

**Not an Authorized Translation**

LST EN ISO 4064-1:2017;  
LST EN ISO 4064-2:2017;  
LST EN ISO 4064-4:2014;  
LST EN ISO 4064-5:2017;  
OIML R 49-1:2013;  
OIML R 49-2:2013;  
WELMEC 7.2:2015.

The measuring instrument shall meet the following specifications:

## 1 Design of the instrument

### 1.1 Construction

Ultrasonic water meter QALCOSONIC F1 consists of the primary flow sensor and calculator. The meter is available in two modifications: meter with protection class IP65 and meter with protection class IP68. Calculator of the meter with protection class IP65 can be mounted directly on the flow sensor or separately. Calculator of the meter with protection class IP68 is inseparably mounted to the flow sensor (integral construction).

The flow sensor consists of brass body with built-in ultrasonic transducers. The flow sensor, which nominal diameter is from DN65 up to DN100, body may be made either from brass (cast) or steel (welded construction).

The flow sensor of the meter with protection class IP65 is inseparably connected with the calculator via 1,2 m length screened cable (2,5 m or 5 m – optional). For welded construction flow sensors two cables are used.

The heat meter is powered by 3,6 V DC lithium battery either remote 12 V to 42 V DC or 12 V to 36 V AC power source.



a) Water meter (IP65)



b) Water meter (IP68)

Fig.1. Water meter QALCOSONIC F1



a) Calculator of the meter (IP65)



b) Calculator of the meter (IP68)

Fig.2. Calculator of the water meter QALCOSONIC F1

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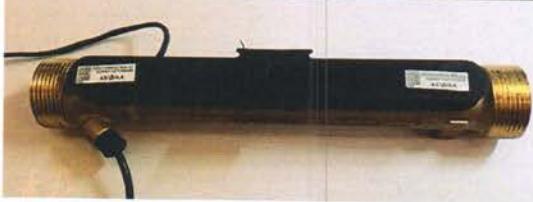
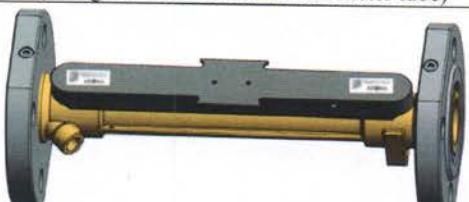
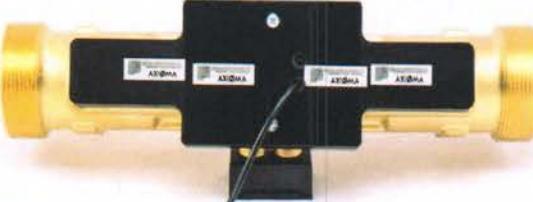
	
a) Flow sensor of the water meter $q_p = 1,6/2,5/4/6,3 \text{ m}^3/\text{h}$ with threaded end connections G 3/4 or G 1	b) Flow sensor of the water meter $q_p = 1,6/2,5/4/6,3 \text{ m}^3/\text{h}$ with flanged end connections DN20
	
c) Flow sensor of the water meter $q_p = 6,3/10 \text{ m}^3/\text{h}$ with threaded end connections G 1 1/4 or G 1 1/2 (triangular cross-section of the meter tube)	d) Flow sensor of the water meter $q_p = 6,3/10 \text{ m}^3/\text{h}$ with flanged end connections DN25 or DN32 (triangular cross-section of the meter tube)
	
e) Flow sensor of the water meter $q_p = 6,3 \text{ m}^3/\text{h}$ with threaded end connections G 1 1/4 or G 1 1/2 (circular cross-section of the meter tube)	f) Flow sensor of the water meter $q_p = 6,3 \text{ m}^3/\text{h}$ with flanged end connections DN25 or DN32 (circular cross section of the meter tube)
	
g) Flow sensor of the water meter $q_p = 10/16 \text{ m}^3/\text{h}$ with threaded end connections G 2	h) Flow sensor of the water meter $q_p = 10/16 \text{ m}^3/\text{h}$ with flanged end connections DN40
	
i) Flow sensor of the water meter $q_p = 16/25 \text{ m}^3/\text{h}$ with flanged end connections DN50	j) Flow sensor of the water meter $q_p = 25/40/63/100 \text{ m}^3/\text{h}$ with flanged end connections (DN65/DN80/DN100), brass body
	k) Flow sensor of the water meter $q_p = 25/40/63/100 \text{ m}^3/\text{h}$ with flanged end connections (DN65/DN80/DN100), steel body

Fig.3. Flow sensor of the water meter QALCOSONIC F1



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**Structure of type number of the meter QALCOSONIC F1 (protection class IP65)\***

Type	QALCOSONIC F1		□ - □ □ - □ - □ - □ - □ - □	
Meter temperature class				
T30	Code		1	
T30/90	Code		2	
T90	Code		3	
End connections and overall length (L):	Code	End connections and overall length (L):	Code	
G ¼ L = 105 mm	11	DN25	L = 260 mm	52
G ¼ L = 110 mm	01	DN32	L = 260 mm**	53
G ¾ L = 165 mm	02	DN32	L = 260 mm	54
G 1 L = 105 mm	12	DN40	L = 300 mm	6F
G 1 L = 110 mm	13	DN50	L = 270 mm	07
G 1 L = 130 mm	03	DN65	L = 300 mm (brass body)	08
G 1 L = 190 mm	04	DN65	L = 300 mm (steel body)	8S
G 1½ L = 260 mm**	05	DN80	L = 350 mm (brass body)	09
G 1½ L = 260 mm	51	DN80	L = 350 mm (steel body)	9S
G 1½ L = 260 mm**	55	DN80	L = 300 mm (brass body)	19
G 2 L = 300 mm	06	DN100	L = 350 mm (brass body)	10
DN20 L = 190 mm	4F	DN100	L = 350 mm (steel body)	1S
DN25 L = 260 mm**	5F	DN100	L = 360 mm (brass body)	20
Permanent flow rate $Q_3$ , m³/h	Code			
1,6	Code		1	
2,5	Code		2	
4	Code		3	
6,3	Code		4	
10	Code		5	
16	Code		6	
25	Code		7	
40	Code		8	
63	Code		9	
100	Code		0	
The ratio $Q_3/Q_1$ :	Code			
R 250	Code		1	
R 400	Code		2	
Communication module:	Code			
None	Code		0	
M-Bus	Code		1	
CL	Code		2	
868 MHz RF	Code		4	
MODBUS RS485	Code		5	
LON	Code		6	
MiniBus	Code		7	
BacNet	Code		8	
Temperature measurement function:	Code			
No	Code		0	
Yes	Code		1	

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Notes:

1. \* – type number code on the label is marked only for meter with protection class IP65. For meter with protection class IP68 code is used only for order coding (order code combination is presented in technical description PLF1IP68V05).
2. \*\* – flow sensor of the meter with pressure-loss class  $\Delta p$  40.

## 1.2 Sensor

Ultrasonic flow sensor.

## 1.3 Measurement value processing

The calculator calculates the volume of water passing through the flow sensor by integrating the measured flowrate over time.

## 1.4 Indication of the measurement results

Measured volume of water is indicated on the 8-line LCD indicator.

Indication in operating mode : m<sup>3</sup>, three digits after decimal point.

Indication in TEST mode : m<sup>3</sup>, six digits after decimal point.

## 1.5 Optional equipment and functions subject to MID requirements

None.

## 1.6 Technical documentation

Water meter QALCOSONIC F1– Technical description, user manual, passport: PLF1V05, 12-08-2019.

