Data Sheet

MMS® Inspection SPG

Surface profile measurement
according to ASTM D4417, Method B

- Easy and convenient operation
- Compact and robust case

Scale 1:1

fischer®

MMS® Inspection SPG

Description

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.

Gage properties

- Ideal for onsite applications due to the compact size and the robust and durable instrument design
- Probe integrated in the gage for single-handed operation
- IP65, dust-tight and water repellant and resistant
- A large touchdown table 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

Applications

Examples

- 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

Variants	Start	High-USB
	Entry level gage with small data memory for max. 10,000 measured values in one batch and USB interface for data transfer	High-end gage with large data memory for 250,000 measured values in 2500 batches, display of measurement acquisition (audible and optical) additional by gage vibration, USB interface for data transfer

Metrological Standard Functions	Measurement Tasks
Batch	File containing all metrological function settings and the linking to calibration necessary for the measurement task as well as the measured readings and evaluations
Block creation	Measured readings grouped in measurement blocks
Tolerance limits	Adjustable, upper and lower limit values
Representativ measurement reading (Measurement Settings)	Display and storage of the representative measurement reading of a specified number (n) of measurements, the n measured readings are not stored. Methods for determination of the representative measurement reading: • Mean value from n measurements • Maximum value from n measurements • Middle value, determined by the maximum and minimum values of n measurements
Measurement reading acquistion	Automatic upon placement of the gage probe
Measurement reading storage	On/Off switchable
Measurement units	µm/mm or mils/inches
Resolution of measurement reading	Low (up to 1 decimal place), Medium (up to 2 decimal places), High (up to 3 decimal places)
Air reference value acquisition	During measurement, the air reference value is used to detemine the maximum depth value. Regular measurement of the air reference value is necessary to achieve high measurement accuracy.

Metrological Standard Functions

Measurement Tasks

Calibration	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.

General Features

Test 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	The memory content is preserved even when there is no voltage supply; subsequent viewing of the measured single readings and evaluations • Gage variant Start with memory capacity of max. 10,000 measured readings in 1 batch • Gage variant High-USB with memory capacity of 250,000 measured readings in 2500 batches
Evaluation	*Statistics* Display of mean value of all location values, standard deviation, min/ max values, range and number of measured locations, number of measured readings lower/upper the set limit values *Graphic Presentation* Run-Chart, showing the progress of stored readings
Probe	Single tip axial probe with spring-loaded measuring tip built-in into gage Measuring tip: 60° tip angle; Probe tip radius: 50 µm, hard metal Probe tip replaceable by customer using the probe tip replacement kit 606-434
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 acquisition	Audible by a short beep and visual by colored illuminated LED; gage variant High-USB: additional by gage vibration
Display for limit monitoring	• Limit violation: Audible by 2 short beeps and visual by red illuminated LED; gage variant High-USB: additional by gage vibration • Measured readings between the limits: Audible by 1 short beep and visual by green illuminated LED; gage variant High-USB: additional by gage vibration
Languages	German and English
Presettings for batches Only available in gage variant High-USB	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.
Display	• 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	• USB: Data transfer of single readings to a PC, Data import to MSExcel via PC-Datex software; You can gratis download the PC-Datex program from Fischer-Homepage
USB port	2.0 Type C • For service purpose • For connection to PC for data transfer, max. cable length: 3 m (118 inches)
Admissible ambient temperature range during operation	0 … +60 °C
Surface temperature	max. + 60 °C

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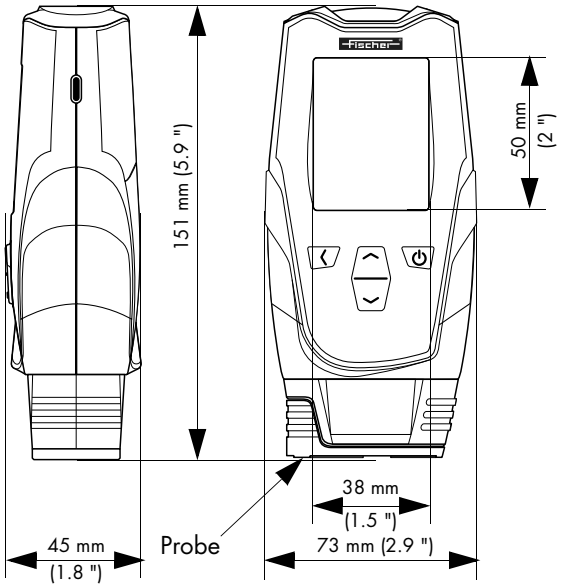
General Features

Protection class	IP65
Weight (incl. batteries)	about 392 g
Power supply	• 2 batteries: Mignon, Alkaline or Lithium, LR6 - AA, 1.5 V • 2 rechargeable batteries: Mignon, NiMH, HR6 - AA
Battery life Specifications valid for +20 °C (+68 °F) ambient temperature and Alkaline batteries used	> 8 h for continuous measuring, brightness set to sunlight

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: ≤ 3 µm 100 ... 500 µm: ≤3 % of nominal value	0 ... 3.94 mils: ≤ 0.12 mils 3.94 ... 19.69 mils: ≤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: ≤ 1.5 µm 100 ... 500 µm: ≤ 1.5 % of reading	0 ... 3.94 mils: ≤ 0.06 mils 3.94 ... 19.69 mils: ≤ 1.5 % of reading

Influence

Curvarure	Probe unsuited for measurements on curved surfaces
Edge distance	No influence; for the measurement, the touchdown table of the measuring instrument must rest completely on the surface

Scope of Supply

Gage; 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	Vibration
Start	606-034	USB	max. 10,000 measured values in 1 batch	
High-USB	606-035	USB	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	605-434	3 measuring tips, exchange tool 605-248

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