

# Klinger U-Mass

## Coriolis Massflowmeter

Klinger U-Mass is a compact Coriolis mass flow meter that can be used for liquids and dry gases in a wide range of applications. The meter will be delivered with a built-in or separate transmitter unit.

In the standard version, the flow meter can be used for process temperatures from -50 to + 180 ° C - the measuring tubes are designed to withstand pressures up to 150 barG

### Coriolis principle

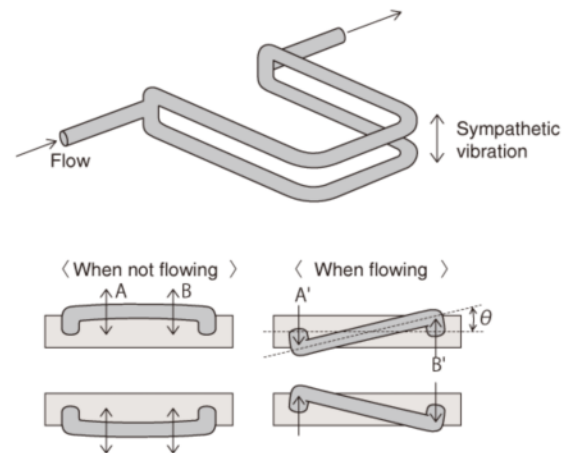
The principle is based on a gyrostatic principle together with the Coriolis acceleration or Coriolis force.

In all systems rotating about an axis, a Coriolis force is generated when a mass moves radially in the system. If a mass placed on a disk moves from the center and out to the edge, it can only move the shortest path by 'leaning' upwards against the force trying to push the body away from the straight path.

In the Coriolis flow meter, the rotation is replaced by an oscillation that sets the measuring tube in motion. As long as there is no flow, the pipe will oscillate around the center. If flow is applied, the Coriolis force will cause a torsion of the measuring tube, which is directly proportional to the mass flow.

By placing sensors on the inlet and outlet side, the movement of the inlet and outlet section can be detected. The signals are passed on to a circuit which measures the time difference between the two oscillators. The time difference is an expression of the tube's twisting - and thus the mass flow.

Bent, S-shaped or twisted tubes are used to mechanically amplify the time difference between the two measured oscillations.



### Klinger U-Mass - the accurate Massflowmeter:

- For homogeneous liquids and dry gases
- Measures mass flow, density and temperature.
- No requirement for inlet and outlet runs.
- Choose between compact or separate version - both types in IP67 version.
- Backlit LCD display
- Modbus RS485 and HART communication are standard

## Technical Data

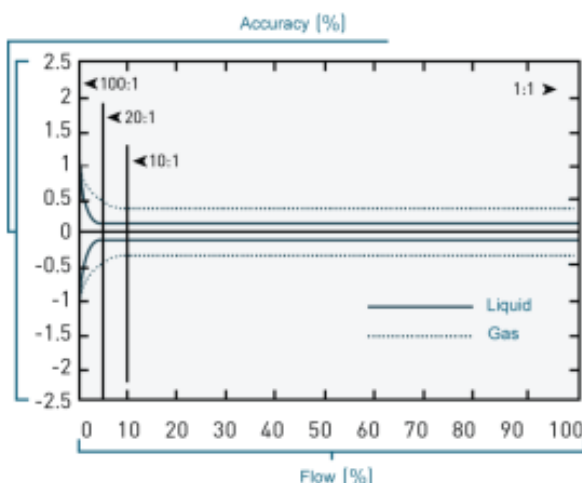
<b>Dimensions</b>	DN 1 mm to DN 250 mm
<b>Process connection:</b>	Flange or TriClamp
<b>Wetted parts:</b>	Stainless Steel / Hastelloy C
<b>Density:</b>	0.1g/cm <sup>3</sup> ...2.5 g/cm <sup>3</sup> (100kg/m <sup>3</sup> ...2,500kg/m <sup>3</sup> )
<b>Accuracy:</b>	Massflow: Better than $\pm 0,2\%$ / option $\pm 0,1\%$ Density: $\pm 0.001$ g/cm <sup>3</sup> (1.0kg/m <sup>3</sup> )
<b>Process Temperature:</b>	-50 to +180°C
<b>Process Pressure:</b>	Standard: 16 bar / Option: max 150 bar
<b>Power Supply:</b>	115/230V 50/60Hz 24VDC +10 - 15%
<b>Output:</b>	2 x analogue 4 ... 20mA Scaled pulse / Frequency (0...10 kHz)
<b>Communikacion:</b>	HART and Modbus RTU



