		V 3112

OIML Member State Czech Republic	**OIML Certificate No.** R49/2013-A-CZ1-2021.07 Revision 2

OIML CERTIFICATE ISSUED UNDER SCHEME A

OIML Issuing Authority

Name: Czech Metrology Institute
Address: Okružní 31, 638 00 Brno, Czech Republic
Person responsible: Jan Kalandra

Applicant

Name: George Kent (Malaysia) Berhad
Address: Lot 1115, Jalan Puchong, Taman Meranti Jaya, 47120 Puchong, Selangor, Malaysia

Manufacturer

Name: George Kent (Malaysia) Berhad
Address: Lot 1115, Jalan Puchong, Taman Meranti Jaya, 47120 Puchong, Selangor, Malaysia

Identification of the certified type *(the detailed characteristics will be defined in the additional pages)*

water meter – positive displacement, dry dial
GKMV40, GKMV40P

Designation of the module *(if applicable)*

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This OIML Certificate attests the conformity of the above identified type (represented by the sample(s) identified in the OIML type evaluation report) with the requirements of the following Recommendation of the International Organization of Legal Metrology (OIML):

OIML R 49 Edition (year): 2013

For accuracy class (if applicable): 2

This OIML Certificate relates only to metrological and technical characteristics of the type of measuring instrument covered by the relevant OIML Recommendation identified above.

This OIML Certificate does not bestow any form of legal international approval.

The conformity was established by the results of tests and examinations provided in the associated reports:

- OIML type evaluation report No. 0511-ER-V41-23 dated 10 August 2023 that includes 33 pages including annex 1.
  - Test report No. 6015-PT-P5008-23 issued by CMI dated 9 August 2023 that includes 26 pages including annexes
- OIML type evaluation report No. 0511-ER-V056-22 dated 27 September 2022 that includes 29 pages including annexes.
- OIML type evaluation report No. 0511-ER-V114-21 dated 22 October 2021 that includes 90 pages including annexes.
  - Test report No. 6015-PT-P5009-21 issued by CMI dated 30 November 2021 that includes 67 pages including annexes

The technical documentation relating to the identified type is contained in documentation file:

0511-UL-V041-23

OIML Certificate History

Revision No.	Date	Description of the modification
-	6 December 2021	Issuing certificate
Revision 1	8 August 2022	Added sizes DN20, DN25 and GKMV40-Sensors and Sealing
Revision 2	19 September 2023	Added sizes DN32 and DN40 GKMV40

The OIML Issuing Authority
RNDr. Pavel Klenovský
Head of Certification Body

Date: 19 September 2023

Important note: Apart from the mention of the Certificate's reference number and the name of the OIML Member State in which the Certificate is issued, partial quotation of the Certificate and of the associated OIML type evaluation report(s) is not permitted, although either may be reproduced in full.

Measuring system description

The water meters types GKMV40 and GKMV40P are positive displacement water meters with dry mechanical indicating device.

The water meters types GKMV40 and GKMV40P consist of a brass (type GKMV40) or composite (type GKMV40P) body with connecting screw threads, an inlet strainer, a wet volumetric chamber with oscillating piston, a magnetic coupling (wet and dry side), an O-ring, a pressure plate closing the wet part, a magnetic shields, an indicating device, a register cap and clamp on cover connecting the indicating device to the body and covering the indicating device. The mechanical indicating device is formed by numbered rollers with eight drums and one pointer.

The water meters types GKMV40 and GKMV40P shall be installed to operate in any positions. The water meters type GKMV40 and GKMV40P are not designed to measure reverse flow.

Marking and inscriptions

The water meters types GKMV40 and GKMV40P shall be clearly and indelibly marked with the following information:

- Unit of measurement (m^3)
- Numerical value Q_3 in m^3/h (Q_3 ×.×) and the ratio Q_3 / Q
- OIML certificate of conformity number
- Name of trademark of the manufacturer
- Year of manufacture, two last digits of the year of manufacture, or the month and year of manufacture and serial number (as near as possible to the indicating device)
- Direction of flow, by means of an arrow (shown on both sides of the body or on one side only provided the direction of flow arrow is easily visible under all circumstances)
- Maximum admissible pressure (MAP ××)
- The temperature class (T××)

These markings shall comply with the requirements of OIML R 49 and shall be visible without dismantling the water meter after the instrument has been placed on the market or put into use. Examples are in Figure 2.

