



QALCOSONIC

W1

/ A design /

SMART ULTRASONIC WATER METER

APPLICATION

Ultrasonic water meter **QALCOSONIC W1** 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
- Long-term measurement stability and reliability
- 9 digits, multi-line LCD. Total volume and instantaneous flow rate indication
- Sensitive and accurate in low flows, down to 1 l/h
- Ready for AMR with NFC, wM-Bus, LoRa, NB-IoT and Sigfox* technologies

* - Only up to DN32

AMR READY

- wM-Bus 433 or 868 MHz OMS T1
- LoRaWAN (EU863-870, AS923, AU915-928, US902-928, IN865-867 channel plans)
- NB-IoT (CoAP)
- NFC
- Sigfox (RC1; RC7)

PARAMETERISATION OF THE METER

NFC and optical interfaces are integrated into the top panel of the meter. They can be used for data reading and parameterisation of the meter.

TECHNICAL FEATURES

- Temperature class T30, T50, T30/90, T90
- Nominal flow 1.6 / 2.5 / 4.0 / 6.3 / 10 / 16 / 25 / 40 m³/h
- Wide measurement range Q3/Q1 = R 250/400/800 (optional)
- No straight sections required
- Installation in any position
- No measurement of air
- Environment class E2/M1
- Protection class IP68
- Nominal pressure PN16 (PN25 for flange version)
- Internal datalogger
- Maintenance free device, battery lifetime > 16 years
- Bi-directional flow measurements
- Flow direction indication
- Meter parameterisation and archive reading via NFC or optical interface
- Durable composite body
- Measurement units: m³-m³/h

AMR INTERFACES, OPTIONAL



DATA REGISTRATION

- Total volume
- Forward volume
- Reverse volume
- Maximum flow rate value and date
- Minimum flow rate value and date
- Operating time without an error
- Operating time
- Error code

DATA LOGGER - HISTORY VALUES

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

RADIO INTERFACE

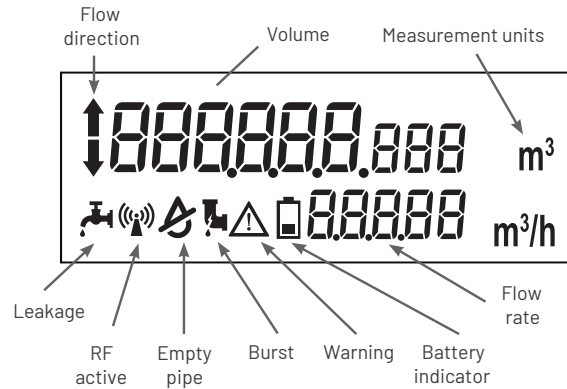
Integrated radio communication allows data reading via wM-Bus telegram: 433 MHz or 868MHz OMS T1 mode, LoRaWAN, NB-IoT or Sigfox.

TECHNICAL DATA:

LCD INDICATIONS AND ALARMS

MULTIPLE ALARMS AND EVENTS, INCLUDING:

- Flow direction indication
- Battery level indication
- Leakage
- Burst
- Backflow
- Empty pipe
- Radio communication
- Warning indication
- Low-temperature warning



| | | |
|------------------|------------------------|---|
| Flow sensor | Q3 [m ³ /h] | 1.6 / 2.5 / 4.0 / 6.3 / 10 / 16 / 25 / 40 |
| | R Q3 / Q1 | 80 / 160 / 250 / 315 / 400 / 800 |
| | Water temperature | 0,1 – 90°C |
| | LCD Display | 9-digits |
| Flow measurement | Protection class [IP] | IP68 |
| | Ambient class | Class C / EN 14 154 |
| | Ambient temperature | -15°C ... +70°C |
| | Installation position | All installation positions (vertical, horizontal, rising pipe, down pipe) |
| | Nominal pressure [bar] | PN16 bar (PN25 bar for flange version) |
| | Pressure loss | 0.16 / 0.25 / 0.40 / 0.63 |
| | Battery lifetime | 16 years LoRa/wM-Bus and Sigfox versions, 13 years NB-IoT version (depending on communication settings) |
| | Units | m ³ /h - m ³ |

