hidroconta
metering technology

WHEN WATER **COUNTS**

water meter

hidrowoltmann

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Woltmann
technology

EMEÑE
approval

Magnetic
transmission

Convertible into a
Smart meter

Accuracy
R50H

Pre-equipped for
pulse emitter

Installation
U10-U0S/DO

REV.8

Hydrodynamic design

The HIDROWOLTMANN water meter is an excellent solution for the measurement of large volumes of water in the field of irrigation.

HIDROWOLMANN has a **wide measuring range** at a good metrological performance which, together with our **IRIS TELELECTURA** solutions, is the best solution for an efficient control of water resources in agricultural environments.

With its symmetrical regulation device that balances the flow input, **it offers R50H accuracy.** In addition, it has a mechanism protected against magnetic fields that offers greater security against fraud.

Technical specifications

- ✓ - Pre-installation for pulse emitter.
- ✓ - Calibres from 50 to 300 mm.
- ✓ - Clockwork with the vacuum-tight dial.
- ✓ - Metrology R50 in a horizontal position.
- ✓ - Pressure loss class Δp 10 (0,1 bar).
- ✓ - Easy to read totaliser.
- ✓ - Use for cold water 0.1 - 30˚C.
- ✓ - The Hidrowoltmann water meter can reach up to a pressure of 16 bar.

High resistance

To increase the service life of the water meter, Hidrowoltmann's design provides hydrodynamic compensation to avoid external thrust on the propeller shaft.

Dial

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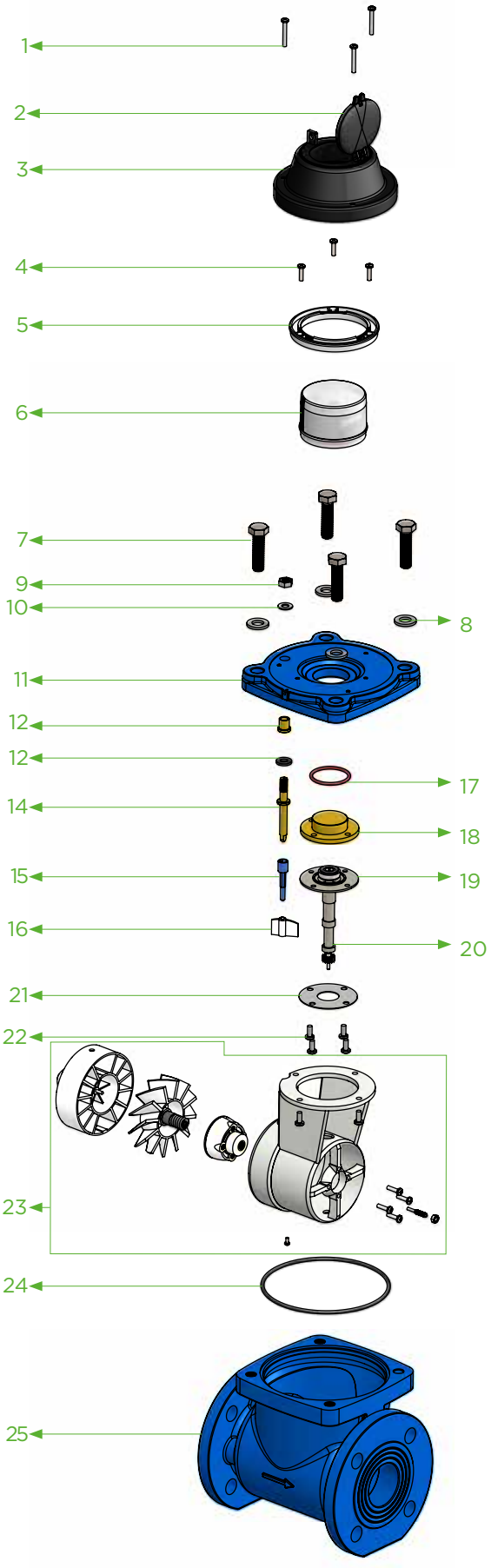
Disassembly

