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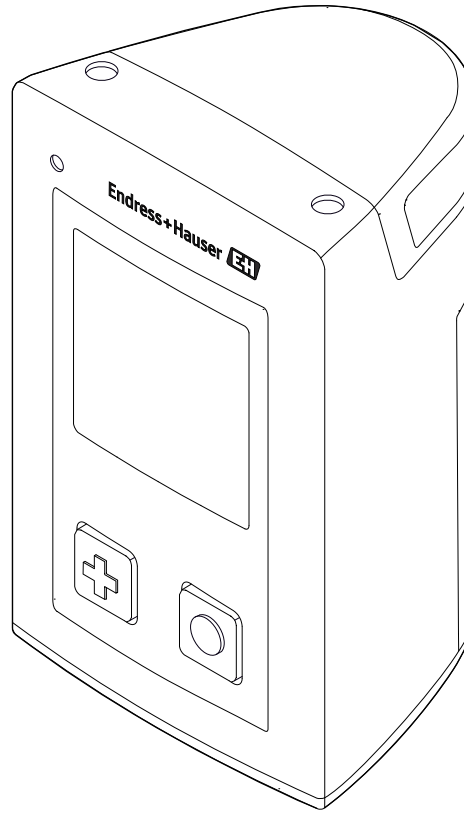
Operating Instructions
Liquiline Mobile CML18

Multiparameter mobile device



Endress+Hauser
People for Process Automation

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1 About this document

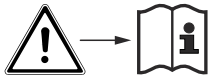
1.1 Warnings

Structure of information	Meaning
⚠ DANGER **Causes (/consequences)** If necessary, Consequences of non-compliance (if applicable) ▶ Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation **will** result in a fatal or serious injury.
⚠ WARNING **Causes (/consequences)** If necessary, Consequences of non-compliance (if applicable) ▶ Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation **can** result in a fatal or serious injury.
⚠ CAUTION **Causes (/consequences)** If necessary, Consequences of non-compliance (if applicable) ▶ Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or more serious injuries.
NOTICE **Cause/situation** If necessary, Consequences of non-compliance (if applicable) ▶ Action/note	This symbol alerts you to situations which may result in damage to property.

1.2 Symbols

Symbol	Meaning
	Additional information, tips
	Permitted or recommended
	Not permitted or not recommended
	Reference to device documentation
	Reference to page
	Reference to graphic
	Result of a step

1.3 Symbols on the device

Symbol	Meaning
	Reference to device documentation

2 Basic safety instructions

2.1 Requirements for personnel

- Installation, commissioning, operation and maintenance of the measuring system may be carried out only by specially trained technical personnel.
- The technical personnel must be authorized by the plant operator to carry out the specified activities.
- The electrical connection may be performed only by an electrical technician.
- The technical personnel must have read and understood these Operating Instructions and must follow the instructions contained therein.
- Faults at the measuring point may only be rectified by authorized and specially trained personnel.

Repairs not described in the Operating Instructions provided must be carried out only directly at the manufacturer's site or by the service organization.

The battery may only be changed directly at the manufacturer's premises or by the service organization.

2.2 Designated use

The Liquiline Mobile CML18 is a multiparameter mobile device for the connection of digital sensors with Memosens technology and optional operation by smartphone or other mobile devices via Bluetooth.

The device is designed for use in the following industries:
- Life science
- Chemical industry
- Water and wastewater
- Food and beverages
- Power stations
- Other industrial applications

The device contains a lithium ion battery. For this reason, the device may only be exposed to the operating and storage temperatures indicated.

The device may not be exposed to mechanical shocks of any kind.

The device may not be operated under water.

2.3 Workplace safety

As the user, you are responsible for complying with the following safety conditions:
- Installation guidelines
- Local standards and regulations

2.4 Operational safety

Before commissioning the entire measuring point:

1. Verify that all connections are correct.

2. Ensure that electrical cables and hose connections are undamaged.
3. Do not operate damaged products, and protect them against unintentional operation.
4. Label damaged products as defective.

During operation:

- If faults cannot be rectified:
  products must be taken out of service and protected against unintentional operation.

