

**TANGENTIAL WATER METER FOR IRRIGATION  
WITH IMPULSE EMITTER DEVICE PN16**



**Size :** DN 50 to 200  
**Connection Ends :** Flanged ISO PN 10/16 ( ISO PN16 for DN200 )  
**Min Temperature :** 0°C  
**Max Temperature :** + 50°C  
**Max Pressure :** 16 Bars  
**Specifications :** Tangential type  
Dry dial  
Magnetic transmission

**Materials :** Cast iron body

## TANGENTIAL WATER METER FOR IRRIGATION WITH IMPULSE EMITTER DEVICE PN16

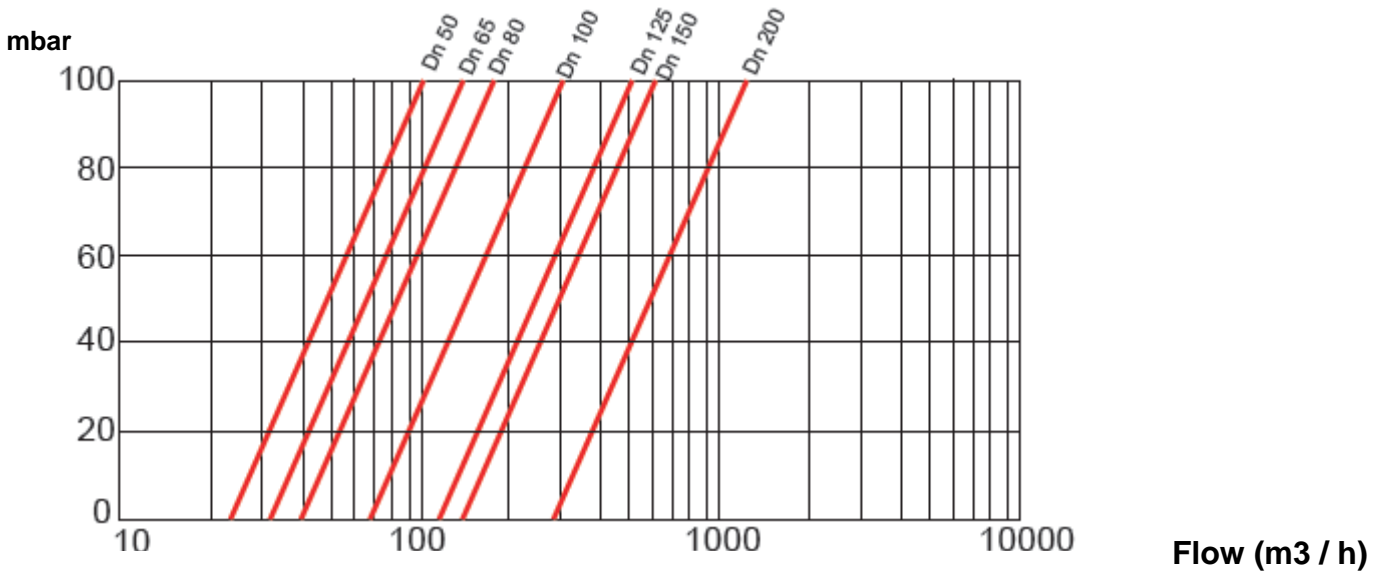
**SPECIFICATIONS :**

- Tangential type with removable insert
- Pre-equipped for pulse emitter
- A Class for horizontal position with horizontal dial ( respect the flow direction indicated by the arrow )
- Negligible head loss
- Dry dial
- Magnetic transmission
- Direct reading on numerical rolls
- With lid
- Cast iron body

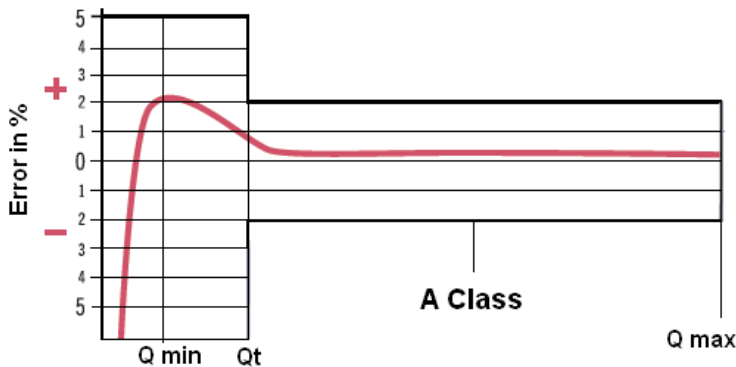
**USE :**

- Irrigation
- Min and max Temperature Ts : 0°C to + 50°C
- Max Pressure Ps : 16 bars

