

hidroconta
metering technology

WHEN WATER COUNTS



water meter
fenix

Volumetric
technology

MID
approval

Starting flow
form 1 l/h

Magnetic
transmission



Convertible into a
Smart meter

Brass or composite
manufactured

High accuracy
R250/ R315 / R400

Rotating display
360°

Installation
UO/DO

Hydrodynamic design

Fenix volumetric water meters base their operating principle on counting the number of fillings and emptyings of a chamber of known volume.

MID approval

Hidroconta's Fenix meter exceeds the metrological requirements based on Directive 2014/32/EU so they are normally used for the totalisation and control of domestic water consumption. At Hidroconta we carry out strict tests on the meters to ensure their quality and accuracy.

Technical specifications

- ✓ Temperature range up to T50.
- ✓ Copper alloy body for sizes DN13 to DN 40 and plastic for sizes DN-13 and DN-15 mm.
- ✓ Direct reading on 5-digit roller counter indicating m³.
- ✓ Completely dry dial and not submerged.
- ✓ Dial can be turned manually: For reading in any position.
- ✓ MID drinking water approval. Directive 2014/32/EU.
- ✓ No need for straight sections at the inlet and outlet of the UO-DO meter.
- ✓ Inductive sensorisation, 1 pulse 1L.

High Protection

Hidroconta's Fenix meters are designed to avoid external manipulation by magnetic fields. They have a special shielding that prevents any possible fraud in the transmission and therefore in the result of the reading.

