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Standards and documents applied:
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 must correspond with the following specifications:

1 Design of the instrument

1.1 Construction

Ultrasonic complete water meter QALCOSONIC W1 consists of a measurement transducer with a primary flow sensor, an electronic calculator and indicating device. Plastic measuring sections with two ultrasonic transducers are installed in the plastic meter body (for meters with threaded end connection G2 – with four ultrasonic transducers). A filter strainer can be installed in the meter inlet. A non-return valve can be installed in the meter outlet (except for meters with threaded end connection G ¾ length 80 mm, G 1 length 105 mm and 110 mm and G 1½). The meter has an electronic calculator and a LCD indicating device mounted in the same body.
The meter is powered by an non-replaceable 3,6 V DC lithium battery (one or two).

Fig.1. Water meter QALCOSONIC W1, Q_3 = 1,6/2,5/4,0 m³/h, with threaded end connection G ¾ or G 1 (meter design initial version)

Fig.2. Water meter QALCOSONIC W1, Q_3 = 1,6/2,5/4,0 m³/h, with threaded end connection G ¾ or G 1 (meter design version „n“)

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Fig. 3. Water meter QALCOSONIC W1, Q_3 = 6,3/10 m³, with threaded end connection G 1¼ or G 1½

Fig. 4. Water meter QALCOSONIC W1, Q_3 = 10/16/25 m³ , with threaded end connection G2

1.2 Sensor
Ultrasonic flow sensor.

1.3 Measurement value processing
The flow measurement principle is based on the measurement of ultrasonic signal propagation time on the downstream and upstream of water flow. The difference between the measuring times is proportional to the water flow through the meter, which is calculated by the meter calculator.

1.4 Indication of the measurement results
Measured volume of water is indicated on the two-line LCD indicating device.

Upper line: 9 columns, intended for volume of water, passing through the meter.
Indications in operating mode: m³, three digits after decimal point.
Indications in TEST mode : m³, six digits after decimal point.

Lower line: 5 columns for dispaying current flow in m³/h and information symbols.

1.5 Optional equipment and functions subject to MID requirements
None.

1.6 Technical documentation
Ultrasonic water meter QALCOSONIC W1. Technical description, installation and operating instructions: TM_QW1_V03_LT, 18-10-2021.
Assembly drawing N10.0001.00.00-01, 24-08-2018.
Assembly drawing N10.0013.00.00-01, 24-08-2018.
Assembly drawing N14.0010.00.00-00, 01-10-2020.
Assembly drawing N10.0033.00.00-00, 01-10-2020.
Assembly drawing N14.013.00.00 W1 DN40 L300, 11-12-2020.
Assembly drawing N10.0052.100.00-00, 15-10-2021.
Assembly drawing N10.0052.100.00-00, 15-10-2021.

Other reference documents on which basis this certificate is issued, are stored in a file Nr.LEI-12-MP-119.21.

1.7 Integrated equipment and functions not subject to MID

NFC (near-field communication) interface is integrated in the meter, intended for data reading. The optical interface according to requirements of EN 62056-21 is integrated in the meter, intended for data reading via M-Bus protocol, for meter parameters setting and for optical pulses output.
The meter is equipped with one of the following wireless communication interfaces:

- RF 868 MHz;
- RF 433 MHz;
- RF 915 MHz;
- RF 920,5 MHz;
- NB-IoT, frequency bands B1, B3, B5, B8, B20, B28.

Data via RF communication interfaces may be transmitted using the following protocols:

- W-M-Bus-T1;
- W-M-Bus-T2;
- W-M-Bus-S1;
- W-M-Bus-C1;
- SIGFOX;
- LORA WAN;
- CoAP.

The meter can be equipped (optional) with one or both of the following additional wired communication interfaces (cable length 1,5 m):

- M-Bus;
- wired pulse output.

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 measurement range of the water meter QALCOSONIC W1 and other technical characteristics are presented in table 1:

Table 1

Flowrate, m³/h				The ratio R, Q_3/Q_1	End connections	Overall length L, mm	Pressure loss class: without filter/ with filter strainer
Permanent Q_3	Overload Q_4	Minimum Q_1	Transitional Q_2				
1,6	2,0	0,020	0,032	80	G ¾	80*; 105; 110; 165;170	Δp 16/ Δp 16
1,6	2,0	0,010	0,016	160	G ¾		Δp 16/ Δp 16
1,6	2,0	0,0064	0,010	250	G ¾		Δp 16/ Δp 16
1,6	2,0	0,005	0,008	315	G ¾		Δp 16/ Δp 16
1,6	2,0	0,004	0,0064	400	G ¾		Δp 16/ Δp 16
2,5	3,125	0,031	0,050	80	G ¾	80*; 105; 110; 165;170	Δp 25/ Δp 25
2,5	3,125	0,0156	0,025	160	G ¾		Δp 25/ Δp 25
2,5	3,125	0,010	0,016	250	G ¾		Δp 25/ Δp 25
2,5	3,125	0,0062	0,010	400	G ¾		Δp 25/ Δp 25
2,5	3,125	0,0031	0,005	800	G ¾		Δp 25/ Δp 25

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Flowrate, m³/h				The ratio R, Q_3/Q_1	End connections	Overall length L, mm	Pressure loss class: without filter/ with filter strainer
Permanent Q_3	Overload Q_4	Minimum Q_1	Transitional Q_2				
2,5	3,125	0,031	0,050	80	G 1	105; 110; 130;165; 190	Δp 16/ Δp 16
2,5	3,125	0,0156	0,025	160	G 1		Δp 16/ Δp 16
2,5	3,125	0,010	0,016	250	G 1		Δp 16/ Δp 16
2,5	3,125	0,0062	0,010	400	G 1		Δp 16/ Δp 16
4,0	5,0	0,050	0,080	80	G 1	105; 110; 130; 165; 190	Δp 25/ Δp 40**
4,0	5,0	0,025	0,040	160	G 1		Δp 25/ Δp 40**
4,0	5,0	0,016	0,026	250	G 1		Δp 25/ Δp 40**
4,0	5,0	0,010	0,016	400	G 1		Δp 25/ Δp 40**
4,0	5,0	0,005	0,008	800	G 1		Δp 25/ Δp 40**
6,3	7,875	0,079	0,126	80	G 1¼	260	Δp 25/ Δp 40
6,3	7,875	0,040	0,063	160	G 1¼		Δp 25/ Δp 40
6,3	7,875	0,0252	0,040	250	G 1¼		Δp 25/ Δp 40
6,3	7,875	0,016	0,0252	400	G 1¼		Δp 25/ Δp 40
6,3	7,875	0,008	0,013	800***	G 1¼		Δp 25/ Δp 40
6,3	7,875	0,079	0,126	80	G 1½	260	Δp 16/ Δp 16
6,3	7,875	0,040	0,063	160	G 1½		Δp 16/ Δp 16
6,3	7,875	0,0252	0,040	250	G 1½		Δp 16/ Δp 16
6,3	7,875	0,016	0,0252	400	G 1½		Δp 16/ Δp 16
10,0	12,5	0,125	0,200	80	G 1¼	260	Δp 63/ Δp 63
10,0	12,5	0,0625	0,100	160	G 1¼		Δp 63/ Δp 63
10,0	12,5	0,040	0,064	250	G 1¼		Δp 63/ Δp 63
10,0	12,5	0,025	0,040	400	G 1¼		Δp 63/ Δp 63
10,0	12,5	0,0125	0,020	800***	G 1¼		Δp 63/ Δp 63
10,0	12,5	0,010	0,016	1000***	G 1¼		Δp 63/ Δp 63
10,0	12,5	0,125	0,200	80	G 1½	260	Δp 25/ Δp 25
10,0	12,5	0,0625	0,100	160	G 1½		Δp 25/ Δp 25
10,0	12,5	0,025	0,040	400	G 1½		Δp 25/ Δp 25
10,0	12,5	0,0125	0,020	800***	G 1½		Δp 25/ Δp 25
10,0	12,5	0,125	0,200	80	G 2	300	Δp 16/ Δp 16
10,0	12,5	0,0625	0,100	160	G 2		Δp 16/ Δp 16
10,0	12,5	0,040	0,064	250	G 2		Δp 16/ Δp 16
16,0	20,0	0,200	0,320	80	G 2	300	Δp 16/ Δp 16
16,0	20,0	0,100	0,160	160	G 2		Δp 16/ Δp 16
16,0	20,0	0,064	0,102	250	G 2		Δp 16/ Δp 16
16,0	20,0	0,040	0,064	400	G 2		Δp 16/ Δp 16
25,0	31,25	0,3125	0,500	80	G 2	300	Δp 16/ Δp 25
25,0	31,25	0,156	0,250	160	G 2		Δp 16/ Δp 25
25,0	31,25	0,100	0,160	250	G 2		Δp 16/ Δp 25
25,0	31,25	0,0625	0,100	400	G 2		Δp 16/ Δp 25
25,0	31,25	0,0312	0,050	800***	G 2		Δp 16/ Δp 25

