

CERTYFIKAT BADANIA TYPU WE

EC TYPE EXAMINATION CERTIFICATE

Nr PL-MI002-1450CP0014



Certification Office of INiG-PIB hereby states that the:

Diaphragm gas meters

measuring series: **UG G10 UG G16 UG G25**

issued to: **APATOR METRIX S.A.
ul. Grunwaldzka 14,
83-110 Tczew, Polska**

manufacturing site: **APATOR METRIX S.A.
ul. Grunwaldzka 14,
83-110 Tczew, Polska**

meet the essential requirements covered by the Directive 2014/32/UE of The European Parliament and of the Council of 26th February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments (OJEU of 2014 L 96) on the basis of EU type examination according to Annex IV (MI-002) of Directive 2014/32/EU

document of reference: **PN-EN 1359:2004 [EN 1359:1998]
PN-EN 1359:2004/A1:2006 [EN 1359:1998/A1:2006]**

test reports: **29/GM/2016; 44/GM/2015, 39/GM/2015, 15/GM/2015,
13/GM/2015, 33/GM/2014, 31/GM/2014, 19/GM/2014,
18/GM/2014, 11/GM/2014, 4/GM/2012, 29/GM/2011, 10/GM/2009**

pages: **6**

certificate is valid until: **29th September 2024**

Certification Office
Manager

Magdalena Swat



Director of the Oil and Gas Institute
National Research Institute

Maria Ciechanowska

Kraków, 19-07-2016

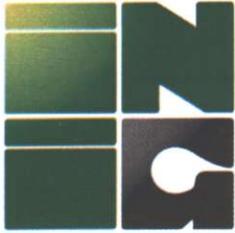
5th issue, replaces the 4th issue of certificate PL-MI002-1450CP0014 of 17.12.2015



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AC 010



Appliance

Diaphragm gas meters

Measuring series

UG G10 UG G16 UG G25

Design of the instrument

Diaphragm gas-meter type UG consists of three units: measurement (battery), case and index.

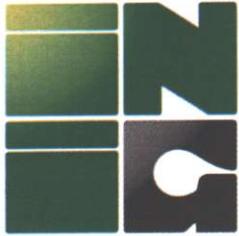
Measurement unit (battery) consists of case with two adjoining covers which creates two measuring chambers containing diaphragms, separating element – mirror and timing mechanism that consists of sliders coupled with gear wheels, paddle shifters, crankset, central wheel and bevel gear differential.

Case unit consists of upper part and lower part tightly connected by band clip. Bushing, magnetic clutch with external and internal magnet sub-assembly and driving pinion are placed in the upper part of the case.

Index unit is connected with measurement unit by three screws. It may be additionally protected with sealing when requested. The construction of index unit enables to install the low frequency impulse transmitter type NI-3 produced by "Apator Metrix" at any time during gas-meter use without breaking of legalization sealing.

Technical documentation – list of figures

No.	Gas meters	Fig no.	Remarks
1	Gas-meters UG G10 UG G16	MA000000 MA000001	main assembly drawing
2	Gas-meters UG G25	MB000XXX.YY	main assembly drawing



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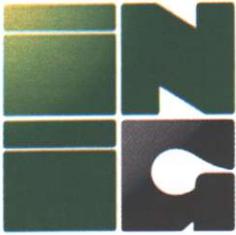
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Technical data

Gas-meter trade name	gas-meter size	Maximum flowrate Q_{max}	Minimum flowrate Q_{min}	cyclic volume V	Distance between connections	Finishing
-	-	m^3/h	m^3/h	dm^3	mm	-
1	2	3	4	5	6	7
UG G10	G10	16	0,1	5,6	152,4 250 280 or 300	K2v
UG G16	G16	25	0,16	5,6	152,4 250 280 or 300	K2v
UG G25	G25	40	0,25	11,2	280 335 or 400	K2v

K2v – gas-meter with vertical axis connections

Gas-meter class 1,5
 Mechanical Class M1
 Maximum operating pressure p_{max} ... 50 kPa (0,5 bar)
 Ambient temperature range t_m -25÷55°C
 Gas temperature range t_g -25÷55°C
 Resistance to high ambient temperature T (at 10kPa / 0,1 bar / according to EN 1359)
 Index measuring range 999999,99 m^3
 1 impulse value 0,1 m^3
 Nominal cyclic volume V 5,6 dm^3 (G10, G16); 11,2 dm^3 (G25);
 Distance between connections 152,4 mm; 250 mm; 280 mm; 300 mm; 335 mm; 400 mm
 Nominal size of connections DN25 – DN50
 Membrane type SMI
 Weight ~7 kg÷12 kg
 Family of gases Gaseous fuels: family 1,2 & 3 acc. to EN 437:2003+A1:2009



Interfaces and compatibility conditions

Gas-meter may be connected to reed relay low frequency impulse transmitter type NI-3 produced by Apator Metrix. This transmitter may cooperate with gas-volume conversion devices or devices that record the flowrate corresponding to 1 impulse. 1 impulse value is $0,1 \text{ m}^3$.

Requirements on production, putting into use and utilisation

Production.

During production the following checks and inspections are being carried out:

- 100% inspection of incoming goods (the quantity inspection), statistical quality inspection;
- tests during production: dimensional check, 100% leak test, statistical check of torque and statistical check of bending moment,
- final tests: checking internal and external tightness, marking, checking the operation of meter (selection of change gears), calibration.

Final tests consists also of checking the permissible errors of indication and pressure absorption in accordance with paragraph A.2.1. of EN 1359:1998/A1:2006.

Installation, utilisation and repair.

Requirements concerning installation, utilisation and repair are described in operation and maintenance manual provided with the gas-meter.

Control of the measuring tasks of the instrument in use

Gas-meters are subject to conformity assessment according to directive 2014/32/EU (MID). In order to make a proof of performed conformity assessment the appropriate manufacturer's symbols are being stamped. Separate national legislation determine the date when gas-meter should be submitted to next legalization after completion of conformity assessment.

Security measures

Gas-meter UG may be secured by different means:

1) Through the index window.

Down right on the transparent index window, the seal symbol "Mx" is printed before the index window is mounted. The index is locked by an index blockage when the index window is mounted. This locking can be released only if the index window is removed and thereby broken.

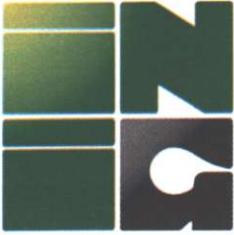
2) Securing by a seal.

On the right side of the index, there is a possibility to apply a seal with manufacturer's symbol "Mx". This seal, too, prevents the opening of the index.

3) Securing through the index window and by a seal.

It is possible to secure the appliance using both of a/m ways, but the manufacturer's symbol "Mx" is printed only on 1 seal.

For a special client's request Apator Metrix may carry out an additional calibration made by INiG-PIB Calibration Laboratory. Calibration is confirmed by lead seal with INiG-PIB's mark that is put on gas-meter's index.



Marking requirements

Each gas-meter should bear a marking plate on index or as a separate plate having at least the following information:

- a) *identification mark or manufacturer's name;*
- b) *CE mark, additional metrology marking, identifying number of notified body*
- c) *accuracy class of the meter;*
- d) *meter's serial number and year of production;*
- e) *maximum flowrate Q_{max} (m^3/h);*
- f) *minimum flowrate Q_{min} (m^3/h);*
- g) *maximum working pressure, p_{max} (bar);*
- h) *nominal cyclic volume, V (dm^3);*
- i) *number and issue year of standard of object;*
- j) *ambient temperature range, if higher than $-10^{\circ}C$ to $40^{\circ}C$;*
- k) *gas temperature range, if different from ambient temperature range;*
- l) *additional marking required by legislation, e.g. the number of type examination certificate;*

If gas-meter is resistant to high ambient temperature it should be additionally mark with „T” symbol.

Marking should be visible and permanent in normal operating conditions of gas-meter.

If gas meter is intended to use outdoors, it should be additionally marked with the symbol H3.



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Labelling and inscriptions

Gas-meter marking example

The image shows a rectangular marking label for a gas meter. It contains the following information:

- CE mark with 'M16' in a box and '1450' to its right.
- A barcode with the number '16MUGG25 33500214852' below it.
- 'G25' in large bold letters.
- 'metrix' logo with 'GRUPA APATOR' and 'Grunwaldzka 14, PL-83-110 Tczew' below it.
- Technical specifications: $Q_{max}=40m^3/h$, $Q_{min}=0,25m^3/h$, $V=11,2dm^3$, $p_{max}=50kPa$, $1imp \hat{=} 0,1m^3$, $t_m = -25^\circ C \dots 55^\circ C$.
- 'UG' and 'OT' in large letters with a circle between them.
- $p_{max T} = 10kPa$.
- A red box highlights a blank space followed by a comma and a blank space, then m^3 .
- Bottom section: 'PL-MI002-1450-CP0014', 'EN 1359:1998+A1:2006 Class 1.5', 'Nr 214852', and '2016'.



Manufacturer's mark

Kraków, 19-07-2016

Certification Office
Manager

Magdalena Swat