



Project	Sunlight House, Manchester		Project Ref.	1394
Tech Sub Ref.	TS-M- 0019	Issued By	Lee Holland	
Date	13/08/2024	Authorised	David Wilson	

Technical Submission	Water meters Rev 1	
SPECIFICATION COMPLIANCE	✓	In compliance with Schedule Specification, reference 1298-CSD-ZZ-ZZ-SH-M-56004
DEROGATIONS		N/A
CALCULATIONS PROVIDED		N/A

This technical submission has been issued by G&H Building Services Ltd for the approval of Water Meters

As per attached Schedule
Apatator Powogaz

Information Required From	Myco
Latest Date Required	27/08/2024

Acceptance/Refusal		
Ensure meters are WRAS approved - Revised to include WRAS certification.		
STATUS A	STATUS B	STATUS C

Response From	
Response Date	

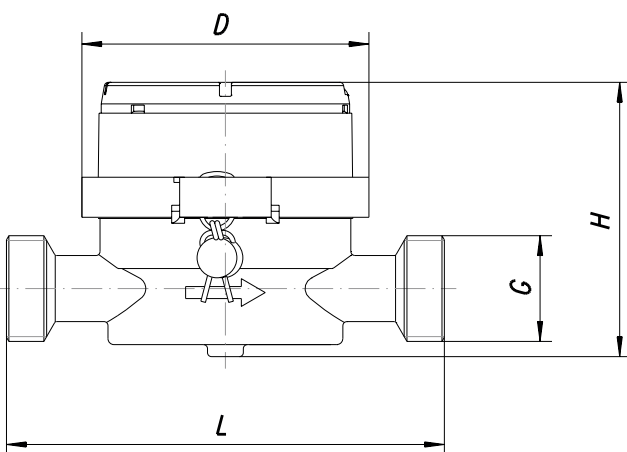
Technical parameters

Parameter				JS 1,6-02 JS90 1,6-02*	JS 2,5-02 JS90 2,5-02*	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	m³/h	1,6	2,5	4	
Max flow rate			Q ₄	m³/h	2	3,125	5	
Indirect flow rate	for cold water	H R100	Q ₂	dm³/h	25,6	40	64	
		V R50			51,2	80	128	
	for hot water	H R80 or R100**			32 or 25,6**	50 or 40**	80 or 64**	
		V R40 or R50**			64 or 51,2**	100 or 80**	160 or 128**	
Minimum flow rate	for cold water	H R100	Q ₁	dm³/h	16	25	40	
		V R50			32	50	80	
	for hot water	H R80 or R100**			20 or 16**	31,25 or 25**	50 or 40**	
		V R40 or R50**			40 or 32**	62,5 or 50**	100 or 80**	
Starting flow			–	dm³/h	6	8	15	
Ratio Q ₂ /Q ₁			–	–	1,6			
Temperature class (nominal working temperature)			–	–	T30 / T90			
Resistance classes to flow profiles			–	–	U0, D0			
Indication range			–	m³	10 ⁵			
Indication correctness			–	m³	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 ≤ Q ≤ Q ₄			ε	%	± 2 for cold water ± 3 for hot water			
Permissible boundary error at the range: Q ₁ ≤ Q ≤ Q ₂			ε	%	± 5			
Connector thread			G	cal	G¾		G1	
Height			H	mm	68,5			
Length			L	mm	110	110	130	130
Diameter			D	mm	72			
Mass (without connection elements)			–	kg	0,5	0,5	0,6	0,6

Realization 02 – eight-barrel counter, water meter adapted to the assembly of the RF frontend

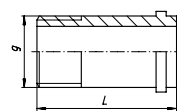
*) Available also in version 02-S - with hard bearing (water meters for hot water circulation system).