Notes:

1. * – meters with a length l = 80 mm are produced only in the initial design version.
2. ** – for meters Q_3 = 4 m³/h, threaded end connection G 1, l = 190 mm, when installed the filter strainer, the presuure loss class Δp 40 is valid. For all other lengths of meters Q_3 = 4 m³/h with filter, the pressure loss class Δp 25 applies.
3. *** – this ratio is only valid for meters with temperature class T30.

2.1.3 Meter temperature classes and maximum permissible errors

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

Table 2

Meter temperature class	Water temperature ranges	Maximum permissible errors
T30	between 0,1 °C and 30 °C	± 5 % in flow range $Q_1 \leq Q < Q_2$ ± 2 % in flow range $Q_2 \leq Q \leq Q_4$
T50	between 0,1 °C and 50 °C	± 5 % in flow range $Q_1 \leq Q < Q_2$ ± 2 % in flow range $Q_2 \leq Q \leq Q_4$ (for water temperature between 0,1 °C and 30 °C) ± 3 % in flow range $Q_2 \leq Q \leq Q_4$ (for water temperature between 30 °C and 50 °C)
T30/90	between 30 °C and 90°C	± 5 % in flow range $Q_1 \leq Q < Q_2$ ± 3 % in flow range $Q_2 \leq Q \leq Q_4$
T90	between 0,1 °C and 90 °C	± 5 % in flow range $Q_1 \leq Q < Q_2$ ± 2 % in flow range $Q_2 \leq Q \leq Q_4$ (for water temperature between 0,1 °C and 30 °C) ± 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

Ambient working temperature	:	-15 °C to 70 °C;
Humidity level	:	condensing;
Installations	:	indoor or outdoor;
Electromagnetic environment	:	class E2;
Degree of protection	:	IP68.

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).

2.2.2 Mounting position of the water meter

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

3 Interfaces and compatibility conditions

The communication interfaces of the meter 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 EN ISO 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 and T50: water temperature of tests 20 °C ± 10 °C.
For meters class T30/90: water temperature of tests is 50 °C ± 10 °C.
For meters class T90: water temperature of tests 20 °C ± 10 °C and 50 °C ± 10 °C.

4.2 Requirements on putting into use

The water meter QALCOSONIC W1 must be installed in accordance with the requirements of technical description specified in section 1.6.
The straight pipelines in upstream and downstream the meter is 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

- optical reading head according to standard LST EN 62056-21, with special holder;
- service software **W1 TOOL**.

5.3 Identification of hardware and software

Identification of hardware:

- see Fig.1, Fig. 2, Fig.3 and Fig. 4 of this appendix.

Identification of software: the software version number is **1.03** for meters with threaded end connection G ¾, G 1, G 1¼, G 1½ and **1.02** for meters with threaded end connection G2. This number shall be marked on the label of the device (SW:1.03 or SW:1.02).

5.4 Calibration-adjustment procedure

Using an optical head and computer with **W1 TOOL** software the meter verification mode (TEST) is activated. Optical head should be connected to the computer USB interface.
After placing the optical head on the meter with the special holder and opening the program startup window, computer port number (to which optical head is connected) is entered in the field **„Com Port“**.
Click **„Wake Up Meter“** button, then click the **„Enter Test Mode“** button. When the meter TEST mode is activated, meter readings are displayed with a resolution of 1 ml.
The meter's measurement errors shall be evaluated at the reference flow rates indicated in section 4.1 of this appendix. Optical pulse output of the meter is used or volume indications can be read directly from meter's LCD.
The volume pulse value in TEST mode is presented in table 3.

Table 3

Permanent flowrate Q_3 of the meter, m³/h	Volume pulse value in verification mode (TEST), litre/pulse
1,6	0,001
2,5	0,002
4	0,004
6,3	0,005
10	0,010
16	0,015
25	0,020

Using an optical head and computer with **W1 TOOL** software the meter is returned to the operating mode. After opening the program startup window, click the **„Wake Up Meter"** button, then click the **„Enter User Mode"** button, the meter returns to the operating mode.
The meter returns to its operating mode itself, 24 hours after activation of the TEST mode.

6 Security measures

6.1 Sealing

The meter casing is imperceptibly closed. Any unauthorized opening of the housing is impossible without damaging. When the upper cover is opened, the safety button that is installed in the meter body is activated and the error code appears on the meter display, with the first digit „4".

For the sealing of the meter after installation, there are provided holes in the meter body (Fig. 5).

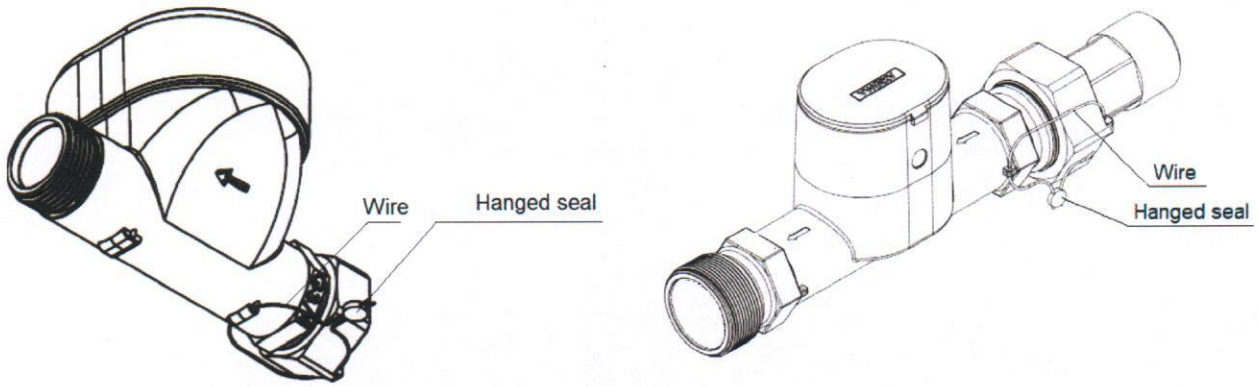

Fig.5. Sealing of the water meter QALCOSONIC W1 after istallation

7 Marking and inscriptions

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

The water meter housing cover contains the following information:

- EU-type examination certificate number;
- trade mark of the manufacturer;
- distributor's logo (if applicable);
- type designation of the meter;
- year of manufacture and serial number;
- unit of measurement: m^3 (on LCD display);
- permanent flowrate Q_3;
- the ratio Q_3/Q_1, preceded by „R";
- the temperature class, where it differs from T30;
- the maximum admissible working pressure (MAP);
- pressure loss class;
- the installation sensitivity class of the meter;
- the latest date by which the meter shall be replaced;
- software version number;
- IP code;
- QR code or barcode;
- communication interface NB-IoT (if installed on the meter).

