Scigiene

Moisture meter

Operating Manual

BLC moisture transmitter

for measuring the moisture content of wood chips,

pellets, sawdust and other materials

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

Version 2.1

Always read this operating manual before using the BLC!

Your BLC device at a glance

The main unit

No.	Name
1	Aluminium housing for electronics
2	Display
3	Keypad
4	Sensor plug

Rear of the main unit
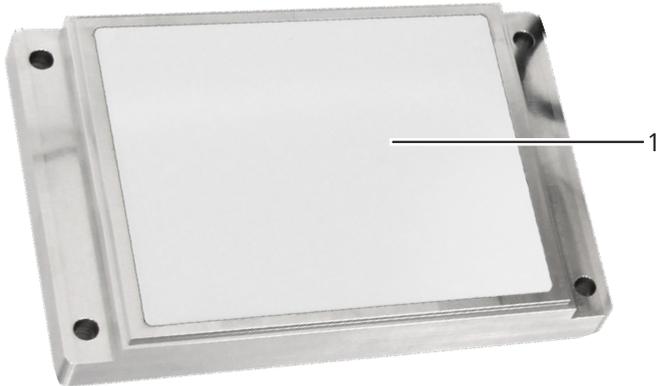
No.	Name
1	Sensor surface

The display

No.	Name
1	Product type
2	Moisture content in % ("7.3 How moisture content 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
4⊡⏱	Saving of Auto Logs

Symbol	Name
✗	No
⇧	Change input level
OK	OK
↻	Change menu
▨	Enter data
◡◡	View measurements
⌁	Delete measurements
⏻	On/off button
⊡	Save measured value
⊓	Hold function

The menus

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

Product selection menu
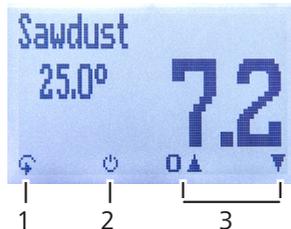
No.	Name
1	Change menu
2	Device on/off
3	For changing the product type

Data Log menu
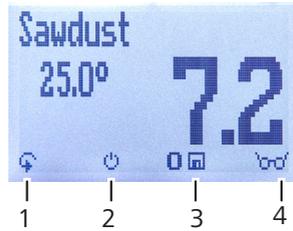
No.	Name
1	Change menu
2	Device on/off
3	Save measured value
4	Show the last recorded values

Main menu

The main menu comprises the following menu items:

- **Options:**
  Date/Time, Log Time, Language, Unlock, °C/°F, Averaging, BL On Time, Material-calibration, Online Send, Password, Reset
- **Send Logs:**
  Manual Logs, Auto Logs, Clear Logs
- **Status**

Table of contents

1. Introduction

1.1 Information about this operating manual

This operating manual is designed to enable you to use the BLC 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 BLC. 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 a

$$C\,E$$

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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

- Online measurement of the water content (optionally water content and temperature) of wood chips, pellets, sawdust and other materials by installation of a sensor in the material flow
- Fully calibrated system with calculation of the measuring value by the transmitter unit

2.2 Improper use

- The device must not be used in ATEX.

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:

- In case of damages or loose parts on the device, 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

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:

3.2.1   Scope of supply

- BLC
- Connecting cable of 1.9 m length
- Operating manual

Optional accessories:

- Analogue output for temperature measurement (-10 °C to +70 °C)

4. Installation of the moisture transmitter

4.1 Laying of the supply line or transmission line

- The cable must not be laid in the area of interference fields.
- Do not operate the transmitter in the area of electromagnetic interference fields.
- The cable must not be bent excessively.
- The permissible cross-sections for the installation must be observed.
- The cable length must be kept as short as possible.
- » If an extension of the cable is required, the cross-section of the extension must not be below 0.25 mm^2.

4.2 Mounting the sensor

- During the measurement a continuous contact between the sensor surface and the material being measured has to be ensured.
- For a correct measurement result, there must be a constant quantity of material to be measured in the measuring field of the sensor.
- There must be no contact of any conductive materials with the sensor surfaces.
- Mount the sensor on the four drilled holes (ø 9.0 mm) .

