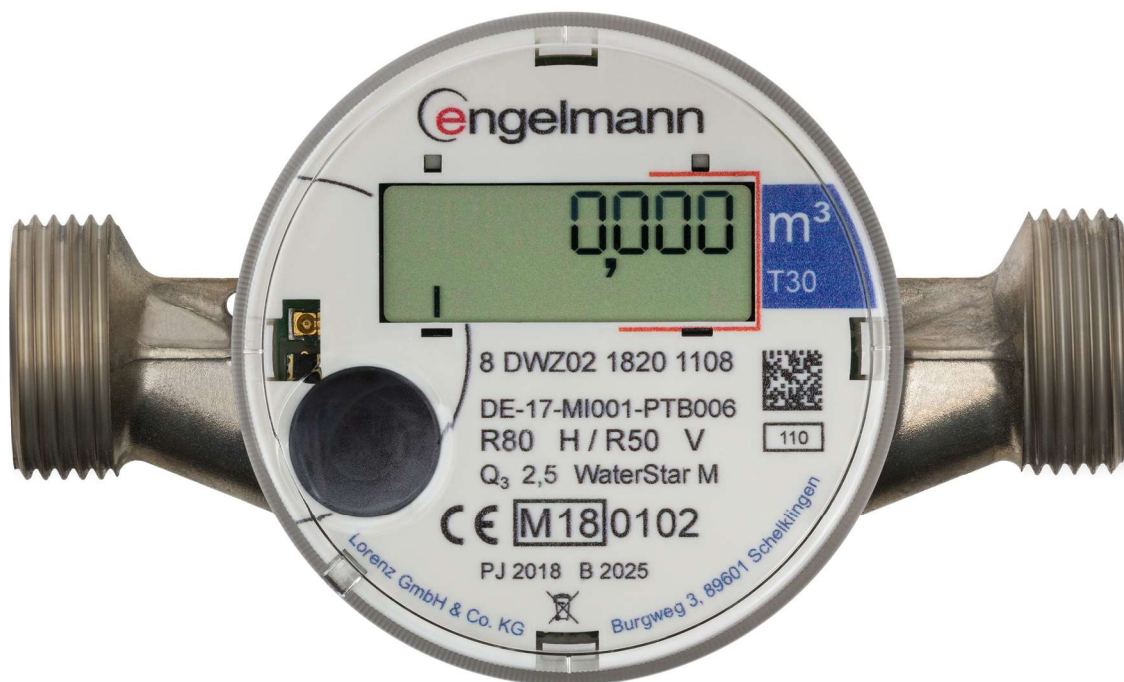


Engelmann Water Meter Radio

## WaterStar M

Meters for inline and a wide variety of measuring capsule installation points



- Integrated wireless M-Bus communication interface
- Impeller scanning, inductive scanning system
- Digital display
- Estimated lifetime of 11 years
- Detection of leakage

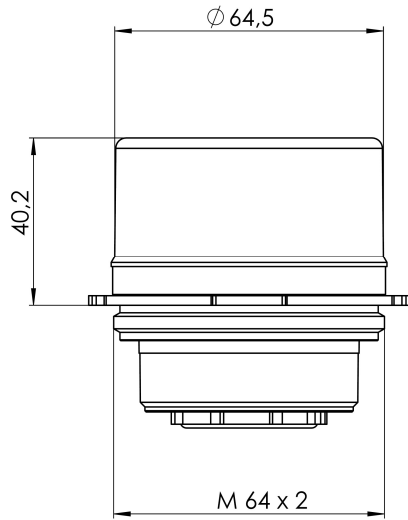
## Technical data:

### **WaterStar M**

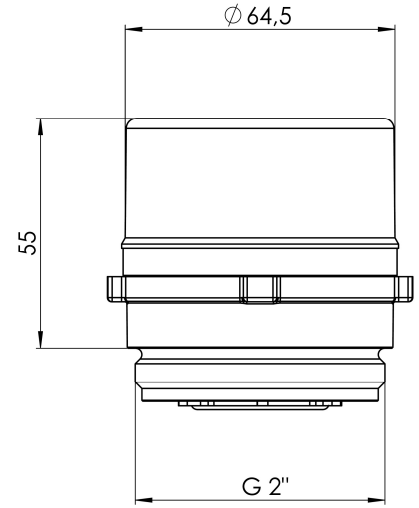
Measuring method		inductive scanning system; bidirectional			
Connection interfaces		measuring capsules (according to EN ISO 4064-4): MET; IST; TE1; MOE/MOC; MUK; A34; DM1; MB1/2; MB3; HT2; WE1; WGU; inline meters (80 mm, 110 mm, 130 mm)			
Permanent flowrate Q <sub>3</sub>	m <sup>3</sup> /h	2,5 (meas. capsules)	2,5 (inline m.)	2,5 (inline m.)	4,0 (inline m.)
Low flow threshold values	l/h	< 10	< 10	< 10	< 10
Minimum flowrate Q <sub>1</sub> (H/V)	l/h	31,25 / 50	31,25 / 50	31,25 / 50	50 / 80
Overload flowrate Q <sub>4</sub>	l/h	3125	3125	3125	5000
Maximum pressure drop at Q <sub>3</sub>	bar	0,63	0,63	0,63	0,63
Nominal diameter	mm	-	DN 15	DN 20	DN 20
Thread	inch	-	G3/4B	G1B	G1B
Length	mm	-	80; 110; 130	130	130
Ratio Q <sub>3</sub> /Q <sub>1</sub> (horizontal)		R80 (maximum R value depends on hydraulics)			
Ratio Q <sub>3</sub> /Q <sub>1</sub> (vertical)		R50 (maximum R value depends on hydraulics)			
Nominal pressure (MAP)	bar	10			
Temperature range cold water	°C	(T30) 0,1 - 30			
Temperature range warm water	°C	(T90) 0 - 90			
Mounting position		horizontal / vertical			
Ambient temperature in the field	°C	5 - 55			
Storage and transport temperature	°C	-20 - 50			
Display		LCD - 8 digits + special characters; display can be rotated 360°			
Unit		m <sup>3</sup>			
Button		capacitive touch sensor			
Communication interfaces		optical interface (M-Bus protocol); wireless M-Bus			
Radio characteristics		selectable: C1; T1			
Power supply	V	3; lithium battery			
Estimated lifetime	years	11 (depending on radio settings)			
Reading dates		selectable yearly reading date; 15 monthly values via display and wireless M-Bus; 15 monthly and semimonthly values via optical interface			
Mechanical class		M1			
Electromagnetic class		E1			
Environmental class		B			
Protection class		IP68			
Flow disturbance classes		U0 / D0			
CE		yes			

**Dimensions**

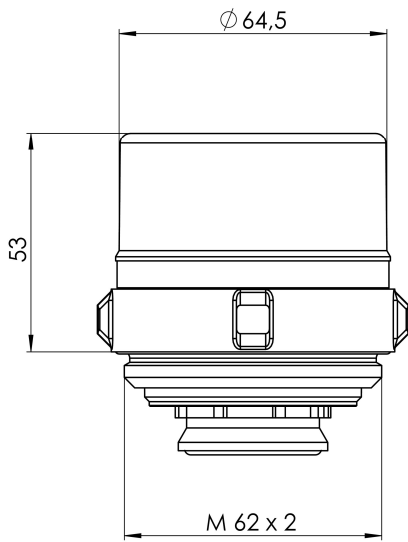
**MET**



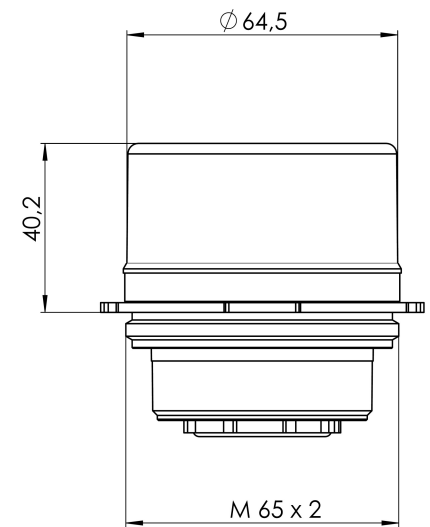
**IST**



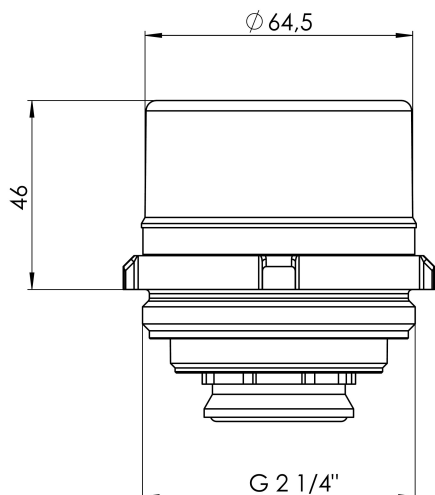
**TE1**



**MOE/MOC**



**MUK**



**Inline meters**

