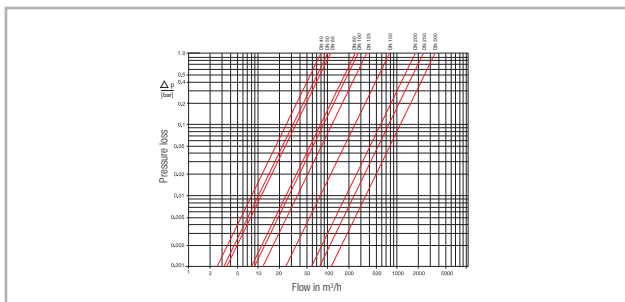
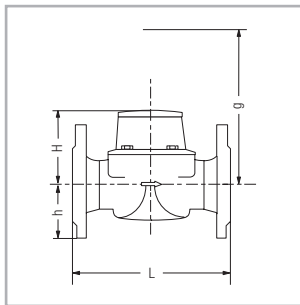
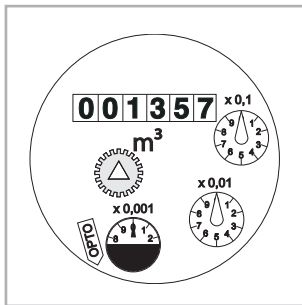




RUBIN

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

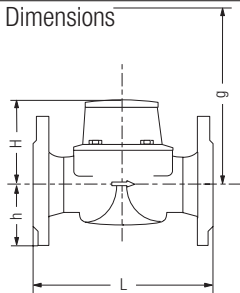
- For measuring large and small flow volumes with a measuring device
- Suitable for monitoring pipe networks and leakage
- Detection area
- No run-in and run-out distance required
- Simple and cost-efficient exchange and upgrade of measuring inserts and system modules for remote reading

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 ¹⁾	65 ¹⁾	80	80
		Inches	1 1/2	2	2	2 1/2	2 1/2	3	3
Overload flow rate	Q ₄	m ³ /h	60	90	90	120	120	200	200
Permanent flow rate	Q₃	m³/h	40	50	50	70	70	120	120
Transition flow rate horizontal	Q ₂	m ³ /h	0.32	0.4	0.4	0.63	0.63	0.51	0.51
Transition flow rate vertical	Q ₂	m ³ /h	0.4	0.51	0.51	0.81	0.81	0.8	0.8
Smallest horizontal flow rate	Q ₁	m ³ /h	0.2	0.15	0.15	0.2	0.2	0.2	0.2
Smallest vertical flow rate	Q ₁	m ³ /h	0.25	0.28	0.28	0.4	0.4	0.5	0.5
Run-in at approximately		m ³ /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 ³	1	1	1	1	1	1	1
MID certification data									
Permanent flow rate	Q ₃	m ³ /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 ₃	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
									
	L		220	200	270	200	300	225	300
	H		120	120	120	120	120	150	150
	h		69	73	73	85	85	95	95
	g ¹⁾		200	200	200	200	200	270	270
Flange connection in accordance with norm EN 1092-1 and 2									

¹⁾ Clearance

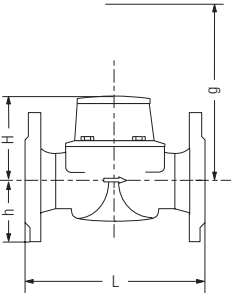
Pressure drop curves

(see page 11)