Possible mounting locations:

- Bunker
- » Installation at the side wall

- Screw conveyor
- » Installation at the bottom of the trough
- » There must be no windings above the sensor

4.3   Pin assignment
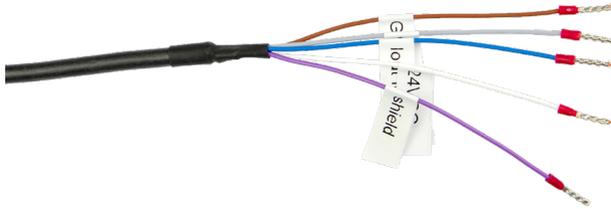
Cable color	Pin no.	Function
Brown	1	Power supply V- (0 VDC) Ground current output
White	2	Power supply V+ (24 VDC)
Blue	3	Analogue output humidity 4 - 20 mA
Black	4	n.c.
Grey	5	Analogue output temperature 4 - 20 mA (optional)
Purple	Housing	Equipotential bonding GND

ⓘ ATTENTION

Damage to the electronics due to incorrect cable connection
Incorrectly connected cables can lead to severe damage of the electronics.
► Connect all cables correctly.

4.4   Wiring diagram
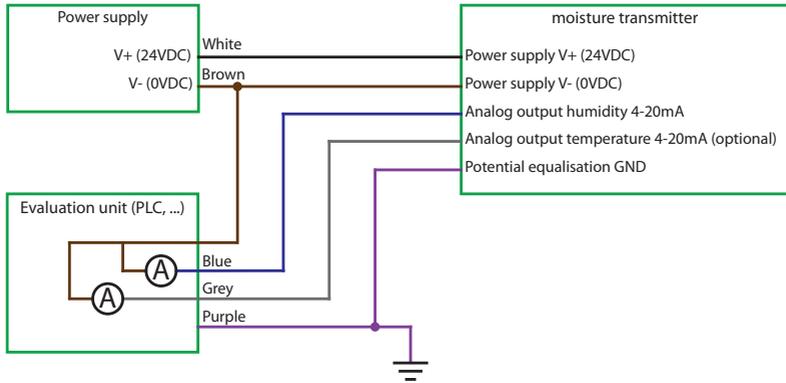
5.   Using the device - Basics

5.1   Selecting the product type

To do so: The device has to be in the product selection menu (figure 1).

For an overview of the different product types and the criteria for selecting them, please refer to "7. Product types".

1. Press the ▽ or △ button to move from one product type to the next Or

2. Press the ▽ or △ button for 3 seconds to open the product type overview (figure 2).

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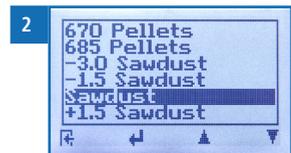
   » The product type you selected will now be shown at the top of the display.

5.2   Taking a measurement

• In order to obtain current measured values, the device must be in the measuring window.

6. Saving your readings

6.1 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 places where it is not possible to see the display (e.g. overhead).

6.1.1 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 3). To do so, press ▼ or ▲ and confirm by pressing ↵.

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

6.1.2 Using the Hold function

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

- Press ⬛.
   » The current reading will be frozen. All of the four symbols will now be displayed as ⬛ (figure 5).

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

6.2   Saving your readings manually

All of the readings can be saved, edited and viewed on the device. The figure below shows the overview screen of a single saved series of measurements.

Nr	Bezeichnung
1	Name of the measurement series (editable)
2	Temperature (average)
3	Date & start time of the measurement series
4	Date & end time fo the measurement series
5	Number of saved readings
6	Product type
7	Device name
8	Moisture content (average)

6.2.1   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.

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

4.   Select **Manual** (figure 6). 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.

Using the manual save function

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

1. Press 🔲.

» The display will now appear as shown in figure 7 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 8.

3. The data you have inputted can be overwritten at any time.
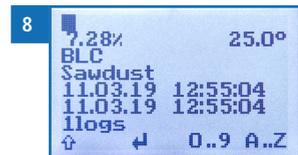
4. Inputting letters:
   Press and hold A..Z to quickly scroll to the required letter and either press it for 3 seconds or press ↵ to confirm the selected letter (figure 9).
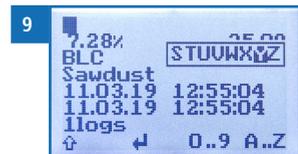
5. Inputting numbers:
   Press and hold 0..9 to quickly scroll to the required number and either press it for 3 seconds or press ↵ to confirm the selected number.

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

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

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

1. Take several readings (see "5.2 Taking a measurement").

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

   » The display will now appear as shown in figure 10. The marked number shows the number of readings that have already been saved.

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

   » The display will now appear as shown in figure 11.
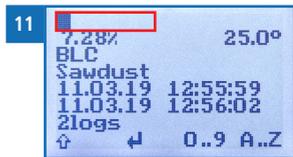
4. The data you have inputted can be overwritten at any time.

