Schaller
Messtechnik / humimeter.com

Moisture meter

Operating Manual

humimeter SG1

Moisture meter

for water content determination of bulk material, powder

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

Version 1.1

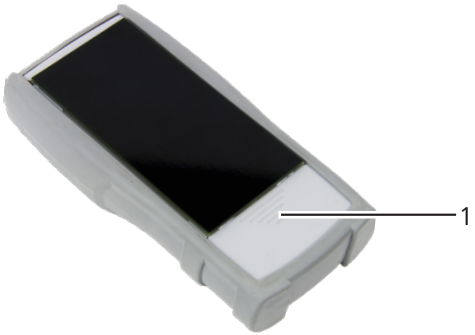
Always read this operating manual before using the humimeter SG1!

Your humimeter SG1 at a glance

The main unit

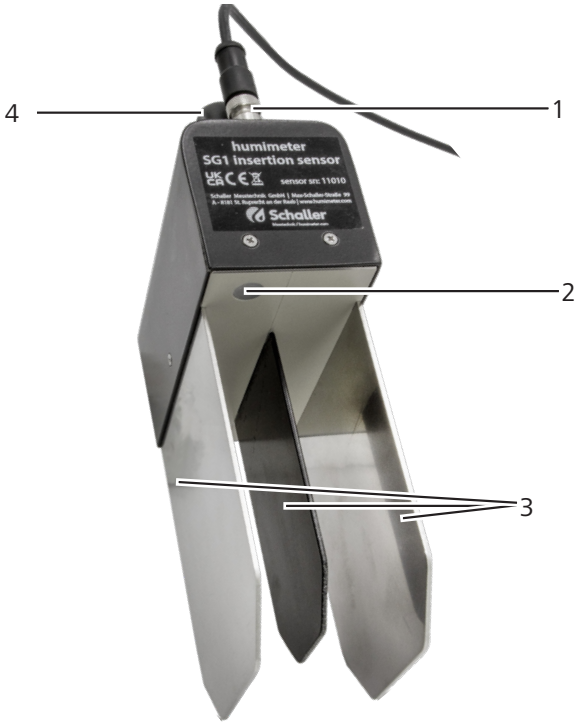
No.	Name
1	Connector for external sensor
2	USB port (optional)
3	Display
4	Keypad
5	Rubber protection cover

Rear of the main unit



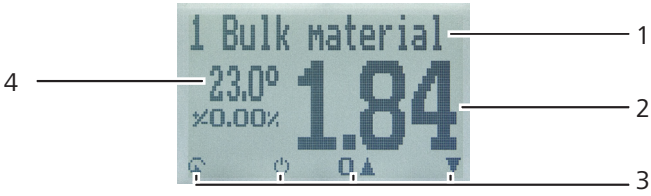
No.	Name
1	Battery compartment

Overview insertion sensor (art. no. 14924)



No.	Name
1	Sensor connector
2	Temperature probe
3	Measuring plates
4	Handle

The display



No.	Name
1	Product type
2	Moisture content in % ("6.3 How moisture is defined")
3	Display symbols
4	Temperature display

The display symbols

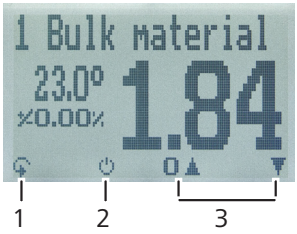
Symbol	Name
	Enter
	Up
	Down
	Back
0..9	Enter numbers
A..Z	Enter letters
	Continue / go right
	Left
	Yes

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

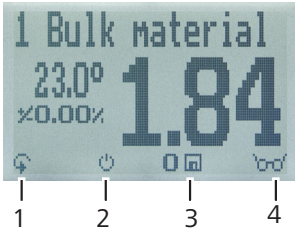
The device has four different menus: Data Log, product selection, offset and main menu:

Product selection menu



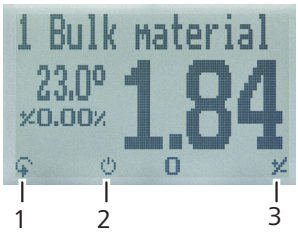
No.	Name
1	Change menu
2	Display illumination / device on/off
3	For changing the product type

Data Log menu



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

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
- **Print Logs:**
  Last Log, All Logs, Clear Logs
- **Send Logs:**
  Manual Logs, Clear Logs
- **Options:**
  Bluetooth, Date/Time, Log Time, Language, Unlock, °C/°F, BL On Time, Auto Off Time, Materialcalibration, Password, Reset
- **Status**

Table of contents

1. Introduction

1.1 Information about this operating manual

This operating manual is designed to enable you to use the humimeter SG1 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 SG1. 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.

