

hidroconta
metering technology

WHEN WATER COUNTS



water meter

Predator

hidroconta.com

Woltmann
technology

EMEÑE and MID
approval

Magnetic
transmission



Convertible into a
Smart meter

High accuracy
R160H / R100V

Easy installation
of the
pulse emitter

Installation
UO/DO

Hydrodynamic design

Hidroconta's Predator water meter has been designed to facilitate the correct water thrust on the propeller. It has a symmetrical regulation device that distributes the inlet load balancing the flow.

MID and EMEÑE approval

Hidroconta's Predator water meter exceeds the metrological requirements based on Directive 2014/32/EU so they are used for totalization and control of domestic water consumption (MID). In addition, it complies with the national Type Examination for use in water of public water domain (EMEÑE).

Technical specifications

- ✓ Pre-installation for pulse emitter. Removable pulse emitter without the need to unseal the counter.
- ✓ Sizes from 50 to 200 mm.
- ✓ Vacuum-tight dial (IP68).
- ✓ Metrology R160 in horizontal position and R100 in vertical position.
- ✓ Pressure loss class $\Delta p 16$ (0,16 bar).
- ✓ Use for cold water 0,1 - 30°C.
- ✓ The Predator meter can reach up to a pressure of 16 bar.
- ✓ Certified for drinking water and irrigation.

Water engineering

Its operation is based on a turbine or propeller whose axis is located in the water flow line. The rotation of the propeller is transmitted by magnetic transmission through a shaft and gear to a head that accumulates in its totalizer the volume of water that has circulated through the meter.

Dial



MID approval
for drinking
water

Permanent
flow rate

Emeñe
approval for
use of public
water domain

Water meter
serial number

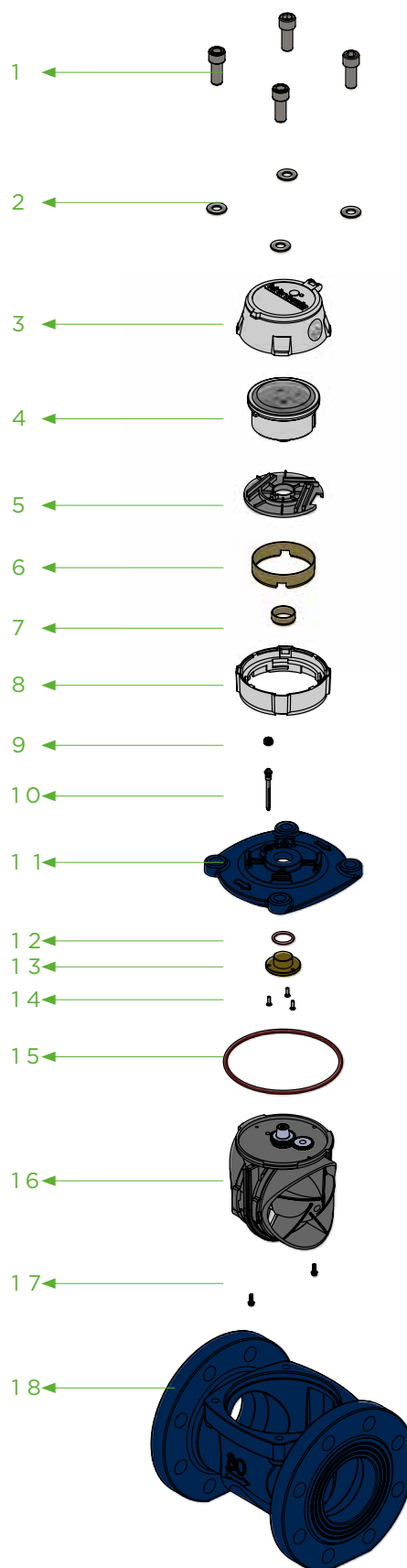
Installation conditions
Maximum working pressure
Horizontal working range
Vertical working range



