Moisture meter

Operating Manual
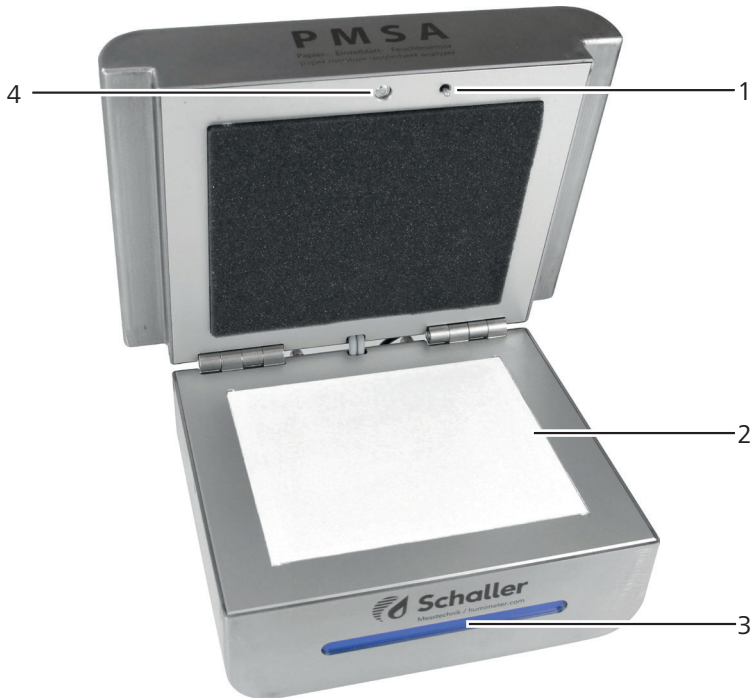
PMSA

Single paper sheet moisture analyser

for measuring the moisture content of a single sheet of paper

78,0°F I 6,16% I 456kg/m³ I −27,3td I 0,64aw I 51,9%r.H. I 14,8%abs I 100,4g/m² I 09m/s I 4,90Ugl I 1

Always read this operating manual before using the PMSA!

Your PSMA at a glance

The main unit

No	Name
1	Lid push button
2	Sensor plate
3	LED status bar
4	IR temperature sensor

The rear of the main unit

No	Name
1	Identification plate
2	Reset button
3	USB port

> ⓘ **ATTENTION**
>
> **Sensitive sensor plate**
> The white sensor surface consists of a thin ceramic plate. This plate may be destroyed by mechanical pressure!
> ► Take care of the sensitive sensor surface during cleaning!

Table of contents

1.   Introduction

1.1   Information about this operating manual

This operating manual is designed to enable you to use the PMSA safely and effectively. It is part of the device, has to be stored nearby and must be easily accessible to users at all times.

All users are required to carefully read and make sure that they have understood this operating manual before using the PMSA. All of the safety and operating instructions detailed in this manual have to be observed to ensure the safety of the device.

1.2   Limitation of liability

All of the information and instructions provided in this operating manual have been compiled on the basis of the current standards and regulations, the state of the art, and the extensive expertise and experience of Schaller Messtechnik GmbH.

Schaller Messtechnik GmbH does not accept any liability for damage associated with the following, which also voids the warranty:

- Non-observance of this operating manual
- Improper use
- Inadequately qualified users
- Unauthorised modifications
- Technical changes
- Use of unapproved spare parts

This fast measuring procedure can be affected by a range of different factors. For this reason, we recommend periodically checking the device's measurements with a standardised oven-drying method.

We, as the manufacturer, do not accept any liability for any incorrect measurements and associated consequential damage.

1.3   Symbols used in this manual

All of the safety information provided in this manual is shown with a corresponding symbol.

⚠️ **CAUTION**

It is essential to observe this warning. Non-compliance can lead to injury.

🛈 **ATTENTION**

It is essential to observe this warning. Non-compliance can lead to damage to property or equipment.

i   Information

This symbol indicates important information that enables users to use the device more efficiently and cost effectively.

1.4   Customer service

For technical advice, please contact our customer service department at:

Schaller Messtechnik GmbH
Max-Schaller-Straße 99
A - 8181 St.Ruprecht an der Raab

Telephone: +43 (0)3178 28899
Fax: +43 (0)3178 28899 - 901

E-Mail: info@humimeter.com
Internet: www.humimeter.com

© Schaller Messtechnik GmbH 2024

CE UKCA

2.   For your safety

The device complies with the following European directives:

- Restriction of Hazardous Substances in Electrical and Electronic Equipment (RoHS)
- Electromagnetic compatibility (EMC)

The device corresponds to state-of-the-art technology. However, it is still associated with a number of residual hazards.

