

MADE IN  
POLAND

# Water meters and radio reading CATALOGUE

## R 200



**Lifetime warranty on body, bearings and components**



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Polska Fabryka  
**WODOMIERZY**  
I CIEPŁOMIERZY



# Calendar

On 21 March 1982, we began operations in a home workshop under the banner of Ślusarstwo Produkcyjne (Production Locksmithing).

There were 6 employees (one of whom works at the company to this day). We manufactured cast iron fittings - couplings, elbows, tees and plug valves.

In 1989, we purchased an abandoned investment - an open shell warehouse hall located in Sztum, on ul. Żeromskiego, by a lake among the woods. After the move to the new location, on 21 March 1989, the company's name was changed to Zakłady Metalowe FILA (FILA Metal Works).

We continued to manufacture cast iron products, expanding the range to include brass production. At the time, employment was around 60 people.

During the difficult period that was the time of the 'Balcerowicz Plan', employment dropped to three people and production fell to practically zero. The reason for this was the total crisis in the housing industry, which was our main customer. We survived the crisis and, experienced in machining brass, in 1992 we took part in a tender from METRON for the machining of the body of the JS 1.5 water meter. Thus began our adventure with the water meter, which has continued to this day. As a co-operator, we machined one million bodies for Metron and later more than one million bodies for Powogaz.

The overriding goal for us was a complete water meter. Years of design, research and testing, have allowed us to independently build 7 validation stations, the most modern in Poland, which allow us to achieve unprecedented accuracy with very high efficiency. On 21 June 2001, we verified our first own water meter.

In order to organise the design, manufacture and sale of water meters, we were preparing to obtain ISO certification, which was finally awarded to us on 16 April 2003.

On 17 September 2004, the company changed its name to Polska Fabryka Wodomierzy i Ciepłomierzy FILA (Polish Water and Heat Meter Factory FILA).

In November 2007, we were the first in Poland to take advantage of the opportunity offered by the European MID Directive.

Once we have obtained a Module D Certificate of Conformity Assessment, we carry out the verification of water meters ourselves (currently a conformity assessment). For us, this means significantly improved organisation and productivity, as well as greater design freedom. On the other hand, it places total responsibility for the water meter produced on our company.

Since the beginning of water meter production, we have preferred direct contact with the customer - water producers and water consumers. This enables us to define their needs and make the necessary changes to our water meters. Hence the more than 50 patented technical solutions filed by our company. We are the only company in Poland to conduct research into the impact of water jet disturbances on water meter metrology. The results of these studies and the knowledge we have, allow us to evidence and question the correctness of the content of paragraph 10.7, in the EN ISO 4064 water meter standard.

The sale of 5,500,000 water meters and thousands of satisfied customers are a great joy for us and allow us to quietly develop our production at an increasing sales level.

Since 2009, we have also been manufacturing radio modules for watermeters. Since 2019, we have been deploying the LoRaWan-based, state-of-the-art Polonia fixed reading system. By connecting the water meter cable to the radio module, our system allows any water meter to be read, regardless of its location. Several years of work by the Research and Development Centre in our company allow us to assess the significant advantages of our Polonia system over similar Western systems. The Polonia system also allows the measurement of wastewater and the tracking of wastewater discharge into the sewer system online. We have introduced a comprehensive service which includes water metering, reading, and issuing an invoice for the water consumer.

