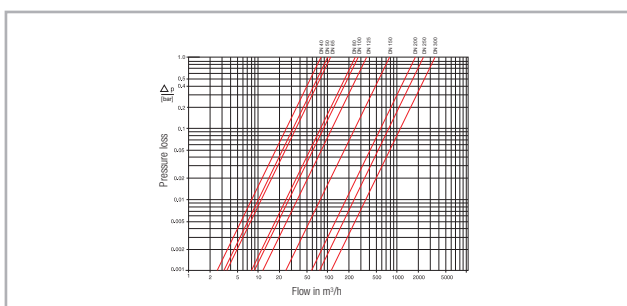
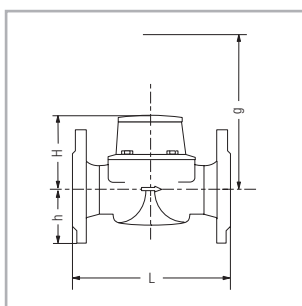
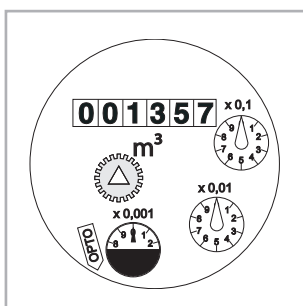




## RUBIN

### Cold Water Meter



The RUBIN product series works in accordance with the speed measuring principle and is conceived for large water measuring. The complete and modular product range covers a wide measuring range in all areas of water supply technology.

#### Features

- High flow rates
- Integrated flow straighteners
- Measuring insert exchangeable
- Upgradable using modules for remote reading
- For remote reading
- Certification 2004/22/EC MID Attachment MI001 (ex. HYZ)
- Certification drinking water SVGW (ex. WPMF)

#### Customer benefits

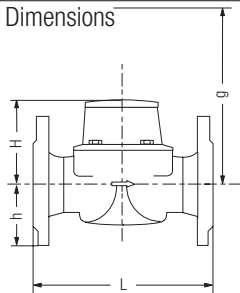
- For measuring large and small flow volumes with a measuring device
- Suitable for monitoring pipe networks and leakage
- Detection area
- No run-in and run-out distance required
- Simple and cost-efficient exchange and upgrade of measuring inserts and system modules for remote reading

# Product range

## RUBIN KMS



- Turbine meter with dry rotors, protection class IP 68
- Media temperature max. 50°C
- Nominal pressure PN 16
- Exchangeable measuring insert
- Upgradeable with HRI modules without retroactive effect or OPTO pulse generators
  
- KMS: Installation in horizontal or vertical pipes, orientation meter head upwards or sideways, does not require run-in distance
- KMS+: exclusively for horizontal installation

Nominal diameter	DN	mm	40	50	50	65 <sup>1)</sup>	65 <sup>1)</sup>	80	80	
		Inches	1 1/2	2	2	2 1/2	2 1/2	3	3	
Overload flow rate	Q <sub>4</sub>	m <sup>3</sup> /h	60	90	90	120	120	200	200	
<b>Permanent flow rate</b>	<b>Q<sub>3</sub></b>	<b>m<sup>3</sup>/h</b>	<b>40</b>	<b>50</b>	<b>50</b>	<b>70</b>	<b>70</b>	<b>120</b>	<b>120</b>	
Transition flow rate horizontal	Q <sub>2</sub>	m <sup>3</sup> /h	0.32	0.4	0.4	0.63	0.63	0.51	0.51	
Transition flow rate vertical	Q <sub>2</sub>	m <sup>3</sup> /h	0.4	0.51	0.51	0.81	0.81	0.8	0.8	
Smallest horizontal flow rate	Q <sub>1</sub>	m <sup>3</sup> /h	0.2	0.15	0.15	0.2	0.2	0.2	0.2	
Smallest vertical flow rate	Q <sub>1</sub>	m <sup>3</sup> /h	0.25	0.28	0.28	0.4	0.4	0.5	0.5	
Run-in at approximately		m <sup>3</sup> /h	0.05	0.05	0.05	0.07	0.07	0.1	0.1	
Smallest readable amount		litres	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Can register		Mio. m <sup>3</sup>	1	1	1	1	1	1	1	
<b>MID certification data</b>										
Permanent flow rate	Q <sub>3</sub>	m <sup>3</sup> /h	25	40	40	63	63	100	100	
Horizontal measurement range	R		125	160	160	160	160	315	315	
Vertical measurement range	R		63	100	100	100	100	125	125	
Measurement range delivery identification	R		63	100	100	100	100	100	100	
Max. loss of pressure	at Q <sub>3</sub>	bar	0.08	0.18	0.18	0.37	0.37	0.16	0.16	
Weight		kg	7.5	7.8	9.6	10.1	12.0	14.2	16.3	
Dimensions										
			<b>L</b>	<b>220</b>	<b>200</b>	<b>270</b>	<b>200</b>	<b>300</b>	<b>225</b>	<b>300</b>
			H	120	120	120	120	150	150	
			h	69	73	73	85	95	95	
			g <sup>1)</sup>	200	200	200	200	270	270	
Flange connection in accordance with norm EN 1092-1 and 2										

<sup>1)</sup> Clearance

## Pressure drop curves

(see page 11)

