CHECKLINE®
MADE TO MEASURE

Moisture meter

Operating Manual
humimeter LM6
Leather moisture meter

for measuring the absolute moisture content of leather

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

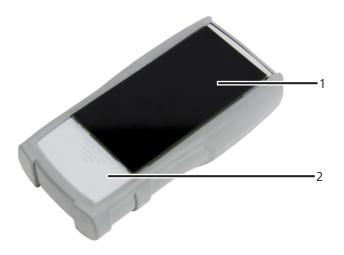Version 3.1   Always read this operating manual before using the humimeter LM6!

Your humimeter LM6 at a glance

The main unit

No	Name
1	USB Port (optional)
2	Display
3	Keypad
4	Rubber protection cover

Rear of the main unit

No	Name
1	Sensor surface
2	Battery compartment

The display

No	Name
1	Product type
2	Moisture content in % (see "6.2 How moisture content is defined")
3	Display symbols
4	Temperature display
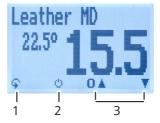
The display symbols

Symbol	Name		Symbol	Name
↵	Enter		✕	No
▲	Up		⇧	Change input level
▼	Down		OK	OK
⇤	Back		↻	Change menu
0..9	Enter numbers		▨	Enter data
A..Z	Enter letters		⌐⌐	View measurements
►	Continue / go right		⌑	Delete measurements
◄	Left		⏻	On/off button, display light
✓	Yes		▣	Save measured value

The menus

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

Product selection menu

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

Data Log menu

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

Main menu

The main menu comprises the following menu items:

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

Table of contents

1.   Introduction

1.1   Information about this operating manual

This operating manual is designed to enable you to use the humimeter LM6 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 LM6. All of the safety and operating instructions detailed in this manual have to be observed to ensure the safety of the device.

1.2   Limitation of liability

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

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

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

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

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

1.3   Symbols used in this manual

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

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

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

1.4   Customer service

For technical advice, please contact our customer service department at

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

CE

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

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

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2. For your safety

The device complies with the following European directives:

- Restriction of Hazardous Substances in Electrical and Electronic Equipment (RoHS)
- Electromagnetic compatibility (EMC)

The device corresponds to state-of-the-art technology. However, it is still associated with a number of residual hazards.

These hazards can be avoided through strict observance of our safety information.

2.1 Proper use

- Easy to use device for quickly measuring the moisture content of stacks of leather.
- The device must only be used for taking measurements on the products defined in the following sections of this manual (see "6. Product types").

2.2 Improper use

- The device must not be used in ATEX.
- The device is not suitable for measuring the moisture content of individual leather hides.
- 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 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 LM6
- 4 pieces of AA Alkaline batteries
- Wooden case with test plate

- Rubber protection cover
- Operating manual

Optional accessories:

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

3.3   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.

4.2 Selecting the product type

To do so: The device has to be in the product selection menu (figure 7).

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 8).

3. Use the arrow keys to move from one product type to the next

4. and keep any of them pressed to scroll through the types.

5. Confirm your selection by pressing ↵.

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

4.3 Taking a measurement

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

4.4 Switching the device off

To do so: The device has to be in the product selection or 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 leather before the measurement.

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

2. Select the desired product type (see "6. Product types") by pressing the 🖑 or 🖒 button (see "4.2 Selecting the product type").
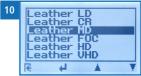
5.2 Taking a measurement

Due to the measuring principle and the consequentially required measuring depth it is only possible to measure stacked leather.

To do so: The stack has to have a minimum height of 10 mm and the device has to have nearly the same temperature than the leather.

- Take hold of the device with one hand and press it onto the top of the stack with a pressure of approx. 4 kg (figure 11).
- When doing so, the sensor surface (black area at the bottom of the device) must be firmly resting on the leather.

» The device will now instantly display the moisture content on the display (figure 12).

