



EnergyMetering

Apartment water meters

Optionally with pulse-output

Fittings meters

Flush-mounted meters

Surface-mounted meters



ZENNER
All that counts.

Apartment water meters

Dry-dial for cold and warm water, optionally with pulse-output

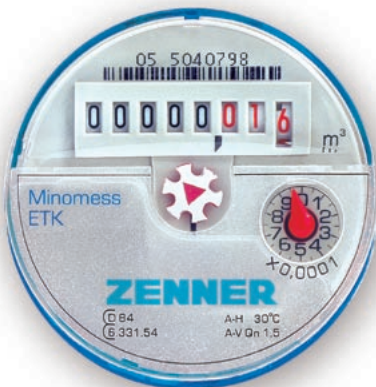
We offer two different meter types for the housing industry: single-jet meters and capsule meters. These are typically used for the sub-distribution of water consumption in apartment buildings. Different fittings are available for the capsule meters. These allow the simple retroactive installation of water meters when no central metering possibility exists.

Construction dry-dial

Our single-jet meters and the meters from our capsule and fittings meters programs are extra dry-dial meters. The transmission from the wet chamber to the counter occurs via a magnetic coupling. Thus, only the turbine works in the wet chamber. The counter rollers have no contact with the water. Malfunctions such as counter blockages due to polluted water are avoided and this shows in the excellent measuring results and the long lasting measuring stability

Eight-roller counter

Readings of the consumed cubic meters including the decimal places are safe and simple using our new modular counter with 8-digit rollers. With this counter, we simplified the required gear transmission ratio and compressed it constructively. This allowed us to make room for three different retrofittable modules. The meter is no longer as high as it used to be and thus, has a very modern appearance. The star wheel in the middle shows impeller movements from the smallest of flows and can for example, be used to detect leakage.



Surface-mounted meters

Our single-jet impeller meter (also surface-mounted meter) is tried and tested in a million times. It is an extra dry dial meter with a rotatable counterface for easy readout in horizontal and vertical installation positions. The model ETK is suited to temperatures of up to 30°C, while the model ETW can operate with a maximum temperature of 90°C. Short increases in temperature can't harm the meter due to the use of appropriate materials (ETK up to 50°C, ETW up to 100°C). As a standard, our meters are equipped with the innovative 8-digits roller counter.



Flush-mounted meters

Flush-mounted meters or capsule meters are an alternative to the classic single-jet meter. They are built into a flush-mounted body which remains in the piping, even after periodical replacements, which makes periodical replacement inexpensive and easy. We offer a multitude of capsules for flush-mounted bodies from other manufacturers that can be installed directly without an adapter.



Fittings meters

We offer a spectrum of fittings meters for the retroactive installation of water meters in apartments. These can be used when a meter must be retrofitted onto an existing tap connection. Fittings meters are equipped with a special type of capsule meter that can be replaced comfortably and quickly during calibration replacement. We use high quality chrome parts and our type -M counter for our program of fittings meters.

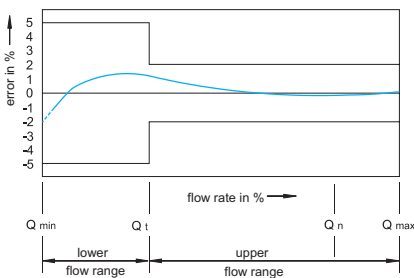




Meters with pulse-output as option

Today, modern meters must be able to cope with the most diverse of requirements. In addition to high measuring stability and accuracy, they must also be fit for the future. More and more often, meters are being read remotely, for example via M-Bus or radio systems. Our meter models "-I-N" fit these requirements perfectly. They unite all of the product advantages of the normal ETK/ETW, can however, also transmit meter readings per pulse. This means they can be connected to an electronic pulse counter module at any time.

The pulser is constructed as a potential-free reed switch and guarantees the highest possible compatibility with all common electronic modules available on the market.



Accuracy curve

Our meters are constructed for long-term adherence to the accuracy curve. The use of special materials makes our meters extremely stable on a long-term basis, i.e. they hardly change their accuracy curve at all over the period of their use. Our meters surpass legal requirements on metering precision without difficulty.

Installation positions

The best measuring results are achieved with single-jet meters when they are installed horizontally. This means that the counter faces up. In this position, the counters bearings are best discharged. The reduced friction results in very low starting values. Our meters can however, also be installed vertically, i.e. the counter can be tilted 90° onto its side. This way single-jet meters can be installed in vertical upstreaming or downstreaming pipes.

