

Positive displacement meter

COVOL



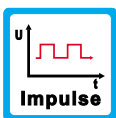
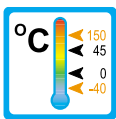
Operation

The positive displacement meter COVOL works with an oscillating piston principle. During one rotation a defined volume will be transported and counted.



Application

The COVOL is used for volume counting and flow measurement of viscous liquids. The positive displacement meter is for example used in the following areas:



Features

The positive displacement meter proves itself through reliable function and easy handling. Further characteristics of this type are:

- High accuracy
- Good repeatability
- Easy cleaning
- Used for viscosity's up to 120000 mPas (cP)
- Options:
Totalizer (CIP),
Digital indicator and measuring converter (MC-01, MT-02, CI-420, DFD-2)

Installation hints

The positive displacement meter can be mounted in any orientation in the system. The flow direction must be observed.

No flow straightening section necessary.

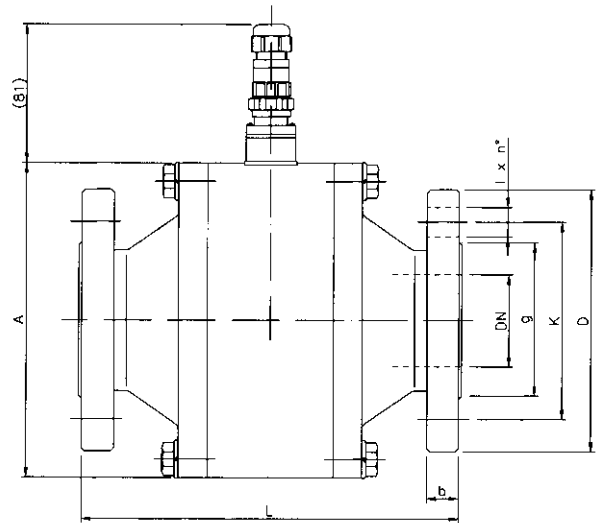
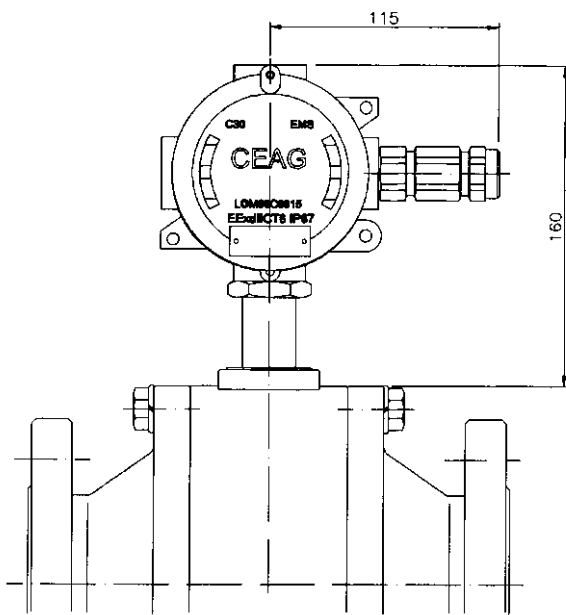
The unit must not be used as a supporting part in a pipe construction.

The liquids must not contain any particles!

The operating instruction for COVOL must be observed under any circumstances!



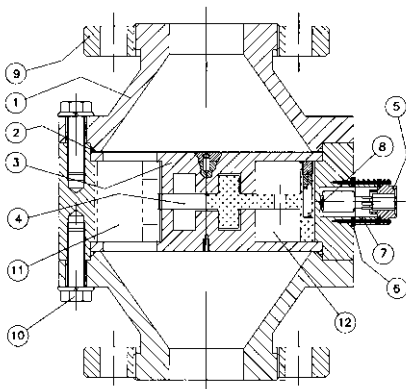
Technical data



Connections, Dimensions and Weights

DN	D	k	g	I x n°	b	L		A		Weight [kg]	
						Stain- less steel	PVC PTFE	Stain- less steel	PVC PTFE	Stain- less steel	PVC PTFE
10	90	60	40	14 x 4	14	180	210	85	125	6	5
15	95	65	45	14 x 4	14	180	210	105	140	9	8
25	115	85	68	14 x 4	16	200	230	140	170	10	9
40	150	110	88	18 x 4	16	220	250	180	200	18	15
50	165	125	102	18 x 4	18	240	270	200	230	26	21
80	200	160	138	18 x 8	20	260	330	250	290	37	30
100	220	180	158	18 x 8	20	340	450	360	420	92	80

