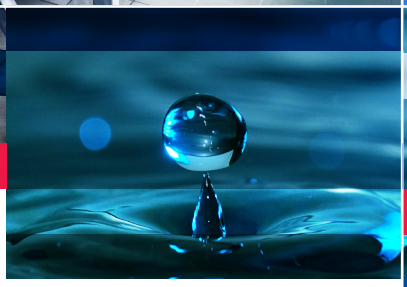
APATOR



JS Impero IP68/IP65

DN50, DN65, DN80, DN100
single-jet vane-wheel dry water meter

water&heat

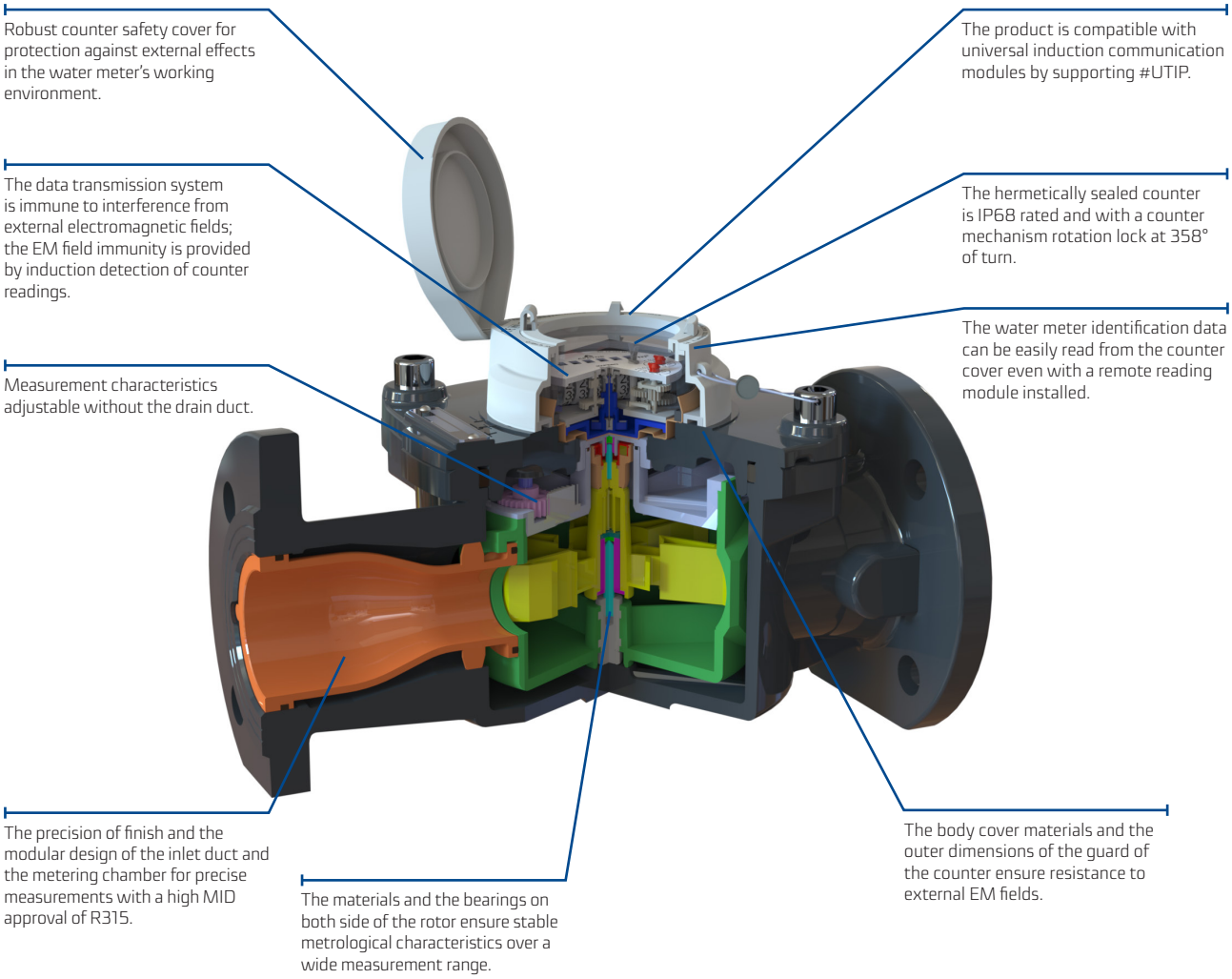
JS Impero IP68/IP65

JS Impero is a single-jet vane-wheel dry water meter for precise measurement of large water supply consumption. The advanced design engineering ensures a high dynamic response to metering conditions and a high resistance to strong magnetic fields. The water meter is compatible with clip-on communication modules for automatic wired or wireless meter reading. The water meter is designed and manufactured to the MID (Measuring Instruments Directive) and in compliance with EN 14154, OIML R49 and ISO 4064 for the measurement range of R315.