CAUTION

It is essential to observe this warning. Non-compliance can lead to injury.

ATTENTION

It is essential to observe this warning. Non-compliance can lead to damage to property or equipment.

Information

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

1.4 Customer service

For technical advice, please contact our customer service department at:

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

Telephone: +43 (0)3178 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 bulk materials
- Easy to use device for quickly measuring the moisture content of free-flowing media in big bags, sacks or troughs.
- The device must only be used for taking measurements on the products defined in the following sections of this manual (see "6. Product types").

2.2 Improper use

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

2.3 User qualifications

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

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

2.4 General safety information

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

- Remove the batteries if the device isn´t used for a prolonged period of time (4 weeks).
- Keep the measuring plates of the sensor away from the body during all activities.
- Keep the measuring plates of the sensor away from the body of others during all activities.
- In case of damages or loose parts on the device, remove the batteries and contact Schaller Messtechnik GmbH or your dealer.

All of the device's technical features have been inspected and tested before delivery. Every device has a serial number. Do not remove the tag with the serial number.

2.5 Warranty

The warranty does not apply to:

- Damage resulting from non-observance of the operating manual
- Damage resulting from third-party interventions
- Products that have been used improperly or modified without authorisation
- Products with missing or damaged warranty seals
- Damage resulting from force majeure, natural disasters, etc.
- Damage from improper cleaning
- Batteries older than six months
- Damage resulting from improper strain (pressure, bending) of the insertion probe or the measuring head
- Damage by dropping the measuring head

2.6 Packaging

- Do not discard the packaging!
- In case of returning the device for a warranty claim, the original packaging must be used.

» We refuse any liability for damages during transport using inadequate packaging.

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 SG1
- 4 pieces of AA Alkaline batteries
- Rubber protection cover
- humimeter USB data interface module - USB flash drive with software and USB-cable or download using humimeter.com/software
- Operating manual

Required accessories:

- Insertion sensor art. no. 14924 (see "Overview insertion sensor (art. no. 14924)" page 3)

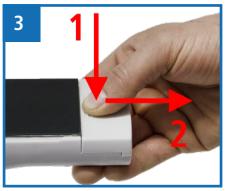
Optional accessories for device:

- humimeter USB data interface module - USB flash drive with software and USB cable
- Thermo printer runs with rechargeable battery (only possible together with humimeter USB data interface module) - Described in a separate operating manual
- Bluetooth module
- Testing equipment

Optional accessories for art. no. 14924 insertion sensor

3.3 Inserting batteries

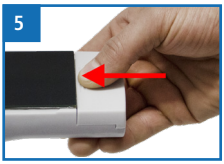
1. Remove the rubber protection cover. To do so, hold the rubber protection cover at the upper side and pull it over (figure 1 and 2). In case a sensor is connected, disconnect it before (see "4.5 Connecting the sensor to the device"). If your device is provided with an optional USB port, remove the protection cap of the USB socket before.



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

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

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



4. 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

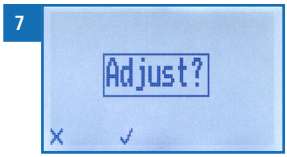
- Press the ⏻ button for 3 seconds.

» The display will then show the status indicator (figure 6).

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

4.2 Automatic calibration

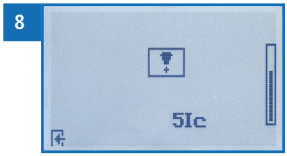
» The display will show the message **Adjust?** (figure 7).



1. Make sure that the measuring chamber of the device is empty and held in the air.

» The insertion sensor must not rest on a surface!

2. Confirm by pressing ✓.



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

» The bar will run upwards. During this period, the device must be held in air.

» After a few seconds, the adjustment is complete.

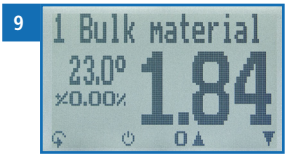
» Once completed, the device will show the measuring window (see "Product selection menu" page 5).

