

EnergyMetering

Wide range diaphragm gas meters
Diaphragm gas meters
IC-card diaphragm gas meters
AMR technology
Commercial diaphragm gas meters



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3,200

employees on 4 continents stand for quality, precision and innovation.

Locations in Europe

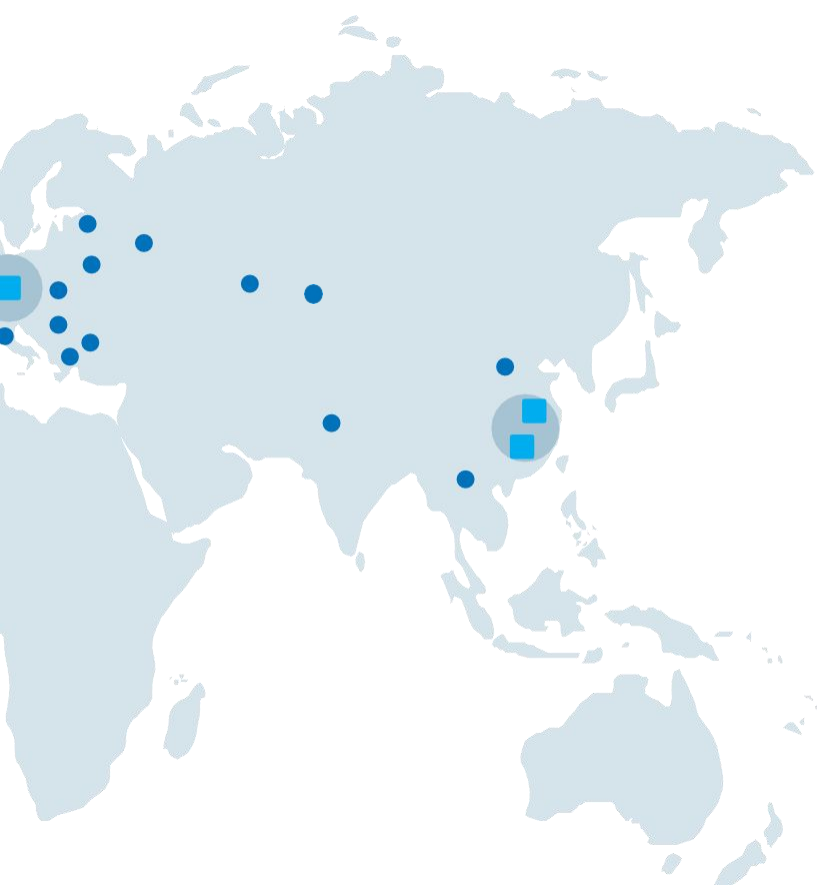
- Germany:
Saarbrücken, Mulda, Mannheim
- Bulgaria: Sofia
- France: Limoges
- Italy: Bologna
- Kasakhstan: Aktobe
- Poland: Warsaw
- Romania: Bucharest
- Russia:
St. Petersburg, Moscow, Tjumen
- Spain: Madrid
- Hungary: Budapest
- Belarus: Minsk

We export our products in

90

countries.





20

locations worldwide with four production sites in Europe, Asia and the US.

Locations worldwide

- Brazil: Novo Hamburgo
- Paraguay: Asuncion
- China: Fuzhou, Beijing, Shanghai
- Vietnam: Hanoi
- India: Faridabad
- USA: Banning, CA, Addison, TX

Innovative measuring equipment for global markets for over

110

years. Est. in 1903.

About ZENNER



COMPANY NAME

ZENNER International GmbH & Co. KG

HEADQUARTERS

Saarbrücken, Germany

YEAR OF FOUNDATION

1903 under the name KEUTH & ZENNER Engineering Agency



BUSINESS ACTIVITY

Production and marketing of measurement equipment:

- Gas meters
- Injection mould
- On/Off circuit breaker
- Stainless corrugated pipe
- Water meters
- Heat meters
- Heat cost allocators
- Systems technology
- AMR Solutions



WORLDWIDE SALES FIGURES

Gas meters:	approximately 6 million units annually worldwide
Water meters:	approximately 4 million units annually worldwide
Heat meters:	approximately 300,000 units annually worldwide
Heat cost allocators:	approximately 2 million units annually worldwide

Approvals for Domestic Gas Meter

MID Module B

NMI **EU-type examination certificate**
 Number T11367 revision 0
 Project number 1902481
 Page 1 of 1

Issued by: **NMI Certin B.V.**, designated and notified by the Netherlands to perform tasks with respect to conformity modules mentioned in article 17 of Directive 2014/32/EU, after having established that the Measuring instrument meets the applicable requirements of Directive 2014/32/EU, for:

Manufacturer: **ZENNER Metering Technology (Shanghai) Ltd.**
 NO.6558, East Yingshang Road
 Qingpu Industrial Zone
 Shanghai
 P.R. China

Measuring instrument: **A Diaphragm Gas Meter**
 Type: : xx5 / HP xxA
 (xx is G1.6, G2.5, G4 or WG2.5)
 Brand: : Huajune
 Destined for the measurement of: : Gas volume
 Accuracy class: : Class 1.5
 Environment classes: : M1 / E1
 Temperature range: : -25 °C / +55 °C
 Location: : Closed

Further properties are described in the annexes:
 - Description T11367 revision 0;
 - Documentation folder T11367-1.

Valid until: **2 November 2028**

Issuing Authority: **NMI Certin B.V., Notified Body number 0122**
 26 March 2019
 C. Oosterman
 Head Certification Board

NMI Certin B.V.
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INSPECTION RvA 1122

MID Module D

NMI **EU quality system Approval**

Certificate: CE-242 (replaces certificate of 9 May 2017)

NMI Certin B.V., designated and notified by the Netherlands to perform tasks with respect to conformity modules mentioned in Article 17 of 2014/32/EU, declares that the quality system of

ZENNER Metering Technology (Shanghai) Ltd.
 NO. 6558, East Yingshang Road
 Qingpu Industrial Zone
 SHANGHAI
 P.R. China

meets the applicable requirements of Annex II, Module D of 2014/32/EU for the conformity assessment of:

Diaphragm Gas Meters
 Scope of the certificate is described in the annex of CE-242.

The certificate is initially granted on 1 April 2016.

This certificate remains valid until **1 April 2022**, under the condition that the quality system is maintained satisfactory.

NMI Certin B.V., Notified Body number 0122
 26 March 2019
 C. Oosterman
 Head Certification Board

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INSPECTION RvA C 011

OIML R137

NMI **OIML Certificate**
 Number R 137/2012-B-NL1-18.16
 Project number 1902481
 Page 1 of 2

OIML Member State: **The Netherlands**

Issuing authority: **NMI Certin B.V.**, Person responsible: **C. Oosterman**

Applicant and Manufacturer: **ZENNER Metering Technology (Shanghai) Ltd.**
 No.6558, East Yingshang Road
 Qingpu Industrial Zone
 Shanghai
 P.R. China

Identification of the certified type: **A diaphragm gas meter**
 Type: : xx5 (Steel) HP xxA (aluminium)
 (xx is G1.6, G2.5, G4 or WG2.5)
 Brand: Huajune

Characteristics: See page 3

This OIML Certificate is issued under scheme B

This 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):

R 137-1 (2012) "Gas meters"

Accuracy class: **1.5**

This Certificate relates only to the metrological and technical characteristics of the type of measuring instrument covered by the relevant OIML International Recommendation identified above. This Certificate does not bestow any form of legal international approval.

Important note: Apart from the mention of the Certificate's reference number and the name of the OIML Member State in which the Certificate was 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.

Issuing Authority: **NMI Certin B.V., OIML Issuing Authority NL1**
 2 November 2018
 C. Oosterman
 Head Certification Board

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 The notification of NMI Certin B.V. as Issuing Authority can be verified at www.oiml.org

OIML **INSPECTION RvA 1122**

EN1359

NMI **Certificate of Conformity**
 No. CoC 1902481-01
 Page 1 of 1

Applicant: **ZENNER Metering Technology (Shanghai) Ltd.**
 NO. 6558, East Yingshang Road
 Qingpu Industrial Zone
 Shanghai
 P.R. China

Issued by: **NMI Certin B.V.**, Hugo de Grootplein 1
 3314 EG DORDRECHT
 The Netherlands

Submitted: **Diaphragm gas meter**

Manufacturer: **ZENNER Metering Technology (Shanghai) Ltd.**
 Type: : xx5 / HP xxA
 (xx is G1.6, G2.5, G4 or WG2.5)
 Brand: : Huajune

Characteristics:

	G1.6	G2.5	G4	WG2.5
Q _{max} [m³/h]	2.5	4	6	6
Q _{nom} [m³/h]	0.016	0.025	0.04	0.016
Q _i [m³/h]	0.25	0.4	0.6	0.2
Class	1.5			
V [dm³]	1.2			
P _{max} [bar]	0.5 xxx			
destined for the measurement of:	1.5 HP xxx			
	Gas volume			

In accordance with: **EN 1359:1998/A1:2006 "Diaphragm gas meters"** with

The described products are tested according to the above mentioned product standards and meet the essential requirements, based on a non-recurrent examination. The appointing test data is presented in type evaluation report no. NMI-13200096-03 and no. NMI-16200714-01, granted by NMI.

Dordrecht, 2 November 2018
 NMI Certin B.V.
 C. Oosterman
 Head Certification Board

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INSPECTION RvA 1122

ZENNER gas meters

ZENNER gas meters impress by the solid processing of high-quality materials combined with a large number of technical details. In the manufacturing process we purely use materials of the highest quality that meet the requirements for product lifetime, security and technical precision.

For example, the housing of our diaphragm gas meters are made of high quality steel or aluminum. The raw material of the essential parts are imported from Europe.

In addition we purely use tested component connections to guarantee that the meters are solid, safe and leak-proof. The corrosion resistance is ensured by the use of galvanized steel and die-casting aluminum. In addition to the widely used residential diaphragm gas meters, customers can also find commercial gas meters for higher flow rates in our product range. These meters are mainly used in residential, commercial and industrial settings.

All ZENNER gas meters are built in compliance with the following regulations, directives and recommendations:

- EN1359:1998/A1:2006
- MID (2014/32/EU)
- OIML R137 (2012)



Meter with cubic meter display

Atmos[®] Wide range gas meters



Two-pipe wide-range diaphragm gas meter WG2.5S

The meter is characterized by precise measurements, a constant measuring stability, a long life and high reliability. Thanks to the use of high-grade materials the diaphragm gas meter is resistant to corrosion.

The gas meter is suitable for various gas media. The integrated calibration system coordinates the movement of the valves in relation to the optimum gas flow. The excellent linearity of the error curve is guaranteed even at low flow rates.

Due to the optimum sliding characteristics of the valves the Q_{\min} value remains stable and the gas meter is resistant to contamination. The high measuring range enables precise metering results. The Atmos[®] diaphragm gas meter meets the requirements of the EN1359:1998/A1:2006 and OIML R137(2012).

