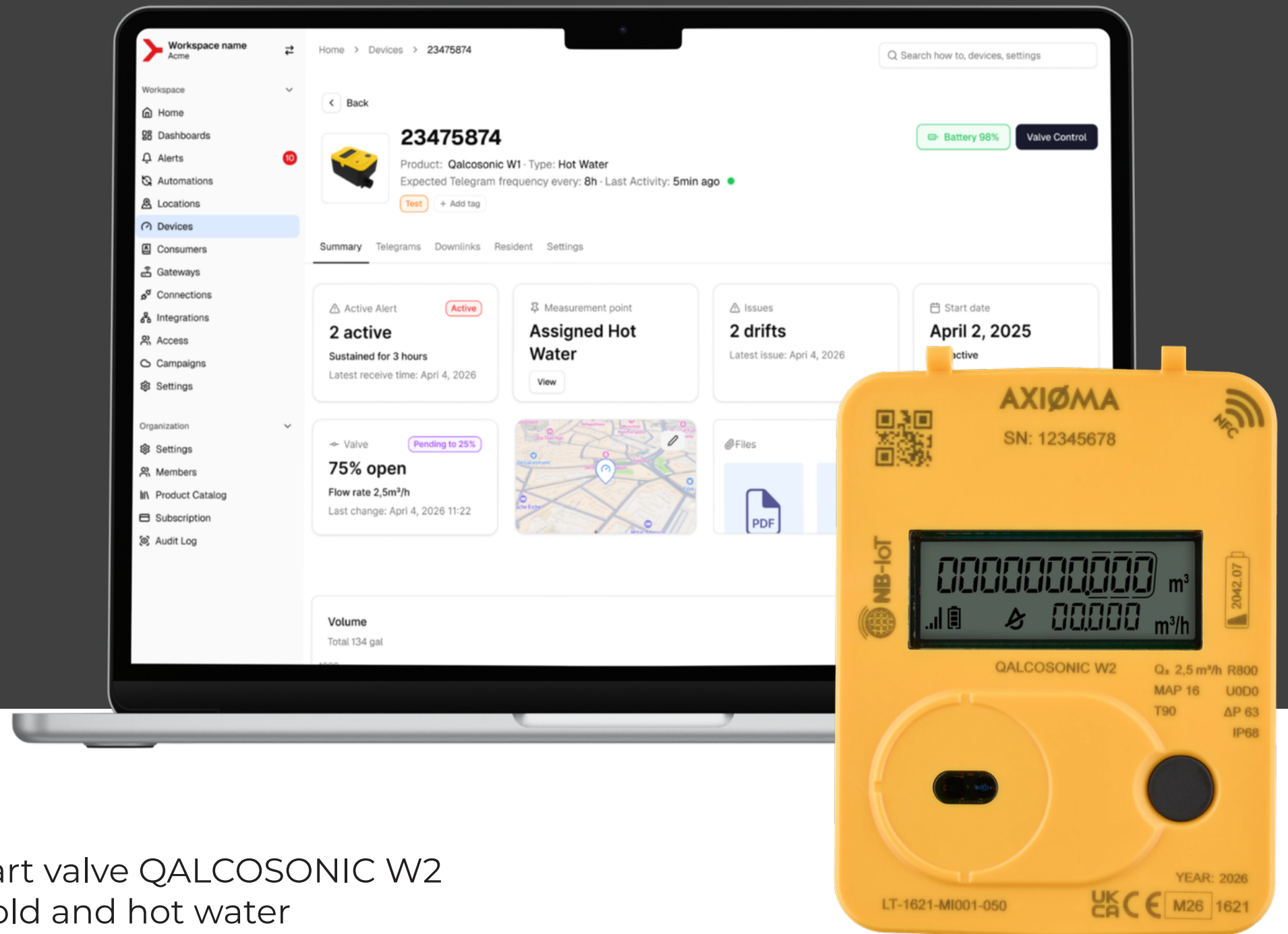


Qalcosonic

W2 Smart Valve



Application

Ultrasonic water meter with integrated smart valve QALCOSONIC W2 is designed for accurate measurement of cold and hot water consumption in households, apartment buildings, and commercial premises.

