

RUBIN KTW / KTW+

Compound water meter cold water

Applications

This compound water meter is designed for high and sharply fluctuating flows in cold water areas up to 50 °C, measurements for very small flows for leak detection purposes, and firefighting pipelines. Its unique modular technology enables measuring inserts to be easily exchanged, as well as cost-efficient retrofitting with options such as pulse outputs or communications modules.



Features

- High dynamic range
- Main meter and submeter in tandem up to DN 100
- Integrated flow straightener
- Exchangeable measuring insert
- Can be retro-fitted with interference-free modules for remote reading
- Approval 2004/22/EC MID annex MI001

Customer benefits

- Measuring high and sharply fluctuating flows
- Leak detection
- No distinction in performance between left or right submeter up to DN 100
- No inlet and outlet sections required
- Cost-effective exchange of measuring inserts

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Operating principle

Small flows are recorded by the by-pass meter (ring piston meter). If the flow volume exceeds a certain value, the main meter changeover valve switches. The changeover valve has a corresponding hysteresis. The main meter is a turbine with specially designed helicoid blades through which water passes. This has little effect on the pipe cross-section in the turbine, meaning very little loss of pressure.

The reading process must always include both meter readouts. Consumption is always the total of both meters.

Constructional design

The meter consists of a basic powder-coated body and a multi-range metrological unit.

The multi-range metrological unit is made up of a main meter (turbine meter with hydrodynamically balanced rotor), a spring-loaded changeover valve with low pressure loss and high resistance to wear, and a by-pass meter (ring piston meter).

The multi-range metrological unit's compact construction enables simple, cost-effective exchange.

The RUBIN KTW+ by-pass meter is mounted laterally.

CAUTION: The submeter mounting side must be given with the order. This will be in a left or right flow direction.

RUBIN KTW DN50 to DN100



RUBIN KTW+ DN150



Technical data

Performance table as per **MID approval**

Nominal diameter	DN	mm	50	65	80	100	150*
Nominal pressure	PN	bar	16				
Item number			95092	95093	95094	95095	92386
Overload flow rate	Q4	m ³ /hr	31.25	50	78.75	125	315
Continuous flow rate	Q3	m³/hr	25	40	63	100	250
Transitional flow rate	Q2	m ³ /hr	0.025				0.16
Lowest flow rate	Q1	m ³ /hr	0.016				0.1
Changeover with increasing flow rate	Qx2	m ³ /hr	2.0 – 2.6				8.3
Changeover with decreasing flow rate	Qx1	m ³ /hr	1.1 – 1.7				4.7
Start-up at approx.		m ³ /hr	0.002				0.045
Measuring range	Q3 / Q1		1600	2500	4000	6300	2500
Operating range		°C	0 – 50				
Temperature class		°C	T30				
Protection type	IP		IP 68				

* RUBIN KTW+ / submeter mounted laterally

Performance table as per **manufacturer specifications**

Overload flow rate	Qs	m ³ /hr	90	120	200	280	600
Continuous flow rate	Q3	m³/hr	50	70	120	180	400
Transitional flow rate	Q2	m ³ /hr	0.012				0.15
Lowest flow rate	Q1	m ³ /hr	0.006				0.035
Changeover with increasing flow rate	Qx2	m ³ /hr	2.0 – 2.6				8.3
Changeover with decreasing flow rate	Qx1	m ³ /hr	1.1 – 1.7				4.7

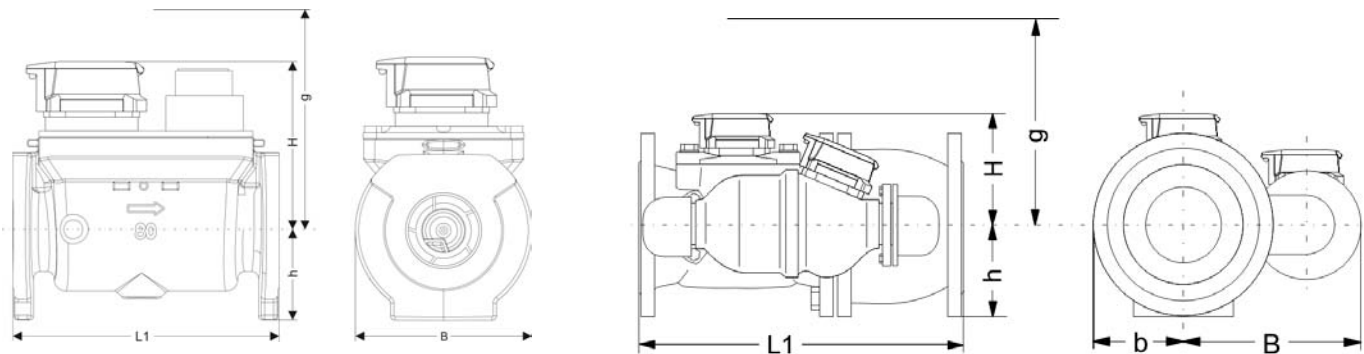
Dimensions and weights

Nominal diameter	DN	mm	50	65	80	100	150*
Flange standard			EN 1052 PN 16				
Item number			95092	95093	95094	95095	92386
Construction length	L1	mm	270	300	300	360	500
Height	H	mm	250				177
	h	mm	80	92.5	100	100	135
	g	mm	505				356
Width approx.	B	mm	185	185	210	220	275
	b	mm					145
Weight							
Basic body		kg	23	25	26	31	60
Measuring insert		kg	7				-