Certification

Design type certification according to 2004/22/EG

MID acc. MIO01, MSK

Nominal diameter	DN	mm	100	100	125	150	150	200	250	300
		Inches	4	4	5	6	6	8	10	12
Overload flow rate	Q ₄	m ³ /h	300	300	350	600	600	1200	1600	2000
Permanent flow rate	Q₃	m³/h	230	230	250	450	450	800	1250	1400
Transition flow rate horizontal	Q ₂	m ³ /h	0.81	0.81	1.02	1.6	1.6	4.0	6.3	16.0
Transition flow rate vertical	Q ₂	m ³ /h	1.28	1.28	1.6	3.2	3.2	2.0	3.5	9.0
Smallest horizontal flow rate	Q ₁	m ³ /h	0.3	0.3	0.5	0.8	0.8	4.0	10.1	25.4
Smallest vertical flow rate	Q ₁	m ³ /h	0.5	0.5	1	1.6	1.6	2.5	6.3	15.9
Run-in at approximately		m ³ /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 ³	1	1	1	10	10	10	10	10
MID certification data										
Permanent flow rate	Q ₃	m ³ /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 ₃	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
Dimensions										
	L		250	360	250	300	500	350	450	500
	H		150	150	160	177	177	214	238	264
	h		105	105	118	135	135	162	194	226
	g ¹⁾		270	270	280	356	356	449	474	499

Woltex 350mm
Integra 300mm

¹⁾ 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 Inches	40 1 1/2	50 2	50 2	65 ¹⁾ 2 1/2	65 ¹⁾ 2 1/2	80 3	80 3
Overload flow rate	Q ₄	m³/h	50	55	55	60	60	120	120
Permanent flow rate	Q₃	m³/h	30	35	35	40	40	63	63
Transition flow rate horizontal	Q ₂	m³/h	0.13	0.13	0.13	0.16	0.16	0.25	0.25
Smallest horizontal flow rate	Q ₁	m³/h	0.08	0.07	0.07	0.1	0.1	0.13	0.13
Run-in at approximately		m³/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. m³	1	1	1	1	1	1	1
MID certification data									
Permanent flow rate	Q ₃	m³/h	25	25	25	40	40	63	63
Measurement range	R		315	315	315	400	400	400	400
Max. pressure loss	at Q ₃	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									
		L	220	200	270	200	300	225	300
		H	120	120	120	120	120	150	150
		h	69	73	73	85	85	95	95
		g ¹⁾	200	200	200	200	200	270	270

¹⁾ Clearance

Nominal diameter	DN	mm Inches	100 4	100 4	150 6	150 6
Overload flow rate	Q ₄	m³/h	160	160	400	400
Permanent flow rate	Q₃	m³/h	100	100	250	250
Transition flow rate horizontal	Q ₂	m³/h	0.4	0.4	0.63	0.63
Smallest flow rate horizontal	Q ₁	m³/h	0.2	0.2	0.35	0.35
Run-in at approximately		m³/h	0.07	0.07	0.12	0.12
Smallest readable amount		litres	0.5	0.5	5	5
Can register		Mio. m³	1	1	10	10
MID certification data						
Permanent flow rate	Q ₃	m³/h	100	100	250	250
Measurement range	R		400	400	630	630
Max. loss of pressure	at Q ₃	bar	0.16	0.16	0.14	0.14
Weight		kg	18.2	20.2	35.9	44.2
Dimensions						
		L	250	360	300	500
		H	150	150	177	177
		h	105	105	135	135
		g ¹⁾	270	270	356	356
Flange connection in accordance with norm EN 1092-1 and 2						

¹⁾ 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. M1001, 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 Inches	50 2	65 2 ½	80 3	100 4
Overload flow rate	Q ₄	m³/h	90	120	200	280
Permanent flow rate	Q₃	m³/h	50	70	120	180
Transition flow rate horizontal	Q ₂	m³/h	0,012	0,012	0,012	0,012
Smallest horizontal flow rate	Q ₁	m³/h	0.006	0.006	0.006	0.006
Run-in at approximately		m³/h	0.002	0.002	0.002	0.002
Smallest readable amount		litres	0.5	0.5	0.5	0.5
Can register		Mio. m³	1	1	1	1
Switching with increasing						
Permanent flow rate	Qx ₂	m³/h	2.3	2.3	2.3	2.3
Switching with falling						
Permanent flow rate	Qx ₁	m³/h	1.2	1.2	1.2	1.2
MID certification data						
Permanent flow rate	Q ₃	m³/h	25	40	63	100
Measurement range		R	1600	2500	4000	6300
Switching with increasing						
Permanent flow rate	Qx ₂	m³/h	2.3	2.3	2.3	2.3
Switching with falling						
Permanent flow rate	Qx ₁	m³/h	1.2	1.2	1.2	1.2
Weight	Meter	kg	23	25	26	31
Weight	Measuring insert	kg	7	7	7	7
		Overall length				
		L1 - mm	270	300	300	360
		Height				
		H	250	250	250	250
		H	80	92.5	100	100
		g ¹⁾ - mm	505	505	505	505
		Width				
		W - mm	185	185	210	220