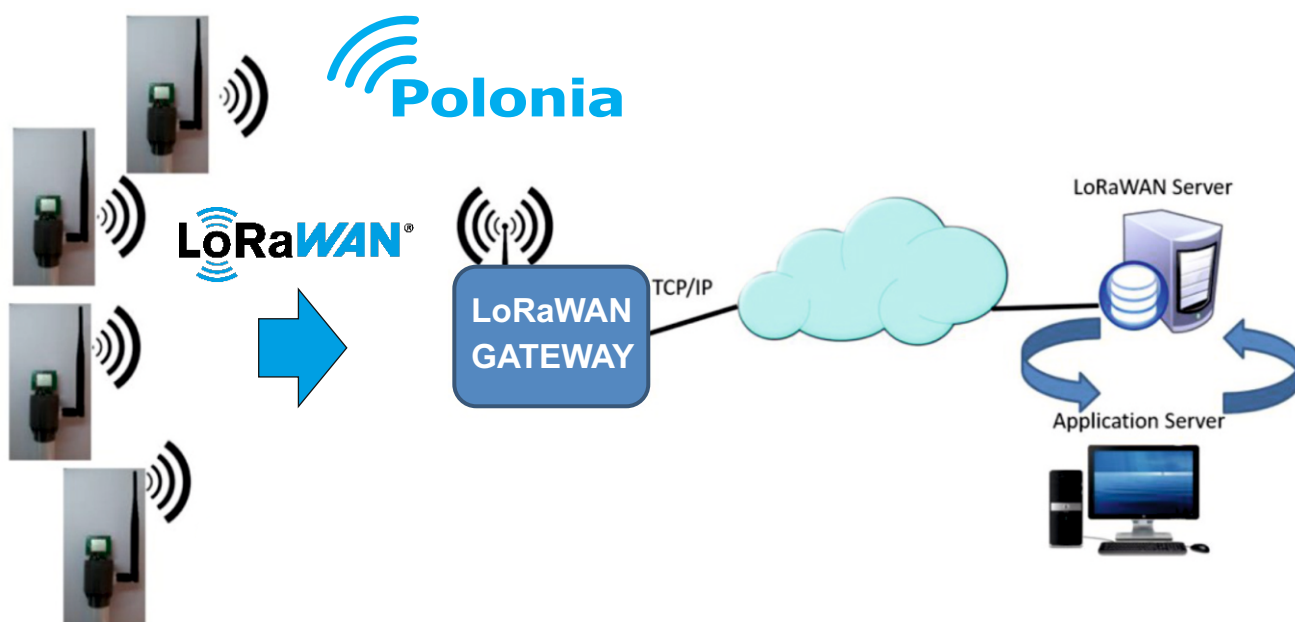


**PATENT OFFICE**  
OF THE REPUBLIC OF POLAND



Sztum, 18.04.2023

# POLONIA remote reading system



The Polonia system is a fixed reading system for water meters and other devices. It allows the measurement of water, data transmission and the invoicing of the water taken.

Polonia alerts managers and consumers by email about blocked water meters, leaks, unsealed installations and exceeded daily doses.

By connecting the water meter cable to the radio module, our system allows any water meter to be read, regardless of its location. The unique design of the radio module, allows a radio range, a minimum of 600 metres to 4,000 metres, much greater than that of our competitors.

Polonia also allows for the current reading of the sewage pumping station and balancing with the water abstracted in the catchment area of the respective sewage pumping station. It also makes it possible to keep track of the supply of wastewater to the sewer system by the individual water consumer.

Battery life of up to two validation periods depending on the temperature of the module environment. The solar power supply allows the gates to be installed regardless of the availability of mains electricity.