* RUBIN KTW+ / submeter mounted laterally

Dimension drawing KTW / DN50 – DN100

Dimension drawing KTW+ / DN150



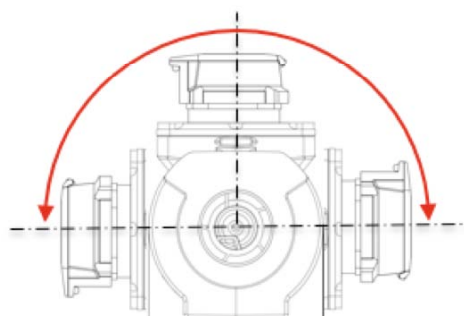
Installation conditions

Installation position

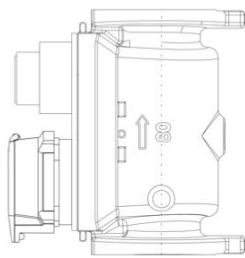
Horizontal or vertical installation. Select the installation position so that the measuring pipe is completely full of water during measurement operation and no air bubbles can collect in the measuring pipe! Vertical installation should therefore preferably be on the standpipe.

For horizontal installation, position the meter head upwards or to the side $\pm 90^\circ$.

RUBIN KTW installation position

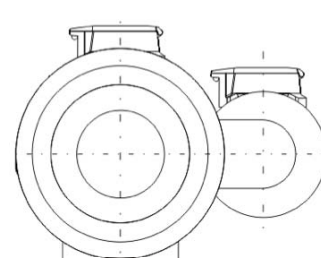


Horizontal installation
Measuring insert rotatable $\pm 90^\circ$
left or right



Vertical installation

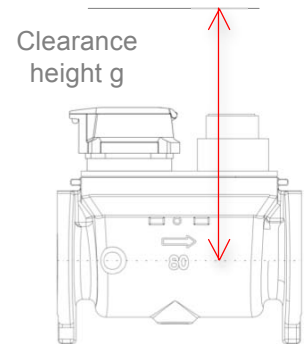
RUBIN KTW+ installation position



Horizontal installation
only, measuring head
always facing upwards

Installation and clearance height

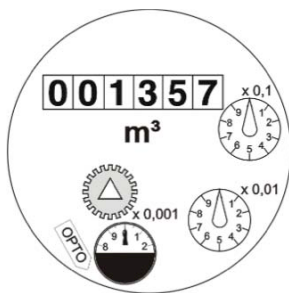
The multi-range metrological units are exchangeable. Always make sure that sufficient upper clearance is available. Recommendations are available in the 'dimensions' section for measurement g.



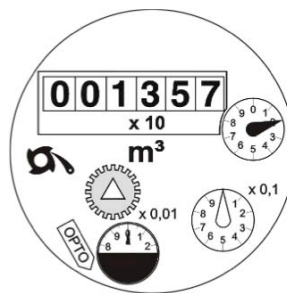
Inlet and outlet sections

The integrated flow straightener means that no inlet or outlet sections are required (U0D0).

Dials / roller counters



By-pass meter



Main meter



The display can be rotated for optimum reading!

