

## Flow measurement

### Flowmeter MDW 500

#### description

- industrial inductive flow meter with display unit
- innovative and compact connection head design
- measurement of different liquids in a variety of sectors
- various process connections
- high measurement accuracy and repeatability
- very simple and intuitive operation with control keys
- possibility of flow monitoring function (flow switch)
- 350° swivel display for comfortable reading
- a wide range of outputs for different control systems



MDW 500...

#### technical specifications

power supply	230 VAC (50/60 Hz), 24 VAC/VDC with polarity reversal protection, 110VAC(60Hz) on request
input power	4,6 VA
technical versions	electronics head fitted, remote version with cable maximum cable length 20m with separate execution (other lengths on request)
temperature range medium	compact design rubber all versions max. 80°C permanently PTFE max. 90°C permanently, CIP cleaning process possible separate version rubber (hard) max. 80°C permanently PTFE max. 150°C permanently PFA max. 130°C permanently (DN300...DN400) on request
diameter	DN 10 ... DN 400 (other diameters on request)
material lining	rubber (hard), rubber approved for potable water or PTFE or PFA (see Table 3)
electrode material	CrNi-stainless steel DIN 1.4571, Hastelloy C4, titanium, tantalum
sensor housing material	flange - stainless steel and structural steel with polyurethane coating sandwich construction - stainless steel
process connections	flange steel ST37 painted flange stainless steel 1.4306/304 L, 1.4404/316 L sandwich design threaded design
pressure	PN10, PN16, PN25, PN40
min. conductivity of the measured fluid	20 µS (at a lower conductivity, upon agreement with promesstec GmbH)
measuring range (Qmin/Qmax)	bidirectionally for 0,2 to 12 m/s (1/60); 0,12 to 12 m/s (1/100); 0,06 to 12 m/s (1/200)
accuracy	accuracy up to 0,5%, repeatability up to 0,2%
pressure loss	negligible
additional electrodes	grounding and detection electrodes for empty piping (DN 15 ÷ DN 400)
empty piping detection	DN 15 ÷ DN 400
display unit	LCD 2 x 16 characters
control	2 x external button (viewing values) 3 x internal button (viewing+parameter changing)
outputs	impulse/flow switch (max. 400 Hz), 4 + 20 mA, RS485 (M-BUS / Mod-Bus protocol) (impulse and current outputs are passive with a possibility of being powered from internal power supply of the meter)
max. ambient temperature	55 °C (housing, electronic)
flow sensor degree of protection	IP65, IP67, IP68
electronics degree of protection	IP67

#### typical application areas

- water and wastewater industry
- agriculture, biogas plants
- food industry, dairies, breweries
- pharmaceutical industry
- industrial applications such as heating circuits
- power station technology

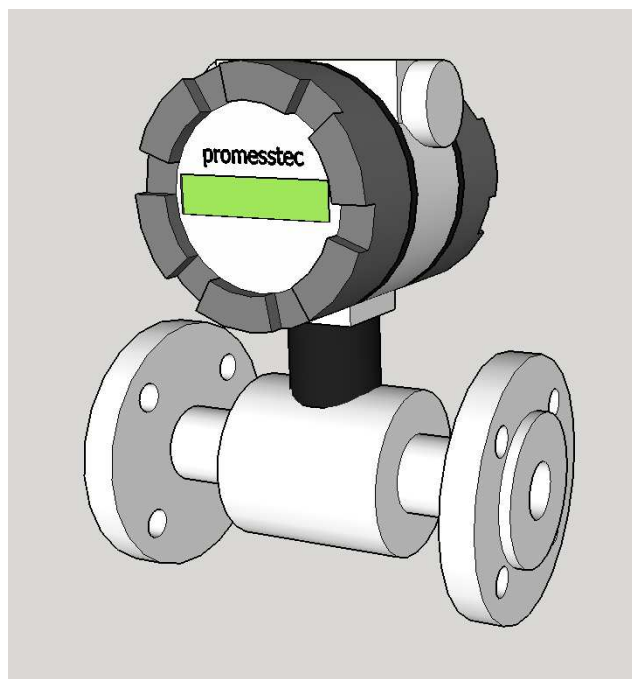
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instantaneous flow rate corresponding to flow velocity (table 1)