These hazards can be avoided through strict observance of our safety information.

2.1   Proper use

- Easy to use device for quickly measuring the water content of single sheets of paper
- The device must only be used for taking measurements on the products defined in the following sections of this manual (see 6. Product types).

2.2   Improper use

- The device must not be used in ATEX.
- Corrugated board cannot be measured.
- Papers and cardboard that have been carbon (graphite) blackened.
- Papers and cardboard with metallic coatings
- The device is not waterproof and must be protected from water and fine dust.

2.3   User qualifications

The device should only be handled by persons who are expected to carry out the work reliably. Persons whose reactions are influenced, by drugs, alcohol or medication, are not permitted to use the device.

Persons who use this device must have read and understood the user manual and follow its instructions.

2.4   General safety information

Follow the safety instructions below to avoid personal injury and material damage:

- If you notice loose parts or damage on the device contact your distributor.

All of the device's technical features have been inspected and tested before delivery. Every device has a serial number. Do not remove the tag with the serial number.

2.5   Warranty

The warranty does not apply to:

- Damage resulting from non-observance of the operating manual
- Damage resulting from third-party interventions
- Products that have been used improperly or modified without authorisation
- Products with missing or damaged warranty seals
- Damage resulting from force majeure, natural disasters, etc.
- Damage from improper cleaning

3. On receipt of your device

3.1 Taking the device out of its packaging

- Take the device out of its packaging.
- Next, make sure that it is not damaged and that no parts are missing.

> ⓘ **ATTENTION**
>
> **Sensitive sensor plate**
> The white sensor surface consists of a thin ceramic plate. This plate may be
> destroyed by mechanical pressure!
> ► Take care of the sensitive sensor surface during cleaning!

3.2 Making sure that all of the components have been included

Make sure that all of the components have been included by checking the package contents against the following list:

- PMSA
- USB cable
- Operating manual

Optional accessories:

- Paper grammage precision scale
- Laboratory analysis for creation of calibration curve

4.   Setting up

4.1   Setting up the PC software

» Download the PMSA software at humimeter.com/software or use the QR code.

1. Open the **setup** and start the installation file of the evaluation software (figure 1).

2. Now follow the instructions of the installation wizard.

3. After successful installation exit the installation wizard with **Finish** (figure 2).
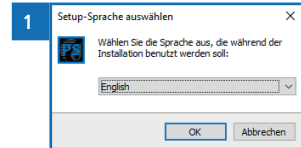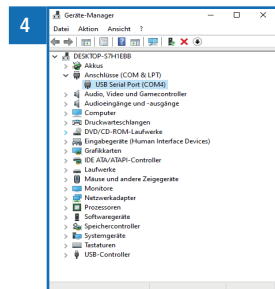

4.2   Setting up the device

• Insert the USB Mini B connector into the PMSA (figure 3).

• Insert the USB connector into the computer.

» The required driver was installed with the evaluation software in the previous step and should now be ready for use.
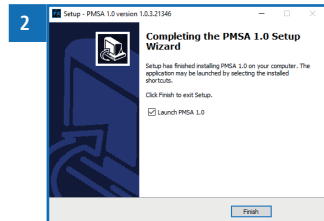
4.3   Determining the COM port

• The PMSA now appears in the Windows device manager as "USB Serial Port (COMxx)" (figure 4).

4.4   Setting the COM Port

1. Start the evaluation software on your computer.

2. Open the sensor settings by clicking on the "Settings" button (figure 5) .

3. Select the COM interface of the PMSA determined under 4.3 Determining the COM port" from the drop-down menu.

4. After selecting the COM interface, the connection to the PMSA can be tested via the "Test" button.

   » After successful completion of the test, a message appears and the LED bar of the device lights up blue.
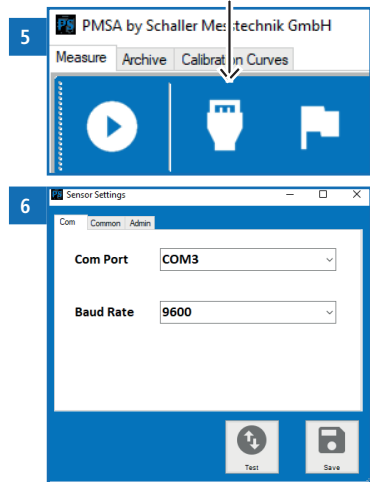

5.   The measuring process

To do so: The connection between the device and the evaluation software has been established successfully.