Water meter QALCOSONIC F1 (IP68)– Technical description, user manual, passport: PLF1IP68V05, 12-08-2019.

Labeling drawing N7.006.01.02-05, 20-11-2017.

Labeling drawing N7.006.01.02-02, 20-11-2017.

Labeling drawing (with distributor's HIDROCONTA logo) N7.006.01.02-03, 19-12-2017.

Labeling drawing (with distributor's AMBIDUCTOR logo) N7.006.01.02-06, 19-02-2018.

Labeling drawing N7.006.01.02-07, 07-05-2020.

Labeling drawing (with distributor's ADF logo) N7.006.01.02-08, 04-12-2020.

Labeling drawing (with distributor's EVN logo T30) N7.006.01.02-09, 04-12-2020.

Labeling drawing (with distributor's EVN logo T30-90) N7.006.01.02-10, 04-12-2020.

Other reference documents on which basis this certificate is issued, are stored in a file Nr.LEI-12-MP-110.20.

## 1.7 Integrated equipment and functions not subject to MID

Optical interface according to requirements of EN 62056-21 integrated in the meter. For meter with protection class IP65 the optical interface is intended for data reading via M-Bus protocol and for meter parameters setting. For meter with protection class IP68 the optical interface is additionally intended for verification mode (TEST) control, and viewing the parameters on the meter LCD indicator is controlled by magnet (magnetically operated switch).

Two pulse inputs with programmable pulse value intended for connecting additional water meters: maximum pulse frequency - 3 Hz, maximum voltage level – 3,6 V.

Two open collector type pulse outputs: maximum current level – 20 mA, maximum voltage level – 50 V.

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The meter can be without communication module or equipped with one of the following modules:

- M-Bus module;
- CL module;
- 868 MHz RF radio module;
- MODBUS RS485 module;
- LON module;
- MiniBus module.
- BacNet module.

Resistance temperature sensor Pt 500 can be connected to the water meter calculator for temperature measurement. Cable length of the sensor – up to 5 m, wiring of sensor – 2-wire. In this case the meter must have an additional temperature measurement function (optional).

The flow sensor body with end connections from G ¾ to G 1¼ and from DN20 to DN25 has intended place for temperature sensor installation.

## 2 Technical data

### 2.1 Rated operating conditions

#### 2.1.1 Measurand

The volume of water passing through the meter, indicated on the LCD indicator.

#### 2.1.2 Measurement range

The measuring range of the water meter QALCOSONIC F1 and other technical characteristics are presented in table 1:

Table 1

Flowrate, m <sup>3</sup> /h				The ratio $R, Q_3/Q_1$	End connections	Overall length $L, \text{mm}$	Pressure loss class
Permanent $Q_3$	Overload $Q_4$	Minimum $Q_1$	Transitional $Q_2$				
1,6	2,0	0,0064	0,010	250	G ¾	105	$\Delta p$ 63/ $\Delta p$ 25*
					G ¾	110	$\Delta p$ 63/ $\Delta p$ 25*
					G ¾	165	$\Delta p$ 63/ $\Delta p$ 25*
					G 1	105	$\Delta p$ 63/ $\Delta p$ 25*
					G 1	110	$\Delta p$ 63/ $\Delta p$ 25*
					G 1	190	$\Delta p$ 25
					DN20	190	$\Delta p$ 25
2,5	3,125	0,010	0,016	250	G ¾	105	$\Delta p$ 63
					G ¾	110	$\Delta p$ 63
					G ¾	165	$\Delta p$ 63
					G 1	105	$\Delta p$ 63
					G 1	110	$\Delta p$ 63
					G 1	190	$\Delta p$ 25
					DN20	190	$\Delta p$ 25
					G 1	130	$\Delta p$ 25





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Flowrate, m <sup>3</sup> /h				The ratio $R, Q_3/Q_1$	End connections	Overall length $L, \text{mm}$	Pressure loss class
Permanent $Q_3$	Overload $Q_4$	Minimum $Q_1$	Transitional $Q_2$				
63,0	78,75	0,252	0,400	250	DN80	300	$\Delta p$ 63
					DN80	350	$\Delta p$ 63
					DN100	350	$\Delta p$ 25
					DN100	360	$\Delta p$ 25
63,0	78,75	0,160	0,260	400	DN80	300	$\Delta p$ 63
					DN80	350	$\Delta p$ 63
100,0	125,0	0,400	0,640	250	DN100	350	$\Delta p$ 63
					DN100	360	$\Delta p$ 63
100,0	125,0	0,250	0,400	400	DN100	350	$\Delta p$ 63
					DN100	360	$\Delta p$ 63

Notes:

1. \* – depending on the meter tube diameter pressure loss class can be  $\Delta p$  63 or  $\Delta p$  25.
2. \*\* – depending on the meter tube, the pressure loss class can be  $\Delta p$  25 (triangular cross-section of the meter tube) or  $\Delta p$  40 (circular cross-section of the meter tube).

### 2.1.3 Meter temperature classes and maximum permissible error

Meter temperature classes and maximum permissible error are presented in table 2:

Table 2

Meter temperature class	Water temperature ranges	Maximum permissible error
T30	between 0,1 °C and 30 °C	$\pm 5\%$ in flow range $Q_1 \leq Q < Q_2$ $\pm 2\%$ in flow range $Q_2 \leq Q \leq Q_4$
T30/90	between 30 °C and 90°C	$\pm 5\%$ in flow range $Q_1 \leq Q < Q_2$ $\pm 3\%$ in flow range $Q_2 \leq Q \leq Q_4$
T90	between 0,1 °C and 90 °C	$\pm 5\%$ in flow range $Q_1 \leq Q < Q_2$ $\pm 2\%$ in flow range $Q_2 \leq Q \leq Q_4$ (for water temperature between 0,1 °C and 30 °C) $\pm 3\%$ in flow range $Q_2 \leq Q \leq Q_4$ (for water temperature between 30 °C and 90 °C)

### 2.1.4 Environmental conditions / Influence quantities

- Climatic class : B according to LST EN ISO 4064-1;  
 Ambient temperature : 5 °C to 70 °C;  
 Humidity level : condensing;  
 Installations : indoor;  
 Mechanical environment : class M1;  
 Electromagnetic environment : class E2;  
 Protection class : IP65 (for measuring section IP67 - optional)  
 or IP68.



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## 2.2 Other operating conditions

### 2.2.1 Maximum admissible working pressure

The maximum admissible working pressure of water meter is 1,6 MPa (MAP 16) or 2,5 MPa (MAP 25).

### 2.2.2 Mounting position of the flow sensor of the heat meter

Water meter can be mounted either horizontally, vertically or inclined.

## 3 Interfaces and compatibility conditions

The communication interfaces of the meter, pulse inputs and outputs are described in section 1.7 of this appendix.

## 4 Requirements on production, putting into use and utilization

### 4.1 Requirements on production

At the end of the manufacturing and adjustment process the water meters shall be tested according to the requirements of the LST EN 4064-2, section 10.1. Errors of water meters shall not exceed the maximum permissible errors, described in Annex III (MI-001) of the Directive 2014/32/EU.

The meters shall be tested within each of the following flowrates:

between  $Q_1$  and  $1,1Q_1$ ;

between  $Q_2$  and  $1,1Q_2$ ;

between  $0,9Q_3$  and  $Q_3$ .

For meters class T30: water temperature of tests  $20\text{ }^{\circ}\text{C} \pm 10\text{ }^{\circ}\text{C}$ .

For meters class T30/90: water temperature of tests is  $50\text{ }^{\circ}\text{C} \pm 10\text{ }^{\circ}\text{C}$ .

