

hidroconta
metering technology

WHEN WATER COUNTS



IoT
IRIS

hidroconta.com

Wireless communications module

Remote reading of water meters

Battery life + 12 years

Powered by lithium battery



Different communication technologies:
3COM: NB-IoT, LTE-M y GPRS; LoRaWAN and wM-Bus; Sigfox

Connectivity NFC

Configurable alarms

IRIS devices allow mechanical water meters access IoT communications world. Because of its great versatility, IRIS can be connected to a wide range of water meters, even from different manufacturers.

output pulse emitter, either with a potential-free contact (e.g. reed relay) or “Open Collector”, can be connected to the IRIS wired version module.

Communications

Sensorization

IRIS module capture water consumption in two possible ways:

Inductive pulse output: Immune to external magnetic fields. Available for ATLANTIS and TRITON Hidroconta water meters as well as for others water meters with inductive pulse emitter.

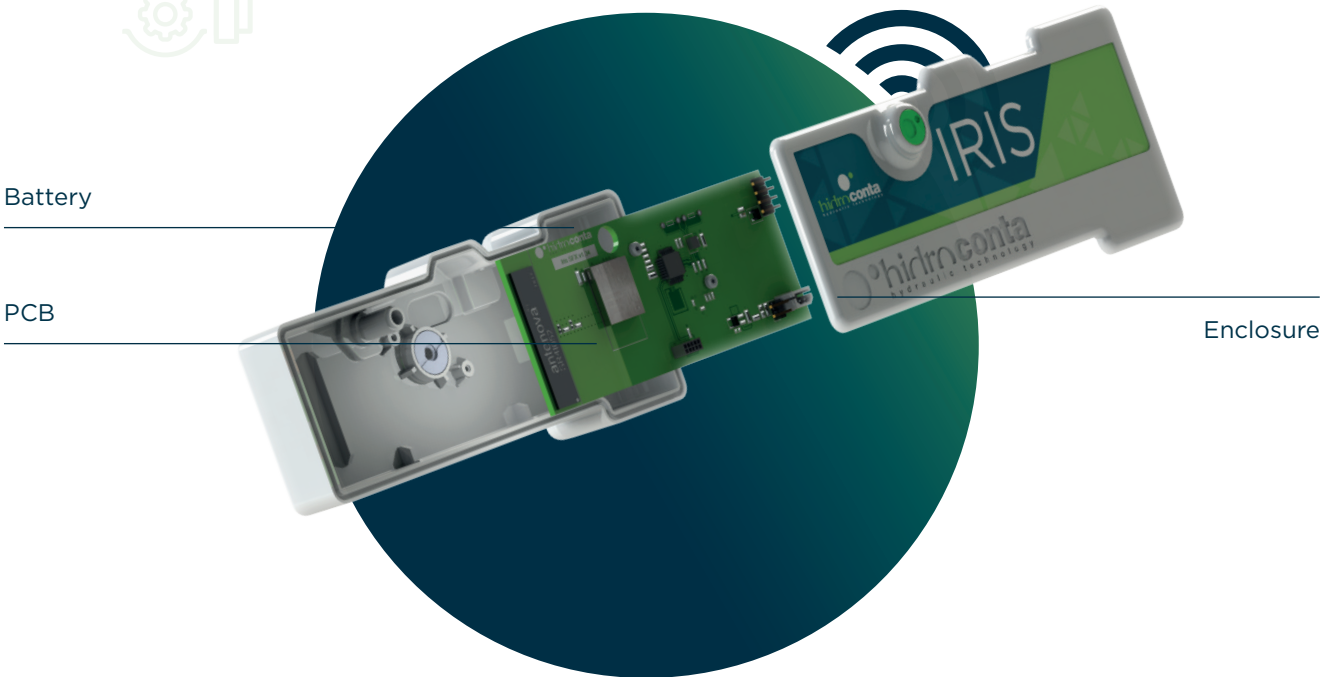
Wired pulse output: Any meter with a cable

IRIS modules are equipped with the most advanced IoT communication technologies: 3COM: NB-IoT, LTE-M and GPRS; LoRaWAN and wM-Bus; Sigfox

Each IRIS module is integrated into our Cloud based DEMETER software (IRIS is also compatible with 3rd party management software).

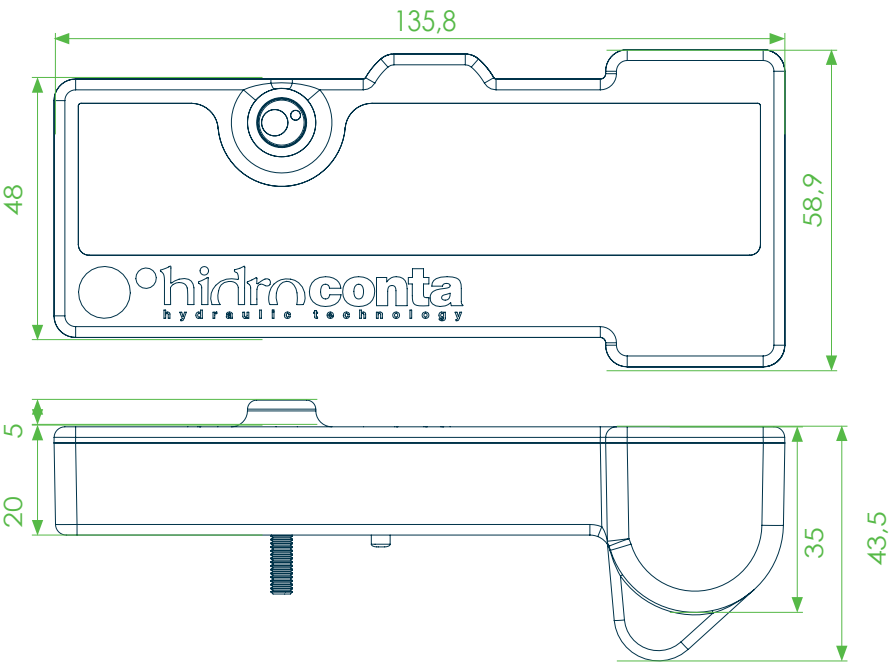
IRIS modules with different communication technologies can be integrated for the same project. Depending on the specific objectives of the project, the solution is tailored to ensure the perfect data acquisition.