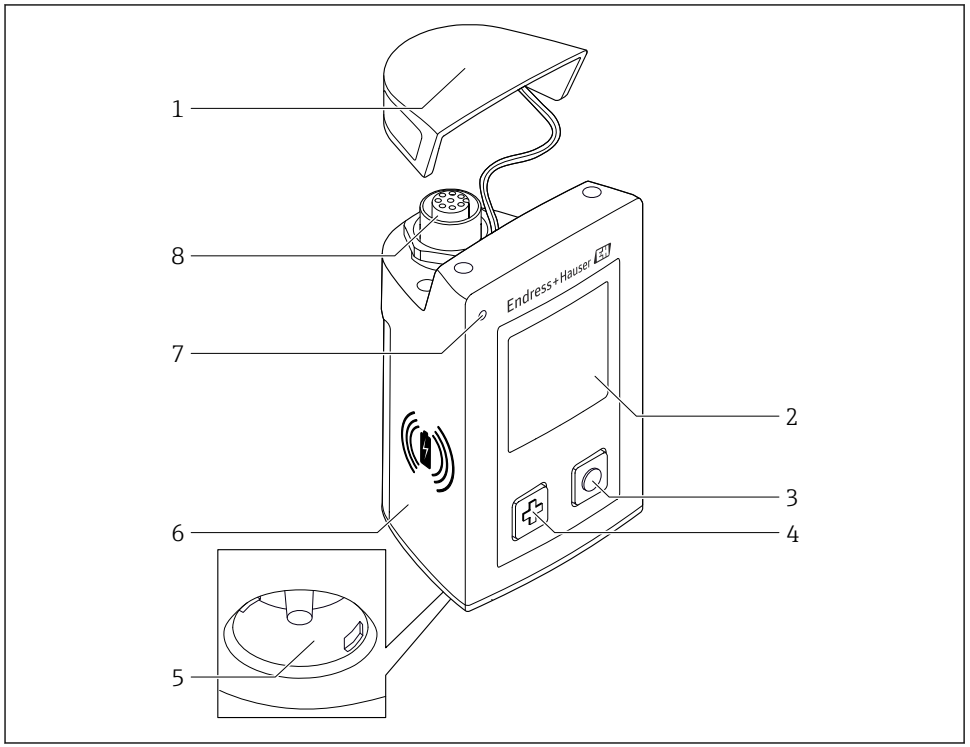
2.5 Product safety

2.5.1 State-of-the-art technology

The product is designed to meet state-of-the-art safety requirements, has been tested, and left the factory in a condition in which it is safe to operate. The relevant regulations and international standards have been observed.

3 Product description

3.1 Product design



1 CML18

1 *Protection cap*
2 *Display screen with automatic screen rotation*
3 *"Select" button*
4 *"Next" button*
5 *Memosens connection*
6 *Area for wireless charging*
7 *Status LED*
8 *M12 connection*

3.1.1 Measuring parameters

The mobile device is designed for digital Memosens sensors with an inductive plug-in head and fixed cable sensors with the Memosens protocol and no external power supply:

- pH
- ORP
- pH/ORP combination sensors
- Conductive conductivity
- Inductive conductivity
- Dissolved oxygen (optical/amperometric)
- Temperature

The measuring range is adapted to the individual sensor type.

4 Incoming acceptance and product identification

4.1 Incoming acceptance

1. Verify that the packaging is undamaged.
   ↳ Notify the supplier of any damage to the packaging.
   Keep the damaged packaging until the issue has been resolved.
2. Verify that the contents are undamaged.
   ↳ Notify the supplier of any damage to the delivery contents.
   Keep the damaged goods until the issue has been resolved.
3. Check that the delivery is complete and nothing is missing.
   ↳ Compare the shipping documents with your order.
4. Pack the product for storage and transportation in such a way that it is protected against impact and moisture.
   ↳ The original packaging offers the best protection.
   Make sure to comply with the permitted ambient conditions.

If you have any questions, please contact your supplier or your local Sales Center.

4.2 Product identification

4.2.1 Nameplate

The nameplate contains the following information:
- Manufacturer identification
- Device name
- Order code
- Serial number
- Protection class
- Ambient and process conditions
- Input and output values
- Certificate information
- Approvals as per order version

▶ Compare the information on the nameplate with the order.

4.2.2 Identifying the product

Product page

www.endress.com/CML18

Interpreting the order code

The order code and serial number of your product can be found in the following locations:
- On the nameplate
- In the delivery papers

Obtaining information on the product

1. Go to www.endress.com.
2. Call up the site search (magnifying glass).
3. Enter a valid serial number.
4. Search.
   ↳ The product structure is displayed in a popup window.
5. Click on the product image in the popup window.
   ↳ A new window (**Device Viewer**) opens. All of the information relating to your device is displayed in this window as well as the product documentation.

