Schaller
Messtechnik / humimeter.com

Moisture meter

Operating manual

humimeter FSW

Grain moisture meter

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 1.2

Always read this operating manual before using the humimeter FSW!

Your humimeter FSW at a glance

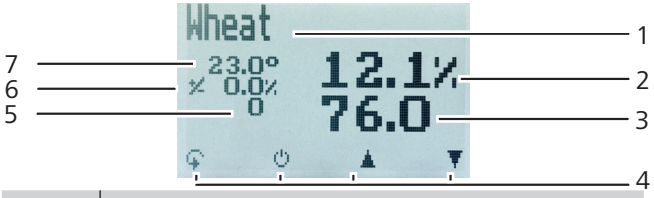
The main unit

No.	Name
1	Filling funnel
2	Measuring chamber
3	Display
4	Keypad
5	USB connection TYPE B mini

Rear of the main unit

No.	Name
1	Battery compartment

The display



No.	Name
1	Calibration curve
2	Water content in % ("6.1 How moisture content is defined")
3	bulk density / hectoliter weight in kg/hl
4	Display symbols
5	Saved measured values
6	Currently applied offset
7	Temperature display

The display symbols

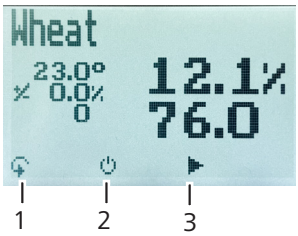
Symbol	Name
	Enter
	Up
	Down
	Back
0..9	Enter numbers
A..Z	Enter letters
	Continue / go right
	Left
	Yes

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

The menus

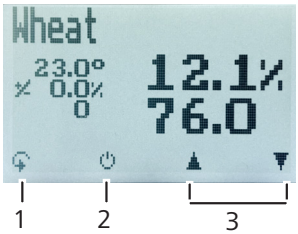
The device has four different menus: product selection, Data Log, offset menu and main menu.

Measuring menu



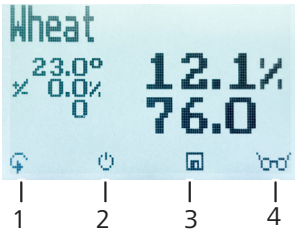
No.	Name
1	Change menu
2	Display illumination / device on/off
3	Start measurement

Product selection menu



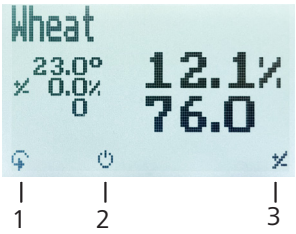
No.	Name
1	Change menu
2	Display illumination / device on/off
3	For changing the calibration curve

Data Log menu



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

Offsetebene



No.	Name
1	Change menu
2	Display illumination / device on/off
3	Setting the offset

Main menu

The main menu comprises the following menu items:

- **Edit Logs:**
  Manual Logs, Clear Logs
- **Options:**
  Date/Time, Language, Unlock, °C/°F, BL On Time, Auto Off Time, Materialcalibration, 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 FSW 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 FSW. All of the safety and operating instructions detailed in this manual have to be observed to ensure the safety of the device.

1.2 Limitation of liability

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

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

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

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

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

1.3 Symbols used in this manual

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

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

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 cereals
- The device must only be used for taking measurements on the products defined in the following sections of this manual (see "6. Calibration curves").

2.2 Improper use

- The device is not suitable for measuring mouldy material.
- The device is not waterproof and must be protected from water and fine dust.

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 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
- 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 FSW
- Filling funnel
- 4 pieces of AA Alkaline batteries
- Measuring cup 0.5 liter
- Plastic case
- humimeter USB data interface module
- Operating manual

3.3 Inserting batteries

1. Remove the screws at the bottom of the appliance to open the battery case. (figure 1).
2. Insert the batteries according to the indicated polarity (+/-).
3. Close the battery compartment by tightening the screws again.

» Ensure that the battery cover is securely closed..

