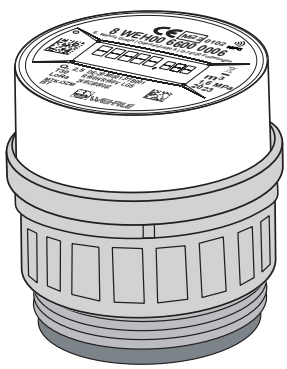
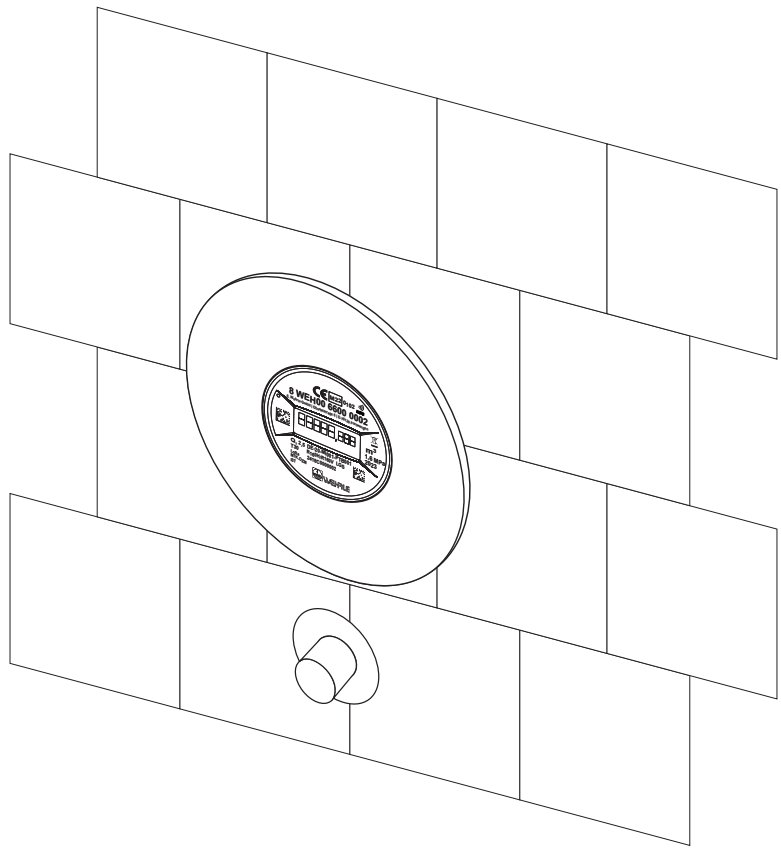
EN

WECOUNT-S
MTK-OZM
MTW-OZM





Operating Instructions

Multi-Jet Dry Meter Measuring Capsules WECOUNT-S

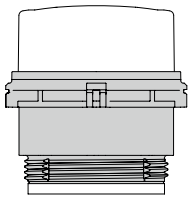
Content

Overview Measuring Capsules

WECOUNT-S: electronic water meter (W_C = Composite/W_M = Brass)

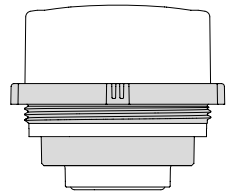
MODULARIS: mechanical water meter (M_C = Composite/M_M = Brass)

