SITA

Process Measurement of Surface Tension

New Generation

Advantages

- Quality assurance and documentation of the continuing process
- Enables automatic consumption-dependent dosing
- Highest process and product quality through optimised process control

Reliable process tensiometer

- Fully automated measurement of the surface tension of process liquids
- Monitoring and controlling the surfactant/wetting agent concentration
- Continuous or discontinuous measurement (intervals or upon request)
- Automatic cleaning, calibration and monitoring

SITA CLEAN LINE ST

Monitoring surface tension and surfactant concentration inline

Technical data

Surface tension

Measuring range	(10...100) mN/m (dyn/cm)
Resolution	0.1 mN/m
Reproducibility	0.5 mN/m

Bubble life time

Control range	(15...30,000) ms
Resolution	1 ms

Liquid temperature

Measuring range	(0...80) °C, depending on the measuring vessel type
Resolution	0.1 K
Measurement deviation	1 K

General data

Housing	750 mm x 400 mm x 240 mm (HxWxD), Stainless steel (1.4301)
Weight	approx. 24.5 kg
Permissible ambient temperature	(10...40) °C

Liquid tangent materials

Metal vessel type	Stainless steel (V2A & V4A), PTFE, FKM (Viton), PEEK, PU, PA, PP
Glass vessel type	Stainless steel (1,4401, 1,4408, 1,457l), borosilicate glass, PTFE, FKM (Viton), PEEK
Teflon (PTFE) type	Stainless steel, PTFE, PFA, PVDF, PEEK

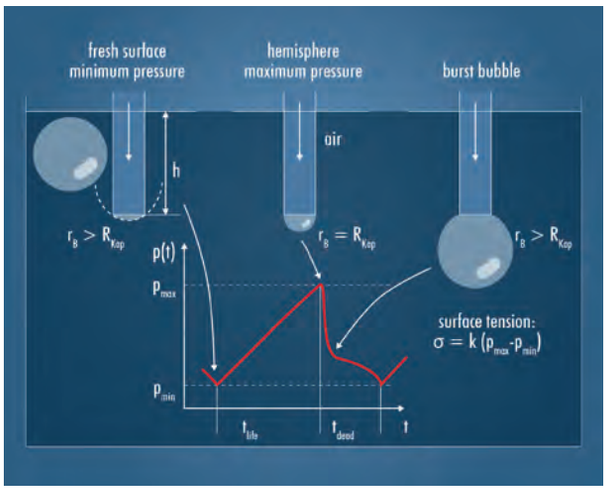
Connections / Interfaces

Power supply	24 V, 60 W
Communication interface	PROFINET
Status messages	Error/interruption, overrange and underrange surface tension
Water supply	2...6 bar, G 1/4" internal thread (10...80°C)
Sample supply	1...6 bar, G 1/4" internal thread (10...80°C) innerspan
Water & sample drain	Tube fitting (standard version: PA)

Our expert engineers will support you in analysing your processes and plant, so that the SITA clean line ST can be modified to fit your specific needs.

Measurement principle

Like all SITA Tensiometers, the SITA clean line ST process measuring device is based on the bubble pressure method to measure the dynamic surface tension in liquids. For this purpose, an air stream is fed into the sample liquid through a capillary which is especially developed for process use. The bubble that is formed at the end of the capillary continually expands its surface area. When the bubble radius reaches its minimum, the bubble pressure rises until reaching its maximum value. The surface tension is then calculated by determining the difference between the pressure maximum and minimum values.



Applications

Continuous monitoring and dosage according to the consumption

- Cleaning agent component surfactant in baths of industrial parts cleaning e.g. in automotive, electronics, microelectronics and metalworking
- Wetting agent concentration of TMAH developer solutions for lithography processes in semiconductors
- Wetting agent concentration in electroplating processes
- Wet chemical process solutions in production processes with surfactant-containing liquids, such as mobility enhancers, drainage aids, slurry additives, cutting additives

Design: augensturm | 101752 / Version 1.2

Contact

SITA Messtechnik GmbH
Gostritzer Straße 63
01217 Dresden
Germany

Tel.: +49 (0)351 288 53-0
info@sita-messtechnik.de
www.sita-messtechnik.de