



WATER MEASUREMENT



SMART C₊

SINGLE-JET VANE-WHEEL
WATER METERS DN 15 , DN 20



Smart C+ single-jet vane wheel water meter is designed for precise measurement of delivered water. Thanks to the newest construction solutions the water meter is adapted for installing the radio module which enables the remote reading of indications. It is the best secured vane-wheel water meter, resistant to the external magnetic field. The water meter is designed on the basis of the MID Directive with the indicating range corresponding the value of R=160 (previously named as C metrological class).

USAGE

Waterworks for cold water of the temperature up to 30°C or 50°C and for hot water up to 90°C used in the single and multi family houses. The water meter design gives the possibility of installing the meter in the horizontal position with the counter directed upwards (H) or in the vertical position (V). Because of applying the rotating counter which enables easy reading of the indications in any installing positions.



**GRUPA
APATOR**

NEW
Former C Class
MID R=160



Hermetic counter (with a increased tightness) resistant to mist over

Protection against the external mechanical interference in the counting device, obtained by using the seal on the clamp and the guard with the element of external pressure detection



Interlock of the counting device rotation, with a higher rotation than the 360° angle

Very high resistance to the magnetic coupling, thanks to using the appropriate distance between spot face of the magnetic coupling

Bilaterally impeller bearing (with a usage of a high quality pivots and stone bearings) it ensures the running within the legalization period with saving the normative legalization parameters



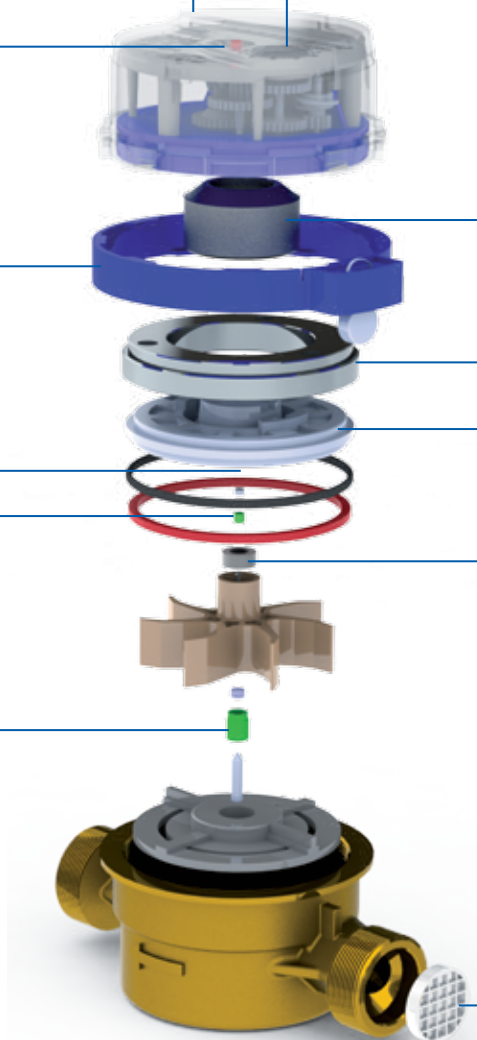
The full resistance of the data transmission device to the external magnetic field achieved thanks to the retro-reflective pointer as an element of the optical data transfer from the water meter to the radio module

Very high resistance of the water meter Smart C+ to the activity of the external magnetic field SN+ resulting from using special magnetic screens

Protection ensuring the consequences of water freezing in the matter of a specially formed seal plate

High resistance of the magnetic coupling to the activity of the external magnetic field by using double multi-field magnets

Strainer in the water meter inlet making the protection against any foulness which could get in the counting organ



ADVANTAGES

ECONOMY:

- Precise measurement:
 - factor R160 – H (previously named as C class according to GUM)
 - the highest resistance in the scale of the house single-jet vane-wheel water meters to the activity of the external magnetic field

COMFORT OF USAGE:

- Adapted to the remote readings
- Easy reading thanks to the possibility of free setting the rotating counter

LOW RUNNING COSTS:

- Tested and solid construction
- High running durability



WATER METER SMART C+

Adapted for installing the radio module enabling the radio reading system

CHARACTERISTIC FEATURES

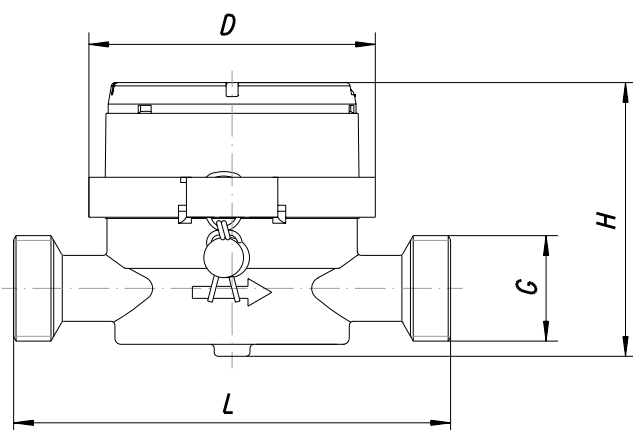
- Alarm signalization –the water meter is equipped with the radio module which has the possibility of informing about: de-installation or taking off the radio module, work interferences of the module, backflow, leaks etc.
- Easy readings thanks to:
 - hermetic counter resistant to mist
 - readable numerals on barrels in two different colours which allow for an accurate reading
 - counter 360° rotation
- Protection against the mechanical interference through the use of the pin, which is deforming the counter's shield leaving the mark of the unapproved tamper

