



ENOVASENSE POINT SENSOR

Coating thickness measurement

HOCHGENAUIGKEIT
PRÄZISE SCHICKE-
MESSUNG
BERÜHRUNGSLÖS

THICKNESS



The ENOVASENSE Point Sensor is a unique way to measure the thickness of any coating material through easy-to-integrate ultra-compact probes. Using our patented Laser Photothermal technology, these sensors are non contact, non destructive, non intrusive, non radiative, fast and repeatable.

Measuring coatings like paints, lacquers, metallic, ceramic or organic layers, inks, varnishes, enamels, resins, adhesives becomes possible, whatever substrate they are deposited on. The sensor measures insensitive to vibrations and provides precise measurements on many different part shapes and curvatures, even high temperatures are not an obstacle.

The intuitive software provided with the sensor allows fast configuration and calibration of the sensor on any coating application. A specific application allows a series of measurements to be performed while computing the statistics on them.

EFFICIENT

- ▶ Precise on a wide range of materials from nanometer to millimeter
- ▶ Non contact, non radiative
- ▶ High distance and angle tolerance

VERSATILE

- ▶ Thickness measurements on many kind of coating materials deposited on all substrate materials
- ▶ Independent of object design (curvature, shapes, edges, surface structure)
- ▶ Precise measurements for dry or wet/uncured coatings. High tolerance to part temperature (hot and cold)
- ▶ Insensitive to roughness or inhomogeneous material compositions

USER-FRIENDLY

- ▶ Maintenance free
- ▶ Vibration insensitive
- ▶ Compact and low weight

TECHNICAL SPECIFICATIONS OF CONTROLLER

| | |
|------------------------|--|
| Interface | Ethernet |
| Light source | Laser diode (different wavelengths: 455 nm - 980 nm - 1550 nm) ²⁾ |
| Operating temperature | + 5°C to + 50°C |
| Dimensions (w x h x d) | 123 mm x 85 mm x 200 mm |
| Weight | 1.7 kg |
| Supply voltage | +24 VDC / 3 A max |
| Laser power | 0.01 W to 150 W (depends on application) |

TECHNICAL SPECIFICATIONS OF OPTICAL PROBES

| | T033 | T033 R ¹⁾ | T 060 | T 060 R ¹⁾ | |
|---|---|----------------------|-----------------|-----------------------|----------------|
| Measuring range ²⁾ | 10 nm -1 mm | | | | |
| Repeatability ^{2) 3)} | < 1% of measured thickness | | | | |
| Angle tolerance ²⁾ | up to ± 50° | | | | |
| Distance tolerance ²⁾ | ±1 mm - 15 mm | | | | |
| Measuring rate | 1 Hz to 100 Hz | | | | |
| Dimensions | Length Diameter | 93 mm 66 mm | 130 mm 66 mm | 64 mm 35 mm | 97 mm 35 mm |
| Weight | 400 g | | 450 g | 150 g | 200 g |
| Working distance in standard configurations ⁴⁾ | 13.5 mm 33.5 mm | | 20 mm 40 mm | | |
| Spot size (Diameter) ⁵⁾ | 0.3 mm – 10 mm | | | | |
| Note | automated rotation option on request, all probes work on moving parts up to 150 m/min | | | | |

TECHNICAL SPECIFICATIONS FOR EXAMPLE APPLICATIONS

| | Thick metallic coatings | Paints and polymeric, organic coatings | Thinner, submicrometric coatings |
|-------------------------------|-------------------------|--|----------------------------------|
| Measuring range ²⁾ | 1 µm -1 mm | 1 µm -500 µm | 10 nm - 1 µm |
| Accuracy ²⁾ | < 2 µm | < 0.5 µm | < 1 nm |
| Repeatability ²⁾ | 1 % | 0.5 % | 2 % |
| Angle tolerance ²⁾ | ± 2° | ± 30° | ± 10° |

¹⁾ Angled version | ²⁾ Depends on application | ³⁾ Typical value | ⁴⁾ Additional working distances available via alternative front lenses | ⁵⁾ depends on used front lens

The given data was generated for a typical application and may be different given other circumstances. Furthermore misprints, changes and/or innovations may lead to differences in the listed measurements, technical data and features. All information is therefore non-binding and technical data, measurements and features are not guaranteed.