Size:

WG2.5S 0.016 m³/h to 6 m³/h

Gas media:

Natural gas

Town gas

Biogas

Liquid gas

Methane gas

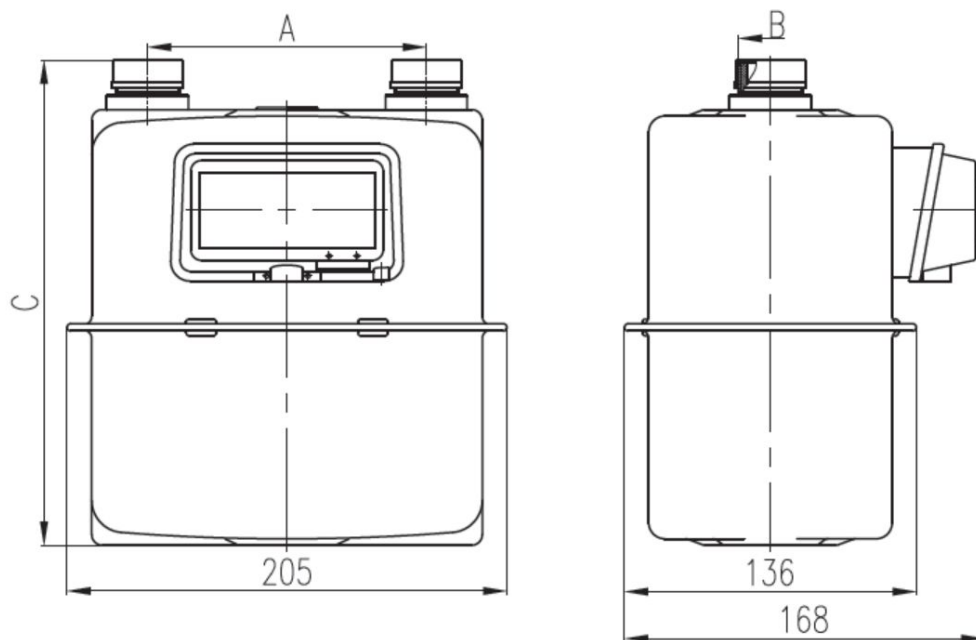
Housing material:

Galvanized steel sheet or
die-cast aluminum

Performance characteristics

- Approved in accordance with MID by NMI
- Wide measuring range for flow rates of 0.016 m³/h to 6 m³/h
- Galvanized steel powder-coated housing for maximum corrosion resistance
- Fire resistant (HTB) up to 0.1 bar according to EN1359
- Maximum pressure loss: <160 Pa at flow rates of 6 m³/h
- Starting flow <1 dm³/h
- Integrated system to adjust the error curve
- Working temperature range: -25 °C to +55 °C
- Operating pressure: 0.5 bar
- Long-term stability due to usage of high-quality diaphragms
- Retrofittable with pulser
- Optional: Reverse flow preventer

Technical data Atmos [®] WG2.5S			
Type			WG2.5S
Nominal flowrate	Q_n	m ³ /h	2.5
Maximum flowrate	Q_{max}	m ³ /h	6
Minimum flowrate	Q_{min}	m ³ /h	0.016
Maximum operating pressure		bar	0.5
Maximum permissible errors	$Q_t \leq Q \leq 0.1 Q_{max}$ $Q_{min} \leq Q < Q_t$		$\pm 1.5\%$ $\pm 3\%$
Max. pressure loss		mbar	≤ 2
Display range max.		m ³ /h	99999.9998
Display range min.		m ³ /h	0.0002
Accuracy class	class		1.5
Cyclic volume		dm ³	1.2
Pulse value		m ³ /pulse	0.01
Weight		kg	1.8



Dimensions Diaphragm gas meter Atmos [®] WG 2.5S							
A	[mm]	90 ± 0.50	110 ± 0.50	130 ± 0.50			
B		M30 x 2 - 6 g	G $\frac{3}{4}$ B	G $\frac{3}{4}$ B	G1B	NPT $\frac{3}{4}$ "	BS746 1"
C	[mm]	226		218			

Atmos[®] - Diaphragm gas meter

Two-pipe Diaphragm gas meter G1.6S | G2.5S | G4S



Center distance 110 mm



Center distance 152.4 mm

Solid build quality, high accuracy, safety and a series of advanced technical details make the Atmos[®] diaphragm gas meter a high-grade measuring instrument. The Diaphragm gas meter is available in sizes G1.6, G2.5 and G4. The meter is characterized by precise measurements, a constant measuring stability, a long life and high reliability. Thanks to the use of high-grade materials, the diaphragm gas meter is resistant to corrosion.

The gas meter is suitable for various gas media. The integrated calibration system coordinates the movement of the valves in relation to the optimum gas flow. The excellent linearity of the error curve is guaranteed even at low flow rates. Due to the optimum sliding characteristics of the valves the Q_{min} value remains stable and the gas meter is resistant to contamination

The Atmos[®] diaphragm gas meter meets the requirements of the EN1359:1998/A1:2006 and OIML R137 (2012) standards.

Performance characteristics

- Approved in accordance with MID by NMI
- Integrated system to adjust the error curve
- Galvanized steel powder-coated housing for maximum corrosion resistance
- Fire resistant (HTB) up to 0.1 bar according to EN1359
- Starting flow < 1 dm³ /h
- Working temperature range: -25 °C to +55 °C
- Operating pressure: 0.5 bar
- Long-term stability due to usage of high-quality diaphragms
- Retrofittable with pulser
- Optional: Reverse flow preventer.

Sizes:

G1.6S : 0.016 m³/h to 2.5 m³/h

G2.5S : 0.025 m³/h to 4 m³/h

G4S : 0.04 m³/h to 6 m³/h

Gas media:

Natural gas

Town gas

Biogas

Liquid gas

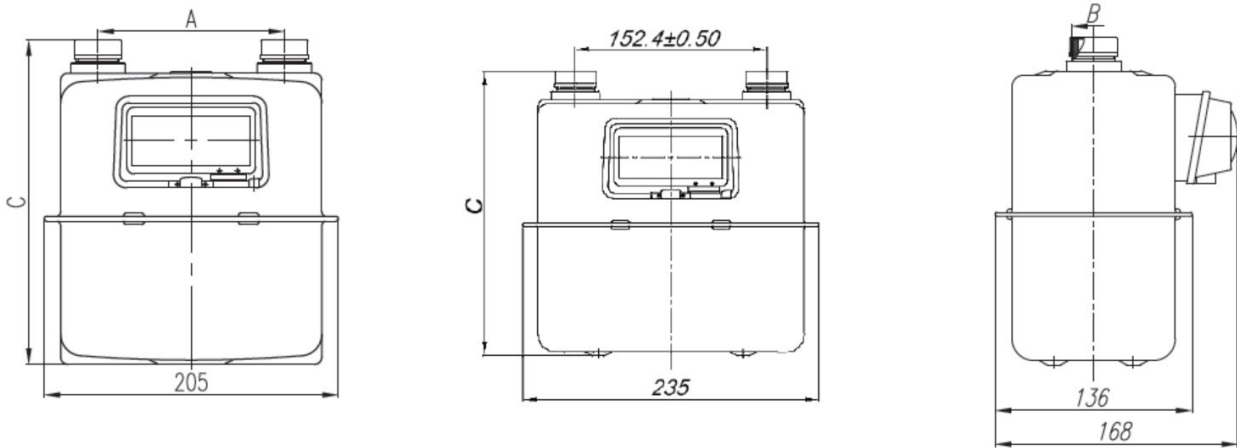
Methane gas

Housing material:

Galvanized steel sheet

Technical data Atmos® G1.6S | G2.5S | G4S

Type			G1.6S	G2.5S	G4S
Nominal flowrate	Q_n	m³/h	1.6	2.5	4
Maximum flowrate	Q_{max}	m³/h	2.5	4	6
Minimum flowrate	Q_{min}	m³/h	0.016	0.025	0.04
Maximum operating pressure		bar	0.5	0.5	0.5
Maximum permissible errors	$0.1 Q_{max} \leq Q \leq Q_{max}$ $Q_{min} \leq Q < 0.1 Q_{max}$		$\pm 1.5\%$ $\pm 3\%$	$\pm 1.5\%$ $\pm 3\%$	$\pm 1.5\%$ $\pm 3\%$
Max. pressure loss		mbar	≤ 2	≤ 2	≤ 2
Display range max.		m³/h	99999.9998	99999.9998	99999.9998
Display range min.		m³/h	0.0002	0.0002	0.0002
Accuracy class	class		1.5	1.5	1.5
Cyclic volume		dm³	1.2	1.2	1.2
Pulse value		m³/pulse	0.01	0.01	0.01
Weight	110/130 mm	kg	1.8	1.8	1.8
	152.4 mm		2.0	2.0	2.0



Dimensions Diaphragm gas meter Atmos® G1.6S | G2.5S | G4S

A	[mm]	90 ± 0.50	110 ± 0.50	130 ± 0.50	152.4 ± 0.50		
B		M30 x 2 - 6 g	G¾ B	G¾B	G1B	NPT ¼"	BS746 1"
C	[mm]	226		218			

Atmos[®] - Compact type gas meter

Two-pipe Diaphragm gas meter G1.6MS | G2.5MS



Center distance 110mm



Center distance 130mm

Solid build quality, high accuracy, safety and a series of advanced technical details make the Atmos[®] diaphragm gas meter a high-grade measuring instrument. The Diaphragm gas meter is available in sizes G1.6 and G2.5. The meter is characterized by precise measurements, a constant measuring stability, a long life and high reliability. Thanks to the use of high-grade materials, the diaphragm gas meter is resistant to corrosion.

The gas meter is suitable for various gas media. The integrated calibration system coordinates the movement of the valves in relation to the optimum gas flow. The excellent linearity of the error curve is guaranteed even at low flow rates. Due to the optimum sliding characteristics of the valves the Qmin value remains stable and the gas meter is resistant to contamination.

The Atmos[®] compact type diaphragm gas meter meets the requirements of the EN1359:1998/A1:2006 and OIML R137 (2012) standards.

Performance characteristics

- Approved in accordance with MID by NMI
- Integrated system to adjust the error curve
- 0.8dm³ cyclic volume, suitable for the demand of G1.6 and G2.5
- Long-term accurate measurement
- Galvanized steel powder-coated housing for maximum corrosion resistance
- Fire resistant (HTB) up to 0.1 bar according to EN1359
- Working temperature range: -25 °C to +55 °C
- Anti-corrosion performance
- Retrofittable with pulser
- Optional: Reverse flow preventer.

Sizes:

G1.6MS : 0.016 m³/h to 2.5 m³/h

G2.5MS : 0.025 m³/h to 4 m³/h

Gas media:

Natural gas

Town gas

Biogas

Liquid gas

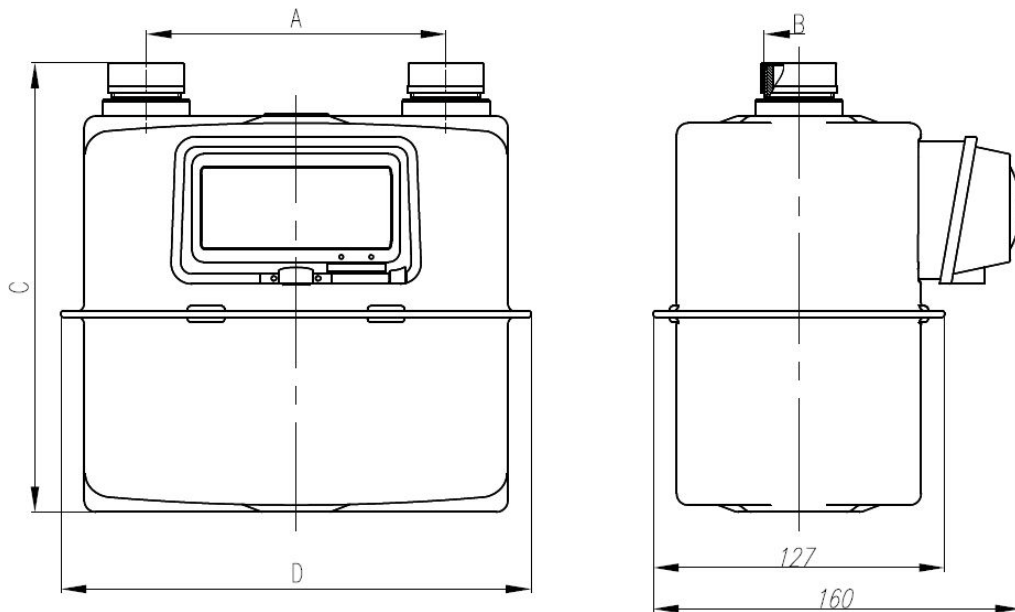
Methane gas

Housing material:

Galvanized steel sheet

Technical data Atmos® G1.6MS | G2.5MS

Type			G1.6MS	G2.5MS
Nominal flowrate	Q_n	m³/h	1.6	2.5
Maximum flowrate	Q_{max}	m³/h	2.5	4
Minimum flowrate	Q_{min}	m³/h	0.016	0.025
Maximum operating pressure		bar	0.5	0.5
Maximum permissible errors	$0.1 Q_{max} \leq Q \leq Q_{max}$ $Q_{min} \leq Q < 0.1 Q_{max}$		± 1.5% ± 3%	± 1.5% ± 3%
Max. pressure loss		mbar	≤ 2	≤ 2
Display range max.		m³/h	99999.9998	99999.9998
Display range min.		m³/h	0.0002	0.0002
Accuracy class	class		1.5	1.5
Cyclic volume		dm³	0.8	0.8
Pulse value		m³/pulse	0.01	0.01
Weight		kg	1.55	1.55



Dimensions Diaphragm gas meter Atmos® G1.6MS | G2.5MS

A	[mm]		110 ± 0.50	130 ± 0.50		
B		M30 x 2 - 6 g	M26 x 1.5 - 6 g	G¾B	G¾B	NPT¾"
C	[mm]		189	195		
D	[mm]		184 @ A=110	204 @ A=130		

Atmos[®] - Compact type gas meter

Two-pipe Diaphragm gas meter G1.6MA | G2.5MA



Sizes:

G1.6MA : 0.016 m³/h to 2.5 m³/h

G2.5MA : 0.025 m³/h to 4 m³/h

Gas media:

Natural gas

Town gas

Biogas

Liquid gas

Methane gas

Housing material:

Die-cast aluminum

Solid build quality, high accuracy, safety and a series of advanced technical details make the Atmos diaphragm gas meter a high-grade measuring instrument. The Diaphragm gas meter is available in sizes G1.6 and G2.5. The meter is characterized by precise measurements, a constant measuring stability, a long life and high reliability. Thanks to the use of high-grade materials, the diaphragm gas meter is resistant to corrosion.

The gas meter is suitable for various gas media. The integrated calibration system coordinates the movement of the valves in relation to the optimum gas flow. The excellent linearity of the error curve is guaranteed even at low flow rates. Due to the optimum rotating characteristics of the valves the Qmin value remains stable and the gas meter is resistant to Contamination.

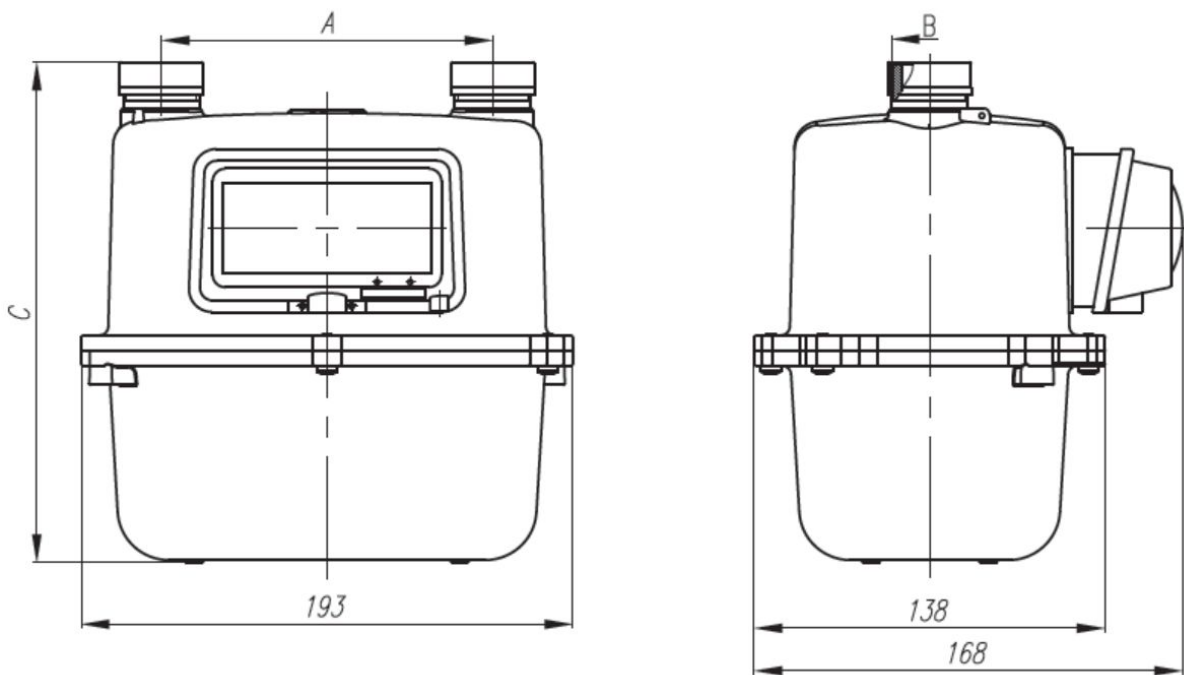
The Atmos[®] compact type diaphragm gas meter meets the requirements of the EN1359:1998/A1:2006 and OIML R137 (2012) standards.

Performance characteristics

- Approved in accordance with MID by NMI
- Integrated system to adjust the error curve
- 0.8dm³ cyclic volume, suitable for the demand of G1.6 and G2.5
- Long-term accurate measurement
- Working temperature range: -25 °C to +55 °C
- Anti-corrosion performance
- Retrofittable with pulser
- Optional: Reverse flow preventer.

Technical data Atmos® G1.6MA | G2.5MA

Type			G1.6MA	G2.5MA
Nominal flowrate	Q_n	m ³ /h	1.6	2.5
Maximum flowrate	Q_{max}	m ³ /h	2.5	4
Minimum flowrate	Q_{min}	m ³ /h	0.016	0.025
Maximum operating pressure		bar	0.5	0.5
Maximum permissible errors	$0.1 Q_{max} \leq Q \leq Q_{max}$ $Q_{min} \leq Q < 0.1 Q_{max}$		± 1.5% ± 3%	± 1.5% ± 3%
Max. pressure loss		mbar	≤ 2	≤ 2
Display range max.		m ³ /h	99999.9998	99999.9998
Display range min.		m ³ /h	0.0002	0.0002
Accuracy class	class		1.5	1.5
Cyclic volume		dm ³	0.8	0.8
Pulse value		m ³ /pulse	0.01	0.01
Weight		kg	1.55	1.55



Dimensions Diaphragm gas meter Atmos® G1.6MA | G2.5MA

A	[mm]		110 ± 0.50	130 ± 0.50
B		M30 x 2 - 6 g	M26 x 1.5 - 6 g	NPT 3/4"
C	[mm]		196	

Atmos[®] - Diaphragm gas meter with temperature compensation

Two-pipe Diaphragm gas meter G1.6-T | G2.5-T | G4-T



The gas meters G1.6-T | G2.5-T | G4-T are equipped with a temperature Compensation mechanism. When the temperature of the gas flow changes, a synthetic bi-metal with different thermal expansion coefficients on the compensation mechanism will be triggered. The deformation is bended, so the length of the crank will be changed to adjust the movement of the diaphragm. Thereby the cyclic volume is changed. Its special design

Will counteract the volume differences which caused by the thermal expansion and contraction of gas. This kind of meter could improve environmental adaptability of diaphragm gas meter, and greatly improve the measurement accuracy.

Sizes:

G1.6-T : 0.016 m³/h to 2.5 m³/h

G2.5-T : 0.025 m³/h to 4 m³/h

G4-T : 0.04 m³/h to 6 m³/h

Gas media:

Natural gas

Town gas

Biogas

Liquid gas

Methane gas

Housing material:

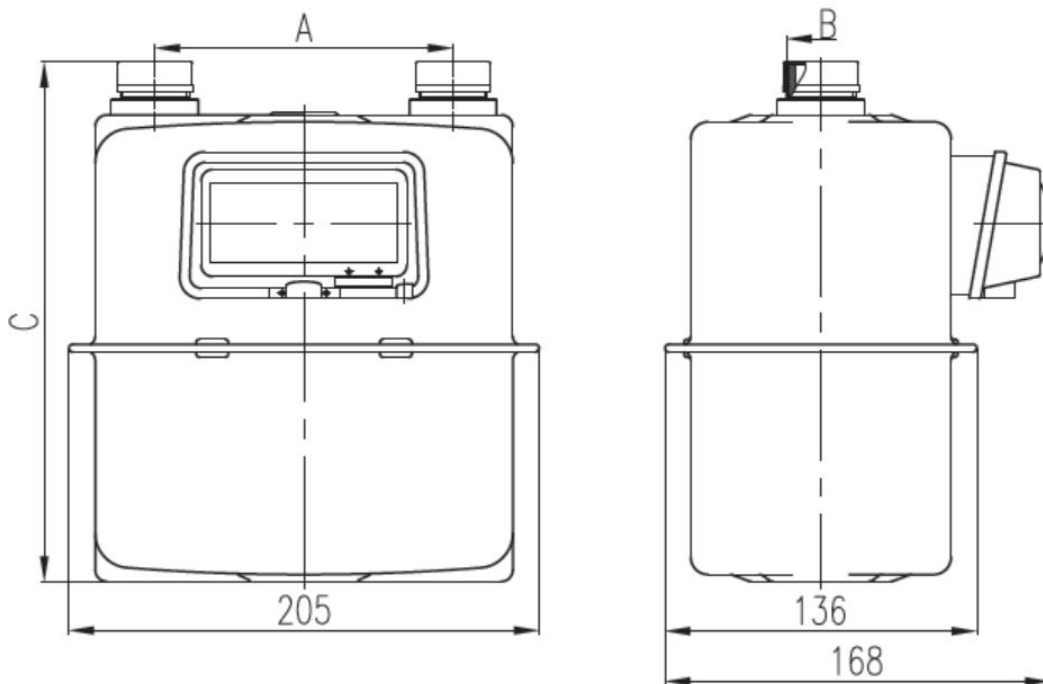
Galvanized steel sheet

Performance characteristics

- Temperature compensation for correcting meter readings
- Integrated system to adjust the error curve
- Galvanized steel powder-coated housing for maximum corrosion resistance
- Operating pressure: 0.5 bar
- Working temperature range: -25 °C to +55 °C
- Long-term stability due to usage of high-quality diaphragms
- Fire resistant (HTB) up to 0.1 bar according to EN1359
- Anti-corrosion performance Retrofittable with pulser
- Optional: Reverse flow preventer.

