



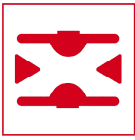
# Magnetic-inductive flow meter

## EPS / UMF2

Technical data sheet

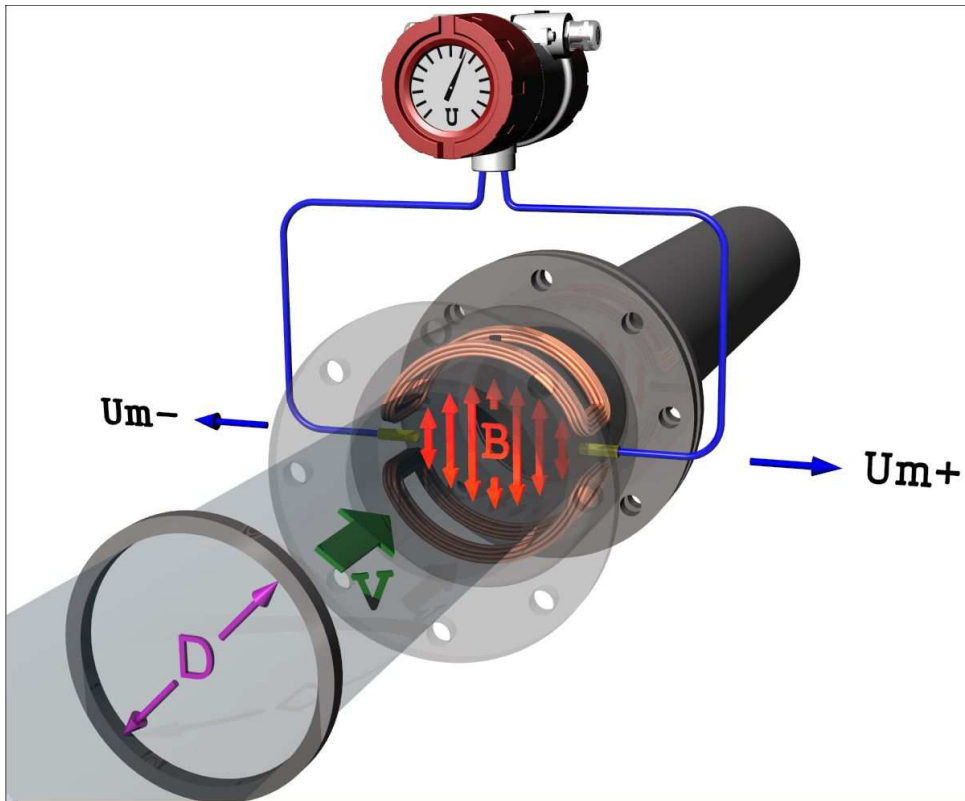


- **high accuracy: 0.3 % of actual**
- **maintenance-free**
- **no pressure drop**
- **numerous lining materials**
- **numerous electrode materials**
- **low-cost grounding electrode instead of earthing rings, also available in special materials e.g. Tantalum.**



## Function

An electrically conductive medium flowing through an orientated magnetic field in accordance to Faraday's law of induction will induce a voltage proportional to the mean flow velocity rate and hence the volumetric flow. A magnetic inductive flowmeter consists of an isolated lined tube, through which a conductive liquid flows, a magnetic field coil and two electrodes. The electrode voltage is detected by a transmitter and converted into standardized electrical signal such as 4-20 mA or pulses. The sensor EPS can be used in combination with the Heinrichs Messtechnik UMF2 transmitter. The transmitter can be mounted compact or separately to the sensor.

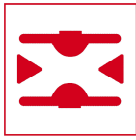


## Application

The magnetic-inductive flow sensor EPS is used to measure the volume flow of liquids, slurries, pastes and other electrically conductive media without any pressure drop. Pressure, temperature, density and viscosity do not affect the volume measurements. Solid particles and small gas bubbles should be avoided.

The sensor EPS has the following significant characteristics:

- Wide variety of lining materials
- Electrodes in stainless steel, Hastelloy C276, Tantalum, Platinum
- Large selection of process connections
- Deployable in harsh environments



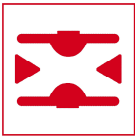
## Technical Data Sensor EPS

<b>Armature</b>	painted steel (standard), stainless steel at DIN11851; Tri-Clamp® and Ceramic lined 2 / 3 / 6 / 10 mm inside diameter	
<b>Nominal sizes:</b>	2 / 3 / 6 / 10 mm inside diameter process connection in DIN - DN10 or ASME - 1/2" EN 1092-1/JIS - DN15 to DN1200 - ASME - 1/2" to 24" (Other nominal sizes on request)	
<b>Process connections:</b>	Flanges of steel or stainless steel (1.4301) (EN1092 und ASME B16.5), Food connection DIN 11851, Tri-Clamp® (other connections on request)	
<b>Lining material:</b>	Hard-rubber, Soft-rubber, PTFE, Ceramics, EPDM	
<b>Electrode material:</b>	Hastelloy C276, stainless steel 1.4571/316 TI Titanium, Tantalum and Platinum-Rhodium (on request)	
<b>Grounding ring:</b>	on request	
<b>Nominal pressure:</b>	PN 40, (40 bar) (580 psi) PN 16, (16 bar) (232 psi) PN 10, (10 bar) (145 psi) (higher pressure on request)	DN 15-300 DN 50-600 DN 200-1200
<b>Process temperature:</b>	-10°C to +70°C (14°F to 158°F) -20°C to +150°C (-4°F to +302°F) -20°C to +150°C (-4°F to +302°F) 0°C to +95°C (32°F to +203°F) 0°C to +70°C (32°F to +158°F)	EPDM PTFE Ceramics Hard rubber Soft rubber
<b>Ambient temperature:</b>	-20°C to +60°C (-4°F to +140°F), depending on process temperature	
<b>Conductivity:</b>	>= 5 µS/cm >=20 µS/cm for demineralised water	
<b>Measuring range:</b>	0,5 m/s – 10 m/s	
<b>Accuracy:</b>	± 0,3 % of measured value ± 0,01 % * (Q at 10 m/s) (under reference conditions)	
<b>Repeatability:</b>	± 0,15 % of measured value ± 0,005 % * (Q at 10 m/s) (under reference conditions)	
<b>Degree of protection:</b>	IP 67 (EN60529), IP68 on request	



