



PC1739 VAS Particle Size Distribution and Concentration Measurement  
PC173x USA Particle Concentration Measurement

## Particles Analyzer/Transducer

### VAS Technology

The particle size distribution and concentration of a colloidal dispersion and suspended liquids can be determined by measuring its ultrasonic velocity and/or attenuation coefficient as a function of frequency and then using a suitable mathematical model to interpret the spectra. Ultrasonic spectroscopy can be used to analyze particle sizes between about 10 nm and 1000  $\mu\text{m}$ , and is suitable for application to concentrated systems (often up to 50 wt%). This technique has considerable advantages over many alternative technologies because it can be applied to systems that are optically opaque without the need of any sample preparation. So it is extremely important for many applications.

There are few other particle sizing technologies which are capable of analyzing this type of system. One of the areas where the technique is most likely to be used is for the on-line determination of particle size distributions of colloidal suspensions during processing.

### USA Technology

Employing ultra sonic attenuation technology to measure the concentration of particles in solution.

### Applications

The ultrasonic technique could be used to monitor the efficiency of a processing operation in real time that could lead to a major improvement in the manufacture of many colloidal-based materials, e.g. foods, pharmaceuticals, petrochemicals, agrochemicals and cosmetics.

### Specification:

Concentration Range: 1% to 50%wt (might be higher in certain applications)

Accuracy: <5% typical ( relative to calibration samples )

Particle Size Range: 10nm to 1000  $\mu\text{m}$

Standard deviation of the geometric mean: <2.5

Sample Pressure: 10 Bar (PN10) 105 Bar



Sample Temperature: -40 to +70 , Max to 150

Response: 100ms

Serial communication: RS232/485, STIMcom/Modbus, IEEE1451.2 compatible

Signal output: 0/4–20 mA

### Models:

PC173xPf	PC173xDip
	
For pipe online application	For pot and reservoir application