1

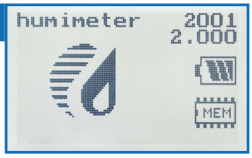
4. Using the device - Basics

4.1 Switching the device on

- Press the ⏻ button for 3 seconds.
- The display will then show the status indicator (figure "6").

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

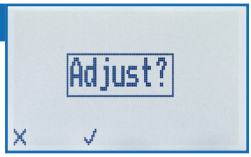
2



4.2 Automatic adjustment

» The display will show the message **Adjust?** (figure 3).

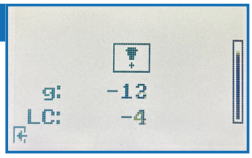
3



1. Make sure that the measuring chamber of the device is empty and place the device on a level table.
2. Confirm by pressing ✓.

» The display will now appear as shown in figure 4.

4



» The bar runs upwards. During this period, the device must stay on the table without any external influence.

» After a few seconds, the adjustment is complete and the internal adjustment of the measuring frequency and the empty weight can be observed on the display.

» If adjustment is not possible, check whether you have removed the filling funnel beforehand. Further information can be found in chapter "11. Faults" Seite 40

» Once completed, the device will show the measuring window (see "Product selection menu" Seite 5).

4.3 Selecting the calibration curve

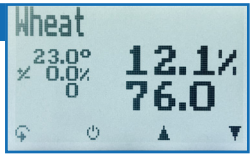
To do so: The device has to be in the product selection menu (figure 9).

For an overview of the different calibration curves and the criteria for selecting them, please refer to "6. Calibration curves".

1. Press the ▽ or △ button to move from one calibration curve to the next Or
2. Press the ▽ or △ button for 3 seconds to open the calibration curve overview (figure 10).
3. Use the arrow keys to move from one calibration curve to the next
4. and keep any of them pressed to scroll through the types.
5. Confirm your selection by pressing ↵.

» The calibration curve you selected will now be shown at the top of the display.

5



6

4.4 Taking a measurement

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

4.5 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 Preparing a measurement

To do so: The device has to have nearly the same temperature than the product being measured. It is recommended to let your humimeter device adjust to the surrounding temperature of the material being measured for at least 30 minutes.

1. Make sure that the measuring chamber of the device is empty. There must be no material to be measured in the device when it is switched on.

   » Empty the device and clean the measuring chamber if necessary. (see "10.3 Care instructions").

2. Switch on the device (see "4.1 Switching the device on").

3. Perform the automatic adjustment ("4.2 Automatic adjustment").

4. Select the required calibration curve (see "6. Calibration curves"). Drücken Sie dafür  oder  (siehe "4.3 Selecting the calibration curve").

7

8

5.2 Taking a measurement

To do so: The device has to have nearly the same temperature than the product being measured.

1. Place the supplied filling funnel on the measuring device.

» The opening of the filling funnel must be above the measuring chamber (figure 9).


9


10

2. Now fill the measuring chamber of the device slowly and evenly with the material to be measured (figure 10).

» Do not use a funnel or similar, which is not included in the scope of delivery, to fill the measuring device.

3. Remove the remains of the material to be measured by pushing the movable part of the filling funnel to the side (figure 11).


11

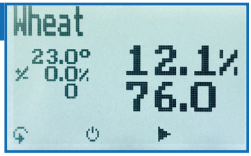
4. Now remove the filling funnel with the remains of the sample from the measuring device.

» The measuring chamber should now be level and evenly filled (figure 12).


12

5. Press the ‘Play’ button to start the measurement (figure 13).

6. The measured value is immediately shown on the display of the device (figure 14).



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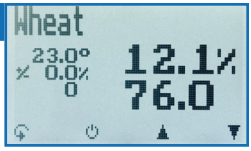


14

» The water content, temperature and hectolitre weight are shown.

» The displayed measured value flashes if it exceeds the measuring range of the selected calibration curve. A flashing value indicates a decrease in measuring accuracy. The measuring range depends on the calibration curve (see "6. Calibration curves").

» The displayed measured value can now be saved on the device (see "5.3 Saving individual readings" or "5.4 Saving several readings (a measurement series) at the same time").