**) On request



Connection elements

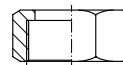
DN	G	g	d	L
	inch	inch	mm	mm
15	3/4	1/2	17	40
20	1	3/4	23	50



connector



pad



nut

Pressure loss

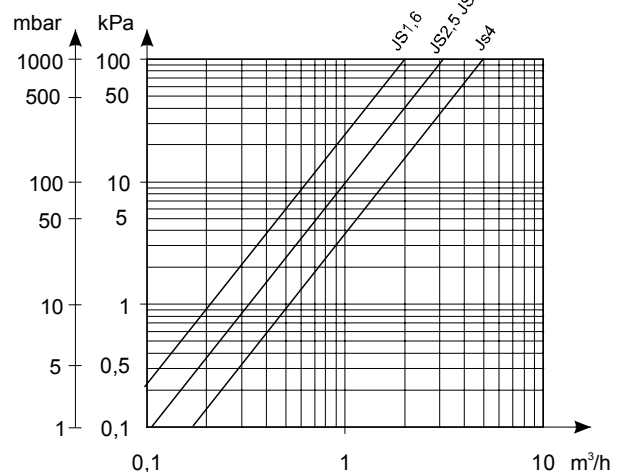


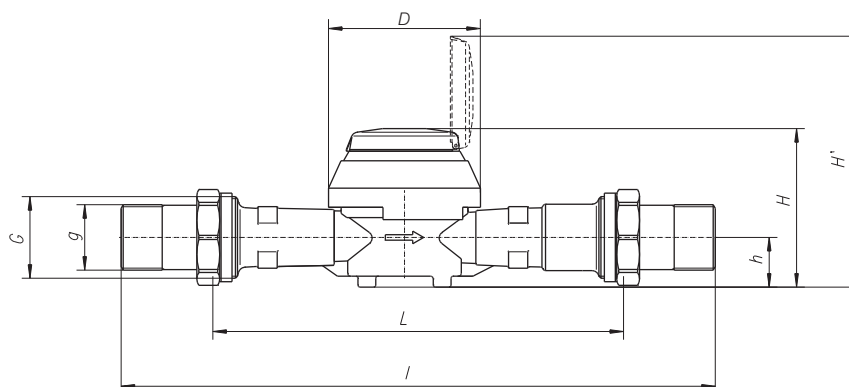
Table 1. TECHNICAL DATA

Parameter				Master ₊ *			
				JS6,3 JS6,3-XX** JS130-6,3 JS130-6,3-XX**	JS10-G1¼ JS10-G1¼-XX** JS130-10-G1¼ JS130-10-G1¼-XX**	JS10 JS10-XX** JS130-10 JS130-10-XX**	JS16 JS16-XX** JS130-16 JS130-16-XX**
Nominal diameter	DN	mm		25	25	32	40
Continuous flow rate	Q ₃	m³/h		6,3	10		16
Maximum flow rate	Q ₄	m³/h		7,875	12,5		20
Indirect flow rate	for cold water H R160 V R63	Q ₂	dm³/h	63 160	100 254		160 406
	for hot water H R80 V R40			126 252	200 400		320 640
Minimum flow rate	for cold water H R160 V R63	Q ₁	dm³/h	40 100	63 159		100 254
	for hot water H R80 V R40			79 158	125 250		200 400
Starting flow		–	dm³/h	21	33		53
Ratio Q ₂ /Q ₁		–	–	1,6			
Temperature class (nominal working temperature)		–	–	T30 / T50 / T130			
Resistance classes to flow profiles		–	–	U0, D0			
Indication range		–	m³	99 999			
Indication correctness		–	m³	0,00005			
Maximum pressure		P _{max}	MPa	1,6			
Maximum pressure loss		Δp	kPa	63			
Permissible boundary error at the range: Q ₂ ≤ Q ≤ Q ₄		ε	%	± 2 for cold water, temperature ≤30°C ± 3 for water, temperature >30°C			
Permissible boundary error at the range: Q ₁ ≤ Q < Q ₂		ε	%	± 5			
Reed-switch impulse transmitter NK		–	dm³/ imp	10 (standard impulsing); 2,5; 25; 100; 250; 1000			100 (standard impulsing) 2,5; 10; 25; 250; 1000
Inlet and outlet spout thread	G	cal		G1¼	G1¼	G1½	G2
Height	h	mm		36			
	H	mm		120			
	H'	mm		185			
Length	L	mm		165**/ 260	260		300
	l	mm		380			440
Diameter	D	mm		111			
Mass (without connecting elements)	Without transmitter	–	kg	2,0	2,2		2,5
	With NK transmitter	–	kg	2,2	2,4		2,7