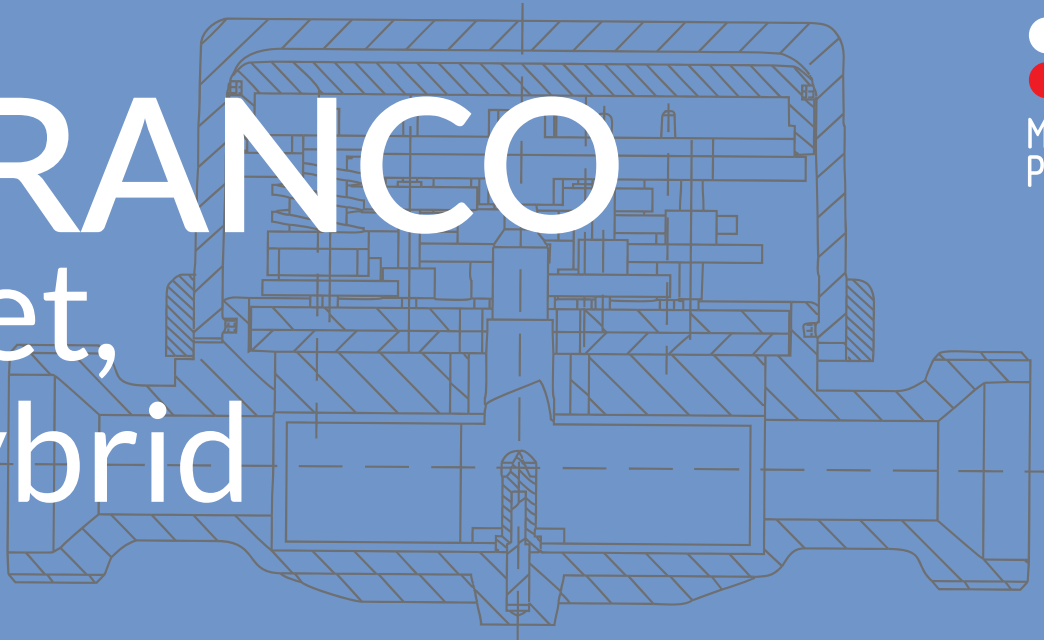
The Polonia system makes it possible to comply with the monthly requirement

Sztum, 18.04.2023 Antoni Fila



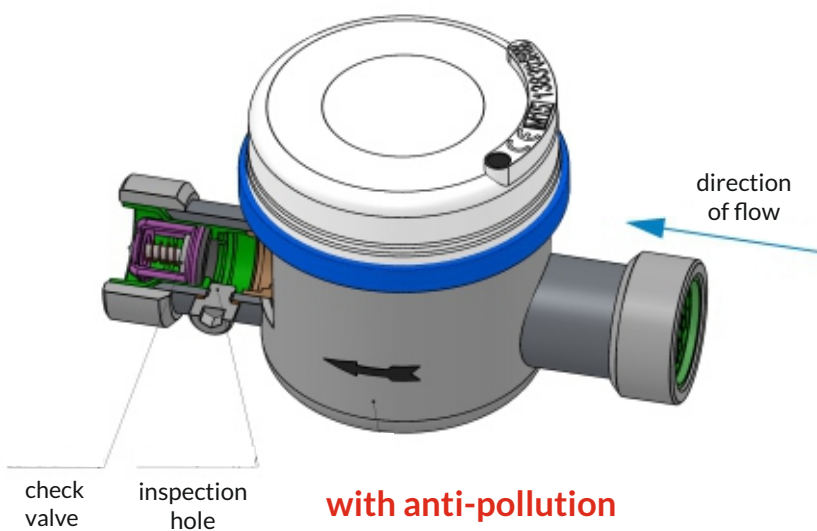
# FRANCO

wet,  
hybrid



MADE IN  
POLAND

## R 200



with anti-pollution  
EA protection

- 4-5 l
- do 200
- 15-20
- start-up threshold
- R measurement accuracy
- diameter DN
- COMPLETELY without magnetic coupling
- eko INOX
- LoRaWAN®



