



# ACD G1.6

## Residential Diaphragm Gas Meter

The ACD G1.6 is Itron's latest generation residential diaphragm meter designed to meet the needs of fast growing gas markets worldwide. It combines accuracy and durability in a highly compact casing. Through our proven know-how in gas measurement, combined with the use of modern engineering and production techniques, Itron has developed this compact, robust and highly accurate meter, ensuring reduced shipping costs, easier handling and simplified installation.

### KEY BENEFITS

- » Ready for remote reading and data management
- » Ultra-compact design
- » Long-term accuracy and reliability
- » Robust, maintenance-free meter
- » High resistance to corrosion

### APPLICATION

The ACD G1.6 residential diaphragm gas meter is typically used for cooking and hot water heating applications requiring accuracy at low to medium gas flow rates. It is designed for use with natural gas, LPG and all non-corrosive gases.

### METROLOGY

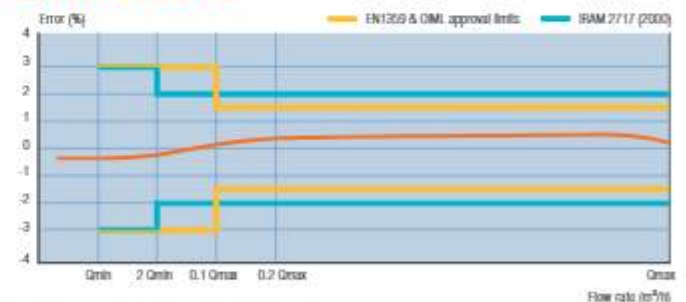
It is MID and EN1359 compliant, and meets many other demanding national metrological standards. During preliminary calibration controls, the meter is 100% tested according to customer or national requirements.

With its ultra-compact robust design, the ACD G1.6 ensures a consistent level of accuracy and stability over time. It is ideally suited to meet the needs of emergent gas markets or customers with consumption up to 2.5 m<sup>3</sup>/h.

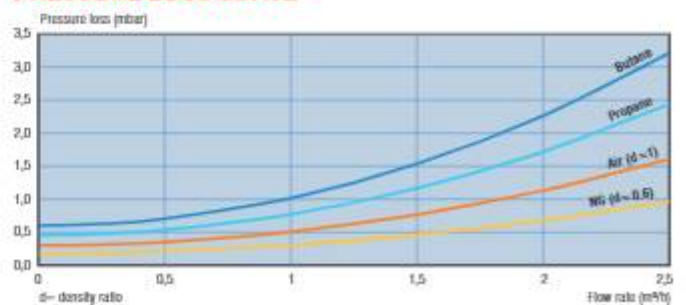
### OPERATING PRINCIPLE

The movement of the diaphragm is due to the pressure difference between the inlet and the outlet of the meter. The 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 gas to fill the empty side. A transmission gear and a mechanical stuffing box transfer the reciprocating motion to the index.

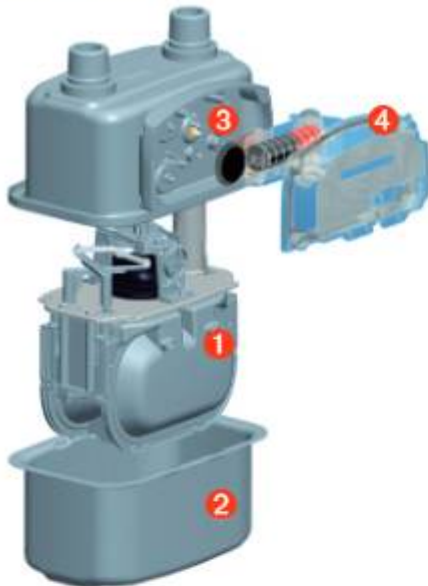
### ACCURACY CURVE



### PRESSURE LOSS CURVE



## CONSTRUCTION



ACD G1.6 Parts



ACD G1.6 Measuring Unit

## QUALITY ASSURANCE

World-class engineering in a ISO 9001 certified design centre in Reims, France.  
World-class manufacturing in a ISO 9001 certified operations unit in Buenos Aires, Argentina, and Chongqing, China.

