

# MWN Nubis IP68

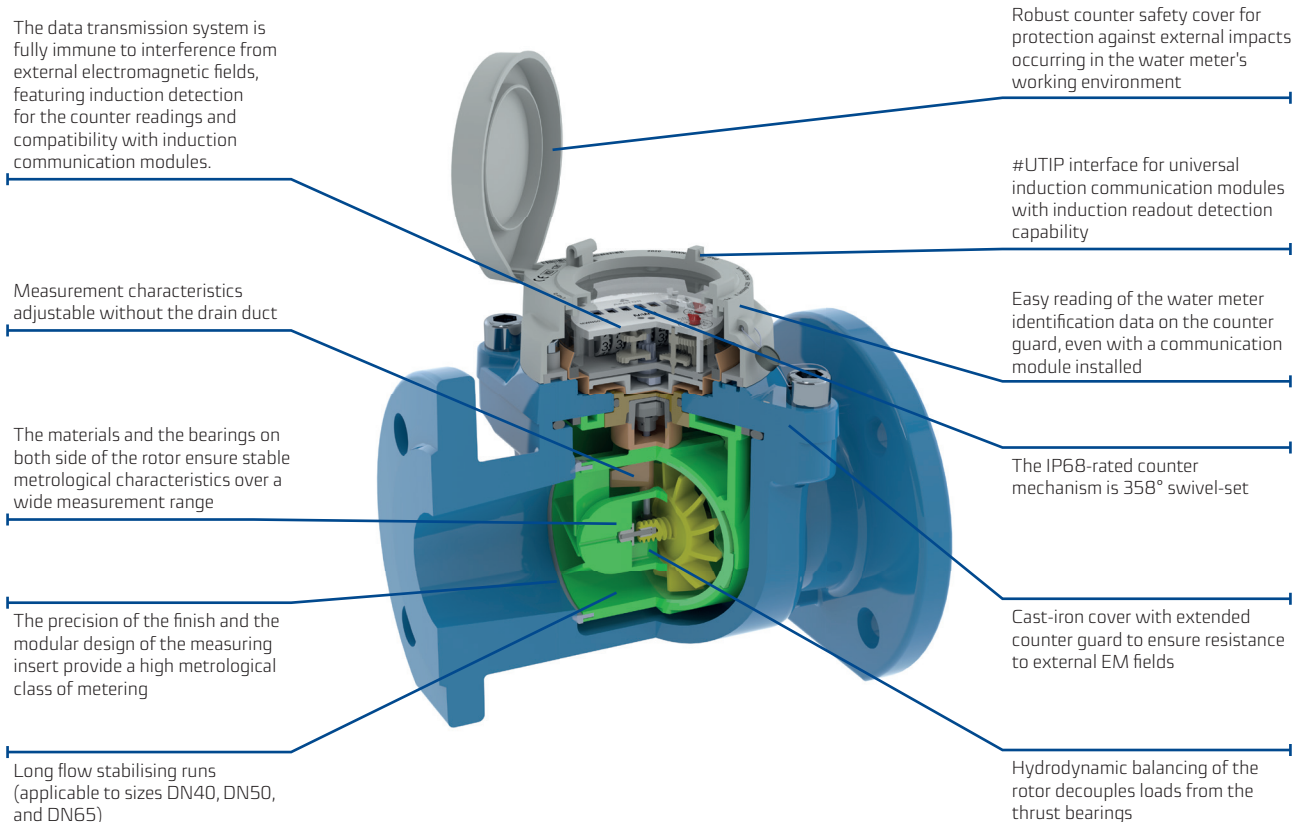
## MWN horizontal rotor axis propeller water meter (Woltman)



The Nubis IP68 is a horizontal rotor axis propeller dry water meter of the Woltman design, with the propeller axis parallel to the piping once installed. The Nubis water meters feature state-of-the-art design and processing solutions, which provide a long operating life, durability, resistance to external electromagnetic fields, and low pressure losses for the water flow. The counter mechanism is confined to a hermetically sealed enclosure of glass, with a guard made of overlapped copper sheet. The water meter has been designed and manufactured to the MID (Measuring Instruments Directive) and in compliance with EN14154, OIML R49 and ISO4064, for a maximum measurement range of R200.