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

7.2 Conformity marking

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

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

8 List of the drawings attached to the certificate

Assembly drawing N10.0001.00.00-01, 24-08-2018.
Assembly drawing N10.0013.00.00-01, 24-08-2018.
Assembly drawing N14.0010.00.00-00, 01-10-2020.
Assembly drawing N10.0033.00.00-00, 01-10-2020.
Assembly drawing N14.013.00.00 W1 DN40 L300, 11-12-2020.
Assembly drawing N10.0052.100.00-00, 15-10-2021.
Assembly drawing N10.0055.100.00-00, 15-10-2021.

9 Certificate history

<table>
<tr><th>Issue</th><th>Date and reference No.</th><th>Description</th></tr>
<tr><td>1</td><td>2</td><td>3</td></tr>
<tr><td>LT-1621-MI001-034</td><td>31-08-2018, No. LEI-12-MP-076.18</td><td>Type examination certificate first issued</td></tr>
<tr><td>LT-1621-MI001-034 Revision 1</td><td>30-07-2019, No. LEI-12-MP-088.19</td><td>1. The meter has been supplemented with water temperature class T50.

2. The design of the meter marking label has been changed (Fig. 1)

3. The document PL_QW1_V02, issued 29-08-2018, has been replaced by the document PL_QW1_V04, issued 24-07-2019.</td></tr>
<tr><td>LT-1621-MI001-034 Revision 2</td><td>09-12-2019, No. LEI-12-MP-092.19</td><td>1. The meter has been supplemented by new modifications with extended flow measurement limits:
<table>
<tr><th colspan="4">Flowrate, m³/h</th><th rowspan="2">R, Q_3/Q_1</th><th rowspan="2">End connections</th><th rowspan="2">Overall length L, mm</th><th rowspan="2">Pressure loss class</th></tr>
<tr><th>Q_3</th><th>Q_4</th><th>Q_1</th><th>Q_2</th></tr>
<tr><td rowspan="5">1,6</td><td rowspan="5">2,0</td><td rowspan="5">0,004</td><td rowspan="5">0,0064</td><td rowspan="5">400</td><td>G ¾</td><td>80</td><td>ΔP 25</td></tr>
<tr><td>G ¾</td><td>105</td><td>ΔP 25</td></tr>
<tr><td>G ¾</td><td>110</td><td>ΔP 25</td></tr>
<tr><td>G ¾</td><td>165</td><td>ΔP 25</td></tr>
<tr><td>G ¾</td><td>170</td><td>ΔP 25</td></tr>
<tr><td rowspan="5">2,5</td><td rowspan="5">3,125</td><td rowspan="5">0,0031</td><td rowspan="5">0,005</td><td rowspan="5">800</td><td>G ¾</td><td>80</td><td>ΔP 40</td></tr>
<tr><td>G ¾</td><td>105</td><td>ΔP 40</td></tr>
<tr><td>G ¾</td><td>110</td><td>ΔP 40</td></tr>
<tr><td>G ¾</td><td>165</td><td>ΔP 40</td></tr>
<tr><td>G ¾</td><td>170</td><td>ΔP 40</td></tr>
</table>
2. New meter labeling drawings with distributor's NeoVac logo.</td></tr>
</table>

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<table>
<tr><th>1</th><th>2</th><th>3</th></tr>
<tr><td></td><td></td><td>3. The document PL_QW1_V04, issued 24-07-2019, has been replaced by the document PL_QW1_V05, issued 21-08-2019.</td></tr>
<tr><td>LT-1621-MI001-034 Revision 3</td><td>31-01-2020, No. LEI-12-MP-098.20</td><td>1. The meter may additionally equipped with the following wireless communication interfaces:
- RF 920,5 MHz;
- NB-IoT, frequency bands B1, B3, B5, B8, B20, B28.

2. The document PL_QW1_V05, issued 21-08-2019, has been replaced by the document PL_QW1_V06, issued 09-01-2020.</td></tr>
<tr><td>LT-1621-MI001-034 Revision 4</td><td>25-08-2020, No. LEI-12-MP-106.20</td><td>1. The meter has been supplemented by modifications with additional values of the ratio R(Q_3/Q_1) = 80 and R(Q_3/Q_1) = 160.

2. For meters with end connections G ¾ and permanent flowrate Q_3 = 1,6 m³/h, pressure-loss class has been changed from Δp 25 to Δp 16.

3. For meters with end connections G ¾ and permanent flowrate Q_3 = 2,5 m³/h, pressure-loss class has been changed from Δp 40 to Δp 25.

4. New meter marking labels with distributor logos (Fig.1p).

5. The document PL_QW1_V06, issued 09-01-2020, has been replaced by the document PL_QW1_V08, issued 22-07-2020.</td></tr>
<tr><td>LT-1621-MI001-034 Revision 5</td><td>25-08-2020, No. LEI-12-MP-106.20</td><td>1. The meter has been supplemented with the following new modifications:
<table>
<tr><th colspan="4">Flowrate, m³/h</th><th rowspan="2">R, Q_3/Q_1</th><th rowspan="2">End connections</th><th rowspan="2">Overall length L, mm</th><th rowspan="2">Pressure loss class</th></tr>
<tr><th>Q_3</th><th>Q_4</th><th>Q_1</th><th>Q_2</th></tr>
<tr><td>6,3</td><td>7,875</td><td>0,079</td><td>0,126</td><td>80</td><td>G 1¼</td><td>260</td><td>Δp 25</td></tr>
<tr><td>6,3</td><td>7,875</td><td>0,040</td><td>0,063</td><td>160</td><td>G 1¼</td><td>260</td><td>Δp 25</td></tr>
<tr><td>6,3</td><td>7,875</td><td>0,0252</td><td>0,040</td><td>250</td><td>G 1¼</td><td>260</td><td>Δp 25</td></tr>
<tr><td>6,3</td><td>7,875</td><td>0,016</td><td>0,0252</td><td>400</td><td>G 1¼</td><td>260</td><td>Δp 25</td></tr>
<tr><td>6,3</td><td>7,875</td><td>0,008</td><td>0,013</td><td>800*</td><td>G 1¼</td><td>260</td><td>Δp 25</td></tr>
<tr><td>6,3</td><td>7,875</td><td>0,079</td><td>0,126</td><td>80</td><td>G 1½</td><td>260</td><td>Δp 16</td></tr>
<tr><td>6,3</td><td>7,875</td><td>0,040</td><td>0,063</td><td>160</td><td>G 1½</td><td>260</td><td>Δp 16</td></tr>
<tr><td>6,3</td><td>7,875</td><td>0,0252</td><td>0,040</td><td>250</td><td>G 1½</td><td>260</td><td>Δp 16</td></tr>
<tr><td>6,3</td><td>7,875</td><td>0,016</td><td>0,0252</td><td>400</td><td>G 1½</td><td>260</td><td>Δp 16</td></tr>
<tr><td>10,0</td><td>12,5</td><td>0,125</td><td>0,200</td><td>80</td><td>G 1¼</td><td>260</td><td>Δp 63</td></tr>
<tr><td>10,0</td><td>12,5</td><td>0,0625</td><td>0,100</td><td>160</td><td>G 1¼</td><td>260</td><td>Δp 63</td></tr>
<tr><td>10,0</td><td>12,5</td><td>0,040</td><td>0,064</td><td>250</td><td>G 1¼</td><td>260</td><td>Δp 63</td></tr>
<tr><td>10,0</td><td>12,5</td><td>0,025</td><td>0,040</td><td>400</td><td>G 1¼</td><td>260</td><td>Δp 63</td></tr>
<tr><td>10,0</td><td>12,5</td><td>0,0125</td><td>0,020</td><td>800*</td><td>G 1¼</td><td>260</td><td>Δp 63</td></tr>
<tr><td>10,0</td><td>12,5</td><td>0,010</td><td>0,016</td><td>1000*</td><td>G 1¼</td><td>260</td><td>Δp 63</td></tr>
<tr><td>10,0</td><td>12,5</td><td>0,125</td><td>0,200</td><td>80</td><td>G 1½</td><td>260</td><td>Δp 25</td></tr>
<tr><td>10,0</td><td>12,5</td><td>0,0625</td><td>0,100</td><td>160</td><td>G 1½</td><td>260</td><td>Δp 25</td></tr>
<tr><td>10,0</td><td>12,5</td><td>0,025</td><td>0,040</td><td>400</td><td>G 1½</td><td>260</td><td>Δp 25</td></tr>
<tr><td>10,0</td><td>12,5</td><td>0,0125</td><td>0,020</td><td>800*</td><td>G 1½</td><td>260</td><td>Δp 25</td></tr>
</table>
Note: * – this ratio is only valid for meters with temperature class T30.</td></tr>
</table>

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<table>
<tr><th>1</th><th>2</th><th>3</th></tr>
<tr><td></td><td></td><td>2. Meter version with additional wired M-Bus or pulse output communication interface has been removed.