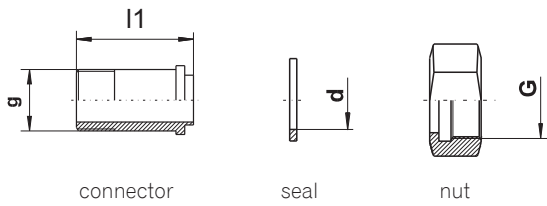
* At special request IP68 counter

** Version: NK reed-switch transmitter or NKP prepared for reed-switch transmitter

*** Only version for cold water

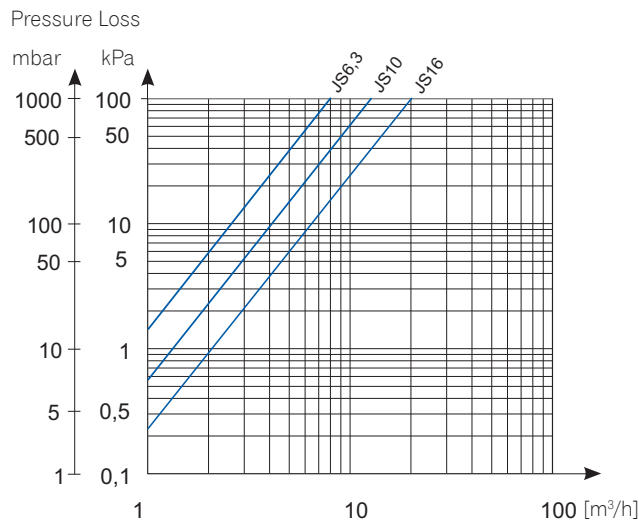


CONNECTION ELEMENTS

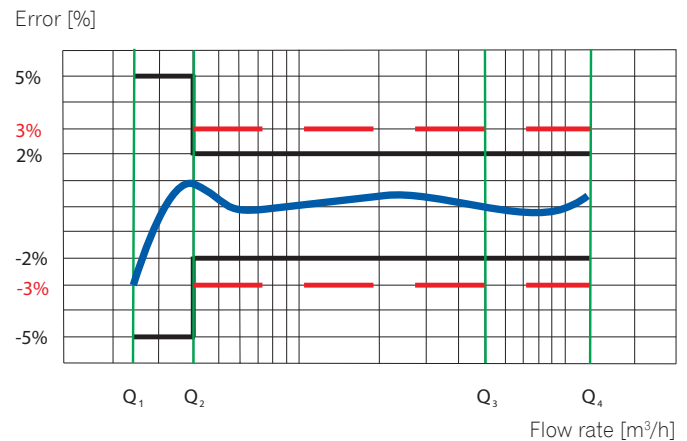