Measurement error limits

Accuracy class 2 / T30

Q₁ = lowest flow rate +/- 5 %

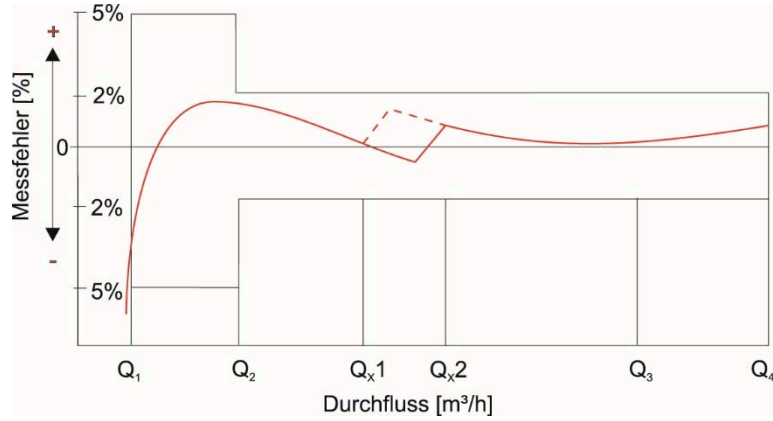
Q₂ = transitional flow rate +/- 2 %

Q₃ = continuous flow rate +/- 2 %

Q₄ = overload flow rate +/- 2 %

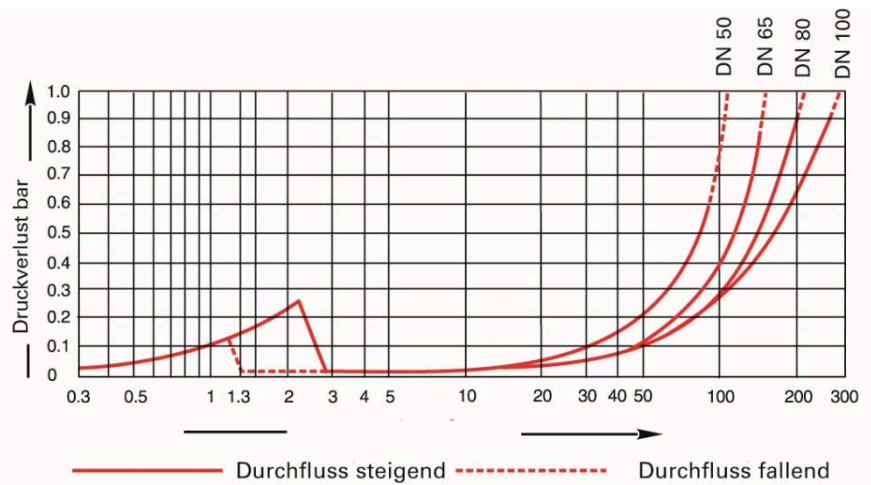
Q_{x1} = changeover with decreasing flow rate

Q_{x2} = changeover with increasing flow rate

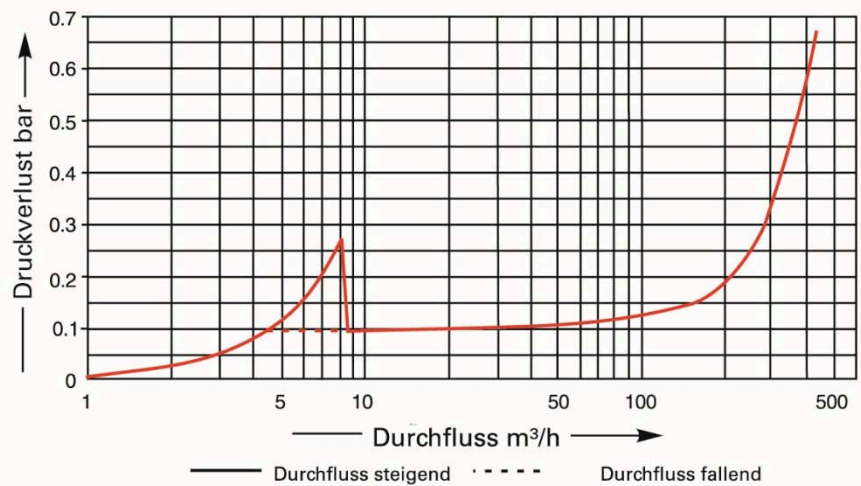


Head lose curve

RUBIN KTW / DN 50 to DN 100



RUBIN KTW+ / DN 150



Certification

MID approval 2004/22/EC annex MI001

SVGW drinking water approval

Accessories

HRI-Mei interface

A module with two programmable pulse outputs and an M-Bus data interface as per IEC870-5 / EN1434-3.



OP opto-electronic pulse generator

An interference-free IR light barrier as per EN50227.



Pulse generator	Type	Pulse value main meter m3	Pulse value submeter m3	Art. No.
KTW DN50 – DN 100				
Data interface	HRI-Mei	0.01 / 0.1 / 1	0.001 / 0.01 / 0.1	
Opto-electronic pulse generator	OD 01	0.001	0.0001	93750
Opto-electronic pulse generator	OD 03	0.01	0.001	93752
KTW + DN 150				
Data interface	HRI-Mei	0.1 / 1 / 10	0.01 / 0.1 / 1	
Opto-electronic pulse generator	OD 01	0.01	0.001	93750
Opto-electronic pulse generator	OD 03	0.1	0.01	93752

See separate data sheets for more information.

Data interface	Nominal diameter	Version	Art. No.
HRI-Mei/10/B4/D100/T500	DN 40 – DN 125	OC, 100l/pul. 500ms	80508
HRI-Mei/10/B4/D1000/T500	DN 40 – DN 125	OC, 1000l/pul. 500ms	80616
HRI-Mei/100/B4/D1000/T500	DN 150	OC, 1000l/pul. 500ms	80509
HRI-Mei/10/B5/D10/T6	DN 40 – DN 125	Namur (EN 60947-5-6), 10l/pul. 6ms	80510
HRI-Mei/100/B5/D100/T6	DN 150	Namur (EN 60947-5-6), 100l/pul. 6ms	80511
HRI-Mei-CDL/10/D10/T6	DN40 – DN 125	Forward and backward pulses with connector for CDL data logger, 10l/pul. 6ms	80512
HRI-Mei-CDL/100/D100/T6	DN150	Forward and backward pulses with connector for CDL data logger, 10l/pul. 6ms	80513

See separate data sheets for more information.

OC = open collector

Designation/type		
Art. No.	93236	92390
Inputs	1	2
Current outputs	1	2
Relay outputs	1	2
Optocoupler outputs	-	2
M-Bus	-	1

See separate data sheets for more information.



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