

„MASS“ AND MORE

CORIOLIS MASS-FLOWMETER



- HIGH ACCURACY
- CAVITY FREE CONSTRUCTION
- ROBUST
- VERY LOW TO VERY HIGH FLOWS
- COMPARABLE PERFORMANCE TO SINGLE & DOUBLE STRAIGHT TUBE CONSTRUCTION
- INDEPENDANT OF CONDUCTIVITY
- EXPLOSION PROOF VERSION UP TO + 80°C AMBIENT TEMPERATURE
- OPTIONAL DIFFERENT COMMUNICATION PROTOCOLS AVAILABLE

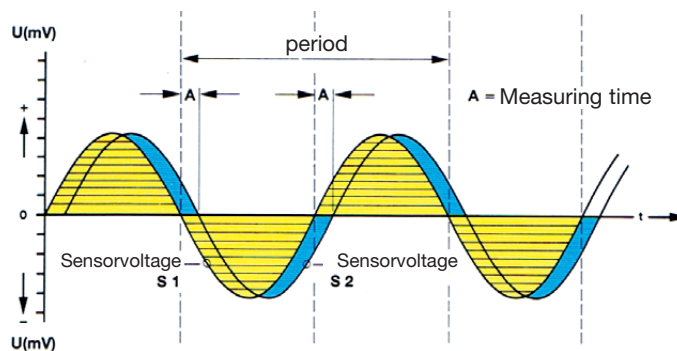
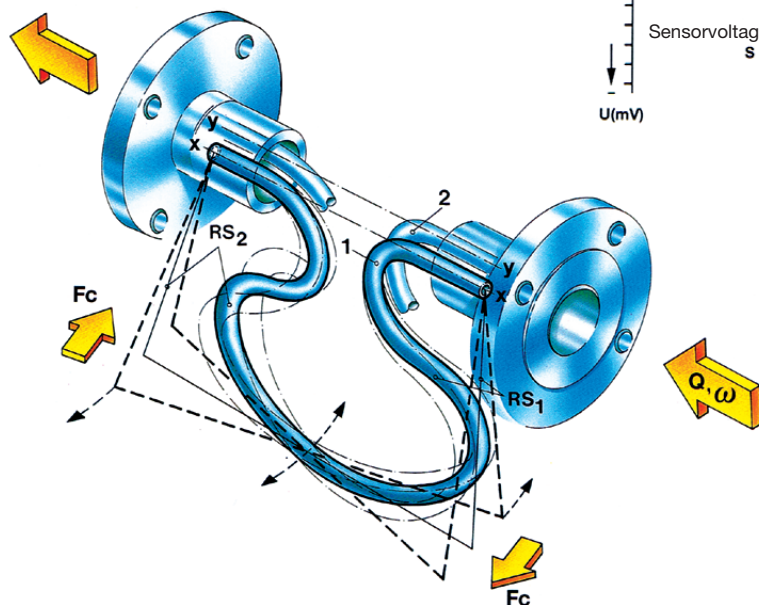
FUNCTIONALITY AND OPERATION

Two very important preconditions for an accurate and reliable measurement.

Meßprinzip – Coriolis-Kraft

- A = Measuring effects
- m = Mass
- ω accurate = Angular velocity
- v = Flow velocity
- Q = Flow
- F_c = Coriolis Force
- RS₁ u. RS₂ = Slope brackets
- 1 u. 2 = Omega slope

$$v = \frac{Q}{A}$$



The delay time „A“ is directly proportional to the mass flow

We only use omega and U-shaped measuring tube. This confers an advantage, when it comes to resolution and accuracy:

Both measuring slopes will be excited at the lowest point of the system – by between a few tenths to a few millimeters. The mounting place of the coils determines the resonance of this excitation – if they were not fixed in position it would rotate around its own axis. If a fluid is introduced to the system e.g. a liquid or gas flow – there will be two self interfering forces. The slopes will oscillate with a certain radius and the flowing media will be accelerated through this oscillation – the resulting force is called the CORIOLIS FORCE.