Nº	DESCRIPTION	MATERIAL
1	**Screw**	A304
2	**Cover**	Iron
3	**Casing**	Iron
4	**Screw**	A304
5	**Ring**	Nylon
6	**Watches**	Assembly
7	**Screw**	A304
8	**Washer**	A304
9	**Axle nut**	A304
10	**Washer**	A304
11	**Cover**	Cast iron
12	**Control paddle bushing**	Brass
13	**Flat gasket**	NBR
14	**Control paddle shaft**	Brass
15	**Shaft bushing**	Plastic
16	**Control paddle**	Plastic
17	**O-ring**	NBR
18	**Insert**	Brass
19	**Helix shaft with magnet**	Assembly
20	**Helix support**	Plastic
21	**Grinder centering plate**	A304
22	**Screw**	A304
23	**Spindle group**	Assembly
24	**O-ring**	NBR
25	**Body**	Cast iron



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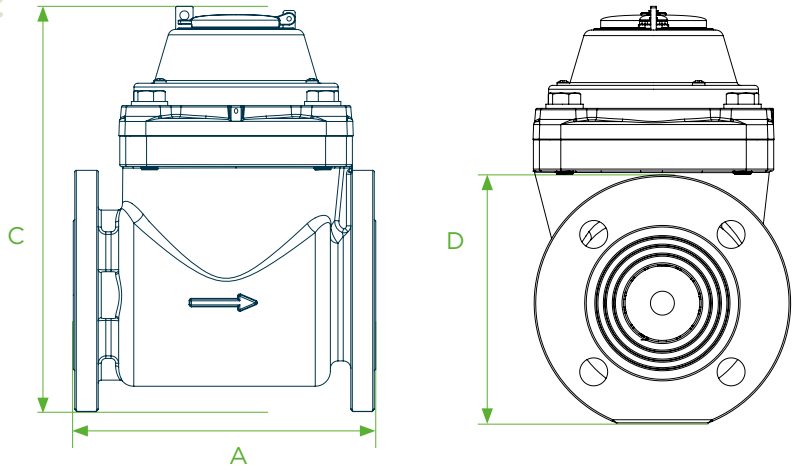
Dimensions



CALIBRE		A	D	C	WEIGHT	CONNECTIONS
mm	in		mm		kg	
50	2”	200	165	260	11,74	Flange
65	2-1/2”	200	185	260	13,13	
80	3”	225	200	280	15,34	
100	4”	250	220	290	17,02	
125	5”	250	250	300	22,74	
150	6”	300	285	330	29,90	
200	8”	350	340	370	41,70	
250	10”	450	405	470	58,65	
300	12”	500	460	492	74,60	

Packing

CALIBRE		PCS. PER BOX	DIMENSIONS PER BOX (CM)			GROSS WEIGHT	CONNECTIONS
mm	in		Length	Width	Height	Kg	
50	2”	1	34	22	24	13,36	Flange
65	2-1/2”	1	34	24	24	14,85	
80	3”	1	35,5	25,1	26,7	17,36	
100	4”	1	35,7	26	28,4	19,16	
125	5”	1	36,2	28,5	27,4	24,89	
150	6”	1	38,6	32,5	33,4	32,65	
200	8”	1	42,7	38,4	37,9	45,40	
250	10”	1	51,1	44,4	50,3	68,35	
300	12”	1	57	50	58	102,5	