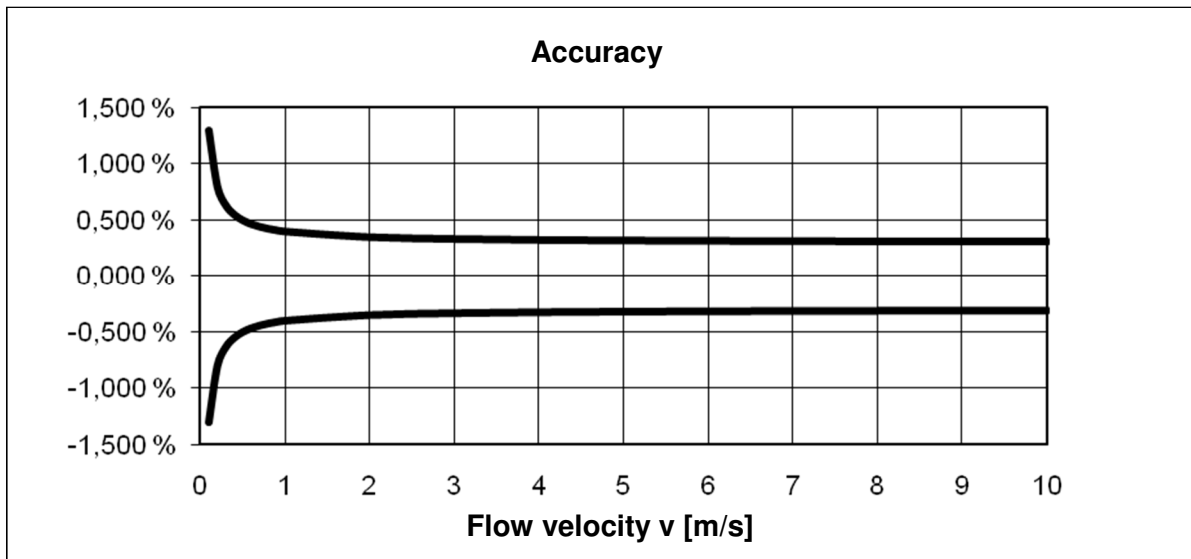
**Flow specific values**

Di	Connection		liter per second		m <sup>3</sup> per hour	
	DN	ASME	Qmin	Qmax	Qmin	Qmax
2	10	½"	0,0008	0,0314	0,003	0,113
3	10	½"	0,0018	0,0707	0,006	0,254
6	10	½"	0,0071	0,2827	0,025	1,02
10	10	½"	0,0196	0,7854	0,071	2,83
15	15	½"	0,0442	1,767	0,159	6,36
25	25	1"	0,1227	4,909	0,442	17,67
40	40	1 ½"	0,3142	12,57	1,13	45,24
50	50	2"	0,4909	19,63	1,77	70,69
65	65	2 ½"	0,8296	33,18	2,99	119,5
80	80	3"	1,257	50,27	4,52	181,0
100	100	4"	1,963	78,54	7,07	282,7
125	125	5"	3,068	122,7	11,04	441,8
150	150	6"	4,418	176,7	15,90	636,2
200	200	8"	7,854	314,2	28,27	1131
250	250	10"	12,27	490,9	44,18	1767
300	300	12"	17,67	706,9	63,62	2545
350	350	14"	24,05	962,1	86,59	3464
400	400	16"	31,42	1257	113,1	4524
450	450	18"	39,76	1590	143,1	5726
500	500	20"	49,09	1963	176,7	7069
600	600	24"	70,69	2827	254,5	10179
700	700	28"	96,21	3848	346,4	13854
800	800	32"	125,7	5027	452,4	18096
900	900	36"	159,0	6362	572,6	22902
1000	1000	40"	196,3	7854	706,9	28274
1200	1200	44"	282,7	11310	1018	40715
1400	1400	48"	384,8	15394	1385	55418
1600	1600	-	502,7	20106	1810	72382
1800	1800	-	636,2	25447	2290	91609
2000	2000	-	785,4	31416	2827	113097



### Accuracy

+/- 0,3 % of measured value + 0,0001 \* (Q at 10 m/s)

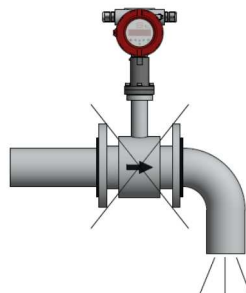


### Repeatability

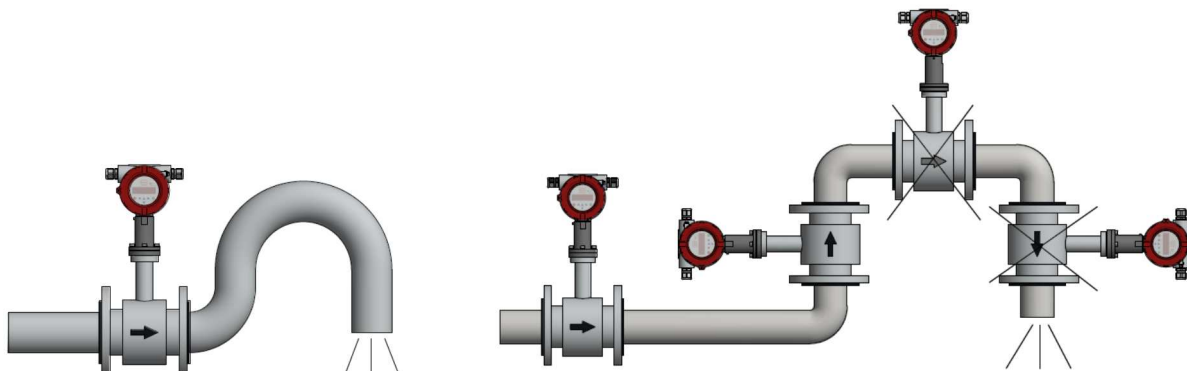
+/- (0,15 % of measured value + 0,00005 \* (Q at 10 m/s))

### Installation conditions

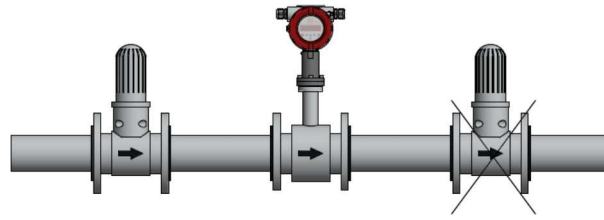
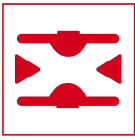
To avoid vacuum, emptying of pipes or gas aggregation please take notice of the following mounting advice



