

## Moisture meter

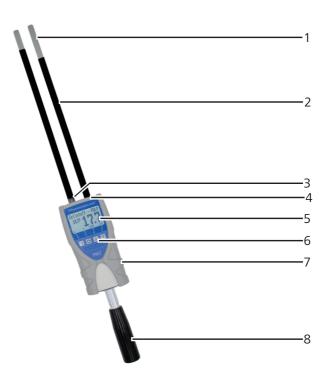
# User manual humimeter PMZ Pulp moisture meter

For absolute water content determination of pulp sheets on a pile



## An overview of your humimeter PMZ

## The main unit



No	Name
1	Measuring electrodes (blank area)
2	Measuring electrodes (insulated area)
3	Infrared temperature sensor
4	USB interface (available optionally)
5	Display
6	Keypad
7	Rubber protection cover
8	Handlebar



## Rear of the main unit



No	Name
1	Battery compartment

## Display



NO	Name
1	Characteristic curve
2	Water content in % ("6.2 Definition of moisture content")
3	Display symbols
4	Temperature display

## **Display symbols**

Symbol	Name	Symbol	Name
البه	Enter	X	No
.dh.	Up	÷	Change input level
	Down	OK	ОК
T <del>T</del> ,	Back	Ģ	Change menu
09	Enter numbers	di i	Enter data
AZ	Enter letters	`o-o'	View measurements
ļ	Continue / right	and the second	Delete measurements
1	Left	Ċ	On/off button, display light
$\checkmark$	Yes	m	Save measured value

## Menus

The device has three different menus: product selection, Data Log and main menu.

Product selection menu



No	Name
1	Change menu
2	Display illumination / device on/off
3	Changing the product type



#### Data Log menu



No	Name
1	Change menu
2	Display illumination / device on/off
3	Save measured value
4	Show the last recorded values

#### Main menu

The main menu comprises the following menu items:

- Data storage: Manual Logs, Clear Logs
- Print Logs: Last Log, All Logs, Clear Logs
- Send Logs: Manual Logs, Clear Logs
- Options: Bluetooth, Date/Time, Log Time, Language, Unlock, °C/°F, Userlevel, BL On Time, Auto Off Time, Materialcalib., Online Send, Password, Reset
- Status

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## 1. Introduction

#### 1.1 Information on this user manual

This user manual enables safe and efficient use of the PMZ humimeter. The user manual is an essential part of the device and must be kept close to the humimeter and be accessible to the user at any time.

Before starting any work, the user must carefully read and understand this manual. Basic requirement for safe work is to follow all safety and handling instructions specified in this user manual.

## 1.2 Limitation of liability

All of the information and instructions provided in this user 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 damages associated with the following, which also voids the warranty:

- Non-observance of this user 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 measurement and associated consequential damage.

## 1.3 Symbols used in this manual

All safety instructions in this user manual are identified by symbols.

## ATTENTION

Non-observance can lead to physical damage.

## Information

Ī

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

## WARNING

In case of non-observance, light or medium injuries can occur.

#### 1.4 Customer service

For technical advice, please contact our customer service department at

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# 



## 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 associate with a number of residual hazards.

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

#### 2.1 Proper use

- Fast measuring device for water content determination of piled pulp.
- Only products which are defined in the following instructions may be measured (see "6. Product types").

#### 2.2 Improper use

- The device should not be used in ATEX areas.
- Do not perform a measuring on a running machine.
- It is not possible to measure pressed pulp blocks made of flocks.
- Single sheet measurements are not possible.
- The device is not waterproof, protect it 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:

- Remove the batteries from the device if it is not to be used for a prolonged period.
- If you notice loose parts or damage on the device, remove the batteries and 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

Not covered by warranty:

- Damages caused by non-observance of the user manual
- Damages caused by third-party intervention
- Products that have been used improperly or modified without authorization
- Products with missing or damaged warranty seals
- Damages caused by majeure, natural disasters, etc.
- Damages due to improper cleaning
- Damage due to leaking batteries

## 3. First steps

#### 3.1 Unpacking the device

- Unpack the device
- Next, make sure that it is not damaged and that no parts are missing.