» Once the reading has been taken, it can be saved on the device (see "5.5 Saving individual readings" or "5.6 Saving several readings (a measurement series) at the same time").

> **i   Information - Measuring accuracy**
>
> This rapid and non-destructive measuring procedure allows you to quickly take moisture readings at a number of different points. When saving the individual readings, the device will automatically calculate the readings' average (see "5.6 Saving several readings (a measurement series) at the same time").

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

5.3   Simplified user

The device can be configured in such a way that the access of the user is restricted to the product selection menu combined with Hold function.

5.3.1   Activating/Deactivating the simplified user

- For information on how to activate/deactivate the simplified user, see section "9.7 Changing the Userlevel").

5.3.2   Using the simplified user

The simplified user offers the following limitations:

- The only useable menu is a slightly modified product selection menu (figure 13).
- » No access to the Data Log or main menu.
- The Hold function replaces the function to switch between the different menus (see "5.4 Hold function - Freezing the displayed values").

5.4 Hold function - Freezing the displayed values

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

5.4.1 Activating the Hold function in the options menu

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

1. Press 🔄 twice or hold for 2 seconds.

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

3. Select **Log Time** (figure 14). To do so, press 🔽 or 🔼 and confirm by pressing ⏎.

4. Select **Hold** (figure 15). 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.

5.4.2 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 4).

- Press 🔲.
- » The current reading will be frozen. All of the four symbols will now be displayed as 🔲 (figure 16).
- To reactivate the frozen display simply press any button.

5.5   Saving individual readings

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

5.5.1   Activating the manual saving function in the options menu

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

1.   Press 🔄 twice or hold for 2 seconds.

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

3.   Select **Log Time** (figure 17). To do so, press 📶 or ⛰ and confirm by pressing ↵.

4.   Select **Manual** (figure 18). 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.

5.5.2   Using the manual saving function

To do so: The device has to be in the Data Log menu (see "Data Log menu" Page 5). The device is set to Data Log Time - Manual.

1.   Press 📥.

    »   The display will now appear as in figure 20 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 21.

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 ![confirm] to confirm the selected letter (figure 22).

5. **Inputting numbers:**
    Press and hold ![0..9] to quickly scroll to the
    required number and either press it for 3 seconds
    or press ![confirm] to confirm the selected number.

6. **Moving forward/back:**
    Press ![switch] to switch to another input level. Press ![forward] or ![back] to move forward or
    back.

7. Confirm your entry by pressing ![confirm].

»   The data you entered has been saved.

5.6   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. To save a reading, press ![in] as soon as the reading
    has been taken.

»   The display will now appear as shown in figure 23. The marked number shows
    the number of readings that have already been
    saved.

3. Press ![pen] 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 24.

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 ![confirm] to confirm the selected letter (figure 25).

   25 ![display showing 15.7%, LM6, STUVWXYZ, Leather MD, 31.01.18 08:25:21, 31.01.18 08:25:24, 2logs, 0..9 A..Z]

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

7. **Moving forward/back:**
   Press ![icon] to switch to another input level. Press ![icon] or ![icon] to move forward or back.

8. Confirm your entry by pressing ![confirm].

   » 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)

5.7　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 26.

1. Press 👓.

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

    » The display will now appear as shown in figure 27.

    » Press ⏏ to leave this screen.

5.8　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 28.

1. Press 👓.

2. Navigate to the required measurement series. To do so, press ▼ or ▲.

    » The display will now appear as shown in figure 29.

3. Press 🔁 to switch to another input level.

    » The display will now appear as shown in figure 30.

4. Press 👓 again.

    » The display will now appear as shown in figure 31.

5. Navigate to the required reading (**No.: 1, No.: 2, No.: 3**). To do so, press 👓▲ or 👓▼.

6. Press ⏏ to leave this screen.

5.9 Deleting all measured values (data log)
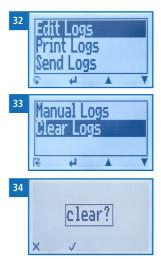
To do so: You must have taken and saved one or several readings.