Norms and regulations

All of the meters manufactured by us conform to the installation and connecting dimensions in the DIN ISO 4064 resp. DIN 19684 Part 3 and other national and international norms and regulations. The existing PTB-approvals have a right of continuance until 2016 years and guarantee our customers reliable metering technology. We have already implemented the current developments in the European approval procedures and are successfully employing the approval and the procedure with regard to the declaration of conformity in correspondence with the regulations of the MID.

Our responsibility

It goes without saying, that we not only conform to all of the applicable legal requirements to environmental and health compatibility, but also fulfill our own, much stricter guidelines. The safety of all of the materials used is tested regularly with regard to drinking water suitability. We only use tested and approved plastic from well-known manufacturers for our counters. Our meter bodies are made of high quality brass from approved alloys. All of the materials we use comply with the current regulations in the Drinking Water Ordinance from the German Federal Ministry of Health.



ETK-M/ETW-M

Surface-mounted single-jet dry dial meter with modular counter



Our single-jet meter is suited to flow rates of up to $Q_n 2,5$. It has a very low starting value and can be installed horizontally or vertically. The compact design of the dry dial meter allows it to be installed in confined or hard-to-reach places. Its 8-digits roller counter guarantees correct readout results. Our ETK-M can be used for cold water up to 30°C. The hot water version ETW-M is an alternative for temperatures of up to 90°C.

Performance characteristics in overview

- Innovative counter with modular options for extending functions
- Ideal as a surface-mounted meter for consumption metering per apartment
- The cold water model offers safety up to 50°C
- The hot water model offers safety up to 100°C
- For horizontal and vertical installation

ETK-I-N/ETW-I-N

Surface-mounted single-jet dry dial meter with pulser

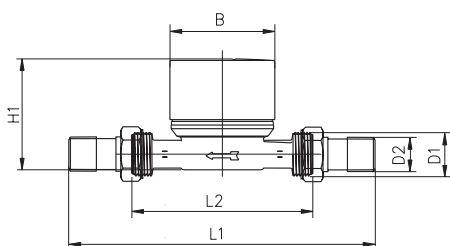


Our reliable single-jet meter is available with a 5-digits roll counter and retrofittable pulser ex works. Resolutions of 10 or 100 l/Imp are typical. Other pulse values are available on request. The roller counter can be easily read despite the attached pulser. The pulser can be sealed and replaced individually.

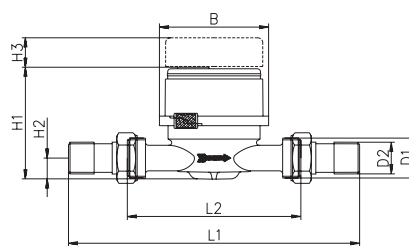
Performance characteristics in overview

- Model with pulse output (reed) for remote readout systems
- Pulse value 10/100 l/Imp (others on request)
- For horizontal and vertical installation