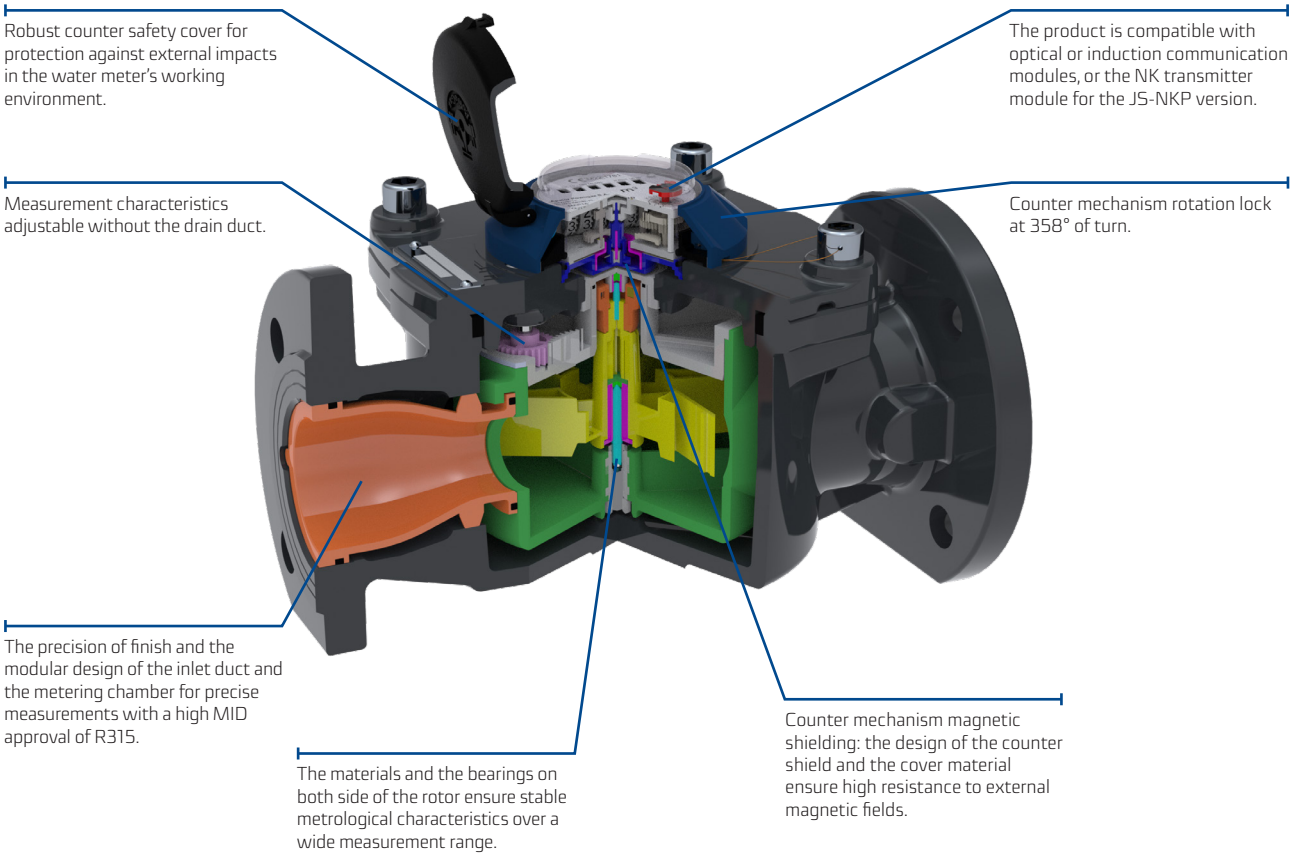
Application

Cold water supply systems (max. 30°C) and hot water supply systems (max. 50°C) in multifamily housing, industrial facilities, public facilities, and metering stations. The maximum admissible pressure (MAP) is 16 bar. Install the water meter horizontally with the counter upright (H). The rotating counter of the water meter facilitates manual readout directly from the dial. The water meters designed to IP68 are excellent for operation in difficult ambient conditions, and the standard version is compatible with universal induction communication modules which feature #UTIP (Universal TI Plug). The IP65 water meters are compatible with optical and induction communication modules.

