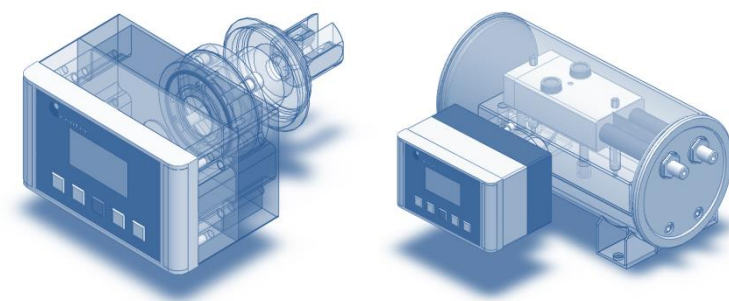


## The Centec Group

Centec is a privately owned group of companies. With a focus on the processing industries, we are rapidly growing in the major world markets. We have a global sales and service structure, with our own subsidiaries and a network of qualified distributors. Our international operations include mechanical, electrical and process automation engineering, with skid manufacture and pipework fabrication; as well as our own switch cabinet production. This infrastructure allows efficient logistics, short lead times and strict adherence to delivery deadlines. The quality of our products is excellent, so is the price-performance ratio.



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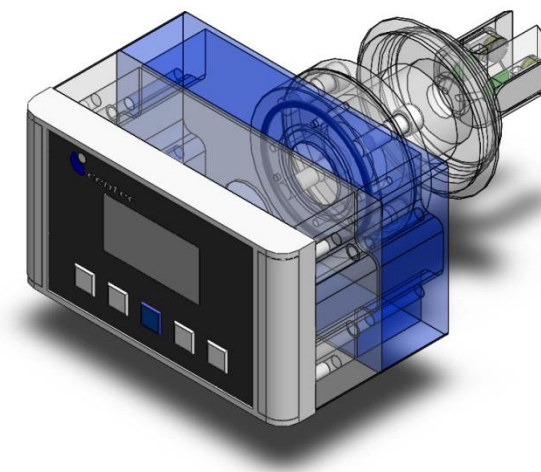
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**SONATEC**

## Concentration Measurement of Acids

### Application Report



Automated  
process skids  
and high precision  
sensors from a  
single source.  
**Centec.**

# SONATEC

## Application and Measurement Principle

Corrosive acids are used in various industries. Their concentration needs to be measured with highest precision. Hydrochloric acid (HCl) is used for the removal of rust from steel and for the production of compounds like PVC. The main application of nitric acid (HNO<sub>3</sub>) and phosphoric acid (H<sub>3</sub>PO<sub>4</sub>) lies in the manufacturing of fertilizers. Sulphuric acid (H<sub>2</sub>SO<sub>4</sub>) plays a role in the production of nearly all industrial goods such as dyes, explosives and batteries. It is used in petroleum refining to wash impurities out of gasoline and in metal processing to clean (pickle) iron and steel before plating. In nuclear power plants boric acid (H<sub>3</sub>BO<sub>3</sub>) serves as neutron poison to control the nuclear chain reaction. Hydrofluoric acid (HF) is used as etching agent.

The speed of a sound pulse between a transmitter and a receiver is measured. The sound pulse is created by piezo-elements and moves perpendicular to the product flow. Based on the correlation between concentration and sound velocity, the concentration of the 2-component liquid is calculated and displayed.



**SONATEC**  
Transmitter Version

- Available as Transmitter Version with Local Display and as a Sensor
- Highly Precise and Fast Determination of the Concentration
- Based on Sound Velocity Measurement
- Applicable for a Huge Number of Liquids in Various Industries
- Short Response Time and Excellent Long-Term Stability
- Hygienic Execution, Full CIP Capability, Maintenance Free
- Outstanding Price-Performance-Ratio

## Technical Data SONATEC

Measuring Range	400 - 3.000 m/s
Accuracy	± 0,05 m/s
Repeatability	± 0,01 m/s
Response Time	≤ 1 s
Pressure of Operation	max. 16 bar
Temperature of Operation	- 25 - + 125 °C
Temperature Compensation	Pt1000
Material	1.4404/AISI 316L; 1.4571/AISI 316Ti; Hastelloy C276; Monel 400; Incoloy 825; Tantal; others on request
Connections	Varivent© DN65; Diary DIN11851 DN65; others on request
Input Transmitter Version	6 x digital (24 VDC)
Output Transmitter Version	3 x digital (24 VDC) & 2 x analog (4 - 20 mA)
Profibus DP Transmitter Version	option
Sensor (w/o local display)	standard
Enclosure Rating	IP65
Explosion Protection Ex II 2G EEx d IIC T6	option
Power Supply	24 VDC