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Working conditions

WATER TEMPERATURE RANGE	MAXIMUM PRESSURE
0,1 °C - 40 °C	≤ 16 bar

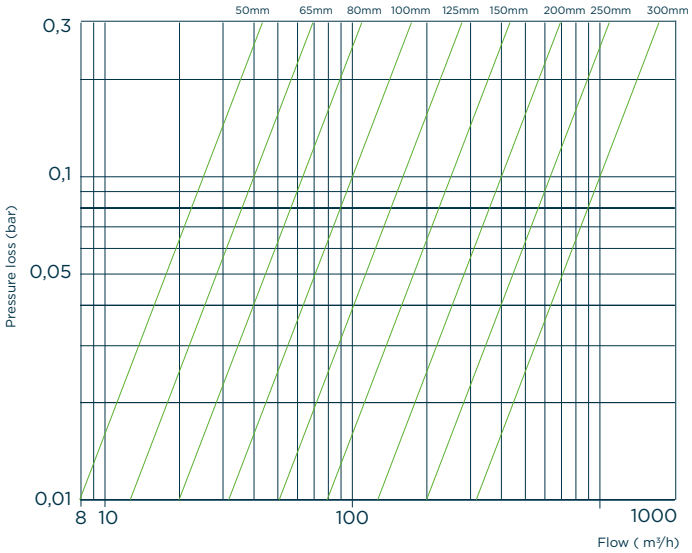
Maximum permissible error

RANGE	ERROR (%)
$Q_1 \leq Q < Q_2$	± 5%
$Q_2 \leq Q \leq Q_4$	± 2%

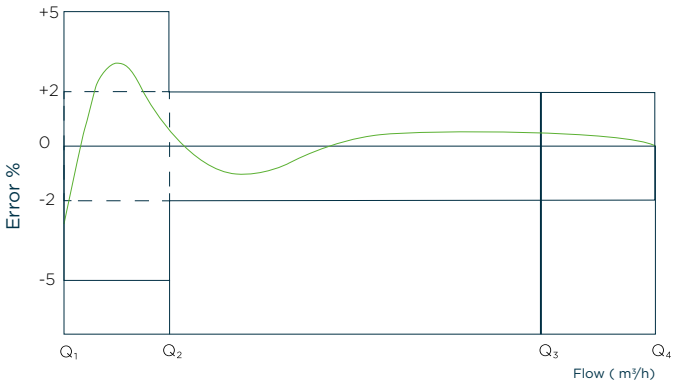
Technical specifications

CALIBRE		Q_4	Q_3	Q_2	Q_1	MINIMUM READING	MAXIMUM READING	RATIO
mm	in	m^3/h				m^3		
50	2”	31,25	25	0,80	0,50	0,0005	9.999.999	R50H
65	2-1/2”	50	40	1,28	0,80	0,0005	9.999.999	R50H
80	3”	78,75	63	2,02	1,26	0,0005	9.999.999	R50H
100	4”	125	100	3,20	2,00	0,0005	9.999.999	R50H
125	5”	200	160	5,12	3,20	0,005	99.999.999	R50H
150	6”	312,5	250	8,00	5,00	0,005	99.999.999	R50H
200	8”	500	400	12,80	8,00	0,005	99.999.999	R50H
250	10”	787,5	630	20,16	12,60	0,02	9.999.999	R50H
300	12”	1.250	1.000	32,00	20,00	0,02	9.999.999	R50H