IST



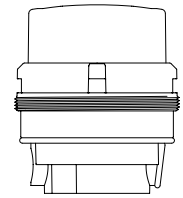
W_C	☒	W_M	☐
M_C	☐	M_M	☒

MOC/MOE



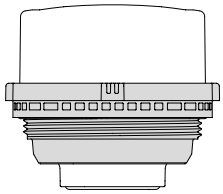
W_C	☒	W_M	☐
M_C	☐	M_M	☒

A34



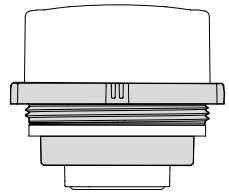
W_C	☐	W_M	☒
M_C	☐	M_M	☒

TE1



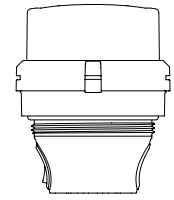
W_C	☒	W_M	☐
M_C	☒	M_M	☐

MET



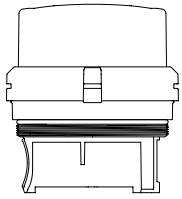
W_C	☒	W_M	☐
M_C	☐	M_M	☒

DM1



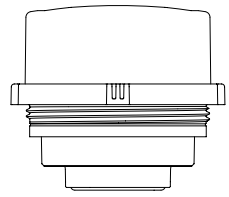
W_C	☐	W_M	☒
M_C	☐	M_M	☒

HT2



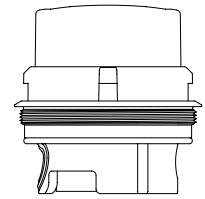
W_C	☐	W_M	☒
M_C	☐	M_M	☒

MUK



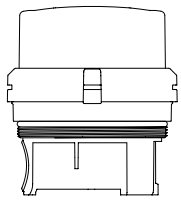
W_C	☐	W_M	☒
M_C	☐	M_M	☒

WE1



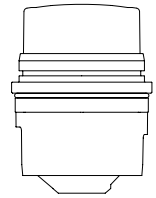
W_C	☐	W_M	☒
M_C	☐	M_M	☒

WGU



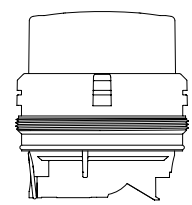
W_C	☐	W_M	☒
M_C	☐	M_M	☒

MB3



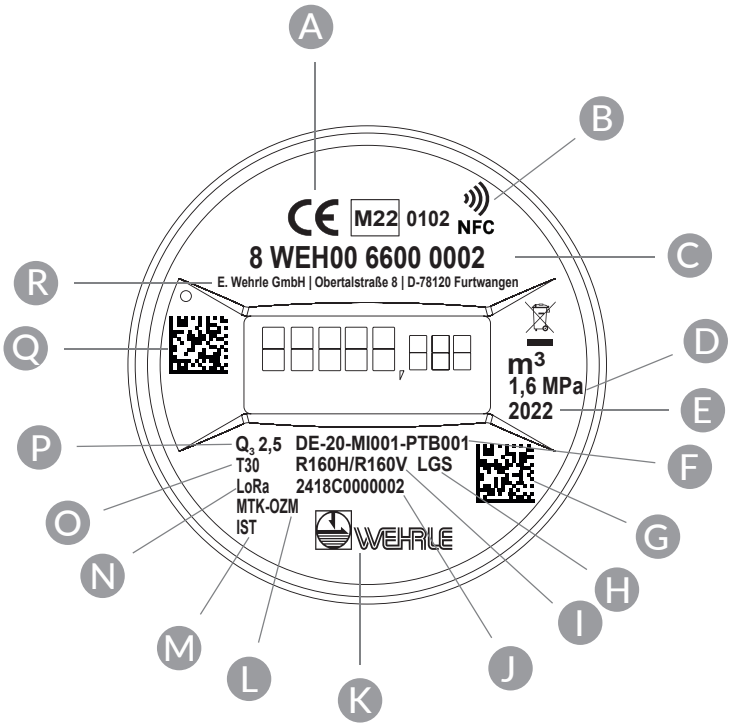
W_C	☐	W_M	☒
M_C	☐	M_M	☒

MB2



W_C	☐	W_M	☒
M_C	☐	M_M	☒

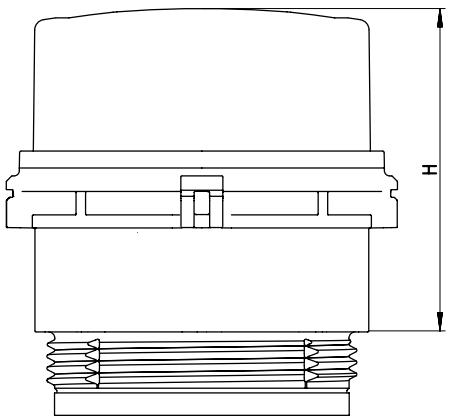
Device marking WECOUNT-S MTK-OZM



A	CE marking
B	Position of the local NFC interface
C	Serial number
D	Max. permissible pressure
E	Year of production
F	Type approval number
G	Placeholder for 2D data matrix code (key management platform)
H	Counter version 8/L = 868 MHz (wMbus-) / LoRa radio, G/K=Large/Small battery, S=WECOUNT-S
I	Measuring class/permitted installation position RxxH: horizontal position, RxxV: vertical position

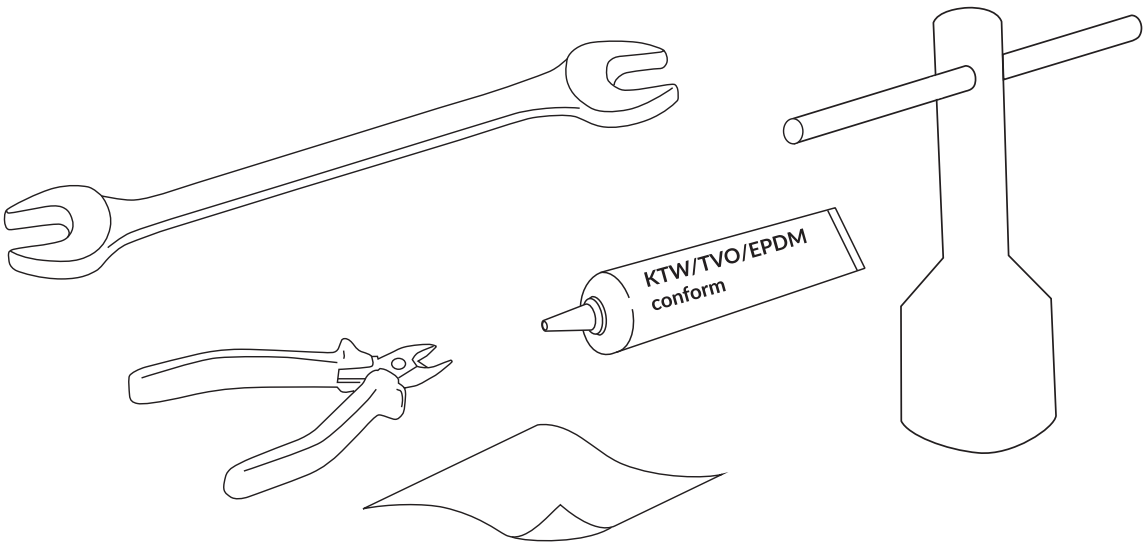
J	DevEUI / MAC address (optional for LoRa radio version)
K	Placeholder for customized logo
L	Meter type marking
M	Meter type interface
N	Radio standard (wMbus, LoRa)
O	Max. permissible water temperature
P	Meter size Q3
Q	Placeholder for 2D data matrix code (e.g. serial number)
R	Postal address