1. Select the desired product type from the drop-down menu (figure 7).

2. The grammage can also be entered manually (figure 7).

   » It must be within the specified range. The grammage must therefore not be below the lowest and not above the highest specified value.

3. Click the "Start" or "F1" button to start the measuring process.

   » The window "Measurement progress" opens (figure 8).

4. Make sure that there is no paper in the machine and close the lid (figure 9).

5. Continue the measurement process by clicking the "OK" button .
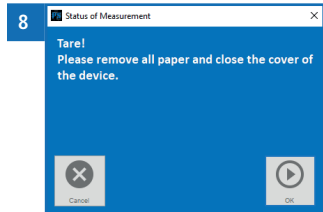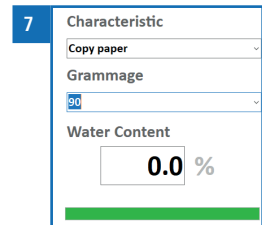
6. Now the device performs a blank measurement.

   » During the blank measurement, the progress window closes.

7. After successful completion of the blank measurement, the progress window opens again (figure 10).

8. Now place the paper to be measured in the device and close the lid (figure 11).

9. Continue the measurement process by clicking the "OK" button 🔘.

10. Now the device performs the measurement.

   » During the measuring process the LED bar on the device flashes.
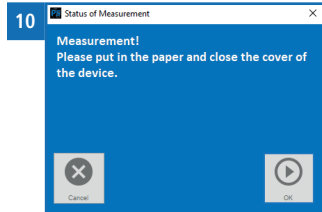
11. After successful completion of the measurement, the window "Measurement Valid" opens, displaying the measured values and options to enter further additional data (figure 12).

   » It is possible to deactivate the opening of the window "Measurement Valid" (see section 8.1.1 Deactivating the "Measurement Valid" window).

12. By clicking the button "Save" 🔘 the measuring results including entered additional data are saved.
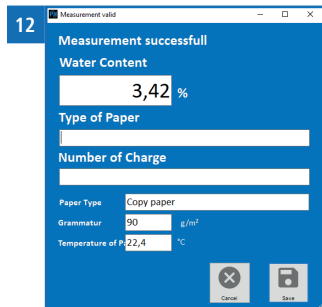
⚠️ ATTENTION

Risk of injury

Crushing due to the lid of the device

► Pay attention to the position of your fingers when closing the lid.

ℹ️ Information - Incorrect readings

Always make sure to select the correct product type for the material you are measuring. This prevents taking incorrect readings (see 10. Faults).

6.   Product types

Calibration curves are available for the following products:

Product type	Paper type	Grammage [g/m²]
*Reference	! Only used for testing the moisture meter !	
Fluting		80 - 160 g/m²
Coated paper		90 - 300 g/m²
Copy paper		60 - 200 g/m²
Kraftliner		100 - 400 g/m²
Board		300 - 400 g/m²
Testliner brown		90 - 210 g/m²
Testliner white		90 - 210 g/m²

6.1   Selecting the product type

Due to the wide range of different types of papers in use, there are no default product type categories. For the different product types of the PMSA, the grammage of the paper sheet and the paper type are decisive.

The product type overview contains suggestions for different paper types and their associated grammage [g/m²].

To achieve an accurate measuring result, it is necessary to create a specific calibration curve.

The recording of a new calibration curve can be carried out by Schaller Messtechnik GmbH or by the customer (see 8.3 Paper Type Recording).

6.2   How moisture content is defined

The device measures and shows a material's moisture content. The moisture content readings it displays are calculated in relation to the material's overall mass:
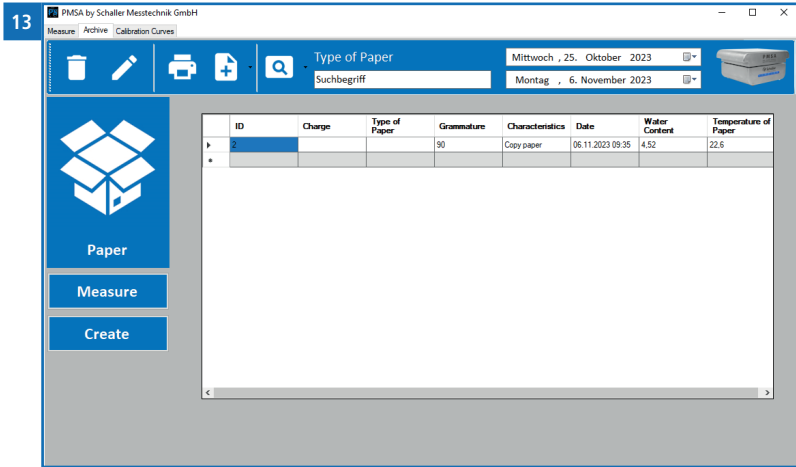
$$\%WG = \frac{M_n - M_t}{M_n} \times 100$$