Dial



Permanent
flow rate value
Ratio

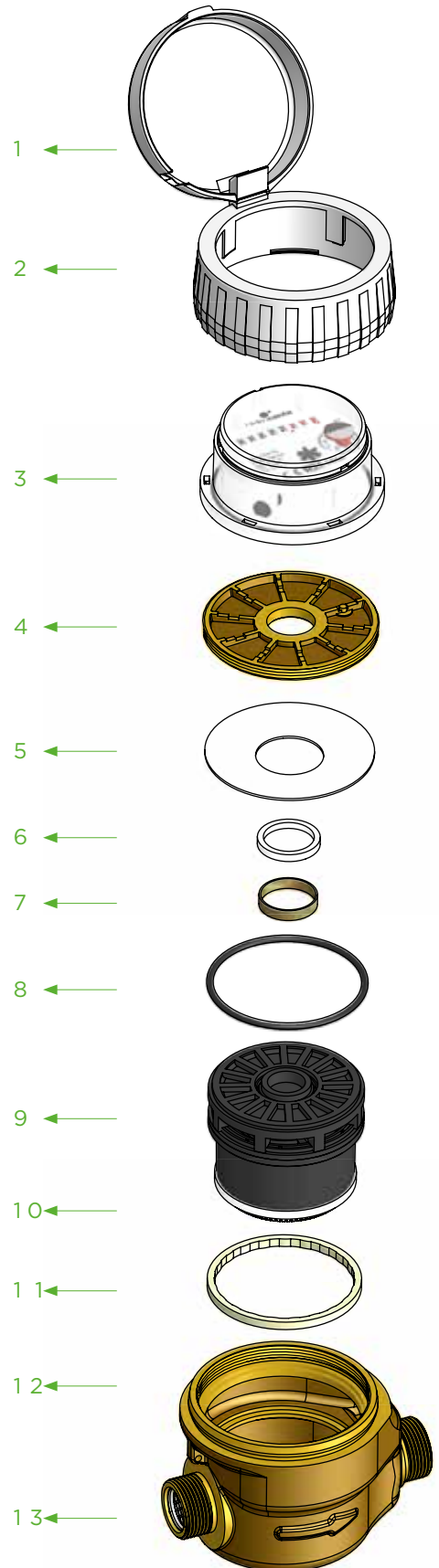
MID approval
for drinking
water

Maximum working pressure
Maximum water temperature
Installation conditions

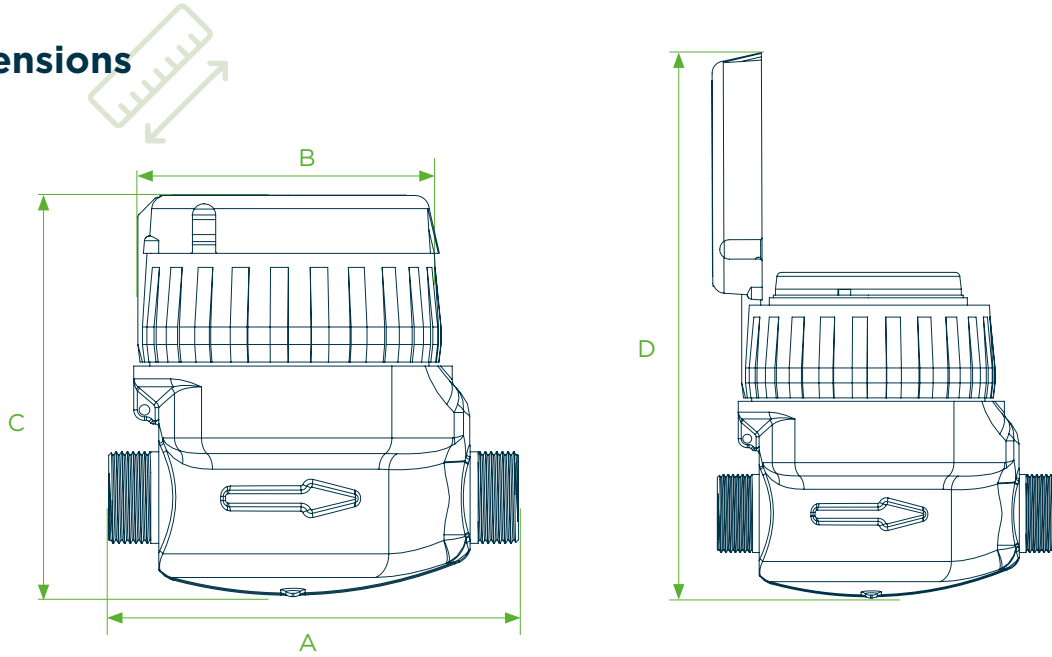
Disassembly



Nº	DESCRIPTION	MATERIAL
1	Cover	ABS
2	Dial case body	ABS
3	Analogue dial assembly	Assembly
4	Body closing ring	Brass
5	Pressure plate	Nylon
6	Cover anti-fraud ring	Nylon
7	Anti-fraud ring	Iron
8	Gasket Ø62,5 x 2,75	NBR
9	Volumetric mechanism	Assembly
10	Filter	Nylon
11	Flat seal Ø65 x 3,8	NBR
12	Body	Copper alloy or composite
13	Filter	Nylon



Dimensions



CALIBRE		A	A (with fittings)	B	D	C	WEIGHT WITH FITTINGS	WEIGHT WITHOUT FITTINGS	THREADED CONNECTIONS	MATERIAL
mm	inch.	mm					Kg			
13	1/2"	115	186	84	105	114	1,42	1,24	G 7/8" x 3/4"	Brass
		115	186	97	150	130	0,69	0,66		Composite
15	1/2"	110/115	190	84	197	114	1,37	1,20	G 3/4"	Brass
		115	186	97	150	130	0,81	0,64		Composite
20	3/4"	190	264	90	140	130	1,57	1,30	G 1"	Brass
25	1"	260	378	103	190	140	2,98	2,50	G 1-1/4"	Brass
32	1-1/4"	260	378	140	195	158	5,07	4,34	G 1-1/2"	Brass
40	1-1/2"	300	430	170	215	171	7,74	6,72	G 2"	Brass

Packing



DIAMETER		PCS. PER BOX	DIMENSIONS PER BOX (CM)			GROSS WEIGHT	WATER METER MATERIAL
mm	inch.		Length	Width	Height	Kg	
13	1/2"	1	200	175	115	1,54	Brass
		1	200	175	115	0,81	Composite
15	1/2"	20	540	445	150	14,76	Composite
		1	200	175	115	1,49	Brass
20	3/4"	1	200	175	115	1,69	Brass
		10	540	445	150	16,88	Brass
25	1"	1	270	125	185	3,06	Brass
32	1-1/4"	1	270	155	185	5,15	Brass
40	1-1/2"	1	315	185	210	7,78	Brass