Manufacturer's address

Endress+Hauser Conducta GmbH+Co. KG
Dieselstraße 24
D-70839 Gerlingen

4.3 Scope of delivery

The scope of delivery comprises:
- 1 Liquiline Mobile CML18
- 1 set of Operating Instructions in German
- 1 set of Operating Instructions in English

Inductive charger and power unit are available separately.

▶ If you have any queries:
Please contact your supplier or local sales center.

4.4 Certificates and approvals

4.4.1 CE mark

The product meets the requirements defined in the legal provisions of the applicable EU directives. The product complies with the applicable harmonized European standards. The manufacturer confirms successful testing of the product by affixing to it the CE mark.

4.4.2 FCC

FCC ID: **2AKGY-BT41PMMA01**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This device has been designed and

complies with the safety requirements for portable RF exposure in accordance with FCC rule part §2.1093 and KDB 447498 D01.

4.4.3 ISED Canada

ID: **22173-BT41PMMA01**

This device complies with ISED's license-exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause interference; and

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

This device complies with the safety requirements for RF exposure in accordance with RSS-102 Issue 5 for portable use conditions.

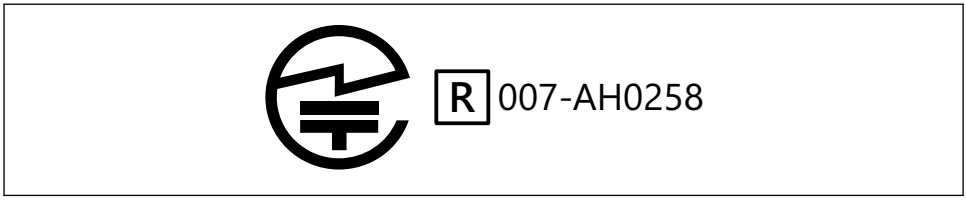
Cet appareil est conforme aux RSS exemptés de licence d'ISED. Le fonctionnement est soumis aux deux conditions suivantes:

(1) Cet appareil ne doit pas causer d'interférences; et

(2) Cet appareil doit accepter toute interférence, y compris Interférences pouvant provoquer un fonctionnement indésirable de l'appareil

Cet appareil est conforme aux exigences de sécurité relatives à l'exposition RF conformément à la norme RSS-102 Édition 5 pour les conditions d'utilisation portables.

4.4.4 Radio approval for Japan



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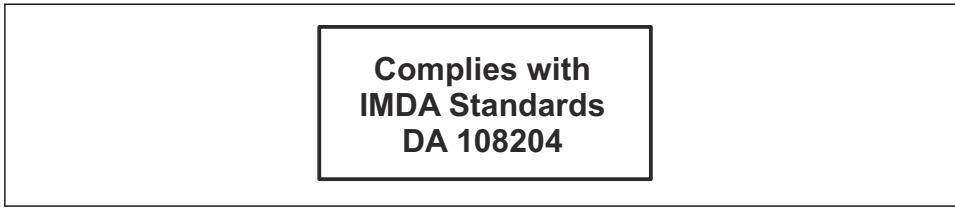
Japanese Radio Law and Japanese Telecommunications Business Law Compliance. This device is granted pursuant to the Japanese Radio Law (電波法). This device should not be modified (otherwise the granted designation number will become invalid).

4.4.5 Thailand radio approval

CML18 complies with the Thai radio requirements.

4.4.6 Singapore radio approval



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4.4.7 Brazil radio approval

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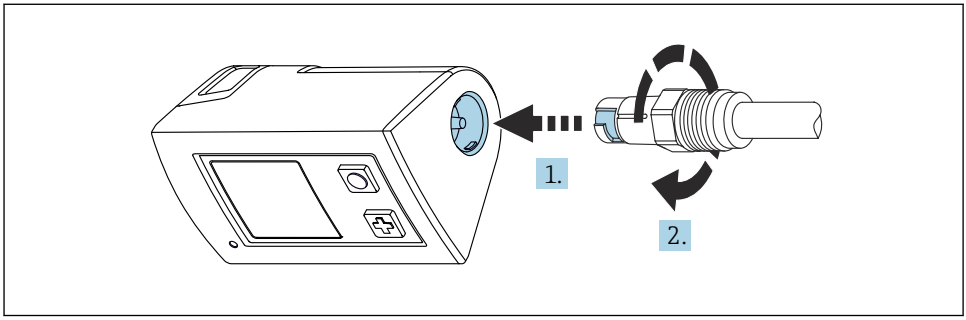
Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados.