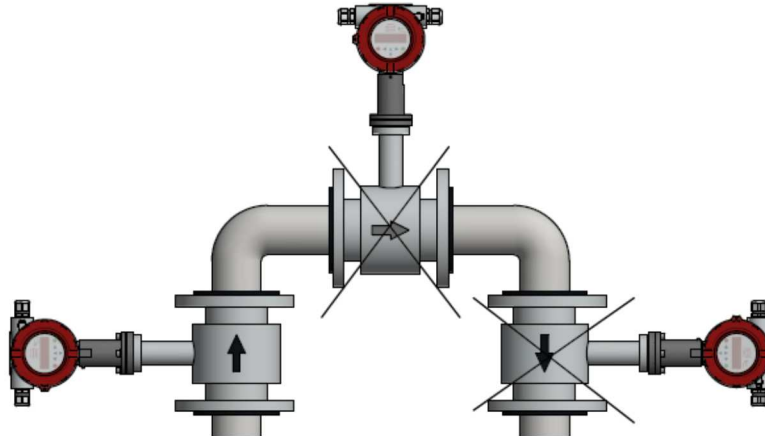
Emptying possible



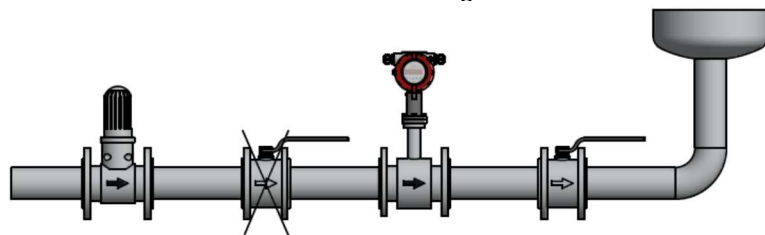
Emptying avoided



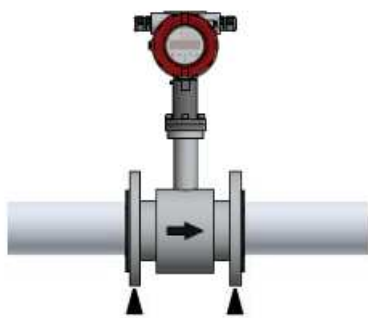
Upstream of pump, vacuum possible



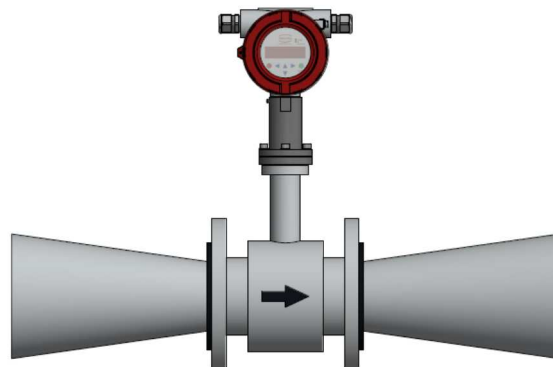
Mount in ascending main



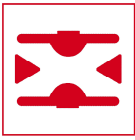
Do not mount downstream of a valve



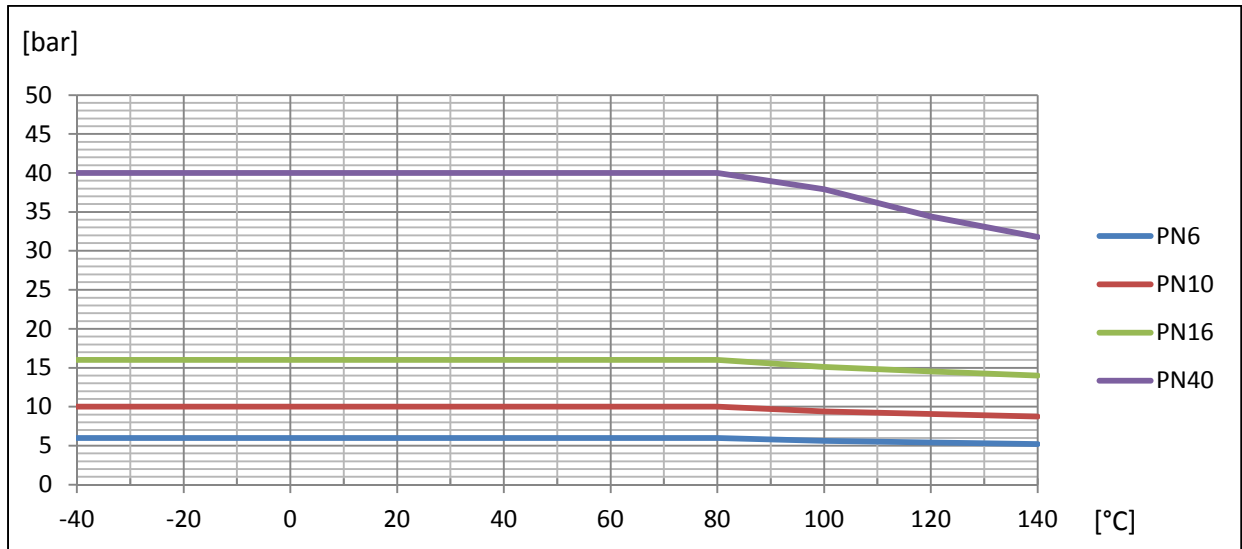
Use support to prevent vibrations



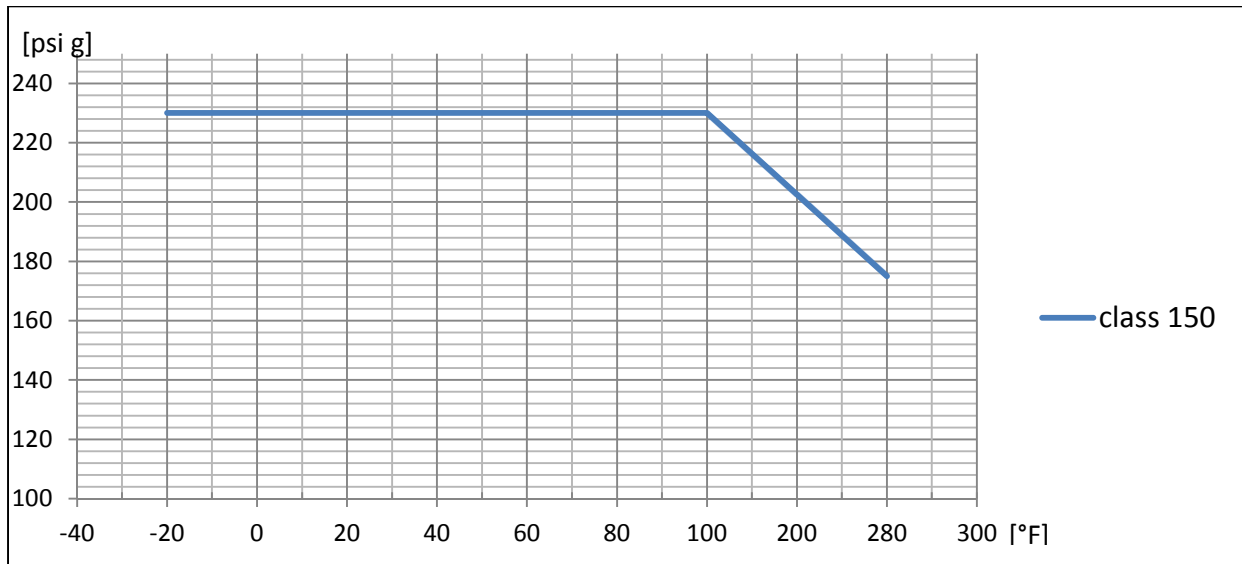
Pipe narrowing with maximum 8° angle



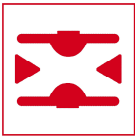
## Material load curves



For stainless steel flanges (1.4404 / 316L) according to EN1092-1



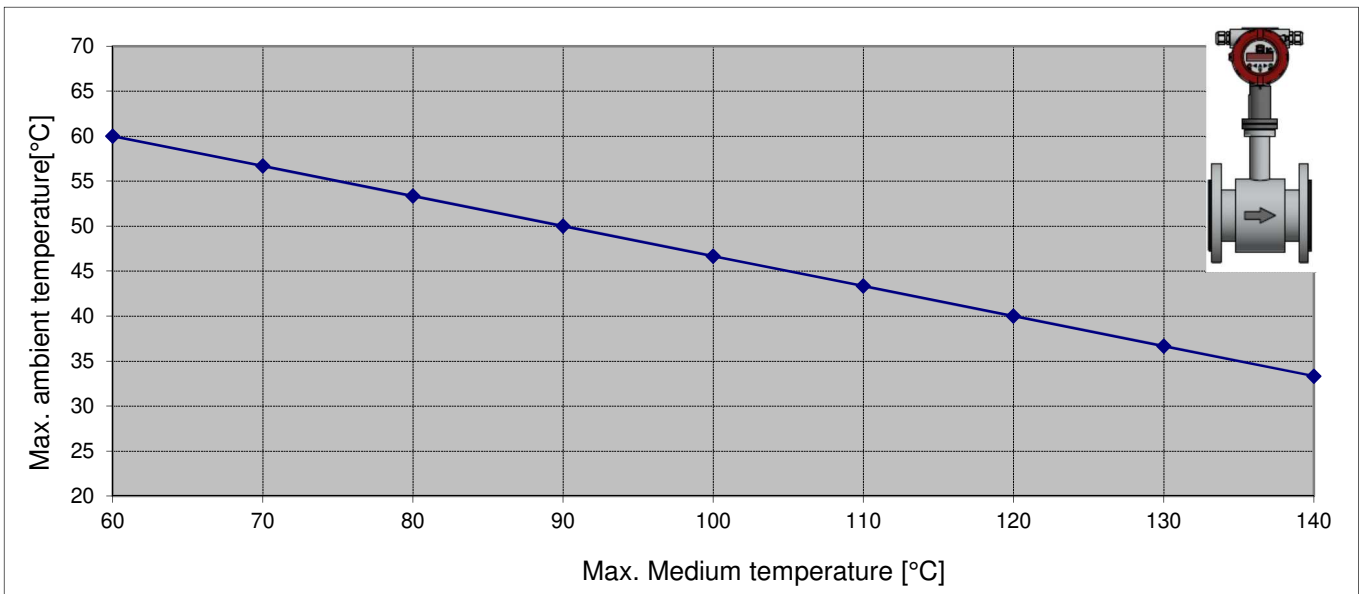
For stainless steel flanges (1.4404 / 316L) according to ASME B16.5



