Schaller
Messtechnik / humimeter.com

GRUBATEC
MESS- UND REGELTECHNIK

Moisture meter

Operating Manual

humimeter FS2

Grain moisture meter

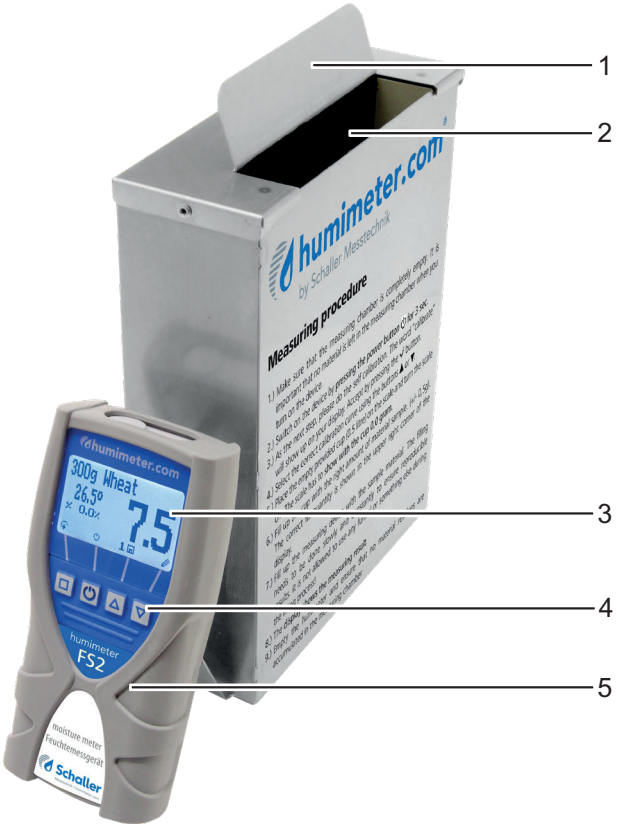
78,0°F | 6,16% | 456kg/m³ | -27,3td | 0,64aw | 51,9%r.H. | 14,8%abs | 100,4g/m² | 09m/s | 4,90Ugl | 1

Version 3.5

Always read this operating manual before using the humimeter FS2!

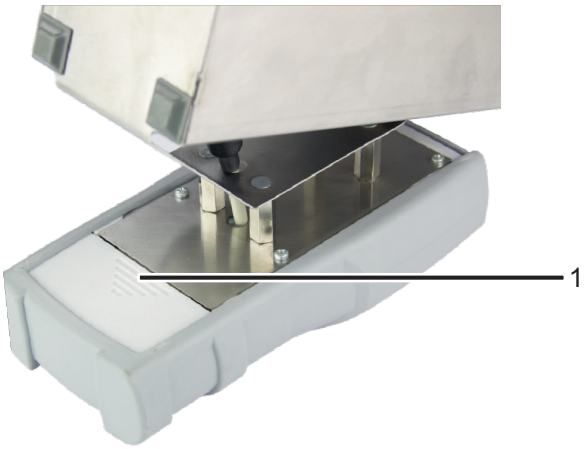
Your humimeter FS2 at a glance

The main unit



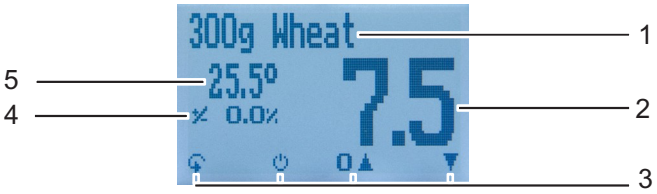
No.	Name
1	Auxiliary plate for filling
2	Measuring chamber
3	Display
4	Keypad
5	Rubber protection cover

Rear of the main unit



No.	Name
1	Battery compartment

The display



No.	Name
1	Calibration curve
2	Moisture content in % ("6.1 How moisture content is defined")
3	Display symbols
4	Currently applied offset
5	Temperature display