For meters class T90: water temperature of tests  $20\text{ }^{\circ}\text{C} \pm 10\text{ }^{\circ}\text{C}$  and  $50\text{ }^{\circ}\text{C} \pm 10\text{ }^{\circ}\text{C}$ .

### 4.2 Requirements on putting into use

The water meter QALCOSONIC F1 must be installed in accordance with the requirements of technical descriptions listed in section 1.6.

For water meters with nominal diameter DN65 to DN100 necessary straight pipelines lengths are: upstream  $\geq 5 \times \text{DN}$ , downstream  $\geq 3 \times \text{DN}$  (flow profile sensitivity class U5 D3).

For water meters of other sizes the straight pipelines installation in upstream and downstream the meter are not necessary (flow profile sensitivity class U0 D0).

### 4.3 Requirements for consistent utilization

No special requirements identified.

## 5 Control of the measuring process after tasks of the instrument in use

### 5.1 Documentation of the procedure

None.

### 5.2 Special equipment or software

For meter with protection class IP65 no special requirements identified.

For meter with protection class IP68 the following equipment is required:

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- optical reading head according to standard LST EN 62056-21;
- service software **QALCOSONIC HEAT 1 v01r150**.

### 5.3 Identification of hardware and software

Identification of hardware:

- see Fig. 1, Fig. 2, Fig. 3 of this appendix;
- identification mark on the meter electronics wiring plate is SKU3-v12R8.

Identification of software: version number of the software is **0.08**. This number on demand can be shown on the display.

### 5.4 Calibration-adjustment procedure

#### 5.4.1 Test instruction for meter with protection class IP65

Water meter errors determination test shall be carried out when verification mode (TEST) is activated as described in section 6.4 of the technical description PLF1V05. Two middle contacts in the terminal block under calculator cover have to be closed using the jumper (Fig. 4).

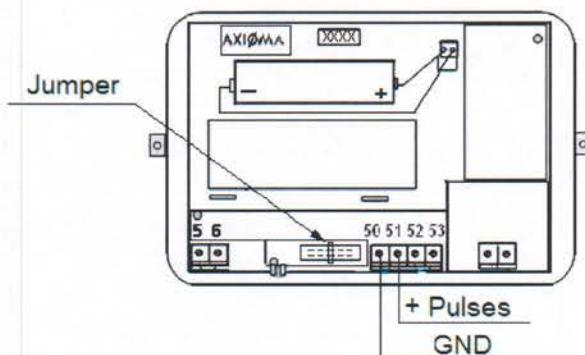


Fig. 4. Activation of the verification mode

The measuring errors of the water meter are determined at three flowrates appointed in section 4.1 of the present appendix. Pulse output of the meter is used (terminals 50 and 51), or the meter volume indication can be read directly from meter's LCD (verification scale interval in verification mode (TEST) – 1 ml).

The volume pulse value in verification mode (TEST) is presented in table 3.

Table 3

Permanent flowrate $Q_3$ of the meter, m <sup>3</sup> /h	Volume pulse value in verification mode (TEST), litre/pulse
1,6	0,002
2,5	0,004
4	0,005
6,3; 10	0,02
16; 25; 40	0,05
63; 100	0,2

**Not an Authorized Translation****5.4.2 Test instruction for meter with protection class IP68****5.4.2.1 Activation of the verification (TEST) mode**

Using an optical head and **QALCOSONIC HEAT 1 v01r150** software the meters verification mode (TEST) is activated. Optical head should be connected to the computer COM interface.

After opening the program startup window („Actual“) computer port number (to which optical head is connected) is entered in the field „Port“. Click button „Open Port“. Briefly place the magnet on the meter calculator (on the area marced with symbol ). The optical head is placed on the meter.

Select menu item „Testing“ and click button „USER Test On/Off“ in the new window. If the operation succeeded, the additional window on the computer display appears with note „Operation done“ and inscription “TEST” appears on the meter display.

**5.4.2.2 Meter errors determination test**

The measuring errors of the meter are determined at three flowrates appointed in section 4.1 of the present appendix. Optical pulse output of the meter is used (Fig. 5), or the meter volume indication can be read directly from meter's LCD (verification scale interval in verification mode – 1 ml).

The volume pulse value in verification mode (TEST) is presented in table 3.

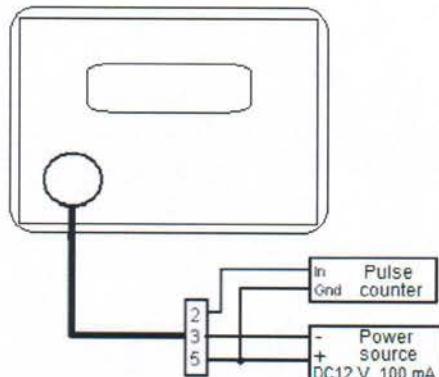


Fig. 5. Connection diagram for the meter errors determination test

**6 Security measures****6.1 Sealing**

The following water meter calculator sealing is provided:

- manufacturer's adhesive seal - sticker on the access to the adjustment activation jumper (Fig.6, pos.1) and on the fixer of the cover protecting electronics wiring plate (Fig.6, pos.2);
- after installation the case and cover of the calculator (Fig.6, pos.3) are sealed with two hanged seals of water supplier.

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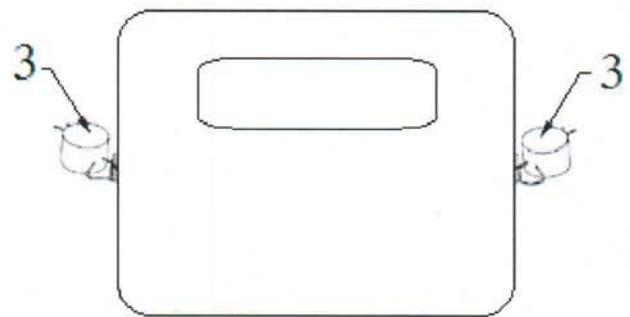
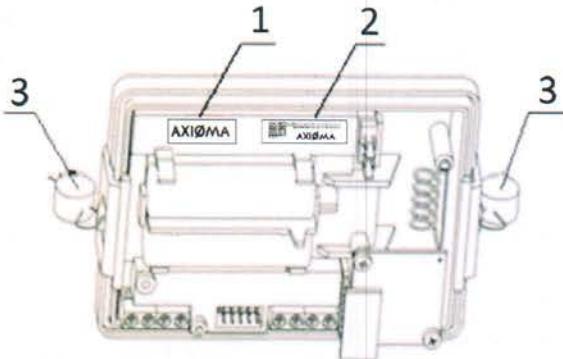
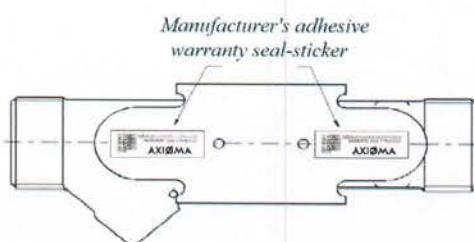


Fig.6. Sealing of the calculator of the water meter QALCOSONIC F1

The following flow sensor sealing is provided:

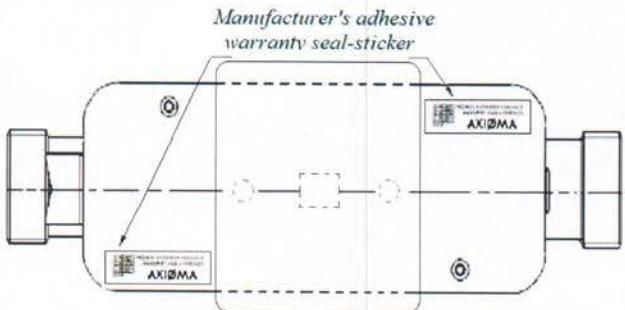
- manufacturer's adhesive seal - sticker on the bolts of the cover (Fig.7 a, b, c, d, e, f);
- manufacturer's hanged seals on ultrasonic transducers by steel body (Fig.7 g);