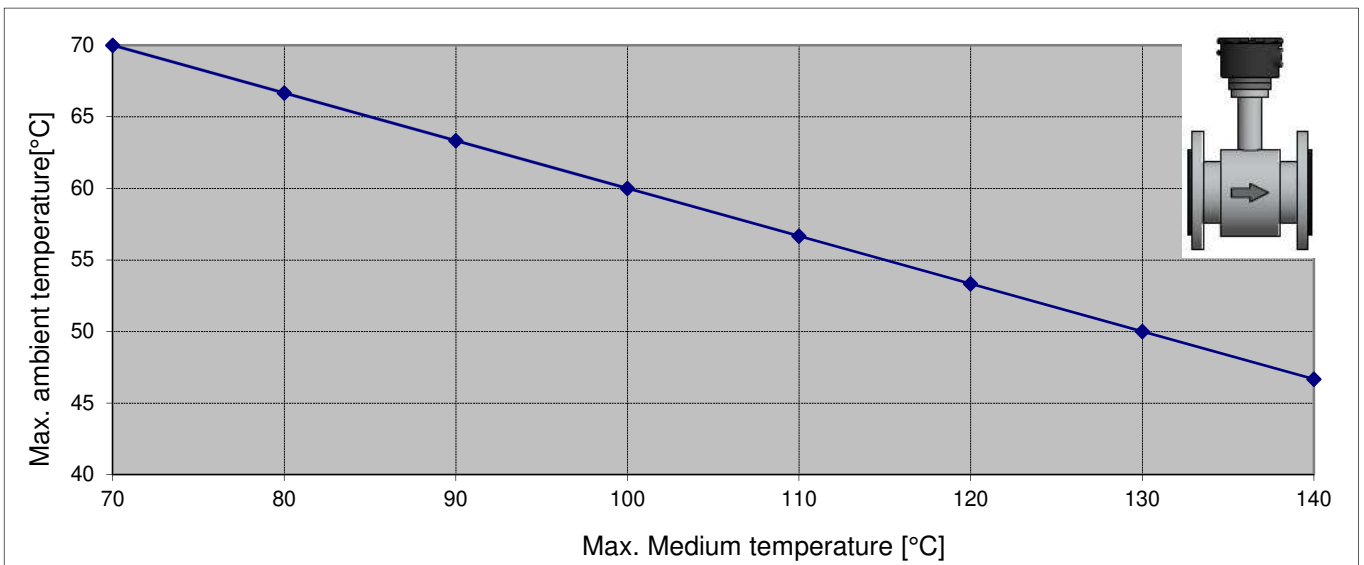
## Ambient conditions

As the sensors are an element of the pipe, these are normally thermally isolated when installed to save energy and prevent accidental physical contact. The heat of the process temperature will be transferred through the supports neck of the compact mounted transmitter or the terminal box. For this reason the thermal insulation of the sensor should only extend half way up the support of the transmitter. It is essential not to include the transmitter or the terminal box into the thermal insulation. The maximum permissible fluid temperature range is stated on the rating plate of the respective version.

### Maximum ambient temperature according to medium temperature with a direct mounted transmitter

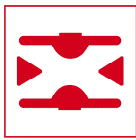


### Maximum ambient temperature according to medium temperature with a mounted connection box



Apply the medium temperatures of the lining materials.

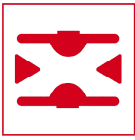




## Technical data transmitter: Type UMF2

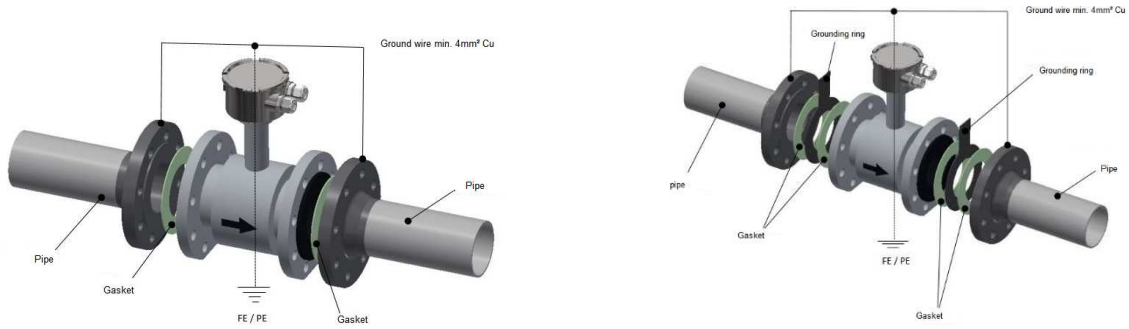


<b>Mounting options:</b>	compact or remote
<b>Housing:</b>	die cast Aluminum, painted
<b>Power supply:</b>	115 / 230 VAC 50/60Hz, 10 VA 24 VDC 10W
<b>Indication:</b>	LCD, 2-lines, 16 digits, background lighted
<b>Interface language:</b>	English, German
<b>Output:</b>	
<b>Analogue:</b>	1 x 0/4-20 mA HART®, active, galvanically isolated
<b>Pulse output:</b>	passive, galvanically isolated 24V, 60mA
<b>Status:</b>	passive, galvanically isolated 24V, 60mA
<b>Ambient temperature:</b>	-20°C to +60°C (-4°F to +140°F), depending on process temperature
<b>Protection:</b>	IP68 (EN60529)
<b>Communication:</b>	HART®
<b>Diagnostic functions:</b>	Empty pipe detection, coil current surveillance
<b>Electromagnetic tolerance:</b>	EMC-Directive 2014/30/EU (EMC)



## Potential equalization

The potential equalization is achieved via the grounding terminal of the junction box.

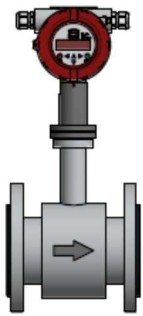


For metallic pipelines we recommend connecting the grounding terminal to the pipe.

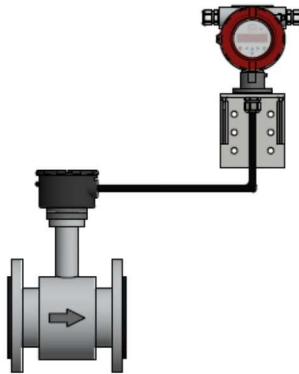
For non-metallic pipelines we recommend connecting the grounding terminal to the grounding discs.

## Electrical connections

### Mounting types

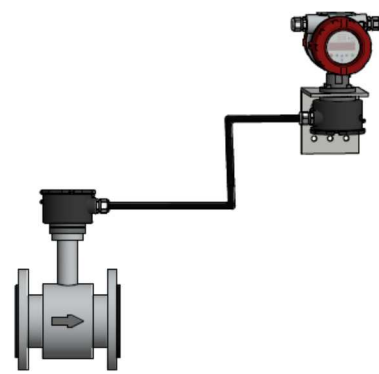


Compact IP67 according to DIN/EN 60529  
Dust tight, short time submersible.



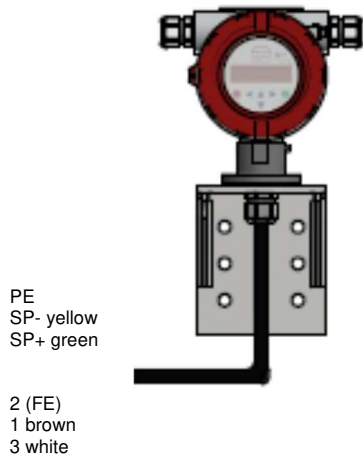
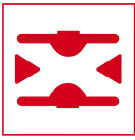
Remote IP65 according to DIN/EN 60529  
Dust tight, protected against powerful water jets.

With 2.5m, 5m and 10m factory mounted cable on transmitter

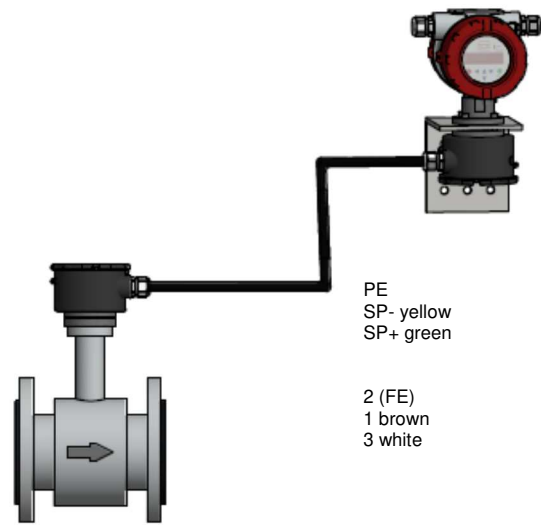


Remote IP68 according to DIN/EN 60529  
Dust tight, suitable for continuous immersion.

For distances > 10m, factory mounted cable on transmitter, junction box on sensor resin filled.



