

RUBIN MeiStream, MeiStream Plus Cold water

Applications

RUBIN MeiStream and MeiStream Plus water meters operate according to the turbine blade flow measuring principle and are designed for high-volume water measurement. The complete modular and housing system covers all areas of water supply management. Meters can be retrofitted with pulse and data interfaces for mobile or stationary remote measurement.



Features

- Wide measuring range
- Measuring units can be replaced
- Universal installation (MeiStream)
- High overload capacity
- Can be retrofitted with non-reactive modules for remote readings
- With MID approval

Your benefits

- Your benefits
- Measuring both small and large volumes with one flowmeter
- MeiStream Plus is ideal for monitoring piping systems and detecting pipe leaks
- One version with the advantages of both Woltman WP and WS
- No straight inlet necessary

Range



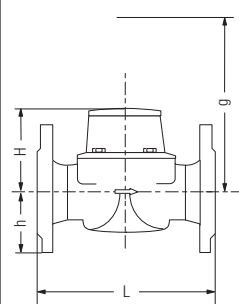
- Turbine meters with dry-type registers, IP 68
- SVGW certification
- The meter can be installed in horizontal, vertical or inclined positions. The meter head must, however, face upwards or to the side. The MeiStream Plus is for horizontal installation only.
- Requires no inlet path
- Powder-coated grey cast iron housing with flange connections acc. to EN 1092-1
- Maximum temperature 50 °C
- Nominal pressure PN 16
- Replaceable measuring unit
- For updating with non-reactive HRI modules or optoelectronic pulsers

RUBIN MeiStream

Nominal diameter	DN	mm inch	40 1 1/2	50 2	50 2	65 ¹⁾ 2 1/2	65 ¹⁾ 2 1/2	80 3	80 3
Art. No.			94524	94525	94585	94526	94586	94527	94587
Overload	Q ₄	m ³ /h	60	90	90	120	120	200	200
Nominal flowrate	Q₃	m³/h	40	50	50	70	70	120	120
Transitional flowrate horizontal	Q ₂	m ³ /h	0.32	0.4	0.4	0.63	0.63	0.51	0.51
Transitional flowrate vertical	Q ₂	m ³ /h	0.4	0.51	0.51	0.81	0.81	0.8	0.8
Minimum flowrate horizontal	Q ₁	m ³ /h	0.2	0.15	0.15	0.2	0.2	0.2	0.2
Minimum flowrate vertical	Q ₁	m ³ /h	0.25	0.28	0.28	0.4	0.4	0.5	0.5
Starting flow at approx.		m ³ /h	0.05	0.05	0.05	0.07	0.07	0.1	0.1
Max. pressure loss	at Q ₃	bar	0.08	0.18	0.18	0.37	0.37	0.16	0.16
Smallest readable volume		litre	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Recording capacity		mio. m ³	1	1	1	1	1	1	1
Data for MID-homologation									
Nominal flowrate	Q ₃	m ³ /h	25	40	40	63	63	100	100
Measuring range horizontal	R		125	160	160	160	160	315	315
Measuring range vertical	R		100	125	125	125	125	200	200
Measuring range as shown on delivery	R		63	100	100	100	100	100	100
Weight		kg	7.5	7.8	9.6	10.1	12.0	14.2	16.3
Overall length		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	200	200	200	200	200	270	270

1) Flanges with 4 holes

Nominal diameter	DN	mm inch	100	100	125	150	150
Art. No.			94528	94588	94529	94530	94589
Overload	Q ₄	m ³ /h	300	300	350	600	600
Nominal flowrate	Q₃	m³/h	230	230	250	450	450
Transitional flowrate horizontal	Q ₂	m ³ /h	0.81	0.81	1.02	1.6	1.6
Transitional flowrate vertical	Q ₂	m ³ /h	1.28	1.28	1.6	3.2	3.2
Minimum flowrate horizontal	Q ₁	m ³ /h	0.3	0.3	0.5	0.8	0.8
Minimum flowrate vertical	Q ₁	m ³ /h	0.5	0.5	1	1.6	1.6
Starting flow at approx.		m ³ /h	0.11	0.11	0.15	0.3	0.3
Max. pressure loss	at Q ₃	bar	0.34	0.34	0.2	0.32	0.32
Smallest readable volume		litre	0.5	0.5	0.5	5	5
Recording capacity		mio. m ³	1	1	1	10	10
Data for MID-homologation							
Nominal flowrate	Q ₃	m ³ /h	160	160	160	400	400
Measuring range horizontal	R		315	315	250	400	400
Measuring range vertical	R		200	200	160	200	200
Measuring range as shown on delivery	R		100	100	100	100	100
Weight		kg	18.2	20.2	20.7	35.9	44.2
Overall length		L	250	360	250	300	500
		H	150	150	160	177	177
		h	105	105	118	135	135
		g	270	270	280	356	356