diameter nominal (mm)	Qmin (m3/h) Qmin /Qmax			Qmax(m3/h) – (12 m/s)
	1/60 (0.2 m/s)	1/100 (0.12 m/s)	1/200 (0.06 m/s)	
DN 6	upon request			
DN 8	upon request			
DN 10	0,06	0,034	-	3,4
DN 15	0,13	0,076	-	7,6
DN 20	0,24	0,142	-	14,2
DN 25	0,35	0,21	0,105	21
DN 32	0,6	0,34	0,17	34
DN 40	0,9	0,54	0,27	54
DN 50	1,4	0,84	0,42	84
DN 65	2,4	1,44	0,72	144
DN 80	3,6	2,2	1,1	220
DN 100	5,6	3,4	1,7	340
DN 125	8,9	5,34	2,67	534
DN 150	13	7,6	3,8	760
DN 200	23	13,5	6,75	1350
DN 250	35	21,1	-	2115
DN 300	51	30	-	3050
DN 350	70	41	-	4150
DN 400	90	54	-	5426

### 3D-view



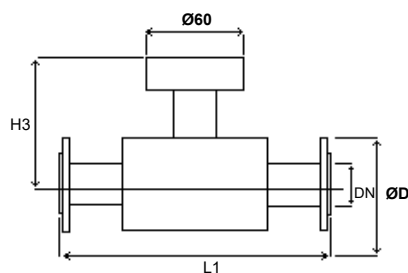
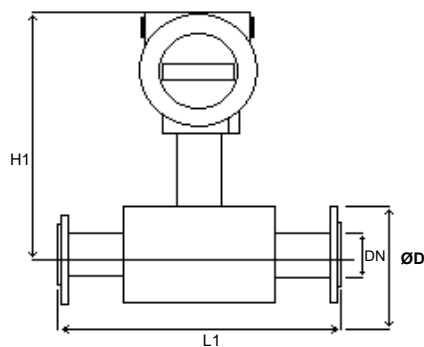
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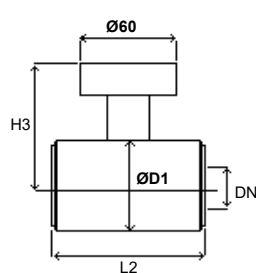
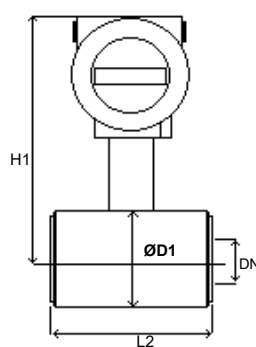
### dimensions (table 2)

connecti- on (mm)	constructional length (mm)			outside diameter (mm)			total height (mm)			
	flange	sandwich	threaded	flange	sensor body		compact design		separated design	
				flange	flange/ sandwich	threaded	flange/ sandwich	threaded	flange/ sandwich	threaded
DN	L1	L2	L3	D	D1	D2	H1	H2	H3	H4
6	u. r.									
8	u. r.									
10	-	90	193 (3/8")	-	51	-	173	-	86	-
15	200	90	196 (1/2")	95	51	70	173	177	86	90
20	200	90	206 (3/4")	105	61	80	173	182	86	95
25	200	90	206 (1")	115	71	90	178	187	91	100
32	200	90	233 (1 1/4")	135	82	100	183	192	96	105
40	200	110	256 (1 1/2")	145	92	116	188	200	101	113
50	200	110	261 (2")	160	107	136	196	210	109	123
65	200	130	-	180	127	151	206	218	119	131
80	200	130	-	195	142	177	213	231	126	144
100	250	200	-	215	168	-	226	-	139	-
125	250	200	-	245	194	-	239	-	152	-
150	300	200	-	280	224	-	254	-	167	-
200	350	200	-	335	284	-	284	-	197	-
250	450	-	-	405	-	-	327/-	-	240/-	-
300	500	-	-	440	-	-	352/-	-	265/-	-
350	550	-	-	500	-	-	382/-	-	295/-	-
400	600	-	-	565	-	-	412/-	-	325/-	-

