

WHEN WATER COUNTS



IOT DEVETER 1H

Hecho en España Made in Spain

hidroconta.com







Adaptable and Scalable

The Demeter 1H device is configured as a wireless telecontrol component, designed to manage a hydrant and a digital input. It comes in two variants, each using a specific communications system:

Demeter 1H-GPRS: Incorporates a GPRS modem. Demeter 1H-R: Equipped with a 433 MHz freeband radio modem, using LoRA modulation. This device can perform the function of GPRS end-point or radio end-point, depending on a GPRS-Radio concentrator.

Telecontrol Software

Hidroconta has given its system a remarkable flexibility to operate with all mobile operators. It includes a SCADA-Web type user interface, making it possible to operate the equipment from any device with an Internet connection. The software capabilities include alarm detection, quota control, history generation and user management, among other functions.

Technical specifications

- Able to communicate with a central server via GPRS or free-band radio, it can operate uninterruptedly for 6 months in the absence of communications without loss of information.
- Totally autonomous. Powered by a lithium battery with an autonomy of more than 3 years in its GPRS version and 10 years in the RADIO version (24 daily communications).
- \checkmark Capable of controlling a hydrant and a digital input.
- ✓ Can operate as a GPRS or radio end-point.
- Possibility of wireless firmware reprogramming.
- \checkmark Consumption: 35uA in the absence of communications.







Power options:



- 3.6VDC/14Ah non-rechargeable lithium battery.
- Power supply 220VAC input to 3.6VDC/2A output.

Memory



Demeter 1H is operated by a microcontroller with 256 KB of storage for firmware and 96 KB of volatile memory for program data. Additionally there is an external non-volatile memory with 244 KB for history and configuration storage. Sufficient to store more than 20,000 records.





Input and output

➡ Analogue Inputs

- 2 Analogue inputs of 0-20/4-20 mA with 10 bits resolution.

- The equipment has a 15Vdc terminal to supply the probes.

➡ Water meter inputs

- Designed for reed type potential free contact.
- Consumption of 30uA with closed contact.

- It can also be used with "open collector" type pulse emitters (respecting polarity).

➡ Digital input

- Potential free contact. Similar to that described for the water meter inputs.

- Useful for use with intrusion detectors, digital pressure switches, etc.

Comunications



GPRS MODEM

Quadband 850/900/1800/1900 MHz.

Compatible with GPRS frequencies worldwide.

Low consumption.

Temperature range from -40 to + 85 ° C

GPRS ANTENNA

Frequency	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)
Impedance (Ohm)	50
Polarisation	Lineal
Gain	OdBi
VSWR	<2:1
Operating Temperature	-40°C to +85°C

Solenoid valve outputs

- Demeter 1H has 1 output for a 12V latch solenoid valve.

- Triggering is done using the energy stored in a 4700uF capacitor charged to a voltage of 18V. More than enough for most manufacturers.

MODEM RADIO BANDA LIBRE

Frequency 433 Mhz

It allows modulation: FSK, GFSK, MSK, GMSK and LoRA.

Sensitivity up to -148 dBm.

Excellent immunity to noise.

Operating temperature range -20 to + 70 ° C.

ANTENNA RADIO

2 types of antenna available

ISM frequency 433MHz

Impedance 50 Ohms

Linear polarisation

installation Gain 0 dBi

VSWR <2:1

Operating temperature -40°C to +85°C

TETRA frequency (380 - 500 MHz)

Impedance 50 Ohms

installation Vertical Polarisation

External

on mast

Gain 5 dBi Max

VSWR <2:1

Operating Temperature -40°C to +85°C

All rights reserved. © Copyright. 2023 HIDROCONTA. S.A.U.





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 can be directly available at the same time on any smart device (computer, Tablet, Smartphone, etc.). GPRS technology allows for a much simpler and lower cost installation compared to other technologies.

Mixta 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 control points with mobile coverage that are far away from the concentrator units, avoiding the use of repeaters.





REV.7

RADIO topology 3



The DEMÉTER Remote Radio 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 it to the central server.

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



DEMETER WEB













visualisation overview

Average consumption





WHEN WATER COUNTS



IOT DEVETER 1H

Ctra. Sta Catalina, 60 Murcia (30012) España T: +34 968 26 77 88 F: +34 968 34 11 49



Net Filtren Net Net S.A.U.

Hidroconta disclaims liability for errors in the information contained in this document, which is subject to change without notice. All rights reserved. Copyright. 2023 HIDROCONTA.

Hecho en España Made in Spain

hidroconta.com