MeiStream

Bulkmeter for cold potable water DN 40...300

Main characteristics

- Meter with MID pattern approval acc. to annex MI001
- Exchangeable metrological unit with MID pattern approval acc. to annex MI001
- Unique measuring range; $Q_3/Q_1 \geq 100$
- High overload capability
- No straight inlet length necessary (U0D0 acc. to OIML R49 and EN 14154)
- Installation position horizontal and vertical
- Meter body in short (WP) and long (WS) overall length acc. to DIN 19625 and ISO 4064-1:2014 available
- Meter can be submerged; protection class IP68
- Used materials are temperature resistant up to 70 °C
- Register prepared for HRI-Mei pick-up
- Use of optical pulsers type OD is still possible

Applications

- Measurement for billing of cold potable water up to 50 °C
- Measurement of high flowrates e.g. in pumped pipes
- Measurement of low flow e. g. in light load periods
- For leakage detection

Available options

- Encoder register with different data protocols (M-Bus, Sensus, IEC 1107)
- Version free of copper alloy for aggressive water (DN 40 ... 150)
- Register with 7 digits without multiplier (DN 150 ... 300)
- Version for high pressure up to PN 40 (DN 50 ... 150)
- Version for use in hazardous area
- HRI-Mei factory mounted
- ¼" pressure monitoring port

Performance Data

Metrological Data acc. to Manufacturers Values

	Size	DN	40	50	65	80	100
Q_s	Max. Peak Flow	m³/h	60	90	120	200	300
Q_3'	Continuous Flow	m³/h	40	50	70	120	230
Q_{2h}	Transitional Flowrate horizontal	m³/h	0.32	0.4	0.63	0.51	0.81
Q_{1h}'	Minimum Flow horizontal	m³/h	0.2	0.15	0.2	0.2	0.3
Q_{2v}	Transitional Flowrate vertical	m³/h	0.4	0.51	0.81	0.8	1.28
Q_{1v}'	Minimum Flow vertical	m³/h	0.25	0.28	0.4	0.5	0.5
	Starting Flow	m³/h	0.05	0.05	0.07	0.1	0.11

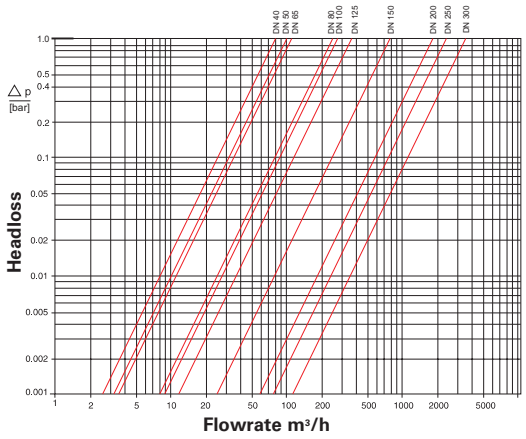
	Size	DN	125	150	200	250	300
Q_s	Max. Peak Flow	m³/h	350	600	1200	1600	2000
Q_3'	Continuous Flow	m³/h	250	450	800	1250	1400
Q_{2h}	Transitional Flowrate horizontal	m³/h	1.02	1.6	4.0	6.3	16.0
Q_{1h}'	Minimum Flow horizontal	m³/h	0.5	0.8	2.0	3.5	9.0
Q_{2v}	Transitional Flowrate vertical	m³/h	1.6	3.2	4.0	10.1	25.4
Q_{1v}'	Minimum Flow vertical	m³/h	1	1.6	2.5	6.3	15.9
	Starting Flow	m³/h	0.15	0.3	1.5	3	8

Metrological Data acc. to 2014/32/EU (MID)