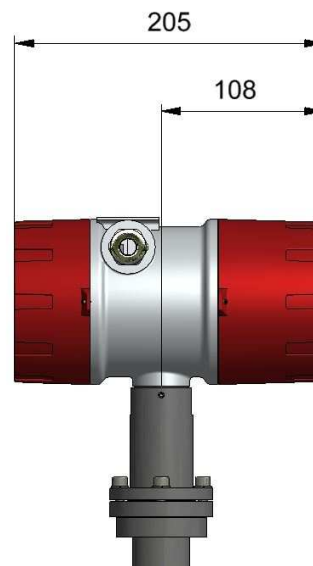
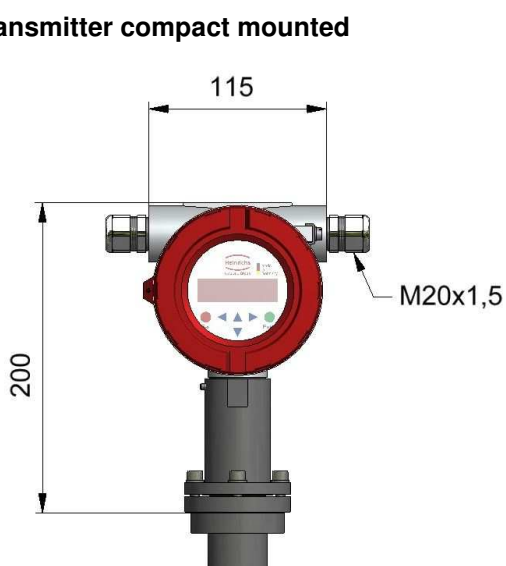
**Remote version up to 10m cable**



**Remote version >10m cable**

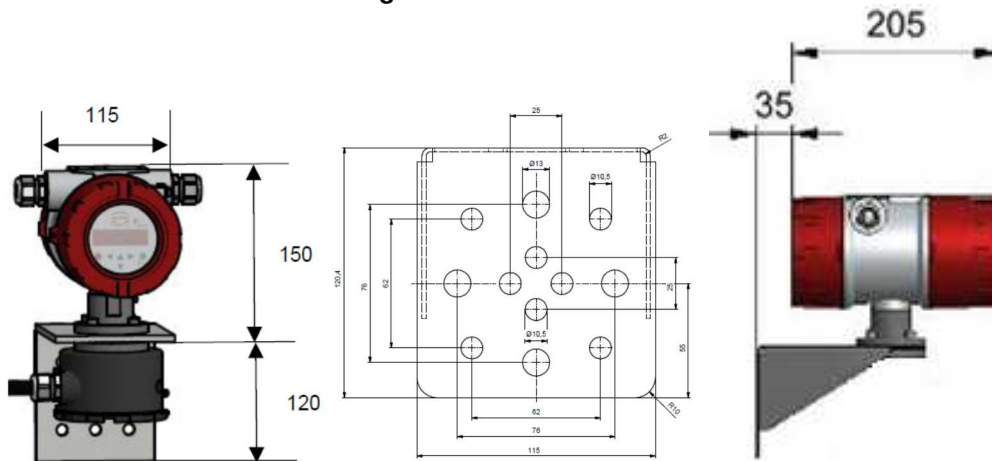
**Dimensions of the Transmitter UMF2**  
(All measures in mm)

**Transmitter compact mounted**

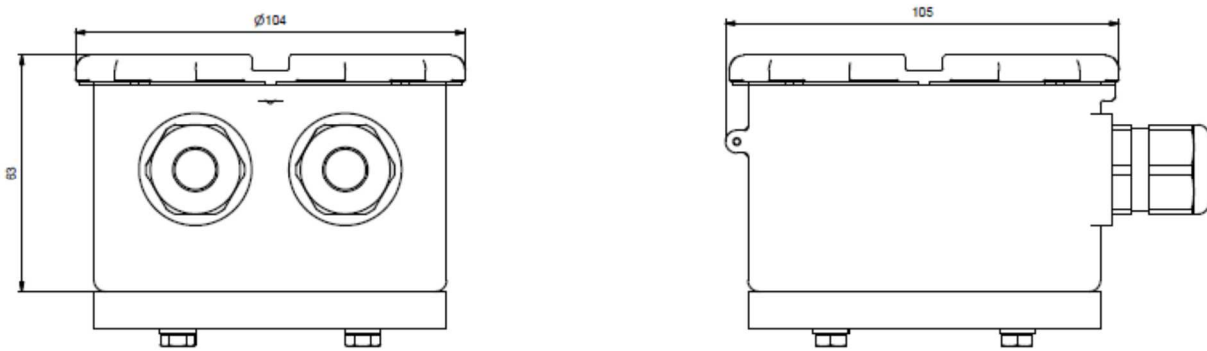


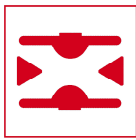


### Transmitter for remote mounting



### Junction box (sensor) for remote mounting

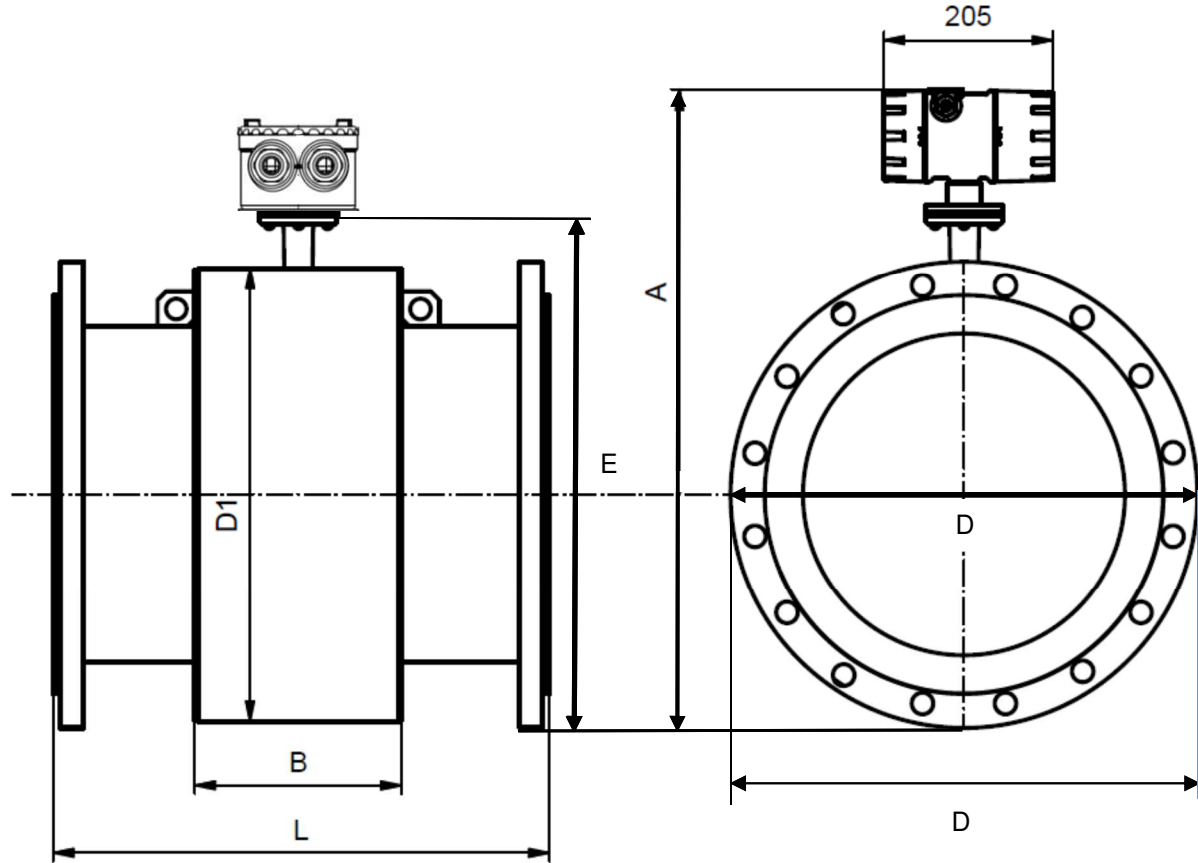




## Dimensions of the Sensor EPS

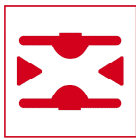
(All measures in mm)