» It is also possible to apply an offset to the displayed measured value (see "5.10 Offset function").

7. Empty the device and ensure that there are no material remains in the measuring chamber.

» Clean the measuring chamber if necessary (see "10.3 Care instructions").

Information - Measuring accuracy

Take advantage of the non-destructive measuring method, which takes just seconds, and carry out several measurements of the same material. The device automatically calculates the average value when the individual measured values are saved (see "5.4 Saving several readings (a measurement series) at the same time").

Information - Incorrect measurements

Use the correct characteristic curve and the correct filling quantity for your measured product. This will help you avoid incorrect measurements (see "11. Faults").

5.3 Saving individual readings

The device is configured in such a way that the device will save a reading every time a button is pressed.

To do so: The device has to be in the Data Log menu (see"Data Log menu" Seite 6).

1. Press .

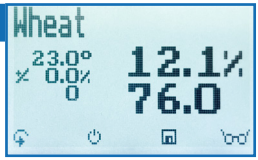
» Figure 16 appears on the display - the number one is now shown under the offset value.

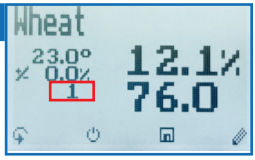
2. Press to enter a name for the saved reading and to finish the measuring process.

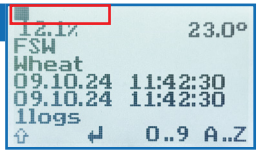
» The display will now appear as shown in figure 17.

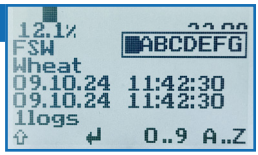
3. If an entry has already been made, the entry shown can be overwritten if desired.

4. Inputting letters:
Press and hold A..Z to quickly scroll to the required letter and either press it for 3 seconds or pres to confirm the selected letter (figure 18).

15


16


17


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.

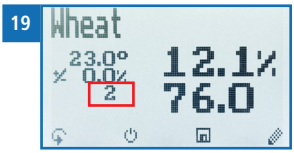
5.4 Saving several readings (a measurement series) at the same time

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

1. Take several measurements of the same sample material (see "5. The measuring process").

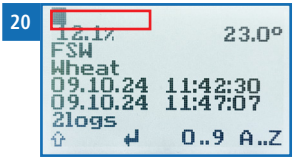
2. To save a reading, press 🖫 as soon as the reading has been taken.

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



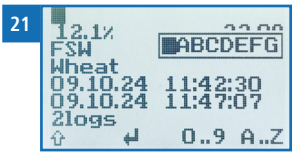
3. Press ✎ to enter a name for the saved series of measurements and to finish the measuring process.

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



4. The data you have inputted can be overwritten at any time.

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).



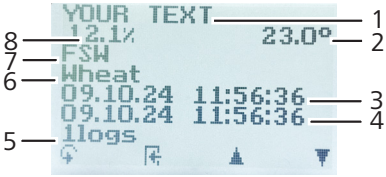
6. Inputting numbers:
   Press and hold 0..9 to quickly scroll to the required number and either press it for 3 seconds or press ↵ to confirm the selected number.

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:



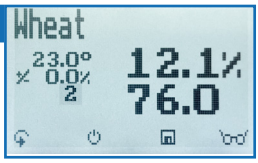
No.	Name
1	Name of the measurement series (editable)
2	Temperature (average)
3	Date & start time of the measurement series
4	Date & end time fo the measurement series
5	Number of saved readings
6	Calibration curve
7	Device name
8	Moisture content (average)

5.5 Viewing individual readings

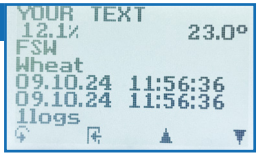
To do so: You must have saved a reading (e.g. **1 log**)
The display will now appear as shown in figure 22.

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.