5 Electrical connection

5.1 Connecting the sensor

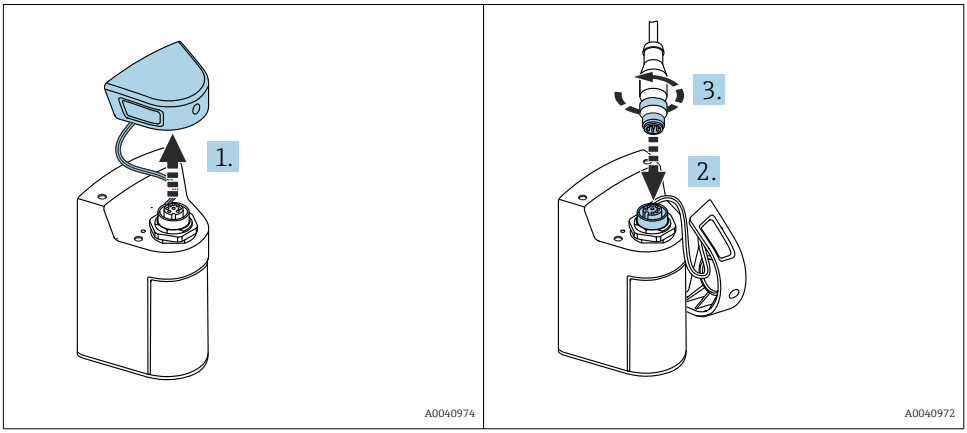
5.1.1 Connecting the Memosens sensor directly



2 *Sensor connection*

1. Insert the sensor into the Memosens connection.
2. Click the Memosens connection into place.

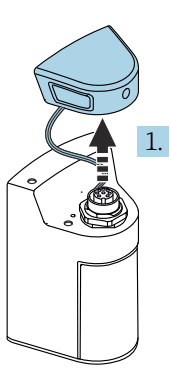
5.1.2 Connecting the Memosens sensor with M12 fixed cable connection



1. Remove the protection cap.
2. Insert the M12 fixed cable.
3. Screw on the M12 fixed cable.

5.1.3 Connecting the sensor via the Memosens M12 cable

The M12 cable has two different connectors:
- M12 connector for connecting to the device
- Memosens connection for connecting a Memosens sensor



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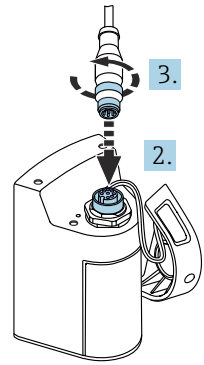

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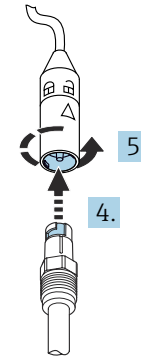

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3 Cable connection

1. Remove the protection cap.
2. Insert the M12 connector.
3. Screw on the M12 connector.
4. Insert the sensor into the Memosens connection.
5. Click the Memosens connection into place.

5.2 Charging the device

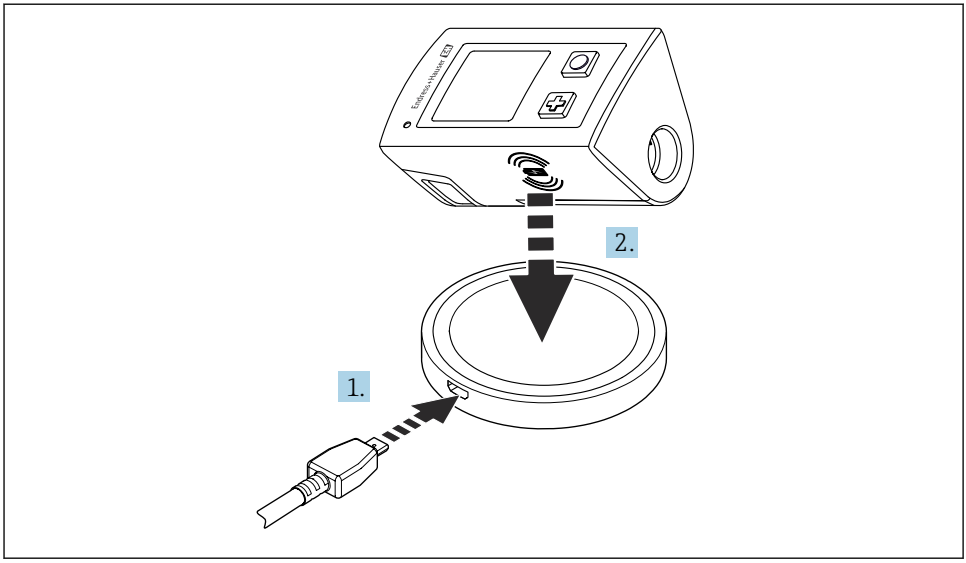
There are two possible ways to load the device:
- Wirelessly via Qi-certified charger
- via M12 cable (available from 2021)

