flexible readout times

The Q caloric 5.5 heat cost allocator enables an even simpler and more flexible readout of meters. The significantly greater wireless transmission range simplifies remote readout, improves data quality and cuts readout times.

Meter reading can be implemented both on site and in mobile form, because parallel to walk-by wireless telegrams Q caloric 5.5 also sends AMR telegrams. In C-Mode operation the AMR telegrams meet 'Open Metering System' (OMS) specifications. In addition, parallel transmission also makes it possible for you to switch to AMR readout at any time, without re-configuration of the Q caloric 5.5. As a result you are well prepared for consumption recording at any time of year.

More information: <https://qundis.com/products/heat-cost-allocators/>



Q water 5.5

Electronic water meters

The MID-compliant Q water 5.5 meters represent a new generation of the tried-and-tested water meters from QUNDIS. The Q water 5.5 doesn't just reliably measure the consumption of cold and hot water in the building – it identifies leaks and transmits all its data by radio also. These features enable the provision of valuable useful additional services.

Remote meter reading can be implemented either on site or in mobile form, because in addition to walk-by radio telegrams the Q water 5.5 also transmits AMR telegrams. In C-Mode operations the latter also conform to the requirements of the Open Metering System (OMS). In addition these parallel transmission operations ensure that you can switch to AMR readout at any time and without any reconfiguration, e.g. if you wish to use the leak detection function.

More information: <https://qundis.com/products/water-meters/>



Q heat 5.5 US R

Radio integrated ultrasonic heat meter

The new ultrasonic heat meter combines precision, high material quality and easy handling during installation with integrated radio technology.

Thanks to the high level of metering accuracy with a dynamic range of up to 1:100, even the smallest flow rates are recorded precisely, which is also ideal for separating out hot water.

The familiar, diverse range of applications has been expanded to include combined heat/cooling meters. For recording the energy consumption of heating, cooling and hot-water heating systems, there are screw-type meters available in the flow rates 0.6 / 1.5 and 2.5 m³ /h.

Thanks to the compact design and the removable calculator unit as standard, the Q heat 5.5 US R is ideally suited for installation situations where space is limited or access is difficult. The installation position can also be selected as desired, which means that overhead installation is also possible without any problems. In addition, it is possible to switch between flow and return on site, without having to change the temperature sensors, as well as between the energy units (GJ - MJ <-> kWh - MWh).

The device parameters are set in a user-friendly way via the IR interface using software, or directly via the device keys. All ultrasonic heat meter variants can also be ordered with optional AES encryption; decryption is possible on request within the Q SMP on a tariff basis.

More information: <https://qundis.com/products/heat-meters/#qheat5.5usr>

iSmart2



iSMART2

The UG iSMART2 series meters are the 2nd generation of smart gas meters of Apator Metrix, being the base for many smart gas meters project in Europe and beyond. The design uses proven and durable diaphragm measuring principle with low power, solid state Hall effect sensors for volumetric measurement. The volumetric measurement principle is highly convenient for changing composition of gases in the networks. The iSMART2 electronic index can be integrated with each meter within our product portfolio to add proven measurement with smart functionalities like shut-off valve, communication and Graphical User Interface. The device uses microkernel-based, real-time operating system ensuring flexibility and security in rising IoT world.

uniSmart2



uniSMART2

uniSMART2 is a communication module, pre-mounted & configured on new gas meters or as a retrofit module for already installed gas meters of Apator Metrix. The robust uniSMART2 has smart solid-state sensors for volumetric measurement of values of the mechanical index of the diaphragm gas meter. The sensors detect possible return flow and secure against "false pulses". Index values and events as tampering and overflows are logged and communicated following 868 MHz Wireless M-Bus (cooperates with devices working in OMS standard), T-mode, security mode 7, profile B in the M-Bus telegram. A lifetime of battery mounts up to 20 years, communicating every 5 minutes. Communication is compliant with German BSI specifications. For retrofit modules on installed gas meters, Apator has developed a special tool for easy and fast installation.

ULTRIMIS



The ULTRIMIS ultrasonic water meter of Apator has been OMS certified by DVGW in May 2021.

DVGW confirmed that radio communications compliance with OMS requirements: Encryption mode 7 - Profile B and Encryption mode 5 Profile A (selectable).

Both synchronous and asynchronous radio frames meet OMS standards in the version chosen by the customer.

ULTRIMIS will also be available with dual stack communications on board: LoRaWAN and wMBus, where wMBus communications will meet OMS Encryption mode 5 - Profile A standards.

Very important argument for customers for using OMS-compliant ULTRIMIS water meters is the data security. It is provided among other things by a unique 128-bit AES key and free access to data transmitted by the water meter, such as current volume, stored volume, backflow volume, battery status and tampering.

ORIOL Pulse adapter



Product description

The ORIOL pulse adapter is a wM-Bus / OMS radio communication adapter for subsequent connection to various types of consumption meters (e.g. gas meters; heat meters and/or water meters).

The wireless M-Bus pulse adapter counts the pulses of consumption meters with pulse output. The meter reading of the connected device is replicated. The pulse value is configurable.

Via an alarm input, tampering can also be detected and displayed in the radio telegram. The pulse adapter is battery-operated and supports different consumption meters.

Depending on the version, the radio connection can be selected either via OMS over wM-Bus or OMS over mioty[®] (*) and therefore communicates in a simple form with the BSI SMGW or other wM-Bus gateways.

The adapter is available as an external module. The wired pulse output of the meter is connected to the pulse interface of the adapter. The configuration and initial parameterization (meter reading) is carried out easily and conveniently via NFC interface using the WEPTeCH app. This allows various types of existing meters to become "smart" by retrofitting.