5. Inputting letters:
   Press and hold 🅰..🆉 to quickly scroll to the required letter and either press it for 3 seconds or press ↵ to confirm the selected letter (figure 12).
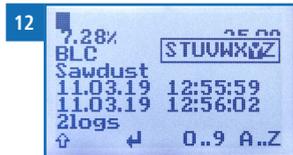
6. Inputting numbers:
   Press and hold 🄀..🄉 to quickly scroll to the required number and either press it for 3 seconds or press ↵ to confirm the selected number.
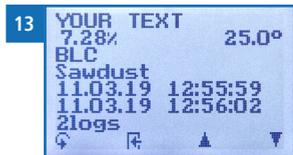
7. Moving forward/back:
   Press 🔼 to switch to another input level.
   Press ▶ or ◀ to move forward or back.

8. Confirm your entry by pressing ↵.

   » The data you entered has been saved.

6.3 Auto save function (time-based)

The device can be configured in such a way that it will automatically save a reading (log) at a selected time interval.

6.3.1 Activating the Auto 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 ![icon] twice or hold for 2 seconds.

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

3. Select **Log Time** (figure 14). To do so, press ![icon] or ![icon] and confirm by pressing ![icon].

4. Navigate to the desired time interval (figure 15). 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.

6.3.2 Auto save function: Saving measured values

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

1. Press ![icon].

    » The device will save a reading at the selected time interval. The number of data saves will increase by one every time a reading is saved. The display will now appear as shown in figure 16.

2. Press ![icon] to finish the measuring process and to enter a name for the saved readings.

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

3. The data you have inputted can be overwritten at any time.
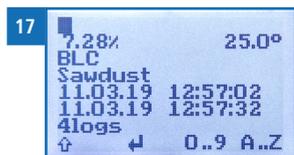
4. Inputting letters:
   Press and hold ![A..Z icon] to quickly scroll to the required letter and either press it for 3 seconds or press ![enter icon] to confirm the selected letter.

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

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

7. Confirm your entry by pressing ![enter icon].

   » The data you entered has been saved.

6.4   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 18.

1. Press ![glasses icon].

2. Select the required reading. To do so, press ![up icon] or ![down icon].

   » The display will now appear as shown in figure 19.

   » Press ![leave icon] to leave this screen.

18
Sawdust
25.0°   7.2
φ   ☉   0⊡   ∞⁄

19
YOUR TEXT
7.28%   25.0°
BLC
Sawdust
11.03.19 12:55:04
11.03.19 12:55:04
1logs
φ   ⌊⌋   ▲   ▼
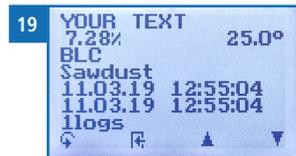
6.5   Viewing individual readings from a series of measurements

To do so: You must have saved a series of measurements
(e.g. **2 logs**). The display will now appear as shown in
figure 20.

1. Press 👓.

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

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

3. Press 🔁 to switch to another input level.

    »   The display will now appear as shown in figure 22.

4. Press 👓 again.

    »   The display will now appear as shown in figure 23.

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

6. Press 🔁 to leave this screen.
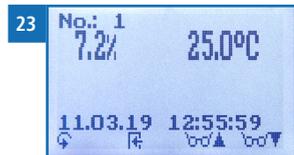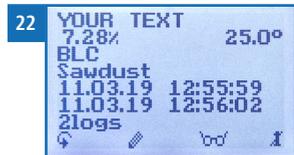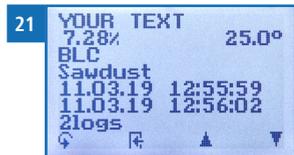
6.6   Deleting individual measurement series

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 24.

1. Press 👓.

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

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

3. Press 🔁 to switch to another input level.

    »   The display will now appear as shown in figure 26.