Characteristics

Basic technical data of water meters types GKMV40 and GKMV40P:

Manufacturer:	George Kent (Malaysia) Berhad		
	GKMV40, GKMV40P		
Nominal diameter:	15	20	25
Type details:			
Q_1 [m^3/h]:	0.0063	0.01	0.0158
Q_2 [m^3/h]:	0.0100	0.016	0.0252
Q3 [m3/h]:	2.50	4.0	6.30
Q_4 [m^3/h]:	3.13	5.0	7.88
Q_3/Q_1:	400		
Q_2/Q_1:	1.6		
Q_3/Q_4:	1.25		
Measuring principle:	positive displacement		
Accuracy class:	2		
Maximum permissible error for the lower flowrate zone (MPE_l):	±5 %		
Maximum permissible error for the upper flowrate zone (MPE_u):	±2 % for water having a temperature ≤ 30 °C ±3 % for water having a temperature > 30 °C		

Temperature class:	T30 or T50		
Water pressure class:	MAP 16		
Pressure loss class:	ΔP 63		
Environmental class: [1]	B, O		
Electromagnetic environment: [1]	E1		
Mechanical class: [1]	M1		
Maximum admissible temperature [°C]:	50		
Maximum admissible pressure [MPa]:	1.6		
Orientation limitation:	any		
Indicating range [m^3]:	9999 or 99 999	99 999	99 999
Resolution of the indicating device [m^3]:	0.000002 or 0.00002	0.00002	0.00002
Resolution of the device for rapid testing [dm^3]:	156.6	89.7	47.49
EUT testing requirements (OIML R 49-2:2013, 8.1.8):			
Category:	Positive displacement water meters		
Case:	A		
Installation details:			
Connection type (screw thread):	G¾"B x G¾"B G⅞"B x G¾"B	G1"B W36.6 x 14TPI W32.5 x 14TPI	G1 ¼ "B
Minimum straight length of inlet pipe [mm]:	0		
Minimum straight length of outlet pipe [mm]:	0		
Flow conditioner (details if required):	No		
Mounting:	in line meter		
Orientation:	any		
Other relevant information:	brass (GKMV40) or composite (GKMV40P)		
Length [mm]:	110; 115; 134; 165; 190	154; 165	199; 260
Reed sensor power supply (U_{max} / I_{max}): [2]	max. 48 V DC/AC/ 50 mA		
Inductive sensor power supply (U_{max} / I_{max}): [2]	max. 24 V DC/ 20 mA		

Manufacturer:	George Kent (Malaysia) Berhad	
	GKMV40	
Nominal diameter:	32	40
Type details:		
Q_1 [m^3/h]:	0.025	0.040
Q_2 [m^3/h]:	0.040	0.064
Q3 [m3/h]:	10.0	16.0
Q_4 [m^3/h]:	12.5	20.0
Q_3/Q_1:	400	

Q_2/Q_1:	1.6	
Q_3/Q_4:	1.25	
Measuring principle:	positive displacement	
Accuracy class:	2	
Maximum permissible error for the lower flowrate zone (MPE_l):	±5 %	
Maximum permissible error for the upper flowrate zone (MPE_u):	±2 % for water having a temperature ≤ 30 °C ±3 % for water having a temperature > 30 °C	
Temperature class:	T30 or T50	
Water pressure class:	MAP 16	
Pressure loss class:	Δ*P* 63	
Environmental class: [1]	B, O	
Electromagnetic environment: [1]	E1	
Mechanical class: [1]	M1	
Maximum admissible temperature [°C]:	50	
Maximum admissible pressure [MPa]:	1.6	
Orientation limitation:	any	
Indicating range [m^3]:	99 999	99 999
Resolution of the indicating device [m^3]:	0.00002	0.00002
Resolution of the device for rapid testing [dm^3]:	31.05	15.066
EUT testing requirements (OIML R 49-2:2013, 8.1.8):		
Category:	Positive displacement water meters	
Case:	A	
Installation details:		
Connection type (screw thread):	G1 ½"B G1 ¾ "B	G2B
Minimum straight length of inlet pipe [mm]:	0	
Minimum straight length of outlet pipe [mm]:	0	
Flow conditioner (details if required):	No	
Mounting:	in line meter	
Orientation:	any	
Other relevant information:	brass (GKMV40)	
Length [mm]:	260	225; 300
Reed sensor power supply (U_{max} / I_{max}): [2]	max. 48 V DC/AC/ 50 mA	
Inductive sensor power supply (U_{max} / I_{max}): [2]	max. 24 V DC/ 20 mA	

