Itron

Knowledge to Shape Your Future

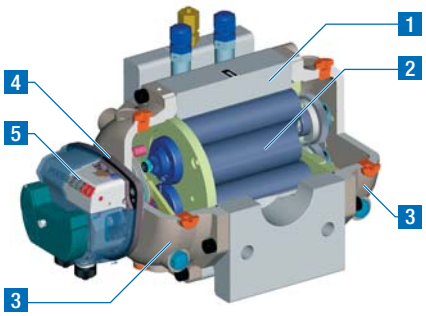
Rotary Meter Delta®

Delta meters are volumetric meters. The flow of gas moves the pistons and each rotation traps and transfers a specific volume of gas.
The movement is mechanically transmitted to the totaliser through the magnetic coupling.

Description

A Delta meter is made of 5 main parts:

- A measuring chamber that is limited by the body and the 2 base plates (1)
- 2 pistons, which are synchronised by 2 gears and which rotate in opposite directions (2)
- 2 lubrificant covers (3)
- A magnetic coupling to transmit the movement of the pistons to the totaliser (4)
- A totaliser to register the measured gas (5)

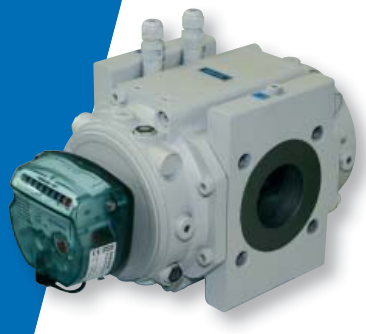


Applications

Delta meters are designed to measure natural gas and various filtered, and non-corrosive gases. They are used when very accurate measurement is required, when the gas flow can be low or irregular. Due to the volumetric principle of the Delta meter, its metrology is not influenced by installation conditions. Consequently, it can be used to build very compact stations without installing a straight pipe inlet before the meter.
Delta meters are approved for fiscal use.

Features

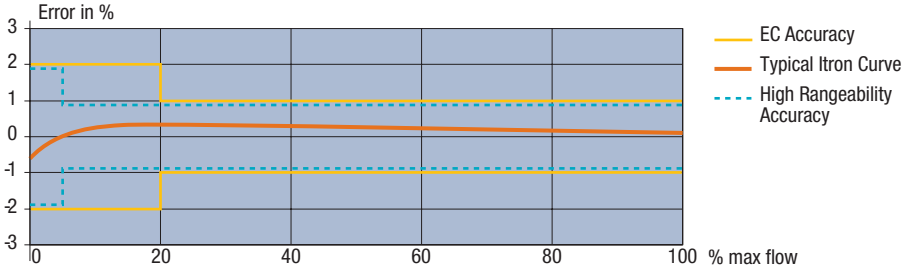
Flow rate	from 0.4 m^3/h to 1000 m^3/h, G10 to G650
Nominal diameters	DN 40 to DN 150 (1"1/2 to 6")
Maximum working pressure	up to 100 bar depending on the body material and flanging
Body materials	aluminium, ductile iron or steel. Compliant with the Pressure Equipment Directive 97/23/EC
Temperature range	PED: -30° C to +60° C MID: -25° C to +55° C Storage temperature: -40° C to +70° C
Metrology	In accordance with the EC and OIML, large rangeability up to 1:200, depending on the G-size Approvals EC (PTB): 1.33-3271.3-ROM-E11. Large rangeability (PTB): 1.33-3271.3-ROM-N05 Compliant with the Measuring Instrument Directive 04/22/EC
Intrinsic safety approval	L.C.I.E. 06 ATEX 6031 X - Compliant with the Directive 94/9/EC.



- *Excellent metrological stability attested by customers over the years*
- *No influence of installation conditions nor stop-and-go flow rate on the metrology*
- *MID approved*
- *Optimised pressure loss for low pressure network*
- *Available in aluminium, ductile iron, or steel, for all applications*
- *Equipped as standard with the Cyble target*

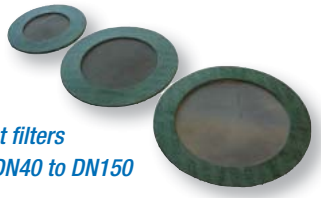
In accordance with the EC regulation, the maximum permissible error is +/-2% from Qmin to 0.2 Qmax, and +/-1% from 0.2 Qmax to Qmax. The WME (Weighted Measured Error) is less than 0.4%. Typical Itron accuracy is +/-1% from Qmin to 0.2 Qmax, +/-0.5% from 0.2 Qmax to Qmax.