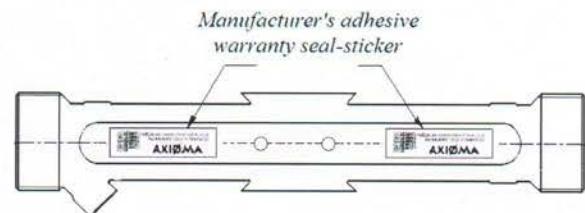
a) Sealing of flow sensor of the water meter with end connections G $\frac{1}{4}$ , G1, DN20 (IP65 and IP68)



b) Sealing of flow sensor of the water meter with end connections G $\frac{3}{4}$ , G $\frac{5}{4}$ , DN25, DN32 (IP65, triangular cross-section of the meter tube)



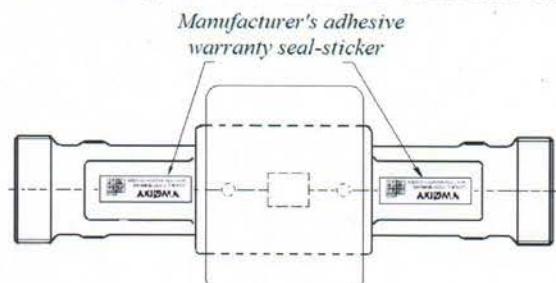
c) Sealing of flow sensor of the water meter with end connections G $\frac{3}{4}$ , G $\frac{5}{4}$ , DN25, DN32 (IP68, triangular cross-section of the meter tube)



d) Sealing of flow sensor of the water meter with end connections G $\frac{3}{4}$ , G $\frac{5}{4}$ , DN25, DN32 (IP65 and IP68, circular cross-section of the meter tube)

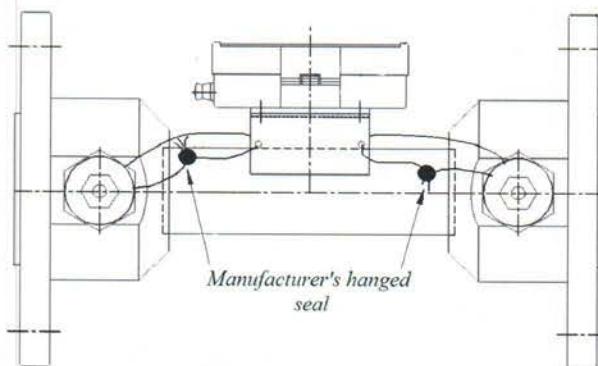


e) Sealing of flow sensor of the water meter with end connections G2; DN40; DN50; DN65; DN80; DN100 (IP65)



f) Sealing of flow sensor of the water meter with end connections G2; DN40; DN50; DN65; DN80; DN100 (IP68)

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g) Sealing of flow sensor of the water meter with end connections DN65; DN80; DN100(steel body, IP65 and IP68)

Fig. 7. Sealing of flow sensor of the water meter



a) Manufacturer's adhesive seal-sticker



b) Manufacturer's adhesive warranty seal-sticker



c) Manufacturer's hanged seal

Fig.8. Manufacturer's protective seals

## 7 Marking and inscriptions

### 7.1 Information to be borne by and to accompany the measuring instrument

At least the following information shall appear on the water meter calculator casing and his label:

- EU-type examination certificate number;
- manufacturer's mark or name;
- distributor's logo (if applicable);
- type and type number (type number is used only for meter with protection class IP65);
- year of manufacture and serial number;
- unit of measurement: m<sup>3</sup> (on LCD display);
- permanent flowrate Q<sub>3</sub>;
- the ratio Q<sub>3</sub>/Q<sub>1</sub>, preceded by „R“;
- the temperature class, where it differs from T30;
- the maximum admissible working pressure;
- pressure loss class, where it differs from Δp 63;
- end connections of the flow sensor;



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- electromagnetic class;
- mechanical class.

Additional metal label is attached to the steel body of the meter DN65/DN80/DN100 flow sensor. On the label is the following information:

- nominal diameter DN of the meter;
- serial number;
- year of manufacture;
- manufacturer's mark or name;
- arrow to indicate the direction of the flow

Arrow to indicate the direction of the flow shall appear on flow sensor brass body.

## 7.2 Conformity marking

In addition, the label of water meter calculator should contain the following marking:

- „CE” marking;
- metrology marking, consisting of the capital letter „M” and the last two digits of the year of its affixing, surrounded by a rectangle;
- identification number of the notified body, which carried out the conformity assessment.

## 8 List of the drawings attached to the certificate.

Labeling drawing N7.006.01.02-05, 20-11-2017.  
Labeling drawing N7.006.01.02-02, 20-11-2017.  
Labeling drawing N7.006.01.02-03, 19-12-2017.  
Labeling drawing N7.006.01.02-06, 19-02-2018.  
Labeling drawing N7.006.01.02-07, 07-05-2020.  
Labeling drawing N7.006.01.02-08, 04-12-2020.  
Labeling drawing N7.006.01.02-09, 04-12-2020.  
Labeling drawing N7.006.01.02-10, 04-12-2020.

## 9 Certificate history

Issue	Date and reference No.	Description
1	2	3
LT-1621-MI001-019	05-01-2016, Nr. LEI-12-MP-032.15	Type examination certificate first issued
LT-1621-MI001-019 Revision 1	21-04-2017, Nr. LEI-12-MP-058.17	<ol style="list-style-type: none"><li>1. The meter includes a new modification with protection class IP68.</li><li>2. The additional functions of the optical interface for the meter with protection class IP68:<ul style="list-style-type: none"><li>- optical switch for viewing the meter parameters;</li><li>- verification mode (TEST) activation and verification pulse output.</li></ul></li><li>3. New software version <b>0.08</b> for the meter with protection class IP68.</li></ol>



