

## DMP Family

Gauge family for measuring coating thickness

DELTASCOPE® DMP10

ISOSCOPE® DMP10

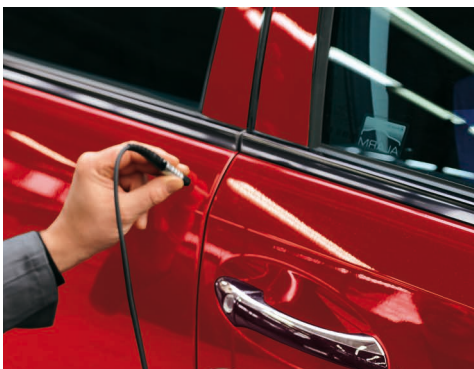
DUALSCOPE® DMP20

DELTASCOPE® DMP30

ISOSCOPE® DMP30

DUALSCOPE® DMP40

SR-SCOPE® DMP30



# DMP Gauge Family

## Description

With these gauge models you measure coating thicknesses easily, quickly, non-destructively and with the precision that is typical for all Fischer instruments.

This gauge family contains gauges for measurement on ferrous, electrically conductive base material, or both base material models. The SR-SCOPE® DMP30 of the DMP gauge family with the special probe D-PCB is especially designed for the measurement of copper thickness on top side of single and multilayer printed circuit boards without the isolated lower lying copper layers influencing the measurement.

## Universally

- Universal applicable coating thickness gauges
- Various probe models are connectable to the gauges, appropriate to your individual applications; Measurement range, trueness and repeatability are dependent on the connected probe. You will find this data in the respective probe data sheet.
- Uniform, simple and convenient operation
- Calibrations for various applications are storable in and recallable from the connected probe
- DMP30/40: gauge models with expanded feature range such as Bluetooth® interface, for example
- Compact and robust aluminium case with protection type IP64
- Battery rechargeable in the gauge or by a separate charger

## Models

DELTASCOPE DMP10	ISOSCOPE DMP10	DUALSCOPE DMP20	DELTASCOPE DMP30	ISOSCOPE DMP30	DUALSCOPE DMP40	SR-SCOPE DMP30
Entry level models with small data storage for max. 10,000 measured readings in a single batch			Convenience models with large data storage and expanded feature range as more measurement value storage, grouping measured readings, limit monitoring, measurement mode Scan and Bluetooth® interface			

## Applications

Examples	DELTASCOPE DMP10	ISOSCOPE DMP10	DUALSCOPE DMP20	DELTASCOPE DMP30	ISOSCOPE DMP30	DUALSCOPE DMP40	SR-SCOPE DMP30
<b>Base material steel or iron (FE)</b>							
■ Zn, Cr, Cu coating on steel or iron (NF/FE)	■		■	■		■	
■ Paint, varnish, plastic coating on steel or iron (NC/FE)							
<b>Base material electrically conductive (NF)</b>							
■ Paint, varnish, plastic coating on Al, Cu or Brass (NC/NF)		■	■		■	■	
■ Anodized coating on Al (NC/NF)							
<b>Base material circuit board (ISO)</b>							
■ Cu coating on single and multilayer printed circuit boards (NF/ISO)							■

## Metrological Features

### Measurement acquisition

- Default: After each placement of the probe onto the surface, a measured reading is automatically recorded
- Expanded feature range, available for DMP30/40 models only
  - Scan mode (not for model SR-SCOPE® DMP30): While probe is moving over the surface, the measured readings are automatically recorded according to the defined time interval and number of measurements.

### Indication of measurement acquisition

- Audible by a short beep, can be disabled
- Visual by colored illuminated strip (green: measured value recorded)
- Limit violation: 2 short beeps, red illuminated strip and gauge vibration
- Measured reading between the limits: 1 short beep, green illuminated strip and gauge vibration
- Expanded feature range, available for DMP30/40 models only
  - Additional haptic feedback by gauge vibration, can be disabled

### Measurement performance

Measurement speed, measurement range, trueness etc. depend on connected probe, you will find these data in the respective probe data sheet

### Storage of measured readings

Can be disabled

### Measurement unit

µm, mm, mils, pinch or customized unit (definable, related to µm), selectable; SR-SCOPE® DMP30: µm, pinch or customized unit (definable, related to µm)

### Limit Monitoring

Can be disabled; limit values can be set

### Offset value/ correction value

Can be set, is deducted automatically from the measured reading. Thus, one obtains the thickness of the top coating if for instance the interim coating is known.

### Resolution of the displayed values

- Low (up to 1 decimal place)
- Medium (up to 2 decimal places)
- High (up to 3 decimal places)
- NAVSEA (1 decimal place for measured readings up to 254 µm (10 mils), integer for measured readings as from 254 µm (10 mils), not for model SR-SCOPE® DMP30)

### Measurement modes

- **Single Reading**  
After each placing of the probe, the measured reading is displayed and stored automatically in the gauge.
- **Free Running (not for model SR-SCOPE® DMP30)**  
After placing the probe on the surface, the continuous display of the measured readings appears without automatic storage, useful for quick checking of coating thicknesses over a defined surface area, e.g. in tank construction
- Expanded feature range, available for DMP30/40 models only
  - **Scan (not for model SR-SCOPE® DMP30)**  
The Scan mode allows a defined acquisition of the measured readings while the probe is moving over the sur-

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face. You can set the number of single readings and the time interval for the measurement acquisition in the gauge. Useful to determine the coating thickness over surface areas.

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## Metrological Features for DMP30/40 Models only

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### Grouping measured readings

Block (group) size can be set between 1 and 1000 single readings

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### Area measurement (not for model SR-SCOPE® DMP30)

Automatic mean value determination starting from placing the probe onto the surface till lifting off the probe; measurement interval depends on the connected probe

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## Calibration

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For a correct measurement of the coating thickness, the gauge must detect the properties (permeability, electrical conductivity, geometry) of the test piece. This adjustment is carried out by a calibration. Furthermore, the gauge contains a function for semi-automatic calibration.

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### Calibration method

Adjustment of the measuring system (gauge and connected probe) to geometrical form and base material of the test piece (= Zero point determination) and adjustment to up to two coating thickness values by using calibration foils (SR-SCOPE®: calibration standards). On recalibration, individual calibration steps can be skipped.

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### Store calibrations

The storage location for a calibration depends of the connected probe.

- Digital probe: up to 100 calibrations can be stored in the connected digital probe; probe identifiable by the USB-C female jack and by the probe name, always beginning with the letter D
- Analog probe: connection via DMP-F-probe-Adapter plugged into the gauge; a total of up to 100 calibrations can be stored in the DMP-F-Probe-Adapter; only the calibrations that were created with the probe connected to the DMP-F-Probe-Adapter are available in the gauge in each case.  
Probe identifiable by the 10-pin male jack and by the probe name, always beginning with the letter F or containing the letter F.

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### Calibration check

Checking the calibration state of the selected calibration and the measuring accuracy of the measuring system. You can check whether the mean value of the check measurement matches the reference value of the calibration standard within the scope of measurement uncertainty (in accordance with ISO/IEC Guide 98-3).

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### Lock calibrations

You can lock selected calibrations.

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### Ways of air reference value acquisition (not relevant for model SR-SCOPE® DMP30)

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. This is done automatically in the measurement mode Single Reading when the probe is lifted off from the surface.

- Default in Probe: air value acquisition as factory predefined in probe (Dynamic/Static)
- Dynamic: automatic acceptance of the air value always when the probe is lifted from the surface, default mode
- Static: no automatic acceptance of the air value always when the probe is lifted from the surface. In this case, the air reference value must be measured manually at regular intervals. This may be useful for measurements in small cavities or pipes where the minimum lift-off distance of the probe cannot be maintained within cavity/pipe.

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## General Features

### Measurement views

- Simple: the measured reading with the set measurement unit is displayed only; additionally with display of the limit values if set
- Statistics: the measured reading with tabular measurement statistics

### Languages

Many different display languages, beside German and English several other European and Asian languages

### Date & Time

- settable
- Date and time formats settable (DD.MM.YY or MM/DD/YY and 12 h or 24 h)

### Storage space

	DELTA SCOPE DMP10	ISO SCOPE DMP10	DUAL SCOPE DMP20	DELTA SCOPE DMP30	ISO SCOPE DMP30	DUAL SCOPE DMP40	SR-SCOPE DMP30
<b>Number of batches</b>	1			≤ 2500			
<b>Total number of measured readings</b>	≤ 10000			≤ 250000			
<b>Number of blocks per batch</b>				≤ 10000			
<b>Number of meas. readings per block</b>				≤ 10000			