1. Press 🔄 twice or hold for 2 seconds.

2. Select **Edit Logs** (figure 32). To do so, press 🔻 or 🔺 and confirm by pressing ⏎.

3. Select **Clear Logs** (figure 33). To do so, press 🔻 or 🔺 and confirm by pressing ⏎.

   » The display will show the message **clear?**

4. Confirm by pressing ✔.

   » The data log has been deleted.

5. Press 🔁 to leave the **Edit Logs** menu.

6. Press 🔄 to leave the main menu.

5.10 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 35.

1. Press 👓.

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

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

3. Press 🔄 to switch to another input level.

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

4. Press ⌫.

» The display will then show the meassage **clear?** (figure 38).

5. Confirm by pressing ✓.

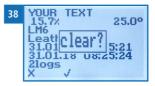» The value has been deleted.

5.11 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 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 👓.

» The display will now appear as shown in figure 42.

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 43.

7. Press 🗑 to delete the value shown.

» The display will then show the message **clear?** (figure 44).

8. Confirm by presssing ✓.

» The value has been deleted.

6. Product types

Product type	Leather type	Density [kg/m³]
Leather LD	Natural leather with a density of:	550 kg/m³
Leather CR	Natural leather with a density of:	600 kg/m³
Leather MD	Natural leather with a density of:	650 kg/m³
Leather FOC	Natural leather with a density of:	700 kg/m³
Leather HD	Natural leather with a density of:	750 kg/m³
Leather VHD	Natural leather with a density of:	800 kg/m³
Reference	! Only for testing the moisture meter !	

6.1 Selecting the product type

Due to different manufacturing processes and different densities of leather, there are no default product type categories. The humimeter LM6's readings are based on densities, which is why it is the decisive factor for the different product types.

If you wish to obtain very precise moisture content readings, please take a one-off comparative measurement with the standardised oven-drying method (EN ISO 4684). To do so, proceed as follows:

1. Take a leather pile of 10 - 15 mm of the format A6 with average moisture content.

2. Take a number of moisture readings using the product types most likely to deliver realistic values and record those readings with the corresponding product type.

3. Next, record the actual moisture content reading obtained through performing a reference moisture content analysis in accordance with EN ISO 4684.

4. Compare the readings recorded for the different product types with those of the actual moisture content established using the reference measurement. From now on, always use the product type that most closely matches the reference measurement.

    »   Note: You can change the product type name to a name of your choice (e.g. to the name of the leather). For more information on doing so, please contact your dealer.

6.2   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 EN ISO 4684)

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.

7.1 Installing / opening the program

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

2. Open the **setup** application.

3. Follow the installation instructions.

4. Open LogMemorizer.

   » The screen will now display the LogMemorizer's interface (figure 45).

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

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

7.2 Exporting measured values to a computer

To do so: LogMemorizer must be installed. And you must have taken and saved one or several moisture readings.

Options: You can export moisture readings from the humimeter LM6 or initiate the export at your computer.

Exporting moisture readings from the humimeter LM6

Connect the humimeter LM6 to your computer using the supplied USB cable:

1. Insert the USB Mini B connector into the humimeter LM6 (figure 46).

2. Insert the USB connector into the computer.

3. Open LogMemorizer on your computer.

4. Switch on the humimeter LM6.

5. Press ⌖ twice or hold for 2 seconds.

6. Select **Send Logs** (figure 47). To do so, press ▼ or ▲ and confirm by pressing ↵.

7. Select **Manual Logs** (figure 48). To do so, press ▼ or ▲ and confirm by pressing ↵.

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

   » All of the measuring values saved on the humimeter LM6 will now be sent to your computer.

Initiating the data export at your computer

Connect the humimeter LM6 to your computer using the supplied USB cable:

1. Insert the USB Mini B connector into the humimeter LM6 (figure 50).

2. Insert the USB connector into the computer.

3. Open LogMemorizer on your computer.

4. Switch on the humimeter LM6.

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

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

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

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

   » The measuring values saved on the humimeter LM6 will now be sent to your computer.