22



23

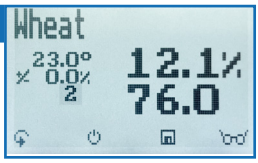


5.6 Viewing individual readings from a series of measurements

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

1. Press .
2. Select the required reading. 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.

24



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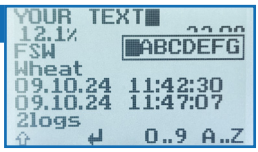

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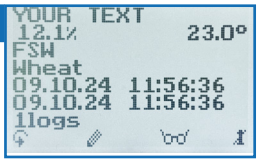

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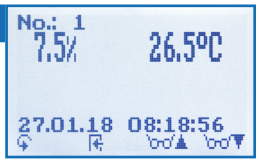

5.7 Deleting all measured values (data log)

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 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.

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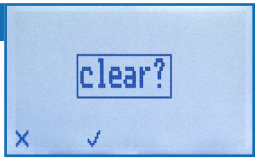
29

30

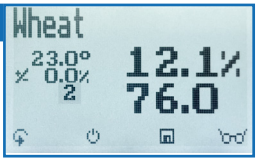


5.8 Deleting individual measurement series

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 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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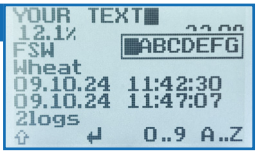
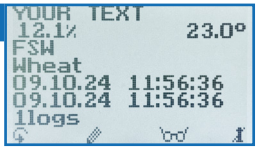


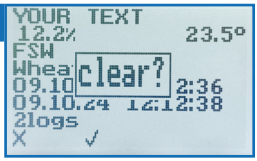
33



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

5. Confirm by pressing ✓.

» The value has been deleted.

34


5.9 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.

1. Press 📖.

» The display will now appear as shown in figure 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.

4. Press 📖.

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

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

6. Press ↻ to switch to another input level.

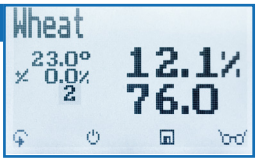
» The display will now appear as shown in figure 39.

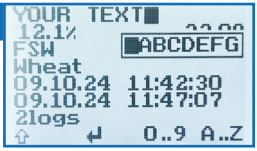
7. Press 🗑 to delete the value shown.

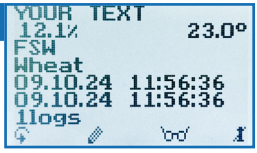
» The display will then show the message **clear?** (figure 40).

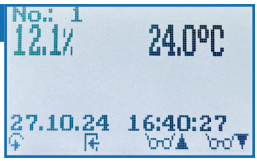
8. Confirm by pressing ✓.

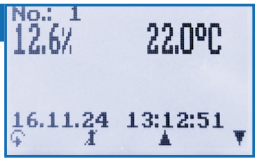
» The value has been deleted.

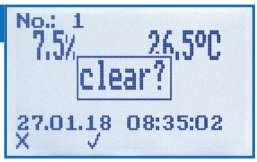
35


36


37


38


39


40


5.10 Offset function

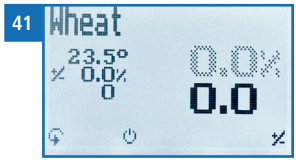
By changing the offset, the displayed measurement values can be adapted to other norms/standards. The displayed measuring value is corrected by the entered offset.

Example:
An offset of 1.5 % applied to a measurement value of 10.0 % results in a displayed measurement value of 11.5 %.
An offset of - 0.5 % applied to a measurement value of 10.0 % results in a displayed measurement value of 9.5 %.

5.10.1 Setting the offset

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

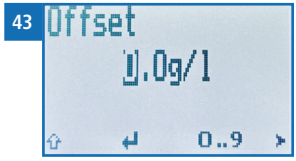
1. Select the required calibration curve (see "6. Calibration curves") by pressing the or button (see "4.3 Selecting the calibration curve").



2. Press twice to change to the offset menu.
3. Press .

» The display will now show the material calibration menu for the selected calibration curve (figure 42).
» The offset is part of the material calibration menu.

4. Select **Offset**. To do so, press or and confirm by pressing .
5. The data you have inputted can be overwritten at any time.
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 (figure 43).

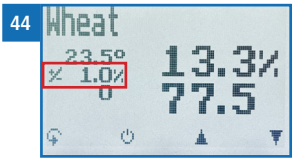


» **Setting a negative offset is also possible!**
To do so, insert a minus sign before the first digit.
» Take care of the position of the comma to prevent setting an offset that is too high!

» ATTENTION: You can set an offset for the displayed water content as well as for the hectolitre weight. Only a water content offset is displayed in the main menu.

7. Moving forward:
   To move forward, press  .

8. Moving back:
   Press  to switch to another input level.
   To move back, press  .



9. Confirm the offset by pressing  .

» The offset has been saved.

10. Press  to leave the material calibration menu.

11. The set offset will now be applied to the selected calibration curve and shown in the display (figure 44).

» **The displayed measurement value now deviates from the standard calibration!**

6. Calibration curves

Calibration curves are available for the following products:

Corn 5 % - 35 % 	Rye 5 % - 28 % 	Wheat 5 % - 28 % 	Durum 5 % - 28 % 
Oats 5 % - 20 % 	Barley 5 % - 28 % 	Spelt in husk 5 % - 18 % 	Spelt peeled 5 % - 20 % 
Rape 5 % - 18 % 	Soybeans 5 % - 18 % 	Horse Beans 5 % - 25 % 	Sunflower 5 % - 15 % 
Pumpkin Seeds 5 % - 15 % 	Rice peeled 5 % - 18 % 	Reis unpeeled 5 % - 18 % 	Millet 5 % - 18 % 

Pea 5 % - 20 % 	Sorghum millet 5 % - 18 % 	Buckwheat unpeeled 5 % - 18 % 	Lentils 5 % - 18 % 
160g roasted coffee 1 % - 20 % 	Reference ! Only for testing the moisture meter !		

On request, Schaller Messtechnik GmbH can develop customer-specific characteristic curves for special calibration curves. It is also possible to subsequently enter optionally available characteristic curves into the device.

6.1 How moisture content is defined

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

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

M_n: Mass of the sample with average moisture content

M_t: Mass of the sample with zero moisture content

%WG: Moisture content (in accordance with the corresponding product norms)

7. Using the LogMemorizer program

To do so: You have installed the optional USB interface.

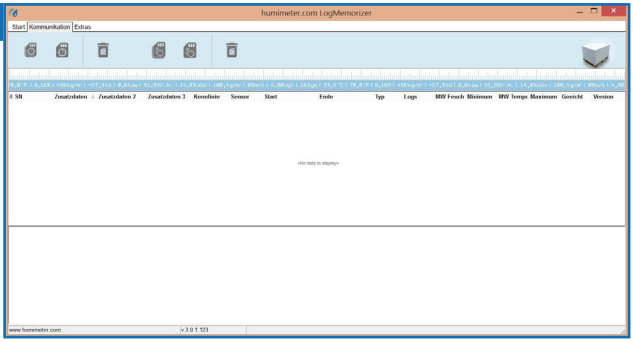
7.1 Installing / opening the program

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 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 45).

45



   » 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 FSW or initiate the export at your computer.

Exporting moisture readings from the humimeter FSW

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

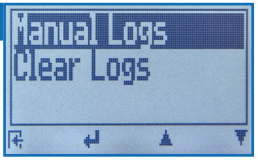
1. Insert the USB Mini B connector into the humi meter FSW (figure 46).
2. Insert the USB connector into the computer.
3. Open LogMemorizer on your computer.
4. Switch on the humimeter FSW.
5. Press  three times or hold for 2 seconds.
6. Select **Send Logs** (figure 47). To do so, press  or  and confirm by pressing  .
7. Select **Manual Logs** (figure 48). To do so, press  or  and confirm by pressing  .

» The display will then show the message **Send** (figure 49).

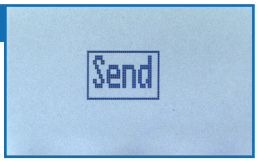
» All measuring values saved on the humimeter FSW will now be sent to your computer.

47

48



49



Initiating the data export at your computer

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

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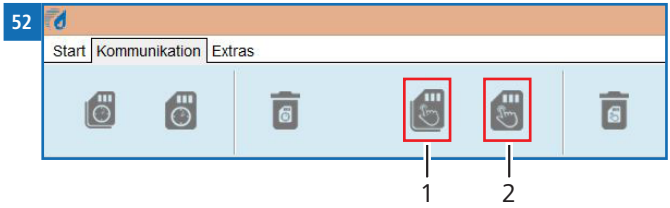
1. Insert the USB Mini B connector into the humi meter FSW (figure 50).
2. Insert the USB connector into the computer.
3. Open LogMemorizer on your computer.
4. Switch on the humimeter FSW.

5. Open the **Communication** tab in LogMemorizer (figure 51).

6. Select and click on one of the two buttons shown in figure 52.

» **Import all manual logs** (for importing all manually saved readings) or

» **Import most recent manual log** (for importing the most recent manually saved logs).

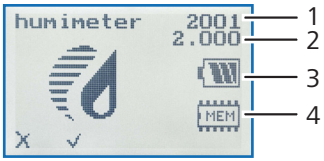


No	Name
1	Import all manual logs
2	Import most recent manual log

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

8. 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.

9. Configuring the device

9.1 Adjust the date/time

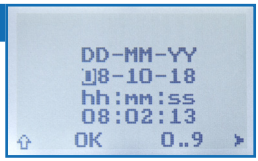
1. Press  twice or hold for 2 seconds.
2. Select **Options**. To do so, press  or  and confirm by pressing  .
3. Select **Date/Time**. To do so, press  or  and confirm by pressing  .

» The display will now appear as shown in figure 53.

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

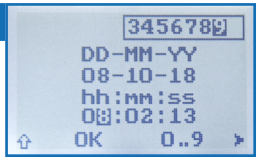
» The format for the time is **hh:mm:ss** (Hour:Minutes:Seconds).

53



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 54).

54



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.

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

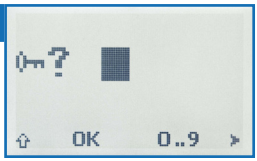
To do so: Some of the options must be deactivated.

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 "55".

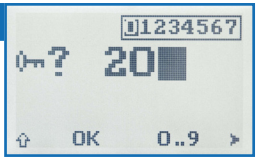
» On delivery, the four-digit password is the device's serial number.

55



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 56).

56



5. Moving back:
   Press to switch to another input level.
   To move back, press .
6. Confirm the four-digit password by pressing OK.

» The setting has been saved.

» The **°C/°F, BL On Time, Auto Off Time, Materialcalibration, 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 switched restarted, the **°C/°F, BL On Time, Auto Off Time, Materialcalibration, 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 setting has 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 setting has 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 "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 setting has 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  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  .

   » The setting has 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 57).

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 58).

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

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10. Cleaning and maintenance

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

10.1 Changing batteries

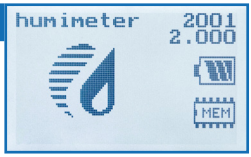
The device constantly monitors the charge level of the batteries. The current battery status is shown on the status screen.

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 60).

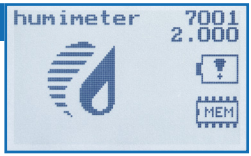
For changing the batteries, see section "3.3 Inserting batteries".

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).

59



60



10.2 Checking the calibration

The calibration check is described in a separate test equipment operating manual.

10.3 Care instructions

- Do not leave the device out in the rain. The device is not waterproof.
- Do not expose the device to extreme temperatures.
- Protect the device from strong mechanical shocks and loads.
- Remove the batteries after the harvesting season.

10.4 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.

Plastic housing

- Clean the plastic housing with a dry cloth.

Measuring chamber

- Clean the measuring chamber with a soft brush.

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 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 calibration curve	Check whether you have selected the right calibration curve (product) before taking a reading (see "6. Calibration curves").
	Wrong filling quantity	Exactly fill in the filling quantity displayed in the calibration curve name (+/- 1.0 gram).
	Mouldy or rain wet material	The accuracy decreases significantly.
	Stored and fermented corn from whole grain silage	May lead to a too high displayed measuring value.
	Frozen material or material mixed with snow	The accuracy decreases significantly.
	Contaminated material	Highly contaminated material such as long ears of barley or foreign material can strongly influence the measuring result.

