

## REDAC Wireless Woltman Water Meter Type EMS-APT-MWN-NUBIS-IP65REG-IMP-REDAC-RADIO

The REDAC wireless Woltman water meter (model EMS-APT-MWN-NUBIS-IP65REG-IMP-REDAC-RADIO) is a dry-dial Woltman-type turbine water meter with a horizontal impeller axis, featuring a REDAC wireless adapter (model EMS-RPA-1-REDAC) factory-connected to the pulse output.



The Woltman water meters of the Nubis series impress with consistent, continuous development in which the most modern constructive and technical solutions have been incorporated. As a result, the Woltman water meters from the Nubis series not only have a particularly long service life, but these devices are also characterized by their exceptional durability. Due to the special construction of the counter, the Woltman counters in the Nubis series are also highly resistant to the potential effects of strong magnetic fields. Another important point for use in practice is the fact that the devices in the Nubis series are extremely flexible. The Nubis series Woltman meters are manufactured and designed based on the MID guidelines in accordance with EN 14154, ISO 4064

and OIML R49. The measuring range of these meters is designed for applications up to a range ratio of R200 and therefore these meters are also suitable for a wide variety of operating conditions.

## Application range of Woltman water meters (type EMS-APT-MWN-NUBIS-IP65REG-IMP-REDAC-RADIO)

The Nubis series Woltman water meters are designed for use in industrial supply networks and are suitable for measuring both cold and hot water consumption. They cover temperature ranges of up to 50°C for cold water and up to 130°C for hot water. Particular emphasis is placed on efficient operation; consequently, the NUBIS series meters are engineered for low pressure loss.

This ensures reliable measurement—even with relatively constant and comparatively high flow rates—without placing unnecessary additional strain on the piping system. The maximum permissible operating pressure is 16 bar, enabling their use in demanding installations and operating conditions.

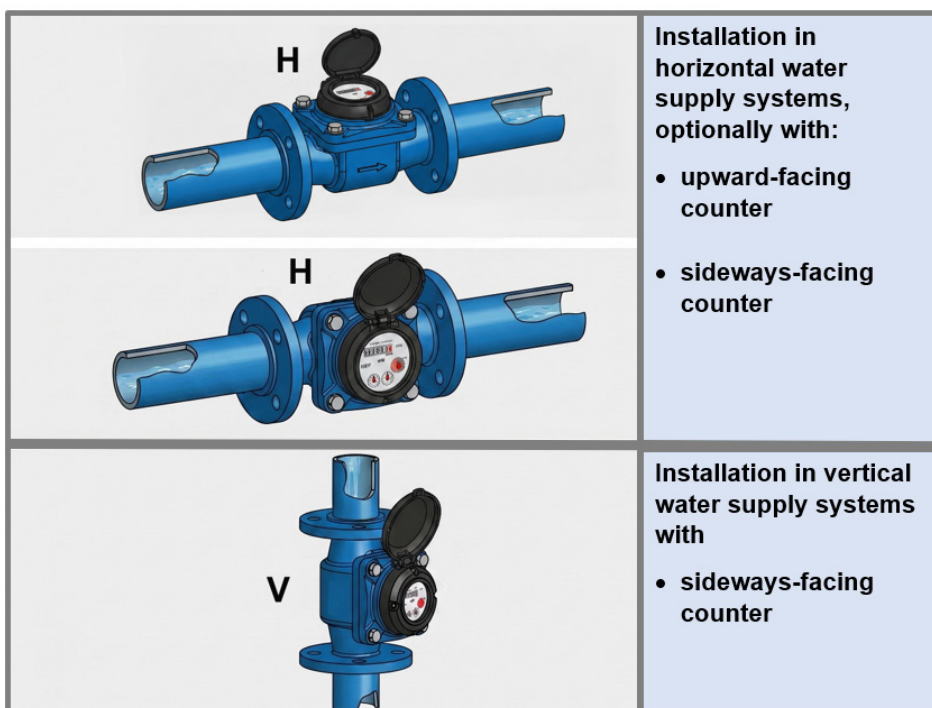


## Installation positions and mounting

The design allows for installation in horizontal water supply systems, optionally with:

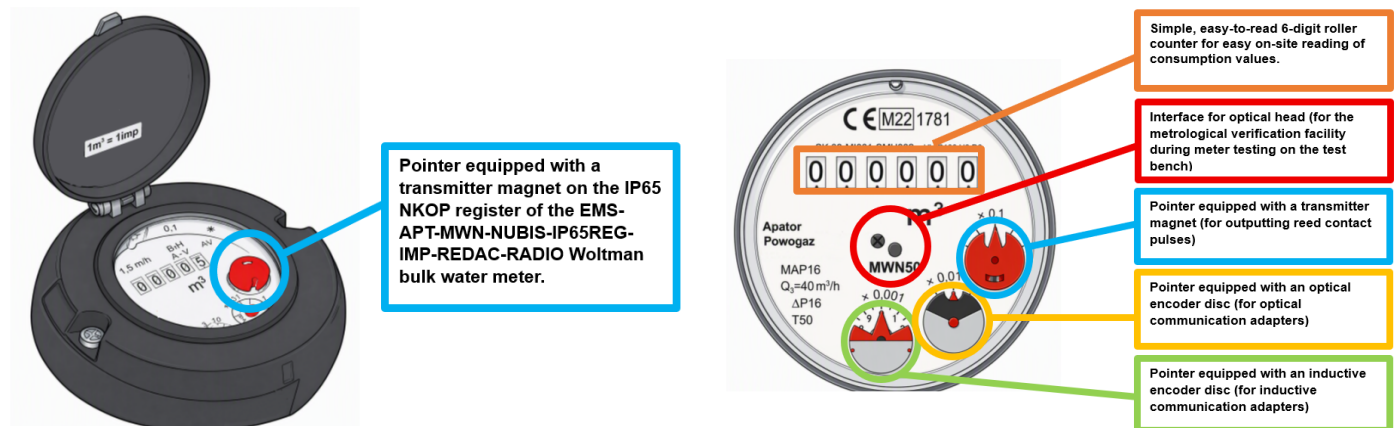
- ▶ upward-facing counter (H) or
- ▶ sideways-facing counter (H)

Vertical installation is also possible. In this case, installation is carried out with the counter (V) facing sideways. This means that the meter can be flexibly adapted to the respective structural conditions.



## Ablezen der Zählerstände

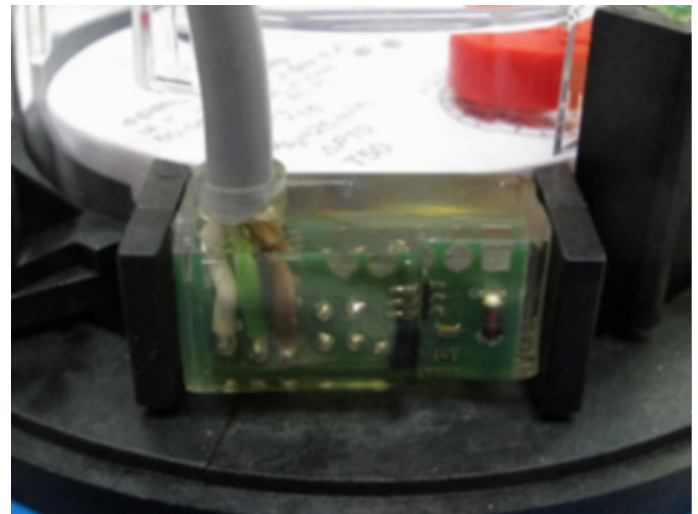
The use of a rotary counter enables simple manual reading of the meter values directly from the dial, even in various mounting positions. This simplifies operational monitoring and supports maintenance or meter-reading processes.



## The pulse generator for the Woltman meter type MWN Nubis

The pulse transmitter for the MWN Nubis Woltman water meter serves as a key interface for remote reading and for integrating the meter into modern remote reading systems, such as the MT-REDAC radio system. The transmitter converts the measurement data captured by the water meter into electrical pulses that represent water consumption based on volume. This creates a simple, robust, and easily integrated foundation for the digital recording of consumption data.

In practice, this means that as soon as water flows through the meter and the meter registers the corresponding volume, the pulse transmitter continuously generates pulses at a defined interval. These signals can then be processed by suitable evaluation devices or communication modules, such as the EMS-RPA1-REDAC radio pulse adapter. This enables reliable transmission and system-based analysis of consumption data without the need for direct manual on-site reading.



The image shows the pulse generator, which takes the form of an encapsulated reed contact positioned in the immediate vicinity of the counter mechanism or the roller containing the magnet.

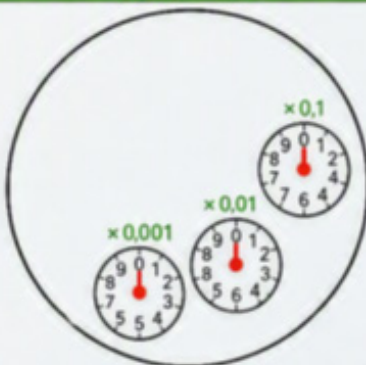
The pulse generator of the MWN Nubis Woltmann bulk water meter ensures that the measurable water flow is not only recorded locally but can also be systematically transmitted into modern data acquisition chains. This establishes the foundation for reliable consumption accounting and future-proof integration into existing infrastructures.

## THE PULSE TRANSMITTER OF THE WOLTMAN WATER METER EMS-APT-MWN-NUBIS-IP65-REG-IMP

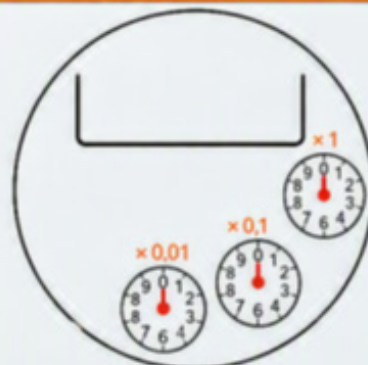
- Positions of the magnetic holder (with the pulse transmitter magnet) on the respective pointer of the register
- Pulse values of the pulse transmitter resulting from the position



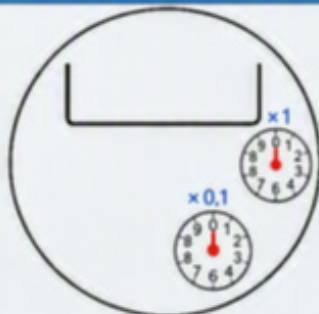
### DN40–125



### DN150–250



### DN300



#### Pointer position → Pulse value



Pointer position  $\times 0,1 \rightarrow 1000$  l/pulse



Pointer position  $\times 0,01 \rightarrow 100$  l/pulse



Pointer position  $\times 0,001 \rightarrow 10$  l/pulse



## The REDAC radio pulse adapter EMS-RPA-1-REDAC

The EMS-RPA1-REDAC radio pulse adapter is designed to capture pulse data from the connected EMS-APT-MWN-NUBIS Woltman water meter and transmit it wirelessly to the EMS-REDAC radio system. In essence, the EMS-RPA-1-REDAC adapter captures the pulses emitted by the Woltman water meter, totals them, and multiplies the result by the programmed pulse value. Furthermore, the physical unit of the measured medium is stored within the EMS-RPA-1-REDAC adapter.