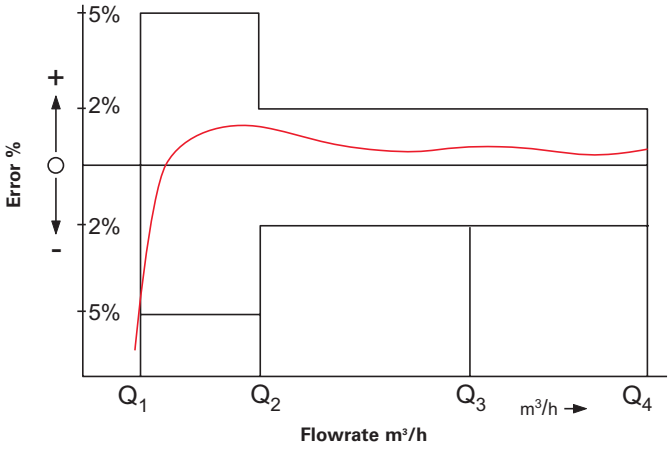
	Size	DN	40	50	65	80	100
Q_4	Overload Flowrate acc. to MID	m³/h	31.25	50	78.75	125	200
Q_3	Permanent Flowrate acc. to MID	m³/h	25	40	63	100	160
Q_{2h}	Transitional Flowrate horizontal acc. to MID	m³/h	0.32	0.4	0.63	0.51	0.81
Q_{1h}	Minimum Flowrate horizontal acc. to MID	m³/h	0.2	0.25	0.39	0.32	0.51
Q_{2v}	Transitional Flowrate vertical acc. to MID	m³/h	0.4	0.51	0.81	0.8	1.28
Q_{1v}	Minimum Flowrate vertical acc. to MID	m³/h	0.25	0.32	0.5	0.5	0.8
Q_3/Q_1 h	Max. Ratio horizontal		125	160	160	315	315
Q_3/Q_1 v	Max. Ratio vertical		63	100	100	125	160
Q_3/Q_1	Standard Marking		63	100	100	100	100
Δp	Headloss at Q_3 acc. to ISO 4064-1:2014	bar	0.1	0.16	0.32	0.16	0.34

	Size	DN	125	150	200	250	300
Q_4	Overload Flowrate acc. to MID	m³/h	200	500	787.5	787.5	1250
Q_3	Permanent Flowrate acc. to MID	m³/h	160	400	630	630	1000
Q_{2h}	Transitional Flowrate horizontal acc. to MID	m³/h	1.02	1.6	4.03	8.06	25.4
Q_{1h}	Minimum Flowrate horizontal acc. to MID	m³/h	0.64	1	2.52	5.04	15.9
Q_{2v}	Transitional Flowrate vertical acc. to MID	m³/h	1.6	3.2	4.03	10.1	25.4
Q_{1v}	Minimum Flowrate vertical acc. to MID	m³/h	1	2	2.52	6.3	15.9
Q_3/Q_1 h	Max. Ratio horizontal		250	400	250	125	63
Q_3/Q_1 v	Max. Ratio vertical		125	200	250	100	63
Q_3/Q_1	Standard Marking		100	100	100	100	63
Δp	Headloss at Q_3 acc. to ISO 4064-1:2014	bar	0.19	0.27	0.11	0.07	0.08

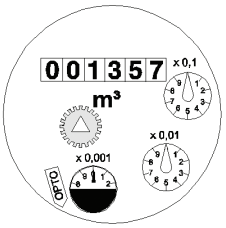
Typical Headloss



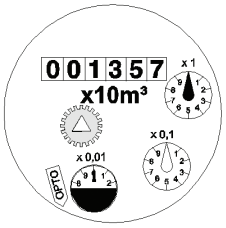
Typical Error Curve



Dial



DN 40...125



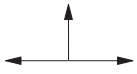
DN 150 ... 300

Nominal diameter DN	Smallest reading m³	Max. reading m³
40 ... 125	0.0005	999,999.999
150 ... 300	0.005	9,999,999.99

Pulse Values

Pulser Type		DN 40 ... 125 Pulse Value	DN 150 ... 300
HRI-Mei (Leaflet see LS 8400)		0.01; 0.05; 0.1 or 1 m³	0.1; 0.5; 1 or 10 m³
OD 01 (Leaflet see LB 8300)		0.001 m³	0.01 m³
OD 03 (Leaflet see LB 8300)		0.01 m³	0.1 m³

Installation

Pipe	horizontal vertical	
Meter head	upwards sideways	

Installation Requirements

- Unrestricted straight pipe upstream 0 x DN
- No abrupt restrictions directly downstream of the meter

Materials

Body	Cast iron (PN16) Ductile iron (PN40)
Measuring element	Plastic
Rotor	Plastic
We also use the following materials	Brass Stainless steel

