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Gallus

Residential Diaphragm Gas Meter

Today's gas providers are tasked with delivering a reliable, quality product at the best possible cost. To do so, they need to operate more efficiently, and accurately measure and manage their resources. Itron's Gallus meter is a compact, residential gas meter designed for the measurement of natural gas, LPG and all non-corrosive gases.

With over 30 million units installed and in service, the Gallus is one of the most trusted residential metering devices in the world. Compliant with international O.I.M.L and EN1359 standards, as well as more than 25 national metrological standards, the Gallus is designed for use in markets where reliable, accurate metering are required. And because it can be factory-equipped with our Cyble™ technology, the Gallus helps your meter reading processes become more efficient.

APPLICATION

The Gallus meets MID and EN1359 (certificate delivered by the LNE), and more than 25 national metrological standards. Its compact design makes the Gallus the right choice where a precise and reliable measurement for medium flow rates is required.

METROLOGY

During preliminary test bench controls, the meter is 100% tested according to customer or national requirements.

The design and the careful materials selection of the Gallus enable it to meet the highest demand in international markets in terms of accuracy and long-term stability.

During the preliminary test controls on the sonic nozzle test benches, all meters are tested at Q_{min} , $0.2 Q_{max}$ and Q_{max} .

OPERATING PRINCIPLE

The Gallus is a positive displacement diaphragm gas meter with a stand-alone twin chamber measuring unit.

The twin chambers are each fitted with a flexible and gas-tight

diaphragm, which is moved by the differential between the inlet and outlet pressure.

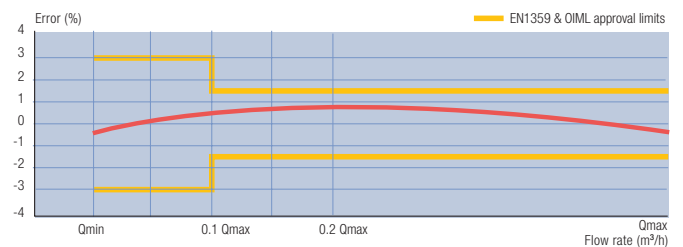
Gas enters one side of the diaphragm plate, while on the other side it sluice through a separate port on the valve. When one side is full, the rotating mono-valve moves on to the next position, allowing the gas to fill the empty side. A transmission gear and a mechanical coupling or stuffing box transfer the reciprocating motion to the mechanical, retrofittable index.

The measuring unit is housed in a robust, gas-tight casing.

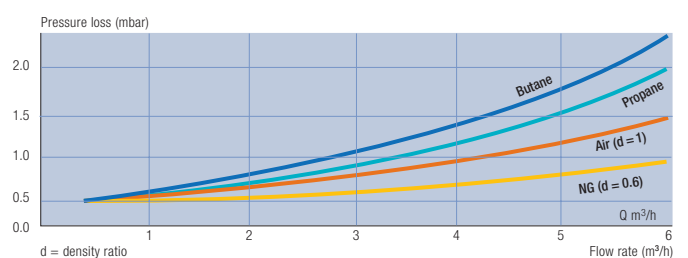
KEY BENEFITS

- » Operational efficiency with remote meter reading
- » Manage usage and resources with timely, accurate data
- » Compact design fits a variety of installation environments
- » Reliable and maintenance-free meter design
- » Standards compliant across multiple ranges

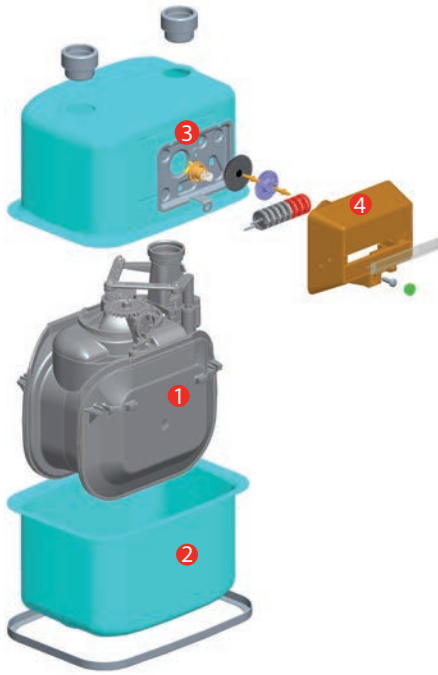
ACCURACY CURVE



PRESSURE LOSS CURVE



CONSTRUCTION



Gallus Parts

The Gallus meter contains four main parts:

1 Measuring Unit

The 1.2d m³ measuring unit has high gliding properties to reduce wear on moving parts and consists of the following components:

- » Four measuring chambers, separated by synthetic diaphragms.
- » A distribution system with a rotating mono-valve.
- » An outlet pipe.

The design of the fixed-stroke mechanism is the result of precision and high-quality automation, eliminating the need for an adjustable tangent. This confines all registration adjustments to the accessible change wheels behind the index.

Long life synthetic diaphragms, coupled to the well-proven movement design, combine to give excellent stability and accuracy throughout the whole life of the meter.

All materials used in the production of the Gallus meter have been selected for their superior resistance to chemicals and gas. A back-run stop prevents the meter from running backwards in case of tampering.

2 Casing

A gas-tight casing, highly protected from corrosion. Two different casing materials are available:

- » Steel casing.
- » Aluminium casing.

With its casing in steel, high protection against corrosion is ensured by 500 hours

of salt fog spray testing and resistant cataphoresis treatment. The aluminium version can withstand up to 1000 hours of salt fog spray test. The extreme strength of the case joint is achieved by rolling the belt and compressing the flanges into contact with a sealant applied between the faces. This forms a joint which is both gas-tight and fire-resistant.