| Technical data for the models ETK-M, ETW-M, ETK-I-N and ETW-I-N | | | | | | | | |
|---|------|--------|---------|---------|---------|---------|---------|---------|
| Nominal flow | Qn | m³/h | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 2,5 |
| Nominal diameter | DN | mm | 15 | 15 | 20 | 15 | 20 | 20 |
| | | Inches | 1/2 | 1/2 | 3/4 | 1/2 | 3/4 | 3/4 |
| Overall length without connectors | L2 | mm | 80 | 110 | 110 | 130 | 130 | 130 |
| Overall length with connectors | L1 | mm | 160 | 190 | 190 | 228 | 228 | 228 |
| Thread at meter G x B | D1 | Inches | 3/4 | 3/4 | 1 | 3/4 | 1 | 1 |
| Thread at connector R x | D2 | Inches | 1/2 | 1/2 | 3/4 | 1/2 | 3/4 | 3/4 |
| Metrological class | | B*H | B*H | B*H | B*H | B*H | B*H | B*H |
| | | A*V | A*V | A*V | A*V | A*V | A*V | A*V |
| Maximum flow | Qmax | m³/h | 3 | 3 | 3 | 3 | 3 | 5 |
| Minimum flow | Qmin | l/h | 30 | 30 | 30 | 30 | 30 | 50 |
| Start-up flow rate | | l/h | 10 | 10 | 10 | 10 | 10 | 14 |
| Display range | min | l | 0,05 | 0,05 | 0,05 | 0,05 | 0,05 | 0,05 |
| | max | m³ | 99.999 | 99.999 | 99.999 | 99.999 | 99.999 | 99.999 |
| Maximum temperature | | °C | 30 / 90 | 30 / 90 | 30 / 90 | 30 / 90 | 30 / 90 | 30 / 90 |
| Operating pressure | PN | bar | 10 / 16 | 10 / 16 | 10 / 16 | 10 / 16 | 10 / 16 | 10 / 16 |
| ETK-M, ETW-M | | | | | | | | |
| Pulse value | | l/Imp | 1 | 1 | - | - | 1 | 1 |
| Height | H1 | mm | 70 | 70 | - | - | 70 | 70 |
| | H2 | mm | 80 | 80 | - | - | 80 | 80 |
| Width | B | mm | 64 | 64 | - | - | 64 | 64 |
| Weight | | kg | 0,42 | 0,42 | - | - | 0,52 | 0,52 |
| ETK-I-N, ETW-I-N | | | | | | | | |
| Pulse value | | l/Imp | 10/100 | 10/100 | 10/100 | 10/100 | 10/100 | 10/100 |
| Height | H1 | mm | 75 | 75 | 75 | 75 | 75 | 80 |
| | H2 | mm | 15 | 15 | 15 | 15 | 15 | 18 |
| | H3 | mm | 20 | 20 | 20 | 20 | 20 | 20 |
| Width | B | mm | 72 | 72 | 72 | 72 | 72 | 72 |
| Weight | | kg | 0,38 | 0,42 | 0,44 | 0,52 | 0,58 | 0,58 |



Dimensions ETK-M, ETW-M



Dimensions ETK-I-N, ETW-I-N

Modules for type -M and flush-mounted meters



Retrofitable modules for type -M surface-mounted meters and flush-mounted meters

Three modules are available for enhancing type -M water meters:

Key date module aqua date

This module records consumption daily. The current value, the past 18 monthly values, as well as the current and previous year's values can be saved at a freely selectable reading date. This means you can do without interim readings for tenant change because all of the intermediate readings are available with the main readout and can be consulted at any time for separating costs.



Pulse-module aqua pulse

The pulse-module scans the counter pulses of the basic device through a relay contact. Due to this, our type -M single-jet meters can be easily integrated into installations with central building control systems and can thus be used in large apartment or object buildings. To the liter exact!



M-Bus module aqua m-bus

The M-Bus module is a further innovation in the range of our products. It easily allows the optimum integration of type -M water meters in M-Bus networks: just plug the module into the meter and connect the bus cable to the network node. The fully-automatic, electronic readout of consumption data is as easy as that!

The flush-mounted meter Minolist

Capsule meters for EAS/EAT 2"

Minolist is our coaxial-measuring capsule meter built according to the multi-jet principle. Its great advantage is that the manifold body (EAS) must be set only at the initial installation and remains in the pipe during calibration replacement. Only the measuring capsule must be replaced.



Performance characteristics in overview

- Safe initial installation and quick replacement
- Installation possible in confined spaces
- Compatible with existing systems
- Easy installation of the measuring capsule
- High measuring stability due to the sapphire bearings of the impeller
- Readout in every position due to the rotatable counter
- Can be enhanced with modules

Flush-mounted body

Installation basis for the measuring capsule meter Minolist

The EAS/EAT is installed during the initial installation of the measuring capsule meter Minolist.

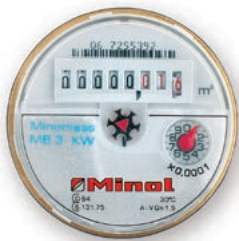


| Technical data Minolist | | | |
|-------------------------|----|-------------------|------|
| Nominal flow | Qn | m ³ /h | 1,5 |
| Thread | | Inches | 2 |
| Height | | mm | 80 |
| Overall length EAS | | mm | 110 |
| Weight | | kg | 0,44 |

Measuring capsule replacement program

For existing flush-mounted bodies

With its comprehensive range of replacement meters, we offer tailor-made solutions for almost all of the common measuring capsule bodies on the market, mountable without an adapter.