At specific, predefined time intervals, the EMS-RPA-1-REDAC Radio Pulse Adapter then transmits radio telegrams containing the stored consumption values to the nearest radio data collector (EMS-DACOS) within the EMS-REDAC wireless network.

The EMS-RPA-1-REDAC radio pulse adapter enables remote reading without a direct cable connection between the meter and the readout system.

This makes the EMS-RPA-1-REDAC radio pulse adapter particularly suitable for scenarios involving the retrofitting of existing metering points or where wireless integration offers economic and organizational advantages.

The EMS-RPA-1-REDAC radio pulse adapter processes the meter's pulse signal and converts it into corresponding transmission data—specifically, EMS-REDAC radio telegrams. These are then transmitted via the designated wireless link to the EMS-REDAC radio system, allowing consumption data to be reliably transferred to the EMS-REDAC remote reading and data acquisition system.

Wireless transmission reduces installation and maintenance efforts by eliminating—or at least significantly simplifying—complex cabling requirements. At the same time, the metering point retains its basic functionality, as the adapter merely evaluates and forwards the pulse signal. Depending on the configuration, the EMS-RPA-1-REDAC radio pulse adapter supports integration into existing consumption monitoring systems, helping to make data collection more efficient, reliable, and future-proof.

In practice, the EMS-RPA-1-REDAC radio pulse adapter is thus an ideal solution for smart sub-metering applications based on pulse or counting signals. It creates an interface between the metering device and a wireless remote reading system, enabling the secure capture and provision of consumption data for further analysis, even within complex system structures.



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REDAC Wireless Woltman Water Meter Type EMS-APT-MWN-NUBIS-IP65REG-IMP-REDAC-RADIO



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## Technical data for the wireless pulse adapter, type EMS-RPA-1-REDAC

|                                |                                                        |
|--------------------------------|--------------------------------------------------------|
| Power supply                   | Lithium battery                                        |
| Battery life                   | 10 years + reserve                                     |
| Ambient temperature (°C)       | 0 ... 55                                               |
| Operating frequency (MHz)      | 868.95                                                 |
| Transmission power E.R.P. (mW) | 15 ... 25                                              |
| Protection rating              | depending on version: IP44, IP54, IP68                 |
| CE conformity                  | in accordance with Directive 2014/53/EU (RED)          |
| Interface                      | inductive transponder interface for MT service devices |
| Dimensions (mm)                | W: 65; H: 110; D: 40                                   |

## General specifications of the EMS-RPA-1-REDAC wireless pulse adapter

|                                                       |             |
|-------------------------------------------------------|-------------|
| Pulse duration (ms)                                   | at least 30 |
| Rise/fall time (ms)                                   | max. 5      |
| Pulse frequency (Hz)                                  | max. 16.7   |
| Connection capacitance (pulse generator + cable) (nF) | max. 2      |
| Cable length (m)                                      | max. 10     |
| Pulse value                                           | variable    |

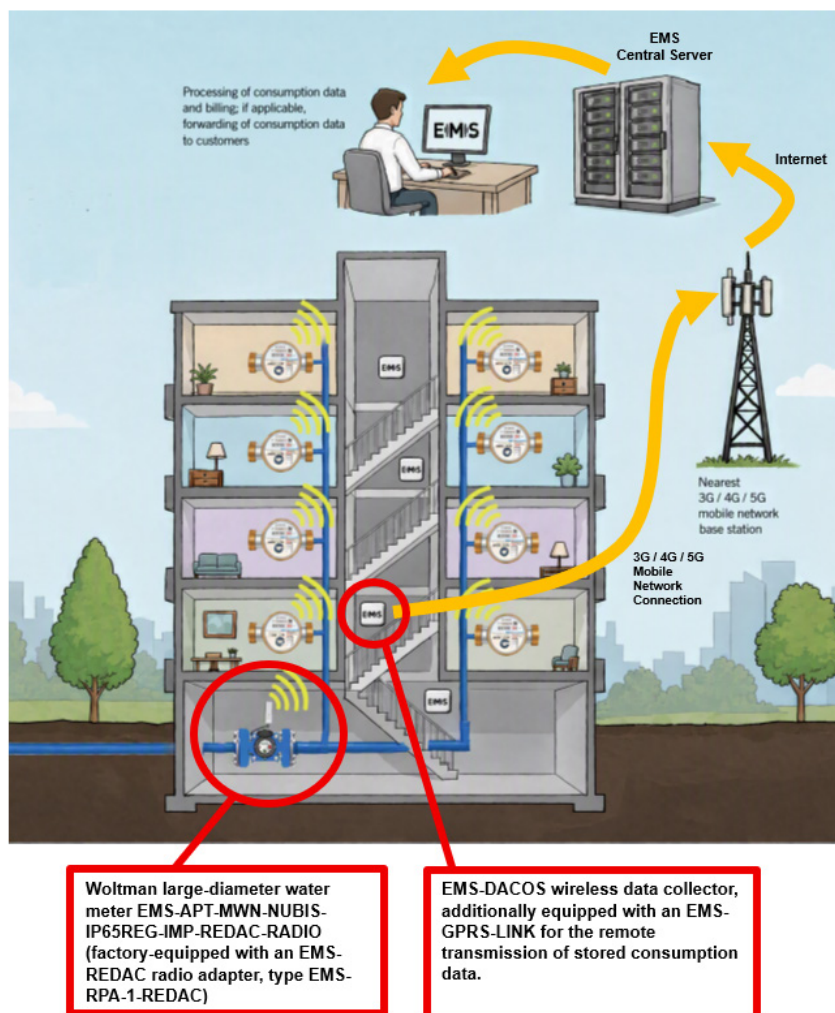
## Technical specifications of the pulse input for the wireless pulse adapter type EMS-RPA-1-REDAC

|                            |      |           |
|----------------------------|------|-----------|
| Bounce time (reed contact) | (ms) | max. 3    |
| Sampling voltage           | (V)  | max. 17,5 |
| Bounce time (reed contact) | (ms) | max. 3    |
| Sampling voltage           | (V)  | max. 3,3  |

## Factory-prepared for wireless communication with EMS-REDAC radio networks:

The Woltman water meter EMS-APT-MWN-NUBIS-IP65REG-IMP-REDAC-RADIO comes factory-equipped with an EMS-RPA-1-REDAC radio adapter, enabling easy integration of the meter into EMS-REDAC radio networks. The EMS-RPA-1-REDAC radio adapter is pre-connected to the meter's pulse input and is radio-activated at the factory.

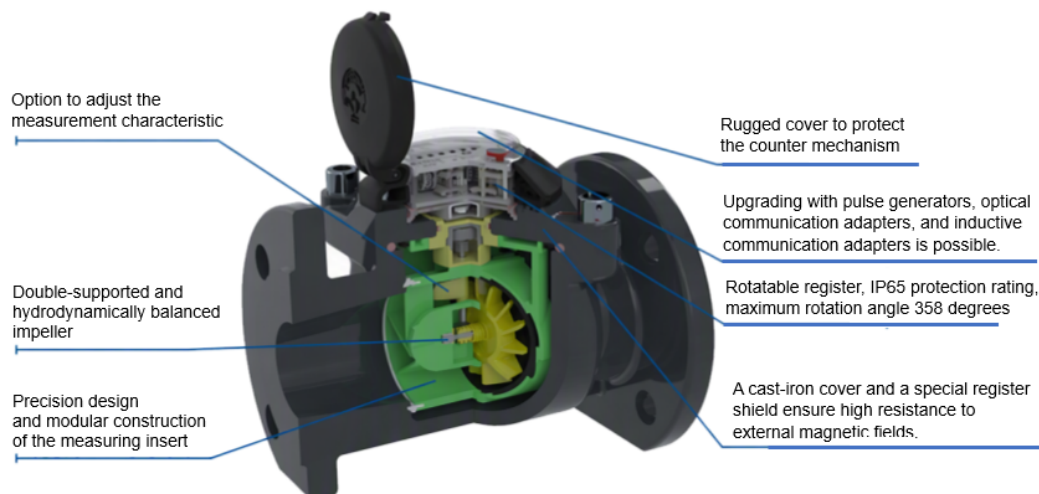
## Basic functional diagram of the integration and remote reading of an EMS Woltmann water meter with EMS-REDAC radio adapter into an EMS-REDAC radio network



## The IP protection class of the EMS-REDAC wireless Woltman water meter, type EMS-APT-MWN-NUBIS-IP65REG-IMP-REDAC-RADIO

IP65-rated water meters are particularly well-suited for environments requiring enhanced robustness and resistance to dust and water. They are ideal for operation under demanding environmental conditions where the device requires additional protection against the ingress of water and dust. In addition to being equipped with a pulse transmitter, the MWN Nubis series Woltman water meters—available in an IP65 version or with an IP65 register—can also be operated with optical and inductive communication modules from the EMS-APT-KOM-MOD series, thanks to their integrated inductive or optical encoder discs.

## Cross-section of a Woltman large-scale water meter Type EMS-APT-MWN-NUBIS-IP65ZW-IMP-REDAC-RADIO





## Advantages of the Woltman water meter type EMS-APT-MWN-NUBIS-IP65ZW-IMP-REDAC-RADIO

In practice, the EMS-APT-MWN-NUBIS-IP65ZW-IMP-REDAC-RADIO Woltman water meter delivers highly reliable measurement and performance parameters, enabling precise consumption recording. This facilitates stable and dependable analysis of consumption data, even when operating conditions fluctuate during day-to-day use.

Another advantage stems from its design: the meter's specialized construction reduces its overall weight, which has a positive impact on logistics, installation effort, and operational handling.

Furthermore, the EMS-APT-MWN-NUBIS-IP65ZW-IMP-REDAC-RADIO meter features interchangeable, standardized measuring inserts. In principle, these inserts can be used across various housing sizes. This simplifies inventory management, reduces administrative overhead, and contributes to more efficient water meter management, as the components remain systematically interchangeable rather than requiring specific assignment for each variant.

## Ease of use of the Woltman water meter type EMS-APT-MWN-NUBIS-IP65ZW-IMP-REDAC-RADIO

The EMS-APT-MWN-NUBIS-IP65ZW-IMP-REDAC-RADIO type Woltmann water meter can be installed in a wide range of positions without significantly affecting measurement parameters. This offers considerably greater flexibility when planning new installations or modernizing existing water meter connections. This advantage is particularly practical for retrofitting projects where spatial or structural constraints already exist.

In addition, the meter features a high-quality coating with excellent anti-corrosive and mechanical properties. Powder epoxy coatings are used for this purpose, providing a robust surface finish that reliably protects the meter throughout years of operation.