Features:

- wM-Bus mode / EN 13757-4 integrated antenna
- Frequency 868 MHz
- Integrated impulse interface
- RED 2014/53/EU
- Dimension: 145 x 90 x 38 mm
- Weight < 200 g
- IP 67 protection class, UV resistant
- Optimised for Smart Metering
- Battery lifetime appr. 20 years
- Temperature range: from -25 bis +55 ° C
- Transmission power: 14,0 dBm
- Power supply: 3,6 V
- OMS 4.5.1 conform, Mode 7
- NFC configuration interface
- * in planning stage

PF gas meter DCI



PRODUCT DESCRIPTION

Communication Adapter for mechanical gas meters – DCI 868 V2

- Pulse interface
- Compliant to DVGW G694, TR3109-1, PTB 50.8
- OMS Interface T1/C1 selectable
- Frequency 868Mhz
- Encryption Mode7
- Transmission interval configurable
- >20 years battery lifetime at standard conditions
- Retrofitting

Smart ultrasonic water meter



PRODUCT DESCRIPTION

Smart ultrasonic water meter – SSM AQUO

- Smart Water meter with integrated Antenna
- Certified according to OMS Gen 4
- OMS Interface T1/C1 selectable
- Frequency 868Mhz
- Encryption Mode7
- Transmission interval 60s or 16s
- Battery power supply with up to 13 lifetime

SensoStar U



Ultrasonic BTU Meter
 OMS Profile A & B approved
 LoRaWAN® Certified
 Flexible communication by modularity
 Detection of back flow and air
 Dynamic measuring cycle

Communication interfaces:	wireless M-Bus; M-Bus, Pulse, LoRa, ModBus,
NB-IoT	
Accuracy class (MID)	class 2
Nominal pressure (PN)	16 bar
Temperature range medium heat	15 – 90 °C
Temperature range medium cooling	5 – 50°C
Temperature difference range $\Delta\Theta$ heat	3 – 100 K
Temperature difference range $\Delta\Theta$ cooling	-3 – -50 K
Minimum temp. difference $\Delta\Theta$ heat	> 0,05 K
Minimum temperature difference $\Delta\Theta$ cooling	< -0,05 K
Resolution temperature	0,01°C
Measuring cycle temperature; dynamic	2 / 60 sec
Units	MWh, kW, m ³ , m ³ /h (kWh, GJ, MMBTU, Gcal)
Power supply	exchangeable 3 V lithium battery; main supplies
Battery lifetime	10 years
Data storage	nonvolatile memory
Protection class	IP65
EMC	EN 1434
Temperature sensors (2-wire technique)	Pt 1000

SensoStar C Calculator



Compact design

Look and Feel as Compact BTU Meter

Battery easy to exchange; calculator prepared for 3 V power pack

Installation point can be set on site

Dynamic measuring cycle

Flexible communication by modularity

Communication interfaces:	wireless M-Bus; M-Bus, Pulse, LoRa, ModBus,
NB IoT	
Temperature range medium heat	0 – 150 °C
Temperature range medium cooling	0 – 50°C
Temperature difference range $\Delta\Theta$ heat	3 – 100 K
Temperature difference range $\Delta\Theta$ cooling	-3 – -50 K
Minimum temp. difference $\Delta\Theta$ heat	> 0,05 K
Minimum temperature difference $\Delta\Theta$ cooling	< -0,05 K
Resolution temperature	0,01°C
Measuring cycle temperature; dynamic	60 sec with a lifetime of 10 years 30 sec with a lifetime of 6+1 years 2 sec using a power pack
Units	MWh, kW, m ³ , m ³ /h (kWh, GJ, MMBTU, Gcal)
Power supply	exchangeable 3 V lithium battery; main supplies
Battery lifetime	10 years
Data storage	nonvolatile memory
Protection class	IP54

Flow meter requirements:

Class of pulse output device: according to EN 1434-2:2015: OA (reed contact); OC (open collector)

Maximum input frequency: Hz 10

Pulse length and pulse pause: at least 25 ms pulse length; at least 50 ms pulse pause

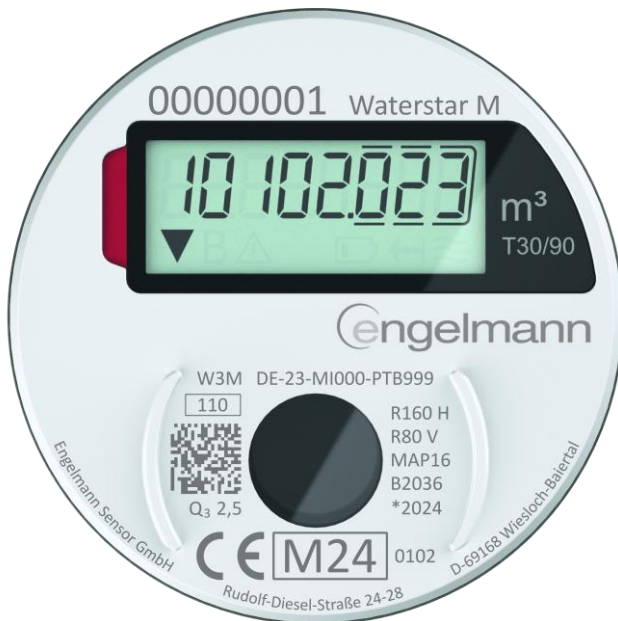
Temperature sensor requirements

Platinum precision resistor Pt 500

Length of cables (unshielded): up to 10 m in 2-wire technique

Installation direct mounted or in temperature pockets

WaterStar M Electronic Water Meter



The WaterStar M is the perfect solution for recording of cold and hot water consumption. With a wide range of single-jet and multi-jet flow sensors for cold and hot water applications, the meter is suitable for various installations and applications. The digital display shows the consumption values in real time, so you always have an overview of your water consumption. Thanks to the integrated 868 MHz radio, the consumption values can be transmitted wirelessly at any time. OMS-compliant radio communication in T1 or C1 mode enables reliable remote reading of the devices. Installation and commissioning is done quickly, as the device is easy to install and can be adjusted at on site. Up-to-date notices and alerts ensure that you are always up to date and can quickly identify potential problems.

Radio-integrated water meters are the perfect choice for reliable, accurate and efficient collection and measurement of your water consumption.

Multi-jet and single-jet flow sensors for all common installation locations

Integrated wM-Bus radio interface (868 MHz)

Protection class: IP68

Battery lifetime: 12 years*

Electronic impeller scanning

ZVEI interface for device configuration

Open data transmission interface in accordance with wireless M-Bus and OMS standard

Data transmission of 15 monthly values via radio

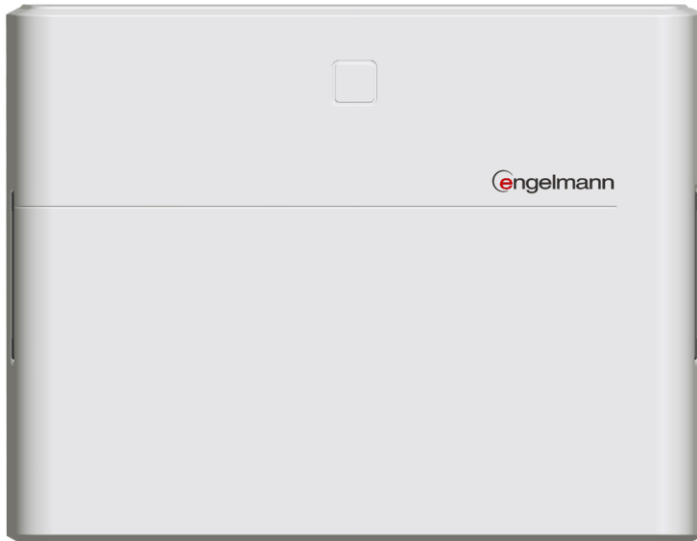
Automatic radio activation in case of flow detection

AES key encryption adjustable (mode 5 / mode 7)

Backflow, manipulation & leakage detection

*with Engelmann default radio setting

Engelmann Connect Gateway



Gateway with open system, according to wireless M-Bus and OMS
Platform for gateway and data management optional
Number of devices in battery mode: up to 1000
High density wireless M-Bus receiver (LTE disturbance filter)
Compatible with OMS radio devices
10 years + battery lifetime
Remote configuration
GPRS or Ethernet available

Interface/Communication: USB or Portal for configuration
Wireless M-Bus for data collection
GPRS for data forwarding, firmware update

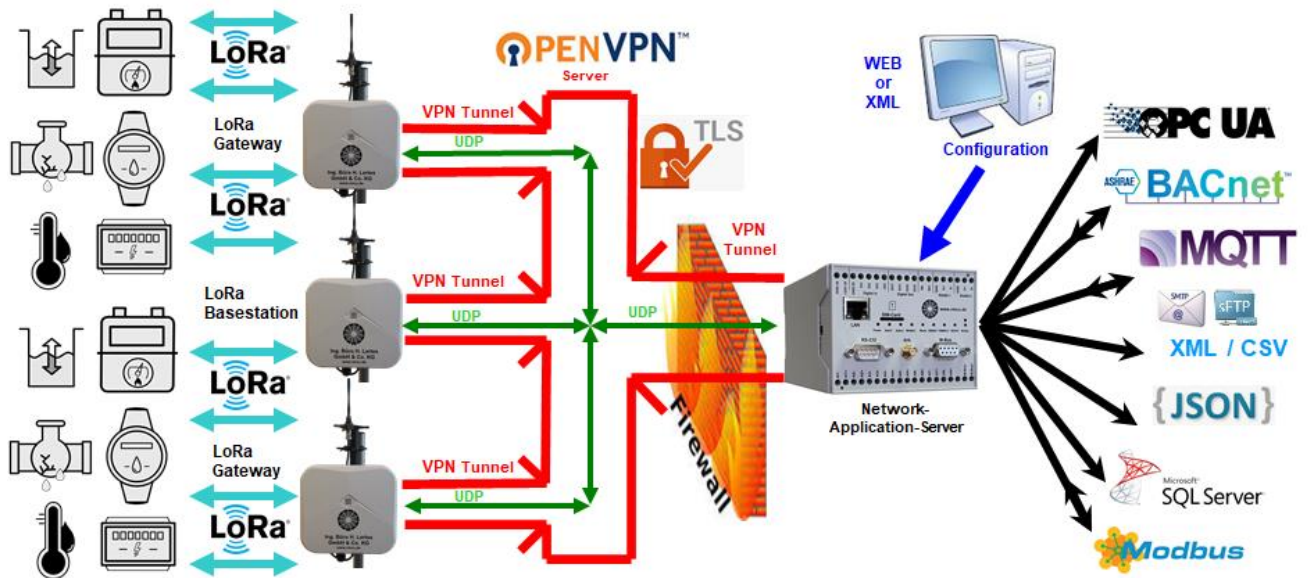
Output file format CSV; XML; RAW
Data transmission e-mail dispatch; FTP upload

Ambient temperature - 20 to 60 °C
Protection class IP65
Power supply 1 or 2 batteries; Main supplies, PoE

AMR software automated data preparation, merges multiple input files



Private LoraWAN Networks



Private LoraWAN Networks

The LoRaWAN Network is an extension of the existing MiDASS / RmCU concept to connect consumption meters and smart city sensors with LoRaWAN interface to head end systems.

The System can be used to build up private LoRa-Networks that do not require any public cloud server.

There are no monthly costs for sensor management or data points.

The Lora Basestations and Gateways can be combined with wM-Bus (OMS 3+4), M-Bus, Modbus, OPC UA and BACnet interfaces. Mobile modems (4G, 5G or 450 MHz) are directly integrated.

LoRaWAN end devices class A (sensors such as water-, heat-, power- and gas-meters) and class C (sensors and actors such as relay switches or active thermostat valves) are supported.

In addition to classic LoRaWAN Payloads there is a wM-Bus/OMS over LoRa decryption implemented.

SMART ULTRASONIC WATER METER QALCOSONIC W1



SMART ULTRASONIC WATER METER QALCOSONIC W1

Ultrasonic water meter **QALCOSONIC W1** is designed for accurate measurement of water consumption in households, apartment buildings, and small commercial premises, where high sensitivity to low water flow is important. This smart water meter with a durable composite flow body part is packed with the latest IoT communication technologies. It is an ideal solution for saving up on investment, improving operational efficiency, and ensuring that every drop of water is counted.