Typical calibration curve





> *Delta DN80 G100 in aluminium equipped with the Cyble sensor*



> *Gasket filters from DN40 to DN150*



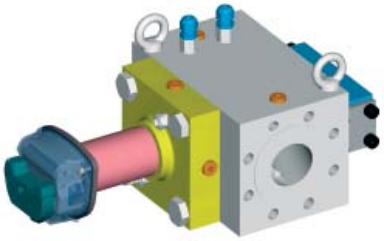
> *Delta DN80 G100 with Corus PTZ*



> *Thermowell fitted with sealing holes*



> *Mechanical drive according to EN 12480*



> *Delta DN50 G65 S1-Flow equipped with extension for the totaliser*

Totaliser:

- 9-digit index to register a larger volume
- 45° orientation for an easy reading
- Free-rotating totaliser
- Equipped as standard with the cyble target: it allows the installation of the cyble sensor at any time.
- Equipped with 1 built-in silicagel cartridge; as an option, equipped with an external cartridge to enable easy maintenance even in extreme conditions.
- Fitted with a reflecting disc on the first drum.
- Integrated optical disc to facilitate the periodic calibration of the meter.
- Customised name plate (logo, bar-code, customer serial number…).
- IP67 protection
- UV resistant
- Unit: m^3



> *Universal totaliser fitted as standard with the Cyble target*

Transmitters:

- Double Low Frequency fitted as standard on the whole range.
- Anti-tampering is supplied as standard.
- Medium Frequency is supplied as an option on the DN50 to DN150.
- High Frequency is supplied as an option on the whole range.
- Mechanical drive according to EN 12480 is supplied as an option for the DN50 to DN150.

Accessories / Options

> 100 µm flat *gasket-filter* to fit between flanges DN40 to DN150.

> *External silicagel cartridge:*
accessory for maintenance on the installed external silicagel cartridge for extreme conditions.

> *Flange* DN50 PN10/16-ANSI125, can be delivered to adapt a 2040 meter (thread connection) to flange connections DN50. This gives a flange-to-flange distance of 171 mm.

> *Pete´s plug®:*
ideal device for filling lubricant in the cover of the meter while equipment is in service. It must be fitted instead of the tap plug of the cover.
Plugged on the pressure tapping, it can be used to measure the pressure and the temperature of the measured gas.
Connection size: 1/4" NPT or 1/4" BSP.
Maximum pressure of gas: 20 bar.

> Bracket for mounting a *volume converter:*
this device permits the Itron Corus PTZ volume converter to be adapted directly onto the meter, or at the most convenient place to the meter to enable the converter index to be easily read.

> *Thermowells:*
these threaded 1/4" NPT thermowells, can be plugged onto the meter. They can be retrofitted on to the standard version (plugged onto the existing pressure tapping), or they can be installed on the versions equipped with extra-tapping.
The internal diameter of the thermowell is 7 mm; it enables mounting of most standard temperature probes.

> *Extension for the totaliser:*
this option allows the possibility to increase the distance between the body of the meter and the index, to facilitate the reading when the meter is covered with ice due to measurement at low temperatures.
It is available for the DN50 to DN150.

> *By - pass:*
It can be installed as an option on the steel version DN50. It enables the gas to flow even if the meter is blocked for any reason.

> *Cyble sensor:*
it can be delivered mounted onto the meter or installed afterwards at any time.
The Cyble sensor is a bounce-free transmitter. It allows also the counting of eventual back flows.

Delta 2040 - Aluminium

Features

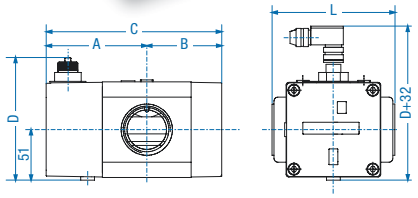
Flow rate	0.4 m³/h to 65 m³/h
G size	G10, G16, G25 and G40
Rangeability	1:20 to 1:100
Nominal diameter	40 (1"1/2)
Flanging	thread BSP or NPT
Pressure range	12 bar (Option: 16 bar)

Main characteristics

- Very compact meter, ideal for mounting in an extremely small cabinet.
- Only the front cover has to be filled with lubricant.
- Totaliser in gas, no magnetic coupling - integral tightness.
- Horizontal mounting, inlet left or inlet right or vertical mounting, inlet top or inlet bottom (to be specified when ordering).
- Thermowell: 1 supplied as option
- Double LF connected on Binder 6 pins. For hydrogen version, LF is not available.
- HF is supplied as an option, connected on the same plug as the LF.
- Flange DN50 PN10/16-ANSI125 can be delivered to adapt a 2040 meter (thread connection) to flanges connections DN50. This gives a flange-to-flange distance of 171 mm.