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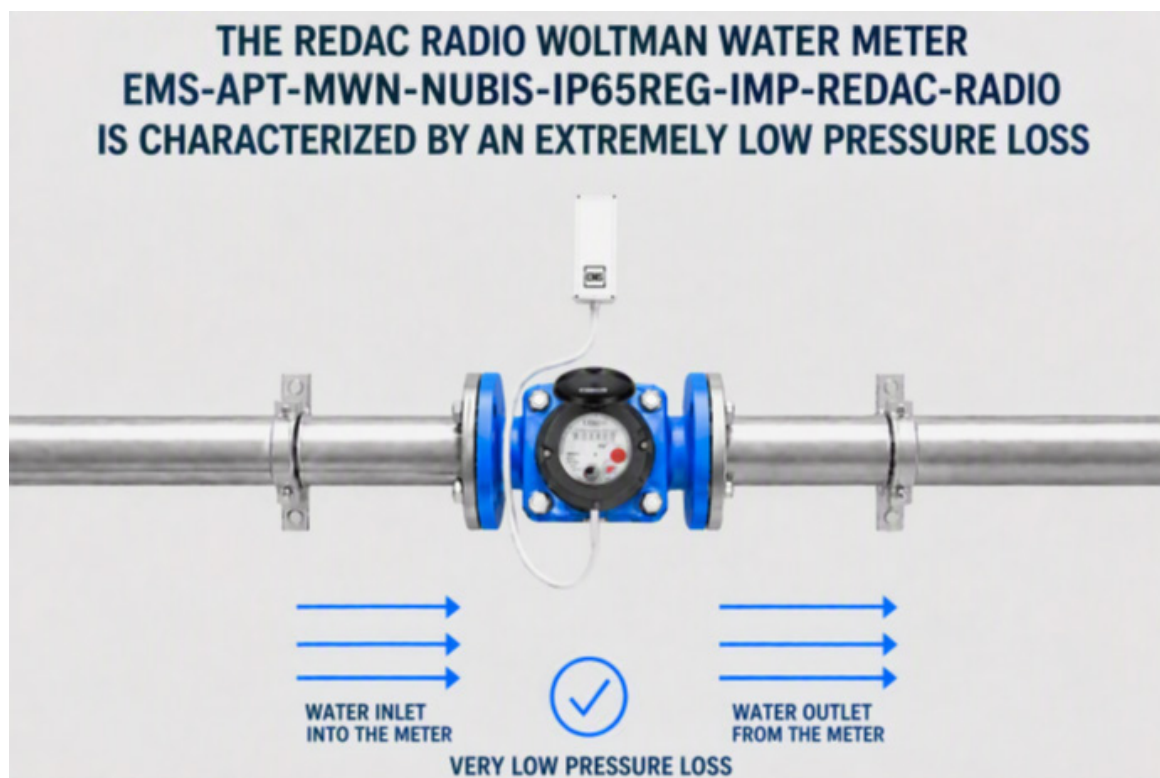
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## Reliability of the Woltman water meter EMS-APT-MWN-NUBIS-IP65ZW-IMP-REDAC-RADIO

The EMS-APT-MWN-NUBIS-IP65ZW-IMP-REDAC-RADIO Woltman water meter stands out due to its proven, robust design, engineered for reliable performance in daily operation. Key factors contributing to its high performance and long service life include the use of modern materials and the sophisticated engineering of critical components.

Service life is extended by manufacturing high-wear components—such as bearings and pivots—with superior wear resistance. Additionally, the meter features an optimized surface structure specifically designed to minimize flow resistance. This ensures highly efficient impeller operation, while the sealing plate supports a stable and durable seal. The design also incorporates a hydrodynamically balanced impeller; this significantly contributes to smooth, stable measurement and enhances overall performance throughout the meter's lifecycle.

To ensure that mechanical stresses do not compromise the counting mechanism, the unit is effectively protected against mechanical damage.



## Special features of the Woltman water meter (type EMS-APT-MWN-NUBIS-IP65REG-IMP-REDAC-RADIO)

In addition to its technical performance, the EMS-APT-MWN-NUBIS-IP65REG-IMP-REDAC-RADIO Woltman water meter impresses with its aesthetic design.

Furthermore, the meter is resistant to external magnetic fields in accordance with EN 14154-3. This ensures reliable operation even in conditions where interference might occur.

A key focus is placed on high efficiency, reliability, and stable metering performance throughout the unit's entire service life. At the same time, the device offers design advantages such as minimal inlet requirements and a very wide measuring range. Electronic verification of the meter's measurement parameters is also possible to support quality assurance and service processes.

The Nubis series Woltman meters feature a deliberately modular design. Key components include:

- ▶ a removable and replaceable measuring insert
- ▶ a magnetic coupling

These modular elements facilitate maintenance and replacement while enhancing flexibility in water meter management.

## Compliance with standards and regulations for the Woltmann water meter, type EMS-APT-MWN-NUBIS-IP65REG-IMP-REDAC-RADIO

The Woltmann bulk water meters of the MWN Nubis series comply with applicable European and international standards. These include, among others:

- ▶ Directive 2014/32/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments
- ▶ Act of 13 April 2016 on conformity assessment systems and market surveillance
- ▶ OIML R 49-1:2006 (Water meters intended for the metering of cold potable water and hot water, Part 1: Metrological and technical requirements)
- ▶ OIML R 49-2:2004 and OIML R 49-2:2013 (Part 2: Test methods)
- ▶ OIML R 49-3:2013 (Part 3: Test report format)



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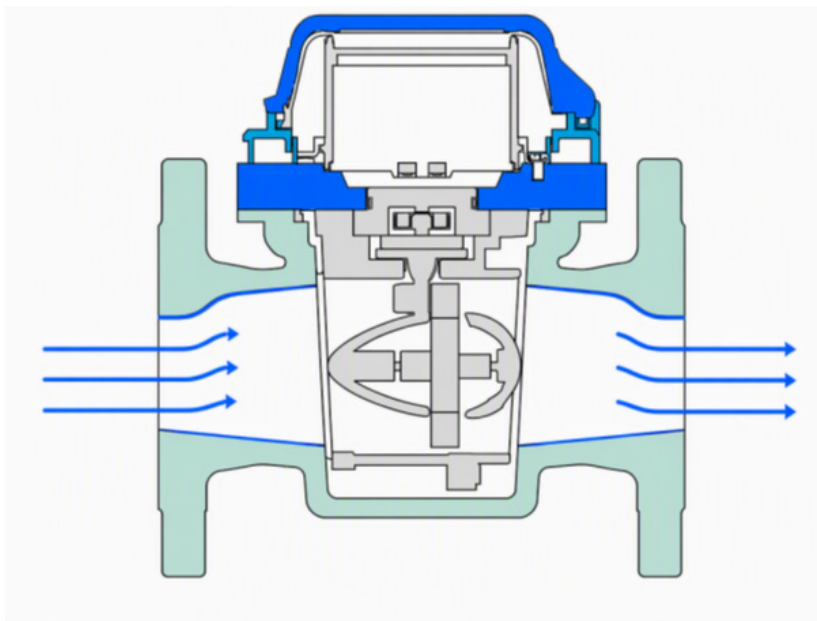
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In addition, conformity with the following norms and standards applies:

- ▶ EN 14154-1:2005+A2:2011 (General requirements)
- ▶ EN 14154-2:2005+A2:2011 (Installation and conditions of use)
- ▶ EN 14154-3:2005+A2:2011 (Test methods and equipment)
- ▶ EN ISO 4064-1:2017 (Metrological and technical requirements)
- ▶ EN ISO 4064-2:2017 (Test methods)
- ▶ EN ISO 4064-5:2017 (Installation conditions)

Furthermore, relevant documentation for the meter is available, including:

- ▶ EU type-examination certificate (cold water)
- ▶ Certificate from the national hygiene institute and WRAS (for the materials used in type MWN 5, demonstrating approval for contact with drinking water)
- ▶ Climatic environmental condition classification: Class B in accordance with EN-ISO 4064-1:2014(E)
- ▶ Mechanical environmental requirement classification: Class M1 in accordance with Directive 2014/32/EU
- ▶ Electromagnetic environmental requirement classification: Classes E1, E2 in accordance with EN-ISO 4064:2014 and Directive 2014/32/EU