Disassembly



Dimensions

PHYSICAL CHARACTERISTICS	
IP	68
Enclosure material	Polycarbonate



Pulse output

PULSE ACQUISITION	INDUCTIVE PULSE OUTPUT	Compatible with ATLANTIS and TRITON hidroconta meters and other brands with inductive pulse emitter
	WIRED PULSE OUTPUT	<ul style="list-style-type: none">- Potential-free contact.- Reversible and non-reversible electronic pulse generators (i.e. without polarity and with polarity, respectively)- "Open collector" pulse output

Installation instructions

IRIS inductive pulse output version

To install the IRIS module, it is only necessary to assemble the module at the top of the water meter and anchor them using the brackets that both, the meter and the Iris device have. Complete the installation with the screw that fix the IRIS module to the meter.



IRIS wired pulse output version

Wired IRIS modules have 2-wire cable coming out of the case.

Reed or non-polarity pulse emitters: blue and white two-wire cable.



Open collector emitters: red and white two-wires cable.

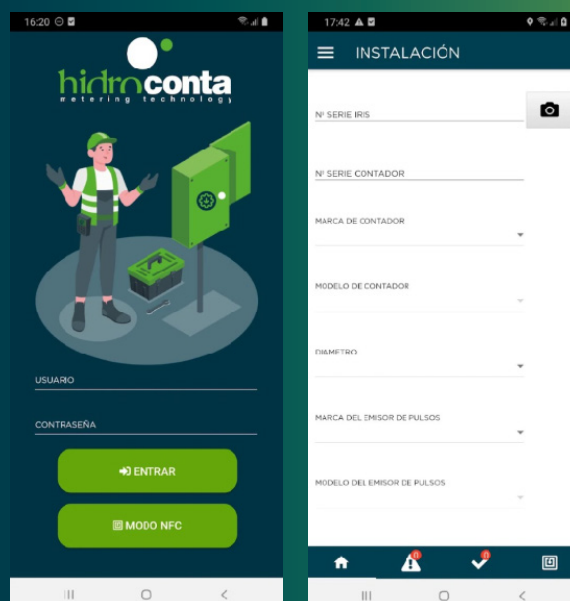


As soon as the installation of the water meter and the IRIS module is completed, information must be updated into the Demeter system.

This step is carried out using “Hidroconta Installer” APP available for Android and iOS and it is based on NFC technology.

Information as water meter DN, brand&model, pulse factor, GPS position and the current value displayed on the water meter is requested.

“Hidroconta Installer” APP also provides maintenance and consultation features.





Communications



3COM module: Technologies integrated in the same module (NB-IoT, LTE-M and GPRS). Possibility of technology choice or automatic search by the Iris device with order of preference pre-configured by the user.

NB- IoT		GPRS	
Bands	LTE NB2/B1/B2/B3/B4/B5/B8/ B12/ B13/B17/B18/B19/ B20/B25/B28/ B66/ B70/B85	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	23 dBm +/-2dB	Transmission power	Class 4 (2W) on GSM850 and EGSM900 Class 1 (1 W) on DCS 1800 and PCS1900
Firmware Update	Via FOTA	Bidirectional	Yes/Half-duplex
LTE -M		SIM	MFF2 eSIM and nano SIM card supported
Bands	B1/2/3/4/5/8/12/13/18/19/20/25/26/ 27/28/31/66/72/73/85/		
Maximum power	26 dBm		

Communications



IRIS LoRaWAN module: Technologies integrated in the same module (LoRaWAN and WM-Bus).

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

WM- Bus

868 MHz

OMS T1 and C1

IRIS Sigfox module: Technologies integrated in the same module (Sigfox).

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

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 STORAGE
Normal -24	12 years	24 h	1 h
Normal -8	7 years	8 h	1 h
Medium	9 years	12 h	30 min
Extreme	5 years	6 h	15 min

The indicated autonomy is a theoretical estimate obtained under normal operating conditions: temperature of 25°C, -90 dBi coverage, and moderate water consumption. The communication settings depending on the operator used, actual coverage, and the type of pulse reading system can have a significant impact on battery consumption.



Reverse flow alarm:

Reverse flow detection. Only available for 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 version.

Battery status alarm:

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

Data visualisation



APP HIDROCONTA METERING

One-click information on water consumption, visualisation of consumption, data comparison, generation of reports and management of consumption alerts.

DEMETER WEB

Comprehensive management of water consumption digitalisation projects through an easy-to-view web platform.



Project
visualisation overview



Hydrological balance



Average consumption



Alarms notification



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