- Static method of water consumption measurement, no moving parts.
- Very high measurement accuracy.
- Eliminates measuring deviations caused by sand, suspended particles, or air pockets.
- Long-term measurement stability and reliability.
- 9 digits, multi-line LCD. Total volume and instantaneous flow rate indication.
- Sensitive and accurate in low flows, down to 1l/h.
- Ready for AMR with NFC, wM-Bus, LoRa, NB-IoT technologies.

WECOUNT



The devices from the WECOUNT family manufactured by E. Wehrle GmbH stand for premium solutions in the field of metering potable water. The fully integrated electronic water meter reliably records even the smallest consumption. It can be used with a variety of hydraulic connection housings for communal applications as well as in the submetering sector. Thanks to the high IP68 protection code, the register can also withstand high humidity and is resistant to temporary submersion.

In addition to the current register value, the LC display provides additional helpful information such as the current flow rate or status codes when unusual consumption is detected. This includes leaks, pipe bursts and magnetic manipulation attempts, providing valuable information in the event of faults in the pipe system, among other events. The radio standard with a frequency of 868 MHz according to OMS offers the transmission modes C1, T1, with or without monthly end values. This makes the device suitable for walk-by/drive-by solutions as well as for automated meter reading within a fixed network. The water meters of the WECOUNT family are equipped with encryption according to OMS Security Mode 5 and 7, which fulfils requirements for system solutions in combination with smart meter gateways. Alternatively, the meter can be ordered with data transmission via LoRaWAN. Furthermore, the register is available with different battery capacities (Up to 16 years) to suit the requirements for the lifespan of the meters.

In terms of operation, the device has been designed to make commissioning and parameterisation as simple as possible. The desired parameters can be chosen within an online configurator at the time of ordering and the meters will be delivered with the chosen parameterisation, simplifying the commissioning. After installation, no manual activation is required, as the meter independently switches to operating mode by means of flow detection. The WECOUNT series can be read out and parameterised via the NFC interface and the associated Android app, or by means of associated hardware (NFC head). This allows the operator to easily and quickly access the stored consumption data or adjust the radio settings. The WECOUNT water meters are available as single-jet meters, measuring capsules and piston cartridge meters.



Single-Jet Dry Meter
WECOUNT



Inline 500
WECOUNT



config.wehrle.de

SHARKY 775



HYDRUS 2.0 DOMESTIC



HYDRUS 2.0 DOMESTIC

HYDRUS 2.0 DOMESTIC is a static water meter operating on ultrasonic measuring technology. This technology enables accurate calculation of water consumption with long-term stability and eliminates measuring deviations caused by sand, suspended particles, scale or air pockets. Its integrated radio based on Open Metering telegram (OMS Generation 3 or 4, Profile B) enables remote reading of the meter's index and alarms both in mobile (walk-by, drive-by, passive drive-by) and fixed network mode. HYDRUS 2.0 DOMESTIC offers a wide choice of connectivity with an excellent coverage for large areas with less receivers and high data granularities and timeliness, which makes high responsive networks to take actions immediately.

SHARKY 775

SHARKY 775, a smart ultrasonic energy meter, gives accurate measures for heating or cooling applications. Its excellent interoperability with an integrated radio based upon the compatible Open Metering System (OMS - Version 4, Profile B) enable you to fulfill data security requirements. Compatible with remote reading solution such as walk-by, drive-by or passive drive-by, it can be also upgraded to a fixed-network at any time – without additional meter configuration.



ELECTO WATER METERS

Maddalena's list of products that have officially received the certificate of conformity to the OMS specification continues to grow.

ELECTO SJ - ELECTRONIC SINGLE JET METER

ElecTo SJ is single jet meter offering built-in data communication thanks to its innovative electronic radio register. Designed specifically for residential installations, it is available for both cold and hot water applications. Its large LCD display makes it very easy to read, while providing additional information to both users and operators. Suitable for remote data reading using mobile and fixed systems, it fully meets the requirements of the European Directive on energy efficiency.

ELECTO MVM - ELECTRONIC VOLUMETRIC METER

ElecTo MVM is a rotary piston meter for domestic water, featuring an innovative multiprotocol radio electronic register. Robust, durable, suitable for the most challenging environments and types of installation. Its low starting flow rate and its wide measuring range provide excellent consumption accounting. Its large LCD display makes it very easy to read, while providing additional information to both users and operators. ElecTo MVM offers the maximum short and long distance data communication flexibility, and can be used with both mobile and fixed reading systems.

ELECTO SONIC - ELECTRONIC ULTRASONIC METER

ElecTo SONIC is the ultrasonic meter offering built-in data communication thanks to its innovative electronic register with multi-protocol radio communication facilities. It ensures excellent performance in all installation conditions and is insensitive to the chemical and physical characteristics of water. It is the ideal solution for Utility installations. Its wide 9-character LCD display (digits and symbols) makes it very easy to read, while providing additional information to both users and operators. ElecTo SONIC supports remote data reading with fixed and mobile system, while offering maximum interoperability.

Maddalena also guarantees a high level of interoperability with third party reading systems in order to offer flexible solutions designed to meet the needs of the Smart Cities of the future.



Elvaco Sense series - wireless M-Bus sensors for indoor use



The new Sense series from Elvaco contains nine wireless M-Bus sensors for indoor applications that measure temperature, humidity, CO₂ level, motion, light, sound and room occupancy.

The series offers both battery- and solar-powered sensors, and several of them are multi sensors, meaning they can measure multiple medias in the same device. The Elvaco Sense series have a minimalistic Scandinavian design and can be discreetly installed in any commercial, public, or private building.

The sensors are easily configured with Elvaco's mobile app and the maintenance costs are low thanks to their long battery lifetime of up to ten years, and their uncomplicated battery-changing process. The solar powered sensors can function for up 30 days in complete darkness in normal operation.

The main target group of the new Sense series are submetering and energy efficiency applications. Measuring and monitoring buildings have great benefits. For instance - measuring the indoor climate helps to save energy and prevents the growth of mold, or measuring room occupancy allows for intelligent control. If a room is empty, the light, heating and air conditioning can be automatically adjusted.

The objective with the Sense series is that Elvaco will be able to offer wireless M-Bus solutions for all common building applications in the future.



