

# MANUAL

## WATER METERS WITH REED PULSE CONTACT

### INDEX

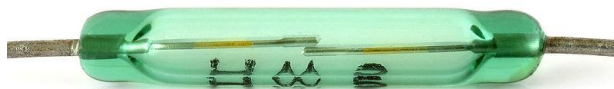
1. USE
2. ADVANTAGES
3. ANTIFRAUD SYSTEM (upon request)
4. HOW TO CHOOSE THE TYPE OF METER WITH PULSE EMITTING DEVICE
5. TECHNICAL FEATURES
6. IMPULSE EMITTING DEVICES INSTALLATION
7. REED SENSOR INSTALLATION ON WOLTMANN WDE-K30 METERS
8. REED SENSOR INSTALLATION ON TANGENTIAL TAN-X5
9. CHECKS TO BE CARRIED OUT IF THE PULSE SENSOR DOES NOT WORK
10. REPLACEMENT OF DEFECTIVE PARTS

## 1. USE

Water meters with impulse emitting device can be connected to remote data reading systems, PLC, M-Bus networks (combined with PADPULSE signal converting device), impulse counters and can be used in all the applications that require an electronic data concerning the water consumption measured by the water meters.

Water meters can be bought in 2 versions:

- Already equipped with the impulse emitting device
- Prearrange for a future installation of the impulse emitting device



Example of REED sensor

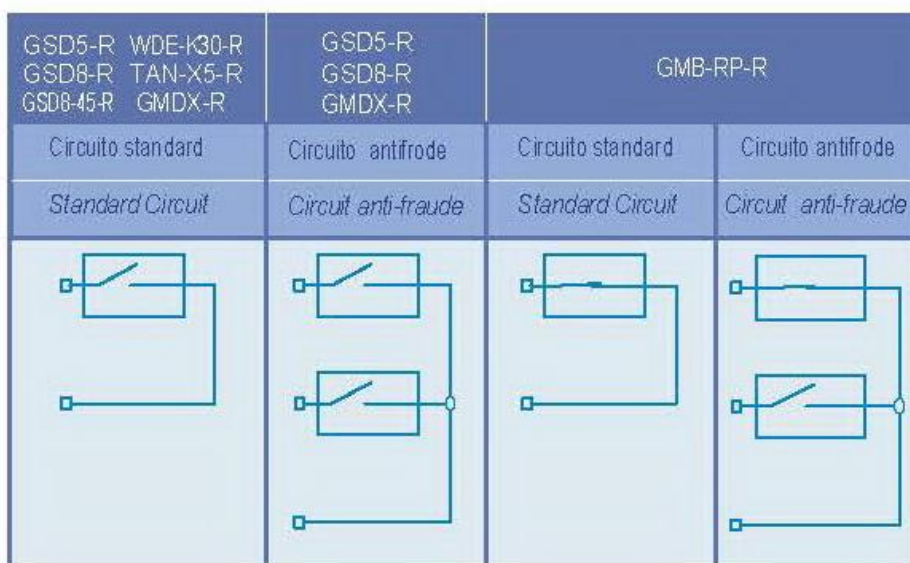
## 2. ADVANTAGES

- REED sensors are enclosed in a waterproof container; this to prevent any possible false contact triggered by moisture or other external factors.
- The attraction strength between the REED contacts is very high so to reduce to a minimum the possibility of false signals or multiple signals.
- The switching speed of the REED contacts is a few milliseconds; this allows the use of the impulse emitting device also for high flows.

## 3. ANTIFRAUDE DEVICE (upon request)

The largest number of fraud attempts to devices using pulse output is performed through the use of external magnets in an attempt to distort the proper functioning of the pulse emitters.

Our pulse emitters can be equipped (as an option) with a further with Reed contact, which produces an alarm signal when the external magnet approaches the water meter.



NORMALLY OPEN

NORMALLY CLOSED

#### 4. HOW TO CHOOSE THE TYPE OF DEVICE WITH PULSE EMITTING DEVICE

To choose the type of water meter with impulse output that better suits your requirements you must consider the following points:

- The meter chosen should normally work at the  $Q_n$  or at lower flows. Only for short periods it can work at the  $Q_{max}$ . The use of the meters at flows higher than the  $Q_n$  can cause damage to the meter itself, resulting in a loss of measurement accuracy. Before ordering please verify the correct choice of I / pulse to suit your needs
- Verify the compatibility of the sensor technical specifications with the electronic devices that will be connected.