3. For meters with end connections G 1 and permanent flowrate Q_3 = 2,5 m³/h, pressure-loss class has been changed from Δp 25 to Δp 16.

4. For meters with end connections G 1 and permanent flowrate Q_3 = 4,0 m³/h, pressure-loss class has been changed from Δp 40 to Δp 25.

5. Additional technical description for meters Q_3 = 6,3 m³/h and Q_3 = 10 m³/h: PL_QW1DN25-32_V01, issued 19-10-2020.</td></tr>
<tr><td>LT-1621-MI001-034 Revision 6</td><td>21-01-2021, No. LEI-12-MP-111.21</td><td>1. The meter has been supplemented with the following new modifications with threaded end connection G2:

<table>
<tr><th colspan="4">Flowrate, m³/h</th><th rowspan="2">R, Q_3/Q_1</th><th rowspan="2">End connections</th><th rowspan="2">Overall length L, mm</th><th rowspan="2">Pressure loss class</th></tr>
<tr><th>Q_3</th><th>Q_4</th><th>Q_1</th><th>Q_2</th></tr>
<tr><td>10,0</td><td>12,5</td><td>0,125</td><td>0,200</td><td>80</td><td>G 2</td><td>300</td><td>Δp 16</td></tr>
<tr><td>10,0</td><td>12,5</td><td>0,0625</td><td>0,100</td><td>160</td><td>G 2</td><td>300</td><td>Δp 16</td></tr>
<tr><td>10,0</td><td>12,5</td><td>0,040</td><td>0,064</td><td>250</td><td>G 2</td><td>300</td><td>Δp 16</td></tr>
<tr><td>16,0</td><td>20,0</td><td>0,200</td><td>0,320</td><td>80</td><td>G 2</td><td>300</td><td>Δp 16</td></tr>
<tr><td>16,0</td><td>20,0</td><td>0,100</td><td>0,160</td><td>160</td><td>G 2</td><td>300</td><td>Δp 16</td></tr>
<tr><td>16,0</td><td>20,0</td><td>0,064</td><td>0,102</td><td>250</td><td>G 2</td><td>300</td><td>Δp 16</td></tr>
<tr><td>16,0</td><td>20,0</td><td>0,040</td><td>0,064</td><td>400</td><td>G 2</td><td>300</td><td>Δp 16</td></tr>
<tr><td>25,0</td><td>31,25</td><td>0,3125</td><td>0,500</td><td>80</td><td>G 2</td><td>300</td><td>Δp 16</td></tr>
<tr><td>25,0</td><td>31,25</td><td>0,156</td><td>0,250</td><td>160</td><td>G 2</td><td>300</td><td>Δp 16</td></tr>
<tr><td>25,0</td><td>31,25</td><td>0,100</td><td>0,160</td><td>250</td><td>G 2</td><td>300</td><td>Δp 16</td></tr>
<tr><td>25,0</td><td>31,25</td><td>0,0625</td><td>0,100</td><td>400</td><td>G 2</td><td>300</td><td>Δp 16</td></tr>
<tr><td>25,0</td><td>31,25</td><td>0,0312</td><td>0,050</td><td>800*</td><td>G 2</td><td>300</td><td>Δp 16</td></tr>
</table>

Note: * – this ratio is only valid for meters with temperature class T30.

2. Additional data transmission protocol CoAP for meter communication interfaces.

3. Additional software version for meters with threaded end connection G2. The version number is **1.02**.

4. Additional technical description for meters with threaded end connection G2: PL_QW1DN40_V01, issued 20-01-2021.</td></tr>
<tr><td>LT-1621-MI001-034 Revision 7</td><td>25-05-2021, No. LEI-12-MP-114.21</td><td>1. Meter marking labels with new distributors logos (Fig. 1p).

2. New technical description for meters of all sizes: TM_QW1_V01_LT, issued 05-05-2021.</td></tr>
</table>

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1	2	3
LT-1621-MI001-034 Revision 8	14-06-2021, No. LEI-12-MP-115.21	1. Additional data transmission protocol W-M-Bus-T2 for meter RF communication interfaces. 2. New software version for meters with threaded end connection G ¾, G 1, G 1¼, G 1½. The version number is **1.03**. 3. The document TM_QW1_V01_LT, issued 05-05-2021, has been replaced by the document TM_QW1_V02_LT, issued 07-06-2021.
LT-1621-MI001-034 Revision 9	28-10-2021, No. LEI-12-MP-119.21	1. Additional design version for meters with threaded end connection G ¾ and G 1 (design version „n“). 2. Possibility of filter strainer installation in the meter inlet. Information on pressure loss classes for meters with filter. 3. Possibility of non-return valve instalation in the meter outlet. 4. Additional wired communication interfaces: M-Bus and/or wired pulse output (optional). 5. Meter marking labels with new distributors logos (Fig. 1p). 6. The document TM_QW1_V02_LT, issued 07-06-2021, has been replaced by the document TM_QW1_V03_LT, issued 18-10-2021.