## Certification

Design type certification according to 2004/22/EG

MID acc. MIO01, MSK

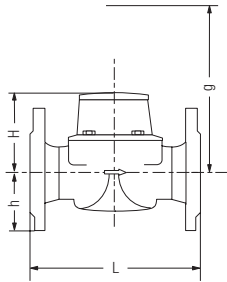
Nominal diameter	DN	mm Inches	100	100	125	150	150	200	250	300
			4	4	5	6	6	8	10	12
Overload flow rate	Q <sub>4</sub>	m <sup>3</sup> /h	300	300	350	600	600	1200	1600	2000
<b>Permanent flow rate</b>	<b>Q<sub>3</sub></b>	<b>m<sup>3</sup>/h</b>	<b>230</b>	<b>230</b>	<b>250</b>	<b>450</b>	<b>450</b>	<b>800</b>	<b>1250</b>	<b>1400</b>
Transition flow rate horizontal	Q <sub>2</sub>	m <sup>3</sup> /h	0.81	0.81	1.02	1.6	1.6	4.0	6.3	16.0
Transition flow rate vertical	Q <sub>2</sub>	m <sup>3</sup> /h	1.28	1.28	1.6	3.2	3.2	2.0	3.5	9.0
Smallest horizontal flow rate	Q <sub>1</sub>	m <sup>3</sup> /h	0.3	0.3	0.5	0.8	0.8	4.0	10.1	25.4
Smallest vertical flow rate	Q <sub>1</sub>	m <sup>3</sup> /h	0.5	0.5	1	1.6	1.6	2.5	6.3	15.9
Run-in at approximately		m <sup>3</sup> /h	0.11	0.11	0.15	0.3	0.3	1.5	3	8
Smallest readable amount		litres	0.5	0.5	0.5	5	5	5	5	5
Can register		Mio. m <sup>3</sup>	1	1	1	10	10	10	10	10
<b>MID certification data</b>										
Permanent flow rate	Q <sub>3</sub>	m <sup>3</sup> /h	160	160	160	400	400	630	630	1000
Horizontal measurement range	R		315	315	250	400	400	250	125	63
Vertical measurement range	R		160	160	125	200	200	250	100	63
Max. loss of pressure	at Q <sub>3</sub>	bar	0.34	0.34	0.19	0.27	0.27	0.11	0.07	0.08
Weight		kg	18.2	20.2	20.7	35.9	44.2	56.9	79.4	103.6
<b>Dimensions</b>										
		<b>L</b>	<b>250</b>	<b>360</b>	<b>250</b>	<b>300</b>	<b>500</b>	<b>350</b>	<b>450</b>	<b>500</b>
		H	150	150	160	177	177	214	238	264
		h	105	105	118	135	135	162	194	226
		g <sup>1)</sup>	270	270	280	356	356	449	474	499

<sup>1)</sup> Clearance

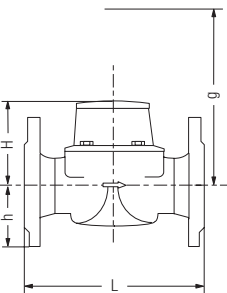
**Available upon request:**

- Nominal pressure PN 40
- Non-ferrous metal free
- Suitable for use in areas protected from explosions
- Other flange drilling, e.g. ANSI, JIS

## RUBIM KMS+, high measurement dynamics version, exclusively for horizontal installation

Nominal diameter	DN	mm	40	50	50	65 <sup>1)</sup>	65 <sup>1)</sup>	80	80	
		Inches	1 1/2	2	2	2 1/2	2 1/2	3	3	
Overload flow rate	Q <sub>4</sub>	m <sup>3</sup> /h	50	55	55	60	60	120	120	
<b>Permanent flow rate</b>	<b>Q<sub>3</sub></b>	<b>m<sup>3</sup>/h</b>	<b>30</b>	<b>35</b>	<b>35</b>	<b>40</b>	<b>40</b>	<b>63</b>	<b>63</b>	
Transition flow rate horizontal	Q <sub>2</sub>	m <sup>3</sup> /h	0.13	0.13	0.13	0.16	0.16	0.25	0.25	
Smallest horizontal flow rate	Q <sub>1</sub>	m <sup>3</sup> /h	0.08	0.07	0.07	0.1	0.1	0.13	0.13	
Run-in at approximately		m <sup>3</sup> /h	0.03	0.03	0.03	0.04	0.04	0.04	0.04	
Smallest readable amount		litres	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Can register		Mio. m <sup>3</sup>	1	1	1	1	1	1	1	
<b>MID certification data</b>										
Permanent flow rate	Q <sub>3</sub>	m <sup>3</sup> /h	25	25	25	40	40	63	63	
Measurement range		R	315	315	315	400	400	400	400	
Max. pressure loss	at Q <sub>3</sub>	bar	0.09	0.08	0.08	0.17	0.17	0.07	0.07	
Weight		kg	7.5	7.8	9.6	10.1	12.0	14.2	16.3	
Dimensions										
			<b>L</b>	<b>220</b>	<b>200</b>	<b>270</b>	<b>200</b>	<b>300</b>	<b>225</b>	<b>300</b>
			H	120	120	120	120	150	150	150
			h	69	73	73	85	85	95	95
			g <sup>1)</sup>	200	200	200	200	270	270	270