4.3 Selecting the product type

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

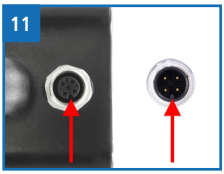
For an overview of the different product types and the criteria for selecting them, please refer to: "6. Product types".

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



» The product type you selected will now be shown at the top of the display.

4.4 Connecting the cable to the sensor



- Insert the connector into the sensor until both threads are in place.
- » Pay attention to the increase in the connector and its correct positioning (figure 11).
- » The connector should fit without effort.
- Now tighten the thread by hand.

4.5 Connecting the sensor to the device

- If a sensor is already mounted, unscrew it counterclockwise.
- Plug the desired sensor into the device until both threads are in contact.
- » Pay attention to the elevation in the connector and its correct positioning (figure 13).
- » Do not use excessive force to plug in the sensor, which is very easy to operate.
- Now tighten the thread by hand.

4.6 Taking a measurement

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

4.7 Switching the device off

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

- Press the ⏻ button for 3 seconds.

5. The measuring process

5.1 The measuring process with the insertion probe

5.1.1 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 for at least 30 minutes before the measurement.

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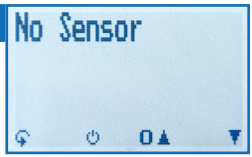

- Switch on the device (see "4.5 Connecting the sensor to the device").
- Now switch on the device (see "4.1 Switching the device on").
- Adjust the device (see "4.2 Automatic calibration").
- Now you can carry out the measurement (see "5.1.2 Taking a measurement").

5.1.2 Taking a measurement

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

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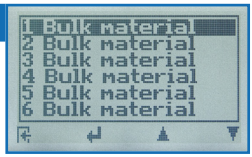
1. Insert the measuring sensor of the device completely into the material up to the measuring cap (black cover) (figure 15).

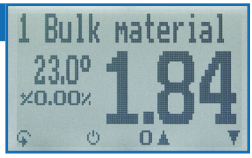
» Do not bend or drop the measuring sensor!

2. Select the desired product type (see "6. Product types") by pressing the or button (see "4.3 Selecting the product type") (figure 16).

16



3. The device will now instantly display the moisture content on the display (figure 17).



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» The displayed value flashes when the moisture content exceeds the measuring range of the selected product type. A flashing value signals lowered accuracy of the measurement. The measuring range is dependent on the product type (see "6. Product types").

» Once the reading has been taken, it can be saved on the device (see "5.3 Saving individual readings" or "5.4 Saving several readings (a measurement series) at the same time").

CAUTION

Risk of injury

Risk of injury due to the measuring plates

► Keep the measuring head away from your body throughout all activities.
► Keep the measuring head away from other people throughout all activities.

Information - Measuring accuracy

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

Information - Incorrect readings

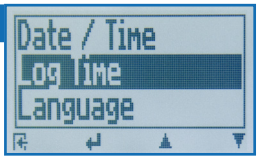
Always make sure to select the correct product type for the material you are measuring. This prevents taking incorrect readings (see "11. Faults").

5.2 Hold function - Freezing the displayed value

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

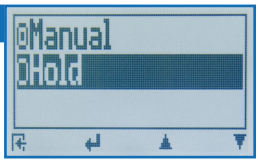
5.2.1 Activating the Hold function in the Options menu

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



18

1. Press twice or hold for 2 seconds.
2. Select **Options**. To do so, press or and confirm by pressing .
3. Select **Log Time** (figure 18). To do so, press or and confirm by pressing .



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4. Select **Hold** (figure 19). To do so, press or and confirm by pressing .

» The setting has been saved.

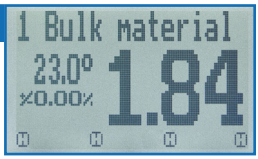
5. Press to leave the **Options** menu.
6. Press to leave the main menu.

5.2.2 Using the Hold function

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

- Press .

» The current reading will be frozen. All of the four symbols will now be displayed as (figure 20).



20

- To reactivate the frozen display, simply press any button.

5.3 Saving individual readings

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

5.3.1 Activating the manual save function in the options menu

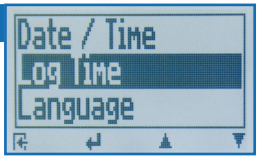
To do so: The device has to be switched on and be in the product selection menu.