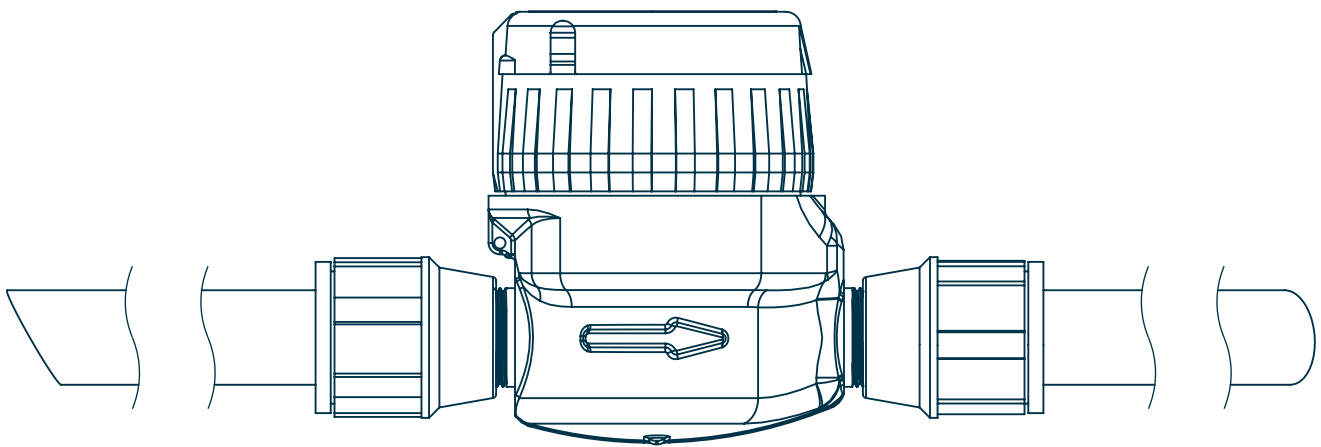
*Weights with fittings included in packaging.

Installation diagrams



U/O

D/O



REV.10

Installation instructions

Water meters should always be operated full of water. A minimum pressure of 0.3 bar is recommended at the outlet of the meter to ensure that it is completely filled with water. Install at a lower level with respect to the slope of the rest of the pipe, in this way, the formation of air pockets inside the pipe will also be eliminated.

If there is air in the pipeline, air release valves must be fitted to avoid incorrect readings. If the water in the pipeline contains large suspended particles, an initial screening filter should be installed.

Provide a shut-off valve upstream of the water meter to facilitate maintenance and/or repair of the meter.

Before installing a water meter in a new pipe, it is recommended to drain it to remove particles.

Do not force the water meter during installation, avoid tensile and torsion stresses, especially in the threaded connections.

Working conditions

WATER TEMPERATURE RANGE

0,1 °C - 50 °C

MAXIMUM PRESSURE

≤ 16 bar

Maximum permissible error

RANGE

ERROR (%)

