



Probe model	FGABI1.3-150-Fe FGABI1.3-260-Fe
Part no. ¹	604-254 604-341
Applications	Measurement of the delta ferrite content in austenitic and duplex steel. All magnetic components of the otherwise non-magnetic structure are also recognized, that is, in addition to delta ferrite also, e.g., deformation martensite and other ferritic phases. Using the hand-held instrument FERITSCOPE® FMP30 you can measure both the delta ferrite content and the alpha martensite content. The probes are suited for measurements in bore holes, pipes or grooves and available with various shank length (L). To achieve a very small measurement uncertainty, externally triggered measurement acquisition should be used when measuring small inside diameters. Smallest permissible inside diameter: 11.5 mm (0.45 ").
Examples	<ul style="list-style-type: none"> • Measurements according to the Basler Standard • Inspection of the ferrite content in weld seams and austenitic platings • Measurement of the ferrite content or martensite content (only connected with hand-held instrument FERITSCOPE® FMP30) to estimate the material properties as the susceptibility to cracking under tension or vibration, material strength or toughness, corrosion resistance
Probe design	Single tip inside probe with spring-loaded measuring system
Applications	Delta ferrite or alpha martensite
Measurement range	0.1 ... 120 FN or 0.1 ... 80 Fe% <i>(You can select between the units WRC-FN and Fe% in all connectable instruments. In the hand-held instrument FERITSCOPE® FMP30 you can additionally select between the units Fe% and αM%)</i>
*	<i>The specifications for trueness and repeatability precision apply to ambient and specimen temperatures at the time of calibration. The values for trueness and repeatability may increase compared to the values specified here if the temperature during measurement differs from the temperature during calibration.</i>
Trueness*	
based on Fischer factory calibration standards	0.1 ... 5 FN: ≤ 0.1 FN 5 ... 120 FN: ≤ 3 % of nominal value
Repeatability precision*	
based on Fischer factory calibration standards 5 single readings per standard	0.1 ... 10 FN: ≤ 0.05 FN 10 ... 40 FN: ≤ 0.5 % of reading 40 ... 120 FN: ≤ 1 % of reading
	<i>Note</i> <i>The inhomogeneity of the material structure mainly defines the measurement variation. So, the measurement variation is higher for specimen with a larger inhomogeneity in the material structure as opposed to the factory calibration standards.</i>
Influences*	
<i>The following values are valid for ferrite content with a nominal value of 10 FN.</i>	
Curvature (R), measurement error from the nominal value with reference to master calibration on flat surface	
Measuring spot	Measurement error ≥ 5 % for R ≤ 20 mm / R ≤ 0.79 " Probe needs a minimum of R = 4.5 mm (support stand necessary) / R = 0.18 "
Curvature (R), measurement error from the nominal value with reference to master calibration on flat surface	
Measuring spot	Measurement error ≥ 5 % for R ≤ 10 mm / R ≤ 0.39 " Probe needs a minimum of R = 1 mm (support stand necessary) / R = 0.039 "
Edge distance (X), specification from probe tip center, measurement error from the nominal value	
Measuring spot = Probe pole centre	Measurement error ≥ 2 % for X ≤ 3 mm / X ≤ 0.12 "

Influences*

The following values are valid for ferrite content with a nominal value of 10 FN.

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

	Metal sheet thickness D: Measurement error $\geq 10\%$ for $D \leq 1\text{ mm}$ / $D \leq 0.039\text{ ''}$ Plating thickness D on iron or steel: Measurement error $\geq 10\%$ for $D \leq 1\text{ mm}$ / $D \leq 0.039\text{ ''}$
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Admissible ambient temperature at operation: $-10\text{ }^\circ\text{C} \dots +40\text{ }^\circ\text{C}$ / $+14\text{ }^\circ\text{F} \dots +104\text{ }^\circ\text{F}$

Admissible specimen temperature: $\text{max. } +40\text{ }^\circ\text{C}$ / $\text{max. } +104\text{ }^\circ\text{F}$

Probe tip material: PVD-coated steel

Probe tip replaceable: No

Probe tip radius: 0.75 mm / 29.53 mils

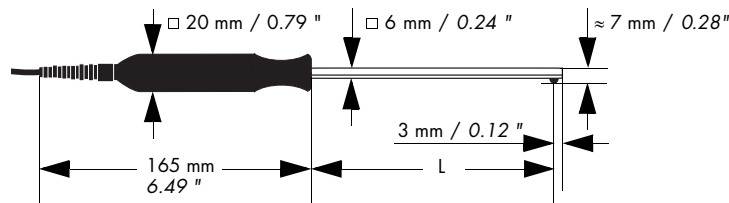
Measuring method: Magnetic induction method according to ISO 2178, ASTM D7091

Scope of supply: Probe

Options: Calibration set and single calibration standards as well as a Inspection certificate "3.1" according to ISO 10474 (only in connection with measuring device) are available as options
 Adapter for probe stand: 601-691

FGABI1.3-xxx-Fe probes work with: Hand-held instrument FERITSCOPE® FMP30;
 Benchtop instruments (cannot measure the alpha martensit content) FISCHERSCOPE® MMS® PC and FISCHERSCOPE® MMS® PC2 with F-Module PERMASCOPE® 604-293

Dimensions



Cable length: 1.5 m / 59.06 '' , other cable lengths on request¹

Probe model	FGABI1.3-150-Fe	FGABI1.3-260-Fe
Shank length L (other lengths on request)	150 mm / 5.91 ''	260 mm / 10.24 ''

¹ FGABI1.3-Fe probes with special cable lengths have own part no. and probe model names. This data sheet is also valid for these probes.