Elvaco Edge - New battery-powered wireless M-Bus Gateway



The new Elvaco Edge is a battery-powered wired and wireless M-Bus Gateway for metering and submetering applications with best-in-class battery lifetime.

With the battery supply you are completely free in the choice of your installation location and independent of the availability of a mains supply. **The gateway will calculate and inform about expected battery lifetime for configured data granularity and data actuality.**

If a power connection is available, the unit can also be operated with a power supply unit.

Elvaco Edge has an **extremely high sensitivity on wireless M-Bus reception**, can be easily wall-mounted and is available with internal or external antenna.

The new gateway enables easy plug & play installation in the field, without IT knowledge.

You can connect any M-Bus meter (wired or wireless) conforming to EN-13757 (EN1434) and OMS standard.

A user friendly app supports the installation of meters for direct integration into a cloud.

The data collected by the new Edge gateway is transmitted either via NB-IoT, LTE or CAT-M.

Elvaco has also developed a special design feature: The distinctive LED ring of Elvaco Edge shows the functional status of the device and gives the installer immediate feedback during installation.

Metromatic® WS3



Metromatic® WS3 is an advanced ultrasonic water meter designed for monitoring cold water usage in residential or commercial settings. Its large 3.25" display provides essential information such as current flow, line pressure, accumulated consumption, and error messages, ensuring clarity and convenience.

The meter incorporates an integrated low-power, long-range communication system, offering options like LoRaWAN® or NB-IoT, along with a wireless OMS fallback. This allows for seamless data collection in real-time, with automated processing. You can access the data through your IoT service provider or have it directly sent to your mobile phone if NB-IoT is utilized.

One noteworthy feature is the replaceable battery, which contributes to a longer meter lifespan and a reduced CO2 footprint compared to our competitors, emphasizing our commitment to sustainability.

LoRaWAN® Cyble Module G3



The LoRaWAN® Cyble Module G3 empowers seamless consumption data acquisition and wireless transmission to the accessible LoRaWAN® network or serves as a drive-by solution in WM-Bus C1 mode. Specifically designed for effortless integration, this module is designed to be affixed to water and gas meters already equipped with an Itron® Cyble target. Streamline your metering processes with the LoRaWAN® Cyble Module for efficient and remote data collection.

LoRaWAN® Modularis Module G2



The LoRaWAN® Modularis Module G2 offers a powerful solution for water consumption data acquisition and seamless wireless transmission to your accessible LoRaWAN® network. This versatile module can also function as a drive-by target when operating in WM-Bus C1 mode. Designed for perfect compatibility, it is tailor-made to attach effortlessly to Modularis water meters. Elevate your data collection efficiency with the LoRaWAN® Modularis Module G3, ensuring accurate and remote monitoring of water consumption.



LoRaWAN® Falcon MJ Module G3



The LoRaWAN® Falcon MJ Module G3 empowers efficient water consumption data acquisition, offering seamless wireless transmission to your available LoRaWAN® network. This versatile module also functions as a drive-by target when operating in WM-Bus C1 mode. Elevate your data collection capabilities with the LoRaWAN® Falcon MJ Module, ensuring precise and convenient monitoring of water consumption.

ZENNER

Ultrasonic water meter IUWS



The IUWS is an ultrasonic water meter with wM-Bus radio interface for the precise measurement of water consumption and for remote transmission of meter and status data to mobile or stationary receivers. The IUWS is used in metering and submetering. Available variants: OMS Gen. 4, Sec. Profile A / B

ZENNER

Ultrasonic thermal energy meter zelsius® C5 IUF



The thermal energy meter zelsius® C5-IUF operates with an innovative ultrasonic technology, specially developed for a broad scope of application from submetering to domestic and district heating and cooling.

Optional interfaces: M-Bus, wireless M-Bus, LoRa® and 3 pulse inputs or outputs

Available variants: OMS Gen. 4, Sec. Profile A / B

ZENNER

Ultrasonic water meter IUW plus NDC



The IUW is used for recording high and fluctuating flows in water supply and commercial & industrial applications. The consumption data and status information are transmitted to mobile or stationary receivers via the connected NDC module by wireless M-Bus.

Available variants: OMS Gen. 4, Sec. Profile A / B

ZENNER

Electronical heat cost allocator caltos E



The heat cost allocator caltos E with integrated wM-bus radio interface serves to record the share of heat produced by radiators. The caltos E with its many possible uses and its convenient recording and data transfer technology fully satisfies the high level of requirements for the housing industry and the increasing demand for comfort by homeowners and tenants.

Available variants: OMS Gen. 4, Sec. Profile A / B

TOPAS® Sonic Ultrasonic Meter / CALEC® ST III Standard & Smart



TOPAS® SONIC

Our TOPAS® SONIC is an ultrasonic water meter for domestic applications. As a smart metering solution, it enables remote data readout via LoRaWAN® and wM-Bus. Thanks to its brass pipe with free-flow design, not only does it feature high mechanical robustness, but there are no mechanical parts in the pipe. Hence, the TOPAS® SONIC offers the highest possible resistance against bacteria or dirt adhesion.



CALEC® ST III Standard & Smart

The CALEC® ST III Standard & Smart is a multifunctional heat and cold calculator for applications in local/district heating and building technology. The calculator provides accurate meter measurements remotely and enables bidirectional energy measurement, namely cooling and heating measurements in the same device. Thanks to its large panel of communication technologies, its modularity is beyond optimal.



PiiGAB 900T Multi-protocol gateway

LoRa WAN, wM-Bus and M-Bus.

Multi-protocol gateway supporting LoRa WAN, wM-Bus and M-Bus in the same gateway. It opens up entirely new possibilities when you can combine meters and sensors regardless of the protocol in the same gateway.

COST-EFFECTIVE

With a gateway that supports the two most common data collection protocols, only one gateway is needed. This helps reduce the costs of network infrastructure and maintenance.

HYBRID USAGE

With this multi-protocol gateway, you can choose the meter or sensor that best suits your purpose, whether the protocol is LoRa WAN, wM-Bus and M-Bus.

PiiGAB 900T wM-Bus with LTE-connectivity

The PiiGAB 900T with LTE is the optimal gateway if the property lacks an internet connection or if the fixed connection goes down. Maximize simplicity by ordering with a SIM card directly.