Device dimensions

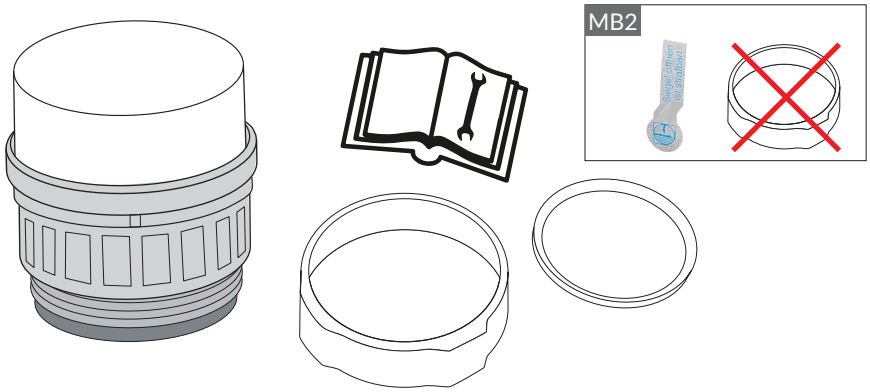


H = 35 - 65 mm

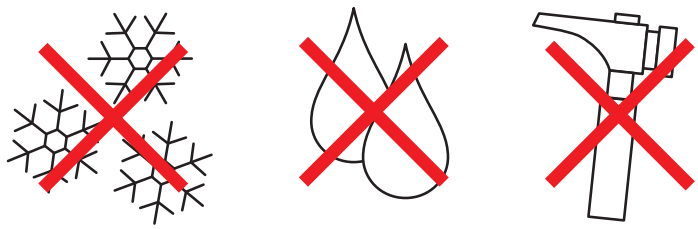
Required tools



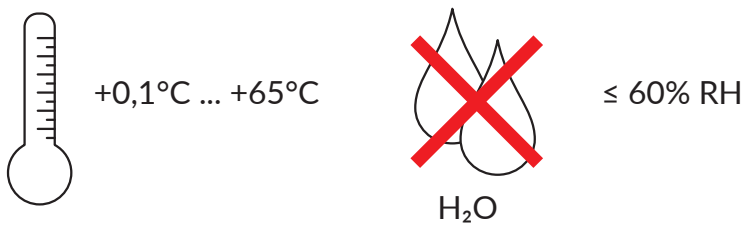
Scope of delivery



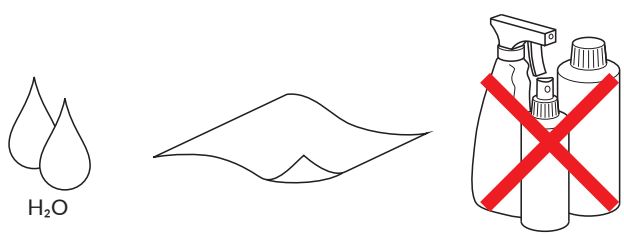
Transport



Storage and environmental conditions



Cleaning



Personnel qualification

The water meter may only be installed or replaced by trained specialists for sanitary, heating and air-conditioning technology.

Intended use

⚠ Water meters are used to record the drinking water consumption (according to TrinkwV), depending on the version for cold or warm water. Other cases of application that deviate from these specifications must be approved of in writing by E. Wehrle GmbH.

⚠ Water meters are exclusively intended for the above-mentioned function. The conversion and any use of the water meters different or beyond this is considered improper use and therefore not permitted.

⚠ Warranty is only effective after compliance with these regulations and the applicable technical rules has been proven.

- ▶ For the period of use, observe all applicable national regulations and in particular the calibration regulation.
- ▶ During installation, observe all specifications according to DIN EN 806 and DIN 1988, especially hygiene regulations and ambient temperatures.
- ▶ Observe the nominal operating conditions according to the type examination certificate and information on the devices.
- ▶ Keep these instructions close to the meter.

Safety notes and hazard warnings

⚠ Improper assembly, pressure tests, modifications or incorrect operation can cause personal injury and damage to property.

- If the seal is damaged or removed, the water meter is no longer licenced for legal metering.
- Check water meter for transport damage before installation.
- Do not drop, never hold by the protective cover or counter.
- If the water meter has fallen down, it must not be installed anymore.

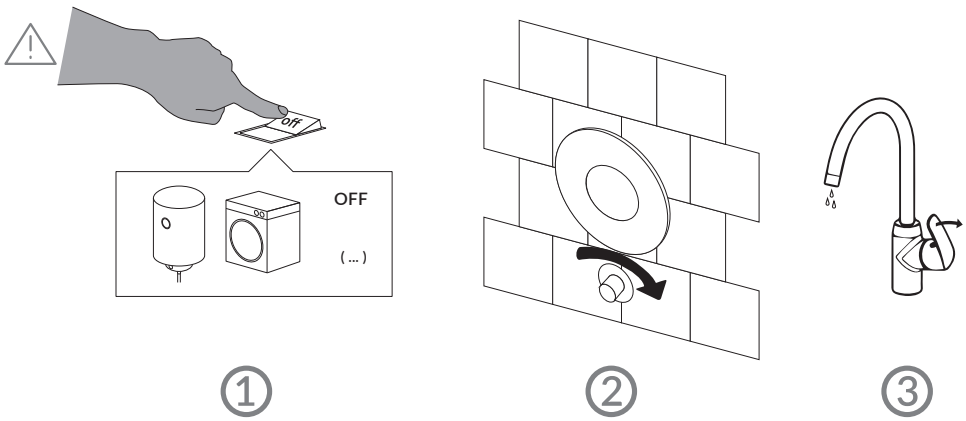
⚠ Pressure shocks in the pipe may damage the meter!

⚠ Present air pockets falsify the measurement result.

- Only use KTW/TVO compliant lubricants that are suitable for EPDM gaskets.
- Water meters may only be installed after a pressure test.
- Water meters may only be installed in pipes that have already been leak-tested, flushed and vented and they must be well vented before commissioning.
- Make sure that the water meter is always filled with water.

Installing the water meter

1



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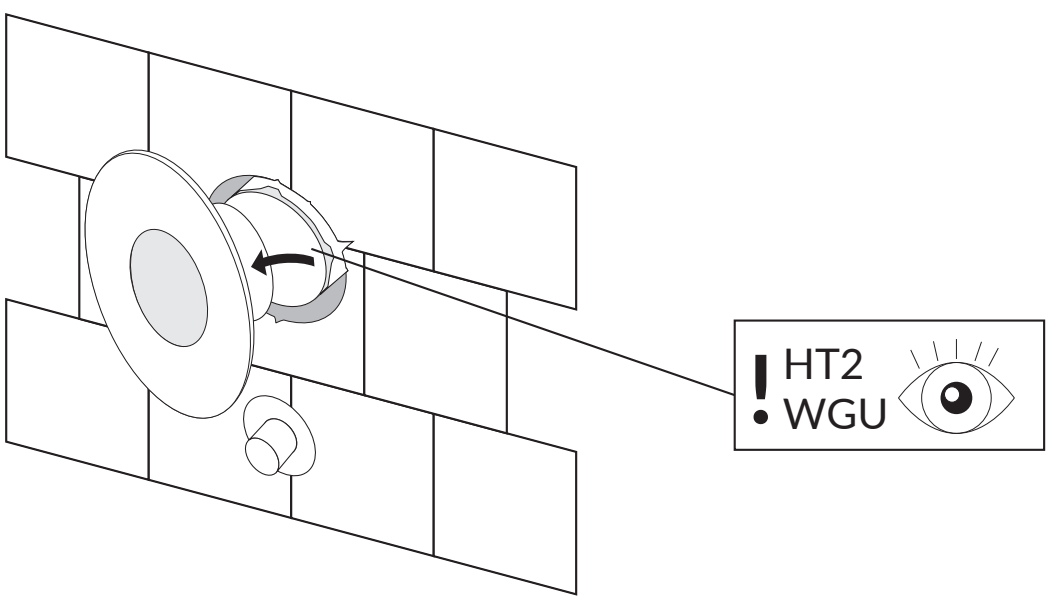

