



EC-TYPE EXAMINATION CERTIFICATE

Number: TCM 142/14 - 5169

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In accordance: with Directive 2004/22/EC of the European Parliament and of the Council as amended implemented in Czech Republic by Government Order No. 464/2005 Coll. as amended that lays down technical requirements on measuring instruments.

Manufacturer: ŞENSOYLAR Klape Tesisat Malz. San. ve Tic. Ltd. Şti.
Bakırcılar ve Prinççiler Sanayi Sitesi Menekşe Caddesi No:13
İstanbul / Beylikdüzü
Turkey

For: water meter - multi jet, wet dial
type: KAÇKAR MJL-xx-T
Accuracy class: 2
Temperature class: T30 and T50

Valid until: 22 June 2024

Document No: 0511-CS-A043-14

Description: Essential characteristics, approved conditions and special conditions, if any, are described in this certificate.

Date of issue: 23 June 2014

Certificate approved by:





RNDr. Pavel Klenovský

1. Measuring device description

The multi jet water meters type KAÇKAR MJL-xx-T are designed to measure, memorise and display the volume at metering conditions of water passing through the measurement transducer in the sense of the Directive of the European Parliament and of the Council no. 2004/22/EC of measuring instruments, as amended.

The water meters type KAÇKAR MJL-xx-T, where xx means nominal diameter, are multi jet rotary vane wheel water meters with wet mechanical indicating device.

The water meters type KAÇKAR MJL-xx-T consist of a brass, bronze, iron or plastic body, an inlet strainer, a wet measuring unit with a plastic distributor with tangential holes, a rotary vane wheel and gears, a mechanical indicating device with pointers and numbered drums, a glass and a brass or plastic head ring with a plastic cover. The adjustment is realized by adjusting screw. The access to the adjusting screw is protected by sealed screw.

The mechanical indicating device is formed by numbered rollers with five drums for water meters DN 15 to DN 32 and six drums for water meters DN 40 and DN 50 and four pointers.

The water meters type KAÇKAR MJL-xx-T can be equipped by a reed impulse transmitter which can be used for remote reading.

The water meters type KAÇKAR MJL-xx-T shall be installed to operate in horizontal or vertical position only with the indicating device positioned at the top, according to used meter body.

Water meters type KAÇKAR MJL-xx-T are manufactured according to technical documentation of manufacturer. Technical documentation contains among others assembly drawing No. ŞENSOYLAR T14/03-001 to ŞENSOYLAR T14/03-007 from 3/2014.

2. Basic technical data

Basic technical data of water meters type KAÇKAR MJL-xx-T DN 15 to DN 25:

Nominal diameter (DN) [mm]:	15	20	25
Overload flowrate (Q_4) [m^3/h]:	≤ 3.13	≤ 5.00	≤ 7.88
Permanent flowrate (Q_3) [m^3/h]:	$\leq 2.50^1$	$\leq 4.00^1$	$\leq 6.30^1$
Transitional flowrate (Q_2) [m^3/h]:	≥ 0.0200	≥ 0.0320	≥ 0.0504
Minimum flowrate (Q_1) [m^3/h]:	≥ 0.0125	≥ 0.0200	≥ 0.0315
Ratio Q_3 / Q_1 :	$\leq 200^2$		
Ratio Q_2 / Q_1 :	1.6		
Ratio Q_4 / Q_3 :	1.25		
Accuracy class:	2		
Maximum permissible error for the lower flowrate zone (MPE _l):	$\pm 5\%$		
Maximum permissible error for the upper flowrate zone (MPE _u):	$\pm 2\%$ for water having a temperature $\leq 30\text{ }^\circ\text{C}$ $\pm 3\%$ for water having a temperature $> 30\text{ }^\circ\text{C}$		
Temperature class:	T30 and T50		
Water pressure classes:	MAP 16		
Pressure-loss classes:	ΔP 63		
Indicating range [m^3]:	99 999		
Resolution of the indicating device [m^3]:	0,00005		
Resolution of the device for the rapid testing [pulse / L]:	71.185	54.000	37.385
Flow profile sensitivity classes:	U0 D0		
Orientation limitation:	H or V (according to used meter body)		
Length of horizontal water meter L [mm]:	110 to 190	160 to 190	160 to 260
Length of vertical water meter L [mm]:	100 to 105		105 to 110
Connection type– Screw thread size:	G $\frac{3}{4}$ B or G1B	G1B	G1 $\frac{1}{4}$ B or G1 $\frac{1}{2}$ B
Reed switch power supply (U_{max} / I_{max}):	max. 24 V / 0.01 A		
Reed switch K-faktor [impulse / L]:	0,001; 0,01; 0,1 and 1		

¹ The value of Q_3 shall be chosen from the R5 line of ISO 3:1973

² The ratio Q_3 / Q_1 shall be chosen from the R10 line from ISO 3:1973 and this value shall be higher than 40.