Available Lengths

Nominal diameter		40	50	65	80	100	125	150	200	250	300
Overall length L WS (DIN / ISO)	mm		270 / 300*	300	300 / 350*	360 / 350*		500			
Overall length L WP (DIN / ISO)	mm	220*	200	200*	225 / 200*	250	250*	300	350	450	500

* PN16 only

Approval Mark

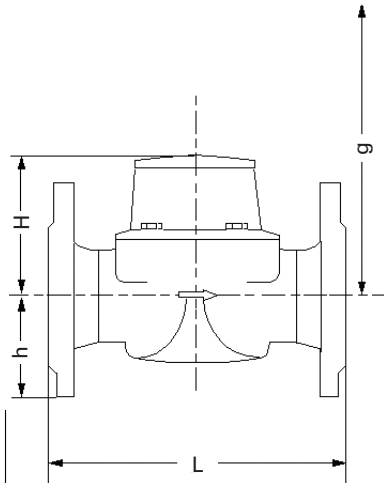
Meter cpl. and exchangeable metrological unit

Marking CE M-XX* 0102

DN 40 ... 150: DE-09-MI001-PTB 010
DN 200 ... 300: DE-15-MI001-PTB 014

* year of production

Dimension Picture



Order example

MeiStream, DN 50, T50, PN16
Drilling EN 1092 PN16
Length 270 mm
mechanical register / m³
with MID conformity

Type
Size
Max. medium temperature
Nominal pressure
Drilling pattern
Body length
Register type / unit
Approval standard

sensus
a xylem brand

Dimensions and Weights

Dimensions

Nominal diameter		DN	40	50	50	50	65	65
Overall length	L	mm	220	200	270	300	200	300
Height	H	mm	120	120	120	120	120	120
	h	mm	69	73	73	73	85	85
Dismantling height	g	mm	200	200	200	200	200	200

Nominal diameter		DN	80	80	80	80	100	100	100
Overall length	L	mm	200	225	300	350	250	350	360
Height	H	mm	150	150	150	150	150	150	150
	h	mm	95	95	95	95	105	105	105
Dismantling height	g	mm	270	270	270	270	270	270	270

Nominal diameter		DN	125	150	150	200	250	300
Overall length	L	mm	250	300	500	350	450	500
Height	H	mm	160	177	177	214	238	264
	h	mm	118	135	135	162	194	226
Dismantling height	g	mm	280	356	356	449	474	499

Weight PN16

Nominal diameter		DN	40	50	50	50	65	65
Overall length	L	mm	220	200	270	300	200	300
Meter cpl.		kg	7.5	7.8	9.6	9.9	10.1	12.0
Measuring unit		kg	1.5	1.5	1.5	1.5	1.5	1.5
Body		kg	6.0	6.3	8.1	8.4	8.6	10.5

Nominal diameter		DN	80	80	80	80	100	100	100
Overall length	L	mm	200	225	300	350	250	350	360
Meter cpl.		kg	13.8	14.2	16.3	17.7	18.2	20.0	20.2
Measuring unit		kg	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Body		kg	10.6	11.0	13.1	14.5	15.0	16.8	17.0

Nominal diameter		DN	125	150	150	200	250	300
Overall length	L	mm	250	300	500	350	450	500
Meter cpl.		kg	20.7	35.9	44.2	56.9	79.4	103.8
Measuring unit		kg	3.2	5.9	5.9	9.6	9.6	9.6
Body		kg	17.5	30.0	38.3	47.3	69.8	94.2

Weight PN40

Nominal diameter		DN	50	50	65	80	80	100	100	150	150
Overall length	L	mm	200	270	300	225	300	250	360	300	500
Meter cpl.		kg	9.7	10.7	13.1	17	18.6	20.4	22.9	44.6	52.9
Measuring unit		kg	1.7	1.7	1.7	4	4	4	4	9.3	9.3
Body		kg	8	9	11.4	14.6	14.6	16.4	18.9	35.3	43.6

MeiStream Plus

Class C Bulkmeter for cold potable water DN 40...150 PN 16

Main characteristics

- Meter with MID pattern approval acc. to annex MI001
- Exchangeable metrological unit with MID pattern approval acc. to annex MI001
- Unique measuring range; $Q_3/Q_1 \geq 315$ in horizontal installation
- High overload capability
- No straight inlet length necessary (U0D0 acc. to OIML R49 and ISO 4064-1:2014)
- Meter body in short (WP) and long (WS) overall length acc. to DIN 19625 and ISO 4064-1:2014 available
- Meter can be submerged; protection class IP68
- Used materials are temperature resistant up to 70 °C
- Register prepared for HRI-Mei pick-up
- Use of optical pulsers type OD is still possible

