APATOR

Smart+

Single-jet dry water meters DN15, DN20

water&heat

SMART+

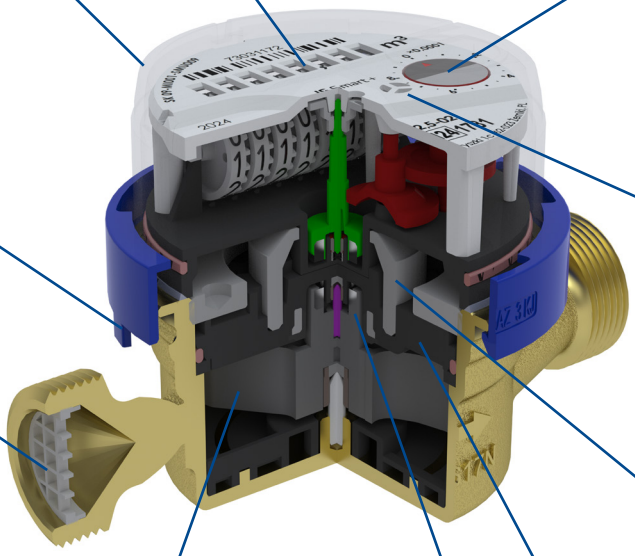
Smart+ is a single-jet dry-running water meter designed for measuring the consumption of supplied cold water of up to 50°C or hot water of up to 90°C. Thanks to the implemented design solutions, it is one of the best protected single-jet dry water meters against the activity of a strong magnetic field. The water meter is adapted for cooperation with optical or inductive communication modules, enabling remote wired or wireless reading of indications. The water meter is manufactured based on the MID Directive in accordance with the ISO4064 and OIML R49 standards, and can be supplied in the IP65 or IP68 protection rating (cold water only). The water meter is also available with hard bearings (water meters designed for hot water circulation systems).

Protection against external mechanical interference in the counting mechanism through a reinforced counter cover design

A hermetic counter (with increased tightness) resistant to fogging

Dual counter indication detection system, based on the use of induction and optical technology on a single pointer, which allows, depending on the conditions of installation of the water meter to select the appropriate model of module

Clamping ring with locking rotation of the counting mechanism, when rotated by an angle greater than 358°, also acts as a security device with legalization marking



Protection from external tampering – a counter disc with an indicator of the force applied to compress the counter glass

Strainer on the water meter's inlet which builds the protection against penetrating the measuring body by dirt

The Smart water meter demonstrates very high resistance to the influence of the external SN+ magnetic field, thanks to the use of a special magnetic shield and a 4-pole magnet in the magnetic clutch

A rotor supported by high-quality pins and bearing stones ensures reliable operation between verification intervals while maintaining the required metrological parameters

Very high resistance to rupture of the magnetic clutch

Protection against the effects of water freezing is provided by a specially formed sealing plate

Application

Cold water supply systems operating at temperatures up to 50°C or hot water supply systems operating at temperatures up to 90°C in single and multi-family housing. The rotating counter facilitates reading of the water meter in corresponding operating positions. For installation in horizontal piping with the counter directed upward (H↑) or either sideways (H→) and vertical with the counter directed sideways (V).

Advantages

Saving

- Accurate measurement determined by the measurement range R: up to 100 – H↑, 50 - V, H → for cold and hot water,
- Resistance to strong external magnetic field exceeds the requirements of EN-ISO 4064 and OIML R49 several times,
- No need for straight sections before and after the water meter (U0D0),
- The use of a clamping ring eliminated the need for copper wire and lead seal (implementation of the recommendations of the RoHS directive).

Comfort of use

- The water meter designed to work with optical or inductive communication modules, enabling both wired and wireless remote reading,
- Possibility of alarm signaling - water meter equipped with a radio module has the possibility of signaling e.g. removal or rupture of the module, module interference, reverse flow, leaks, etc.,
- Reliability of indications by dividing the water meter into a wet part with a measuring body and a dry part with a counting mechanism,
- Simplicity of reading by:
  - hermetic counter resistant to fogging,
  - legible digits on drums in two colors, allowing for faultless reading,
  - counter rotation within 358°,
- Protection against external mechanical interference - through the reinforced design of the counting mechanism cover.