8.   Checking the device's status

1.   Press ![icon] twice or hold for 2 seconds.

2.   Select **Status**. To do so, press ![icon] or ![icon] and confirm by pressing ![icon].

   »   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 ![icon].

4.   Press ![icon] to leave the main menu.
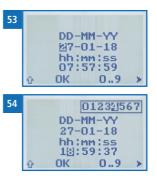
9.   Configuring the device

9.1   Turning on Bluetooth

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

9.2   Adjust the date/time

1. Press 📶 twice or hold for 2 seconds.

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

3. Select **Date/Time**. To do so, press ▼ or ▲ and confirm by pressing ↵.

    » The display will now appear as shown in figure 53.
    » The format for the date is **DD-MM-YY** (Day-Month-Year).
    » The format for the time is **hh:mm:ss** (Hour:Minutes:Seconds).

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 54).

5. Moving forward:
    To move forward between **DD-MM-YY** and **hh:mm:ss**, press ▶.

6. Moving back:
    Press ⬆ to switch to another input level. To move backward between **DD-MM-YY** and **hh:mm:ss**, press ◀.

7. Confirm the date/time by pressing **OK**.

    » The settings have been saved.

8. Press 📶 to leave the **Options** menu.

9. Press 📶 to leave the main menu.

9.3 Selecting a language

1. Press ![icon] twice or hold for 2 seconds.

2. Select **Options**. To do so, press ![icon] or ![icon] and confirm by pressing ![icon].

3. Select **Language**. To do so, press ![icon] or ![icon] and confirm by pressing ![icon].

4. Navigate to the required language. To do so, press ![icon] or ![icon] and confirm by pressing ![icon].

   » The setting has been saved.

5. Press ![icon] to leave the **Options** menu.

6. Press ![icon] to leave the main menu.

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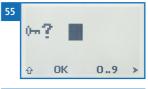
To do so: Some of the options must be deactivated.

1. Press ![icon] twice or hold for 2 seconds.

2. Select **Options**. To do so, press ![icon] or ![icon] and confirm by pressing ![icon].

3. Select **Unlock**. To do so, press ![icon] or ![icon] and confirm by pressing ![icon].

   » The display will now appear as shown in figure 55.
   » On delivery, the four-digit password is the device's serial number.

4. Inputting numbers:
   Press and hold ![icon] to quickly scroll to the required number and either press it for 3 seconds or press ![icon] to confirm the selected number (figure 56).

5. Moving back:
   Press ![icon] to switch to another input level.
   To move back, press ![icon].

6. Confirm the four-digit password by pressing ![OK].

   » The setting has been saved.

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

7. Press [icon] to leave the **Options** menu.

8. Press [icon] to leave the main menu.

9.5 Deactivating options

Once the device has been switched restarted, the **°C/°F, Userlevel, BL On Time**, **Auto Off
Time**, **Materialcalib., 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 [icon] twice or hold for 2 seconds.

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

3. Select **°C/°F**. To do so, press [icon] or [icon] and confirm by pressing [icon].

4. Navigate to the required temperature scale, i.e. Celsius (**°C**) or Fahrenheit (**°F**). To
do so, press [icon] or [icon] and confirm by pressing [icon].

> » The setting has been saved.

5. Press [icon] to leave the **Options** menu.

6. Press [icon] to leave the main menu.

9.7   Changing the Userlevel

9.7.1   Changing from the advanced to the simplified user

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 **Userlevel**. To do so, press ▼ or ▲ and confirm by pressing ↵.

   »   The simplified user is now activated.

4.   Press ⊞ to leave the **Options** menu.

5.   Press ⏏ to leave the main menu.

9.7.2   Changing from the simplified user to the advanced user

To do so: The device has to be turned off.

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

2.   Press and hold ▼ and ▲ at the same time, directly after switching the device on.

   »   The device will automatically boot into the main menu.