JS Impero IP68



JS Impero IP65



Advantages

Economy:

- Precise measurements at R315 – H
- Low starting flow
- Does not require upstream and downstream straight pipework runs
- May replace compound water meters (restrictions apply)
- Protected by design against:
  - strong magnetic field interference per EN 14154
  - mechanical tampering (with a robust, tamper-proof counter and cover design)
  - multiple rotations of the counter by more than 358°

Convenience of use:

- The standard water meter version is AMR (automatic meter reading) (MDMS) capable, while the IP68 version is provided with #UTIP for compatibility with induction communication modules
- Easy reading of indications and parameters by:
  - Any orientation of the counter mechanism within 0 to 358° in the IP68 NKOP/NK version, the standard IP65 version, and the JS-NKOP version adapted for the NO and NK transmitter modules
  - Hermetically sealed, non-fogging counter in the IP68 version
  - Location of the water meter parameter legend on the top surface of the counter cover in the IP68 version
- Remote wireless indication reading with a portable terminal or a stationary reading system
- Wireless-system based indication reading with:
  - Induction communication modules (TI): IN-WMBUS, IN-GSM for IP68 and IP65
  - Optical communication module (IR): APT-03A-4 for IP65

- Wired-system based indication reading with:
  - Induction communication modules (TI): IN-PULSE for IP68 and IP65
  - Optical communication modules (IR): APT-MBUS-NA-4 and AT-MBUS-NE-01 for IP65
  - NK and/or NO reed relay pulse transmitter for IP65
- 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

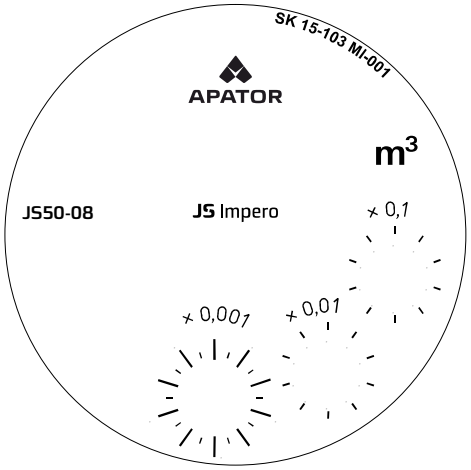
Reliability:

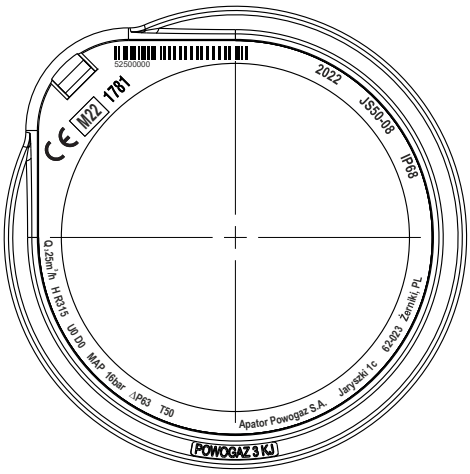
- Tested and robust design
- Long operating life thanks to advanced wear-resistant materials of bearings and pivots
- The inlet duct and the metering chamber are highly resistant to clogging with dirt
- the counter mechanism is protected against mechanical damage
- the snap-locked counter cover of the IP68 version features the verification marking to eliminate traditional tamper seals

Key features

- MID-compliant EC type examination certificate
- 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 droplet-shaped design for the counter safety cover and guard
- Stable flow rate inlet bore design
- Double-sided rotor bearings
- Removable measuring insert
- Potable water approved materials
- Duct-parallel rotor axis
- Magnetic coupling

Design of the JS Impero cover and face exemplified by the IP68 counter





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
- OIML R 49-1 rev. 2013(E): Water meters for cold potable water and hot water. Part 1: Metrological and technical requirements
- 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 4064-1:2014 – Water meters for cold potable water and hot water. Part 1: Metrological and technical requirements
- EN ISO 4064-5:2014 – Water meters for cold potable water and hot water. Part 5: Installation requirements
- WELMEC Guidelines 11.1 – Measuring instruments, Directive 2004/22/EC. Common regulations for measuring instruments (rev. 5:2014)
- WELMEC Guidelines 11.3 – Guidelines for measuring instruments (rev. 1:2012)
- EU type test certificate – Cold water, no. SK 15 - 103 MI-001
- PZH National Institute of Hygiene certificate (all materials used in JS Impero 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, E2, as per Directive 2014/32/EC of the European Parliament and of the Council of 26 February 2014

