QALCOSONIC

F1

ULTRASONIC WATER METER

APPLICATION

Ultrasonic water meter **QALCOSONIC F1** designed for measurement of cold and hot water consumption in households and blocks of flats, as well for industrial applications.

- Static method of water flow measurement
- High accuracy calculation of water consumption
- Long-term measurement stability and reliability

APPROVALS

- MID
- EN 14154

WIRED M-BUS INTERFACE (SPECIAL ORDER)

The internal M-Bus module provides data reading posibility via M-Bus protocol.

PARAMETERISATION OF THE METER

The optical interface is integrated into the front panel of the calculator. It is designed for data reading via M-Bus protocol and parametrization of the meter, reading of optical pulse values in the TEST mode.

NFC interface is used for LoraWAN communication parameter reading.

RADIO INTERFACE

Integrated radio communication allows data reading via wM-Bus telegram: 433 MHz or 868 MHz, OMS S1, T1 mode, LoRa WAN.

TECHNICAL FEATURES

- Temperature class T30, T30/90, T90/h
- Nominal flow 10 / 16 / 25 / 40 m^3/h
- Dynamic range up to Q1/Q3 = R 250/400
- No straight sections required
- No measurement of air
- Environment class E2/M1
- Protection class IP68
- Nominal pressure PN25
- Temperature measurement possibility Pt 500, 0-180°C
- Internal data logger
- Battery lifetime > 16 years
- Power supply options: Battery/External power supply
- Optional communication modules
- Measure reverse flow (to additional register)
- Flow direction indication

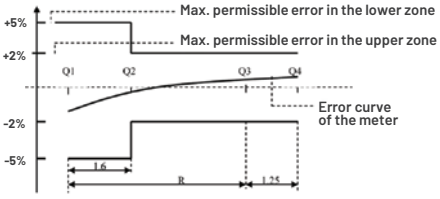
UNIVERSAL PULSE INPUTS/OUTPUTS (SPECIAL ORDER)

- Pulse cable (optional)
- Two configurable pulse outputs/inputs

AMR INTERFACES, OPTIONAL

M-Bus · M-Bus wireless · Modbus · LoRaWAN CERTIFIED · ASHRAE BACnet

MEASURING ACCURACY CLASS 2



DATA REGISTRATION

- Total volume
- Forward volume
- Reverse volume
- Volume of pulse input 1 (optional)
- Volume of pulse input 2 (optional)
- Maximum flow rate value and date
- Minimum flow rate value and date
- Maximum temperature value and date (if used)
- Minimum temperature value and date (if used)
- Operating time without an error
- Error code
- Time when the flow rate exceeded 1.2 Q_4
- Time when the flow rate was less than Q_1

ERROR CODES

ERROR and message code indication:
- Battery low alarm
- Air in pipe
- Leak detection

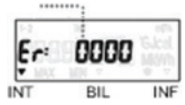
DATA LOGGER - HISTORY VALUES

- Every hour, day and month values of the measured parameters are stored in internal memory
- All data from archive can be read by means of the remote reading.
- In addition data logger records of monthly parameters can be seen on the display.

LCD INDICATIONS

- The device is equipped with 8-digits LCD (Liquid Crystal Display) with special symbols to display parameters, measurement units and operation modes.
- The following information can be displayed:
  - Integral and instantaneous measured parameters,
  - Archive data and set day data,
  - Device configuration information.
- Programmable LCD displaying parameters

MESSAGE INDICATIONS:

CODE	DESCRIPTION
Status of calculator 	0 – no error, normal operation 1 – warning – less than 6 months to ending of battery life 2 – battery low alarm (ending battery life) 8 – electronics failure (tamper attempt)
Status of flow sensor 	0 – no error, normal operation 1 – air measurement alarm (airless 10 min) 2 – reverse flow alarm 4 – meter overload flow alarm (displayed q=1,2· Q_4)
Status of flow 	0 – no error, normal operation 1 – meter dry alarm (air more than 10 min) 2 – continuous zero flow alarm (more than 24 h) 4 – leak / continuous flow alarm (more than 1 h)
Status of temperature sensor (if used) 	0 – no error, normal operation 1 – low temperature alarm (<3° C) 2 – meter overload temperature alarm (>90° C) 4 – failure of temperature sensor (or disconnected)