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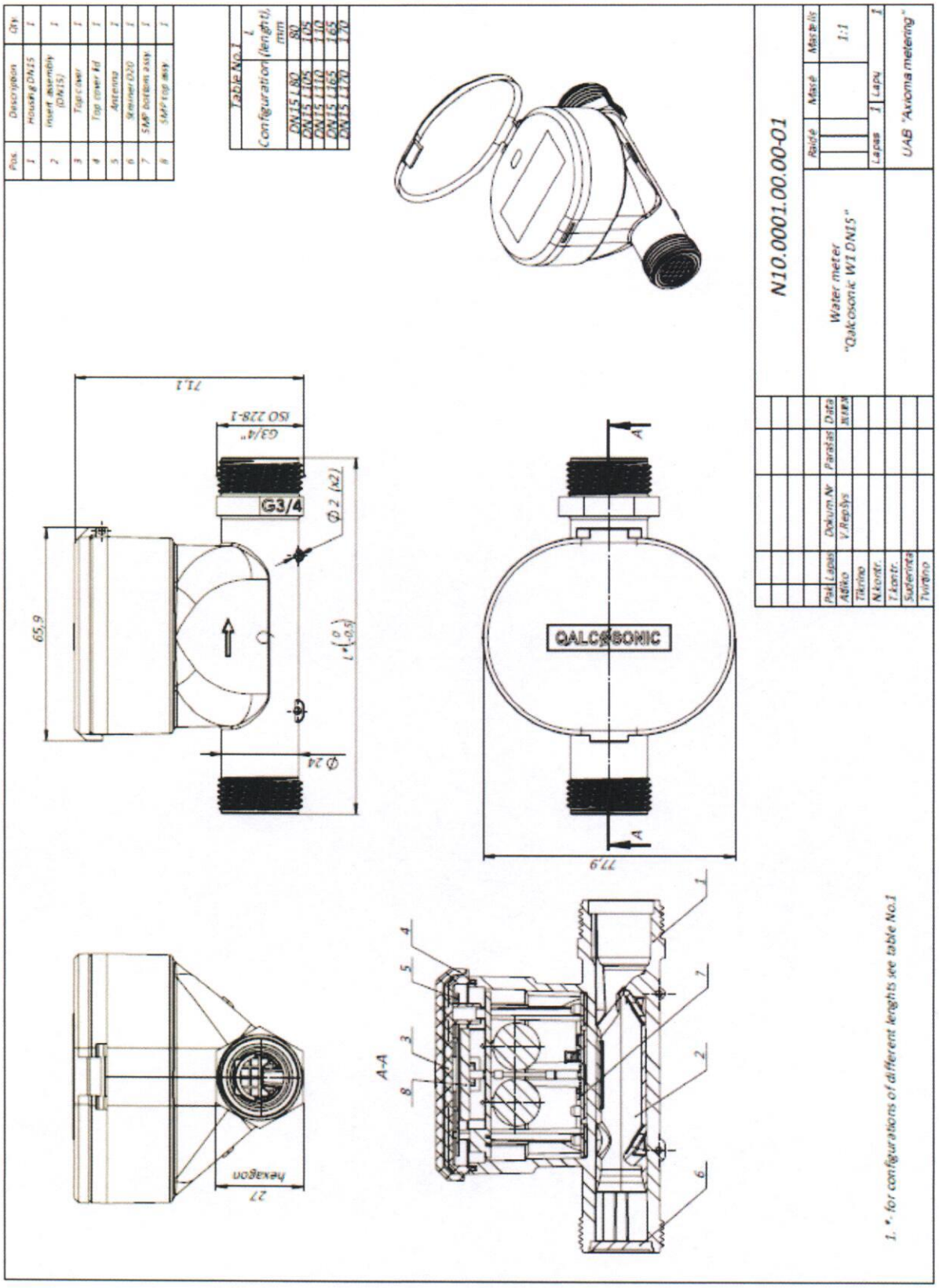
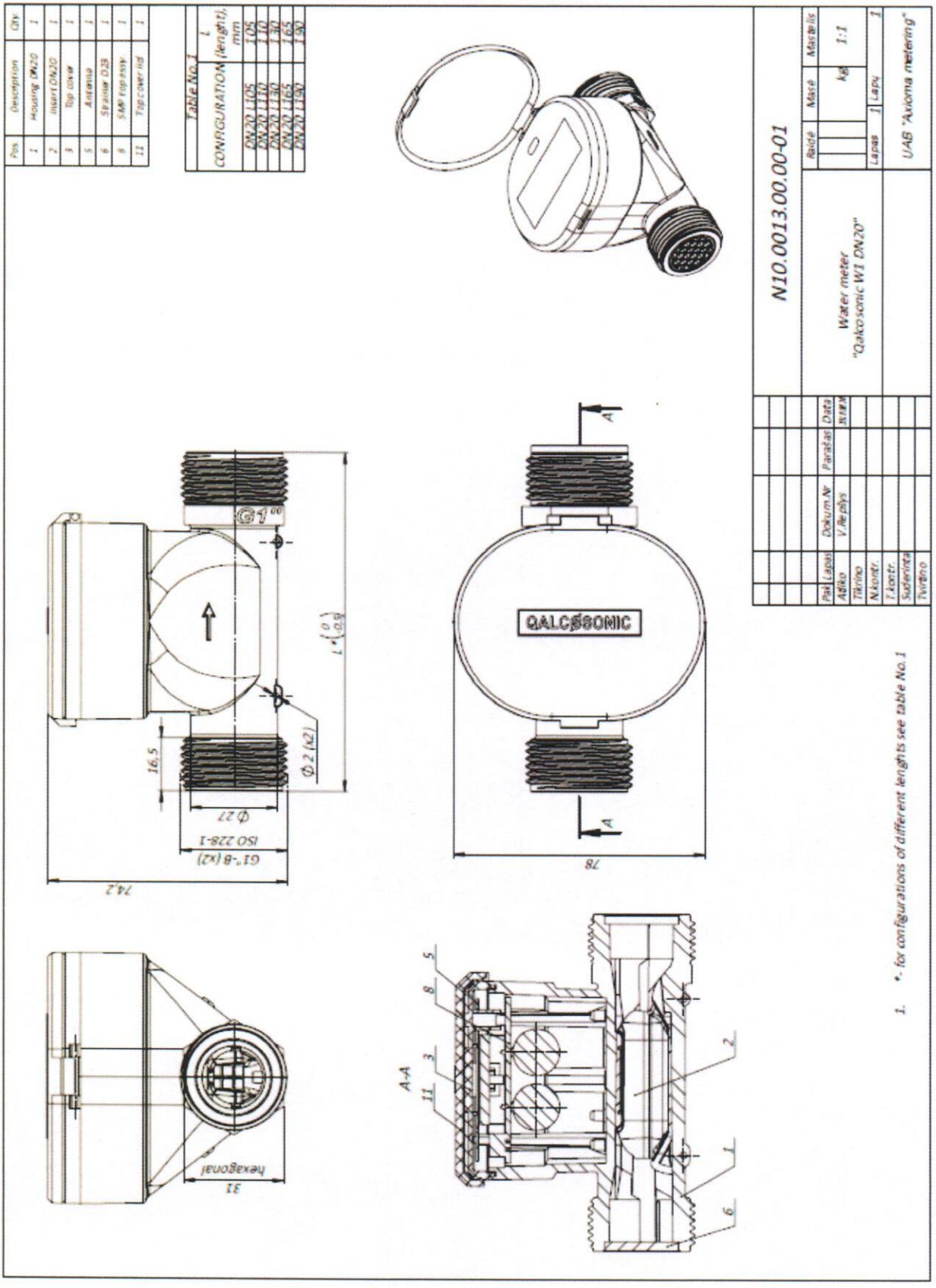