<sup>1)</sup> Clearance

Nominal diameter	DN	mm	100	100	150	150	
		Inches	4	4	6	6	
Overload flow rate	Q <sub>4</sub>	m <sup>3</sup> /h	160	160	400	400	
<b>Permanent flow rate</b>	<b>Q<sub>3</sub></b>	<b>m<sup>3</sup>/h</b>	<b>100</b>	<b>100</b>	<b>250</b>	<b>250</b>	
Transition flow rate horizontal	Q <sub>2</sub>	m <sup>3</sup> /h	0.4	0.4	0.63	0.63	
Smallest flow rate horizontal	Q <sub>1</sub>	m <sup>3</sup> /h	0.2	0.2	0.35	0.35	
Run-in at approximately		m <sup>3</sup> /h	0.07	0.07	0.12	0.12	
Smallest readable amount		litres	0.5	0.5	5	5	
Can register		Mio. m <sup>3</sup>	1	1	10	10	
<b>MID certification data</b>							
Permanent flow rate	Q <sub>3</sub>	m <sup>3</sup> /h	100	100	250	250	
Measurement range		R	400	400	630	630	
Max. loss of pressure	at Q <sub>3</sub>	bar	0.16	0.16	0.14	0.14	
Weight		kg	18.2	20.2	35.9	44.2	
Dimensions							
			<b>L</b>	<b>250</b>	<b>360</b>	<b>300</b>	<b>500</b>
			H	150	150	177	177
			h	105	105	135	135
			g <sup>1)</sup>	270	270	356	356
Flange connection in accordance with norm EN 1092-1 and 2							

<sup>1)</sup> Clearance

### Available upon request:

- Suitable for use in areas protected from explosions

### Pressure drop curves

(see page 11)

### Certification

Design type certification according to 2004/22/EG

MID acc. MIO01, MS

## RUBIN Compound meter KTW



- High measuring dynamics
- Main and sub meters one after the other up to DN 100
- Integrated flow straighteners
- Measuring insert exchangeable
- Upgradeable with reactionless modules for remote reading
- Certification 2004/22/EC MID Attachment MI001
- Certification drinking water SVGW
- Measurement of high and strongly fluctuating flow rates
- Leakage recognition
- No difference in performance of submeter left or right up to DN 100
- No run-in and run-out distance required
- Cost-effective exchange of measuring units

Nominal diameter	DN	mm	50	65	80	100
		Inches	2	2 ½	3	4
Overload flow rate	Q <sub>4</sub>	m <sup>3</sup> /h	90	120	200	280
<b>Permanent flow rate</b>	<b>Q<sub>3</sub></b>	<b>m<sup>3</sup>/h</b>	<b>50</b>	<b>70</b>	<b>120</b>	<b>180</b>
Transition flow rate horizontal	Q <sub>2</sub>	m <sup>3</sup> /h	0,012	0,012	0,012	0,012
Smallest horizontal flow rate	Q <sub>1</sub>	m <sup>3</sup> /h	0.006	0.006	0.006	0.006
Run-in at approximately		m <sup>3</sup> /h	0.002	0.002	0.002	0.002
Smallest readable amount		litres	0.5	0.5	0.5	0.5
Can register		Mio. m <sup>3</sup>	1	1	1	1
Switching with increasing						
Permanent flow rate	Qx <sub>2</sub>	m <sup>3</sup> /h	2.3	2.3	2.3	2.3
Switching with falling						
Permanent flow rate	Qx <sub>1</sub>	m <sup>3</sup> /h	1.2	1.2	1.2	1.2
<b>MID certification data</b>						
Permanent flow rate	Q <sub>3</sub>	m <sup>3</sup> /h	25	40	63	100
Measurement range		R	1600	2500	4000	6300
Switching with increasing						
Permanent flow rate	Qx <sub>2</sub>	m <sup>3</sup> /h	2.3	2.3	2.3	2.3
Switching with falling						
Permanent flow rate	Qx <sub>1</sub>	m <sup>3</sup> /h	1.2	1.2	1.2	1.2
Weight	Meter	kg	23	25	26	31
Weight	Measuring insert	kg	7	7	7	7
Dimensions						
		<b>Overall length</b>				
		L1 - mm	270	300	300	360
		Height				
		H	250	250	250	250
		H	80	92.5	100	100
		g <sup>1)</sup> - mm	505	505	505	505
		Width				
		W - mm	185	185	210	220

<sup>1)</sup> Clearance

### Pressure drop curves

(see page 12)

### Certification

Design approval PTB D 6.152 / 01.16 Class B for DN 50, 80 and 100  
SVGW

## RUBIN Compound meter KTW+



- High measuring dynamics
- Main and sub meters one after the other up to DN 100
- Integrated flow straighteners
- Measuring insert exchangeable
- Upgradeable with reactionless modules for remote reading
- Certification 2004/22/EC MID Attachment MI001
- Certification drinking water SVGW
- Measurement of high and strongly fluctuating flow rates
- Leakage recognition
- No difference in performance of submeter left or right up to DN 100
- No run-in and run-out distance required
- Cost-effective exchange of measuring units

<b>Nominal diametre</b>	<b>DN</b>	<b>mm</b>	<b>150</b>
		Inch	6
Overload flow rate	$Q_4$	$m^3/h$	600
<b>Permanent flow rate</b>	<b><math>Q_3</math></b>	<b><math>m^3/h</math></b>	<b>50</b>
Permanent flow rate	$Q_2$	$m^3/h$	<b>0,012</b>
Smallest horizontal flow rate	$Q_1$	$m^3/h$	0.006
Run-in at approximately		$m^3/h$	0.045
Smallest readable amount		litres	5
Can register		Mio. $m^3$	10
Switching with increasing			
Permanent flow rate	$Q_{x_2}$	$m^3/h$	2.3
Switching with falling			
Flow rate	$Q_{x_1}$	$m^3/h$	1.2
<b>MID certification data</b>			
Permanent flow rate	$Q_3$	$m^3/h$	25
Measuring range		R	2500
Switching with increasing			
Permanent flow rate	$Q_{x_2}$	$m^3/h$	2.3
Switching with falling			
Flow rate	$Q_{x_1}$	$m^3/h$	1.2
Weight	Counter	kg	60
Dimensions		<b>Overall length</b>	
		L1 - mm	500
		Height	
		H - mm	177
		H - mm	135
		g <sup>1)</sup> - mm	356
		Width	
		W - mm	275