20
Sawdust
25.0°   7.2
⟳   ⏻   0▣   👓

21
YOUR TEXT
7.28%   25.0°
BLC
Sawdust
11.03.19   12:55:59
11.03.19   12:56:02
2logs
⟳   🔁   ▲   ▼

22
YOUR TEXT
7.28%   25.0°
BLC
Sawdust
11.03.19   12:55:59
11.03.19   12:56:02
2logs
⟳   ✎   👓   ✗

23
No.: 1
7.2%   25.0°C

11.03.19   12:55:59
⟳   🔁   👓/▲ 👓/▼

24
Sawdust
25.0°   7.2
⟳   ⏻   0▣   👓

25
YOUR TEXT
7.28%   25.0°
BLC
Sawdust
11.03.19   12:55:59
11.03.19   12:56:02
2logs
⟳   🔁   ▲   ▼

26
YOUR TEXT
7.28%   25.0°
BLC
Sawdust
11.03.19   12:55:59
11.03.19   12:56:02
2logs
⟳   ✎   👓   ✗
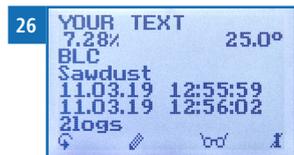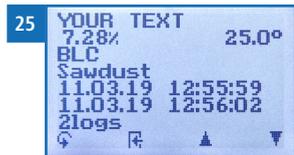
4.   Press ▉.

   »   The display will then show the message **clear?** (figure 27).

5.   Confirm by pressing ✓.

   »   The value has been deleted.
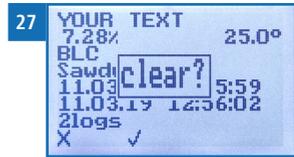
6.7   Deleting individual values from a single series of measurements

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 28.

1.   Press 👓.

2.   Select the required reading. 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 👓.

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

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

7.   Press 🔄 to switch to another input level.

   »   The display will now appear as shown in figure 32.

8.   Press ▉ to delete the value shown.

   »   The display will then show the message **clear?** (figure 33).

9.   Confirm by pressing ✓.

   »   The value has been deleted.
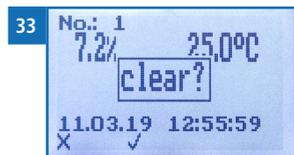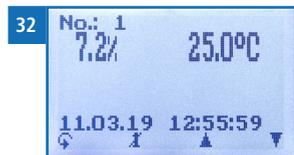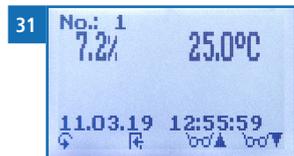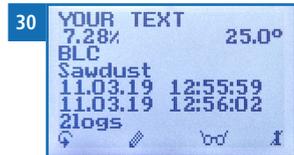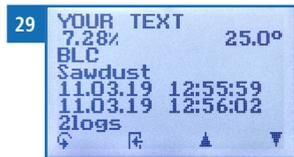
7. Product types

Product type	Material	Measuring range	Scaling Analog output
625 Pellets	Wood pellets with a bulk density of 625 kg/m³	2 - 20%	0 to 20%
640 Pellets	Wood pellets with a bulk density of 640 kg/m³	2 - 20%	0 to 20%
655 Pellets	Wood pellets with a bulk density of 655 kg/m³	2 - 20%	0 to 20%
670 Pellets	Wood pellets with a bulk density of 670 kg/m³	2 - 20%	0 to 20%
685 Pellets	Wood pellets with a bulk density of 685 kg/m³	2 - 20%	0 to 20%
-3.0 Sawdust	Sawdust with a -3.0 % WC offset	2 - 60%	0 to 80%
-1.5 Sawdust	Sawdust with a -1.5 % WC offset	2 - 60%	0 to 80%
Sawdust	Sawdust	2 - 60%	0 to 80%
+1.5 Sawdust	Sawdust with a +1.5 % WC offset	2 - 60%	0 to 80%
+3.0 Sawdust	Sawdust with a +3.0 % WC offset	2 - 60%	0 to 80%
1 Woodchips	Very fine wood chips P16	2 - 60%	0 to 80%
2 Woodchips	Fine wood chips P31	2 - 60%	0 to 80%
3 Woodchips	Wood chips P31 (without fine fractions)	2 - 60%	0 to 80%
4 Woodchips	Wood chips standard P45	2 - 60%	0 to 80%
5 Woodchips	Coarse wood chips P63	2 - 60%	0 to 80%
6 Woodchips	Very coarse wood chips P100	2 - 60%	0 to 80%
Reference	! Only for testing the moisture meter !		

7.1   Definition wood chip types (in accordance with EN ISO 17225-1)

The given numbers refer to the particle sizes that fit through the round screen openings.

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

7.2   Selection of calibration curve for wood chips

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

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

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

7.3   How moisture content is defined

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

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

M_n: Mass of the sample with average moisture content

M_t: Mass of the sample with zero moisture content

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

8.   Checking the device's status

1.   Press twice or hold for 2 seconds.

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

»   The display will then show the status indicator **humimeter**.