Minomess MB3

Fits Minol MB3



Minomess MB2

Fits Minol MB2



Measuring Capsule SP

Fits SPX PolluMUK, G2x1/4



Measuring Capsule TE

Fits Lorenz short design

Minomet

Fits Metrona-Brunata HT3 in the original EAT

Fits HT2 with the enclosed adapter HT3

Neptun

Fits Neptun-EAT (ZR, SPX, LZ, Rossweiner), M78x1,5

Measuring Capsule for ELSTER

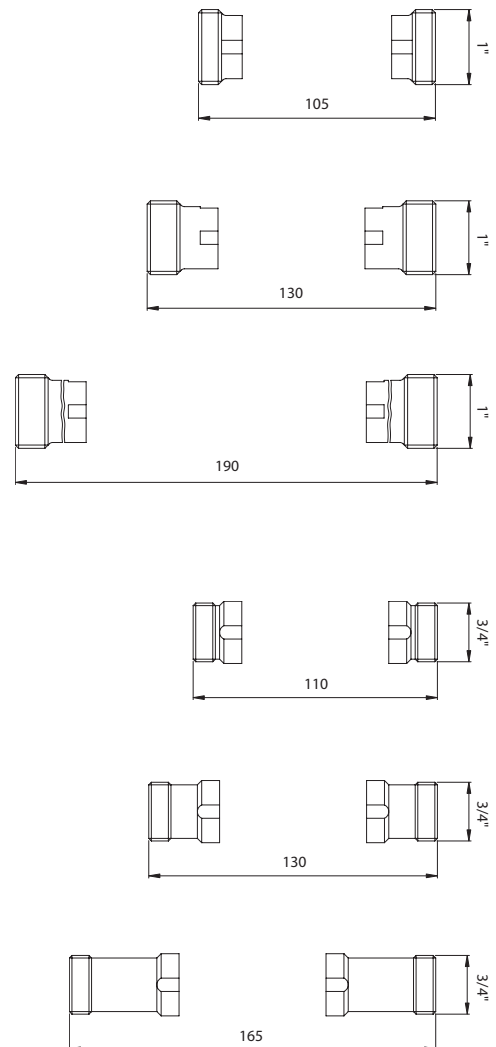
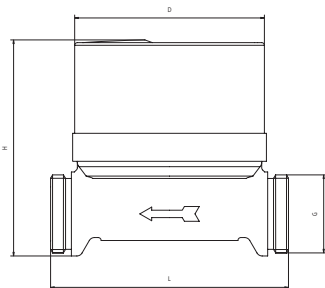
Fits ABB-Kent/Elster module meters MO-E, MO-C

Universal meter M22

Surface-mounted meter suitable for all installation situations

The universal meter M22 is suitable for a variety of application situations due to its range of adapter pieces in connection with the possible nominal sizes Qn 1,5 and Qn 2,5. Its advantages lie, above all, in meter replacement. With the different adapter pieces you can select the right configuration for the respective installation situation on location.

The adapter fittings with integrated O-ring-seals allow an individual installation length adjustment from 110 to 165 mm at 3/4"-threads and 105 to 190 mm at 1"-threads. With the pulse-module aqua pulse, you can retrofit remote-readout-outputs with 1 l/Imp.



| Technical data M22 | | | | |
|---------------------|-------|--------|---------|---------|
| Nominal flow | Qn | m³/h | 1,5 | 2,5 |
| Meter thread | G | | M22 | M22 |
| Overall length | L | mm | 80 | 80 |
| Connection thread | G x B | Inches | 3/4, 1 | 3/4, 1 |
| Installation length | | mm | 105-190 | 105-190 |
| Maximum flow | Qmax | m³/h | 3 | 5 |
| Minimum flow | Qmin | l/h | 60 | 100 |
| Height | H | mm | 71 | 71 |
| Weight | | kg | 0,42 | 0,42 |

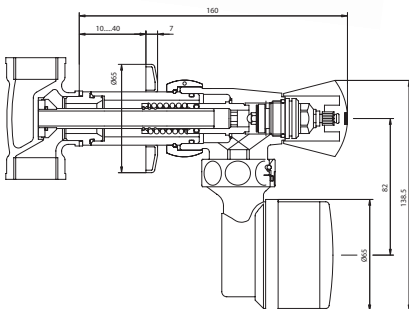


Valve meter type MC

Retrofit meter for flush-mounted valves

The valve meter type MC was especially developed for retroactive installation in existing flush-mounted stop valves 1/2", 3/4", 1" and 1 1/4". The modern, functional design blends in harmoniously in your bathroom, WC or kitchen. This meter solution is characterized by a high level of reliability due to its technical conception:

- The installation is very simple: after dismantling the top part of the valve, the new valve meter is screwed into the existing valve housing. Walls and tiles aren't damaged.
- Even deeper lying stop valves aren't a problem: the meter's connector can be extended by up to three times 22 mm.
- Thanks to the integrated valve, the water supply in individual apartments can also be cut off after installation.
- Only the meter's measuring capsule must be replaced in a few small steps after the calibration validity has expired.