| Nominal flow rate Q3, m ³ /h | 1,6 | | | | | 2,5 | | | | | 4,0 | | | | | | | | |
|--|------------------------|-------|--------|-------|--------|------------------------|--------|-------|--------|--------|-------------------------|--------|-------|--------|-------|-------|-------|-------|-------|
| Overall length, mm | 80, 105, 110, 165, 170 | | | | | 80, 105, 110, 165, 170 | | | | | 105, 110, 130, 165, 190 | | | | | | | | |
| Nominal diameter | DN15 | | | | | DN15 | | | | | DN20 | | | | | | | | |
| Connection | G 3/4" | | | | | G 3/4" | | | | | G 1" | | | | | | | | |
| Dynamic range R, Q3/Q1 | 80 | 160 | 250 | 315 | 400 | 80 | 160 | 250 | 400 | 800 | 80 | 160 | 250 | 400 | 80 | 160 | 250 | 400 | 800 |
| Minimum flow rate Q1, m ³ /h | 0,020 | 0,010 | 0,0064 | 0,005 | 0,004 | 0,031 | 0,0156 | 0,010 | 0,0062 | 0,0031 | 0,031 | 0,0156 | 0,010 | 0,0062 | 0,050 | 0,025 | 0,016 | 0,010 | 0,050 |
| Transitional flow rate Q2, m ³ /h | 0,032 | 0,016 | 0,010 | 0,008 | 0,0064 | 0,050 | 0,025 | 0,016 | 0,010 | 0,005 | 0,050 | 0,025 | 0,016 | 0,010 | 0,080 | 0,040 | 0,026 | 0,016 | 0,080 |
| Starting flow rate, m ³ /h | 0,001 | | | | | 0,001 | | | | | 0,001 | | | | | | | | |
| Maximum flow rate Q4, m ³ /h | 2,0 | | | | | 3,125 | | | | | 3,125 | | | | | | | | |
| Pressure loss class Δp, bar x 100 | Δp16 | | | | | Δp25 | | | | | Δp16 | | | | | | | | |

TECHNICAL DATA:

| Nominal flow rate Q3, m ³ /h | 6,3 | | | | | | | | | | 10,0 | | | | | | | | |
|--|-------|-------|--------|--------|-------|-------|-------|--------|--------|--|-------|--------|-------|-------|--------|-------|--------|-------|--------|
| Overall length, mm | 260 | | | | | 260 | | | | | 260 | | | | | | | | |
| Nominal diameter | DN25 | | | | | DN32 | | | | | DN25 | | | | DN32 | | | | |
| Connection | G 1¼" | | | | | G 1½" | | | | | G 1¼" | | | | G 1½" | | | | |
| Dynamic range R, Q3/Q1 | 80 | 160 | 250 | 400 | 800* | 80 | 160 | 250 | 400 | | 80 | 160 | 250 | 400 | 800* | 80 | 160 | 400 | 800* |
| Minimum flow rate Q1, m ³ /h | 0,079 | 0,040 | 0,0252 | 0,016 | 0,080 | 0,079 | 0,040 | 0,0252 | 0,016 | | 0,125 | 0,0625 | 0,040 | 0,025 | 0,0125 | 0,125 | 0,0625 | 0,025 | 0,0125 |
| Transitional flow rate Q2, m ³ /h | 0,126 | 0,063 | 0,040 | 0,0252 | 0,013 | 0,126 | 0,063 | 0,040 | 0,0252 | | 0,200 | 0,100 | 0,064 | 0,040 | 0,020 | 0,200 | 0,100 | 0,040 | 0,020 |
| Starting flow rate, m ³ /h | 0,003 | | | | | 0,005 | | | | | 0,003 | | | | 0,005 | | | | |
| Maximum flow rate Q4, m ³ /h | 7,875 | | | | | 7,875 | | | | | 12,5 | | | | 12,5 | | | | |
| Pressure loss class Δp, bar x 100 | Δp25 | | | | | Δp16 | | | | | Δp63 | | | | Δp25 | | | | |