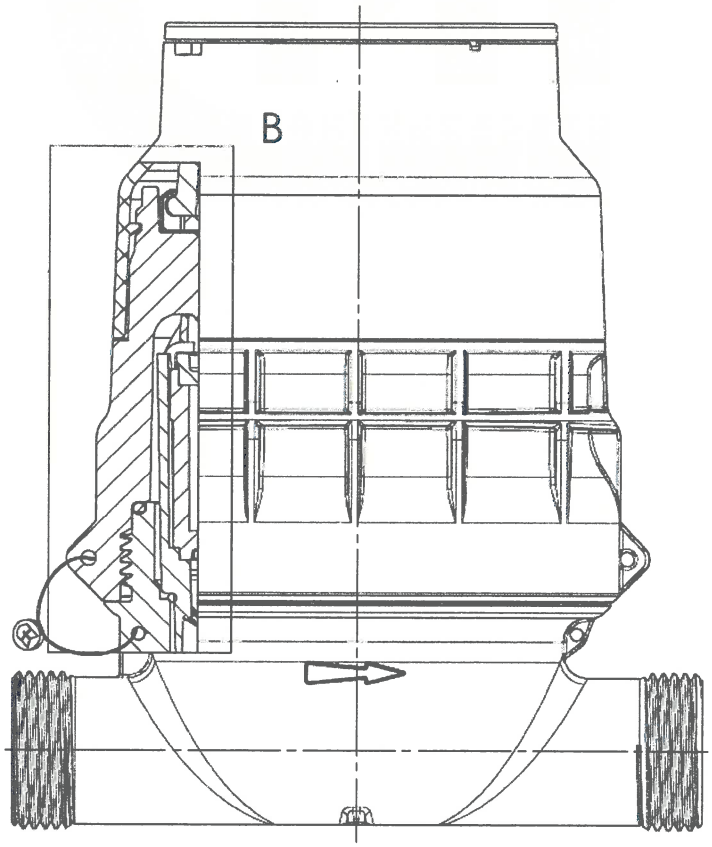
[1] Valid for water meter with an electronic device; if it is equipped, these classes are set in combination with parameters of ancillary device. Information specified by the manufacturer.
[2] Ancillary devices – reed sensor and inductive sensor –have not been tested.

Securing components and verification marks

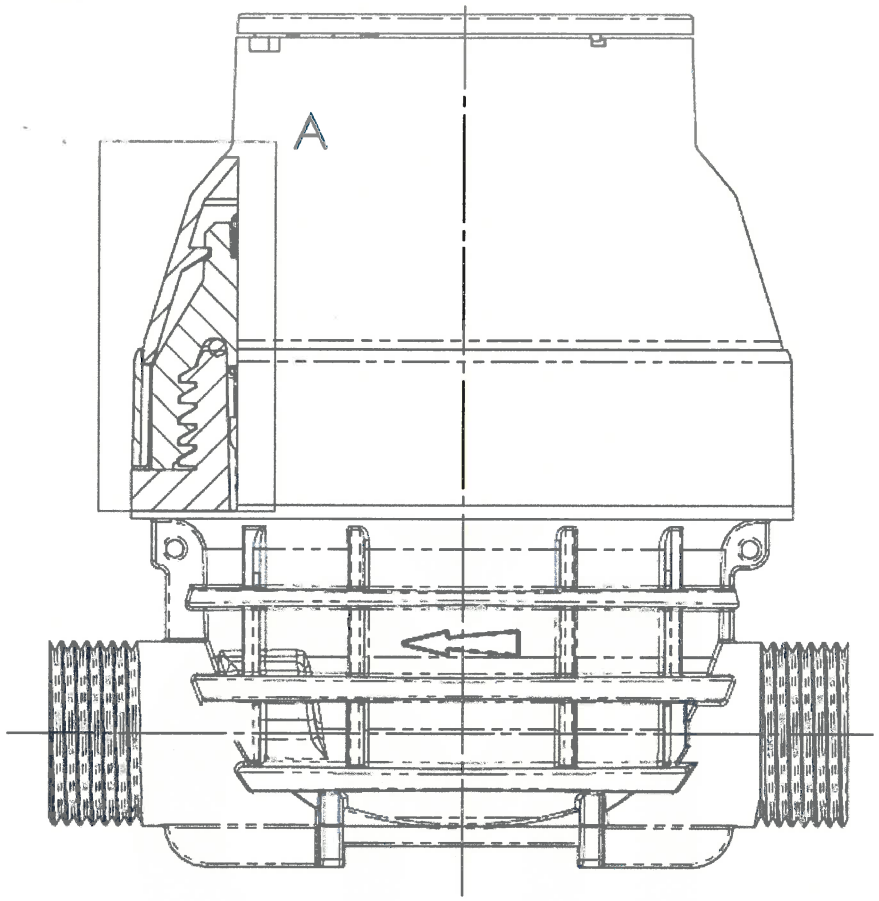
The type GKMV40 DN 15, DN 20 and DN 25 meters have to be sealed by embedding of the clamp on cover of the meter to the pressure plate. The cover can be removed only destroying this part. The cover has to be equipped with save guarding marks. The type GKMV40 DN 15, DN 20 and DN 25 meters also have to be sealed by connecting the pressure plate to the body using a wire with a seal such that the pressure plate cannot be turned without damaging the seal or the sealing wire. The location of seal is described in Figure 1a.
The type GKMV40P DN 15, DN 20 and DN 25 meters have to be sealed by embedding of the clamp on cover of the meter to the pressure plate and clamp on cover is also fitted with sealing ring that assures the protection against the external manipulation of the pressure plate. The cover can be removed only destroying this part. The cover has to be equipped with save guarding marks. The location of seal is described in Figure 1b.
The type GKMV40 DN32 and DN40 meters have to be sealed by connecting the brass head ring to the body of water meter using a wire with a lead seal such that the head ring and the body of water meter cannot be turned without damaging the seal or the sealing wire. The location of seal is described in Figure 1c.

The cover can be removed only destroying this part. The cover has to be equipped with save guarding marks.
If the meter is equipped by the reed impulse transmitter or the inductive transmitter, the screws fixing the transmitter to the meter have to be sealed (Figure 3).

Figure 1: The water meter types GKMV40 and GKMV40P – view and sealing:
a) type GKMV40:



b) type GKMV40P:



c) type GKMV40:

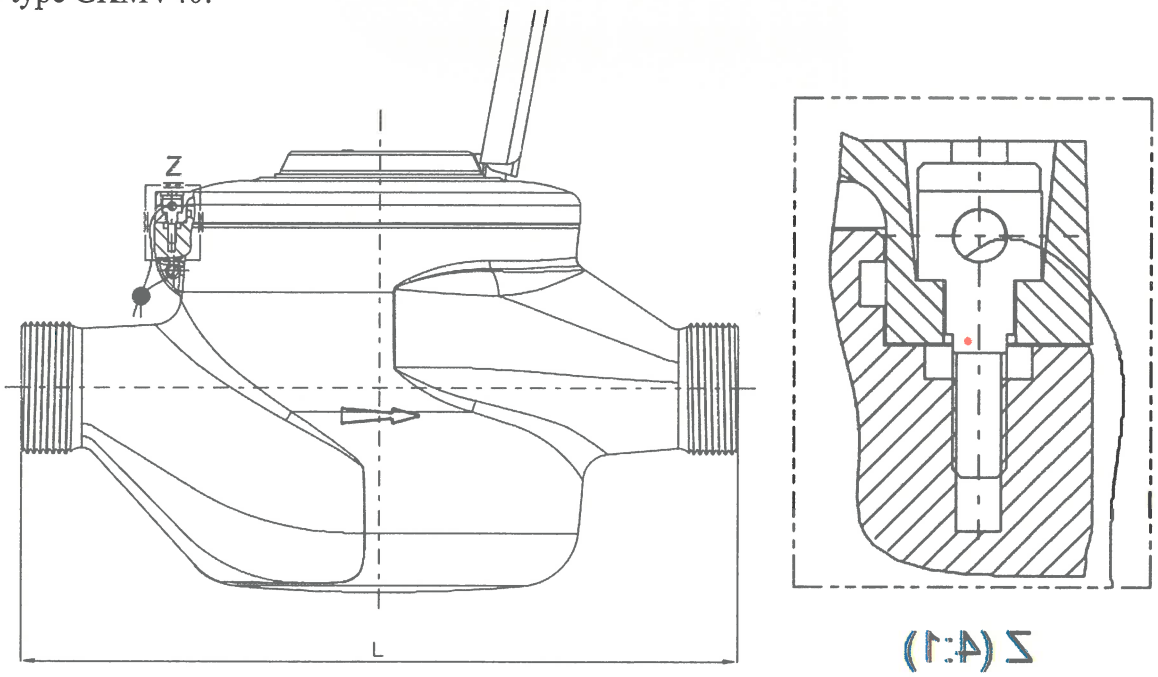
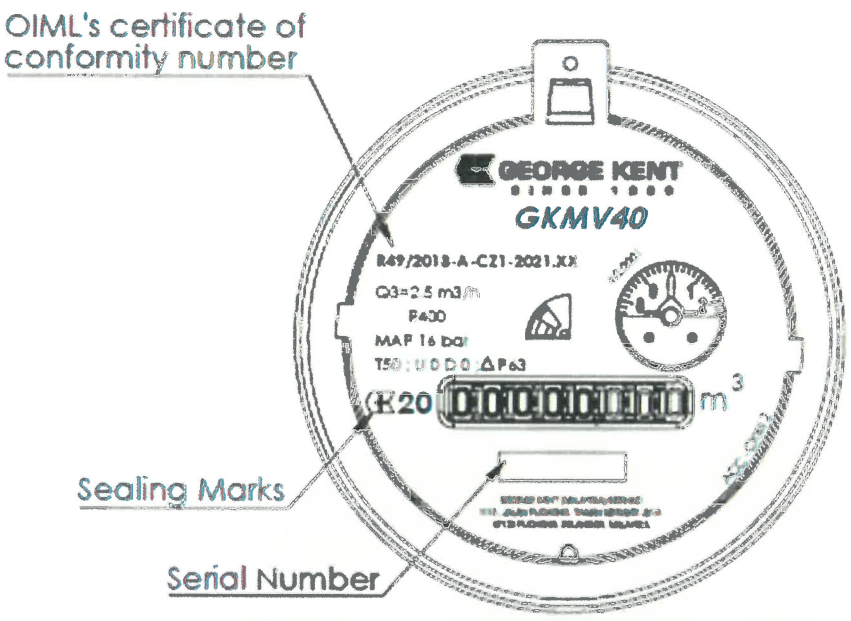


Figure 2: The water meter types GKMV40 – example of register:

a) type GKMV40:



b) type GKMV40P:

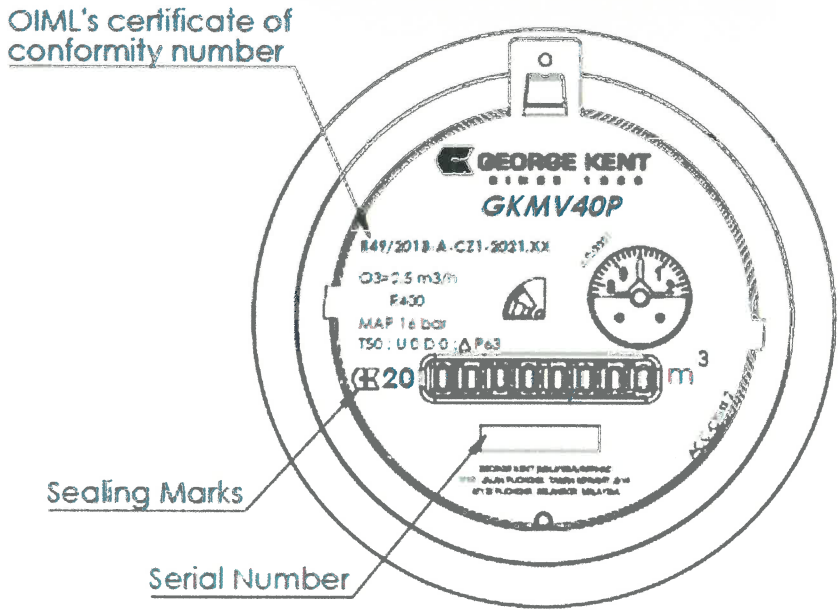


Figure 3: The water meter types GKMV40 and GKMV40P – sensor and register: