

# MESY 3.0 – 570.70



## Quick reference guide

Installation and operating



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Congratulations for the purchasing of your new SEF MESY 3.0. You have now a modern and capable device for an easy temperature measurement with your PC to your disposal.

**! Please check the scope of delivery before the beginning of operation. !**

## **Scope of delivery:**

- 1 Mesy 3.0 – 570.70
- 3 thermocouple sensors type k, length 2,5m
- 1 USB- connecting cable, connector A/B, length 3m
- 1 installation CD-ROM
- 1 quick reference guide MESY 3.0 – 570.70
- 2 self-adhesive magnetic-stripes

## **1. Installation, beginning of operation:**

**For a correct installation Microsoft Windows 2000® or**

**! Windows XP® and Microsoft Excel 2000® or Microsoft !**

**Office 2000® must be installed on your PC.!**

### **Software installation**

- ⇒ Before connecting the hardware the software must be installed.
- ⇒ Please insert the enclosed CD-ROM in the CD-ROM drive of your PC.
- ⇒ Open the file "Setup.exe" from the CD-ROM.
- ⇒ Follow the instructions on the screen.
- ⇒ If wanted a new installation path can be created.
- ⇒ After the end of the installation procedure the software of the MESY 3.0 is installed on your PC.

### **Hardware installation**

- ⇒ Install the software first.
- ⇒ Connect the MESY 3.0 with the enclosed USB- connecting cable to a free USB port of your PC.
- ⇒ The operating system will recognize the new USB device and will install the necessary driver automatically.

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## 2. Starting the Software

**Information:** For a correct funktion the MESY 3.0–form it is necessary that the macro function of your Microsoft Excel 2000<sup>®</sup> is activated. If this is not the case please activate the accordingly button in *Menue/Extras/Macros/Safety!*

- ⇒ Choose Start/Programs/MesyIII or open the link on your desktop
- ⇒ Microsoft Excel<sup>®</sup> will be started and the MESY 3.0-form will be opened.
- ⇒ The information “Download OK” shows that the MESY 3.0 was integrated in the measurement form correctly.
- ⇒ Please confirm this information with <OK>.
- ⇒ The LED of your MESY 3.0 flashes 5 times to confirm a correct operation.

Following it it is lit all the time.

**! Your MESY 3.0 is now ready for measurement !**

## 3. Operating the measurement software

### a) Layout of the measurement form (overview)

In detail you will find the following sheets in the measurement form.

1. **Configurationen**  
Here you can make adjustments regarding the measurement process.
2. **Diagramm**  
On this sheet the retrieved values will be shown graphically and you can also see the analysed values.
3. **Values**  
On this sheet the measured values will be shown in table form.
4. **Reference**  
On this sheet you see the values of a previously saved reference curve in a table.

### b) Form sheets in detail

#### **Configuration**

In the upper area of the table the following information is shown eg. can be chosen.

- |                    |   |
|--------------------|---|
| <i>Initialize:</i> | With this button you can initialize your MESY 3.0 again. This is maybe necessary if your PC has switched on the screen saver in the meantime. |
| <i>Check:</i>      | With this button you can check, which channels of the MESY 3.0 are equipped with thermocouple sensors.  |
| <i>Adjust:</i>     | With this button you will start the adjustment of the MESY 3.0.   |
| <i>Language:</i>   | With this button you can change the language of the measurement form.   |

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*Channel no.:* Here you can see the channel numbers of your MESY 3.0. Actually only the channels 1-3 and channel 8 are available for measurement. Channel 5-7 are provided for an extension and are not available at this time.

The channels 1-3 comply with the sensor inputs 1-3 on your MESY 3.0. Channel 8 complies with an internal temperature sensor which shows the internal temperature of your MESY 3.0.

*Used name:* For a better overview the channels are shown with names. You can edit the name by clicking in the field of the name.

*Available:* Here you can see which channels (hardware) are available in your MESY 3.0. Actually only the channels 1-3 and channel 8 are available for measurement. The fields >available< and >measurable< will be filled according to their status by pressing the button <check>.

A ✕ means “not available” e.g. “deselected”.  
A ✓ means “available” e.g. “selected”.

*Measurable:* Here you can see if a thermocouple sensor is connected to the according channel.

*Use Channel:* In this fields you can select which channels you want to use for the measurement. To select a channel click in the refewing field with the left mouse button.

*Interval:* In these field you can choose the measurement interval. Click on the arrow button to see a list of the available values and select one from the list with the left mouse button.

*Duration:* Please enter the desired measurement duration and press >RETURN< or >TAB< . You can also choose if your entry should be in seconds or minutes.

**Information:** Please keep attention that a combination of interval and duration which results in more than 3000 measurement values is not possible. If the combination results in more than 3000 measurement values a warning will appear and the values are set to the possible maximum.

*Duration in  
seconds:*

In this field the measurement duration will be shown in seconds for control purposes.

*In diagram  
Show time-  
windows:*

In this field you can enter the length of the time axis of the diagram in seconds.

## **4. The execution of the measurement analysis**

### **a) Adjustments for the measurement analysis:**

Automatic analysis and  
diagram:

Automatic analysis and diagram: If you want that the analysis and the diagram start automatically after the measurement please activate the according field on the configuration sheet. You can also start the analysis manually by pressing the <analyze> button on the diagram sheet.

Activating and melting  
temperature:

On the configuration sheet you can enter the values for the activating and the melting temperature. These temperatures and also the length of the preheating phase and the melting phase will be shown in the diagram after the measurement.

Reference curve:

The MESY 3.0 offers the option to show an additional reference curve. To show a reference curve you first must save a curve of a previous measurement as a reference curve. Herefore you will find the button <Save graph> on the values sheet. Now you are asked which graph you want to save (channel 1,2 or 3), then you are asked for the temperature difference (deviation from the original graph) and at least you can edit a name under which the reference curve is saved. If you want to see the reference curve in the diagram you first must activate the field "show reference" on the configuration sheet. Now change to the sheet reference and press the button <load reference>. A list will appear with the graphs you have saved so far. Please select a graph and press ok. Following the table will be filled with the origin temperatures, your chosen temperature difference and the calculated values of origin

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temperature + temperature difference and – temperature difference. On the sheet diagram you will see now two additional graphs following this calculated values.

## b) Executing the measurement:

- ⇒ Press the button <Start> after you have done all adjustments according to your requirements.
- ⇒ The measurement will now start.
- ⇒ The status LED in the MESY 3.0 will flash at each measurement for control purposes.
- ⇒ On the sheet diagram you can follow the run of the measurement and on the sheet values the incoming temperature values.
- ⇒ After the measurement is finished, the LED is lit all the time again.
- ⇒ After the finished measurement you can use all Microsoft Excel 2000® functions for further processing.
- ⇒ Save the file under another file name when closing Microsoft Excel 2000®. This guarantees that the original file “Mesy3.xls” is retained with all standard settings.
- ⇒ Now the measurement is finished.

## c) Adjustment of the measurement box:

Thermocouple sensors are available with different accuracy. With this function you can adjust the MESY 3.0 with every connected thermocouple sensor. The adjustment is a 2 point adjustment. The temperature measured with the MESY 3.0 will be compared with a second calibrated temperature. The MESY 3.0 is already adjusted with the delivered thermocouple sensors, so follow this procedure only if you use new thermocouple sensors of a different accuracy.

### Example for an adjustment

- ⇒ Take the USB connecting cable and connect the MESY 3.0 with your PC.
- ⇒ Connect the thermocouple sensors of type k with the measurement system.
- ⇒ Start the measurement software.
- ⇒ Press the button <Adjust> on the configuration sheet.
- ⇒ With the button <Reset> you can reset the adjustment values back to the standard settings at any time. After confirmation the values will be reseted.
- ⇒ You can also read the already existing adjustment values by pressing the button <Read> prepare.
- ⇒ Please provide two pots filled with an insulating fluid with two different temperatures, for example 25°C and 100°C.

**!**      **Attation:** Don't use water, danger of short circuit!      **!**  
( for example oil is an adequate medium)

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**!      Attation:** take care while handling hot media      **!**

**!      Danger of burns      !**

- ⇒ The channels will be adjusted together at 25°C first and then at 100°C.
- ⇒ Insert the ends of the thermocouple sensors of all 3 channels in the pot with the 25°C fluid.
- ⇒ Start with channel 1. Select channel 1 in the adjustment menu.
- ⇒ Enter the value 250 (temperature in 1/10 °C) in the field >Adjust Lo<.
- ⇒ Press the button <Adjust Lo>.
- ⇒ In the table you will see the entered value and the measured value of the MESY 3.0 now.
- ⇒ Follow the same procedure for the channels 2 and 3.
- ⇒ Now the channels will be adjusted with the temperature 100°C.
- ⇒ Insert the ends of the thermocouple sensors of all 3 channels in the pot with the 100°C medium.
- ⇒ Start with channel 1. Select channel 1 in the adjustment menu.
- ⇒ Enter the value 1000 (temperature in 1/10 °C) in the field >Adjust High<.
- ⇒ Press the button <Adjust High>.
- ⇒ In the table you will see the entered value and the measured value of the MESY 3.0 now.
- ⇒ Follow the same procedure for the channels 2 and 3.
- ⇒ Close the window "Adjustment"
- ⇒ If you press the button "Start" a measurement will start. With a correct adjustment you should see the graphs of all channels at 25°C or at 100°C (end of thermocouple sensors must be in the according fluid).

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For any questions please contact phone +49-4136-909-0

*Your SEF- Eltronic Team*

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Subject to technical changes.

V1.0