<sup>1)</sup> Clearance

### Pressure drop curves

(see page 12)

### Approval

Design approval PTB D 6.152 / 01.16 Class B for DN 50, 80 and 100  
SVGW

## RUBIN Plug meter HYZ



- Turbine meter with dry rotors, protection class IP 68
- Stainless steel casing with threaded connection R2
- With SVGW Certification
- Medium temperature max. 50 °C (30°C in accordance with SVGW)
- Nominal pressure PN 16
- Rotatin counter head
- Installation in horizontal or vertical pipe, orientation or to the side
- No run-in and run-out distance required

<b>Nominal diameter</b>	<b>DN</b>	<b>mm</b>	<b>40</b>
		<b>Inch</b>	<b>1½</b>
Permanent flow rate	Q <sub>4</sub>	m <sup>3</sup> /h	60
<b>Permanent flow rate</b>	<b>Q<sub>3</sub></b>	<b>m<sup>3</sup>/h</b>	<b>40</b>
Smallest horizontal flow rate	Q <sub>2</sub>	m <sup>3</sup> /h	0.32
Smallest vertical flow rate	Q <sub>2</sub>	m <sup>3</sup> /h	0.40
Smallest horizontal flow rate	Q <sub>1</sub>	m <sup>3</sup> /h	0.20
Smallest vertical flow rate Q <sub>1</sub>	m <sup>3</sup> /h	0.25	
Run-in at approximately	m <sup>3</sup> /h	0.05	
Horizontal measuring range		R	80
Smallest readable amount		litres	0.5
Registrability		m <sup>3</sup>	999.999
<b>MID registration data for measuring unit</b>			
Permanent flow rate	Q <sub>4</sub>	m <sup>3</sup> /h	31.25
<b>Permanent flow rate</b>	<b>Q<sub>3</sub></b>	<b>m<sup>3</sup>/h</b>	<b>25</b>
Permanent flow rate	Q <sub>2</sub>	m <sup>3</sup> /h	0.5
Smallest vertical flow rate	Q <sub>2</sub>	m <sup>3</sup> /h	0.40
Smallest horizontal flow rate	Q <sub>1</sub>	m <sup>3</sup> /h	0.31
Smallest vertical flow rate Q <sub>1</sub>	m <sup>3</sup> /h	0.39	
Pressure loss max.	with Q <sub>3</sub>	bar	0.08
Threaded connection			
- Entry	Internal thread	Duty	G 2
- Exit	External thread	Duty	G 2
Weight		approx. kg	4.3725
		a	R2"
		L	220
		W	48
		H	166
		W	125

### Pressure drop curves

(see page 13)

### Approval

SVGW

## RUBIN Plug meter WP-MF

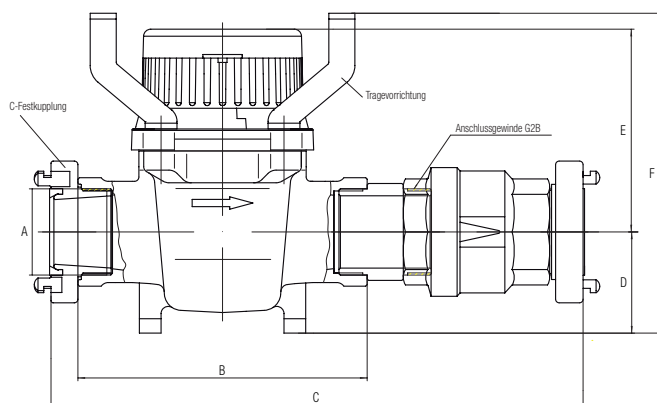


- Robust performance with support device, knuckle coupling on both sides or rotatable coupling and
- Non-return valve on the inlet
- Removable measuring unit
- Pressure loss only 0.1 bar per Qn
- Measuring error boundaries  $\pm 2\%$  from the measurement value in the upper load range  $Q_t \leq Q \leq Q_{max}$  and  $\pm 5\%$  in the lower load range  $Q_{min} \leq Q < Q_t$
- For horizontal, vertical, or slanted operating position, straight run-in distance of  $3 \times DN$  is recommended for maintaining the measurement error boundaries
- Powder-coated housing
- Rated pressure 16 bar
- Temperature max.  $50\text{ }^\circ\text{C}$

			<b>On the inlet rotatable coupling</b>
<b>Nominal diametre</b>	<b>DN</b>	<b>mm</b>	<b>80</b>
Max. flow rate	$Q_{max}^{1)}$	$\text{m}^3/\text{h}$	140
<b>Permanent flow rate</b>	<b>Qn</b>	<b><math>\text{m}^3/\text{h}</math></b>	<b>90</b>
Permanent flow rate	$Q_t$	$\text{m}^3/\text{h}$	2
Min. flow rate	$Q_{min}$	$\text{m}^3/\text{h}$	0.5
Run-in at approximately	Q	$\text{m}^3/\text{h}$	0.2
Weight approx.	m	kg	10
Knuckle coupling		mm	75 (B)
Process fitting	A	Inch	$2\frac{1}{2}$
Length meter	B	mm	300
Total length	C	mm	530
Length	D	mm	85
Length	E	mm	155
Total height	F	mm	245

<sup>1)</sup> Short-term

## Dimensions



Übersetzungen fehlen!