* - T30 temperature class only

| Nominal flow rate Q3, m ³ /h | 10,0 | | | 16,0 | | | | | | | | 25,0 | | | | |
|--|-------|--------|--------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|--------|--------|
| Overall length, mm | 300 | | | 300 | | | | 200 | | | | 300 | | | | |
| Nominal diameter | DN40 | | | DN40 | | | | DN50** | | | | DN40 | | | | |
| Connection | G 2" | | | G 2" | | | | DN50 | | | | G 2" | | | | |
| Dynamic range R, Q3/Q1 | 80 | 160 | 250 | 80 | 160 | 250 | 400 | 80 | 160 | 250 | 400 | 80 | 160 | 250 | 400 | 800* |
| Minimum flow rate Q1, m ³ /h | 0,125 | 0,0625 | 0,0625 | 0,200 | 0,100 | 0,064 | 0,040 | 0,200 | 0,100 | 0,064 | 0,040 | 0,3125 | 0,156 | 0,100 | 0,0625 | 0,0312 |
| Transitional flow rate Q2, m ³ /h | 0,200 | 0,100 | 0,100 | 0,032 | 0,016 | 0,102 | 0,064 | 0,032 | 0,016 | 0,102 | 0,064 | 0,500 | 0,250 | 0,160 | 0,100 | 0,050 |
| Starting flow rate, m ³ /h | 0,01 | | | 0,01 | | | | 0,016 | | | | 0,01 | | | | |
| Maximum flow rate Q4, m ³ /h | 12,5 | | | 20,0 | | | | 20,0 | | | | 31,25 | | | | |
| Pressure loss class Δp, bar x 100 | Δp16 | | | Δp16 | | | | Δp16 | | | | Δp16 | | | | |

* - T30 temperature class only

| Nominal flow rate Q3, m ³ /h | 25,0 | | | | | 40,0 | | | | |
|--|--------|-------|-------|--------|--------|--------|------|-------|------|------|
| Overall length, mm | 200 | | | | | 200 | | | | |
| Nominal diameter | DN50** | | | | | DN50** | | | | |
| Connection | DN50 | | | | | DN50 | | | | |
| Dynamic range R, Q3/Q1 | 80 | 160 | 250 | 400 | 800* | 80 | 160 | 250 | 400 | 800* |
| Minimum flow rate Q1, m ³ /h | 0,3125 | 0,156 | 0,100 | 0,0625 | 0,0312 | 0,5 | 0,25 | 0,16 | 0,1 | 0,05 |
| Transitional flow rate Q2, m ³ /h | 0,500 | 0,250 | 0,160 | 0,100 | 0,050 | 0,8 | 0,4 | 0,256 | 0,16 | 0,08 |
| Starting flow rate, m ³ /h | 0,016 | | | | | 0,016 | | | | |
| Maximum flow rate Q4, m ³ /h | 31,25 | | | | | 50,00 | | | | |
| Pressure loss class Δp, bar x 100 | Δp16 | | | | | Δp16 | | | | |

* - T30 temperature class only

SIZE AND DIMENSIONS:

| DN [mm] | 15 | 20 | 25 | 32 | 40 | 50** |
|------------|------------------------|-------------------------|-------|-------|-----|------|
| L [mm] | 80, 105, 110, 165, 170 | 105, 110, 130, 165, 190 | 260 | 260 | 300 | 200 |
| Connection | 3/4" | 1" | G 1¼" | G 1½" | G 2 | DN50 |

* - T30 temperature class only

** - Available from 2022 Q4

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