DN	G	g	d	l1
25	1¼"	1"	29	60
32	1½"	1¼"	36	60
40	2"	1½"	43	70

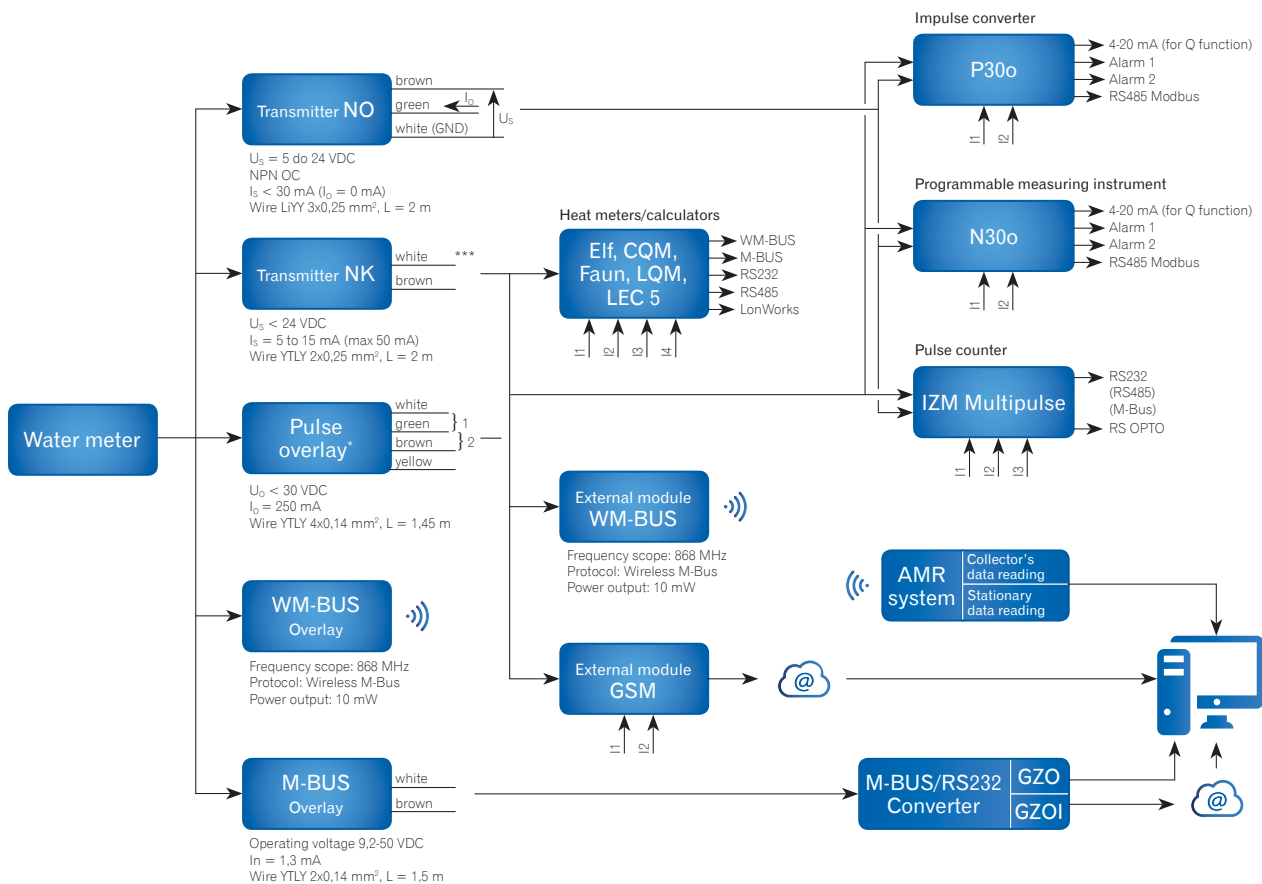
PRESSURE LOSS DIAGRAM



TYPICAL ERROR DIAGRAM



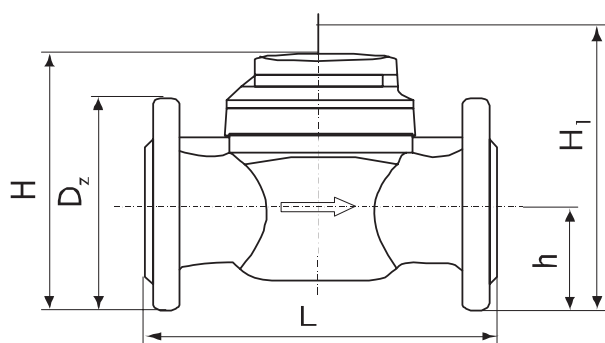
REMOTE TRANSMISSION OF MEASUREMENTS, MEASUREMENT OF FLOW RATE



*) Pulse involves opening of connection 250 ms.

