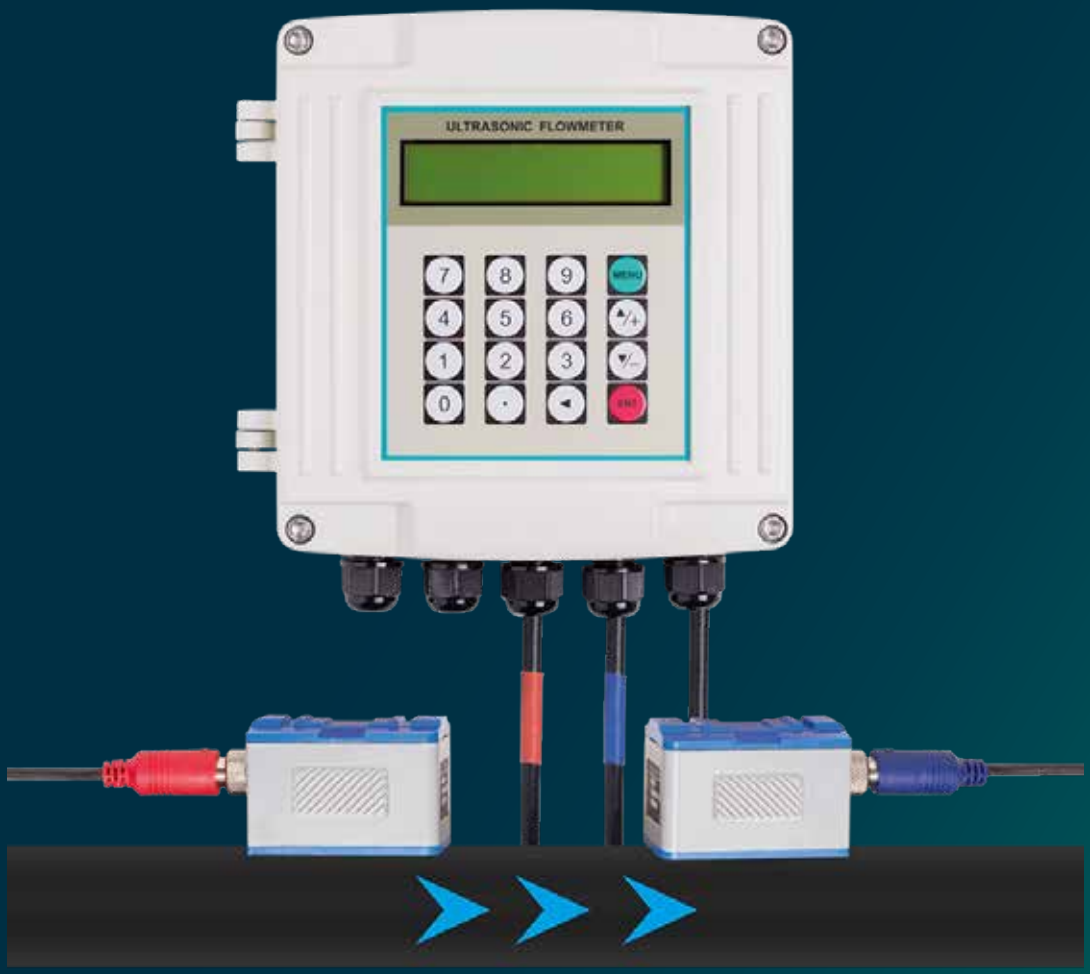
hidroconta
metering technology

WHEN WATER **COUNTS**



flowmeter
ultrasonic

The image is not representative of the real installation.

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WHEN WATER **COUNTS**

ultrasonic

Convertible into a
Smart meter

Ultrasonic
technology

Accuracy
± 2%

Transducers
non-invasive

Installation
U10/D5

Converter with
alphanumeric LCD

Option
Fixed or portable

Imaging model: fixed ultrasonic
The image is not representative of the real installation.

REV9

Hidroconta presents the **non-intrusive flow measurement technology** for conductive and non-conductive liquids. Say hello to HIDROCONTA's revolutionary system that will transform the way you monitor fluid dynamics: NON-INVASIVE ULTRASONIC.

NON-INVASIVE ultrasonic flowmeter, water flow control in **large calibre pipes**, up to DN 6000.

The ultrasonic flowmeter is designed to provide accurate **readings without disturbing the flow.**

Choosing the non-invasive ultrasonic flowmeter gives you many advantages such as non-intrusive installation, versatility, convenient maintenance, high accuracy, reliability and cost-effectiveness.

Advantages

Installation (external mounting): installs without disrupting existing piping infrastructure.

Versatility and adaptability: suitable for pipes of different sizes and materials.

Maintenance: easy access to transducers or sensors for inspection.

Cost-effectiveness: these flowmeters offer long-term savings in terms of installation costs, operational efficiency and overall life-cycle costs.

Applications

- ✓ Drinking water, seawater, other liquids with low suspended solids.