Materials



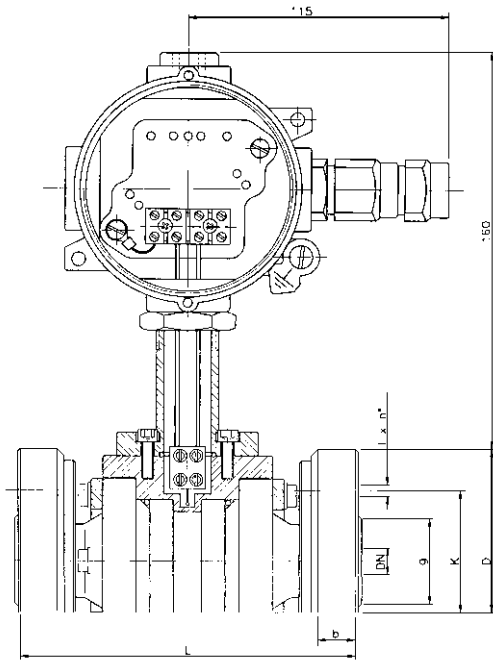
Nr.	Components	Stainless steel	PTFE	PVC / PP
1	Fittings	SS 1.4404	PTFE	PVC / PP
2	O-ring	NBR / Viton	Viton / PTFE	NBR / Viton
3	Disc	SS 1.4404	PTFE	PVC / PP
4	Piston	PTFE graphitized	PTFE graphitized	PTFE graphitized, PVC, PP
5	Connector	brass / plastic	brass / plastic	brass / plastic
6	Gaskets	NBR	NBR	NBR
7	Mounting	SS 1.4404	SS 1.4404 / PTFE	SS 1.4404 / PVC / PP
8	Reed-Contact	glass, 0,3 A / 220 V	glass, 0,3 A / 220 V	glass, 0,3 A / 220 V
9	Flanges	Steel / SS 1.4401	Steel / PTFE	Steel / PVC / PP
10	Screws	SS 1.4401	SS 1.4401	SS 1.4401
11	Seperator	SS 1.4404	PTFE	PVC / PP
12	Measuring chamber	SS 1.4404	PTFE	PVC / PP

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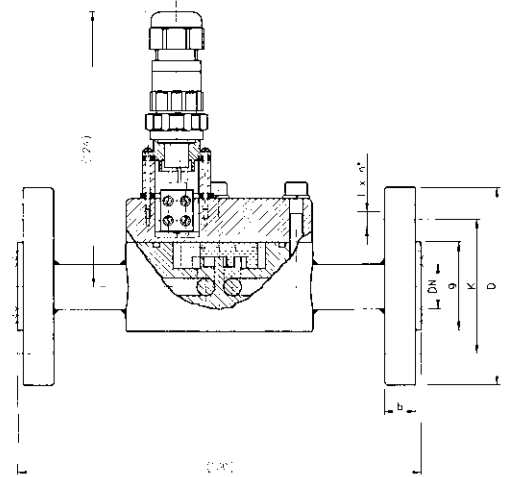


Technical data

Plastic-versions with ADF-housing



DN 10 HZ only for horizontal mounting



Dimensions DN 10 ... DN 100

DN	D	k	g	l x n°	b	L
10	95	60	40	10 x 4	25	210
15	100	65	44	12 x 4	45	210
25	120	85	64	12 x 4	45	230
40	150	110	84	16 x 4	45	250
50	175	125	98	16 x 4	45	270
80	230	160	138	16 x 4	55	330
100	250	180	158	18 x 8	65	450

Dimensions DN 10 HZ

DN	D	k	g	l x n°	b
10	90	60	40	14 x 4	14

Technical data	COVOL
Operating pressure stainless steel-version	PN 16
Operating pressure plastic-version	PN 10
Temperature range stainless steel-version	- 40 °C bis +150 °C
Temperature range PTFE-version	- 20 °C bis +130 °C
Temperature range PP-version	- 10 °C bis +80 °C
Temperature range PVC-version	0 °C bis +45 °C
Pressure drop	see diagram on page 4
Viscosity	120000 mPas (cP)
Accuracy	0,8 %
Repeatability	0,3 %
Connections	
Standard	EN 1092-1 flanges, PN 16
On request	Sanitary connections, NPT-thread
Options	Totalizer CIP (see page 5)
	MC-01, MT-02, CI-420, DFD-2 (see separate data sheets)

