

# ACD G10 and G16

## Diaphragm Meters - High Accuracy Commercial Meters

Actaris Gas Diaphragm ACD G10-G16 meters combine accuracy and long life in a very compact casing. Through our proven know-how in gas measurement, combined with the use of modern engineering and production techniques, Actaris Gas has developed this smaller size, highly accurate meter, ensuring reduced shipping costs, and easier handling and simplified installation. Our range of ACD G10-G16 meters are designed for commercial use for gas suppliers and gas utilities worldwide.



### Key Benefits

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

### Application

The ACD diaphragm meters are used for applications requiring high precision and large rangeability at low pressure (below 1 bar gauge).

They are supplied in two versions - a compact and a standard version (single and two pipe). Due to the volumetric principle of the diaphragm meters, its metrology is not influenced by installation conditions.

They are designed for use with natural gas, manufactured gas and other non-corrosive gases.

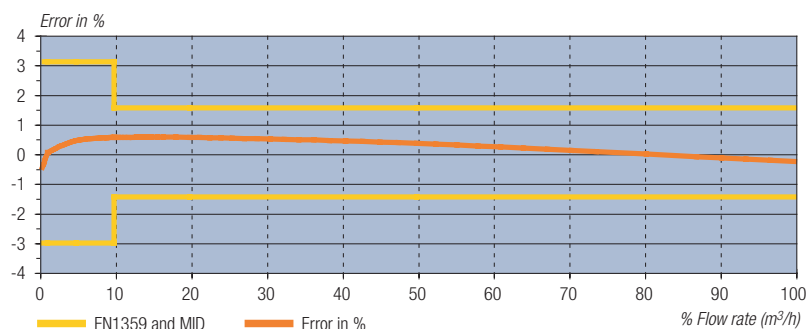
The ACD diaphragm meters are approved for fiscal use.

### Operating Principle

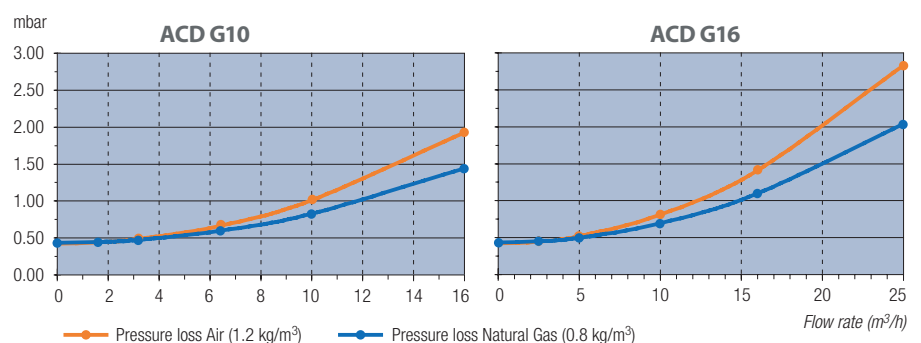
The movement of the diaphragm is caused by the pressure difference between the inlet and the outlet of the meter. The reciprocal filling is controlled by means of two sliding valves.

This oscillating movement is transformed into a rotational one and is mechanically transmitted to the totalizer through a magnetic coupling or a stuffing box.

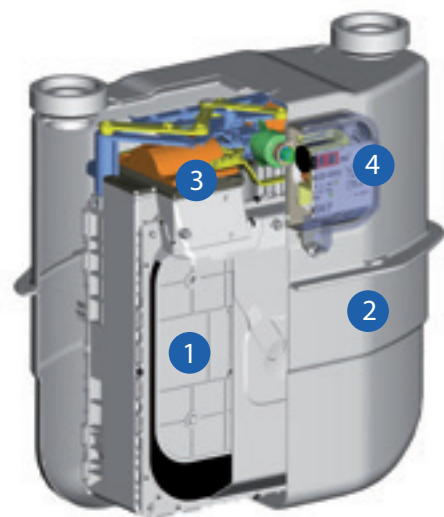
### Typical Error Curve



### Pressure Loss Curve



## Construction



ACD Measuring Unit

### The ACD G10-G16 meters contain four main parts:

- 1 A measuring unit with:
  - » Four measuring chambers.
  - » Two sliding valves.
  - » An outlet pipe.
- 2 A steel casing fitted with one or two connections
- 3 A magnetic coupling or stuffing box transmits the movement of the measuring unit to the totalizer
- 4 A totalizer is available in different versions depending on the application