### Application

The water meters are intended for metering in industrial water supply systems operating at temperatures up to 50°C, at low pressure losses with relatively constant and high flow rates. The maximum admissible pressure (MAP) is 16 bar. **The water meter design enables installation in horizontal (H) or vertical (V) piping with the counter upward or sideways, and in piping oriented between H and V.** The water meters are excellent for operation in harsh environmental conditions. The standard water meter version is designed for use with universal induction communication modules with #UTIP (Universal TI Plug).



## Advantages

### Economic

- Excellent metrological parameters
- Low overall water meter weight
- Interchangeable, unified design of the measuring insert: compatible with several body sizes for optimum water meter installation management
- The standard water meter version is AMR capable (automatic meter reading)
- Any installation orientation is feasible without affecting the metrological parameters, allowing the more liberal design of new and existing water meter connections
- High anti-corrosive and damage resistance performance of the paint coat (made by epoxy powder coating)

### Convenience

- The standard water meter version is AMR capable (automatic meter reading) and includes #UTIP for compatibility with universal induction communication modules
- Hermetically sealed counter: the counter mechanism is sealed in an IP68-rated glass enclosure with a copper guard
- Alarm output capability: the meter with a universal induction communication module is capable of remote indication of any removal of or damage to the module, disruption of operation, reverse flows, leakages, and more
- Convenient manual reading, with the option of swivel-set counter rotation of up to 358° relative to its axis

## Reliability

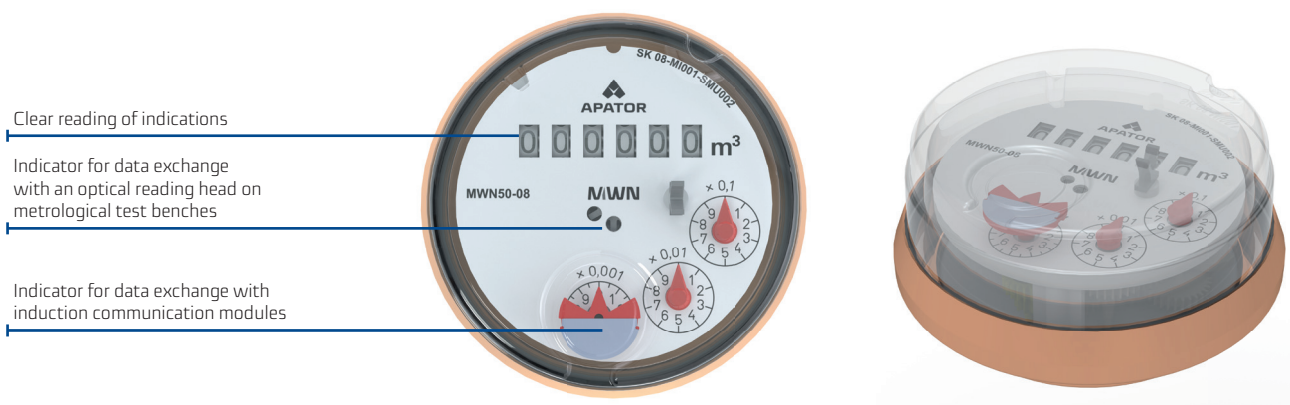
- Tested and robust design
- High operational durability
- The counter mechanism is shielded against mechanical damage

## Key features

- IP68 rated: capable of operation in extremely difficult ambient conditions (including full immersion in water) alone or with a communication module installed
- Highly aesthetic droplet-shaped design for the counter safety cover and guard
- EN14154-3 compliant resistance to external magnetic fields
- The rotor bearings and other solutions and materials used to ensure stable metrology over the service life
- The standard water meter version is designed for universal induction communication modules with #UTIP (Universal TI Plug)
- Low starting flow
- Wide metering range
- Electronic diagnostics of metrological parameters
- Modular design
- Removable measuring insert
- Magnetic coupling

## Regulatory and standard compliance

- Directive 2014/32/EC 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
- Polish Act of 13/04/2016 on market surveillance and compliance assessment systems
- EN-ISO 4064-1÷5:2014+2017 (E) – Water meters for cold potable water and hot water
- OIML R49:2013 – Water meters intended for the metering of cold potable water
- EU type test certificate – Cold water, no. SK08-MI001-SMU002
- PZH National Institute of Hygiene and WRAS certificates (all materials used in MWN water meters have Hygiene Certificates for use with potable water)
- Classification of environmental, climate and mechanical conditions: Class B (ref. EN-ISO 4064-1:2014(E))
- Classification of mechanical environmental conditions: Class M1, as per Directive 2014/32/EC of the European Parliament and of the Council of 26 February 2014
- Classification of electromagnetic environmental conditions: Class E1 and E2, as per EN-ISO 4064: 2014 and Directive 2014/32/EC of the European Parliament and of the Council of 26 February 2014