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Measuring ranges and pressure drop

Measuring ranges

DN	min. [l/h]	range max. [m³/h]	intermittent [m³/h]	pulses per litre (± 12 %)
10 HZ	8	0,15	0,5	100
10	20	0,35	0,8	100
15	60	1,5	2,7	20
25	100	4,5	9,0	10
40	200	8,5	15,5	4
50	400	16,0	28,0	2
80	600	28,0	50,0	1
100	800	60,0	104,0	0,2

diagram 1: pressure drop versus flow rate

diagram 2: accuracy

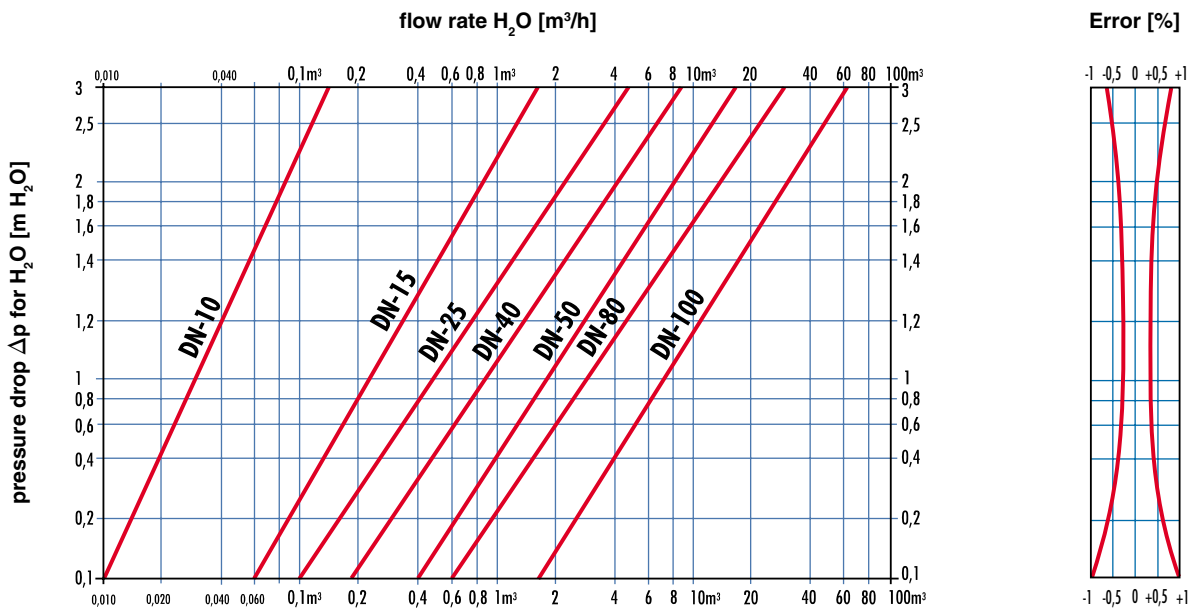
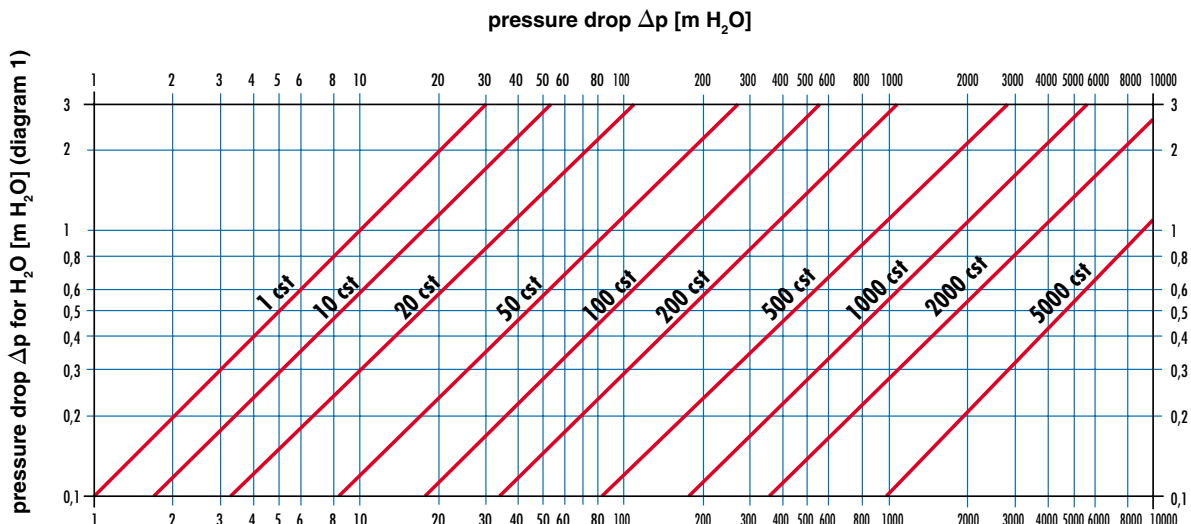