> Delta DN40 in aluminium





Aluminium Range DN40:

G size	Qmax (m³/h)	DN	Flange to flange distance Dim.: L	Rangeability	Starting flow (dm³/h)	Flow rate at: Error ≤ -10% Typical value (dm³/h)	Pressure loss Δpr(1) (mbar)	1 Imp LF (m³/Imp)	1 Imp HF (dm³/Imp) (Std. Gears 20/38)	Freq HF at Qmax (Hz)	A	B	C	D	Vc (dm³)	Weight (Kg)
G10	16	40	121	20 to 30	30	100	0.34	0.01	0.0227	195	93	66	159	96	0.14	2.7
G16	25	40	121	20 to 50	30	100	0.83	0.01	0.0227	305	93	66	159	96	0.14	2.7
G25	40	40	121	20 to 100	50	150	1.38	0.01	0.0324	343	103	86	189	96	0.19	3.4
G40	65	40	121	20 to 100	50	200	3.32	0.01	0.0324	558	103	86	189	96	0.19	3.4

(1)Δpr: Pressure loss (mbar) with ρ=0.83Kg/m³ and at Qmax

Delta 2050/2080/2100 - Aluminium

Features

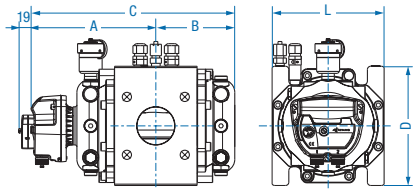
Flow rate	0.4 m³/h to 400 m³/h
G size	G16, G25, G40, G65, G100, G160 and G250
Rangeability	1:20 to 1:200
Nominal diameter	50, 80 and 100 (2", 3" and 4")
Flanging	PN 10/16, PN20 and ANSI125-ANSI150
Pressure range	16 bar (Option: 19.3 bar)

Main characteristics

- Index can be oriented as required, magnetic coupling.
- Both front and rear covers must be filled with a lubricant.
- Multi-position meters, the flow orientation does not need to be specified when ordering the meter.
- Thermowells: supplied as an option, 2 tappings 1/4" NPT allow an easy installation of thermowells.
- Double Low Frequency transmitter connected on a Binder 6 pins plug. Anti-tampering is supplied as a standard.
- MF is supplied as an option.
- HF is supplied as an option, connected on a 3 pin binder.
- A G100 DN50 is available to allow the possibility of increasing the station capacity; the use of the same flanging as the G65 DN50 does not require modification of the existing installation.
- Equipped as standard with the Cyble target.

> Delta DN100 G250 in aluminium equipped with HF and Cyble sensor





Aluminium Range DN50/DN80/DN100:

G size	Qmax (m³/h)	DN	Flange to flange distance Dim.: L	Rangeability	Starting flow (dm³/h)	Flow rate at: Error ≤ -10% Typical value (dm³/h)	Pressure loss Δpr(1) (mbar)	1 Imp LF & Cyble (m³/Imp)	1 Imp MF (m³/Imp)	Freq MF at Qmax (Hz)	1 Imp HF (dm³/Imp) (Std. Gears 32/40)	Freq HF at Qmax (Hz)	A	B	C	D	Vc (dm³)	Weight (Kg)
G16	25	50	171	20 to 50	50	150	0.13	0.1	2.72	2.55	0.0585	119	190	121	311	182	0.59	11
G25	40	50	171	20 to 100	50	150	0.33	0.1	2.72	4.08	0.0585	190	190	121	311	182	0.59	11
G40	65	50	171	20 to 160	50	150	0.88	0.1	2.72	6.64	0.0585	309	190	121	311	182	0.59	11
G65	100	50	171	20 to 200	50	150	2.08	0.1	2.72	10.2	0.0585	475	190	121	311	182	0.59	11
	100	80	171	20 to 200	70	250	0.69	0.1	4.36	6.36	0.0939	296	228	159	387	182	0.94	15
G100	160	50	171	20 to 200	70	250	3.25	0.1	4.36	10.2	0.0939	473	228	159	387	182	0.94	15
	160	80	171	20 to 200	70	250	1.73	0.1	4.36	10.2	0.0939	473	228	159	387	182	0.94	15
G160	250	80	171	20 to 200	80	250	3.15	0.1	5.28	13.2	0.116	599	252	183	435	182	1.16	17
	250	80	241	20 to 160	150	500	2.73	0.1	8.26	8.41	0.178	390	230	179	409	235	1.78	29
	300	100	241	20 to 160	175	550	2.1	1	21.8	3.82	0.241	346	265	213	478	235	2.41	34
G250	400	100	241	20 to 160	200	600	2.63	1	32.6	3.40	0.365	304	333	282	615	235	3.65	43