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1	2	3																										
		<p>4. Additional verification instruction for the meter with protection class IP68.</p> <p>5. Additional sealing schemes for the meter's flow sensor with protection class IP68.</p> <p>6. The new document issued for the meter with protection class IP68: - PLSF4V02, 02-2017.</p> <p>7. The new labeling drawings of the meter: -labeling drawing N7.006.01.02-03, 26-01-2017; -labeling drawing N7.006.01.02, 26-01-2017; -labeling drawing (with distributor's logo SAGEMCOM) N7.006.01.02-02, 03-04-2017.</p>																										
LT-1621-MI001-019 Revision 2	19-07-2017, Nr. LEI-12-MP- 059.17	<p>1. The meter has been supplemented with the following primary flow sensor modifications:</p> <table border="1"><thead><tr><th>Permanent flowrate <math>Q_3</math>, m<sup>3</sup>/h</th><th>The ratio R, <math>Q_3/Q_1</math></th><th>End connections</th><th>Overall length L, mm</th><th>Pressure loss class</th></tr></thead><tbody><tr><td rowspan="2">1,6</td><td rowspan="2">R250</td><td>G ¾</td><td>105</td><td rowspan="2"><math>\Delta p</math> 63 or <math>\Delta p</math> 25</td></tr><tr><td>G 1</td><td>105</td></tr><tr><td rowspan="2">2,5</td><td rowspan="2">R250</td><td>G ¾</td><td>105</td><td rowspan="2"><math>\Delta p</math> 63</td></tr><tr><td>G 1</td><td>105</td></tr><tr><td rowspan="2">2,5</td><td rowspan="2">R400</td><td>G ¾</td><td>105</td><td rowspan="2"><math>\Delta p</math> 63</td></tr><tr><td>G 1</td><td>105</td></tr></tbody></table> <p>2. Document PLSF4V01, issued 09-2015, has been replaced by the document PLSF4V01, issued 30-06-2017.</p> <p>3. Document PLSF4V02, issued 02-2017, has been replaced by the document PLSF4V02, issued 03-07-2017.</p>	Permanent flowrate $Q_3$ , m <sup>3</sup> /h	The ratio R, $Q_3/Q_1$	End connections	Overall length L, mm	Pressure loss class	1,6	R250	G ¾	105	$\Delta p$ 63 or $\Delta p$ 25	G 1	105	2,5	R250	G ¾	105	$\Delta p$ 63	G 1	105	2,5	R400	G ¾	105	$\Delta p$ 63	G 1	105
Permanent flowrate $Q_3$ , m <sup>3</sup> /h	The ratio R, $Q_3/Q_1$	End connections	Overall length L, mm	Pressure loss class																								
1,6	R250	G ¾	105	$\Delta p$ 63 or $\Delta p$ 25																								
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2,5	R400	G ¾	105	$\Delta p$ 63																								
		G 1	105																									
LT-1621-MI001-019 Revision 3	28-02-2018, Nr. LEI-12-MP- 059.17	<p>1. Manufacturer's name AB „Axis Industries” changed to UAB „Axioma LEZ”.</p> <p>2. Manufacturer's name AB AXIS INDUSTRIES on the meter label changed to manufacturer's brand AXIOMA.</p> <p>3. The name of the meter type from QALCOSONIC FLOW 4 changed to QALCOSONIC F1.</p> <p>4. New meter label with distributor's KIMANS Inc. logo.</p>																										

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1	2	3																																																					
		<p>5. New meter label with distributor's HIDROCONTA logo.</p> <p>6. New meter label with distributor's AMBIDUCTOR logo.</p> <p>7. The new labeling drawings of the meter:            - labeling drawing N7.006.01.02-05, 20-11-2017;            - labeling drawing N7.006.01.02-02, 20-11-2017;            - labeling drawing N7.006.01.02-04, 20-11-2017 (with distributor's KIMANS Inc. logo);            - labeling drawing N7.006.01.02-03, 19-12-2017 (with distributor's HIDROCONTA logo);            - labeling drawing N7.006.01.02-06, 19-02-2018 (with distributor's AMBIDUCTOR logo).</p> <p>8. For meter with protection class IP 68 the optical switch changed to magnetically operated switch (magnetic switch).</p> <p>9. The meter has been supplemented with the following primary flow sensor modifications:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Permanent flowrate <math>Q_3</math>, m<sup>3</sup>/h</th><th style="text-align: center;">The ratio <math>R, Q_3/Q_1</math></th><th style="text-align: center;">End connections</th><th style="text-align: center;">Overall length <math>L</math>, mm</th><th style="text-align: center;">Pressure loss class</th></tr> </thead> <tbody> <tr> <td style="text-align: center;">1,6</td><td style="text-align: center;">R250</td><td style="text-align: center;">G 1</td><td style="text-align: center;">110</td><td style="text-align: center;"><math>\Delta P</math> 63 or <math>\Delta P</math> 25</td></tr> <tr> <td style="text-align: center;">2,5</td><td style="text-align: center;">R250</td><td style="text-align: center;">G 1</td><td style="text-align: center;">110</td><td style="text-align: center;"><math>\Delta P</math> 63</td></tr> <tr> <td style="text-align: center;">2,5</td><td style="text-align: center;">R400</td><td style="text-align: center;">G 1</td><td style="text-align: center;">110</td><td style="text-align: center;"><math>\Delta P</math> 63</td></tr> <tr> <td style="text-align: center;">40,0</td><td style="text-align: center;">R250</td><td style="text-align: center;">DN80</td><td style="text-align: center;">300</td><td style="text-align: center;"><math>\Delta P</math> 25</td></tr> <tr> <td style="text-align: center;">63,0</td><td style="text-align: center;">R250</td><td style="text-align: center;">DN80</td><td style="text-align: center;">300</td><td style="text-align: center;"><math>\Delta P</math> 63</td></tr> <tr> <td rowspan="2" style="text-align: center;">63,0</td><td rowspan="2" style="text-align: center;">R250</td><td style="text-align: center;">DN80</td><td style="text-align: center;">300</td><td style="text-align: center;"><math>\Delta P</math> 63</td></tr> <tr> <td style="text-align: center;">DN100</td><td style="text-align: center;">360</td><td style="text-align: center;"><math>\Delta P</math> 25</td></tr> <tr> <td style="text-align: center;">63,0</td><td style="text-align: center;">R400</td><td style="text-align: center;">DN80</td><td style="text-align: center;">300</td><td style="text-align: center;"><math>\Delta P</math> 63</td></tr> <tr> <td style="text-align: center;">100,0</td><td style="text-align: center;">R250</td><td style="text-align: center;">DN100</td><td style="text-align: center;">360</td><td style="text-align: center;"><math>\Delta P</math> 63</td></tr> <tr> <td style="text-align: center;">100,0</td><td style="text-align: center;">R400</td><td style="text-align: center;">DN100</td><td style="text-align: center;">360</td><td style="text-align: center;"><math>\Delta P</math> 63</td></tr> </tbody> </table>	Permanent flowrate $Q_3$ , m <sup>3</sup> /h	The ratio $R, Q_3/Q_1$	End connections	Overall length $L$ , mm	Pressure loss class	1,6	R250	G 1	110	$\Delta P$ 63 or $\Delta P$ 25	2,5	R250	G 1	110	$\Delta P$ 63	2,5	R400	G 1	110	$\Delta P$ 63	40,0	R250	DN80	300	$\Delta P$ 25	63,0	R250	DN80	300	$\Delta P$ 63	63,0	R250	DN80	300	$\Delta P$ 63	DN100	360	$\Delta P$ 25	63,0	R400	DN80	300	$\Delta P$ 63	100,0	R250	DN100	360	$\Delta P$ 63	100,0	R400	DN100	360	$\Delta P$ 63
Permanent flowrate $Q_3$ , m <sup>3</sup> /h	The ratio $R, Q_3/Q_1$	End connections	Overall length $L$ , mm	Pressure loss class																																																			
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2,5	R400	G 1	110	$\Delta P$ 63																																																			
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63,0	R250	DN80	300	$\Delta P$ 63																																																			
63,0	R250	DN80	300	$\Delta P$ 63																																																			
		DN100	360	$\Delta P$ 25																																																			
63,0	R400	DN80	300	$\Delta P$ 63																																																			
100,0	R250	DN100	360	$\Delta P$ 63																																																			
100,0	R400	DN100	360	$\Delta P$ 63																																																			

10. One software version **0.08** for meters with protection class IP65 and IP68.
11. Test instruction for meter with protection class IP68 was updated.
12. The document PLSF4V01, issued 30-06-2017, has been replaced by the document PLSF4V04, issued 20-11-2017.