3 Mechanical Transmission

A stuffing box transmits the movement of the measuring unit to the totalizer.

4 Totalizer

A totalizer is available in cubic meters. The totalizer comes with an IP54 protection class and an IP67 version for specific environments. Different totalizer versions can be ordered depending on the application required:

- » **“c” series:** mechanical index equipped with a Cyble target for retrofittable AMR communication systems. This standard Itron meter interface allows the adaptation of different Cyble modules as a communication device (such as pulse, M-Bus or radio frequency wireless links).
- » **“o” series:** mechanical index available with a permanent magnet in an index drum. Can be refitted with a low frequency pulse transmitter (reed switch).

QUALITY ASSURANCE

Quality assurance procedures based on ISO 9001, ISO 14001 and strict controls throughout the manufacturing process ensure a very high quality level and reliable product in compliance with environmental standards.

Technical Specifications

The following table shows all technical features affecting the measuring unit and the meter casing

Gas Type	Natural Gas, LPG and all non-corrosive gases		
Cyclic Volume	1.2 dm ³		
Temperature Range	Operating: -25°C to +55°C Storage: -30°C to +70°C		
Maximum Operating Pressure	Steel	0.5 bar (0.1 bar HTL version)	
	Aluminium	1.5 bar	
Measuring Range	G2.5	Qmin	0.025 m ³ /h
		Qmax	4 m ³ /h
	G4	Qmin	0.04 m ³ /h
		Qmax	6 m ³ /h
Casing Material	Sheet steel Aluminium alloy		
Accuracy	Class 1.5		
Approval	MID (04/22/EC) module H1		
Totalizer	IP54 (IP67 on request)		
Connections	Single or 2 pipe connections Different connection threads are available (ISO 228-1 & BS746 standards, national). Special threads on request		
Colour	Grey white RAL9002		

TOTALIZER FEATURES

Building Blocks of Itron's "c" and "o" series

"c" series

Smart ready, allowing for future AMR capabilities

Itron's latest-generation mechanical index meter comes standard with our Cyble™ target, and can be upgraded in the field to implement AMR and enable remote reading via different communication technologies.

Key advantages of "c" series devices include:

- » Ready for smart metering
- » Can be retrofitted on site without recalibration of meter
- » Reliability of an electronic switch (no wear or bouncing)
- » Principle proven on the field with 20 years experience
- » Pre-equipment is immune to magnetic tampering

"o" series

Retrofit enabling smart upgrades to existing meter park

The "o" series addresses traditional meters with a mechanical index, already installed in the field, to minimize stranded assets when AMR/AMI is required. LF transmitters - via a Reed switch - and a pulse RF radio module transform pulses into transmittable data.



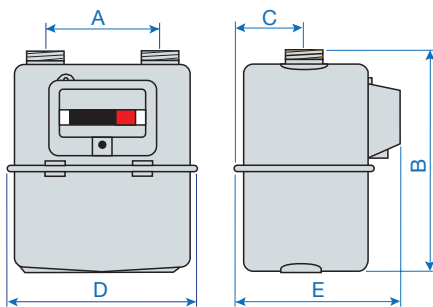
Totalizer characteristics "c" series

Meter Size	G2.5 / G4
European Metrological Approval (04/22/EC - Module H1)	N° LNE-11827
Display	Mechanical index with 8 drums (3 decimals)
Transmission Rate	0.01 m³ / rotation
Transmission System	Cyble™ target
Mechanical Environment	M1
Electronical Environment	E2



Totalizer characteristics "o" series

Meter Size	G2.5 / G4
European Metrological Approval (04/22/EC - Module H1)	N° LNE-11827
Display	Mechanical index with 8 drums (3 decimals)
Pulse Generator	Standard 0.01 m³ / pulse (optional 0.1 m³ / pulse)
Pulse Transmitter	Retrofittable LF system, 12 Vdc max – 10 mA max.
Mechanical Environment	M1
Electronical Environment	E2



Gallus

Dimensions and Weight

Casing Material	A mm	B mm	C mm	D mm	E mm		Weight kg		Connection threads (according to ISO 228-1)
					"c" series	"o" series	"c" series	"o" series	
Steel	100	212 ±2*	67	190	173.7	156	1.55	1.45	DN 20 - G 1"¼
	110	219 ±9*	67	190	173.7	156	1.55	1.45	DN 20 - M24 x 1.5 G ¾" - G 1" G 1 ¼" - G 7/8" - BS ¾"
	130	225	80	240	173.7	156	1.7	1.6	G 1"¼
	152.4 (6")	240	80	240	173.7	156	1.7	1.6	BS 1"
	160	225 ±2*	80	240	173.7	156	1.7	1.6	DN 20 - G 1" G ¾" - G 7/8"
Aluminium	110**	219	77	196	n/a	177	n/a	2.2	DN20 - G 1"¼
	110	230/240*	73.5	227	174	170	1.9	1.8	G 7/8" - G 1" G 1 ¼" - DN20
	130	230/240*	73.5	227	174	170	1.9	1.8	M26 x 1.5
	152.4 (6")	230/240*	73.5	227	174	170	1.9	1.8	G 1 ¼"

* Depending on the connection height

** Meter type available for European markets only & based on EEC approval
Please consult us for any other requests.



Gallus "c" series
Asia version



Gallus "o" series
Asia version



Gallus "c" series
Latin America version

Ordering Information

- » Measuring range
(G2.5 & G4)
- » Maximum working pressure
(0.1-0.5-1.5 bar)
- » Meter interaxis and connection
type
- » Specific marking
(serial number, logo, bar code)
- » Options
(e.g. pressure tap, wired/wireless
communication modules)



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