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STRUMENTI & SERVIZI
per il sistema qualità

C O N T E N T S

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INTRODUCTION

Congratulation ! You really made a good choice to decide for

EASY-CHECK FE-S,

because this device is not only designed and manufactured according to the latest level of technology, but also is extremely comfortable and easy to operate.

We tried our best to write this manual as clear and short as possible. For any further information you may need, please contact our Service Department. Our technicians are always ready to help you.

What can you measure with EASY-CHECK FE-S ?

On *iron and steel* (FE) all non-magnetic coatings, such as varnish, paint, plastics, enamel, rubber, ceramics and galvanization (except niquel) up to 5 mm.

In addition EASY-CHECK FE-S includes the following features

- Store up to 1000 readings in the data memory
- Display statistics
- Transfer all readings and statistics to a printer or computer by means of the interface, or just
- Transfer the data by RADIO.

All these functions can be performed with the red key.

And this is really unique:

- **EASY-CHECK FE-S can measure up to 80 hours with only one 1.5V Mignon battery.**
- **Worldwide the only device with a swinging measuring probe allowing to measure inside pipes and in other inaccessible places.**

SHORT INSTRUCTIONS

To make it as easy as possible for you and to be able to start taking measurements immediately, we have already calibrated the device.

You receive the instrument ready for operation and do not need to perform any adjustments.

You just switch on the device with the red key. In the display flashes shortly the number of the software version and then appears *<on>*.

That's all and now you can start taking measurements.

FUNCTION MODES

Switch on the device by pressing the key until *<on>* is displayed. Release the key.

When you now press the key once again for a longer time the following modes will appear one after another:

Sto	=	Store readings in the Data Memory
↓		
StA	=	Display Statistics
↓		
Prn	=	Print or activate the Serial Interface
↓		
IcL	=	Clear the last reading
↓		
cLr	=	Clear the whole Data Memory
↓		
un	=	Change the unit of measurement (μm / mils)
↓		
rES	=	Switch over the resolution: 0.1 or 1.0 μm

By pressing the key the mode selected is confirmed.

OPERATION OF THE FUNCTION MODES

<Sto> Store readings in the Data Memory

To store readings in the memory for further evaluation press the key until *<Sto>* is displayed.

Now release the key and press it again for confirmation and wait until *<on>* is displayed.

The data memory is activated and all subsequent measurements will be stored. The symbol *<STORE>* is displayed to make evident that the memory is switched on.

Capacity of the data memory : 1000 readings

When the memory has reached its capacity limit the symbol <FUL> is displayed.

As soon as the device is switched off the memory mode is deactivated.

<StA> Display Statistics

The readings stored in the data memory are evaluated as follows:

No.	- Number of readings stored
MIN	- Lowest reading stored
MAX	- Highest reading stored
MEAN	- Mean value
STD.DEV.	- Standard deviation

Press the key until the symbol <StA> appears. Now release the key and press it again to confirm. The statistics values are displayed one after another.

<Prn> Print or Activate the RADIO CONTROL function

When EASY-CHECK FE-S is connected to the printer MEGA-PRINT or operated with the RADIO CONTROL module, press the key until <prn> is displayed. Then release the key and press it again to start the data transfer.

This is not necessary when working with the interface cable and the software selected. As soon as the interface cable is connected, the data transfer starts by itself without pressing the key.

<lcL> Clear the last reading

Press the key until the symbol <lcL> is displayed. Release the key shortly and press it again to confirm.

Now the last reading is cleared.

<cLr> Clear the whole Data Memory

Press the key until the symbol <cLr> is displayed. Release the key shortly and press it again to confirm.

Now the whole Data Memory is cleared.

<Un> Change unit of measurement (μm / mils)

In its basic setting the instrument measures in μm .

To measure in "mils" (American unit of measurement) press the key until the symbol <un> is displayed. Release the key and press it again to confirm.

When you switch on the instrument again it will measure in "mils".

To change over to " μm " proceed in the same way.

<rES> Resolution

From factory the device is adjusted to the resolution 1.0 μm .

To switch over to the resolution 0.1 μm press the key until <rES> is displayed. Release the key shortly and press it again to confirm the setting.

CALIBRATION

You receive the device already calibrated. Nevertheless from time to time it is necessary to check or correct the calibration. This is especially recommended when you measure on small or curved objects or when the surface of the test object is rough.

To calibrate the device you should always use the shim with the higher value (approx. 300 μm). The shim with the lower value (approx. 100 μm) is only supplied to verify the accuracy after calibration.

- Switch on the device.
- Set the device with the probe on the base plate FE (blue) and press the key for about 2 sec until <0.0> is displayed stable. Then release the key and zero setting is performed and confirmed by a beep signal
- Take off the device, <cA/> is flashing.
- Press the key and the actual calibration value is displayed. This value should be identical with your shim value (approx. 300 µm). If it is not, you now can enter the correct value. Pressing the key shortly the value goes down by 1, pressing it continuously the value scrolls up.
- Once the correct calibration value is set, place the shim (approx. 300 µm) on the base plate FE (blue) and set the device on the shim and wait until the beep sounds.

The device is calibrated.

To perform just a one-point calibration and after having set the zero point, you can go on taking measurements while <cA/> is flashing. The flashing <cA/> disappears on the display as soon as a new measurement is taken.

When measuring on small or curved objects it is advisable to perform calibration on a bare test object with the same geometry of the object to be measured and not on the base plate supplied with the device.

EXCHANGE OF THE BATTERY

As soon as the symbol <BAT> is flashing the battery must be exchanged by a new one.

When the voltage of the battery is less than 0.8 V the device switches off by itself.

CHARGE THE 1.2V RECHARGEABLE BATTERY WITH THE LINE-CHARGING UNIT

As soon as the symbol <BAT> is flashing the rechargeable 1.2V Mignon battery must be charged.

Important: Before inserting the charging connector into the interface plug of EASY-CHECK FE-S the device must be switched off.

The charger must not be connected when the 1.5V battery is inside the device. The battery may run out and destroy the device !

With the device switched off the charging connector is inserted into the interface plug of EASY-CHECK FE-S. The device switches on by itself and a bar diagram with the battery symbol is displayed. With the charger connected you can go on taking measurements.

After approx. 20 sec the state of charge is displayed again provided no measurement is taken. When the charger is connected the automatic switch off is deactivated.

The rechargeable battery needs approx. 8 hours to be charged completely. A constant bar diagram is flashing together with the battery symbol and the charger can be removed.

GENERAL REMARKS

Thickness of the base material: at least 300 µm

Automatic switch-off

The device switches off automatically one minute after the last measurement. The instrument can also be switched off with the red key.

IMPORTANT

The probe should not be drawn across the testing surface but reset at different spots, i.e. after each measurement hold the instrument in the air for about 1 sec. In doing so the stored calibration is automatically checked and corrected if necessary.

Make sure that the probe surface and the base plate are kept clean and polished at all times.

TECHNICAL DATA

Measuring Technique:	Magnetic induction on iron and steel (ISO 2178)
Measuring Range:	0 – 5000 μm
Indication:	LCD 3½ digits with floating decimal point and guides for operation
Resolution:	selectable 1.0 μm or 0.1 μm
Accuracy:	below 100 μm : $\pm 1 \mu\text{m}$ 100 - 1000 μm : $\pm 1 \%$ 1000 - 2000 μm : $\pm 3 \%$ > 2000 μm : $\pm 5 \%$
Memory:	max. 1000 readings
Statistics	Indication of No.-MIN-MAX-MEAN-STD.DEV.
Power Supply:	1,5V Mignon battery (1.2V rechargeable battery with charger available)
Recording Data:	one long beep
Measuring Probe:	swinging by 90°
Dimensions:	108 x 48 x 38 mm
Weight:	approx. 100 g
Interface:	serial RS 232 C (5 V TTL level)
Baudrate:	Printer + PC: 1200 baud
Data/Stop bits:	Printer + PC: 7/2
Warranty:	Indication unit: 12 months Measuring probe: 3 months

OPTIONAL ACCESSORIES

SOFTWARE incl. Operation Instructions

- Software TRANSFER
Sends the data and statistics to the computer.
- Software TRANSFER-EXCEL
Transfers the data directly in an existing Excel file.
- Graphic Statistics Software STAT-6
Sends the data and statistics to the computer.
Limit values can be set which are evaluated as line and bar diagrams.

RADIO- CONTROL

With the Transmitter / Receiver and the Software STAT-6 the data and statistics can be sent to the computer by RADIO without any cable connection.

Data Printer MEGA-PRINT

Print out all the data and statistics.

Line-Charger with 1.2V rechargeable Mignon battery

DATA PRINTER MEGA-PRINT

Technical Data:

Type of Printer:	Thermo printer
Characters/Line:	16
Data Transfer Rate:	1200 baud
Printing Velocity:	max. 20 lines/sec.
Interface:	serial
Paper:	Thermo paper 57 mm wide, max. 10 m long
Power Supply:	Rechargeable NiCad battery (approx. 60 hours operation/charge)
Size:	110 x 80 x 45 mm
Weight: approx. 240 g	
Charging Unit:	230 V/50 Hz / 6.0 V – 0.5 A

Charging the built-in NiCad Battery

Before using MEGA-PRINT for the first time the built-in NiCad battery must be charged.

The built-in NiCad battery is charged with the charging unit supplied with the printer. The cable of the charging unit is connected at the right-hand socket of MEGA-PRINT.

The charging time should be at least 4 hours.

Operating Instructions

1. The operation of MEGA-PRINT together with the Coating Thickness Meter EASY-CHECK FE-S is explained in the operating instructions of EASY-CHECK FE-S (Page 5).
2. When the printer MEGA-PRINT is connected to the Coating Thickness Meter EASY-CHECK FE-S, MEGA-PRINT switches on automatically (the green LED flashes every 2 sec). When switching off EASY-CHECK FE-S, the printer is switched off automatically (the green LED remains switched off).

3. The manual paper feed is performed with the key „Paperfeed“. When the printout is finished the paper stripe is transported out of the casing by pressing this key and can be neatly turned off.

4. Faulty print out

Incorrect printed lines mean that the printer should be recharged.

Insert a new paper roll

- Open the lid
- Insert the paper roll
- Pull out the end of the paper
- Close the lid