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<b>1</b>	<b>2</b>	<b>3</b>																																																																													
		13. The document PLSF4V02, issued 03-07-2017, has been replaced by the document PLF1IP68V04, issued 20-11-2017																																																																													
LT-1621-MI001-019 Revision 4	18-05-2020, Nr. LEI-12-MP-094.19	1. Manufacturer's name UAB „Axioma LEZ” changed to UAB „Axioma Metering”.  2. The meter has been supplemented with the following primary flow sensor modifications:  <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Permanent flowrate <math>Q_3</math>, m<sup>3</sup>/h</th> <th style="text-align: center;">The ratio R, <math>Q_3/Q_1</math></th> <th style="text-align: center;">End connections</th> <th style="text-align: center;">Overall length <math>L</math>, mm</th> <th style="text-align: center;">Pressure loss class</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>G 1¼</td> <td>260</td> <td><math>\Delta p</math> 40</td> </tr> <tr> <td></td> <td></td> <td>DN25</td> <td>260</td> <td><math>\Delta p</math> 40</td> </tr> <tr> <td style="text-align: center;">6,3</td> <td style="text-align: center;">R250</td> <td>G 1½</td> <td>260</td> <td><math>\Delta p</math> 25</td> </tr> <tr> <td></td> <td></td> <td>G 1½</td> <td>260</td> <td><math>\Delta p</math> 40</td> </tr> <tr> <td></td> <td></td> <td>DN32</td> <td>260</td> <td><math>\Delta p</math> 25</td> </tr> <tr> <td></td> <td></td> <td>DN32</td> <td>260</td> <td><math>\Delta p</math> 40</td> </tr> <tr> <td></td> <td></td> <td>G 1¼</td> <td>260</td> <td><math>\Delta p</math> 40</td> </tr> <tr> <td></td> <td></td> <td>DN25</td> <td>260</td> <td><math>\Delta p</math> 40</td> </tr> <tr> <td style="text-align: center;">6,3</td> <td style="text-align: center;">R400</td> <td>G 1½</td> <td>260</td> <td><math>\Delta p</math> 25</td> </tr> <tr> <td></td> <td></td> <td>G 1½</td> <td>260</td> <td><math>\Delta p</math> 40</td> </tr> <tr> <td></td> <td></td> <td>DN32</td> <td>260</td> <td><math>\Delta p</math> 25</td> </tr> <tr> <td></td> <td></td> <td>DN32</td> <td>260</td> <td><math>\Delta p</math> 40</td> </tr> <tr> <td style="text-align: center;">10,0</td> <td style="text-align: center;">R250</td> <td>DN32</td> <td>260</td> <td><math>\Delta p</math> 63</td> </tr> <tr> <td style="text-align: center;">10,0</td> <td style="text-align: center;">R400</td> <td>DN32</td> <td>260</td> <td><math>\Delta p</math> 63</td> </tr> </tbody> </table>	Permanent flowrate $Q_3$ , m <sup>3</sup> /h	The ratio R, $Q_3/Q_1$	End connections	Overall length $L$ , mm	Pressure loss class			G 1¼	260	$\Delta p$ 40			DN25	260	$\Delta p$ 40	6,3	R250	G 1½	260	$\Delta p$ 25			G 1½	260	$\Delta p$ 40			DN32	260	$\Delta p$ 25			DN32	260	$\Delta p$ 40			G 1¼	260	$\Delta p$ 40			DN25	260	$\Delta p$ 40	6,3	R400	G 1½	260	$\Delta p$ 25			G 1½	260	$\Delta p$ 40			DN32	260	$\Delta p$ 25			DN32	260	$\Delta p$ 40	10,0	R250	DN32	260	$\Delta p$ 63	10,0	R400	DN32	260	$\Delta p$ 63		
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10,0	R400	DN32	260	$\Delta p$ 63																																																																											
		3. Additional data in the meter type number code.  4. Additional communication module BacNet.  5. The design of the calculator mounting to the flow sensor has been changed.  6. New labeling drawing of the meter: N7.006.01.02-07.  7. The document PLF4V04, issued 20-11-2017, has been replaced by the document PLF1V05, issued 12-08-2019.  8. The document PLF1IP68V04, issued 20-11-2017, has been replaced by the document PLF1IP68V05, issued 12-08-2019.																																																																													
LT-1621-MI001-019 Revision 5	28-12-2020, Nr. LEI-12-MP-110.20	1. New labeling drawings for the meter with protection class IP68: - labeling drawing (with distributor's ADF logo) N7.006.01.02-08, 04-12-2020; - labeling drawing (with distributor's EVN logo, T30) N7.006.01.02-09, 04-12-2020; - labeling drawing (with distributor's EVN logo, T30/90) N7.006.01.02-10, 04-12-2020;																																																																													



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Gamintojo prekės ženklas (manufacturer's brand)

F1-3-01-1-1-1-0  
SN 00030055 Year: 2017  
Type: QALCOSONIC F1  
CE MXXXXXX  
Q3 1.6 G 1/2"  
R250 T90  
MAP 16 IP 65  
Class: E2, M1  
Barcode

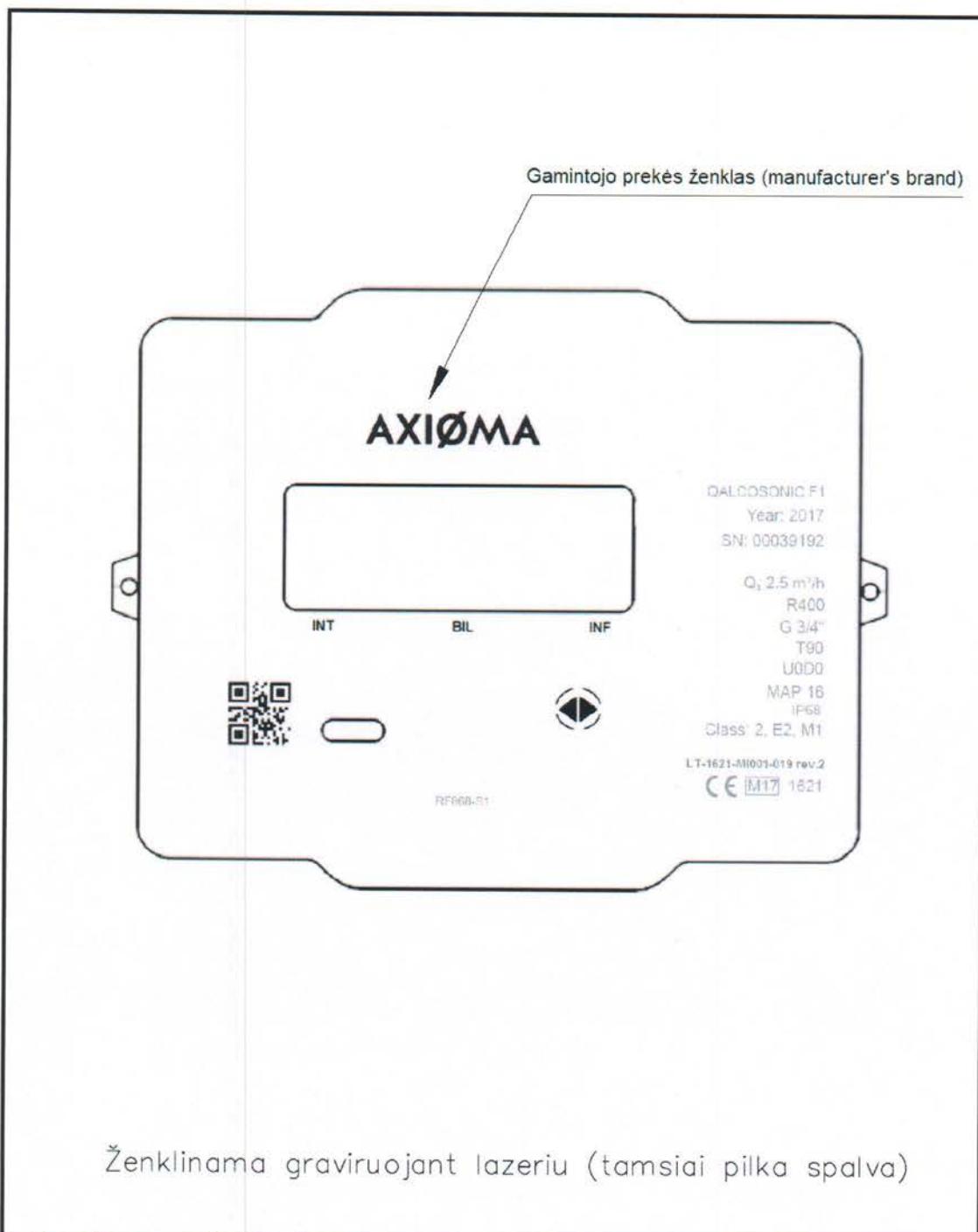
Pak	Lapas	Dokum.Nr	Parašas	Data
Atliko	Poška			2017.11.20
Tikrino				
N.kontr.				
T.kontr.				
Suderinta	Balčikonis			
Tvirtinio	Bagdonas			