Technical specifications

FIXED ULTRASONIC

item		
Pipe	Material	Steel, stainless steel, iron, plastic with smooth walls, with rough walls, with very thin walls.
	Inner diameter	15 to 6000mm (range covered by up to 3 sets of probes).
	Straight sections	Upstream: greater than D10 and D50 after pumps.
		Downstream: greater than D5
Liquid	Type	Drinking water, seawater, other liquids with low suspended solids.
	Turbidity	Less than 10000pm (mg/l) with few air bubbles.
	Temperature	0 C + 80 C, no ice at low temperatures.
	Speed	-16m/s to +16 m/s
Transducers	Type	0. Standard - TS2 DN15.....DN300mm.
		1.Standard - TM1 DN50.....DN1000mm.
		2.Standard - TL1 DN300.....DN6000mm.
	Cable length	Min. 5m, Max. 500.
	Mounting methods	V" Method: For small diameter pipes up to DN-400mm.
		Method "Z": For large diameter pipes, larger than DN- 250mm.
		Methods "W" or "N": selectable for very small diameter pipes, DN15.....DN100mm.
Converter	Display	Alphanumeric 2 x 20 digits, backlit LCD.
	Keyboard	4 x 4
	Mounting	Wall mounting.
	Inputs	5 current loops 4 - 20mA, accuracy o,1%.
	Outputs	Current loop selection 4 - 20mA, accuracy 0, 1%.
		RS485 serial port.
		Programmable frequency output 12..9999Hz.
		Relay output 1st/125 Vac or 2nd/30V dc for volume pulses or alarms.
	Dimensions	Fixed type: 185 x 175 x 75 mm
	Weight	Fixed type: 3,1 kg.
	Memory	Stored data: configuration parameters, volume and total flow rates. Permanent, non-volatile, for the life of the battery (5 years).
Working conditions	Temperature	Transducer: -20C...+40C.
		Transducers: -20C...+80C
	Relative humidity	Transducer: 85%.
		Transducers: 98%...+/- 2% Transducers: 98%...+/- 2%.
Accuracy		+/- 2%
Power supply		90 - 260 Vac 50/60Hz - 12 to 36 Vdc.
Operation		Continuous

PORTABLE ULTRASONIC

item		
Pipe	Material	Steel, stainless steel, iron, cast iron, copper, PVC, among others.
	Inner diameter	15 to 6000mm.
	Straight sections	Upstream: greater than 10D and 50D after pumps.
		Downstream: greater than 5D
Liquid	Type	Drinking water, seawater, other liquids with low suspended solids.
	Turbidity	1%
	Temperature	0.1 - 30 ºC
	Speed	0.1 - 10 m/s
Transducers	Type	0.Standard - TS2 DN15.....DN100mm.
		1.Standard - TM1 DN50.....DN700mm.
		2. Standard - TL1 DN300.....DN6000mm.
	Cable length	5m
	Mounting methods	Method "V": pipes from DN 15 to Dn 200mm
		Z" method: pipes from DN 200 to Dn 6000mm
Converter	Display	Alphanumeric 4 x 16 digits, backlit LCD.
	Keypad	4 x 4 +2
	Outputs	RS232 serial port.
	Dimensions	200x93x33 mm
	Weight	5,5 kg (case)
Working conditions	Temperature	Transducer: -20C...+60 ºC
		Transducers: standard 0-30 ºC
Accuracy		± 2%
Operation		Internal batteries and power adapter. 90-260 VAC 50/60Hz

Working principles

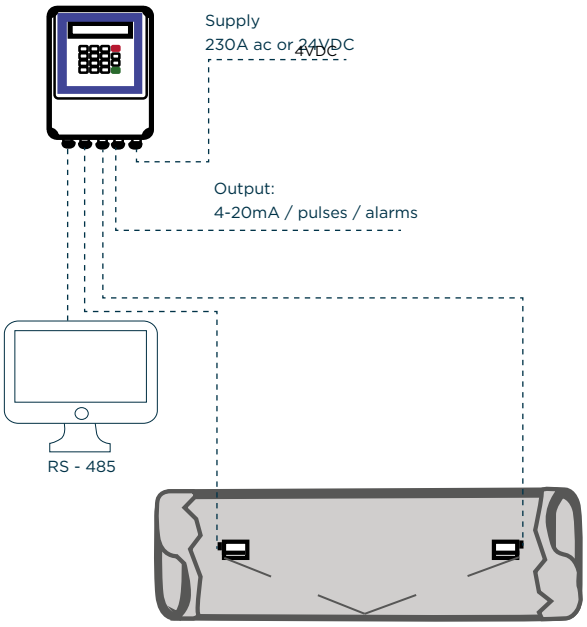
Its operation is based on sending ultrasonic signals that are received by transducers installed on the outer wall of the pipe. One transducer is placed upstream (red, UP) and one downstream (blue, DN).

High frequency sound pulses are transmitted through the pipe from the UP sensor to the DN sensor and back. The signal from UP to DN travels in the same direction as the flow and speeds up, while the return from DN to UP slows down. It is the measurement of the difference of the two flight times that defines the circulating flow rate.