Low operating costs

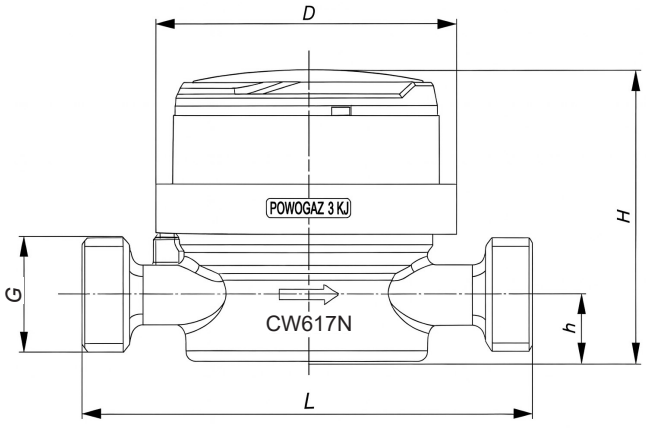
- Verified and solid design,
- High operating cycle life.

Technical data

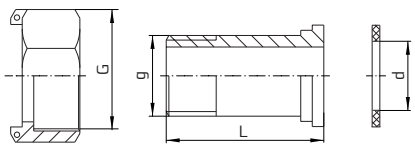
Parameter				JS 1,6-02 JS 1,6-03 JS90 1,6-02 JS90 1,6-03	JS 2,5-02 JS 2,5-03 JS90 2,5-02 JS90 2,5-03	JS 2,5-G1-02 JS90 2,5-G1-02	JS 4-02 JS90 4-02
Nominal diameter		DN	mm	15		20	
Continuous flow rate		Q_3	m^3/h	1,6	2,5		4
Max flow rate		Q_4	m^3/h	2	3,125		5
Indirect flow rate	H ↑ R100	Q_2	dm^3/h	25,6	40		64
	V, H → R50			51,2	80		128
Minimum flow rate	H ↑ R100	Q_1	dm^3/h	16	25		40
	V, H → R50			32	50		80
Starting flow		–	dm^3/h	6	8		15
Ratio Q_2/Q_1		–	–	1,6			
Temperature class (nominal working temperature)		–	–	T30, T50, T90			
Resistance classes to flow profiles		–	–	U0, D0			
Indication range		–	m^3	10^5			
Indication correctness		–	m^3	0,00005			
Max pressure		P_{max}	MPa	1,6			
Max pressure loss for Q_3		Δp	kPa	63			
Permissible boundary error at the range: $Q_2 \leq Q \leq Q_4$		ε	%	± 2 for cold water ± 3 for hot water			
Permissible boundary error at the range: $Q_1 \leq Q \leq Q_2$		ε	%	± 5			
Connector thread		G	cal	G¾		G1	
Height		H	mm	68,5			
Height		h	mm	17			
Length		L	mm	110	110	130	130
Diameter		D	mm	72			
Mass (without connection elements)		–	kg	0,43	0,43	0,57	0,53

Versions of water meters:
-02 - 8-drum counter brass body, water meter adapted for installation of a communication module.
-03 - 8-drum counter composite body (applies to JS 1.6 and JS 2.5 with 110 mm length, R100 for cold water and hot water)

On request:
- IP68 - protection degree of the counter
- Ti/IR - with pointer for optical reading or inductive reading
-02-S - with hard bearings (water meters designed for hot water circulation systems)
* Non-standard body lengths are available for JS 1,6/2,5 DN15 and DN20:
L = 80 mm ¾ "-> ¾",
L = 115 mm ¾ "-> ¾",
L = 115 mm 1"-> 1",
non-standard threads e.g. L = 115 mm ⅞"-> ¾"



Connection elements



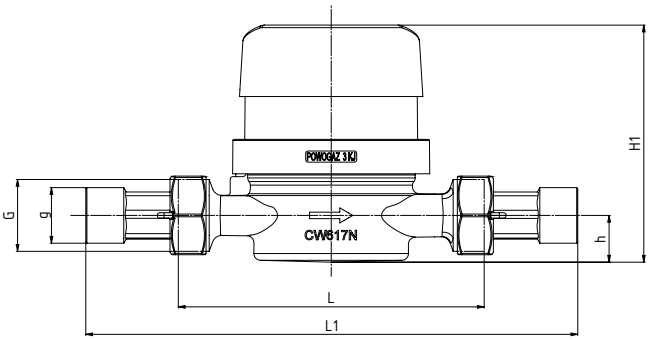
nut connector pad

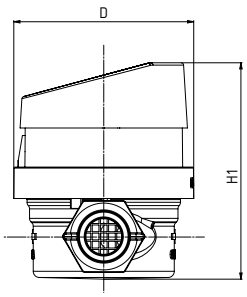
DN	G	g	d	L
	inch	inch	mm	mm
15	¾	1/2	17	37,5
20	1	3/4	23	45,6