M_n: Mass of the sample with average moisture content

M_t: Mass of the sample with zero moisture content

%MC: Moisture content (in accordance with EN ISO 287)

7.   Database / Archive

In the database all stored measuring values can be displayed.

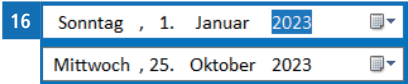Each stored measurement has its own identification number.

7.1   Filter

To facilitate the search, filters can be applied to the stored measurements in the database. When leaving the archive, the applied filters are reset.

7.1.1   Filter by date

1.   When using the date filter, select Period to display all measurements taken within this period.

2.   In the first field, enter the start date of the desired time period (figure 14).

   »   The start date can be chosen on the calendar (figure 15) or entered manually in the format (**TT-MM-JJJJ**).

   »   Clicking on "today" the current date is entered.
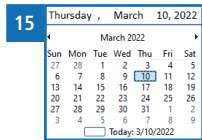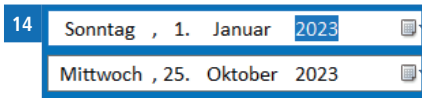
3. In the second field enter the end date of the desired time period (figure 16).

| 16 | Sonntag , 1. Januar 2023 | ▦▾ |
| | Mittwoch , 25. Oktober 2023 | ▦▾ |

» By default, the current date is selected as the end date.

» The end date can be chosen on the calendar or entered manually in the format (**TT-MM-JJJJ**).

» Clicking on "today" the current date is entered.

7.1.2 Filter by keyword

1. It is also possible to filter the database according to entered specific data such as the type of paper, batch number or grammage.

2. Click on the drop-down arrow (figure 17) of the button "Search in "
   [🔍] and choose the desired filter option.

   | 17 | 🔍 | ▾ |

3. Enter the required search term.

4. The search term is applied to the database after entry.

» Press the Enter key or the "Search in" [🔍] button to manually apply the search term to the database.

» To filter even more precisely, it is also possible to combine date filter and filter by search term.

5. By clicking on the column headings (e.g. ID), the list can be sorted in ascending or descending order.
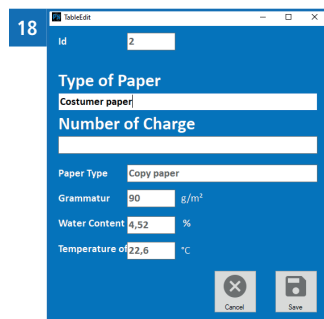
7.2 Additional database functions

All data from the database can be deleted, further processed or exported.

7.2.1 Deleting measurements

- Mark the desired measurement series by clicking on the empty field in front of the "ID" column.

  » To select an entire area, keep the Shift key pressed.

  » To select several individual measurement series, keep the Ctrl key pressed.

- Click on the button "Delete" ☐ to delete the marked measurement series.

  » The marked measurements are irrevocably deleted from the database!

7.2.2 Edit measurements

1. Mark the desired measurement series by clicking on the empty field in front of the "ID" column.

2. Click on the button „Edit" ✏ to edit the marked measurement series.

   » The "TableEdit" window opens (figure 18).

3. Now you can change the paper type as well as the batch number.

4. Confirm your entry by clicking on Save 💾 .

7.2.3 Printing measurements

- Click on the button „Print" 🖨 to print all measurements shown in the table.

  » If a filter is set, only the records corresponding to the filter are printed.

7.2.4 Exporting measurements

- Click on the button "Export" to export all measurements shown in the table.

  » The export is possible in CSV, HTML or XML format.

  » If a filter is set, only the records corresponding to the filter are exported.

8. Configuring the device

8.1 Sensor settings

- Open the sensor settings by clicking on the button "Settings" 🔲.