The display symbols

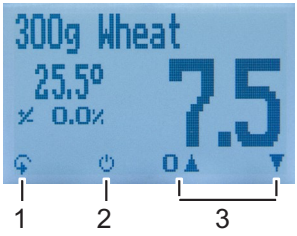
Symbol	Name
	Enter
	Up
	Down
	Back
0..9	Enter numbers
A..Z	Enter letters
	Continue / go right
	Left
	Yes
	Offset

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

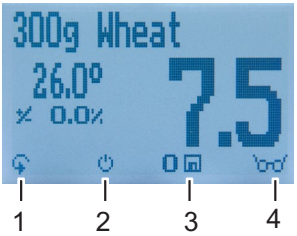
The device has four different menus: product selection, Data Log, offset menu and main menu.

Product selection menu



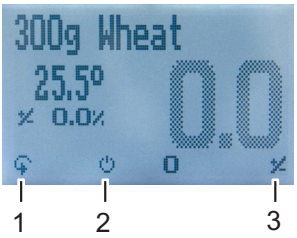
No.	Name
1	Change menu
2	Display illumination / device on/off
3	For changing the calibration curve

Data Log menu



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

Offset menu



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 FS2 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 FS2. 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

Telephone: +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 "The displayed measurement value now deviates from the standard calibration!").

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.

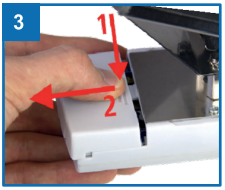
3.2 Making sure that all of the components have been included

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

- humimeter FS2
- 4 pieces of AA Alkaline batteries
- Digital scale 500 grams
- Measuring cup 0.5 liter
- Plastic case
- Rubber protection cover
- Operating manual

3.3 Inserting batteries

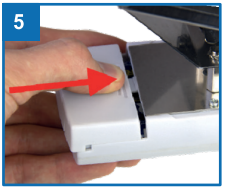
1. Remove the rubber protection cover. To do so, hold the rubber protection cover at the upper side and pull it over. If your device is provided with an optional USB port, remove the protection cap of the USB socket before (figure 1 and 2).



2. Take hold of the device with one hand, press your thumb onto the engraved area of the battery compartment (1) and drag downwards (2) (figure 3).

3. Insert the batteries with negative and positive terminals matching those indicated on the battery compartment. Press down the batteries so that they lay flat on the bottom of the housing (figure 4).

   » As soon as all batteries have been inserted, the device switches on automatically.



4. Push the battery cover onto the housing until it clicks into place. Then mount the rubber protection cover onto the housing, beginning at the end where the battery compartment is situated (figure 5).

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.

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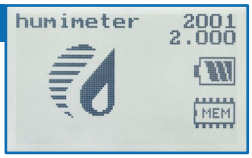

4.2 Automatic adjustment

» The display will show the message **Adjust?** (figure 7).

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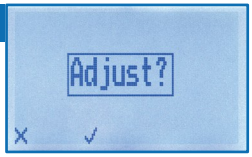

1. Make sure that the measuring chamber of the device is empty and place the device on a level table.
2. Confirm by pressing ✓.

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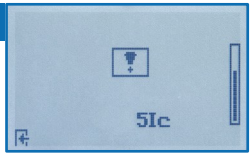


» The display will now appear as shown in figure 8.

» The bar will run upwards. During this period, the device must remain on the table without external influence,

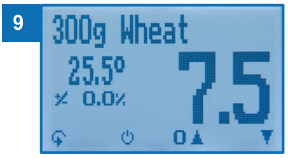
» which only takes a couple of seconds to complete.

» Once completed, the device will show the measuring window (see "Product selection menu" page 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 "The displayed measurement value now deviates from the standard calibration!".



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.

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. Place the empty and clean measuring cup (0.5 liter) on the switched-off scale (figure 11). Then switch on the scale.

   » The balance must display 0.0 g with the empty measuring cup on it. The measuring cup must not be weighed.

2. Check whether the measuring chamber of the device is empty. When the device is switched on, there must not be any material in it.