## Technical Specifications

Gas Type	Natural Gas, air, propane, butane, nitrogen and all non-corrosive gases		
Cyclic Volume	5 dm³		
Temperature Range	Ambient: -25°C to +55°C Gas: -25°C to +55°C Storage: -40°C to +70°C		
Maximum Working Pressure	Compact version: 0.5 bar Standard version: 0.5 bar (1 bar optional)		
Flow Range	G10:	Qmin	0.10 m³/h
		Qmax	16 m³/h
	G16:	Qmin	0.16 m³/h
		Qmax	25 m³/h
Accuracy	Class 1.5		
Approval	MID (04/22/EC) module B, DE-07-MI002-PT013, and EN 1359:2017		
Metrology	In accordance with the EN 1359:2017 and MID Maximum permissible errors are +/-3% from Qmin to 0.1 Qmax and +/-1.5% from 0.1 Qmax to Qmax.		
Starting Flow Rate	Typical value: < 8 dm³/h		
Totalizer	IP54 UV resistant cover Fitted with a reflecting disc on the first drum to facilitate periodical checks Customised name plate: bar code, customer serial number or logo		
Magnetic Coupling Stuffing Box	The meter is equipped as standard with a magnetic coupling As an alternative a stuffing box can be also installed		
Connections	Single pipe or 2 pipe connections From DN32 to DN50 depending on the G-size Other connections are available on request		
Backrun Stop	Prevents the meter from running backwards in case of tampering		
RPF (Resistant Power Factor)	According to PRS11 (< 1.2)		
Materials	Casing:	aluminium-coated sheet steel	
	Measuring unit body:	polyacetal (POM)	
	Diaphragms:	polyester fabric coated with NBR-ECO	
	Distribution valves and grid:	phenol resin	
Colour	Light grey RAL7035		

## Options

Thermowell	The meters can be fitted with a thermowell to allow electronic temperature compensation. A second thermowell for reference measurements is available on special request
High Temperature Loading (HTL)	The meters can be delivered in a HTL version following EN1359 PN0,1
Pressure Tapping	This device allows the gas pressure to be measured at a reference point.



Thermowell fitted onto an ACD standard

# Totalizer Features

With the CO series, Itron offers a complete portfolio to address today's and future energy resource and environmental challenges.

## "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.

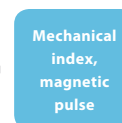
- » Smart reading possible with additional modules
- » Can be retrofitted on site without recalibrating the meter
- » Reliable electronic switch (no wear or bouncing)
- » Proven, tested design backed by 20 years' experience
- » Protection against magnetic tampering



Building Blocks of Itron's CO series



Base Meter



Index



Communication Module

## Totalizer characteristics "c" series

Meter Size	G10 / G16
European Metrological Approval (04/22/EC - Module B)	N° DE-07-MI002-PTB013
Display	Mechanical index with 8 drums (2 decimals)
Transmission Rate	0.1 m³ / rotation
Transmission System	Cyble™ target
Mechanical Environment	M1
Electronical Environment	E2

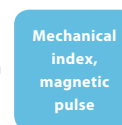
## "o" series

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.



Base Meter



Index



Communication Module

## Totalizer characteristics "o" series

Meter Size	G10 / G16
European Metrological Approval (04/22/EC - Module B)	N° DE-07-MI002-PTB013
Display	Mechanical index with 8 drums (2 decimals)
Pulse Generator	Standard 0.1 m³ / pulse (optional 1 m³ / pulse)
Pulse Transmitter	Retrofittable LF system, 180 Vdc max – 50 mA max standard 0.1 m³/pulse. Different versions: with 1m cable, terminal block or binder plug (Double LF pulse transmitter)
Mechanical Environment	M1
Electronical Environment	E2



"o" series Totaliser with LF "cable"