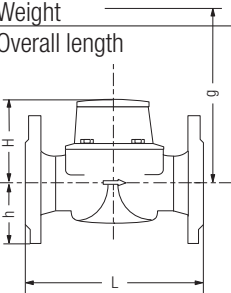


Available on request:

- Nominal pressure PN 40
- Non-ferrous metal version
- Version for use in explosion-proof areas
- Flanged version e.g. ANSI, JIS

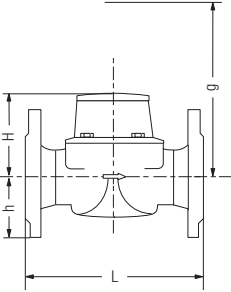
RUBIN MeiStream Plus

Nominal diameter	DN	mm	40	50	50	65 ¹⁾	65 ¹⁾	80	80
		inch	1 1/2	2	2	2 1/2	2 1/2	3	3
Art. No.			94534	94535	94590	94536	94591	94537	94592
Overload	Q ₄	m ³ /h	50	55	55	60	60	120	120
Nominal flowrate	Q₃	m³/h	30	35	35	40	40	63	63
Transitional flowrate horizontal	Q ₂	m ³ /h	0.13	0.13	0.13	0.16	0.16	0.25	0.25
Minimum flowrate horizontal	Q ₁	m ³ /h	0.08	0.07	0.07	0.1	0.1	0.13	0.13
Starting flow at approx.		m ³ /h	0.03	0.03	0.03	0.04	0.04	0.04	0.04
Max. pressure loss	at Q ₃	bar	0.09	0.08	0.08	0.17	0.17	0.07	0.07
Smallest readable volume		litre	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Recording capacity		mio. m ³	1	1	1	1	1	1	1
Data for MID-homologation									
Nominal flowrate	Q ₃	m ³ /h	25	25	25	40	40	63	63
Measuring range horizontal	R		315	315	315	400	400	400	400
Measuring range as shown on delivery	R		315	315	315	315	315	315	315
Weight		kg	7.5	7.8	9.6	10.1	12.0	14.2	16.3
Overall length		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	200	200	200	200	200	270	270



1) Flanges with 4 holes

Nominal diameter	DN	mm	100	100	150	150
		inch	4	4	6	6
Art. No.			94538	94593	94539	94594
Overload	Q ₄	m ³ /h	160	160	400	400
Nominal flowrate	Q₃	m³/h	100	100	250	250
Transitional flowrate horizontal	Q ₂	m ³ /h	0.4	0.4	0.63	0.63
Minimum flowrate horizontal	Q ₁	m ³ /h	0.2	0.2	0.35	0.35
Starting flow at approx.		m ³ /h	0.07	0.07	0.12	0.12
Max. pressure loss	at Q ₃	bar	0.16	0.16	0.14	0.14
Smallest readable volume		litre	0.5	0.5	5	5
Recording capacity		mio. m ³	1	1	10	10
Data for MID-homologation						
Nominal flowrate	Q ₃	m ³ /h	100	100	250	250
Measuring range horizontal	R		400	400	630	630
Measuring range as shown on delivery	R		315	315	315	315
Weight		kg	18.2	20.2	35.9	44.2
Overall length		L	250	360	300	500
		H	150	150	177	177
		h	105	105	135	135
		g	270	270	356	356

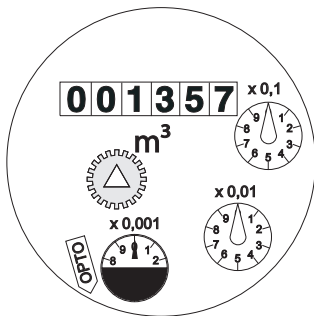


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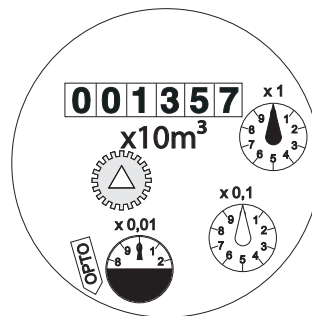
- Version for use in explosion-proof areas

Roller counters

DN 40...125



DN 150



Pulsers

The Meistream / Meistream Plus large capacity water meters are designed to be used with non-reactive HR modules and optoelectronic pulsers. Add-ons can also be retrofitted without affecting the metrological data.

