

Press Release

Date: April 2012
Enclosure: pic.
Reference: PR-0032-CPE-170412-TOPE

TopSens - New Optical Sensors by Polytec for Surface Profile and Layer Thickness

Polytec is expanding its product portfolio for surface measurement with TMS TopSens and TMS TopLine series point sensors. These new sensors allow fast and efficient characterization of surfaces, the determination of micro/nano-topography and optical surface roughness, and the thickness measurement of transparent samples. The measuring heads have no moving parts and are therefore robust and maintenance free. TopSens sensor systems measure any surface and any material, whether reflective, polished, rough, opaque or transparent.

These new point sensors are ideal for the automotive and micro-mechanical, electronic and microelectronic, semiconductor and optical industries, and can be configured for a variety of applications:

On-line production control: With their extremely high scanning speed and a carefully thought-out interface concept, the optical sensors can be easily integrated into the manufacturing process or an existing test station.

Profilometry and micro-topography: In combination with 3-D scanners, the point sensors facilitate 2-D and 3-D measurements of complex structures with submicrometer precision.

Roughness measurement: Our sensors meet the new ISO 25178 standard and can measure roughness down to a few nanometers. Roughness profiles can be generated much faster than with conventional tactile sensors without affecting the surface.

Publication free of charge

For questions please contact
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Thickness measurement: The chromatic confocal sensor's highly innovative measuring principle allows thickness measurements of transparent materials with extremely high accuracy.

Auto-focus: Thanks to the expanded measurement range, the sensors are ideal for automatic focusing in image processing systems.

TopSens sensors operate on the principle of confocal imaging and the 'chromatic coding' of the optical axis in order to determine the distance to the target surface or the layer thickness. Here, the sensor's optical system makes use of the fact that there is one focal length for each wavelength of the broadband light source. For a given distance from the measurement object, an exact wavelength is displayed on the test piece. The backscatter is collected and analyzed by a calibrated spectrometer and the spectrum obtained contains the desired distance information.

The sensor systems are modular in construction and consist of an optical sensor pin, a controller, a multi-mode fiber optic cable, a cable to connect via USB or RS-232 and software, along with the documentation and a calibration document.

More info: www.topmap.info

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