

# TELECONTROL



4H Series

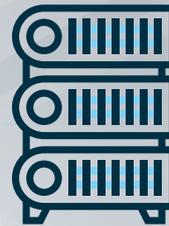


DEMÉTER  
REMOTE SYSTEM

Demeter 4H is a tele-management and supervision team of hydrants and measuring equipment related to the consumption and distribution of water.



Although it is designed according to especially irrigation communities needs, it is easily adaptable to other uses (pumping and reservoir management and monitoring, datalogger, etc.).



## Adaptable and scalable

It is a modular equipment and adaptable to most installations. Thanks to the different possibilities of installation it is able to be adapt to the needs of the ground. GPRS, RADIO, MIXED (GPRS, RADIO).



## Telecontrol Software

Hidroconta has flexibilized its system to be able to work with all the mobile operators. It includes a Scada-Web user interface that allows to operate the equipment from any device with Internet connection. The software allows to detect alarms, control quotas, generate histories and manage users among others.

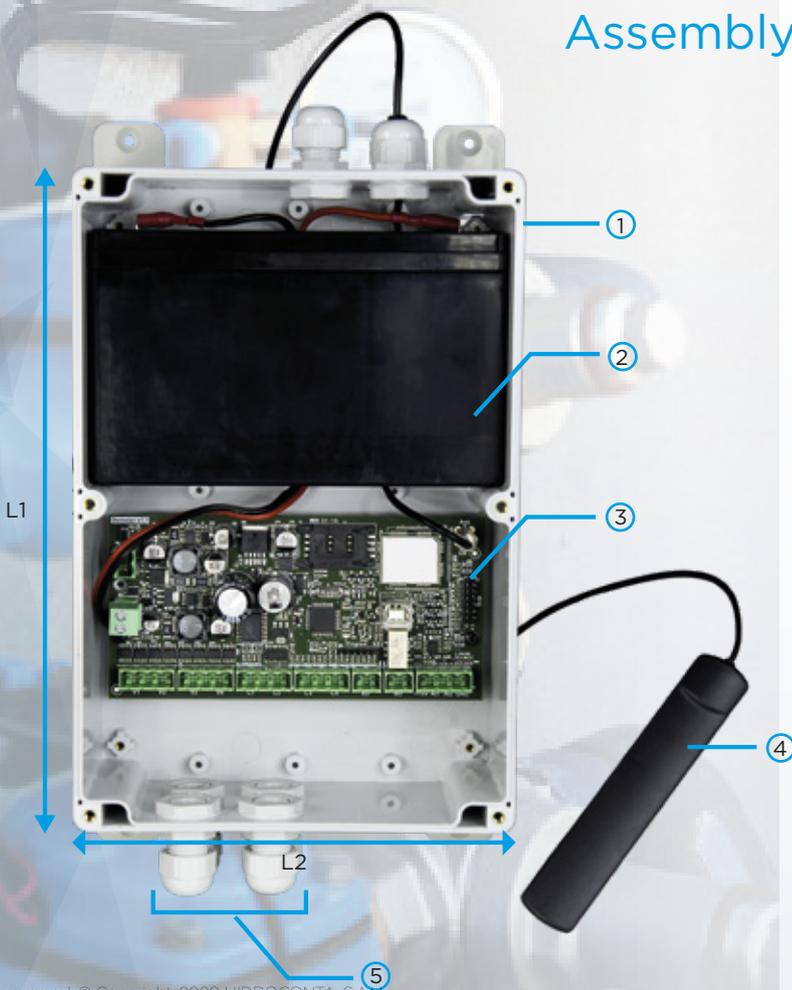


## General characteristics

- ✓ - Demeter communicates with a central server using GPRS technology, or free band radio, being able to operate without interruption for 6 months in the absence of communications without loss of information.
- ✓ - It's a totally autonomous. It is powered by batteries and, as an additional support, you can manage your load using a small solar panel.
- ✓ - Possibility of wireless firmware reprogramming.
- ✓ - The most basic equipment could control up to four hydrants, one digital input and one digital output and two analog inputs, although this number can be extended by the use of expansions.
- ✓ - It can operate as a GPRS or radio endpoint and as a GPRS / Radio mixed communications hub. It collects and concentrates communications from a radio subnet and retransmits them via GPRS.