#### 3.2 Checking the delivery content

Use the following list to check if the delivery is complete:

- humimeter PMZ 4 pieces AA alkaline batteries
- wooden case
   steel handlebar
- rubber protection
   user manual



Optional accessories:

- humimeter USB data interface module USB stick with LogMemorizer software (data recording and analysing software) and USB cable
- Battery powered thermo printer (can only be used with humimeter USB data interface module) described in a separate user manual
- Bluetooth module (can only be used with humimeter USB data interface module) - described in a separate user manual
- Test block for checking the calibration on two different points

## 3.3 Inserting the batteries

1. Remove the rubber protection from the device. Pull it off from the upper side of the housing. If you have an optional USB interface, pull out the protective cover of the USB socket first. (figure 1 and 2)





- 2. Take the device in one hand and press with your thumb on the marked area of the battery compartment. Now slide the battery cover downwards from the device (2) (figure 3).
- 3. Insert the batteries with negative and positive terminals matching those indicated on the battery compartment. Press the batteries down firmly, so that they lay flat on the bottom of the housing (figure 4).
  - » When all the batteries are inserted, the device turns on automatically.
- Slide the battery cover back onto the housing until it clicks into place. Then put the rubber protection onto the housing - start with the side where the battery cover is. (figure 5).







## 4. Using the device - Basics

#### 4.1 Turn on the device

- Press the 🕑 button for 3 seconds.
- The display will then show the status indicator (figure 6).
- » The device turns on automatically after inserting batteries.

## 4.2 Selecting the product type

Requirement : The device has to be in the product selection menu (figure 7).

For an overview of the different product types and the criteria for selecting them, please refer to "6. Product types".

- 1. Press the  $\bigtriangledown$  or  $\bigtriangleup$  button to move from one product to the next Or
- 2. Press the ♥ or △ button for 3 seconds to open the product type overview (figure 8).
- 3. Use the arrow keys to move from one product type to the next
- 4. and keep any of them pressed to scroll through the types.
- 5. Confirm your selection by pressing 🖊
  - » The selected product type is shown on the top of the display.

#### 4.3 Perform a measurement

• The measurement is described in chapter "5. Measurement".

### 4.4 Turn off the device

Requirement: The device has to be in the product selection or Data Log menu. You cannot turn off the device in the menu level.

Press the 🕐 button for 3 seconds.









## 5. Measurement

#### 5.1 Measuring procedure setup

Requirement: The measuring instrument must have the same temperature as the product to be measured as precisely as possible. It is recommended to let the measuring device adjust to the temperature close to the product before measuring.

- 1. Turn on the device (see "4.1 Turn on the device").
- 2. Select the desired product type (see "6. Product types") by pressing the T or the button (see "6.1 Selecting the product type").

#### 5.2 Perform a measurement

#### 5.2.1 Measurement on stapled pulp sheets / bows

Requirement: The pulp height has to be at least 30 cm on the top and bottom side of the electrodes to avoid incorrect measurements. The device has approximately the same temperature as the measured material. The insertion position is designed to ensure that the contact pressure on the electrodes lies around 250kg/m<sup>2</sup> (2.45kN/m<sup>2</sup>).

- 1. Take the measuring unit by the handle with one hand and gently lift the pulp pile. Insert the measuring electrodes into the crack of the pile (see figure 9 and 10).
- The electrodes have to be inserted as far as possible into the pile ( at least <sup>3</sup>/<sub>4</sub> of the electrode length) (see figure 11).
- 3. Make sure that the IR temperature sensor is exposed and can measure the temperature of the pulp surface. If the IR sensor does not face the pulp surface, a too high temperature, due to hot parts or the body surface as well as a too cold temperature, due to cold parts or clothing, can negatively affect the measurement result caused by incorrect temperature compensation (figure 12).









- To ensure a correct measurement, the above mentioned pulp height must be maintained to ensure a minimum contact pressure on the electrodes.
   13 1 long-fibre u
  - » The measured value is immediately visible on the instruments display (figure 13).



» Now you can save the displayed measured value on the device (see "5.4 Saving individual readings" or

"5.5 Saving several readings (measurement series) at the same time").



#### **Injury hazard**

Injury hazard due to measuring electrodes.

- Keep the measuring electrodes away from your body during all activities.
- Keep the measuring electrodes away from other people' bodies during all activities.

## Information - Measuring accuracy

This rapid and non-destructive measuring procedure allows you to quickly take moisture readings at a number of different points. When saving the individual readings, the device will automatically calculate the readings' average (see "5.5 Saving several readings (measurement series) at the same time").

## Information - Incorrect readings

Make sure to select the correct product type for the material you are measuring. This prevents taking incorrect readings (see "11. Faults").

## Information - IR-temperature sensor

Pay attention to the IR temperature sensor on the top of your humimeter PMZ. The temperature sensor is a precise optical measuring instrument. It should not be under strong pressure when the electrodes are inserted or be damaged by impacts. This will cause irreparable damage that falsifies the measurement result because of incorrect temperature compensation.



