Cori-Flow

Coriolismassflödesmätare för vätskor och gaser från Bronkhorst High-Tech

Mäter och reglerar från 20 g/h till 600 kg/h

Enkel

- Mäter alltid rätt flöde oavsett tryck, temperatur och medium
- Snabb mätrespons: 50-200 ms som standard
- Snabb reglering: 0,5 sekund insvängning
- Klarar temperaturer från 0 till +120 ºC
- Analogt bör- och ärvärde samt RS232-kommunikation
- Kapslingsklass IP65

Ekonomisk

- Enkelt montage med Swagelok-kopplingar, därmed låg installationskostnad
- Medieberörda delar i 316L eller Hastelloy C
- Klarar tryck upp till 100 bar
- Fältbussar: Profibus, DeviceNet, Modbus

Noggrann

- 3 noggrannhetsklasser:
- +/- 0,2%, +/- 0,5% eller +/- 1% av mätvärdet

OmniProcess AB
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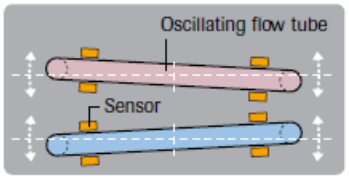
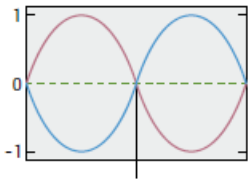
> Measuring principle

The CORI-FLOW® contains two parallel tube loops, forming part of an oscillating system. When a fluid flows through the tubes, Coriolis forces cause a variable phase shift between the loops, which is detected by sensors and fed into the integrally mounted pc-board. The resulting output signal is strictly proportional to the real mass flow rate.

NO FLOW

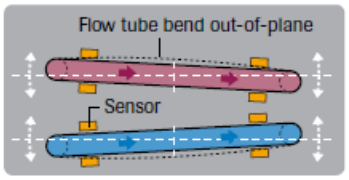


Differential sensing mode - top view

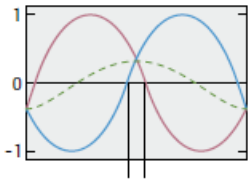


Δ Phase = 0

FLOW



Differential sensing mode - top view



Δ Phase

> Technical specifications

Performance flow sensor

Accuracy	Class A	: 0,2% of rate + zero stability, range 20:1
Note: Class A	Class B	: 0,5% of rate + zero stability, range 50:1
for liquids only	Class C	: 1,0% of rate + zero stability, range 100:1

Smallest Full Scale flow rates (values in kg/h)

	M52		M53		M54		M55	
	Gas	Liquid	Gas	Liquid	Gas	Liquid	Gas	Liquid
Class A min. FS rate	n.a.	1	n.a.	1	n.a.	10	n.a.	50
Class B min. FS rate	1	0,5	1	0,5	10	5	50	20
Class C min. FS rate	0,5	0,2	0,5	0,5	5	5	20	20
Recommended min. flow	0,02		0,05		0,2		0,5	
Zero stability	< 0,005		< 0,010		< 0,050		< 0,100	

Repeatability (based on digital output)	: 0,1% of rate
Mounting position	: preferred mounting position on liquid service upside down

Operating limits flow controller

Control range (with elastomeric seat)	: 2...100%
Auto shut off	: valve closes when setpoint drops below 1,6%
Liquids and Gases	: any clean, homogeneous liquid or gas compatible with AISI 316 (or Hastelloy-C22 as an option)
Differential pressure mass flow controller	: recommended ΔP across control valve at least 50% of total ΔP for liquids and 75% for gases
Settling time	: approx. 0,5 s

Mechanical

Process connections	: std. 1/4" face seal male, or 1/8", 1/4" or 6 mm OD compression type; other on request
Material of construction (wetted parts)	: stainless steel AISI 316 or equivalent; option for M52 / M53 / M54: Hastelloy-C22
Weight	: meter: approx. 3,1 kg meter + integral valve: 4,4 kg (max.)
Ingress protection	: IP 65 (weatherproof) for meter; for controller on request
Leak integrity	: < 2 x 10^{-9} mbar l.s^{-1} He
Pressure test	: 1,5 times max. stated operating pressure prevailing at customer
Max. operating pressure	: 100 bar
Temperature range (ambient + fluid)	: 0...70°C for standard version, 0...120°C with remote electronics, 130°C ≤ 1 hour allowed for CIP

Electrical

Power supply		: +15...24 Vdc ± 10%; (DeviceNet™ +24 Vdc only)
Consumption electronics		: approx. 80 mA at 15 Vdc
Consumption valve (if present)		: 250 mA (max) at 15 Vdc
Output signal	analog	: 0...5 (10) Vdc; 2 kOhm min. load 0 (4)...20 mA (sourcing); 375 Ohm max. load
	digital	: Profibus-DP®, DeviceNet™, FLOW-BUS, RS-232, Modbus
Command signal	analog	: 0...5 (10) Vdc; 424 kOhm load 0 (4)...20 mA (sinking); 250 Ohm load
	digital	: Profibus-DP®, DeviceNet™, FLOW-BUS, RS-232, Modbus
Electr. connection		: male, 8-pin Amphenol for power, analog I/O and RS-232
	option	: standard M12 connector for Profibus (female) or DeviceNet™/FLOW-BUS (male)/Modbus (male)
CE approved design		

CORI-FLOW® Mass Flow Meter with pressure actuated control valve