HRI modules



- 2 programmable pulse outputs and M-Bus data interface to IEC870-5/EN1434-3
- Non-reactive inductive tap with external manipulation detection
- Lifetime of battery approx. 12 years, external power supply via M-Bus approx. 15 years
- Cable length 3 m
- Ambient temperature -10 - 60 °C, IP 68
- Forward/reverse flow recognition
- Pulse value, length and type selectable with MiniCom software

M-Bus output, data transmission:

- Meter reading
- Fabrication number
- Meter number with secondary address
- Monthly meter reading on any day selected
- Meter reading with current and previous year's billing date selected
- Minimum and maximum flowrate with time and date
- Reverse flow volume with time and date
- Pipe breakage and leak detection with selectable limit value
- Detection of any attempt at external manipulation

Pulse outputs:

- Programmable as:
 - Opto-OD (NAMUR to EN 60947-5-6), pulse width 6 ms or
 - Reed-RD compatible, pulse width 32, 128 or 500 ms, max. 48 VDC, max. 0.2 A, max. 4 Watt

The following pulse modes can be set:

Pulse mode	B1	B2	B3	B4	B5	B6
Pulse output						
I1 (white)	Balanced pulses ¹⁾	Forward pulses	Forwards and reverse pulses	Balanced pulses ¹⁾	NAMUR pulses with forward/reverse recognition	NAMUR pulses with backflow suppression (OD-AM)
I2 (yellow)	On = Alarm ²⁾	Reverse pulses	On = Forwards flow	Off = Alarm ²⁾	Not used	Not used

1) Reverse pulses are compensated by suppressing the identical number of forward pulses.

2) Can be assigned for pipe breakage, leakage detection, external interference and cable breakage.

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

MiniCom software is required for changing set parameters.

The HRI-Mei pulser is available with the following parameters on request:

Version	DN 40...125	DN 150
Open collector / NAMUR	0.01, 0.05, 0.1 or 1 m ³ /pulse pulse length 32, 128 or 500 ms pulse length NAMUR 6 ms	0.1, 0.5, 1 or 10 m ³ /pulse pulse length 32, 128 or 500 ms pulse length NAMUR 6 ms

Optoelectronic pulsers



- IR reflex light barriers to EN 50227 as a plug-in version
- Non-reactive optical tap
- Cable length 3 m
- Ambient temperature -10 - 70 °C, IP 68

Technical data:

- Power supply 8.2 VDC
- Switch current (actuated) ≤ 1.2 mA
- Quiescent current (non-contact) ≥ 2.1 mA
- Forwards and reverse flow detection is built in by means of an additional current threshold at 1.5 mA. With forward flow, the rising pulse edge thus has an additional current threshold of 1.5 mA. With reverse flow, the current threshold lies on the falling edge of the pulse.

Forward flow:



Reverse flow:



- Pulse length is dependent on the flowrate and at meter standstill a continuous pulse is possible.

Type designation	Version	Art. No.
OD 01	Optoelectronic pulser, smaller pulse value	93750
OD 03	Optoelectronic pulser, larger pulse value	93752

Standard pulse values and frequencies

Nominal diameter	DN	mm	40	50	65	80	100	125	150
			inch	1 1/2	2	2 1/2	3	4	5
HRI-Mei modules									
Pulse value		litres/pulse	100	100	100	100	100	100	1000
Pulse length		ms	500	500	500	500	500	500	500
OD pulser									
OD 01		litres/pulse	1	1	1	1	1	1	10
Pulse frequency at Q4		Hz	13.9	13.9	21.9	34.7	55.5	55.5	13.9
Pulse frequency at Q1		Hz	0.035	0.035	0.055	0.055	0.055	0.089	0.014
OD 03		litres/pulse	10	10	10	10	10	10	100

