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Harmonized standards applied: EN 14154-1:2005+A2:2011, EN 14154-2:2005+A2:2011, EN 14154-3:2005+A2:2011.

Additionally documents applied:

EN ISO 4064-1:2014, EN ISO 4064-2:2014, EN ISO 4064-3:2014, EN ISO 4064-4:2014, EN ISO 4064-5:2014.

The measuring instrument must correspond with the following specifications:

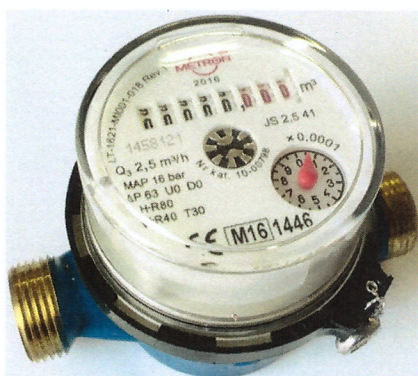
1 Design of the instrument

1.1 Construction

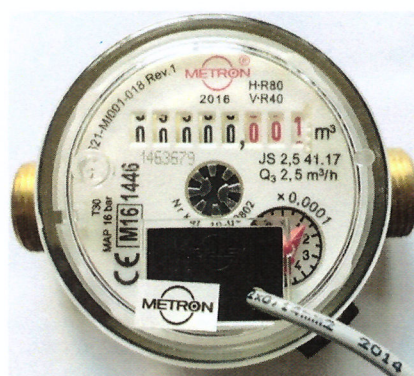
Single-jet dry type water meter for cold water (T30) or warm water (T90 or T30/90) consisting of the brass housing with impeller, rotating in the measuring chamber, and roller-pointer indicating device.

The following modifications of water meters are produced:

JS 2,5 41	temperature class T30;
JS 2,5 41.17	temperature class T30, with slot for mounting the pulse transmitter (with or without transmitter);
JS 2,5 46	temperature class T90 or T30/90;
JS 2,5 46.18	temperature class T90 or T30/90, with slot for mounting the pulse transmitter (with or without transmitter);
JS 4,0 41	temperature class T30;
JS 4,0 46	temperature class T90 or T30/90.

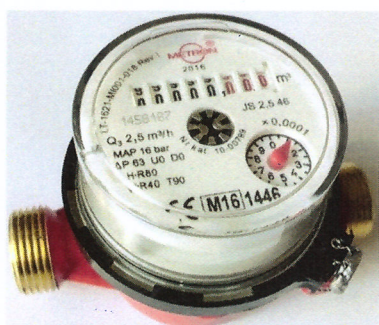


a) modification JS 2,5 41

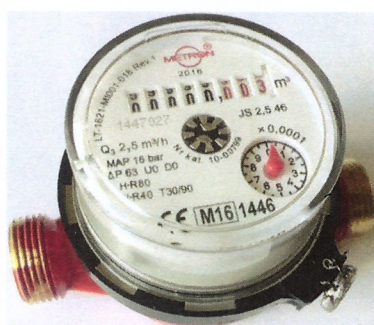


b) modification JS 2,5 41.17, with mounted pulse transmitter

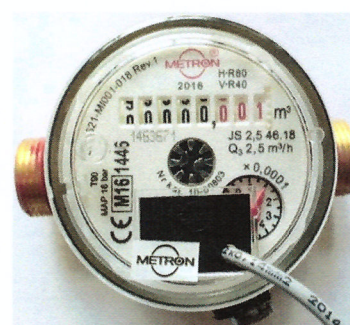
Fig. 1. Water meter JS 2,5 41 and JS 2,5 41.17



a) modification JS 2,5 46, temperature class T90



b) modification JS 2,5 46, temperature class T30/90



c) modification JS 2,5 46.18, with mounted pulse transmitter

Fig. 2. Water meter JS 2,5 46 and JS 2,5 46.18

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Fig. 3. Water meter JS 4,0 41



a) modification JS 4,0 46,
temperature class T90



b) modification JS 4,0 46,
temperature class T30/90

Fig. 4. Water meter JS 4,0 46

1.2 Measurand sensor

Single-jet dry type measurand sensor consists of the measuring chamber with impeller rotating inside. Water flows through the meter and rotates impeller which rotational frequency is proportional to volume of the water passing through the meter. Rotation of the impeller is transmitted to indicating device by means of magnetic coupling.

Adjustment of the meter is performed by means of adjustment device allocated in the meter housing.

1.3 Measurand processing

Not applicable.

1.4 Indication of the measurement results

Measurement results are indicated on the roller-pointer indicating device consisting of eight numbered rollers and one circular scale with pointer. Five rollers are predicted for cubic meters, three rollers – for litres. Circular scale with pointer is predicted for verification. Value of the verification scale interval is 0,05 ltr.