Not an Authorized Translation



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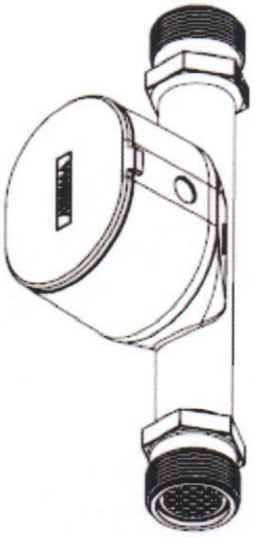
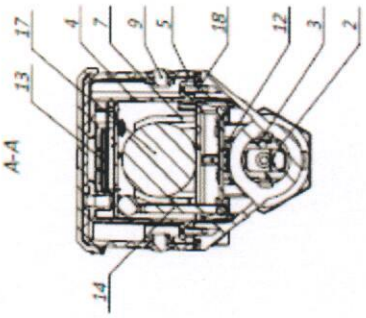
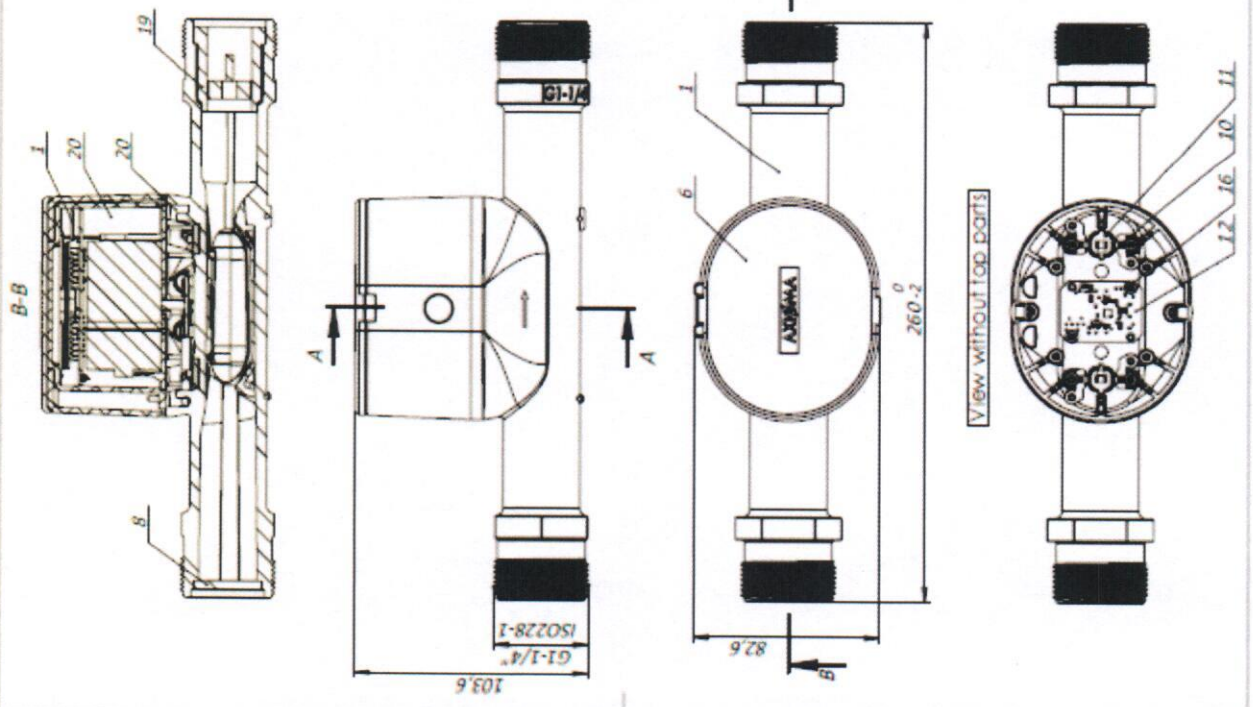
Poz.	Part No	Description	Qty.
1	N14.0010.00.01-03	Housing DN25 L260	1
2	N14.0011.01.01_03	Insert DN25 bottom	1
3	N14.0011.02.01-03	Insert DN25 UP	1
4	N10.0033.02.01-03	Inner shell	1
5	N10.0033.00.02-02	Outer shell	1
6	N10.0033.00.05-00	Cover Lid	1
7	N10.0033.02.02-00	Battery holder	1
8	N14.0013.00.06-00	Strainer DN25	1
9	N14.0010.00.03-05	Plastic rivet	2
10	N10.0033.00.03-02	Sheet metal spring	2
11	N10.0033.00.04-00	PCB plate 10mm	2
12	N10.0001.05.00-02	SMP bottom assy.	1
13	N10.0033.00.02.04-00	Top PCB	1
14	-	Cable	1
15	N10.0033.02.07-00	Antenna	1
16	SP39A03000170	Screw 3.0x7	8
17	-	D-Cell battery	1
18	SP39A03501005	Screw 3.5x10 inox	2
19	WMD25 W1490.2560	Check valve "Watts"	1
20	-	Potting compound	







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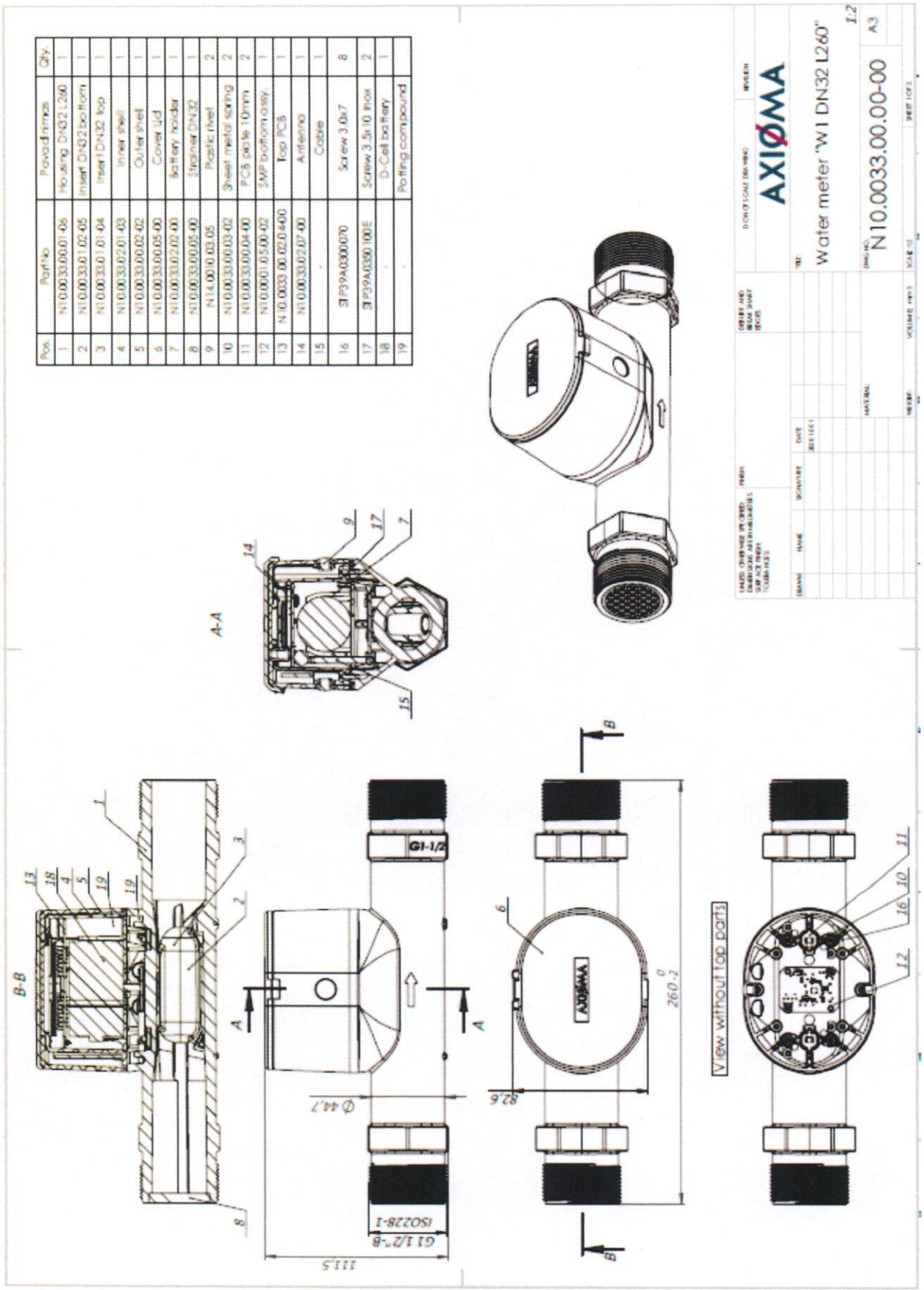
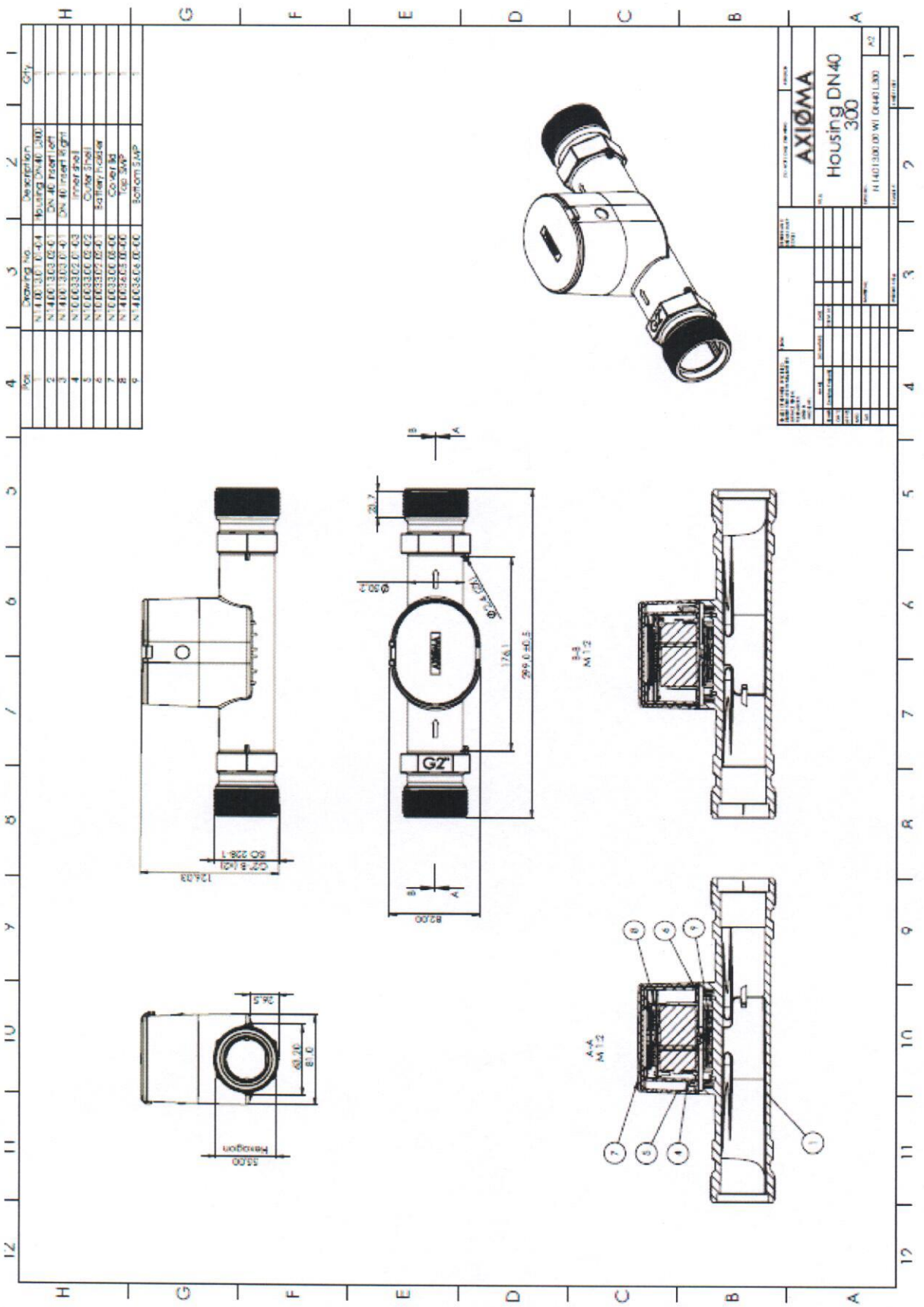
Pos.	Part No	Panel frames	Qty.
1	N10.0033.00.01-06	Housing DN32 L260	1
2	N10.0033.01.02-05	Insert DN32 bottom	1
3	N10.0033.01.01-04	Insert DN32 top	1
4	N10.0033.02.01-03	Inner shell	1
5	N10.0033.00.02-02	Outer shell	1
6	N10.0033.00.05-00	Cover lid	1
7	N10.0033.02.02-00	Battery holder	1
8	N10.0033.00.05-00	Sealing DN32	1
9	N14.0010.03.05	Plastic rivet	2
10	N10.0033.00.03-02	Sheet metal spring	2
11	N10.0033.00.04-00	PCB pads 10mm	2
12	N10.0001.05.00-02	SW bottom assy.	1
13	N 10.0033.00.02.0400	Top PCB	1
14	N10.0033.02.07-00	Antenna	1
15	-	Cable	1
16	3P39A0300070	Screw 3.0x7	8
17	3P39A0350100E	Screw 3.5x10 Inox	2
18	-	D-Cell battery	1
19	-	Potting compound	