N7.006.01.02-05

QALCOSONIC F1 IP65  
ženklinimas

Raidė	Masė	Mastelis	
		2:1	
Lapas	1	Lapų	1

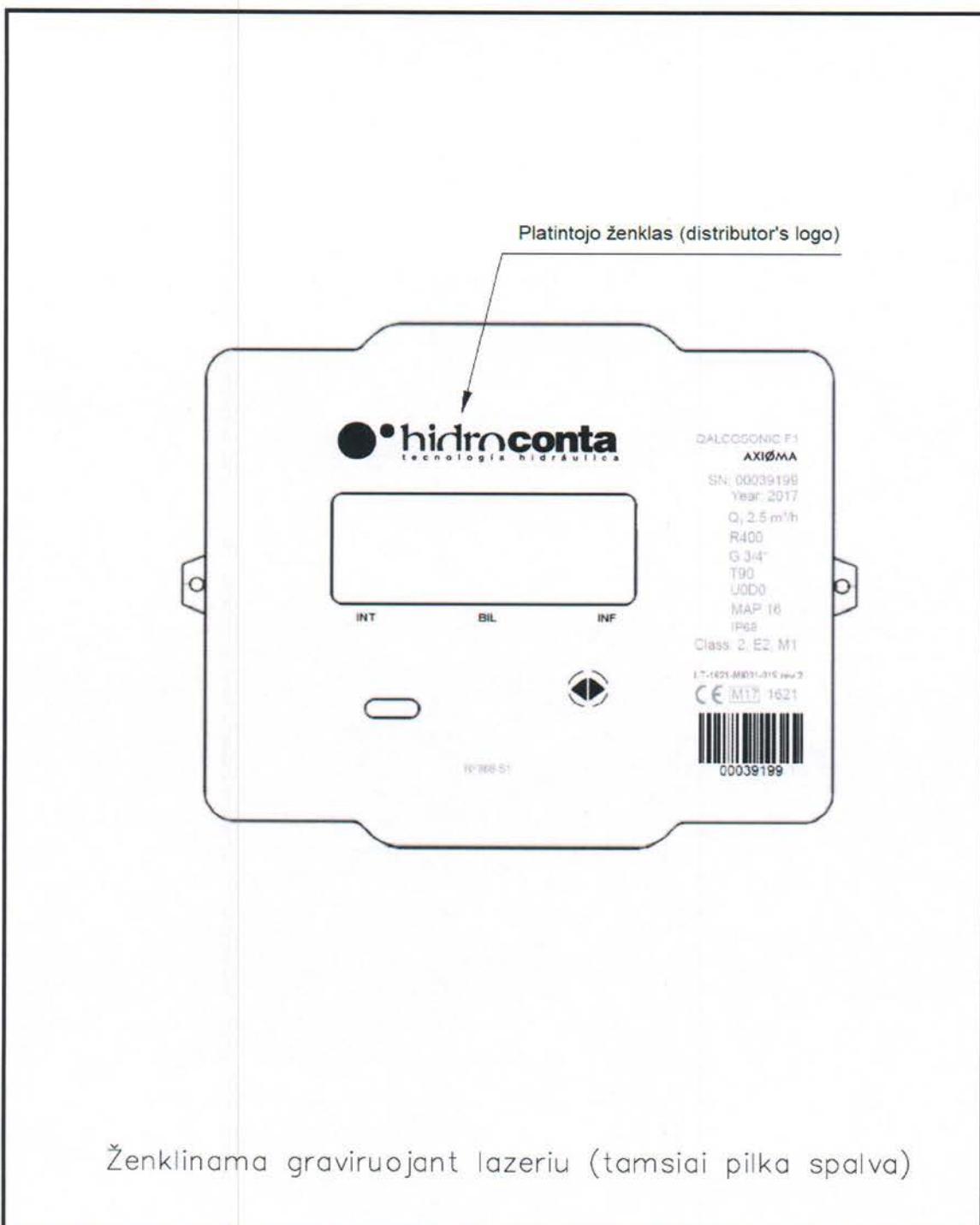
UAB AXIOMA LEZ

**Not an Authorized Translation**


Pak.	Lapas	Dokum.Nr	Parašas	Data	Skaitiklio	Raijdė	Masė	Mastelis
Atliko	Poška			2017.11.20	QALCOSONIC F			
Tikrino					(IP68) ženklinimas			2:1
N.kontr.						Lapas	1	Lapų
T.kontr.								1
Suderinta	Balčikonis				ASA (RAL 7035)			
Tvirtino	Bagdonas					UAB AXIOMA LEZ		