## 5.3 Hold function - Freezing the displayed values

The device can be configured in such a way that the information being shown on the display will freeze at the touch of a button until a new button is pressed. This function can be very useful when e.g. taking readings in spaces where it is not possible to see the display (e.g. overhead).

#### 5.3.1 Activating the hold function in the options menu

Requirement: The device has to be turned on and be in the product selection menu.

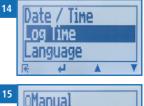
- 1. Press 😱 twice or hold for 2 seconds.
- 2. Select **Options**. To do so, press **T** or **A** and confirm by pressing **4**.
- Select Log Time (figure 14). To do so, press T or and confirm by pressing .
- 4. Navigate to **Hold** (figure 15). To do so, press **T** or **A** and confirm by pressing **4**.
- » Setting has been saved.
- 5. Press **F** to leave the **Options** menu.
- 6. Press 🙀 to leave the main menu.

#### 5.3.2 Using the hold function

Requirement: The device has to be turned on and be in the Data Log menu (see "Menus" on page 4).

- Press 🚺.
- The current reading will be frozen. All of the four symbols will now be displayed as [1] (figure 16).
- To reactivate the frozen display simply press any button.





oma Dho	anual old		
	4	*	

## 5.4 Saving individual readings

The device can be configured in such a way that the device will save a reading every time a button is pressed. This option (manual save function) is the device's default setting.

#### 5.4.1 Activating the manual save function in the options menu

Requirement: The device has to be turned on and be in the product selection menu.

- 1. Press  $\mathbf{\hat{\mathbf{P}}}$  twice or hold for 2 seconds.
- 2. Select **Options**. To do so, press **T** or **a** and confirm by pressing **a**.
- Select Log Time (figure 17). To do so, press T or
   and confirm by pressing 4.
- Navigate to Manual (figure 18). To do so, press or and confirm by pressing .
- 5. Setting has been saved.
- 6. Press **I** to leave the **Options** menu.
- 7. Press  $\widehat{\mathbf{P}}$  to leave the main menu.

#### 5.4.2 Using the manual save function

Requirement: The device has to be in the Data Log menu (see "Product selection menu" on page 4). The device is set to DataLog Time - Manual.

- 1. Press 🗖.
- » On the display appears the figure 20 prior to the disk symbol is now the number one.
- 2. Press it to enter a name for the saved reading and to finish the measuring process.
- » On the display appears figure 21.
- 3. If a previous entry has already been made, the displayed entry can be overwritten if required.







#### 4. Add letters:

Press and hold A ...Z to quickly scroll to the required letter and either press it for 3 seconds or press 4 to confirm the selected letter (figure 22).

5. Add numbers:

Press and hold **1 .. 9** to quickly scroll to the required number and either press it for 3 seconds or press **4** to confirm the selected number.

- Moving forward/backward: Press to switch to another input level. Press move forward or backward.
- 7. Confirm your entry by pressing 🖊.
  - » The data you entered has been saved.

## 5.5 Saving several readings (measurement series) at the same time

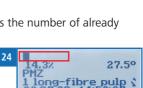
Requirement: The device has to be in the Data Log menu.

- 1. Take several readings from one stack or a roll (see "5. Measurement").
- 2. Press 🔟 for each measurement
- » On the display appears figure 23. This number shows the number of already saved readings.
- Press it to enter a name for the saved series of measurements and to finish the measuring process.
  - » On the display appears figure 24.
  - » If a previous entry has already been made, the displayed entry can be overwritten if required.
- 4. Add letters

Press and hold  $\bigcirc$  ...Z to quickly scroll to the required letter and either press it for 3 seconds or press  $\bigcirc$  to confirm the selected letter (figure 25).

5. Add numbers:

Press and hold **1 ...** to quickly scroll to the required number and either press it for 3 seconds or press **4** to confirm the selected number.



14:52:39

9.07.20









- Moving forward/backward: Press to switch to another input level. Press to move forward or backward.
- 7. Confirm your entry by pressing 🚚.
  - » The data you entered has been saved.
  - » The device automatically determines the average moisture content of the savedmeasuring values..
  - » On the dispay appears the following information:



No	Name
1	Name of the measurement series
2	Temperature (average)
3	Date & start time of the measurement series
4	Date & end time of the measurement series
5	Number of saved readings
6	Product type
7	Device name
8	Water content (average)



## 5.6 View single measured value

Requirement: Minimum one measurement (e.g. **1 Log**) was saved. On the display appears

- 1. Press '0-0'.
- Navigate to the required measurement series. To do so, press T or <u>1</u>.
  - » On the display appears figure 27.
  - » Press 🕂 to leave this screen.