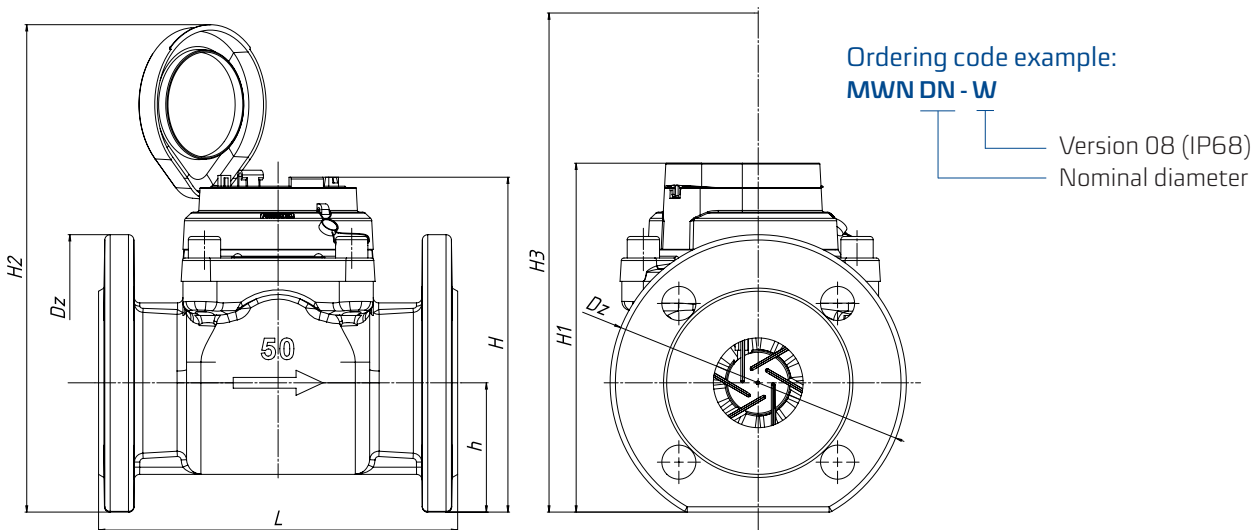
**The -08 (IP68) counter version is compatible with cold water applications only and is installed in a hermetically sealed mineral glass enclosure with a copper guard. The counter is compatible with induction communication modules**

Table 1. Specifications

Parameter	MWN-08 (IP68)													
	DN	mm	40	50	65	80	100	125	150	200	250	300		
Nominal diameter	DN	mm	40	50	65	80	100	125	150	200	250	300		
Temperature class (operating temperature range)	T30 (0.1 to 30°C), T50 (0.1 to 50°C)													
Permanent flow rate	Q <sub>3</sub>	m <sup>3</sup> /h	25	40	63	100	160	250	400	630	1,000	1,600		
Overload flow rate	Q <sub>4</sub>	m <sup>3</sup> /h	31.25	50	78.75	125	200	312.5	500	787.5	1,250	2,000		
Transitional flow rate	Q <sub>2</sub>	m <sup>3</sup> /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>	m <sup>3</sup> /h	0.25	0.4	0.504	0.625	0.8	1.563	2	5.04	10	12.8 16		
Starting flow	–	m <sup>3</sup> /h	0.15	0.15	0.2	0.25	0.25	0.5	1.0	1.5	3	8		
Measurement range, R	Q <sub>3</sub> /Q <sub>1</sub>	–	100	100	125	160	200	160	200	125	100	125 100		
Coefficient	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		
Flow profile sensitivity class	–	–	U0, D0											
Indicating range	–	m <sup>3</sup>	10 <sup>6</sup>						10 <sup>7</sup>					
Resolution of reading	–	m <sup>3</sup>	0.0005						0.005			0.05		
Maximum allowable pressure	P <sub>max</sub>	–	MAP16 = (16bar)											
Operating pressure range	–	bar	0.3 to 16											
Operating orientation	–	–	H, V											
Maximum permissible error range: (Q2 ≤ Q ≤ Q4)	ε	%	± 2 for 0.1°C ≤ T ≤ 30°C cold water ± 3 T > 30°C water											
Maximum permissible error range: (Q1 ≤ Q < Q2)	ε	%	±5											
Dimensions	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		
	H	mm	179.5	186.5	197.5	218	228	255.5	350	375	422	489		
	H <sub>1</sub>	mm	187.5	194.5	205.5	226	236	263.5	357	382	429	496		
	H <sub>2</sub>	mm	264.5	271.5	282.5	303	313	340.5	434.1	459.1	506.1	573.1		
	H <sub>3</sub> **	mm	283	290	301	347.5	358	385	580	604	650	720		
	D <sub>z</sub>	mm	150	165	185	200	220	250	285	340	400	460		
Weight		kg	7.9	9.9	10.6	13.3/13.8*	15.6	18.1	40.1	51.1	75.1	103.1		

