Schaller
Messtechnik / humimeter.com

Moisture meter

Operating Manual

humimeter BMC

Moisture meter for measuring the moisture content of wood chips

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

Version 1.0

Always read this operating manual before using the humimeter BMC

Your humimeter BMC at a glance

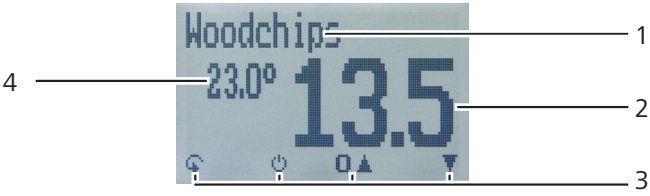
The main unit

No	Name
1	Display
2	Keypad
3	Battery compartment

Rear of the main unit

No	Name
1	Measuring chamber

The display



No	Name
1	Product type
2	Moisture content % ("6.1 How moisture is defined")
3	Display symbols
4	Temperature display

The display symbols

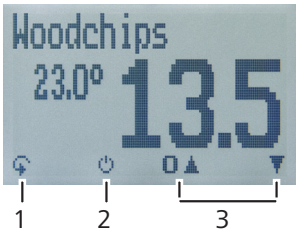
Symbol	Name
	Enter
	Up
	Down
	Back
	Enter numbers
	Enter letters
	Continue / go right
	Left
	Yes

Symbol	Name
	No
	Change input level
	OK
	Change menu
	Enter data
	View measurements
	Delete measurements
	On/off button, display light
	Save measured value

The menus

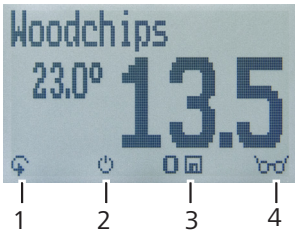
The device has three different menus: product selection, Data Log and main menu:

Product selection menu



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

Data Log menu



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

Main menu

The main menu comprises the following menu items:

- **Edit Logs:**
  Manual Logs, Clear Logs
- **Options:**
  Date/Time, Reinitialize, Language, Unlock, °C/°F, BL On Time, Auto Off Time, Materialcalib., Password, Reset
- **Status**

Table of contents

1. Introduction

1.1 Information about this operating manual

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

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

1.2 Limitation of liability

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

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

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

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

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

1.3 Symbols used in this manual

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

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

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

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

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

2.2 Improper use

- The device must not be used in ATEX.
- The device is not suitable for measuring frozen wood chips or wood chips with a temperature of more than +40 °C.
- The device is not waterproof and must be protected from water and fine dust (IP40).

2.3 User qualifications

The device must only be operated by people who can be expected to reliably take the measurements. The device must not be operated by people whose reaction times may be slowed due to, e.g. the use of drugs, alcohol or medication.

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

2.4 General safety information

The following safety information has to be observed at all times to avoid damage to objects and injury to people:

- Remove the batteries if the device isn´t used for a prolonged period of time (4 weeks).
- In case of damages or loose parts on the device, remove the batteries and contact Schaller 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
- Batteries older than six months

3. On receipt of your device

3.1 Taking the device out of its packaging

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

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:

- humimeter BMC
- 4 pieces of AA Alkaline batteries
- Plastic bucket
- Operating manual

3.3 Inserting batteries

1. Remove the battery compartment. To do so, press both retaining clips inwards at the same time (figure 1).

2. Pull the battery compartment out downwards (figure 2) and 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 3).

3. Slide the battery compartment back into the moisture meter until both retaining clips click into place (figure 4).

» Pay attention to the correct insertion direction of the battery compartment. The closed rear wall of the compartment has to face the device.

» As soon as the battery compartment has clicked into place, the device switches on automatically.

4. Using the device - Basics

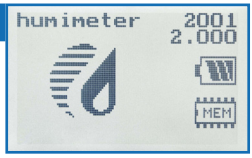
4.1 Switching the device on

- Press the button for 3 seconds.

» The display will then show the status indicator (figure 5).

» After inserting the batteries, the device switches on automatically.

5



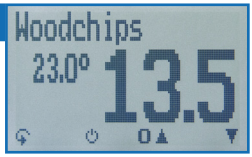
4.2 Selecting the product type

To do so: The device has to be in the product selection menu (figure 6).

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 7).
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 .

6



7

» 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 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.

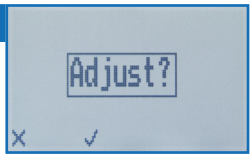
5. The measuring process

5.1 Switching the device on

- Press the button for 3 seconds.
» The display will then show the status indicator (see "7. Checking the device's status").
» Make sure to store both the device and the wood chips at about the same temperature. A high temperature difference (+/- 3 °C) will negatively affect the measurement accuracy.

5.2 Automatic calibration

» After switching on, the device effects a self-calibration. The display shows the message **Adjust?** (figure 8).
» Make sure that the measuring chamber is empty. During the self-calibration there must not be any material inside the measuring chamber.
» Confirm by pressing .
» The self-calibration is effected. The display will now appear as shown in figure 9.
» When the self-calibration is completed, the display will show the measuring window (figure 10).

8


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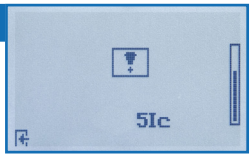

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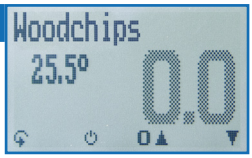


5.3 Taking a measurement

1. Select the required product type (see "6. Product types") by pressing the or button Or
2. Press the or button for 3 seconds.
» The display will now show the product type overview (figure 11).
3. Select the required product type (**Woodchips, coarse chips, softwood chips, softwood coarse chips, fine woodchips, Empty 1 - 3**).

11


» To do so, press or and confirm by pressing Or

» Keep or pressed to scroll through the types and confirm by pressing .

4. Completely fill the measuring chamber with wood chips using the included plastic bucket (13 litres). Fill the measuring chamber as shown in figure 12.

12

» Always fill the measuring chamber from the gray backplate.

» Do not compress the wood chips.

» Do not shake the device after the filling.

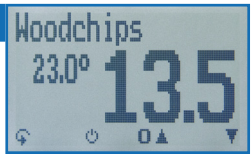
» Fill the measuring chamber up to the edge with wood chips.

5. Remove protruding wood chips so that the material is even with the top edge of the measuring chamber.

» The device will now display the moisture content (figure 13).

» The displayed value flashes when the moisture content exceeds 40% (figure 14). A flashing value signals a decreasing accuracy of the measurement. The measuring range of the device is specified from 5 % to 50 % water content.

13



14

6. Once the reading has been taken, it can be saved on the device (see "5.4 Saving individual readings" or "5.5 Saving several readings (a measurement series) at the same time").

7. Empty the measuring chamber completely.

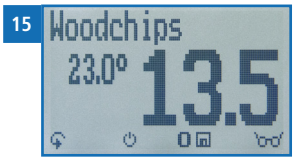
Information - Measuring accuracy

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 (a measurement series) at the same time").

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

5.4 Saving individual readings

To do so: The device has to be switched on and be in the Data Log menu (see "Data Log menu" page 5).



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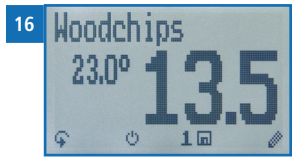

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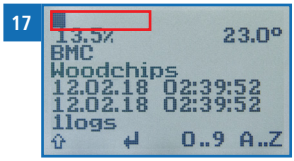

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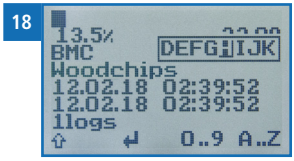
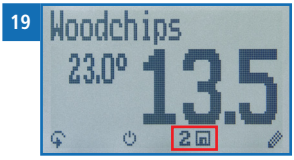


18

1. Press .
   - » The display will now appear as shown in figure 16 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 17.
3. The data you have inputted can be overwritten at any time (only if data has already been entered).
4. Inputting letters:
   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 18).
5. Inputting 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.

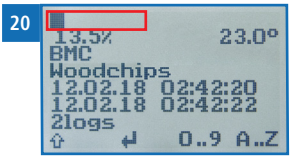
5.5 Saving several readings (a measurement series) at the same time

To do so: The device has to be in the Data Log menu (see "Data Log menu" page 5).



1. Take several measurements of the same wood chips (see "5. The measuring process").
2. After each measurement, press to save the reading.

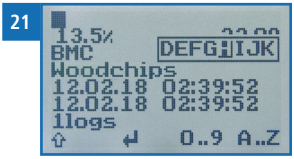
» The display will appear as shown in figure 19. The marked number shows the number of readings that have already been saved.



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

» The display will now appear as shown in figure 20.

4. The data you have inputted can be overwritten at any time (only if data has already been entered).

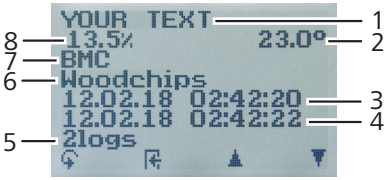


5. Inputting letters:
   Press and hold A..Z to quickly scroll to the required letter and either press it for 3 seconds or press to confirm the selected letter (figure 21).
6. Inputting numbers:
   Press and hold 0..9 to quickly scroll to the required number and either press it for 3 seconds or press to confirm the selected number.
7. Moving forward/back:
   Press to switch to another input level. Press or to move forward or back.
8. 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.

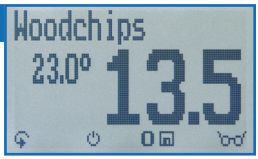
» The display will show the following information:



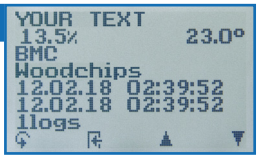
No	Name
1	Name of the measurement series (editable)
2	Temperature (average)
3	Date & start time of the measurement series
4	Date & end time of the measurement series
5	Number of saved readings
6	Product type
7	Device name
8	Moisture content (average)

5.6 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 22.

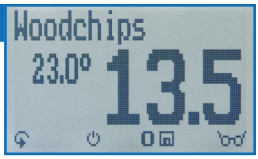


1. Press .
2. Select the required reading. To do so, press or .
   » The display will now appear as shown in figure 23.
   » Press to leave this screen.

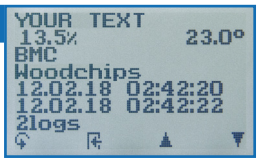


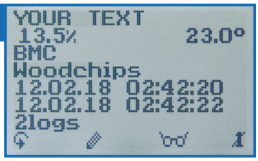
5.7 Viewing individual readings from a series of measurements

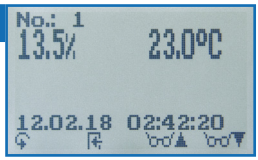
To do so: You must have saved a series of measurements (e.g. **2 logs**).
The display will now appear as shown in figure 24.



1. Press ..
2. Navigate to the required measurement series. To do so, press or .
   » The display will now appear as shown in figure 25.
3. Press to switch to another input level.
   » The display will now appear as shown in figure 26.
4. Press again.
   » The display will now appear as shown in figure 27.
5. Navigate to the required reading (**No.: 1, No.: 2, No.: 3**). To do so, press or .
6. Press to leave this screen.







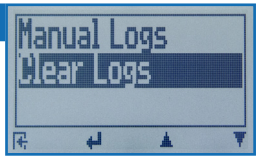
5.8 Deleting all measured values (data log)

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

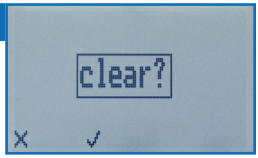
1. Press  twice or hold for 2 seconds.
2. Select **Edit Logs** (figure 28). To do so, press  or  and confirm by pressing  .
3. Select **Clear Logs** (figure 29). To do so, press  or  and confirm by pressing  .
   - » The display will show the message **clear?** (figure 30).
4. Confirm by pressing  .
   - » The data log has been deleted.
5. Press  to leave the **Edit Logs** menu.
6. Press  to leave the main menu.

28

29



30

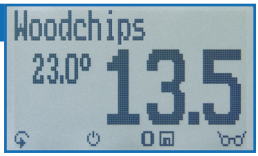


5.9 Deleting individual measurement series

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 31.

1. Press  .
   - » The display will now appear as shown in figure 32.
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 33.
4. Press  .

31



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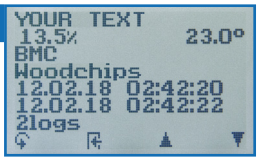

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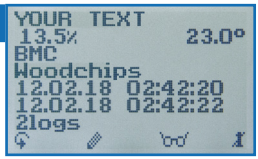
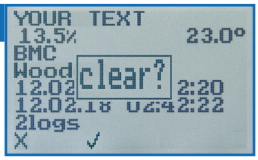


» The display will then show the message **clear?** (figure 34).

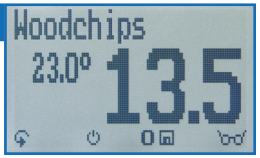
5. Confirm by pressing ✓.

» The value has been deleted.

34


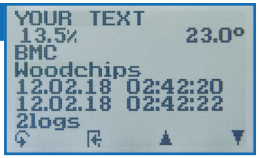
5.10 Deleting individual values from a single series of measurements

To do so: You must have saved a series of measurements comprising at least 2 logs. The display will now appear as shown in figure 35.

35


1. Press 📖.

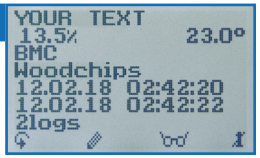
» The display will now appear as shown in figure 36.

36


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

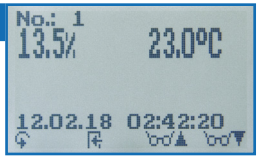
3. Press ↻ to switch to another input level.

» The display will now appear as shown in figure 37.

37


4. Press 📖.

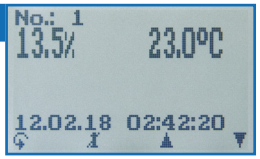
» The display will now appear as shown in figure 38.

38


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 39.

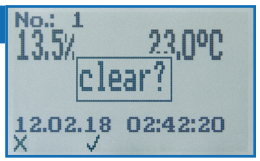
39


7. Press 🗑 to delete the value shown.

» The display will then show the message **clear?** (figure 40).

8. Confirm by pressing ✓.

» The value has been deleted.

40


6. Product types

Product type	Wood chip type
Wood chips	See "6.3.1 Wood chips"
Coarse chips	See "6.3.2 Coarse wood chips"
Softwood chips	See "6.3.3 Softwood chips"
Softwood coarse	See "6.3.4 Softwood coarse chips"
Fine wood chips	See "6.3.5 Fine wood chips"
Empty 1	For special sorts (calibration by Schaller GmbH)
Empty 2	For special sorts (calibration by Schaller GmbH)
Empty 3	For special sorts (calibration by Schaller GmbH)
Reference	! Only for testing the moisture meter !

6.1 How moisture is defined

The device measures and shows a material's moisture content. The moisture content readings it displays are calculated in relation to the material's overall mass:

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

M_n: Mass of the sample with average moisture content

M_t: Mass of the sample with zero moisture content

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

6.2 Definition of wood chips types

The given numbers (in accordance with EN ISO 17225-1) refer to the particle sizes that fit through the round screen openings.

- P16 at least 75% of the mass between 3.15 and 16 mm
- P31 at least 75% of the mass between 8 and 31.5 mm
- P45 at least 75% of the mass between 8 and 45 mm
- P63 at least 75% of the mass between 8 and 63 mm

6.3 Selection of calibration curve for wood chips

The calibration curves for wood chips depend on the wood type (hardwood, softwood), the size of the chips (size classes according to norm EN ISO 17225-1) as well as on the content of fine fraction.

If you are not sure which calibration curve is the best suited for your material, it is recommended to carry out a reference measurement by kiln-drying (according to EN ISO 18134-2).

Schaller GmbH will be happy to advise you on the selection of the right calibration curve. Please send a picture of your wood chips, placing a measuring tape to the material, to support@schaller-gmbh.at. You will receive a recommendation from us immediately.

6.3.1 Wood chips

For wood chips with fine fraction, consisting of at least one third hardwood. The fine fraction mainly derives from barks, small branches and bushes. For wood chips sizes from P31 to P45. See example pictures 41 and 42.

If your wood chips contain few fine fraction or no fine fraction or if the wood chips contain a higher proportion of softwood, use one of the following calibration curves.

6.3.2 Coarse wood chips

For coarse wood chips without fine fraction, consisting of at least one third hardwood. This curve is predominantly suited for measuring wood chips deriving from logs and full trees. For wood chips sizes from P45 to P63. See example pictures 43 and 44.

This calibration curve also has to be taken for wood chips from short rotation forestry (poplar, willow) harvested by a field chopper, for wood chips sizes from P16 to P31.

If your wood chips contain a higher proportion of softwood, use one of the following

calibration curves.

6.3.3 Softwood chips

For wood chips with fine fraction, mainly (more than two thirds) consisting of softwood (spruce, fir, pine, larch). The fine fraction mainly derives from barks, small branches and bushes. For softwood chips sizes from P16 to P45. See example pictures 45 and 46.

If your wood chips contain few fine fraction or no fine fraction, use one of the following calibration curves.

6.3.4 Softwood coarse chips

For coarse wood chips without fine fraction, mainly (more than two thirds) consisting of softwood (spruce, fir, pine, larch) of 70% and more. This curve is predominantly suited for measuring wood chips deriving from logs and full trees as well as sawmill residues. For wood chips sizes from P45 to P63. See example pictures 47 and 48.

6.3.5 Fine wood chips

For fine wood chips with a high proportion of fine fraction, consisting of at least one third hardwood. The fine fraction mainly derives from barks, small branches and bushes. For wood chips sizes from P16 to P31. See example picture 49.

For wood chips purely from ash trees, wood chips sizes from P31 to P45, also choose this calibration curve.

Example pictures wood chips

41

42

Example pictures coarse wood chips

43

44

Example pictures softwood chips

45

46

Example pictures softwood coarse chips

47

48

Example picture fine wood chips

6.4 Notes for comparative measurement with oven-drying method

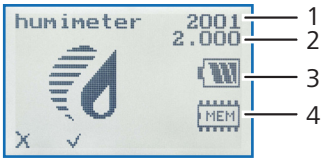
The device uses a much higher sample quantity than the drying oven (12-fold to 20-fold quantity of kiln-drying method). Furthermore, to determine a more accurate average moisture value in case of inhomogeneous material, there can be effected several measurements within a short time.

Considering a sampling error due to the considerably smaller sample quantity as well as the content of volatile matters, resin etc. (that are not water), the kiln-drying method will practically reach an accuracy of approx. +/- 3%. Therefore, if the measuring values of these two very different methods of determining the water content are compared, differences of +/- 3% can be considered to be normal.

In the standard EN ISO 18134-2 is declared that the drying oven method provides no absolute values, but only comparable values.

7. Checking 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

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

8. Configuring the device

8.1 Adjust the date/time

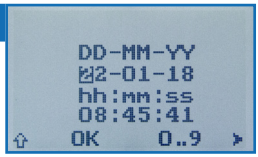
1. Press  twice or hold for 2 seconds.
2. Select **Options**. To do so, press  or  and cofirm by pressing  .
3. Select **Date/Time**. To do so, press  or  and cofirm by pressing  .

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

» The format for the date is **DD-MM-YY** (Day-Month-Year).

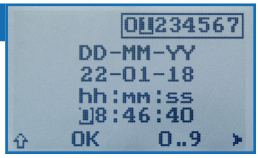
» The format for the time is **hh:mm:ss** (Hour:Minutes:Seconds).

50



4. Inputting 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 51).

51



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  .

» The settings have been saved.

8. Press  to leave the **Options** menu.
9. Press  to leave the main menu.

8.2 Selecting a language

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

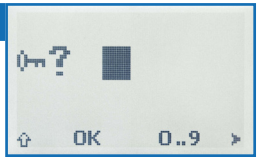
3. Select **Language**. To do so, press or and confirm by pressing .
4. Navigate to the required language. To do so, press or and confirm by pressing .
   » The settings have been saved.
5. Press to leave the **Options** menu.
6. Press to leave the main menu.

8.3 Activating options

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

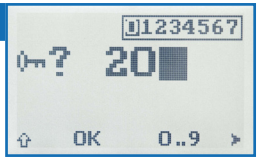
1. Press twice or hold for 2 seconds.
2. Select **Options**. To do so, press or and cofirm by pressing .
3. Select **Unlock**. To do so, press or and cofirm by pressing .
   » The display will now appear as shown in figure 52.
   » On delivery, the four-digit password is the device's serial number.

52



4. Inputting 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 (figure 53).

53



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

8. Press  to leave the main menu.

8.4 Deactivating options

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

8.5 Selecting °C/°F

To do so: All of the options must be activated (see "9.4 Activating options").

1. Press  twice or hold for 2 seconds.
2. Select **Options**. To do so, press  or  and cofirm by pressing  .
3. Select **°C/°F**. To do so, press  or  and cofirm by pressing  .
4. Navigate to the required temperature scale, i.e. Celsius (**°C**) or Fahrenheit (**°F**). To do so, press  or  and cofirm by pressing  .

   » The settings have been saved.

5. Press  to leave the **Options** menu.
6. Press  to leave the main menu.

8.6 Reducing the device's power consumption

8.6.1 Configuring the display illumination time

To do so: All of the options must be activated (see "8.3 Activating options").

1. Press  twice or hold for 2 seconds.
2. Navigieren Sie zu **Optionen**. 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.

8.6.2 Configuring automatic switch-off

To do so: All of the options must be activated (see "8.3 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/5minutes/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.

8.7 Configuring the material calibration function

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

8.8 Changing the password

To do so: All of the options must be activated (see "8.3 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.

Overwrite the current password. To do so, press and hold  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 .

4. Confirm the new four-digit password by pressing OK.

» The settings have been saved.

5. Press to leave the **Options** menu.

6. Press to leave the main menu.

8.9 Resetting the device to its factory settings

To do so: All of the options must be activated (see "8.3 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 54).

4. Confirm by pressing .

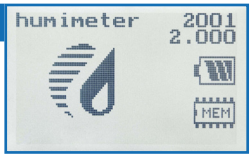
» The device will now be reset to its factory settings. All of your personal settings will be lost.

» The display will show the status indicator **humimeter** (figure 55).

» Resetting the device will not affect the saved measuring values.

54

55

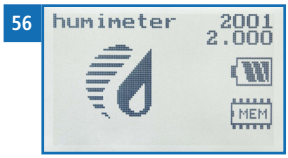


9. Cleaning and maintenance

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

9.1 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 57).

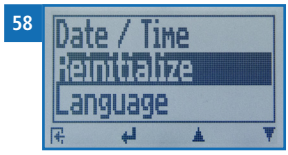
For changing the batteries, see section "3.3 Inserting batteries".

As the device's user, you are responsible by law for properly disposing of all used batteries, which must not be disposed of as domestic waste (Battery Directive).

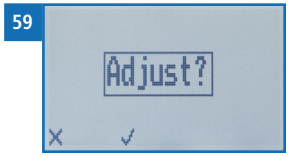
9.2 Calibrating the moisture meter

9.2.1 Starting the calibration manually

To do so: The measuring chamber has to be empty.

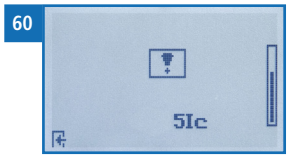


1. Press  twice or hold for 2 seconds.
2. Select **Options**. To do so, press  or  and confirm by pressing  .
3. Select **Reinitialize** (figure 58). To do so, press  or  and confirm by pressing  .



» The display will then show the message **Adjust?** (figure 59).

4. Confirm by pressing  .



» The display will now appear as shown in figure 60.

» The bar will run upwards,

» which only takes a couple of seconds to complete. When completed, the display will look as shown in figure 58.

5. Press  and then  to return to the product selection level.

9.3 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.

9.4 Cleaning the device

ATTENTION

Do not clean with fluids
Water or cleaning fluid getting inside the device can destroy the device.

► Only clean with dry materials.

Sensor surface

- Clean the sensor surface with a dry cloth.

10. Faults

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

Fault	Cause	Remedy
Measuring error	The temperature of the material being measured is too low or high. I.e. the material's temperature is lower than 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 "6.3 Selection of calibration curve for wood chips").
	Insuffient material in the measuring chamber	Ensure that the measuring chamber is full; there must not be less nor more material in it.
	Too high measuring value due to compression of wood chips	Do not compress the material and do not shake the device after the filling.
	Wrong filling direction	Always fill the measuring chamber from the gray backplate. Use the delivered bucket of 13 litres.
	Metal or similar conductive materials in the wood chips	Remove all metal or other conductive materials from the wood chips.
	Mouldy or rain wet wood chips Accuracy decreases significantly	Only measure dry, not mouldy wood chips

Fault	Cause	Remedy
	Frozen wood chips or wood chips mixed with snow Accuracy decreases signifi-cantly	The wood chips most not be frozen or mixed with snow.
Incorrect calibration (the exclamation mark on the display does not go away)	Material in the measuring chamber (during calibration)	Empty the measuring chamber completely.

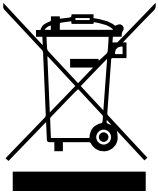
11. Storage and disposal

11.1 Storing the device

The device must be stored as follows:

- Do not store outdoors.
- Store in a dry and dust-free place.
- Protect the device from sunlight.
- Avoid mechanical shocks/loads.
- Remove the batteries if the device isn´t used for a period of 4 weeks or longer.
- Storage temperature: -20 °C o +60 °C

11.2 Disposing of the device



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

Electronic devices must not be disposed of as domestic waste.

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

12. Device information

12.1 CE declaration of conformity

CE DECLARATION OF CONFORMITY

We **Schaller GmbH**
Max-Schaller-Straße 99
A – 8181 St. Ruprecht

in accordance with the following Directives:

EMV - Richtlinie 2014/30/EU,
RoHS - Directives 2011/65/EG,

hereby declare that the following product types:

Product: **humimeter**

Types: **BMC**

are in conformity with the applicable requirements of the following documents

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

I hereby declare that the equipment named above has been designed to comply with the relevant Sections of the above referenced specifications. The unit complies with all applicable Essential Requirements of the Directives.

St. Ruprecht a.d. Raab, 11.04.2018

Max Schaller

Schaller GmbH
Maximilian Schaller
General Manager

12.2 Technical data

Display resolution	0.5 % moisture content, 0.5 °C/°F temperature
Measuring range	5 % to 50 % moisture content
Operating temperature	0 °C to +40 °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	296 x 278 x 508 mm
Device weight	7,9 kg
Device IP rating	IP 40

13. Notes

Climate
Environment

Materials

Food

Buildings

Bioenergy

Paper / Board

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

Schaller GmbH

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