## 5.7 View single measured values of a measurement series

Requirement: Minimum one measurement (e.g. 2 Logs) was saved.

On the display appears 'oro'.

- 1. Press '0-0'.
- Navigate to the required measurement series. To do so, press T or <u>1</u>.
  - » On the display appears figure 29.
- 3. Press 🗣 to move to another entry level.
  - » On the display appears figure 30.
- 4. Press again 'md'.
- » On the display appears figure 31.
- 5. Navigate to the required reading (No.: 1, No.: 2). To do so, press or or .
- 6. Press 🙀 to exit the screen.



## 5.8 Delete all measurements (Data storage)

Requirement: One or more measurements have been performed and stored.

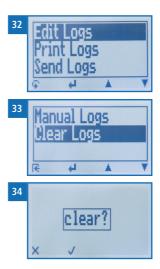
- 1. Press 😱 twice or hold for 2 seconds.
- Navigate to Edit Logs (figure 32). To do so, press

   Image: Total and confirm by pressing
- » On the display appears the message **clear?** (figure 34).
- 4. Confirm √.
- » The data storage was deleted.
- 5. Press 🙀 to exit the Edit Logs menue.
- 6. Press 😱 to exit the main menu.

## 5.9 Delete individual measurement series

Requirement: One measured value (**1 Log**) or a measurement series (f.e. **3 Logs**) has been saved. On the display appears of the display a

- 1. Press '0-0'.
- » On the display appears figure 36.
- Navigate to the required measurement. To do so, press T or .
- 3. Press  $\bigcirc$  to switch to another input level.
  - » On the display appears figure 37.
- 4. Press 🧾.



35	1 long-fibre pu 27.5° <b>14.3</b>
36	YOR TEXT 14.3% 27.5° PMZ 1 long-fibre pulp \$ 29.07.20 14:52:37 29.07.20 14:52:39 20.95 € F ▲ ▼
37	YOR TEXT 14.3% 27.5° PMZ 1 long-fibre pulp \$ 29.07.20 14:52:37 29.07.20 14:52:39 2logs © Ø ~ ~ X

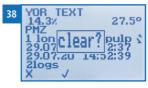


- » On the display appears the message "clear?" (figure 38).
- 5. Confirm with 📢.
  - » The measurement has been deleted.

## 5.10 Delete a single value from a measuring series

Requirement: A measurement series with at least 2 logs has been saved. On the display appears **bro**.

- 1. Press '0-0'.
  - » On the display appears figure 40.
- Navigate to the required measurement. To do so, press T or .
- 3. Press  $\mathbf{\hat{q}}$  to switch to another input level.
- » On the display appears figure 41.
- 4. Press '000'.
- » On the display appears figure 42.
- 5. Navigate to the required measurement. To do so, press or 'oro' .
- 6. Press  $\widehat{\mathbf{P}}$  to switch to another input level..
- » On the display appears figure 43.
- 7. Press 🧵 to delete the displayed value.
- » On the display appears the message "clear?" (figure 44).
- 8. Confirm with 📢.
  - » The measurement has been deleted.





## 6. Product types

The following product types are available

Product type	Pulp type	Measuring range
1 long fiber pulp 1	Long fiber pulp from sulfate and	8%-40% WC
2 long fiber pulp 2	sulfite process	7%-40% WC
3 long fiber pulp 3	Pulp with a predominantly long	7%-40% WC
4 long fiber pulp 4	fiber content	6%-40% WC
5 short fiber pulp 1	Short fiber pulp from sulfate and	8%-40% WC
6 short fiber pulp 2	sulfite process	7%-40% WC
7 short fiber pulp 3	Pulp with a predominantly short	7%-40% WC
8 short fiber pulp 4	fiber content	6%-40% WC
9 free 1	Free product types within the measuring range of the short	5%-30% WC
10 free 2	fiber product types for customers' products	5%-30% WC
11 free 3	Free product types within the measuring range of the long fiber	9%-45% WC
12 free 4	product types for customers' products	9%-45% WC
Digit	Special products and for creating a product type	0,0-100
Test block	! Only to check your humimeter PM tional test block !	Z with the op-

## 6.1 Selecting the product type

As a result of the numerous pulp types and their composition and production processes, there is no standardised product type classification. The fiber type is the main factor for the different product types of the humimeter PMZ.

