

Probes FKB10 / D-F90-2t8 Data Sheet



Probe models	FKB10	D-F90-2t8
Part no.	604-177	1007032
Measurement task	Coating thickness on steel or iron base material (FE); NC/FE or NF/FE	
Applications	Measurement of non-conductive and non-ferrous metal coatings on steel or iron base materials (NC/FE or NF/FE).	
Examples	<ul style="list-style-type: none"> ■ Paint, varnish or plastic coatings on steel or iron (NC/FE) ■ Copper, brass, zinc, tin and chrome coatings on steel or iron (NF/FE) 	
Features	<ul style="list-style-type: none"> ■ Preferably for measurements on rough (blasted) surfaces, measurements on smooth surfaces are of course also possible ■ Shortness design; min. working height 60 mm (2.36 ") ■ Probe model FKB10 also available as digital probe (D-F90-2t8) 	
Restriction	<ul style="list-style-type: none"> ■ Sensitive to magnetic preferential directions in the material, therefore when measuring, turn the probe rotate the probe 90° at a time 	


* *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).*

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.


Measuring range*	0 ... 8 mm (0 ... 314.96 mils)	
Trueness*	Steel or iron base material (FE)	
based on Fischer factory calibration standards at 20 °C (68 °F) for specimen and ambient temperature	0 ... 0.5 mm: ≤ 0.01 mm 0.5 ... 8.0 mm: ≤ 2 % of reading	(0 ... 19.69 mils: ≤ 0.39 mils) (19.69 ... 314.96 mils: ≤ 2 % of reading)
Repeatability precision*	Steel or iron base material (FE)	
based on Fischer factory calibration standards at 20 °C (68 °F) for specimen and ambient temperature	0 ... 0.5 mm: ≤ 0.0025 mm 0.5 ... 8.0 mm: ≤ 0.5 % of reading	(0 ... 19.69 mils: ≤ 0.1 mils) (19.69 ... 314.96 mils: 0.5 % of reading)
Influence*	Steel or iron base material (FE)	

The following values are valid for a coating thickness with a nominal value of 0.2 mm (7.87 mils).

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

Measuring spot  Measurement deviation ≥ 10 % for R ≤ 37.5 mm (R ≤ 1.48 ")
Probe needs a minimum of R = 12 mm (R = 0.47 ")

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

Measuring spot  Measurement deviation ≥ 10 % for R ≤ 25 mm (R ≤ 0.98 ")
Probe needs a minimum of R = 1 mm (R = 0.04 ")

Edge distance (R), specification from probe tip center

Measuring spot in the center of the circular surface  Measurement deviation ≥ 10 % for R ≤ 15 mm (R ≤ 0.59 ")
Probe needs a minimum of R = 7.5 mm (R = 0.29 ")


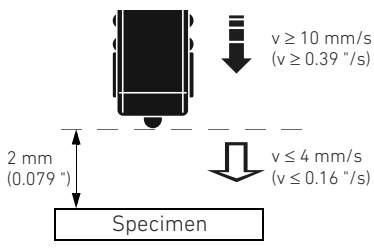
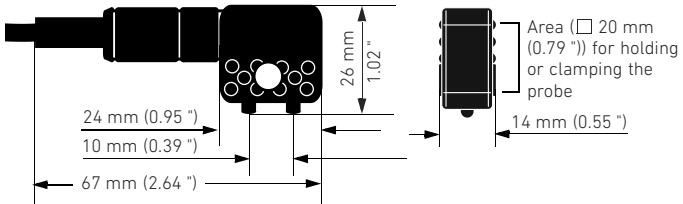
NDT Supply.com, Inc.

7952 Nieman Road
Lenexa, KS 66214-1560 USA

Phone: 913-685-0675, Fax: 913-685-1125
e-mail: sales@ndtsupply.com, www.ndtsupply.com



Probes FKB10 / D-F90-2t8

Influence*	Steel or iron base material (FE)	
	<i>The following values are valid for a coating thickness with a nominal value of 0.2 mm (7.87 mils).</i>	
Base material thickness (D)	Measurement deviation $\geq 10\%$ for $D \leq 0.5$ mm ($D \leq 19.69$ mils)	
Measuring spot		
Admissible ambient temperature at operation	-10 °C ... +40 °C / +14 °F ... +104 °F	
Admissible specimen temperature	max. +40 °C (+104 °F)	
Probe design	<p>Two pole angle probe with fixed measuring system</p> <p>Probe pole tips</p> <ul style="list-style-type: none"> ■ wear-resistant ■ material: PVD coated steel ■ radius: 1.5 mm (0.06 ") per pol tip ■ replaceable by Fischer service center 	<p>Approach and touchdown speed for automated measurement</p>  <p>Lift-off distance between 2 measurements ≥ 32 mm (≥ 1.26 ")</p>
	<p>Dimensions</p>  <p>Probe cable length: 1.5 m (59.06 "), other cable lengths on request¹ Bending radius: ≥ 30 mm (1.18 ")</p>	
Measuring method	Magnetic induction test method according to ISO 2178, ASTM D7091	
Calibration – Calibration foils	<p>1-Point calibration</p> <p><i>The 1-Point-Calibration is practicably in the lower measuring range only. This calibration method provides the best measuring accuracy in a small coating thickness range close by the stated foil thickness.</i></p>	<p>2-Point calibration</p> <p><i>The calibration using two calibration foils provides on the one hand the best measuring accuracy in the coating thickness range limited by the two foil thicknesses and on the other hand two calibration foils are necessary for calibrating the upper measurement range.</i></p>
Use following foil thickness (pairings) for calibration	max. 1 mm (39.37 mils)	Foil 1: ≤ 1 mm (39.37 mils); Foil 2: ≥ 2.2 mm (86.61 mils)
Probes work with following instruments	<p>FKB10 (analog probe)</p> <ul style="list-style-type: none"> ■ Hand-held instruments: all DUALSCOPE® and DELTASCOPE® instruments of the FMP series and also all DUALSCOPE® and DELTASCOPE® instruments of the DMP series by using DMP-F-Probe-Adapter (1007336) ■ Bench top instruments: FISCHERSCOPE® MMS® PC and FISCHERSCOPE® MMS® PC2 both with PERMASCOPE® F-Probe module (604-293, 12-pin connecting socket) <p>D-F90-2t8 (digital probe)</p> <ul style="list-style-type: none"> ■ Hand-held instruments: all DUALSCOPE® and DELTASCOPE® instruments of the DMP series 	
Scope of delivery	Probe with connecting cable, calibration foil set 602-449 (metal plate NF/FE for instrument check, 2 calibration foils with thicknesses of approx. 0.05 mm (0.002 ") and 3 mm (0.118 ")	
Options	<ul style="list-style-type: none"> ■ Calibration foils: various foil thickness are available up to 6 mm (0.24 "); suitable calibration foil thicknesses are specified in section Calibration – Calibration foils ■ Manufacturer Certificate M according to DIN 55350-18 (only in connection with measuring instrument) ■ Support stand V12 BASE, 604-420, with mechanical probe lowering device; suitable probe clamp 600-077 ■ Support stand V12 MOT, 604-374, with motorized probe lowering device for highest repeatability; suitable probe clamp 600-077 	

¹ Probes with special cable lengths have own part no. and probe model names. This data sheet also applies to these probes.
Probe D-F90-2t8: max. cable length 3 m (118 "), it not allowed to use a USB connection cable to connect probe to instrument!

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Lenexa, KS 66214-1560 USA

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e-mail: sales@ndtsupply.com, www.ndtsupply.com