#### 5. TECHNICAL FEATURES

|                                    | Normally open  | Normally closed |
|------------------------------------|--|-----------------|
| Contact type                       | GSD5-R<br>GSD8-R<br>GSD8-45-R<br>GMDX-R<br>WDE-K30-R<br>TAN-X5-R | GMB-RP-R        |
| Material of the REED contact       | Rhodium  |                 |
| Maximum switching power ( W )      | 10   |                 |
| Maximum switching current ( V )    | 100  |                 |
| Maximum switching resistance ( A ) | 0,5  |                 |
| Contact resistance ( Ohm ) max     | 0,1  |                 |
| Breakdown voltage ( V ) min        | 150  |                 |
| Insulation resistance ( Ohm ) min  | 10 <sup>9</sup>  |                 |
| Operating time ( ms ) max          | 0,5  |                 |
| Releasing time ( ms ) max          | 0,3  |                 |
| Capacity ( pF ) max                | 0,5  |                 |
| Resonance frequency ( Hz ) min     | 5000   |                 |
| Operating temperature ( ° C )      | -60 ÷ 125  |                 |
| Max frequency ( Hz ) max           | 400  |                 |
| IP protection                      | 66   |                 |
| Cable lenght                       | 3mt  |                 |

#### N.B. REED contact requires power to operate

## 6. IMPULSE EMITTING SENSOR INSTALLATION

### 6.1 Magnetic sensor positioning and housing verification

Verify that the Reed sensor housing and the magnetic index (larger compared to normal indexes) are placed in the correct position of the liters/pulse combination ordered at the time of purchase and that the REED sensor housing is oriented as in the following photos

#### GSD8



1 litre

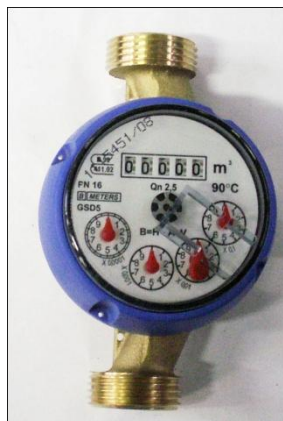
#### GSD5



1 litre



10 litres



100 litres



1000 litres

## GMDX



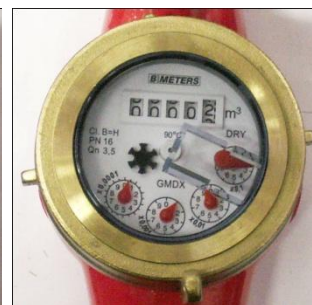
1 litre



10 litres



100 litres



1000 litres

## Woltmann WDE K30 and Tangential TANX5

This models only offer the following pulse/litre combinations:

DN50 ÷ DN100                      100 litres/pulse

DN125 ÷ DN200                    1000 litres/pulse

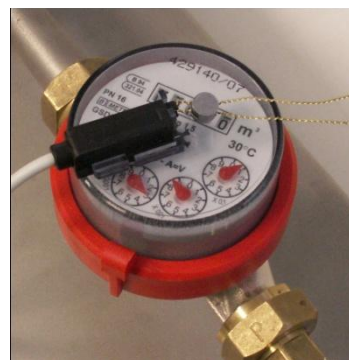
## 6.2 Impulse emitting device insertion



1) install the meter



2) insert the impulse device



3) Insert the wire through the holes and close the seal

### 6.3 Sensor drive checking

All our sensors have been tested by us prior to shipment, however we recommend that before installing the meter you check the sensor proper functioning.

- a) Insert the sensor into the dovetailed slot as described in chap. 6.2
- b) Connect the sensor to a meter set to measure  $\Omega$  resistance



- c) Blow compressed air inside the counter so that the hand with the magnetic index makes a complete turn
- d) Make sure that when the hand passes under the sensor there is detection of electrical resistance

### 6.4 Wire colors

*Basic sensor GSD e GMDX:*

brown = ground  
blue = signal

*Antifraud Sensor GSD e GMDX:*

blue = ground  
red = signal  
white = protection

*Basic sensor WDEK30 e GMDX*

red = ground  
green = signal

The REED sensor is a normal switch so there are no contraindications in reversing the poles of power.