1. Press twice or hold for 2 seconds.
2. Select **Options**. To do so, press or and confirm by pressing .
3. Select **Log Time** (figure 21). To do so, press or and confirm by pressing .
4. Select **Manual** (figure 22). To do so, press or and confirm by pressing .

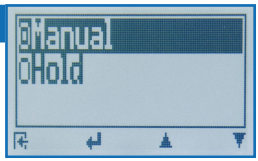
» The setting has been saved.

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

21

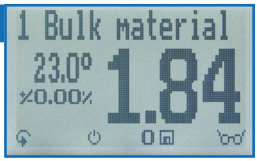


22



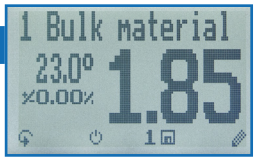
5.3.2 Using the manual save option

To do so: The device has to be in the Data Log menu (see "Data Log menu" page 5). The manual save option is set on the device.

23


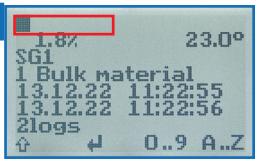
1. Press .

» The display will now appear as shown in figure 24 and the disc symbol will be preceded by the digit one.

24


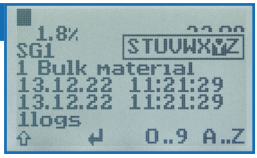
2. Press to enter a name for the saved reading and to finish the measuring process.

» The display will now appear as shown in figure 25.

25


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 press to confirm the selected letter (figure 26).

26


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.

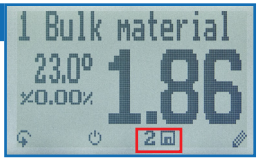
5.4 Saving several readings (a measurement series) at the same time

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

1. Take several readings (see "5. The measuring process").
2. After each measurement, press to save the reading.

» The display will appear as shown in figure 27. The marked number shows the number of readings that have already been saved.

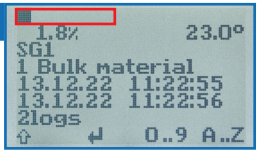
27



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

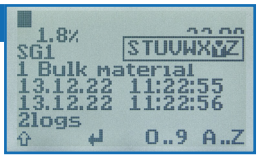
» The display will now appear as shown in figure 28.

28



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 29).

29

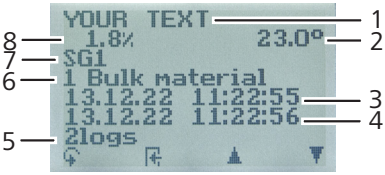


6. Inputting numbers:
   Press and hold 0..9 to quickly scroll to the required number and either press it for 3 seconds or press to confirm the selected number.
7. Moving forward/back:
   Press to switch to another input level. Press or to move forward or back.
8. Confirm your entry by pressing .

» The data you entered has been saved.

» The device automatically determines the average moisture content of the saved measuring values.

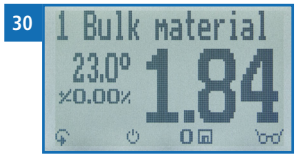
» The display will show the following information:



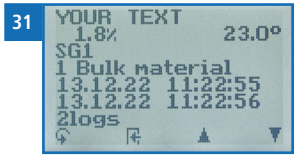
No.	Name
1	Name of the measurement series (editable)
2	Temperature (average)
3	Date & start time of the measurement series
4	Date & end time of the measurement series
5	Number of saved readings
6	Product type
7	Device name
8	Moisture content (average)

5.5 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 30.

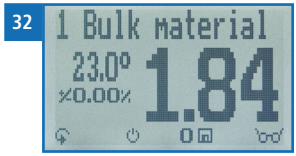


1. Press .
2. Select the required reading. To do so, press or .
   » The display will now appear as shown in figure 31.
   » Press to leave this screen.

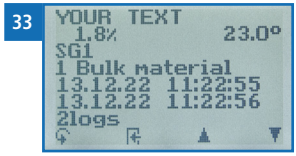


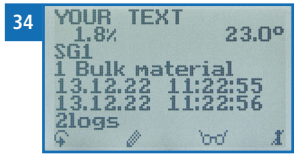
5.6 Viewing individual readings from a series of measurements

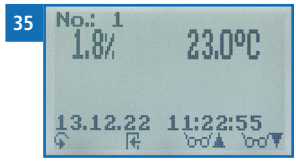
To do so: You must have saved a series of measurements (e.g. **2 logs**).
The display will now appear as shown in figure 32.