To get a better impression of this – try to run on a spinning disc and move from the inside to the outside. The nearer you get to the outside the faster you will go. The result in a Coriolis Mass Flowmeter is that the slopes rather than moving round its axis, oscillates from the inlet to the outlet. Therefore the delay time of the oscillation from the inlet to outlet is directly proportional to the mass flow.

So far so good – but how can we put this into operation?

For this to be explained we would need a much larger page; suffice to say – you need a lot of experience and a precise production. For you, the finished product is the important part.

„MASS“ AND MORE

FOR ALL APPLICATIONS THE RIGHT INSTRUMENT

As you need an applicable instrument for your application – we have four different model lines.

TME The “ECONOMY LINE“

Economically priced, without compromising performance



-Robust cast iron housing, very good damping qualities against external vibrations.

-Ranges	0....60.000 kg/h
-Sizes	DN 10....DN 80
-Accuracy:	± 0,15% of actual ± ZP stability
-Density	± 0,003 g/cm ³ ± ZP stability
-Volume	± 0,2%
-Temperature	-40...+180 °C
-Max. Pressure	40 Bar
-Wetted Parts	st.st. 1.4571, 1.4404
-Process connection	Flange acc. DIN / ANSI
-Ex Approvals	ATEX, FMC, NEPSI
-External heating	liquid or steam on request

TM The “UNIVERSAL LINE“

High precision, with “me” almost everything works



-Special, extremely pressure resistant housing construction

-Ranges	0....65.000 kg/h
-Sizes	DN 10....DN100
-Accuracy	± 0,1% (0,05%) of actual ± ZP stability
-Density	± 0,003 g/cm ³ ± ZP stability
-Volume	± 0,2%
-Temperature	-90...+260 °C
-Max. pressure	up to 900 bar
-Wetted Parts	st.st. 1.4571, 1.4404, Hast. C-22 Hast. B-2, Tantalum, Monel, Nickel other special material on request
-Process connection	Flange acc. DIN / ANSI / JIS /thread other special connections on request
-Ex Approvals	ATEX, FMC, NEPSI
-External heating	liquid, steam or electric on request
-Custody transfer	Approval on certain models

„MASS“ AND MORE



TMU The “CLASSIC LINE”

The classic unit – covers most applications

- robust fully welded st.st. housing
- Ranges 0.....2.200.000 kg/h
- Sizes DN 10....DN 400
- Accuracy $\pm 0,1\%$ (0,05%) of actual $\pm$ ZP stability
- Density $\pm 0,003 \text{ g/cm}^3 \pm$ ZP stability
- Volume $\pm 0,2\%$
- Temperature -40...+260 °C
- Max. Pressure 40 bar (higher pressure rating on request)
- Wetted Parts st.st. 1.4571, 1.4404, Hast. C-22
- Process connection Flange acc. DIN / ANSI /thread
other special connections on request
- Ex Approvals ATEX, FMC, NEPSI
- External heating liquid or steam on request
- Custody transfer approval on certain models



TMR The “SLIM LINE”

as a replacement for PD meters or where space is at a premium

- robust fully welded st.st. housing
- integrated flange connections, very compact design
- Ranges 0....120.000 kg/h
- Sizes DN 20....DN 100
- Accuracy $\pm 0,1\%$ (0,15%) of actual $\pm$ ZP stability
- Density $\pm 0,005 \text{ g/cm}^3 \pm$ ZP stability
- Volume $\pm 0,2\%$
- Temperature -40...+260 °C
- Max. pressure 40 bar
- Wetted parts st.st. 1.4571(316Ti), 1.4404(316L)
- Process connection Flange acc. DIN / ANSI
- Ex Approvals ATEX, FMC, NEPSI



Tailored custom solutions to meet every need

We are specialists in custom production of all kinds. Special material like Titanium, Tantalum and Nickel – no problem. High pressures e.g . up to 900 bar – no problem.

With our team of experts we can solve nearly all measuring problems.

Subject to modification

HEINRICHS – IF IT NEEDS TO BE PRECISE