The producty type overview provides suggestions for pulp types based on the fiber types used.

For mixed fiber pulp, choose a product type which corresponds to the greater percentage of the fiber.



Example:

80% Hardwood (short fiber) & 20% Softwood (long fiber) use one of the types short fiber pulp 1-4

80% Softwood (long fiber) & 20% Hardwood (short fiber) use one of the types long fiber pulp 1-4

In order to achieve an exact measurement result, a one-time comparison measurement with your online moisture measurement or a reference method already used by you (e.g: EN/ISO 287) should be performed.

- 1. Measure your pulp with the product types which provide realistic results and note down the different measurement results including temperature with the relevant product type names.
- 2. Note the actual moisture content from your online moisture measurement or run a reference water content determination e.g: according to EN ISO 287.
- 3. Compare the recorded readings for the different product types with the actual moisture content based on the reference measurement. From now on, you should always use the product type which most closely matches the reference measurement.
  - » Note: The name of the product type can be changed to a name of your choice (e.g. to your brand name and density). Please contact your dealer regarding this.

## 6.2 Definition of moisture content

The device displays the moisture content. This means that the moisture will be calculated based on the total mass:

$$\%WG = \frac{M_n - M_t}{M_n} \times 100$$

- M<sub>n</sub>: Mass of the sample with average moisture content
- M<sub>t</sub>: Mass of the dried sample
- %WG: Moisture content (according to standard EN ISO 287)

## 7. Using the LogMemorizer program

To do so: The device is provided with USB interface, and the USB stick with LogMemorizer software and USB cable are available.

## 7.1 Installing / opening the program

- 1. Insert the USB stick with the LogMemorizer program into the USB port on your computer.
- 2. Open the **setup** application.
- 3. Follow the installation instructions.
- 4. Open LogMemorizer.
  - » The screen will now display the LogMemorizer's interface (figure 45).
  - » Before using LogMemorizer, please refer to the the separate LogMemorizer user manual for the correct configuration of the USB COM Port.

18						humimeter.	com LogMerno	rizer		-	. 🗆 🗡
Start Kommun	nikation Extra	9									
6	6	Ō	6		Ō						-
28.915   5.15X	1.4553/02/011	-27,3101 8,61 (24)	Statio Hair	0.3350561.10	1.4 G/m <sup>2</sup> 1 201	and a local sector of the	63 yrs 1 23,270 1 78	1.8°F1 6.18X1 456Ng/m	n hai mha ha ha ha ha	national and an instantian in the second s	1899/614.5
		- Zusatzdaten 2				Start	Ende	Typ Logs		WW Tempe Maximum Goeich	
						-0	io data to displays				

For more information on LogMemorizer, please refer to the separate LogMemorizer user manual supplied with the device.

#### 7.2 Exporting measured values to a computer

To do so: LogMemorizer must be installed. And you must have taken and saved one or several moisture readings.

Options: You can export moisture readings from the humimeter PMZ or initiate the export at your computer.



#### Exporting moisture readings from the humimeter PMZ

Connect the humimeter PMZ to your computer using the supplied USB cable:

- 1. Insert the USB Mini B connector into the humimeter PMZ (figure 46).
- 2. Insert the USB connector into the computer.
- 3. Open LogMemorizer on your computer.
- 4. Switch on the humimeter PMZ.
- 5. Press 😱 twice or hold for 2 seconds.
- Select Send Logs (figure 47). To do so, press or and confirm by pressing 4.
- Select Manual Logs (figure 48). To do so, press or and confirm by pressing .
  - » The display will then show the message **Send** (figure 49).
  - » All of the measuring values saved on the humimeter PMZ will now be sent to your computer.

#### Initiating the data export at your computer

Connect the humimeter PMZ to your computer using the supplied USB cable:

- 1. Insert the USB Mini B connector into the humimeter PMZ (figure 50).
- 2. Insert the USB connector into the computer.
- 3. Open LogMemorizer on your computer.
- 4. Switch on the humimeter PMZ.
- 5. Open the **Communication** tab in LogMemorizer (figure 51).





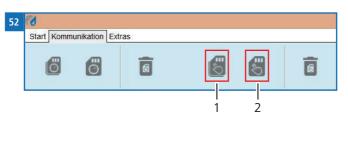








- 6. Select and click on one of the two buttons shown in figure 52.
  - » Import all manual logs (for importing all manually saved readings) or
  - » **Import most recent manual log** (for importing the most recent manually saved logs).