MORE SECURE

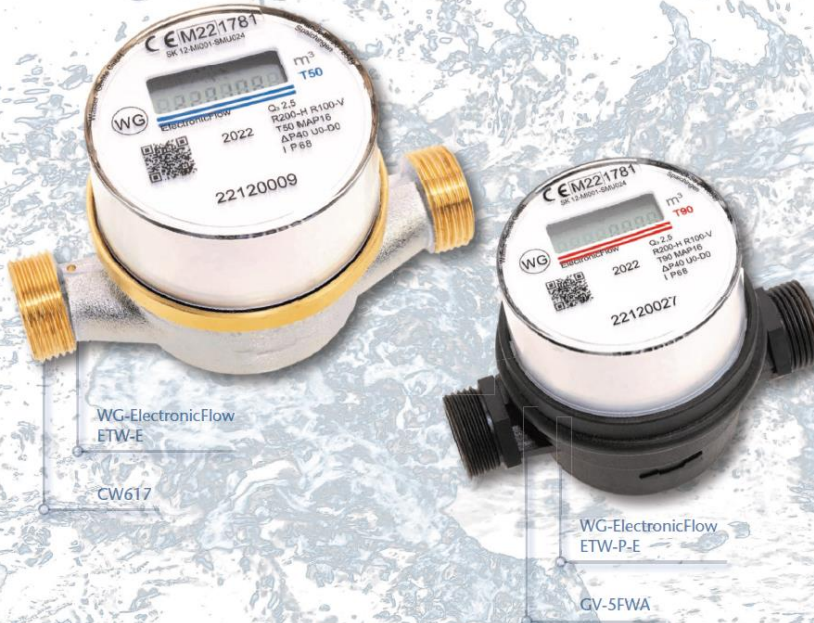
A 4G/LTE-connected gateway can be used as a redundant connection to ensure availability even if the fixed network goes down.

REMOTE ACCESS

Allows you to connect to the gateway remotely without the need for access to the property's network. This increases flexibility and efficiency in configuration and technical support.

COMPLETE WITH SIM CARD

Experience the convenience of PiiGAB SIM Card Service, a gateway complete with a SIM card. No complicated activation or additional purchases required. Stable connection on Telia's network, with or without an administration portal. The SIM card is, of course, an optional choice.



WG-ElectronicFlow
ETW-E

CW617

WG-ElectronicFlow
ETW-P-E

GV-5FWA

„WG-ElectronicFlow“

Einstrahl-Aufputz-Wasserzähler ETW-E / ETW-P-E
elektronisch mit LCD-Display

- MID-Messklasse: Horizontal R200 / Vertikal R100
- Funkart: 868 MHz (T1 / C1), wM-Bus, OMS-fähig
- Schutzart: IP68
- Temperaturbereich: Kaltwasser bis T50° / Warmwasser bis T90°
- Konfiguration über NFC-Schnittstelle
- Warnung bei: Manipulation, Leckage, Rohrbruch, Batteriestatus und Übertragungsfehler
- Vorwärts- und Rückflusserkennung
- Langzeitspeicher über 15 Monatsendwerte

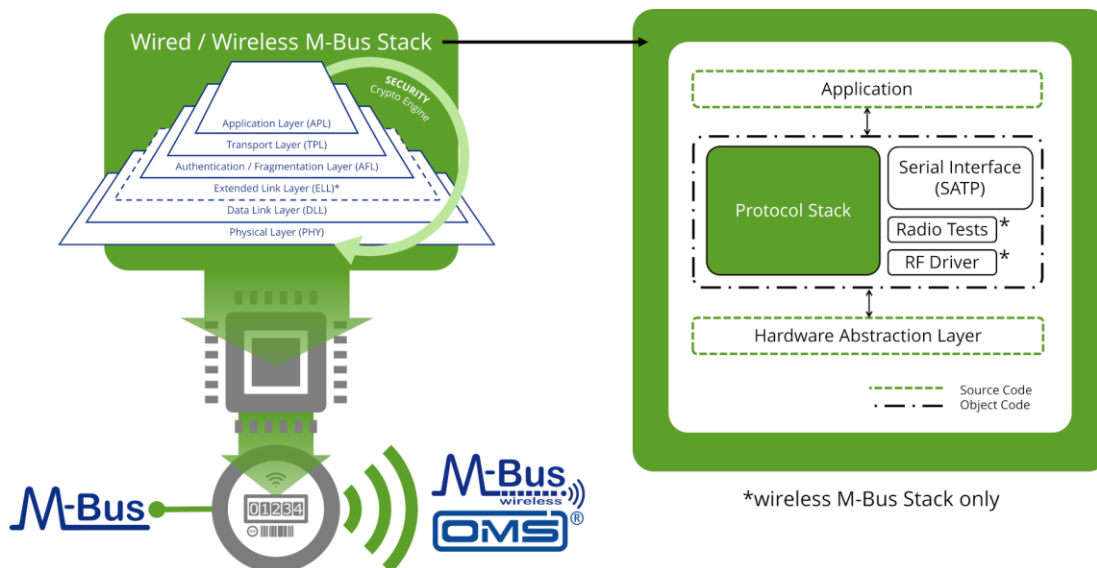
JV400 water meter



JV600 water meter



Wired/Wireless M-Bus Stack



IOT CONNECTIVITY WITH PROTOCOL STACKS

Based in Germany but operating worldwide, STACKFORCE is one of the leading experts in the development of embedded software and (wireless) connectivity solutions. STACKFORCE's core business focuses on the development and implementation of protocol stacks for various IoT use cases. The stacks support modern communication technologies like the well-proven wired and wireless M-Bus protocol and the Low Power Wide Area Network technologies mioty® and LoRaWAN®. The stack solutions of STACKFORCE can be integrated directly into products or as components to already existing or new to establish networks.

With currently three different standard protocol stacks for the metering or smart city area supporting the OMS specification, numerous use cases can be mapped. Heat, water, gas or electricity meters can be equipped with a protocol stack, as well as sensors for level measurement, air quality, CO² measurement and others. The application scenarios are manifold and depend on the respective requirements.