## Assembly



Nº	Components
1	Box
2	Battery
3	PCB
4	Antenna
5	Cable Glands

Dimensions	
	mm
L1	245
L2	165
Depth	100

Material
Polycarbonate



Connection possibility  
SP21 IP68



## Power supply



### Solar panel:

Optional (depending on the frequency of communications) 12V / 5W.

### SUPPLY

126uA in low power mode (no communications)

Additional 42uA per expansion

19 mA with GPRS connection

TDB mA with Radio connection

TDB mA with mixed GPRS / Radio connection



### Battery:

rechargeable lead acid 6V / 12Ah



## Input and output

### Analog Inputs

- 2 Analog inputs 0-20 / 4-20 mA 10-bit resolution.
- The equipment has a 15Vdc terminal to feed the probes.

### Electrovanne Outputs

- Demeter 4H has 4 outputs for 12V latch solenoid valves.
- The tripping is done using the energy stored in a capacitor of 4700uF charged at a voltage of 15V. More than enough for most manufacturers.

### Water meter inputs

- Demeter 4H has 4 water meter inputs.
- Designed for potential free reed contact. 30uA consumption with closed contact.
- They can also be used with "open collector" pulse emitters (respecting the polarity).

### Relay Output

- Potential free contact digital output via 220V / 2A relay.

### Digital input

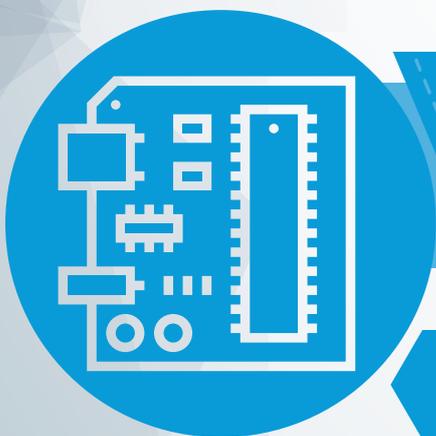
- Potential free contact. Similar to described for water meters input.
- Useful for use with intrusion detectors, digital pressure switches, etc.





## Communications

Modém GPRS	Free band radio modem	
Quadband 850/900/1800/1900 MHz.	Frequency 433 Mhz	
Compatible with GPRS frequencies worldwide.	It allows modulation: FSK, GFSK, MSK, GMSK and LoRA.	
Low consumption.	Sensitivity up to -148 dBm.	
Temperature range from -40 to + 85 ° C	Excellent immunity to noise.	
	Operating temperature range -20 to + 70 ° C.	
GPRS Antenna	Radio Antenna	
Frequencies AMPS (824-894 MHz) - ISM (868 MHz) - GSM (900 MHz) - DCS (1800 MHz) - PCS (1900 MHz) - 3G (UMTS 2.1 GHz) - WIFI / BLUETOOTH (2.4 GHz)	2 types of antenna available	
	Inner assembly	Pole Assembly
	Frequency ISM 433MHz	Frequency TETRA (380 - 500 MHz)
Impedance 50 Ohms	50 Ohms Impedance	50 Ohms Impedance
Polarization Linear	lineal polarization	Vertical polarization
Gain OdBi	Gain0 dBi	Gain5 dBi Max
VSWR <2:1	VSWR <2:1	VSWR <2:1
Operating temperature -40 ° C to + 85 ° C	Operating temperature -40°C to +85°C	Operating temperature to +85°C