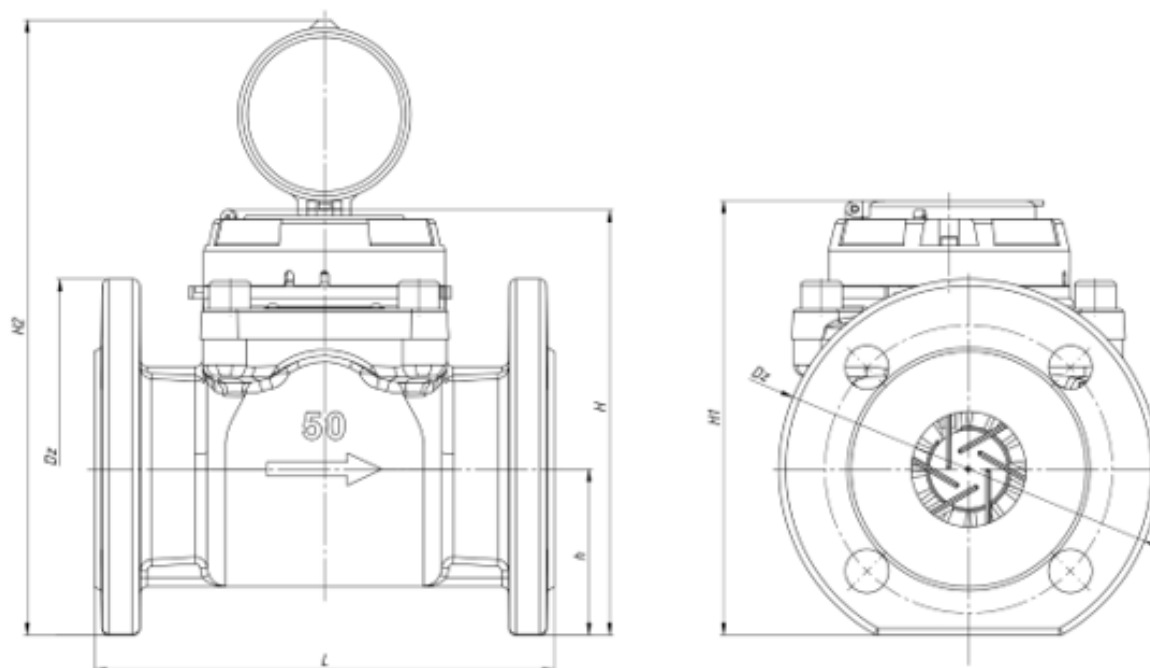


**Cross-section of a Woltman large-scale water meter with a horizontal impeller axis (parallel Woltman, WP type)**

## Technical specifications of the individual models of the MWN Nubis series Woltman bulk water meters

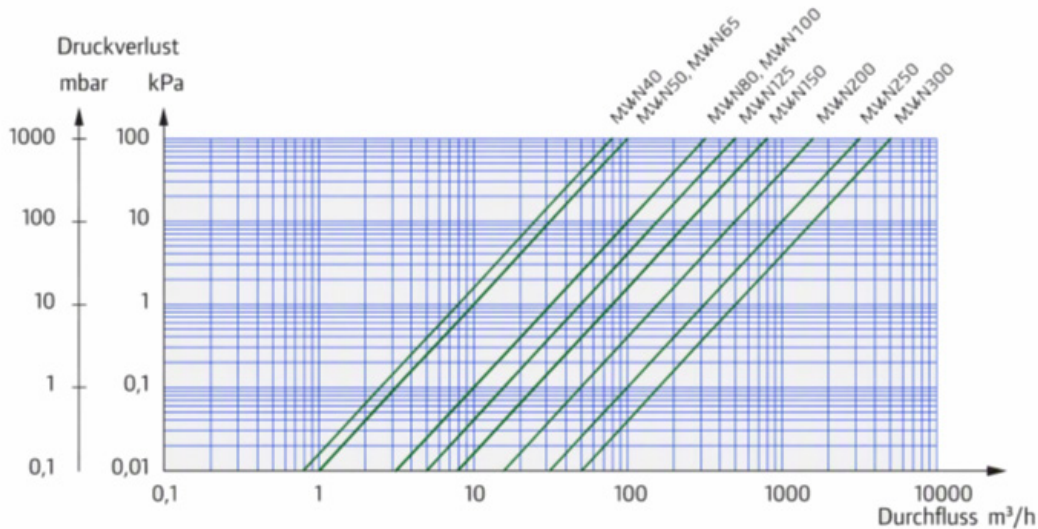
| Parameter                                              |  |                                   |                                |           |                                                                                                        |       | MWN-08 (IP68); MWN (IP65) |            |       |       |       |                             |       |       |          |  |
|--------------------------------------------------------|--|-----------------------------------|--------------------------------|-----------|--------------------------------------------------------------------------------------------------------|-------|---------------------------|------------|-------|-------|-------|-----------------------------|-------|-------|----------|--|
| Nominal diameter                                       |  |                                   | DN                             | mm        | 40                                                                                                     | 50    | 65                        | 80         | 100   | 125   | 150   | 200                         | 250   | 300   |          |  |
| Temperature class (operating temperature range)        |  |                                   | T30(0,1÷30°C, T50 (0,1÷50°C)   |           | MWN-08 oder MWN;<br>MWN (as executed) – NKOP                                                           |       |                           |            |       |       |       |                             |       |       |          |  |
| Permanent flow rate                                    |  |                                   | Q <sub>3</sub>                 | m³/h      | 25                                                                                                     | 40    | 63                        | 100        | 160   | 250   | 400   | 630                         | 1000  | 1600  |          |  |
| Overload flow rate                                     |  |                                   | Q <sub>4</sub>                 | m³/h      | 31,25                                                                                                  | 50    | 78,75                     | 125        | 200   | 312,5 | 500   | 787,5                       | 1250  | 2000  |          |  |
| Transitional flow rate                                 |  |                                   | Q <sub>2</sub>                 | m³/h      | 0,4                                                                                                    | 0,64  | 0,806                     | 1          | 1,28  | 2,5   | 3,2   | 8,064                       | 16    | 20,48 | 25,6     |  |
| Minimum flow rate                                      |  |                                   | Q <sub>1</sub>                 | m³/h      | 0,25                                                                                                   | 0,4   | 0,504                     | 0,625      | 0,8   | 1,563 | 2     | 5,04                        | 10    | 12,8  | 16       |  |
| Starting flow rate                                     |  |                                   | –                              | m³/h      | 0,15                                                                                                   | 0,15  | 0,2                       | 0,25       | 0,25  | 0,5   | 1,0   | 1,5                         | 3     | 8     |          |  |
| Measuring range R (ratio)                              |  |                                   | Q <sub>3</sub> /Q <sub>1</sub> | –         | 100                                                                                                    | 100   | 125                       | 160        | 200   | 160   | 200   | 125                         | 100   | 125   | 100      |  |
| Ratio Q2/Q1 (= 1.6 according to MID)                   |  |                                   | Q <sub>2</sub> /Q <sub>1</sub> | –         | 1,6                                                                                                    |       |                           |            |       |       |       |                             |       |       |          |  |
| Maximum pressure loss                                  |  |                                   | ΔP                             | kPa       | ΔP10                                                                                                   | ΔP16  | ΔP40                      | ΔP10       | ΔP25  | ΔP25  | ΔP25  | ΔP16                        | ΔP10  | ΔP10  |          |  |
| Temperature class (operating temperature range)        |  |                                   | T130 (0,1÷130°C)               |           | MWN130 or<br>MWN130 (in the NKOP version)                                                              |       |                           |            |       |       |       |                             |       |       |          |  |
| Continuous flow rate                                   |  |                                   | Q <sub>3</sub>                 | m³/h      | 25                                                                                                     | 25    | 40                        | 63         | 100   | 160   | 250   | 400                         | 1000  | 1600  |          |  |
| Overload flow rate                                     |  |                                   | Q <sub>4</sub>                 | m³/h      | 31,25                                                                                                  | 31,25 | 50                        | 78,75      | 125   | 200   | 312,5 | 500                         | 1250  | 2000  |          |  |
| Transitional flow rate                                 |  |                                   | Q <sub>2</sub>                 | m³/h      | 1                                                                                                      | 1     | 1,6                       | 2,52       | 4     | 6,4   | 10    | 16                          | 40    | 64    |          |  |
| Minimum flow rate                                      |  |                                   | Q <sub>1</sub>                 | m³/h      | 0,625                                                                                                  | 0,625 | 1                         | 1,575      | 2,5   | 4     | 6,25  | 10                          | 25    | 40    |          |  |
| Starting flow rate                                     |  |                                   | –                              | m³/h      | 0,25                                                                                                   | 0,25  | 0,3                       | 0,35       | 0,6   | 1,1   | 2     | 4                           | 8     | 15    |          |  |
| Measurement range R                                    |  |                                   | Q <sub>3</sub> /Q <sub>1</sub> | -         | 40                                                                                                     | 40    | 40                        | 40         | 40    | 40    | 40    | 40                          | 40    | 40    |          |  |
| Ratio                                                  |  |                                   | Q <sub>2</sub> /Q <sub>1</sub> | -         | 1,6                                                                                                    |       |                           |            |       |       |       |                             |       |       |          |  |
| Maximum pressure loss                                  |  |                                   | ΔP                             | kPa       | ΔP10                                                                                                   | ΔP16  | ΔP40                      | ΔP10       | ΔP25  | ΔP25  | ΔP25  | ΔP16                        | ΔP10  | ΔP10  |          |  |
| Connection: K - flanged***<br>G - with thread          |  |                                   |                                |           | K                                                                                                      | K/G   | K                         | K          | K     | K     | K     | K                           | K     | K     |          |  |
| Flow profile sensitivity class                         |  |                                   | –                              | –         | U0,D0                                                                                                  |       |                           |            |       |       |       |                             |       |       |          |  |
| Display range                                          |  |                                   | –                              | m³        | 10 <sup>6</sup>                                                                                        |       |                           |            |       |       |       | 10 <sup>7</sup>             |       |       |          |  |
| Display accuracy                                       |  |                                   | –                              | m³        | 0,0005                                                                                                 |       |                           |            |       |       |       | 0,005                       |       |       |          |  |
| Upper pressure limit                                   |  |                                   | P <sub>max</sub>               | –         | MAP16=(16bar)                                                                                          |       |                           |            |       |       |       |                             |       |       |          |  |
| Operating pressure range                               |  |                                   | –                              | bar       | From 0.3 to 16                                                                                         |       |                           |            |       |       |       |                             |       |       |          |  |
| Operating position                                     |  |                                   | –                              | –         | H,V                                                                                                    |       |                           |            |       |       |       |                             |       |       |          |  |
| Permissible limit of error in the range: (Q2 ≤ Q ≤ Q4) |  |                                   | ε                              | %         | ± 2 for cold water with a temperature of 0.1°C ≤ T ≤ 30°C<br>± 3 for water with a temperature T > 30°C |       |                           |            |       |       |       |                             |       |       |          |  |
| Permissible limit of error in the range: (Q1 ≤ Q < Q2) |  |                                   | ε                              | %         | ±5                                                                                                     |       |                           |            |       |       |       |                             |       |       |          |  |
| Reed contact NK (IP65 only)                            |  |                                   | –                              | dm³/ Imp. | 100 (standard pulse value)<br>10 (on request)                                                          |       |                           |            |       |       |       | 1000 (standard pulse value) |       |       |          |  |
|                                                        |  |                                   |                                |           |                                                                                                        |       |                           |            |       |       |       | 100 (on request)            |       | -     |          |  |
| NO opto-encoder (IP65 T30 and T50 only)                |  |                                   | –                              | dm³/ Imp. | 1                                                                                                      |       |                           |            |       |       |       | 10                          |       |       | 105,2632 |  |
|                                                        |  |                                   | L                              | mm        | 200                                                                                                    | 200   | 200                       | 225/200*   | 250   | 250   | 300   | 350                         | 450   | 500   |          |  |
|                                                        |  |                                   | h                              | mm        | 65                                                                                                     | 72    | 83                        | 95         | 105   | 120   | 135   | 160                         | 193   | 230   |          |  |
| Dimensions                                             |  | Height for IP68                   | H                              | mm        | 179,5                                                                                                  | 186,5 | 197,5                     | 218        | 228   | 255,5 | 350   | 375                         | 422   | 489   |          |  |
|                                                        |  |                                   | H1                             | mm        | 187,5                                                                                                  | 194,5 | 205,5                     | 226        | 236   | 263,5 | 357   | 382                         | 429   | 496   |          |  |
|                                                        |  |                                   | H2                             | mm        | 264,5                                                                                                  | 271,5 | 282,5                     | 303        | 313   | 340,5 | 434,1 | 459,1                       | 506,1 | 573,1 |          |  |
|                                                        |  | Height for IP65                   | H                              | mm        | 168,6                                                                                                  | 175,6 | 186,6                     | 207,1      | 217,1 | 244,6 | 338,9 | 363,9                       | 410,9 | 477,9 |          |  |
|                                                        |  |                                   | H1                             | mm        | 173,6                                                                                                  | 180,6 | 191,6                     | 212,1      | 222,1 | 249,6 | 343,6 | 368,6                       | 415,6 | 482,6 |          |  |
|                                                        |  |                                   | H2                             | mm        | 236                                                                                                    | 243   | 254                       | 274,5      | 284,5 | 312   | 406   | 431                         | 478   | 545   |          |  |
|                                                        |  |                                   | H3**                           | mm        | 283                                                                                                    | 290   | 301                       | 347,5      | 358   | 385   | 580   | 604                         | 650   | 720   |          |  |
|                                                        |  |                                   | Dz                             | mm        | 150                                                                                                    | 165   | 185                       | 200        | 220   | 250   | 285   | 340                         | 400   | 460   |          |  |
| Weight                                                 |  | Without communication module      |                                | kg        | 7,9                                                                                                    | 9,9   | 10,6                      | 13,3/13,8* | 15,6  | 18,1  | 40,1  | 51,1                        | 75,1  | 103,1 |          |  |
|                                                        |  | With NC contact and/or NO contact |                                |           | 8,3                                                                                                    | 10,3  | 11                        | 13,7/14,2* | 16    | 18,5  | 40,5  | 51,5                        | 75,5  | 103,5 |          |  |

