Data Sheet for the Probes FGAB1.3 and EGAB1.3

Probe model	**FGAB1.3**	**EGAB1.3**
Part no.[1]	**604-141**	**601-793**
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., sandblasted) surfaces. For such cases we recommend special probes for measurements on rough surfaces from our probe program.	
Examples	**Steel or iron base materials (Fe)** • Paint, varnish or plastic coatings on steel or iron (NC/Fe) • Copper, brass, zinc, tin and chrome coatings on steel or iron (NF/Fe)	
Probe design	Axial single tip probes with spring-loaded measuring system	
Applications	NC/Fe or NF/Fe	
*	*The values for measurement range, trueness, repeatability precision and measurement deviations 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*	**Steel or iron base materials (Fe)** 0 ... 2000 µm / *0 ... 78.74 mils*	
Trueness*	**Steel or iron base materials (Fe)**	
based on Fischer factory calibration standards	0 ... 100 µm: ≤ 1 µm 100 ... 1000 µm: ≤ 1 % of nominal value 1000 ... 2000 µm: ≤ 3 % of nominal value	*0 ... 3.94 mils: ≤ 0.039 mils* *3.94 ... 39.37 mils: ≤ 1 % of nominal value* *39.37 ... 78.74 mils: ≤ 3 % of nominal value*
Repeatability precision*	**Steel or iron base materials (Fe)**	
based on Fischer factory calibration standards 5 single readings per standard	0 ... 100 µm: ≤ 0.3 µm 100 ... 2000 µm: ≤ 0.3 % of reading	*0 ... 3.94 mils: ≤ 0.012 mils* *3.94 ... 78.74 mils: ≤ 0.3 % of reading*
Influences*	**Steel or iron base materials (Fe)**	

The following values are valid for a coating thickness with a nominal value of 75 µm / 2.95 mils.
The quantity of the influences are stated with the expanded measurement uncertainty U with the expanded factor of k = 2 (defines an interval with the confidence level of 95.45 %) - according to DIN V ENV 13005 "Leitfaden zur Angabe der Unsicherheit beim Messen" (Guide to the expression of uncertainty in measurement).

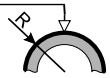
Curvature (R), measurement deviation from the nominal value with reference to master calibration on flat surface

Measuring spot

No measurement deviation within the trueness as of R = 142 mm ± 19 mm / *R = 5.59 " ± 0.75 "*
Measurement deviation of 10 % for R = 14 mm ± 1.2 mm / *R = 0.55 " ± 0.05 "*
Probe needs a minimum of R = 5 mm (support stand necessary) / *R = 0.2 "*

Curvature (R), measurement deviation from the nominal value with reference to master calibration on flat surface

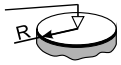
Measuring spot



No measurement deviation within the trueness as of R = 87 mm ± 11 mm / *R = 3.43 " ± 0.43 "*
Measurement deviation of 10 % for R = 9 mm ± 0.9 mm / *R = 0.35 " ± 0.035 "*
Probe needs a minimum of R = 1 mm (support stand necessary) / *R = 0.039 "*

Edge distance (R), specification from probe tip centre, measurement deviation from the nominal value

Measuring spot in the centre of the circular surface

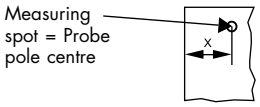


No measurement deviation within the trueness as of R = 9.9 mm ± 0.7 mm / *R = 0.389 " ± 0.028 "*
Measurement deviation of 10 % for R = 4.75 mm ± 0.09 mm / *R = 0.1870 " ± 0.0035 "*
Probe needs a minimum of R = 1.8 mm (support stand necessary) / *R = 0.07 "*

Influences*	**Steel or iron base materials (Fe)**

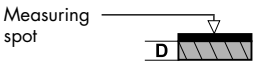
The following values are valid for a coating thickness with a nominal value of 75 µm / 2.95 mils.
The quantity of the influences are stated with the expanded measurement uncertainty U with the expanded factor of k = 2 (defines an interval with the confidence level of 95.45 %) - according to DIN V ENV 13005 "Leitfaden zur Angabe der Unsicherheit beim Messen" (Guide to the expression of uncertainty in measurement).

Edge distance (X), specification from probe tip centre, measurement deviation from the nominal value



No measurement deviation within the trueness as of X = 3.8 mm ± 0.3 mm / *X = 0.149 " ± 0.012 "*
Measurement deviation of 10 % for X = 0.9 mm ± 0.07 mm / *X ≤ 0.0354 " ± 0.0028 "*

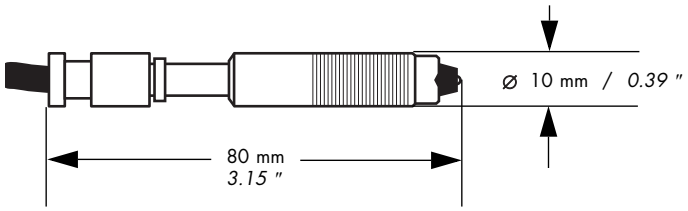
Base material thickness (D), measurement deviation from the nominal value



No measurement deviation within the trueness as of D = 1 mm ± 0.25 mm / *D = 0.0394 " ± 0.0098 "*
Measurement deviation of 10 % for D = 0.39 mm ± 0.02 mm / *D = 0.0153 " ± 0.0008 "*

Base material	Influence of the permeability of the base material (Fe) with reference to Fischer calibration standards (master calibration): No measurement deviation within the trueness as of ferrite content of 138 FN ± 0.04 FN Measurement deviation of 10 % for ferrite content of 119.3 FN ± 0.3 FN
Admissible ambient temperature at operation	-10 °C ... +40 °C / *+14 °F ... +104 °F*
Admissible specimen temperature	max. +40 °C / max. *+104 °F*
Probe tip material	PVD coated steel
Probe tip replaceable	Yes, by an authorized Fischer service centre
Probe tip radius	0.75 mm / *29.53 mils*
Measuring method	Magnetic induction method according to ISO 2178, ASTM D7091
Scope of supply	Probe, metal plate NF/FE for instrument check, prism adapter for measurements on pipes and bars, support ring for placing the probe easier onto the surface, calibration foil set 605-414
Option	Adapter for support stand: 602-370, is supplied by default with the support stand
FGAB1.3 works with:	All DUALSCOPE® and DELTASCOPE® hand-held instruments of the series FMP and the bench top instruments FISCHERSCOPE® MMS® PC and FISCHERSCOPE® MMS® PC2 with F-Module PERMASCOPE® (12-pin connecting socket)
EGAB1.3 works with:	All DUALSCOPE® and DELTASCOPE® hand-held instruments of the series MP10 to MP40 and the bench top instruments FISCHERSCOPE® MMS®, FISCHERSCOPE® MMS® PC and FISCHERSCOPE® MMS® PC2 with E-Module PERMASCOPE® (8-pin connecting socket)

Dimensions



Cable length: 1.5 m / 59.06 ", other cable lengths on request[1]

[1] *FGAB1.3 and EGAB1.3 probes with special cable lengths have own part no. and probe model names. This data sheet is also valid for these probes.*