(1)Δpr: Pressure loss (mbar) with ρ=0.83Kg/m³ and at Qmax

Delta 2050/2080/2100 & S3-Flow - Ductile iron

EN-GJS-400-18LT

Features

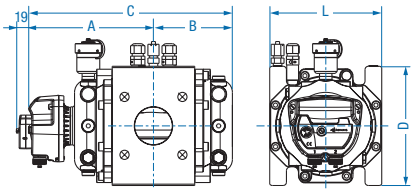
Flow rate	0.4 m³/h to 1000 m³/h
G size	G16, G25, G40, G65, G100, G160, G250, G400 and G650
Rangeability	1:20 to 1:200
Nominal diameter	50, 80, 100 and 150 (2", 3", 4" and 6")
Flanging	PN 10/16, PN20 and ANSI150
Pressure range	16 bar (Option: 19.3 bar)

Main characteristics

- Index can be oriented as required, magnetic coupling.
- Both front and rear covers must be filled with a lubricant.
- Multi-position meters, the flow orientation does not need to be specified when ordering the meter.
- Thermowells: supplied as an option, 2 tappings 1/4" NPT allow an easy installation of thermowells.
- Double Low Frequency transmitter connected on a Binder 6 pins plug. Anti-tampering is supplied as a standard.
- MF is supplied as an option.
- HF is supplied as an option (up to 3 HF possible for the S3-Flow!).
- High Temperature Loading: fire resistant PN5 is supplied as an option.
- Equipped as standard with the Cyble target.

> Delta DN80 G100 3xDN in Ductile iron equipped with Cyble sensor





Ductile iron Range DN50/80/100/150:

G size	Qmax (m³/h)	DN	Flange to flange distance Dim.: L	Rangeability	Starting flow (dm³/h)	Flow rate at: Error ≡ -10% Typical value (dm³/h)	Pressure loss Δpr(1) (mbar)	1 Imp LF & Cyble (m³/Imp)	1 Imp MF (m³/Imp)	Freq MF at Qmax (Hz)	1 Imp HF (dm³/Imp) (Std. Gears 32/40)	Freq HF at Qmax (Hz)	A	B	C	D	Vc (dm³)	Weight (Kg)
G16	25	50	150	20 to 50	70	250	0.1	0.1	4.36	1.59	0.0939	74	228	150	378	174	0.94	25
	25	50	171	20 to 50	50	150	0.13	0.1	2.72	2.55	0.0585	119	190	112	302	174	0.59	19
G25	40	50	150	20 to 100	70	250	0.21	0.1	4.36	2.55	0.0939	118	228	150	378	174	0.94	25
	40	50	171	20 to 100	50	150	0.33	0.1	2.72	4.08	0.0585	190	190	112	302	174	0.59	19
G40	65	50	150	20 to 160	70	250	0.55	0.1	4.36	4.14	0.0939	192	228	150	378	174	0.94	25
	65	50	171	20 to 160	50	150	0.88	0.1	2.72	6.64	0.0585	309	190	112	302	174	0.59	19
G65	100	50	150	20 to 200	70	250	1.3	0.1	4.36	6.36	0.0939	296	228	150	378	174	0.94	25
	100	50	171	20 to 200	50	150	2.08	0.1	2.72	10.2	0.0585	475	190	112	302	174	0.59	19
	100	80	171	20 to 200	70	250	0.69	0.1	4.36	6.36	0.0939	296	228	150	378	194	0.94	25
	100	80	230	20 to 80	80	250	0.52	0.1	5.28	5.26	0.116	239	252	174	426	225	1.16	30
	100	80	240	20 to 200	70	250	0.69	0.1	4.36	6.36	0.0939	296	228	150	378	194	0.94	27
G100	160	50	150	20 to 200	70	250	3.25	0.1	4.36	10.2	0.0939	473	228	150	378	194	0.94	25
	160	80	171	20 to 200	70	250	1.73	0.1	4.36	10.2	0.0939	473	228	150	378	194	0.94	25
	160	80	230	20 to 130	80	250	1.32	0.1	5.28	8.42	0.116	383	252	174	426	225	1.16	30
	160	80	240	20 to 200	70	250	1.73	0.1	4.36	10.2	0.0939	473	228	150	378	194	0.94	27
	160	80	310	20 to 100	150	500	1.15	0.1	8.26	5.38	0.178	250	230	179	409	235	1.78	45
	160	100	241	20 to 130	80	250	0.9	0.1	5.28	8.42	0.116	383	252	174	426	225	1.16	30
G160	250	80	230	20 to 200	80	250	3.15	0.1	5.28	13.2	0.116	599	252	174	426	225	1.16	30
	250	80	241	20 to 160	150	500	2.73	0.1	8.26	8.41	0.178	390	230	179	409	235	1.78	41
	250	80	310	20 to 160	150	500	2.73	0.1	8.26	8.41	0.178	390	230	179	409	235	1.78	45
	250	100	230	20 to 200	80	250	2.2	0.1	5.28	13.2	0.116	599	252	174	426	225	1.16	30
	250	100	241	20 to 200	80	250	2.2	0.1	5.28	13.2	0.116	599	252	174	426	225	1.16	30
G250	400	100	241	20 to 160	200	600	2.63	1	32.6	3.40	0.365	304	333	282	615	235	3.65	56
	400	100	400	20 to 160	200	600	2.63	1	32.6	3.40	0.365	304	333	282	615	235	3.65	61
	400	150(2)	450	20 to 100	1000	2500	0.77	1	48.0	2.31	0.595	187	343	267	610	365	5.4	120
G400	650	150(2)	450	20 to 160	1000	2500	2.03	1	48.0	3.76	0.595	303	343	267	610	365	5.4	120
G650	1000	150(2)	450	20 to 200	1000	2500	4.8	1	48.0	5.79	0.595	467	343	267	610	365	5.4	120