## Pressure drop curves

(see page 13)

## Approval

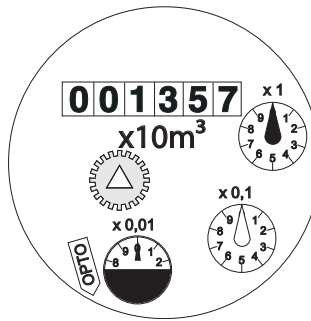
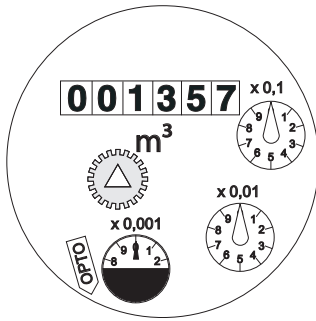
EWG approval Class B



# Roller counter

RUBIN KMS / KMS+, KTW / KTW+, HYZ  
DN 40...125

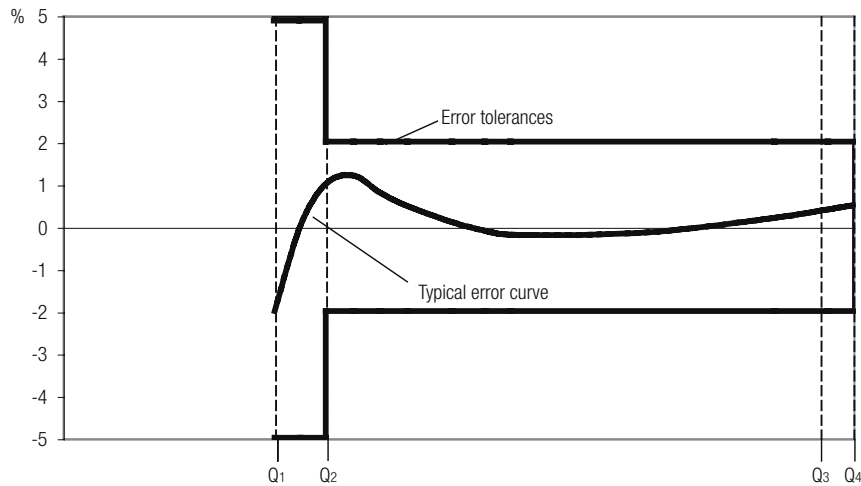
DN 150...300



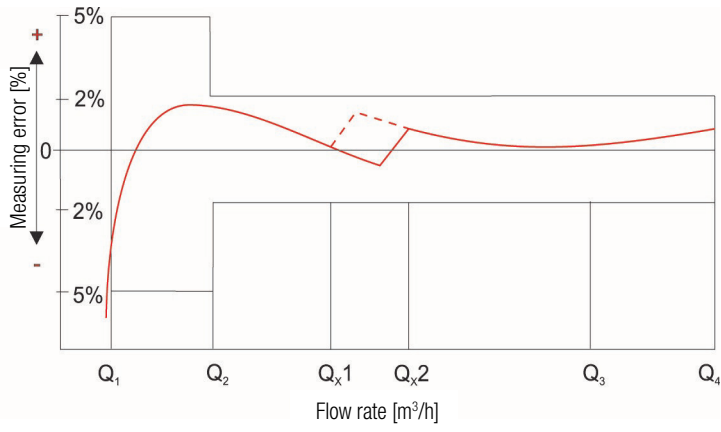
Nominal diameter	Smallest scale value	Display area	Smallest pulse value with HRI module	Pulse value with OD 01	Pulse value with OD 03
DN 40...125	0.5 litres	1'000'000 m <sup>3</sup>	10 litres	1 litres	10 litres
DN 150...125	5 litres	10'000'000 m <sup>3</sup>	100 litres	10 litres	100 litres

## Measuring error thresholds

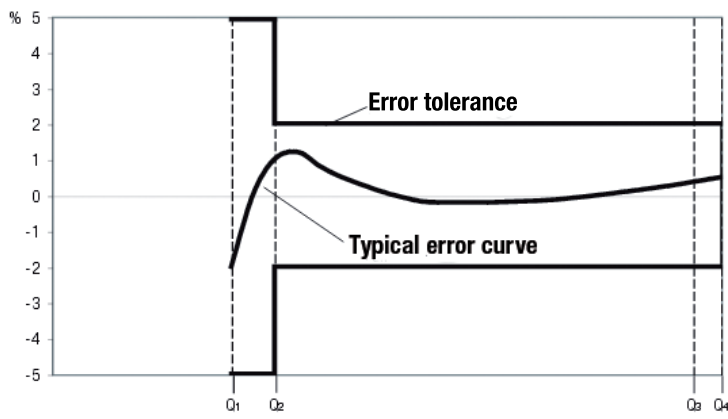
RUBIN KMS / KMS+  
According to standard OIML R 49