Basic technical data of water meters type KAÇKAR MJL-xx-T DN 32 to DN 50:

Nominal diameter (DN) [mm]:	32	40	50
Overload flowrate (Q_4) [m^3/h]:	≤ 12.5	≤ 20.0	≤ 31.3
Permanent flowrate (Q_3) [m^3/h]:	$\leq 10.0^1$	$\leq 16.0^1$	$\leq 25.0^1$



Transitional flowrate (Q_2) [m^3/h]:	≥ 0.0800	≥ 0.128	≥ 0.160
Minimum flowrate (Q_1) [m^3/h]:	≥ 0.0500	≥ 0.0800	≥ 0.100
Ratio Q_3 / Q_1 :	$\leq 200^2$		$\leq 250^2$
Ratio Q_2 / Q_1 :	1.6		
Ratio Q_4 / Q_3 :	1.25		
Accuracy class:	2		
Maximum permissible error for the lower flowrate zone (MPE _l):	$\pm 5\%$		
Maximum permissible error for the upper flowrate zone (MPE _u):	$\pm 2\%$ for water having a temperature $\leq 30\text{ }^\circ\text{C}$ $\pm 3\%$ for water having a temperature $> 30\text{ }^\circ\text{C}$		
Temperature class:	T30 and T50		
Water pressure classes:	MAP 16		
Pressure-loss classes:	ΔP 63		
Indicating range [m^3]:	99 999	999 999	
Resolution of the indicating device [m^3]:	0.00005	0.00005	
Resolution of the device for the rapid testing [pulse / L]:	23.143	12.462	
Flow profile sensitivity classes:	U0 D0		
Orientation limitation:	H		
Length of horizontal water meter L [mm]:	160 to 260	200 to 300	270 to 300
Connection type– Screw thread size:	G1½B	G2B	G2½B or Flange
Reed switch power supply (U_{max} / I_{max}):	max. 24 V / 0.01 A		
Reed switch K-faktor [impulse / L]:	0,001; 0,01; 0,1 and 1		

¹ The value of Q_3 shall be chosen from the R5 line of ISO 3:1973

² The ratio Q_3 / Q_1 shall be chosen from the R10 line from ISO 3:1973 and this value shall be higher than 40.

3. Test

Technical tests of the water meters type KAÇKAR MJL-xx-T were performed in compliance with the International Recommendation OIML R 49 Edition 2006 (E) with conformity to EN 14154-1:2005+A2:2011, Test Report No. 6015-PT-P0031-14.

4. The measuring device data

The water meters type KAÇKAR MJL-xx-T shall be clearly and indelibly marked with the following information:

- The “CE” marking and supplementary metrology marking
- Number of EC-type examination certificate
- Manufacturer’s mark or name
- Year of manufacture (last two digit)
- Serial number (as near as possible to the indicating device)
- Measuring device type
- Unit of measurement (m^3)
- Accuracy class 2
- Numerical value Q_3 in m^3/h ($Q_3 \times \times$)
- The ratio Q_3 / Q_1 , ($R \times \times$)
- The temperature class ($T \times \times$)
- The maximum admissible pressure (MAP $\times \times$)
- The pressure loss class ($\Delta P \times \times$)
- Classes on sensitivity to irregularities in velocity field ($U \times D \times$)
- Orientation limitation (H / V)
- Direction of flow arrow on both sides of the meter body

There are additional data required if the water meter is equipped with impulse transmitter:

- Output signals for ancillary devices (type / levels)
- External power supply requirements (voltage – frequency)



