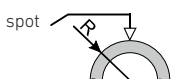
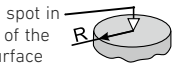




Probe model	FGAB1.3-Fe	D-F-Fe
Part no. ¹	604-264	1007044
Measurement task	Determination of delta ferrite or alpha martensite	
Applications	Measurement of the delta ferrite content in austenitic and duplex steel. All magnetic components of the otherwise non-magnetic structure are also recognized, that 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.	
Examples	■ 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	
Feature	■ well suited for small measuring areas due to the small probe diameter	
Measuring range	0.1 ... 120 FN or 0.1 ... 80 Fe% (You can select between the units WR-FN and Fe% in all connectable instruments. In the hand-held instrument FERITSCOPE® FMP30 you can additionally select between the units Fe% and αM%)	
*	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.	
Trueness*		
based on Fischer factory calibration standards,at 20 °C (68 °F) for specimen and ambient temperature	0.1 ... 5 FN: ≤ 0.15 FN 5 ... 120 FN: ≤ 3 % of nominal value	
Repeatability precision*		Note
based on Fischer factory calibration standards,at 20 °C (68 °F) for specimen and ambient temperature 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	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.
Influence*		
The following values are valid for ferrite content with a nominal value of 10 FN at 20 °C (68 °F) for specimen and ambient temperature.		
Curvature (R), measurement deviation from nominal value with reference to a calibration on flat surface		
Measuring spot		Measurement deviation ≥ 5 % for R ≤ 10 mm (R ≤ 0.39 ") Probe needs a minimum of R = 15 mm (support stand necessary) (R = 0.59 ")
Curvature (R), measurement deviation from nominal value with reference to a calibration on flat surface		
Measuring spot		Measurement deviation ≥ 5 % for R ≤ 5 mm (R ≤ 0.2 ") Probe needs a minimum of R = 1 mm (support stand necessary) (R = 0.039 ")
Edge distance (R), specification from probe tip center, measurement deviation from nominal value		
Measuring spot in the center of the circular surface		Measurement deviation ≥ 2 % for R ≤ 3 mm (R ≤ 0.12 ") Probe needs a minimum of R = 5 mm (support stand necessary) (R = 0.2 ")

Sonden FGAB1.3-Fe / D-F-Fe

Influence*

The following values are valid for ferrite content with a nominal value of 10 FN at 20 °C (68 °F) for specimen and ambient temperature.

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

Measuring spot =
Probe pole center



Measurement deviation $\geq 2\%$ for $X \leq 3\text{ mm}$ ($X \leq 0.12\text{ ''}$)

Material thickness (D), measurement deviation from nominal value

Measuring spot



Metal sheet thickness D: Measurement deviation $\geq 10\%$ for $D \leq 1\text{ mm}$ ($D \leq 0.039\text{ ''}$)

Plating thickness D on iron or steel: Measurement deviation $\geq 10\%$ for $D \leq 1\text{ mm}$ ($D \leq 0.039\text{ ''}$)

Admissible ambient temperature at operation

-10 °C ... +40 °C (+14 °F ... +104 °F)

Admissible specimen temperature

temporary max. +80 °C (max. +176 °F)

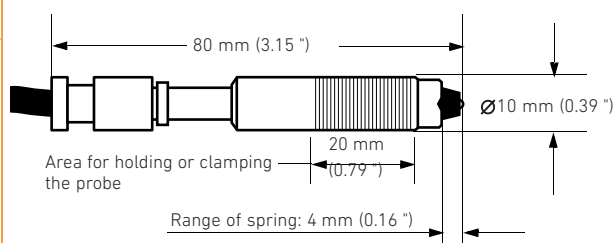
Design

Single pole axial probe with spring-loaded measuring system

Probe pole

- wear-resistant
- material: PVD coated steel
- radius: 0.75 mm (29.53 mils)
- replaceable by Fischer service center

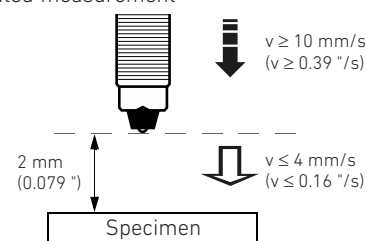
Dimensions



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

Bending radius: $\geq 30\text{ mm}$ (1.18 '')

Approach and touchdown speed for automated measurement



Lift-off distance between 2 measurements $\geq 8\text{ mm}$ ($\geq 0.32\text{ ''}$)

Measuring method

Magnetic induction test method according to ISO 2178, ASTM D7091

Probes work with following instruments

FGAB1.3-Fe (analog probe)

- Hand-held instruments: FERITSCOPE® FMP30 (can also measure the alpha martensit content) and FERITSCOPE® DMP30 series by using DMP-F-Probe-Adapter (1007336)
- Benchtop instruments (cannot measure the alpha martensit content) FISCHERSCOPE® MMS® PC and FISCHERSCOPE® MMS® PC2 with PERMASCOPE® F-Probe module (604-293)

D-F-Fe (digital probe)

- FERITSCOPE® DMP30 (cannot measure the alpha martensit content)

Scope of delivery

Probe with connecting cable, prism adapter for measurements on pipes and bars, placing ring for placing the probe easier onto the surface

Options

- Calibration set 602-239
- Single calibration standards on request
- Manufacturer Certificate M according to DIN 55350-18 (only in connection with measuring instrument)
- Support stand V12 MOT, 604-374, with motorized probe lowering device for highest repeatability; suitable probe clamp 602-370 included in support stand delivery
- Support stand V12 BASE, 604-420, with mechanical probe lowering device; suitable probe clamp 602-370 included in support stand delivery

¹ Probes with special cable lengths have own part no. and probe model names (FGAB1.3Lx-Fe; x = cable length in meter). This data sheet also applies to these probes.

Probe D-F-Fe: max. cable length 3 m (118 ''), it not allowed to use a USB connection cable to connect probe to instrument