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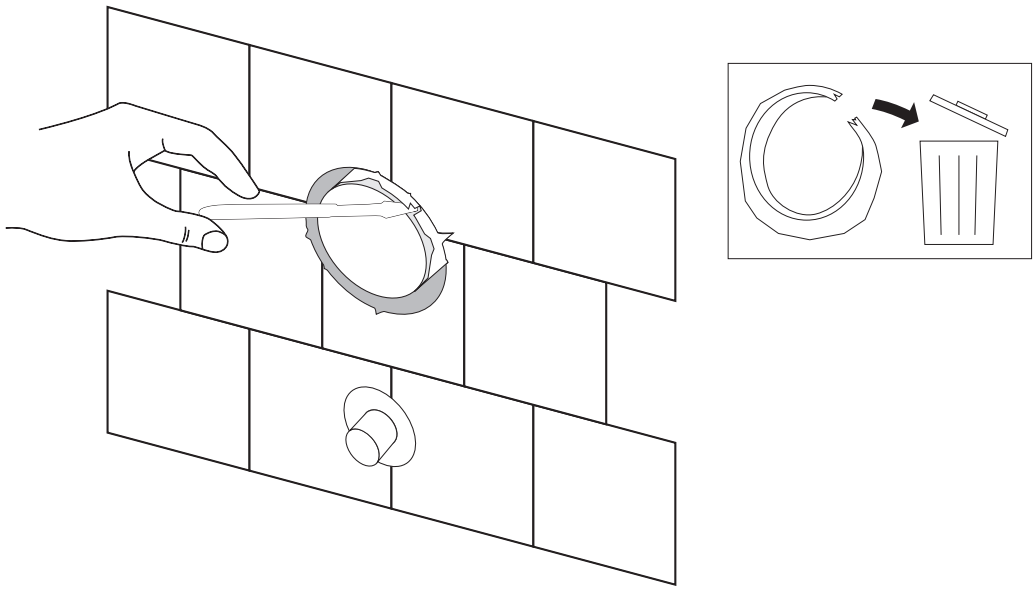

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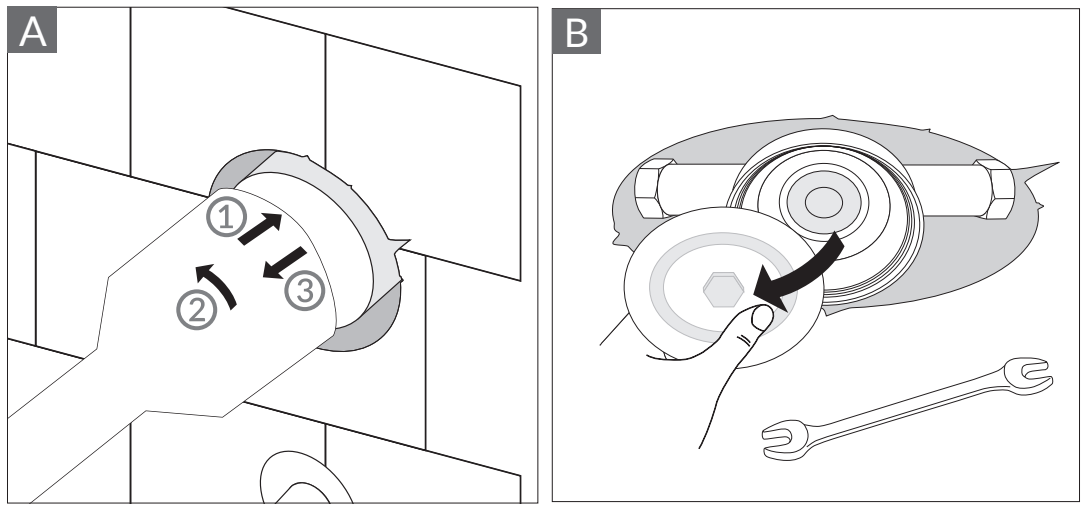

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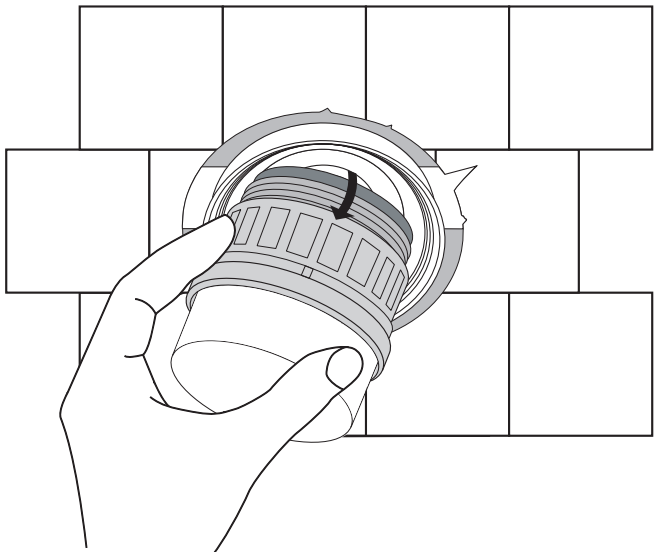