Table 1. TECHNICAL CHARACTERISTICS

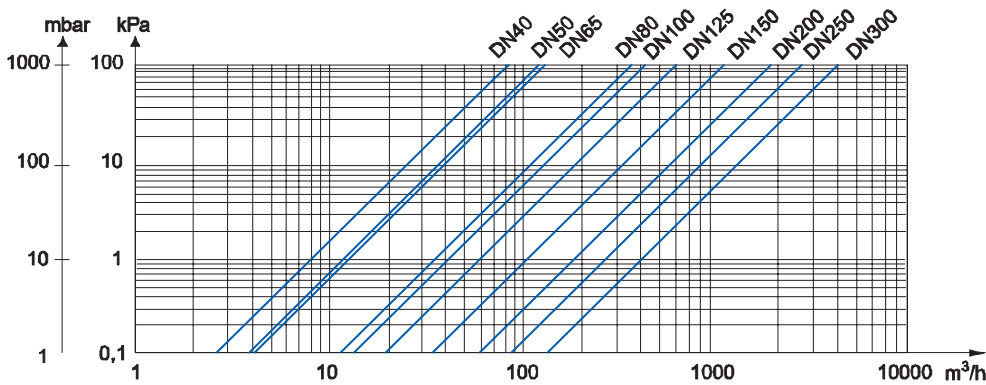
Parameter			MWN, MWN-XX											
Nominal diameter	DN	mm	40	50	65	80	100	125	150	200	250	300		
Temperature class (Working temperatures range)	T30 (0,1÷30°C), T50 (0,1÷50°C)		MWN (without transmitter) or MWN (with transmitter) in NK, NO, NKO, NKOP optio											
Constant flow rate	Q ₃	m³/h	25	40	63	100	160	250	400	630	1000	1600		
Overload flow rate	Q ₄	m³/h	31,25	50	78,75	125	200	312,5	500	787,5	1250	2000		
Transitional flow rate	Q ₂	m³/h	0,4	0,64	0,806	1	1,28	2,5	3,2	8,064	16	20,48	25,6	
Minimal flow rate	Q ₁	m³/h	0,25	0,4	0,504	0,625	0,8	1,563	2	5,04	10	12,8	16	
Starting flow rate	–	m³/h	0,15	0,15	0,2	0,25	0,25	0,5	1,0	1,5	3	8		
R measuring rate	Q ₃ /Q ₁	–	100	100	125	160	200	160	200	125	100	125	100	
Coefficient	Q ₂ /Q ₁	–	1,6											
Temperature class (Working temperatures range)	T130 (0,1÷130°C)		MWN (without transmitter) or MWN (with transmitter) in NK, NKP optio											
Constant flow rate	Q ₃	m³/h	25	25	40	63	100	160	250	400	630	1000		
Overload flow rate	Q ₄	m³/h	31,25	31,25	50	78,75	125	200	312,5	500	787,5	1250		
Transitional flow rate	Q ₂	m³/h	1	1	1,6	2,52	4	6,4	10	16	40,32	64		
Minimal flow rate	Q ₁	m³/h	0,625	0,625	1	1,575	2,5	4	6,25	10	25,2	40		
Starting flow rate	–	m³/h	0,25	0,25	0,3	0,35	0,6	1,1	2	4	8	15		
R measuring rate	Q ₃ /Q ₁	–	40	40	40	40	40	40	40	40	25	25		
Coefficient	Q ₂ /Q ₁	–	1,6											
Clase de resistencia al perfil de caudal	–	–	U0, D0											
Indication range	–	m³	10 ⁶						10 ⁷					
Accuracy of indication	–	m³	0,0005						0,005			0,05		
Upper pressure limit	P _{max}	–	MAP16=(16bar)											
Working pressure range		bar	from 0,3 to 16											
Max pressure lost		kPa	ΔP16=(0,16bar)											
Working position	–	–	H, V											
Border range error allowed	ε	%	±5% (Q ₁ ≤Q≤Q ₂) ±2 (Q ₂ ≤Q≤Q ₄) for 0,1≤T≤30°C ±3 (Q ₂ ≤Q≤Q ₄) for T>30°C											
NK Reed Switch pulse transmitter	–	dm³/ imp.	1000 (standard impulsion) 2,5; 10; 25; 100; 250						10000 (standard impulsion) 25; 100; 250; 1000; 2500;					250; 1000; 2500;
Optoelectronic impulse transmitter NO**	–	dm³/ imp.	1						10			105,2632		
Dimension	L	mm	200	200	200	225/200***	250	250	300	350	450	500		
	h	mm	65	72	83	95	105	120	135	160	193	230		
	H	mm	177	187	197	219	229	257	357	382	427	497		
	H ₁ ****	mm	227	287	297	239	349	377	582	607	652	722		
	D _z	mm	150	165	185	200	220	250	285	340	400	460		
Weight	without transmitter		kg	7,9	9,9	10,6	13,3/13,8***	15,6	18,1	40,1	51,1	75,1	103,1	
	with transmitter NK NO			8,3	10,3	11	13,7/14,2***	16	18,5	40,5	51,5	75,5	103,5	