## Dimensions and Weight

Model	G	Qmax	Qmin	Cyclic Volume	DN	Threads	Pmax	Pmax HTL	Pressure Loss (Air)	A	B	C	D	E mm	Weight kg
	Size	m <sup>3</sup> /h	m <sup>3</sup> /h	dm <sup>3</sup>	mm	Standard	bar	bar	mbar	mm	mm	mm	mm	"c & o" series	"c & o" series

### ACD Compact: 2 pipe version

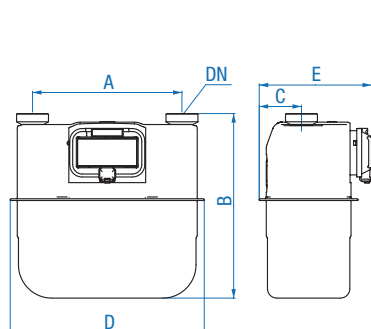
1	G10	16	0.10	5	32	G13/4" A ISO228-1	0.5	0.1	1.9	250	310	71	325	189	4
2	G10	16	0.10	5	32	MFIT001	0.5	0.1	1.9	250	310	71	325	189	4
3	G10	16	0.10	5	40	G2" A ISO228-1	0.5	0.1	1.9	250	310	71	325	189	4
4	G16	25	0.16	5	40	G2" A ISO228-1	0.5	0.1	2.9	250	310	71	325	189	4

### ACD Standard: 2 pipe version

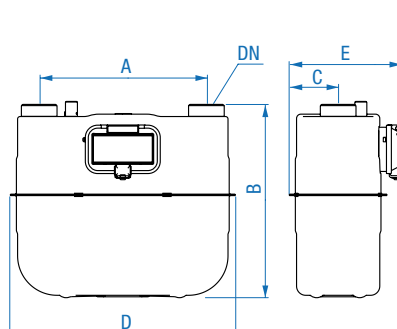
10	G10	16	0.10	5	32	G13/4" A ISO228-1	0.5	0.1	1.9	280	328	85	382	191	4.9
11	G10	16	0.10	5	40	G2" A ISO228-1	0.5	0.1	1.6	280	324	85	382	191	4.9
12	G10	16	0.10	5	40	G2" A ISO228-1	0.5	0.1	1.6	290	349	85	382	191	4.9
13	G10	16	0.10	5	40	G2" A ISO228-1	0.5	0.1	1.6	300	353	85	382	191	4.9
14	G16	25	0.16	5	32	G13/4" A ISO228-1	0.5	0.1	2.9	280	328	85	382	191	4.9
15	G16	25	0.16	5	40	G2" A ISO228-1	0.5	0.1	2.7	280	324	85	382	191	4.9
16	G16	25	0.16	5	40	G11/2" BS Withworth	0.5	0.1	2.7	280	328	85	382	191	4.9
17	G16	25	0.16	5	40	G2" A ISO228-1	0.5	0.1	2.7	300	353	85	382	191	4.9
18	G16	25	0.16	5	50	MFIT001	0.5	0.1	2.7	280	327	85	382	191	4.9
19	G16	25	0.16	5	50	Flange ISO PN10	0.5	0.1	2.7	280	350	85	382	191	10.6
20	G16	25	0.16	5	40	2" BS746	0.5	0.1	2.7	280	347	85	382	191	4.9

### ACD Standard: Single pipe version

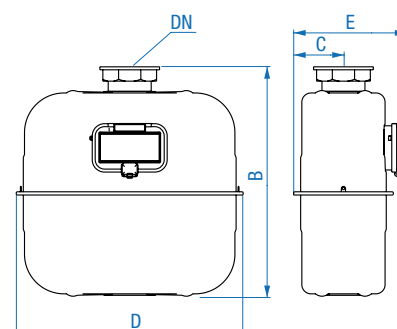
30	G10	16	0.10	5	40	G23/4" ISO228-1	0.5	0.1	1.9	-	370	85	382	191	5.4
31	G16	25	0.16	5	40	G23/4" ISO228-1	0.5	0.1	2.9	-	370	85	382	191	5.4



ACD Compact: Two Pipe version



ACD Standard: Two Pipe version



ACD Standard: Single Pipe version

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