JS Impero IP68 counter version

Clear reading of indications

Indicator for data exchange with an optical reading head on metrological test benches

Indicator (TI) for data exchange with induction communication modules

Indicator (IR) for data exchange with optical communication modules

JS Impero IP65 counter version

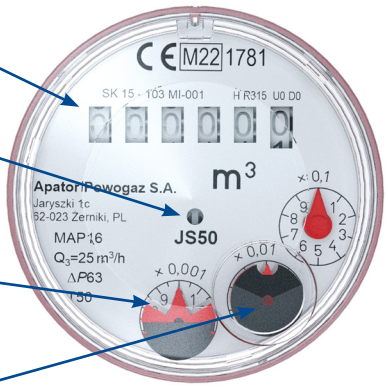
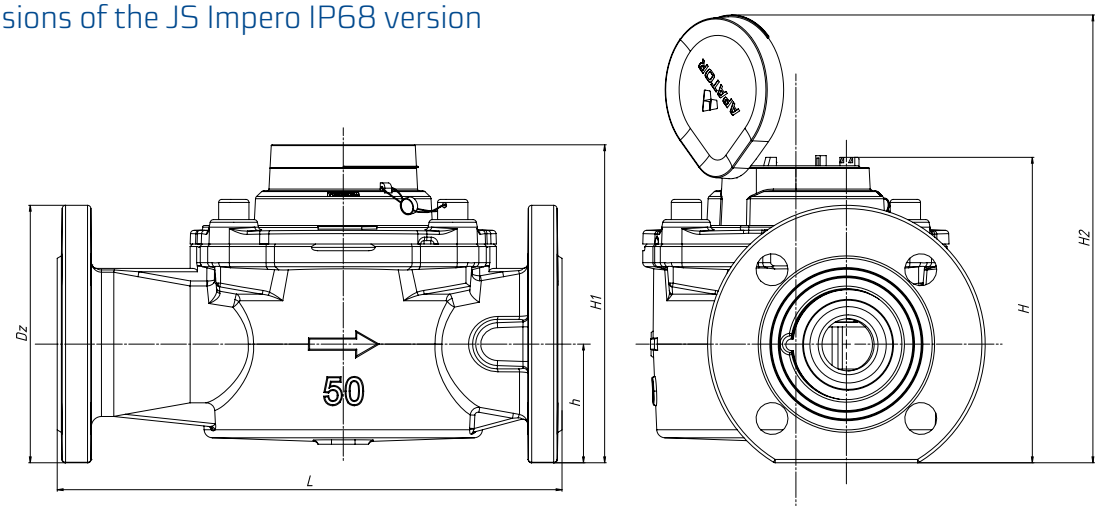