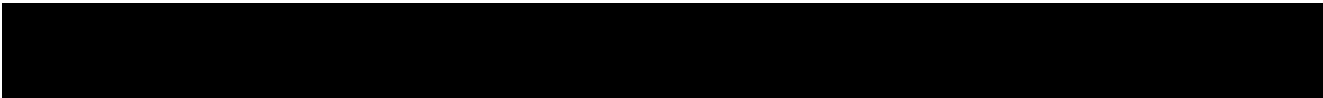
**HEAD LOSS :**



**TYPICAL ERROR CURVE :**



**Qmin : Min flow**  
**Qt : Transitional flow**  
**Qmax : Max flow**



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**RANGE :**



- Cold water type with impulse emitter device flanged R.F. ISO PN10/16 up to DN150 and ISO PN16 for DN200 **Ref.1724 bore 50 to 200**



- LCD counter **Ref. 1749021**



- LCD counter with reset **Ref. 1749023**



- Double LCD counter with reset **Ref. 1749022**



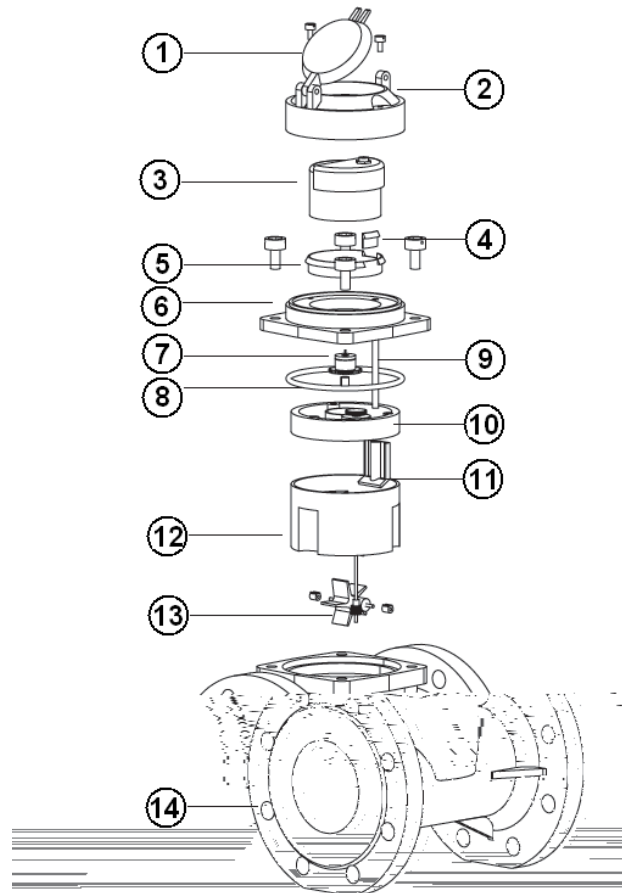
- Wireless radio MBUS converter **Ref. 1749006**



- MBUS converter PAD PULSE **Ref. 1749015**

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**MATERIALS :**



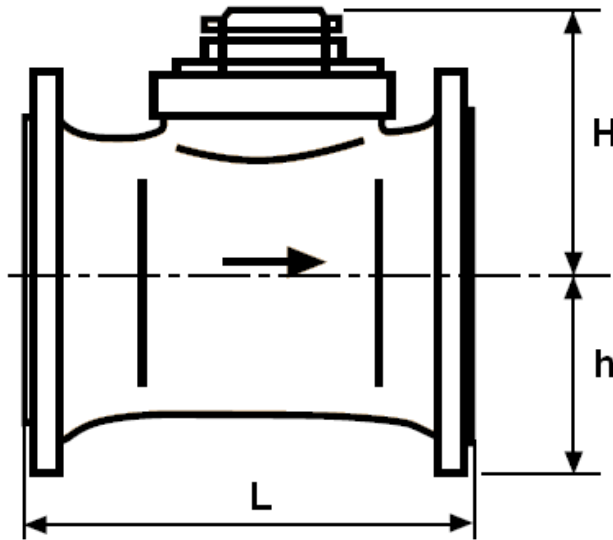
Item	Designation
1	Lid
2	Cap
3	Mechanism with PC and glass 5 mm
4	Clamp
5	Ring nut
6	Separation plate
7	Magnetic transmission
8	O-ring
9	Adjusting shaft
10	Upper insert
11	Adjusting device
12	Lower insert
13	Turbine
14	Cast iron body