in brass body



with safety flap



with anti-pollution  
EA protection



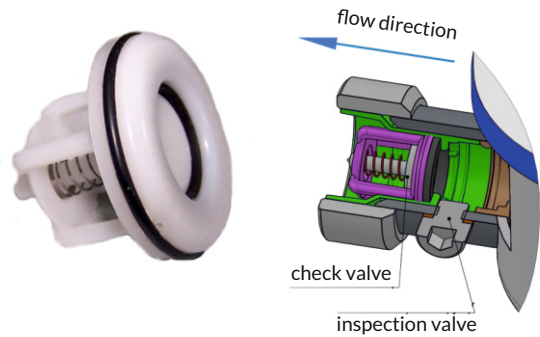
R 200

# Water meter characteristics:

- Nominal volume flow: 0.63 ; 1.0 ; 1.6 ; 2.5 ; 4.0m<sup>3</sup>/h FRANCO ecolnox 1.0 ; 1.6 ; 2.5 m<sup>3</sup>/h
- Operating temperature: **cold water - up to 30°C, hot water - up to 90°C**
- Metrology class up to **R 200**
- Single-jet wet vane-wheel hybrid water meter
- Due to the lack of magnetic coupling, the water meter is completely immune to the action of magnets, rupture of the coupling and braking by ferromagnetic impurities deposited on the rotor magnet
- Its glycerine-filled tumbler unit isolated from the water to ensure easy reading of the water meter readings throughout its lifetime
- Particularly suitable for residential and commercial metering due to its metrological and operational characteristics
- **With the anti-drip valve, we guarantee the balance of up to +- 5%. Achieved building water consumption balance of up to +- 2%.**
- Small dimensions facilitate installation while maintaining standard connection dimensions - fully interchangeable with other water meters
- Straight sections upstream of water meter **U 5**, downstream of water meter **D 1**
- Compression protection (indicator)
- Verification meeting EU requirements
- Guarantee for the entire validation period (not less than 5 years, not more than 6 years)
- **The perfect bearing arrangement allows for a lifetime guarantee which we hereby grant**
- Up to 100 % overload capacity
- FRANCO water meter cooperates with anti-drip valve - start-up threshold horizontal 1-2 l/h, vertical 2-4 l/h (for DN 15)
- Complies with EN-PN 14154 {1-3}
- Available in EA anti-drip version, with flap and in **ekoINOX** stainless steel body
- Also in a version adapted to a remote reading system **POLONIA**
- The counter head of wet water meters is not rotated. Our company is the only one in Poland able to supply water meters with the dial aligned with the water meter supply direction

## REVERSE VALVE

- Protects water mains from backflows
- Provides protection against user interference in the operation of the water meter
- Easy to install - fitting in the outlet branch of the water meter
- Valves DN15 and DN20 do not require the replacement of connectors, valve DN25 is installed in place of the outlet connector
- The water meter with an inspection opening is an EA type anti-drain valve