Table 1. Technical specifications

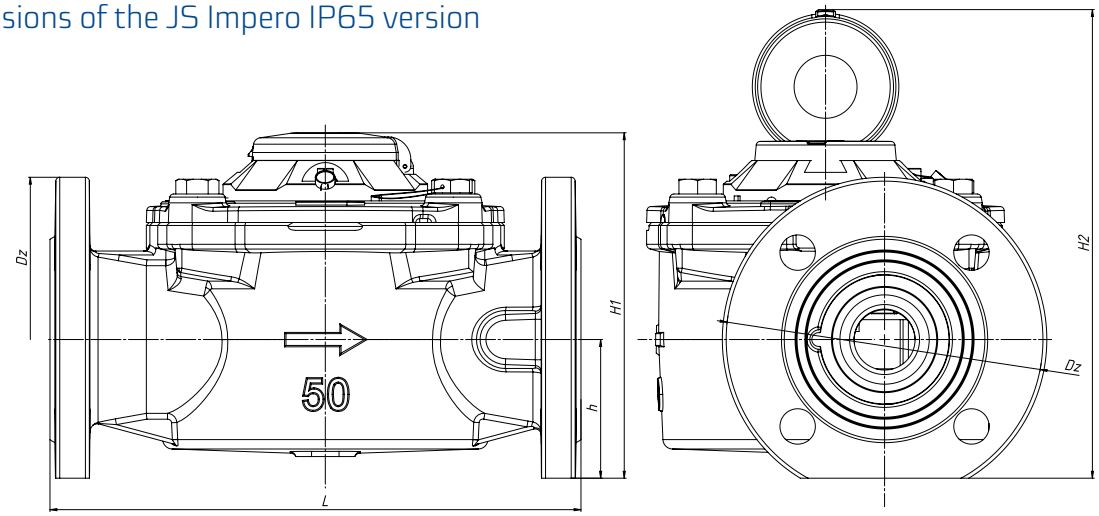
Parameter				JS Impero IP68/IP65			
				JS50 JS50-08* JS50-XX**	JS65 JS65-08* JS65-XX**	JS80 JS80-08* JS80-XX**	JS100 JS100-08 JS100-XX**
Nominal diameter		DN	mm	50	65	80	100
Permanent flow rate		Q_3	m^3/h	25	40	63	100
Maximum flow rate		Q_4	m^3/h	31.25	50	78.75	125
Transitional flow rate		Q_2	m^3/h	0.127	0.203	0.32	0.508
Minimum flow rate		Q_1	m^3/h	0.079	0.127	0.2	0.317
Starting flow		–	m^3/h	0.025	0.04	0.04	0.07
Maximum instantaneous flow rate in case of fire < 2h		–	m^3/h	50	60	90	135
Measurement range R= Q_3 / Q_1		–	–	315			
Q_2/Q_1 ratio		–	–	1.6			
Temperature class (rated operating temperature)		–	–	T30 / T50			
Flow profile sensitivity class		–	–	U0, D0			
Indicating range		–	m^3	10^6			
Resolution of reading		–	m^3	0.00005			
Maximum pressure		P_{max}	MPa	1.6			
Operating pressure range		–	bar	0.3 to 16			
Maximum pressure loss		Δp	kPa	Δ63			
Connection ends		–	–	flanged***			
Operating orientation		–	–	H ↑			
Maximum permissible error range: $Q_2 \le Q \le Q_4$		ε	%	±2 for 0.1°C≤T≤30°C cold water; ±3 for T>30°C water			
Maximum permissible error range: $Q_1 \le Q < Q_2$		ε	%	±5			
Reed relay pulse transmitter NK (IP65 only)		–	dm^3/ pulse	100 (standard pulsing) 10 (available on request)			
Optoelectronic pulse transmitter NO (for IP65 only)		–	dm^3/ pulse	1			
Height		L	mm	270****/ 300*****	300	300****/ 350*****	360****/ 350*****
		h	mm	70.5	80.5	89.5	105
	Height – for IP68	H	mm	181.5	191.5	200.5	217
		H1	mm	190	199	208	224.5
		H2	mm	266.1	276.1	285.1	301.6
	Height – for IP65	H	mm	170.6	180.6	189.6	205
		H1	mm	175.6	185.6	194.6	210.6
		H2	mm	238	248	257	213
Length		L	mm	270*/ 300**	300	300*/ 350**	360*/ 350**
Diameter		D	mm	165	182	200	220
Weight (w/o connection fittings)		–	kg	11.8	16.6	20	23.5

* Version -08 – IP68-rated counter mechanism and cover; the water meter supports readout with induction communication modules (Ti)
** IP65 version; NKOP – water meter ready for installation of reed relay and/or optoelectronic pulse transmitters
*** Connection flange bolt hole pattern:
Standard: PN-EN 1092-2 (PN10), DIN 2532, DIN2501 (PN10), BS4504 (PN10)
Special: PN-EN 1092-2 (PN16) (available on request)
Extra: ANSI B16.5 Class 150 (DN40-300) (available on request)
**** DIN 19625 overall length
***** ISO 4064 overall length