Our standard OMS stacks for smart metering/smart city applications:

- Wireless M-Bus/OMS Stack for meter & collector
- Wired M-Bus/OMS Stack for meter & collector
- Dual Stack Wireless M-Bus/OMS for meter + LoRaWAN® incl. wM-Bus/OMS-over-LoRaWAN®

All protocol stacks are compliant to EN 13757 as well as the OMS specification. The stacks developed by STACKFORCE are basically hardware agnostic and can be ported to almost any hardware platform, provided that the basic requirements to run the stack are met by the hardware. If there is no suitable standard stack in our portfolio for specific application requirements, we offer the cost-efficient development of a custom stack based on a standard stack or as a tailor-made solution.

Cordonel



Ultrasonic bulk water meter for potable water up to 50 °C

Drinking water supply

Building services engineering (e.g.: high-rise buildings)

Fire extinguishing / fire protection / sprinkler systems

Irrigation technology / agriculture

Process water

Cordonel is a high-performance bulk meter that enables you to manage your distribution network more efficiently and provides accurate and reliable data in any installation or environmental condition.

- Install in any environment with a meter that meets UOD0. Install in horizontal and vertical pipe orientations with no straight upstream and downstream pipe required.
- Integrate easily with a Sensus communication network for two-way information and data transfer.
- Receive accurate, reliable readings over a 20-year battery life—enabled by new technology that ensures all water entering passes through one of its three individual measuring paths.
- Measure beyond water consumption with pressure monitoring (optional) to proactively identify leaks, improve efficiency, and examine overall health of your water network.
- Ensure revenue assurance with a solid-state meter featuring no moving parts.

PolluStat



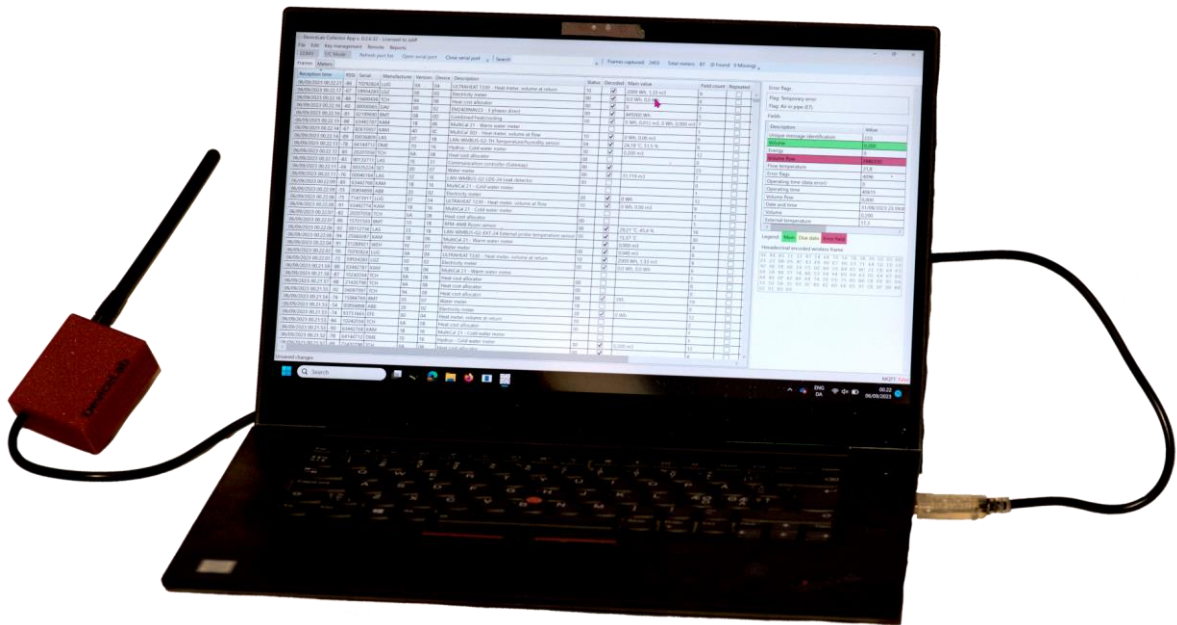
Compact ultrasonic thermal energy meter
District Heat / Industry Heat
Commercial Heating / Cooling (HVAC)
Domestic Warm Water Generation / Charging Systems

The compact PolluStat ultrasonic meter measures energy consumption in heating or cooling circuits. Thanks to its high-precision flow sensor, the application range stretches from district heating stations to consumption billing for individual apartments.

It is equipped with a large comprehensive LC display with programmable screens. The following modules for remote readout and data communication are available as options:

- Wireless M-Bus according EN13757-4
- Wired M-Bus per EN 1434-3 with arbitrary readout frequency, the values update every 2 min.
- Wireless M-Bus and 3 pulse inputs for consumption meters with remote meter pulse output
- LoRaWAN® communication
- M-Bus per EN 1434-3 and 3 pulse inputs for consumption meters with remote meter pulse output
- Pulse output
- Modbus

Payload Extractor & Payload Collector software from DeviceLab



Decrypt and decode data from a wide and growing range of wireless M-bus and OMS compliant meters and sensors.

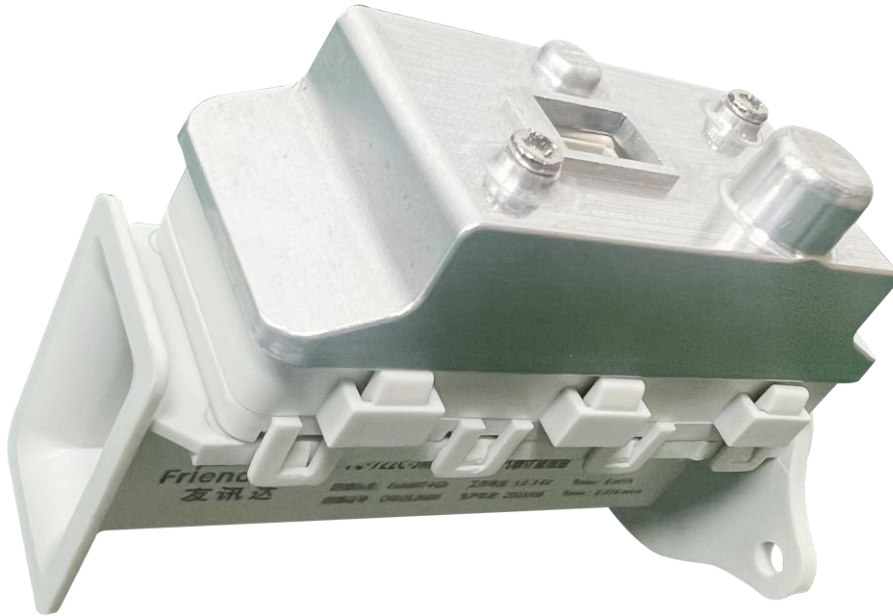
Get richer data faster for your energy management headend application1