»   The display will show the following information:

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

3.   Confirm by pressing .

4.   Press to leave the main menu.

9.   Configuring the device

9.1   Adjust the date/time

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 **Date/Time**. To do so, press ![icon] or ![icon] and confirm by pressing ![icon].

»   The display will now appear as shown in figure 34.
»   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 ![icon] to quickly scroll to the required number and either press it for 3 seconds or press ![icon] to confirm the selected number (figure 35).

5.   Moving forward:
      To move forward between **DD-MM-YY** and **hh:mm:ss**, press ![icon].

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

7.   Confirm the date/time by pressing ![icon].

»   The settings have been saved.

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

9.   Press ![icon] to leave the main menu.
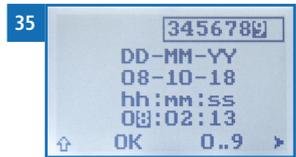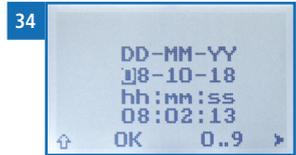
9.2 Selecting a language

1. Press ⬇ twice or hold for 2 seconds.

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

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

4. Navigate to the required language. To do so, press ▼ or ▲ and confirm by pressing ↵.

   » The settings have been saved.

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

6. Press ⬇ to leave the main menu.

9.3 Activating options

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

1. Press ⬇ twice or hold for 2 seconds.

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

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

   » The display will now appear as shown in figure 36.
   » On delivery, the four-digit password is the device's serial number.

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 37).

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

6. Confirm the four-digit password by pressing OK.

   » The setting has been saved.
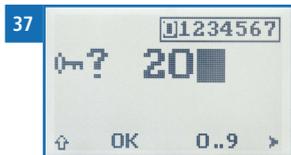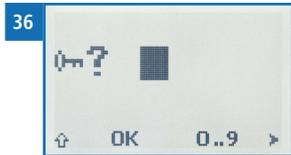
» The **°C/°F, Averaging, BL On Time, Materialcalibration, Online Send, Password, Reset** options are now activated

7. Press 📇 to leave the **Options** menu.

8. Press 📤 to leave the main menu.

9.4 Deactivating options

Once the device has been switched restarted, the **C/°F, Averaging, BL On Time, Material-calibration, Online Send, Password, Reset** options will be deactivated again.

9.5 Selecting °C/°F

To do so: All of the options must be activated (see "9.3 Activating options").

1. Press 📤 twice or hold for 2 seconds.

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

3. Select **°C/°F**. To do so, press ▼ or ▲ and confirm by pressing ↵.

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

» The setting has been saved.

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

6. Press 📤 to leave the main menu.

9.6　Setting the averaging time

To do so: All of the options must be activated (see "9.3 Activating options").

1.　Press 🔲 twice or hold for 2 seconds.

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

3.　Select **Averaging**. To do so, press 🔲 or 🔲 and confirm by pressing 🔲.

4.　Navigate to the required time at which the arithmetic average should be calculated (90 seconds/45 seconds/20 seconds/7 seconds/ 5 seconds). To do so, press 🔲 or 🔲 and confirm by pressing 🔲.

　»　The setting has been saved.

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

6.　Press 🔲 to leave the main menu.

9.7　Configuring the display illumination time

To do so: All of the options must be activated (see "9.3 Activating options").

1.　Press 🔲 twice or hold for 2 seconds.

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

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

4.　Navigate to the required setting, turned off (**0 Off**) or turned on (**1 On**). To do so, press 🔲 or 🔲 and confirm by pressing 🔲.

　»　The setting has been saved.

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

6.　Press 🔲 to leave the main menu.

9.8   Configuring the material calibration function

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

9.9   Online Send

The **Online Send** option is not available on this device.

9.10   Changing the password

To do so: All of the options must be activated (see "9.3 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 **Password**. To do so, press [icon] or [icon] and confirm by pressing [icon].

   »   The display will show the current password.

4.   Overwrite the current password. To do so, 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.

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

5.   Confirm the new four-digit password by pressing [icon].

   »   The setting has been saved.

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

7.   Press [icon] 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 "9.3 Activating options").

1.   Press ⊕ twice or hold for 2 seconds.

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

3.   Select **Reset**. To do so, press ⊤ or ⊥ and confirm by pressing ↵.

   »   The display will then show the message **Reset?** (figure 38).

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 39).