- Static method of water flow measurement, no moving parts.
- High accuracy calculation of water consumption..
- Eliminates measuring deviations caused by sand, suspended particles or air pockets.
- Eliminates measuring deviations caused by sand, suspended particles or air pockets.
- Long-term measurement stability and reliability.
- 10 digits, multi-line LCD. Total volume and instantaneous flow rate indication.
- Sensitive and accurate in low flows, down to 1 l/h.
- Failsafe mechanism prevents valve closure when energy is insufficient.
- Programmable physical button on the housing, configurable by volume (liters) or time.
- Daily consumption mode enables setting a daily usage limit in liters (1 – 65 000 liters).
- Supports configurable partial valve position.
- Ready for AMR with NFC, wM- Bus, LoRa and NB-IoT technologies.

Technical features

- Temperature class T30, T50, T30/90, T90
- Nominal flow 1.6 / 2.5 / 4.0 m³/h
- Wide measurement range Q3/Q1 = 80 / 160 / 250 / 315 / 400 / 500
- No straight pipe sections required before or after the meter
- Installation in any position
- No measurement of air
- Electromagnetic environment class E2 Mechanical environment class M1
- Protection class IP68
- Nominal pressure PN16
- Internal datalogger
- Maintenance free device, battery lifetime up to 16 years*
- Bi-directional flow measurements
- Flow direction indication
- Meter parameterization and archive reading via NFC or optical interface
- Brass or composite body options
- Tamper detection mechanism
- Self-cleaning valve mechanism

* - For meter only, depending on communication settings.

AMR Ready

- wM-Bus 433 or 868 MHz OMS T1
- LoRaWAN (EU863-870, AS923, AU915-928, US902-928, IN865-)
- NB-IoT (CoAP)
- NFC

Parameterisation of the meter

NFC and optical interfaces on the top panel enable meter data reading and parameterisation; valve parameterisation is also available over the air (COTA);

AMR interfaces, optional

LoRaWAN®

NB-IoT™

M-Bus wireless

Data logger - history values

Hourly, daily, monthly values of the measured parameters are stored in internal memory.

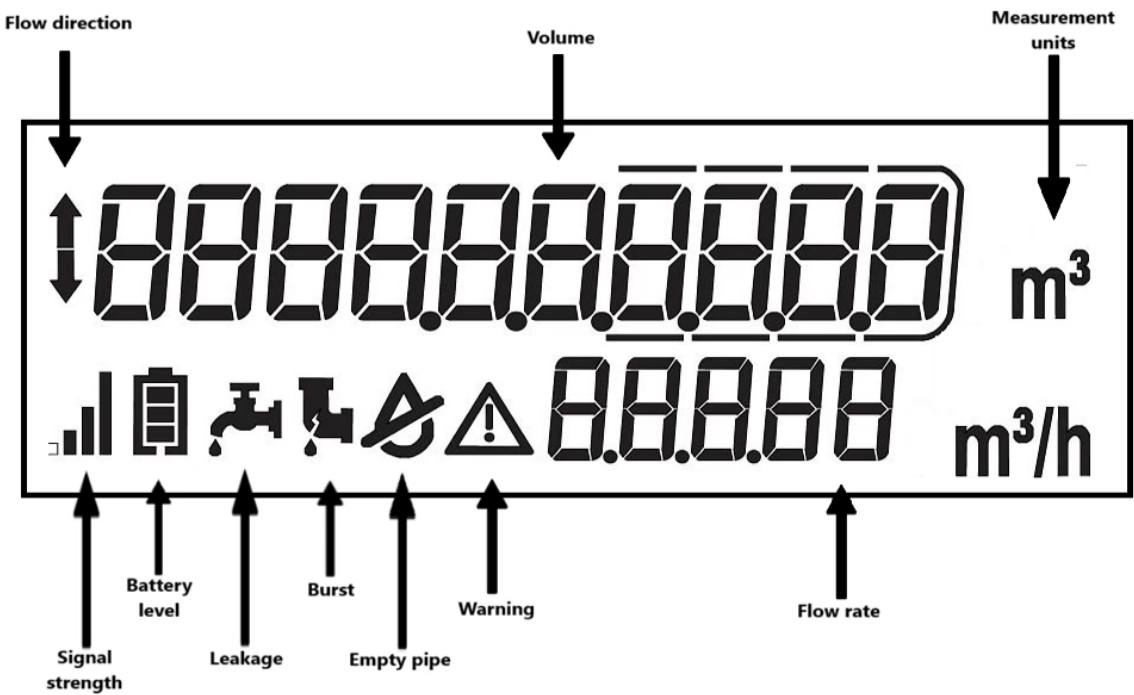
LCD indications and alarms

Multiple alarms and events, including:

- Flow direction indication;
- Battery level indication;
- Leakage;
- Burst;
- Backflow;
- Empty pipe;
- Signal strength;
- Warning indication;
- Low-temperature warning

Radio interface

Integrated radio communication allows data reading via wM-Bus telegram: 433 MHz or 868MHz OMS T1 mode, LoRaWAN or NB-IoT.