Applications

- Measurement for billing of cold potable water up to 50 °C
- Measurement of medium and high flowrates
- Measurement of low flow e. g. in light load periods
- For leakage control

Available options

- HRI-Mei factory mounted
- Version for use in hazardous area
- ¼" pressure monitoring port
- Encoder register with different data protocols

Approval Mark

Meter cpl. and exchangeable metrological unit

Marking CE M-XX* 0102
DE-09-MI001-PTB 012

* year of production

Performance Data

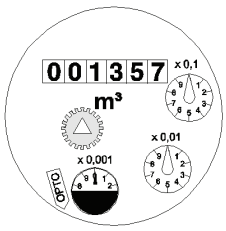
Metrological Data acc. to Manufacturers Values

	Size	DN	40	50	65	80	100	150
Q_5	Max. Peak Flow	m³/h	50	55	60	120	160	400
Q_3'	Continuous Flow	m³/h	30	35	40	63	100	250
Q_2	Transitional Flowrate horizontal acc. to MID	m³/h	0.13	0.13	0.16	0.25	0.4	0.63
Q_1'	Minimum Flow horizontal	m³/h	0.08	0.07	0.1	0.13	0.2	0.35
	Starting Flow	m³/h	0.03	0.03	0.035	0.04	0.065	0.12

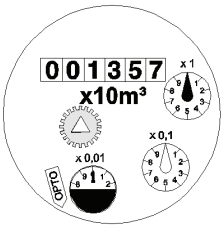
Metrological Data acc. to 2014/32/EU (MID)

	Size	DN	40	50	65	80	100	150
Q_4	Overload Flowrate acc. to MID	m³/h	31.25	31.25	50	78.75	125	312.5
Q_3	Permanent Flowrate acc. to MID	m³/h	25	25	40	63	100	250
Q_2	Transitional Flowrate horizontal acc. to MID	m³/h	0.13	0.13	0.16	0.25	0.4	0.63
Q_1	Minimum Flowrate horizontal acc. to MID	m³/h	0.08	0.08	0.1	0.16	0.25	0.4
Q_3/Q_1	max. Ratio		315	315	400	400	400	630
Q_3/Q_1	Standard Marking		315	315	315	315	315	315
Δp	Headloss at Q_3 acc. to ISO 4064-1:2014	bar	0.09	0.08	0.17	0.07	0.16	0.14

Dial



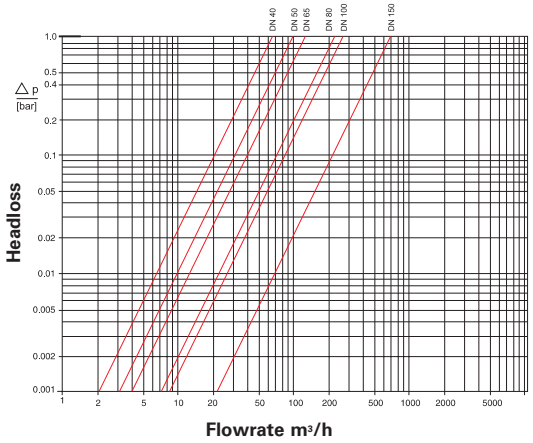
DN 40...100



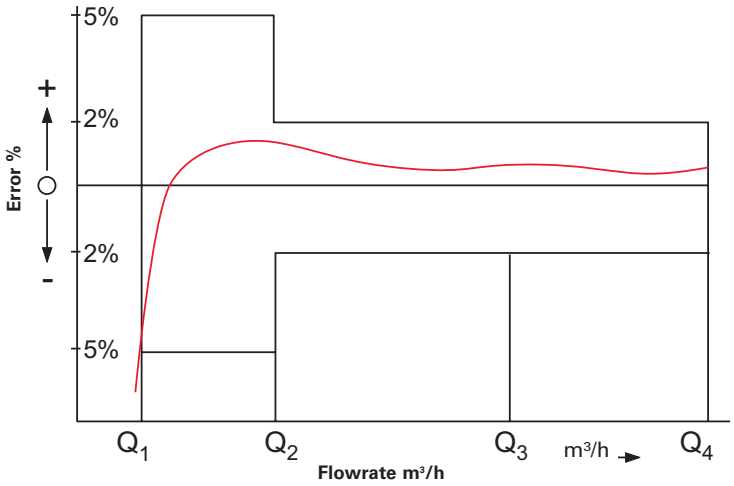
DN 150

Nominal diameter DN	Smallest reading m³	Max. reading m³
40 ... 100	0.0005	999,999.999
150	0.005	9,999,999.99