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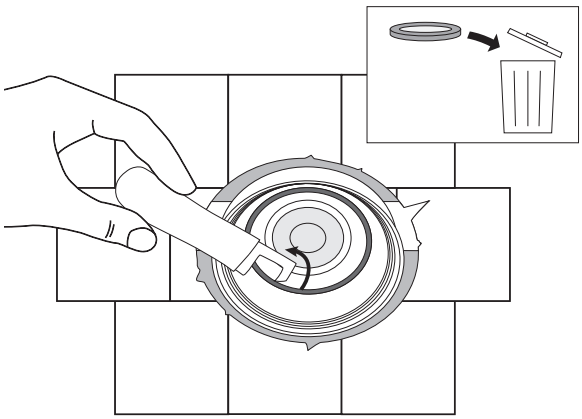
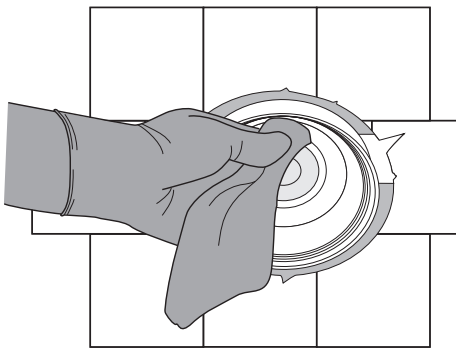
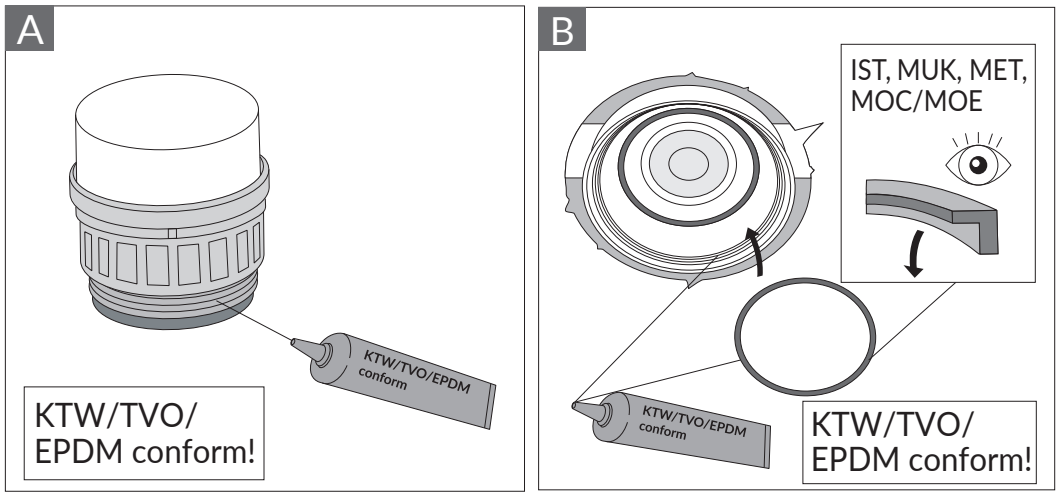


①

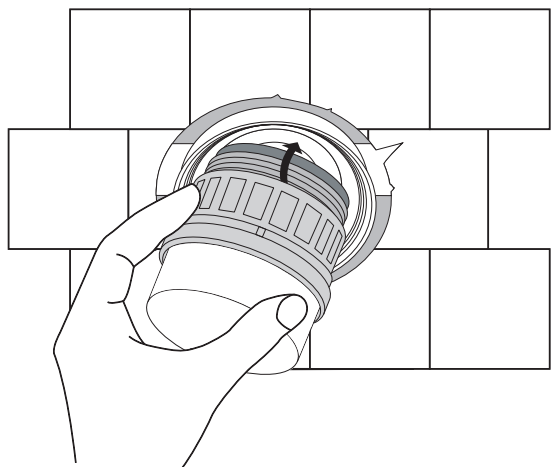


②

7


A
KTW/TVO/EPDM conform
KTW/TVO/
EPDM conform!
B
IST, MUK, MET,
MOC/MOE
KTW/TVO/EPDM conform
KTW/TVO/
EPDM conform!

8



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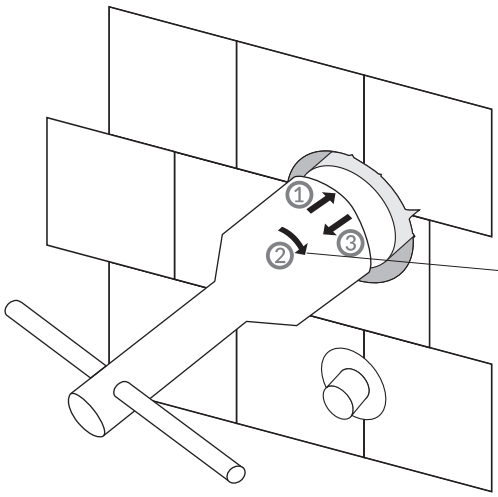
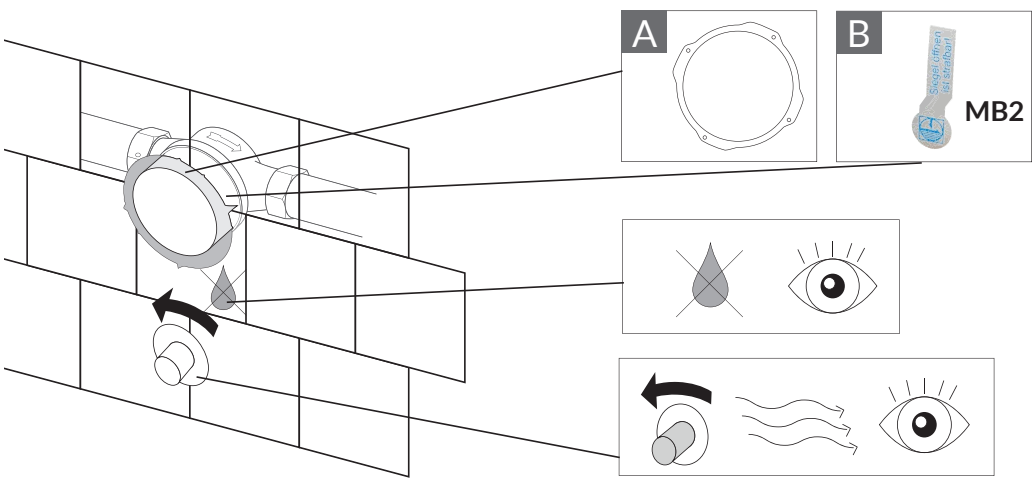


IST, TE1, MET, MOC/MOE
max. 40 Nm

A34, DM1, MUK, HT2, MB2, MB3, WE1, WGU
max. 80 Nm

10



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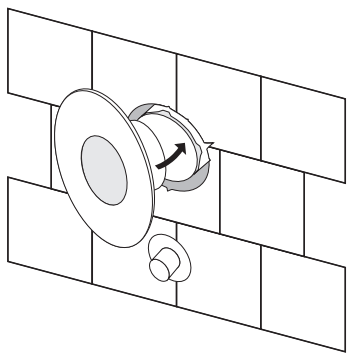
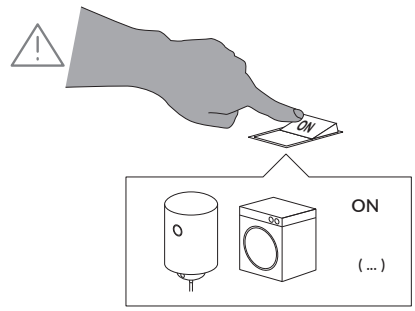


①

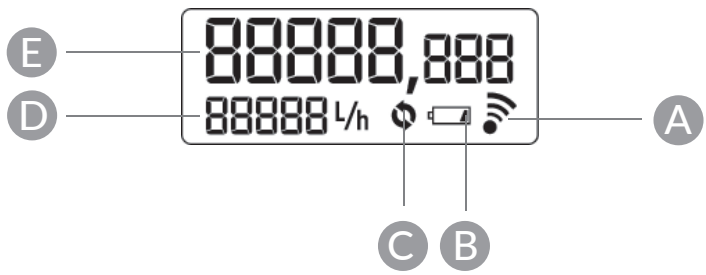


②

WECOUNT-S (electronic register)

The following device displays are examples!

Display explanation



A	Shows active radio signal
B	Battery warning symbol (replace device)
C	Flow rate symbol (flashes in case of flow)
D	Current flow rate value (optional)
E	Main display (m^3), cumulative consumption with 3 decimal places (litres)

Delivery condition

The SLEEP mode is the regular delivery condition of the meter. In this condition the meter already counts the consumption, with the radio transmission not yet active to save energy during transport and until installation.

Note: The end customer/installer can be sure of the meter being a new device, when the word SLEEP is displayed.

Switching to operating mode + trigger radio

Opening a tap for a few seconds triggers the meter to switch to operating mode. The device display changes and only now the installation radio starts up.

The minimum volume of 5 l (standard) must be removed (e.g. turn on the tap completely for a short time). The minimum volume can be adjusted at the factory or via NFC interface.

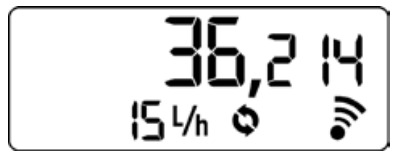
When switching to normal operation from SLEEP mode, the commissioning date is set, the volume is reset and the error log is deleted. The unit can also be switched to operating mode via the NFC interface with the WEPROG software on an Android or Windows device.

Installation radio

If you have triggered the installation radio after installing the meter, you can use it to check the reception.

In the first hour after commissioning, the transmission interval is 30 seconds. After this time, the configured interval is activated. Regardless of the configured radio times, the radio remains on for 24h until the 3rd midnight crossing. After this time, the radio calendar is used. During regular radio operation, the radio symbol in the display lights up permanently.

Radio settings



As soon as the radio is activated, it sends an encrypted radio telegram according to OMS (Open Metering System). During active radio times, the radio symbol lights up permanently.

Factory setting = Long telegram „Walk-by“ in C1 mode: Current value + due date value + 15 month-end values in Mode 5 AES encryption

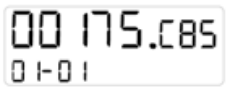
In factory setting, the radio signal is transmitted in 1 minute intervals from Monday to Friday, 6:00 am – 7:00 pm.

If other transmission times and/or a different radio telegram are desired, these can be configured using an NFC read/write head or an NFC-capable smartphone and the WEPROG software, see chapter „Radio settings configuration“ on page 30.

Attention!

At the request of the customer, the meter can also be programmed with other radio settings as default.

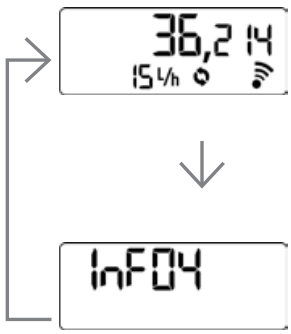
Device display loop

Device display	Display duration	Example
	10 s	Consumption 236,214 m³ Actual flow rate 15 l/h
	3 s optional	Consumption at due date 175 m³ Check number C85 Due date 01.01
	Min.1 s (can be extended)	Firmwareversion
	1 s minimum	Segment test all OFF
	1 s minimum	Segment test all ON

Depending on the device configuration as delivered, the display scrolls through the various contents. Here is a typical example of the display for the consumption at due date.

The „consumption at due date“ display can be optionally deactivated using the WEPROG configuration app, as can the „current flow rate“ display, see chapter „WECOUNT-S additional functions“ on page 24.

Event and error messages

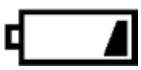


10 seconds

2 seconds

If the meter meets with an event or error, this is indicated by a message on the display. The event message display is integrated into the display loop for 2 second.

Battery lifetime



To indicate the end of the device's lifetime, the battery warning symbol is activated in the display (permanent notification) and the error message Err 09 is set. This is time-controlled once the "time to battery warning symbol" saved in the device for this purpose has expired. This warning symbol is also displayed in combination with error Err02 in the event of an unexpectedly early battery voltage drop. In this case, the unit must be replaced!

Overview of event and error messages

No.	Type	Description	Measures
Err01	System error	Memory error, detection defective	Replace device
Err02	BatLow	Battery voltage too low	Replace device
InF03	Manipulation	Fraud attempt (magnetic field)	Counter no longer valid for billing
InF04	Radio error	The meter no longer transmits a radio signal.	Check device
InF05	Pipe burst	Over a period of 24 hours an extremely high water consumption was determined.	Check pipe network
InF06	Leakage	The water has not been standing still for 24 hours, which indicates a permanent loss of water. (After 30 min stop the error is automatically reset).	Check pipe network for leaks
InF07	Qmax error	An inadmissibly high water flow rate has been detected, which may cause damage to the meter.	Check meter and pipe network
InF08	backflow error	Water runs through the meter in the wrong direction.	Check water meter installation
Err09	Battery end	End of the device's lifetime reached	Replace device
InF10	No flow	No flow for 21 days	Check Pipe network

WECOUNT-S additional functions

The functions described below are only available in conjunction with an NFC reader and the WEPROG configuration app.

Requirements:

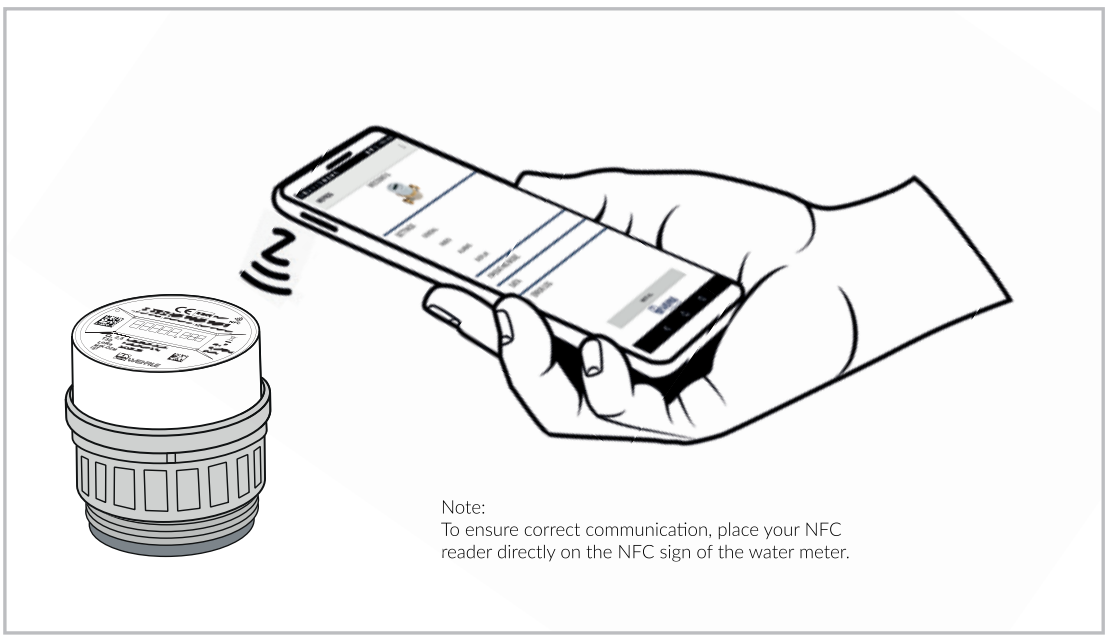
- Android mobile phone or Android tablet with NFC interface or:
- Windows notebook, tablet or PC with USB interface
- NFC read/write head with USB connector (available as an accessory)

▶ Click here for the WEPROG configuration app www.wehrle.de/metering/fernauslesung/software-apps/.

The following data can be viewed and/or changed via the NFC interface:

- Radio settings
- Event messages
- LCD settings
- Volume measurement values (current, set day, return flow, monthly values)

NFC (Near Field Communication) Device interface



The NFC interface in the water meter is located above the display on the upper right side of the top of the housing.

The interface is bidirectional, operates at a frequency of 13.57MHz and complies with ISO/IEC 15693. The maximum transmission rate that can be achieved is 26 kbit/s.

The NFC chip on the water meter is designed to use the energy from the NFC reader. The power supply can only be provided by the NFC reader. It therefore remains completely without power without the reader, the NFC chip is passive. The NFC chip does not send a signal by itself.

With the WEPROG software on an Android or Windows device, the water meter can be configured and switched to operating mode.

Access rights

There are 3 access rights:

- Consumer (no password, read only)
- Installer (read and change settings, password required)
- Verifier (read and change metrological parameters).

The default installer password is “0000”. It can be changed or disabled.

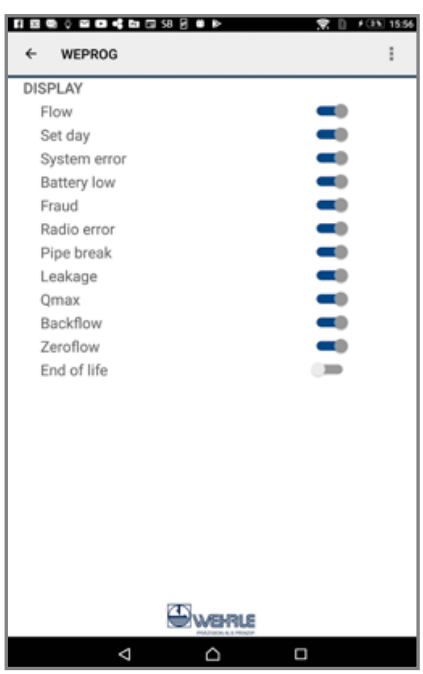
Data memory

Volume readings/15 month end values

The current volume is stored in the unit every 15 minutes. The volume on the due date is also stored and displayed in the unit. At the beginning of a new month, the current volume value of the previous month is stored. The volume values of the last 15 months are continuously stored and can be read out with the configuration app WEPROG.

LCD settings

The content of the unit's display loop in the LCD can be set individually via the WEPROG configuration app. Which displays or event messages appear one after the other can be easily switched on and off via the app.



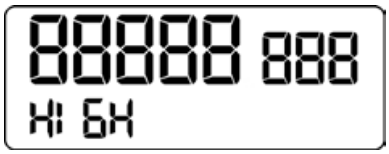
Event logfile

For various analysis, it is very helpful to be able to trace the chronological course of events. To make this possible, a rolling event log with the last 10 most recent entries is integrated in the counter: If many temporary events occur in succession, older important messages may drop out.

The individual events contain:

- Timestamp of occurrence
- Type of event
- Counter reading at occurrence

High resolution mode



For the purpose of metrological verification of the meter by an approved laboratory, the consumption display on the unit can be changed to a high-resolution display for a maximum of 24 hours. Instead of the usual m3 , millilitres (ml) are displayed. This mode is indicated on the unit display by the stylized word „HIGH“ being shown below the main display. At 24:00 midnight at the latest, the display is automatically reset to the standard m3 display.

