Minomess®

Surface mounted water meter with radio module

LoRaWAN®- or wireless M-Bus-interface

The radio water meter Minomess® is a dry-dial meter with 7-digit-rollers register and shielded magnetic coupling. The individual advantage of the meter an exceptional compact design. With its very small height, the meter easily adapts to any installation situation. The meter is available in various lengths and dimensions. It can be used in horizontally and vertically position.

Minomess® is equipped with a LoRaWAN® or wireless M-Bus radio module ex works and can be integrated in LoRaWAN® readout-systems.

All materials, which are used in the drinking water section, comply with the required standards, guidelines and the current German drinking water approval (other country-specific drinking water approvals on request).

Performance characteristics in overview

- Single jet dry-dial meter with protected magnetic coupling
- With 7-digit-rollers register and modulator disc (1 l/pulse) for non-reactive scanning for radio
- For horizontal and vertical installation (also for risers and downpipes)
- Register cap made of high-quality UV-resistant polymer plastic
- Battery life 10 years after radio activation
- Brass body (outside chrome-plated)
- Register rotatable 360 °
- Operating pressure MAP 16
- Approved according to MID

Applications

- For the consumption measurement of cold and clean drinking water or service water up to 50 °C
- For the consumption measurement of hot and clean drinking water or service water up to 90 °C

AMR options

- Equipped with a radio module as standard:
  - LPWAN radio module (868 MHz) for LoRaWAN®
  - wireless M-Bus radio module

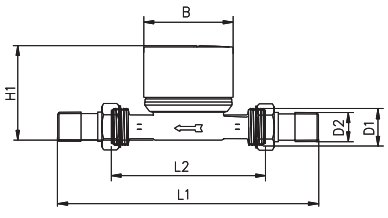
Smart Metering functions

- Self monitoring
- Tampering detection
- Reverse water flow detection
- Leakage detection
- Meter stop detection
- Meter oversized detection
- Meter undersized respectively pipe burst detection

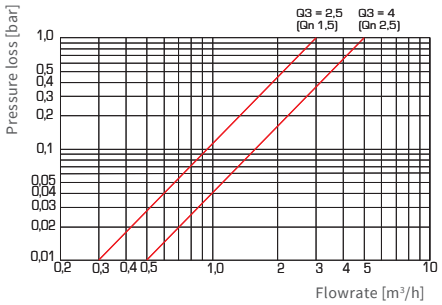
Minomess® with LoRaWAN®- or wM-Bus-interface

Technical data						
Permanent Flowrate	Q_3	m^3/h	2.5	2.5	2.5	4
Attainable measuring range	Q_3/Q_1	R	80H/40V	80H/40V	80H/40V	80H/40V
Standard measuring range [1]	Q_3/Q_1	R	40H/40V	80H/40V	80H/40V	80H/40V
Overload Flowrate	Q_4	m^3/h	3.125	3.125	3.125	5
Transitional Flowrate [2]	Q_2	l/h	50H/100V	50H/100V	50H/100V	80H/160V
Minimum Flowrate [2]	Q_1	l/h	31H/63V	31H/63V	31H/63V	50H/100V
Start-up flow rate	-	l/h	<10	<10	<10	<14
Display range	min	l	0.05	0.05	0.05	0.05
	max	m^3	9999.999	9999.999	9999.999	9999.999
Temperature range	Cold water Hot water	°C	0.1-50 0.1-90	0.1-50 0.1-90	0.1-50 0.1-90	0.1-50 0.1-90
Operating pressure	MAP	bar	16	16	16	16
Pulse value	-	l/Imp.	1	1	1	1
Pressure loss class at Q_3	Δp	bar	0.63	0.63	0.63	0.63
Mechanical environmental condition	-	-	M1	M1	M1	M1
Climatic ambient conditions [3]	-	°C	5 - 70	5 - 70	5 - 70	5 - 70
Flow profile sensitivity	-	-	U0/D0	U0/D0	U0/D0	U0/D0
Dimensions and weights:						
Nominal diameter	DN	mm	15	15	20	20
		Inch	1/2"	1/2"	3/4"	3/4"
Overall length	L2	mm	80	110	130	130
Overall length with connectors approx.	L1	mm	160	190	226	226
Thread meter G x B	D1	Inch	3/4"	3/4"	1"	1"
Thread connector	D2	Inch	1/2"	1/2"	3/4"	3/4"
Width approx.	B	mm	64	64	64	64
Height approx.	H1	mm	77	75	78	78
Weight approx.	-	kg	0.44	0.48	0.59	0.59