   » Empty the instrument and clean the measuring chamber if necessary (see "9.4 Cleaning the device").

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

4. Perform the automatic adjustment (see "4.2 Automatic adjustment").

5. Select the required calibration curve (see "The displayed measurement value now deviates from the standard calibration!") by pressing the  or  button (see "4.3 Selecting the calibration curve"rve").

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5.2 Taking a measurement

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

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1. Fill the measuring cup with the filling quantity displayed in the calibration curve name (+/- 1.0 g) (figure 15) (see "The displayed measurement value now deviates from the standard calibration!").
2. Now slowly and evenly fill the measuring chamber of the device with the material being measured (figure 15).
   - » For the filling, no funnel or similar device may be used.

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3. The device will now display the moisture content (figure 16).
   - » The displayed value flashes when the moisture content exceeds the measuring range of the selected calibration curve (figure 17). A flashing value signals a decreasing accuracy of the measurement. The measuring range is dependent on the calibration curve (see "The displayed measurement value now deviates from the standard calibration!").
   - » Once the reading has been taken, it can be saved on the device (see "5.3 Saving individual readings" or "5.4 Saving several readings (a measurement series) at the same time").
   - » It is possible to apply an offset to the displayed measurement value (see "5.10 Offset function").

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4. Empty the device and make sure that there are no residues in the measuring chamber.
   - » Clean the measuring chamber if necessary (see "9.4 Cleaning the device").

i Information - Measuring accuracy

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

Information - Incorrect readings

Always make sure to select the correct calibration curve and the correct filling quantity for the material you are measuring. This prevents taking incorrect readings (see "10. Faults").

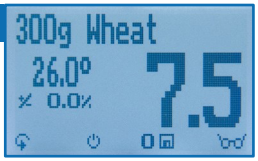
5.3 Saving individual readings

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" page 5).

1. Press .
   - » The display will now appear as in figure 19 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 20.
3. The data you have inputted can be overwritten at any time.
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 21).
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.

18



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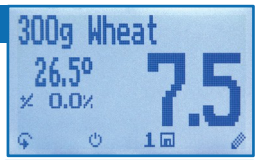

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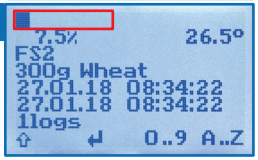

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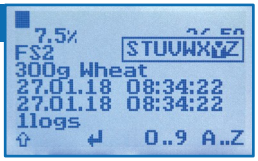
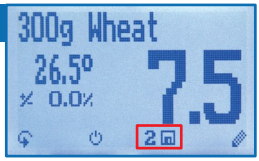


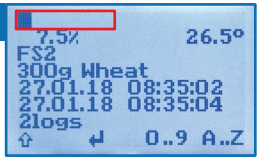
5.4 Saving several readings (a measurement series) at the same time

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

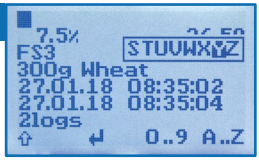
1. Take several measurements of the same sample material (see "5. The measuring process").
2. To save a reading, press  as soon as the reading has been taken.
   - » The display will now appear as shown in figure 22. This number shows the number of readings that have already been saved.



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 23.

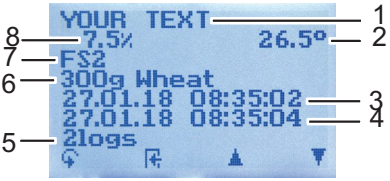


4. The data you have inputted can be overwritten at any time.
5. Inputting letters:
   Press and hold  to quickly scroll to the required letter and either press it for 3 seconds or press  to confirm the selected letter (figure 24).



6. 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.
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.

