WATER METER

Ultrasonic

SMARTIO

DN15 to DN20

Q_3=1,6 to 4 m^3/h

Up to R1000

T50

MAP 16

Multiprotocol LoRaWAN & wM-Bus

FOTA (Firmware Over the Air Updates)

ULTRASONIC WATER METER MULTIPROTOCOL

LoRaWAN M-Bus wireless

Best in class measurement accuracy up to R1000.

Starting flow 1,0 L/h.

Alarms: allows the reception of events.

Accurate measurements in any installation position and immune to flow disturbances.

Records back-flow information for possible contamination of water

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SMARTIO offers:

- Ultrasonic water meter multiprotocol guarantees local communication via NFC, with integrated radio technology (RF) for mobile or fixed networks, system AMI and AMR (wM-Bus for walk-by or drive-by and LoRaWAN at 868MHz).
- Bidirectional communication allows firmware over the air updates (FOTA) for the equipment's upgrade of functionalities.
- Intelligent alarms: leak, backflow, burst, empty pipe, air, battery status, temperature and blocked meter.
- High resistance to hydraulic shock and unaffected by magnetic fields.
- Flood proof meter (IP68 / mineral glass cover).
- Ultra Robust - High resistance to overload flowrate (Q4).

OPERATIONAL FEATURES:

Maximum Admissible Pressure (BAR): MAP 10 | MAP 16

Temperature Class (ºC): T30 | T50

Ratio Q_3/Q_1: up to R1000

Pressure Loss-Class: ΔP 25

Installation Position: Any position

Flow Profile Sensitivity Classes: U0/D0

Indicating range (m³): 6 digits (m^3) with 3 decimals, UV protection

Resolution of the indicating device (L): 0,01 in test mode

Body: Brass

Certification: UE Examination Certificate TCM 142/24 - 5965 in accordance with directive 2014/32 UE, CE, ISO 4064-1: 2014, OIML R49: 2006, OIML R49:2013, ACS, RoHs, OMS, LoRaWAN, RED 2014/53/EU and EN14154: 2005 + A2: 2011

Retention valve: available

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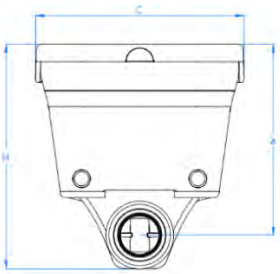
TECHNICAL DATA:

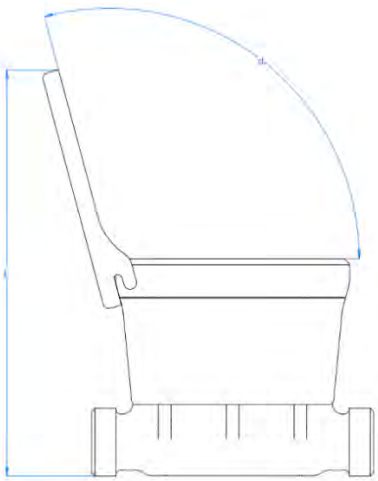
DN			15	20
Ratio Q_3/Q_1		R	Up to 1000	
Permanent Flowrate	**Q_3**	m^3/h	1,6 – 2,5	2,5 – 4
Overload Flowrate	**Q_4**	m^3/h	Q_3 x 1,25	
Transitional Flowrate	**Q_2**	dm^3/h	Q_1 x 1,6	
Minimum Flowrate	**Q_1**	dm^3/h	Q_3 / R	
Quadrant Indication		m^3	999 999, 999 configurable	
Verification Division		L	0,01	

DIMENSIONS:

Nominal Diameter	**DN**		**15**	**20**
Threaded Connections	**R1-R2**	''	$G^{3/4}$	G1
Lay Length	**L**	mm	110-165	105-220
Height	**H**	mm	87,5	94,5
Register Length	**b**	mm	95	
Register Width	**C**	mm	81	
Register Height	**a**	mm	74	77
Height with lid open	**E**	mm	158	165
Lid opening angle	**d**	°	105	
Weight		kg	0,65-0,75	0,65-0,9

*Other available options





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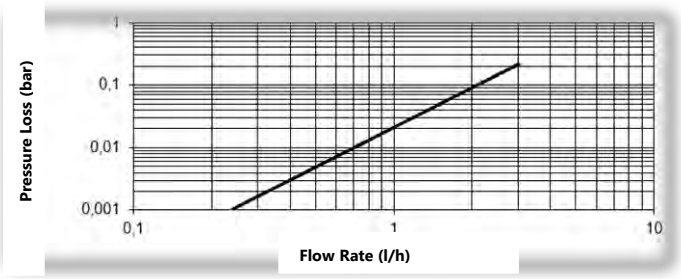
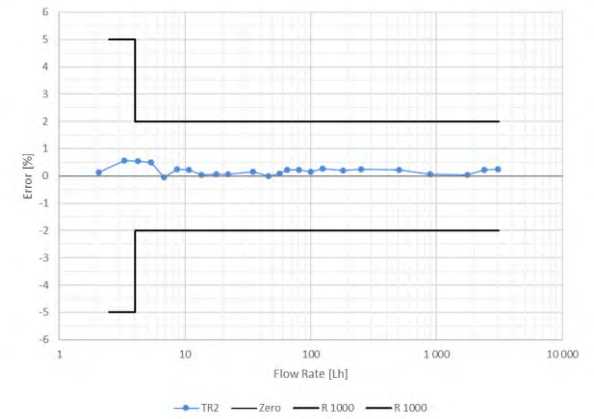
HEAD LOSS DIAGRAM



Graphs are relative to DN15.

TYPICAL CURVE ERROR



FEATURES OF COMMUNICATION SYSTEM:

NFC Interface: integrated

Battery lifetime*: Standard Profile up to 16 years

Electric Power: 1 x integrated 3.6 DC lithium C battery

Protection: IP68

Operating Temperature: -10 ºC to 70ºC

Recommended Warehousing Temperature: -25ºC à 70ºC (>35 max. 4 weeks)

Communication technology: LoRaWAN and wM-Bus

*Depending on configuration and environmental conditions

COMMUNICATION MULTI-PROTOCOL FEATURES:

Possibility to configure protocols and alarms for optimized communication.

Standard Profile - hourly acquisitions and 2 transmissions per day 12h/12h.

Extreme Profile - 15 min acquisitions and 8 transmissions per day 3h/3h.

Mode	LoRaWAN	M-Bus wireless
Frequency	868 MHz	868 MHz
Modulation/Transmission Mode	Class A, EU868	C1 & C2

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DATALOGGING:

Internal data backup and logging of up to 400 data packages. The data logging interval is configurable and results in the following history log periode:

DATA PERIOD	STORAGE TIMESPAN
15 minutes	4 days
Hour	16 days
Day	400 days
Month	20 years

Each logging interval backup's the following data:

- Cumulative, forward and reverse volume.
- All possible active alerts.
- Max. and min. flow rates incl. timestamp.
- Max. and min. temperatures incl. timestamp.

The monthly/yearly log is written on the first day of the month/year, the daily log at midnight.

ALARMS:

Allows the reception of alarms. The following integrated alerts are displayed on the meter LCD and transmitted over the integrated radio or NFC interface. Alarm settings are configurable.

- **Leakage:** a continuous flow has been detected above a set threshold (set in terms of time or volume).
- **Backflow:** flow in opposite direction above a set threshold (set in terms of time or volume).
- **Burst:** exponential volume detected above a set threshold (set in terms of time or volume).
- **Air:** air in pipe.
- **Blocked Meter:** the meter does not register flow for a set threshold (set in terms of time or volume).
- **Empty Pipe:** no water detected.
- **Battery Status:** low battery level.

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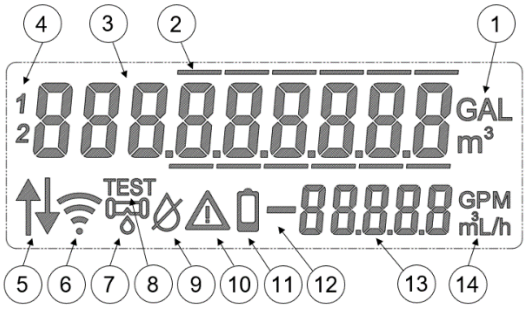
- **Ambient Temperature:** indicator of ambient temperature too high or too low.
- **Water Temperature:** indicator of water temperature too high or too low.

DISPLAY:

It is a passive display with 9 digits, symbol icons and UV protection. It is updated every second and shows beside the WELMEC information the following content:



ICONS FUNCTIONALITIES

1. Volume unit indicator (digital)	8. Test mode on
2. Non-billing relevant lines	9. Air in pipe detected
3. Volume	10. System alarm icon
4. Tarif number	11. Active when battery is low
5. Main flow direction (automatic set)	12. Actual flow direction arrow
6. Radio connection status	13. Index
7. Leakage detected	14. Index unit indicator (digital)

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OPTIONS:

SMARTIO water meters can be integrated into a smart city project by being combined with JANZ Telemetry System and mobile application (LPWA Telemetry System MYWATER) or any other similar product.

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