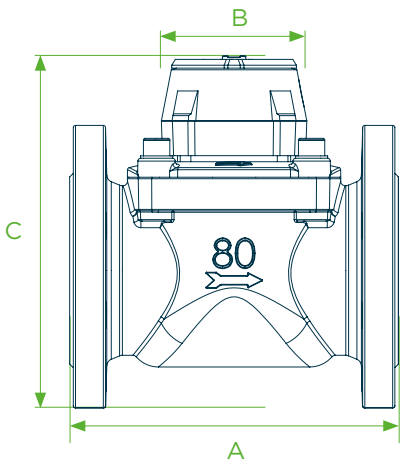
Disassembly



Nº	DESCRIPTION	MATERIAL
1	Screws	Stainless steel
2	Washers	Stainless steel
3	Body and watch case cover	Plastic
4	Clockwork	Assembly
5	Pulse guide plate	Plastic
6	Anti-fraud ring Ø70	Iron
7	Anti-fraud ring Ø26,2	Iron
8	Watch housing base	Plastic
9	Adjusting screw M10x0,75	Brass
10	Regulating vane shaft	Stainless steel
11	Cover	Cast iron
12	O-ring	NBR
13	Insert	Brass
14	Screws	Stainless steel
15	O-ring	NBR
16	Grinder assembly	Assembly
17	M3 screw	Stainless steel
18	Counter body	Cast iron



Dimensions



CALIBRE		A	B	C	WEIGHT	CONNECTIONS
mm	in	mm		kg		
50	2"	200	93	201	7,8	Flange
65	2-1/2"	200	93	210	9,5	Flange
80	3"	225	93	244	14,5	Flange
		248	93	217	8,0	Victaulic
100	4"	250	93	253	16,5	Flange
		278	93	218	9,5	Victaulic
125	5"	250	93	280	19,5	Flange
150	6"	300	93	310	32,0	Flange
		432	93	285	32,0	Victaulic
200	8"	350	93	370	61,0	Flange

Packing



CALIBRE		PCS. PER BOX	DIMENSIONS PER BOX (CM)			GROSS WEIGHT	CONNECTIONS
mm	in		Length	Width	Height	Kg	
50	2"	1	29,6	21,5	23	9	Flange
65	2-1/2"	1	31,8	24,0	25,1	11	Flange
80	3"	1	31,8	23,9	25	16	Flange
		1	31,5	26,0	29,0	9	Victaulic
100	4"	1	31,9	25,7	27,8	18	Flange
		1	32,0	26,5	29,0	10,5	Victaulic
125	5"	1	36,0	28,2	27,2	21,5	Flange
150	6"	1	38,8	32,3	32,4	34,5	Flange
		1	49,0	26,0	35,0	34,0	Victaulic
200	8"	1	40,8	38,4	36,9	63,5	Flange

Working conditions

WATER TEMPERATURE
RANGE

0,1 °C - 30 °C

MAXIMUM PRESSURE

≤ 16 bar

Maximum permissible error

RANGE

ERROR (%)