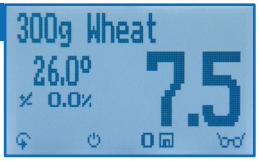
» The display will show the following information:



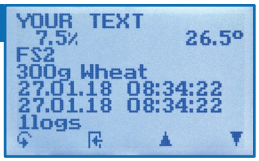
No.	Name
1	Name of the measurement series (editable)
2	Temperature (average)
3	Date & start time of the measurement series
4	Date & end time fo the measurement series
5	Number of saved readings
6	Calibration curve
7	Device name
8	Moisture content (average)

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 25.

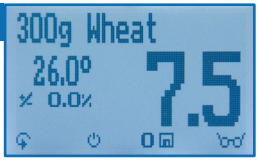


1. Press .
2. Select the required reading. To do so, press or .
   - » The display will now appear as shown in figure 26.
   - » Press to leave this screen.

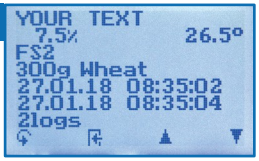


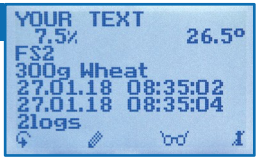
5.6 Viewing individual readings from a series of measurements

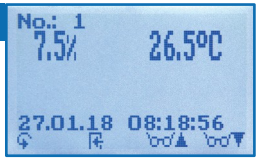
To do so: You must have saved a series of measurements (e.g. **2 logs**).
The display will now appear as shown in figure 27.



1. Press .
2. Select the required reading. To do so, press or .
   - » The display will now appear as shown in figure 28.
3. Press to switch to another input level.
   - » The display will now appear as shown in figure 29.
4. Press again.
   - » The display will now appear as shown in figure 30.
5. Navigate to the required reading (**No.: 1, No.: 2, No.: 3**). To do so, press or .
6. Press to leave this screen.







5.7 Deleting all measured values (data log)

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

1. Press twice or hold for 2 seconds.
2. Select **Edit Logs** (figure 31). To do so, press or and confirm by pressing .
3. Select **Clear Logs** (figure 32). To do so, press or and confirm by pressing .
   » The display will show the message **clear?** (figure 33).
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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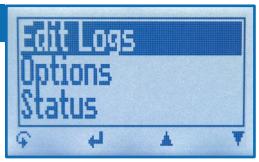

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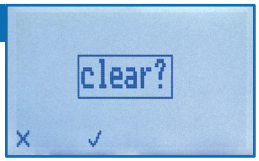


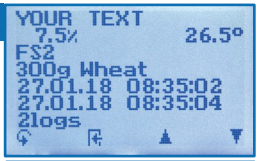
5.8 Deleting individual measurement series

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 34.

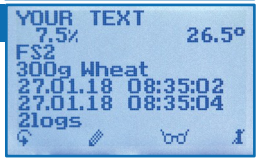
1. Press .
   » The display will now appear as shown in figure 35.
2. Select the required reading. To do so, press or .
3. Press to switch to another input level.
   » The display will now appear as shown in figure 36.
4. Press .

34

35



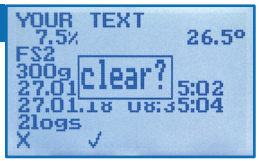
36



» The display will then show the message **clear?** (figure 37).

5. Confirm by pressing ✓.

» The value has been deleted.

37


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 40.

1. Press 👓.

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

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 40.

4. Press 👓.

» The display will now appear as shown in figure 41.

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 42.

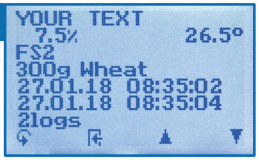
7. Press ✎ to delete the value shown.

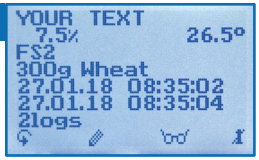
» The display will then show the message **clear?** (figure 43).

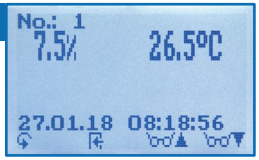
8. Confirm by pressing ✓.

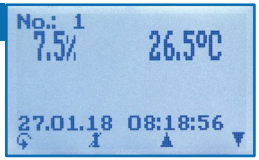
» The value has been deleted.

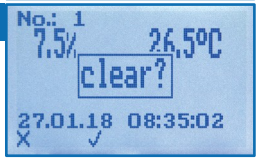
38


39


40


41


42


43


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 %.

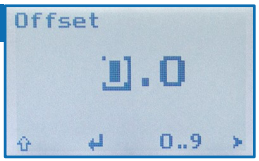
5.10.1 Setting the offset

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"es") by pressing the or button (see "4.3 Selecting the calibration curve"rve").

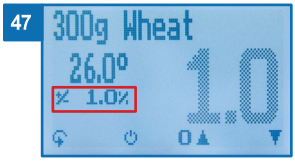
2. Press twice to change to the offset menu.
3. Press .
   - » The display will now show the material calibration menu for the selected calibration curve (figure 45).
   - » The offset is part of the material calibration menu.

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 46).



   - » **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!
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 47).
    » **The displayed measurement value now deviates from the standard calibration!**

6. Calibration curves

300g Corn 5 % - 40 % 	300g hand Corn 5 % - 40 % 	300g Rye 5 % - 28 % 	300g Triticale 5 % - 28 % 
300g Wheat 5 % - 28 % 	300g Durum 5 % - 28 % 	300g Spelt Peeled 5 % - 28 % 	300g Barley 5 % - 28 % 
190g Oats 5 % - 25 % 	300g Rape 5 % - 18 % 	230g Pumpkin Seeds 2 % - 20 % 	310g Peas 2 % - 25 % 
300g Soybeans 5 % - 18 % 	295g Horse Beans 5 % - 25 % 	277g Scarlet Runner 5 % - 25 % 	180g Sunflower 5 % - 18 % 

300g Rice peeled 5 % - 25 % 	250g Rice unpeeled 4 % - 30 % 	300g Rice brown 4 % - 26 % 	300g Buckwheat peeled 5 % - 18 % 
300g Buckwheat unpeeled 3 % - 25 % 	300g Millet 5 % - 15 % 	300g Sorghum Millet 5 % - 25 % 	200g Jatropha 5 % - 18 % 
Referenz ! 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:

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

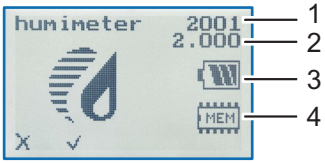
M_n: Mass of the sample with average moisture content

M_t: Mass of the sample with zero moisture content

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

7. 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:



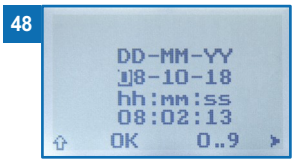
No.	Name
1	Serial number
2	Software version
3	Battery status
4	Memory status

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

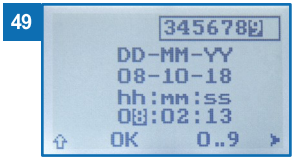
8. Configuring the device

8.1 Adjust the date/time

1. Press twice or hold for 2 seconds.
2. Select **Options**. To do so, press or and 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 48.
   - » The format for the date is **DD-MM-YY** (Day-Month-Year).
   - » The format for the time is **hh:mm:ss** (Hour:Minutes:Seconds).



4. 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 49).



5. Moving forward:
   To move forward between **DD-MM-YY** and **hh:mm:ss**, press .
6. Moving back:
   Press to switch to another input level. To move backward between **DD-MM-YY** and **hh:mm:ss**, press .
7. Confirm the date/time by pressing OK.
   - » The settings have been saved.
8. Press to leave the **Options** menu.
9. Press to leave the main menu.