## Dimensions of the MWN Nubis series Woltman water meters with IP65 register and REED pulse output

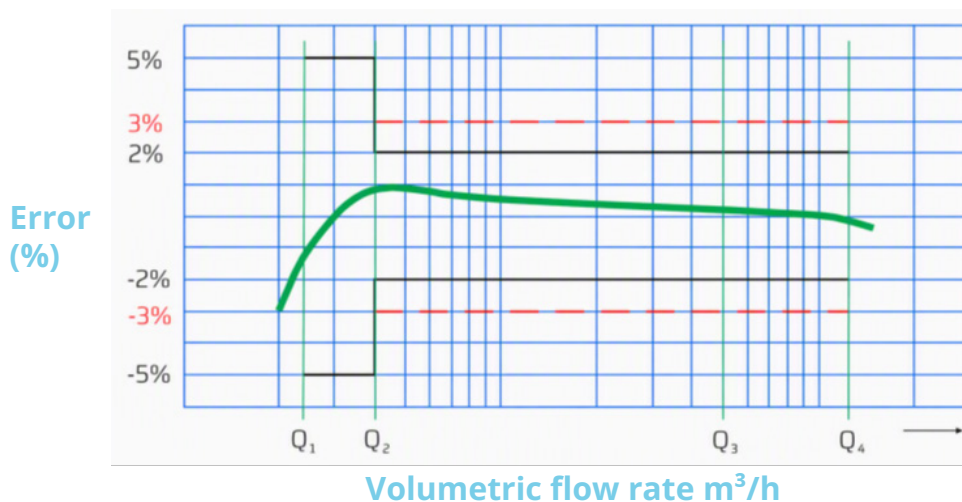


| DN |    | 40    | 50    | 65    | 80    | 100   | 125   | 150   | 200   | 250   | 300   |
|----|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| H  | mm | 213,5 | 220,5 | 231,5 | 252   | 262   | 289,5 | 384   | 409   | 456   | 523   |
| H1 | mm | 217,5 | 224,5 | 235,5 | 256   | 266   | 293,5 | 388   | 503   | 500   | 527   |
| H2 | mm | 260   | 267   | 278   | 298,5 | 308,5 | 336   | 430,5 | 455,5 | 502,5 | 569,5 |

## Pressure loss diagram of woltman water meters in the WN Nubis Series



## Typical error curve for the MWN Nubis series Woltman water meters.



## EU Declaration of Conformity from the manufacturer Apator-Powogaz for the MWN Nubis mechanical basic water meter. The MWN Nubis mechanical basic Woltmann water meter is designated as MWN by the manufacturer Apator Powogaz.





0010-306-002

1. DEKLARACJA ZGODNOŚCI UE  
EU DECLARATION OF CONFORMITY
2. Model przyrządu: Wodomierze MWN/MWN130, MK, MH  
Instrument model: Water meters MWN/MWN130, MK, MH  
Wodomierze: suchobieżne typu Woltman DN40-DN300 zgodnie z typami podanymi w tabeli w punkcie 5.  
Dry-running water meters type Woltman DN40-DN300 according to the types given in the Table in point 5.
3. Nazwa i adres producenta  
Name and address of the manufacturer  

APATOR POWOGAZ S.A.  
Jaryszki 1c, 62-023 Żerniki  
Polska/Poland  
+48 (61) 8 418 101  
sekretariat.powogaz@apator.com
4. Niniejsza deklaracja zgodności wydana zostaje na wyłączną odpowiedzialność producenta.  
Opisany przedmiot niniejszej deklaracji jest zgodny z odpowiednimi wymaganiami unijnego prawodawstwa harmonizacyjnego.  
This declaration of conformity is issued under the sole responsibility of the manufacturer.  
The object of the declaration described is in conformity with the relevant Union harmonisation legislation.  
Dyrektywa/ Directive 2014/32/UE  
Dyrektywa Parlamentu Europejskiego i Rady 2014/32/UE z dnia 26 lutego 2014 r. w sprawie harmonizacji ustawodawstw państw członkowskich odnoszących się do udostępniania na rynku przyrządów pomiarowych/ Directive 2014/32/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments
5. Odniesienia do odpowiednich Norm zharmonizowanych, odpowiednich dokumentów normatywnych, które zastosowano lub do innych specyfikacji technicznych, w stosunku, do których deklarowana jest zgodność:  
References to the relevant standards, documents used or references to the other technical specifications in relation to which conformity is declared:  

OIML R 49-1:2013  
OIML R 49-2:2013  
OIML R 49-3:2013

EN ISO4064-1:2017  
EN ISO4064-2:2017  
EN ISO4064-3:2014

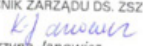
EN ISO4064-5:2017

| Nazwa i numer jednostki notyfikowanej<br>Name and number of the notified body                                      | Wydany certyfikat-Moduł B<br>Certificate issued-Module B                                                                                                              | Numer certyfikatu<br>Certificate number                                                                                                                                        | Typ<br>Type                                                                                                                                                                    | Wydany certyfikat – Moduł D<br>Certificate issued-Module D                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Słowacki Instytut Metrologiczny- Jednostka Notyfikowana 1781/<br>Slovak Institute of Metrology- notified body 1781 | Zatwierdzenie typu UE, zgodnie z modulem B, załącznika II do Dyrektywy nr 2014/32/UE<br>EU type approval, in accordance with Annex II, Module B, Directive 2014/32/EU | SK 08-MI001-SMU002 wersja 6 wydany/issued 29-04-2022, ważny do/valid until 15.07.2028<br>SK 10-MI001-SMU013 wersja 4 wydany/issued 29-04-2022, ważny do/valid until 29.07.2030 | MWN(WPH-01), MWN-08,MWN-NKOP, MWN-G, MWN-GH<br>MWN130 (WPH-01-130), MWN130-NK, MWN130-NKP, MWN130-G (DN50), (WPH130-01, WPH130-N-01)<br>MK-01 (MI-001), MK-08 NK, MK X-01 NKOP | SK23-QD-SMU003* ważny do/valid until 27.10.2026<br>Certyfikat zapewnia jakość produkcji, kontroli i testowania produktu końcowego, zgodnie z modulem D załącznika II do Dyrektywy nr 2014/32/UE<br>The certificate ensures the quality of production, control and testing of the final product, in accordance with Annex II, Module D of Directive 2014/32/EU |
| Karloveská 63, 842 55 Bratislava 4<br>Slovenská Republika                                                          |                                                                                                                                                                       | SK 16-MI001-SMU043 wersja 2 wydany/issued 29-04-2022, ważny do/valid until 19.06.2026<br>SK 16-MI001-SMU044 wersja 2 wydany/issued 29-04-2022, ważny do/valid until 19.06.2026 | MH-01 (MI-001), MH X-01 NK, MH-08 NKOP                                                                                                                                         | Słowacki Instytut Metrologiczny- Jednostka Notyfikowana 1781/<br>Slovak Institute of Metrology- notified body 1781<br>Karloveská 63, 842 55 Bratislava 4<br>Slovenská Republika                                                                                                                                                                               |

\*rewizja ważna w dniu wystawienia niniejszej deklaracji zgodności / revision valid on the date of issue of this declaration of conformity

- 6. Informacje dodatkowe:  
Additional information:

APATOR  
POWOGAZ S.A.  
Z UP. PREZESA ZARZĄDU  
KIEROWNIK LABORATORIUM  
  
Kamil Burda

APATOR  
POWOGAZ S.A.  
Z UP. PREZESA ZARZĄDU  
PEŁNOMOCNIK ZARZĄDU DS. ZSZ  
  
Katarzyna Janowicz

Jaryszki 01.04.2025  
Wydanie 2/Edition 2

Prezes Zarządu - Dyrektor Generalny  
CEO, President & Managing Director



\*Wszystkie aktualne certyfikaty, potwierdzające spełnienie wymagań w pkt. 5, dostępne są na [www.apator.com](http://www.apator.com)  
 All current certificates confirming compliance with the requirements in point 5, are available at [www.apator.com](http://www.apator.com)  
 \*\*Wszelka dokumentacja, dotycząca produktu znajduje się w zakładce „plik do pobrania” przy danym produkcie na [www.apator.com](http://www.apator.com)  
 \*\*All documentation regarding the product can be found in the “files to download” tab for a given product at [www.apator.com](http://www.apator.com)