$Q_1 \leq Q < Q_2$

± 5%

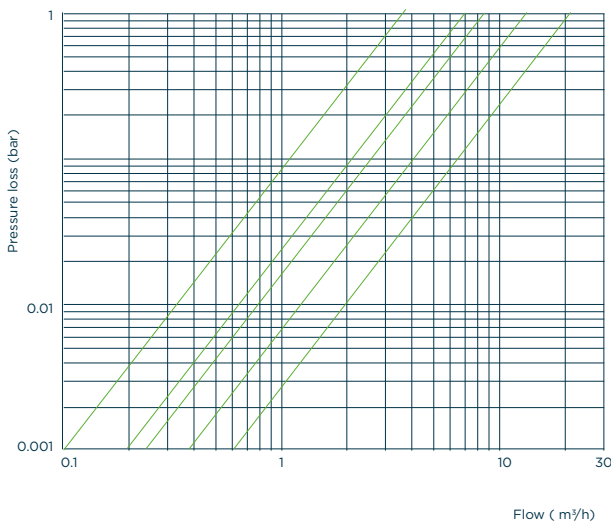
$Q_2 \leq Q \leq Q_4$

± 2%

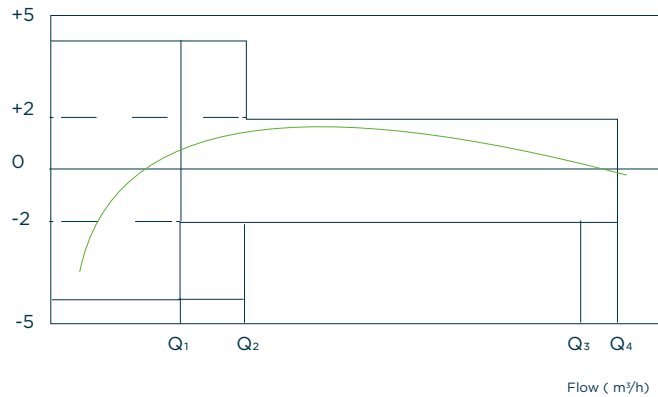
Technical specifications

CALIBRE		Q ₄	Q ₃	Q ₂	Q ₁	STARTING FLOW RATE	MINIMUM READING	MAXIMUM READING	RATIO	MATERIAL
mm	inch.	m ³ /h		l/h	l/h			m ³		
13	1/2"	3,125	2,5	10	6,25	1	0,00002	99.999	R400	Brass
		3,125	2,5	12,70	7,94	1	0,00002	99.999	R315	Composite
15	1/2"	3,125	2,5	10	6,25	1	0,00002	99.999	R400	Brass
		3,125	2,5	12,70	7,94	1	0,00002	99.999	R315	Composite
20	3/4"	5	4	16	10	2	0,00002	99.999	R400	Brass
25	1"	7,875	6,3	32	20	5	0,00002	99.999	R315	Brass
32	1-1/4"	12,5	10	64	40	10	0,00002	99.999	R250	Brass
40	1-1/2"	20	16	102	64	20	0,00002	99.999	R250	Brass

Pressure loss curve



Flow error curve



Automatic meter reading

Adding the IRIS communications module to the water meter will enable automatic remote readings. IRIS devices allow mechanical meters to access the world of IoT communications. Its great versatility allows it to be integrated with a wide range of meters.

The IRIS communications module is integrated with the Demeter system. It supports the integration of a wide range of devices using various communication technologies to suit the needs of the installation.



NB-IoT

Belts	LTE NB2/B1/B2/B3/B3/B4/B5/B8/ B12/B13/ B17/B18/B19/ B20/B25/B28/B66/ B70/B85
Transmission power	23 dBm +/-2dB
Firmware Update	Via FOTA

M-Bus wireless

868 MHz
OMS T1 and C1

GPRS

Frequency	<ul style="list-style-type: none"> - Quad-band: GSM850, ESM900, DCS1800, PCS1900. - The module can search for these frequency bands automatically. - The frequency bands can be configured by AT command. - GSM Phase 2/2+ compliant
Transmission power	Class 4 (2W) on GSM850 and EGSM900 Class 1 (1 W) on DCS 1800 and PCS1900
Bidirectional	Yes/Half-duplex
SIM	MFF2 eSIM and nano SIM card supported

LoRaWAN

Modulation	CSS	CSS
Frequency	EU868* ISM band	ISM band US915, AU915, AS923**/ ***
Power	14 dBm	20 dBm
Sensitivity	168 dBm	168 dBm
Bandwidth	125 kHz	125 kHz
LoRaWAN Configuration	SF12	SF12
Bidirectional	Yes/Half-duplex	Yes/Half-duplex
Encryption	AES128	AES128
Standardisation	LoRa-Alliance	LoRa-Alliance

sigfox

Geographical availability	RC1*	RC2**	RC4***
Modulation	BPSK	BPSK	BPSK
Frequency	Tx Freq. : 868.13MHz Rx Freq. : 869.525MHz	Tx Freq. : 902.2MHz Rx Freq. : 905.2MHz	Tx Freq. : 920.8MHz Rx Freq. : 922.3MHz
Power	14 dBm (max) @600bps	+24dBm (max.) @600bps	+24dBm (max.) @600bps
Sensitivity	-127dBm @600bps	-129dBm(min.) @600bps	-129dBm(min.) @600bps
Bandwidth	100 Hz	100 Hz	100 Hz
Bidirectional	Limited/Half-duplex	Limited/Half-duplex	Limited/Half-duplex



Alarms

🔔 Reverse flow alarm:

Reverse flow detection. Only available for the inductive pulse version. Configuration adjusted by communications.

🔔 Leakage alarm:

Detection of continuous consumption for a maximum period of time. Configuration adjusted by communications.

🔔 Water meter stopped alarm:

The alarm is activated if no consumption is detected for a maximum period of time. Configuration adjusted by communications.

🔔 Under-dimensioned water meter alarm:

Detection of flow rate higher than the overload flow rate for a maximum period of time. Configuration adjusted by communications.