1. Press .
2. Select the required reading. To do so, press or .
   » The display will now appear as shown in figure 33.
3. Press to switch to another input level.
   » The display will now appear as shown in figure 34.
4. Press again.
   » The display will now appear as shown in figure 35.
5. Navigate to the required reading (**No.: 1, No.: 2, No.: 3**). To do so, press or .
6. Press to leave this screen.







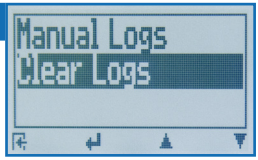
5.7 Deleting all measured values (data log)

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

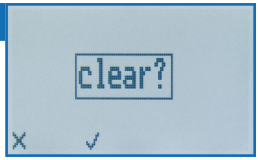
1. Press twice or hold for 2 seconds.
2. Select **Edit Logs** (figure 36). To do so, press or and confirm by pressing .
3. Select **Clear logs** (figure 37). To do so, press or and confirm by pressing .
   » The display will show the message **clear?** (figure 36).
4. Confirm by pressing .
   » The data log has been deleted.
5. Press to leave the **Edit Logs** menu.
6. Press to leave the main menu.

36

37



38

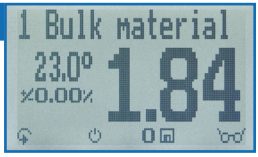


5.8 Deleting individual measurement series

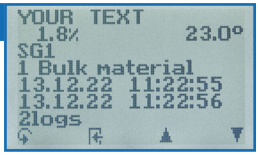
To do so: You must have saved a measured value (e.g. **1 log**) or a series of measurements (e.g. **3 logs**). The display will now appear as shown in figure 39.

1. Press .
   » The display will now appear as shown in figure 40.
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 41.
4. Press .

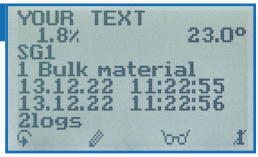
39



40



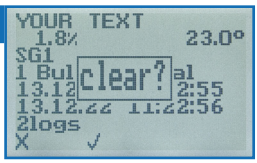
41



» The display will then show the message **clear?** (figure 42).

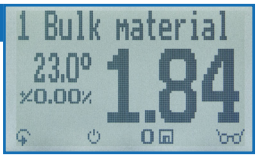
5. Confirm by pressing ✓.

» The value has been deleted.

42


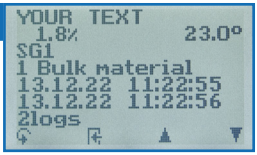
5.9 Deleting single values from a series of measurements

To do so: You must have saved a series of measurements comprising of at least 2 logs. The display will now appear as shown in figure 43.

43


1. Press 👓.

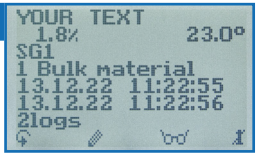
» The display will now appear as shown in figure 44.

44


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

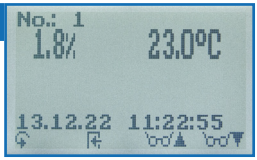
3. Press ↻ to switch to another input level.

» The display will now appear as shown in figure 45.

45


4. Press 👓.

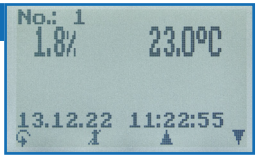
» The display will now appear as shown in figure 46.

46


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 47.

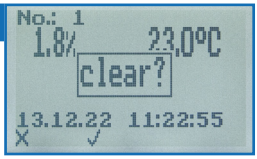
47


7. Press 🗑 to delete the value shown.

» The display will then show the message **clear?** (figure 48).

8. Confirm by pressing ✓.

» The value has been deleted.

48


5.10 Offset function

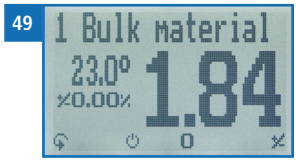
By changing the offset, the displayed measurement values can be adapted to other norms/standards. The displayed measuring value is corrected by the entered offset.

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 %.

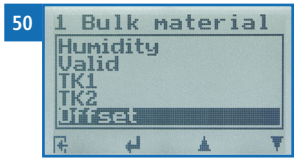
5.10.1 Changing the offset

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

1. Select the required product type (see "Product type") by pressing the or button (see "4.3 Selecting the product type").