If you require a wire extension exceeding the 10 m length, when connecting any type of REED sensor to a counter or any other electronic device we recommend the application of a protection between the two contact wires on the terminals of the signal acquisition device.

Protection features:

- bidirectional transient voltage suppressor, operating voltage min 15V cc max 24V cc power > 100W  
For example BZW06 – 15B, P6KE18CA

Protection can be unidirectional but it is important to verify the input polarity and connect the protection cathode to the positive polarity and the anode to the negative polarity.

### **BMETERS disclaims any responsibility related to the use of cables longer than 10 m**

If the wires run close to electrical networks it is better it is better to separate them by at least a few centimeters to prevent shock for induction.

**N.B. The wire color can vary without notice; the only wire that remains unchanged is the white protection one.**

## 7. IMPULSE EMITTING SENSOR INSTALLATION ON WOLTMANN WDE K30

All our normal Woltmann meters are prearranged for the installation of pulse emitter. If you want to install the REED sensor on your own you must remove the seal and by doing this you lose the warranty. If you want to keep the warranty, please send the meter back to B Meters that will take care of the installation and proper sealing.



1) Remove the seal



2) Remove the plastic ring



3) Insert the sensor in the position shown in the pic. (in no case insert the sensor in any other position)



4) Close the cup letting the wire out through the slot and close it with the seal

## 8. REED SENSOR INSTALLATION ON TAN-X5 TANGENTIAL METERS

All our Tangential meters are prearranged for the installation of pulse emitter. If you want to install the REED sensor on your own you must remove the seal and by doing this you lose the warranty.

If you want to keep the warranty, please send the meter back to B Meters that will take care of the installation and proper sealing.



1) Remove the seal



2) Remove the metal ring using a 4 mm allen wrench



4) Insert the sensor in the position shown (in no case insert the sensor in any other position)



5) Close the cup letting the wire out trough the slot and make sure the OR seal is properly placed between the screw and the cup.



6) Insert the seal



**N.B. When connecting any type of REED sensor to a counter or any other electronic device we recommend the application of a protection between the two contact wires on the terminals of the signal acquisition device.**

**Protection features:**

- bidirectional transient voltage suppressor, operating voltage min 15V cc max 24V cc power > 100W  
For example BZW06 – 15B, P6KE18CA

Protection can be unidirectional but it is important to verify the input polarity and connect the protection cathode to the positive polarity and the anode to the negative polarity.

If the wires run close to electrical networks it is better it is better to separate them by at least a few centimeters to prevent shock for induction.

## 9. CHECKS TO BE CARRIED OUT IF THE PUSLE SENSOR DOES NOT WORK

### 9.1 Sensor

Those listed below are the checks to be carried out if the sensor does not work

- 1) Verify the resistance with a tester as described in chap. 6.3.
- 2) Verify if the sensor is overheated and if so wait to let it cool.
- 3) Verify the correct voltage.
- 4) Remove the sensor and pass a magnet at its bottom using a tester to verify the functioning.
- 5) Try tapping the sensor and move the wires then recheck with the tester.

If these tests have failed, then return the sensor to B METERS that will replace it.

### 9.2 Water meter

Those listed below are the checks to be carried out if the sensor is working, but during water meter operation does not counts.

- 1) Make sure the sensor is properly mounted as described in chap. 6.
- 2) Operate the meter and verify the electrical resistance with a tester as described in chap. 6.3
- 3) Remove the water meter and place it in an area where there are no large metallic objects or electromagnetic fields than operate it by a water or air flow and check it with a tester as described in chap. 6.3

If these tests have failed, then return the sensor to B METERS that will replace it.

## 10. REPLACING DEFECTIVE COMPONENTS

In the event the pulse emitter and / or the water meter is damaged, after having performed all the verification procedures described in this manual, send the defective material back to BMeters.

Before sending the components back, please send a fax or an e-mail with the request for replacement by referring to your order number or to the dealer you purchased the product from.

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**e-mail: [info@bmeters.com](mailto:info@bmeters.com)**

**N.B. If the sensor has been fed at a different voltage than the one specified and consequently burned, BMETERS will not replace it under warranty.**