

**OIML Member State**

Czech Republic

OIML Certificate No.

R49/2013-A-CZ1-2024.01

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: GENUS POWER INFRASTRUCTURES LIMITED

Address: SPL-2A, RIICO Industrial Area, Sitapura, Tonk Road, Jaipur

302022- Rajasthan, India

Manufacturer

Name: GENUS POWER INFRASTRUCTURES LIMITED

Address: SPL-2A, RIICO Industrial Area, Sitapura, Tonk Road, Jaipur

302022- Rajasthan, India

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

water meter – ultrasonic

GWU

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-V040-23 dated 24 January 2024 that includes 23 pages including annex 1.
- Test report No. 6015-PT-P5003-24 issued by CMI dated 24 January 2024 that includes 176 pages including annexes

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

0511-UL-V040-23

OIML Certificate History

Revision No.	Date	Description of the modification
	26 January 2024	Issuing certificate

The OIML Issuing Authority

RNDr. Pavel Klenovský
Head of Certification Body

Date: 26 January 2024



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 GWU are designed to measure, memorise and display the volume at metering conditions of water passing through the measurement transducer.

The water meters type GWU are manufactured also under Model / Product name: Salil / Intellisonic.

The water meters type GWU are ultrasonic water meters with an electronic indicating device.

The family of water meters covers the nominal diameters of DN15 and DN20.

The transducers with its protective housing are inserted into holes in the pipe, exposing inner covers of the transducers to the fluid in the pipe.

The water meters type GWU are fitted with an easily readable 9 digit LCD, measuring units and information field.

To display the value of the volume, the finger must be held on the virtual button (on the right under the display for a few seconds - wakeup)

Ultrasonic water meter has a separation of software. The version of SWs and CRCs are displayed in the auto-rounding menu on LCD display in the time period in the form:

- CRC of legally relevant part
- SW version of legally relevant part

The water meter type GWU can be equipped by impulse output via optical port.

The water meter type GWU is fitted with 3.6V Lithium thionyl chloride battery.

Battery operating time is depended on battery Ah rating, type of communication, data requirement.

The water meters shall be installed to operate in any positions.

Marking and inscriptions

The water meters type GWU shall be clearly and indelibly marked with the following information:

- Water meter type
- Unit of measurement (m^3)
- Numerical value Q_3 in m^3/h ($Q_3 \times .\times$) and the ratio Q_3 / Q_1 ,
- Manufacturer's name, registered trade name or registered trade mark
- Year of manufacture, two last digits of the year of manufacture, or the month and year of manufacture
- Serial number (as near as possible to the indicating device)
- Direction of flow, by means of an arrow (on display)
- Maximum admissible pressure (MAP 16)
- The temperature class (T50 or T30)
- The pressure loss class (Δp 63)
- The installation sensitivity class (U0 / D0)
- Power voltage
- Environmental classification (M)
- Electromagnetic environmental class (E1)
- Software version
- Hardware version

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.

Characteristics

Basic technical data of water meters:

Manufacturer:	GENUS POWER INFRASTRUCTURES LIMITED	
Model number:	GWU001 – DN15	GWU002 – DN20
Nominal diameter:	DN15	DN20
Type details:		
Q_1 [m^3/h]:	flowrates are shown in Table <i>Basic metrological data (flowrates)</i>	
Q_2 [m^3/h]:		
Q_3 [m^3/h]:		



Q_4 [m³/h]:		
Q_3/Q_1 :	≤ 400 ¹	
Q_2/Q_1 :	1.6	
Q_4/Q_3 :	1.25	
Measuring principle:	ultrasonic	
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:	MP16	
Pressure loss class:	Δp_{63}	
Reverse flow:	Not designed to measure	
Environmental class:	M	
Electromagnetic environment:	E1, E2	
Maximum admissible temperature [°C]:	50° C	
Maximum admissible pressure [MPa]:	1.6	
Orientation limitation:	any	
Indicating range [m³]:	999 999	999 999
Resolution of the indicating device [dm³]:	1	1
High resolution mode of the indicating device [dm³]:	0,001	0,001
Resolution of the device for rapid testing [pulse/dm³]:	1000	
EUT testing requirements (OIML R 49-2:2013, 8.1.8):		
Category:		
Case:		
Installation details:		
Connection type (screw thread):	G 3/4	G1
Minimum straight length of inlet pipe [mm]:	0	
Minimum straight length of outlet pipe [mm]:	0	
Flow profile sensitivity class:	U0 D0	
Flow conditioner (details if required):	-	
Mounting:	-	
Orientation:	-	
Other relevant information:	-	
Length [mm]:	130; 165	130; 154; 165; 190
Reed switch power supply ($U_{\max}$ / $I_{\max}$):	N/A	
Reed switch K-factor (impulse / L):	N/A	
Installation details (electrical):		
Wiring instructions:	N/A	
Mounting arrangement:	N/A	
Orientation limitations:	no	
Power supply:		
Type (battery, mains AC, mains DC):	Battery 3.6V	
$U_{\max}$ (V):	3.6V	



$U_{\min}$ (V):	3V
Frequency:	N/A
Minimum battery life time [years]:	≥ 7 years*
Software version (of legally relevant SW):	1.00
CRC-32 checksum (of legally relevant SW):	C42A30Cb
Version hardware	GWM2429
Information specified by the manufacturer (information in the table below are not certified)	
-	-

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

* Battery life is depended on battery Ah rating, type of meter communication & data requirement.

