APATOR

JS Master+ IP68

DN25, DN32 & DN40 single-jet vane-wheel dry water meter

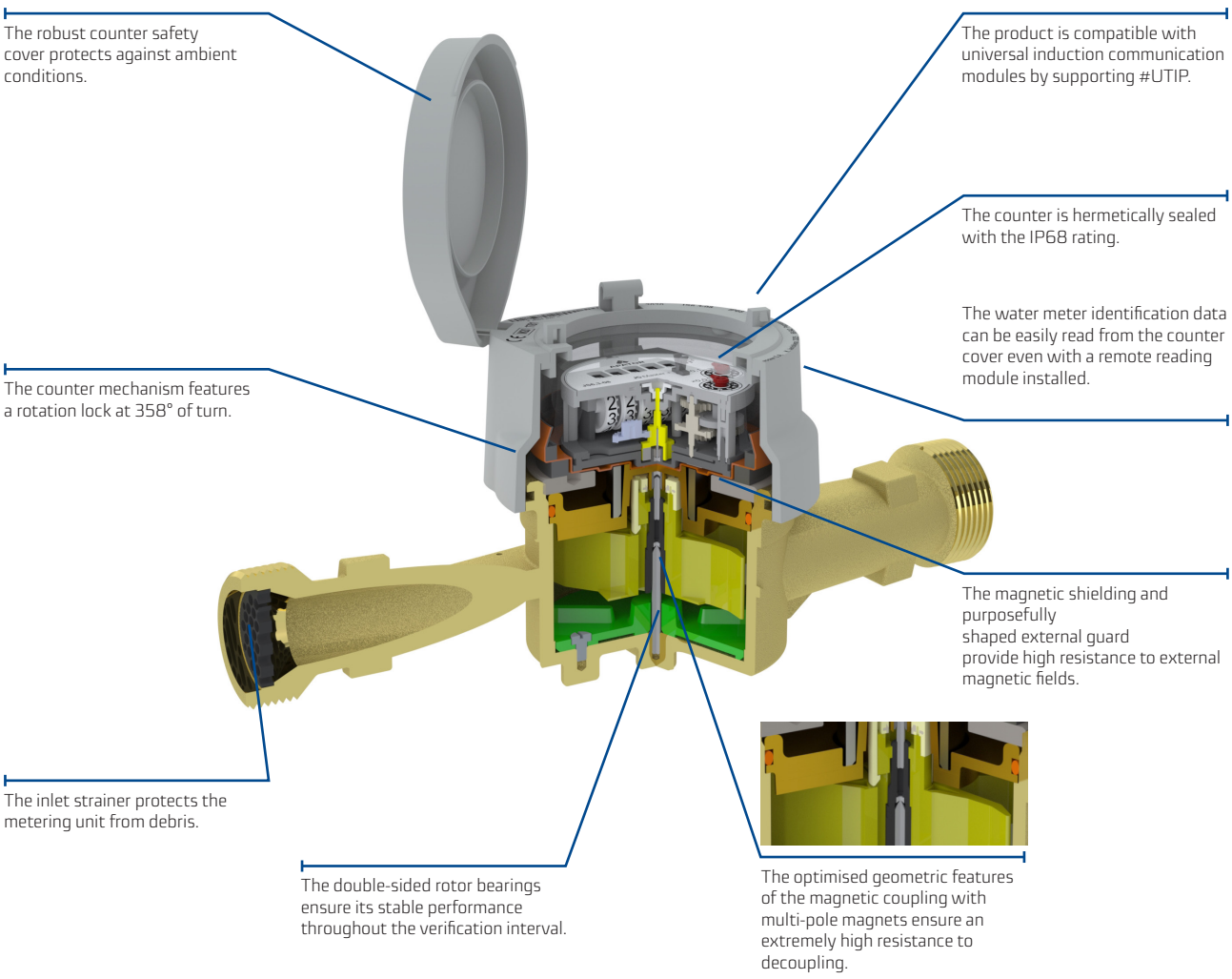
water&heat

JS Master+ IP68

JS Master+ IP68 is a single-jet vane-wheel dry water meter for precise measurement of water supply consumption. Thanks to the modern design solution, it can accommodate an induction module for remote reading of indications. This water meter features superior protection against interference by magnetic fields as it is fitted with the latest in EM shielding engineering. The counter mechanism is confined to a hermetically sealed glass enclosure, with a guard made of lapped-over copper sheet. The water meter is designed and manufactured to the MID (Measuring Instruments Directive) and in compliance with EN14154, OIML R49 and ISO4064 for the maximum measurement range of R100.