No	Name
1	Import all manual logs
2	Import most recent manual log

7. The measuring values saved on the humimeter PMZ will now be sent to your PC.



## 8. Device status check

- 1. Press 😱 twice or hold for 2 seconds.
- 2. To do so, press  $\overline{\Psi}$  or  $\underline{I}$  and confirm by pressing  $\underline{I}$ .
- » The humimeter status symbol appears on the display .
- » On the display appears the following information:



No	Name
1	Serial number
2	Software version
3	Battery status
4	Memory status

- 3. Confirm by presssing 🗸.
- 4. Press 😱 to leave the main menu.

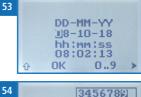
## 9. Adjust settings

#### 9.1 Set Bluetooth

For Bluetooth, refer to a separate user manual.

#### 9.2 Set date/time

- 1. Press  $\widehat{\mathbf{G}}$  twice or hold for 2 seconds.
- 2. Navigate to **Options**. To do so, press  $\overline{\Psi}$  or  $\underline{\downarrow}$  and confirm by pressing  $\underline{\downarrow}$ .
- 3. Navigate to Date/Time. To do so, press 🐺 or 📥 and confirm by pressing 🚚
  - » On the display appears figure 53.
  - » The format for the date is **DD-MM-YY** (Day-Month-Year).
  - » The format for the time is **hh:mm:ss** (Hour:Minutes:Seconds).
- Add numbers: Press and hold **11.9** to navigate quickly to the required number and stay on the number for 3 seconds (figure 54).
- Navigate forward: To move forward between DD-MM-YY and hh:mm:ss, press .
- Navigate backward: Press 1 to switch to another input level. To move backward between DD-MM-YY and hh:mm:ss, press 1
- 7. Confirm the date/time by pressing **OK**.
- » The setting has been saved.
- 8. Press **F** to exit the **Options** menu.
- 9. Press 😱 to exit the main menu.







#### 9.3 Language setting

- 1. Press 😱 twice or hold for 2 seconds.
- 2. Navigate to **Options**. To do so, press  $\overline{\Psi}$  or  $\underline{I}$  and confirm by pressing  $\underline{I}$ .
- 3. Navigate to Language. To do so, press 🔻 or 📥 and confirm by pressing 🚚.
- 4. Navigate to the required language. To do so, press 🐺 or 执 and confirm by pressing 🕌.
- » The setting has been saved.
- 5. Press 🕂 to exit the **Options** menu.
- 6. Press 😱 to exit the main menu.

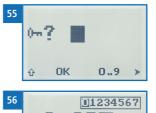
#### 9.4 Unlock options

Requirement: Certain options are deactivated .

- 1. Press 😱 twice or hold for 2 seconds.
- 2. Navigate to **Options**. To do so, press **T** or **h** and confirm by pressing **+**.
- 3. Navigate to Unlock. To do so, press 🔻 or 📥 and confirm by pressing 🚚.
  - » On the display appears figure 55.
  - » The four-digit password is the serial number of the device when delivered.
- 4. Add numbers:

Press and hold **1** ... **9** to navigate quickly to the required number and stay on the number for 3 seconds or press **4** to accept the number (figure 56).

- Navigate backward: Press to switch to another input level. Navigate back with .
- 6. Confirm the four-digit password by pressing **OK**.
- » The setting has been saved.



0m 7

ŵ

OK

0..9

- » The °C/°F, BL On Time, Swith-off time, Materialcalibration, Password, Reset options are now activated.
- 7. Press **I** to exit the **Options** menu.
- 8. Press 😱 to exit the main menu.

## 9.5 Lock options

After switching the instrument off and on again, the options °C/°F, BL On Time, Swithoff time, Materialcalibration, Password, Reset are again deactivated.

## 9.6 Selecting °C/°F

Requirement: All options are activated (see "9.4 Unlock options").

- 1. Press 😱 twice or hold for 2 seconds.
- 2. Navigate to **Options**. To do so, press  $\overline{\Psi}$  or  $\underline{I}$  and confirm by pressing  $\underline{4}$ .
- 3. Navigate to °C/°F. To do so, press T or  $\mathbf{A}$  and confirm by pressing  $\mathbf{A}$ .
- 4. Navigate to the required temperature scale, i.e. Celsius (°C) or Fahrenheit (°F). To do so, press T or in and confirm by pressing i.
- » The setting has been saved.
- 5. Press **+** to exit the **Options** menu.
- 6. Press 😱 to exit the main menu.



### 9.7 Setting the power save mode

#### 9.7.1 Adjusting the display illumination

Requirement: All options are activated (see "9.4 Unlock options" Unlock options").