Frequency transmitters



FM-1D/K

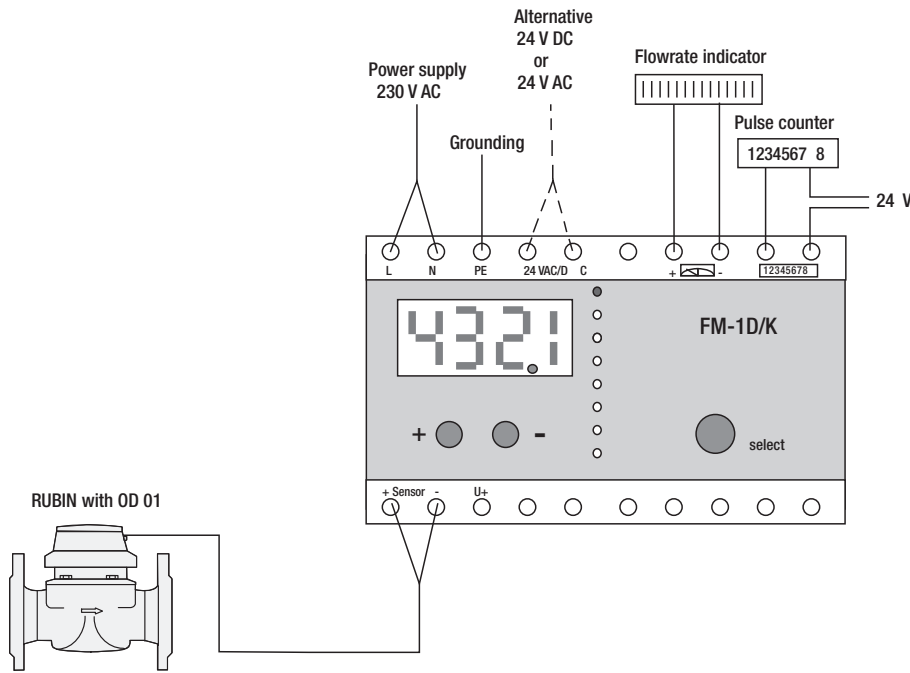
- Frequency transmitter
- Pulse/current transformer and flowrate indicator for water meters
- The FM-1D/K is a microprocessor-controlled frequency transmitter with digital display. It converts pulses into a flow-proportional current to indicate flowrate with the following outputs:
 - Current output
 - Counting pulses
 - Illuminated digital display

FM-2D/K

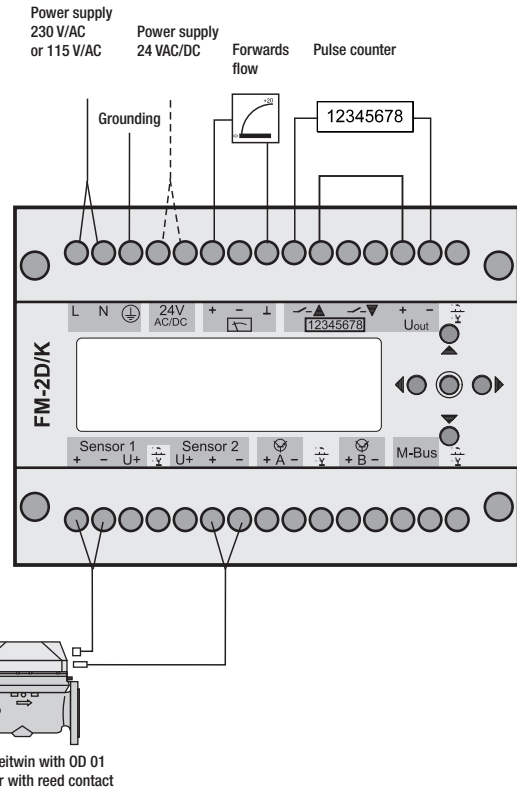
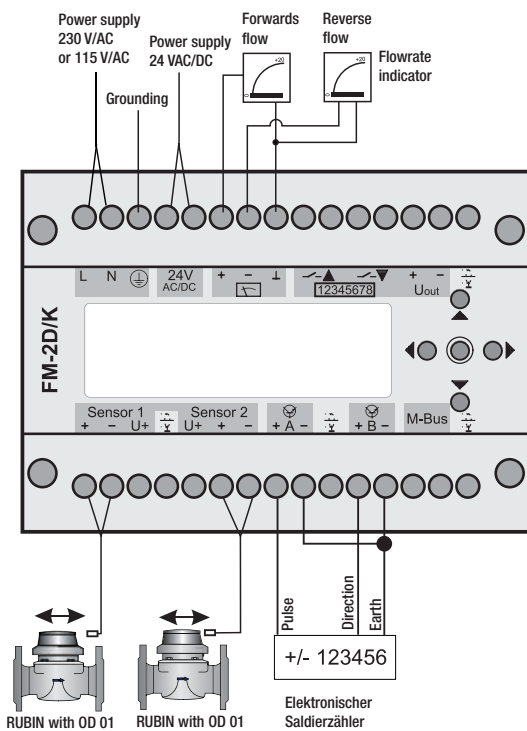
- Frequency transmitter
- Flowrate summation of two water meters
- The FM-2D/K is a microprocessor-controlled frequency transmitter with two pulse outputs
- It can be used for combining signals from two pulses with a flow direction signal
- M-Bus output

