



Member state  
Czech Republic

OIML Certificate No.  
**R49/2013-CZ-15.01**  
Revision 1

## OIML BASIC CERTIFICATE OF CONFORMITY

### Issuing Authority

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

### Applicant

Name: SPIRE METERING TECHNOLOGY  
Address: 15 Craig Road Acton, MA 01720  
USA

### Manufacturer of the certified type

Name: SPIRE METERING TECHNOLOGY  
Address: 15 Craig Road Acton, MA 01720  
USA

### Identification of the certified type

**Water meter**  
**Type: 280W-...**

For further characteristics see page 2 to 4

This certificate attests the conformity of above identified Type (represented by the sample(s) identified in the OIML Basic Type Evaluation Report) with the requirements of the following Recommendation of the International Organization of Legal Metrology (OIML):

**R 49, edition 2013, for accuracy class 2**

**Characteristics:**

Basic technical data of water meters type **280W-...** DN15 TO DN 25

<b>Manufacturer:</b>	SPIRE METERING TECHNOLOGY 15 Craig Road Acton, MA 01720 USA		
<b>Model number:</b>	280W-R, 280W-D		
<b>Type details:</b>			
Nominal diameter(DN)[mm]	15	20	25
Overload flowrate(Q <sub>4</sub> )[m <sup>3</sup> /h]	3.13	3.13	5.00
Permanent flowrate(Q <sub>3</sub> )[m <sup>3</sup> /h]	2.50	2.50	4.00
Transitional flowrate(Q <sub>2</sub> )[m <sup>3</sup> /h]	0.016	0.016	0.026
Minimum flowrate(Q <sub>1</sub> )[m <sup>3</sup> /h]	0.010	0.010	0.016
Ratio Q <sub>3</sub> /Q <sub>1</sub> :	250		
Ratio Q <sub>2</sub> /Q <sub>1</sub> :	1.6		
Ratio Q <sub>4</sub> /Q <sub>3</sub> :	1.25		
Accuracy class	2		
Maximum permissible error for the lower flowrate zone (MPE <sub>l</sub> )	±5%		
Maximum permissible error for the upper flowrate zone (MPE <sub>u</sub> )	±2% for water having a temperature ≤ 30°C ±3% for water having a temperature > 30°C		
Temperature class:	T30 and T50		
Pressure-loss classes	ΔP 63	ΔP 40	ΔP 25
Indicating range[m <sup>3</sup> ]	99 9999		
Resolution of the indicating device[m <sup>3</sup> ]	0.01 (normal mode) 0.000001 (calibration mode)		
Flow profile sensitivity classes	U5 D3		
Orientation limitation	H - V		
Length of horizontal water meter L[mm]	165	190	260
Connection type-screw thread size	G 3/4 B	G 1 B	G 1 ¼ B
Climatic environment class:	B		
Electromagnetic environment class:	E2		
Software version	Version 31.0		
Checksum	A4532301		
Minimum battery life time:	15 years		

**Marking and inscriptions**

The water meters type **280W-...** shall be clearly and indelibly marked with the following information:

- Unit of measurement (m<sup>3</sup>)
- Numerical value Q<sub>3</sub> in m<sup>3</sup>/h (Q<sub>3</sub> ×.×) and the ratio Q<sub>3</sub> / Q<sub>1</sub>, (R 250)
- 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 (MAP16)
- Letter H - V (H - Horizontal position; V - Vertical position)
- The temperature class (T50, T30)
- The pressure loss class (Δp 63, Δp 40, Δp 25)
- The installation sensitivity class (U5D3)
- Climatic and electromagnetic environmental classes
- The latest date that the meter is to be replaced

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

This 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 Test report No. 6015-PT-P3010-15 from 12<sup>th</sup> June 2015 that includes 87 pages including annexes, Test report No. 8551-PT-P0101-15 from 1<sup>st</sup> June 2015 that includes 37 pages including annexes, Test report No. 6015-PT-P3021-15 from 5<sup>th</sup> November 2015 that includes 38 pages including annexes, Test report No. 8551-PT-P0140-15 from 26<sup>th</sup> June 2015 that includes 14 pages including annexes and Test report No. 8551-PT-P0145-15 from 10<sup>th</sup> July 2015 that includes 13 pages including annexes.

### **Measuring system description:**

The water meter type 280W-... is ultrasonic water meter. There are two modification of meter. Type 280W-R is intended for residential applications and type 280W-D for sub-metering.

The water meters type **280W-...** intended for metering cold potable water, based on an ultrasonic transit-time principle, with straight inlet (5 times the diameter) and outlet (3 times the diameter) length, without flow conditioner and there are equipped with an electronic calculating/indicating device. The display shows the measurements in cubic meter volume and cubic meter per hour flow rate. The meter is not designed to measure reverse flow. The meter does not require any extra-mechanical housing or adjustments.


The meter is intended for mount to the connecting horizontal pipework with the flow axis in the horizontal plane and with the indicating device positioned at the top and at the side.

The meter is equipped with the electronic indicating device. The display is a digital type, and can show up to 9 digits. The meter has two indication modes: High resolution mode and normal resolution mode. The high resolution mode is used during the calibration process. The water meter displays the volume resolution of 0.000001 m<sup>3</sup> on the digital display in the high resolution mode.

The normal resolution mode is used during normal operation. The water meter displays in the normal resolution mode up to 000000.001 m<sup>3</sup>/h flow rate and 0000000.01 m<sup>3</sup> volume on the digital display.

The water meters type can be equipped by M-bus transmitter which can be used for remote reading.



  
**The OIML Issuing Authority**  
Pavel Klenovský

27 November 2015

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 Basic Type Evaluation Report (s) is not permitted, although either may be reproduced in full.

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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.

**Security measures**

To prevent tampering with the water meter and its electronics, a sealing cap is permanently adhered to the 2 screws that are horizontally aligned with the display, surrounding the face plate of the water meter. The seals prevent access to the screws required to open the water meter top cover/face plate.