

MMS[®] Inspection SPG

Surface profile measurement
according to ASTM 4417, Method B

- Easy
- Convenient



- Compact
- Robust

Scale 1:1

Description

<p>Gage properties</p>	<p>The gage models MMS Inspection SPG measure the depths of surface profiles easily, quick, non-destructively and with the precision that is typical for all Fischer instruments. The SPG gages measure the peak-to-valley distances according ASTM D4417, Method B. Therefore, measurements of the depths of surface profiles by using the SPG gages are conform to many standards and guidances, e.g., SSPC-PA17.</p> <ul style="list-style-type: none"> • Ideal for onsite applications due to the compact size and the robust and durable instrument design • Probe integrated in the measuring instrument for single-handed operation • IP65, dust-tight and water repellent and resistant • A large placing surface ensures a sure positioning on the surface • Intuitive operation of the menu navigation and graphic display • The measurement presentation flips automatically and thus allows optimum reading in different measuring positions • Different languages selectable • Measurements according to ASTM D4417, Method B
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Applications

<p>Examples</p>	<ul style="list-style-type: none"> • Measuring the depths of surface profiles • Inspection, whether the surface profile depth is within the specifications • Assessment of blasted surfaces whether they are appropriate for varnishing
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Variants

	Start	High
	<p>Entry level gage with small data memory for max. 10,000 measured values in one batch and USB interface for data transfer</p>	<p>High-end gage with large data memory for 250,000 measured values in 2500 batches, USB interface, Bluetooth and WiFi for data transfer</p>

Metrological Standard Functions

Measurement Tasks

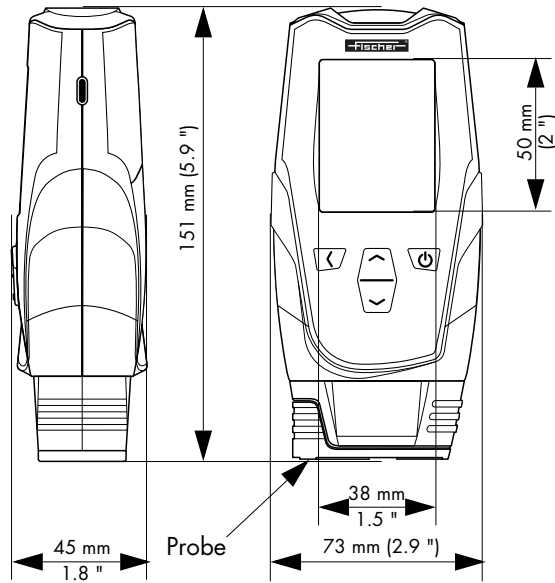
<p>Batch</p>	<p>File containing all metrological function settings and the linking to calibration necessary for the measurement task as well as the measured values and evaluations.</p>
<p>Representativ measurement reading</p>	<p>Display and storage of the representative measurement reading of a specified number (n) of measurements, the n measured values are not stored. Methods for determination of the representative measurement reading:</p> <ul style="list-style-type: none"> • Mean value from n measurements • Maximum value from n measurements • Middle value, determined by the maximum and minimum values of n measurements
<p>Measurement value capture</p>	<p>Automatic upon placement of the gage probe</p>
<p>Measurement value storage</p>	<p>On/Off switchable</p>
<p>Measurement units</p>	<p>µm/mm or mils/inches</p>
<p>Resolution of measurement value</p>	<p>Low (up to 1 decimal place), Medium (up to 2 decimal places), High (up to 3 decimal places)</p>
<p>Air reference value capture</p>	<p>During measurement, the air reference value is used to reference the zero point determination. Regular measurement of the air reference value is necessary to achieve high measurement accuracy. Automatic capture of the air value always when the gage probe is lifted from the surface.</p>
<p>Calibration</p>	<p>For a correct measurement of the depth of surface profiles, the gage must record the two extreme values "Zero" and "maximum depth" (= air value). This adjustment is carried out by a calibration. If necessary, an adjustment to 1 to 2 further depth values is also possible.</p>