Frequency transmitter	FM-1D/K	FM-2D/K
Art. No.	93236	92390
Input		
Universal input for pulser reed contact or NAMUR to EN 50227	1	2
Input frequency range for 0/4...20 mA	0...0.1 to 0...1000Hz	0...300 Hz, 0...150 Hz with flow direction recognition
Maximum cable length.	approx. 6 km	approx. 6 km
Outputs		
Current output 0...20 mA or 4...20 mA, max. load 1 kOhm	1	2
Relay, NO contact, max. 48 VAC/DC 1 A, potential-free	1	2
Optocoupler output, max. 30 V, 30 mA	-	2
M-Bus Output	-	1
Ambient temperature	0...70 °C	0...70 °C
Protection type	IP 40	IP 40
Supply voltage	230 VAC or 24 VAC / VDC	230 VAC or 24 VAC / VDC
Montage	35 mm standard rail	35 mm standard rail
Dimensions	100 x 73 x 114 (B x H x D) mm	100 x 73 x 114 (B x H x D) mm

FM-1D/K



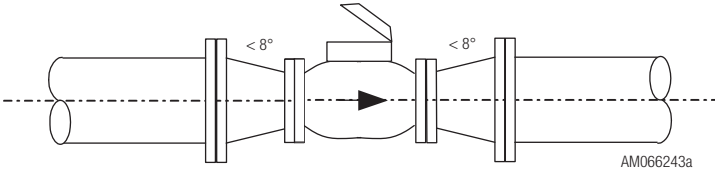
FM-2D/K



Installation notes

Nominal sizes: pipes, meters and pipe reducers

The choice of the nominal meter size should not automatically be based on the nominal size of the pipe. The decisive factor is the highest flowrate that occurs continuously in the pipe - this determines the nominal flowrate Q_n of the meter.



Mounting height

RUBIN MeiStream / MeiStream Plus meters have exchangeable velocity measuring units which can be tested and calibrated independently of the housing. For this purpose, the old units are removed upwards. When designing the installation, it is important to ensure that there is adequate space above the meter for removal.

Installation position

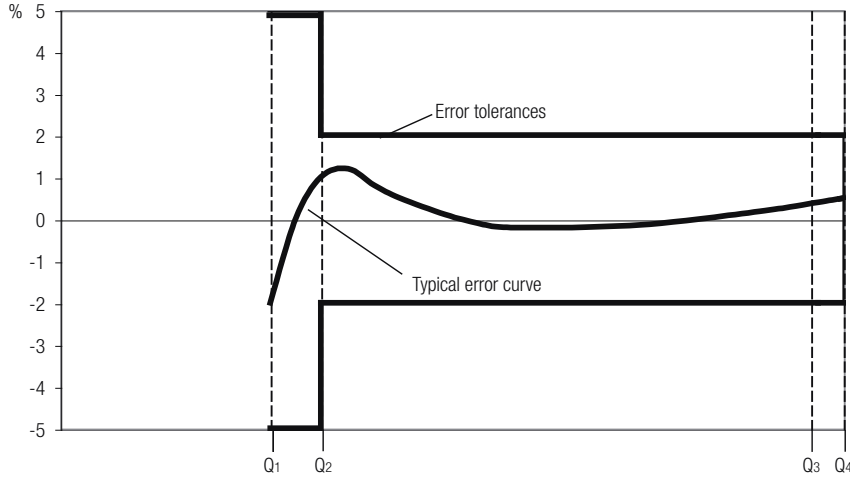
Meters must not be installed upside-down as then the metrological approval requirements will not be met.