Application

Cold water supply systems up to 50°C maximum in multifamily housing, public facilities, and metering stations. The maximum admissible pressure (MAP) is 16 bar. The water meter design enables installation in a horizontal orientation with the counter upward (H) or sideways (V), and in a vertical orientation (V). The rotary counter makes it easy to read the indications directly from the front face and works well in different installation orientations. The standard water meter version is designed for use with universal induction communication modules which feature #UTIP (Universal TI Plug).



Advantages

Economy:

- Precise measurements at R100 – H
- Remote meter reading via wired or wireless interfaces
- Protection against:
  - strong magnetic field effects (by magnetic shielding)
  - mechanical tampering (a robust, tamper-proof counter design)
  - multiple rotations of the counter by more than 358°

Convenience of use:

- The standard water meter version is AMR-capable (automatic meter reading) and provided with #UTIP for compatibility with universal induction communication modules
- Easily readable:
  - the counter can be oriented anywhere within 0 to 358°
  - Hermetically sealed, non-fogging counter: the counter mechanism is sealed in an IP68-rated glass enclosure with a copper guard

Reliability:

- Tested and robust design
- Long operating life thanks to advanced materials:
  - with high resistance to wearing (in the bearings and pivots)
  - with a surface texture which minimises flow resistance (on the rotor and sealing disc)
- the inlet strainer (which protects the metering unit from debris)
- the counter mechanism is protected against mechanical damage

Key features

- Output of event alarms: when equipped with an RF module, the water meter can indicate removal or breaking off of the module, module operating interruptions, reverse flow, leaks, etc.
- The rotor bearings and other solutions and materials used which ensure stable metrology over the service life
- IP68 rating: the water meter is capable of operation in extremely difficult ambient conditions (and also when fully immersed in water), also with a data communication module installed
- Highly aesthetic water drop-shaped design of the counter safety guards and covers
- Stable flow rate inlet bore design
- Double-sided rotor bearings

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
- 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 49-2:2013 – 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 14154-1:2005+A2:2011 – Water meters. Part 1: General requirements
- EN 14154-2:2005+A2:2011 – Water meters. Part 2: Installation and conditions of use
- EN 14154-3:2005+A2:2011 – Water meters. Part 3: Test methods and equipment
- 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 4064-5:2017 – Water meters for cold potable water and hot water. Part 5: Installation requirements
- CE Type Test Certificate for hot and cold water – ref. TCM 142/11-4832
- Classification of environmental climate and mechanical conditions: Class B (ref. PN-ISO 4064-1:2014 (E)
- Classification of mechanical environment conditions: Class M1 (ref. Polish Regulation Dz.U. 2007.3.27)
- Classification of electromagnetic environment conditions: Class E1 (ref. Polish Regulation Dz.U. 2007.3.27)

All materials of the JS Master+ IP68 water meters have PZH-NIH Hygiene Certificates for use with potable water.

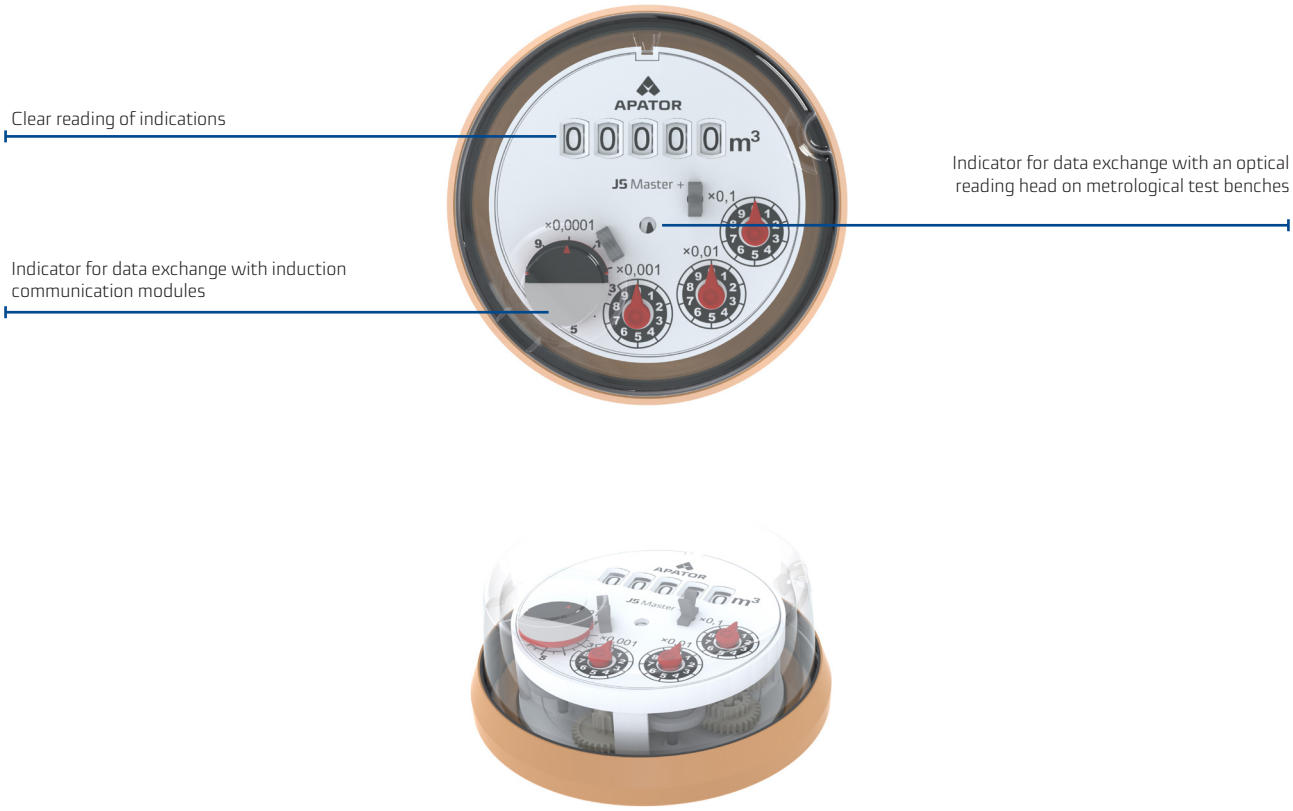
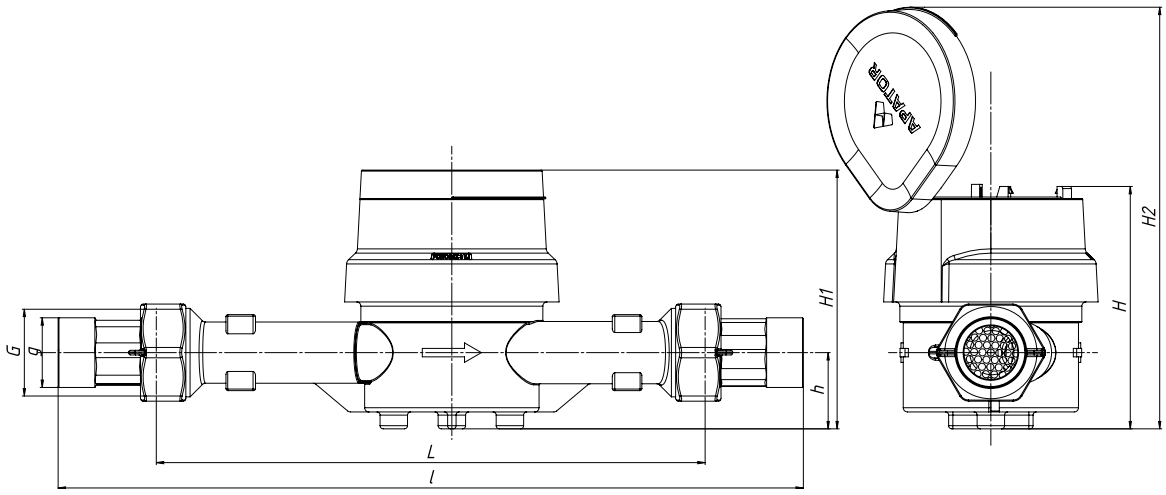
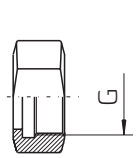


Table 1. Specifications

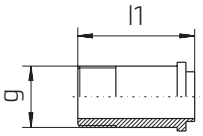
Parameter					JS Master+ (IP68)			
					JS6,3-08	JS10-G1¼-08	JS10-08	JS16-08
Nominal diameter			DN	mm	25	25	32	40
Permanent flow rate			Q_3	m³/h	6.3	10		16
Maximum flow rate			Q_4	m³/h	7.875	12.5		20
Transitional flow rate	cold water	H R100 V R50	Q_2	dm³/h	101 202	160 320		256 512
	hot water	H R80 V R40			126 252	200 400		320 640
Minimum flow rate	cold water	H R100 V R50	Q_1	dm³/h	63 126	100 200		160 320
	hot water	H R80 V R40			79 158	125 250		200 400
Starting flow			–	dm³/h	21	33		53
Q_2/Q_1 ratio			–	–	1.6			
Temperature class (rated operating temperature)			–	–	T30 / T50			
Flow profile sensitivity class			–	–	U0, D0			
Indicating range			–	m³	99,999			
Resolution of reading			–	m³	0.00005			
Maximum pressure			P_{max}	MPa	1.6			
Maximum pressure loss			Δp	kPa	63			
Maximum permissible error range: $Q_2 \le Q \le Q_4$			ε	%	± 2 for ≤30ºC cold water ± 3 >30ºC water			
Maximum permissible error range: $Q_1 \le Q < Q_2$			ε	%	± 5			
Inlet and outlet pipe threads			G	Inch	G1¼	G1¼	G1½	G2
Height			h	mm	36			
			H	mm	115			
			H1	mm	123			
			H2	mm	200			
Length			L	mm	165***/ 260	260		300
			l	mm	380			440
Diameter			D	mm	111			
Weight (w/o connection fittings)			–	kg	2.0	2.2		2.5



Connection fittings



nut



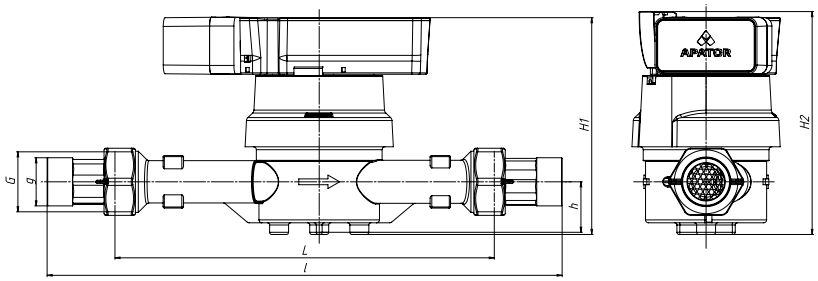
union

gasket

DN	G	g	d	l1
25	1¼"	1"	29	46,5
32	1½"	1¼"	36	56
40	2"	1½"	43	66

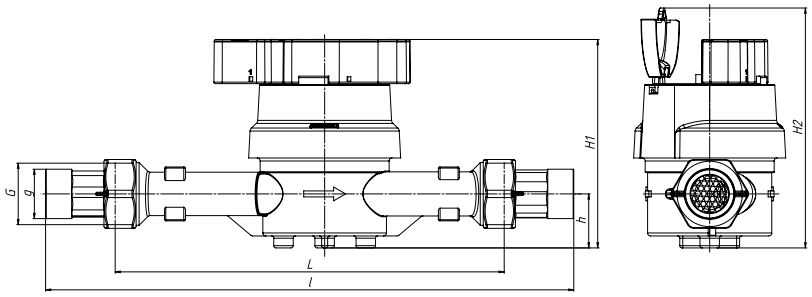
Example of the Master IP68 water meters with compatible data communication modules:

APT-GMS-NA-1 clip-on module, #UTIP (Universal TI Plug)



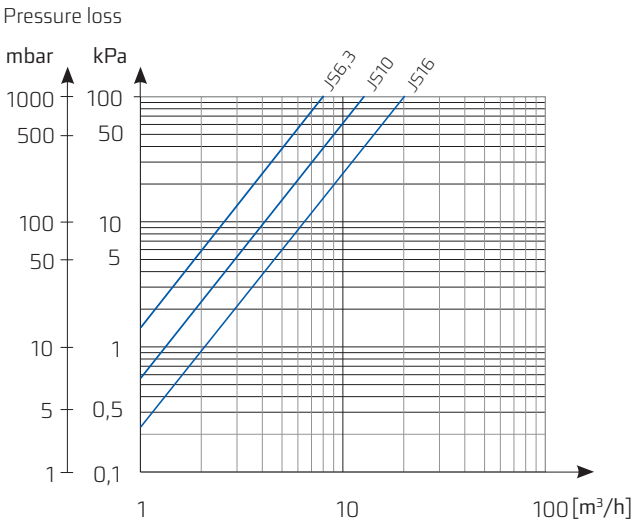
DN		25	25/32	40
H1	mm		149	
H2	mm		153	

APT-WMBUS-NA-1 clip-on module, #UTIP (Universal TI Plug)