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| <p><b>CS</b><br/>                 *Všetchny aktuální certifikáty potvrzující shodu s požadavky oddílu 5 jsou k dispozici na <a href="http://www.apator.com">www.apator.com</a></p> <p><b>DE</b><br/>                 *Alle aktuellen Zertifikate, die die Einhaltung der Anforderungen von Absatz 5 bestätigen, sind unter <a href="http://www.apator.com">www.apator.com</a> verfügbar</p> <p><b>EL</b><br/>                 *Όλα τα τρέχοντα πιστοποιητικά που επιβεβαιώνουν τη συμμόρφωση με τις απαιτήσεις της παραγράφου 5 είναι διαθέσιμα στη διεύθυνση <a href="http://www.apator.com">www.apator.com</a></p> <p><b>ES</b><br/>                 *Todos los certificados vigentes que confirman el cumplimiento de los requisitos del párrafo 5 están disponibles en <a href="http://www.apator.com">www.apator.com</a></p> <p><b>FR</b><br/>                 *Tous les certificats en vigueur confirmant le respect des exigences du paragraphe 5 sont disponibles sur <a href="http://www.apator.com">www.apator.com</a></p> <p><b>IT</b><br/>                 *Tutti i certificati attuali che confermano la conformità ai requisiti del paragrafo 5 sono disponibili sul sito <a href="http://www.apator.com">www.apator.com</a></p> <p><b>RU</b><br/>                 *Все действующие сертификаты, подтверждающие соответствие требованиям пункта 5, доступны на сайте <a href="http://www.apator.com">www.apator.com</a></p> <p><b>SK</b><br/>                 *Všetky aktuálne certifikáty potvrdzujúce súlad s požiadavkami bodu 5 sú dostupné na webovej stránke <a href="http://www.apator.com">www.apator.com</a></p> <p><b>UK</b><br/>                 *Усі актуальні сертифікати, що підтверджують відповідність вимогам пункту 5 доступні на сайті <a href="http://www.apator.com">www.apator.com</a></p> <p><b>RO</b><br/>                 *Toate certificatele actuale care confirmă conformitatea cu cerințele de la punctul 5, sunt disponibile la <a href="http://www.apator.com">www.apator.com</a></p> | <p><b>1. EU PROHLÁŠENÍ O SHODĚ 2. Typ zařízení: vodoměr MWN/MWN 130, MK, MH. Suchoběžný vodoměr typu Woltmann DN40-DN300 dle typů uvedených v tabulce pod bodem 5. 3. Jméno a adresa výrobce 4. Toto prohlášení o shodě se vydává na výhradní odpovědnost výrobce. Popsaný předmět tohoto prohlášení je v souladu s příslušnými požadavky harmonizačních právních předpisů Unie 5. Odkazy na příslušné harmonizované normy nebo příslušné použité normativní dokumenty nebo na jiné technické specifikace, ve vztahu k nimž je deklarována shoda 6. Další informace.</b></p> <p><b>1. EU-KONFORMITÄTSERKLÄRUNG 2. Gerätetyp: Wasserzähler MWN/MWN 130, MK, MH. Trockenlauf Wasserzähler Typ Woltmann DN40-DN300 entsprechend der in der Tabelle unter Punkt 5 angegebenen Typen. 3. Name und Adresse des Herstellers 4. Die Erstellung dieser Konformitätserklärung erfolgt in alleiniger Verantwortung des Herstellers. Der beschriebene Gegenstand dieser Erklärung entspricht den einschlägigen Anforderungen der Harmonisierungsgesetzgebung der Union 5. Verweise auf relevante harmonisierte Normen oder verwendete relevante normative Dokumente oder auf andere technische Spezifikationen, in Bezug auf die die Konformität erklärt wird 6. Weitere Informationen.</b></p> <p><b>1. ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ ΕΕ 2. Τύπος συσκευής: μετρητής νερού MWN/MWN 130, MK, MH. Μετρητής (ή ποιο τριχοεισμού νερού) τύπου Woltmann DN40-DN300 σύμφωνα με τους τύπους που καθορίζονται στον πίνακα στο σημείο 5. 3. Ονομα και διεύθυνση του κατασκευαστή 4. Αυτή η δήλωση συμμόρφωσης εκδίδεται με αποκλειστική ευθύνη του κατασκευαστή. Το θέμα που περιγράφεται σε αυτή τη δήλωση συμμορφώνεται με τις σχετικές απαιτήσεις της νομοθεσίας ενσωμάτωσης της ΕΕ 5. Παραπομπές στα σχετικά εναρμονισμένα ενσωματωμένα πρότυπα ή κανονιστικά έγγραφα ή άλλες τεχνικές προδιαγραφές για τις οποίες δηλώνεται η συμμόρφωση 6. Πρόσθετες πληροφορίες.</b></p> <p><b>1. DECLARACIÓN UE DE CONFORMIDAD 2. Tipo de dispositivo: contador de agua MWN/MWN 130, MK, MH. Contador de agua corriente en seco tipo Woltmann DN40-DN300 según los tipos especificados en la tabla del punto 5. 3. Nombre y dirección del fabricante 4. Esta declaración de conformidad se emite bajo la exclusiva responsabilidad del fabricante. El objeto descrito en esta declaración cumple los requisitos pertinentes de la legislación comunitaria de armonización 5. Referencias a las normas armonizadas pertinentes o a los documentos normativos pertinentes utilizados o a otras especificaciones técnicas respecto a las cuales se declara la conformidad 6. Informaciones adicionales.</b></p> <p><b>1. DÉCLARATION UE DE CONFORMITÉ 2. Type d'appareil : compteur d'eau MWN/MWN 130, MK, MH. Compteur d'eau courante sèche type Woltmann DN40-DN300 selon les types précisés dans le tableau au point 5. 3. Nom et adresse du fabricant 4. Cette déclaration de conformité est délivrée sous la seule responsabilité du fabricant. L'objet décrit dans cette déclaration est conforme avec les exigences pertinentes de la législation d'harmonisation de l'UE 5. Références aux normes harmonisées ou aux documents réglementaires applicables ou à d'autres spécifications techniques pour lesquels la conformité est déclarée 6. Informations supplémentaires.</b></p> <p><b>1. DICHIARAZIONE DI CONFORMITÀ UE 2. Tipo di dispositivo: contatore dell'acqua MWN/MWN 130, MK, MH. Contatore per acqua corrente a secco tipo Woltmann DN40-DN300 secondo le tipologie specificate nella tabella al punto 5. 3. Nome e indirizzo del produttore 4. La presente dichiarazione di conformità viene rilasciata sotto la responsabilità esclusiva del produttore. L'oggetto descritto della presente dichiarazione è conforme ai requisiti pertinenti della legislazione di armonizzazione dell'UE 5. Riferimenti alle pertinenti norme armonizzate o ai pertinenti documenti normativi utilizzati o ad altre specifiche tecniche per le quali è dichiarata la conformità 6. Informazioni aggiuntive.</b></p> <p><b>1. ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ ЕС 2. Тип устройства: Водосчетчик MWN/MWN 130, MK, MH. Сухой водомер типа Woltmann DN40-DN300 по типам, указанным в таблице в пункте 5. 3. Название и адрес производителя 4. Данное право на соответствие выдано под исключительную ответственность производителя. Описанный предмет настоящей декларации отвечает соответствующим требованиям законодательства ЕС о гармонизации 5. Ссылки на соответствующие национальные стандарты или нормативные документы Международной организации законодательной метрологии, применяемые, или ссылки на другие технические спецификации, в отношении которых декларируется соответствие 6. Дополнительная информация.</b></p> <p><b>1. EÚ VYHLÁSENIE O ZHODE 2. Typ zariadenia: vodoměr MWN/MWN 130, MK, MH. Suchý tečúci vodoměr typu Woltmann DN40-DN300 podľa typov uvedených v tabuľke v bode 5. 3. Meno a adresa výrobcu 4. Toto vyhlásenie o zhode sa vydáva na výhradnú zodpovednosť výrobcu. Opisovaný predmet tohto vyhlásenia je v súlade s príslušnými požiadavkami harmonizačných právnych predpisov Unie 5. Odkazy na príslušné harmonizované normy, alebo príslušné použité normatívne dokumenty alebo na iné technické špecifikácie, vo vzťahu ku ktorým je deklarovaná zhoda 6. Ďalšie informácie.</b></p> <p><b>1. ДЕКЛАРАЦІЯ ВІДПОВІДНОСТІ ЄС 2. Тип приладу: вodomір MWN/MWN 130, MK, MH. Лічильник сухого воду типу Woltmann DN40-DN300 за типом, зазначеним у таблиці під пунктом 5. 3. Назва та адреса виробника 4. Ця декларація про відповідність видана під виключною відповідальністю виробника. Описаний предмет цієї декларації відповідає відповідним вимогам законодавства ЄС про гармонізацію 5. Посилання на відповідні національні стандарти чи нормативні документи Міжнародної організації законодавчої метрології, що були застосовані, або посилання на інші технічні специфікації, стосовно яких декларується відповідність 6. Додаткова інформація.</b></p> <p><b>1. DECLARAȚIA UE DE CONFORMITATE 2. Tip dispozitiv: apometru MWN/MWN130, MK, MH. Contor de apă curentă uscată tip Woltmann DN40-DN300 conform tipurilor specificate în tabelul de la punctul 5. 3. Numele și adresa producătorului 4. Această declarație de conformitate este emisă pe responsabilitatea exclusivă a producătorului. Obiectul descris în această declarație respectă cerințele relevante ale legislației UE de armonizare 5. Referințe la standardele armonizate aplicabile sau documentele de reglementare sau alte specificații tehnice pentru care este declarată conformitatea 6. Informații suplimentare.</b></p> |
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Apator Powogaz S.A.  
 Jaryszki 1c, 62-023 Zeniki, Poland / apator.com / e-mail: [sakretariat.powogaz@apator.com](mailto:sakretariat.powogaz@apator.com)  
 NIP 781-002-06-01 / REGON 630509799 / KRS 0030028129

Zintegrowany System Zarządzania  
 Integrated Management System

ISO 9001 ISO 14001 ISO 45001

Type-examination certificate for the MWN Nubis mechanical Woltmann meter. In the documentation from the Slovak Metrological Institute, the mechanical Woltmann water meter is designated as MWN.

|                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                   |                                                                                                                                                                                      |                                                                                   |                                                                                   |
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|                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Slovenský metrologický ústav</b><br>Karloveská 63, 842 55 Bratislava 4,<br>Slovenská republika |                                                                                                                                                                                      |  |  |
| <b>CERTIFIKÁT EÚ SKÚŠKY TYPU</b><br><i>EU – type examination certificate</i>                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                   |                                                                                                                                                                                      |                                                                                   |                                                                                   |
| Číslo dokumentu:<br><i>Document number:</i>                                                                                                                                                                                                                                                                                                                                                        | SK 08-MI001-SMU002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                   | Revízia 6<br><i>Revision 6</i>                                                                                                                                                       |                                                                                   |                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                    | Revízia 6 nahrádza certifikát zo dňa 3. apríl 2020<br><i>Revision 6 replaces the certificate issued by April 3, 2020</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                   |                                                                                                                                                                                      |                                                                                   |                                                                                   |
| V súlade s:<br><i>In accordance with:</i>                                                                                                                                                                                                                                                                                                                                                          | prílohou č. 2, Modul B nariadenia vlády Slovenskej republiky č. 145/2016 Z. z. o sprístupňovaní meradiel na trhu v znení nariadenia vlády SR č. 328/2019 Z. z., ktorým sa preberá smernica Európskeho parlamentu a Rady 2014/32/EU o harmonizácii právnych predpisov členských štátov týkajúcich sa sprístupnenia meradiel na trhu<br><i>Annex II, Module B to Government Ordinance of the Slovak Republic No. 145/2016 Coll. Relating to the making available on the market of measuring instruments as amended by Government Ordinance of the Slovak Republic No. 328/2019 Coll., which implemented the Directive 2014/32/EU of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments</i> |                                                                                                   |                                                                                                                                                                                      |                                                                                   |                                                                                   |
| Žiadateľ/Výrobca:<br><i>Issued to (Manufacturer):</i>                                                                                                                                                                                                                                                                                                                                              | <b>Aptor PoWoGaz S.A.</b><br>ul. Jaryszki 1c, 62-023 Żerniki, Poland                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                   |                                                                                                                                                                                      |                                                                                   |                                                                                   |
| Druh meradla:<br><i>Type of instrument:</i>                                                                                                                                                                                                                                                                                                                                                        | <b>Vodomer (MI-001)</b><br><i>Water meter (MI-001)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                   |                                                                                                                                                                                      |                                                                                   |                                                                                   |
| Označenie typu:<br><i>Type designation:</i>                                                                                                                                                                                                                                                                                                                                                        | <b>MWN (WPH-01)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                   |                                                                                                                                                                                      |                                                                                   |                                                                                   |
| Základné požiadavky:<br><i>Essential requirements:</i>                                                                                                                                                                                                                                                                                                                                             | príloha č. 1 a príloha č. 3 Vodometry (MI-001) k nariadeniu vlády SR č. 145/2016 Z. z. v znení nariadenia vlády SR č. 328/2019 Z. z.<br><i>Annex No. I and Annex No. III Water meters (MI-001) to Government Ordinance of the Slovak Republic No. 145/2016 Coll. as amended by Government Ordinance of the Slovak Republic No. 328/2019 Coll.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                   |                                                                                                                                                                                      |                                                                                   |                                                                                   |
| Platnosť do:<br><i>Valid until:</i>                                                                                                                                                                                                                                                                                                                                                                | <b>15. júla 2028</b><br><i>July 15, 2028</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                   |                                                                                                                                                                                      |                                                                                   |                                                                                   |
| Notifikovaná osoba:<br><i>Notified body:</i>                                                                                                                                                                                                                                                                                                                                                       | <b>Slovenský metrologický ústav 1781</b><br><i>Slovak Institute of Metrology 1781</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                   |                                                                                                                                                                                      |                                                                                   |                                                                                   |
| Dátum vydania:<br><i>Date of issue:</i>                                                                                                                                                                                                                                                                                                                                                            | <b>29. apríl 2022</b><br><i>April 29, 2022</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                   |                                                                                                                                                                                      |                                                                                   |                                                                                   |
| Základné charakteristiky, popis meradla a podmienky schválenia sú uvedené v prílohe, ktorá je súčasťou tohto certifikátu. Certifikát vrátane prílohy má spolu 10 strán.<br><i>Essential characteristics, instrument description and approval conditions are set out in the appendix hereto, which forms the part of the certificate. The certificate including the appendix contains 10 pages.</i> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                   |                                                                                                                                                                                      |                                                                                   |                                                                                   |
|                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                   | <br><b>Viliam Mazúr</b><br>zástupca notifikovanej osoby<br><i>representative of notified body</i> |                                                                                   |                                                                                   |
| Poznámka: Tento certifikát EÚ skúšky typu môže byť rozmnožovaný len celý a nezmenený. Bez podpisu a odtlačku pečiatky je neplatný.<br><i>Note: This EU-type examination certificate shall not be reproduced except in full. Certificates without signature and stamp are not valid.</i>                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                   |                                                                                                                                                                                      |                                                                                   |                                                                                   |