diagram 3: pressure drop versus viscosity of media



Options

Electronic counter CIP for Covol

The electronic totalizer CIP is specially designed for the meter type COVOL. The totalizer is battery powered and directly mounted on the meter, so it is possible to show total quantities direct on site..

- Compact construction
- Battery-powered (3 - 4 years lifetime)
- 7-digits display, 9 mm high
- Resetting with a integrated push button or external with magnet
- PTFE coated aluminium housing (IP 65), cover in polycarbonat (UV-protected)

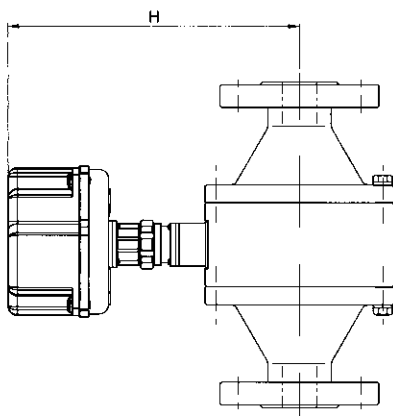


Dimensions DN 10...DN 100

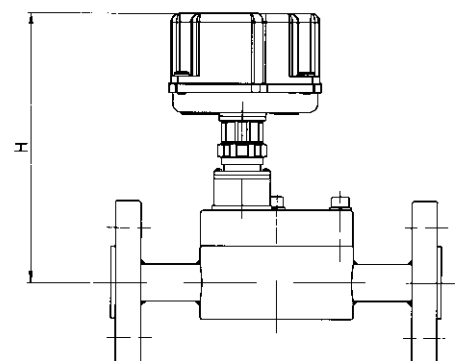
DN	H
10	148
15	161
25	170
40	192
50	202
80	227
100	267

Dimensions DN 10 HZ

DN	H
10	142



DN 10 ... DN 100



DN 10 HZ

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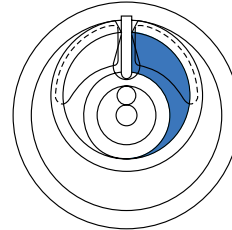


Function Principle

Function principle of the oscillating piston meter

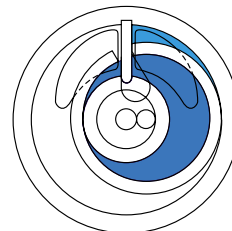
position 1

The liquid flows into the inside of the ring piston and starts the rotation.



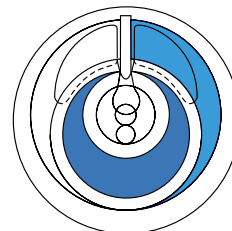
position 2

The liquid starts to fill the cavity between metering chamber and the outside of the piston and continues to fill the inside of the piston.



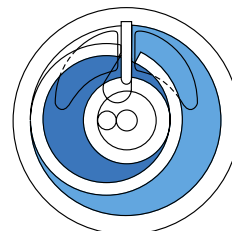
position 3

The pistons inside is completely filled. The liquid continues to fill the outside cavity and keep the piston in motion.



position 4

During further filling of the cavity, the inside of the piston will be discharged through the outlet. Then begins a new cycle by filling the pistons inside again.



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