

Concentration analyzers for ternary liquids

9570 Series

Dual Sensor Technology Analyzer - US and EC



Introducing Model 9570

For liquids that are composed of two dissolved components, such as acid/salt mixtures, alkaline/salt and other mixtures existing of three major components, Rhosonics has developed an advanced inline dual channel analysis system, comprising of one ultrasonic and one electrical conductivity sensor.

Advantages

- Real time, accurate salt and acid/base measurement
- Integrated sampling system
- Temperature compensated
- Resists upset process conditions (gas, product standstill)
- No reagents needed

Description

The system employs the measurement of two physical parameters: the sound velocity and the electrical conductivity. In a mixture of an acid and a salt, the sound velocity will be increased by the salt, and decreased by the acid. The conductivity of water is, in contrast with the sound velocity, zero. Therefore, in many cases, the conductivity will be affected in a positive manner by both acids and salts.

In addition, acids give a larger increase in conductivity than salts.

Rhosonics has developed an algorithm for defining conductivity and the sound velocity, based on the concentration of the two components and the temperature. By reverse modelling, the Rhosonics calculates the concentration of both components from the measured variables.



The Chemical Concentration Analyzer of the Future

Features

- Very low cost of ownership
- High accuracy and reproducibility
- Maintenance free
- No cleaning needed
- No moving parts
- No reagents

- Insitu, spool and wafer sensor technology
- High-end software technology, easy to operate
- Colour graphics touch screen display
- Datalogging
- Various communication protocols, like Modbus

Industries & Applications

The model 9570 is used in the following industries:

- Electronics production
- Steel and metal industry
- Mining

For the applications:

- Electrolyte solutions
- Pickling baths
- Etching baths
- Solvent concentrations

and hence for the determination of:

- CuSO_4 (Cu^{++}) and H_2SO_4
- FeCl_2 (Fe^{++}) and HCl
- ZnSO_4 (Zn^{++}) and H_2SO_4

Performance Characteristics

Method	Ultrasonic sound velocity Inductive electrical conductivity
Ranges	Auto ranging
Factory calibrations	200 chemicals max
Temperature circuit	-10..+200 °C; resolution: 0.001 °C
Sound speed circuit	500-3000 m/s; resolution: 0.002 m/s
Total Accuracy	0-1 wt%: better than 0.005 wt% 0-10 wt%: better than 0.01 wt%
Probe materials	Standard wetted parts: PEEK, 316L Optional: PVDF, Hastelloy C276, C2000

General Specifications

Response time	0 to 90 s (adjustable)
Analog outputs	(2x) 4-20 mA (+/- 0.02%)
Alarm outputs	(2x) SPDT, Hi-Hi, Lo-Lo
Sample hold	External trigger can hold data during machine stands still
RS-232 output	Modbus RTU
Ethernet TCP/IP	Optional
Other options	Profibus DP, Hart protocol, PC link
Datalogging	1 year continuous through USB stick
Housing	/WPF SS316, wall mount IP65 enclosure /SPLT Split type OEM version /PAN Panel mount enclosure
Terminal	/TOD 5,7" B/W Touch screen display /TCLD 5,7" Colour Touch screen display
Power	/VAC 90-240 VAC, 10W /VDC 24VDC, 10W
Example:	9570/WPF/TCLD/VAC Sensor to be determined





The Solution Specialist

The mission of Rhosonics Analytical is to provide solutions for In-line concentration analysis of virtually all existing process liquids, including electrolytes, emulsions, suspensions and slurries.

For almost two decades, Rhosonics Analytical has been focusing on the development and employment of high-performance ultrasonic technologies for in-line liquid concentration analyzers and non-destructive testing of materials.

Our products

- In-line concentration analyzers for virtually all existing process liquids, including solutions, electrolytes, emulsions, suspensions, solids and slurries.
- Piezo composite transducers for Ultrasonic NDT (Non-Destructive Testing) for new inspection methods, including ToFD and Phased Array.

The Solution Specialist

Rhosonics Analytical is The Solution Specialist for the design, production and supply of ultrasonic in-line process analyzers for liquids and slurries in any industry world wide.



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