WATER METERS

# WM

## MULTI-JET VANE-WHEEL WATER METER RESISTANT TO THE NEODYMIUM MAGNET

WM is a water mater made from high quality materials resistant to corrosion and sediment condensation, guarantying the water meter functioning to the temperature of 50°C. In the water was applied an mechanical drive transmission from the rotor to the counter (no magnetic clutch) what guaranties the full resistance to the external magnetic field generated from the neodymium magnet. Thanks to the latest constructional solutions within the scope of the bearing and using the high quality steel resistant to wiping off and synthetic stones. The water meter characterizes itself with a high quality of durability and stabile metrological parameters during the exploitation period.

### APPLICATION

Water meters are designed to measure the volume of cold water at a pressure to 16 bar, at the households or office-industrial complex. Installation should be done only in a horizontal position with counter upwards (H).

GRUPA APATOR

## ADVANTAGES

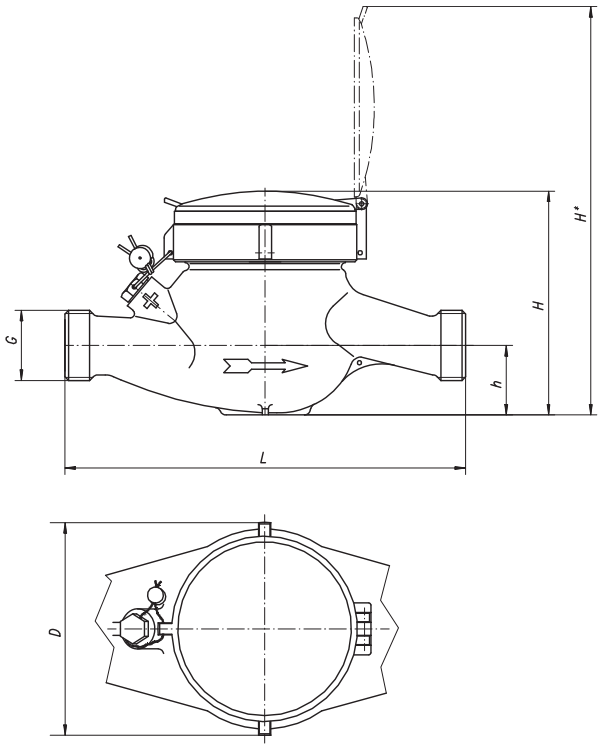
- The water meter fully resistant to the external magnetic field.
- The water meter with a long-lasting measurement stability resulting from the water meter construction in which the external ring with the openings from which stream dividing comes emerging the row of the smaller streams what causes the evenly load of the rotor blades.
- The water meter in the NK edition can work in the AMR system.
- Low starting rate.
- Ability of equipping with a reed switch impulse transmitter.
- Hermetic counter with barrels dipped in the glycerine solution.
- No necessity of applying straights before and after the water meter.
- Special cone riddle on the water meter entry protects the subassembly against mechanical dross.
- Ability of using the return valve.
- Ability of electronic checking of metrological parameters of the water meter.
- Ability of the calibration thanks to external sink regulation.