### 8.1.1 Deactivating the "Measurement Valid" window

- Navigate to the tab "Common".
- Remove the tick from the setting "Show Measurement Valid Window".
- » Now the "Measurement Successful" window is no longer displayed after a measurement has been completed.
- » **If the "Measurement Valid" window is deactivated, your measurements are not saved in the archive.**

8.2 Carry out adjustment

If the error message "Calibration out of limits" appears frequently during a blank measurement (without paper), your PMSA can be adjusted.

To do so: You are in the "Measurement" tab.
In addition, there must be no paper or other material in the PMSA!

- Now click on the "Settings" button.
- Now go to the "General" tab.
- Enter the serial number of your device in the password field.
- » The serial number can be seen at the bottom left (figure 19).
- Click on the "Adjust" button 🔲.
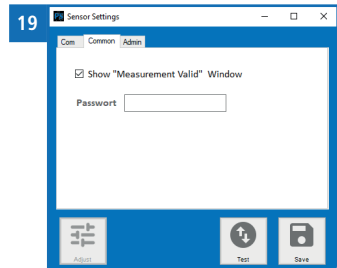
8.3 Paper Type Recording

8.3.1 Recording of paper with one grammage

To do so: You are in the "Measurement" tab.

- Start recording the paper types by pressing the "Create" button (figure 20).
- By pressing the "New paper type" ⊕ button, the following window appears (figure 21).

- Enter the paper name, the internal designation and the known grammage of the sample/type here.
- Now save the data record with 🖫 to start recording.
- Now click on the "Start" ▶ button to start the measurement.

- Confirm the empty detection with "OK" ▶.
- » There must be no paper in the PMSA!
- When prompted, insert the paper of the above-mentioned type for which you want to record the characteristic curves.
- » If necessary, add the batch number.
- Continue the measurement process by clicking the "OK" ▶ button.
- If the measurement was successful, the "Measurement successful" window appears (figure 22).
- » The data series of the "Paper type" field can be changed using the drop-down menu if necessary.
- You can now enter the target value of the paper in the PMSA in the "Water content" window. However, this can also be added directly in the table later.
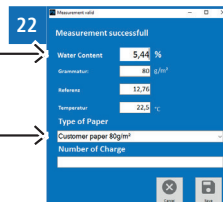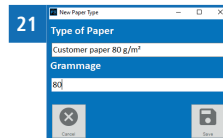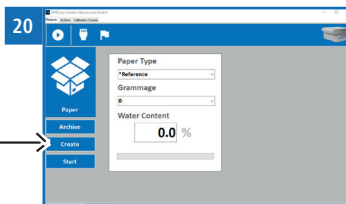
> ⓘ **ATTENTION**
>
> The recording of a new paper type can also be ordered from Schaller Messtechnik GmbH.

> **(!) ATTENTION**
>
> The target value of the water content is the value determined by:
>
> - means of a standardized drying oven method according to EN ISO 287
> - or another reference method (inline scanner of the paper machine, etc.) of the sample material used.
>
>   Reference water contents are the reference values on the basis of which the calibration curve is created in the PMSA. The PMSA compares internal frequencies with the manually entered water content and assigns the calibration curve.

> **(!) ATTENTION**
>
> The number of measurements can increase the accuracy of the calibration curves. However, the precision of the measurements for each individual measuring point is more important than the number of measuring points.

> **(!) ATTENTION**
>
> The paper sheet must always be at room temperature and have a homogeneous moisture distribution.

- » A batch number can be entered manually if required.
- • This measurement can now be saved using the "Save" [icon] button (figure 22).
- • Carry out at **least seven measurements** under different humidity conditions!
- » To do this, start again at the point: " Now click on the "Start" [icon] button to start the measurement" .
- • The difference between the individual measuring points (moisture conditions) should be approx. 1% water content.
- » Water content / target values must be in the range where measurements are taken afterwards.
- » If you have carried out at least seven measurements, a graph with the measured values is automatically displayed.
- » Pressing the "Generate polynomial" [icon] button places a regression through the measuring points and generates a polynomial.
- » If the value of the regression is shown in green, the quality of the generated calibration curve is good. If this value is red or yellow, additional data points must be recorded. (figure 23).
- » Alternatively, visible outliers that contradict the trend of the polynomial can also be deleted.
- • Now click on the "Add calibration curves" [icon] button and the following display will appear (figure 24).
- • If you add a new paper type, the designation of the paper type is automatically adopted. This can also be changed manually (figure 24)!
- • If necessary, enter the correct grammage manually (figure 24).
- • Now click on the "New" button to add the new paper type/calibration.
- • Save this process with the "Save" button [icon]
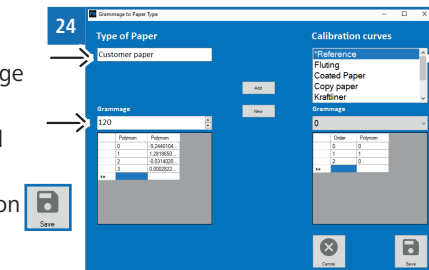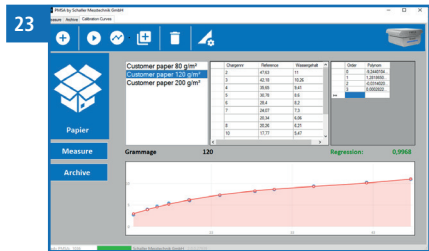
8.3.2 Recording of paper with different grammages