Basic metrological data (flowrates)

Manufacturer:	GENUS POWER INFRASTRUCTURES LIMITED										
Model number:	GWU001										
Nominal diameter:	15										
Q_1 [m ³ /h]:	0.0063	0.0079	0.0100	0.0125	0.016	0.020	0.025	0.031	0.040	0.050	0.063
Q_2 [m ³ /h]:	0.0100	0.0127	0.0160	0.0200	0.025	0.032	0.040	0.050	0.063	0.080	0.100
Q_3 [m ³ /h]:	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Q_4 [m ³ /h]:	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13
Q_3/Q_1 :	400	315	250	200	160	125	100	80	63	50	40

Manufacturer:	GENUS POWER INFRASTRUCTURES LIMITED										
Model number:	GWU002										
Nominal diameter:	20										
Q_1 [m ³ /h]:	0.0100	0.0127	0.0160	0.0200	0.025	0.032	0.040	0.050	0.063	0.080	0.100
Q_2 [m ³ /h]:	0.0160	0.0203	0.0256	0.0320	0.040	0.051	0.064	0.080	0.102	0.128	0.160
Q_3 [m ³ /h]:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Q_4 [m ³ /h]:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Q_3/Q_1 :	400	315	250	200	160	125	100	80	63	50	40

Securing components and verification marks

The type GWU meters have to be sealed through the plastic cover over the register and the body part by hologram seal and additionally by hardware seals. The location of seal is described in Figure 3. Example of hologram seal is described in the Figure 4.

Figure 1: The water meter type GWU – view (example of complete meter and body):



Figure 2: The water meter type GWU - LCD indications

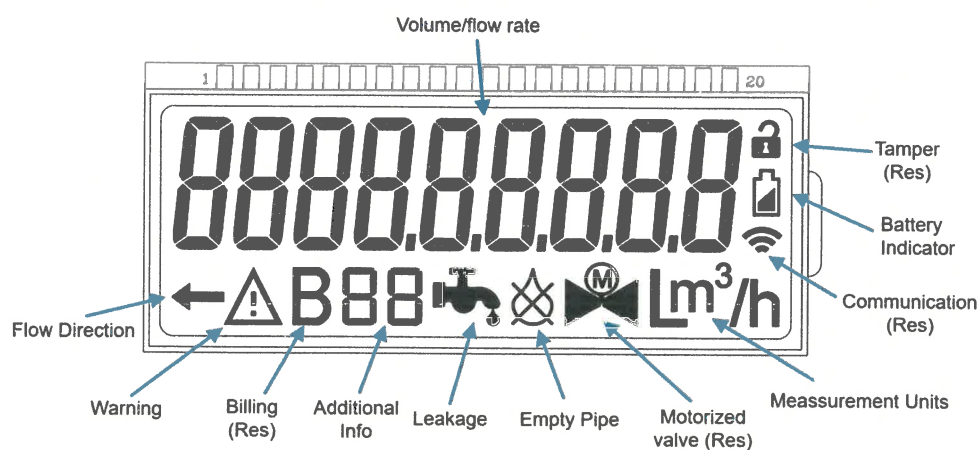


Figure 3: The water meter type GWU – security seal or additional hardware sealing:

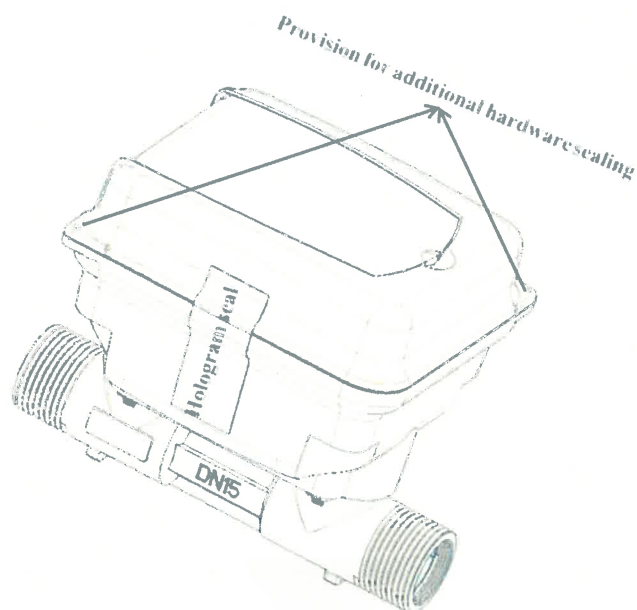


Figure 4: The water meter type GWU – example hologram security seal:

