



# MTKe - 868 MHz

Multijet domestic water meter



## Your benefits

- 2 communication technologies in one meter (Dual mode)  
**Investment security and efficient meter reading all the time with fall back to wireless M-Bus if LoRaWAN is not accessible**
- Utility grade and sustainable technology (robust & high grade wear resistant materials with brass body):  
**Excellent measuring stability and reliability over meter lifetime and awareness of using a recyclable product**
- Plug & Play:  
**Easy and fast on-site installation with automatic radio activation (no programming required)**
- Performance driven design:  
**Range up to several km (LoRaWAN) or up to several hundred meters (wireless M-Bus) - depending on environment**
- Integrated monitoring of connectivity and reconnecting mechanism (LoRaWAN):  
**Robust operation with automatic repair options, e.g. due to gateway failures**

## Applications

- Automated mobile or fixed network readout of relevant billing data

## Properties

- Multijet impeller wheel, super dry-dial, magnetic coupling
- Q<sub>3</sub> 2,5: Measuring range R100  
Q<sub>3</sub> 4-25: Measuring range R160
- Maximum operating pressure 16 bar  
Maximum operating temperature 30 °C
- Horizontal or vertical installation (Vertical riser/down pipe)
- Inlet strainer
- 18 monthly volume key date values
- **CE** Conformity according to European Measuring Instruments (MID)
- Radio transmission in license free 868 MHz frequency band
- Data transmission in accordance with LoRaWAN (v1.0.4) and wireless M-Bus acc. EN 13757-4 (OMS<sup>®</sup> Gen. 4, Issue 4.1.2) (Dual mode)
- Contactless NFC configuration and commissioning (tap and go) interface
- Internal data logger (upcoming feature)
- -----**LoRaWAN**-----
- Data security via AES-128-bit end-to-end encryption over 2 independent security layers
- ADR (adaptive data rate) support gives higher transmission intervals with consistent battery life
- Real-time clock synchronization with LoRaWAN-Network - DeviceTimeReq
- -----**Wireless M-Bus**-----
- AES128 encrypted wireless protocol security mode 5 (security profile A) or 7 (security profile B)
- Free route selection - no call-up required
- Migratable from drive-by system to fixed network application

## Options

- Only LoRaWAN transmission mode
- Only Wireless M-Bus transmission mode

# Technical Data

Execution			MTKe (horizontal)							MTK-VSe or -VFe (vertical) <sup>1)</sup>			
Nominal diameter	DN	mm	15	20	25	25	32	40	50	20	25	32	40
Nominal pressure	PN	bar	16	16	16	16	16	16	16	16	16	16	16
Connection thread on meter	G...B	Inch	¾	1	1¼	1¼	1½	2	2¾	1	1¼	1½	2
Connection thread on coupling	R...	Inch	½	¾ <sup>2)</sup>	1	1	1¼	1½	2	¾	1	1¼	1½
Nominal flow rate	Q3	m <sup>3</sup> /h	2,5	4	6,3	10	10	16	25	4	6,3	10	16
Overload flow rate <sup>3)</sup>	Q4	m <sup>3</sup> /h	3,125	5	7,875	12,5	12,15	20	31,25	5	7,875	12,5	20
Transitional flow rate ± 2 %	Q2	m <sup>3</sup> /h	0,04	0,04	0,063	0,1	0,1	0,16	0,25	0,04	0,063	0,1	0,16
Minimum flow rate ± 5 %	Q1	m <sup>3</sup> /h	0,025	0,025	0,039	0,062	0,062	0,1	0,156	0,025	0,039	0,062	0,1
Max. register reading		m <sup>3</sup>	1000'000							1000'000			
Temperature range	max.	°C	0,1...30							0,1...30			
Measuring range			R100	R160	R160	R160	R160	R160	R160	R160	R160	R160	R160

Dimensions and weights			MTKe (horizontal)							MTK-VSe or -VFe (vertical) <sup>1)</sup>			
Length without couplings	A	mm	165	190 <sup>4)</sup>	260	260	260	300	300	105	150	150	200
Length with couplings		mm	239	282	352	352	372	432	452	197	242	262	332
Height	B	mm	119	115	135	135	135	160	174	-	-	-	-
Height from pipe centre line	C	mm	84	85	91	91	91	114	117	-	-	-	-
Depth	D	mm	-	-	-	-	-	-	-	148	169	183	226
Depth from pipe centre line	E	mm	-	-	-	-	-	-	-	130	143	156	190
Installation depth from pipe centre line	W	mm	48	48	50	50	50	68	76	48	49	51	70
Height with open lid	G	mm	167	163	183	183	208	222	-	-	-	-	-
Weight without couplings		kg	1,7	2,1	2,6	2,6	2,7	5,4	6,7	-	-	-	-
Weight without couplings MTK-VS		kg	-	-	-	-	-	-	-	1,9	3,0	3,0	6,0
Weight without couplings MTK-VF		kg	-	-	-	-	-	-	-	2,0	3,4	3,7	7,3
Weight with couplings		kg	1,9	2,3	3,0	3,0	3,3	6,4	8,7	-	-	-	-
Weight with couplings MTK-VS		kg	-	-	-	-	-	-	-	2,1	3,4	3,6	7,0
Weight with couplings MTK-VF		kg	-	-	-	-	-	-	-	2,2	3,8	4,3	8,3

Ambient conditions	
Ambient temperature	+ 5 °C to + 55 °C
Transport & Storage temperature	- 20 °C to + 70 °C
Register protection class	IP67
Environmental class	B
Electromagnetic environmental class	E1

Power supply	
Lithium/Mangan battery (not replaceable)	3 V DC
Typical battery lifetime (depending on environment and configuration conditions)	Up to 15 years

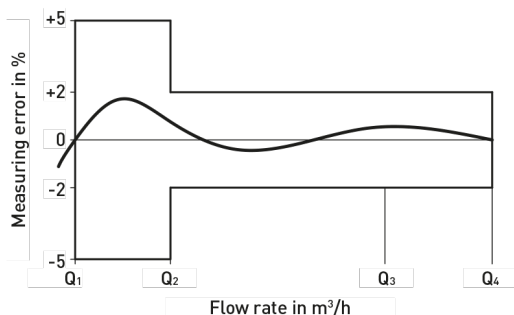
Approval	MTK3e (horizontal)	MTK3-VSe or -VFe (vertical) <sup>1)</sup>
MI-001 No. CH-MI001-07005	■	■

Certifications	MTK3e (horizontal)	MTK3-VSe or -VFe (vertical) <sup>1)</sup>
SVGW / KTW/BWGL	■	■
UBA Brass (DIN 50930-6)	■	■
LoRa Alliance Certification (1.0.4 spec.)	■	■

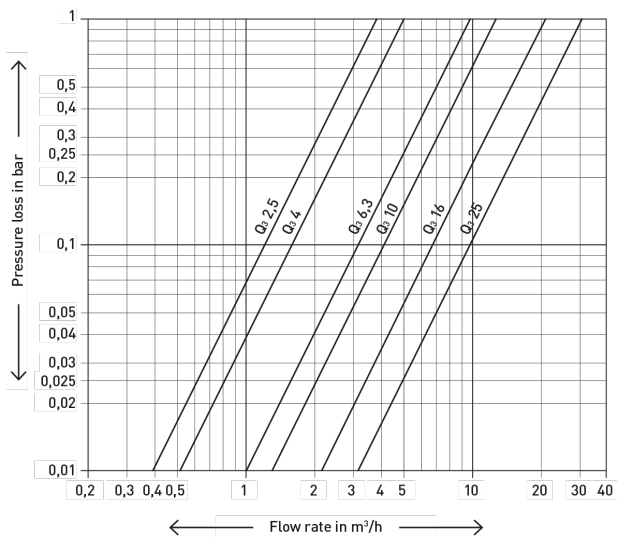
1) -VS = Vertical riser / -VF = Vertical down pipe 2) Also supplied with couplings R½ 3) Max. 1 h per 24 h, with total time of 100 h 4) Also supplied in length 220 mm

Information	
EU-Reach Art. 33 / ChemV Art. 71	Brass product contain lead > 0,1 %

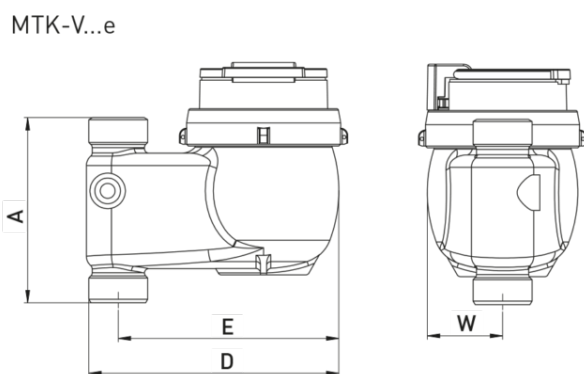
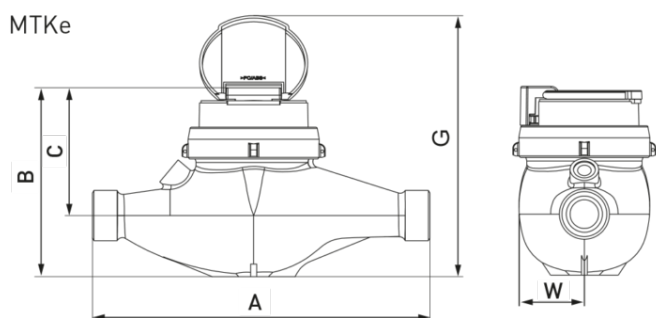
## Measuring error curve



## Typical Head Loss Curve



## Dimension Diagram



## Installation

<b>Pipeline:</b>	horizontal	—
	vertical	
<b>Meter head:</b>	upwards	↑

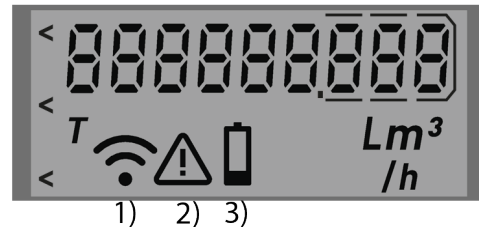
## Installation Requirements

The meter must be installed so that the type plate is always horizontally positioned, facing upwards (do not tilt).

📄 **Documentation:** [GWF water meters - BAdfei10122](#)

# Display, radio, data package

Display	
LCD	9 digits
Volume unit	m <sup>3</sup>
Volume resolution	0.001 m <sup>3</sup>
Flow rate unit	m <sup>3</sup> /h or L/h
Test mode	T
Low battery icon	see image 3)
Alarm icon	see image 2)
Radio indicator (On/Off) and LoRaWAN connectivity status	see image 1)



Radio specifications	
Frequency band	868 MHz
Transfer protocol (payload)	LoRaWAN: GWF specific Wireless M-Bus: Acc. EN 13757-4 (OMS@ Gen. 4, Issue 4.1.2)
Radiated power	max. 14 dBm (25 mW)
Class (LoRaWAN)	A
ADR (LoRaWAN)	Yes
Activation type (LoRaWAN)	OTAA
Mode (Wireless M-Bus)	C1, C2
Modulation (Wireless M-Bus)	FSK

Information data package	LoRaWAN <sup>1)</sup>	Wireless M-Bus <sup>1)</sup>
DevEUI	70B3D538700000AB	-
Meter manufacturer	GWF	GWF
Medium	Water	Water
Meter S/N	23132356	23132356
Absolute meter value	359.768 m <sup>3</sup>	359.768 m <sup>3</sup>
Absolute meter reading key date	-	343.417 m <sup>3</sup>
Date of key date reading	-	31.03.2022
Remaining battery life	Years	Days/Semester
Warnings	Meter alarms, Low Battery, Burst pipe, Potential leak, Backflow, No Usage, Max. flow rate exceeded, Min./Max. temperature	Meter alarms, Low Battery, Burst pipe, Potential leak, Backflow, No Usage, Max. flow rate exceeded, Min./Max. temperature

<sup>1)</sup> Other protocols (e.g. Privacy telegram) on request