(1)Δpr: Pressure loss (mbar) with ρ=0.83Kg/m³ and at Qmax *(2)S3-Flow meter*

Delta S1-Flow & 2080 - Steel

Features

Flow rate	0.4 m³/h to 250 m³/h
G size	G16, G25, G40, G65, G100 and G160
Rangeability	1:20 to 1:200
Nominal diameter	50 and 80 (2" and 3")
Flanging	PN 10/16 to PN110, ANSI 150 to ANSI600
Pressure range	101.2 bar

Main characteristics

- Index can be oriented as required, magnetic coupling.
- Double Low Frequency transmitter connected on a 6 pin Binder plug. Anti-tampering is supplied as a standard.

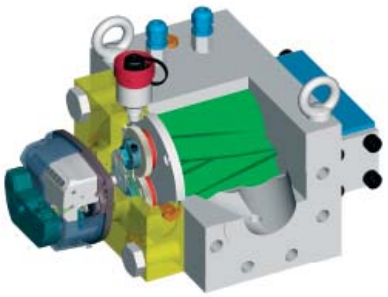
DN50

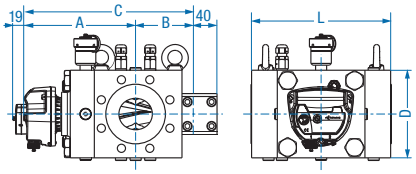
- G16 to G100
- S-Flow technology
- Only the front cover must be filled with a lubricant.
- Multi-position meter
- MF is supplied as an option.
- 2 thermowells are supplied as option.
- A by-pass can be installed as an option.
  It enables the gas to flow even if the meter is blocked for any reason.
  An alarm can be remotely sent requesting for maintenance.
- Up to 2 HF are supplied as option.

DN80

- G100 to G160
- Conventional principle
- Both front and rear covers must be filled with a lubricant.
- Horizontal inlet left-vertical inlet top or horizontal inlet right-vertical inlet bottom (to be specified when ordering).
- 1 HF is supplied as an option.

> Delta DN50 G65 S1 Flow in Steel





Steel Range DN50/80:

G size	Qmax (m³/h)	DN	Flange to flange distance Dim.: L	Rangeability	Starting flow (dm³/h)	Flow rate at: Error ≤ -10% Typical value (dm³/h)	Pressure loss Δpr(1) (mbar)	1 Imp LF & Cyble (m³/Imp)	1 Imp MF (m³/Imp)	Freq MF at Qmax (Hz)	1 Imp HF (dm³/Imp) (Std. Gears 32/40)	Freq HF at Qmax (Hz)	A	B	C	D	Vc (dm³)	Weight (Kg)
G16	25	50(2)	240	20 to 30	50	150	0.09	0.1	2.31	3.01	0.0496	140	190	100	290	150	0.49	34
G25	40	50(2)	240	20 to 65	50	150	0.23	0.1	2.31	4.81	0.0496	224	190	100	290	150	0.49	34
G40	65	50(2)	240	20 to 100	50	150	0.6	0.1	2.31	7.82	0.0496	364	190	100	290	150	0.49	34
G65	100	50(2)	240	20 to 160	50	150	1.42	0.1	2.31	12.0	0.0496	560	190	100	290	150	0.49	34
G100	160	50(2)	240	20 to 200	50	150	3.64	0.1	2.31	19.3	0.0496	896	190	100	290	150	0.49	34
	160	80	320	20 to 30	150	500	1.15	1	8.26	5.38	0.178	250	231	185	416	275	1.78	84
G160	250	80	320	20 to 50	150	500	2.73	1	8.26	8.41	0.178	390	231	185	416	275	1.78	84