\* On request.

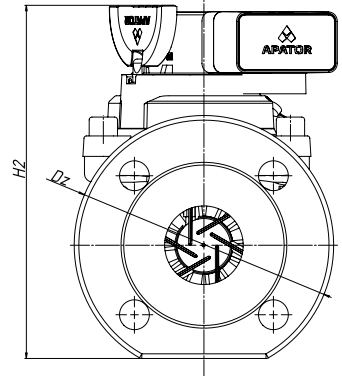
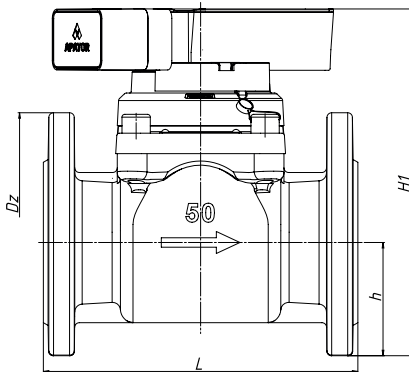
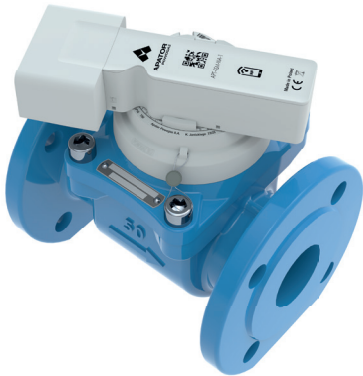
\*\* Measuring insert removal clear height.





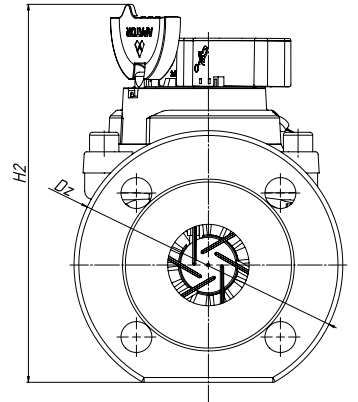
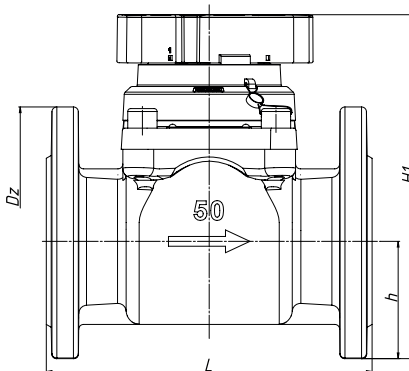
Example of MWN IP68 water meter compatibility with induction communication modules:

**INGSM induction communication module, #UTIP (Universal TI Plug)** Available from Q2 2021



DN		40	50	65	80	100	125	150	200	250	300
H1	mm	213.5	220.5	231.5	252	262	289.5	384	409	456	523
H2	mm	217.5	224.5	235.5	256	266	293.5	388	503	500	527