8.2 Selecting a language

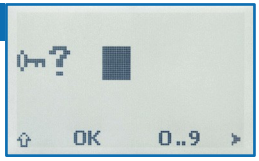
1. Press twice or hold for 2 seconds.
2. Select **Options**. To do so, press or and confirm by pressing .
3. Select **Language**. To do so, press or and confirm by pressing .
4. Navigate to the required language. To do so, press or and confirm by pressing .
   » The settings have been saved.
5. Press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

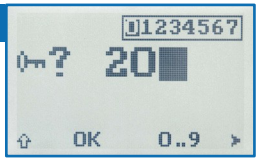
1. Press twice or hold for 2 seconds.
2. Select **Options**. To do so, press or and confirm by pressing .
3. Select **Unlock**. To do so, press or and confirm by pressing .
   » The display will now appear as shown in figure 50.
   » On delivery, the four-digit password is the device's serial number.

50



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 51).

51



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.

8.4 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.

8.5 Selecting °C/°F

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 **°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.

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. 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.

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 setting has 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.

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.

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 52).

4. Confirm by pressing  .

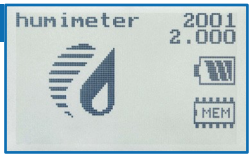
» The device will now be reset to its factory settings. All of your personal settings will be lost.

» The display will show the status indicator **humimeter** (figure 53).

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

52

53



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

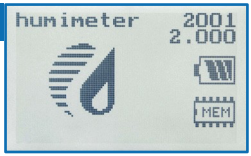
The device constantly monitors the charge level of the batteries. The current battery status is shown on the status screen.

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 55).

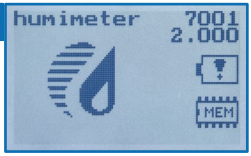
For changing the batteries, see section "3.3 Inserting batteries".

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).

54



55



9.2 Checking the calibration

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

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.
- Remove the batteries after the harvesting season.

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.

Plastic housing

- Clean the plastic housing with a dry cloth.

Measuring chamber

- Clean the measuring chamber with a soft brush.

10. Faults

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

Fault	Cause	Remedy
Measuring error	The temperature of the material being measured is too low or high. I.e. the material's temperature is lower than 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 "The displayed measurement value now deviates from the standard calibration!").
	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.

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 to +60 °C

11.2 Disposing of the device

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

Electronic devices must not be disposed of as domestic waste.

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

12. Device information

12.1 EC declaration of conformity

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 ; BP1**
Produktbeschreibung:	**Messgerät zur Bestimmung des Wassergehalts in Lebensmitteln**
Product description	***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

Schaller
Messtechnik / humimeter.com
Schaller Messtechnik GmbH
Raab - Schaller - Straße - 99
AT - 8130 St. Ruprecht a. d. Raab
www.humimeter.com | info@humimeter.com

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

DECLARATION OF CONFORMITY

Name/ address of manufacturer:	**Schaller Messtechnik GmbH** **Max-Schaller-Straße 99** **A – 8181 St. Ruprecht**
Product designation:	**humimeter**
Type designation:	**FS1 ; FS1.1 ; FS2 ; FS3 ; FS4 ; FS4.1 ; FS4.2 ; 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.

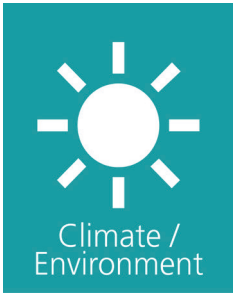
In case of any changes not agreed upon with the manufacturer, this declaration of conformity loses its validity.

St. Ruprecht a.d. Raab, 31.07.2022

Bernhard Maunz
Legal binding signature of the issuer

12.2 Technical data

Display resolution	0.1 % moisture content, 0.5 °C/°F temperature
Measuring range	5 % to 40 % moisture content (depending on calibration curve)
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 x 1.5 Volt AA Alkaline batteries
Current consumption	60 mA (incl. display illumination)
Menu languages	English, German, French, Italian, Spanish, Portuguese, Czech, Polish, Russian, International
Display	128 x 64 illuminated matrix display
Device dimensions	260 x 70 x 250 mm
Device weight	1,300 g
Case dimensions	450 x 360 x 106 mm
Weight of device + case	3,180 g
Device IP rating	IP 40



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