$Q_1 \leq Q < Q_2$

± 5%

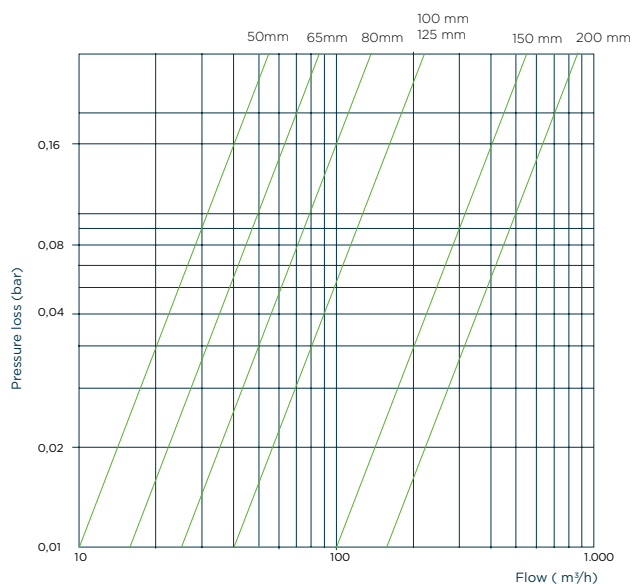
$Q_2 \leq Q \leq Q_4$

± 2%

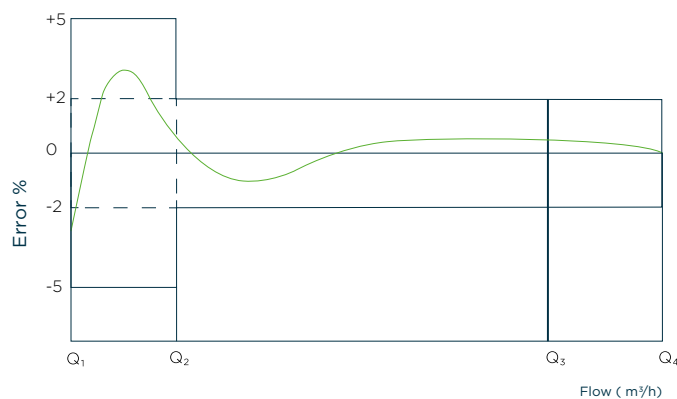
Technical specifications

CALIBRE		Q_4	Q_3	Q_2	Q_1	STARTING FLOW RATE	MINIMUM READING	MAXIMUM READING	RATIO
mm	in			m ³ /h		m ³ /h		m ³	
50	2"	50	40	0,4 0,64	0,25 0,4	0,150	0,0002	999.999	R160H R100V
65	2-1/2"	78,75	63	0,63 1,008	0,394 0,63	0,200	0,0002	999.999	R160H R100V
80	3"	125	100	1 1,6	0,625 1	0,300	0,0002	999.999	R160H R100V
100	4"	200	160	1,6 2,56	1 1,6	0,400	0,0002	999.999	R160H R100V
125	5"	200	160	1,6 2,56	1 1,6	0,500	0,0002	999.999	R160H R100V
150	6"	500	400	4 6,4	2,5 4	1,000	0,002	9.999.999	R160H R100V
200	8"	787,5	630	6,3 10,08	3,938 6,3	1,400	0,002	9.999.999	R160H R100V

Pressure loss curve



Flow error curve



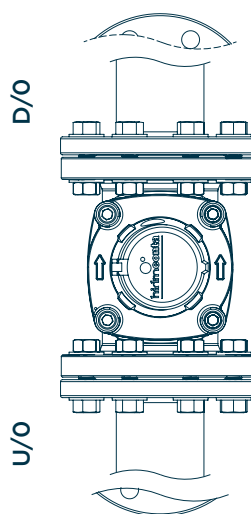
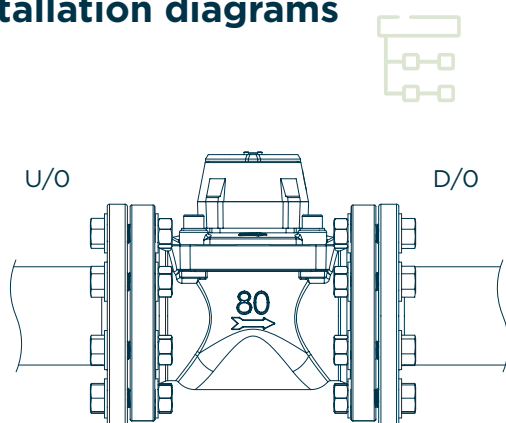
Pulse output



DIRECT AND INVERSE PULSE OUTPUT

Pulse Value	DN: 50-125: 1 pulse 100L DN 150-200: 1 pulse 1000L
Minimum current for contact closure	0mA
Maximum current for contact closure	100mA
Contact closed resistance	< 1 Ω
Open contact resistance	$\sim \infty$
Max. withstand voltage	24V
Max. contact stabilization time	100 us
Contact closed contact duration	40% Cycle
Standard cable length	1,5 m

Installation diagrams



REV.7

Installation instructions

It is recommended to always place the water meter at a low point of the installation.

Place the water meter in a way that the arrow corresponds to the direction of water flow.

Do not force the water meter during installation, avoid tensile and torsion stresses.

The water meters must always be filled with water. A minimum pressure of 0.3 bar is recommended at the outlet of the water meter to ensure that it is completely filled with water. Install at a lower level concerning the slope of the rest of the conduction, in this way, it will also eliminate the formation of air pockets in its interior.

If there is the presence of air in the pipeline, it is necessary to place air release valves to avoid erroneous readings.

If the water in the pipeline has coarse particles in suspension, it is recommended to install a roughing filter beforehand.

Provide a shut-off valve upstream of the water meter to facilitate its maintenance and/or repair.

Before installing a water meter in a new pipe, it is recommended to drain it to eliminate particles.

The inside diameter of the pipe should be equal to the nominal diameter of the water meter.

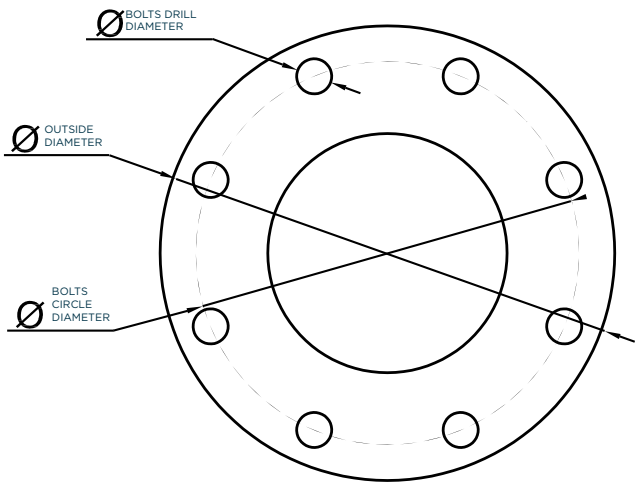
It is not necessary to install straight sections before or after the water meter UO-DO.

Suitable for installation in horizontal position R160H and vertical position R100V.

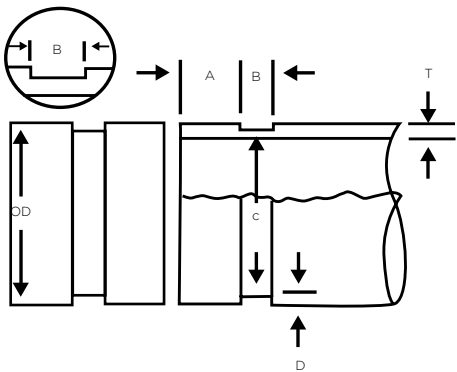
Coupling



	CALIBRE		PN	OUTSIDE DIAMETER	BOLTS CIRCLE DIAMETER	BOLTS DRILL DIAMETER	Nº BOLTS	NORMATIVE
	mm	in						
FLANGE	50	2"	10/16	165	125	18	4	UNE - EN 1092-1
	65	2-1/2"	10/16	185	145	18	4	
	80	3"	10/16	200	160	18	8	
	100	4"	10/16	220	180	18	8	
	125	5"	10/16	250	210	18	8	
	150	6"	10/16	285	240	22	8	
	200	8"	10 16	340	295	22 22	8 12	



	CALIBRE		OUTER PIPE DIAMETER		GASKET SEAT A		GROOVE WIDTHE B	GROOVE DIAMETER C		GROOVE DEPTH
	mm	in	OD	Tolerance +	Tolerance -	± 0,76 mm	± 0,76 mm	C	Tolerance	D
VICTAULIC	80	3"	88,9	+0,89	-0,79	15,88	7,95	84,94	-0,018/-0,46	1,98
	100	4"	114,3	+1,14	-0,79	15,88	9,53	110,08	-0,020/-0,51	2,11
	150	6"	168,3	+1,6	-0,79	15,88	9,53	163,96	-0,022/-0,56	2,16



Automatic meter reading

Adding the IRIS communications module to the water meter will enable automatic remote readings. IRIS devices allow mechanical meters to access the world of IoT communications. Its great versatility allows it to be integrated with a wide range of 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



Reverse flow alarm:

Reverse flow detection. Only available for the 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 pulse version.

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	COMUNICACION	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.



1. Which is the difference between dry dial, wet dial and semi-dry water meter dial?

On water meters with dry dial the reading mechanism (clock) is tightly separated from the wet chamber of the meter.

On Wet dial water meter the watch is totally immersed in the fluid.

For water meters with semi-dry dial, the reading mechanism is totally immersed in the fluid but the dial is partially separated and protected by a sealed capsule.

2. What are the ranges of measurement and precision?

The measuring range of the meters is determined by the Directive MID 2014/32 / UE establishing the ratio between the value of the permanent flow (Q3) and that of the minimum flow (Q1). The water meter can measure up to the maximum flow rate (Q4) for short periods of time without deterioration.

The maximum permissible error, positive or negative, in volumes between the transition flow (Q2) (included) and the overload flow (Q4) would be 2% with a water temperature 30 ° C.

The maximum permissible error, positive or negative, in volumes between the minimum flow rate (Q1) and the transition flow (Q2) (excluded) would be 5%.

3. The MID directive and its compliance

The MID Directive (2014/32 / EU Measuring Instruments Directive) is a directive of the European Union whose purpose is to harmonize the different aspects of Legal Metrology in the member states.

The most important aspect of this directive is that equipment in possession of a MID certificate can be used in the EU.

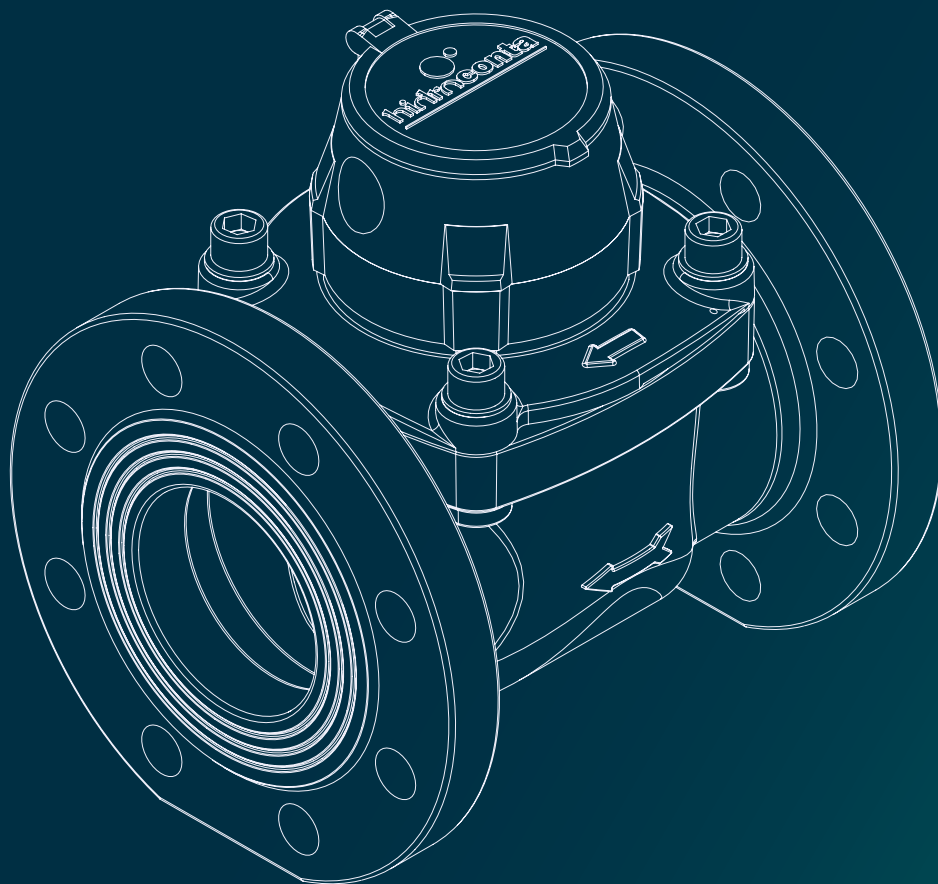
4. How should the single jet water meters be installed?

HIDROCONTA single jet counters do not require special installation conditions.

If you have any doubt about the installation of these equipments, it is recommended to follow the instructions indicated in the technical data sheet of the product.

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metering technology

WHEN WATER COUNTS



water meter

Predator

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