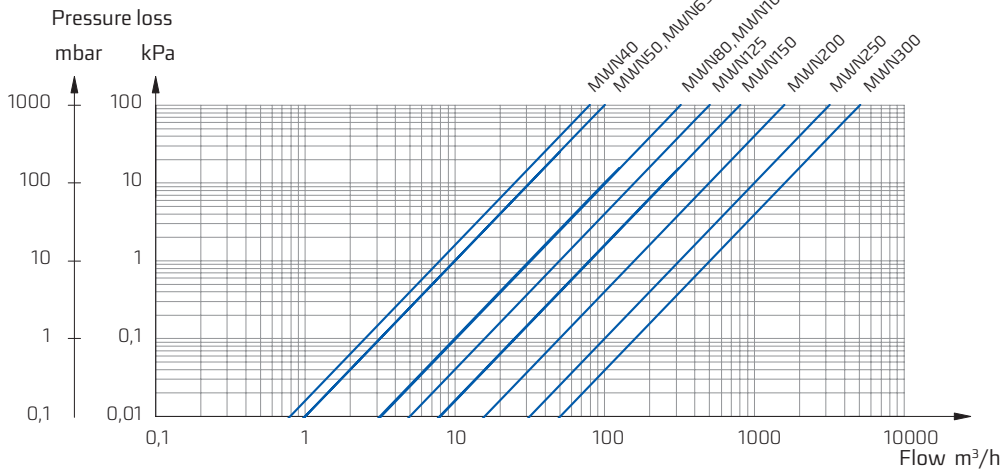
**APT-WMBUS-NA-1 induction communication module, #UTIP (Universal TI Plug)**  
**APT-WMBUS-NA-1 PULSE induction communication module** Available from Q2 2021



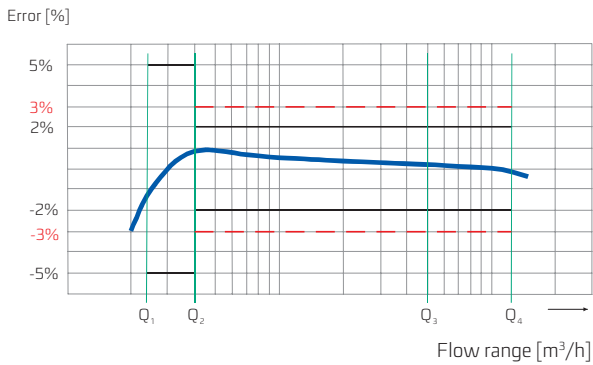
DN		40	50	65	80	100	125	150	200	250	300
H1	mm	204.1	211.1	222.1	242.6	252.6	280.1	374.6	399.6	446.6	513.6
H2	mm	225.1	232.1	243.1	263.1	273.6	301.1	395.6	420.6	467.6	534.6



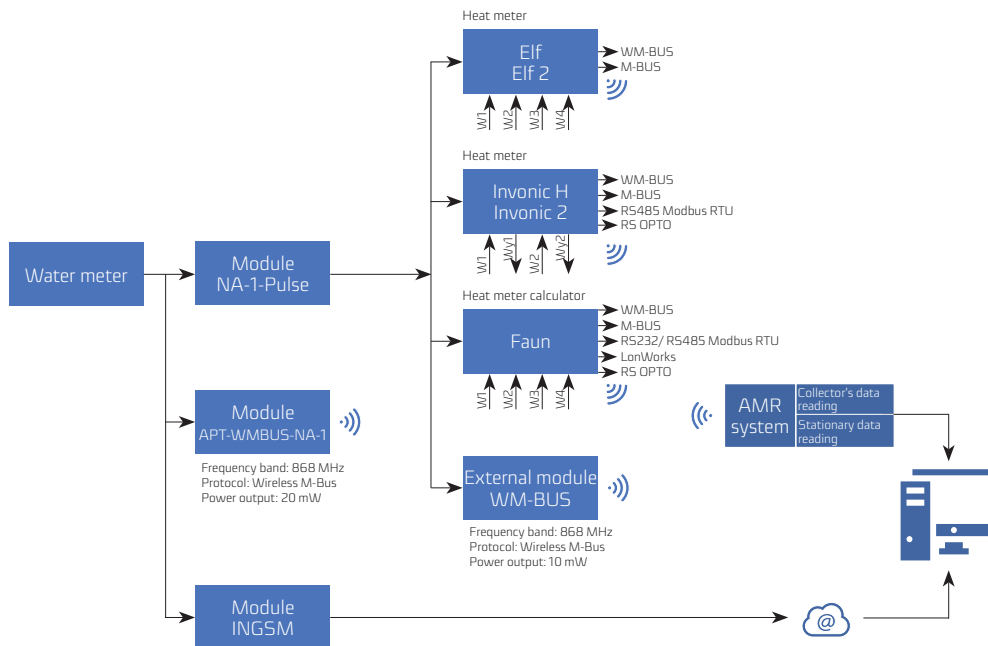
## Pressure loss chart



## Typical error chart



## Examples of connections for a remote transmission of readings and flow rate measurement



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