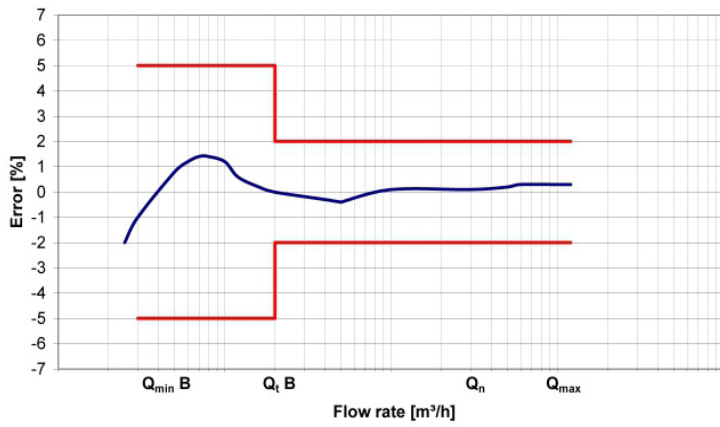
### RUBIN KTW / KTW+



### RUBIN HYZ

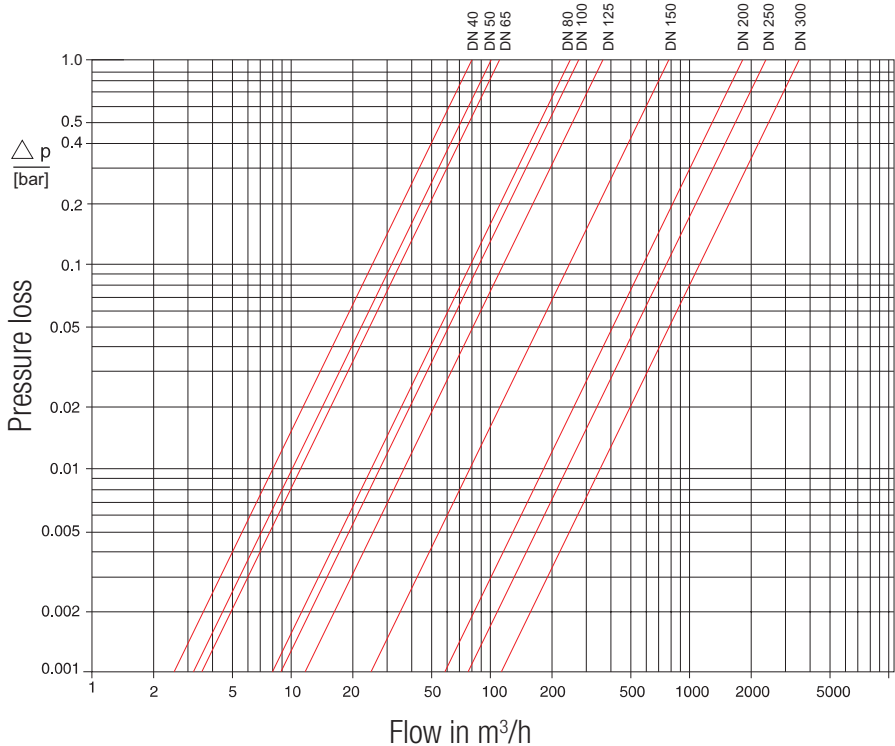


### RUBIN WP-MF

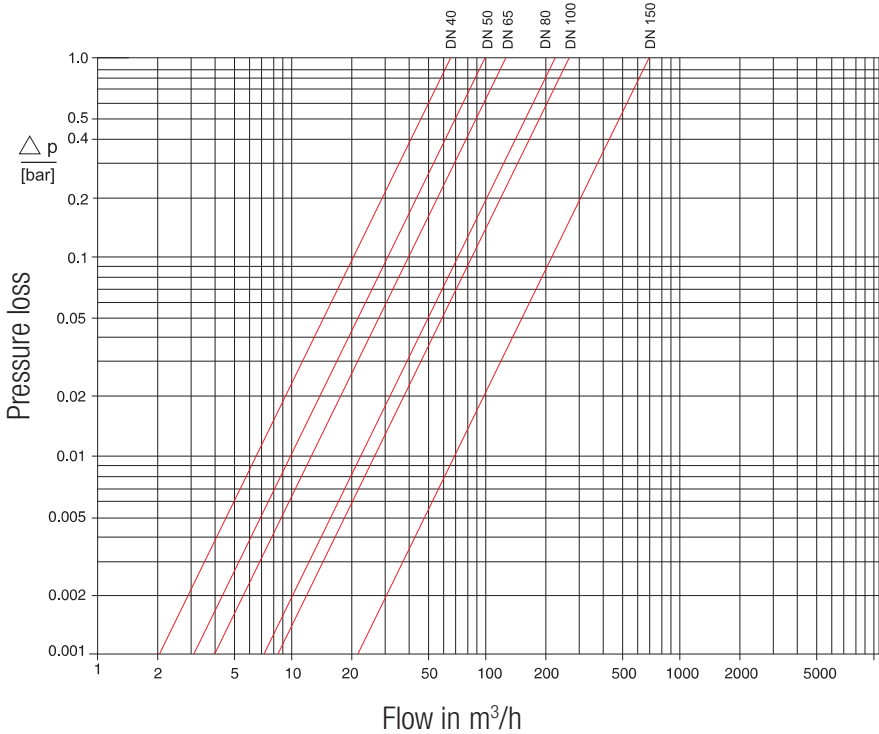


# Pressure drop curves

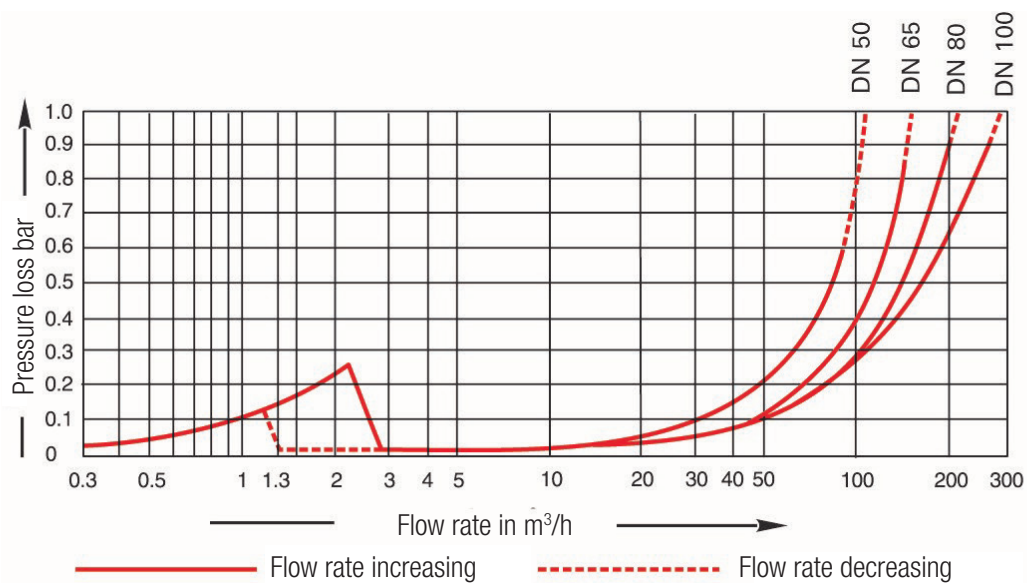
## RUBIN KMS



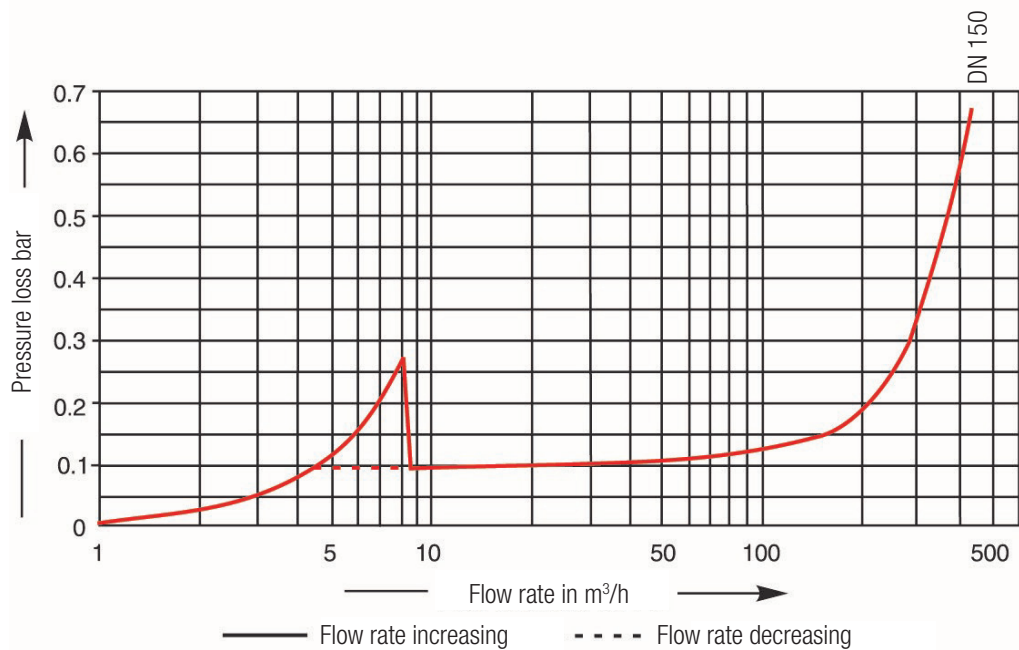
## RUBIN KMS+



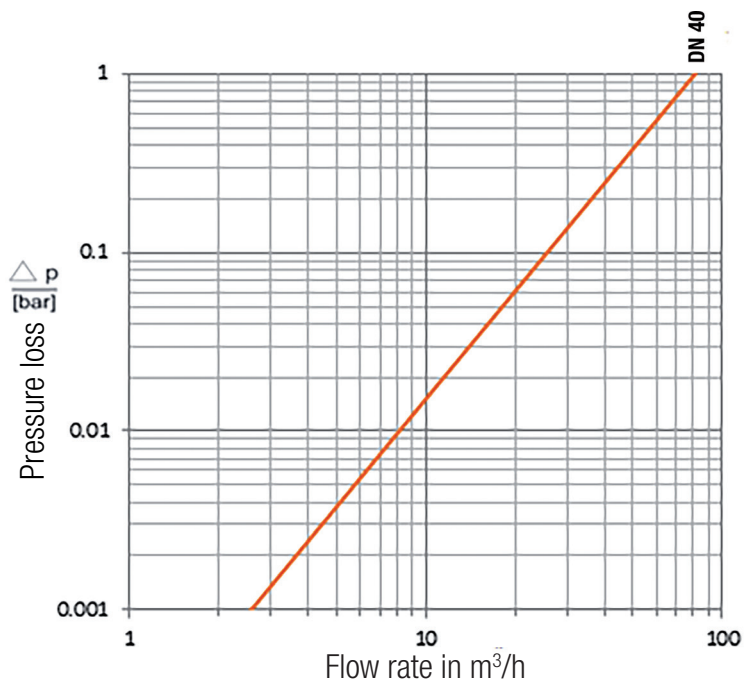
**RUBIN KTW**



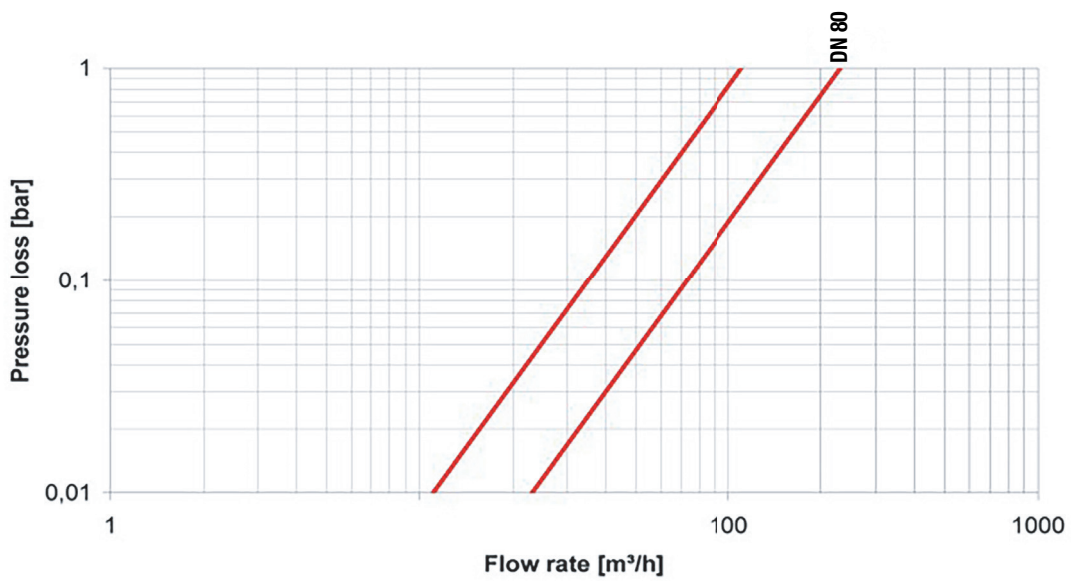
**RUBIN KTW+**



**RUBIN HYZ**



**RUBIN WP-MF  
(without return valve)**



## Accessories

The Rubin cold water meters (except WP-MF) are prepared for the recording of reactionless HRI modules and optoelectrical pulse generators. Installation is also possible later without influencing the metrological data.

### Interface HRI-Mei

A module with two programmable pulse generators and an interface in accordance with IEC870-5 / EN1434-3.

- Cable length 3 m
- Battery life span 12 years
- IP 68



### Optoelectronic pulse generation OD

A reactionless IR light cabinet in accordance with EN50227.