¹⁾ 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

Nominal diametre	DN	mm	150
		Inch	6
Overload flow rate	Q_4	m^3/h	600
Permanent flow rate	Q_3	m^3/h	50
Permanent flow rate	Q_2	m^3/h	0,012
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_{x2}	m^3/h	2.3
Switching with falling			
Flow rate	Q_{x1}	m^3/h	1.2
MID certification data			
Permanent flow rate	Q_3	m^3/h	25
Measuring range		R	2500
Switching with increasing			
Permanent flow rate	Q_{x2}	m^3/h	2.3
Switching with falling			
Flow rate	Q_{x1}	m^3/h	1.2
Weight	Counter	kg	60
Dimensions		Overall length	
		L1 - mm	500
		Height	
		H - mm	177
		H - mm	135
		g ¹⁾ - mm	356
		Width	
		W - mm	275

¹⁾ Clearance

Pressure drop curves

(see page 12)

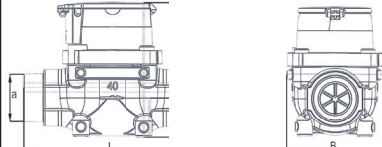
Approval

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

Nominal diameter	DN	mm Inch	40 1½
Permanent flow rate	Q ₄	m ³ /h	60
Permanent flow rate	Q₃	m³/h	40
Smallest horizontal flow rate	Q ₂	m ³ /h	0.32
Smallest vertical flow rate	Q ₂	m ³ /h	0.40
Smallest horizontal flow rate	Q ₁	m ³ /h	0.20
Smallest vertical flow rate Q ₁	m ³ /h	0.25	
Run-in at approximately	m ³ /h	0.05	
Horizontal measuring range		R	80
Smallest readable amount		litres	0.5
Registrability		m ³	999.999
MID registration data for measuring unit			
Permanent flow rate	Q ₄	m ³ /h	31.25
Permanent flow rate	Q₃	m³/h	25
Permanent flow rate	Q ₂	m ³ /h	0.5
Smallest vertical flow rate	Q ₂	m ³ /h	0.40
Smallest horizontal flow rate	Q ₁	m ³ /h	0.31
Smallest vertical flow rate Q ₁	m ³ /h	0.39	
Pressure loss max.	with Q ₃	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	mm	220
	W	mm	48
	H	mm	166
	W	mm	125

Pressure drop curves

(see page 13)

Approval

SVGW

RUBIN Plug meter WP-MF

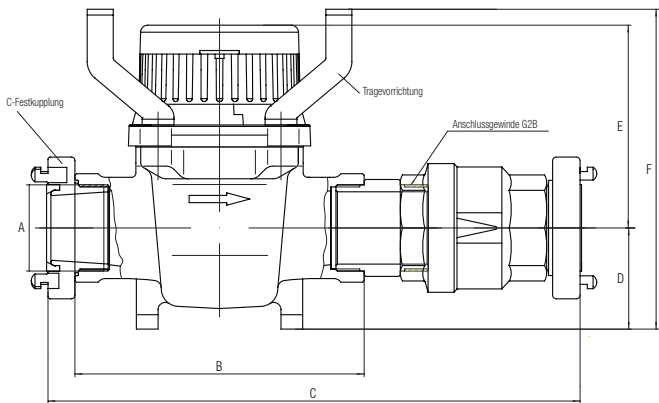


- Robust performance with support device, knuckle coupling on both sides or rotatable coupling and
- Non-return valve on the inlet
- Removable measuring unit
- Pressure loss only 0.1 bar per Qn
- Measuring error boundaries $\pm 2\%$ from the measurement value in the upper load range $Q_t \leq Q \leq Q_{max}$ 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. $50\text{ }^{\circ}\text{C}$

			On the inlet rotatable coupling
Nominal diametre	DN	mm	80
Max. flow rate	$Q_{max}^{1)}$	m^3/h	140
Permanent flow rate	Q_n	m^3/h	90
Permanent flow rate	Q_t	m^3/h	2
Min. flow rate	Q_{min}	m^3/h	0.5
Run-in at approximately	Q	m^3/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

¹⁾ Short-term

Dimensions



Übersetzungen fehlen!

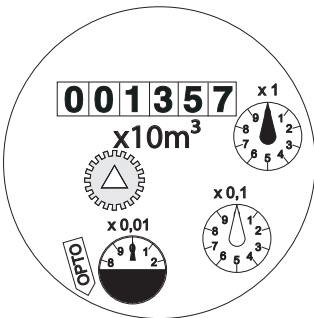
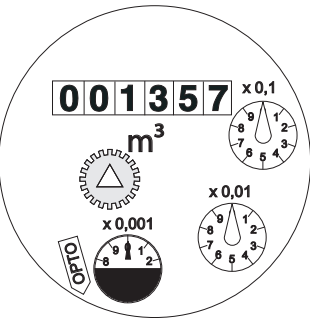
Pressure drop curves
(see page 13)

Approval
EWG approval Class B

Roller counter

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

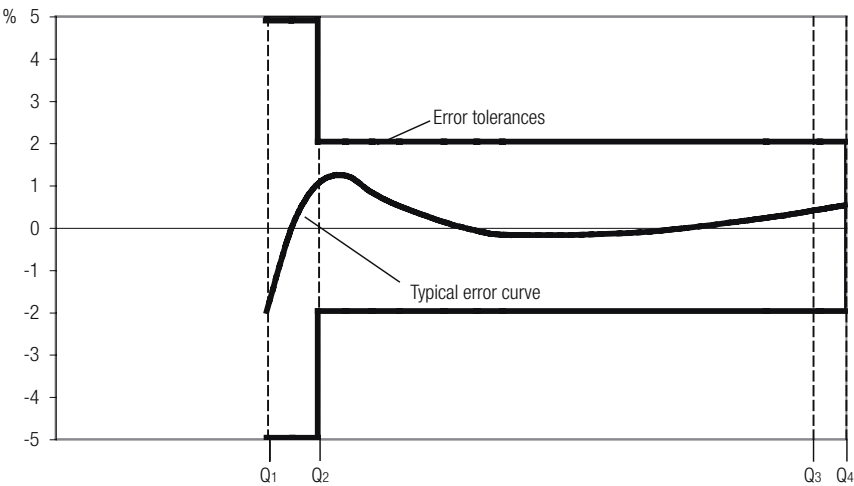
DN 150...300



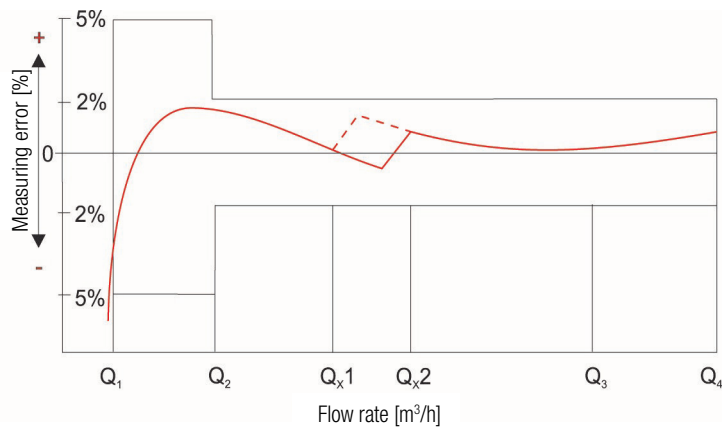
Nominal diameter	Smallest scale value	Display arrea	Smallest pulse value with HRI module	Pulse value with OD 01	Pulse value with OD 03
DN 40...125	0.5 litres	1'000'000 m³	10 litres	1 litres	10 litres
DN 150...125	5 litres	10'000'000 m³	100 litres	10 litres	100 litres

Measuring error thresholds

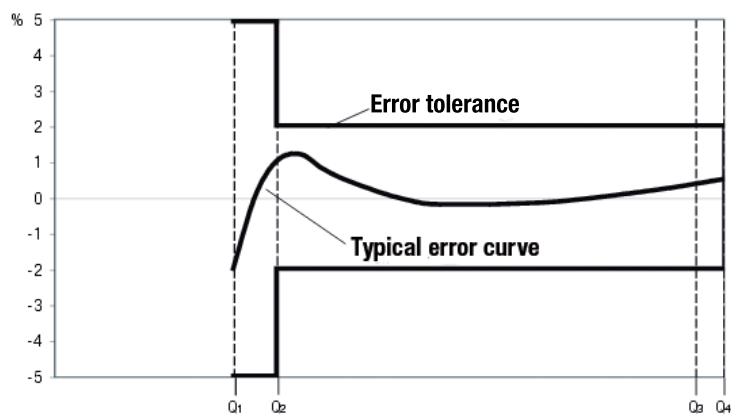
RUBIN KMS / KMS+
According to standard OIML R 49



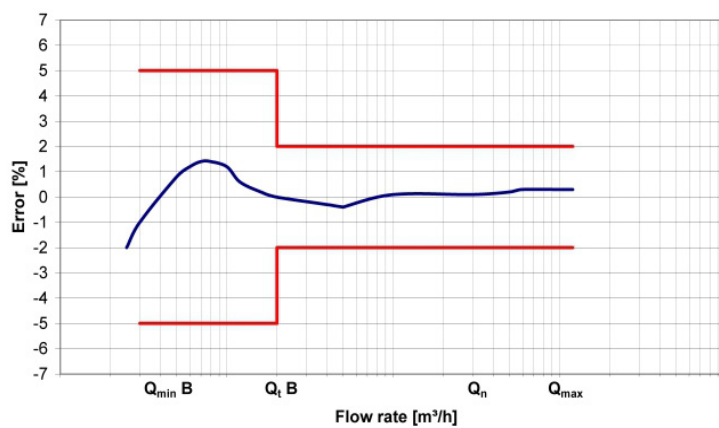
RUBIN KTW / KTW+



RUBIN HYZ

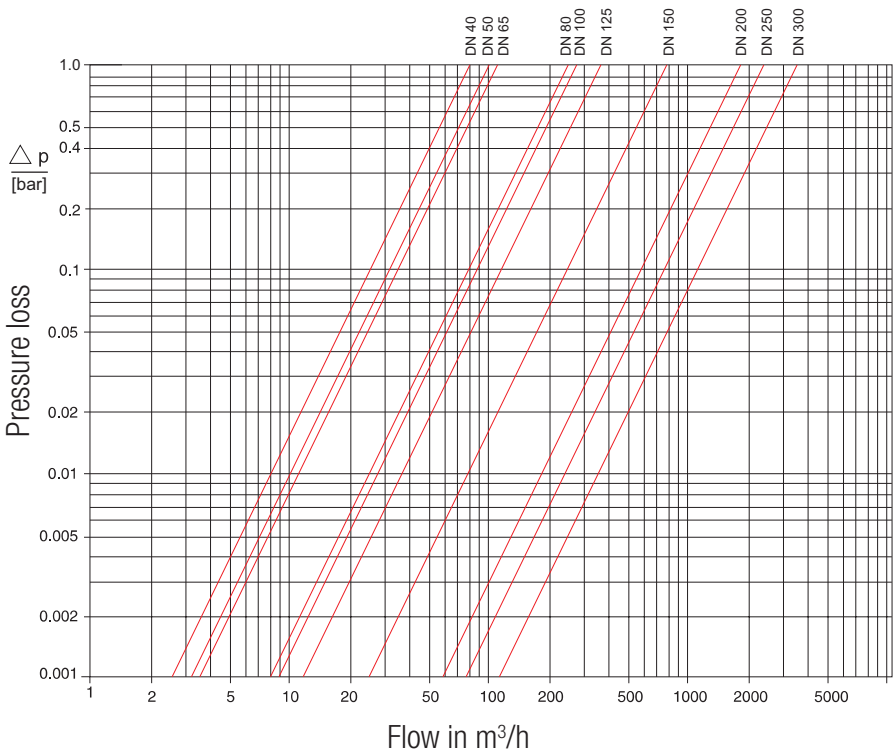


RUBIN WP-MF

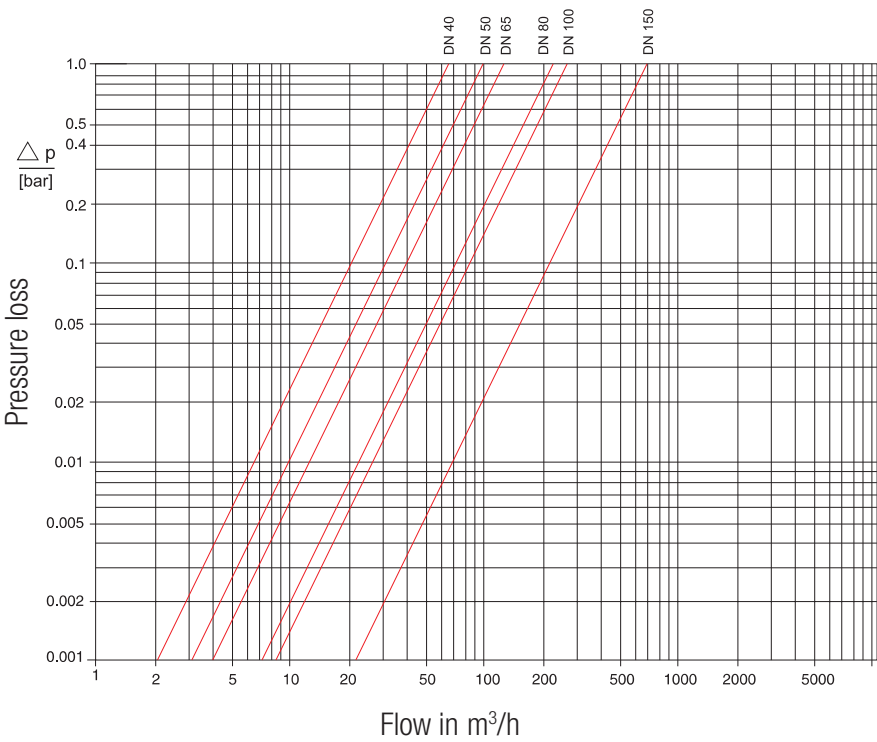


Pressure drop curves

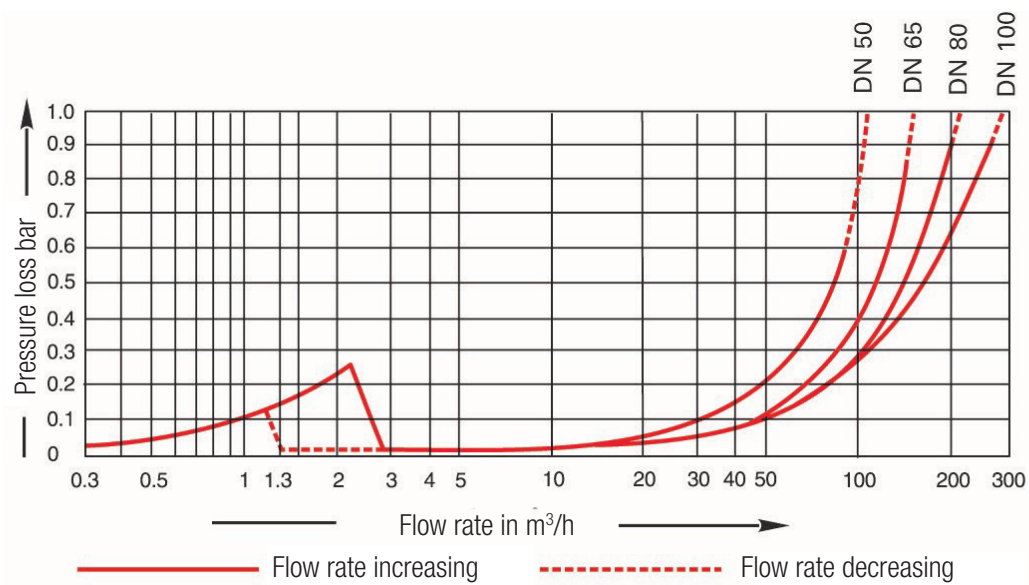
RUBIN KMS



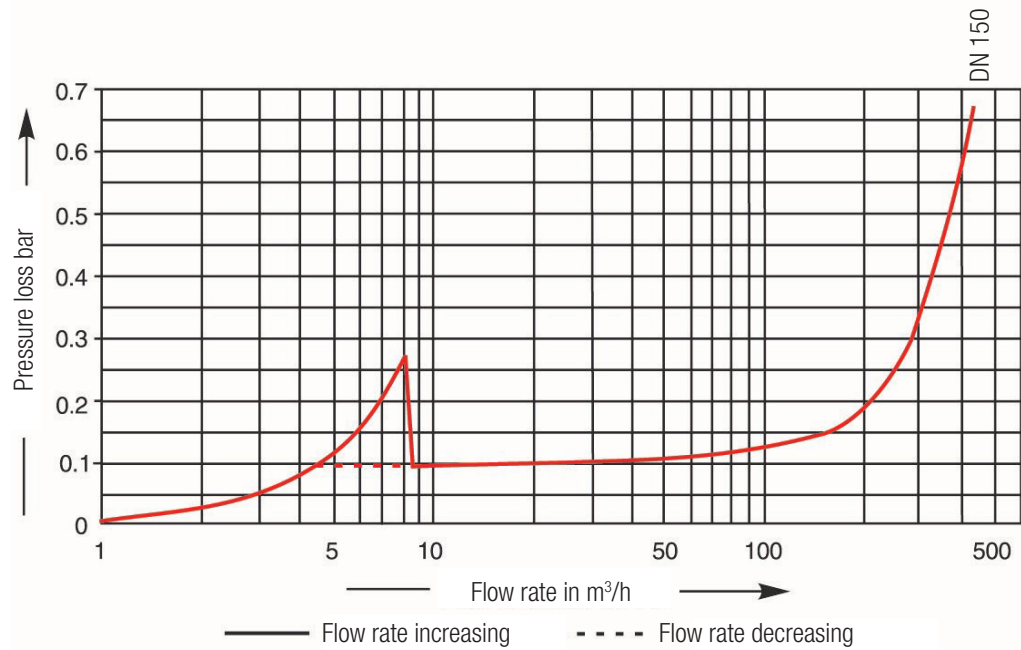
RUBIN KMS+



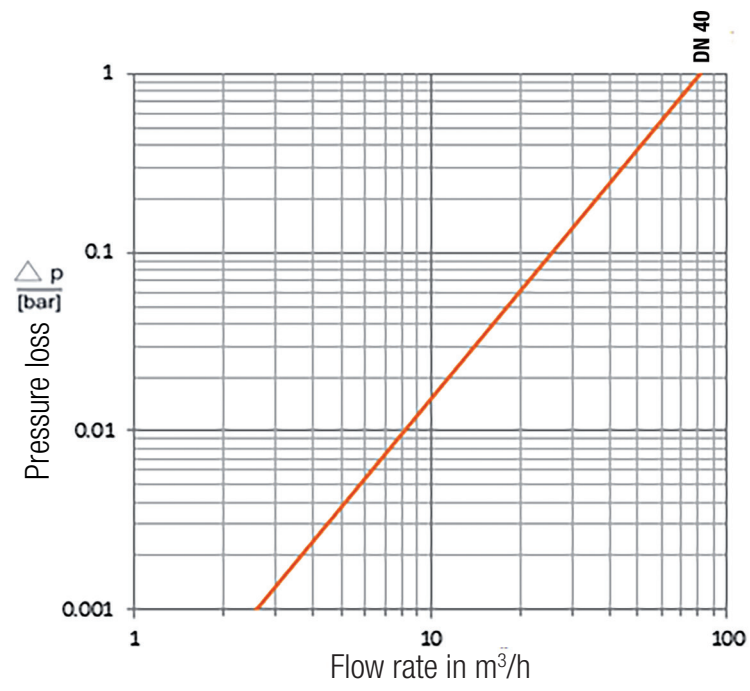