### Flange design

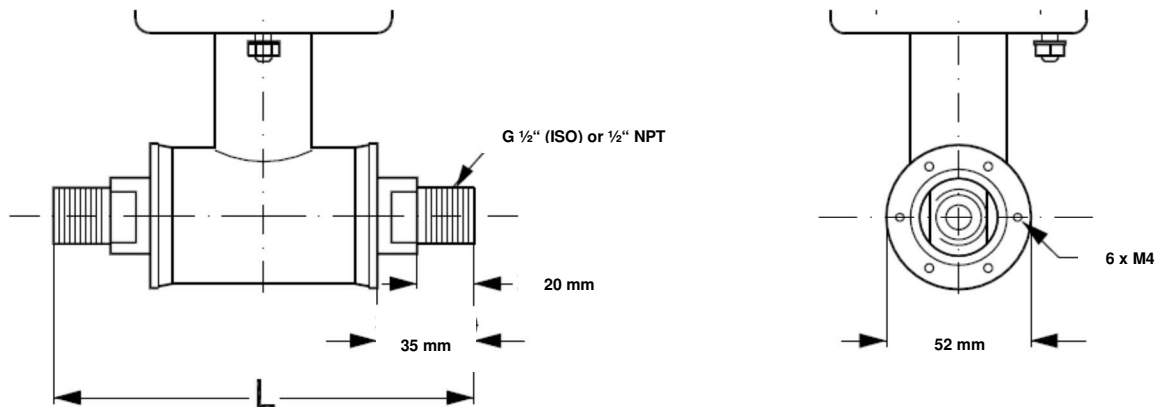


(standard - pressure level)	DN	ASME	D in mm			D1 in mm	E in mm				A in mm						L		weight / Mass [ kg ]
			ASME		EN1092-1		EN 1092-1	ASME		with transmitter			with junction box			B in mm	mm	Inch	
			150lbs	300lbs	EN1092-1			150lbs	300lbs	EN 1092-1	ASME		EN 1092-1	ASME					
											150lbs	300lbs		EN 1092-1	150lbs				
PN 40	15	½"	88,9	95,2	90	104	159	159	159	312	312,0	312,0	225,5	225,5	225,5	59	200	7,9	4
	25	1"	108	124	115	104	164,5	161	169	317,5	314,0	322,0	231	227,5	235,5	59	200	7,9	5
	40	1½"	127	155,4	150	124	192	180,5	194,7	345	333,5	347,7	258,5	247,0	261,2	82	200	7,9	8
PN 16 PN10*	50	2"	152,4	165,1	165	139	207	200,7	207,1	360	353,7	360,1	273,5	267,2	273,6	72	200	7,9	9
	65	2½"	177,8	190,5	185	154	224,5	220,9	227,3	377,5	373,9	380,3	291	287,4	293,8	72	200	7,9	11
	80	3"	190,5	209,6	200	174	242	237,3	246,8	395	390,3	399,8	308,5	303,8	313,3	72	200	7,9	12
	100	4"	228,6	254	220	214	272	276,3	289	425	429,3	442,0	338,5	342,8	355,5	85	250	9,8	16
	125	5"	254	279,4	250	239	299,5	301,5	314,2	452,5	454,5	467,2	366	368,0	380,7	85	250	9,8	19
	150	6"	279,4	317,5	285	282	338,5	335,7	354,8	491,5	488,7	507,8	405	402,2	421,3	85	300	12	27
PN 10 PN 16*	200	8"	342,9	381	340	338	394	395,5	414,5	547	548,5	567,5	460,5	462,0	481,0	137	350	14	40
	250	10"	406,4	444,5	395	393	449	454,7	473,8	602	607,7	626,8	515,5	521,2	540,3	157	450	18	60
	300	12"	482,6	520,7	445	444	499,5	518,3	537,4	652,5	671,3	690,4	566	584,8	603,9	157	500	20	80
	350	14"	533,4	584,2	505	451	533	547,2	572,6	686	700,2	725,6	599,5	613,7	639,1	270	550	22	110
	400	16"	596,9	647,7	565	502	588,5	604,5	629,9	741,5	757,5	782,9	655	671,0	696,4	270	600	24	125
	450	18"	635	711,2	615	563	644	654	692,1	797	807,0	845,1	710,5	720,5	758,6	310	600	24	175
	500	20"	698	774,7	670	614	697	711	749,4	850	864,0	902,4	763,5	777,5	815,9	350	600	24	200
	600	24"	812,8	914,4	780	715	802,5	818,9	869,7	955,5	971,9	1022,7	869	885,4	936,2	320	600	24	287
	700	-	-	-	880	816	903	-	-	1056	-	-	969,5	-	-	450	700	28	330
	800	-	-	-	1015	927	1026	-	-	1179	-	-	1092,5	-	-	560	800	32	450
	900	-	-	-	1115	1032	1128,5	-	-	1281,5	-	-	1195	-	-	630	900	35	530
	1000	-	-	-	1230	1136	1238	-	-	1391	-	-	1304,5	-	-	670	1000	39	660
1200	-	-	-	1455	1348	1456,5	-	-	1609,5	-	-	1523	-	-	792	1200	47	1180	

Weights are proximate (for PN16) without transmitter. For transmitter additional weight of 2.4 kg  
(\* higher pressure on request)

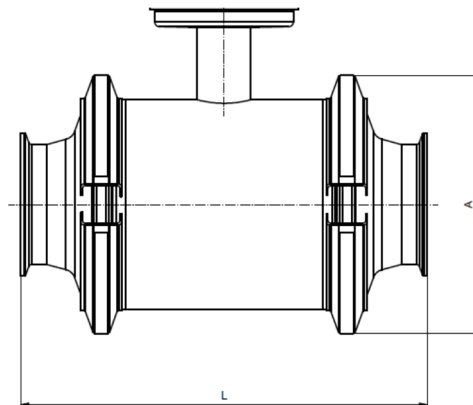


**Wafer-version DN 2, 3, 6, 10 incl. G1/2" (ISO) or 1/2"NPT connection**

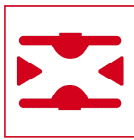


DN	L (mm) (w/o gasket)	L (mm) EPDM	L (mm) Graphi	L (mm) Teflon
2	150	150	152	156
3				
6				
10				
Size	L (inch) (w/o gasket)	L (inch) EPDM	L (inch) Graphi	L (inch) Teflon
1/12"	5,9	5,9	6	6,1
1/8"				
1/4"				
3/8"				

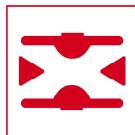
**EPS Food design be possible in DIN 11850, Tri-Clover®**



Size	A (mm)	B (mm)	C (mm)	Standard	
				11851	Tri-Clover®
DN				L (mm)	L (mm)
10	99	159,2	64	146	146
15	99	159,2	64	146	146
25	113	180	77,5	161	161
40	126	207	91	176	176
50	154	240,7	119	186	186
65	165	261,1	130	223	223
80	200	297	155	258	258
100	225	336,5	183	288	288
Ansi	A (inch)	B (inch)	C (inch)	L (inch)	L (inch)
3/8"	3,9	6,26	2,52	5,75	5,75
1/2"	3,9	6,26	2,52	5,75	5,75
1"	4,45	7,09	3,05	6,34	6,34
1 1/2"	4,96	8,15	3,58	6,93	6,93
2"	6,06	9,47	4,68	7,32	7,32
2 1/2"	6,5	10,28	5,12	8,78	8,78
3	7,87	11,69	6,1	10,16	10,16
4	8,86	13,25	7,2	11,34	11,34