Typical Headloss



Typical Error Curve



Pulse Values

Pulser Type		DN 40 ... 100 Pulse Value	DN 150
HRI-Mei (Leaflet see LS 8400)		0.01; 0.05; 0.1 or 1 m³	0.1; 0.5; 1 or 10 m³
OD 01 (Leaflet see LB 8300)		0.001 m³	0.01 m³
OD 03 (Leaflet see LB 8300)		0.01 m³	0.1 m³

Installation

Pipe	horizontal
Meter head	upwards

Installation Requirements

- Unrestricted straight pipe upstream 0 x DN
- No abrupt restrictions directly downstream of the meter

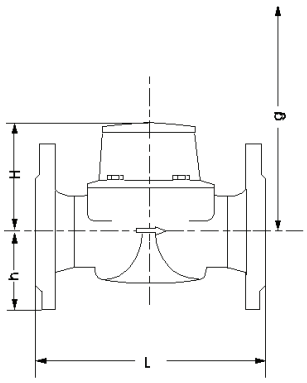
Materials

Body	Cast iron
Measuring element	Plastic
Rotor	Plastic
We also use the following materials	Brass Stainless steel

Available Lengths

Nominal diameter		40	50	65	80	100	150
Overall length L WS (DIN / ISO)	mm		270 / 300	300	300 / 350	360 / 350	500
Overall length L WP (DIN / ISO)	mm	220	200	200	225 / 200	250	300

Dimension Picture



Dimension and Weights PN 16

Nominal diameter				40	50	50	50	65	65	80	80
Dimensions	Overall length	L	mm	220	200	270	300	200	300	200	225
	Height	H	mm	120	120	120	120	120	120	150	150
		h	mm	69	73	73	73	85	85	95	95
	Dismantling height	g	mm	200	200	200	200	200	200	270	270
Weights	Meter cpl.		kg	7.5	7.8	9.6	9.9	10.1	12.0	13.8	14.2
	Measuring insert		kg	1.5	1.5	1.5	1.5	1.5	1.5	3.2	3.2
	Body		kg	6.0	6.3	8.1	8.4	8.6	10.5	10.6	11.0

Nominal diameter				80	80	100	100	100	150	150
Dimensions	Overall length	L	mm	300	350	250	350	360	300	500
	Height	H	mm	150	150	150	150	150	177	177
		h	mm	95	95	105	105	105	135	135
	Dismantling height	g	mm	270	270	270	270	270	356	356
Weights	Meter cpl.		kg	16.3	17.7	18.2	20.0	20.2	35.9	44.2
	Measuring insert		kg	3.2	3.2	3.2	3.2	3.2	5.9	5.9
	Body		kg	13.1	14.5	15.0	16.8	17.0	30.0	38.3

Order Information

MeiStream Plus, DN 50, T50, PN16
Drilling EN 1092 PN16
Length 270 mm
mechanical register / m³
with MID conformity

Type
Size
Max. medium temperature
Nominal pressure
Drilling pattern
Body length
Register type / unit
Approval standard