RUBIN KTW



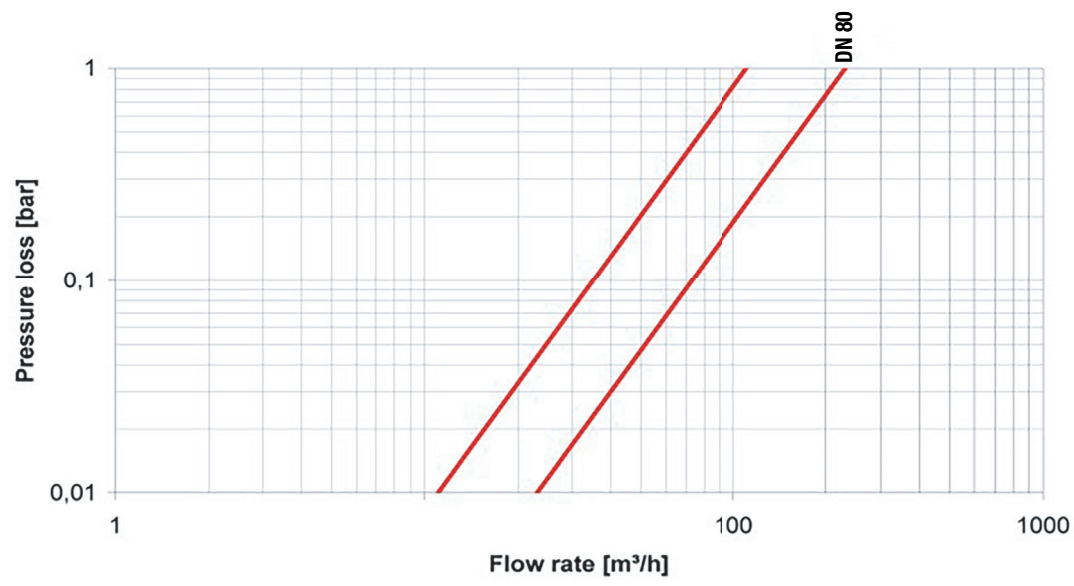
RUBIN KTW+



RUBIN HYZ



RUBIN WP-MF
(without return valve)



Accessories

The Rubin cold water meters (except WP-MF) are prepared for the recording of reactinless 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) ≤ 1.2 mA
- Standby current (not required) ≥ 2.1 mA
- IP 68



Pulse generator	Type	Pulse value Main meter m ³	Pulse value Submeter m ³	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.

