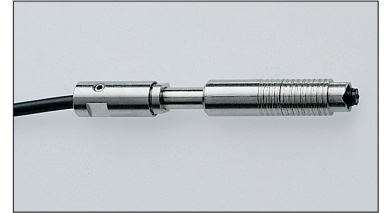
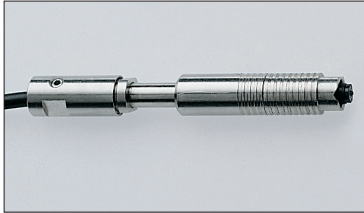
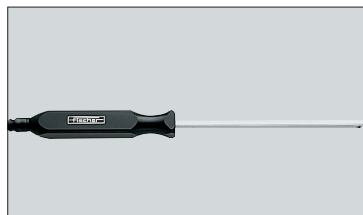
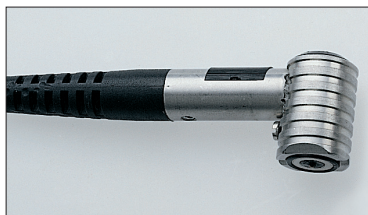


**NDT** INTERNATIONAL, INC.  
 711 S. CREEK ROAD  
 WEST CHESTER, PA 19382-8031  
 Tel: 610-793-1700  
 Fax: 610-793-1702  
 info@ndtint.com  
 www.ndtint.com



Probe model	FGAB1.3	FGA2H	FGA06H
Version description	<b>FGAB1.3; standard version</b>	<b>FGA2H; standard version</b>	<b>FGA06H</b>
Part no.	604-141 <b>FGAB1.3T; temperature resistant</b> 604-182	604-174 <b>FGA2HF; moisture proof</b> 604-226	604-176
Probe design	Axial single tip probe with spring-loaded measuring system.	Axial single tip probe with spring-loaded measuring system.	Axial single tip probe with spring-loaded measuring system
Measuring mode	Single mode	Single mode	Single mode
Measuring method	Magnetic induction method	Magnetic induction method	Magnetic induction method
Measuring application	NF, Iso/Fe	NF, Iso/Fe	NF, Iso/Fe
Measuring range	0 - 2000 µm	0 - 1500 µm	0 - 700 µm
Accuracy	up to 100 µm: ± 1 µm 100 - 1000 µm: ± 1 % 1000 - 2000 µm: < 3 %	up to 100 µm: ± 1 µm 100 - 1000 µm: ± 1 % 1000 - 1500 µm: < 3 %	up to 70 µm: ± 0.5 µm 70 - 500 µm: < 2 % 500 - 700 µm: < 3 %
Precision	bis/up to 100 µm: 0.3 µm 100 - 2000 µm: < 0.3 %	bis/up to 100 µm: 0.3 µm 100 - 1500 µm: < 0.3 %	bis/up to 25 µm: 0.2 µm 25 - 500 µm: < 0.3 % 500 - 700 µm: < 0.5 %
Ø (concave) for 10 % error	30 mm	40 mm	15 mm
Min. Ø	10 mm	38 mm	22 mm
1.2"	400 mils	1.57"	600 mils
Ø (convex) for 10 % error	16 mm	18 mm	7 mm
Min. Ø	2 mm	2 mm	2 mm
630 mils	80 mils	710 mils	280 mils
80 mils	80 mils	80 mils	80 mils
Meas. area Ø for 10 % error	10 mm	20 mm	4 mm
Min. measuring area Ø	3.5 mm	4 mm	2 mm
400 mils	140 mils	800 mils	200 mils
140 mils	160 mils	160 mils	80 mils
Edge distance for 10 % error	0.3 mm	0.1 mm	0,25 mm
	12 mils	4 mils	10 mils
Substrate th. for 10 % error	0.4 mm	0.6 mm	0.2 mm
	16 mils	24 mils	8 mils
Probe tip radius	0.75 mm	2.25 mm	0.3 mm
	30 mils	90 mils	12 mils
Probe tip material	PVD-coated steel	Hard metal	Hard metal
Probe tip replaceable	Yes	Yes	No
Height	-	-	-
Diameter / width	10 mm	13 mm	10 mm
Length	110 mm	80 mm	110 mm
Works with the instruments	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®

Applications	FGAB1.3	FGA2H	FGA06H
	Measures nonferrous and nonmetallic coatings on steel or iron substrates (NF, Iso/Fe). Most popular probe for electroplated or paint and lacquer coatings. However, measurement data scatter is relatively high on rough (e.g., sandblasted) surfaces. If permitted by the shape of the specimen, a dual-tip probe should be used in such cases.	Measures nonferrous and nonmetallic coatings on steel or iron substrates (NF, Iso/Fe). Due to the larger probe tip diameter better suited for rough surfaces than the FGAB1.3 probe.	Measures nonferrous and nonmetallic coatings on steel or iron substrates (NF, Iso/Fe). Especially suited for small test areas and surfaces with a pronounced curvature. High wear resistance of the tungsten carbide tip. Not suited for very rough surfaces.



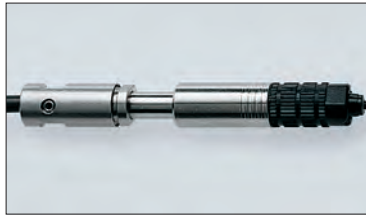
Probe model	FGABW1.3	FGABI1.3-150	V7FK4
Version description	FGABW1.3	FGABI1.3-150	V7FK4
Part no.	604-178	604-175	604-184

Probe design	Single tip probe for angular measurements with spring-loaded measuring system	Single tip inside probe with spring-loaded measuring system	Axial double tip probe with spring-loaded measuring element
Measuring mode	Single mode	Single mode	Single mode
Measuring method	Magnetic induction method	Magnetic induction method	Magnetic induction method
Measuring application	NF, Iso/Fe	NF, Iso/Fe	NF, Iso/Fe
Measuring range	0 - 2000 µm	0 - 1000 µm	0 - 2000 µm
Accuracy	up to 100 µm: ± 1 µm 100 - 1000 µm: ± 1 % 1000 - 2000 µm: < 3 %	up to 50 µm: ± 0.5 µm 50 - 1000 µm: < 1 %	0 - 100 µm: 1 µm 100 - 2000 µm: < 1 %
Precision	bis/up to 100 µm: 0.3 µm 100 - 2000 µm: < 0.3 %	0 - 50 µm: 0.15 µm 50 - 1000 µm: 0.3 %	0 - 25 µm: 0.1 µm 25 - 2000 µm: 0.4 %

Ø (concave) for 10 % error	35 mm	1.4"	35 mm	1.38"	38 mm	1.52"
Min. Ø	36 mm	1.44"	9 mm	350 mils	20 mm	800 mils
Ø (convex) for 10 % error	16 mm	640 mils	16 mm	640 mils	22 mm	880 mils
Min. Ø	2 mm	80 mils	2 mm	80 mils	2 mm	80 mils
Meas. area Ø for 10 % error	10 mm	400 mils	8 mm	320 mils	30 mm	1.2"
Min. measuring area Ø	3.5 mm	140 mils	2 mm	80 mils	25 mm	1"
Edge distance for 10 % error	0.7 mm	-	-	-	-	-
Substrate th. for 10 % error	0.2 mm	8 mils	0.2 mm	8 mils	0.4 mm	16 mils
Probe tip radius	0.75 mm	30 mils	0.75 mm	30 mils	1.25 mm	50 mils

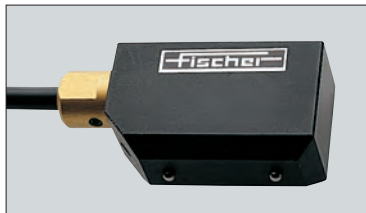
Probe tip material	PVD-coated steel	PVD-coated steel	Heat treated steel
Probe tip replaceable	Yes	Yes	Yes
Height	23 mm	6,5 mm	-
Diameter / width	14 mm	5,5 mm	18 mm
Length	72 mm	320 mm	105 mm
Works with the instruments	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®

Applications	Measures nonferrous and nonmetallic coatings on steel or iron substrates (NF, Iso/Fe). Most popular probe for the measurement of electroplated or paint and lacquer coatings in pipes, bore holes, recesses etc. However, measurement data scatter is relatively high on rough (e.g., sandblasted) surfaces. If permitted by the shape of the specimen, a dual-tip probe should be used in such cases.	Measures nonferrous and nonmetallic coatings on steel or iron substrates (NF, Iso/Fe). Suited for measurements in bore holes, pipes or grooves. To achieve a very small measurement uncertainty, externally triggered measurement acquisition should be used when measuring small inside diameters. Smallest permissible inside diameter: 9 mm. Maximum insertion depth: 150 mm.	Measures nonferrous and nonmetallic coatings on steel or iron substrates (NF, Iso/Fe). Due to the uncoated measuring tips, especially suited for thin coatings (phosphate coatings). Greater measuring precision on rough surfaces than single tip probes. Spring-loaded measuring system ensures dependable positioning and uniform contact pressure of the measuring system (an advantage with thin coatings).
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Probe model	FGB2	FKB10	FKB10-OD			
Version description	<b>FGB2 standard version</b>	<b>FKB10</b>	<b>FKB10-OD</b>			
Part no.	604-179 <b>FGB2L; cable 5 m</b> 604-265	604-177	604-219			
Probe design	Axial single tip probe with spring-loaded measuring system.	Double tip probe for angular measurements with fixed measuring system	Double tip probe for angular measurements with fixed measuring system			
Measuring mode	Single mode	Single mode	Single mode			
Measuring method	Magnetic induction method	Magnetic induction method	Magnetic induction method			
Measuring application	NF, Iso/Fe	NF, Iso/Fe	NF, Iso/Fe			
Measuring range	0,01 - 5 mm	0 - 8 mm	0 - 8 mm			
Accuracy	up to 0.1 mm: ± 0.0015 mm 0.1 - 3 mm: < 1.5 % 3 - 5 mm: < 5 %	0 - 0.5 mm: 0.01 mm 0.5 - 8 mm: < 2 %	0 - 0.5 mm: 0.005 mm 0.5 - 8 mm: < 1 %			
Precision	bis/up to 0.1 mm: 0.0003 mm 0,1 - 3 mm: < 0.3 % 3 - 5 mm: < 0.5 %	0 - 0.5 mm: 0.0025 mm 0.5 - 8 mm: 0.5 %	0 - 0.5 mm: 0.0015 mm 0.5 - 8 mm: 0.3 %			
Ø (concave) for 10 % error Min. Ø	37 mm 9 mm	1.48" mils 360 mils	75 mm 24 mm	3" 960 mils	for f at specimen only	
Ø (convex) for 10 % error Min. Ø	21.5 mm 2 mm	860 mils 80 mils	50 mm 2 mm	2" 80 mils	50 mm -	2" -
Meas. area Ø for 10 % error Min. measuring area Ø	20 mm 6 mm	800 mils 240 mils	30 mm 20 mm	1.2" 800 mils	30 mm 38 mm	1.2" 1.52"
Edge distance for 10 % error	1.5 mm	60 mils	-	-	-	-
Substrate th. for 10 % error	0.6 mm	24 mils	0.5 mm	20 mils	0.5 mm	20 mils
Probe tip radius	1.0 mm	40 mils	1.5 mm	60 mils	f at: 34x24 mm	f at: 400x960 mils
Probe tip material	PVD-coated steel	PVD-coated steel	Hard plastics			
Probe tip replaceable	Yes	Yes	No			
Height	-	27 mm	26 mm			
Diameter / width	10 mm	14 mm	24 mm			
Length	110 mm	50 mm	53 mm			
Works with the instruments	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®			

Applications	FGB2	FKB10	FKB10-OD
	Measures nonferrous and nonmetallic coatings on steel or iron substrates (NF, Iso/Fe). Has the largest measurement range of all single tip probes. Due to unshielded magnetic field larger geometric influence, however smaller tilting effect.	Measures nonferrous and nonmetallic coatings on steel or iron substrates (NF, Iso/Fe). Especially suited for thick coatings. Higher measurement precision on rough surfaces than single tip probes.	Measures nonferrous and nonmetallic coatings on steel or iron substrates (NF, Iso/Fe). The large f at contact surface is especially well suited for thick and compressible soft coatings (for example rubber sheeting for offset printing).



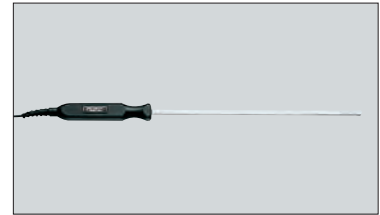
Probe model	FKB25	FK50	FGBW2
Version description	FKB25	FK50	FGBW2
Part no.	604-266	604-185	604-252

<b>Probe design</b>	Double tip probe for angular measurements with fixed measuring system	Double tip probe for angular measurements with fixed measuring system	Single tip probe for angular measurements with spring-loaded measuring system
<b>Measuring mode</b>	Single mode	Single mode	Single mode
<b>Measuring method</b>	Magnetic induction method	Magnetic induction method	Magnetic induction method
<b>Measuring application</b>	NF, Iso/Fe	NF, Iso/Fe	NF, Iso/Fe
<b>Measuring range</b>	0 - 15 mm	0,01 - 30 mm	0,01 - 5 mm
<b>Accuracy</b>	0 - 1 mm: 0.002 mm 1 - 7 mm: < 2 % 7 - 15 mm: < 5 %	0.03 - 1 mm: 5 µm 1 - 10 mm: < 0.5 % 10 - 30 mm: < 5 %	up to 0.1 mm: ± 0.0015 mm 0.1 - 3 mm: < 1.5 % 3 - 5 mm: < 5 %
<b>Precision</b>	0 - 0.5 mm: 0.001 mm 0.5 - 15 mm: 0.2 %	0.03 - 1 mm: 0.002 mm 1 - 30 mm: 0.2 %	bis/up to 0.1 mm: 0.0003 mm 0.1 - 3 mm: < 0.3 % 3 - 5 mm: < 0.5 %

<b>Ø (concave) for 10 % error</b>	85 mm	3.4"	140 mm	5.6"	35 mm	1.4"
<b>Min. Ø</b>	20 mm	800 mils	14 mm	560 mils	18 mm	720 mils
<b>Ø (convex) for 10 % error</b>	60 mm	2.4"	100 mm	4"	24 mm	960 mils
<b>Min. Ø</b>	10 mm	400 mils	10 mm	400 mils	2 mm	80 mils
<b>Meas. area Ø for 10 % error</b>	-	-	-	-	20 mm	800 mils
<b>Min. measuring area Ø</b>	40 mm	1.6"	70 mm	2.8"	6 mm	240 mils
<b>Edge distance for 10 % error</b>	5 mm	200 mils	7 mm	280 mils	1 mm	40 mils
<b>Substrate th. for 10 % error</b>	0.7 mm	28 mils	1.2 mm	48 mils	0.6 mm	24 mils
<b>Probe tip radius</b>	1.5 mm	60 mils	2.5 mm	100 mils	1.0 mm	40 mils

<b>Probe tip material</b>	PVD-coated steel	Heat treated steel	PVD-coated steel
<b>Probe tip replaceable</b>	Yes	Yes	Yes
<b>Height</b>	33 mm	33 mm	23 mm
<b>Diameter / width</b>	20 mm	20 mm	14 mm
<b>Length</b>	65 mm	95 mm	72 mm
<b>Works with the instruments</b>	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®

<b>Applications</b>	Measures nonferrous and nonmetallic coatings on steel or iron substrates (NF, Iso/Fe). Especially suited for thick, nonmetallic coatings.	Measures nonferrous and nonmetallic coatings on steel or iron substrates (NF, Iso/Fe). Especially suited for very thick, nonmetallic coatings. For austenitic stainless steel coatings smaller measurement errors due to ferromagnetic delta ferrite content than with all other types of probes.	Measures nonferrous and nonmetallic coatings on steel or iron substrates (NF, Iso/Fe). Same as FGB2 probe, however preferably used for measurements in pipes, bore holes or recesses.
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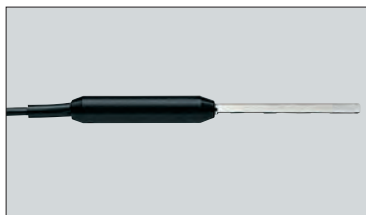
Probe model	FGA06H-MC	FGAB1.3-SD	FGAB1.3-260
Version description	FGA06H-MC	FGAB1.3-SD	FGAB1.3-260
Part no.	604-181	604-227	604-339

Probe design	Axial single tip probe with spring-loaded measuring system	Axial single tip probe with spring-loaded measuring system.	Single tip inside probe with spring-loaded measuring system
Measuring mode	Single mode	Single mode	Single mode
Measuring method	Magnetic induction method	Magnetic induction method	Magnetic induction method
Measuring application	NF, Iso/Fe	NF, Iso/Fe	NF, Iso/Fe
Measuring range	0 - 700 µm	0 - 2000 µm	0 - 1000 µm
Accuracy	0 - 50 µm: 0.5 µm 50 - 700 µm: < 1 %	up to 60 µm: ± 1.5 µm 60 - 1000 µm: ± 2.5 % 1000 - 2000 µm: < 5 %	up to 50 µm: ± 0.5 µm 50 - 1000 µm: < 1 %
Precision	0 - 100 µm: 0.08 µm 100 - 700 µm: < 0.08 %	bis/up to 60 µm: 0.6 µm 60 - 2000 µm: < 1 %	0 - 50 µm: 0.15 µm 50 - 1000 µm: 0.3 µm

Ø (concave) for 10 % error Min. Ø	30 mm 10 mm	1200 mils 400 mils	for f at specimens only		35 mm 9 mm	1.38" 350 mils
Ø (convex) for 10 % error Min. Ø	18 mm 2 mm	720 mils 80 mils	For f at specimens only		16 mm 2 mm	640 mils 80 mils
Meas. area Ø for 10 % error Min. measuring area Ø	5 mm 3 mm	200 mils 120 mils	12 mm 4 mm	480 mils 160 mils	8 mm 2 mm	320 mils 80 mils
Edge distance for 10 % error	-	-	4 mm	160 mils	-	-
Substrate th. for 10 % error	0.25 mm	10 mils	0.4 mm	16 mils	0.2 mm	8 mils
Probe tip radius	0.3 mm	12 mils	f at: ø 8 mm	f at: ø 320 mils	0.75 mm	30 mils

Probe tip material	Hard metal	Hard plastics	PVD-coated steel
Probe tip replaceable	No	No	Yes
Height	-	-	6,5 mm
Diameter / width	13 mm	18 mm	5,5 mm
Length	110 mm	100 mm	430 mm
Works with the instruments	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®

Applications	Measures nonferrous and nonmetallic coatings on steel or iron substrates (NF, Iso/Fe). Mechanical design especially suited for installation in customer specific probe fixtures or guide devices for precise probe positioning..	Measures nonferrous and nonmetallic coatings on steel or iron substrates (NF, Iso/Fe). The flat surface probe tip is especially suited for soft coatings (screen printing material, soft plastic material, etc.). The surface to be measured must be completely clean. Grease coatings or dirt particles will lead to measurement errors.	Measures nonferrous and nonmetallic coatings on steel or iron substrates (NF, Iso/Fe). Suited for measurements in bore holes, pipes or grooves. To obtain the smallest possible measurement uncertainty, externally triggered measurement acquisition should be used when measuring small inside diameters. Smallest permissible inside diameter: 9 mm. Maximum insertion depth: 260 mm
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Probe model	V1FGA1HR34	V7FKB4	FGAW2H
Version description	V1FGA1HR34	V7FKB4	FGAW2H
Part no.	604-183	604-180	604-212

<b>Probe design</b>	Single tip probe for inside measurement applications with fixed measuring system	Axial double tip probe with spring-loaded measuring system	Single tip probe for angular measurements with spring-loaded measuring system
<b>Measuring mode</b>	Single mode	Single mode	Single mode
<b>Measuring method</b>	Magnetic induction method	Magnetic induction method	Magnetic induction method
<b>Measuring application</b>	NF, Iso/Fe	NF, Iso/Fe	NF, Iso/Fe
<b>Measuring range</b>	0 - 1000 µm	0 - 2000 µm	0 - 1500 µm
<b>Accuracy</b>	0 - 50 µm: 0.5 µm 50 - 1000 µm: 1 %	up to 100 µm: ± 1 µm 100 - 1500 µm: < 1 % 1500 - 2000 µm: < 3 %	up to 100 µm: ± 1 µm 100 - 1000 µm: ± 1 % 1000 - 1500 µm: < 3 %
<b>Precision</b>	0 - 100 µm: 0.2 µm 100 - 1000 µm: 0.2 %	bis/up to 100 µm: 0.2 µm 100 - 2000 µm: < 0.2 %	bis/up to 100 µm: 0.3 µm 100 - 1500 µm: < 0.3 %

<b>Ø (concave) for 10 % error</b>	35 mm	1.4"	44 mm	1.76"	32 mm	1.28"
<b>Min. Ø</b>	7 mm	280 mils	60 mm	2.4"	18 mm	720 mils
<b>Ø (convex) for 10 % error</b>	18 mm	720 mils	29 mm	1.16"	23 mm	920 mils
<b>Min. Ø</b>	2 mm	80 mils	4 mm	160 mils	2 mm	80 mils
<b>Meas. area Ø for 10 % error</b>	6 mm	240 mils	12 mm	480 mils	20 mm	800 mils
<b>Min. measuring area Ø</b>	2 mm	80 mils	6 mm	240 mils	4 mm	80 mils
<b>Edge distance for 10 % error</b>	-	-	0.6 mm	24 mils	0.5 mm	20 mils
<b>Substrate th. for 10 % error</b>	0.2 mm	8 mils	0.7 mm	28 mils	0.6 mm	24 mils
<b>Probe tip radius</b>	0.8 mm	32 mils	1.25 mm	50 mils	2.25 mm	90 mils

<b>Probe tip material</b>	Hard metal	PVD-coated steel	Hard metal
<b>Probe tip replaceable</b>	No	Yes	Yes
<b>Height</b>	4,3 mm	-	23 mm
<b>Diameter / width</b>	4 mm	18 mm	14 mm
<b>Length</b>	120 mm	105 mm	72 mm
<b>Works with the instruments</b>	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC mit F-Modul PERMASCOPE®

<b>Applications</b>	Measures nonferrous and nonmetallic coatings on steel or iron substrates (NF, Iso/Fe). Suited for measurements in bore holes, pipes or grooves. To obtain the smallest possible measurement uncertainty, externally triggered measurement acquisition should be used when measuring small inside diameters. Smallest permissible inside diameter: 7 mm. Maximum insertion depth: 60 mm.	Measures nonferrous and nonmetallic coatings on steel or iron substrates (NF, Iso/Fe). Higher repeatability precision than single tip probes when measuring rough surfaces. Spring loaded measuring system allows exact positioning and constant pressure force, which is advantageous when measuring soft coatings.	Measures nonferrous and nonmetallic coatings on steel or iron substrates (NF, Iso/Fe). Due to the larger probe tip diameter better suited for rough surfaces than the FGABW1.3 probe.
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Probe model	FTA3.3H	FTA3.3	FTD3.3
Version description	FTA3.3H	FTA3.3	FTD3.3
Part no.	604-142	604-186	604-189

Probe design	Axial single tip probe with spring-loaded measuring system	Axial single tip probe with spring-loaded measuring system	Axial single tip probe with spring-loaded measuring system
Measuring mode	Single mode	Single mode	Single mode
Measuring method	Eddy current method	Eddy current method	Eddy current method
Measuring application	Iso/NF	Iso/NF	Iso/NF
Measuring range	0 - 1200 µm	0 - 1200 µm	0 - 800 µm
Accuracy	up to 50 µm: ± 0.5 µm 50 - 800 µm: ± 1 % 800 - 1200 µm: < 3 %	up to 100 µm: ± 1 µm 100 - 800 µm: ± 1 % 800 - 1200 µm: < 3 %	on f at specimen: 0 - 50 µm: 0.5 µm; 50 - 800 µm: 1 % on 8 mm convex: 0 - 50 µm: 2.5 µm; 50 - 800 µm: 5 %
Precision	bis/up to 100 µm: 0.4 µm 100 - 1200 µm: < 0.4 %	bis/up to 100 µm: 0.4 µm 100 - 1200 µm: < 0.4 %	auf f achen Teilen/on f at specimen *: 0 - 100 µm: 0.5 µm 100 - 800 µm: 0.5 %

Ø (concave) for 10 % error	62 mm	2.48"	69 mm	2.76"	-	-
Min. Ø	18 mm	720 mils	18 mm	720 mils	32 mm	1.28"
Ø (convex) for 10 % error	57 mm	2.28"	57 mm	2.28"	-	-
Min. Ø	2 mm	80 mils	2 mm	80 mils	2 mm	80 mils
Meas. area Ø for 10 % error	2 mm	80 mils	3 mm	120 mils	-	-
Min. measuring area Ø	2 mm	80 mils	2 mm	80 mils	2 mm	80 mils
Edge distance for 10 % error	1 mm	40 mils	1 mm	40 mils	1.5 mm	60 mils
Substrate th. for 10 % error	< 0.1 mm	< 4 mils	< 0.1 mm	< 4 mils	0.05 mm	2 mils
Probe tip radius	1.2 mm	48 mils	1.2 mm	48 mils	1.2 mm	48 mils

Probe tip material	Hard metal	Ruby jewel tip	Ruby jewel tip
Probe tip replaceable	No	Yes	Yes
Height	-	-	-
Diameter / width	18 mm	18 mm	16 mm
Length	70 mm	70 mm	100 mm
Works with the instruments	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®

Applications	Measures electrically non-conducting coatings on non-ferromagnetic metal substrate materials (Iso/NF). Standard probe for paint and plastic coatings. Should not be used when surfaces exhibit a damp condition (acidic contamination of test surface).	Measures electrically non-conducting coatings on non-ferromagnetic metal substrate materials (Iso/NF). Standard probe for paint and plastic coatings, as well as for anodized coatings. Can possibly also be used when surfaces exhibit a damp condition (acidic contamination of test surface). Smaller tilting effect than with ETA3.3FG probe.	Measures paint, lacquer, plastic and anodized coatings on non-ferromagnetic metal substrates (Iso/NF). Excellent curvature compensation in a diameter range from inf nite to about 4 mm. Patented design. Especially suited for measurements on curved surfaces such as car bodies, blinds, etc. Operation corresponds to that of a typical Eddy current probe.
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\*) Precision measured on 8 mm convex: 0 - 100 µm: 1 µm  
100 - 800 µm: 1 %



Probe model	FAW3.3	FAI3.3-150	FTA3.3FG
Version description	FAW3.3	FAI3.3-150 shaft length 150 mm	FTA3.3FG
Part no.	604-193	604-187 FAI3.3-260 shaft length 260 mm 604-336	604-190

Probe design	Single tip probe for angular measurements with spring-loaded measuring system	Single tip inside probe with spring-loaded measuring system	Axial single tip probe with spring-loaded measuring system
Measuring mode	Single mode	Single mode	Single mode
Measuring method	Eddy current method	Eddy current method	Eddy current method
Measuring application	Iso/NF	Iso/NF	Iso/NF
Measuring range	0 - 1200 µm	0 - 800 µm	0 - 1200 µm
Accuracy	up to 100 µm: 1 µm 100 - 800 µm: ± 1 % 800 - 1200 µm: < 3 %	1 - 200 µm: 1 µm 200 - 800 µm: < 0.5 %	0 - 50 µm: 0.5 µm 50 - 1200 µm: < 1 %
Precision	bis/up to 50 µm: 0.5 µm 50 - 1200 µm: < 0.5 %	1 - 100 µm: 0.3 µm 100 - 800 µm: 0.3 %	0 - 35 µm: 0.35 µm 35 - 1200 µm: 1 %

Ø (concave) for 10 % error	62 mm	2.48"	55 mm	2.2"	-	-
Min. Ø	26 mm	1.04"	9 mm	360 mils	-	-
Ø (convex) for 10 % error	54 mm	2.16"	50 mm	2"	12 mm	480 mils
Min. Ø	2 mm	80 mils	2 mm	80 mils	10 mm	400 mils
Meas. area Ø for 10 % error	3 mm	120 mils	4 mm	160 mils	15 mm	600 mils
Min. measuring area Ø	2 mm	80 mils	2 mm	80 mils	10 mm	400 mils
Edge distance for 10 % error	1.2 mm	48 mils	-	-	-	-
Substrate th. for 10 % error	< 0.1 mm	< 4 mils	0.09 mm	4 mils	0.09 mm	4 mils
Probe tip radius	1.2 mm	48 mils	1.2 mm	48 mils	7 mm	280 mils

Probe tip material	Ruby jewel tip	Sapphire jewel tip	VespeI SP1
Probe tip replaceable	Yes	Yes	No
Height	23 mm	6,5 mm	-
Diameter / width	14 mm	5,5 mm	18 mm
Length	72 mm	Depending on version	80 mm
Works with the instruments	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®

Applications	Measures electrically non-conducting coatings on non-ferromagnetic metal substrate materials (Iso/NF). Suited for measurements on plane specimens or in pipes bore holes and recesses. Can possibly also be used when surfaces exhibit a damp condition (acidic contamination of test surface).	Measures electrically non-conducting coatings on non-ferromagnetic metal substrate materials (Iso/NF). Suited for measurements in pipes, bore holes, grooves, etc. External start should be used to avoid contact errors. Smallest permissible inside diameter: 9 mm. Maximum insertion depth: 150 mm.	Measures electrically non-conducting coatings on non-ferromagnetic metal substrate materials (Iso/NF). Entire probe, incl. cable connector, protected from moisture infiltration. Thus, especially suited for anodized coatings with acidic contamination of the test surface. Larger tilting effect than with FTA3.3 probe.
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Probe model	FTA3.3-5.6	FTA3.3-5.6-HF
Version description	FTA3.3-5.6	FTA3.3-5.6-HF
Part no.	604-200	604-229

<b>Probe design</b>	Axial single tip probe with spring-loaded measuring system	Axial single tip probe with spring-loaded measuring system
<b>Measuring mode</b>	Single mode	Single mode
<b>Measuring method</b>	Eddy current method	Eddy current method
<b>Measuring application</b>	Iso/NF	Iso/NF
<b>Measuring range</b>	0 - 1200 µm	0 - 1200 µm
<b>Accuracy</b>	up to 50 µm: ± 0.8 µm 50 - 1200 µm: up to ± 1.5 %	0 - 50 µm: ± 1 µm 50 - 800 µm: up to ± 2 % 800 - 1200 µm: up to ± 5 %
<b>Precision</b>	0 - 100 µm: 0.5 µm 100 - 1200 µm: 0.5 %	0 - 100 µm: 1 µm 100 - 1200 µm: 1 %

<b>Ø (concave) for 10 % error</b>	32 mm	1.28"	72 mm	2.88"
<b>Min. Ø</b>	40 mm	1.6"	40 mm	1.6"
<b>Ø (convex) for 10 % error</b>	43 mm	1.72"	22 mm	880 mils
<b>Min. Ø</b>	2 mm	80 mils	2 mm	80 mils
<b>Meas. area Ø for 10 % error</b>	-	-	-	-
<b>Min. measuring area Ø</b>	5 mm	200 mils	5 mm	200 mils
<b>Edge distance for 10 % error</b>	-	-	0.4 mm	16 mils
<b>Substrate th. for 10 % error</b>	< 0.1 mm	< 4 mils	< 0.1 mm	< 4 mils
<b>Probe tip radius</b>	5.6 mm	220 mils	5.6 mm	220 mils

<b>Probe tip material</b>	Alumina	Alumina
<b>Probe tip replaceable</b>	Yes	Yes
<b>Height</b>	-	-
<b>Diameter / width</b>	18 mm	18 mm
<b>Length</b>	70 mm	70 mm
<b>Works with the instruments</b>	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®

<b>Applications</b>	Measures electrically non-conducting coatings on non-ferromagnetic metal substrate materials (Iso/NF). Due to the larger radius of the probe tip, lower measurement scatter on rough surfaces than with FTA3.3 probe.	Measures electrically non-conducting coatings on non-ferromagnetic metal substrate materials (Iso/NF). Due to the larger radius of the probe tip and the high measurement frequency, especially suited for the measurement of paint coatings on hot-dipped galvanized steel components with a zinc thickness of > 80 µm (3.2 mils).
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<b>Probe model</b>	<b>FAW3.3-5.6</b>	<b>FAW3.3-5.6 HF</b>
<b>Version description</b>	<b>FAW3.3-5.6</b>	<b>FAW3.3-5.6 HF</b>
<b>Part no.</b>	604-223	604-224

<b>Probe design</b>	Single tip probe for angular measurements with spring-loaded measuring system	Single tip probe for angular measurements with spring-loaded measuring system
<b>Measuring mode</b>	Single mode	Single mode
<b>Measuring method</b>	Eddy current method	Eddy current method
<b>Measuring application</b>	Iso/NF	Iso/NF
<b>Measuring range</b>	0 - 1200 µm	0 - 1200 µm
<b>Accuracy</b>	up to 50 µm: 0.75 µm 50 - 800 µm: ± 1.5 % 800 - 1200 µm: < 3 %	up to 50 µm: ± 1 µm 50 - 800 µm: < 2 % 800 - 1200 µm: < 5 %
<b>Precision</b>	bis/up to 100 µm: 0.7 µm 100 - 1200 µm: < 0.7 %	bis/up to 100 µm: 1.5 µm 100 - 1200 µm: < 1.5 %

<b>Ø (concave) for 10 % error</b>	47 mm	1.88"	54 mm	2.16"
<b>Min. Ø</b>	40 mm	1.6"	24 mm	960 mils
<b>Ø (convex) for 10 % error</b>	54 mm	2.16"	57 mm	2.28"
<b>Min. Ø</b>	2 mm	80 mils	2 mm	80 mils
<b>Meas. area Ø for 10 % error</b>	3 mm	120 mils	3 mm	120 mils
<b>Min. measuring area Ø</b>	2 mm	200 mils	1.5 mm	60 mils
<b>Edge distance for 10 % error</b>	1.2 mm	48 mils	1.25 mm	50 mils
<b>Substrate th. for 10 % error</b>	< 0.1 mm	< 4 mils	< 0.1 mm	< 4 mils
<b>Probe tip radius</b>	5.6 mm	220 mils	10 mm	400 mils

<b>Probe tip material</b>	Alumina	Alumina
<b>Probe tip replaceable</b>	Yes	Yes
<b>Height</b>	23 mm	23 mm
<b>Diameter / width</b>	14 mm	14 mm
<b>Length</b>	72 mm	72 mm
<b>Works with the instruments</b>	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®

<b>Applications</b>	Measures electrically non-conducting coatings on non-ferromagnetic metal substrate materials (Iso/NF). Due to the larger radius of the probe tip, lower measurement scatter on rough surfaces than with FAW3.3 probe.	Measures electrically non-conducting coatings on non-ferromagnetic metal substrate materials (Iso/NF). Due to high measurement frequency suitable for measuring Iso-coatings on thin base material..
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Probe model	FA9	FA30	FA70
Version description	FA9	FA30	FA70
Part no.	604-188	604-213	604-191

Probe design	Single tip probe for angular measurements with spring-loaded measuring system	Single tip angle probe with fixed measurement system	Single tip angle probe with fixed measurement system
Measuring mode	Single mode	Single mode	Single mode
Measuring method	Eddy current method	Eddy current method	Eddy current method
Measuring application	Iso/NF	Iso/NF, Fe	Iso/NF, Fe
Measuring range	0 - 3,5 mm	0 - 20 mm	0 - 50 mm
Accuracy	up to 0.25 mm: up to ± 0.005 mm 0.25 - 2.5 mm : up to ± 2 % 2.5 - 3.5 mm: up to ± 3 %	0 - 2 mm: 0.04 mm 2 - 20 mm: < 2 %	0 - 5 mm: 0.1 mm 5 - 50 mm: < 2 %
Precision	bis/up to 1 mm: < 0.002 mm 1 - 2.5 mm: < 0.2 % 2.5 - 3.5 mm: < 0.4 %	0 - 1 mm: 0.002 mm 1 - 20 mm: 0.2 %	0 - 50 mm: 0.3 %

Ø (concave) for 10 % error	175 mm	7"	-	-	-	-
Min. Ø	40 mm	1.6"	-	-	-	-
Ø (convex) for 10 % error	175 mm	7"	1200 mm	48"	2500 mm	98"
Min. Ø	2 mm	80 mils	400 mm	16"	600 mm	24"
Meas. area Ø for 10 % error	8 mm	320 mils	42 mm	1680 mils	82 mm	3.3"
Min. measuring area Ø	5 mm	200 mils	34 mm	1360 mils	74 mm	3"
Edge distance for 10 % error	3 mm	120 mils	-	-	-	-
Substrate th. for 10 % error	< 0.1 mm	< 4 mils	0.09 mm	4 mils	0.09 mm	4 mils
Probe tip radius	8 mm	320 mils	Flat: ø 34 mm	Flat: ø 1.36"	Flat: ø 74 mm	Flat: ø 3"

Probe tip material	Heat treated steel	Hard plastics	Hard plastics
Probe tip replaceable	No	No	No
Height	23 mm	43 mm	43 mm
Diameter / width	14 mm	34 mm	74 mm
Length	72 mm	60 mm	80 mm
Works with the instruments	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®

Applications	Measures electrically non-conducting coatings on non-ferromagnetic metal substrate materials (Iso/NF). Suited for the measurement of thicker plastic or rubber coatings.	Measures electrically non-conducting coatings on non-ferromagnetic metal substrate materials (Iso/NF) or on steel or iron (Iso/Fe). Suitable for the measurement of thicker plastic or rubber coatings; also to measure the wall thickness of, for example, plastic tanks with an aluminum backing foil. For surfaces with a larger curvature, a V-groove adapter shoe has to be used.	Measures electrically non-conducting coatings on non-ferromagnetic metal substrate materials (Iso/NF) or on steel and iron (Iso/Fe). Suitable for the measurement of thicker plastic or rubber coatings; also to measure the wall thickness of, for example, plastic tanks with an aluminum backing foil. For surfaces with a larger curvature, a V-groove adapter shoe has to be used.
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Probe model	FTA2.4-SC		FTA2.4-MC	
Version description	FTA2.4-SC standard version		FTA2.4-MC	
Part no.	604-228		604-192	
	FTA2.4L-SC cable length 3 m			
	604-267			
Probe design	Single tip probe with spring-loaded measuring system, integrated in f at contact surface		Axial single tip probe with spring-loaded measuring system	
Measuring mode	Single mode		Single mode	
Measuring method	Eddy current method		Eddy current method	
Measuring application	Iso/NF		Iso/NF	
Measuring range	0 - 700 µm		0 - 700 µm	
Accuracy	0 - 50 µm: 0.5 µm 50 - 300 µm: < 1 % 300 - 700 µm: < 2 %		up to 50 µm: ± 1 µm 50 - 500 µm: < 2 % 500 - 700 µm: < 5 %	
Precision	0 - 100 µm: 0.2 µm 100 - 700 µm: 0.2 %		0 - 100 µm: 0.5 µm 100 - 700 µm: < 0.5 %	
Ø (concave) for 10 % error	-	-	15 mm	600 mils
Min. Ø	-	-	8 mm	560 mils
Ø (convex) for 10 % error	-	-	23 mm	920 mils
Min. Ø	-	-	2 mm	80 mils
Meas. area Ø for 10 % error	Smallest test area 20 mm x 60 mm	Min. area 800 mils x 2.4"	2 mm	80 mils
Min. measuring area Ø			1 mm	40 mils
Edge distance for 10 % error	-	-	0.8 mm	32 mils
Substrate th. for 10 % error	0.4 mm	16 mils	0.15 mm	6 mils
Probe tip radius	0.5 mm	20 mils	0.5 mm	20 mils
Probe tip material	Ruby jewel tip		Ruby jewel tip	
Probe tip replaceable	Yes		Yes	
Height	-		-	
Diameter / width	13 mm		13 mm	
Length	110 mm		110 mm	
Works with the instruments	FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®		FMP10/20/30/40/100, MMS® PC & F-Modul PERMASCOPE®	

**Applications**

Measures electrically non-conducting coatings on non-ferromagnetic metal substrate materials (Iso/NF). Due to the large contact surface and spring-loaded measuring element with very little mass and low contact pressure, especially suited for soft coatings such as those found on aluminum tubes or for automated measuring systems. No measurement tip wear even after several million measurement cycles when used properly. For f at specimens only.

Measures electrically non-conducting coatings on non-ferromagnetic metal substrate materials (Iso/NF). Mechanical design especially suited for installation in customer-specific probe fixtures or guide devices for precise probe positioning.