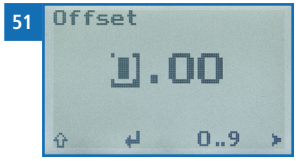


2. Press twice to change to the offset menu.
3. Press .



» The display will now show the material calibration menu for the selected product type (figure 20).
» The offset is part of the material calibration menu.

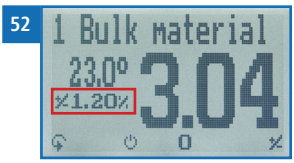
4. Select **Offset**. To do so, press or and confirm by pressing .
5. The data you have inputted can be overwritten at any time.
6. Inputting numbers:
Press and hold 0..9 to quickly scroll to the required number and either press it for 3 seconds or press to confirm the selected number (figure 4.5).



» **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 product type and shown in the display (figure 4).

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

6. Product types

The device provides the corresponding calibration curves:

6.1 Calibration curves of the insertion probe

Product name	Product type	Measuring range
Bulk material 1 -8	Free characteristics for special products	
Reference	! Only for testing the moisture meter !	

Humimeter SG1 free characteristic curves are stored. These can be referenced or adapted via a comparison using the EN/ISO method.

6.2 Selecting a calibration curve

Due to the different compositions of the various bulk materials, there is no standardized characteristic curve assignment.

- The measuring device itself is equipped with a reference characteristic curve that covers the entire measuring range of the insertion sensor from 0-100 %.
- With the reference characteristic, control of the material is possible via comparative values.
- Using this reference characteristic and a comparison procedure (such as various EN/ISO standards), material-specific characteristics can be created.
- For this purpose, we recommend that you let us carry out a laboratory order for the creation of a characteristic curve of a material for the humimeter SG1 art nr. 11217.
- In addition, the SG1 also has 8 Free Bulk Characteristics pre-installed. Here it is possible for the customer to assign one of these characteristic curves to his material via a comparison procedure (such as various EN/ISO standards).

6.3 How moisture is defined

In the standard delivery state, the device measures and shows the material moisture content. The moisture content readings are calculated in relation to the material's overall mass:

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

M_n: Mass of the sample with average moisture content

M_t: Mass of the sample with zero moisture content

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

6.4 Notes for comparative measurement with oven-drying method

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

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

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

6.5 Compression of the material

Due to the open shape, there is no blockage or accumulation of bulk material in the sensor. Free-flowing material can flow out of the sensor, whereby the material density/ bulk density between the sensor plates is approximately the same. Due to the open design, reproducibility is given.

7. Using the LogMemorizer program

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

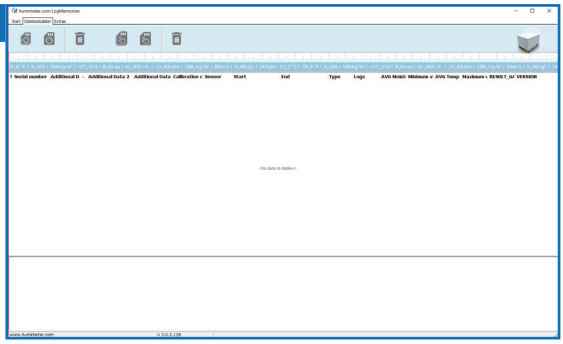
7.1 Installing/opening the program

1. Insert the USB stick with the LogMemorizer program into the USB port on your computer or

   » download the LogMemorizer software at humimeter.com/software 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 53).

53



   » 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 SG1 or initiate the export at your computer.

Exporting moisture readings from the humimeter SG1

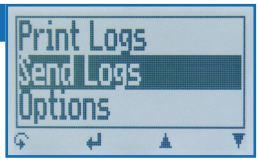
Connect the humimeter SG1 to your computer using the supplied USB cable:

1. Insert the USB Mini B connector into the humi meter SG1 (figure 54).
2. Insert the USB connector into the computer.
3. Open LogMemorizer on your computer.
4. Switch on the humimeter SG1.
5. Press  twice or hold for 2 seconds.
6. Select **Send Logs** (figure 55). To do so, press  or  and confirm by pressing  .
7. Select **Manual Logs** (figure 56). To do so, press  or  and confirm by pressing  .
8. The display will then show the message **Send** (figure 57).