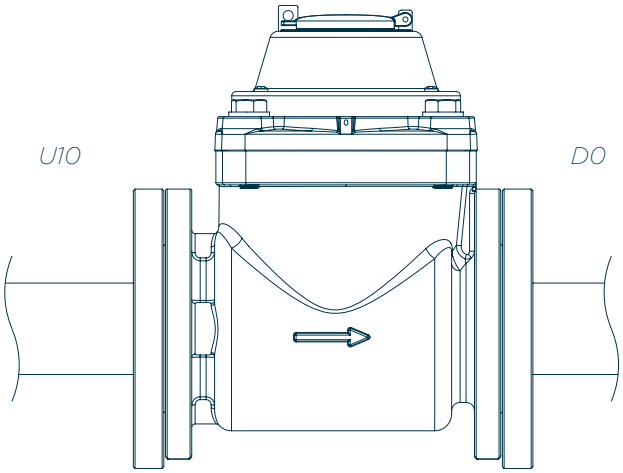
Pressure loss curve

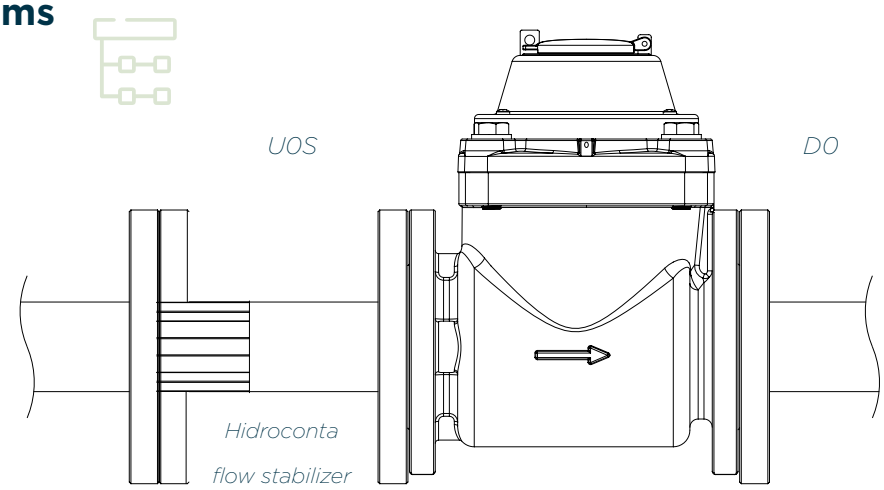


Flow error curve



Installation diagrams





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Installation instructions

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

Position the water meter so 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 filled with water. Install at a lower level concerning the slope of the rest of the pipe, thus also eliminating the formation of air bubbles inside it.

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

If air is present in the pipe, it is necessary to place release air valves to avoid erroneous readings.
If the water in the pipe has large particles in suspension, it is recommended to install a preliminary filter.

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

The inner diameter of the pipe must be equal to the nominal diameter of the water meter.

Suitable for installation in horizontal position R50H.

U0S: If a Hidroconta flow stabilizer is installed at the inlet of the water meter, the installation will not require straight runs upstream of the water meter.

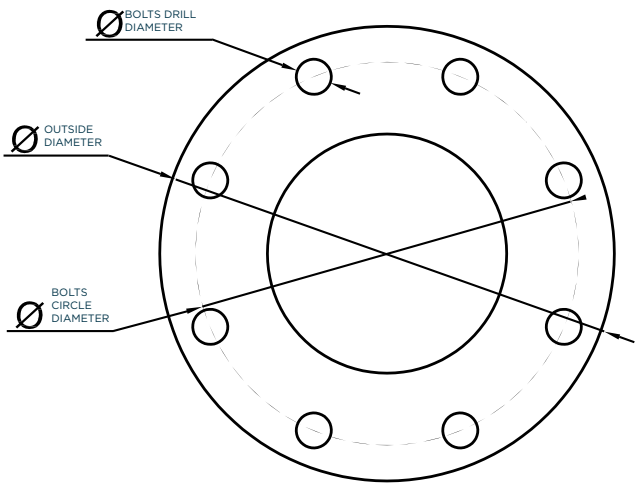
Pulse output

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	~ ∞
Max. withstand voltage	24V
Max. contact stabilization time	100 us
Contact closed contact duration	40% Cycle
Standard cable length	1,5 m

Coupling

	CALIBRE		PN	OUTSIDE DIAMETER	BOLTS CIRCLE DIAMETER	BOLTS DRILL DIAMETER	Nº BOLTS	NORMATIVE
	mm	in			mm			
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”	16	340	295	22	12	
	250	10”	16	405	355	26	12	
	300	12”	16	460	410	26	12	
	350	14”	16	520	470	26	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.

NB-IoT	
Belts	LTE NB2/B1/B2/B3/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
868 MHz
OMS T1 and C1

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

GPRS	
Frequency	- 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	Class 4 (2W) on GSM850 and EGSM900 Class 1 (1 W) on DCS 1800 and PCS1900
Bidirectional	Yes/Half-duplex
SIM	MFF2 eSIM and nano SIM card supported

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

Alarms

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.

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	COMUNICATION	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.

FAQs

1- Is the turbine broken?

Turbine breakage may be caused by the presence of solid particles of considerable size, e.g. stones and pebbles that may be suspended in the water.

In this case you should replace the water meter mechanism and place either a “Y” or basket strainer upstream of the water meter to prevent this from happening again.