Dimensions of the JS Impero IP68 version

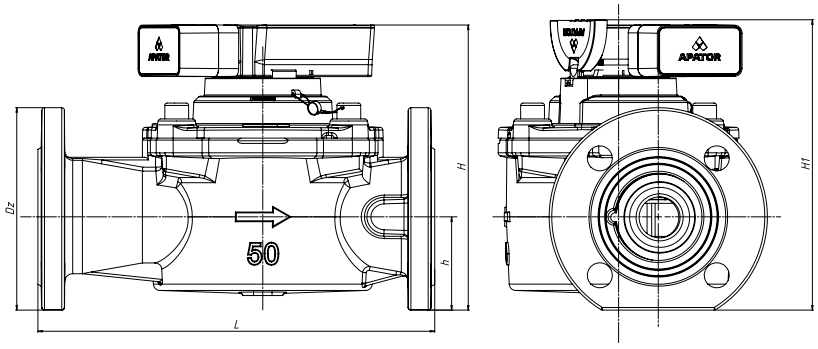


Dimensions of the JS Impero IP65 version



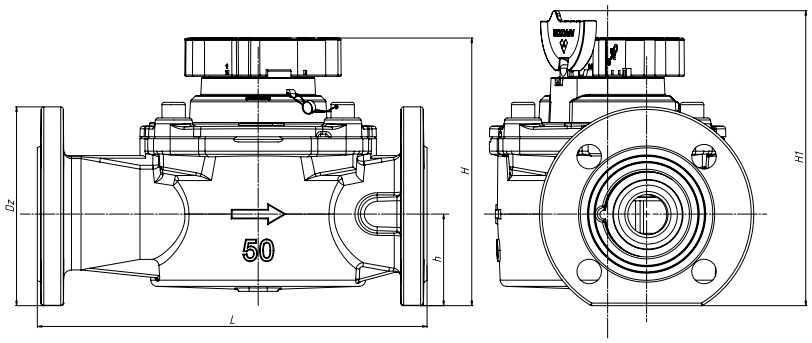
Example of the JS Impero IP68 -08 water meter version with compatible data communication modules:

IN-GSM clip-on module #UTIP (Universal TI Plug)



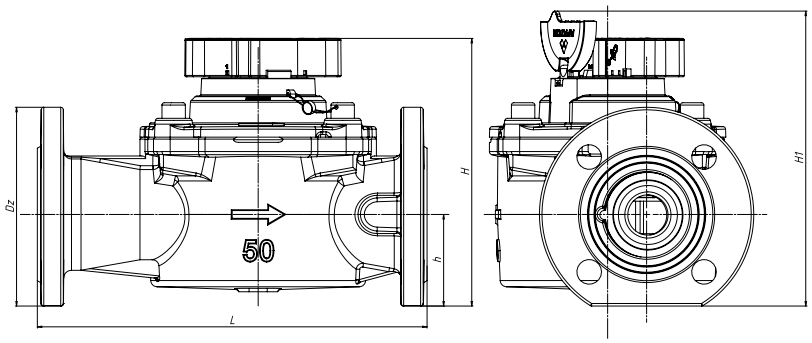
DN		50	65	80	100
H1	mm	215.5	224.5	233.5	250
H2	mm	219.5	229.5	238.5	255

IN-WMBUS clip-on module #UTIP (Universal TI Plug)



DN		50	65	80	100
H1	mm	206	215	224	240.5
H2	mm	227	237	246	262.5

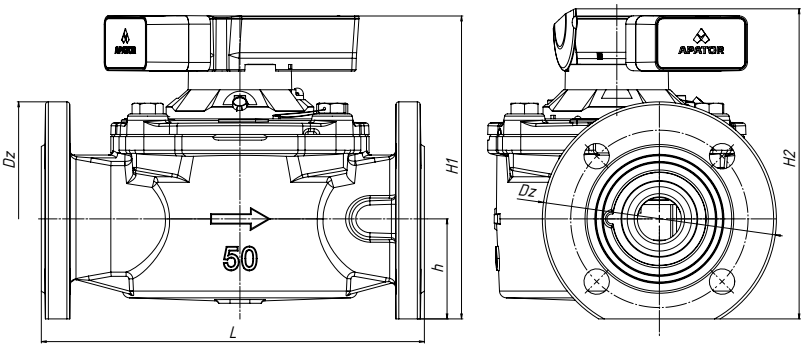
IN-PULSE clip-on module #UTIP (Universal TI Plug)



DN		50	65	80	100
H1	mm	206	215	224	240.5
H2	mm	227	237	246	262.5

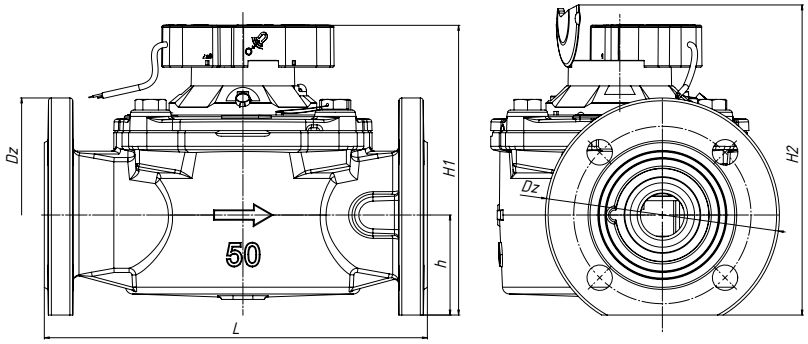
Example of the JS Impero IP65 water meters with compatible data communication modules on the locating interface ring:

IN-GSM clip-on module with the interface ring



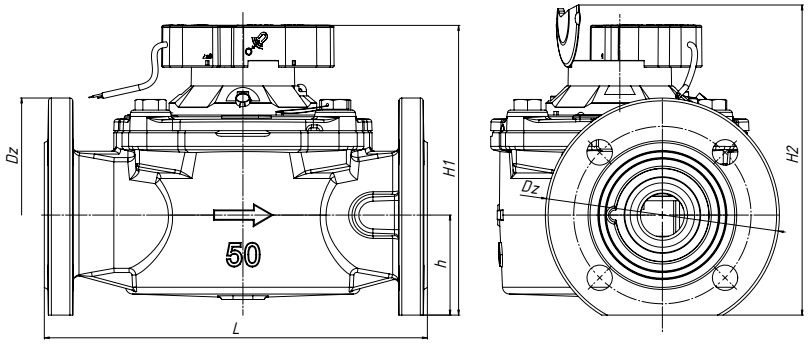
DN		50	65	80	100
H1	mm	215	225	234	250
H2	mm	219.9	229.9	238.9	254.9

IN-WMBUS clip-on module with the interface ring



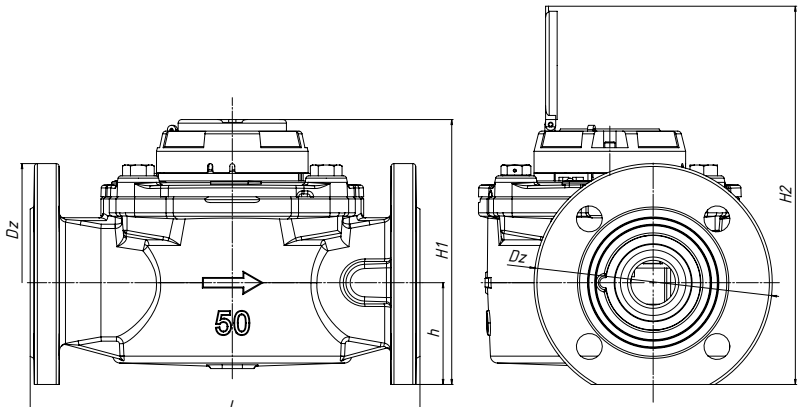
DN		50	65	80	100
H1	mm	205.8	215.8	224.8	240.8
H2	mm	219.9	229.9	238.9	254.9

IN-PULSE clip-on module with the interface ring



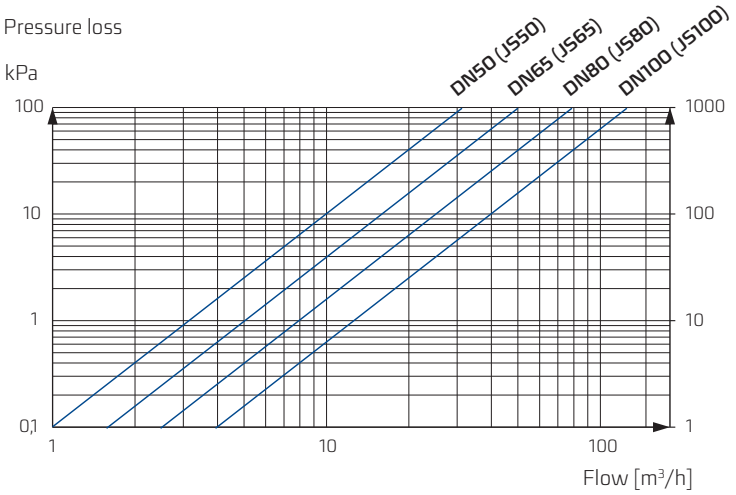
DN		50	65	80	100
H1	mm	205.8	215.8	224.8	240.8
H2	mm	219.9	229.9	238.9	254.9

