



OIML Member State
Czech Republic

OIML Certificate No.
R49/2013-A-CZ1-25.02

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: Xylem Water Solution Singapore Pte Ltd
Address: 3A International Business Park, Tower B, #10-10/18, ICON@IBP, 609935 Singapore, SG

Manufacturer

Name: Xylem Water Solution Singapore Pte Ltd
Address: 3A International Business Park, Tower B, #10-10/18, ICON@IBP, 609935 Singapore, SG

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

water meter - multi jet, dry dial
420+ or 420 Plus

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 OIML type evaluation report:

- No. 0511-ER-V061-24 dated 8 January 2025 that includes 24 pages including annex 1 and annex 2
- Test report No. 6015-PT-P5009-24 that includes 97 pages including annex 1 and annex 2

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

0511-UL-V061-24

OIML Certificate History

Revision No.	Date	Description of the modification
-	9 January 2025	Issuing certificate

The OIML Issuing Authority

RNDr. Pavel Klenovský
Head of Certification Body

Date: 9 January 2025



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 type 420⁺ or 420 Plus 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 2014/32/EU of the European Parliament and of the Council of the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments (implemented in Czech Republic by Government Order No. 120/2016 Coll.), as amended.

The water meters type 420⁺ or 420 Plus are multi jet water meters with dry mechanical indicating device. The water meters type 420⁺ or 420 Plus consist of a metallic body (bronze), composite (durethan) body, aluminium (EcoCAZt) body or brass body.

The measuring chamber is made from a plastic material with a metallic pivot fixed in the central position in order to guide turbine rotation. The lower part of the measuring chamber has several windows to distribute the water around the turbine. The measuring chamber leans on a gasket in order to prevent by pass of water between lower side and upper side of the chamber. The turbine is a group formed by a ring magnet, a turbine pivot, turbine blades and a turbine bushing. Pressure plate separates the dry side and the wet side of the meter. In the central part of the wet side are assembled a bushing and a bearing stone. An O-ring lodged in the pressure plate seat assures the water tightness.

A mechanical indicating device has pointers and numbered drums, a plastic cover and a plastic lid. The mechanical indicating device is formed by numbered rollers with eight drums and one pointer. The adjustment is done with the regulation screw covered by a closure bolt. The access to the screw is protected by a glass and cover cap with plastic locking ring.

The water meters type 420⁺ or 420 Plus shall be installed to operate in horizontal position only with the indicating device positioned at the top or vertical position.

Marking and inscriptions

The water meters types 420⁺ or 420 Plus shall be clearly and indelibly marked with the following information:

- Unit of measurement (m³)
- Numerical value Q_3 in m³/h ($Q_3 \times \times$) and the ratio Q_3 / Q_1
- 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 $\times \times$)
- Letter H (horizontal position with the indicating device at the top) or letter V (vertical position)
- The temperature class (T $\times \times$)
- The pressure loss class ($\Delta p \times \times$)
- The installation sensitivity class (U \times D \times)

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 (Figure 4).

Characteristics

Basic technical data of water meters types 420⁺ or 420 Plus:

Manufacturer:	Xylem Water Solution Singapore Pte Ltd
Model number:	420 ⁺ or 420 Plus
Nominal diameter:	DN 15/ DN 20
Type details:	
Q_1 [m ³ /h]:	flowrates are shown in Table <i>Basic metrological data (flowrates)</i>



Q_2 [m³/h]:		
Q_3 [m³/h]:		
Q_4 [m³/h]:		
Q_3/Q_1 :	≤ 160 ¹ for Horizontal with the indicating device at the top for metallic body (bronze), composite (durethan) body, aluminium (EcoCAZt) body	40 for vertical
	≤ 125 ¹ for Horizontal with the indicating device at the top for brass body	
Q_2/Q_1 :	1.6	
Q_4/Q_3 :	1.25	
Measuring principle:	Multi jet, dry dial	
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 %	
Temperature class:	T50	
Water pressure class:	MAP 16	
Pressure loss class:	ΔP 63	
Reverse flow:	Not designed to measure	
Maximum admissible temperature [°C]:	50	
Maximum admissible pressure [MPa]:	1.6	
Indicating range [m³]:	99 999.9999	
Resolution of the indicating device [dm³]:	0.02	
Resolution of the device for rapid testing [pulse/dm³]:	196.56664	
EUT testing requirements (OIML R 49-2:2013, 8.1.8):		
Category:	Positive displacement meters and turbine water meters	
Case:	A	
Installation details:		
Connection type (screw thread):	G¾”B or G1”B	
Minimum straight length of inlet pipe [mm]:	0	
Minimum straight length of outlet pipe [mm]:	0	
Flow profile sensitivity class:	U0D0	
Flow conditioner (details if required):	No	
Mounting:	-	
Orientation:	Horizontal with the indicating device at the top, Vertical	
Other relevant information:		
Length [mm]:	165, 170, 190	
Reed switch power supply (U _{max} / I _{max}):	-	

Reed switch K-factor (impulse / L):	-
Information specified by the manufacturer (information in the table below are not certified)	
Mechanical environment class (OIML R 49-1:2013/ Directive 2014/32/EU):	B/O
Temperature range ambient:	-25 °C / 55 °C

¹ The ratio Q_3 / Q_1 shall be chosen according to paragraph 4.1.4 of EN ISO 4064-1:2017 | OIML R 49-1:2013

Basic metrological data (flowrates)

Manufacturer:	Xylem Water Solution Singapore Pte Ltd						
Model number:	420+ or 420 Plus						
Nominal diameter:	15/20						
Type details:							
Q_1 [m³/h]:	0.016	0.020	0.025	0.031	0.040	0.050	0.063
Q_2 [m³/h]:	0.025	0.032	0.040	0.050	0.063	0.080	0.100
Q_3 [m³/h]:	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Q_4 [m³/h]:	3.13	3.13	3.13	3.13	3.13	3.13	3.13
Q_3/Q_1 :	160	125	100	80	63	50	40

Securing components and verification marks

The water meter type 420+ or 420 Plus has to be sealed by clamp the plastic cup and fixing by anti-seam ring, that connecting the indicating device and the body, using a wire with a seal such that the plastic locking ring cannot be opened without damaging the seal or the sealing wire. The location of seal is described in Figure 1, 2, 3.

Figure 1: water meter type 420+ or 420 Plus view and sealing, example of register - metallic body (bronze):



Figure 2: The water meter type 420+ or 420 Plus - view and sealing, example of register - composite (durethan) body:



Figure 3: The water meter type 420+ or 420 Plus - view and sealing, example of register - aluminium (EcoCazt) body:



Figure 4: The water meter type 420+ or 420 Plus - dial marking:

