



Probe models	<b>FGAB1.3</b>	<b>FGAB1.3L5</b>	<b>FGAB1.3T</b>	<b>FGAB1.3TL5</b>
Part no.	<b>604-141</b>	<b>604-544</b>	<b>604-182</b>	<b>604-418</b>
Applications	Measurement of electrically non-conductive and non-ferrous metal coatings on steel or iron base material (NC/Fe and NF/Fe). The probes are well suited for measurements of electroplated metal coating thicknesses. However, measurement data variation is relatively high on rough (e.g., sand-blasted) surfaces. For such cases we recommend special probes for measurements on rough surfaces from our probe program.			

Probes including a T in the model designation be equipped with a temperature-resistant plastic cover for measurements on specimens with surface temperature up to + 80 °C (176 °F).

Examples	<p><b>Steel or iron base materials (Fe)</b></p> <ul style="list-style-type: none"> <li>• Paint, varnish or plastic coatings on steel or iron (NC/Fe)</li> <li>• Copper, brass, zinc, tin and chrome coatings on steel or iron (NF/Fe)</li> </ul>
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Probe design	Axial single tip probe with spring-loaded measuring system
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Applications	NC/Fe or NF/Fe
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\* *The values for measurement range, trueness, repeatability precision and measurement errors are valid for electrically non-conductive coating materials on steel or iron (NC/Fe). The values may differ for measurements on non-ferrous coating materials (NF).*

Measurement range*	<p><b>Steel or iron base materials (Fe)</b></p> <p>0 ... 2000 µm / 0 ... 78.74 mils</p>
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Trueness* based on Fischer standards	<p><b>Steel or iron base materials (Fe)</b></p> <p>0 ... 100 µm: ≤ 1 µm          100 ... 1000 µm: ≤ 1 % of reading          1000 ... 2000 µm: ≤ 3 % of reading</p> <p>0 ... 3.94 mils: ≤ 0.039 mils          3.94 ... 39.37 mils: ≤ 1 % of reading          39.37 ... 78.74 mils: ≤ 3 % of reading</p>
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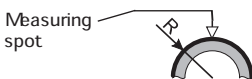
Repeatability precision* based on Fischer standards	<p><b>Steel or iron base materials (Fe)</b></p> <p>0 ... 100 µm: ≤ 0.3 µm          100 ... 2000 µm: ≤ 0.3 % of reading</p> <p>0 ... 3.94 mils: ≤ 0.012 mils          3.94 ... 78.74 mils: ≤ 0.3 % of reading</p>
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Influences*	<b>Probe models FGAB1.3 and FGAB1.3L5</b>	<b>Probe models FGAB1.3T and FGAB1.3TL5</b>
<i>The following values are valid for a reference coating thickness of 75 µm / 2.95 mils and steel or iron base material.</i>		

Curvature (R), measurement with reference to master calibration on flat surface	<p>Measurement error          ≥ 10% for R ≤ 15 mm / R ≤ 0.6 "</p> <p>Probe needs a minimum of R = 5 mm (support stand necessary) / R = 0.2 "</p>	<p>Measurement error          ≥ 10% for R ≤ 14,5 mm / R ≤ 0.57 "</p>
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Curvature (R), measurement with reference to master calibration on flat surface	<p>Measurement error ≥ 10% for R ≤ 8 mm / R ≤ 0.32 "</p> <p>Probe needs a minimum of R = 1 mm (support stand necessary) / R = 0.039 "</p>
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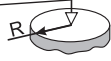


Influences\* **Probe models FGAB1.3 and FGAB1.3L5** **Probe models FGAB1.3T and FGAB1.3TL5**

The following values are valid for a reference coating thickness of 75 µm / 2.95 mils and steel or iron base material.

Edge distance (R), specification from probe pole center

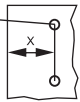
Measuring spot in the center of the circular surface



No measurement error for  $R > 10 \text{ mm}$  /  $R > 0.39 \text{ ''}$   
 Measurement error  $\geq 10\%$  for  $R \leq 5 \text{ mm}$  /  $R \leq 0.2 \text{ ''}$   
 Probe needs a minimum of  $R = 1.75 \text{ mm}$  (support stand necessary) /  $R = 0.069 \text{ ''}$

Edge distance (X), specification from probe pole center

Measuring spot



No measurement error for  $X > 6 \text{ mm}$  /  $X > 0.24 \text{ ''}$   
 Measurement error  $\geq 10\%$  for  $X \leq 0.3 \text{ mm}$  /  $X \leq 0.012 \text{ ''}$

No measurement error for  $X > 4 \text{ mm}$  /  $X > 0.16 \text{ ''}$   
 Measurement error  $\geq 10\%$  for  $X \leq 0.9 \text{ mm}$  /  $X \leq 0.035 \text{ ''}$

Base material thickness (D) Measurement error  $\geq 10\%$  for  $D \leq 0.4 \text{ mm}$  /  $D \leq 0.016 \text{ ''}$

Measuring spot



Admissible ambient temperature at operation - 10 °C ... + 40 °C / + 14 °F ... + 104 °F

Admissible specimen temperature	<b>Probe models FGAB1.3 and FGAB1.3L5</b> max. + 40 °C / max. + 104 °F	<b>Probe models FGAB1.3T and FGAB1.3TL5</b> temporary max. + 80 °C / max. + 176 °F
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Probe tip material PVD coated steel

Probe tip replaceable Yes

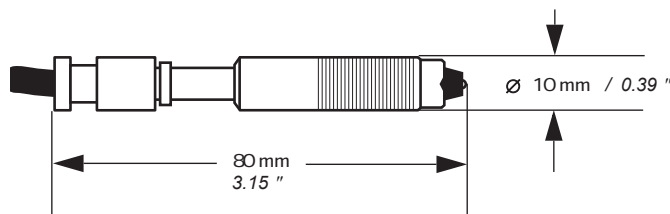
Probe tip radius 0.75 mm / 29.53 mils

Measuring method Magnetic induction method according to ISO 2178, ASTM D7091, Non-magnetic coatings on magnetic substrates; Measurement of coating thickness; Magnetic method

Scope of supply Probe, metal plate NF/FE for instrument check, calibration foils

Works with instruments All DUALSCOPE® and DELTASCOPE® hand-held instruments of the series FMP and FISCHERSCOPE® MMS® PC2 with F-Module PERMASCOPE®

Dimensions



FGAB1.3 and FGAB1.3T: cable length 1.50 m / 59.06 ''  
 FGAB1.3L5 and FGAB1.3TL5: cable length 5 m / 196.85 ''

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