Not an Authorized Translation



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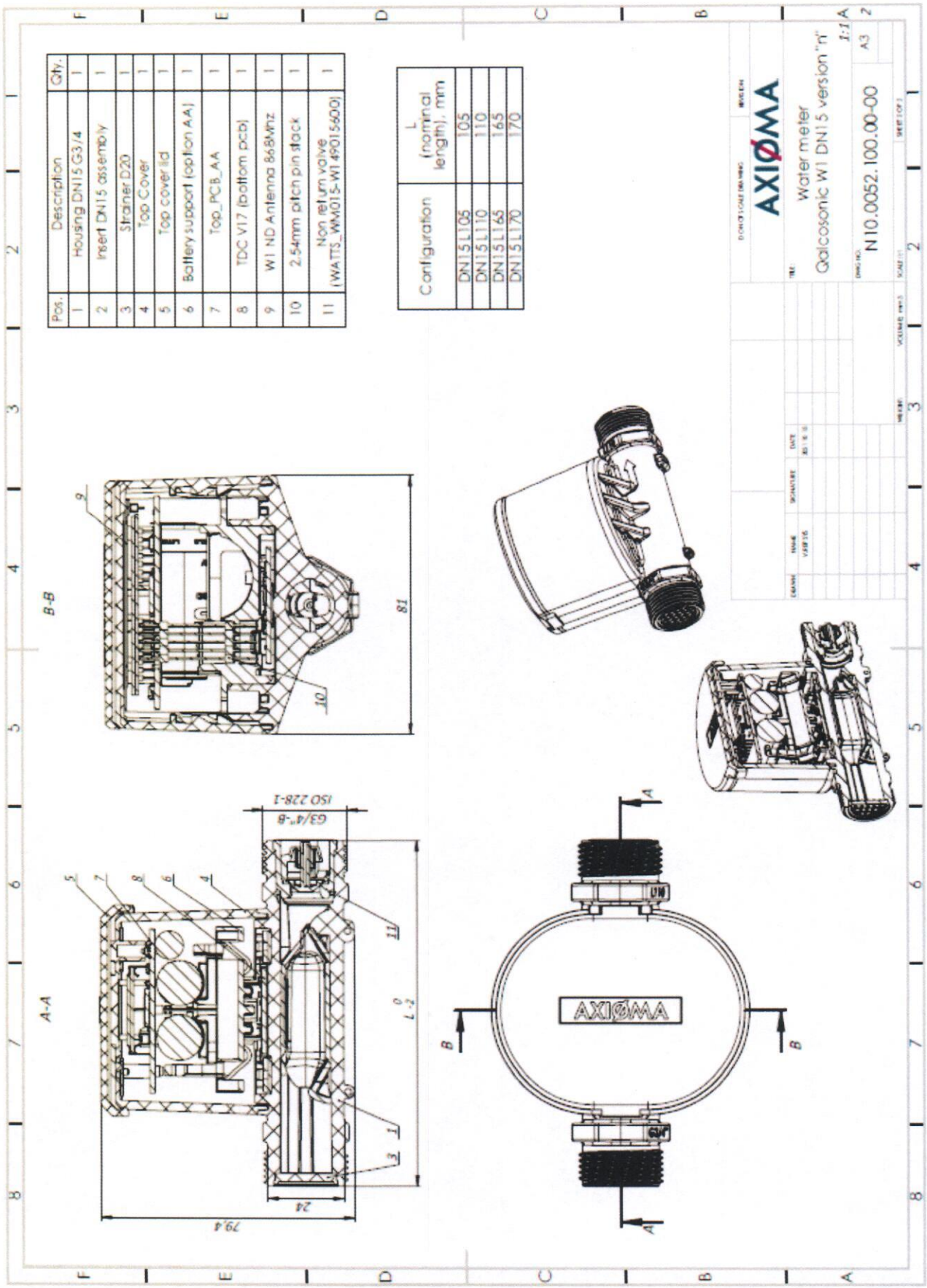
Pos.	Description	Qty.
1	Housing DN15 G3/4	1
2	Insert DN15 assembly	1
3	Strainer D20	1
4	Top Cover	1
5	Top cover lid	1
6	Battery support (option AA)	1
7	Top_PCB_AA	1
8	TDC V17 (bottom pcb)	1
9	W1 ND Antenna 868Mhz	1
10	2.54mm pitch pin stack	1
11	Non return valve (WATTS_WM015-W1 49015400)	1

Configuration	L (nominal length), mm
DN15 L105	105
DN15 L110	110
DN15 L165	165
DN15 L170	170

AXIØMA

Water meter
Qalcosonic W1 DN15 version "n"

N10.0052.100.00-00



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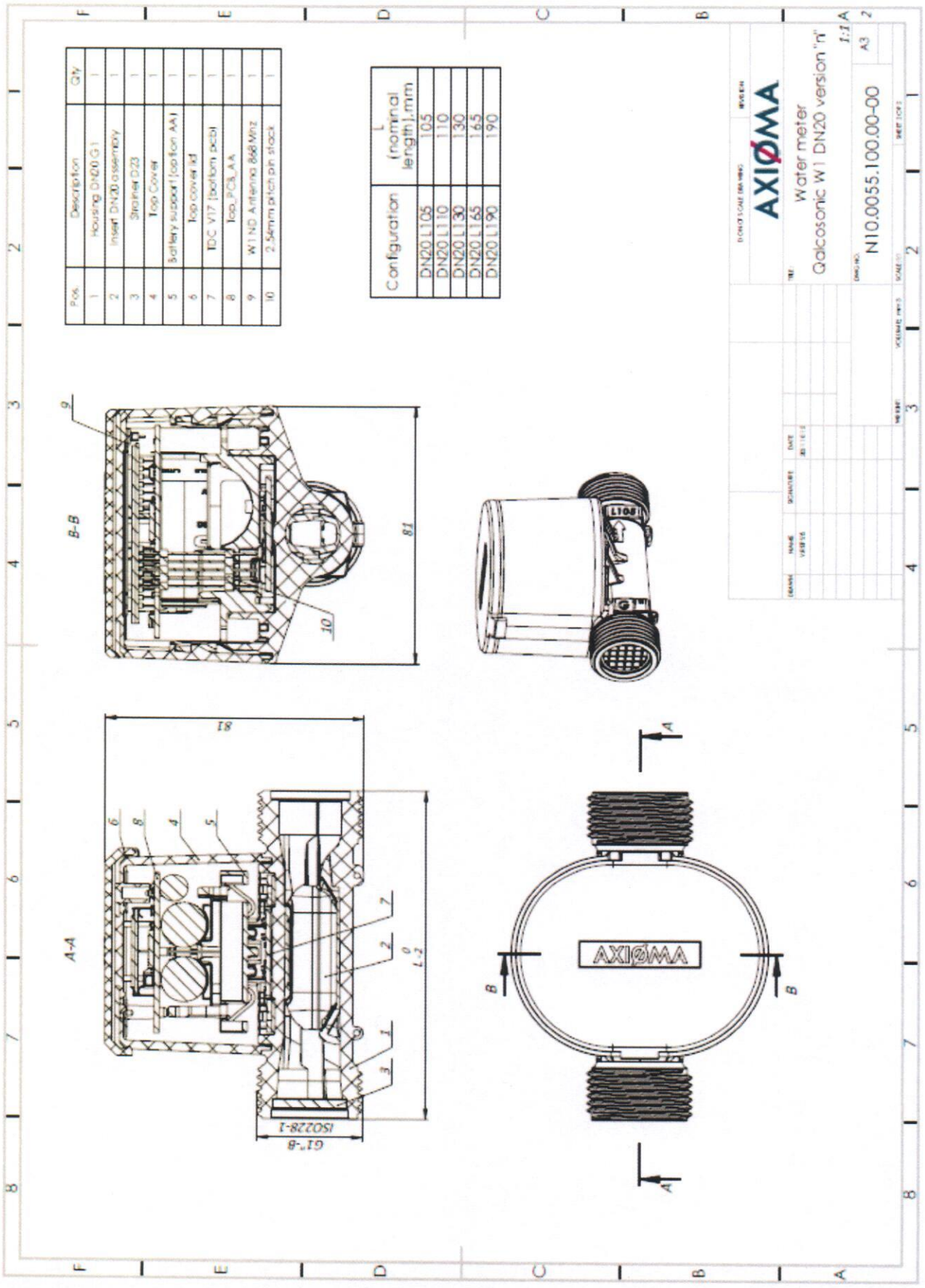
Pos.	Description	Qty
1	Housing DN20 G1	1
2	Insert DN20 assembly	1
3	Strainer D23	1
4	Top Cover	1
5	Battery support (option AA)	1
6	Top cover kit	1
7	TDC V17 (bottom pcb)	1
8	Top_PCB_AA	1
9	W1ND Antenna 868 Mhz	1
10	2.54mm pitch pin stock	1

Configuration	L (nominal length), mm
DN20 L105	105
DN20 L110	110
DN20 L130	130
DN20 L165	165
DN20 L190	190

AXIØMA
Water meter
Qalcosonic W1 DN20 version "n"
N10.00055.100.00-00
A3
1:1



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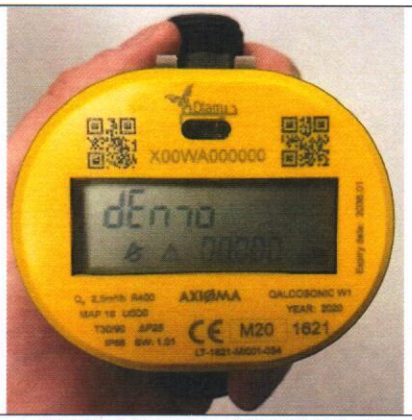
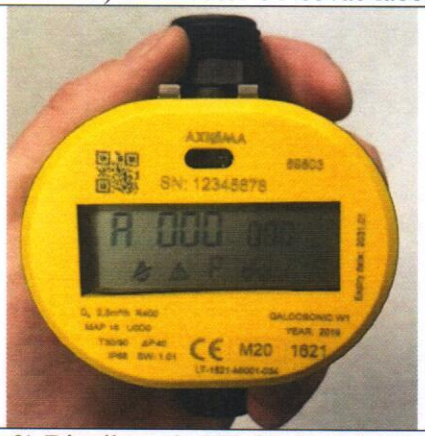
1) Distributor's Neovac label

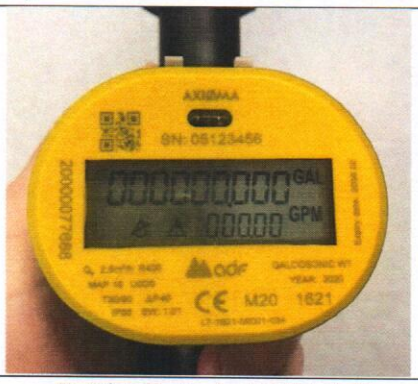


2) Distributor's DIAM label

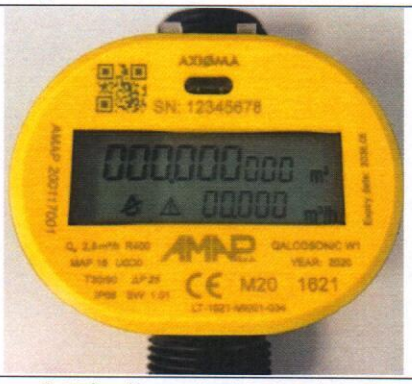


3) Distributor's HT GROUP label

4) Distributor's Heitland label



5) Distributor's ADF label



6) Distributor's AMAP label

7) Distributor's OSE label

8) Distributor's GSP label

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9) Distributor's EQUYSIS label	10) Distributor's AQP label
	
11) Distributor's SECAM label	12) Distributor's RKG label
	
13) Distributor's Hydro Control label	14) Distributor's NSVA label
	
15) Distributor's VASYD label	16) Distributor's ASIS label

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17) Distributor's VERTO label	18) Distributor's ETRA label
	
19) Distributor's KIWA label	20) Distributor's PUBLIACQUA label
	
21) Distributor's ASA label	22) Distributor's Evides label
	
23) Distributor's **acea** label	20) Distributor's APS label

Fig.1p. Meter labels with distributor logos