5. Sealing

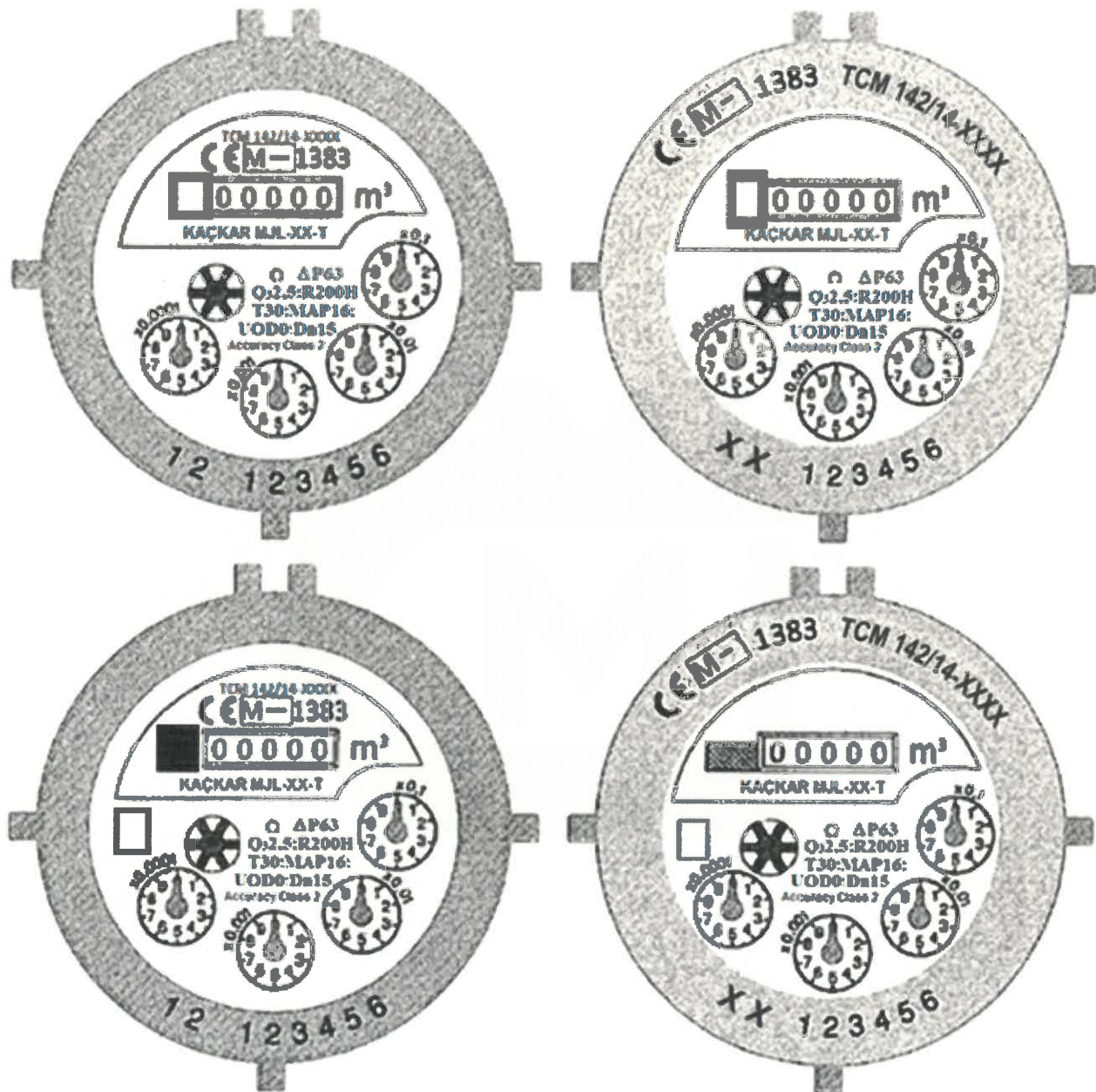
The connection of water meter body and head ring has to be sealed. The connection of water meter body and reed impulse transmitter has to be sealed, if equipped.

The location of seals is described in figures below.

Figure 1: The water meter type KAÇKAR MJL-xx-T:



Figure 2: An example of the dial plate of the water meter type KAÇKAR MJL-xx-T. Top row – dials with manufacturer's logo or name only, bottom row – dials with both manufacturer's and customer's logo or name, left column – dials without plastic top ring, right column – dials with plastic top ring:



-  Manufacturer's logo or name
-  Customer's logo or name