(1)Δpr: Pressure loss (mbar) with ρ=0.83Kg/m³ and at Qmax *(2)S1-Flow meter*

A) Transmitter characteristics

Intrinsic safety approval: L.C.I.E. 06 ATEX 6031 X
Intrinsic safety level: ⟨Ex⟩ II 1/2 G EEx ia IIC T5 c T6

Low Frequency pulse transmitter (LF):
The LF transmitter consists of 2 dry Reed switches, normally open, and controlled by a magnet situated in the first drum of the totaliser. The LF connections are without polarity.

Characteristics of LF transmitter:

> Hermetically sealed contacts
> Maximum terminal voltage: 30 Volt and maximum current according to EN50020.
> Maximum temperature: +60°C
> Minimum pulse time: 0.4 sec
> Cyble sensor: It conforms to CENELEC standard EN50020 with:
- Ui ≤ 14.3 Volt
- Ii ≤ 50 mA

Inductive transmitters (MF and HF):
They are inductive sensors actuated by a toothed disc. The frequency is proportional to the instantaneous flow. The polarity of the connections is indicated on the name plate of the meter.

Characteristics of LF transmitter:

> Proximity detector conform to EN50227 (and NAMUR) standards
> They conform to CENELEC standards (EN50014 and 50020) with:
- Ui ≤ 15 Volt
- Ii ≤ 50 mA
- Pi ≤ 120 mW
> Maximum temperature: + 60°C

Anti-tampering transmitter (AT):
This consists of one dry Reed switch, normally closed. Attempts at magnetic tampering will open the contact. The electrical characteristics are the same as those for the LF transmitter.

> *Delta DN150 G650 S3-Flow in Ductile iron*



B) Pressure loss of the Delta meters

Calculation of pressure loss: $\Delta p = \Delta p_r \times \frac{\rho n}{0.83} \times (Pb+1) \times \left[\frac{q}{Qmax}\right]^2 \times \left[\frac{273}{(273+Tb)}\right]$

> Where:

Δp: Pressure loss in the calculated conditions
Δpr: Pressure loss in the reference conditions
ρn: Gas density (kg/m³) at 0° C and 1013 mbar
Pb: Operating pressure (Bar gauge)
q: Flow rate (m³/h)
Qmax: Maximum flow rate (m³/h)
Tb: Gas temperature (°C).

C) Installation

Each meter is delivered with binder plugs for the installed transmitters and oil for the lubrication.
Please refer to the instruction manual supplied with the meter.
The advice given therein will ensure optimal use of the Delta meter over the years.

About Itron Inc.

Itron Inc. is a leading technology provider to the global energy and water industries. Our company is the world's leading provider of metering, data collection and utility software solutions, with nearly 8,000 utilities worldwide relying on our technology to optimize the delivery and use of energy and water. Our products include electricity, gas and water meters, data collection and communication systems, including automated meter reading (AMR) and advanced metering infrastructure (AMI); meter data management and related software applications; as well as project management, installation, and consulting services. To know more, start here: www.itron.com

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RF1 G6

Residential Diaphragm Gas Meter

Basic Features

- Compact size
- 2 dm³ cyclic volume
- Range G1.6, G2.5, G4 & G6
- EN1359 & O.I.M.L compliance

Design

- Robust construction
- Environment-friendly
- Long-term accuracy & safety
- Ready for remote reading & data management

Quality

- World-class, ISO9001 certified, European Engineering and Manufacturing



RF1 G6 Double-pipe 250 steel version

The RF1 G6 is a compact residential gas meter designed to measure accurately volumes of natural gas, LPG and all non-corrosive gases.

Application

The RF1 G6 long-term metrology stability offers the solution of choice for very high residential consumption or gas repartition applications.