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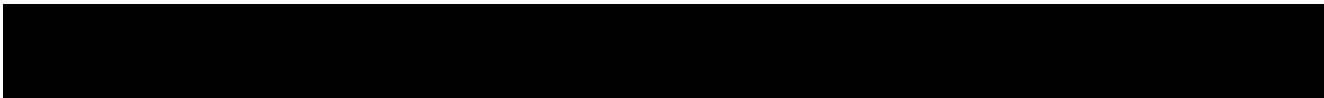
DIAL :



SIZE ( in mm ) :



Ref.	DN	50	65	80	100	125	150	200
1724	L	200	200	225	250	250	300	350
	h	80	92.5	100	110	125	142.5	170
	H	150	150	150	150	150	152	195
	Weight (Kg)	11.5	13	15	19	24	30	48



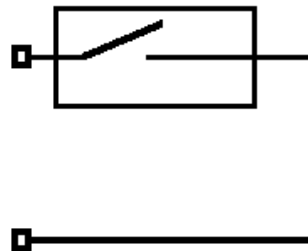


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**IMPULSE EMITTER SPECIFICATIONS :**

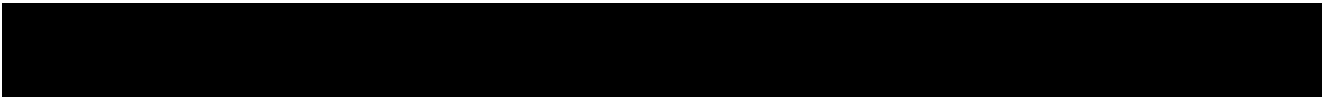
REED contact

- Max voltage : 24 V
- Min voltage : 0.02 V
- Max bearable Current : 1.2 A
- 2 wires cable 3 meters lenght
- Normaly opened contact
- Contact in Rhodium
- Contact rating 10W
- Switching current 0.5A
- Max resistance contact 0.1 Ohm
- Min breakdown voltage 150V
- Min insulation resistance  $10^9$  Ohm
- Max operate time 0.5 ms
- Max release time 0.3 ms
- Max capacitance 0.5 pF
- Min resonant frequency 5000 Hz
- Max operation frequency 400 Hz
- Max switching voltage : 24 V
- Min voltage : 0.02 V
- Max current : 1.2 A
- Cable 2 wires 3 meters long



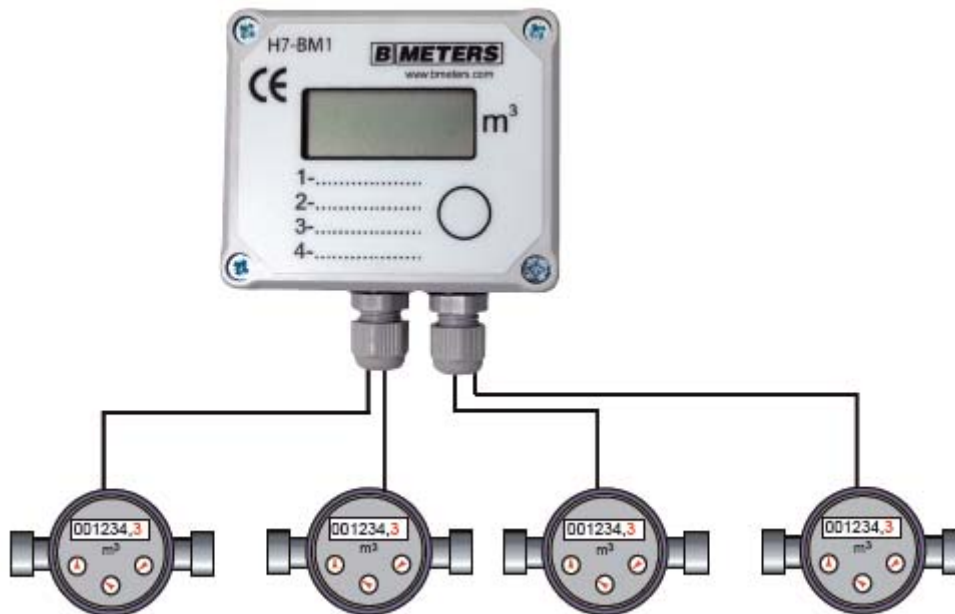
**PULSE POSSIBILITIES :**

Pulse Number	By multiple of
1	100 liter for bore 50 to 100
	1000 liter for bore 125 to 200



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LCD COUNTER ( OPTION ) :



Use of this device allows grouping and reading of the impulse signals generated by up to 4 water meters. It is possible to set the pulse value for each input signal independently.