   »   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   Care instructions

   •   Do not immerse the sensor in water.
   •   Do not expose the device to extreme temperatures.
   •   Do not bend the sensor cable excessively. Repeated bending of the sensor cable can lead to a damage of the sensor.
   •   Protect the device from strong mechanical shocks and loads.

10.2   Cleaning the device

Sensor surface

Clean the sensor surface with a cloth and cleaning alcohol.

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 +50 °C.	The temperature of the material being measured has to be between 0 °C and +50 °C.
	Measurement error due to too short temperature adjustment time	Let the device adjust to the surroundings.
	Frozen material or material mixed with snow Accuracy decreases significantly	The material must not be frozen or mixed with snow.
	Mouldy or rain wet material Accuracy decreases significantly	Only measure dry, not mouldy material.
	Air value being displayed	If there is no material above the sensor, the air value will be displayed (2.0 %).
	Uneven pressure of the material	Make sure that the material applies even pressure onto the sensor.
	Polluted sensor	Clean the sensor surface (see "10.2 Cleaning the device").
	Conductive material on the sensor plates	Make sure that there is no contact of any conductive material with the sensor plates.
	The sensor plug is not connected correctly	Make sure that the sensor plug is connected properly.

12. Storage and disposal

12.1 Storing the device

The device must be stored as follows:

- Avoid mechanical shocks/loads
- 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 Technical data

Measuring range moisture content	2 % to 60 % (product type dependent)
Measuring range temperature	-10 °C to +70 °C
Operating temperature	0 °C to +50 °C
Measuring depth	200 mm
Outputs	Moisture content (4 - 20 mA) -Scaling (see "7. Product types") Temperature (4 - 20 mA) (optional) -Scaling (-10 °C to +70 °C) Working resistance < 500 Ohm (UB 24 V)
Temperature compensation	Automatic
Power supply	24 VDC (18 to 29 VDC)
Current consumption	50 mA (without output)
Electrical connection	Connecting cable 1.9 m
Menu languages	German, English, French, Italian, Spanish, Portuguese, Czech, Polish, Russian, International
Display	128 x 64 illuminated matrix display
Device dimensions	226 x 156 x 92 mm (without cable)
Device weight	2.500 g (without cable)
Device IP rating	IP 54

13.2 Technical drawing BLC
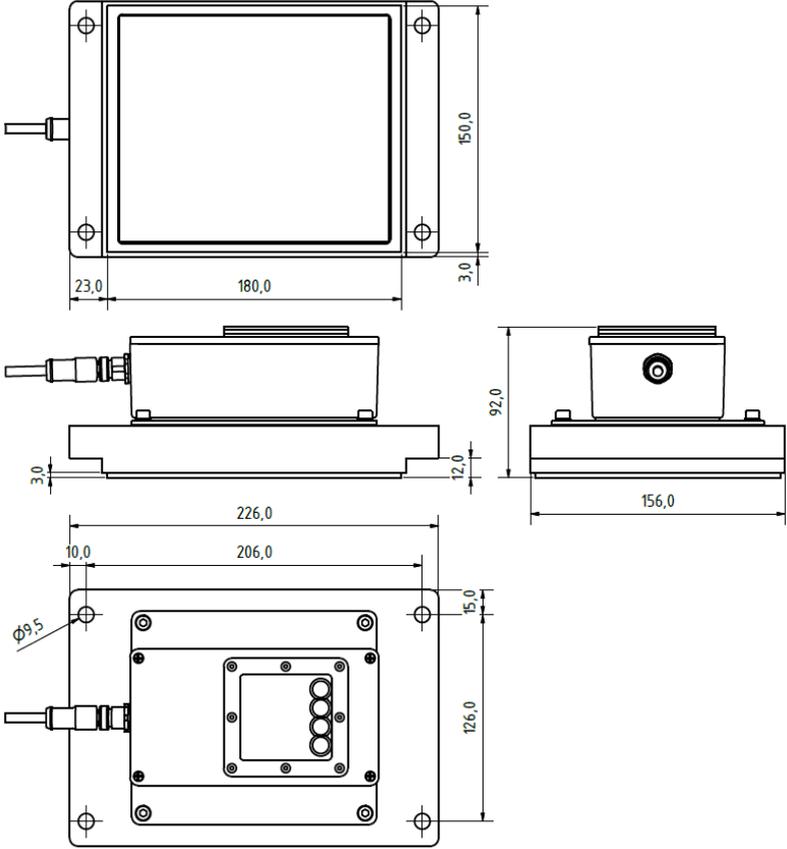
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