1.5 Optional equipment and functions subject to MID requirements

Not applicable.

1.6 Technical documentation

- Water meter JS 2,5 41; JS 2,5 41.17; JS 2,5 46; JS 2,5 46.18. Technical description JS 2,5 OT V02, 03-03-2016;
- Water meter JS 4,0 41; JS 4,0 46. Technical description JS 4,0 OT V04, 04-05-2016;
- Installation instruction and user manual METRON water meters, edition 4, 20-11-2015;
- Water meter JS 2,5 41, assembly drawing 10-00798, 27-11-2015;
- Water meter JS 2,5 41.17, assembly drawing 10-00802, 27-11-2015;



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- Water meter JS 2,5 46, assembly drawing 10-00799, 27-11-2015;
- Water meter JS 2,5 46.18, assembly drawing 10-00803, 27-11-2015;
- Water meter JS 4,0 41, assembly drawing 10-00800, 09-02-2016;
- Water meter JS 4,0 46, assembly drawing 10-00801, 09-02-2016.

Other reference documents on which basis this certificate is issued are stored in a file Nr.LEI-12-MP-050.16.

1.7 Integrated equipment and functions not subject to MID

The pulse transmitter can be mounted on the indicating device of the meter (modifications JS 2,5 41.17 and JS 2,5 46.18), pulse value - 1 litre. Type of the transmitter – „reed switch“ (the maximum input current – 4 mA, the maximum input voltage – 12 V).

2 Technical data

2.1 Rated operating conditions

2.1.1 Measurand

Volume of water passing through the meter.

2.1.2 Measurement range

Measuring range of the water meter and basic technical characteristics are presented in table 1.

Table 1

Modification of the meter		JS 2,5 41; JS 2,5 41.17	JS 2,5 46; JS 2,5 46.18	JS 4,0 41	JS 4,0 46
Temperature range (temperature class T)	°C	0,1 to 30 (T30)	0,1 to 90 (T90) 30 to 90 (T30/90)	0,1 to 30 (T30)	0,1 to 90 (T90) 30 to 90 (T30/90)
The ratio Q_3/Q_1 (R), for horizontal mounting (H)	-	80		80	
The ratio Q_3/Q_1 (R), for vertical mounting (V)	-	40		40	
Permanent flowrate Q_3	m ³ /h	2,5		4,0	
Overload flowrate Q_4	m ³ /h	3,125		5,0	
Minimum flowrate Q_1 , for horizontal mounting (H)	m ³ /h	0,0313		0,050	
Minimum flowrate Q_1 , for vertical mounting (V)	m ³ /h	0,0626		0,100	
Transitional flowrate Q_2 , for horizontal mounting (H)	m ³ /h	0,050		0,080	
Transitional flowrate Q_2 , for vertical mounting (V)	m ³ /h	0,100		0,160	
Pressure loss class	-	ΔP 63		ΔP 63	
Overall length	mm	110		130	
End connection	-	G ¾ B		G 1 B	
Max. admissible working pressure (MAP)	bar	16		16	10

2.1.3 The maximum permissible error

The maximum permissible error of the meter depending on the temperature class is presented in table 2.

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Table 2

Meter temperature class	Maximum permissible error
T30	$\pm 5\%$ in flow range $Q_1 \leq Q < Q_2$ $\pm 2\%$ in flow range $Q_2 \leq Q \leq Q_4$
T30/90	$\pm 5\%$ in flow range $Q_1 \leq Q < Q_2$ $\pm 3\%$ in flow range $Q_2 \leq Q \leq Q_4$
T90	$\pm 5\%$ 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 and mechanical environment	:	class B according to EN 14154-1;
Ambient temperature	:	5 °C to 55 °C;
Installations	:	indoor;
Electromagnetic environment	:	not applicable.

2.2 Other operating conditions

2.2.1 Mounting position of the meter

Water meter can be mounted either horizontally (indicating device positioned at the top or at the side) or vertically.

3 Interfaces and compatibility conditions

Not applicable.

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 14154-1, section 9.2. Errors of indication shall not exceed the maximum permissible errors described in Annex III (MI-001) of the Directive 2014/32/EU.

The meters shall be tested at 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: any water temperature of tests between 0,1 °C and 30 °C.

For meters class T90: any water temperature of tests between 0,1 °C and 30 °C and 50 °C \pm 5 °C.

For meters class T30/90: water temperature of tests 50 °C \pm 5 °C.

4.2 Requirements on putting into use

The water meter must be installed and used in accordance with the requirements of installation instruction listed in section 1.6.

The straight pipelines installation in upstream and downstream is not necessary (flow profile sensitivity class U0 D0).

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4.3 Requirements for utilization

The water meter must be utilized in accordance with the requirements of section 7 of the installation instruction, pointed out in the section 1.6 of this appendix.

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

No special requirements identified.

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: not applicable.

