

Coating Thickness Measurement Probe: for high accuracy on very thin coating layers

By using improved coating methods, the paint layers and also the galvanic layers become much thinner with the same quality and the same corrosion protection. Coating thickness gauges must adapt to this trend.

The new measurement probe FN 0.2 has been specially developed for thin coatings on iron/steel and for non-ferrous metals such as, for example, aluminium. It operates, as the standard probe, according to the magnet-inductive method (DIN EN ISO 2178), respectively the eddy current method (DIN EN ISO 2360), and is equipped with an additional precision slide bush.

The measurement range is 0 to 200µm and therefore very effectively covers both the range of very thin coating layers from 0 to 50µm as well as the range of thin coating layers from 50µm to 200µm. In the 0 to 100µm range, coating thicknesses can be read-off accurately to 0.1µm. Above 100µm there is a resolution of 0.2µm.



The accuracy of the probe FN 0.2 is characterized by "Trueness" and "Repeatability" (standard deviation).

- Trueness is: $T = \pm(0.25\mu\text{m} + 0.5\%)$
- Repeatability is: $R = \pm(0.05\mu\text{m} + 0.1\%)$

The total uncertainty (u) is calculated from the geometrical sum of T and R. With these very good probe values also thin coatings below 10µm can be measured relatively accurate. For example a coating thickness of 10µm results in a total uncertainty of $u \sim \pm 0.3\mu\text{m}$.

The specified data relates to PHYNIX standards and represents optimum values. Surfaces occurring in practice can produce poorer measurement results.

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