### Evaluation

	DELTA SCOPE DMP10	ISO SCOPE DMP10	DUAL SCOPE DMP20	DELTA SCOPE DMP30	ISO SCOPE DMP30	DUAL SCOPE DMP40	SR-SCOPE DMP30
<b>Batch statistics</b> Evaluation of all stored measured readings of one batch	■	■	■	■	■	■	■
<b>Block statistics</b> Evaluation over the grouped measured readings, evaluation per block				■	■	■	■
<b>Graphical presentation of measured readings</b> Histogram of all measured readings of one batch, from 5 readings	■	■	■	■	■	■	■

### Data transmission

	DELTA SCOPE DMP10	ISO SCOPE DMP10	DUAL SCOPE DMP20	DELTA SCOPE DMP30	ISO SCOPE DMP30	DUAL SCOPE DMP40	SR-SCOPE DMP30
<b>via USB</b>	■	■	■	■	■	■	■
<b>via Bluetooth® only with Fischer Bluetooth® stick</b>				■	■	■	■
<b>Data export via Tactile Suite to Excel® (online, offline)</b>	■	■	■	■	■	■	■
<b>Data retrieval from Tactile Suite, batches, single readings, batch statistics,</b>	■	■	■	■	■	■	■
<b>Block statistics</b>				■	■	■	■

# DMP Gauge Family

Test methods	DELTASCOPE DMP10	ISOSCOPE DMP10	DUALSCOPE DMP20	DELTASCOPE DMP30	ISOSCOPE DMP30	DUALSCOPE DMP40	SR-SCOPE DMP30
<b>DIN EN ISO 2178 / ASTM D7091</b> Magnetic induction test method, measurement of non-magnetic coat- ings on magnetic substrates	■		■	■		■	
<b>DIN EN ISO 2360 / ASTM D7091</b> Amplitude-sensitive eddy current test method, measurement of non- conductive coatings on non-magnet- ic substrate metals		■	■		■	■	
<b>DIN EN 14571</b> Microresistivity method, Metallic coatings on nonmetallic basis mate- rials - measurement of coating thick- ness							■

## Connectable probes

- Digital probes with USB-C female jack, probe names always beginning with the letter D
- Via DMP-F-Probe-Adapter (not for model SR-SCOPE® DMP30) many analog probes with 10-pin male jack; probe names beginning with the letter F or containing the letter F;
  - Probes connectable to the DMP-F-Probe-Adapter: F20H, FA100, FA14, FA30, FA70, FA9, FAW3.3, FD10, FD13H, FGA0.6H FGAB1.3, FGAB1.3T, FGABW1.3, FGB2, FGBW2, FKB10, FKB4, FTA2.4-MC, FTA2.4-SC, FTA3.3, FTA3.3-5.6, FTA3.3-5.6-HF, FTA3.3F-Cr, FTA3.3FG, FTA3.3H, FTD3.3, V7FKB4
  - Not supported: duplex probes (FDX10, FDX13H, FN4D) and special probes for special customer-specific applications

The Fischer probe program encompasses nearly 100 probes designed to ensure optimal results with highest accuracy for the widest range of measurement applications. At factory each individual probe is adjusted at several reference points with the greatest care to ensure the highest possible degree of trueness.

## Energy management

- **Power supply:** Li-Ion rechargeable battery, model RRC1130  
Nominal voltage: 3.8 V=  
Nominal capacity: 3880 mA, 14.7 Wh  
max. charge voltage: 4.35 V=  
max. charge current: 2.4 A
- **Energy saving** for longest battery life
  - Automatic gauge switch-off after a preset time period w i t h o u t operation (key use, data transfer or measurement acquisition)
  - Automatic dimming of the display brightness after a preset time period
- **Battery operating period**  
> 24 h with continuous measurement and about +20 °C (+68 °F) ambient temperature
- **Battery charging time**  
Temperature during charging: 0 ... +45 °C (+32 ... +113 °F)  
about 6 h by default  
about 3 h for fast charging

## Protection class

IP64, dust-protected, splash-water proof

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## Admissible climatic conditions during storage and transport

We recommend to store and transport battery and gauge separately

- Gauge with/without Li-Ion rechargeable battery
- Indoor only
- Ambient temperature: -20 ... +60 °C (-4 ... +140 °F)
- Relative humidity: 5 ... 60 %RH at 20 °C (+68 °F), non-condensing

## Admissible climatic conditions during operation

- Ambient temperature: 0 ... +40 °C (+32 ... +104 °F)
- Relative humidity: 5 ... 85 %RH at 25 °C (+77 °F), non-condensing
- Altitude of location: up to 2000 m (6561.7 ft) (above sea level)
- Pollution degree: 3

## Visual indications

- Graphical display with automatic flip view (can be disabled) allows optimum reading in different measuring positions
- Colored illumination strip to signal measurement acquisition, limit violation and battery charging status

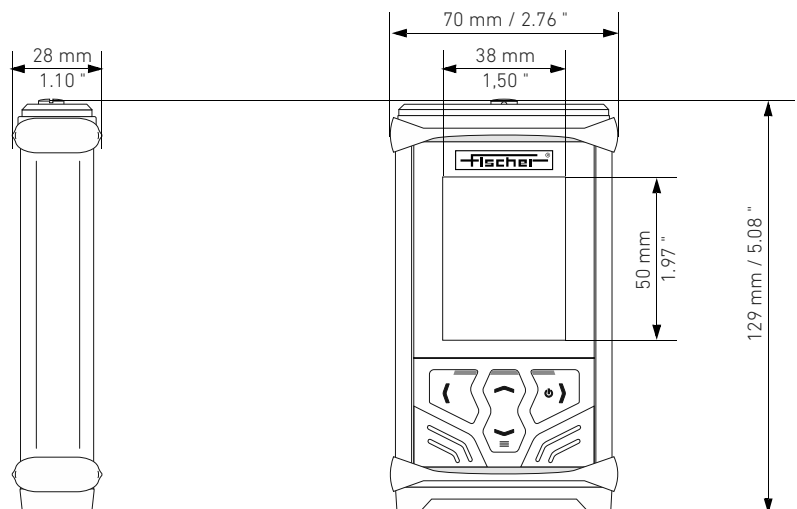
## Connections

- 2 USB female jacks, type C
  - USB 3.1, 900 mA/5 V=, at gauge bottom: for connecting digital Fischer probe ■ for fast charging the Li-Ion rechargeable battery in the gauge
  - USB 3.1, 500 mA/5 V=, at gauge top: for charging the Li-Ion rechargeable battery in the gauge ■ for connection to a PC for data transfer ■ max. cable length: 3 m (118 inches)
- Expanded feature range, available for DMP30/40 models only
  - USB socket, type A, at gauge top specific for inserting Fischer Bluetooth® stick for data transfer via Bluetooth®  
Fischer Bluetooth® stick (scope of supply): Bluetooth v 4.0. LE, transmit power up to -27 dBm

## Weight

Gauge with rechargeable battery: 276 g (0.61 lb)

## Dimensions



# Gauge family DMP

## Scope of supply

Gauge, Li-Ion rechargeable battery, USB cable type C to type A (1,5 m/59.06 "), safety information and quick guide, lanyard, gauge case, additional for DMP30/40 models: Fischer Bluetooth® stick

Order Information							
<b>Gauge model</b>	DELTA SCOPE DMP10	ISO SCOPE DMP10	DUAL SCOPE DMP20	DELTA SCOPE DMP30	ISO SCOPE DMP30	DUAL SCOPE DMP40	SR-SCOPE DMP30
<b>Order number</b>	1007328	1007329	1007330	1007331	1007332	1007333	1007335
<b>Number of batches</b>	1			≤ 2500			
<b>Storage capacity</b>	≤ 10000 measured readings			≤ 250000 measured readings			
<b>Vibration function</b>				■	■	■	■
<b>Grouping of measured readings</b>				■	■	■	■
<b>Bluetooth® interface</b>				■	■	■	■
<b>Accessories/Spare parts</b>	DELTA SCOPE DMP10	ISO SCOPE DMP10	DUAL SCOPE DMP20	DELTA SCOPE DMP30	ISO SCOPE DMP30	DUAL SCOPE DMP40	SR-SCOPE DMP30
<b>Manufacturer's Certificate M according to DIN 55350-18</b>	in conjunction with probe only, see probe data sheet						
<b>Evaluation and archiving software Tactile Suite</b>	free of charge download, you will find download link in guide and manual						
<b>DMP-F-Probe-Adapter for connecting analog probes with 10-pin connection plug</b>	1007336						
<b>Gauge support stand</b>	1008201						
<b>USB C cable, type C to A, 1 m (39.4 ")</b>	1008215						
<b>Fischer Bluetooth® stick</b> Bluetooth v 4.0. LE, transmit power up to -27 dBm	-			1008864			
<b>Li-Ion rechargeable battery</b> model RRC1130	1008303						
<b>Charger</b> for battery model RRC1130	1008304						
<b>Gauge foot</b>	1005837						
<b>Battery compartment cap</b>	1007162						

You must order the probe separately. Choose the right probe for your individual application from our comprehensive probe portfolio. Call us, we are gladly support you with the selection.

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