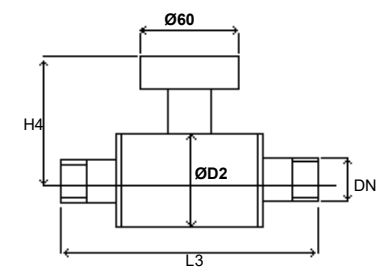
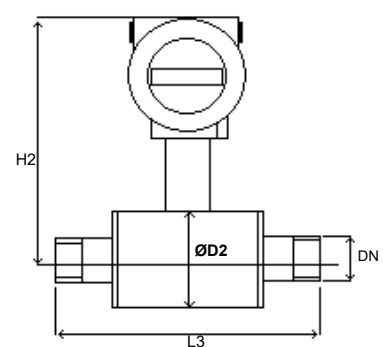
flange design



sandwich design



threaded design



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#### diameter and linings (others on request) (table 3)

connection (mm)	flange		sandwich		threaded	
	rubber (hard))	PTFE	rubber (hard)	PTFE	rubber (hard)	PTFE
<b>DN</b>						
6	upon request					
8	upon request					
10	-	-	-	X	-	-
15	-	X	-	X	-	X
20	-	X	-	X	-	X
25	X	X	X	X	X	X
32	X	X	X	X	X	X
40	X	X	X	X	X	X
50	X	X	X	X	-	-
65	X	X	X	X	-	-
80	X	X	X	X	-	-
100	X	X	X	X	-	-
125	X	X	X	X	-	-
150	X	X	X	X	-	-
200	X	X	X	X	-	-
250	X	-	-	-	-	-
300	X	-	-	-	-	-
350	X	-	-	-	-	-
400	X	-	-	-	-	-

#### explanation

.....: the standard is not possible, please inquire

X .....: design possible

#### pressure levels and diameters (table 4)

pressure level	diameter
PN10	DN350....DN400, others on request
PN16	DN250...DN300, others on request
PN25	DN10...DN200, others on request
PN40	others on request
special solutions	others on request

## Flow measurement

### Flowmeter MDW 500

order code MDW 500...

order example: MDW 500-80-DN25-B11-C3-D4-E1-F1-G2-H1-I1

### connection heads

- 80 compact design, electronic and display panel in the head
- 8503 decentralised version with 3 m cable between evaluation and transducer
- 8505 decentralised version with 5 m cable between evaluation and transducer
- 8510 decentralised version with 10 m cable between evaluation and transducer
- 8515 decentralised version with 15 m cable between evaluation and transducer
- 8520 decentralised version with 20 m cable between evaluation and transducer

### diameter

-DN XX DN10...400 possible for example DN25 = diameter 25 mm = 1" (possibilities see table 2)

### process connection

- B10 flange steel ST37 painted
- B11 flange stainless steel 1.4306/304 L
- B12 flange stainless steel 1.4404/316 L
- B20 sandwich design
- B30 threaded design

### transducer pressure area

- C1 PN10
- C2 PN16
- C3 PN25
- C4 PN40

### sensor lining (table 3)

- D1 hard rubber
- D3 rubber potable water approved (material)
- D4 PTFE
- D5 PFA

### material electrodes

- E1 stainless steel 316Ti
- E2 hastelloy C4
- E3 titan
- E4 tantalum

### sensor protection category

- F1 protection category IP65
- F2 protection category IP67
- F3 protection category IP68

### output signal

- G2 4...20 mA, pulse, switching contact
- G4 4...20 mA, pulse, switching contact, RS485 MOD-Bus RTU and M-Bus protocol can be parameterized

### power supply

- H1 230 VAC
- H2 24 VAC/VDC

### measuring range (information see table)

- I1 1/60 (standard version)
- I2 1/100
- I3 1/200