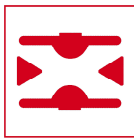


Model code	Description			
Sensor				
EPS-	Material Lining	Electrodes	Process-Temperature	
E	EPDM	Standard 2x Measuring- + 2x Groundelectrodes	-10...+70°C	
H	Hard Rubber (Ebonit)	Standard 2x Measuring- + 2x Groundelectrodes	0°C...95°C	
W	Soft Rubber	Standard 2x Measuring- + 2x Groundelectrodes	0°C...70°C	
P	PTFE	Standard 2x Measuring Electrodes	-20°C...+150°C	
A	Ceramics	Standard 2x Measuring Electrodes	-20°C...+150°C	
-	Process connection	Material Lining / Electrodes / Sealing	Max. measuring range (Water 20°C, 1 mPas)	Installation length
DIN connections				
002E	DN 2 G1/2"(316L) / incl. Gasket/EPDM	Ceramics / Platinum / EPDM	156 l/h	150 mm
003E	DN 3 G1/2"(316L) / incl. Gasket/EPDM	Ceramics / Platinum / EPDM	254 l/h	150 mm
006E	DN 6 G1/2"(316L) / incl. Gasket/EPDM	Ceramics / Platinum / EPDM	1017 l/h	150 mm
010E	DN10 G1/2"(316L) / incl. Gasket/EPDM	Ceramics / Platinum / EPDM	2827 l/h	150 mm
H02E	DN 2 G1/2"(Hastelloy) / incl. Gasket/PTFE	Keramik / Platin / PTFE	156 l/h	156 mm
H03E	DN 3 G1/2"(Hastelloy) / incl. Gasket/PTFE	Keramik / Platin / PTFE	254 l/h	156 mm
H06E	DN 6 G1/2"(Hastelloy) / incl. Gasket/PTFE	Keramik / Platin / PTFE	1017 l/h	156 mm
H10E	DN10 G1/2"(Hastelloy) / incl. Gasket/PTFE	Keramik / Platin / PTFE	2827 l/h	156 mm
DIN flanges				
305B	DN15 PN40 Form B1 DIN EN 1092-1		6,3 m³/h	200 mm
309B	DN25 PN40 Form B1 DIN EN 1092-1		17,6 m³/h	200 mm
317B	DN40 PN40 Form B1 DIN EN 1092-1		45 m³/h	200 mm
320B	DN50 PN16 Form B1 DIN EN 1092-1	only EPDM	70 m³/h	200 mm
321B	DN50 PN40 Form B1 DIN EN 1092-1		70 m³/h	200 mm
325B	DN65 PN16 Form B1 DIN EN 1092-1		119 m³/h	200 mm
326B	DN65 PN40 Form B1 DIN EN 1092-1		119 m³/h	200 mm
330B	DN80 PN16 Form B1 DIN EN 1092-1		180 m³/h	200 mm
331B	DN80 PN40 Form B1 DIN EN 1092-1		180 m³/h	272 mm
335B	DN100 PN16 Form B1 DIN EN 1092-1		282 m³/h	250 mm
336B	DN100 PN40 Form B1 DIN EN 1092-1		282 m³/h	250 mm
340B	DN125 PN16 Form B1 DIN EN 1092-1		441 m³/h	250 mm
341B	DN125 PN40 Form B1 DIN EN 1092-1		441 m³/h	250 mm
345B	DN150 PN16 Form B1 DIN EN 1092-1		636 m³/h	300 mm
346B	DN150 PN40 Form B1 DIN EN 1092-1		636 m³/h	300 mm
349B	DN200 PN10 Form B1 DIN EN 1092-1		1130 m³/h	350 mm
350B	DN200 PN16 Form B1 DIN EN 1092-1		1130 m³/h	350 mm
351B	DN200 PN40 Form B1 DIN EN 1092-1		1130 m³/h	350 mm
355B	DN250 PN10 Form B1 DIN EN 1092-1		1767 m³/h	450 mm
356B	DN250 PN16 Form B1 DIN EN 1092-1		1767 m³/h	450 mm
358B	DN250 PN40 Form B1 DIN EN 1092-1		1767 m³/h	450 mm
362B	DN300 PN10 Form B1 DIN EN 1092-1		2544 m³/h	500 mm
363B	DN300 PN16 Form B1 DIN EN 1092-1		2544 m³/h	500 mm
365B	DN300 PN40 Form B1 DIN EN 1092-1		2544 m³/h	550 mm
369B	DN350 PN10 Form B1 DIN EN 1092-1		3463 m³/h	550 mm
370B	DN350 PN16 Form B1 DIN EN 1092-1		3463 m³/h	550 mm
375B	DN400 PN10 Form B1 DIN EN 1092-1		4523 m³/h	600 mm
376B	DN400 PN16 Form B1 DIN EN 1092-1		4523 m³/h	600 mm
3B1B	DN450 PN10 Form B1 DIN EN 1092-1		5725 m³/h	600 mm
3B2B	DN450 PN16 Form B1 DIN EN 1092-1		5725 m³/h	600 mm
380B	DN500 PN10 Form B1 DIN EN 1092-1		7068 m³/h	600 mm
381B	DN500 PN16 Form B1 DIN EN 1092-1		7068 m³/h	600 mm
384B	DN600 PN10 Form B1 DIN EN 1092-1		10178 m³/h	600 mm
385B	DN600 PN16 Form B1 DIN EN 1092-1		10178 m³/h	600 mm
38AB	DN700 PN10 Form B1 DIN EN 1092-1		13854 m³/h	700 mm
389B	DN800 PN6 Form B1 DIN EN 1092-1		18095 m³/h	800 mm
390B	DN800 PN10 Form B1 DIN EN 1092-1		18095 m³/h	800 mm
391B	DN900 PN6 Form B1 DIN EN 1092-1		22902 m³/h	900 mm
392B	DN900 PN10 Form B1 DIN EN 1092-1		22902 m³/h	900 mm
393B	DN1000 PN6 Form B1 DIN EN 1092-1		27274 m³/h	1000 mm
394B	DN1000 PN10 Form B1 DIN EN 1092-1		27274 m³/h	1000 mm
395B	DN1200 PN6 Form B1 DIN EN 1092-1		40715 m³/h	1200 mm
396B	DN1200 PN10 Form B1 DIN EN 1092-1		40715 m³/h	1200 mm
ANSI connections				
002A	DN 2 - 1/2"NPT(316L) / incl. Gasket/EPDM	Keramik / Platin / EPDM	156 l/h	150 mm
003A	DN 3 - 1/2"NPT(316L) / incl. Gasket/EPDM	Keramik / Platin / EPDM	254 l/h	150 mm
006A	DN 6 - 1/2"NPT(316L) / incl. Gasket/EPDM	Keramik / Platin / EPDM	1017 l/h	150 mm
010A	DN10 - 1/2"NPT(316L) / incl. Gasket/EPDM	Keramik / Platin / EPDM	2827 l/h	150 mm
H02A	DN 2 - 1/2"NPT(Hastelloy) / incl. Gasket/PTFE	Keramik / Platin / PTFE	156 l/h	156 mm
H03A	DN 3 - 1/2"NPT(Hastelloy) / incl. Gasket/PTFE	Keramik / Platin / PTFE	254 l/h	156 mm
H06A	DN 6 - 1/2"NPT(Hastelloy) / incl. Gasket/PTFE	Keramik / Platin / PTFE	1017 l/h	156 mm
H10A	DN10 - 1/2"NPT(Hastelloy) / incl. Gasket/PTFE	Keramik / Platin / PTFE	2827 l/h	156 mm