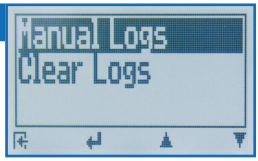
» All measuring values saved on the humimeter SG1 will now be sent to your computer.

54

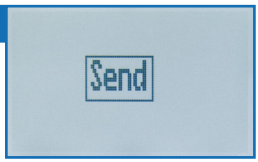
55



56



57



Initiating the data export at your computer

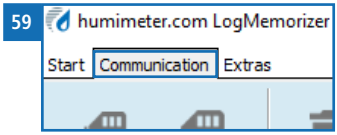
Connect the humimeter SG1 to your computer using the supplied USB cable:

1. Insert the USB Mini B connector into the humi meter SG1 (figure 58).
2. Insert the USB connector into the computer.
3. Open LogMemorizer on your computer.

58

4. Switch on the humimeter SG1.

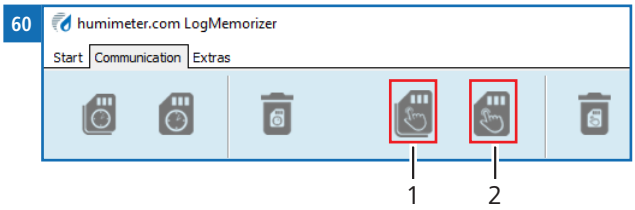
5. Open the **Communication** tab in LogMemorizer (figure 59).



6. Select and click on one of the two buttons shown in figure 60.

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

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

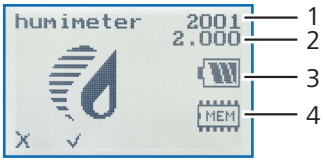


No.	Name
1	Import all manual logs
2	Import most recent manual log

» The measuring values saved on the humimeter RM1 will now be sent to your computer.

8. Checking on the device's status

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



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

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

9. Configuring the device

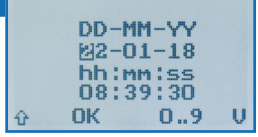
9.1 Turning on Bluetooth

The information on Bluetooth is provided in a separate operating manual.

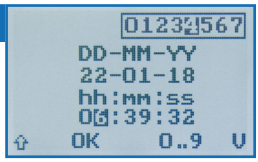
9.2 Adjusting the date/time

1. Press twice or hold for 2 seconds.
2. Select **Options**. To do so, press or and confirm by pressing .
3. Select **Date/Time**. To do so, press or and confirm by pressing .
   - » The display will now appear as shown in figure 61.
   - » 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 62).
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.

61



62



9.3 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.

9.4 Activating options

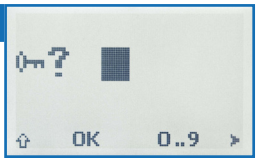
To do so: Some of the options must be deactivated.

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 63.

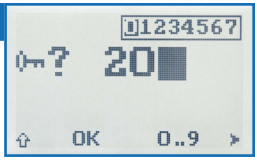
» On delivery, the four-digit password is the device's serial number.

63



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 64).

64



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

» The settings have been saved.

» The **°C/°F**, **BL On Time**, **Auto Off Time**, **Materialcalibration**, **Password**, **Reset** options are now activated.

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

9.5 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.

9.6 Selecting °C/°F

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

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

» The settings have been saved.

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

9.7 Reducing the device's power consumption

9.7.1 Configuring the display illumination time

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

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

4. Select the required display illumination period (30 seconds, 2 minutes, 5 minutes, 10 minutes). To do so, press  or  and confirm by pressing  .

» The settings have been saved.

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

6. Press  to leave the main menu.

9.7.2 Configuring automatic switch-off

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

1. Press  twice or hold for 2 seconds.

2. Select **Options**. To do so, press  or  and confirm by pressing  .

3. Select **Auto Off Time**. To do so, press  or  and confirm by pressing  .

4. Select the period of time you want the device to stay switched on (3 minutes, 5 minutes, 10 minutes). To do so, press  or  and confirm by pressing  .

» The settings have been saved.

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

6. Press  to leave the main menu.

9.7.3 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 "9.4 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 settings have been saved.

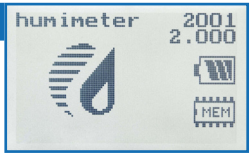
6. Press  to leave the **Options** menu.
7. Press  to leave the main menu.