Technical data

Flow sensor	Q3 [m3/h] R Q3 / Q1 Water temperature LCD Display	1.6 / 2.5 / 4.0 80 / 160 / 250 / 315 / 400 / 500 0,1 – 900C 10-digits
Flow measurement	Protection class [IP] Environmental class Ambient temperature Installation position Nominal pressure [bar] Pressure loss Battery lifetime Units	IP68 B (Indoors) / O (Outdoors) / ISO 4064 -150C ... +700C All installation positions (vertically, horizontally, diagonally) PN16 bar 0.16 / 0.25 / 0.40 up to 16 years (depending on communication and valve usage conditions) m3 - m3/h

Nominal flow rate	1,6	2,5	2,5	4,0
Overall length, mm	110, 165	110, 165	130**, 165*, 190	130**, 165*, 190
Nominal diameter	DN15	DN15	DN20	DN20
Connection	G3/4	G3/4	G1	G1
Dynamic range R,Q3/Q1	80 / 160 / 250 / 315 / 400 / 500	80 / 160 / 250 / 315 / 400 / 500	0,031 / 0,0156 / 0,010 / 0,0062	80 / 160 / 250 / 400 / 500 / 800
Transitional flow rate Q2, m3/h	0,020 / 0,010 / 0,0064 / 0,005 / 0,004	0,031 / 0,0156 / 0,010 / 0,0062 / 0,005 / 0,0031	0,031 / 0,0156 / 0,010 / 0,0062	0,050 / 0,025 / 0,016 / 0,010 / 0,008 / 0,005
Starting flow rate, m3/h	0,032 / 0,016 / 0,010 / 0,008 / 0,0064	0,050 / 0,025 / 0,016 / 0,010 / 0,008 / 0,005	0,050 / 0,025 / 0,016 / 0,010	0,080 / 0,040 / 0,026 / 0,016 / 0,0128 / 0,008
Starting flow rate, m3/h	0,001	0,001	0,001	0,001
Maximum flow rate Q4, m3/h	2,0	3,125	3,125	5,0

* - Composite only ** - Brass only

Size & dimensions:	DN15 / L [mm]: 110, 165 DN15 / connection: G3/4	DN20 / L [mm]: 130**, 165*, 190 DN20 / connection: G1
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AMI platform

Fully integrated with the Qalcosonic W2 Smart Valve

Description

Mainlink is an AMI platform, with the Qalcosonic W2 fully integrated. It monitors device and connectivity health, dispatches valve commands and device parameters over the air, and retains every uplink telegram and alarm. Applications are provided for the utility operator, the end consumer and the installer.

Platform functions

Function	Detail
Device monitoring	Battery, valve position, consumption, telegrams, alerts (device and system), uplink health
Connectivity monitoring	Uplink, telegrams, RSSI, SNR, telegram activity, radio health trend, gateway reception distribution, frequency usage, spreading factor
Commands over the air	Valve position, in 10 % increments; alert threshold changes, e.g. freeze threshold from 2 to 5 °C
Alerts and rules	Rules can be set on every field the device reports, e.g. consumption above a set threshold, or flow registered while the valve is closed
Automations	Email notifications configured per alert rule; automatic valve control in response to alert rules or external conditions
Locations and fleet view	Devices assigned to locations and measurement points; the full fleet on a map, with active alerts

Applications

Application	User	Functions
Mainlink	Utility operator	Device and connectivity monitoring, over-the-air commands, alert rules and automations, fleet and location view
Customer app	End consumer	Review consumption and valve position; receive device alerts; where the utility grants permission, change valve position by NFC at the meter — instant water flow — with a downlink command and guided reopening instructions as backup
Axilink app	Installer	Install and configure the device; valve position change by NFC (0 %, 50 %, 100 %)

Security and compliance

AES-256-GCM	GDPR	ISO 9001:2015	ISO/IEC 27001:2022
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System overview