### Ranges

Model	DN (mm)	Liquid Flow Range (kg/h)
SCM-U-001N	1	20
SCM-U-002N	2	60
SCM-U-005N	5	300
SCM-U-010N	10	1000
SCM-U-015N	15	6000
SCM-U-025N	25	10000
SCM-U-040N	40	20000
SCM-U-040H	40	30000
SCM-U-050N	50	30000
SCM-U-050H	50	60000
SCM-U-080N	80	60000
SCM-U-080H	80	180000
SCM-U-100N	100	100000
SCM-U-100H	100	280000
SCM-U-150N	150	300000
SCM-U-150H	150	640000
SCM-U-200N	200	1100000
SCM-U-250N	250	1800000

### Pressure Loss



Range ability	500:1	100:1	20:1	10:1	1:1
Accuracy of liquid ( $\pm$ %)	2.50	0.8	0.1	0.1	0.1
Accuracy of gas ( $\pm$ %)	2.50	1.5	0.5	0.35	0.35
<b>Pressure loss</b>					
Liquid (psi)	~0	~0	0.1	0.25	14.5
Liquid (bar)	~0	~0	0.01	0.02	1.0
Gas (psi)	0	0	0.1	0.35	15.0
Gas (bar)	0	0	0.01	0.02	1.03

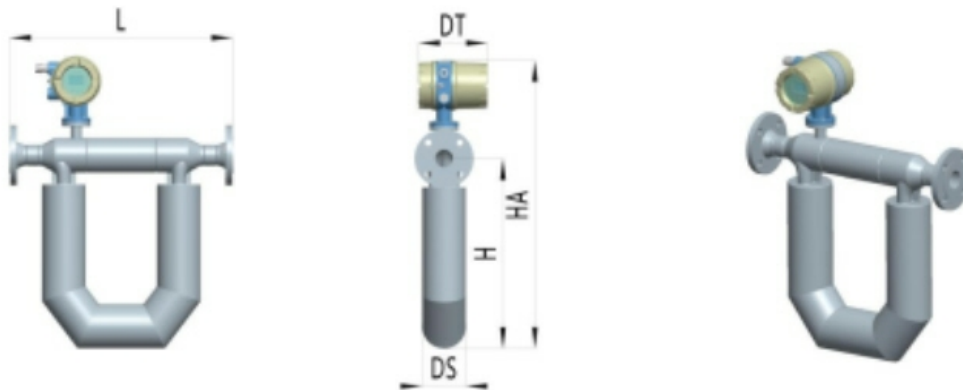
## Dimensions

U-Mass is available in 2 versions, compact with built-in transmitter, and separated by separate transmitter.

The table below shows the dimensions of the different dimensions (if you need another dimension, ask)

### Kompakt

metric size, mm



Specification	Line Size	L	H	HA	DS	DT
SCM-US-010N	10	200	170	436	95	192
SCM-US-015N	15	256	220	503	115	192
SCM-US-025N	25	304	310	568	135	192
SCM-US-040N	40	574	522	794	121	192
SCM-US-040H	40	622	542	817	121	192
SCM-US-050N	50	622	542	817	121	192
SCM-US-050H	50	702	658	936	150	192
SCM-US-080N	80	763	678	969	150	192
SCM-US-080H	80	850	861	1177	196	192
SCM-US-100N	100	822	733	1045	150	192
SCM-US-100H	100	1064	1150	1490	302	192
SCM-US-150N	150	1160	994	1331	245	192
SCM-US-150H	150	1240	1257	1627	326	192
SCM-US-200N	200	1268	1257	1627	326	192
SCM-US-250N	250	1760	1751	2168	435	192

# Ordering

Model	Suffix Code											Description
SCM-	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	Coriolis Mass Flow Meter
Type	U											U Type
Diameter	XXX											Stand for diameter 001: DN1; 250: DN 250
Signal Output	1											4-20mA/0-10KHz
Communication		1										RS485
			2									Hart
				3								PF
					4							FF
						5						None
Temperature Rating				T1								-50...+130°C
				T2								-50...+180°C
				T3								-50...+250°C
				T4								-50...+350°C
Measuring Tube					S6							SS316
					HC							Hastelloy C
					XX							On request
Accuracy Rating						01						±0.1% of rate
						02						±0.2% of rate
						05						±0.5% of rate
						XX						On request
Connection							AXX					ANSI Flange;A15:ANSI 150#;A30:ANSI 300#...
							DXX					DIN Flange;D16:DIN PN16;DN25:DIN PN25...
							JXX					JIS Flange;J10K:JIS 10K;J20K:JIS 20K...
							TRC					Tri-clamp type(Sanitary connection)
							THR					Thread connection (<DN 40)
Body Material							S4					SS304
							S6					SS316
Structure								S				Compact type with local display
								L				Remote display include bracket
Power Supply								0				24V DC
								1				220V AC

## Other Flowmeters

W-Mass - Easy Draining



LDG - Magnetic Flowmeter



LUGB - Vortex flowmeter