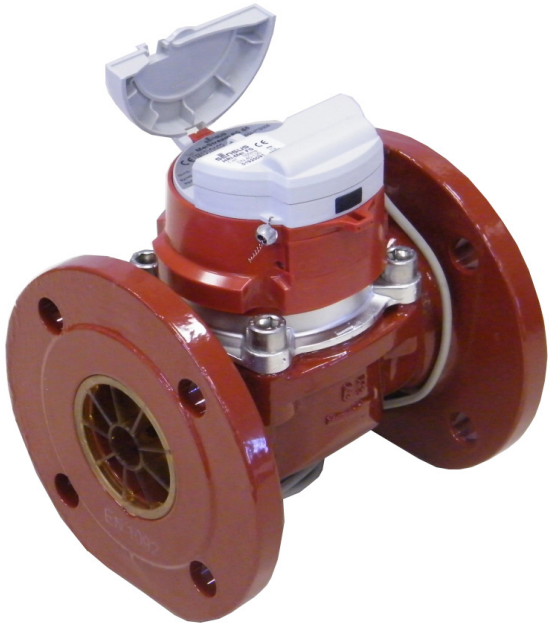
sensus
a xylem brand

UK & Ireland Enquiries
Sensus UK Systems Ltd, 3 Lindenwood Crockford Lane, Chineham Business Park
Basingstoke RG24 8QY UK
T: +44 (0) 1256 372800 F: +44 (0) 1256 707203 Email: info.gb@xyleminc.com **www.sensus.com**

International Enquiries
Sensus GmbH Hannover, Meineckestraße 10, D-30880 Laatzen Germany
T: +49 (0) 5102 74-0 F: +49 (0) 5102 74-3341 Email: info.int@xyleminc.com **www.sensus.com**

MeiStream FS

Flow sensor for
heat and cooling meters
DN 50...100, 90 °C / PN 16



Special features

The MeiStream flow sensor combines the high reliability and measurement accuracy of the Woltman WP meter with the advantages of the Woltman WS meter in the lower measuring range. This combination creates an excellent new flow sensor with a MID approval according to MI004 or EN 1434 in the accuracy class 2.
Volume pulses are generated by the interface HRI-Mei FS. This interface transfers volume pulses with programmable pulse values to the heating or cooling calculator. Possible reverse flows are compensated.

Centerpiece of the MeiStream Flow Sensor is a newly designed impeller with spherical hub that floats freely. Once the minimum flow rate is reached the impeller is lifted from the radial bearing and moves axially in a friction-free position without further loading the bearing pins. This floating is maintained up to a high levels of flow ensuring consistency. The design of the impeller is the result of several years of research, development and testing. As a result of this work an impeller has been developed that works optimally over the entire flow rate range and provides excellent metrological performance, secure profit and increased service life.

Unlike the Woltman-WS flow sensor the MeiStream Flow Sensor can also be installed in the vertical position. This essential feature is achieved by the three-dimensional hydrodynamic balance of the impeller. This permits quick and easy installation even in narrow locations. For compatibility with existing measuring points the MeiStream flow sensor is available in the short (WP) and long (WS) lengths.

Application

- Flow sensor for heat and cooling meters for commercial and light industrial use
- For measurement of hot process water up to 90 °C
- For measurement of cooling water starting from 5 °C
- For high permanent flow rates such as generated by pumps, as well as for the measurement of low flow rates in off-peak periods
- Installation in horizontal and vertical pipes

Approval mark and conformity marking

Heat application

DE-12-MI004-PTB006

Cooling application

22.76

13.02

Performance data

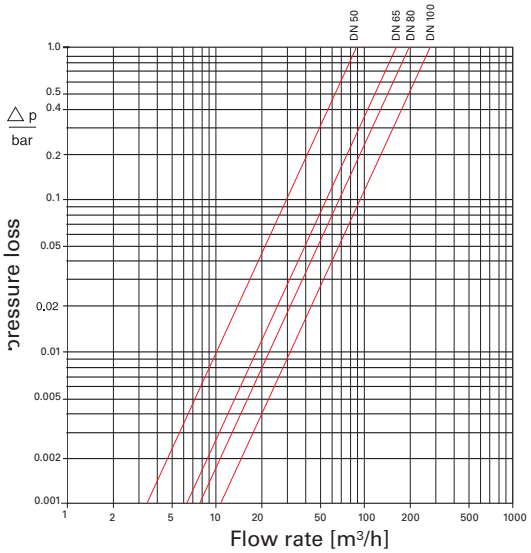
Nominal diameter		DN	50	65	80	100
	Max. Peak Flow	m³/h	50	60	120	140
q_s	Overload Flowrate	m³/h	50	50	120	120
q_p	Continuous Flow	m³/h	25	25	60	60
q_i	Minimum Flow	m³/h	0.5	0.5	1.2	1.2
q_p / q_i	Ratio horizontal		1/50	1/50	1/50	1/50
q_p / q_i	Ratio vertical		1/25	1/25	1/25	1/25
q_c	Starting value	m³/h	0.08	0.08	0.15	0.15
Δp	Head loss at q_p	bar	0.08	0.02	0.08	0.04
Kvs	Flow rate at 1 bar pressure loss	m³/h	88	177	212	300
T	Approved temperature range heat	°C	15 ... 90			
T	Approved temperature range cooling	°C	5 ... 50			