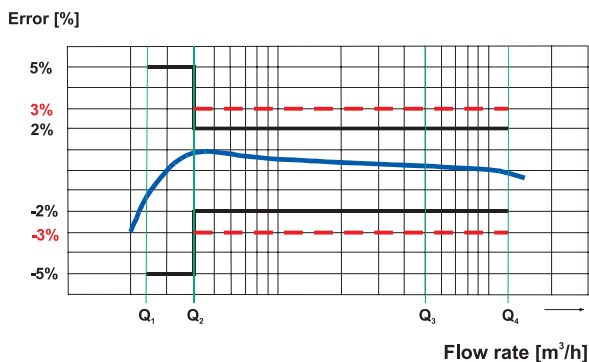
*) Quality: NK- Reed Switch transmitter, NKP- water meter adapted for Reed Switch,
NO- optoelectronic transmitter, NKO- optoelectronic and Reed Switch transmitter,
KNOP- water meter adapted for optoelectronic and Reed Switch transmitter.
**) Only for T30 and T50.
***) On request.
****) Space for measuring insert removal.

TFlange drilling according to PN-EN 1092-2 (PN10), DIN2532, DIN2501 (NP10), BS4504 (NP10) on special request PN16 and PN25 quality for chosen sizes.

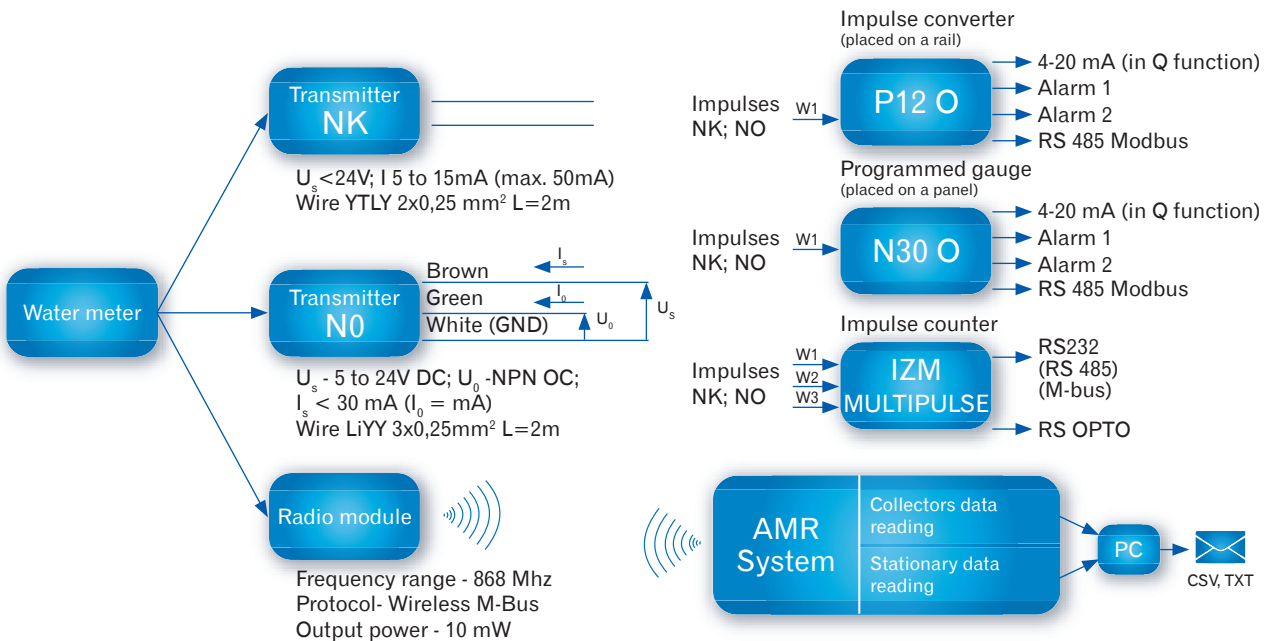
HEAD LOSS DIAGRAM



TYPICAL ERROR DIAGRAM



CONNECTION EXAMPLES FOR IMPLEMENTATION REMOTE INDICATION TRANSMITTING AND MEASURING THE FLOW RATE



Order example:

Water meter for cold water: ex. MWN 50-NO or MWN 80-NK (1 dm^3/imp) etc.
 Water meter for hot water: ex. MWN 130-100-NK (25 dm^3/imp)

When ordering one should assess other data than the standard ones ex.: impulse value, Quality (ex. for demineralised water) or flange drilling – described earlier.e.

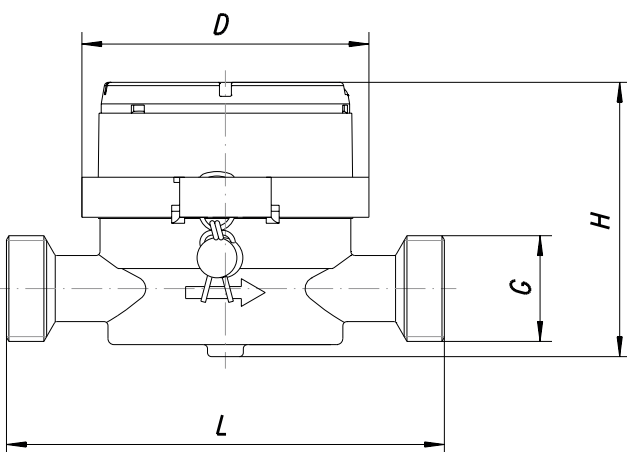
Technical parameters

Parameter				JS 1,6-02 JS90 1,6-02*	JS 2,5-02 JS90 2,5-02*	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	m³/h	1,6	2,5	4	
Max flow rate			Q ₄	m³/h	2	3,125	5	