- Up to 4 entries
- Max reading : 1999.999 m<sup>3</sup>
- Settable impulse values : 1, 2.5, 10, 25,100 or 1000 L/impulse
- Wall mounting with 2 screws Ø6 mm
- Power supply by lithium battery ( 8 years lifetime )
- External dimensions : 89 x 73 x 42 mm
- IP protection : IP54



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LCD COUNTER SETTING :



H7-BM1 is equipped with 3 buttons and LCD display.  
K1 button is located externally near LCD display.  
K2 and K3 buttons are located internally as showed in the following picture.

K1 button is used in normal operating mode, for switching the display view to another channel.

**Setting the pulse value**

- Press button K1 for choosing the correct channel.
- Wait until the reading value appears.
- Press the button K2, the display shows the current pulse value.
- It is possible to change the pulse value by pressing button K3.
- For setting the value you can press button K2 or wait a few seconds.

**Set the starting reading value**

- Press button K1 for choosing the correct channel
- While the display show the channel number, press button K2. In this way the figure starts flashing indicating the quantity of liters.
- Press button K3 for setting the desired starting reading value. You can press button K2 for moving to the second position.
- Repeat the previous operation for all the positions showed on the display. After pressing button K2 on the last position, the reading value is stored.

**Attention**

It is possible to set the starting reading value after having initially set the pulse rate.



## **TANGENTIAL WATER METER FOR IRRIGATION WITH IMPULSE EMITTER DEVICE PN16**

### **STANDARDS :**

- Fabrication according to ISO 9001 : 2008 ICIM and IQNET
- Flanged according to EN 1092-2 PN16
- DIRECTIVE 97/23/CE : Products excluded from directive ( article 1, § 3.2 )

**ADVICE :** Our opinion and our advice are not guaranteed and SFERACO shall not be liable for the consequences of damages. The customer must check the right choice of the products with the real service conditions.

### **INSTALLATION INSTRUCTIONS OF WATER METER**

#### **BEFORE INSTALLATION :**

Pipe-line must be cleaned and free from residual of weldings, rubbish, shaving and every kind of extraneous materials.  
Pipe-line must be perfectly aligned and their support properly dimensioned so that there's no external constraint.  
Tighten the bolts in cross  
Use the right bolt tightening so that the ends won't be damaged.

It's recommended to install a strainer before the water meter if there are some solid particles in the water.  
Installation of the meters in the vicinity of pumps must be avoided. It is advisable to install the meter as far as possible from them.

Make sure all the water supply outlets, served by the meter, sit higher than the meter itself otherwise its metering precision could be altered. The highest position of the count itself as the recording of the counter may not be reliable. To address these possibilities, simply place the meter after a 'large upward curve that ensures always a pipe completely filled with water (Fig 1). This will prevent air bubbles that could affect the accuracy of measurement

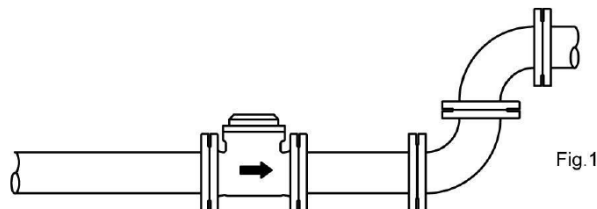


Fig.1

Respect the flow direction indicated by the arrow.

We recommend installing a valve downstream and one upstream of the meter in order to facilitate a possible maintenance of the meter itself, without having to drain the complete pipeline.

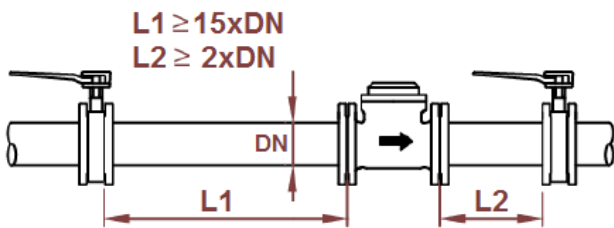
During the water meter commissioning it is advisable to open first the valve placed downstream of the meter (so to flood the mechanical part of the instrument) and then slowly open the valve located upstream of the meter. This will prevent possible water hammers or acceleration of the flow that could damage the moving parts of the instrument.