9.9 Resetting the device to its factory settings

To do so: All of the options must be activated (see "9.4 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 65).
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 **humi meter** (figure 66).
   » Resetting the device will not affect the saved measuring values.

65


66


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.

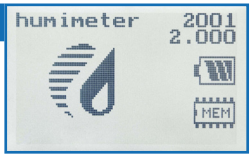
10.1 Changing the batteries

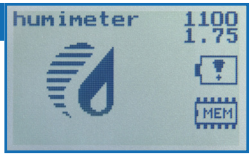
The device constantly monitors the charge level of the batteries. The current battery status is shown on the status screen.

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 68).

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).

67


68


10.2 Care instructions

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

10.3 Cleaning the device

Plastic housing

- Clean the plastic housing with a dry cloth.

Measuring head of the measuring probe

- The measuring head of the measuring probe can be cleaned with alcohol.

Insertion sensor

- The insertion sensor can be cleanedd with compressed air.
- In case of heavier soiling, the insertion sensor can also be cleaned with alcohol.

ATTENTION

Do not clean with fluids
Water or cleaning fluid getting inside the device can destroy the device.
► Only clean the plastic housing with dry materials.

11. Faults

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

Fault	Cause	Remedy
Measuring errors	Temperature discrepancy between device and material being measured	Let the temperature adjust to the material being measured (permitted difference of max. 3 °C).
	Wrong product type	Check whether you have selected the right product type (product) before taking a reading (see "6. Product types").
	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.
	Moldy or rain wet material	The accuracy of the measurement decreases significantly.
	Frozen material	The accuracy of the measurement decreases significantly.
	Material mixed with snow	The accuracy of the measurement decreases significantly.
	Movement of the measuring tip after inserting	Do not move the measuring tip after inserting.
	Water film on the measuring head	After measuring wet material, on the measuring head may arise a water film. Clean the measuring head (see "10.3 Cleaning the device").
Data transfer to Log Memorizer failed	Interface has not been configurated	The interface only has to be configurated once. To do so, press the F1 key on your computer and read the Help file of the LogMemorizer program.

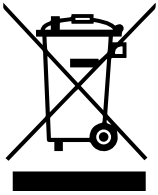
12. Storage and disposal

12.1 Storing the device

The device must be stored as follows:

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

12.2 Disposing of the device



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

Electronic devices must not be disposed of as domestic waste.

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

13. Device information

13.1 EC declaration of conformity

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:*	**SG1**
Produktbeschreibung: *Product description*	**Messgerät zur Bestimmung des Wassergehalts in Schüttgütern** ***Measuring device for determining the water content in bulk materials***

Das bezeichnete Produkt erfüllt die Bestimmungen der Richtlinien:

The designated product is in conformity with the European directives:

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

Die Übereinstimmung des bezeichneten Produktes mit den Bestimmungen der Richtlinien wird durch die vollständige Einhaltung folgender Normen nachgewiesen:

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

EN 61326–1:2013	Elektrische Mess-, Steuer-, Regel- und Laborgeräte - EMV-Anforderungen *Electrical equipment for measurement, control, and laboratory use – EMC requirements*
EN IEC 63000:2019-05 *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
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www.humimeter.com | info@humimeter.com

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:	**SG1**
Product description:	**Measuring device for determining the water content in bulk materials**

The designated product is in conformity with the following directives:

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

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

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

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Bernhard Maunz
Legal binding signature of the issuer

13.2 Technical data

Basic device

Measuring range	1 to 50 % water content (depending on the material)
Measuring range reference characteristic curve	0 to 100 unitless
Resolution	0,1 % water content
Operating temperature	0 to +40°C
Hold function	Manual saving of results, datalog for 10.000 logs with measuring point report
Temperature compensation	Automatic
Menu languages	English, German, French, Italian, Spanish, Portuguese, Czech, Polish, Russian, International
Dimensions	150 x 75 x 30 mm
Weight	270 g (with batteries)

Insertion sensor

Measuring range	1 to 50 % water content (depending on the material)
Measuring range referential characteristic	0 to 10 unitless
Resolution	0,1 % water content
Operating temperature	0 to +40°C
Temperature compensation	Automatic
Dimensions	255 x 150 x 70 mm
Weight	1615 g

14. Notes

Climate
Environment

Materials

Food

Buildings

Bioenergy

Paper / Board

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

Schaller Messtechnik GmbH

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