Fault	Cause	Remedy
	Entered offset	An entered offset leads to deviations on the displayed measured value. If the deviation does not match your reference procedure, enter an offset corresponding to the difference or set the offset to 0.0 (see "5.10 Offset function") to restore the factory characteristic curve.
Data transfer to LogMemorizer software fails.	Interface not configured.	To configure the interface once, press the F1 key on your PC and read the LogMemorizer software help file.

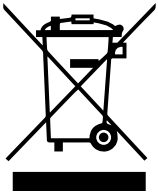
12. Storage and disposal

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

CE KONFORMITÄTSERKLÄRUNG
DECLARATION OF CONFORMITY

Name/ Adresse des Herstellers: *Name/ address of manufacturer:*	**Schaller Messtechnik GmbH** **Max-Schaller-Straße 99** **A – 8181 St. Ruprecht**
Produktbezeichnung: *Product designation:*	**humimeter**
Typenbezeichnung: *Type designation:*	**FS1 ; FS1.1 ; FS2 ; FS3 ; FS4 ; FS4.1 ; FS4.2 ; FSW ; BP1**
Produktbeschreibung: *Product description*	**Messgerät zur Bestimmung des Wassergehalts in Lebensmitteln** ***Measuring instrument for determining the water content in foodstuffs***

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

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

Die Übereinstimmung des bezeichneten Produktes mit den Bestimmungen der Richtlinien wird durch die vollständige Einhaltung folgender Normen nachgewiesen:
Full compliance with the standards listed below proves the conformity of the designated product with the provisions of the above-mentioned EC Directives:

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

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

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

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

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

St. Ruprecht a.d. Raab, 31.07.2022

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

UK CA DECLARATION OF CONFORMITY

Name/ address of manufacturer:	**Schaller Messtechnik GmbH** **Max-Schaller-Straße 99** **A – 8181 St. Ruprecht**
Product designation:	**humimeter**
Type designation:	**FS1 ; FS1.1 ; FS2 ; FS3 ; FS4 ; FS4.1 ; FS4.2 ; FSW ; BP1**
Product description:	**Measuring instrument for determining the water content in foodstuffs**

The designated product is in conformity with the following directives:

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

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

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

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

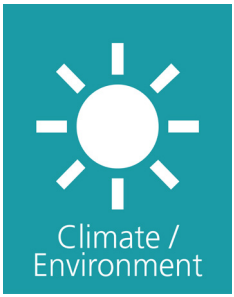
In case of any changes not agreed upon with the manufacturer, this declaration of conformity loses its validity.

St. Ruprecht a.d. Raab, 31.07.2022

Bernhard Maunz
Legal binding signature of the issuer

13.2 Technical data

Measuring range	5 % to 40 % warer content (depending on product) 30 to 90 kg/hl (depending on product)
Resolution	0.1 % water content, 0.1 kg/hl hectolitre weight
Operating temperature	0 °C to 40 °C
Storage temperature	-10 °C to 50 °C
Calibration accuracy water content to reference material	+/- 0.4 %
Calibration accuracy hectolitre weight to hectolitre measuring spout	+/- 0.7 kg/hl
Compensation	through integrated hectolitre determination and sample temperature measurement
Average sample quantity	ca. 330 g (depending on product)
Measuring result	within 3 seconds without sample preparation. Clean working possible due to filling funnel
Data memory	Hold function, manual measured value memory for 10,000 values with measurement location description
Dimensions FSW	250 x 80 x 180 mm
Dimensions filling funnel	160 x 100 x 25 mm
Weight	1.7 kg
Power supply	4 pcs. Alkaline AA batteries 1.5 V
Offset function	Adjustment of the calibration curve
Menu languages	German, English, French, Italian, Spanish, Portuguese, Czech, Slovenian, Hungarian, Romanian, Polish, Russian, Slovakian



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

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