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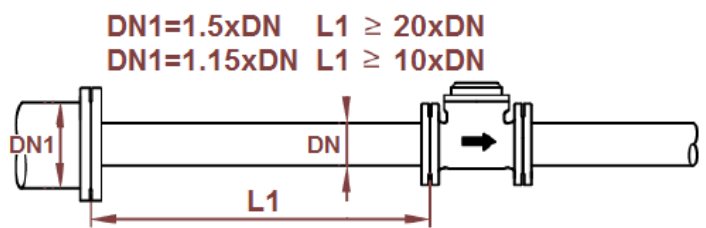
**INSTALLATION POSITIONS (SUITE) :**

In the event of devices installed upstream of the water meter (gate valves, curves, elbows, tees, reducers, ...) it is recommended to follow the following points. These devices can generate flow turbulence that in the long run may damage the moving parts of the measuring instrument. The L1 and L2 lengths above are considered the minimum necessary. When possible, you should increase them.

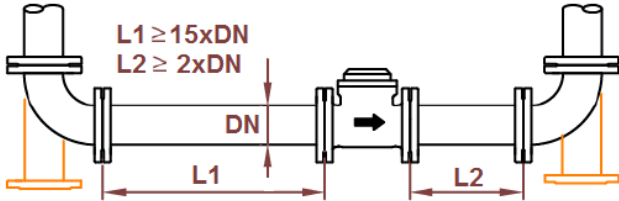
**Valves placed upstream and downstream**



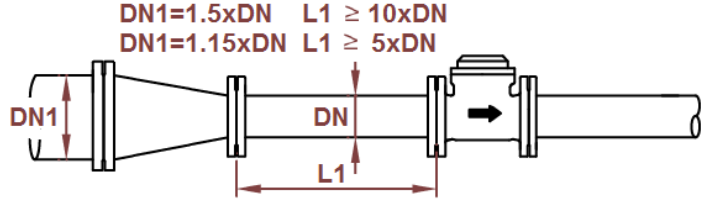
**Upstream bottleneck**



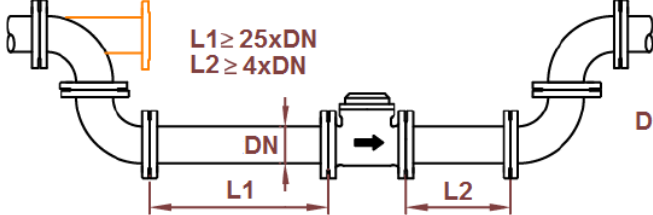
**Curve or T fitting**



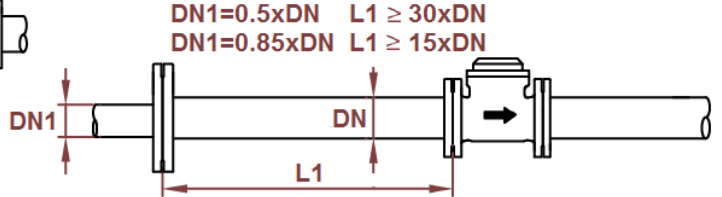
**Upstream bottleneck with conical fitting**



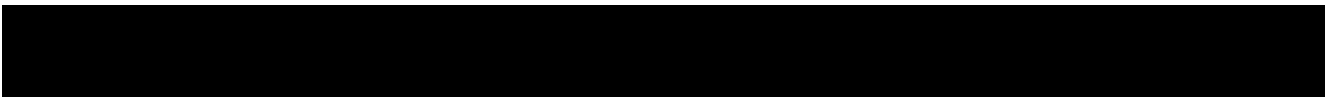
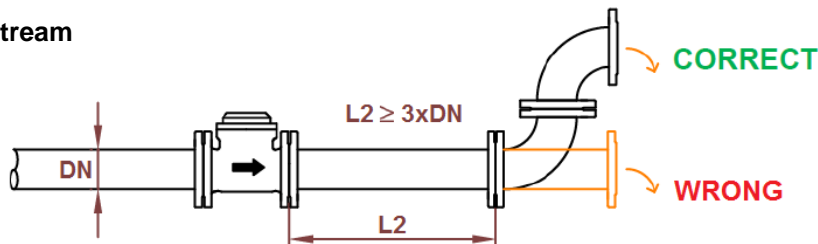
**Two curves or one curve and T fitting**



**Upstream increased pipeline**



**Free discharge downstream**



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**TESTS :**

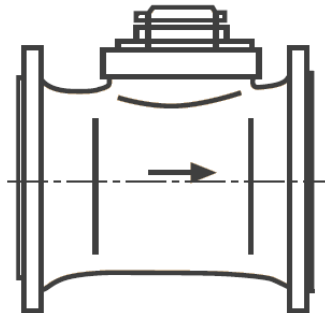
During the tests under pressure, water meter must be removed to avoid overpressure risks.

**INSTALLATION**

Please make the water flow slowly to avoid water hammer.  
The meter pit shall be protected from flooding, rainwater and frost.

**INSTALLATION POSITIONS :**

**HORIZONTAL :**



**A Class**