Indirect flow rate	for cold water	H R100	Q ₂	dm³/h	25,6	40	64	
		V R50			51,2	80	128	
	for hot water	H R80 or R100**			32 or 25,6**	50 or 40**	80 or 64**	
		V R40 or R50**			64 or 51,2**	100 or 80**	160 or 128**	
Minimum flow rate	for cold water	H R100	Q ₁	dm³/h	16	25	40	
		V R50			32	50	80	
	for hot water	H R80 or R100**			20 or 16**	31,25 or 25**	50 or 40**	
		V R40 or R50**			40 or 32**	62,5 or 50**	100 or 80**	
Starting flow			–	dm³/h	6	8	15	
Ratio Q ₂ /Q ₁			–	–	1,6			
Temperature class (nominal working temperature)			–	–	T30 / T90			
Resistance classes to flow profiles			–	–	U0, D0			
Indication range			–	m³	10 ⁵			
Indication correctness			–	m³	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 ≤ Q ≤ Q ₄			ε	%	± 2 for cold water ± 3 for hot water			
Permissible boundary error at the range: Q ₁ ≤ Q ≤ Q ₂			ε	%	± 5			
Connector thread			G	cal	G¾		G1	
Height			H	mm	68,5			
Length			L	mm	110	110	130	130
Diameter			D	mm	72			
Mass (without connection elements)			–	kg	0,5	0,5	0,6	0,6

Realization 02 – eight-barrel counter, water meter adapted to the assembly of the RF frontend

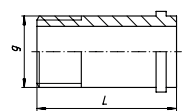
*) Available also in version 02-S - with hard bearing (water meters for hot water circulation system).