Technical data Atmos® G1.6-T | G2.5-T | G4-T

Type			G1.6-T	G2.5-T	G4-T
	Q_n	m³/h	1.6	2.5	4
Maximum flowrate	Q_{max}	m³/h	2.5	4	6
Minimum flowrate	Q_{min}	m³/h	0.016	0.025	0.04
Maximum operating pressure		bar	0.5	0.5	0.5
Maximum permissible errors	$0.1 Q_{max} \leq Q \leq Q_{max}$ $Q_{min} \leq Q < 0.1 Q_{max}$		± 1.5% ± 3%	± 1.5% ± 3%	± 1.5% ± 3%
Max. pressure loss		mbar	≤ 2	≤ 2	≤ 2
Display range max.		m³/h	99999.9998	99999.9998	99999.9998
Display range min.		m³/h	0.0002	0.0002	0.0002
Accuracy class	class		1.5	1.5	1.5
Cyclic volume		dm³	1.2	1.2	1.2
Pulse value		m³/pulse	0.01	0.01	0.01
Weight		kg	2.0	2.0	2.0



Dimensions Diaphragm gas meter Atmos® G1.6-T | G2.5-T | G4-T

A	[mm]	110 ± 0.50	130 ± 0.50				
B		M30 x 2 - 6 g	G¾B	G¾B	G1B	G1¼B	NPT ¾"
C	[mm]	230	238				



Center distance 152.4 mm



Center distance 250mm



Single Pipe Meter

Sizes:

G4M : 0,4m³/h to 6m³/h

G6M : 0,06 m³/h to 10 m³/h

WG6M : 0,04 m³/h to 10 m³/h

Gas media:

Natural gas

Town gas

Biogas

Liquid gas

Methane gas

Housing material:

Galvanized steel sheet & Die-cast aluminum

Atmos[®] - diaphragm gas meter 2L

Two-pipe&Single pipe Diaphragm gas meter G4MS | G6MS | WG6MS

Solid build quality, high accuracy, safety and a series of advanced technical details make the Atmos[®] diaphragm gas meter a high-grade measuring instrument. The Diaphragm gas meter is available in sizes G4,G6 and WG6. The meter is characterized by precise measurements, a constant measuring stability, a long life and high reliability. Thanks to the use of high-grade materials, the diaphragm gas meter is resistant to corrosion.

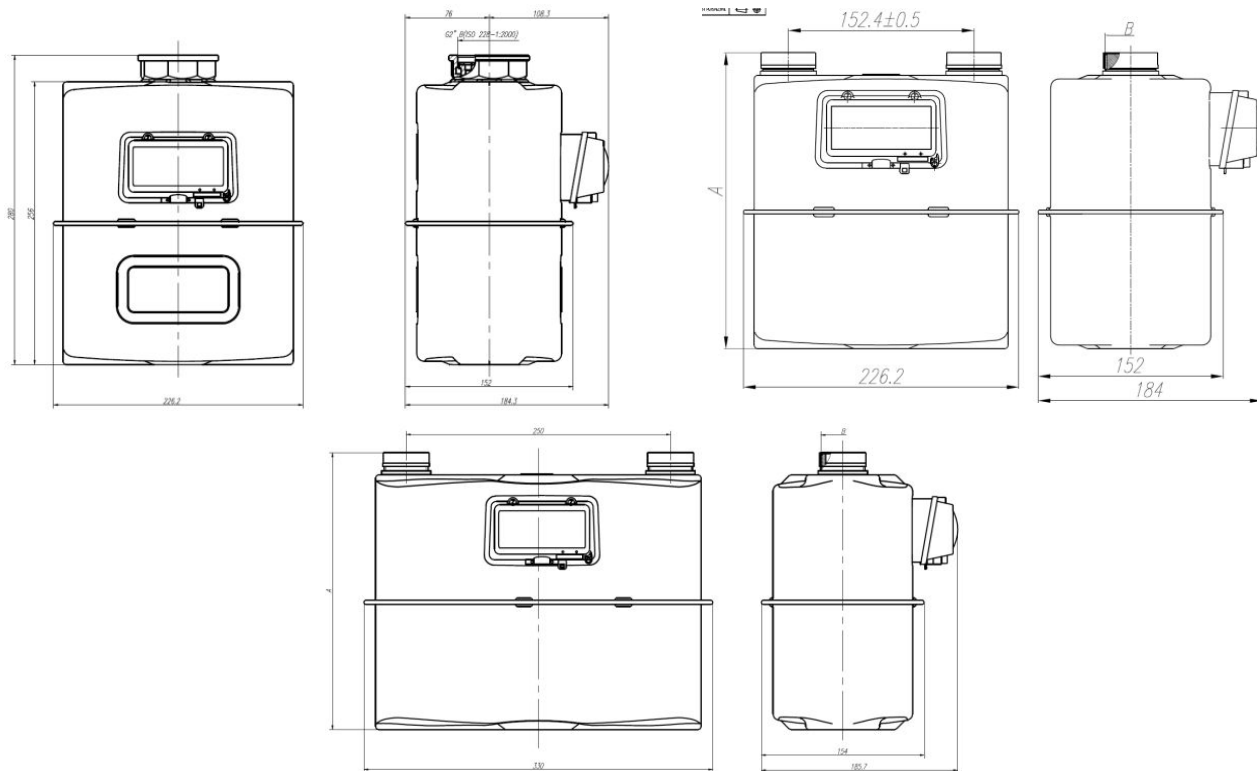
The gas meter is suitable for various gas media. The integrated calibration system coordinates the movement of the valves in relation to the optimum gas flow. The excellent linearity of the error curve is guaranteed even at low flow rates. Due to the optimum sliding characteristics of the valves the Q_{min} value remains stable and the gas meter is resistant to Contamination

Performance characteristics

- Approved in accordance with MID by NMI
- Integrated system to adjust the error curve 2dm³ cyclic volume, suitable for the demand of G4,G6 and WG6
- Integrated system to adjust the error curve
- Long-term accurate measurement
- Anti-Humidity&corrosion performance
- Starting flow $\leq 1 \text{ dm}^3/\text{h}$
- Optional : Retrofittable with pulser

Technical data Atmos® G4S | G6MS | WG6MS

Type			G4S	G6MS	WG6MS
Nominal flowrate	Qn	m³/h	4	6	6
Maximum flowrate	Qmax	m³/h	6	10	10
Minimum flowrate	Qmin	m³/h	0.04	0.06	0.04
Maximum operating pressure		bar	0.5	0.5	0.5
Maximum permissible errors	0,1 Qmax ≤ Q ≤ Qmax Qmin ≤ Q < 0,1 Qmax		± 1.5% ± 3%	± 1.5% ± 3%	± 1.5% ± 3%
Max. pressure loss		mbar	≤ 2	≤ 2	≤ 2
Display range max.		m³/h	99999.9998	99999.9998	99999.9998
Display range min.		m³/h	0.0002	0.0002	0.0002
Accuracy class	class		1.5	1.5	1.5
Cyclic volume		dm³	2	2	2
Pulse value		m3/pulse	0.01	0.01	0.01
Weight		kg	3.05	3.05	3.05



Dimensions Diaphragm gas meter Atmos® G4S |G6MS| WG6MS

A	[mm]	280/ 242.5/ 261.4
B		G1 1/4 B G¾B G¾B NPT¾" G2" B
Center distance	[mm]	152.4± 0.50 250±0.50

Atmos[®] HP- Diaphragm gas meter

Two-pipe Diaphragm gas meter HP G1.6A | HP G2.5A | HP G4A



Solid build quality, high accuracy, safety and a series of advanced technical details make the Atmos[®] diaphragm gas meter a high-grade measuring instrument. The meter is characterized by precise measurements, a constant measuring stability, a long life and high reliability. Thanks to the use of high-grade materials the diaphragm gas meter is resistant to corrosion.

The gas meter is suitable for various gas media. The integrated calibration system coordinates the movement of the valves in relation to the optimum gas flow. The excellent linearity of the error curve is guaranteed even at low flow rates. Due to the optimum rotating characteristics of the valves the Q_{\min} value remains stable and the gas meter is resistant to contamination. The high measuring range enables precise metering for flow rates from 0.016 m³/h to 6 m³/h.

The Atmos[®] HP- diaphragm gas meter meets the requirements of the EN1359:1998/A1:2006 and OIML R137 (2012) standards.

Performance characteristics

- Approved in accordance with MID by NMI
- Integrated system to adjust the error curve
- Die-cast aluminum housing for maximum corrosion resistance
- Starting flow < 1 dm³/h
- Working temperature range: -25 °C to +55°C
- Operating pressure: 1.5 bar
- Long-term stability due to usage of high-quality diaphragms
- Starting flow ≤ 1 dm³/h
- Optional: Retrofittable with pulser

Sizes:

HP G1.6A : 0.016 m³/h to 2.5 m³/h

HP G2.5A : 0.025 m³/h to 4 m³/h

HP G4A : 0.04 m³/h to 6 m³/h

Gas media:

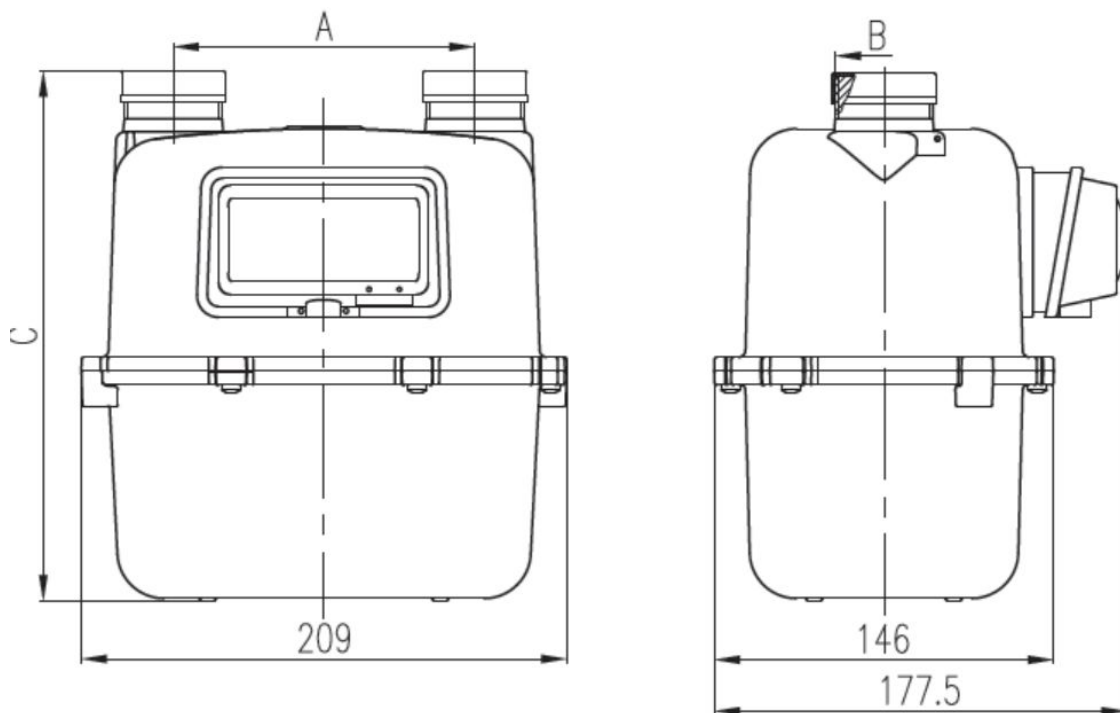
- Natural gas
- Town gas
- Biogas
- Liquid gas
- Methane gas

Housing material:

Die-cast aluminum

Technical data Atmos® HP G1.6A | HP G2.5A | HP G4A

Type			HP G1.6A	HP G2.5A	HP G4A
Maximum flowrate	Q_n	m³/h	1.6	2.5	4
	Q_{max}	m³/h	2.5	4	6
Minimum flowrate	Q_{min}	m³/h	0.016	0.025	0.04
Maximum operating pressure		bar	1.5	1.5	1.5
Maximum permissible errors	$0.1 Q_{max} \leq Q \leq Q_{max}$		± 1.5%	± 1.5%	± 1.5%
	$Q_{min} \leq Q < 0.1 Q_{max}$		± 3%	± 3%	± 3%
Max. pressure loss		mbar	≤ 2	≤ 2	≤ 2
Display range max.		m³/h	99999.9998	99999.9998	99999.9998
Display range min.		m³/h	0.0002	0.0002	0.0002
Accuracy class	class		1.5	1.5	1.5
Cyclic volume		dm³	1.2	1.2	1.2
Pulse value		m³/pulse	0.01	0.01	0.01
Weight		kg	2.2	2.2	2.2



Dimensions Diaphragm gas meter Atmos® HP G1.6A | HP G2.5A | HP G4A

A	[mm]	130 ± 0.50	152.4 ± 0.50			
B		M30 x 2 6	¼B	G¾B	NPT ¾"	NPT 1"
C	[mm]	227				

Atmos[®] HP-Diaphragm gas meter

Two-pipe Diaphragm gas meter HP G4MA | HP G6MA | HP WG6MA



Solid build quality, high accuracy, safety and a series of advanced technical details make the Atmos[®] diaphragm gas meter a high-grade measuring instrument. The meter is characterized by precise measurements, a constant measuring stability, a long life and high reliability. Thanks to the use of high-grade materials the diaphragm gas meter is resistant to corrosion.

