

## Optical Probes in Combination with Knick Ceramat WA 155

The automated solution for reliable inline process control

Available for SOPAT probe models VI-Ma, VI-PI, VI-Pa, and the VI-ex models

### The SOPAT photo-optical probes use image analysis to measure the particle size distribution of processes in real-time

In most multiphase processes, the sizing of particles, droplets, bubbles, crystals, biological cells, etc. are critical to the product's quality. For efficient reliable process and quality control, the knowledge of the particle size distribution is essential. This is achieved using SOPAT's inline probes to provide real-time data.

### Reliable image analysis requires good visibility into the process

Slight fouling of the probe window by product can generally be removed by the SOPAT software, however, if a certain threshold of fouling is exceeded, image analysis may be affected. In order to facilitate continuous particle analysis, SOPAT's 12 mm probes can be combined with the Knick Ceramat WA 155 retractable fitting.

### Automated prompts to the process control system

SOPAT provides a customizable alarm which can alert the process control system if the fouling threshold has been exceeded initiating the Ceramat's cleaning cycle. This can also be scheduled routinely.

### Fully automatic cleaning system - allowing your process to run continuously

With the aid of Knick's fully automatic probe cleaning system Uniclean 900, continuous measurement is guaranteed. Operators are protected from any contact with the process media as the probe is retracted from the process by the retractable fitting which separates the probe from the process by two ceramic discs. The Uniclean system washes, rinses, and dries the probe window using customizable cleaning routines.

### A Wide range of applications - even in potentially explosive environments

The Ceramat WA 155 can be used with all four 12mm probe types: VI-Ma, VI-PI, VI-Sc, and VI-Pa. The system is equipped to handle process temperatures up to 130°C, pressures of 10 bar and is compatible with very corrosive media. The SOPAT ATEX-rated VI-ex probes can also be used with the Ceramat WA 155.



SOPAT GmbH

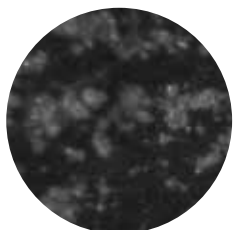
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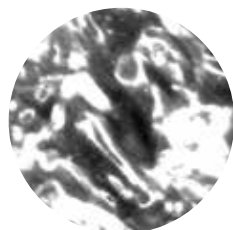
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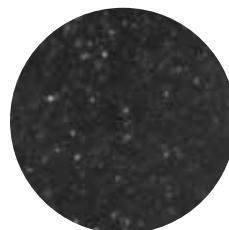
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Probe detects fouling



Probe being cleaned



Free view into the process

# Ceramat

## Retractable Fitting for Process Spectroscopy

Probe cleaning without interruption for reliable process control



### In combination with spectrometer systems, optical immersion probes are now an established element in process analysis

Depending on the nature and composition of the medium, however, the process may cause disruptive dirt deposits to form on the optical window. These deposits differ in how they impact on the accuracy of the measurement depending on the spectroscopy method used. Adhering, can considerably distort or obscure a measurement.

### The challenge

To clean the probe, it was previously necessary to either interrupt the measurement or wait until the production system's next service date. This meant that optical methods were hardly ever used for measurements in adhering substances such as adhesives or particle suspensions.

### The solution

Contamination of the optical window caused by particle deposits and fouling is detected by the spectrometer software; the probe can be cleaned as required or periodically on an automated basis.

### The technology edge

The Ceramat retractable fitting with the Uniclean 900 cleaning system was specifically modified to meet the requirements of spectroscopy with optical fibers and optical immersion probes:

- Maintenance without process interruption
- Special ceramic process sealing
- Probe rinsing/cleaning outside the process with up to four cleaning liquids and drying with compressed air.

### Clear view of the process

The fitting's unique design enables its unhindered immersion in the process, without an immersion tube in front of the optical window distorting the measurement.

### Extremely durable

Two ceramic disks act as seals. Ceramic sealing is extremely resistant to chemical, thermal, and mechanical influences. In processes with depositing, abrasive, or encrusting solids, Ceramat provides a reliable and durable alternative to maintenance-prone O-rings.

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Probe retracted  
( service position )



Probe extended  
( measuring mode )