The values Q_s, Q_p and Q_i correspond to EN 1434

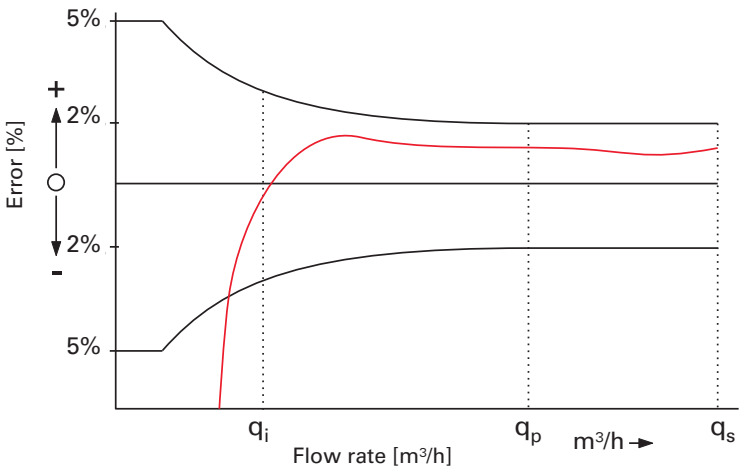
Dial

Nominal diamter DN	Smallest reading m³	Max. reading m³
50 ... 100	0,0005	999.999,999

Typical head loss curve



Typical error curve



Upstream straight pipe

- No straight pipe at inlet or outlet required (U0D0 acc. EN 14154)
- No abrupt restrictions directly downstream of the meter

Installation

Pipe	horizontal vertical 
Meter head	upwards sideways 

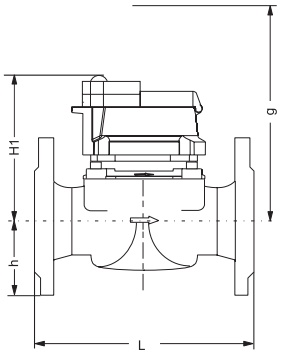
Materials

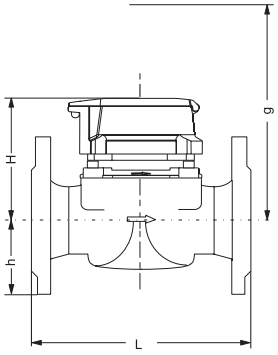
Body	Cast iron
Measuring element	Plastic
Rotor	Plastic
We also use the following materials	Brass Stainless steel

Dimensions and weights

Nominal diameter			**DN**	**50**	**50**	**65**	**65**	**80**	**80**	**100**	**100**
Dimensions	Overall length	L	mm	200	270	200	300	225	300	250	360
	Height	H	mm	120	120	120	120	150	150	150	150
	Height with HRI-Mei FS	H1		150	150	150	150	180	180	180	180
		h	mm	73	73	85	85	95	95	105	105
	Dismantling height	g	mm	200	200	200	200	270	270	270	270
Weight			kg	7.8	9.6	10.1	12.0	14.2	16.3	18.2	20.2

Dimension drawings





Pulse values

Pulser		Pulse value DN 50 ... 100
HRI-Mei FS		0.01; 0.025; 0.1; 0.25 m^3
OD AM OD 04		0.001 m^3 0.01 m^3

Technical data HRI-Mei FS

Pulse value:	10, 25, 100 or 250 l/pulse alternative	**Cable length:**	3 m
Switch type:	OC acc. EN 1434-2 (open Drain)	**Connection:**	white = plus, grey = minus
Maximum voltage:	28 Volt	**Protection class:**	IP 68
Maximum power:	20 mA	**Power supply:**	Lithium battery (not replaceable)
Pulse length:	≥100 ms	**Battery life:**	typ. 6 years operation + 1 year storage
Pulse pause:	≥100 ms	**Ambient temperature:**	-5 .... + 70 °C
On position:	≥0,3 V at 0,1 mA	**Humidity:**	100%
Off position:	≥6 MΩ		