Compatibility with norms and regulations

- Directive 2014/32/EC of the European Parliament and of the Council of Europe of February 26, 2014, on the harmonization of the legislation of the Member States relating to the making available on the market of measuring instruments,
- Law of 13.04.2016 on conformity assessment and market surveillance systems,
- EN-ISO 4064-1÷5:2014(E) - Water meters for cold potable water and hot water,
- EC type examination certificate - cold water No. SK09-MI001-SMU007, hot water No. SK09-MI001-SMU009,
- WRAS certificate, NSF REG4.
- Classification of environmental, climatic conditions - Class B - according to EN-ISO 4064-1:2017(E),
- Classification of mechanical environmental conditions - class M1 - according to Directive 2014/32/EU of the European Parliament and of the Council of February 26, 2014,
- PZH Certificate (all materials used in the production of the JS type water meter have the relevant Hygienic Certificates allowing the product to come into contact with drinking water).

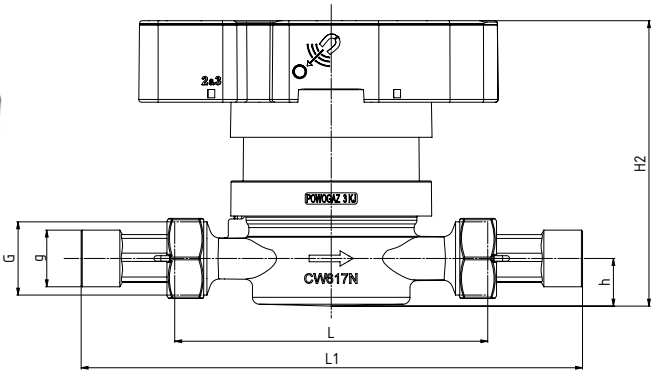
Example of JS Smart+ water meters with compatible communication modules:
OP-04-1a module (optical radio module):

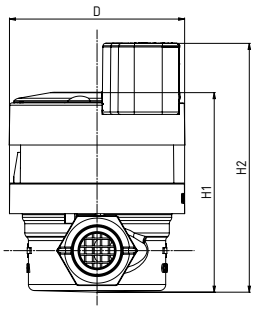




DN	h	H1
	mm	mm
15	17,0	86,6
20	17,0	86,6

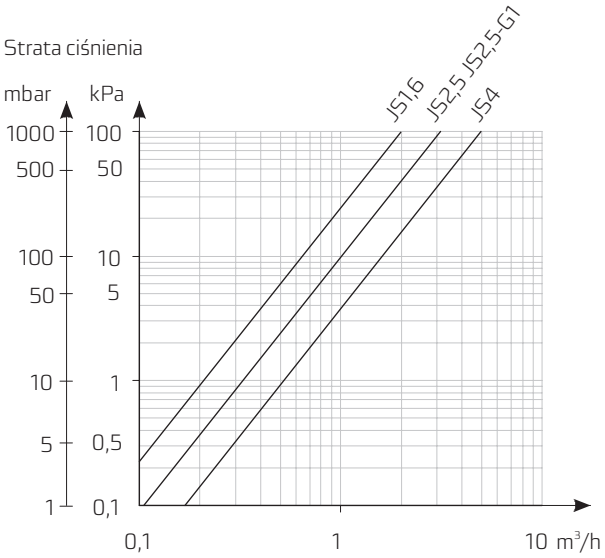
APT-WMBUS-NA-1 module (universal inductive radio module):



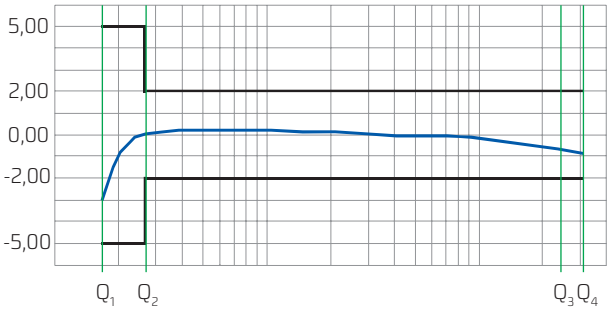


DN	H1	H2
	mm	mm
15	68,5	111,2
20	68,5	111,2

Pressure loss chart



Typical error chart



Apator Powogaz S.A.
Jaryszki 1c, 62-023 Żerniki
Office: sekretariat.powogaz@apator.com, tel. +48 61 84 18 101

Sales / Customer Service: tel.: +48 61 84 18 149
Customer Service Centre Support: handel.powogaz@apator.com
Export: export.powogaz@apator.com
Technical Support: support.powogaz@apator.com, tel. +48 61 8418 131, 134, 294
Warranty Claims: reklamacje.powogaz@apator.com