## TECHNICAL DATA

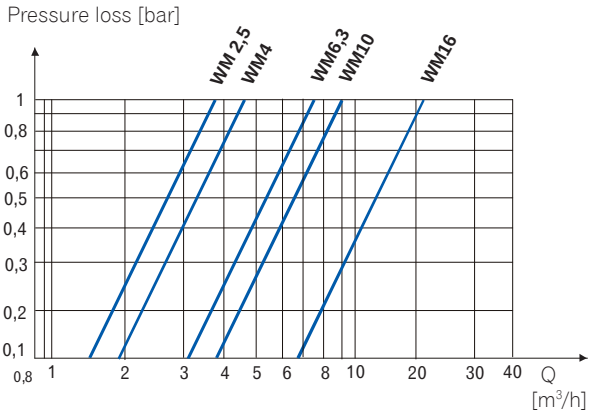
| Parameter | | | | WM2,5<br>WM2,5-XX | | WM4<br>WM4-XX | WM6,3<br>WM6,3-XX | WM10<br>WM10-XX | | WM16<br>WM16-XX |
|---|---|---|---|---|---|---|---|---|---|---|
| Nominal diameter | | DN | mm | 15 | 20 | 20 | 25 | 25 | 32 | 40 |
| Constant flow rate | | $Q_3$ | $m^3/h$ | 2,5 | | 4 | 6,3 | 10 | | 16 |
| Overload flow rate | | $Q_4$ | $m^3/h$ | 3,13 | | 5 | 7,88 | 12,5 | | 20 |
| Transitional flow rate | | $Q_2$ | $m^3/h$ | 0,025 | | 0,04 | 0,063 | 0,1 | | 0,16 |
| Minimal flow rate | | $Q_1$ | $m^3/h$ | 0,016 | | 0,025 | 0,039 | 0,063 | | 0,1 |
| Starting flow rate | | – | $dm^3/h$ | 5,3 | | 8,3 | 13 | 21 | | 33,3 |
| **R measuring rate** | | $Q_3/Q_1$ | – | 160 | | 160 | 160 | 160 | | 160 |
| Coefficient | | $Q_2/Q_1$ | – | 1,6 | | 1,6 | 1,6 | 1,6 | | 1,6 |
| Temperature class<br>(working temperature rate) | | – | – | T30 (0,1÷30°C)<br>T50 (0,1÷50°C) | | | | | | |
| Resistance class of the flow profile | | – | – | U0, D0 | | | | | | |
| Indication range | | – | $m^3$ | $10^6$ | | | | | | |
| Accuracy of indications | | – | $m^3$ | 0,0005 | | | | | | |
| Upper pressure limit | | $P_{max}$ | – | MAP16=(16bar) | | | | | | |
| Working pressure range | | – | bar | 0,3 ÷ 16 | | | | | | |
| Max pressure loss | | ΔP | kPa | ΔP63=(0,63bar) | | | | | | |
| Working position | | – | – | H | | | | | | |
| Border range error allowed | | ε | % | ±5% ($Q_1 \le Q \le Q_2$)<br>±2% ($Q_2 \le Q \le Q_4$) for 0,1<T≤30°C<br>±3% ($Q_2 \le Q \le Q_4$) for T>30°C | | | | | | |
| NK reed switch pulse transmitter | | – | $dm^3$/imp | (standard impulsion) | | | | | | |
| | | | | 1 | | 10 | 10 | 10 | | 100 |
| | | | | 0,25; 0,5; (1); 2,5; 5; (10); 25; 50; (100); 250; 500; 1000 | | | | | | |
| Measurements | | G | mm | ¾" | 1" | 1" | 1¼" | 1¼" | 1½" | 2" |
| | | L | mm | 165 | 190 | 190 | 260 | 260 | | 300 |
| | | h | mm | 36 | | 36 | 40 | 48 | | 58 |
| | | H | mm | 90 | | 105 | 115 | 115 | | 165 |
| | | H* | mm | 195 | | 210 | 220 | 220 | | 270 |
| | | $D_Z$ | mm | 90 | | 90 | 90 | 90 | | 140 |
| Weight | Without receiver | | kg | 1,2 | | 1,4 | 2 | 2,2 | | 5,7 |
| | With NK module | | kg | 1,4 | | 1,6 | 2,2 | 2,4 | | 5,9 |

-**XX** – Quality: NK- Reed Switch transmitter, NKP- water meter adapted for Reed Switch.
*) Height of the water meter with raised lid.

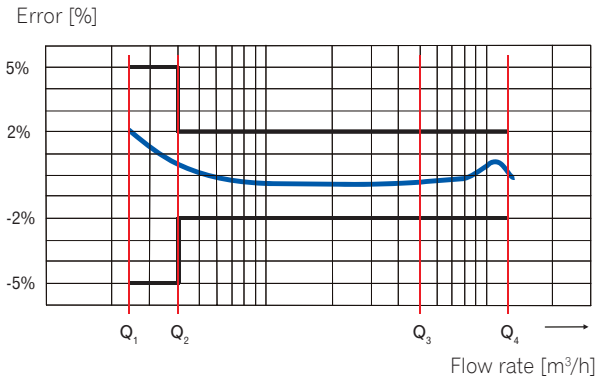
## PICTURE WITH MEASUREMENTS




## HEAD LOSS GRAPH




## TYPICAL ERROR GRAPH

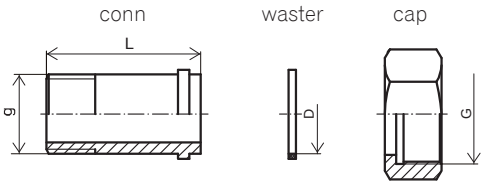



## ACCORADANCE WITH RULES

- 2004/22/EC directive of the European Parliament and the Council of Europe from the March 31 2004 on measuring instruments
- OMIL R49:2004 and 2006- Water meters designed for measuring cold drinking water
- Certificate type WE nr TCM 142/10-4730 research
- All materials used when building the MWN water meters have applied Hygienic Attests (PZH) allowing the product to contact with drinking water.
- Mechanical classification of environmental conditions - Class M1 - by RMG dated 18.12.2006
- Classification of environmental conditions, climate and mechanical - Class B - PN-EN-14154-3: 2005 + A1
- Classification of electromagnetic environmental conditions-Class E1 - by RMG dated 18.12.2006