3.   Activate all of the options (see "9.4 Activating options").

4.   Select **Userlevel**. To do so, press ▼ or ▲ and confirm by pressing ↵.

   »   The advanced user is now activated.

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

6.   Press ⏏ to leave the main menu.

9.8 Reducing the device's power consumption

9.8.1 Configuring the display illumination time

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

1. Press [icon] twice or hold for 2 seconds.

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

3. Select **BL On Time**. To do so, press [icon] or [icon] and confirm by pressing [icon].

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

   » The setting has been saved.

5. Press [icon] to leave the **Options** menu.

6. Press [icon] to leave the main menu.

9.8.2 Configuring automatic switch-off

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

1. Press [icon] twice or hold for 2 seconds.

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

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

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

   » The setting has been saved.

5. Press [icon] to leave the **Options** menu.

6. Press [icon] to leave the main menu.

9.9 Configuring the material calibration function

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

9.10 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 ⬛..9 to quickly scroll to the required number and either press it for 3 seconds or press ↵ to confirm the selected number.

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

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

   » The setting has been saved.

6. Press 🔾 to leave the **Options** menu.

7. Press 🔾 to leave the main menu.

9.11   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 57).

4.   Confirm by pressing ✓.

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

   »   The display will show the status indicator **humimeter** (figure 58).

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

10.   Cleaning and maintenance

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

10.1   Changing batteries

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

If the battery's charge is very low, the battery symbol will be shown with an exclamation mark. In that case, the batteries must be changed immediately (figure 60).

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

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

10.2   Checking the calibration

The device's calibration should be checked every four weeks. When doing so, use the test plate supplied with the device.

To do so: The device and test plate must have a temperature of between 20 °C and 26 °C. Place the case on top of a wooden table. (The case must not be placed on top of or above metal.)

1.   Switch on the device.

2.   Use the arrow keys to select "Reference" under product type (see "6.1 Selecting the product type").

3.   Take hold of the device with one hand and press it onto the top of the grey test plate with a pressure of approx. 4 kg (figure 62).

» The moisture content reading shown must be between 14.5 and 15.5 (the moisture reading will be displayed in black) (figure 61).

» If the moisture value is outside this range, in which case it will be displayed in grey (figure 63), the moisture meter has to be calibrated (see "10.3 Calibrating the moisture meter").

4.   Lift the device up into the air with one hand (figure 64).

» When doing so, there must be a minimum of 0.5 metres of empty space behind the sensor surface (black plate at the bottom of the device.

» The moisture content reading shown must be between 3.0 and 3.6.

» If the moisture value is outside this range, the moisture meter has to be calibrated (see "10.3 Calibrating the moisture meter").

10.3   Calibrating the moisture meter

To do so: The device must have a temperature of between 20 °C and 26 °C.

1.   Switch on the device.

2.   Press ⬆ twice or hold for 2 seconds.

3.   Select **Options**. To do so, press ⬇ or ⬆ and confirm by pressing ⏎.

4.   Select **Reinitialize** (figure 65). To do so, press ⬇ or ⬆ and confirm by pressing ⏎.

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

5.   Lift the device up into the air with one hand. When doing so, there must be a minimum of 0.5 metres of empty space behind the sensor surface (black plate at the bottom of the device (figure 67).

6.   Confirm by pressing ✔.

   »   The display will now appear as shown in figure 68.

   »   The bar will run upwards. The device must be held up in the air throughout this entire process,

   »   which only takes a couple of seconds to complete. When completed, the display will look as shown in figure 65.

7.   Press ⬆ and then ⬆ to return to the product selection level.

8.   Then check the calibration (see "10.2 Checking the calibration").

65

> Log Time
> **Reinitialize**
> Language

66

> Adjust?

67

68

> 5Ic
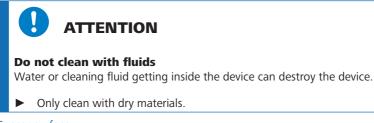
10.4   Care instructions

•   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.

