

POA Correlation Wedge Sensor

Ultrasonic sensors for flow measurement

ELECTRONICS

ACOUSTIC

WEIGHT

OVERLOADING
SAFETY SYSTEMS

VALVES

TEMPERATURE

DETECT
A FIRE®**FLOW**

DENSITY

INTERFACE

PRESSURE

LEVEL



Ultrasonic sensors for flow measurement with very high accuracy in slight to heavily polluted media. For installation on channel wall or channel bottom.

POA flow velocity sensors are suitable for continuous measurement of slight to heavily polluted media. The wedge sensors are designed for mounting on channel walls, on the channel floor and on the inner walls of large pipes. In combination with transmitters such as NivuFlow 750 or NivuFlow and with level measurements integrated in the sensor or external level measurements, they form a complete flow measurement system.

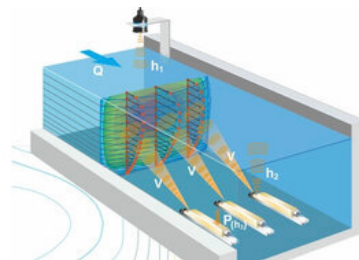
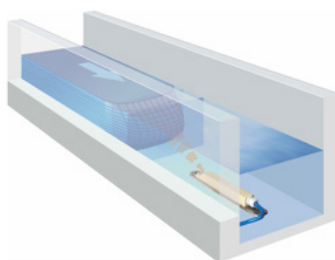
Benefits

- For high-accurate flow measurement by means of ultrasonic cross correlation method
- Interference-free connection over long distances through digital signal transmission
- Cable extensions over several 100 metres with standard cables possible without any problems
- Absolutely stable zero point and drift-free
- Measurement in slightly to heavily contaminated media

- Easy installation without additional constructions and perfectly matched mounting accessories
- Fastening by means of screws or various optionally available fastening systems
- Installation under process conditions possible
- Suitable for all channel cross sections
- The tailored selection of sensor constructions ensures the best possible solution for each application

Typical applications

- Wastewater treatment plants: intake, discharge, activated sludge tank intakes, return sludge, recirculation, surplus sludge, digester discharge and flocculant dosage
- Permanent measurements on stormwater treatment facilities such as stormwater overflow tanks, rainwater sedimentation and retention tanks
- Direct discharge control, infiltration (extraneous water) or leakage detection
- Industrial wastewater networks
- and many more



Technical Specifications

Measurement principle	• Ultrasound Transit Time (Level Measurement) • Piezoresistive Pressure Measurement (Level Measurement) • Correlation with measurement of the real flow profile
Measurement frequency	1MHz
Protection	IP68
Ex approval	II 2G Ex ib IIB T4 Gb (ATEX) / Ex ib IIB T4 Gb (IECEX)
Operating temperature	-20 °C to +50 °C / -20 °C to +40 °C if using the sensors in Ex Zone 1
Storage temperature	-30 °C to +70 °C
Operating pressure	max. 4 bar (combi sensor with pressure cell max. 1 bar)
Sensor types	• Flow velocity sensor with v-measurement by cross-correlation and temperature measurement to compensate for the influence of the latter on the speed of sound • Combi sensor with velocity sensor by cross-correlation, level measurement using water-ultrasound and temperature measurement to compensate for the influence of the latter on the speed of sound • Combi sensor with velocity sensor by cross-correlation, level measurement using pressure and temperature measurement to compensate for the influence of the latter on the speed of sound (only for wedge sensor) • Combi sensor with velocity sensor by cross-correlation, level measurement using water-ultrasound and redundantly using pressure as well as temperature measurement to compensate for the influence of the latter on the speed of sound (only for wedge sensor)
Medium-contacting materials	Polyurethane, stainless steel 1.4571, PPO GF30, PA Option: chemical-resistant sensor made of PEEK, Hastelloy C-276 mounting plate; titanium mounting plate; cable with FEP coating
Flow velocity measurement	
Measurement range	-350 cm/s to +600 cm/s
Max. Measuring span	Δ 700 cm/s
Quantity of scan layers recorded and computed	max. 32
Zero point drift	absolutely stable zero point
Error limits (per scan layer)	< 1 % of measurement value (v > 1 m/s) / < 0.5 % of measurement value +5 mm/s (v < 1 m/s)
Minimum filling level	6,5 cm
Beam angle	±5 degrees 45°
Level Measurement - Water-Ultrasound	
Measurement range	0 to 200 cm; minimum absolute measurable height 5 cm
Zero point drift	Absolutely stable zero point
Measurement uncertainty	< ±2 mm
Temperature measurement	
Measurement range	-20 °C to +60 °C
Measurement uncertainty	±0.5 K
Level measurement - Pressure	
Measurement range	0 to 500 cm
Zero point drift	absolutely stable zero point
Measurement uncertainty	< 0.5 % of final value
Temperature Measurement	
Measurement range	-20 °C to +50 °C
Measurement uncertainty	±0.5 K

Specifications subject to change

