

Void Sensor Information

The dispersion of gas is of vital importance in industrial applications. The uniform dispersion of gas [Figure (a)] will maximise the contact between different phases and therefore achieve maximum gas-to-liquid mass transfer efficiency. The void fraction probe can be used to determine the dispersion and mixing of gas bubbles in mineral processing reactors. Such as for monitoring oxygen injection in gold leaching tanks, air sparging in synthetic rutile processing of pigments and a wide range of other gas sparging applications.

Most industrial processors do not operate in the ideal situation of complete gas dispersion. The gas phase often is only dispersed to limited region in the reactors [Figure (b)] as found from various research activities. A non-uniform dispersion of the gas phase can lead to inferior product quality, lower throughput and inefficient usage of energy for some processes.

Gas monitoring is also important for inline process control. Change of input conditions such as flow rate and slurry property usually requires change of gassing rate and/or impeller speed. Such a change will affect the gas dispersion pattern. It is important to control the process condition so that the gas dispersion is optimised in order to achieve maximum efficiency.

The void sensor was developed in collaboration with CSIRO, Australia.



Industrial Void Sensor >>

Display: _____ Back-lit LCD, 2x16 lines
 Output: _____ 4-20mA
 Isolation: _____ Fully Isolated
 Operating temperature: _____ 0 to 50C
 Enclosure: _____ NEMA 1,3,4X,12
 Dimensions: _____ 234 x 182 x 130 (HWD)
 Weight: _____ 2.5kg
 Power: _____ 240VAC 50Hz

Order information

VFS4300L Laboratory Void Fraction Sensor
 VFS4300I Industrial Void Fraction Sensor

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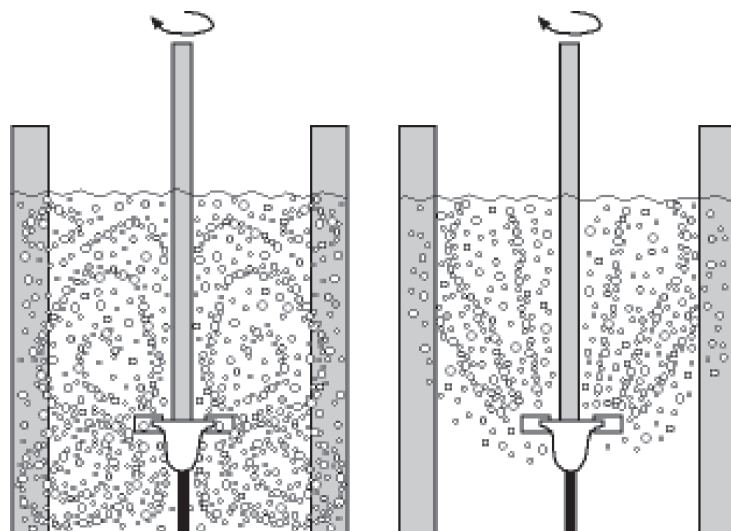


Figure (a)

Figure (b)

Specifications

General

- Accuracy ±5% void fraction in gas/liquid mixtures
- Repeatability 0.1%
- Usable range 0 to 100% void fraction
- Bubble size >1.0 mm diameter for detection

Probe

- Tip size 1mm diameter x 1mm long
- Maximum Pressure 200 kPa
- Minimum liquid conductivity 2 µS/cm
- Maximum liquid conductivity 2 mS/cm
- pH 2-11
- Operating temperature 5 to 80C
- Connecting cable 4.0m
- Dimensions 19mm diameter x 1.13m long
- Weight 1.56 kg

Instrument

- Display Back-lit LCD, 2 x 16 lines
- Operating temperature 0 to 50C
- Dimensions 85 x 263 x 270mm (HWD)
- Weight 1.36 kg
- Power AC adaptor, 5 VDC ±5% 1 Amp

Specifications subject to change without notice