10.5 Cleaning the device

> 🛈 **ATTENTION**
>
> **Do not clean with fluids**
> Water or cleaning fluid getting inside the device can destroy the device.
>
> ► Only clean with dry materials.

Sensor surface

- Clean the sensor surface with a cloth.

11. Faults

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

Fault	Cause	Remedy
Measuring error	The temperature of the material being measured is too low or high. I.e. the material's temperature is lower than 0 °C or higher than +40 °C.	The temperature of the material being measured has to be between 0 °C and +40 °C.
	Temperature discrepancy between device and material being measured	Let the temperature adjust to the material being measured (permitted difference of max. 3 °C).
	Wrong product type	Check whether you have selected the right product type (product) before taking a reading. See "6.1 Selecting the product type".
	Material stack is not high enough	The stack of leather being measured has to be at least 10 mm high.
	Incorrect contact pressure	Press the device against the leather with a pressure of approx. 4 kg.
	Metal or similar conductive materials in the device's measuring range	Remove all metal or other conductive materials from the device's measuring range.
	Foreign materials below the material being measured	Stack the material being measured to avoid influences from foreign materials.
	Mouldy or rain wet material	In this case the accuracy decreases significantly.
Incorrect calibration (the exclamation mark on the display does not go away)	There is an object/material behind the sensor plate (during calibration)	Hold the device up into the air - make sure your fingers do not touch the sensor plate

Fault	Cause	Remedy
	Rubber protection cover mounted in the wrong direction	Mount the rubber protection cover as shown in "The main unit" Page 2 and "Rear of the main unit" Page 3 .
	Polluted sensor surface	Clean the sensor surface (see "10.5 Cleaning the device").
Data transfer to LogMemorizer failed	Interface has not been configured	The interface only has to be configured once. To do so, press the F1 key on your computer and read the Help file for your 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 CE declaration of conformity

$C\epsilon$ DECLARATION OF CONFORMITY

We   **Schaller GmbH**

Max-Schaller-Straße 99

A – 8181 St. Ruprecht

in accordance with the following Directives:

EMV - Richtlinie 2014/30/EU,

RoHS - Directives 2011/65/EG,

hereby declare that the following product types:

Product: **humimeter**

Types: **GE1 ; GF2 ; LM5 ; LM6 ; MS4 ; M20**

are in conformity with the applicable requirements of the following documents

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

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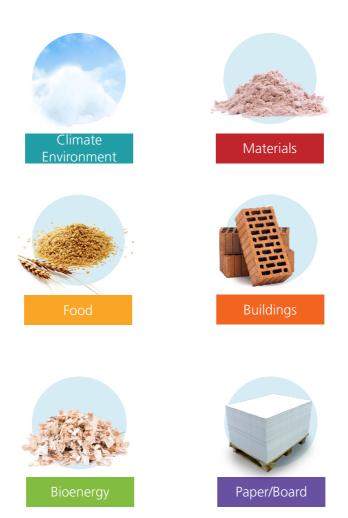

St. Ruprecht a.d. Raab, 06.08.2018

....
Schaller GmbH
Maximilian Schaller
General Manager

13.2   Technical data

Display resolution	0.1 % moisture content, 0.5 °C/°F temperature
Measuring range	3 % to 65 % moisture content
Operating temperature	0 °C to +40 °C
Storage temperature	-20 °C to +60 °C
Temperature compensation	Automatic
Data memory	Up to 10,000 measuring values
Measuring depth	5 mm
Minimum material thickness	10 mm
Leather density range	525 kg/m³ to 825 kg/m³
Power supply	4 pcs. of 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	147 x 75 x 30 mm
Device weight	265 g
Dimensions of device + case	192 x 130 x 52 mm
Weight of device + case	660 g
Device IP rating	IP 40

Climate Environment

Materials

Food

Buildings

Bioenergy

Paper/Board