5.4 Calibration-adjustment procedure

Water meters errors determination test shall be carried out at the flow rates listed in section 4.1 of this appendix.

6 Security measures

6.1 Sealing

The measuring chamber of the water meter is connected to the indicating device using sealing ring. This ring is sealed with manufacturer's hanged seal together with a protective screw head of the adjustment device (Fig.5 a and b).

In case of pulse transmitter mounted on the meter (modifications JS 2,5 41.17 and JS 2,5 46.18), the transmitter is sealed with manufacturer's adhesive seal – sticker (Fig. 1 b, Fig. 2 c and Fig. 5 b).

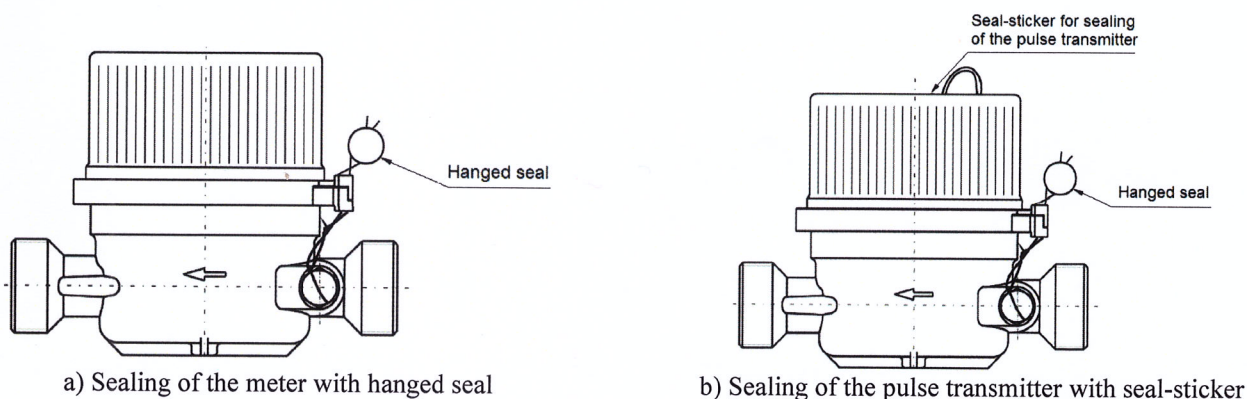


Fig.5. Sealing of the water meter

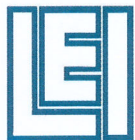


a) Manufacturer's hanged seal



b) Manufacturer's adhesive seal-sticker

Fig.6. Examples of the manufacturer's seals



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6.2 Data logger

Not applicable.

7 Marking and inscriptions

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

On the label of the meter indicating device shall appear at least the following information:

- EU-type examination certificate number (LT-1621-MI001-018 Rev. 2);
- manufacturer's mark or name;
- type designation;
- year of manufacture and serial number;
- unit of measurement: m³;
- permanent flowrate Q_3 ;
- ratio Q_3/Q_1 , preceded by „R“;
- temperature class, where it differs from T30;
- the maximum admissible working pressure (MAP) if it differs from 10 bar.

Arrow to indicate the direction of the flow shall appear on the water meter housing.

7.2 Conformity marking

In addition, the label of water meter 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.

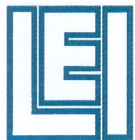
8 List of the drawings attached to the certificate.

Drawings are not added.

9 Certificate history

Issue	Date and reference No.	Description
1	2	3
LT-1621-MI001-018	04-12-2015, Nr. LEI-12-MP-035.15	Type examination certificate first issued
LT-1621-MI001-018 Revision 1	16-05-2016, No. LEI-12-MP-041.16	<p>1. The water meter modifications JS 2,5 46 and JS 2,5 46.18 are supplemented by temperature class T30/90.</p> <p>2. The following additional modifications of the meter are produced:</p> <ul style="list-style-type: none">- JS 4,0 41, temperature class T30;- JS 4,0 46, temperature class T90 or T30/90. <p>3. Document JS 2,5 OT V01 (Technical description), issued 23-11-2015, replaced by document JS 2,5 OT V02, issued 03-03-2016.</p> <p>4. The additional documents are issued:</p> <ul style="list-style-type: none">- JS 4,0 OT V04 (Technical description), 04-05-2016;- assembly drawing 10-00800, 09-02-2016;- assembly drawing 10-00801, 09-02-2016.

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1	2	3
LT-1621-MI001-018 Revision 2	14-09-2016, No. LEI-12-MP-050.16	<p>1. The owner of the certificate has been changed. The certificate issued to manufacturer: „METRON Fabryka Zintegrowanych Systemów Opomiarowania i Rozliczeń Sp. z o.o.”.</p> <p>2. An authorised representative of the manufacturer has been appointed: „Capital Investment Systemy Opomiarowania Sp. z o.o.”.</p>