IP65-rated water meter with the NKOP module

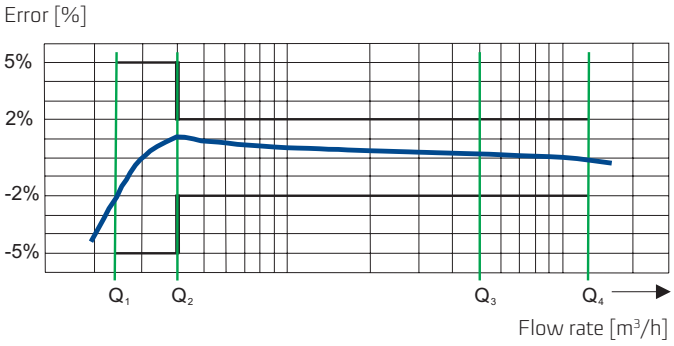


DN		50	65	80	100
H1	mm	183.5	193.5	202.5	218.5
H2	mm	262	272	281	297

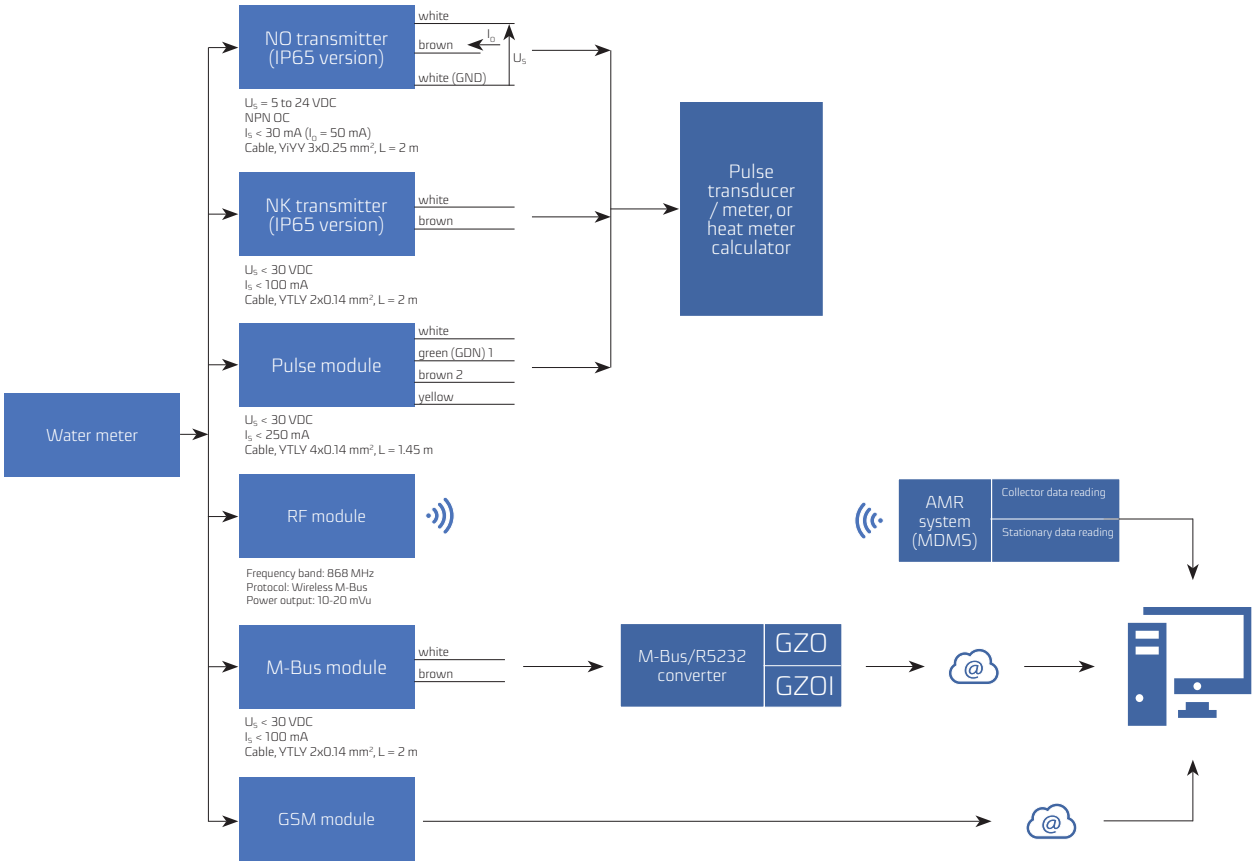
Pressure loss chart



Typical error chart



Remote indication relay & flow rate measurement for IP68/IP65; flow rate measurement



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