🔔 Water meter tampering alarm (tampering):

The alarm is triggered in case the device is not mounted on the meter. Only available for the inductive pulse version. Optional upon request.

🔔 Battery status alarm:

Various battery alarm levels are activated depending on the remaining battery life.

REVISION

Functionality



Operating profiles based on the recording consumption and communications records requirements:



- Normal-24: Sending data every 24 hours and recording every hour.
- Normal-8: Sending data every 8 hours and recording every hour.
- Medium: Sending data every 12 hours and recording every 30 minutes.
- Extreme: Sending data every 6 hours and recording every 15 minutes.

MODE	AUTONOMY	COMUNICACION	DATA HISTORY RECORD
Normal -24	12 years	24 h	1 h
Normal -8	TBD	8 h	1 h
Medium	TBD	12 h	30 min
Extreme	TBD	6 h	15 min

* TBD (to be determined). 24 maximum storage and sending readings: each sending allows accumulating up to 24 values for each communication interval.

3



1. Which is the difference between dry dial, wet dial and semi-dry water meter dial?

On water meters with dry dial the reading mechanism (clock) is tightly separated from the wet chamber of the meter.

On Wet dial water meter the watch is totally immersed in the fluid.

For water meters with semi-dry dial, the reading mechanism is totally immersed in the fluid but the dial is partially separated and protected by a sealed capsule.

2. What are the ranges of measurement and precision?

The measuring range of the meters is determined by the Directive MID 2014/32 / UE establishing the ratio between the value of the permanent flow (Q3) and that of the minimum flow (Q1). The water meter can measure up to the maximum flow rate (Q4) for short periods of time without deterioration.

The maximum permissible error, positive or negative, in volumes between the transition flow (Q2) (included) and the overload flow (Q4) would be 2% with a water temperature 30 ° C.

The maximum permissible error, positive or negative, in volumes between the minimum flow rate (Q1) and the transition flow (Q2) (excluded) would be 5%.

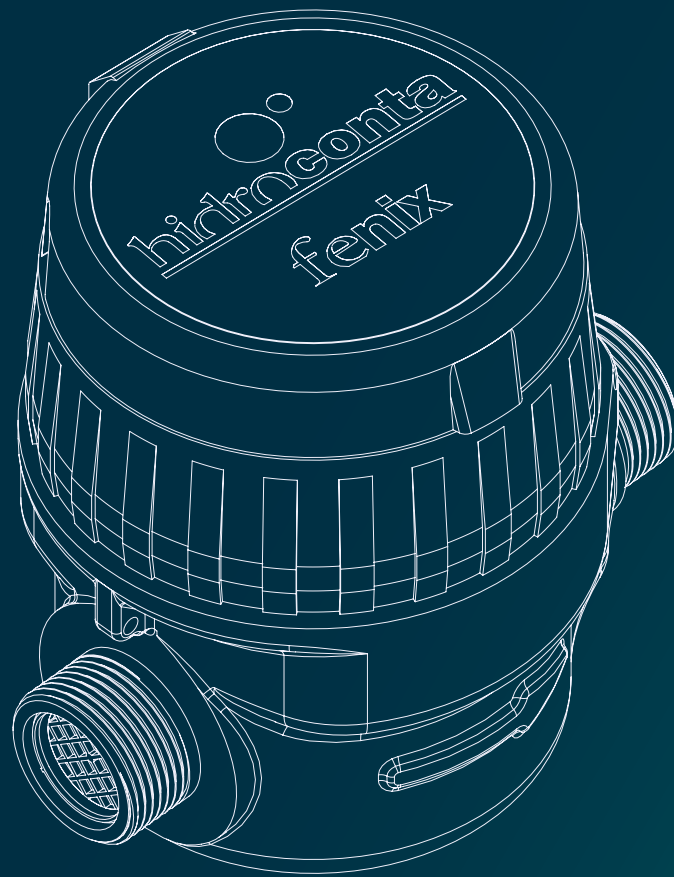
3. The MID directive and its compliance

The MID Directive (2014/32 / EU Measuring Instruments Directive) is a directive of the European Union whose purpose is to harmonize the different aspects of Legal Metrology in the member states.

The most important aspect of this directive is that equipment in possession of a MID certificate can be used in the EU.

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Ctra. Sta Catalina, 60
Murcia (30012) España
T: +34 968 26 77 88



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