Electrical installation

Electrical cables and installation must be carried out by a specialist in accordance with legal requirements.

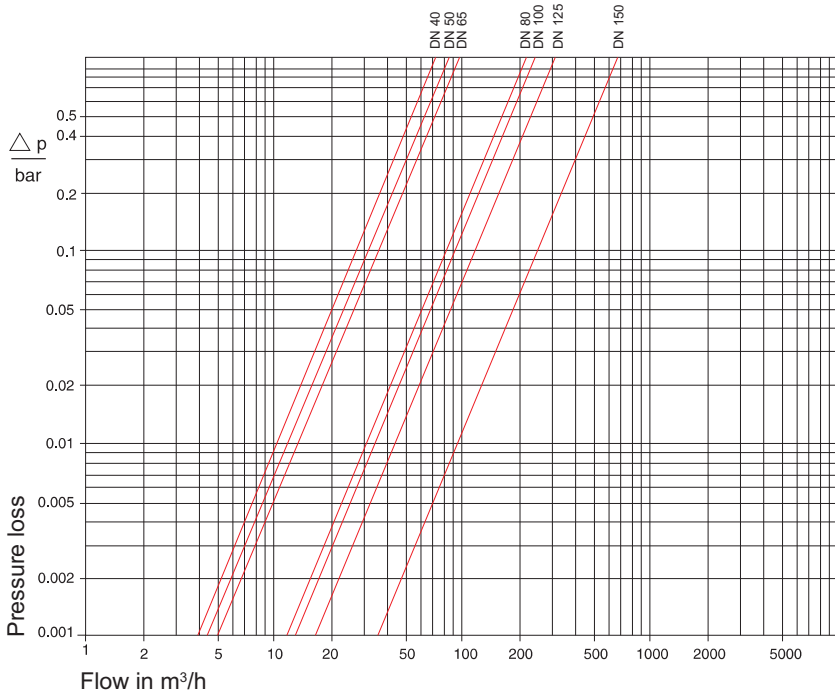
Measurement error limits

According to Directive OIML R 49

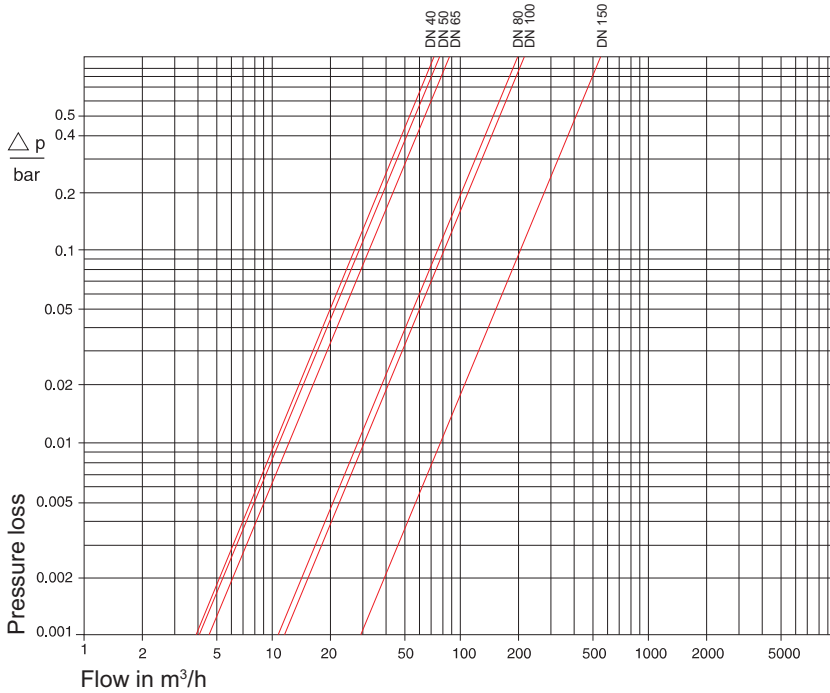


Pressure loss curves

RUBIN MeiStream



RUBIN MeiStream Plus



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