**) On request



Connection elements

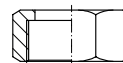
DN	G	g	d	L
	inch	inch	mm	mm
15	3/4	1/2	17	40
20	1	3/4	23	50



connector

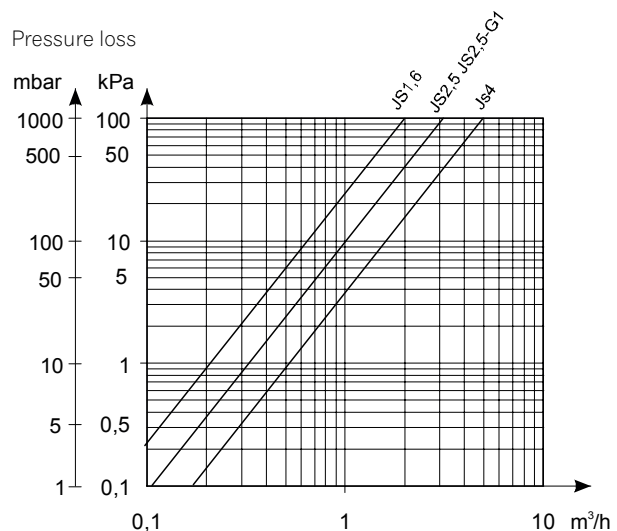


pad



nut

Pressure loss





This certifies that

APATOR POWOGAZ S.A.

has had the undermentioned product(s) examined, tested and certified as being of an appropriate quality and standard as required in the Water Supply (Water Fittings) Regulations and Scottish Water Byelaws, subject to scheme requirements being met when installed.

Model Numbers

WATER METERS JS6.3, JS10 AND JS16.

The certificate by itself is not evidence of a valid WRAS Approval. Confirmation of the current status of an approval must be obtained from the WRAS Approvals Directory (www.wras.co.uk/directory)

The product so mentioned will be valid until the end of:

September 2028

Certificate No.

2309312

A handwritten signature in blue ink, appearing to read 'Ian Hughes', with a long horizontal flourish extending to the right.

Ian Hughes,
WRAS Approvals Manager



This certifies that

APATOR POWOGAZ S.A.

*has had the undermentioned product examined, tested and found,
when correctly installed, to comply with the requirements of the
United Kingdom Water Supply (Water Fittings) Regulations and
Scottish Water Byelaws.*

**JS 1,6; JS 2,5; JS 4 ; JS1,6 NK; JS 2,5 NK; JS 4 NK; JS 1,6 NKP; JS
2,5 NKP, JS 4 NKP, JS90 1,6; JS90 2,5; JS90 4; JS90 1,6 NK; JS90 2,5
MK; JS90 4 NK; JS90 1,6 NKP; JS90 2,5 NKP & JS90 4 NKP RANGE OF WATER
METERS**

*The certificate by itself is not evidence of a valid WRAS Approval. Confirmation of the current
status of an approval must be obtained from the WRAS Directory (www.wras.co.uk/directory)*

The product so mentioned will be valid until the end of:

March 2025

2003807

Certificate No.

A handwritten signature in black ink, appearing to read "J. Furnival".

Secretary

A handwritten signature in black ink, consisting of several vertical strokes followed by a horizontal line.

Chairman, Product Assessment Group



This certifies that

APATOR POWOGAZ S.A.

has had the undermentioned product(s) examined, tested and certified as being of an appropriate quality and standard as required in the Water Supply (Water Fittings) Regulations and Scottish Water Byelaws, subject to scheme requirements being met when installed.

Model Numbers

**MWN X-YYY, WPH X-YYY &
WPH X-YYY WATER METERS.**

The certificate by itself is not evidence of a valid WRAS Approval. Confirmation of the current status of an approval must be obtained from the WRAS Approvals Directory (www.wras.co.uk/directory)

The product so mentioned will be valid until the end of:

October 2028

Certificate No.

2310343

A handwritten signature in blue ink, appearing to read 'Ian Hughes', with a long horizontal flourish extending to the right.

Ian Hughes,
WRAS Approvals Manager