» If you want to measure papers of the same type with different grammages, then several papers of this type (with different grammages) must also be measured.

• Now take at least two more recordings with other grammages of the same paper type.

» A measurement of the lowest, average and highest grammage value must be carried out for each new paper type.

» To load paper with a different grammage, repeat the procedure in 8.3.1 Recording of paper with one grammage.

• Entire measurement series can be deleted using the "Delete" 🗑 button.

» By clicking in the first column, individual values can also be deleted using the delete key.

• The three different measurements can now be combined to form a new calibration curve/paper type.

• Click on one of your newly entered paper types and make sure that the polynomial and the regression value are displayed.

» You can do this by pressing the "Create polynomial" button 〰

• Now click on the "Add calibration curves" 🔲 button and the following display will appear (figure 25).

• If you add a new paper type, the designation of the paper type is automatically adopted. This can also be changed manually (figure 25)!

» If necessary, enter the correct grammage manually (figure 25).

• Now click on the "New" button to add the new paper type/calibration.

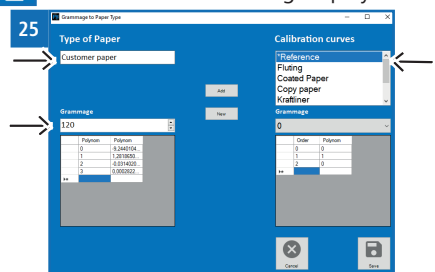• Save this process with the "Save" 💾 .

• The second measurement can now be added to the new calibration curve/paper type.

• To do this, click on the second measurement and again make sure that the polynomial and the regression value are displayed.

• Click on the "Add calibration curves" button 🔲 .

• Now select the newly added calibration curve/paper type under Paper types (figure 25)

• Change the grammage if necessary.

• Now click on the "Add" button and save again with 💾 .

• This process can now also be carried out with the third measurement in order to add this to the new calibration curve/paper type.

- This means that the calibration curve/paper type recording was successful and can be selected for the measurement.

» The grammage can be changed again manually during the measuring process, but must not be below the lowest and not above the highest specified value (see "5. The measuring process" page 12).

8.4   Importing calibration curves

To do so: You are in the "Calibration curves" tab.

- Press the button to display the following screen. (figure 26).

- Click on the "Import" button to import one or more calibration curves (figure 26).

» A "FileExplorer" window will now open.

» Navigate to the .xml file with the calibration curves.

- Click on Save to confirm the imported calibration curves.
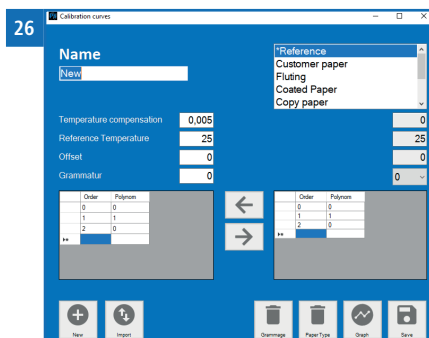
8.5   Create/change paper types manually

To do so: The following display is shown (figure 27).

- To manually create a new paper type, the name and grammage must first be entered manually in the left-hand block.

- This new paper type is <u>now</u> created by pressing the "New" ⊕ button.

- Existing paper types can also be changed.

» To do this, select the desired paper type and change it again manually.

- To change a paper type or gram-mage, it must be selected on the right-hand side and moved to the left-hand side using the arrow. The changes can be made there and then added to the paper type again using the arrow to the right.

- Paper types or individual grammages of a paper type can also be deleted using the 🗑 or 🗑 button.