- 1. Press 😱 twice or hold for 2 seconds.
- 2. Navigate to **Options**. To do so, press  $\overline{\Psi}$  or  $\underline{I}$  and confirm by pressing  $\underline{I}$ .
- 3. Navigate to **BL On Time**. To do so, press **T** or **h** and confirm by pressing **4**.
- 4. Select the required display illumination period (30 seconds/2 minutes/5 minutes/10 minutes). To do so, press **T** or **i** and confirm by pressing **i**.
  - » The setting has been saved.
- 5. Press **+** to exit the **Options** menu.
- 6. Press  $\overline{\mathbf{\varphi}}$  to exit the main menu.

#### 9.7.2 Automatic power-off setting of the device

Requirement: All options are activated (see "9.4 Unlock options").

- 1. Press 😱 twice or hold for 2 seconds.
- 2. Navigate to **Options**. To do so, press **T** or **h** and confirm by pressing **H**.
- 3. Navigate to **Switch-off time**. To do so, press **T** or **h** and confirm by pressing **h**.
- 4. Select the preferred time for the unit to stay on (3 minutes/5 minutes/10 minutes). To do so, press **T** or **i** and confirm by pressing **i**.
- » The setting has been saved.
- 5. Press **4** to exit the **Options** menu.
- 6. Press 🗣 to exit the main menu.

## 9.8 Adjusting the type calibration

The adjustment of the type calibration is described in a separate user manual.

## 9.9 Change password

Requirement: All options are activated (see "9.4 Unlock options").

- 1. Press 🗣 twice or hold for 2 seconds.
- 2. Navigate to **Options**. To do so, press  $\overline{\Psi}$  or  $\underline{I}$  and confirm by pressing  $\overline{I}$ .
- 3. Navigate to **Password**. To do so, press **T** or **i** nd confirm by pressing **i**.
- » On the display appears the current password.
- Overwrite the current password. To do so, press and hold ① ... 9 to navigate quickly to the required number and stay on the number for 3 seconds or press ...
   to accept the number.

Navigate backward: Press in to switch to another input level. Navigate back with .

- 5. Confirm the new four-digit password by pressing **OK**.
- » The setting has been saved.
- 6. Press **F** to exit the **Options** menu.
- 7. Press  $\bigcirc$  to exit the main menu.

## 9.10 Resetting the device to factory settings

Requirement: All options are activated (see see "9.4 Unlock options").

- 1. Press 😱 twice or hold for 2 seconds.
- 2. Navigate to **Options**. To do so, press 🐺 or 🔔 and confirm by pressing 🚚
- 3. Navigate to **Reset**. o do so, press 🐺 or և uand confirm by pressing 🚚.
- » On the display appears **Reset?** (figure 57).
- 4. Confirm with 🗹.
  - The device will now be reset to its factory settings. All personal settings are deleted.
  - » The humimeter status symbol appears on the display (figure 58).
  - » The saved measured values are not lost through the reset.

## 10. Cleaning and maintenance

Regular cleaning and maintaining your device ensures that it remains in an excellent condition for as long as possible.

## 10.1 Replacing batteries

The device continuously monitors the battery charge status. The status screen displays the current battery charge level (figure 59).

If an exclamation mark appears in the battery icon, the batteries must be replaced immediately (figure 60).

Proceed as described in section "3.3 Inserting the batteries".

You as the end user are legally obliged to return all used batteries, disposal with household waste is prohibited (Battery Directive).





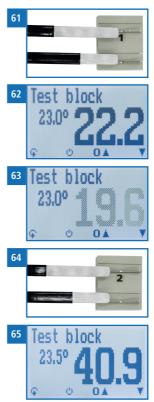


## 10.2 Calibration check

#### 10.2.1 Calibration check of the lancet probe

Requirement: The test block article no. 12308 is required. The device and the test block have to reach a temperature between 23,0 °C and 23,5 °C. The device and the test block must be free of dust, dirt and grease.

- 1. Switch on the device and select the product type "test block" using the arrow keys (see 6.1).
- 2. Hold side 1 of the test block as shown on figure 61 on the electrodes.
- » The displayed water content has to be 22,0 % (+/- 0,4 %) (the moisture value will be displayed in black) (figure 62).
- » If the displayed value lies outside this range (the moisture value is displayed in grey) (figure 63) please, contact your dealer or Schaller Messtechnik GmbH.
- 3. Hold side 2 of the test block as shown on figure 64 on the electrodes.
  - » The displayed water content has to be 41,0 % (+/- 1,0 %) (the moisture value will be displayed in black) (figure 65).
  - » If the displayed value lies outside this range (the moisture value is displayed in grey) please, contact your dealer or Schaller Messtechnik GmbH.





