

# PREPAID IRRIGATION STATION



# Quantum

The irrigation station is developed for the management of large irrigation areas. The prepaid card system prevents late payments and responsible water consumption.

It is equipped with a Demeter module for managing the consumption of the users of the irrigation outlet. In addition, it incorporates the possibility of remote control of hydraulic equipment for its management by the operator.

The hydraulic set consists of a Hydrant formed by a large volume water meter and a hydraulic flow limiting solenoid valve.

All the components necessary for the proper operation of the irrigation station are located in a steel box and have their own autonomy and communication interfaces.



## PREPAID IRRIGATION STATION

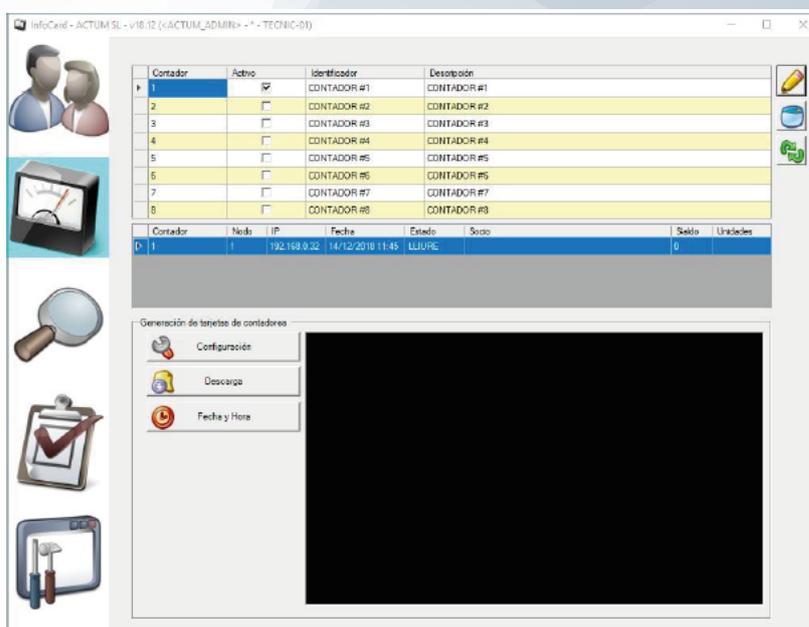
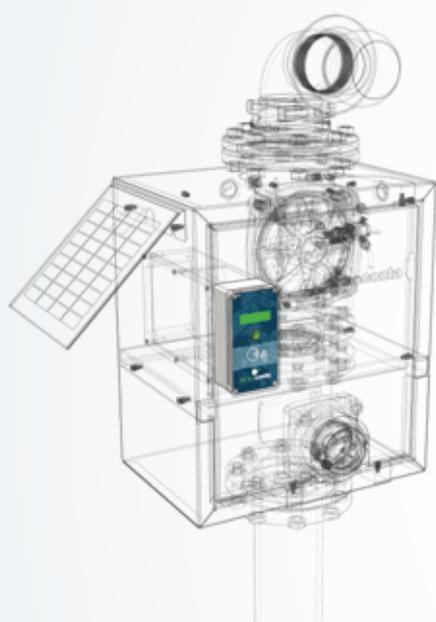
## PREPAYMENT DEMETER SYSTEM

### Prepaid system features

The management of the irrigation station by prepayment is carried out through a contactless card that gives the user the possibility of withdrawing a defined volume of water, previously loaded on the card itself.

The water consumption made by the user is loaded directly on the card according to the amount of water consumed reflected in the watering station meter.

The equipment developed by Hidroconta offers two independent systems, one for managing user consumption (prepaid system) and the other for managing equipment remotely by an authorized operator (equipment management system).



### Prepaid software platform.

- Allows complete management of a consumption control system with prepaid cards.

#### USERS

Management of registered user data.  
Management of consumer cards.

#### COUNTERS

Definition and configuration of the counters.  
Issuance of meter configuration cards.  
Issuance of download cards (only with Flexy electronics)

#### CARD READING

Reading and identification of issued cards.

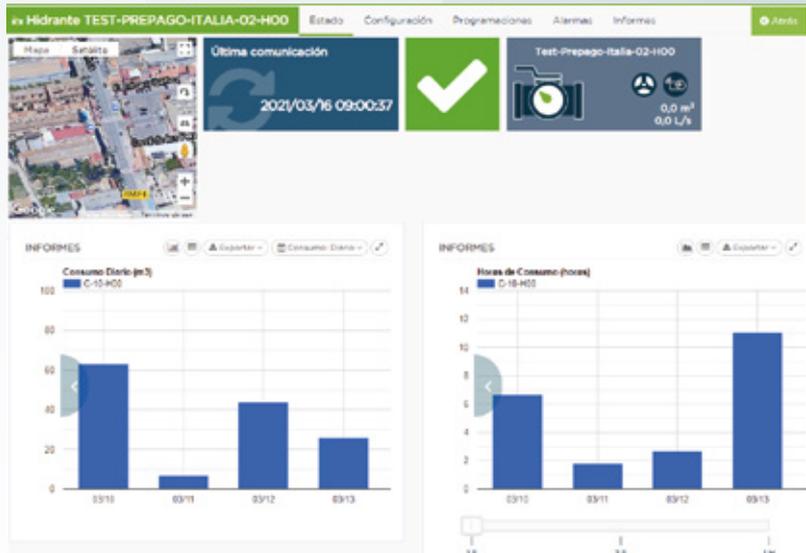
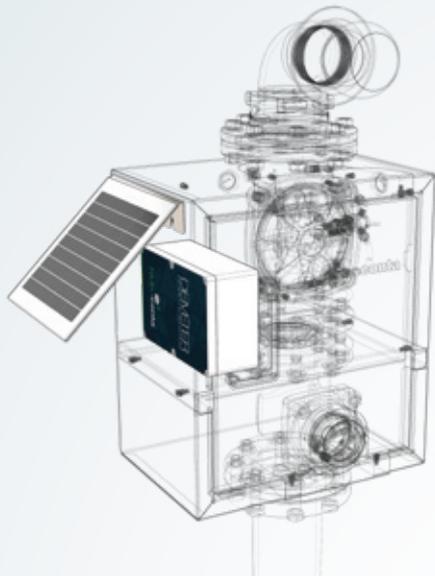
#### REPORTS

Obtaining reports.  
Reading of historical tables.

#### PARAMETERS

Parameterization of the application (connection to database, language, historical).  
Rate management.  
Application user management.

- It is responsible for the opening and closing of the valve, activated by means of pre-charged balances to users on cards.



**Scada Web Platform.**

- Manual solenoid control of each control point  
Prepayment orders are ignored and the element can be operated at the request of the telecontrol system.

- Remote reading of the meter.  
Global and partial accountant. The communication of the devices will occur periodically every 1 hour.

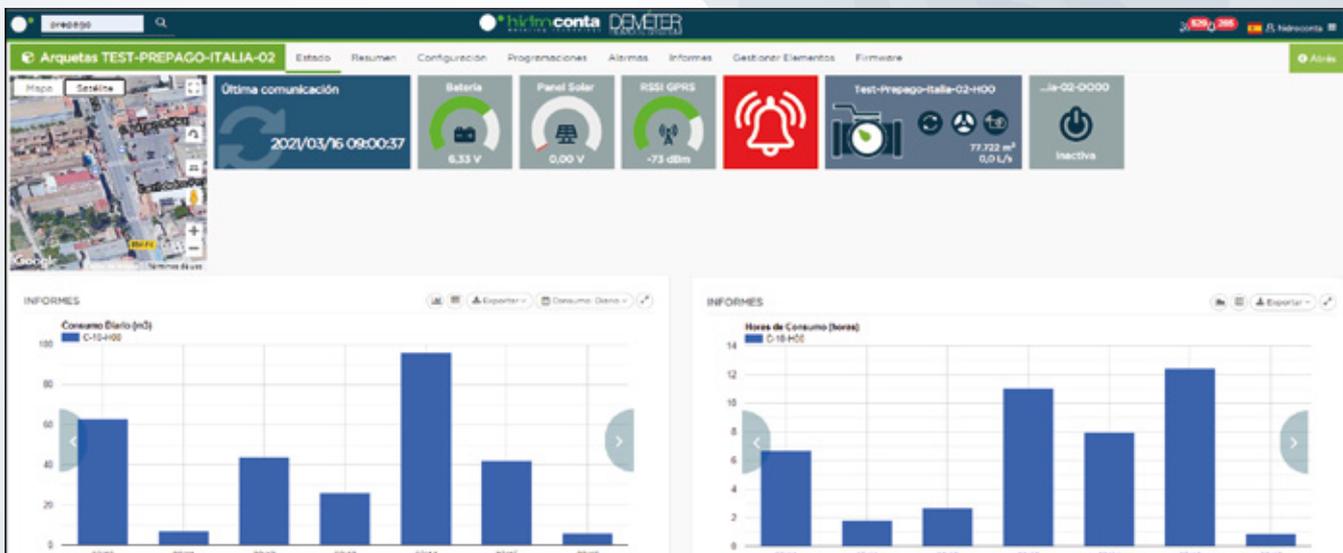
NOTE: For device consumption to be within acceptable limits, device communication must be periodic. The device does support an always connected configuration, but at the cost of reducing its autonomy.

- Alerts related to irrigation:

- Excessive instantaneous flow (above setpoint).
- Insufficient instantaneous flow (below setpoint).
- No flow with valve open.
- Flow with valve closed.
- Food-related alerts.
- Low, very low or replacement battery.
- Dirty solar panel.

- Alerts related to food.

- Low, very low or replacement battery.
- Dirty solar panel.





## Alimentación



### Solar panel:

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

### Consumo

- 126uA in low power mode (no communications).
- 19 mA with GPRS connection.



### Battery:

rechargeable lead acid 6V / 12Ah.



## Comunicaciones

### Modém GPRS

Quadband 850/900/1800/1900 MHz.

Compatible with GPRS frequencies worldwide.

Low consumption.

Temperature range from -40 to + 85 ° C

### GPRS 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)

Impedance 50 Ohms

Polarization Linear

Gain 0dBi

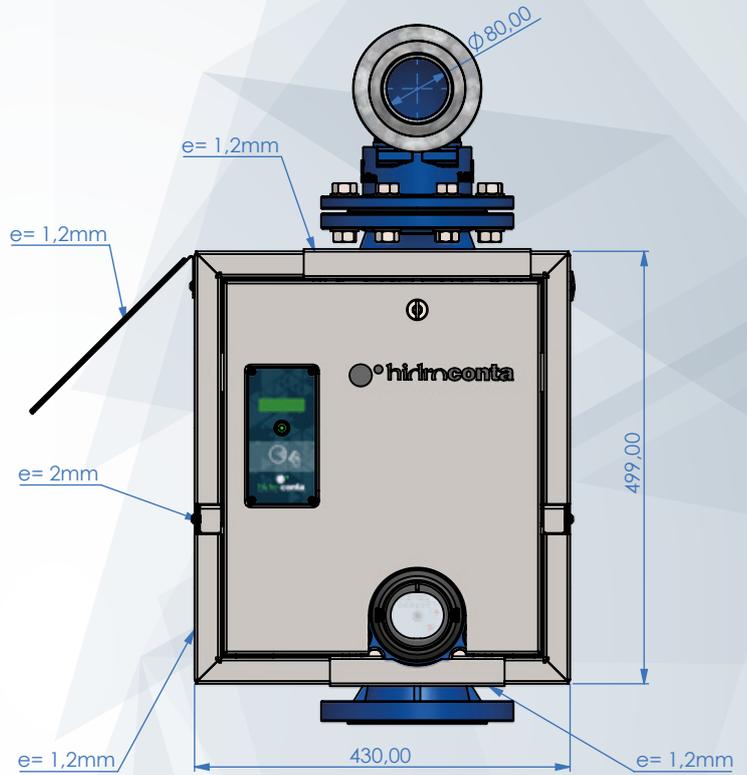
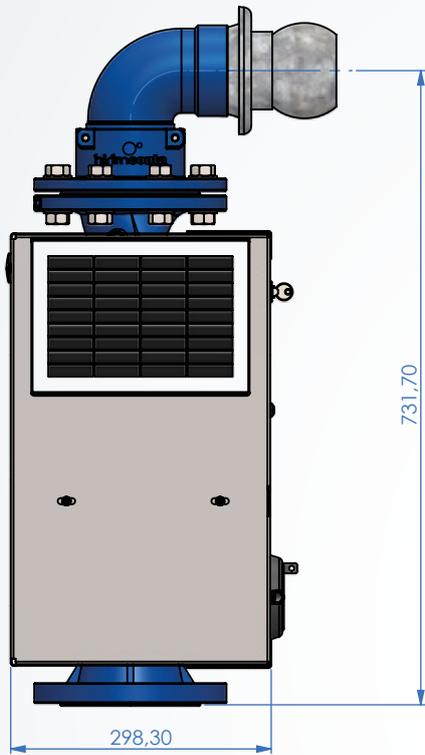
VSWR <2:1

Operating temperature -40 ° C to + 85 ° C

CASE

Material

AISI 304



## HYDRAULIC EQUIPMENT



## Hydrodynamic design

Hydrant is the name given to the different elements existing in a water connection point. In particular, when we refer to HYDRANTS, we mean the connection between the meter + the hydraulic valve (multifunctional).

The hydrant is the key element in the irrigation system and the point where the water enters the system. It has a series of special characteristics designated by the user.



## Advantajes

- ✓ - Compact installation.
- ✓ - Different uses: irrigation networks, automated irrigation networks, systems in general.
- ✓ - Reduction in installation space.
- ✓ - Low installation cost.
- ✓ - Possibility of multiple functions through incorporating flow control pilots.
- ✓ - The valve action is very smooth, as no pressure waves are generated.
- ✓ - They provide a large supply flow rate with a low load loss..



## Aplicaciones

- To provide users with water that has specific pressure and flow rate characteristics.
- To enable regulation in the event of alterations in the user's pressure or flow rate needs.
- To allow operation from a distance through remote management, depending on the needs of the user. (DEMETER).
- Systems in general. Limits the pressure and flow rate constants that are triggered due to complex geography.

### ASSEMBLIES

- Leopard electrovalve
- Tangencial water meter
- Dynamic hole Disc



# TANGENCIAL WATER METER



## Especificaciones técnicas

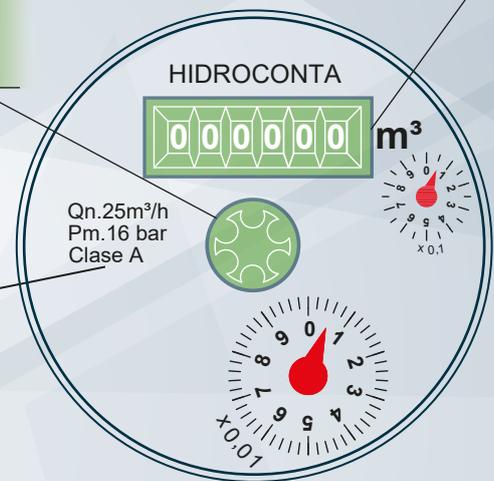
- Tangential propeller and removable mechanism.
- Class A horizontal installation (observe the flow direction indicated on the body by an arrow).
- Low pressure loss.
- Dry sphere.
- Magnetic transmission.
- Direct reading on the dial.
- Protective cover.
- Cast iron body.

Rotary starwheel for leak detection

6 lining figures dial

Class A. ISO 4064.

Note: the equip does not have conformity certificate for its use as a mandatory metrological instrument on the national level.



## Dimensions

Calibre		L	H	D	Weight
mm	Inch	mm			Kg
100	4"	250	295	220	15,44

Coupling - Flange PN16



## Technical specifications

Calibre		Q. maximum	Q. nominal	Q. de transitional	Q. minimum	Minimum Reading	Maximum Reading
mm	Inch	m <sup>3</sup> /h				m <sup>3</sup>	
100	4"	120	60	18	4,8	0,002	999.999

Clase A ISO 4064



## Working conditions

Room temperature	Maximum pressure
0.1 °C ~ 40 °C	≤ 16 bar

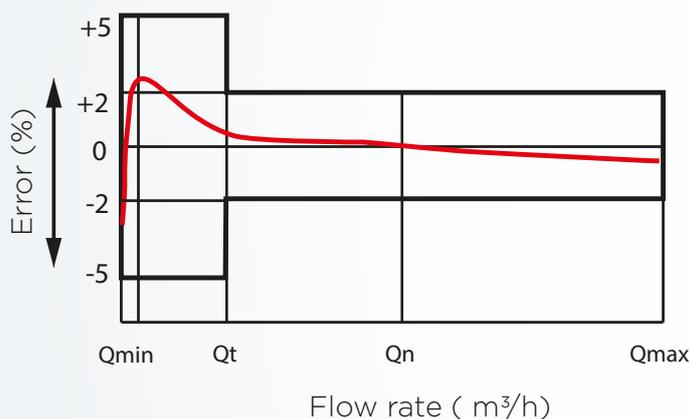


## Maximum permissible error

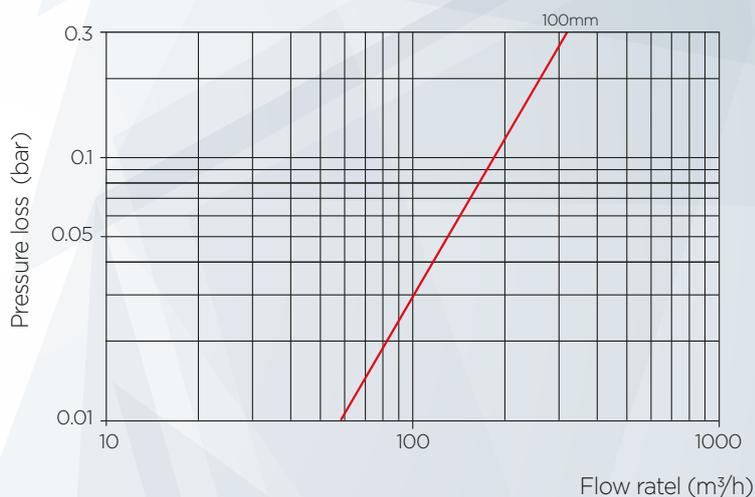
Range	Error ( % )
$Q_{min} \leq Q < Q_t$	± 5%
$Q_t \leq Q \leq Q_{max}$	± 2%



## Flow error curve



## Pressure loss curve



## Pulse emitter

Type	Reed sensor
Pulse value	100L
Min. amperage to close contact	0 mA
Max. amperage to close contact	100 mA
Closed contact impedance	< 1 Ω
Open contact resistance	~∞
Max. supportable voltage	24V
Max. Stabilization time	100us
Closed contact lapsed time	20% of cycle

# ELECTROVALVE LEOPARD



## Functioning

The valve with solenoid or electrovalve Leopard is an on / off valve.

The valve will operate fully open or fully closed when the solenoid is energized.

The valve uses the own pressure of the network for its operation.

In case of low pressure in the network any external source of pressure can be used.



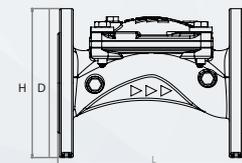
## Applications

La instalación de electroválvulas nos permite actuar sobre la válvula a distancia, podremos controlar la apertura y cierre de la válvula de manera automática.



## Dimensions

Calibre		L	H	D	Weight	Conexions
mm	Inch	mm			Kg	
100	4"	311	222	222	16,2	BRIDA

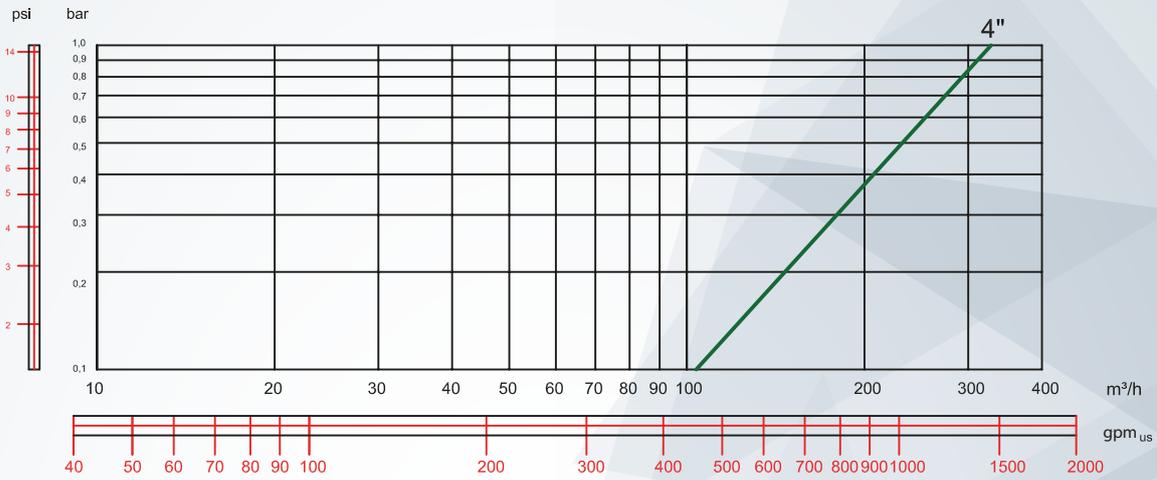


## Technical specifications

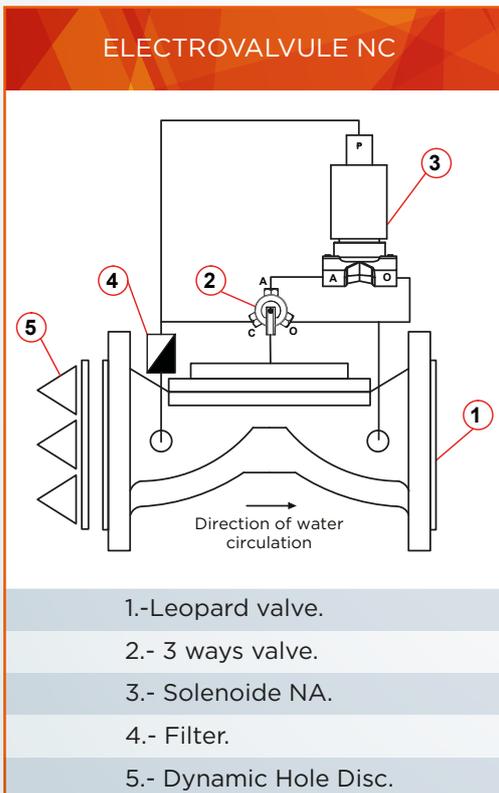
Calibre		Minimum opening pressure	Maximum pressure	KV	CV
		bar	bar	m <sup>3</sup> /h	US gpm y psi
100	4"	0,3	PN16	328	380,48



## Pressure loss curve

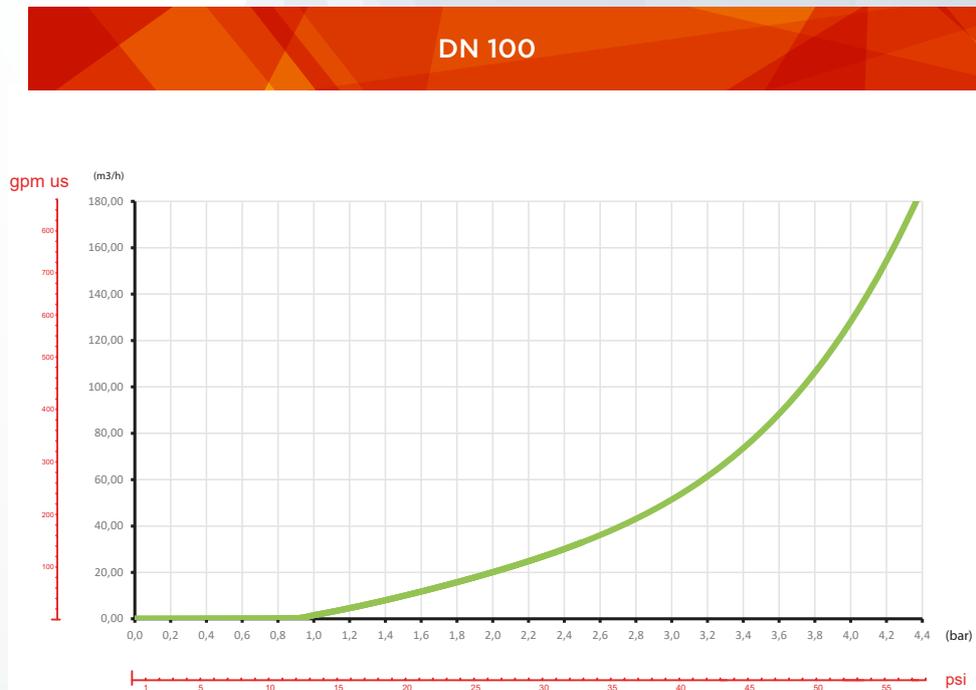


## Functional drawing



## Operating curves

\* Data in non-pressurized downstream conditions.





## QUANTUM

WHEN WATER COUNTS

CUANDO EL AGUA ES LO QUE CUENTA

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