



QALCOSONIC

W1

# 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, w-MBus, LoRa and NB-IoT technologies

## 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

## 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 m<sup>3</sup>/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: m<sup>3</sup>-m<sup>3</sup>/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
- Water temperature indication

## DATA LOGGER - HISTORY VALUES

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

## RADIO INTERFACE

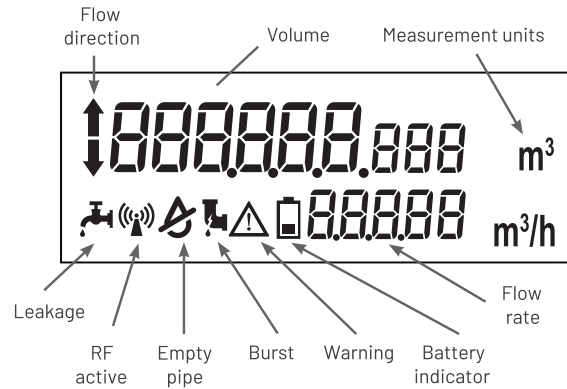
Integrated radio communication allows data reading via wM-Bus telegram: 433 MHz or 868 MHz, OMS, T1 mode, LoRaWAN or NB-IoT.

## 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
	Pressure loss	0.16 / 0.25 / 0.40 / 0.63
	Battery lifetime	16 years LoRa/wM-Bus version, 12 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 $\Delta p$ , bar x 100	$\Delta p16$					$\Delta p25$					$\Delta p16$								

## TECHNICAL DATA:

Nominal flow rate Q3, m <sup>3</sup> /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 <sup>3</sup> /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 <sup>3</sup> /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 <sup>3</sup> /h	0,003					0,005					0,003				0,005				
Maximum flow rate Q4, m <sup>3</sup> /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 <sup>3</sup> /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 <sup>3</sup> /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 <sup>3</sup> /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 <sup>3</sup> /h	0,01			0,01				0,016				0,01				
Maximum flow rate Q4, m <sup>3</sup> /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 <sup>3</sup> /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 <sup>3</sup> /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 <sup>3</sup> /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 <sup>3</sup> /h	0,016					0,016				
Maximum flow rate Q4, m <sup>3</sup> /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 Q1

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