Dimensions Valve meters

Technical data valve meter type MC

| | | | |
|------------------|------------------|-------------------|------------------------|
| Nominal flow | Q _n | m ³ /h | 1,5 |
| Maximum flow | Q _{max} | m ³ /h | 3 |
| Minimum flow | Q _{min} | l/h | 60 |
| Rosette diameter | | mm | 80 |
| Valve size | | | 1/2", 3/4", 1", 1 1/4" |
| Weight | | kg | 0,44 |

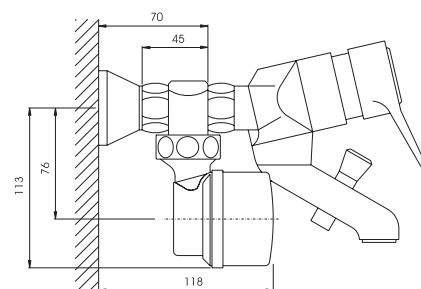
Bath tub meter type MC

Retrofit meter for bath tub mixer taps

Our bath meter can be easily installed between the S-connector and the mixer. For unilateral installation the fitting is adjusted with a special adapter. Only the meter's measuring capsule must be replaced after the calibration validity has expired.



| Technical data bath tub meter type MC | | | |
|---------------------------------------|-------|--------|------|
| Nominal flow | Qn | m³/h | 1,5 |
| Connection thread | G x B | Inches | 3/4 |
| Height | | mm | 68 |
| Overall length | | mm | 90 |
| Installation length | | mm | 45 |
| Weight | | kg | 0,44 |

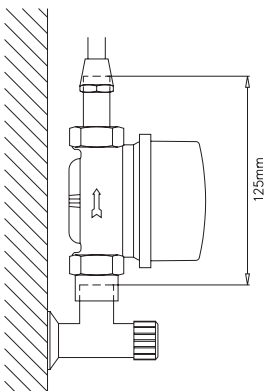


Dimensions bath tub meter

Washstand water meter

Retrofit meter for washstands

Our washstand water meter is installed on existing angle valves. Two versions are available for the line connection: Version A with a flexible metal hose and Version B with an adapter and a compression fitting for connection to existing copper lines with a diameter of 10 mm.



Dimensions washstand water meter

Technical data washstand water meter

| | | | |
|---------------------|-------|--------|------|
| Nominal flow | Qn | m³/h | 1,5 |
| Connection thread | G x B | Inches | 3/4 |
| Height | | mm | 75 |
| Overall length | | mm | 80 |
| Installation length | | mm | 125 |
| Weight | | kg | 0,42 |

Tap water meter

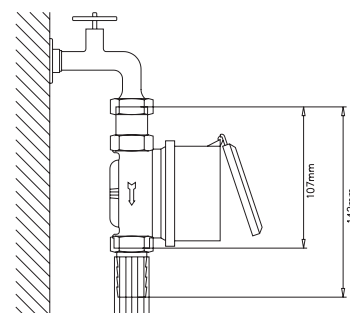
Retrofit meter for taps

Our tap meter can be fixed to all common outlet valves with its special connector. The meter's screw connection is protected against manipulation with a seal.



Technical data tap water meter

| | | | |
|---------------------|-------|-------------------|------|
| Nominal flow | Qn | m ³ /h | 1,5 |
| Connection thread | G x B | Inches | 3/4 |
| Height | | mm | 75 |
| Overall length | | mm | 80 |
| Installation length | | mm | 142 |
| Weight | | kg | 0,44 |



Dimensions tap water meters

ZENNER International GmbH & Co. KG

Römerstadt 4

D-66121 Saarbrücken, Germany

Telephone +49 6 81 99 676-0

Fax +49 6 81 99 676-100

E-Mail info@zenner.com

Internet www.zenner.com