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## Place of production:

### 1. Apator PoWoGaz S.A.

ul. Klemensa Janickiego 23/25, 60 – 542 Poznań, Poland

### 2. Apator PoWoGaz S.A.

ul. Jaryszki 1c, 62-023 Żemiki, Poland



## 1 Instructions and standards used within assessment

### 1.1 Generally binding instructions

Meter type was examined in terms of request for given type provisions Government Ordinance of the Slovak Republic No. 145/2016 Coll. relating to the making available on the market of measuring instruments as amended by Government Ordinance of the Slovak Republic No. 328/2019 Coll., which implemented the Directive 2014/32/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments as later amended (next Government Ordinance).

Requirements are set out in Annex No. 1 and Annex No. 3 Water Meters (MI-001) to Government Ordinance of SR No. 145/2016 Coll. as amended by Government Ordinance of the Slovak Republic No. 328/2019 Coll..

### 1.2 Technical specification used:

|                     |                                                                                                                             |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------|
| OIML R 49-1:2013    | Water meters intended for the metering of cold potable water and hot water. Part 1: Metrological and technical requirements |
| OIML R 49-2:2013    | Water meters intended for the metering of cold potable water and hot water. Part 2: Test methods                            |
| OIML R 49-3:2013    | Water meters intended for the metering of cold potable water and hot water. Part 3: Test report format                      |
| EN ISO 4064-1: 2017 | Water meters for cold potable water and hot water. Part 1: Metrological and technical requirements                          |
| EN ISO 4064-2: 2017 | Water meters for cold potable water and hot water. Part 2: Test methods                                                     |
| EN ISO 4064-3: 2014 | Water meters for cold potable water and hot water. Part 3: Test report format                                               |
| EN ISO 4064-5: 2017 | Water meters for cold potable water and hot water. Part 5: Installation requirements                                        |

## 2 Type marking

**Woltman water meter - MWN** (for type marking out of Poland is used **WPH-01**)

Meter is made in following subgroups:

| Type of meter | Temperature class | Class                            | Nominal Diameter                                                 |
|---------------|-------------------|----------------------------------|------------------------------------------------------------------|
| MWN           | T30, T50          | M1 <sup>1)</sup> B <sup>2)</sup> | DN40, DN50, DN65, DN80, DN100, DN125, DN150, DN200, DN250, DN300 |

<sup>1</sup> according to Government Ordinance of the Slovak Republic, Annex No. 1

<sup>2</sup> according to EN ISO 4064-1:2017 and OIML R 49-2:2013



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### 3 Description of measuring instrument

**Meter name:** Woltman horizontal water meter

**Type marking:** MWN, (WPH-01)

#### Description of operating principle instrument design:

The industrial horizontal meter is intended for metering of delivered water quantity. The Woltman meter (Picture No. 1 and 2) operates on the principle of a water speed sensor by impeller wheel. The operating speed of the wheel is proportionate to the speed of overflowing water. The operating speed is proportionate to water delivered quantity. The Water meter is dedicated to measure the flow and the delivered cold water quantity.

Water meter is:

- Woltman horizontal, dry water meter,
- with internal float regulation,
- with removable measuring insert in covered casing,
- measures in horizontal and vertical position.



Picture No.1 Woltman water meter MWN



Picture No.2 Woltman water meter MWN – IP68 version



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### 3.1 Description of subgroups

Marking: MWN, MWN-NK, MWN-NKP, MWN-NO, MWN-NOP, MWN-NKOP, MWN-G (only for DN50 and DN65), MWN-GH (only for DN50 and DN65), (WPH-01, WPH-N-01)

Version with IP68 cover is marked with number 08 (for example MWN50-08)

DN: DN40, DN50, DN65, DN80, DN100, DN125, DN150, DN200, DN250, DN300

The Water meter can be equipped by following output impulses:

- MWN - basic type with mechanical counter
- MWN-NK - mechanical counter with contact impulse transducer
- MWN-NKO - mechanical counter with contact and optical impulse transducer
- MWN-NKP - advance prepared counter for contact transducer
- MWN-NO - mechanical counter with optical impulse transducer
- MWN-NOP - advance prepared counter to optical impulse transducer
- MWN-NKOP - counter for contact and optical impulse transducer prepared in advance
- MWN-G - threaded coupling
- MWN-GH - with hydrant stand pipe
- WPH-01 - basic type with mechanical counter
- WPH-N-01 - mechanical counter with contact and/or optical impulse transducer or mechanical counter prepared in advance with contact and/or optical impulse transducer

### 3.2 Measuring insert

The measuring insert consists of the measuring mechanism, mechanism's flanged top cover and counter. The measuring insert is attached to the body by screws. The tightness of the measuring insert is secured in the body by 2 O-rings, while one O-ring secures the outside tightness (measuring insert and screws). The 2-nd O-ring secures the tightness of the insert situated in the body (inlet and outlet without DN125, 150, 200, 250, 300). The position of the regulation blade is adjustable via different positions in relation to the water flow.

### 3.3 Indicating device

The indicating device is a combined number rollers and pointers counter. It consists of 6 rollers for m<sup>3</sup> and 3 or 2 scale indicators with pointers for the decimals of m<sup>3</sup>. Counter capacity is 999 999 m<sup>3</sup> or 9 999 999 m<sup>3</sup> and resolution of the reading is 0,5; 5 or 50 dm<sup>3</sup>.

The counter can be equipped by the contact or optical impulse transducer. The mechanical counter is equipped by metal cover, the contact or optical impulse transducer can be equipped as well.

### 3.4 Principle of operation

The core part of the water meter is the screw gear lying vertically on the axle of pipe axis. The screw gear is pressed by flash of liquid and turns into the rotation. The rotating movement of the screw gear is transferred through the magnetic clutch onto the mechanical counter.



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### 3.5 Technical documentation

A number of drawings of technical documentation are listed in the following table:

|                 |                 |                 |                 |                 |                 |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 7250-00000      | 7108-000000     | 7307-000000     | 7345-000000     | 7380-000000     | 7798-000000     |
| 5000-210000/070 | 5003-250000/074 | 5000-640000/174 | 5000-660000/074 | 5000-680000/070 | 5003-890000/075 |
| 7255-000000     | 7200-000000     | 7308-000000     | 7347-000000     | 7385-000000     | 7190-000000     |
| 5000-240000/074 | 5000-230000/070 | 5003-640000/074 | 5000-660000/174 | 5000-880000/075 | 6000-260000/070 |
| 7257-000000     | 7205-000000     | 7320-000000     | 7348-000000     | 7387-000000     | 7195-000000     |
| 5000-240000-174 | 5000-260000/074 | 5000-620000/070 | 5003-660000/074 | 5000-880000/175 | 6000-780000/075 |
| 7258-000000     | 7207-000000     | 7325-000000     | 7360-000000     | 7388-000000     | 7197-000000     |
| 5003-240000/074 | 5000-260000/174 | 5000-650000/074 | 5000-670000/070 | 5003-880000/075 | 6000-780000/175 |
| 7100-000000     | 7208-000000     | 7327-000000     | 7365-000000     | 7790-000000     | 7198-000000     |
| 5000-220000/070 | 5003-260000/074 | 5000-650000/174 | 5000-870000/075 | 5000-690000/070 | 5003-900000/075 |
| 7150-000000     | 7300-000000     | 7328-000000     | 7367-000000     | 7795-000000     | 7411-000000     |
| 5000-250000/074 | 5000-610000/070 | 5003-650000/074 | 5000-870000/075 | 5000-890000/075 |                 |
| 7107-000000     | 7305-000000     | 7340-000000     | 7368-000000     | 7797-000000     |                 |
| 5000-250000/174 | 5000-640000/074 | 5000-630000/070 | 5003-870000/075 | 5000-890000/175 |                 |

All drawings, schemes and technical documentation used during the conformity assessment are saved in document No. NO-062/08, NO-128/11, NO-373/18, NO-447/20 and NO540/22.

### 4 Basic technical characteristics

| Type marking                         |                      | MWN40                                          | MWN50      | MWN65      | MWN80 |
|--------------------------------------|----------------------|------------------------------------------------|------------|------------|-------|
| Nominal diameter DN                  | mm                   | 40                                             | 50         | 65         | 80    |
| Indicating range                     | m <sup>3</sup>       | 10 <sup>6</sup>                                |            |            |       |
| Resolution of the reading            | m <sup>3</sup>       | 0,0005                                         |            |            |       |
| Maximum admissible pressure          | -                    | MAP10, MAP16                                   |            |            |       |
| Working pressure range               | bar                  | from 0,3 to 16                                 |            |            |       |
| Pressure loss                        | -                    | ΔP10                                           | ΔP16, ΔP10 | ΔP40, ΔP16 | ΔP10  |
| Temperature class                    | -                    | T30, T50                                       |            |            |       |
| Flow profile sensitivity classes     | -                    | U0, D0                                         |            |            |       |
| Position                             | -                    | H, V                                           |            |            |       |
| Climatic and mechanical environments | -                    | closed spaces /from 5°C to 55°C/mech. class M1 |            |            |       |
| Contact impulse transducer NK        | dm <sup>3</sup> /imp | 2,5; 5; 10; 25; 100; 250; 500; 1000            |            |            |       |
| Optical impulse transducer NO        | dm <sup>3</sup> /imp | 1                                              |            |            |       |



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## 8 Data placed on the measuring instrument

On the shroud, the dial of the indicating device or on an identification plate of every water meter or in the product documentation minimum the following data should be marked:

- a) Manufacturer's name, registered trade name or registered mark
- b) Postal address of manufacturer at which they can be contacted
- c) Measuring instrument type
- d) Measuring unit ( $\text{m}^3$ )
- e) Numerical value of  $Q_3$  in  $\text{m}^3/\text{h}$  ( $Q_3 \text{ x, x}$ ) and ratio  $Q_3/Q_1$  (Rxxx)
- f) Year of production
- g) Production serial number
- h) Number of EU-type examination certificate and conformity mark
- i) The highest admissible pressure if it differs from 1 MPa (MAP xx)
- j) Flow direction
- k) The letter V or H, if the meter can only be operated in the vertical or horizontal position
- l) Class of pressure loss if it differs from  $\Delta p_{63}$  ( $\Delta p \text{ XX}$ )
- m) Flow profile sensitivity classes ( $U \times D \times$ )
- n) The temperature class where it differs from T30
- o) Environmental classification

The environmental classification may be given on a separate datasheet, unambiguously related to the meter by a unique identification, and not on the meter itself.