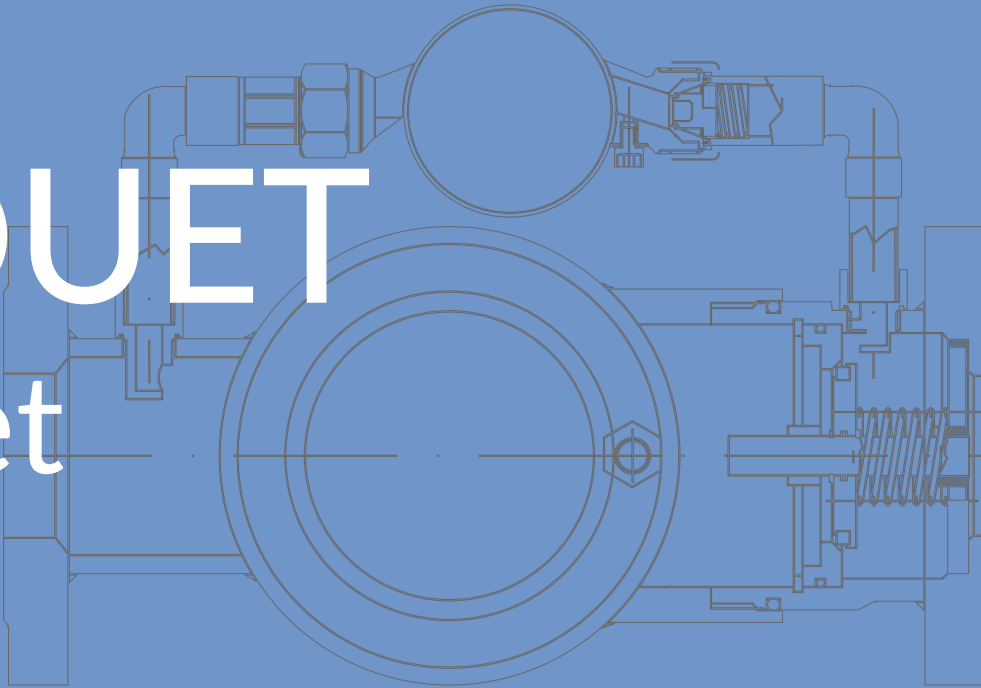


## General dimensions and metrology data:

DN Size	FRANCO				ekoINOX			
	15		20		15		20	
	H	V	H	V	H	V	H	V
Minimum flow rate $Q_{im^3/h}$	$\geq 0,0125$	$\geq 0,0250$	$\geq 0,0200$	$\geq 0,0400$	$\geq 0,0125$	$\geq 0,0250$	$\geq 0,0200$	$\geq 0,0400$
R $Q_3/Q_t$ ratio	$\leq 200$ - for horizontal installation				$\leq 200$ - for horizontal installation			
	$\leq 100$ - for vertical installation V				$\leq 100$ - for vertical installation V			
Indirect flow $Q_2^{m^3/h}$	$\geq 0,02$	$\geq 0,04$	$\geq 0,032$	$\geq 0,064$	$\geq 0,02$	$\geq 0,04$	$\geq 0,032$	$\geq 0,064$
Nominal flow $Q_3^{m^3/h}$	$\leq 2,5$		$\leq 4,0$		$\leq 2,5$		$\leq 2,5$	
Maximum flow $Q_4^{m^3/h}$	$\leq 3,125$		$\leq 5$		$\leq 3,13$		$\leq 5$	
Start-up threshold l/h	H	5	8		5	8		
	V	8	18		8	18		
with anti-drip valve l/h	horizontal	1,4 - 1,6	1,4 - 1,6		1,4 - 1,6	1,4 - 1,6		
	vertical	2,5 - 3,0	2,5 - 3,0		2,5 - 3,0	2,5 - 3,0		
Maximum pressure $Mpa$	1,6		1,6		1,6		1,6	
Pressure loss $bar$	0,16		0,16		0,16		0,16	
Length mm	110		130		110		130	
Height mm	71/74		71/74		74		74	
Width mm	68		68		68		68	
Weight mm	0,38/0,38		0,48/0,45		0,38		0,45	
Spigot thread $inch$	G 3/4		G 1		G 3/4		G 1	
Working position	horizontal/ver							

maximum flow permitted by the manufacturer

# DUET set



  
MADE IN POLAND

 **100 %**  
Polish product



DUET II

4-5 l      200      25-150

  
start-up  
threshold

**R**  
measurement  
accuracy

  
diameter  
DN



  
**COMPLETELY**  
without magnetic  
coupling

 LoRaWAN®



DUO I



A DUET I DUET



DUET IV



DUET VI

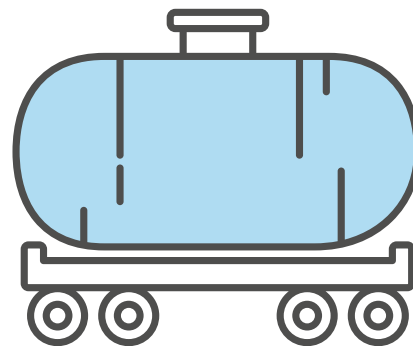
# A UNIQUE SOLUTION

precise measurement within the range

# 5 - 450 000



(5 l)



Rail tanker ( 450 000 l )

## Characteristics of a watertanker

- Connection diameters from DN 25 to DN 150
- DUET I and II consist of the hybrid multi-jet R 100 (main) and hybrid single jet (side) R 200 water meters
- DUET IV-VII consists of the R 80 dry dial water meter with horizontal rotor axis (main) and the R 100 single-jet hybrid water meter (side)
- Due to the fact that only single-jet vane-wheel water meters are used in the DUET I A set, limescale deposits have a negligible effect on the metrology during operation
- Mainly recommended for measuring water consumption for industry and multi-family dwellings with large consumption differences
- Metrology class: **R200**
- Operating temperature: **cold water - up to 30°C**
- Glycerine-filled tumbler unit isolated from the water to ensure easy reading of the water meter readings throughout its lifetime
- Internal and external filter
- **Design protected by patent P-212527**

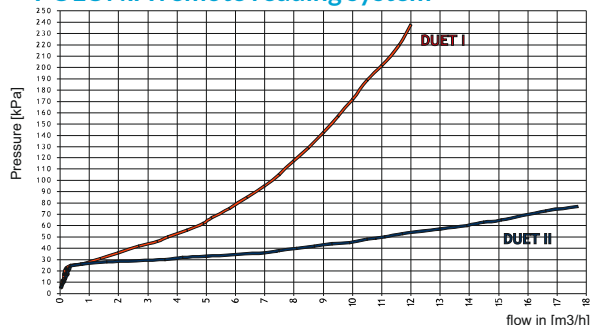
- All EA anti-drainage DUETs have a built-in valve and an inspection opening with a mesh filter, which can be cleaned without disassembly
- Connecting elements made of powder-coated brass
- Conforms to PN-ISO 4064 and EN 14154-1-3
- Warranty on DUET I , DUET I A and DUET II for the entire validity period of verification .
- Warranty for DUET IV , DUET V , DUET VI - 2 years
- Side water meter can be replaced if required during operation
- All sets come in two versions (right and left)
- After the verification period we will repair the water meters by replacing the measuring insert for 50% of the current price plus the cost of verification, **with a warranty for a further 5 years**
- Also available in a version adapted to the



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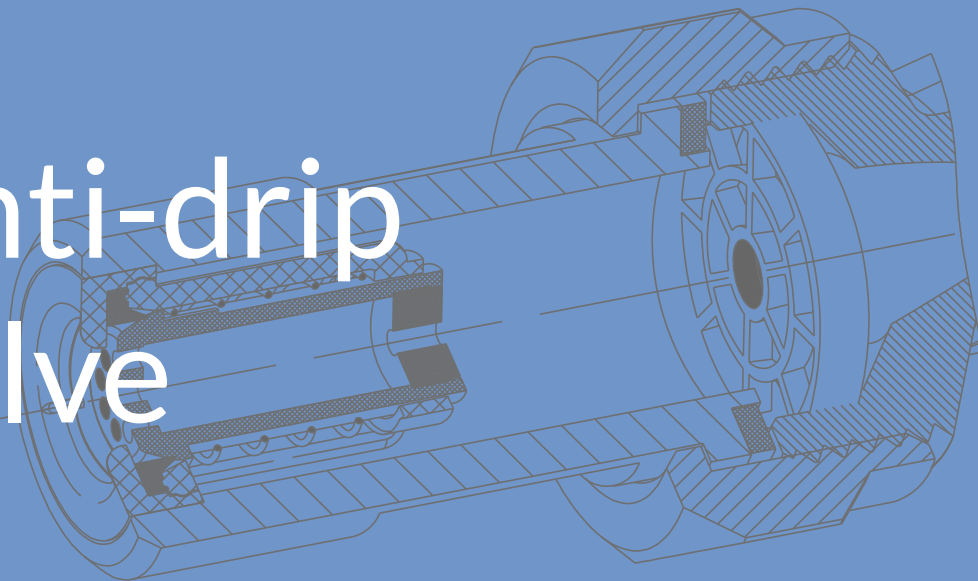
## POLONIA remote reading system