General Features

Measuring method	ASTM D4417, Method B, and magnetic induction method ISO 2178, ASTM D7091					
Factory calibration	Each individual gage is factory calibrated at several reference points with the greatest care to ensure the highest possible degree of trueness.					
Data memory	<p>The contents of the memory is retained even without batteries; subsequent viewing of the measured individual values and evaluations</p> <ul style="list-style-type: none"> • Gage variant Start with memory capacity of max. 10,000 measured values in 1 batch • Gage variant High with memory capacity of 250,000 measured values in 2500 batches 					
Evaluation	<p><i>Statistics</i></p> <p>Display of mean value of all location values, standard deviation, min/ max values, range and number of measured locations, number of measured values lower/upper the set limit values</p>					
Probe	<p>Single tip axial probe with spring-loaded measuring tip built-in into gage</p> <p>Measuring tip: 60° tip angle; Probe tip radius: 50 µm (1.97 mils), hard metal</p> <p>Probe tip replaceable by customer using the probe tip replacement kit 606-434</p>					
Quantity of measurements	Before each measurement the probe tip has to be checked! After approximately 20,000 measurements the intact probe tip may show signs of wear and should be replaced.					
Display of measurement capture	Audible by a short beep, visual by colored illuminated LED and by gage vibration					
Languages	German and English					
Presettings for batches	Each new batch is created with a preset measurement unit and resolution for the displayed measured value. You can adapt these presettings to your requirements. However, you can also change the unit of measurement and the resolution for the measured value display at any time in the batch that has already been created.					
Only available in gage variant High						
Display	<ul style="list-style-type: none"> • Graphic display with automatic flipping measuring presentation view (deactivatable) to read measurement results in many different gage positions • Setting of brightness and contrast (definable for Office, Sunlight and Night) 					
Data transfer	<p>Single values</p> <ul style="list-style-type: none"> • USB: Data transfer to PC, Data import to MSExcel via PC-Datex software; You can gratis download the PC-Datex program from Fischer-Homepage • Bluetooth/WiFi: Data transfer to App PHASCOPE® PAINT; Creation and export of reports via App; You can gratis download the App from Google Play Store and Apple App Store 					
USB port	<p>2.0 Type C</p> <ul style="list-style-type: none"> • For service purpose • For connection to PC for data transfer, max. cable length: 3 m (118 inches) 					
Wireless interface	<table border="1"> <thead> <tr> <th>Bluetooth</th> <th>WiFi</th> </tr> </thead> <tbody> <tr> <td>Bluetooth module integrated in gage, Bluetooth v2.1 + EDR, class 2</td> <td>WiFi module integrated in gage, Standards IEEE 802.11b/g/n</td> </tr> </tbody> </table>		Bluetooth	WiFi	Bluetooth module integrated in gage, Bluetooth v2.1 + EDR, class 2	WiFi module integrated in gage, Standards IEEE 802.11b/g/n
Bluetooth	WiFi					
Bluetooth module integrated in gage, Bluetooth v2.1 + EDR, class 2	WiFi module integrated in gage, Standards IEEE 802.11b/g/n					
Only available in gage variant High						
Admissible ambient temperature range during operation	0 ... +60 °C (+32 ...+140 °F)					
Surface temperature	max. + 60 °C (+140 °F)					
Protection type	IP65					
Weight (incl. Batteries)	ca. 392 g (0.86 lb.)					
Power supply	<ul style="list-style-type: none"> • 2 batteries: Mignon, Alkaline or Lithium, LR6, AA, 1.5 V • 2 rechargeable batteries: Mignon, NiMH, HR6 - AA 					
Battery life	> 8 h for continuous measuring, brightness set to sunlight and deactivated wireless interface					
Specifications valid for +20 °C (+68 °F) ambient temperature and Alkaline batteries used						

Dimensions

Gage



Measurement Range

0 ... 500 μm

0 ... 19.69 mils

Trueness

Based on Fischer factory calibration standards and 20 °C (68 °F) for specimen and ambient temperature

0 ... 100 μm : $\leq 3 \mu\text{m}$

100 ... 500 μm : $\leq 3 \%$ of nominal value

0 ... 3.94 mils: $\leq 0.12 \text{ mils}$

3.94 ... 19.69 mils: $\leq 3 \%$ of nominal value

Repeatability Precision

Based on Fischer factory calibration standards, 5 single readings per standard, and 20 °C (68 °F) for specimen and ambient temperature

0 ... 100 μm : $\leq 1.5 \mu\text{m}$

100 ... 500 μm : $\leq 1.5 \%$ of reading

0 ... 3.94 mils: $\leq 0.06 \text{ mils}$

3.94 ... 19.69 mils: $\leq 1.5 \%$ of reading

Influence

Curvature

Probe unsuitable for measurements on curved surfaces

Edge distance

No influence. For measurement the probe ring must be placed completely on the surface.

Scope of Supply

Gage; lanyard; 2 batteries; USB cable type C to type A (1 m (39.4 inches)); calibration standard set 605-308; guideline

Order Information

MMS Inspection SPG

Gage	Variant	Order no.	Interface	Memory capacity
	Start	606-034	USB	max. 10,000 measured values in 1 batch
	High	606-035	USB + BT + WiFi	250,000 measured values in 2500 batches

We recommend ordering the probe tip replacement kit at the same time

Spare parts/accessory for MMS Inspection SPG

Product	Order no.	Description
Calibration standard set	605-308	Glass base (606-306), 2 depth standards 300 μm /11.8 mils (605-305) and 100 μm /3.94 mils (605-307)
Probe tip replacement kit	606-434	3 measuring tips, exchange tool 605-248

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