TECHNICAL DATA

Flow rate sensor	Q_3 [m^3/h]	10 / 16 / 25 / 40 / 63 / 100
	R Q_3/ Q_1 [m^3/h]	10, 16, 25, 40, 63, 100: 250 / 400
Technical data	LCD Display	8-digit
	Protection class [IP]	IP68
	Ambient temperature	+5 ºC...+70 ºC
	Installation place	indoor, outdoor in a pit or inst. box
	Installation position	all installation positions (vertical, horizontal, rising pipe, down pipe)
	Nominal pressure [bar]	PN25 bar
	Pressure loss	0.25 / 0.63 bar
	Battery lifetime	10-16 years

POWER SUPPLY

Power supply (one of the following depending on meter configuration):
- 2 x AA battery 3,6 V 2,4 Ah (Li-SOCl2) battery, operation time at least 16 years.
- 12..42 V DC or 12...36 V 50/60Hz AC external power supply, used current 10 mA and back up battery AA 3,6 V (Li-SOCl2) (Optional).

Q3, m³/h	R Q3/Q1	Q4, m³/h	Q1, m³/h	Q2, m³/h	Threshold value, m³/h	Joining to the pipeline (Thread – G, flange–DN)	Overall length L, mm	ΔP (bar x 100)
10	R250	12,5	0,04	0,064	0,02	G2" or DN40*	300	ΔP 25
10	R400	12,5	0,025	0,04	0,01	G2" or DN40*	300	ΔP 25
16	R250	20	0,064	0,1	0,03	G2" or DN40*	300	ΔP 25
						DN50	270	ΔP 25
16	R400	20	0,04	0,064	0,02	G2" or DN40*	300	ΔP 25
25	R250	31,25	0,1	0,16	0,05	DN50	270	ΔP 63
						DN65	300	ΔP 25
25	R400	31,25	0,063	0,1	0,03	DN50	270	ΔP 63
40	R250	50	0,16	0,26	0,08	DN65	300	ΔP 63
						DN80	300	ΔP 25
40	R400	50	0,1	0,16	0,05	DN65	300	ΔP 63
63	R250	78,75	0,252	0,4	0,12	DN80	300	ΔP 63
						DN100	360	ΔP 25
63	R400	78,75	0,16	0,26	0,08	DN80	300	ΔP 63
100	R250	125	0,4	0,64	0,2	DN100	360	ΔP 63
100	R400	125	0,25	0,4	0,12	DN100	360	ΔP 63

* - *Under special request*.

PULSE OUTPUT VALUE DEPENDING ON Q3, m³/h

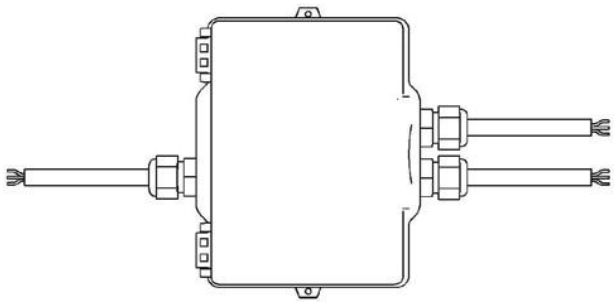
Pulse output value depending on Q3, m³/h	10 ... 100
Pulse value, L/pulse	10

SIZE AND DIMENSIONS:

DN [mm]	50	65	80	100
L [mm]	270	300	300	360
H [mm]	172	180/183	197/200	222/235
G/Flange DN	DN50	DN65	DN80	DN100

CABLE OUTPUTS (SPECIAL ORDER)

Depending on the order, the meter can have up to 3 cables outputs (cable length 1.5 m). The cables can have from two to four core wires. The cable core is identified by the number and color of different communication module applications.



2022 03

AXIØMA
METERING

metering@axioma.eu
+370 37 36 02 34
Veterinaru str. 52, Biruliskes, LT-54469 Kaunas, Lithuania