## General dimensions and metrology data

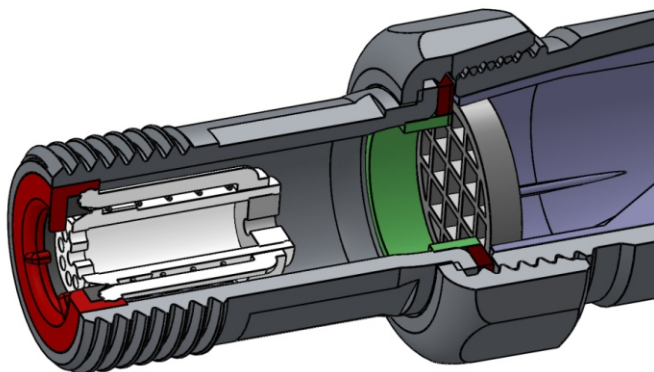
Size		DUET I A		DUET I		DUET II		DUET IV		DUET V		DUET VI A	
		main	side	main	side	main	side	main	side	main	side	main	side
		DN	25	15	25	15	50	15	80	20	100	20	150
	cal	1"	1/2"	1"	1/2"	Flange Ø 50	1/2"	Flange Ø 80	3/4"	Flange Ø 100	3/4"	Flange Ø 150	1"
	model	JS 6,3	Franco 2,5	WS-6,3	Franco 2,5	WS-25	Franco 2,5	WMAP 80	Franco 4,0	WMAP 100	Franco 4,0	WMAP 150	DS TRP 6,3
Nominal flow Q <sub>3</sub>	m <sup>3</sup> /h	6,3	2,5	6,3	2,5	25	2,5	100	4,0	160	4,0	250	6,3
<b>factor/metrology class</b>	<b>Q<sub>3rd</sub> + Q<sub>3m</sub> / Q<sub>1</sub></b>	<b>4400</b>		<b>4400</b>		<b>13750</b>		<b>26000</b>		<b>41000</b>		<b>4068</b>	
Nominal flow Q <sub>1</sub>	m <sup>3</sup> /h	0,0200		0,0400		0,0125		0,020		0,020		0,400	
Maximum flow	m <sup>3</sup> /h	7,88		7,88		31,3		125		200		312,50	
Start-up threshold	lh	4 - 6		4 - 6		4 - 6		6 - 8		6 - 8		20	
Working temperature	°C	0,1-30		0,1-30		0,1-30		0,1-30		0,1-30		0,1-30	
Reader display range	m <sup>3</sup>	99999/99999		99999/99999		99999/99999		99999/9999999		99999/9999999		99999/9999999	
Maximum pressure	MPa	1,6		1,6		1,6		1,6		1,6		1,6	
Water meter length	mm	300		300		300, 270**		300, 350		360		500	
Water meter height	mm	90		120		150		280		280		320	
Water meter width	mm	160		180		220		280		280		380	
Water meter weight	kg	3,65		7,1		15		23		26		59	
Spigot threads	cal	G 2, 1 1/4", 1 1/2" **		G 2, Flange Ø 40		Flange Ø 50		Flange Ø 80		Flange Ø 100		Flange Ø 150	
Type of work		horizon		horizon		horizon		horizon		horizon		horizon	
Working range	lh	5 - 6 250		5 - 12 000		5 - 30 000		8 - 200 000		8 - 250 000		8 - 450 000	

# Anti-drip valve



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POLAND

Ratio **R1250** 2500 l/h:2l/h=1250



- It provides excellent protection against water intake using the DRIBBLING method.
- It causes Franco DN 15 water meters, regardless of their metrological class, with a nominal flow of 2.5 m<sup>3</sup>/h, to achieve, horizontally, a starting flow of 2 l/h - R 1250; vertically, 4l/h - R 625.
- No modification of the installation is required - fitting in place of the intake connector.
- No maintenance required during operation, 15-year efficiency.
- Available in diameters DN 15, DN 20.
- Supplied without nut.
- The valve has been filed with the Polish Patent Office (P.387308).
- With the Franco water meter, it allows a balance guarantee of up to 5%, in any multi-family building, regardless of the position of the water meter and the water quality. The most common results are + 1% to - 2%.