The gas meter is suitable for various gas media. The integrated calibration system coordinates the movement of the valves in relation to the optimum Q_{\min} value remains stable and the gas meter is resistant to contamination. The high measuring range enables precise metering for flow rates from 0.04m³/h to 10 m³/h.

The Atmos[®] HP- diaphragm gas meter meets the requirements of the EN1359:1998/A1:2006 and OIML R137 (2012) standards.

Sizes:

HP G4MA : 0.04 m³/h to 6 m³/h

HP G6MA : 0.06 m³/h to 10m³/h

HP WG6MA : 0.04 m³/h to 10 m³/h

Gas media:

- Natural gas
- Town gas
- Biogas
- Liquid gas
- Methane gas

Housing material:

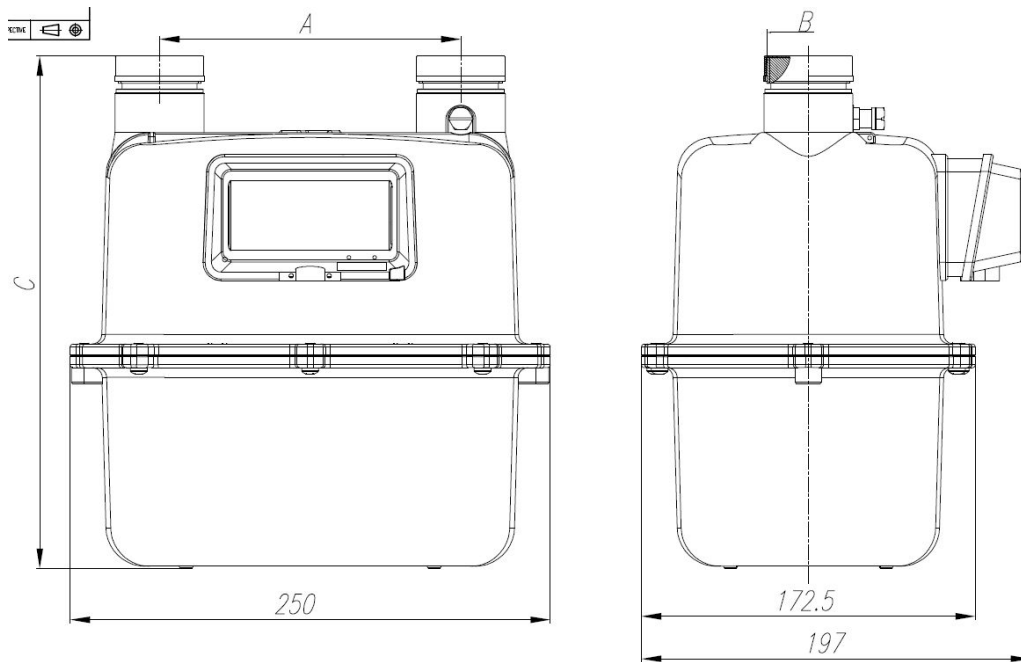
Die-cast aluminum

Performance characteristics

- Approved in accordance with MID by NMI
- Integrated system to adjust the error curve
- Die-cast aluminum housing for maximum corrosion resistance
- Starting flow < 1 dm³ /h
- Working temperature range: -25 °C to +55°C
- Operating pressure: 1.5 bar
- Long-term stability due to usage of high-quality diaphragms
- Optional: Retrofittable with pulser.

Technical data Atmos® G4A | G6MA | WG6MA

Type			G4MA	G6MA	WG6MA
Nominal flowrate	Qn	m³/h	4	6	6
Maximum flowrate	Qmax	m³/h	6	10	10
Minimum flowrate	Qmin	m³/h	0.04	0.06	0.04
Maximum operating pressure		bar	0.5	0.5	0.5
Maximum permissible errors	0,1 Qmax ≤ Q ≤ Qmax Qmin ≤ Q < 0,1 Qmax		± 1.5% ± 3%	± 1.5% ± 3%	± 1.5% ± 3%
Max. pressure loss		mbar	≤ 2	≤ 2	≤ 2
Display range max.		m³/h	99999.9998	99999.9998	99999.9998
Display range min.		m³/h	0.0002	0.0002	0.0002
Accuracy class	class		1.5	1.5	1.5
Cyclic volume		dm³	2	2	2
Pulse value		m3/pulse	0.01	0.01	0.01
Weight		kg	3.05	3.05	3.05



A	152.4±0.5		
B	G1 1/4 B(ISO 228-1:2000)	M42X2-6g	1"(BS 746:2005)
C	259		

Atmos[®] HP- Diaphragm gas meter



Two-pipe Diaphragm gas meter HP G6A

Solid build quality, high accuracy, safety and a series of advanced technical details make the Atmos[®] diaphragm gas meter a high-grade measuring instrument. The Diaphragm gas meter is available in size G6. The meter is characterized by precise measurements, a constant measuring stability, a long life and high reliability. Thanks to the use of high-grade materials the diaphragm gas meter is resistant to corrosion.

The gas meter is suitable for various gas media. The integrated calibration system coordinates the movement of the valves in relation to the optimum gas flow. The excellent linearity of the error curve is guaranteed even at low flow rates. Due to the optimum rotating characteristics of the valves the Q_{\min} value remains stable and the gas meter is resistant to contamination.

Sizes:

HP G6A : 0.06 m³/h to 10 m³/h

Gas media:

- Natural gas
- Town gas
- Biogas
- Liquid gas
- Methane gas

Housing material:

Die-cast aluminum

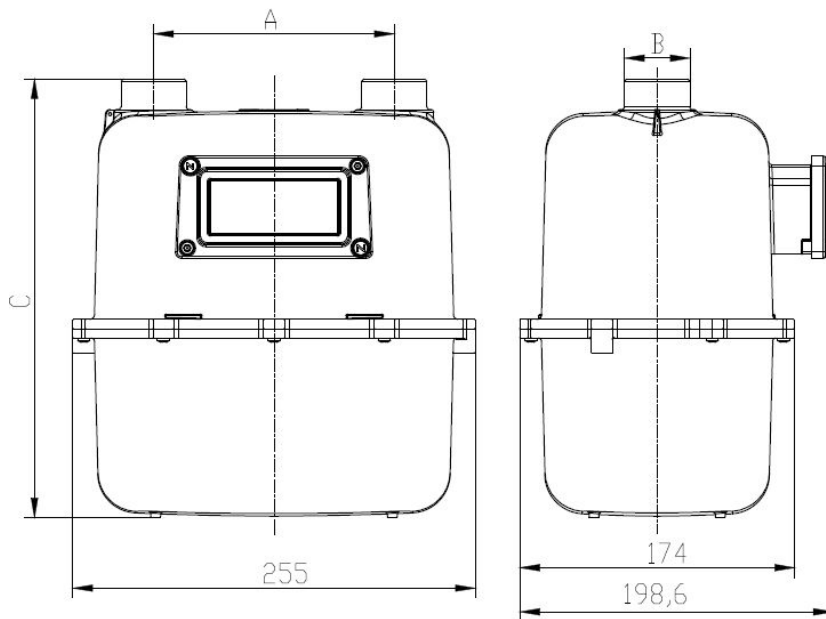
The Atmos[®] HP-diaphragm gas meter meets the requirements of the EN1359:1998/A1:2006 and OIML R137 (2012) standards.

Performance characteristics

- Approved in accordance with MID by NMI
- Integrated system to adjust the error curve
- Die-cast aluminum housing for maximum corrosion resistance
- Starting flow < 1 dm³ /h
- Working temperature range: -25 °C to +55°C
- Operating pressure: 1.5 bar
- Long-term stability due to usage of high-quality diaphragms
- Retrofittable with pulser
- Optional: reverse flow preventer

Technical data Atmos® HP G6A

Type			HP G6A
Nominal flowrate	Q_n	m ³ /h	6
Maximum flowrate	Q_{max}	m ³ /h	10
Minimum flowrate	Q_{min}	m ³ /h	0.06
Maximum operating pressure		bar	1.5
Maximum permissible errors	$0.1 Q_{max} \leq Q \leq Q_{max}$ $Q_{min} \leq Q < 0.1 Q_{max}$		± 1.5% ± 3%
Max. pressure loss		mbar	≤ 2
Display range max.		m ³ /h	99999.9998
Display range min.		m ³ /h	0.0002
Accuracy class	class		1.5
Cyclic volume		dm ³	2.5
Pulse value		m ³ /pulse	0.01
Weight		kg	3.1



Dimensions Diaphragm gas meter Atmos® HP G6A

A	[mm]	152.4 ± 0.30			
B		G1B	G1½B	NPT 1"	NPT 1¼"
C	[mm]	279			

Atmos[®] - Diaphragm gas meter

Two-pipe Diaphragm gas meter G1.6A | G2.5A



Sizes:

G1.6A : 0.016 m³/h to 2.5 m³/h

G2.5A : 0.025 m³/h to 4 m³/h

Gas media:

- Natural gas
- Town gas
- Biogas
- Liquid gas
- Methane gas

Housing material:

Die-cast aluminum

Solid build quality, high accuracy, safety and a series of advanced technical details make the Atmos[®] diaphragm gas meter a high-grade measuring instrument. The Diaphragm gas meter is available in sizes G1.6 and G2.5. The meter is characterized by precise measurements, a constant measuring stability, a long life and high reliability. Thanks to the use of high-grade materials the diaphragm gas meter is resistant to corrosion.

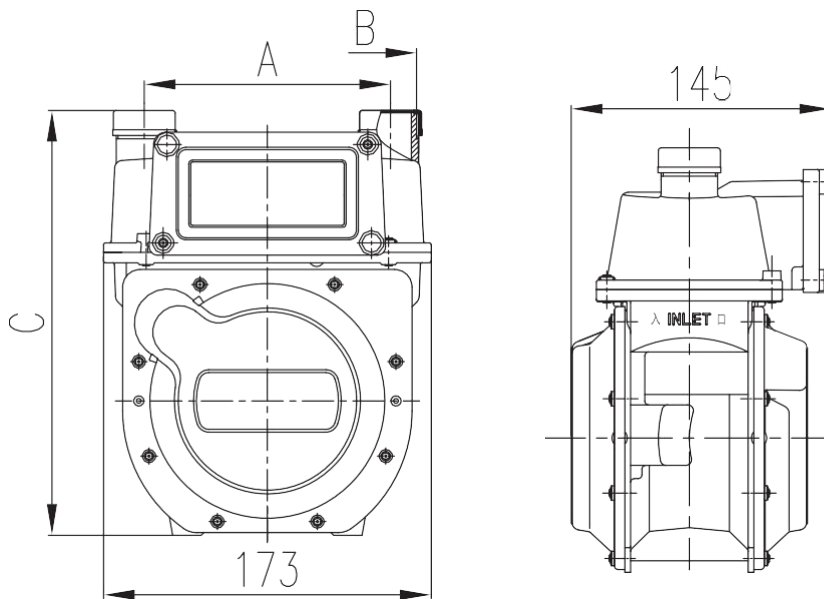
The gas meter is suitable for various gas media. The integrated calibration system coordinates the movement of the valves in relation to the optimum gas flow. The excellent linearity of the error curve is guaranteed even at low flow rates. Due to the optimum rotating characteristics of the valves the Q_{min} value remains stable and the gas meter is resistant to contamination.

