WATER METER
Ultrasonic

≋ JANZ

⦿ SMARTIO

DN15 to DN40

Q$_3$=1,6 to 16 m^3/h

Up to R1000

T50

MAP 16

Pressure Loss ΔP 16

FOTA (Firmware Over the Air)

ULTRASONIC WATER METER MULTIPROTOCOL

LoRaWAN   M-Bus wireless))   ⊛ NB-IoT

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 water contamination.

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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, AMI and AMR (**wM-Bus** for walk-by or drive-by, **Lo-RaWAN** at 868MHz and **NB-IoT**).

- Robust construction with advanced **free pipe design**, without transducers or mirrors obstructing the flow making it resistant to particles deposit that would otherwise compromise the reading.

- **MID certified for reverse flow reading** up to R1000

- Precise measurement even at low flows – **starting flow 1L/h.**

- Bidirectional communication allows firmware over the air updates (**FOTA**) for firmware upgrade.

- **Intelligent alarms**: leak, backflow, burst, empty pipe, air, battery status, temperature, tamper and blocked meter.

- **High resistance** to hydraulic shock and unaffected by magnetic fields.

- **Flood proof meter** (IP68 / mineral glass cover).

OPERATIONAL FEATURES:

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

Temperature Class (°C): T30 | T50

Ratio Q_3/Q_1: up to R1000

Pressure Loss-Class (DN15, DN20)**:** ΔP 16, 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: 1cL in teste mode, 1L in operation mode

Body: *Eco Brass* (lead free brass alloy)

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, WRAS, DM174, RoHs, OMS, LoRaWAN, RED 2014/53/EU and EN14154: 2005 + A2: 2011

NRV (Non return valve): available
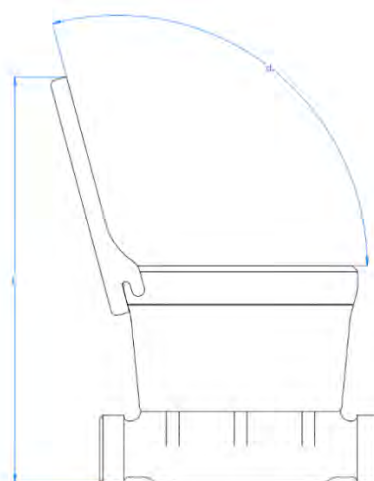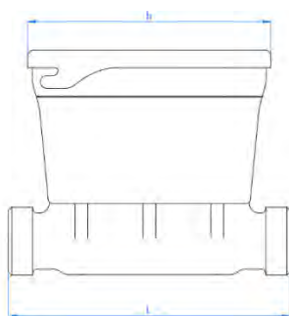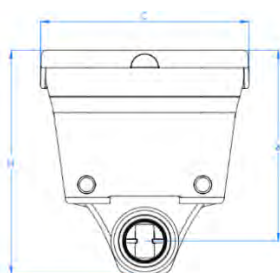
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TECHNICAL DATA:

Nominal Diameter	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:

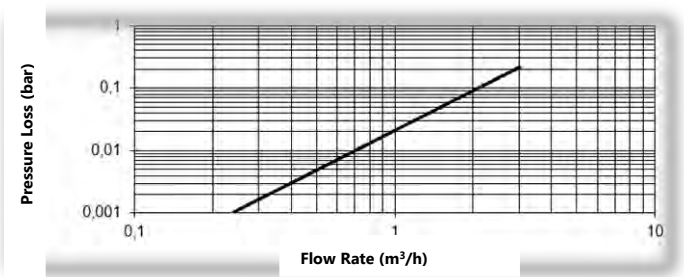| Nominal Diameter	DN		15	20
Threaded Connections*	R1-R2	''	$G^{3/4}$	G1
Lay Length	L	mm	105-165	105-220
Height	H	mm	87,5	94,5
Register Length	b	mm	95	
Register Width	C	mm	81	
Register Height	a	mm	74	77
Height with lid open	E	mm	158	165
Lid opening angle	d	°	105	
Weight		kg	0,65-0,75	0,65-0,9

*Other available options
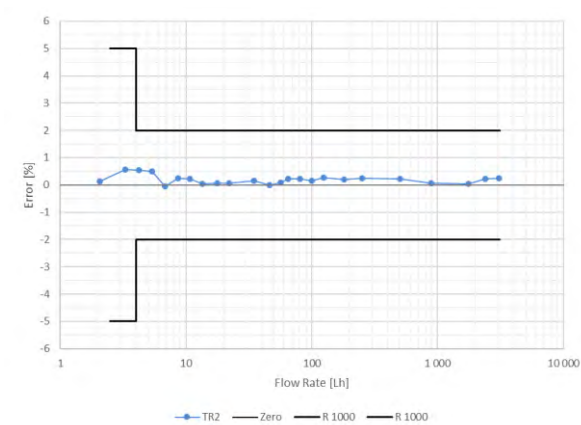
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HEAD LOSS DIAGRAM

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 ºC max. 4 weeks)

Communication technology: LoRaWAN, wM-Bus and NB-IoT

*Depending on configuration and environmental conditions

COMMUNICATION MULTI-PROTOCOL FEATURES:

Possibility to configure protocols and alarms for optimized communication.

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

Extreme Profile - 15 min acquisitions with 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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DATA LOGGING:

The device does internal data backup with different data periodicity and storage timespan. It is configurable, resulting on the following history log period:

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 including timestamp.
- Max. and min. temperatures including 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's 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 & volume).

- **Backflow:** flow in opposite direction above a set threshold (set in terms of time or volume).

- **Overconsumption/Burst:** exponential volume detected above a set threshold (set in terms of time & volume).

- **Air:** air in pipe.

- **Blocked Meter:** the meter does not register flow for a set threshold (set in terms of time).

- **Empty Pipe:** no water detected.

- **Battery Status:** low battery level.
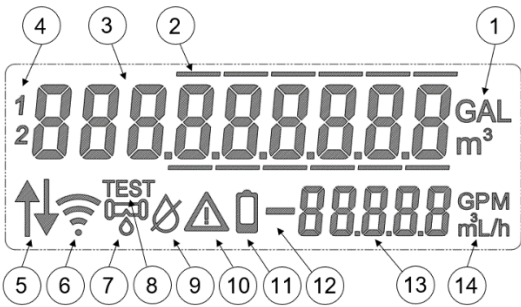
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- **Tamper:** software tampering.

- **Ambient Temperature:** ambient temperature too high or too low.

- **Water Temperature:** water temperature too high or too low.

- **Occasional Hardware Error:** non-critical hardware problem.

- **Permanent Hardware Error:** critical hardware issues.

DISPLAY:

UV protected display with 9 digits and icons. The display is updated every second showing beside the WELMEC information, the following content:

ICONS FUNCTIONALITIES

1. Volume unit indicator (digital)	8. Test mode On
2. Non-billing relevant lines (decimal points)	9. Air in pipe detected
3. Volume	10. Alarm icon
4. Tarif number	11. Active when battery is low
5. Main flow direction (automatic set)	12. Negative Instant flow
6. Radio connection status	13. Instant flow
7. Leakage detected	14. Instant flow 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 **MYWATER** or any other similar product.

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