2- Doesn’t the water meter add up?

It is likely that it is clogged, has a faulty internal part or has suffered from age-related wear and tear. When wear due to ageing occurs, the water meter may add up m3, but not the actual m3. In this case, the faulty element must be replaced. Our water meters, thanks to their hydrodynamic design with independent mechanism, make this type of repairs very easy.

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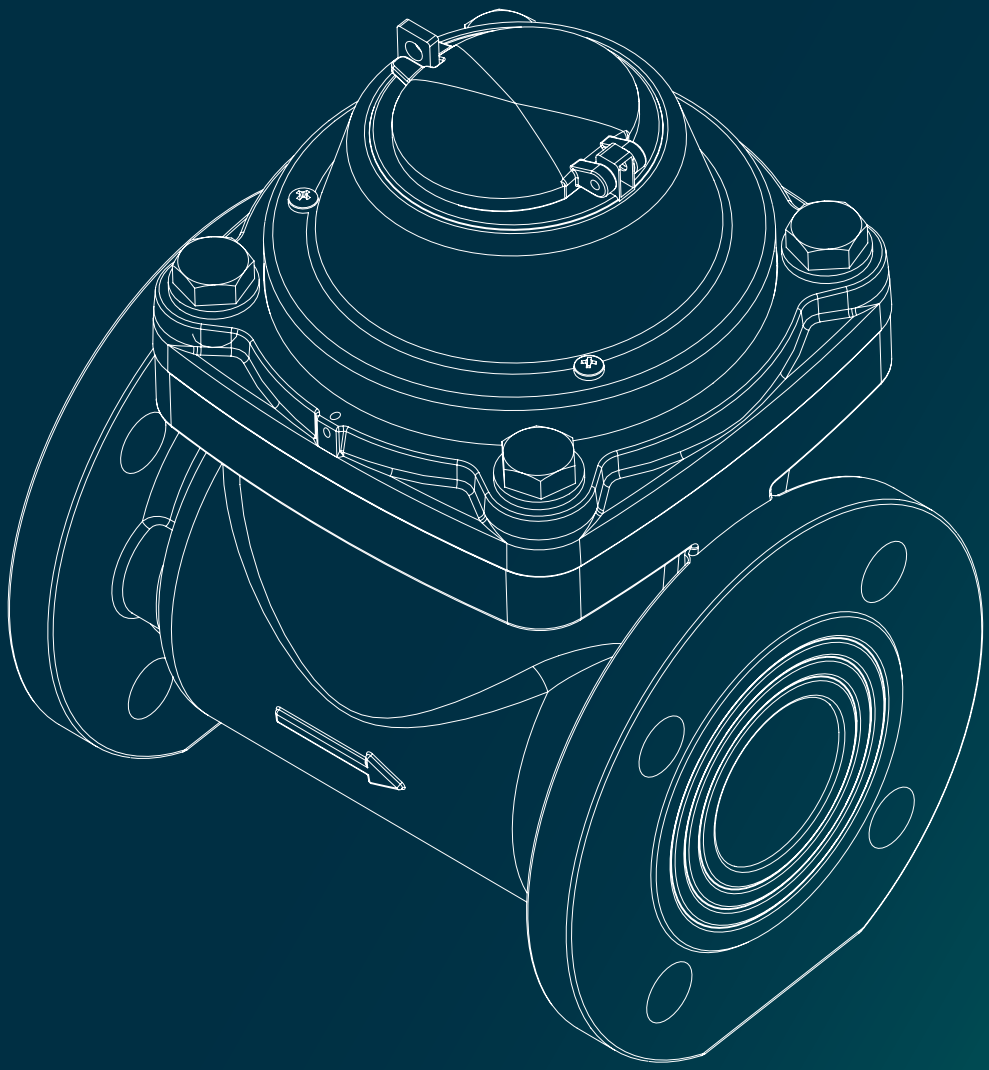

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AENOR
GESTIÓN DE LA CALIDAD
ISO 9001
ER-0362/2000

CERTIFIED IQNet MANAGEMENT SYSTEM