Performance characteristics

- Integrated system to adjust the error curve
- Die-cast aluminum housing for maximum corrosion resistance
- Starting flow < 1 dm³ /h
- Working temperature range: -10 °C to +40°C
- Operating pressure: 0.5 bar
- Long-term stability due to usage of high-quality diaphragms
- Optional: reverse flow preventer

Technical data Atmos® G1.6A | G2.5A

Type			G1.6A	G2.5A
Nominal flowrate	Q_n	m ³ /h	1.6	2.5
Maximum flowrate	Q_{max}	m ³ /h	2.5	4
Minimum flowrate	Q_{min}	m ³ /h	0.016	0.025
Maximum operating pressure			0.5	0.5
Maximum permissible errors	$0.1 Q_{max} \leq Q \leq Q_{max}$ $Q_{min} \leq Q < 0.1 Q_{max}$		$\pm 1.5\%$ $\pm 3\%$	$\pm 1.5\%$ $\pm 3\%$
Max. pressure loss	mbar		≤ 2	≤ 2
Display range max.	m ³ /h		99999.9998	99999.9998
Display range min.	m ³ /h		0.0002	0.0002
Accuracy class	class		1.5	1.5
Cyclic volume	dm ³		1.2	1.2
Pulse value	m ³ /pulse		0.01	0.01
Weight	kg		1.8	1.8



Dimensions Diaphragm gas meter Atmos® G1.6A | G2.5A

A	[mm]	110 ± 0.50	130 ± 0.50		
B		M26 x 1.5 - 6g	M30 x 2 - 6g	G ³ /4B	G ⁷ /8B
C	[mm]	225			

Atmos[®] IC-Card prepaid diaphragm gas meter

Two-pipe IC-Card diaphragm gas meter IG1.6S | IG2.5S | IG4S



IGS series are credit gas meters and use an encrypted IC card as a data carrier. Our IGS system is optimally adapted to the needs of gas supply companies. Using the IC-card, information such as gas flow, meter status or unusual operating conditions of the meter are read. This allows the operator to get relevant data from the customer without on-site reading.

The gas meter is suitable for various gas media. The integrated calibration system coordinates the movement of the valves in relation to the optimum gas flow. The excellent linearity of the error curve is guaranteed even at low flow rates. Due to the optimum rotating characteristics of the valves the Q_{\min} value remains stable and the gas meter is resistant to contamination.

The Atmos[®] IC-Card prepaid diaphragm gas meter meets the requirements of the EN1359:1998/A1:2006 and OIML R137(2012) standards.

Sizes:

IG1.6S : 0.016 m³/h to 2.5 m³/h

IG2.5S : 0.025 m³/h to 4m³/h

IG4S : 0.04 m³/h to 6 m³/h

Gas media:

- Natural gas
- Town gas
- Biogas
- Liquid gas
- Methane gas

Housing material:

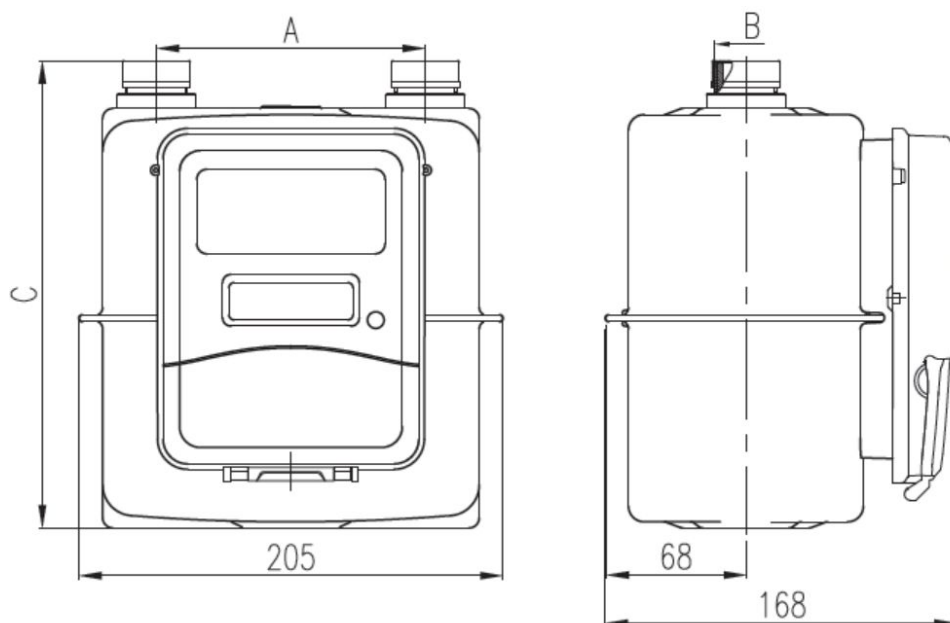
Galvanized steel sheet

Performance characteristics

- Prepaid function
- Overdrawing function
- Hint and warning function
- Built-in shut-off valve
- Anti magnetic interference
- Integrated system to adjust the error curve
- Starting flow < 1 dm³ /h
- Working temperature range: -25 °C to +55 °C
- Operating pressure: 0.5 bar
- Long-term stability due to usage of high-quality diaphragms
- Optional: stair gas price
- Temperature and pressure compensation

Technical data Atmos® IG1.6S | IG2.5S | IG4S

Type			IG1.6S	IG2.5S	IG4S
Nominal flowrate	Q_n	m³/h	1.6	2.5	4
Maximum flowrate	Q_{max}	m³/h	2.5	4	6
Minimum flowrate	Q_{min}	m³/h	0.016	0.025	0.04
Maximum operating pressure		bar	0.5	0.5	0.5
Maximum permissible errors	$0.1 Q_{max} \leq Q \leq Q_{max}$ $Q_{min} \leq Q < 0,1 Q_{max}$		± 1.5% ± 3%	± 1.5% ± 3%	± 1.5% ± 3%
Max. pressure loss		mbar	≤ 2	≤ 2	≤ 2
Display range max.		m³/h	99999.9998	99999.9998	99999.9998
Display range min.		m³/h	0.0002	0.0002	0.0002
Cyclic volume		dm³	1.2	1.2	1.2
Accuracy class		class	1.5	1.5	1.5
Weight		kg	2.2	2.2	2.2
Working voltage		VDC	4.5 / 6	4.5 / 6	4.5 / 6
Battery life		year	1	1	1
Pulse value		m³/pulse	0.01 or 0.1	0.01 or 0.1	0.01 or 0.1
Quiescent current		µA	< 20	< 20	< 20
Maximum current		mA	< 300	< 300	< 300



Dimensions Diaphragm gas meter Atmos® IG1.6S | IG2.5S | IG4S

A	[mm]	110 ± 0.50	130 ± 0.50				
B		M30 x 2 - 6 g	G¾B	G½B	G1B	G1¼B	NPT ¾"
C	[mm]	218	226				



Type A



Type B

Atmos ® - Mechanical Meter +Plug-in Module

Economical Type Smart Meter

Two-pipe diaphragm gas meter IG1.6 | IG2.5|IG4

The plug-in module is a dedicated network based on the IoT of mobile operators, with a diaphragm gas meter as the base meter, adding built-in Lora/Lora WAN/ GPRS/SigFox/NB-LoT communication module to update a smart meters, according to client's requirement we have two options: Type A : Simple version without control valve and LCD which can realized remote meter reading , temper alarming functions; Type B with control valve and LCD, which can meet all the smart meter functions, like remote meter reading, remotely open/close valve, temper alarming etc. It is a cost-effective, stable, economical and practical product.

Performance characteristics

- Communication mode is diversified for option:Lora/Lora WAN/ GPRS/SigFox/NB-LoT.
- No need to disassemble the mechanical meter when malfunction , just need to change the plug-in module, which is easy to install and save the after-sales service cost.
- According to customer's demand, we have option for control valve and electronic counter display, so that customers have a more economical choice.
- Remote valve controlling if chose type with control valve
- Remote settable block pricing
- Daily and monthly billing data records available
- Data transmitted to cloud platform for analyzing
- Alarm: low balance and low battery alarm, temper alarm, leakage alarm,overflow alarm.
- Cyclic volume : 0.8L or 1.2L
- Lithium battery with more than 10 years life time

Size:

IG1.6 : 0.016 m³/h to 2.5 m³/h

IG2.5 : 0.025 m³/h to 4 m³/h

IG4: 0.04 m³/h to 6 m³/h

Gas media:

Natural gas

Town gas

Biogas

Liquid gas

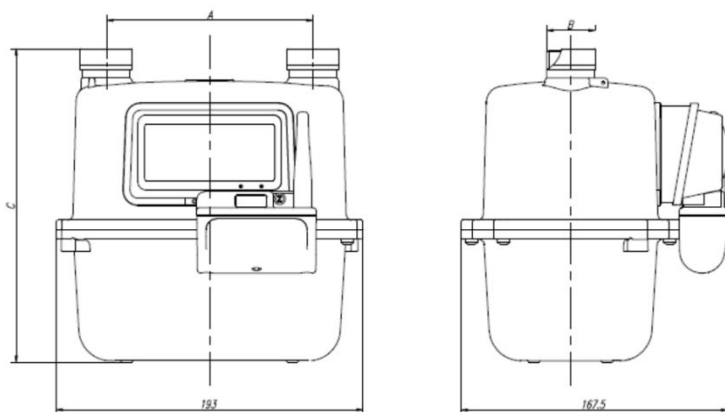
Methane gas

Housing material:

Galvanized steel sheet

& Die-cast aluminum

Technical data Atmos® IG1.6 IG2.5 IG4				IG1.6	IG2.5	IG4
Type				IG1.6	IG2.5	IG4
Nominal flowrate	Q_n	m³/h	1.6	2.5	4	
Maximum flowrate	Q_{max}	m³/h	2.5	4	6	
Minimum flowrate	Q_{min}	m³/h	0.016	0.025	0.04	
Maximum operating pressure		bar	0.5	0.5	0.5	
Maximum permissible errors	$0.1 Q_{max} \leq Q \leq Q_{max}$ $Q_{min} \leq Q < 0.1 Q_{max}$		$\pm 1.5\%$ $\pm 3\%$	$\pm 1.5\%$ $\pm 3\%$	$\pm 1.5\%$ $\pm 3\%$	
Max. pressure loss		mbar	≤ 2	≤ 2	≤ 2	
Operating temperature		°C		-25 ~ +55		
IP degree				IP65		
Working pressure		V		4.8~6.5		
Average current		µA		≤ 25		
Battery life		years		≥ 10 years (one time upload a day)		
Battery type				Lithium battery		
Data storage		years		10		
Communication mode				Lora/LoraWAN/ GPRS/SigFox/NB-LoT		
The success rate of meter reading		%		95		
Single concentrator network scale		PCS		>2000		



Dimensions Diaphragm gas meter Atmos® IG1.6 IG2.5 IG4								
A	[mm]	110 ± 0.50	130 ± 0.50	152.4 ± 0.50				
B		M30 x 2 - 6 g	G¾B	G½B	G1B	G1¼B	NPT ¾"	BS746 1"
C	[mm]	218	226					



Atmos[®] - STS/GPRS / NB-IoT Smart Diaphragm Gas Meter

G1.6S-GI | G2.5S-GI | G4S-GI | WG2.5S-GI

GPRS/NB IOT/NFC gas meter is a smart gas metering product based on ZENNER mechanical diaphragm gas meter, combined with a built-in shut-off valve basement and a smart controller with GPRS/NB IOT/NFC communication module.