## The ACD G1.6 meter contains four main parts:

### 1 Measuring Unit

The 0.7 litre measuring unit has high gliding properties to reduce wear on kinematic 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.

All materials have been selected for their superior resistance to chemicals and gas.

A back-run stop prevents the meter from running backwards.

### 2 Casing

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

- » Steel casing.
- » Aluminium casing.

### 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 (standard) or kWh (optional). Depending on the application, different totalizer versions can be ordered:

- » "c" series: mechanical index equipped with a Cyble target for retrofittable AMR communication systems. This Itron standardised meter interface allows the adaptation of different Cyble modules as a communication device.
- » "o" series: mechanical index available with a permanent magnet in an index drum. Can be retrofitted with a Low Frequency pulse transmitter (Reed switch).

## 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	0.7 dm <sup>3</sup>		
Temperature Range	Gas:	-10°C to +40°C	
	Ambient:	-10°C to +40°C	
	Storage:	-30°C to +70°C	
Maximum Operating Pressure	Steel	0.5 bar	(0.1 bar HTL version)
	Aluminium	0.5 bar	(1.0 bar optional)
Measuring Range	G0.6	Q <sub>min</sub>	0.016 m <sup>3</sup> /h
		Q <sub>max</sub>	1 m <sup>3</sup> /h
	G1	Q <sub>min</sub>	0.016 m <sup>3</sup> /h
		Q <sub>max</sub>	1.6 m <sup>3</sup> /h
	G1.6	Q <sub>min</sub>	0.016 m <sup>3</sup> /h
		Q <sub>max</sub>	2.5 m <sup>3</sup> /h (3 m <sup>3</sup> /h optional)
Casing Material	Sheet steel Aluminium alloy		
Accuracy	Class 1.5		
Approval	MID (04/22/EC) module H1 Local approvals like IRAM2717:2000, Portaria 31/1997, GB/T 6968 -1997, NOM-106-SCFI-2000 etc.		
Flow Direction	Left to Right (standard) or Right to Left (optional)		
Connections	Metric standards:	M26 x 1.5 / M30 x 2	
	ISO228 standards:	G7/8" / G¾" / G1"¼	
	NPT standards:	(Upon request)	
	BS746 standards:	1"	
	Others:	W28.8x12	
	Specials connections on request.		
Colour	Grey RAL 7040 for Latin America Grey RAL 7042 for Asia Other colors on request		

## 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

- » 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	G0.6 / G1 / G1.6
European Metrological Approval (04/22/EC)	N° LNE-21197 (Module H1) N° LNE-23714 (Module B)
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	G0.6 / G1 / G1.6
European Metrological Approval (04/22/EC)	N° LNE-21197 (Module H1) N° LNE-23714 (Module B)
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. standard 0.01 m³/pulse.
Mechanical Environment	M1
Electronical Environment	E2

## Dimensions and Weight

Casing Material	Entry	Distribution Channel	A mm	B mm	C mm	D mm	E mm		F	Weight kg	
							"c" series	"o" series		"c" series	"o" series
Steel	Top	Asia	110	196	58	186	147	n/a		1.5	n/a
Aluminium	Top	SA	110	200	55.5	171	n/a	145		n/a	1.48
		SA	130	200	55.5	171	n/a	145		n/a	1.55
		SA	100	198	58	178	145	n/a		1.56	n/a
Aluminium	Side	SA/Asia	110	198	58	178	145	n/a	161	1.59	n/a
		Asia	169	175.5	48	176.5	150.5	n/a		1.5	n/a

SA - South America

Please consult us for any other requests.



ACD G1.6 Top Entry

ACD G1.6 Side Entry



ACD G1.6 steel casing



ACD G1.6 alu casing  
"o" series for Latin America



ACD G1.6 alu casing  
"c" series



ACD G1.6 alu casing  
side entry

#### OPTIONS

- » Outlet test pressure connector
- » Side entry connection
- » Anti reverse flow valve (available for aluminum casing only)

#### Ordering Information

- » Measuring range
- » Maximum working pressure
- » Meter interaxis and connection type
- » Specific marking (serial number, logo, bar code)
- » Options (e.g. wired/wireless communication)



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