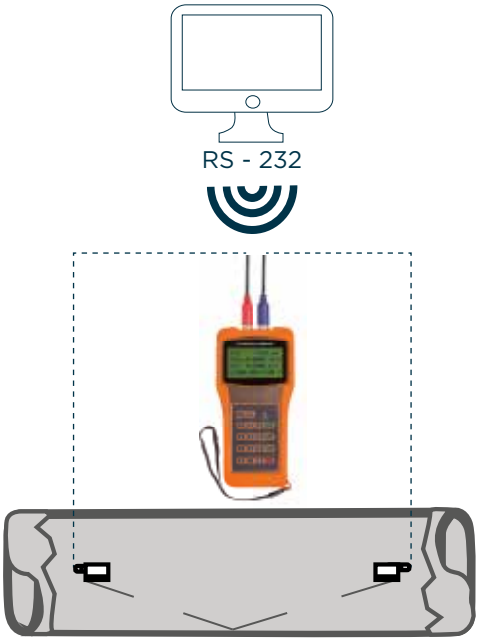
The measurement result is transformed by the converter into readable parameters for the plant manager, providing him with valuable information such as positive flow rate, negative flow rate, net volume, fluid velocity or empty pipe alert. Moreover, it is possible to combine the ultrasonic flowmeter with our IRIS TELELECTURA solutions, these equipments together are the best solution for an efficient control of water resources.

Installation diagram

Ultrasons fixes



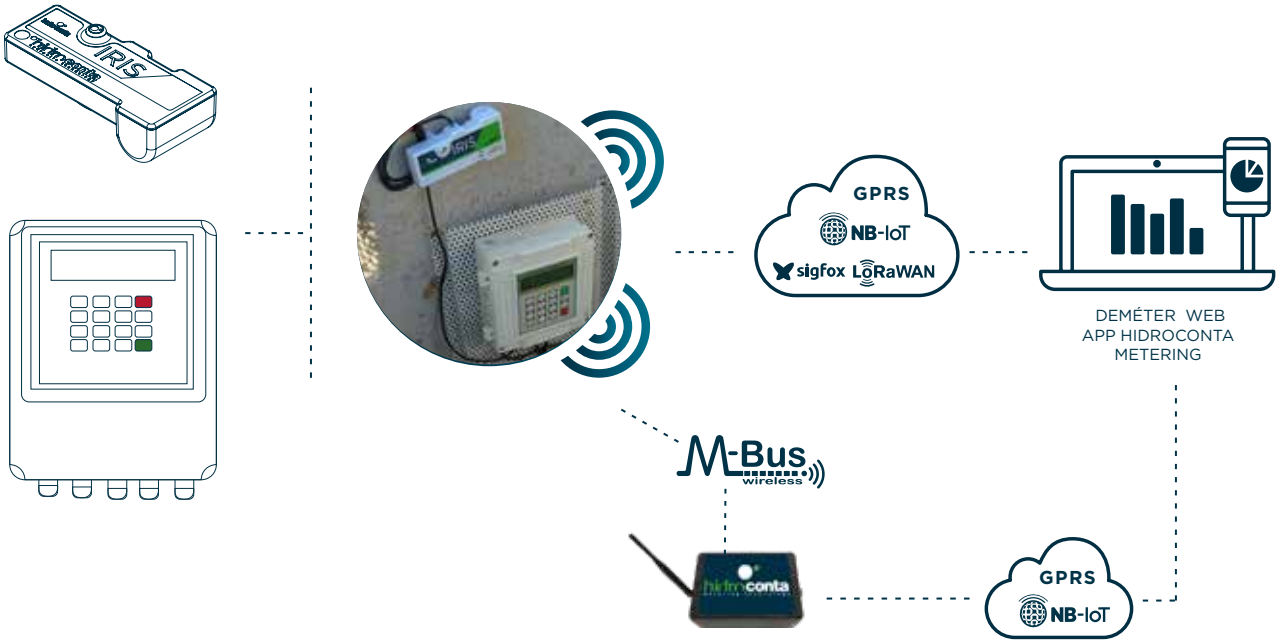
Portable Ultrasonic



Automatic meter reading

Adding the Iris communications module to the **fixed ultrasonic flowmeter** allows automatic remote readings. IRIS devices bring mechanical water meters into the world of IoT communications. Its versatility allows it to be integrated with a wide range of water 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.



LoRaWAN		
Modulation	CSS	CSS
Frequency	Banda ISM EU868*	Banda ISM 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
Standard	LoRa-Alliance	LoRa-Alliance

NB-IoT	
Bands	LTE NB2/B1/B2/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 y C1

Alarms

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.

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

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	COMUNICATION	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.

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flowmeter
ultrasonic

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AENOR
GESTIÓN DE LA CALIDAD
ISO 9001
ER-0362/2000

CERTIFIED IQNet MANAGEMENT SYSTEM