With the connection of GPRS/ NB-IoT/NFC wireless network, the following functions could be realized:

Performance characteristics

- Data transmitted to cloud platform for analyzing
- Block pricing
- Alarm: low balance and low battery alarm, temper alarm, leakage alarm, overflow alarm. etc.
- Remote monitoring, remote valve control
- Automactic shut-off valve
- Combined with new media channels to achieve remote charging and real time interaction
- GPRS/ NB-IoT/NFC communication technology
- Optical sampling
- Fast shut-off valve
- Lithium battery with more than 10 years life time

Size:

G1.6S-GI: 0.016 m³/h to 2.5 m³/h

G2.5S-GI : 0.025 m³/h to 4m³/h

G4S-GI : 0.04 m³/h to 6m³/h

WG2.5S-GI: 0.016m³/h to 6m³/h

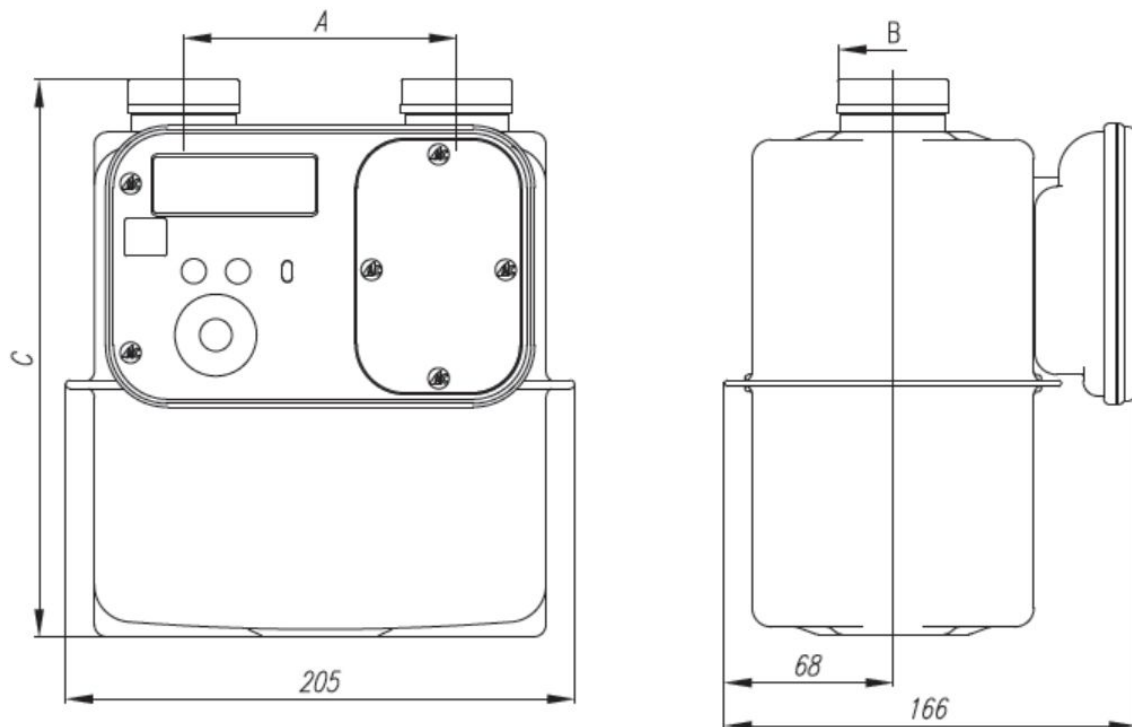
Gas media:

- Natural gas
- Town gas
- Biogas
- Liquid gas
- Methane gas

Housing material:

Galvanized steel sheet

Technical data Atmos® G1.6S-GI G2.5S-GI G4S-GI WG2.5S-GI						
Type			G1.6S-GI	G2.5S-GI	G4S-GI	WG2.5S-GI
Nominal flowrate	Q_n	m³/h	1.6	2.5	4	2.5
Maximum flowrate	Q_{max}	m³/h	2.5	4	6	6
Minimum flowrate	Q_{min}	m³/h	0.016	0.025	0.04	0.016
Maximum operating pressure		bar	0.5	0.5	0.5	0.5
Maximum permissible errors	$0.1 Q_{max} \leq Q \leq Q_{max}$ $Q_{min} \leq Q < 0.1 Q_{max}$		$\pm 1.5\%$ $\pm 3\%$	$\pm 1.5\%$ $\pm 3\%$	$\pm 1.5\%$ $\pm 3\%$	$\pm 1.5\%$ $\pm 3\%$
Max. pressure loss		mbar	≤ 2	≤ 2	≤ 2	≤ 2
Display range max.		m³/h	99999.9998	99999.9998	99999.9998	99999.9998
Display range min.		m³/h	0.0002	0.0002	0.0002	0.0002
Cyclic volume		dm³	1.2	1.2	1.2	1.2
Accuracy class		class	1.5	1.5	1.5	1.5
Weight		kg	2.2	2.2	2.2	2.2
Data acquisition	Double pulse (0.1m3) or photoelectric direct					
Communication mode	GPRS / NB-IoT					
Communication cycle	hours, days, months.					
Battery life	Lithium battery ≥ 10 years (upload once a day)					
Meter reading success rate per time	$\geq 99\%$					



Dimensions Diaphragm gas meter Atmos® G1.6S-GI G2.5S-GI G4S-GI WG2.5S-GI								
A	[mm]	110 ± 0.50	130 ± 0.50					
B		M30 x 2 - 6 g	G $\frac{3}{4}$ B	G $\frac{7}{8}$ B	G1B	G1 $\frac{1}{4}$ B	NPT $\frac{3}{4}$ "	BS746 1"
C	[mm]	218	226					

Atmos[®] XL - Industrial & Commercial diaphragm gas meter

Commercial gas meters G6S | G10S | G16S | G25S



The Atmos[®] XL series of commercial gas meter is extremely suitable for the conditions of hotels, restaurants, factories and other commercial settings.

The meter is characterized by precise measurements, a constant measuring stability, a long life and high reliability. Thanks to the use of high-grade materials, the diaphragm gas meter is resistant to corrosion. The gas meter is suitable for various gas media.

The Atmos[®] XL industrial & commercial Diaphragm gas meter meets the requirements of the EN1359:1998/A1:2006 and OIML R137-1 (2012) standards.

Performance characteristics

- Approved in accordance with MID by NMI
- Integrated system to adjust the error curve
- Galvanized powder-coated steel housing for maximum corrosion resistance
- Starting flow: G6 = 8 dm³/h; G10, G16 = 13 dm³/h; G25 = 20 dm³/h
- Working temperature range: -25 °C to +55 °C
- Operating pressure: 0.5 bar
- Long-term stability due to usage of high-quality diaphragms
- Retrofittable with pulser
- Optional: reverse flow preventer

Sizes:

WG6S : 0.04 m³/h to 10 m³/h

WG10S : 0.06 m³/h to 16 m³/h

WG16S : 0.1 m³/h to 25 m³/h

WG25S : 0.16 m³/h to 40 m³/h

Gas media:

- Natural gas
- Town gas
- Biogas
- Liquid gas
- Methane gas

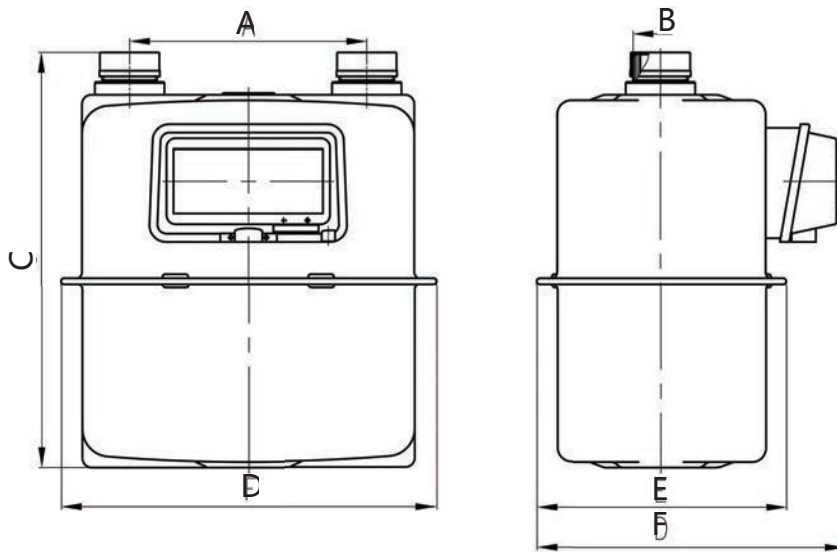
Housing material:

Galvanized steel sheet



Technical data Atmos® XL G6S | G10S | G16S | G25S

			G6S	G10S	G16S	G25S
Nominal flowrate	Q_n	m³/h	6	10	16	25
Maximum flowrate	Q_{max}	m³/h	10	16	25	40
Minimum flowrate	Q_{min}	m³/h	0.04	0.06	0.10	0.16
Operating pressure range		KPa	0.5 ~ 50	0.5 ~ 50	0.5 ~ 50	0.5 ~ 50
Cyclic volume		dm³	2.5	5	8	15
Max. permissible errors	$0.1 Q_{max} \leq Q \leq Q_{max}$ $0.1 Q_{min} \leq Q \leq Q_{min}$				$\pm 1.5\%$ $\pm 3\%$	
Maximum pressure loss		mbar	≤ 2		≤ 3	
Display range max.		m³/h	99999.9998		999999.998	
Display range min.		m³/h	0.0002		0.002	
Accuracy class	class		1.5	1.5	1.5	1.5
Weight		kg	4.1	7.8	7.8	15.6



Dimensions Commercial gas meter Atmos® XL G6S | G10S | G16S | G25S

		G6S	G10S	G16S	G25S
A	mm	160 ± 0.50	200 ± 0.50	240 ± 0.50	300 ± 0.50
B	mm	G1 ¼"	G2"	G2"	M80x3
C	mm	273.5	327.5	375.5	437
D	mm	254.5	316	355.5	438.8
E	mm	168.6	191	213	262.5
F	mm	192	216	238	285.5

AMR-system for gas meters

AMR-system for wired and wireless communications



The automated meter reading system is an optimal solution for all gas suppliers. It enables improved meter management and the implementation of a uniform pricing system. The AMR-system allows the gas supplier:

- Retrieval of customer data and analysis of consumption data
- Creating consumption statistics
- Remote control of gas valves
- Adaptation of the current gas prices and the available credit
- Upload of counter-operating situations to the central server



Performance characteristics

- Time and cost savings
- Collection of consumption data in real time
- Two methods for gas billing (gas or cash balance)
- Several possibilities of data collection:
 - Data collection with handheld / PDA
 - Data collection via network
 - Data collection by mobile data collectors
- No meter exchange when moving from handheld to GPRS
- Minimized losses caused by fluctuating gas prices
- Remote adjustment of the gas price to the current market price
- Multi-level data encryption
- Professional, easy-to-use software for managing and viewing of customer and meter data and sales figures