To switch the meter to this high-resolution display, you need an NFC reader and the configuration app WEPROG (Android or Windows).

Radio settings configuration

For more information on installing the software for radio settings and programming, see: www.wehrle.de/metering/fernauslesung/software-apps/.

Adjustable radio telegram types wMbus models*

Short telegram (OMS)	T1	Current value, due date value (factory setting)
Short telegram (OMS)	C1	Current value, due date value
Long telegram (Walk-by)	T1	Current value, due date value, 15 month-end values
Long telegram (Walk-by)	C1	Current value, due date value, 15 month-end values

*LoRa models have differing radio telegram contents and radio parameters (standard = short telegram)

Further radio parameters

Item	Setting option	Factory setting	Comment
Days of transmission	Mon, Tue, Wed, Thu, Fri, Sat, Sun	Mon - Fri	Each weekday can be selected individually. This also allows for the radio to be suppressed during the weekend.
Months of transmission	Jan–Dec	All months	Each month can be selected individually.
Hour of transmission	0–12 am/pm, selectable by the hour	6 am–7 pm	For the active days of transmission, the active hours of transmission are selected here.
Interval of transmission	10 sec–4.5 h	1 min	-
Time zone	UTC -12:00 h to +12:00 h	UTC +01:00 h	This allows the time to be adjusted according to the location. Daylight saving time not taken into account.
Encryption-Mode	Mode 5, Mode 7 no	Mode 5	-
AES key	uniform, individual	individual	Each device can be encrypted with an individual key.

WECOUNT-S technical data

(Electronic register)

IP protection class	IP65
Radio standard	EN13757-4, wMBus according to OMS (Open Metering System), T1, C1 mode, AES-128 Encryption (4th Generation, Mode 5 + Mode 7, Security Profile A + B)
Radio frequency	868.95 MHZ
Radio range/ transmission power	1.5 kilometres in open space / 14 dBm
Battery	1 lithium cell, 3 VDC, protection class III, lifetime 13 years to 16 years
Interface	NFC; 13,57 MHz; max. 26 kbit/s, ISO/IEC 15693 conform
Storage temperature	+0.1 °C to +65 °C, dry
Ambient temperature	+0.1 °C to +65 °C
Medium temperature ranges	+0,1 °C to 30 °C cold water (T30) +0,1 °C to 90 °C hot water (T90)
LCD	8-digit, volume resolution 0.001 m^3 Flow rate in L/h
Environment class	B
Environmental conditions	M1, E1

Translations

For delivery to countries of the European Economic Area, the operating instructions must be translated into the language of the country of use. Should discrepancies occur in the translated text, either consult the original operating instructions (German) for clarification or contact the manufacturer.

Maintenance

The water meter is maintenance-free.

Disposal

- Dispose of the water meter in accordance with the applicable local environmental and disposal regulations.

The following applies to electronic water meters containing an electronic system and a lithium battery:

- Never dispose of the devices in household waste.
- If required, test certificates for the batteries in use can be obtained from E. Wehrle GmbH.
- Protect lithium batteries from moisture, do not heat to 100°C or higher and do not throw them into fire.
- Do not short-circuit, open, damage or recharge lithium batteries.
- Always keep lithium batteries out of reach of children.

Return

- Only send water meters to the supplier (distributor) in suitable packaging, carriage prepaid. Insufficiently prepaid packages cannot be accepted!

EG-Konformitätserklärung
EC declaration of conformity

E. Wehrle GmbH, Obertalstraße 8, D-78120 Furtwangen

Erklärt, dass die Mehrstrahl-Trockenläufer Messkapseln WECOUNT | *Declares that the Multi-Jet Dry Meter Measuring Capsules WECOUNT:*
MTK-OZM, MTW-OZM (IST, MOE, MOC, MET, MUK, A34, WE1, MB2, MB3, DM1, HT2, WGU, TE1)

Mit der EG-Baumusterprüfbescheinigung, ausgestellt durch die notifizierte Stelle 0102 (PTB) | *With the EC type examination certificate, issued by the notified body 0102 (PTB):*
DE-20-MI001-PTB001

Anerkennung des QM-Systems durch die notifizierte Stelle 0102 (PTB) | *Recognition of the QM system by the notified body (PTB):* **DE-M-AQ-PTB027**

Mit den Vorschriften folgender Europäischer Richtlinien und Normen übereinstimmen | *Are confirm with the regulations of the following European Directives and Standards:*

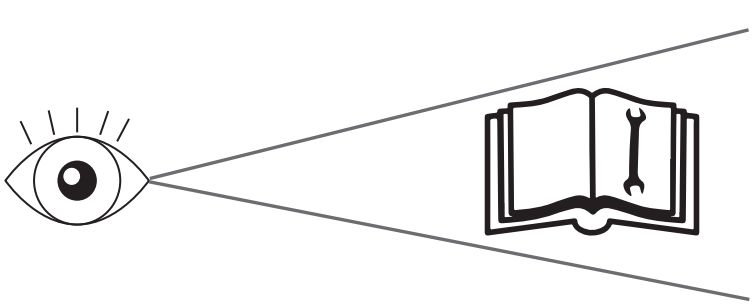
- **2014/32/EU, L 96/149, 29.3.2014 (MID)**
  EN 14154; ISO 4064; OIML R 49
- **2014/53/EU, L 153/62, 22.5.2014 (RED)**
  EN 300 220-1,-2; EN 300 330; EN 301 489-1; EN 301 489-3; EN 50364; EN 62369-1; EN 62479; EN 60950
- **2014/30/EU, L 96/79, 29.3.2014 (EMC)**
- **2011/65/EU, L 174/88, 1.7.2011 (RoHS)**
- **2012/19/EU, L 197/38, 24.7.2012 (WEEE)**
- **1907/2006, L 396/1, 30.12.2006 (Reach)**

Furtwangen, 2022-06-22

i. V. Marcus Hanak
Leitung Produktion

i. V. Thomas Pühler
Metrologiebeauftragter

EMK / 81.0611.00.00 [01] / 2022-06-22, MEA



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Operating Instructions Cartridge 81.0679.00.02 [02] 2024-04-02