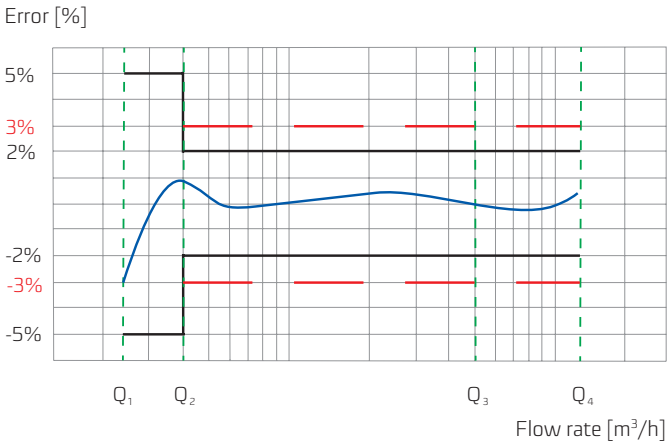


DN		25	25/32	40
H1	mm		140	
H2	mm		160.5	

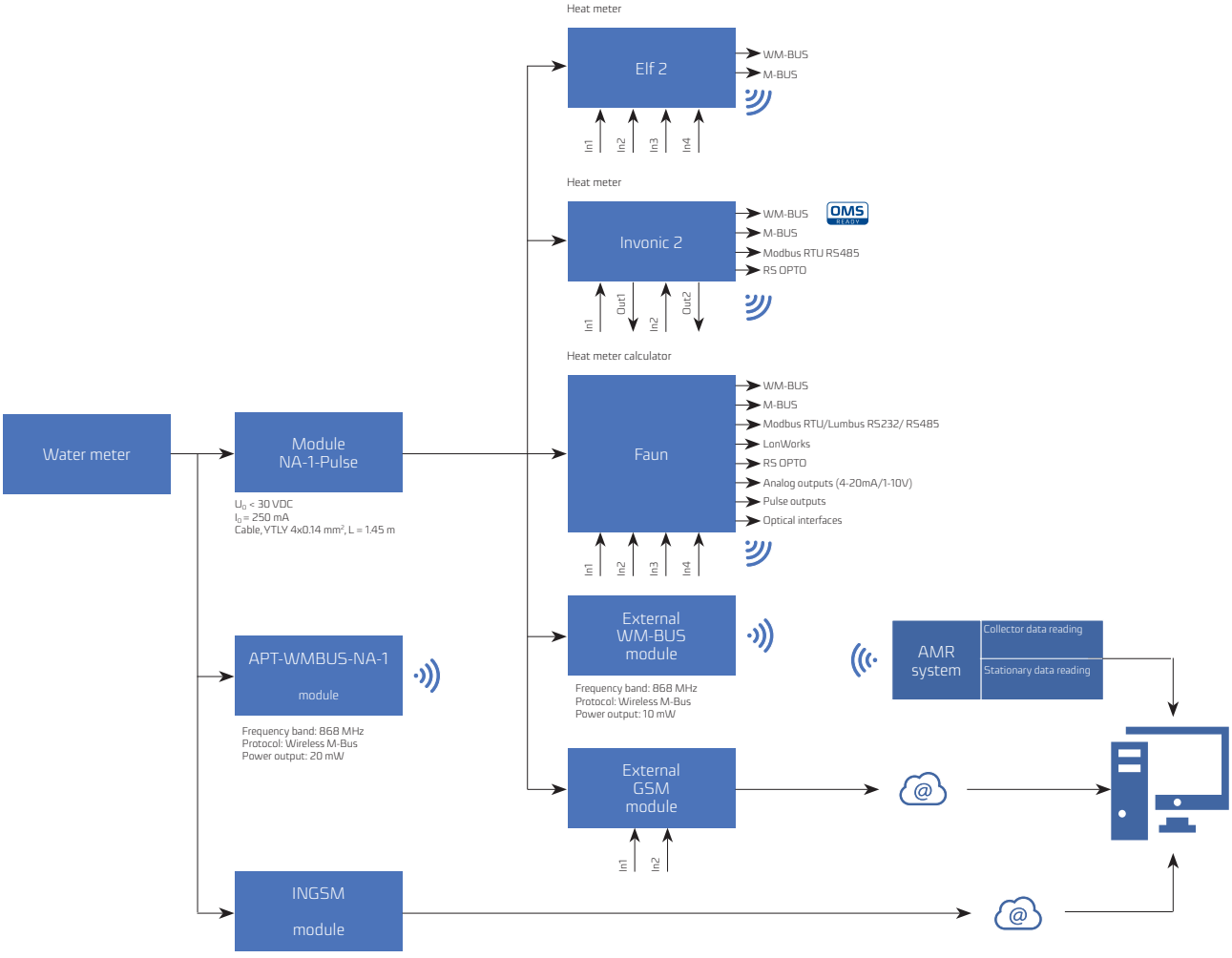
Pressure loss chart



Typical error chart



Remote indication relay & flow rate measurement



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