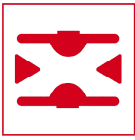


ANSI flanges				
201R	1/2" Class 150 RF ASME B16.5-2003		6,3 m³/h	200 mm
221R	1/2" Class 300 RF ASME B16.5-2003		6 m³/h	200 mm
203R	1" Class 150 RF ASME B16.5-2003		17,6 m³/h	200 mm
223R	1" Class 300 RF ASME B16.5-2003		17,6 m³/h	200 mm
205R	1 1/2" Class 150 RF ASME B16.5-2003		45 m³/h	200 mm
225R	1 1/2" Class 300 RF ASME B16.5-2003		45 m³/h	200 mm
206R	2" Class 150 RF ASME B16.5-2003		70 m³/h	200 mm
226R	2" Class 300 RF ASME B16.5-2003		70 m³/h	200 mm
207R	2 1/2" Class 150 RF ASME B16.5-2003		119 m³/h	200 mm
227R	2 1/2" Class 300 RF ASME B16.5-2003		119 m³/h	272 mm
208R	3" Class 150 RF ASME B16.5-2003		180 m³/h	272 mm
228R	3" Class 300 RF ASME B16.5-2003		180 m³/h	272 mm
210R	4" Class 150 RF ASME B16.5-2003		282 m³/h	250 mm
230R	4" Class 300 RF ASME B16.5-2003		282 m³/h	310 mm
211R	5" Class 150 RF ASME B16.5-2003		441 m³/h	250 mm
231R	5" Class 300 RF ASME B16.5-2003		441 m³/h	335 mm
212R	6" Class 150 RF ASME B16.5-2003		636 m³/h	300 mm
232R	6" Class 300 RF ASME B16.5-2003		636 m³/h	300 mm
213R	8" Class 150 RF ASME B16.5-2003		1130 m³/h	350 mm
233R	8" Class 300 RF ASME B16.5-2003		1130 m³/h	350 mm
214R	10" Class 150 RF ASME B16.5-2003		1767 m³/h	450 mm
234R	10" Class 300 RF ASME B16.5-2003		1767 m³/h	450 mm
215R	12" Class 150 RF ASME B16.5-2003		2544 m³/h	500 mm
235R	12" Class 300 RF ASME B16.5-2003		2544 m³/h	500 mm
216R	14" Class 150 RF ASME B16.5-2003		3463 m³/h	550 mm
236R	14" Class 300 RF ASME B16.5-2003		3463 m³/h	550 mm
217R	16" Class 150 RF ASME B16.5-2003		4523 m³/h	600 mm
237R	16" Class 300 RF ASME B16.5-2003		4523 m³/h	600 mm
218R	18" Class 150 RF ASME B16.5-2003		5725 m³/h	600 mm
238R	18" Class 300 RF ASME B16.5-2003		5725 m³/h	640 mm
219R	20" Class 150 RF ASME B16.5-2003		7068 m³/h	600 mm
239R	20" Class 300 RF ASME B16.5-2003		7068 m³/h	730 mm
220R	24" Class 150 RF ASME B16.5-2003		10178 m³/h	600 mm
240R	24" Class 300 RF ASME B16.5-2003		10178 m³/h	860 mm
2A1R	28" Class 150 RF ASME B16.5-2004		13854 m³/h	800 mm
2A2R	30" Class 150 RF ASME B16.5-2005		15904 m³/h	900 mm
2A3R	32" Class 150 RF ASME B16.5-2006		18095 m³/h	900 mm
2A4R	36" Class 150 RF ASME B16.5-2007		22902 m³/h	1100 mm
2A5R	40" Class 150 RF ASME B16.5-2008		28274 m³/h	1100 mm
2A6R	48" Class 150 RF ASME B16.5-2010		40715 m³/h	1400 mm
JIS flanges				
416R	1" JIS K10		17,6 m³/h	200 mm
418R	1" JIS K20		17,6 m³/h	200 mm
426R	1 1/2" JIS K10		45 m³/h	200 mm
428R	1 1/2" JIS K20		45 m³/h	240 mm
431R	2" JIS K10		70 m³/h	200 mm
433R	2" JIS K20		70 m³/h	240 mm
436R	2 1/2" JIS K10		119 m³/h	200 mm
438R	2 1/2" JIS K20		119 m³/h	272 mm
441R	3" JIS K10		180 m³/h	200 mm
443R	3" JIS K20		180 m³/h	272 mm
446R	4" JIS K10		282 m³/h	250 mm
448R	4" JIS K20		282 m³/h	310 mm
451R	5" JIS K10		441 m³/h	250 mm
453R	5" JIS K20		441 m³/h	335 mm
456R	6" JIS K10		636 m³/h	300 mm
458R	6" JIS K20		636 m³/h	300 mm
461R	8" JIS K10		1130 m³/h	350 mm
463R	8" JIS K20		1130 m³/h	350 mm
466R	10" JIS K10		1767 m³/h	450 mm
468R	10" JIS K20		1767 m³/h	450 mm
471R	12" JIS K10		2544 m³/h	500 mm
473R	12" JIS K20		2544 m³/h	500 mm
476R	14" JIS K10		3463 m³/h	550 mm
478R	14" JIS K20		3463 m³/h	550 mm
481R	16" JIS K10		4523 m³/h	600 mm
483R	16" JIS K20		4523 m³/h	600 mm
486R	18" JIS K10		5725 m³/h	600 mm
488R	18" JIS K20		5725 m³/h	640 mm
491R	20" JIS K10		7068 m³/h	600 mm
493R	20" JIS K20		7068 m³/h	680 mm
496R	24" JIS K10		10178 m³/h	600 mm
498R	24" JIS K20		10178 m³/h	800 mm
Food design				
7000	DN15 Tri-Clamp-Connection	Ceramics / Platinum	6,3 m³/h	144 mm
7010	DN25 Tri-Clamp-Connection	Ceramics / Platinum	17,6 m³/h	159 mm
7020	DN40 Tri-Clamp-Connection	Ceramics / Platinum	45 m³/h	174 mm
7030	DN50 Tri-Clamp-Connection	Ceramics / Platinum	70 m³/h	184 mm
7040	DN65 Tri-Clamp-Connection	Ceramics / Platinum	119 m³/h	221 mm
7050	DN80 Tri-Clamp-Connection	Ceramics / Platinum	180 m³/h	256 mm
7060	DN100 Tri-Clamp-Connection	Ceramics / Platinum	282 m³/h	286 mm
6610	DN 15 Sanitary connection DIN11851	Ceramics / Platinum	6,3 m³/h	144 mm
6630	DN 25 Sanitary connection DIN11851	Ceramics / Platinum	17,6 m³/h	159 mm
6650	DN 40 Sanitary connection DIN11851	Ceramics / Platinum	45 m³/h	174 mm
6660	DN 50 Sanitary connection DIN11851	Ceramics / Platinum	70 m³/h	184 mm
6690	DN100 Sanitary connection DIN11851	Ceramics / Platinum	282 m³/h	286 mm
	<b>Special on request</b>			
XXXX	special on request		xx	xx





-	<b>Material Process connection</b>		
0	w/o		
1	Flange steel painted		
2	Flange st.st. 1.4301 (DN2...10 in 1.4404)		
x	special on request		
	<b>Material electrodes</b>		
S	st.st. 1.4571 (316 -Ti)	(Standard for hard rubber, soft rubber)	
H	Hastelloy	(Standard for PTFE / EPDM - lining)	special for hard rubber, soft rubber
T	Tantalum		special for soft rubber, EPDM
N	Platinum / Iridium	(Standard for ceramic lining)	special for soft rubber, EPDM
M	Titanium		special for hard rubber rubber, EPDM
X	Special on request		
	<b>Earthing electrode</b>		
0	w/o	(Standard for PTFE / ceramic - lining)	
S	st.st. 1.4571 (316 Ti)	(Standard for hard rubber, soft rubber)	
H	Hastelloy	EPDM (not available for PTFE / ceramic lining)	special for hard rubber, soft rubber
T	Tantalum	(not available for PTFE / ceramic lining)	special for soft rubber, EPDM
N	Platinum	(not available for PTFE / ceramic lining)	special for soft rubber, EPDM
M	Titanium	(not available for PTFE / ceramic lining)	special for hard rubber, EPDM
X	Special on request		
	<b>Transmitter mounting</b>		<b>Protection class, sensor</b>
1	Integrated transmitter	IP67	-
2	Remote Transmitter	IP 67 terminal conn.box via M 20 x 1,5	cable > 10m add. term.conn.box on transmitter
3	Remote Transmitter	IP 68, term.conn.box via M 20 x 1,5, encapsulated	add. term.conn.box on transmitter
	<b>Certificates</b>		
0	w/o		
1	Certificate of compliance with order 2.1		
2	Test report 2.2		
B	Inspection / material certificate 3.1 DIN/EN 10204:2008		
C	Inspection / material certificate 3.2 DIN/EN 10204:2008		
	<b>UMF2-</b>	<b>Mounting</b>	<b>Connection to sensor</b>
		<b>IP 67</b>	<b>Thread - electrical connection</b>
A	Integrated transmitter IP 67 standard		1/2" NPT (f)
B	Integrated transmitter IP 67 standard		M20 x 1,5
C	Remote transmitter	incl 2,5 m cable, c/w pipe-/wall mounting bracket	cable > 10m add. term.conn.box on trans 1/2" NPT (f)
D	Remote transmitter	incl 2,5 m cable, c/w pipe-/wall mounting bracket	cable > 10m add. term.conn.box on trans M20 x 1,5
		<b>IP 68</b>	
L	compact transmitter IP68		1/2" NPT (f)
M	compact transmitter IP68		M20x1,5
G	remote transmitter	incl 2,5 m cable, c/w pipe-/wall mounting bracket	transmitter c/w term.conn.box 1/2" NPT (f)
H	remote transmitter	incl 2,5 m cable, c/w pipe-/wall mounting bracket	transmitter c/w term.conn.box M20 x 1,5
	<b>Display and control unit</b>		
1	integrated		
	<b>Power supply</b>		
1	230V AC (+10%, -15%), 50/60Hz		
2	115V AC (+10%, -15%), 50/60Hz		
4	24V DC (±15%)		
	<b>Output signal</b>		
F	current output: 1x 0/4-20 mA		
G	current output: 1x 0/4-20 mA c/w HART protocoll		
	<b>Design</b>		
0BH	Heinrichs		
0BK	Kobold		
	<b>modelcode</b>		
	options		
	<b>Longer cable</b>		
	<b>IP 67</b>		
0	2,5m standard on remote version	breakout cable	
1	5m	breakout cable	
2	10m	breakout cable	
3	15m	add junction box to transmitter	
4	20m	add junction box to transmitter	
5	30m	add junction box to transmitter	
6	40m	add junction box to transmitter	
7	50m	add junction box to transmitter	
	<b>IP 68</b>		
A	2,5m standard on remote version	add junction box to transmitter	
B	5m	add junction box to transmitter	
C	10m	add junction box to transmitter	
D	15m	add junction box to transmitter	
E	20m	add junction box to transmitter	
F	30m	add junction box to transmitter	
G	40m	add junction box to transmitter	
H	50m	add junction box to transmitter	
X	Special on request		



Subject to change.

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