- Cable length 3 m
- Voltage supply 8.2 VDC
- Switch current (required)  $\leq 1.2$  mA
- Standby current (not required)  $\geq 2.1$  mA
- IP 68



Pulse generator	Type	Pulse value Main meter m <sup>3</sup>	Pulse value Submeter m <sup>3</sup>	Item No.
DN 50 - DN 100				
Data interface	HRI-Mei	0.01 / 0.1 / 1	0.001 / 0.01 / 0.1	
Optoelectronic pulse generator	OD 01	0.001	0.0001	93750
Optoelectronic pulse generator	OD 03	0.01	0.001	93752
DN 150 - DN 300				
Data interface	HRI-Mei	0.01 / 0.1 / 1	0.001 / 0.01 / 0.1	
Optoelectronic pulse generator	OD 01	0.001	0.0001	93750
Optoelectronic pulse generator	OD 03	0.01	0.001	93752

For further information see separate data sheets.

Type designation	Version	Item No.
HRI-Mei/10/B4/D100/T500	DN 40...125: Open Collector, 100 litres/pulse, pulse length 500 ms	80508
HRI-Mei/10/B4/D1000/T500	DN 40...125: Open Collector, 1000 litres/pulse, pulse length 500 ms	80616
HRI-Mei/100/B4/D1000/T500	DN 150...300: Open Collector, 1000 litres/pulse, pulse length 500 ms	80509
HRI-Mei/10/B5/D10/T6	DN 40...125: NAMUR /EN 60947-5-6), 10 litres/pulse, pulse length 6 ms	80510
HRI-Mei/100/B5/D100/T6	DN 150...300: NAMUR /EN 60947-5-6), 100 litres/pulse, pulse length 6 ms	80511
HRI-Mei-CDL/10/D10/T6	DN 40...125: Forward and reverse pulses with plug for CDL data logger, 10 litres/pulse, pulse length 6 ms	80512
HRI-Mei-CDL/100/D100/T6	DN 150...300: Forward and reverse pulses with plug for CDL data logger, 100 litres/pulse, pulse length 6 ms	80513

For further information see separate data sheets.

## Frequency transducer FM

A transducer with digital display, which converts the digital impulses of the water meter into an analogue current signal 0/4 - 20 mA. Additional digital outputs (relay or optocoupler) are available for limit value or alarm notices.



Frequency transducer	FM-1D/K	FM-2D/K
Art. No.	93236	92390
Relay outputs	1 2	
Relay outputs	1 2	
Relay outputs	1 2	
Optocoupler outputs	-	2
M-Bus	-	1

For further information see separate data sheets.