- Click on Save 💾 to confirm the processes or changes.
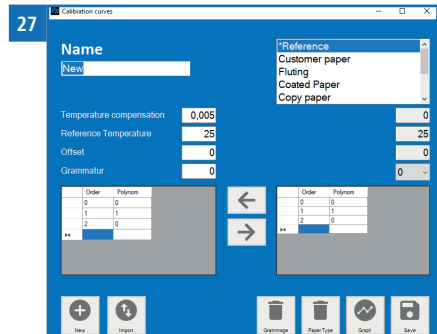
8.6   Selecting a language

To do so: Sie befinden sich in der Registerkarte "Mes-sung".

- Open the language settings by clicking on the "Language" button ⚑.
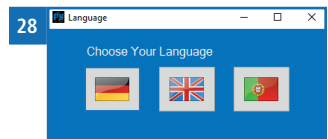
9. Cleaning and maintenance

Regularly cleaning and maintaining the device will ensure that it will have a long service life and stay in good condition.

9.1 Resetting the hardware/device

If the device has stopped operating for some reason, the hardware/device can be reset.

- Press the reset button on the back of the device (see "The rear of the main unit" page 3).
- The device will restart as soon as the reset button has been pressed.

9.2   Care instructions

- Do not leave the device out in the rain. The device is not waterproof.
- Do not expose the device to extreme temperatures.
- Protect the device from strong mechanical shocks and loads.
- During transport, secure the lid of the device against unintentional opening.
- Back up the measurement database at regular intervals.
- In the case of changes of the product types, also save the calibration curve database at regular intervals.

9.3   Cleaning the device

> ## ⓘ ATTENTION
>
> **Do not clean with fluids**
> Water or cleaning fluid getting inside the device can destroy the device.
> ► Only clean with dry materials.

> ## ⓘ ATTENTION
>
> **Sensitive sensor plate**
> The white sensor surface consists of a thin ceramic plate. This can be destroyed by mechanical pressure!
> ► Take care of the sensitive sensor surface during cleaning!

Metal housing

Clean the metal housing with a cloth and cleaning alcohol.

Infrared sensor

Do not touch the infrared sensor. Clean it by gently and carefully by blowing air on it (do not use compressed air.)

Sensor plate

Clean the sensor plate by carefully blowing it off (do not use compressed air).

10.   Faults

If the measures listed below fail to remedy any faults or if the device has faults not listed here, please contact Schaller Messtechnik GmbH.

Fault	Cause	Remedy
Measuring error	The temperature of the material being measured is too low or high. I.e. the material's temperature is lower than +10 °C or higher than +40 °C	The temperature of the material being measured has to be between +10 °C and +40 °C.
	Wrong product type	Check whether you have selected the right product type (product) before taking a reading. See 6.1 Selecting the product type).
	Insufficient grammage	Only paper with a grammage over 30 g/m² can be measured.
	Graphite paper	The device is not suitable for measuring moisture in paper containing graphite.
Data transfer to Log-Memorizer failed	Interface has not been configured	The interface only has to be configured once. To do so, press the F1 key on your computer and read the Help file for your Log-Memorizer program.
The device does not respond	Software has crashed	Reset the device (perform a hardware reset). (See 9.1 Resetting the hardware/device).
Lid doesn't close	Paper thickness higher than 0.8 mm	In this case contact Schaller Messtechnik GmbH.

11. Storage and disposal

11.1 Storing the device

The device must be stored as follows:

- Do not store outdoors
- Store in a dry and dust-free place
- Protect the device from sunlight
- Avoid mechanical shocks/loads
- Storage temperature: -20 °C to +60 °C

11.2 Disposing of the device

Devices marked with this symbol are subject to Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE).
If the device is being operated outside the European Union, the national regulations on the disposal of such devices that apply in the country of use must be observed.

Electronic devices must not be disposed of as domestic waste.

The device must be disposed of appropriately using appropriate collection systems.

12. Device information

12.1 EC declaration of conformity

$C\epsilon$ **KONFORMITÄTSERKLÄRUNG**
DECLARATION OF CONFORMITY

Name/ Adresse des Herstellers:	**Schaller Messtechnik GmbH**
Name/ address of manufacturer:	**Max-Schaller-Straße 99**
	A – 8181 St. Ruprecht
Produktbezeichnung:	**Schaller**
Product designation:	
Typenbezeichnung:	**PMSA**
Type designation:	
Produktbeschreibung:	**Messgerät zur Bestimmung des Wassergehalts in Papier**
Product description	***Measuring instrument for determining the water content in paper***

Das bezeichnete Produkt erfüllt die Bestimmungen der Richtlinien:

The designated product is in conformity with the European directives:

EMV - Richtlinie 2014/30/EC	*EMC Directive 2014/30/EU*
RoHS - Richtlinie 2011/65/EG	*RoHS-Directive 2011/65/EU*

Die Übereinstimmung des bezeichneten Produktes mit den Bestimmungen der Richtlinien wird durch die vollständige Einhaltung folgender Normen nachgewiesen:

Full compliance with the standards listed below proves the conformity of the designated product with the provisions of the above-mentioned EC Directives:

EN 61326–1:2013	Elektrische Mess-, Steuer-, Regel- und Laborgeräte - EMV-Anforderungen *Electrical equipment for measurement, control, and laboratory use – EMC requirements*
EN IEC 63000:2019-05 *ersetzt / replaced* **EN 50581:2012**	Technische Dokumentation zur Beurteilung von Elektro- und Elektronikgeräten hinsichtlich der Beschränkung gefährliche Stoffe. *Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.*

Für das angeführte Produkt ist eine vollständige Dokumentation mit Betriebsanleitung in Originalfassung vorhanden.

For the mentioned product a complete documentation with manual of instruction in original version is available.

Bei Änderungen, die nicht vom Hersteller spezifiziert sind, verliert diese Konformitätserklärung die Gültigkeit.

In case of any changes not agreed upon with the manufacturer, this declaration of conformity loses its validity.

St. Ruprecht a.d. Raab, 31.07.2022

....
Bernhard Maunz
Rechtsverbindliche Unterschrift des Ausstellers
Legal binding signature of the issuer

UKCA *DECLARATION OF CONFORMITY*

Name/ address of manufacturer:	**Schaller Messtechnik GmbH**
	Max-Schaller-Straße 99
	A – 8181 St. Ruprecht
Product designation:	**Schaller**
Type designation:	**PMSA**
Product description:	**Measuring instrument for determining the water content in paper**

The designated product is in conformity with the following directives:

- **Electromagnetic Compatibility Regulations 2016 Great Britain**
- **RoHS-Directive 2011/65/EU Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment**

Full compliance with the standards listed below proves the conformity of the designated product with the provisions of the above-mentioned Directives:

EN 61326–1:2013	Electrical equipment for measurement, control, and laboratory use – EMC requirements
EN IEC 63000:2019-05 replaced **EN 50581:2012**	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.

For the mentioned product, a complete documentation with manual of instruction in original version is available.

In case of any changes not agreed upon with the manufacturer, this declaration of conformity loses its validity.

St. Ruprecht a.d. Raab, 31.07.2022

....
Bernhard Maunz
Legal binding signature of the issuer

12.2   Technical data

Measuring range	1 % to 20 % moisture content (product type dependant)
Resolution of the measurement	0.01 % moisture content 0.1 °C / 0.3 °F temperature
Operating temperature	+10 °C to +40 °C
Storage temperature	-20 °C to +60 °C
Temperature compensation	automatic
Paper sheet size	at least 180 x 180 mm
Paper sheet thickness	up to max. 0.8 mm (thicker on request)
Paper grammage	30 to 800 g/m²
Power supply	Power supply via PC 5VDC (USB connection)
Power consumption	60 mA
Menu languages	English, German, Portuguese
Dimensions	274 x 202 x 128 mm
Weight	4.7 kg
IP rating	IP 30

13. Notes

Climate / Environment

Material

Food

Buildings

Bioenergy

Paper / Board
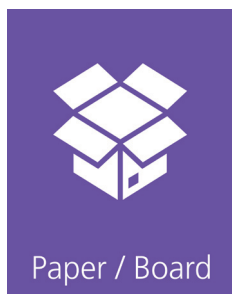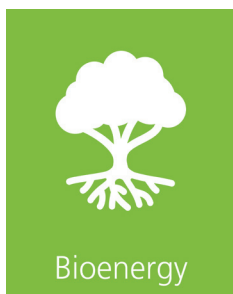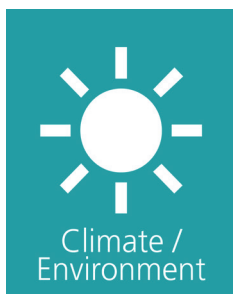
Schaller Messtechnik develops, produces and sells professional moisture meters and turnkey solutions.

Schaller Messtechnik GmbH

Max-Schaller-Straße 99, A - 8181 St. Ruprecht an der Raab

Tel +43 (0)3178 - 28899 , Fax +43 (0)3178 - 28899 - 901

info@humimeter.com, www.humimeter.com