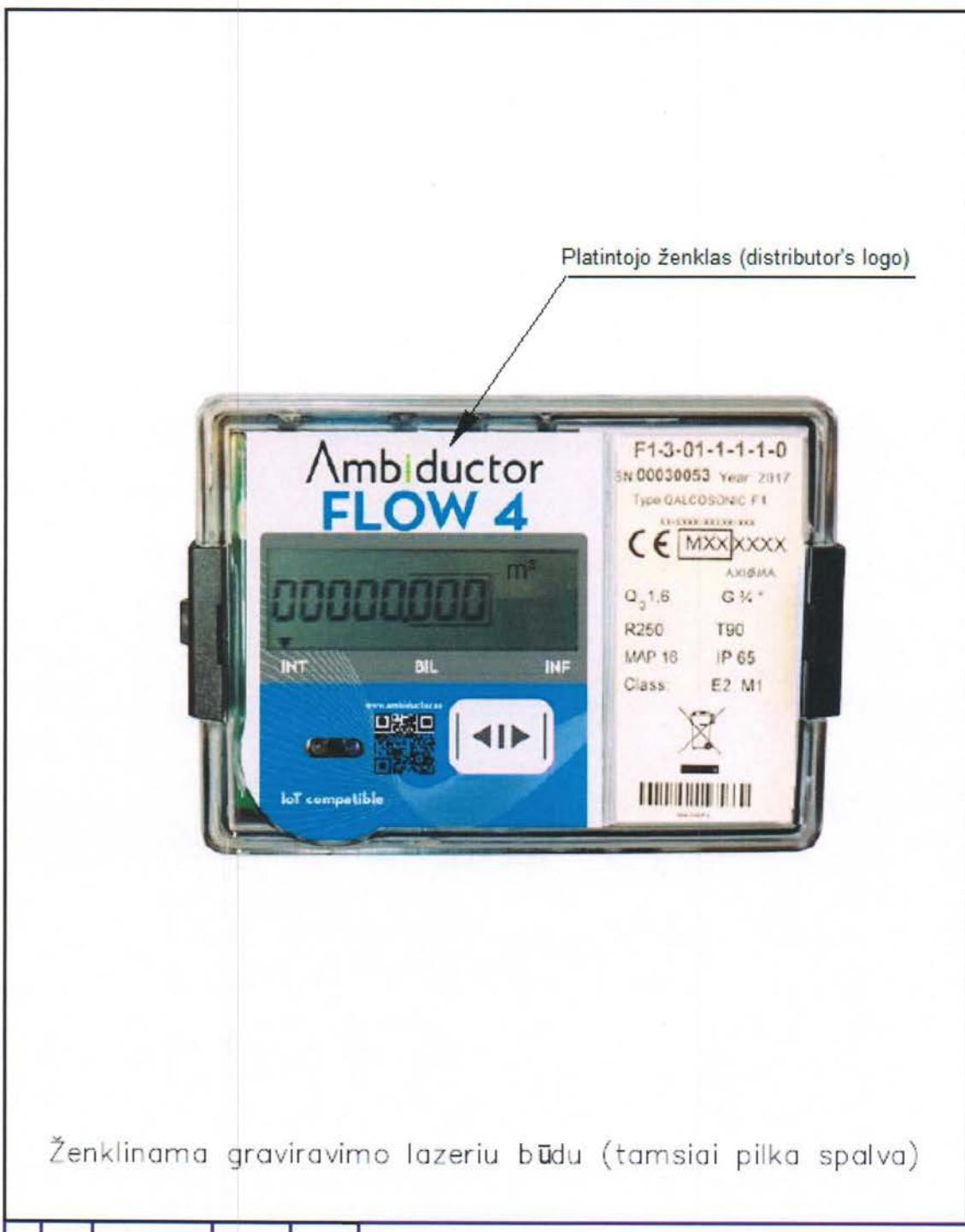
**Not an Authorized Translation**



Pak	Lapas	Dokum.Nr	Parašas	Data	Skaitiklio HIDROCONTA ženklinimas	N7.006.01.02-03	Raidė	Masė	Mastelis
Atliko	Poška			2017.12.19					
Tikrino									2:1
N.kontr.									
T.kontr.									
Suderinta	Balčikonis					ASA (RAL 7035)	UAB AXIOMA LEZ		
Tvirtino	Bagdonas						Lapas	1	Lapų 1



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					N7.006.01.02-06		
Pak.	Lapas	Dokum.Nr.	Parašas	Data	QALCOSONIC F1 ženklinimas „Ambiductor“	Raldė	Masė
Atliko	Poška			2018.02.19			Masteliš
Tlkrlno							2:1
N.kontr.						Lapas	1
T.kontr.						Lapų	1
Suderinta	Balčkonis				ASA (RAL 7035)	UAB AXIOMA LEZ	
Tvirtino	Bagdonas						

**Not an Authorized Translation**
**Gamintojo prekės ženklas (manufacturer's brand)**

**Ženklinama graviravimo lazeriu būdu (tamsiai pilka spalva)**
**N7.006.01.02-07**

Pak.	Lopas	Dokum.Nr	Parašas	Data	Raide	Mase	Mastelis
Atliko	Poska			2020.05.07			
Tikrino							
N.kontr.							
T.kontr.							
Suderinta							
Tvirtino	Raižys						
Skaitiklio ženklinimas DIN Matrix kodu					Lopas	Lapu	
ASA (RAL 7035)					UAB "Axioma metering"		



**Not an Authorized Translation**

Platintojo ženklas (distributor's logo)

Ženklinama graviravimo lazerlu būdu (tamslal plika spalva)

					N7.006.01.02-08				
Pak.	Lapas	Dokum.,Nr	Parašas	Data	Skaitiklio ADF ženklinimas	Rajčė	Masė	Mastelis	
Atliko	Poška			2020-12-04					5:1
Tikrlno									
N.kontr,									
T.kontr,									
Suderinta	Balčikonis								
Tvrtlno									
					UAB "Axioma metering"				



LITHUANIAN  
ENERGY  
INSTITUTE

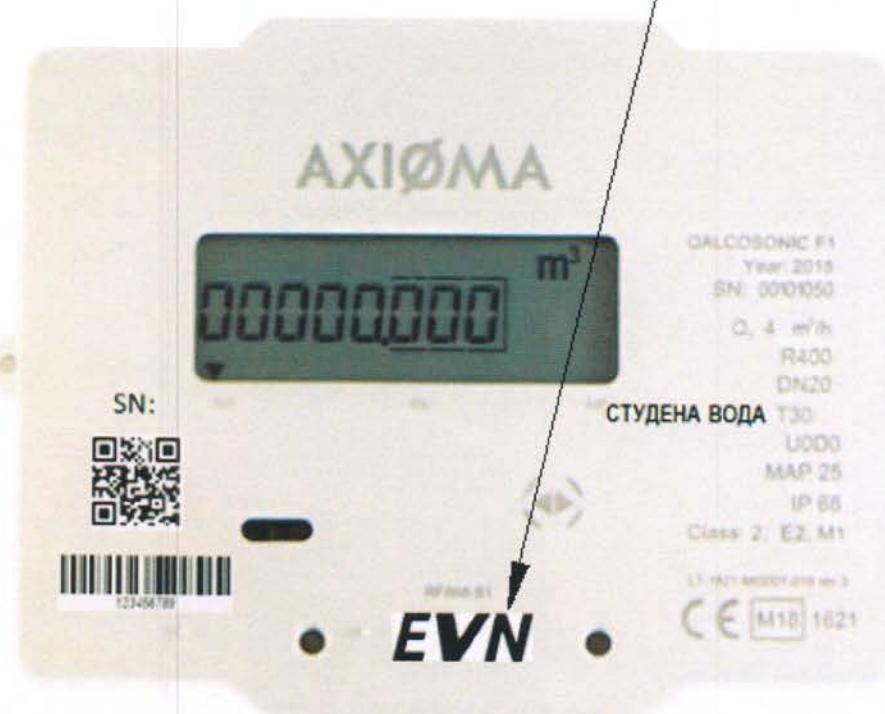
LABORATORY OF HEAT-EQUIPMENT  
RESEARCH AND TESTING

Appendix to EU-Type Examination Certificate  
No. LT-1621-MI001-019, Revision 5,  
issued 28<sup>th</sup> December 2020

Page 23 of 24 pages

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Platintojo ženklas (distributor's logo)



Ženklinama graviravimo lazeru būdu (tamslai plika spalva)

Z:\V\Jukomens\N1\LEI-BLOK\Calcsonic Flow-4\1968 EBV\Uždučias lapas\idw

Pak.	Lapas	Dokum.Nr	Parašas	Data	N7.006.01.02-09			
Atliko	<i>Poška</i>			2021-12-04	Skaitiklio	Rajdė	Masė	Mastelis
Tikrino					EVN T30			
N.kontr.					ženklinimas			
T.kontr.						Lapas	1	Lapų
SuderInta	<i>Balčikonis</i>							1
Tvirtinuo					UAB "Axioma metering"			



Not an Authorized Translation

Platintojo ženklas (distributor's logo)

Ženklinama graviravimo lazeru būdu (tamslai pilka spalva)

				N7.006.01.02-10
Pak.	Lapas	Dokum.Nr	Parašas	Data
Atliko	Poška			2020-12-04
Tikrino				
N.kontr.				
T.kontr.				
Suderintा	Balčikonis			
Tvirtinuo				
Skaitiklio EVN T30/90 ženklinimas				
Raldė	Masė	Mastelis		
				5:1
Lapas	1	Lapų	1	
UAB "Axioma metering"				