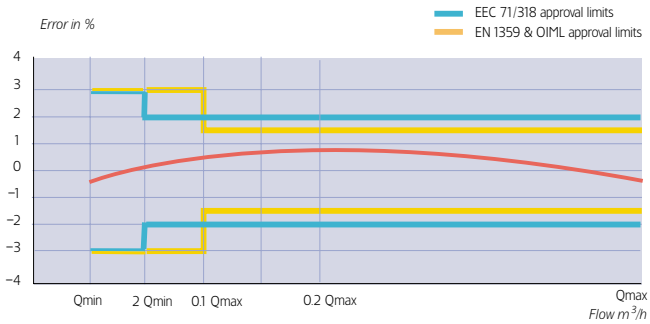
Metrology

The RF1 G6 gas meter meets strict metrological requirements such as O.I.M.L and EN 1359 as well as DIN, PTB, DVGW and KVGN.

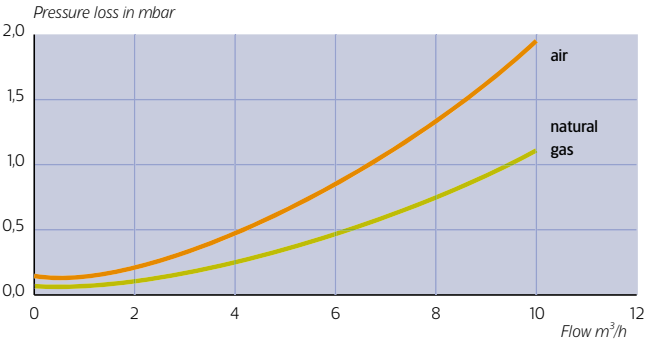
The RF1 G6 is a combination of proven gas meter concepts:

- Reciprocating plastic diaphragm
- Crank-controlled and oscillating slides
- Robust and tight connections between components
- Use of precise, light-weight and noise-free plastic parts

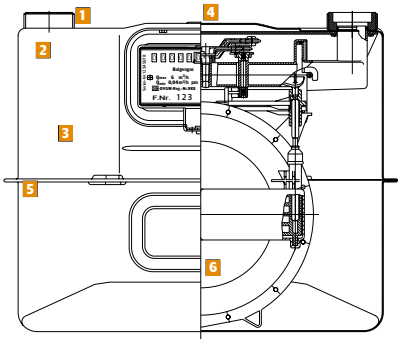
During the preliminary test controls on the sonic nozzle test benches, all meters are tested at Qmin, 0.2 Qmax and Qmax.

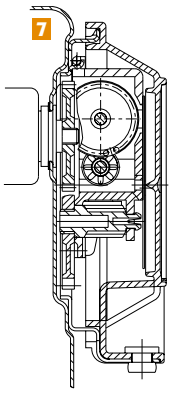


Accuracy Curve



Pressure Loss







▶ Measuring unit

Operating Principle

The RF1 G6 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. The gas enters one side of the diaphragm pan while on the other side it comes out through a separate port on the valve. When one side is full, the sliding valve moves on to the next position, allowing the gas to fill the empty side. A transmission gear and a magnetic coupling or stuffing box transfer the reciprocating motion to the mechanical retrofittable index.

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

Construction

▶ **1 - Connections**
- Moulded connections ensure optimum resistance to corrosion
- Material protected against corrosion (500h salt spray test)
- Available in different versions (DIN 3376).

▶ **2 - Backflow Flap (Option and two-nozzle only)**
- Available with and without backflow flap
- Protects against the backflow of gas.

▶ **3 - Body**
- Made from aluminium-coated sheet steel, i.e. protected against corrosion
- Additional coating with solvent-free paint Integrated crimp
- Alternatively in sturdy aluminium casing for High Pressure application.

▶ **4 - Backrun Stop**
Prevents the meter from running backwards.

▶ **5 - Crimped Body**



- Crimped version for PN 0.1 – PN 0.2 – PN 0.5.
- No water residues due to integrated crimp
- Safe, DVGW-approved sealing material.

▶ **6 - Plastic Measuring Unit**
- Two-litre measuring unit
- Good recyclability due to the use of the same classes of plastic (where possible)
- Resistance to chemicals and gas
- High gliding properties to protect against the wear of moving parts
- Optimum long-term functioning.

▶ **7 - DIN 3374 Counter**
Protected against fraud:
- by a stable, sheet metal, retention plate
- by its labyrinth shape
- tampering is indicated by markings on the type plate.

- Dirt Resistant
Resistant to fine dust IP 54.

- Legible Counter
- Broad reading angles
- Customer-specific, type plates available, e.g. bar code.

- Pulse Generator (Option)
- Available with a permanent magnet in counter roller
- Can be refitted with a pulse transmitter (read switch).

Quality Assurance

The gas meter - produced in accordance with DIN EN ISO 9001/BS 5750 requirements - guarantees quality, accuracy and long-term stability.