## MEMORY

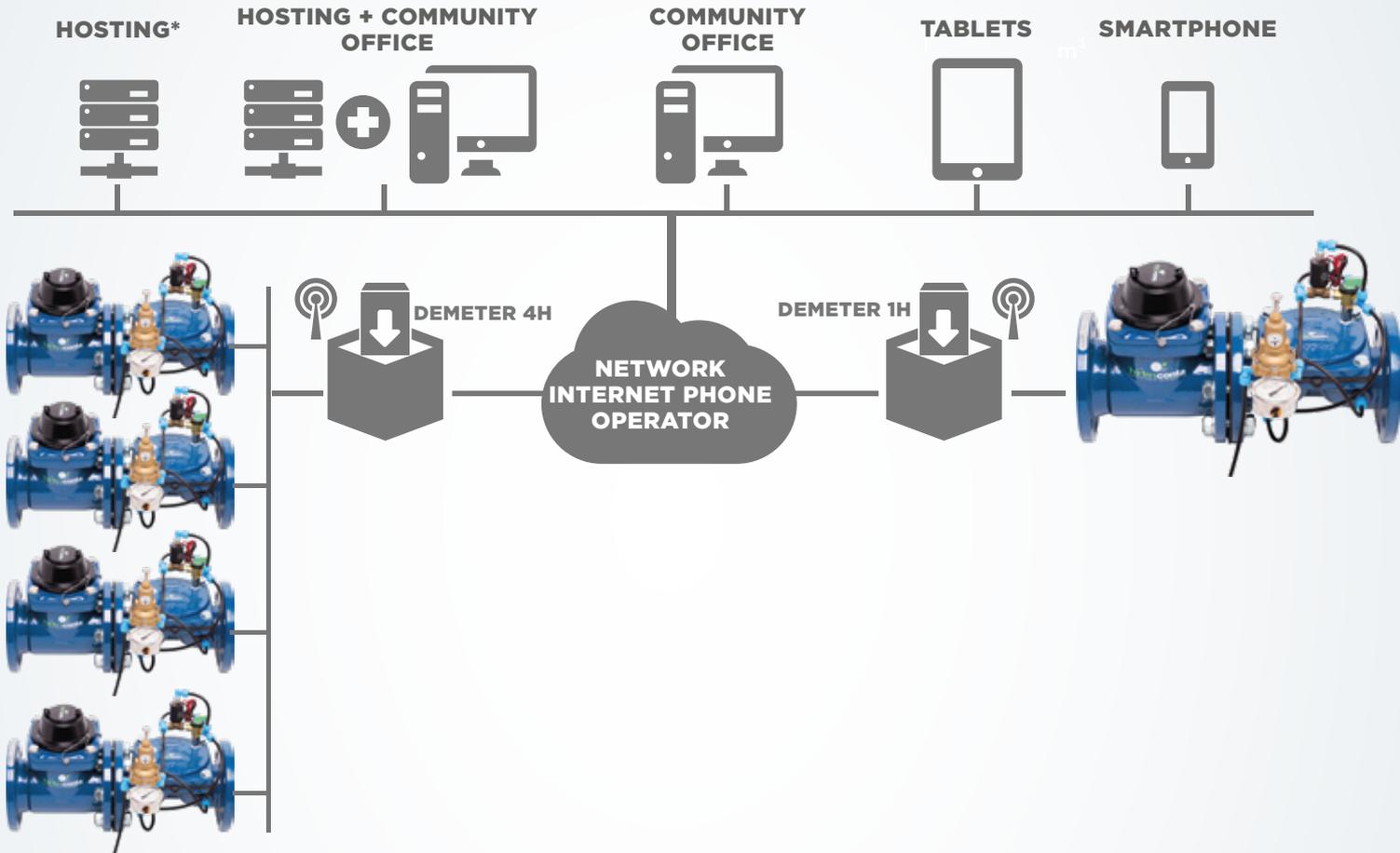
Demeter 4H is operated by a microcontroller that has 256 KB of storage for firmware and 96 KB of volatile memory for program data.

It also has a 244K non-volatile external memory for storing history and configuration enough to store more than 20,000 records.



## Topologies

### GPRS Topology



The Demeter GPRS model consists of Remote Units equipped with GPRS modems.



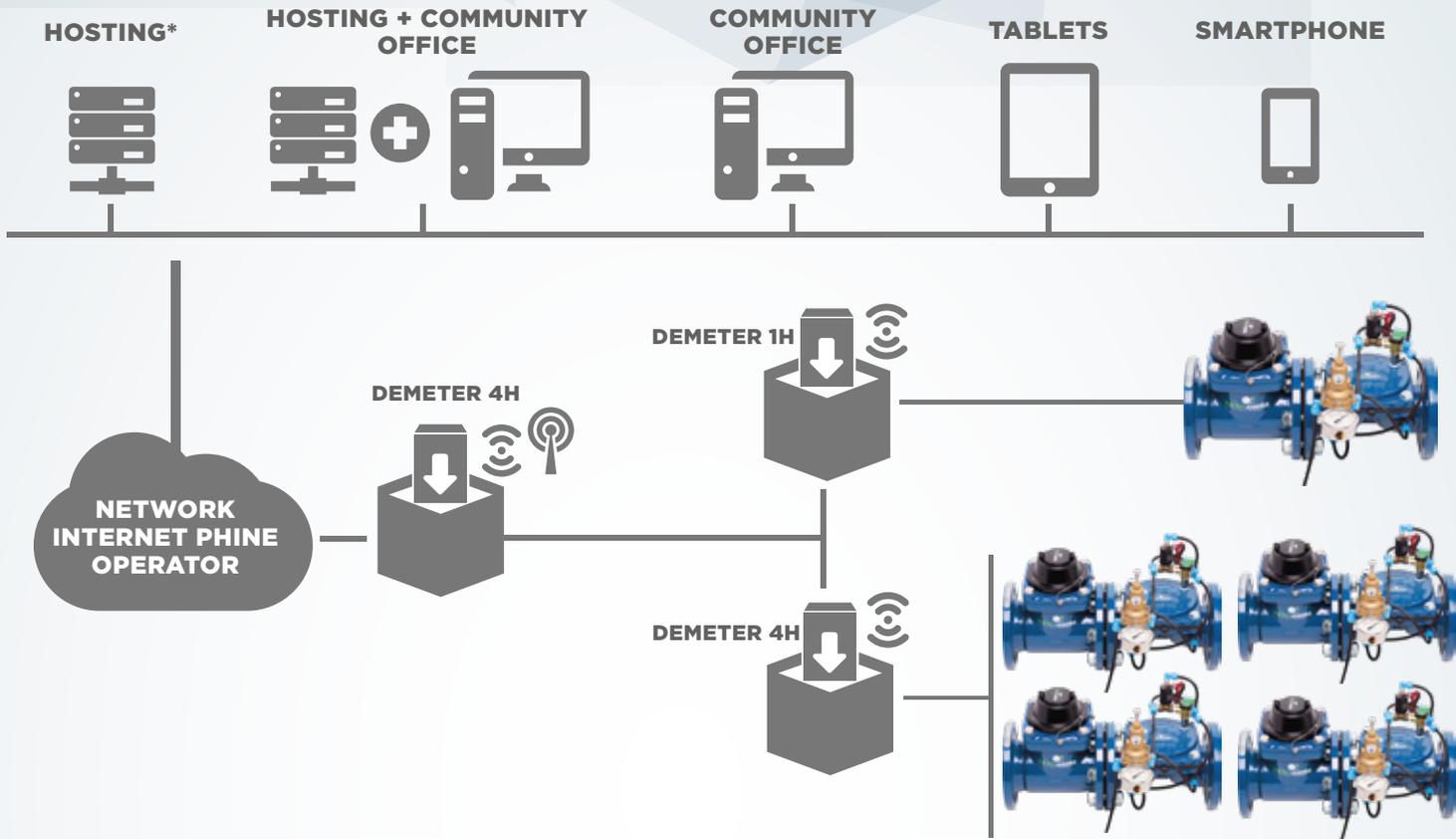
The Units automatically transmit all data directly to the Cloud, and the information is directly available on any smart device (computer, Tablet, Smartphone, etc.).



GPRS technology allows simpler and less costly installation compared to other technologies.

\* The hosting can be integrated in the control center of users or installed independently through a service provider or others.

MIXED topology



DEMÉTER Remote

System is able to combine GPRS and Radio system to adapt the system to any situation.



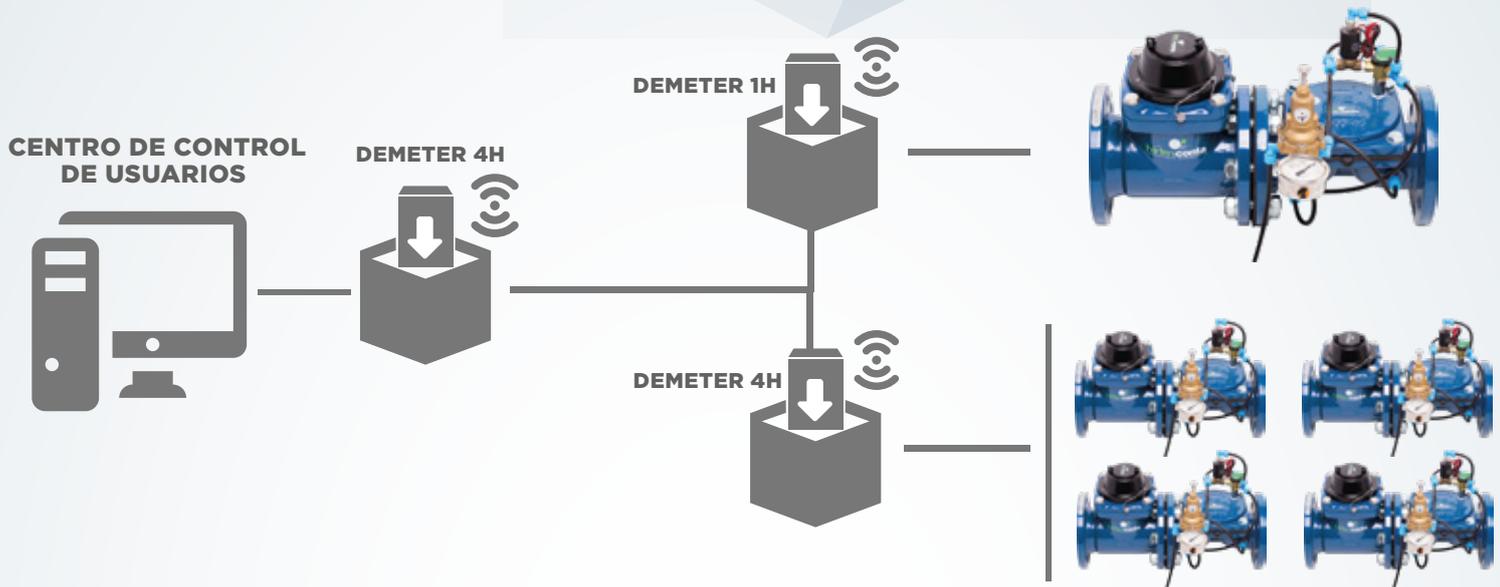
The mixed topology consists of remote terminal units equipped with a RADIO modem and GPRS / RADIO concentrator units that receive the data from the RTUs and send it directly to the cloud server.



In this model it is also possible to use GPRS remote terminal units for mobile coverage control points that are very far from the concentrator equipment, avoiding the use of repeaters.

\* The hosting can be integrated in the control center of users or installed independently through a service provider or others.

## RADIO topology



 The DEMÉTER Radio Remote System has been specifically designed for Irrigation Communities with existing RADIO installations or where GPRS coverage is not available.

 The Radio version consists of a remote terminal unit equipped with a RADIO modem and a unit concentrator that receives the information from the RTUs and sends them to the central server.

 The units will transmit periodically (in intervals defined by the administrator) all the information to the Central Server, being available to the users.

## DEMETER-WEB



Control tool that allows visualization, management and maintenance of the system.

## USER MANAGEMENT



The software allows the registration of new users by entering their data and establishing their level of access to the information.

## IRRIGATION MANAGEMENT AND ALERTS CONTROL



The system allows, select irrigation programs, know the activity of the user, establish consumption alerts, loss of communication, intrus ...

## SEARCHING EQUIPMENT

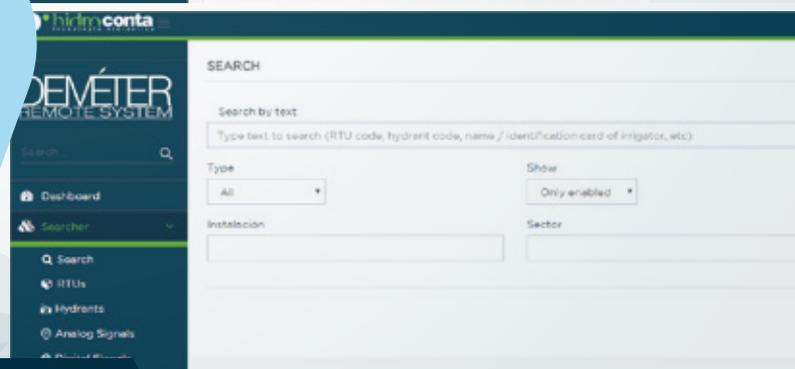
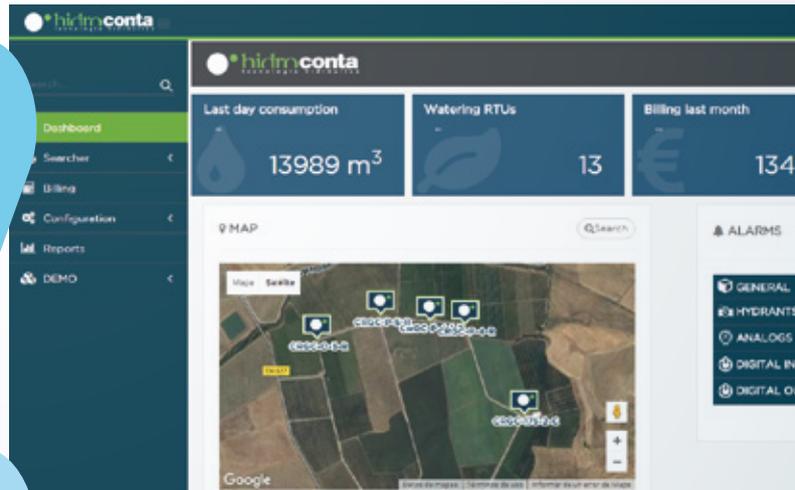
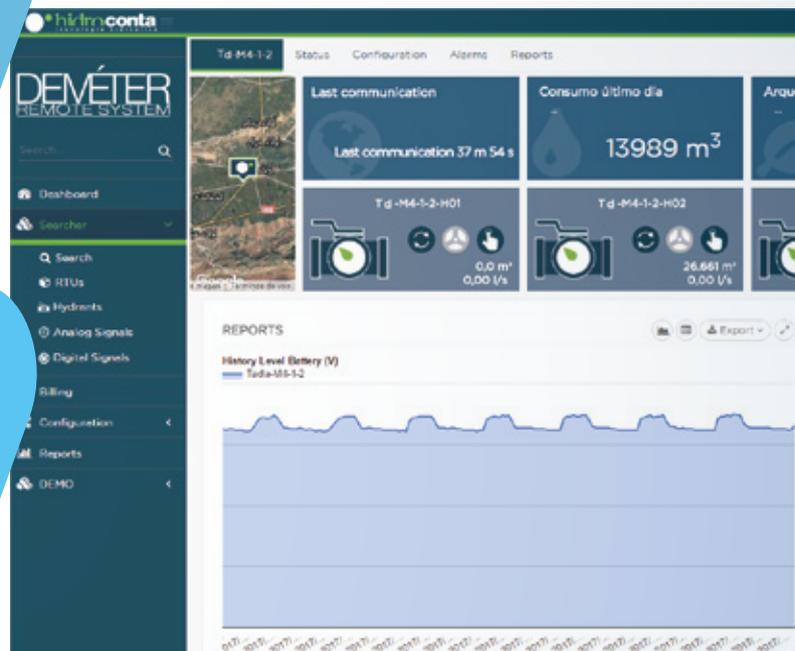


Performs searches of equipment in the network according to criteria predefined by the user, installation / sector / sub-sector / plot.

## DATA VIEW AND PARAMETER CONFIGURATION



Each element of the network has a page where you can configure each of its parameters.





4H series

WHEN WATER COUNTS  
CUANDO EL AGUA ES LO QUE CUENTA

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