

Moisture meter

## User Manual

### humimeter SLW

### Moisture meter

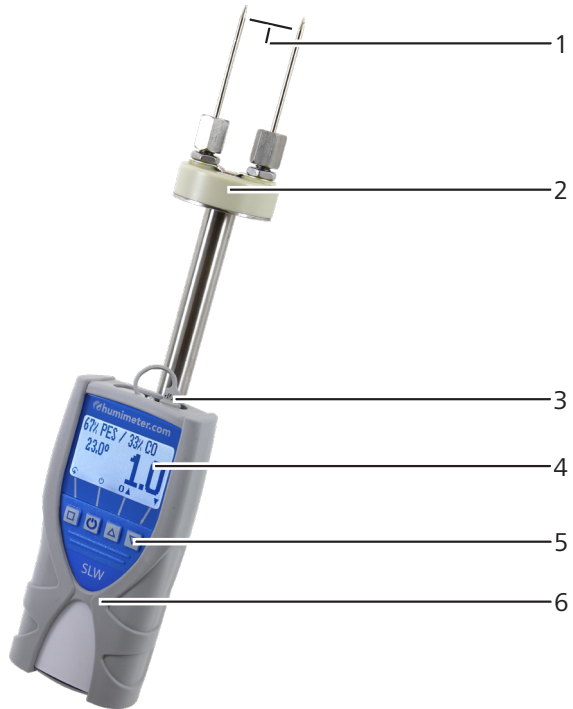
for water content determination of textiles



78,0 °F | 6,16% | 456kg/m<sup>3</sup> | -27,3td | 0,64aw | 51,9%r.H. | 14,8%abs | 100,4g/m<sup>2</sup> | 09m/s | 4,90Ug/L | 1

## Your humimeter SLW at a glance

### The main unit with probe



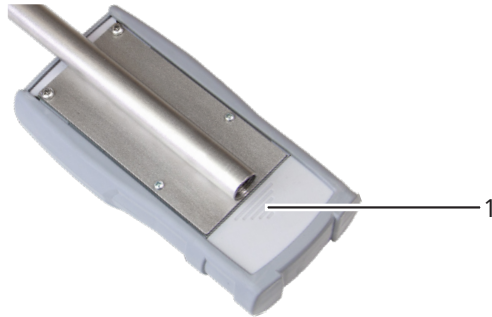
No.	Name
1	Measuring tips
2	Measuring head
3	USB port (optional)
4	Display
5	Keypad
6	Rubber protection cover

## The main unit for external sensor



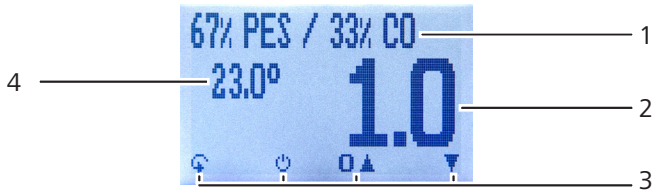
No.	Name
1	Sensor connector
2	USB port (optional)
3	Display
4	Keypad
5	Rubber protection cover
6	Hand electrode holder
7	Plastic mounting ring
8	Electrodes

## Rear of the main unit





















No.	Name
1	Battery compartment

## The display



Nr	Bezeichnung
1	Characteristic curve
2	Material moisture in % ("6.1 Definition of material moisture")
3	Display symbols
4	Temperature display

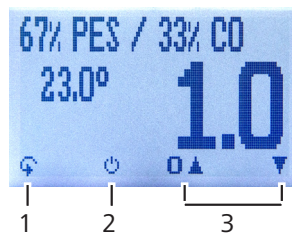
## The display symbols

Symbol	Name	Symbol	Name
	Enter		No
	Up		Change input level
	Down		OK
	Back		Change menu
	Enter numbers		Enter data
	Enter letters		View measurements
	Continue / go right		Delete measurements
	Left		On/off button, display light
	Yes		Save measured value

## The menus

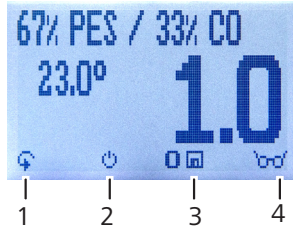
The device has three different menus: Data Log, product selection and main menu:

### Product selection menu



No.	Name
1	Change menu
2	Display illumination / device on/off
3	For 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:

- **Edit Logs:**  
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, BL On Time, Auto Off Time, Materialcalibration, Password, Reset
- **Status**

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## 1. Introduction

### 1.1 Information about this user manual

This user manual is designed to enable you to use the humimeter SLW 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 user manual before using the humimeter SLW. 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 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 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 safety informations provided in this manual are shown with a corresponding symbol.



#### **WARNING**

It is essential to observe this warning. Non-compliance can lead to serious irreversible or fatal injury.



#### **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.



#### **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 288 99  
Fax: +43 (0)3178 288 99 - 901

E-mail: [info@humimeter.com](mailto:info@humimeter.com)  
Internet: [www.humimeter.com](http://www.humimeter.com)



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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 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 moisture content of textiles
- The device must only be used for taking measurements on products defined in the following sections of this manual (see "6. Product types").

### 2.2 Improper use

- The device is not suitable for measuring material with a temperature over +40 °C.
- The device is not waterproof and must be protected from water and fine dust (IP40).

### 2.3 User qualifications

Only those persons are permitted to operate the device who can be expected to carry out the work reliably. Persons whose reactions are affected, e.g. by drugs, alcohol or medication, are not allowed to operate with the device.

All persons using this device must have read, understood and follow the instructions provided in this manual.

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## 2.4 General safety information

To avoid personal injury and damage to property, always observe the following safety instructions:

- Remove the batteries if the device is not used for a prolonged period of time (4 weeks).
- Keep the measuring tips away from your body throughout all activities.
- Keep the measuring tips away from other people throughout all activities.
- In case of damages or loose parts on the device, remove the batteries and contact Schaller Messtechnik GmbH or your dealer.

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
- Damage due to leaking batteries
- Damage resulting from improper strain (pressure, bending) of the ram electrode or the measuring tips
- Damage from dropping the device

# 3. After receipt of your device

## 3.1 Unpack the device

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

## 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:

Optional accessories base device:

- humimeter USB data interface module - USB stick with software and USB cable
- Battery powered portable thermo-printer (only possible together with humimeter USB data interface module) - Described in a separate operating manual
- Bluetooth module (only possible together with humimeter USB data interface module) - Described in a separate operating manual

### 3.2.1 SLW with probe's scope of supply

- humimeter SLW
- 10 pieces of measuring tips without insulation (60 mm)
- 4 pieces of AA Alkaline batteries
- Rubber protection cover
- Plastic case
- humimeter USB data interface module - USB flash drive with software and USB-cable or download using [humimeter.com/software](http://humimeter.com/software)
- User manual

Optional accessories:

- 2 replacement tips for measuring electrodes, without insulation, 255 mm length
- 2 replacement tips for measuring electrodes, insulated, 60 mm length

### 3.2.2 SLW for external sensor's scope of supply

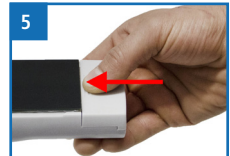
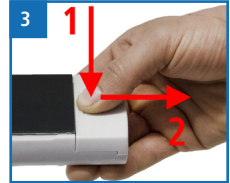
- humimeter SLW
- 4 pieces of AA Alkaline batteries
- Rubber protection cover
- Plastic case
- humimeter USB data interface module - USB flash drive with software and USB-cable or download using [humimeter.com/software](http://humimeter.com/software)
- User manual

Accessories:

- Hand electrode holder incl. BNC cable with 1 m length
- SLW-E023: Surface electrode, diameter : 23 mm
- SLW-E100: Needle electrode, needle length: 100 mm
- SLW-E325: Rod electrode, rod length: 325 mm
- SLW-E025: Needle electrode, needle length: 6 x 25 mm

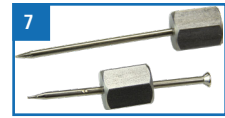
### 3.3 Inserting batteries

1. Remove the rubber protection cover.
  - » Humimeter SLW with probe: Remove the rubber protection from the top of the housing (figure 1 and 2).
  - » Humimeter SLW with Hand electrode holder: Disconnect it (see "3.5.2 Disconnecting the hand electrode holder") before you pull the rubber protection off the bottom of the housing.
  - » If your device is provided with an optional USB port, remove the protection cap of the USB socket before.
2. Take hold of the device with one hand, press your thumb onto the engraved area of the battery compartment (1) and drag downwards (2) (figure 3).
3. Insert the batteries with negative and positive terminals matching those indicated on the battery compartment. Press down the batteries so that they lay flat on the bottom of the housing (figure 4).
  - » As soon as all batteries have been inserted, the device switches on automatically.
4. Slide the battery cover onto the housing until it clicks into place (figure 5). Then mount the rubber protection cover onto the housing.
  - » Humimeter SLW with probe: start with the side on which the battery cover is.
  - » Humimeter SLW with Hand electrode holder: start with the side on which the sensor plug is positioned..



### 3.4 Inserting the measuring tips

- Unscrew the two nuts located on the measuring head (figure 6) counterclockwise.
- » Loosen only the upper nuts. The bottom nuts must not be loosened!
- Insert one measuring tip per nut from behind through the nut (figure 7).
- » Measuring tips without insulation (article no. 12521) always measure the wettest spot across the entire insertion depth.
- » By using insulated measuring tips (article no. 11482) it is possible to determine humidity at a defined measuring depth, as these only measure at the measuring tip.
- Now screw the nuts with measuring tips to the threads located on the measuring head and tighten the nuts by hand (figure 8).



#### **WARNING**

##### **Risk of injury**

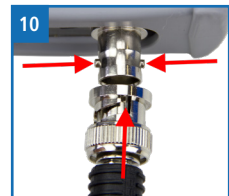
Risk of injury due to measuring tips

- ▶ Keep the measuring tips away from your body throughout all activities.
- ▶ Keep the measuring tips away from other people throughout all activities.

### 3.5 Basic operation of the hand electrode holder

#### 3.5.1 Connecting the hand electrode holder

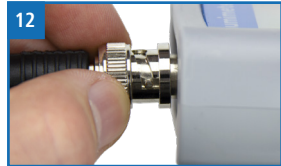
- Connect the hand electrode holder to the device.
- » Pay attention to the elevations at the socket and the guides in the plug and their correct positioning (figure 10).
- Now tighten the plug clockwise with a quarter turn.
- » The plug snaps noticeably at the end of the guides.





### 3.5.2 Disconnecting the hand electrode holder

- Press the plug with slight force towards the device (figure 11).
- Now turn the plug counterclockwise with a quarter turn to the beginning of the guides (figure 12).
- Now pull the plug straight off the device.
- » This should be done without great effort.



### 3.5.3 Inserting the electrodes

- Unscrew the dark-grey plastic fastening ring on the head of the hand electrode holder (figure 13).
- » In case of an already inserted electrode, pull it straight out of the hand electrode holder.
- Place the two male contact pins of the electrode on the female sockets on the head of the hand electrode holder (figure 14) and press them together with enough force (figure 15).
- » You don't have to pay attention to the correct polarity of the contacts.
- Screw the dark-grey plastic fastening ring back onto the head of the hand electrode holder and hand-tighten it..



## WARNING


### Risk of injury

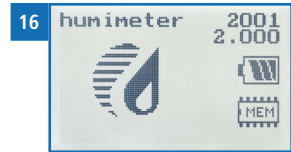
Risk of injury due to the Elektrodenspitzen

- ▶ Keep the Elektroden tips away from your body throughout all activities.
- ▶ Keep the Elektroden tips away from other people throughout all activities.

## 4. Using the device - Basics

### 4.1 Switching the device on






- Press the  button for 3 seconds.
- » The display will then show the status indicator (figure 16).
- » After inserting the batteries, the device switches on automatically.

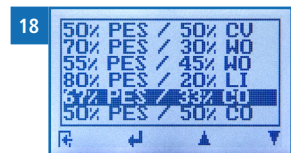
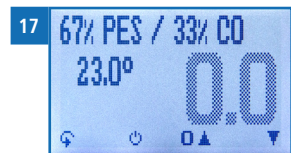


### 4.2 Selecting the product type

**To do so:** The device has to be in the product selection menu (figure 17).

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

1. Press the  or  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 18).
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 product type you selected will now be shown at the top of the display.

### 4.3 Taking a measurement

- For information on how to take a measurement, see section "5. The measuring process".

### 4.4 Switching the device off

**To do so:** The device has to be in the product selection or the Data Log menu. It is not possible to switch off the device when it is in the main menu.

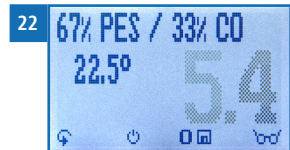
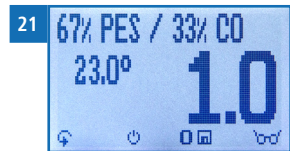
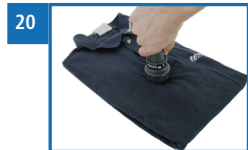
Press the  button for 3 seconds.

## 5. The measuring process

### 5.1 Taking a measurement

**To do so:** Let your device adjust to the surrounding temperature before the measurement.

- Hold the device in one hand and insert the measuring/electrode tips into the material (figure 19) or press the surface electrode onto the material to be measured (figure 20).
- » Make sure that the sample is not damaged by the measuring/electrode tips..
- » Do not drop the device!
- The device will now instantly display the moisture content on the display (figure 21).
- » The displayed value flashes when the moisture content exceeds the measuring range of the selected product type (figure 22). A flashing value signals the end of the measuring range. The measuring range is dependent on the product type (see "6. Product types").
- » Once the reading has been taken, it can be saved on the device (see "5.3 Saving individual readings" or "5.4 Saving several readings (a measurement series) at the same time").



### WARNING

#### Risk of injury

Risk of injury due to the Mess-/Elektroden spitzen

- ▶ Keep the Mess-/Elektroden tips away from your body throughout all activities.
- ▶ Keep the Mess-/Elektroden tips away from other people throughout all activities.



### Information - Measuring accuracy

This rapid and non-destructive measuring procedure allows you to take moisture readings at a number of different points. When saving the individual readings, the device will automatically calculate the readings' average (see "5.4 Saving several readings (a measurement series) at the same time").

## **i** Information - Incorrect readings













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

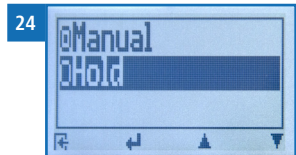
### 5.2 Hold function - Freezing the displayed values

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).

#### 5.2.1 Activating the Hold function in the options menu



**To do so:** The device has to be switched on and be in the product selection menu.

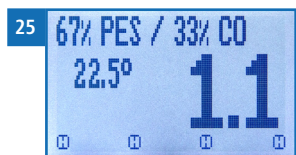
1. Press  twice or hold for 2 seconds.
2. Select **Options**. To do so, press  or  and confirm by pressing .
3. Select **Log Time** (figure 23). To do so, press  or  and confirm by pressing .
4. Select **Hold** (figure 24). To do so, press  or  and confirm by pressing .
- » The setting has been saved.
5. Press  to leave the **Options** menu.
6. Press  to leave the main menu.



#### 5.2.2 Using the Hold function

**To do so:** The device has to be switched on and be in the Data Log menu (see "Data Log menu" page 6).

- Press .
- » The current reading will be frozen. All of the four symbols will now be displayed as  (figure 25).
- To reactivate the frozen display, simply press any button.















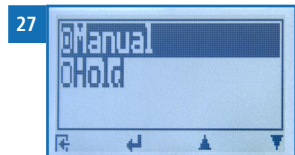
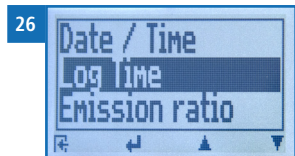
## 5.3 Saving individual readings

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 saving function) is the device's default setting.

### 5.3.1 Activating the manual saving function in the options menu



**To do so:** The device has to be switched on and be in the product selection menu.

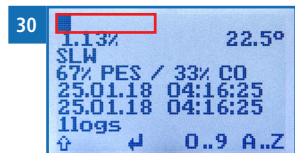
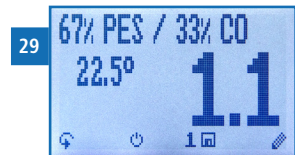
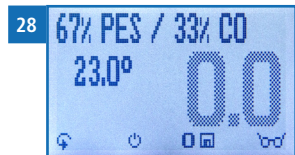
1. Press  twice or hold for 2 seconds.
2. Select **Options**. To do so, press  or  and confirm by pressing .
3. Select **Log Time** (figure 26). To do so, press  or  and confirm by pressing .
4. Select **Manual** (figure 27). To do so, press  or  and confirm by pressing .
  - » The setting has been saved.
5. Press  to leave the **Options** menu.
6. Press  to leave the main menu.



### 5.3.2 Using the manual saving option


**To do so:** The device has to be in the Data Log menu (see "Data Log menu" page 6). The device is set to Data Log time - Manual.

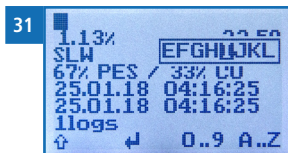
1. Press .
  - » The display will now appear as shown in figure 29 and the disc symbol will be preceded by the digit one.
2. Press  to enter a name for the saved reading and to finish the measuring process.
  - » The display will now appear as shown in figure 30.




3. If an entry has already been made, the displayed entry can be overwritten.

4. **Add characters:**




Press and hold **A..Z** to quickly scroll to the required letter and either press it for 3 seconds or press  to confirm the selected letter (figure 31).




5. **Add numbers:**

Press and hold **0..9** to quickly scroll to the required number and either press it for 3 seconds or press  to confirm the selected number.

6. **Moving forward/back:**

Press  to switch to another input level. Press  or  to move forward or back.


7. Confirm your entry by pressing .

- » The data you entered has been saved.

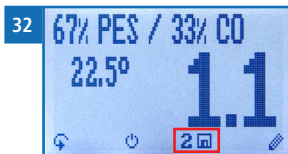
## 5.4 Saving several readings (a measurement series) at the same time


To do so: The device has to be in the Data Log menu.

1. Take several measurements at different points (see "5. The measuring process").

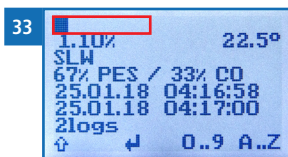
2. After each measurement, press  to save the reading.

- » The display will appear as shown in figure 32. The marked number shows the number of readings that have already been saved.




- » Press  to enter a name for the saved measurement series and to finish the measuring process.

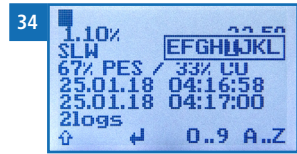
- » The display will appear as shown in figure 33.




3. The data you have entered can be overwritten at any time.

4. **Add characters:**




Press and hold **A..Z** to quickly scroll to the required letter and either press it for 3 seconds or press  to confirm the selected letter (figure 34).




5. **Add numbers:**

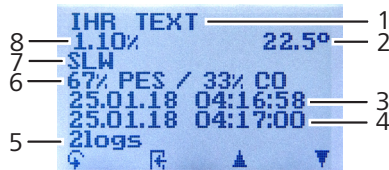
Press and hold **0..9** to quickly scroll to the required number and either press it for 3 seconds or press  to confirm the selected number.

6. **Moving forward/back:**

Press  to switch to another input level. Press  or  to move forward or back.

7. Confirm your entry by pressing .





- » The data you entered has been saved.
- » The device automatically determines the average moisture content of the saved measuring values.
- » The display will show the following information:

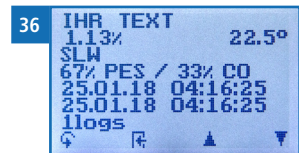
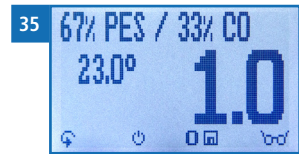


No.	Name
1	Name of the measurement series (editable)
2	Temperature (average)
3	Date & start time of the measurement series
4	Date & end time of the measurement series
5	Number of saved readings
6	Product type
7	Device name
8	Moisture content (average)

## 5.5 Viewing individual readings









**To do so:** You must have saved a reading (e.g. **1 Log**).  
The display will now appear as shown in figure 35.

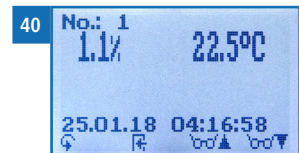
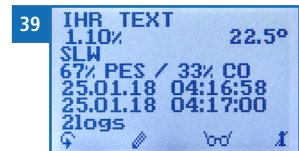
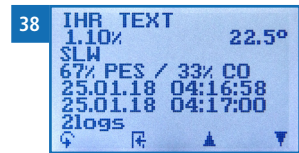
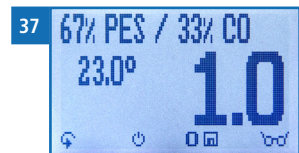
1. Press .
2. Select the required reading. To do so, press  or .
  - » The display will now appear as shown in figure 36.
  - » Press  to leave this screen.



## 5.6 Viewing individual readings from a series of measurements

**To do so:** You must have saved a series of measurements (e.g. **2 logs**).  
The display will now appear as shown in figure 37.











1. Press .
2. Navigate to the required measurement series. To do so, press  or .
  - » The display will now appear as shown in figure 38.
3. Press  to switch to another input level.
  - » The display will now appear as shown in figure 39.
4. Press  again.
  - » The display will now appear as shown in figure 40.
5. Navigate to the required reading (**No.: 1, No.: 2, No.: 3**). To do so, press  or .
6. Press  to leave this screen.

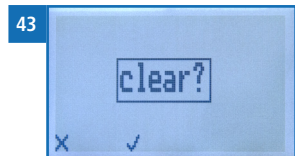
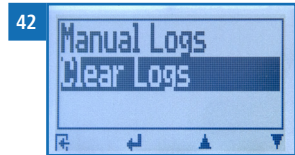




## 5.7 Deleting all measured values (data log)






**To do so:** You must have taken and saved one or several readings.

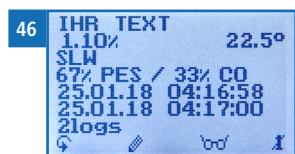
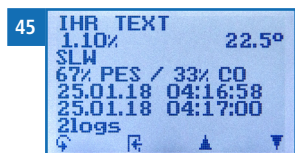
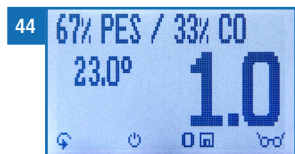
1. Press  twice or hold for 2 seconds.
2. Select **Edit Logs** (figure 41). To do so, press  or  and confirm by pressing .
3. Navigate to **Clear logs** (figure 42). To do so, press  or  and confirm by pressing .
  - » The display will show the message **clear?** (figure 43).
4. Confirm by pressing .
  - » The data log has been deleted.
5. Press  to leave the **Edit Logs** menu.
6. Press  to leave the main menu.




## 5.8 Deleting individual measurement series

**To do so:** You must have saved a measured value (e.g. 1 log) or a series of measurements (e.g. 3 logs). The display will now appear as shown in figure 44.

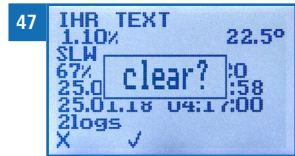
1. Press .
  - » The display will now appear as shown in figure 45.
2. Select the required reading. To do so, press  or .
3. Press  to switch to another input level.
  - » The display will now appear as shown in figure 46.
4. Press .



- » The display will then show the message **clear?** (figure 47).

5. Confirm by pressing .

- » The value has been deleted.






## 5.9 Deleting single values from a series of measurements

**To do so:** You must have saved a series of measurements comprising of at least 2 logs. The display will now appear as shown in figure 48.

1. Press .

- » The display will now appear as shown in figure 49.



2. Select the required reading. To do so, press  or .

3. Press  to switch to another input level.

- » The display will now appear as shown in figure 50.

4. Press .

- » The display will now appear as shown in figure 51.

5. Select the required measured value. To do so, press  or .

6. Press  to switch to another input level.

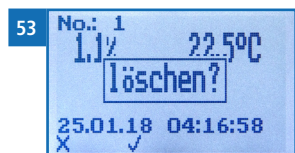
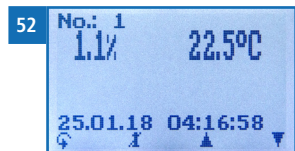
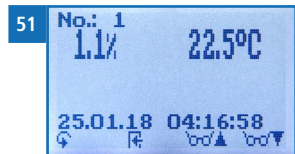
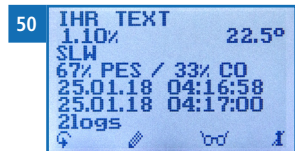
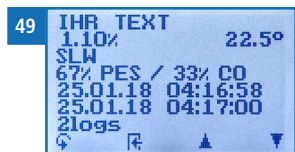
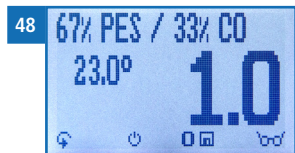
- » The display will now appear as shown in figure 52.

7. Press  to delete the value shown.

- » The display will then show the message **clear?** (figure 53).

8. Confirm by pressing .

- » The value has been deleted.



## 6. Product types

Product name		Measuring range	Border
WO Wool	Wool	12 % - 25.8 %	25.9%
CO Cotton	Cotton	1.5 % - 13.1 %	13.3 %
CV Rayon	Rayon	4.1 % - 25.2 %	25.3 %
LI Flax yarn	Flax yarn	5.4 % - 15.3 %	15.5 %
JU Jute yarn	Jute yarn	7.4 % - 24.2 %	24.4 %
HA Hemp yarn	Hemp yarn	5.9 % - 17.5 %	17.5 %
PA Polyamide	Polymide	1.5 % - 6.5 %	6.6 %
PAC Polyacrylics	Polyacrylics	0.2 % - 2.8 %	2.9 %
PES Polyester	Polyester	0.7 % - 4.0 %	4.1 %
CA Acetate	Acetate	3.4 % - 13.4 %	13.5 %
70% PES / 30% CV	70% Polyester / 30% Rayon	0.8 % - 9.3 %	10.9 %
65% PES / 35% CV	65% Polyester / 35% Rayon	1.7 % - 9.9 %	10.6 %
55% PES / 45% CV	55% Polyester / 45% Rayon	1 % - 11.7 %	13.8 %
50% PES / 50% CV	50% Polyester / 50% Rayon	2.6 % - 12.4 %	14.5 %
70% PES / 30% WO	70% Polyester / 30% Wool	2.5 % - 7.9 %	8.5 %
55% PES / 45% WO	55% Polyester / 45% Wool	2 % - 13 %	14.7 %
80% PES / 20% LI	80% Polyester / 20% Flax yarn	0.6 % - 5.2 %	8 %
67% PES / 33% CO	67% Polyester / 33% Cotton	0.5 % - 5 %	5.5 %
50% PES / 50% CO	50% Polyester / 50% Cotton	0.6 % - 6.8 %	10.5 %
40% PES / 60% CO	40% Polyester / 60% Cotton	1.3 % - 10.5 %	17.5 %
50% PES / 50% PAC	50% Polyester / 50% Polyacrylics	0.1 % - 1.5 %	1.8 %
70% PAC / 30% WO	70% Polyacrylics / 30% Wool	2.9 % - 9.1 %	9.8 %
70% PAC / 30% CO	70% Polyacrylics / 30% Cotton	1.9 % - 6.4 %	7.2 %
67% PAC / 33% CO	67% Polyacrylics / 33% Cotton	1.2 % - 6.4 %	7.4 %
60% PAC / 40% WO	60% Polyacrylics / 40% Wool	3.8 % - 11.7 %	12.6 %
40% PAC / 60% WO	40% Polyacrylics / 60% Wool	4.3 % - 15.2 %	15.6 %
70% WO / 30% CV	70% Wool / 30% Rayon	6.4 % - 24.4 %	25.8 %
50% CO / 50% PON	50% Cotton / 50% Polynosic	4 % - 16.3 %	17.9 %
40% CO / 60% LI	40% Cotton / 60% Flax yarn	4 % - 16 %	19.5 %

80% CV / 20% WO	80% Rayon / 20% Wool	4.7 % - 23.5 %	30.0 %
Digit		0 - 100	
Empty 1 & 2			
Test block	! Only for testing the moisture meter !		

## 6.1 Definition of material moisture

In the standard delivery state, the device measures and shows the material moisture. The material moisture defines the amount of water contained in the material in relation to the material's dry weight.

Example: 0.6 kg with 0.4 kg water

The dry weight of 0.6 kg corresponds to 100 %. In relation to the dry weight, the 0.4 kg water result in a material moisture of 66,7 %.

## 6.2 Definition of moisture content

The moisture content readings 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

%WG: Moisture content (in accordance with EN ISO 18134-2)

Example: 1 kg material with 40 % moisture content. The total weight of 1 kg (corresponding to 100%) consists of 0.6 kg (60 %) material and 0.4 kg (40 %) water.

It is possible to set the device to the calculation of moisture content at the factory. For that please contact [support@schaller-gmbh.at](mailto:support@schaller-gmbh.at).

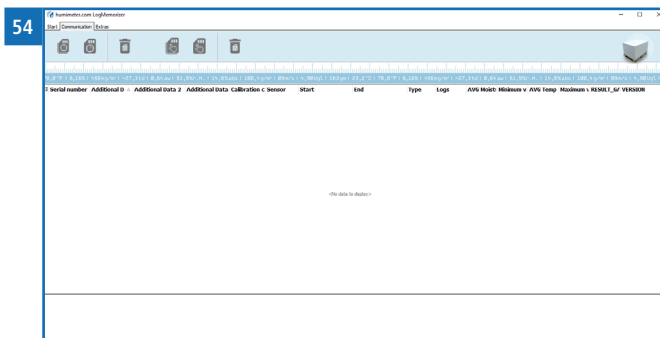
## 7. Using the LogMemorizer program

**To do so:** The device is provided with USB interface, and the USB stick with LogMemorizer software and USB cable are available. Otherwise, you can also install the software at [humimeter.com/software](http://humimeter.com/software) or by scanning the QR code.



### 7.1 Installing/opening the program

1. Insert the USB stick with the LogMemorizer program into the USB port on your computer or
  - » download the LogMemorizer software at [humimeter.com/software](http://humimeter.com/software) or use the QR code.
2. Open the **setup** application.
3. Follow the installation instructions.
4. Open LogMemorizer.
  - » The screen will now display the LogMemorizer's interface (figure 54).



- » Before using LogMemorizer, please refer to the the separate LogMemorizer operating manual for the correct configuration of the USB COM Port.

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








## 7.2 Exporting measured values to a computer

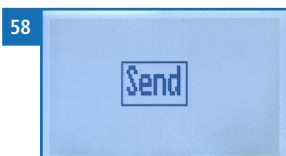
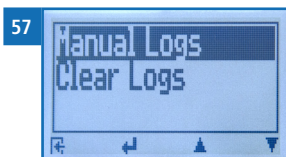
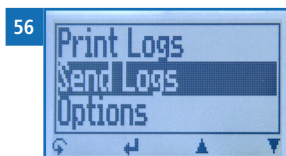
**To do so:** The LogMemorizer program is installed. You must have taken and saved one or several moisture readings.

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

### Exporting moisture readings from the humimeter SLW

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

1. Insert the USB Mini B connector into the humimeter SLW (figure 55).
2. Insert the USB connector into the computer.
3. Open LogMemorizer on your computer.
4. Switch on the humimeter SLW.
5. Press  twice or hold for 2 seconds.
6. Select **Send Logs** (figure 56). To do so, press  or  and confirm by pressing .
7. Select **Manual Logs** (figure 57). To do so, press  or  and confirm by pressing .
8. The display will then show the message **Send** (figure 58).
  - » All measuring values saved on the humimeter SLW will now be sent to your computer.



### Initiating the data export at your computer

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

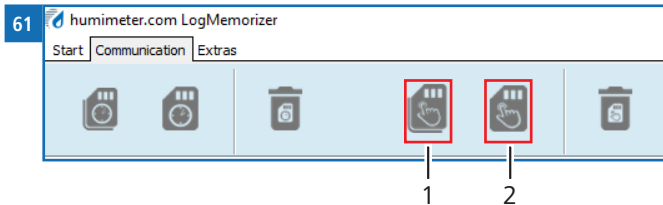
1. Insert the USB Mini B connector into the humimeter SLW (figure 59).
2. Insert the USB connector into the computer.
3. Open LogMemorizer on your computer.



4. Switch on the humimeter SLW.
5. Open the **Communication** tab in LogMemorizer (figure 60).







6. Select and click on one of the two buttons shown in figure 61.
  - » **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


- » The measuring values saved on the humimeter SLW will now be sent to your computer.

## 8. Checking on the device's status

1. Press  twice or hold for 2 seconds.
2. Select **Status**. To do so, press  or  and confirm by pressing .
- » The display will then show the status indicator **humimeter**.
- » The display will show the following information:

















No.	Name
1	Serial number
2	Software version
3	Battery status
4	Memory status
5	Device ID

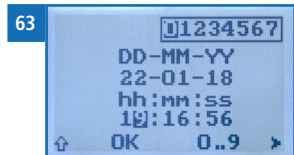
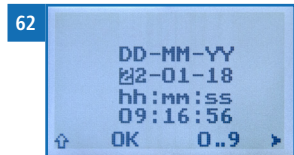
- » The measuring device is identified by a unique hardware-dependent ID.
- » This ID can only be viewed in the menu on a meter with software version => 2.200.
3. Press any key to exit this view.
4. Press  to leave the main menu.















## 9. Configuring the device

### 9.1 Adjusting the date/time

1. Press  twice or hold for 2 seconds.
2. Select **Options**. To do so, press  or  and confirm by pressing .
3. Select **Date/Time**. To do so, press  or  and confirm by pressing .
  - » The display will now appear as shown in figure 62.
  - » The format for the date is **DD-MM-YY** (Day-Month-Year).
  - » The format for the time is **hh:mm:ss** (Hour:Minutes:Seconds).
4. **Add numbers:**  
 Press and hold  to quickly scroll to the required number and either press it for 3 seconds or press  to confirm the selected number (figure 63).
5. **Moving forward:**  
 To move forward between **DD-MM-YY** and **hh:mm:ss**, press .
6. **Moving back:**  
 Press  to switch to another input level. To move backward between **DD-MM-YY** and **hh:mm:ss**, press .
7. Confirm the date/time by pressing **OK**.
  - » The settings have been saved.
8. Press  to leave the **Options** menu.
9. Press  to leave the main menu.












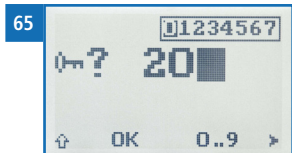
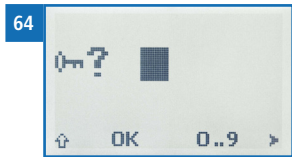
## 9.2 Selecting a language






1. Press  twice or hold for 2 seconds.
2. Select **Options**. To do so, press  or  and confirm by pressing .
3. Select **Language**. To do so, press  or  and confirm by pressing .
4. Navigate to the required language. To do so, press  or  and confirm by pressing .
- » The settings have been saved.
5. Press  to leave the **Options** menu.
6. Press  to leave the main menu.

## 9.3 Activating options

**To do so:** Some of the options must be deactivated.

1. Press  twice or hold for 2 seconds.
2. Select **Options**. To do so, press  or  and confirm by pressing .
3. Select **Unlock**. To do so, press  or  and confirm by pressing .
- » The display will now appear as shown in figure 64.
- » On delivery, the four-digit password is the device's serial number.
4. **Add numbers:**  
Press and hold  to quickly scroll to the required number and either press it for 3 seconds or press  to confirm the selected number (figure 65).















5. **Moving back:**  
Press  to switch to another input level.  
To move back, press .
6. Confirm the four-digit password by pressing .
- » The settings have been saved.
- » The °C/°F, **BL On Time**, **Auto Off Time**, **Material calibration**, **Password**, **Reset** options are now activated.
7. Press  to leave the **Options** menu.
8. Press  to leave the main menu.

## 9.4 Deactivating options

Once the device has been restarted, the °C/°F, **BL On Time**, **Auto Off Time**, **Material calibration**, **Password**, **Reset** options will be deactivated again.

## 9.5 Selecting °C/°F













**To do so:** All of the options must be activated (see "9.3 Activating options").

1. Press  twice or hold for 2 seconds.
2. Select **Options**. To do so, press  or  and confirm by pressing .
3. Select °C/°F. To do so, press  or  and confirm by pressing .
4. Navigate to the required temperature scale, i.e. Celsius (°C) or Fahrenheit (°F). To do so, press  or  and confirm by pressing .
- » The settings have been saved.
5. Press  to leave the **Options** menu.
6. Press  to leave the main menu.

## 9.6 Reducing the device's power consumption













### 9.6.1 Configuring the display illumination time

**To do so:** All of the options must be activated (see "9.3 Activating options").

1. Press  twice or hold for 2 seconds.
2. Select **Options**. To do so, press  or  and confirm by pressing .
3. Select **BL On Time**. To do so, press  or  and confirm by pressing .
4. Select the required display illumination period (30 seconds/2 minutes/5 minutes/10 minutes). To do so, press  or  and confirm by pressing .
- » The settings have been saved.
5. Press  to leave the **Options** menu.
6. Press  to leave the main menu.

### 9.6.2 Configuring automatic switch-off

**To do so:** All of the options must be activated (see "9.3 Activating options").









1. Press  twice or hold for 2 seconds.
2. Select **Options**. To do so, press  or  and confirm by pressing .
3. Select **Auto Off Time**. To do so, press  or  and confirm by pressing .
4. Select the period of time you want the device to stay switched on (3 minutes/5 minutes/10 minutes). To do so, press  or  and confirm by pressing .
- » The settings have been saved.
5. Press  to leave the **Options** menu.
6. Press  to leave the main menu.

## 9.7 Configuring the material calibration function


The type calibration function is described in a separate operating manual.

## 9.8 Changing the password



**To do so:** All of the options must be activated (see "9.3 Activating options").

1. Press  twice or hold for 2 seconds.
2. Select **Options**. To do so, press  or  and confirm by pressing .
3. Select **Password**. To do so, press  or  and confirm by pressing .
  - » The display will show the current password.
4. Overwrite the current password. To do so, press and hold **0..9** to quickly scroll to the required number and either press it for 3 seconds or press  to confirm the selected number.

### Moving back:








Press  to switch to another input level.

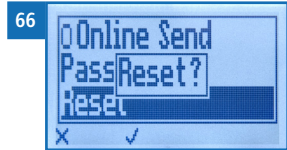
To move back, press .

5. Confirm the new four-digit password by pressing **OK**.
  - » The settings have been saved.
6. Press  to leave the **Options** menu.
7. Press  to leave the main menu.

## 9.9 Resetting the device to its factory settings

To do so: All of the options must be activated (see "9.3 Activating options").

1. Press  twice or hold for 2 seconds.
2. Select **Options**. To do so, press  or  and confirm by pressing .
3. Select **Reset**. To do so, press  or  and confirm by pressing .



- » The display will then show the message **Reset?** (figure 66).

4. Confirm by pressing .

- » The device will now be reset to its factory settings. All of your personal settings will be lost.
- » The display will show the status indicator **humimeter** (figure 67).
- » Resetting the device will not affect the saved measuring values.



## 10. Cleaning and maintenance

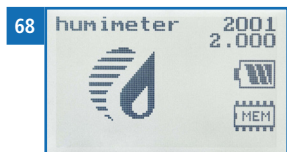
Regular cleaning and maintenance will ensure that your device remains undamaged for as long as possible.

### 10.1 Changing batteries

The device constantly monitors the charge level of the batteries. The current battery status is shown on the status screen.

If the battery's charge is very low, the battery symbol will be shown with an exclamation mark. In that case, the batteries must be changed immediately (figure 69).

For changing the batteries, see section "3.3 Inserting batteries".



You as a final consumer are legally obligated to return all used batteries! The disposal of batteries with domestic waste is prohibited (battery regulation).

## 10.2 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.

## 10.3 Cleaning the device

### Plastic housing

- Clean the plastic housing with a dry cloth.

### Measuring tips

- The measuring tips can be cleaned with a cloth and cleaning alcohol.



### **ATTENTION**

#### **Do not clean with fluids**

Water or cleaning fluid getting inside the device can destroy the device.

- ▶ Only clean with dry materials.

## 11. 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 errors	The temperature of the material being measured is too low or high. I.e. the material's temperature is lower than 0 °C or higher than +40 °C.	The temperature of the material being measured has to be between 0 °C and +40 °C.
	Temperature discrepancy between device and material being measured	Let the temperature adjust to the material being measured (permitted difference of max. 3 °C).
	Wrong product type	Check whether you have selected the right product type (product) before taking a reading (see "6. Product types").
	Moldy or rain wet material	The accuracy of the measurement decreases significantly
	Water film on the measuring/electrode tips	After a measurement of wet material, a film of water may appear on the measuring / electrode tips. Clean the measuring head (see "10.3 Cleaning the device").
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 of the Log-Memorizer program.



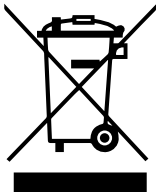
## 12. Storage and disposal

### 12.1 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.
- Remove the batteries if the device isn't used for a period of 4 weeks or longer.
- Storage temperature: -20 °C to +60 °C

### 12.2 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.

## 13. Device information

### 13.1 EC declaration of conformity

#### KONFORMITÄTSERKLÄRUNG DECLARATION OF CONFORMITY

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Name/ Adresse des Herstellers: **Schaller Messtechnik GmbH**  
Name/ address of manufacturer: **Max-Schaller-Straße 99**  
**A – 8181 St. Ruprecht**

Produktbezeichnung: **humimeter**  
Product designation:

Typenbezeichnung: **BL2 ; BLL ; BLH ; BLW ; FL1 ; FL2 ; FLH ; FLM ; FLS ; RM1 ;**  
Type designation: **SLW ; WLW**

Produktbeschreibung: **Messgerät zur Bestimmung des Wassergehalts in**  
Product description: **Biomasse und diversen Schüttgütern**  
**Measuring device for determining the water content in bio-**  
**mass and various bulk materials**

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** Technische Dokumentation zur Beurteilung von Elektro- und Elektronikgeräten hinsichtlich der Beschränkung gefährlicher Stoffe.  
*Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.*  
**EN 50581:2012**

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

 **Schaller**  
Messtechnik / humimeter.com  
Schaller Messtechnik GmbH  
Inz. - Schaller, St. Ruprecht a.d. Raab  
AT-8180 St. Ruprecht a.d. Raab  
www.humimeter.com | info@humimeter.com  
.....  
Bernhard Maunz  
Rechtsverbindliche Unterschrift des Ausstellers  
Legal binding signature of the issuer



## DECLARATION OF CONFORMITY

---

*Name/ address of manufacturer:* **Schaller Messtechnik GmbH  
Max-Schaller-Straße 99  
A – 8181 St. Ruprecht**

*Product designation:* **humimeter**

*Type designation:* **BL2 ; BLL ; BLH ; BLW ; FL1 ; FL2 ; FLH ; FLM ; FLS ; RM1 ;  
SLW ; WLW**

*Product description:* **Measuring device for determining the water content in bio  
mass and various bulk materials**

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:

<b>EN 61326–1:2013</b>	Electrical equipment for measurement, control, and laboratory use – EMC requirements
<b>EN IEC 63000:2019-05</b> replaced <b>EN 50581:2012</b>	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

  
 **Schaller**  
Messtechnik / humimeter.com  
Schaller Messtechnik GmbH  
Ma - St. Ruprecht a.d. Raab 99  
AT-818 / St. Ruprecht a.d. Raab  
www.humimeter.com | info@humimeter.com  
.....  
Bernhard Maunz  
Legal binding signature of the issuer

## 13.2 Technical data

Display resolution	0.1 % moisture content, 0.5 °C/°F temperature
Measuring range	0.3 % to 30 % moisture content (product type dependent)
Operating temperature	0 °C to +40 °C
Temperature measuring range	-10 °C to +60 °C
Storage temperature	-20 °C to +60 °C
Temperature compensation	Automatic
Data memory	Up to 10,000 measuring values
Power supply	4 pcs. of 1.5 Volt AA Alkaline batteries
Current consumption	60 mA (incl. display illumination)
Menu languages	German, English, French, Italian, Spanish, Portuguese, Czech, Polish, Russian, International
Display	128 x 64 illuminated matrix display
Device dimensions	334 x 75 x 62 mm
Device weight	450 g
Plastic case dimensions	450 x 360 x 110 mm
Plastic case + device weight	1.700 g
Device IP rating	IP 40

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## 14. Notes

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Climate  
Environment



Materials



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

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