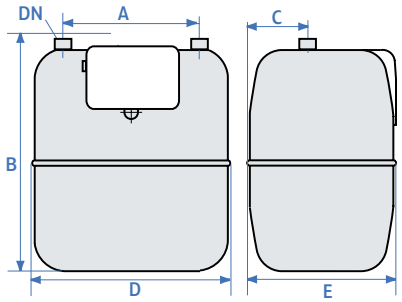
Technical Characteristics

Gas Type		Natural Gas, air, propane, butane, nitrogen and all non-corrosive gases
Cyclic Volume		2 dm^3
Operating Temperature		- 10°C to + 50°C (Option – 20°C to + 50°C)
Storage Temperature		- 40°C to + 70°C
Maximum Operating Pressure		0.5 bar for steel version
		1.5 bar for aluminium version (HP)
Measuring Range		Qmin 0.06 m^3/h
		Qmax 10 m^3/h
	G1.6	Qmin 0.016 m^3/h
		Qmax 2.5 m^3/h
	G2.5	Qmin 0.025 m^3/h
		Qmax 4 m^3/h
	G4	Qmin 0.04m^3/h
		Qmax 6 m^3/H
Pulse Generator		Standard 0.1 m^3 / pulse
		Optional 0.01 m^3/ pulse
Pulse Transmitter		Retrofittable LF-system, 12 Vdc max – 10 mA max. standard 0.1 m^3/pulse
		Different versions: with 1m cable, binder plug or connecting block
Casing Material		Steel or aluminium
Connections Threads		ISO 228-1 standards:
		G 1" 1/4 A;
		G 1" 1/2 A;
		G 1" 3/4" A;
		GM 1";
		GM 3/4";
		Others on request
Colour		RAL 7035 for steel
		RAL 9010 for aluminium

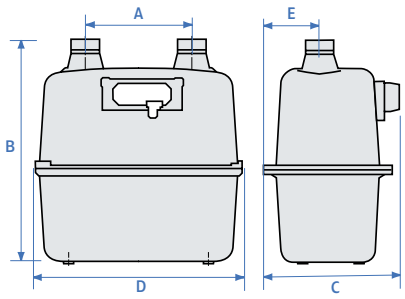
Dimensions

Connection	DN	20	25	25*	25*	25
A (Spacing)	mm	220 250	210 250	250	152	single-pipe
B	mm	269	263	276	320	274
C	mm	71	71	77	80	71
D	mm	325	325	316	297	233
E	mm	177	177	211	197	177
Weight	kg	2.7	2.7	4.2	4	2.5

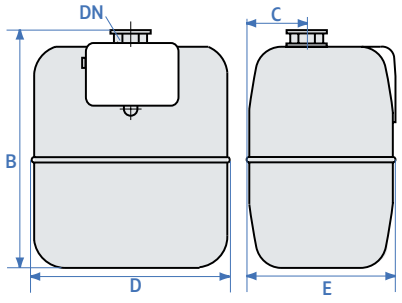
* Version HP (aluminium)



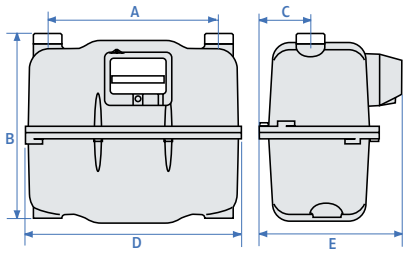
▶ Two-pipe steel version



▶ Two- pipe 6" HP aluminium version



▶ Single-pipe steel version



▶ Two-pipe 250 HP aluminium version



▶ **RF1 G6 SIngle-pipe steel**



▶ **RF1 G6 Double-pipe 250 aluminium version**

Versions and Options

- ▶ Aluminium HP version
- ▶ Retrofittable pulse transmitter
- ▶ Mechanical temperature corrector (-5°C +35°C standard, other temperatures on request)*.
- ▶ Electronical temperature corrector (-10°C + 40°C)*

* The compensated volume on the indicator refers to a base temperature of 15°C

Environmental Aspects

Actaris is increasingly concerned with environmental issues. In the development of the RF1 G6, environmental aspects have been taken into account:

- use of an environment-friendly coating process (water-based paint)
- lead-free sheet metal
- weight reduction
- low-noise
- plastic parts of the same class as far as possible (recyclable, all plastic parts are marked accordingly)

Ordering Information

- Measuring Range (G1.6, G2.5, G4, G6)
- Maximum working pressure (0.1 bar HTL), (0.5-1.5bar)
- Meter interaxis and connection type
- Specific marking (serial number, logo, bar code)
- Versions and Options

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