Table 1. TECHNICAL DATA

Parameter	SMART C+					
			JS 1,6-02 JS90-1,6-02	JS2,5-02 JS90-2,5-02	JS2,5-G1-02 JS90-2,5-G1-02	JS4-02 JS90-4-02
Nominal diameter	DN	mm	15		20	
Permanent flow rate	Q_3	m ³ /h	1,6	2,5		4
Overload flow rate	Q_4	m ³ /h	2	3,125		5
Transitional flow rate	H R160 V R63	Q_2	dm ³ /h	16 40	25 63	40 102
	H R160 V R63	Q_1	dm ³ /h	10 25	16 40	25 63
Starting flow	–	dm ³ /h	5	6		12
Ratio Q_2/Q_1	–	–	1,6			
Temperature class (nominal temperature class)	–	–	T30 / T50 / T90			
Flow profile sensitivity classes	–	–	U0, D0			
Indicating range	–	m ³	99999			
Resolution of reading	–	m ³	0,00005			
Max pressure	P_{max}	MPa	1,6			
Max pressure los	Δp	kPa	63			
Advisable error in the scale of: $Q_2 \leq Q \leq Q_4$	ϵ	%	± 2 dla wody zimnej ± 3 dla wody ciepłej			
Advisable error in the scale of: $Q_1 \leq Q < Q_2$	ϵ	%	± 5			
Tightness class of the water meter counter	–	–	IP 65			
Dimensions	G	cal	G $\frac{3}{4}$	G $\frac{3}{4}$; G $\frac{7}{8}$	G1	G1
	H	mm	68,5			
	L	mm	110	110*	130	130
	D	mm	72			
Weight (without the connection elements)	–	kg	0,5	0,5	0,6	0,6

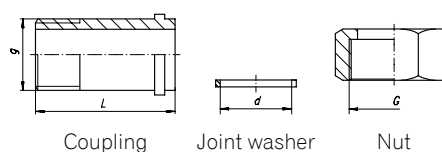
The water meter construction-02 (with the 8 barrel counter, adjusted for the radio module installation)

* On special ordering are available over standard variants of the main casing thread (input and output) and the length L=115mm



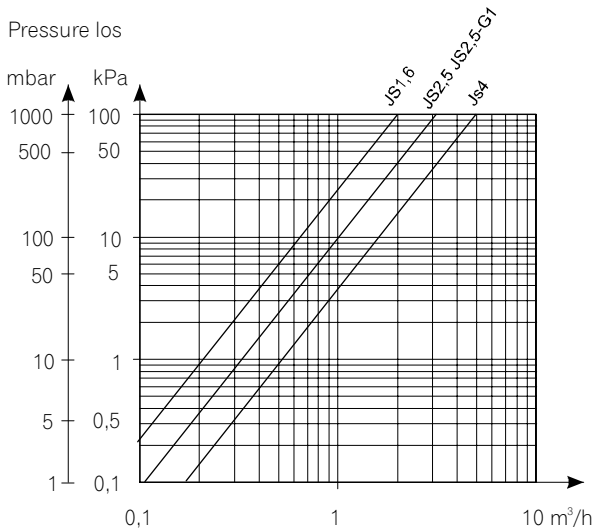
Elementy przyłączeniowe

DN	G	g	d	L
	cale	cale	mm	mm
15	3/4	1/2	17	40
20	1	3/4	23	50

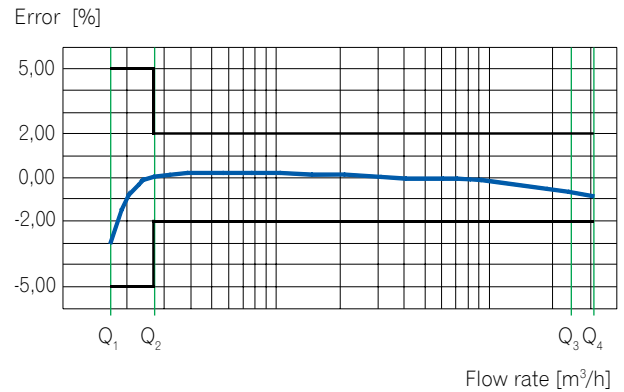




PRESSURE LOS GRAPH



TYPICAL ERROR GRAPH



REMOTE READING TRANSMISSION, FLOW RATE READING



ACCORDANCE WITH NORMS AND REGULATIONS

- Directive 2004/22/WE of the European Parliament and of the Council dated at 31 March 2004 about the measuring instruments
- OIML R49: 2004 i 2006 – water meters meant for cold drinking water and hot water
- EN-14154:2011 – water meters part 1÷3.
- Certificate of the WE examination- cold and hot water no. TCM 142/11-4832
- Classification of the environment, climatic and mechanic conditions - B class according to PN-EN-1454-3:2005:A1.
- Classification of the environment and mechanical conditions - MI class - according to RMG from 18.12.2006.
- Classification of the environment and electromagnetic conditions - E1 class - according to 18.12.2006.

All the materials used in constructing the Smart C+ water meter have a Hygienic Certificate allowing the product to contact with drinking water

ORDER EXAMPLE:

Standard making of the water meter for example to:

- cold water - water meter JS2.5-02 Smart C+
- hot water - water meter JS90-2,5-02 Smart C+

Over standard making of the water meter for example to:

- hot water - water meter JS90-2,5-02 Smart C+ (¾" – 115 mm)

For additional order we deliver:

- Coupling for the water meter, without the reflux valve
- Coupling for the water meter, with the reflux valve (preventing the backing the indications of reading by the forced water flow in the opposite direction)
- Expendable clapping rings with clasp lock seals made from plastic with the individual unique numeration (mechanical manipulation protection at the couplings of the water meter)



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