- Richer: Every bit of information transmitted by the meter, including the device error flags1
- Faster: Low requirements to your AMR infrastructure removes data delays. And implemented on your server in a few days.

The Payload Extractor on-premise server app fills the tricky gap between your AMR infrastructure and your energy management or utility applications. Let DeviceLabs Payload Extractor technology handle datagram decryption and decoding for you, and focus your resources on building the product features that your customers want.

DeviceLabs Payload Extractor technology “translates” the raw encrypted datagrams - transmitted by your devices - into a JSON or XML data structure. Ready to be stored in your database, ready to be used for your energy management or utility applications.

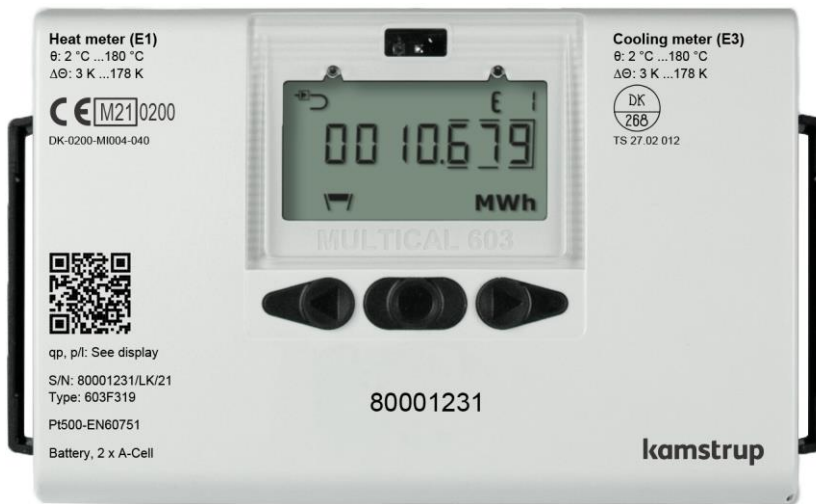
Gas and Water Meter



Joda IE.5-TD1



MULTICAL® 603



Une seule plateforme – d’innombrables possibilités

- Des coûts réduits avec un stock réduit
- Des coûts d’investissement réduits sur la durée de vie totale
- Votre installation de chauffage et de refroidissement parée pour l’avenir avec une totale flexibilité



Flow IQ 3100



Un compteur d'eau pour le commerce et l'industrie

- Technologie des ultrasons éprouvée, sans risque d'usure
- Excellente précision de mesure quels que soient les débits, élevés comme faibles
- Détection des fuites limitant les pertes d'eau pour les utilisateurs finaux
- Interopérabilité de la communication pour la télérelève

EM24-DIN.AV2.3.X.W1.E.X



EM24 W1 is a three-phase energy meter in a 4-DIN modules housing for DIN-rail mount. It embeds a wireless M-Bus communication provided with an external antenna. This set has been designed to allow the meter installation also in a metallic switchgear or in a place where, without an external antenna, radiofrequency signal would be difficult to propagate. The metering features and the wireless communication are ideal to meet energy efficiency monitoring and cost allocation when wiring is not possible or too expensive. EM24 W1 can be provided also with MID certification so to meet both main and submetering for billing purpose.

It can be installed in one-phase and three-phase systems up to 277 V L-N (480 V L-L) with direct current connection up to 65A with no need of auxiliary power supply. When the current exceeds 65A, a specific version with 5A current transformers connection is available to measure beyond 10kA.

If needed, communication parameters such as transmission interval, encryption enabling, transmission mode and frame type can be easily customized using the frontal joystick. A transmission test function and a transmission counter are available to help commissioning and troubleshooting.

EM24 W1 is compatible with Carlo Gavazzi or third-party gateways/receivers implementing transmission mode T1 or C1 and at least one of the following security profiles: no encryption, security profile A (ENC-Mode 5), security profile B (ENC-Mode 7).

EM24-DIN.AV2.3.X.W1.I.X



EM24 W1 is a three-phase energy meter in a 4-DIN modules housing for DIN-rail mount. It embeds a wireless M-Bus communication provided with fully integrated antenna. The metering features and the wireless communication are ideal to meet energy efficiency monitoring and cost allocation when wiring is not possible or too expensive. EM24 W1 can be provided also with MID certification so to meet both main and submetering for billing purpose.

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ULTRAHEAT® T450 and ULTRAWATER® W370



The ULTRAHEAT® T450 is a compact and at the same time flexible ultrasonic meter, which is suitable for many, especially demanding applications. Robustness, easy installation, on-site configurations, retrofitting of communication modules, sensors or power supply - these are just a few of the features that distinguish the T450. The new electronic design enables power supply via M-Bus and thereby an almost unlimited service life. The unique calibration logbook makes it possible to change the installation location, sensor type and energy unit at any time.

ULTRAWATER® W370 – the robust and IoT-ready ultrasonic water meter

This IoT-ready water meter offers advanced metering and network insights from afar: It comes with highly accurate and long-term stable ultrasonic measurement technology, enhanced functionalities, including optional leakage detection, and various communication options for data transmission like NB-IoT (LwM2M), LoRa® and wM-Bus.

With its robust long-life design, environmentally friendly lead-free brass tube, and energy efficiency, the W370 provides actionable insights on consumption, delivery quality, and meter point status across many years without maintenance.

Headline

Product picture

Description