System Components

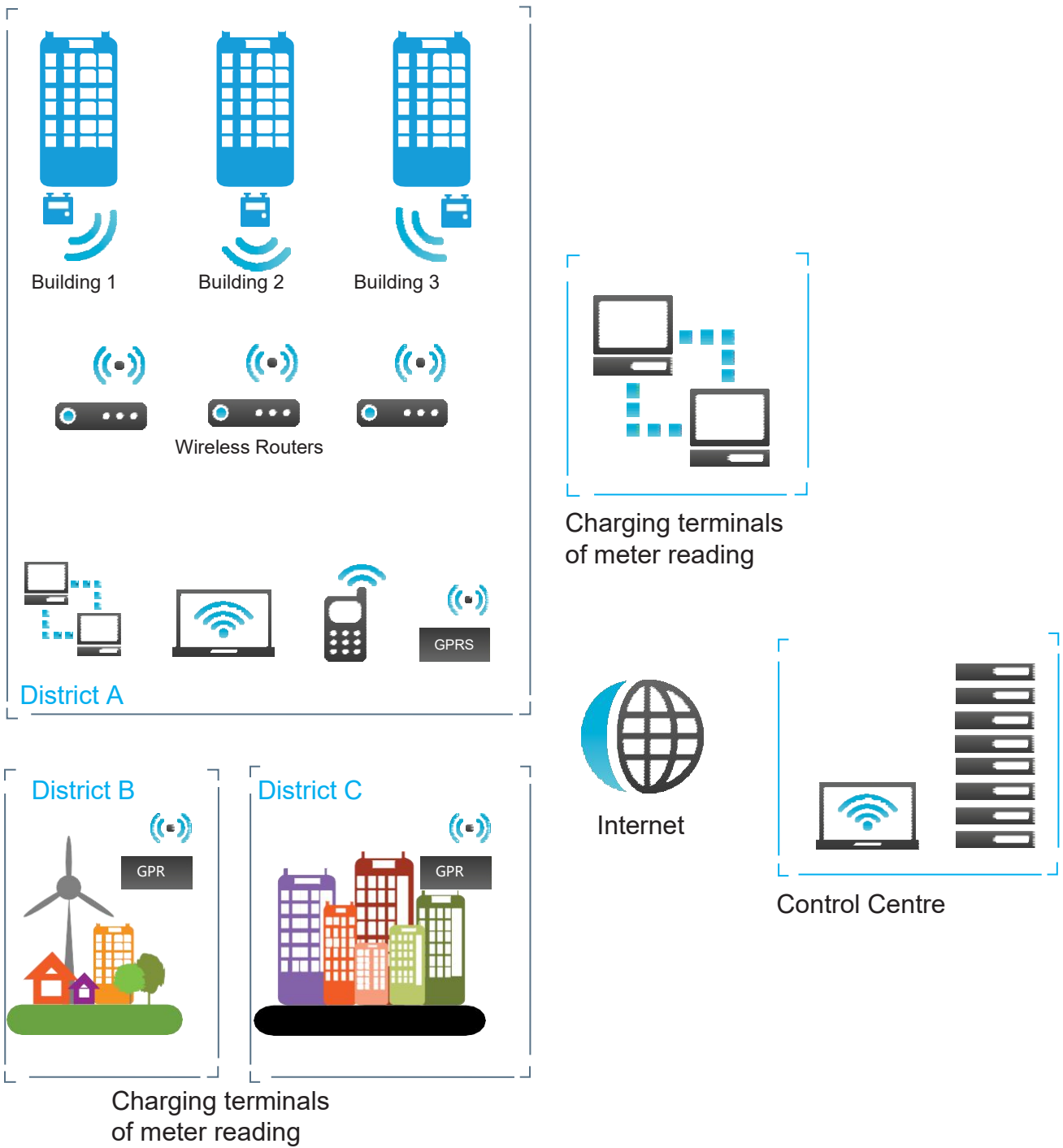
- Software for administration and remote-control
- Data collector
- Router
- PDA

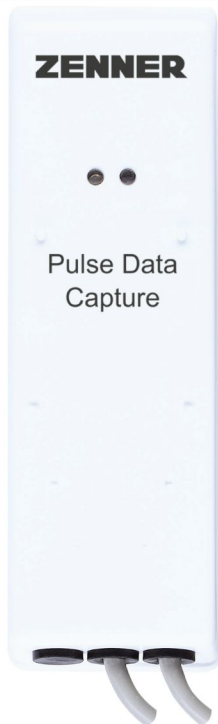
To use with:

Intelligent gas meters of the IGS-W - series

Intelligent gas meters of the IGS-WI - series

AMR-system overview





PDC-Communication module

Gateway for the integration of meters with pulse outputs in remote reading systems

The PulseDataCapture module is optimal for the integration of measuring instruments with pulse output in radio reading systems.

The consumption data of water-, energy heat-, gas-, oil- and other electricity meters with pulse output can be transferred by means of this gateway wireless to a wM-bus receiver.

The gateway is battery powered. The battery lifetime is depending on the version, the transmission interval and the ambient conditions and can reach 15 years.

Model variant:

Our PDC module is available in two versions:

- wireless M-bus radio module according to OMS standard (868 MHz), EN 13757-4
- Radio via LPWAN (LoRaWAN™, SIGFOX)

Smart Metering Functions:

- Self-monitoring
- Leakage detection
- Meter stop detection
- Meter oversized detection
- Meter undersized respectively pipe burst detection

Typical applications:

- Radio reading of water meters with walk-by or drive-by system
- Remote reading of meters with pulse output via the stationary readout system Z.RTU from ZENNER.

Main features

- Plastic housing incl. wall bracket
- Infrared interface
- Pulse and Open-Collector signals processible
- Battery powered
- Protection class IP54 or IP68 as an option
- Versions with connected ZENNER Reed pulser (cable length 1,5m) for the model ranges ETKD-N/ETWD-N, MNK-N, MTKD-N/MTWD-N, RTKD-N available
- Version with lose cable end to be connected to an external meter with pulse output available
- Optionally: to be connected with 2 meters with pulse output



Technical data

General performance characteristics:	
Power supply	Long life battery up to 15 years battery lifetime (depending on the version)
Battery status monitoring	yes
Operating temperature	10°C...40°C; -15°C...60°C (temporarily)
Data logger:	
Annual due dates values:	max. 16
Monthly values max	max. 192, plus max. 192 semi-monthly values
Daily values	max. 96
Quarter hour values	max. 96

Technical data PDC-radio:	
Transmission mode	wireless M-Bus unidirectional, Standard: T1; optionally S1, C1
Encryption	AES 128 according to OMS (device-specific), with factory key or not encrypted as an alternative
Data contents	current value, current date, due date, monthly value, historical monthly values for telegram type A, status information
Transmission interval	20-40 sec., depending on telegram type and number of inputs
Transmission power	25 mW

Data contents (wM-Bus)

The PDC module can be delivered with various data telegrams.

Data protocols	Type A*	Type B*	Type C**
Current value	✗	✗	✗
Current date	✗	✗	
Due date		✗	✗
Monthly value, previous month	✗	✗	✗
Further 11 monthly values	✗		
Status information 1	✗	✗	✗
Status information 2	✗	✗	✗

* Data telegram according OMS Spec., Transmission interval Type A: typical: 40 sec., Type B: typical 40 sec. ** wM-Bus, manufacturer specific data telegram, Transmission interval 20 sec

Set up:

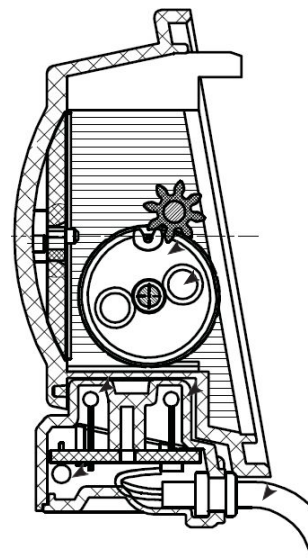
The configuration of the PDC-module is made via the optical interface with using of the ZENNER MinoConnect with ZENNER Optohead IrCombiHead and the right ZENNER software.

Other alternative Android-software solutions from our partners can be used.

ZENNER Gas Meter Supporting Index Assembly Reed Switch Pulse transmitter

Type PT-B-1.5

ZENNER gas meter supporting index assembly (reed switch) is a key part which offers counting pulse signal and burglar alarm signal to the control board. The function will be finished through plastic housing which fixes board, reed switch which is installed on the board and magnet inside of drum. Closed reed switch on the board has function of burglar alarm. It transmits pulse signal and burglar alarm by the outlet cable on the board to the control board.



A pulse signal is produced after one circle

- Magnet
- Reed Switch 1
- Reed Switch 2
- Burglar alarm reed switch
- Pulse signal output line

Application

Retrofittable pulse transmission from a mechanical index.

Operating principle:

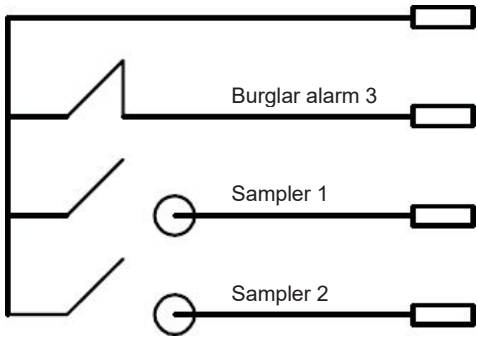
- Counting: when the magnet of the drum on the index moves within the range of reed switch, a pulse signal emerges. When the drum of index moves one circle, an open and close signal is produced periodically in reed switches of the sampler.
- Burglar alarm: when outer magnet approaches reed switch (or connecting line breaks), an open and close signal is produced.



Diaphragm gas meter with pulse transmitter

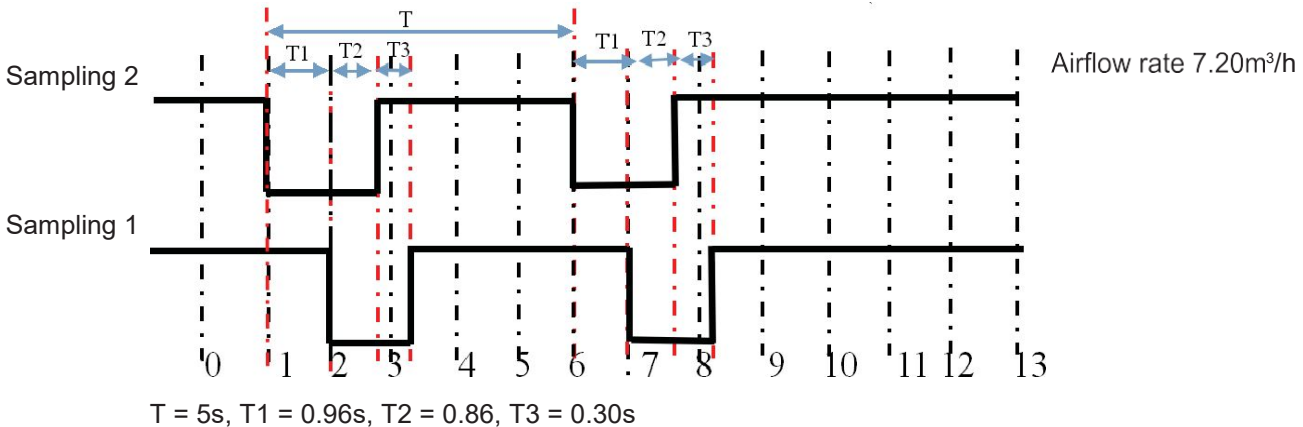
Technical data	
Lifetime	1x10 ⁷ (Lifetime)
Voltage	0-30V
Current	Max. 0.2A
Contact Resistance	100m Ω
Isolation Resistance	10 ⁹ Ω

Output interface



Sampler 1, sampler 2 periodically open; burglar alarm 3 periodically close.

Sampling Sequence Chart



Remarks	
T1	Total time when the sampling digit roller moves one circle (sampling cycle time)
T1	The time that reed switch J1 breaks while J2 is closed
T2	The time that both reed switch J1 and J2 are closed
T3	The time that reed switch J1 is closed while J2 breaks

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