#### 10.3 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.

### 10.4 Cleaning the device

# ATTENTION

#### Device damage caused by wet cleaning

Water or cleaning products can damage the device if they get into the device.

Only clean with dry materials.

#### Housing

• Clean the plastic housing with a dry cloth.

#### Measuring electrodes

• Should the measuring electrodes be dirty, they can be cleaned with alcohol.

#### Test block

• The test block can be cleaned with a moistened lint-free cloth.

## 11. Faults

If the following actions do not eliminate the faults or if other faults not listed here appear, please contact Schaller Messtechnik GmbH.

Fault	Cause	Remedy							
Measuring error	Material temperature outside the application range: Material below 0 °C or above +50 °C	The temperature of the material being measured- has to be between 0 °C and +50 °C.							
	Temperature difference be- tween material to be measured and measuring device	Let the temperature of the measuring device adjust to that of the pulp (a maxi- mum difference of 3 °C is permissible).							
	Wrong product type	Before starting a measure- ment, check if the correct curve (product) is set (see "6.1 Selecting the product type").							
	Material is not thick enough	Ensure that the material has a minimum thickness of 30 cm on the top and bottom of the electrodes.							
	Incorrect contact pressure	Increase or decrease the material weight on the electrodes by changing the insertion position in order to achieve a contact pressure of approx. 250kg/m <sup>2</sup> (2.45kN/m <sup>2</sup> ).							
	Metals or similar conductive materials within the measur- ing field	Remove metals or similar conductive materials from the measuring field.							
	Dirty electrodes	Clean the sensor surface (see "10.4 Cleaning the device").							



Fault	Cause	Remedy
Data transfer to Log- Memorizer failed	Interface not 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.

## 12. Storage and disposal

## 12.1 Storing the device

Store the device as follows:

- Do not store outdoors.
- Store dry and dust-free.
- Protect from sunlight.
- Avoid mechanical shocks and impacts.
- Always remove the batteries from the device if it is not used for more than two months.
- Storage temperature: -20 °C to +60 °C

### 12.2 Disposal of the device



Devices marked with this symbol are regulated by the European Directive 2012/19/EU of the European Parliament and the Council of 4 July 2012 relating to waste of electrical and electronic equipment. If the device is not used within the European Union, national disposal regulations in the country of use must be observed.

Electrical devices should not be disposed of with household waste.

Please recycle the device in an environmentally friendly way using suitable recycling systems.

## 13. Device information

## 13.1 EC declaration of conformity

## **CE** KONFORMITÄTSERKLÄRUNG *DECLARATION OF CONFORMITY*

Name/ Adresse des Herstellers: Name/ address of manufacturer:	Schaller Messtechnik GmbH Max-Schaller-Straße 99 A – 8181 St. Ruprecht
Produktbezeichnung: Product designation:	humimeter
Typenbezeichnung: <i>Type designation:</i>	РМΖ
Produktbeschreibung: Product description	Messgerät zur Bestimmung des Wassergehalts in Zellstoff Measuring instrument for determining the water content in pulp

Das bezeichnete Produkt erfüllt die Bestimmungen der Richtlinien: The designated product is in conformity with the European directives:

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

# UK DECLARATION OF CONFORMITY

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

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	Technical documentation for the assessment of electrical
replaced	and electronic products with respect to the restriction of
EN 50581:2012	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

## 13.2 Technical data

Display resolution	0,1 % water content, 0,5 °C/°F temperature
Measuring range	6 % bis 40 % water content (depending on material)
Operating temperature	0 °C to +50 °C
Storage temperature	-20 °C to +60 °C
Temperature compensation	automatic
Data memory	Up to 10,000 measuring values
Measuring depth	10 mm
Minimum material thick- ness	60 cm
Fabrication process	sulfate / sulfite process
Treatement	bleached and unbleached
Pulp density range	450 - 900 kg/m³
Power supply	4 x 1,5 Volt AA Alkaline batteries
Power consumption	60 mA (with display illumination)
Menu languages	German, English, French, Italian, Spanish, Por- tuguese, Czech, Polish, Russian, International
Display	128 x 64 illuminated matrix display
Device dimensions	575 x 75 x 46 mm
Wooden box dimensions	780 x 110 x 70 mm
Device weight	685 g
Device + wooden box weight	1700 g
Device IP rating	IP 40



# 14. Notes

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# 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