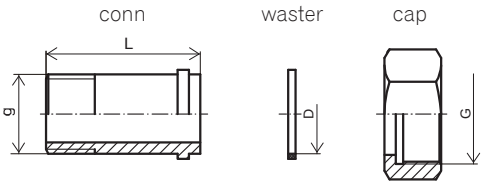
## CONNECTING ELEMENTS

Basic quality

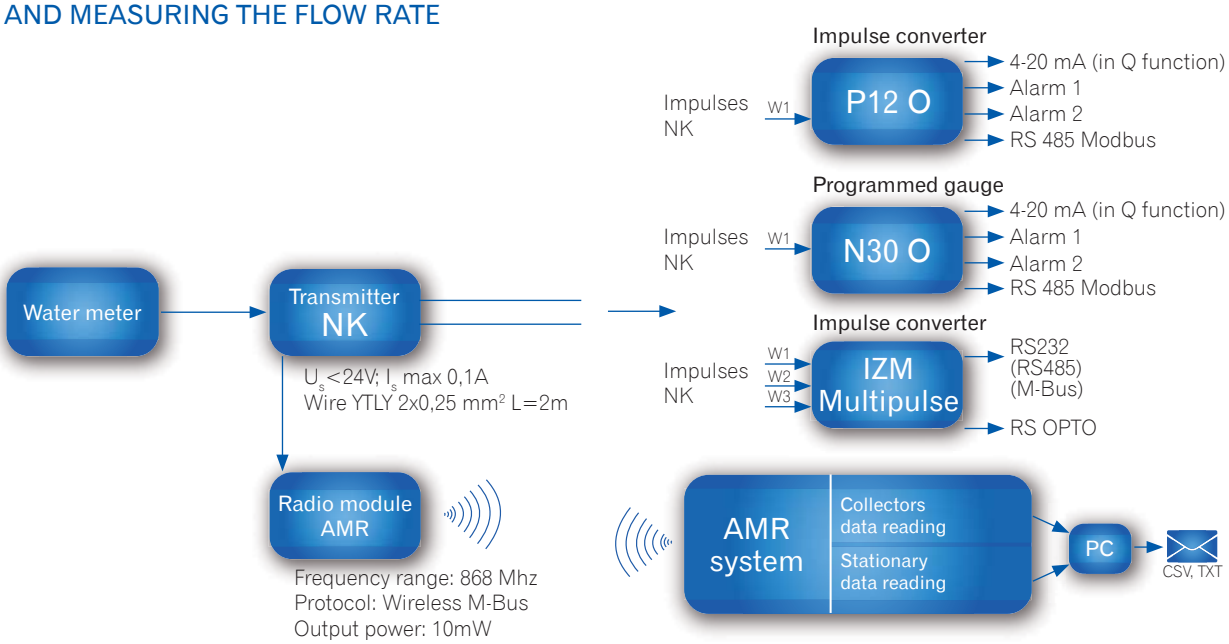



| DN | G | g | D | L | L1 | D1 |
|---|---|---|---|---|---|---|
| 15 | ¾" | ½" | 17 | 40 | 37 | 17 |
| 20 | 1" | ¾" | 23 | 50 | 47 | 23 |
| 25 | 1¼" | 1" | 29 | 60 | 57 | 29 |
| 32 | 1½" | 1¼" | 36 | 60 | 57 | 29 |
| 40 | 2" | 1½" | 43 | 70 | 67 | 43 |

Water meter with the return valve




## CONNECTION EXAMPLES FRO THE IMPLEMENTATION OFREMOTE INDICATION TRANSMITTING AND MEASURING THE FLOW RATE




Ordering example:

- Water meter for cold water- e.g. without the WM 4 module; adapted for the WM 4-NKP module or with the WM 4-NK module ( please define the impulse quantity other than the standard- on the stage of ordering- 25dm³/ipm) etc.
- Water meter for cold water WM4 z the return valve
- Set of linking equipment DN15
- Ste of linking equipment DN14 for the water meter with the return valve.

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