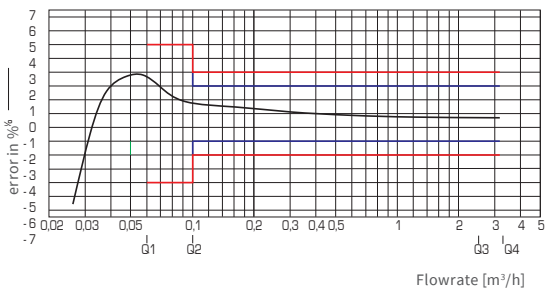
[1] Other measuring ranges (R) on request
[2] The data refer to the standard measuring range
[3] Condensation possible
Attention: not all versions are available in all markets



Dimensions



Pressure loss curve



Typical error curve

Technical data LoRaWAN® radio module	
Operating frequency	868 MHz
Transmission power	max. 25 mW
Duration of transmission telegrams	up to 1.5 s (depending on spreading factor)
Sending interval	Standard: daily (monthly or 8 telegrams per day, each with the last 3 hourly values on request)
Data transmission procedure	LoRaWAN® class A (bi-directional communication)
Encryption of radio protocols	yes
Error detection	CRC
Telegram content	Telegram contents depend on the communication scenario. Contents can be, for example: Daily-, monthly, half-monthly value, key date, date, time, status information (alarms), firmware version, identification number
Optical interface	yes
Energy supply	Lithium battery
Battery life	10 years + reserve (scenario 201 and 202), 6 years + reserve (scenario 203)
Battery status monitoring	yes
Display	no
Reverse flow detection	yes
Protection class	IP67
Ambient conditions	+5 °C to +55 °C
CE conformity	according to directive 2014/53/EU (RED)
Radio activation (compact device with radio module ex works)	- by means of illuminating the IR interface > 8 s (illuminant should not be an LED); - by means of the ZENNER opto-head, the universal interface MinoConnect (USB or Bluetooth) and the MSS-configuration software or the ZENNER Device Manager Basic app; - Autostart after flow rate of 100 L from firmware 1.41 possible

Datalogger (readable via optical IrDA interface) IrDA-Interface	
Annual due date values	max. 2
Monthly values	18 plus 18 half-monthly values
Daily values	32

Technical data wireless M-Bus-radio module	
Operating frequency	868 MHz
Transmission power	max. 25 mW
Duration of transmission telegrams	approx. 10-15 ms
Sending interval *	180 seconds (standard), others on request
Data transmission procedure	wireless M-Bus (standard: C1 mode) from firmware 1.78: C1 or T1 depending on scenario
Encryption of radio protocols	yes (Standard: Encryption Mode 5; Encryption Mode 7 on request)
Error detection	CRC
Telegram content	Telegram contents depend on the communication scenario. Contents can be, for example: Serial number, date, meter reading, mid-month value, previous month (max. 15), status information radio module
Optical interface	yes
Energy supply	Lithium battery
Battery life	up to 10 years plus reserve from radio activation, depending on scenario
Battery status monitoring	yes
Display	no
Reverse flow detection	yes
Protection class	IP67
Ambient conditions	+5 °C to +55 °C
CE conformity	according to directive 2014/53/EU (RED)
Radio activation (compact device with radio module ex works)	The activation of the radio and the coil scanning of the module can be carried out: - by means of illuminating the IR interface > 8 s (illuminant should not be an LED); - by means of the ZENNER opto-head, the universal interface MinoConnect (USB or Bluetooth) and the MSS-configuration software or the ZENNER Device Manager Basic app; - Autostart after flow rate of 100 L from firmware 1.41 possible

*After activation, the module transmits for a period of one hour with a quicker transmission interval of 20 s (commissioning scenario).

Datalogger (readable via optical IrDA interface)	
Annual due date values	max. 2
Monthly values	18 plus 18 half-monthly values
Daily values	32

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