## 9 Measures asked for providing measuring instrument integrity

### 9.1 Identification

Woltman meter should be in compliance with the description provided on the item 3 of this Annex and should be in compliance with the marking specified by the item 7 of this Annex. The number given to the EU-type examination certificate is put at each piece of the measuring instrument.

Emplacement of the conformity mark is followed by § 15 of the Governmental ordinance.

### 9.2 Sealing of the measuring instrument

Woltman water meter shall be before the conformity assessment according to the Annex No.2 (Module D or F) of the Governmental ordinance sealed by following sealing marks:

Connection of counter shroud and water meter body shall be sealed by seal used for security measures (lead or plastic seal) (Picture No. 3)



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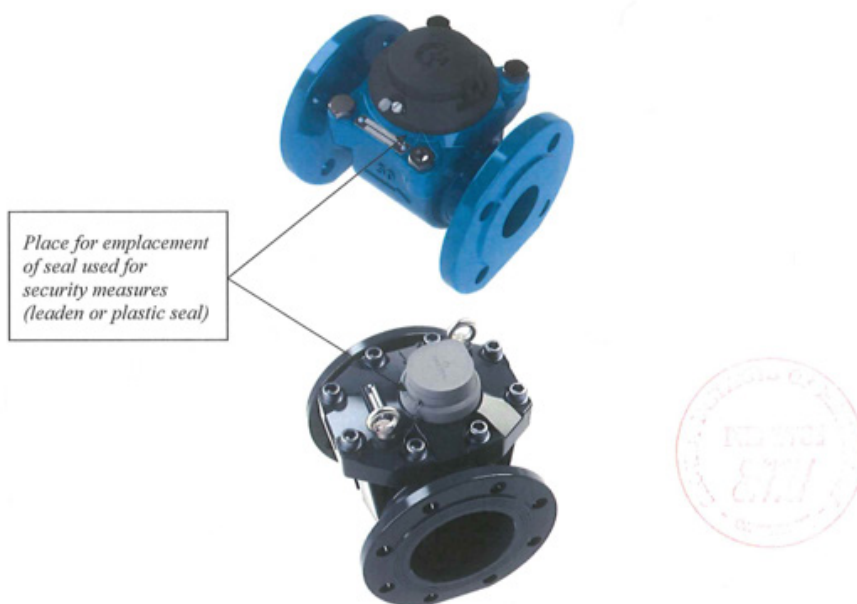


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Picture No.3 Emplacement of the seal for security measures

## 10 Requirements for installation, especially conditions of usage

### 10.1 Installation data

|                                        |     |     |      |         |      |
|----------------------------------------|-----|-----|------|---------|------|
| Nominal diameter - DN                  | 40  | 50  | 65   | 80      | 100  |
| Construction length [mm] - L           | 200 | 200 | 200  | 225/200 | 250  |
| Flange diameter [mm] - $D_z$           | 150 | 165 | 185  | 200     | 220  |
| Weight [kg]                            | 7,9 | 9,9 | 10,6 | 13,3    | 15,6 |
| Height [mm] - H                        | 177 | 187 | 197  | 219     | 229  |
| Distance axle from edge [mm] - h       | 65  | 72  | 83   | 95      | 105  |
| Space height for remove insert - $H_1$ | 277 | 287 | 297  | 339     | 349  |

|                                        |      |      |      |      |       |
|----------------------------------------|------|------|------|------|-------|
| Nominal diameter - DN                  | 125  | 150  | 200  | 250  | 300   |
| Construction length [mm] - L           | 250  | 300  | 350  | 450  | 500   |
| Flange diameter [mm] - $D_z$           | 250  | 285  | 340  | 400  | 460   |
| Weight [kg]                            | 18,1 | 40,1 | 51,1 | 75,1 | 103,1 |
| Height [mm] - H                        | 257  | 357  | 382  | 427  | 497   |
| Distance axle from edge [mm] - h       | 120  | 135  | 160  | 193  | 230   |
| Space height for remove insert - $H_1$ | 377  | 582  | 607  | 652  | 722   |



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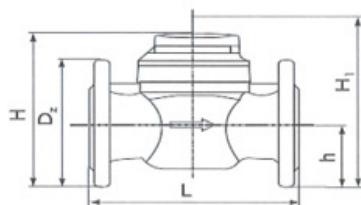


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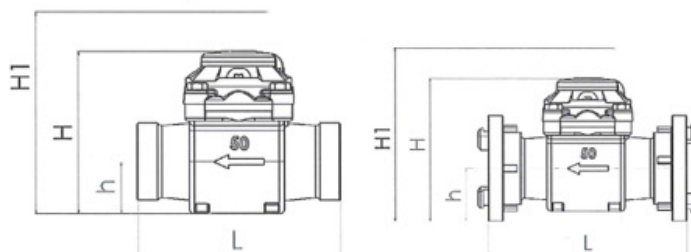
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Picture No.4 Installation dimensions

| Nominal diameter – DN                           | 50-G  | 50-GH              | 65-G | 65-GH              |
|-------------------------------------------------|-------|--------------------|------|--------------------|
| Construction length [mm] - L                    | 200   | 240                | 200  | 240                |
| G                                               | 2 1/2 | hydrant stand pipe | 3    | hydrant stand pipe |
| Weight [kg]                                     | 5,5   | 6,6                | 6,2  | 7,3                |
| Height [mm] – H                                 | 160   | 170                | 170  | 180                |
| Distance axle from edge [mm] – h                | 50    | 65                 | 51   | 66                 |
| Space height for remove insert - H <sub>1</sub> | 260   | 270                | 270  | 280                |



Picture No.5 Installation dimensions - MWN50-G/GH and MWN65-G/GH

## 10.2 Installation requirements

The Woltman water meter is introduced into the operation by a worker having a certificate for this activity performance. The Woltman meter is possible to be put into use after a construction in line with this report and in line with a producer instruction by "Instruction of installation and conditions of use of flanged water meters". A measuring instrument should be installed in direction of water flow arrow marked on the meter body.

## 10.3 Conditions of use

Within using the measuring instrument it is needed to be managed by recommendations of a producer by "Instruction of installation and conditions of use of flanged water meters".

Assessment done by: Ing. Viliam Mazúr

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**EMS Electronic Metering Systems**

Your trusted partner for precision measurement technology, innovative solutions, and sustainable systems.  
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Since 2007, EMS Electronic Metering Systems s.r.l. has been synonymous with innovation and reliable solutions in the fields of energy metering, heat metering, and water metering. Headquartered in Timisoara, Romania, we are a high-tech company known for our innovative and reliable solutions in the fields of energy metering, heat metering, water metering, and remote consumption data transmission. We combine nearly two decades of experience with high quality standards, making us a trusted choice for our customers throughout Europe. EMS Electronic Metering Systems s.r.l. offers more than just consumption meters for energy, heat, and water—at EMS Electronic Metering Systems s.r.l., everything revolves around providing efficient and precise tools for managing energy, heat, and water. Our products embody innovation, durability, and accuracy and have been serving a diverse European market since 2007.

## EMS - Our Story



**EMS Electronic Metering Systems s.r.l., based in Timișoara, Romania, was founded in 2009.** As part of a successful Austrian Messtechnik-Group, the company serves as a research, development, and manufacturing hub for the entire group. The Timișoara facility specializes in the development and production of electronic heat cost allocators, electronic heat meters, wireless data collection units, wireless repeaters, wireless adapters, M-Bus technology, and cellular-based consumption data reading systems.

### Our production:

At our state-of-the-art production facility in Timișoara, we manufacture a wide range of innovative metering systems designed primarily for the housing industry and sub-metering applications. Our manufacturing processes are engineered for maximum precision and quality, ensuring the production of devices that meet international standards in metering technology.

**Our ISO 9001-certified production process** guarantees that every stage of manufacturing is carried out with the utmost care and in accordance with the highest quality standards. Furthermore, EMS operates two state-of-the-art test rigs supplied by one of Central Europe's most renowned manufacturers of precision testing equipment. Specifically designed for the MID-compliant production of heat and water meters, these test rigs ensure that all our metering devices comply with the European Union's Measuring Instruments Directive (MID) as well as stringent European standards, specifications, and regulations regarding measurement accuracy and conformity.

**Through continuous research and development,** we maintain the superior performance of our products, ensuring they consistently meet the latest technological requirements and perfectly satisfy our customers' individual needs. This philosophy is central to our commitment to continuous improvement and to delivering products of the highest quality to our customers.

### Our expertise:

EMS focuses particularly on the development and production of consumption metering devices for the sub-metering sector. These products are used in various industries, especially for the precise measurement and monitoring of energy consumption and distribution.

**Innovative solutions** for the conscious and economical use of heat, water, and energy – for a sustainable future.

In addition to hardware manufacturing, EMS develops advanced firmware and software solutions, including systems for the remote reading of metering devices.

**Our intelligent sub-metering systems** enable the efficient optimization of energy consumption—particularly in the residential sector—and the targeted management of resources. EMS sub-metering products allow residents to monitor and manage their heat, water, and energy consumption with transparency and clarity.

**This encourages more conscious usage habits:** users who conserve resources benefit financially through lower costs, whereas wasteful behavior leads directly to higher bills. This incentive structure supports sustainable resource use, resulting in a significant reduction in overall consumption and, consequently, lower total costs for heat, water, and energy. Through our solutions, we actively contribute to the digitalization of the energy sector and provide tailored systems that meet our customers' specific needs. In doing so, we promote not only the efficient use of heat and energy but also the conscious and sustainable management of water resources.

### Quality and Innovation

EMS places great importance on the highest quality and relies on state-of-the-art technologies across all areas of product development and production. We continuously work on improving our solutions to meet the ever-changing demands of the market.

### Trust and Partnership

With over 15 years of experience in the metering industry, EMS is a trusted partner in the development and manufacture of consumption meters, associated remote reading technology, and related system solutions. As part of an established international metering group, EMS offers not only reliable and sustainable products but also excellent service and comprehensive support to its customers.

For further information or tailored solutions, we look forward to hearing from you:

EMS Electronic Metering Systems s.r.l., Strada Macilor Nr. 30c, 300351 Timișoara, Rumänien  
Email: [info@ems-electronic.com](mailto:info@ems-electronic.com), Internet: <https://ems-electronic.com>



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