The following applies to both options:
- When device is switched on:
  - The start of charging is indicated by a flash symbol on the display and confirmed by an acknowledgement tone.
  - If charging stops before the battery is fully charged, this is confirmed by another acknowledgment tone.
  - When charging is complete, the "charging complete" melody will sound.
- When device is switched off:
  - The green LED flashes during charging.
  - When charging is complete, the "charging complete" melody will sound and the LED is lit green continuously for 10 minutes.
  - The device then switches off.

5.2.1 Charging via Qi charger

Only use Qi-certified chargers (Baseline Power)!

For more information, visit: www.wirelesspowerconsortium.com



4 *Inductive charging*

1. Connect the charger to the power source.
2. Place the device with the charging side on the charger.

Charging begins and the charging state is indicated on the display.

An acoustic signal indicates that charging is complete.

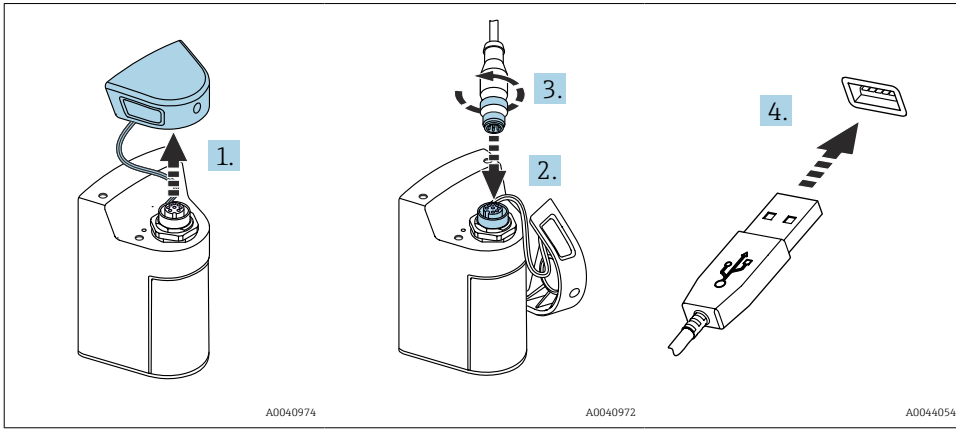
During inductive charging, measurement via the integrated Memosens connection on the device is not possible.

A message to this effect is shown on the display.

Measurement via M12 cable is still possible.

5.2.2 Charging via M12 cable

The M12 cable has two different connectors:
- M12 connector for connecting to the device
- USB connector for connecting to a computer or USB charger



1. Remove the protection cap.
2. Attach the M12 connector of the cable to the device connection.
3. Screw on the M12 connector of the cable.
4. Connect the USB connector to a USB charger or USB port on a computer.

5.3 Ensuring the degree of protection

Only the mechanical and electrical connections which are described in these instructions and which are necessary for the required, designated use, may be carried out on the device delivered.

► Exercise care when carrying out the work.

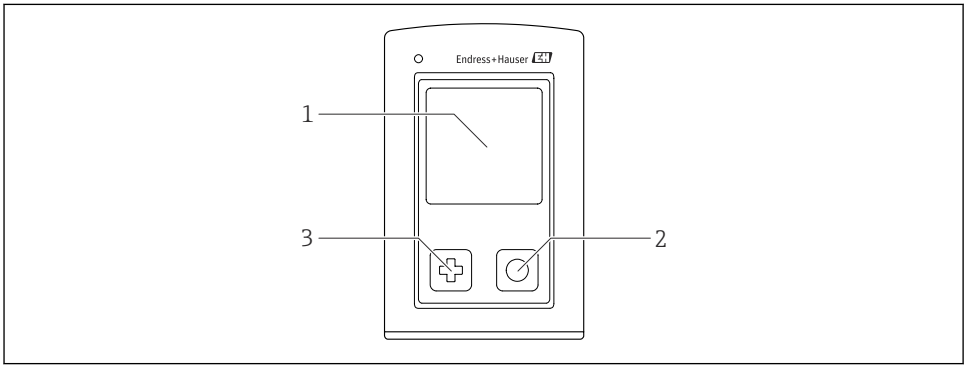
Otherwise, the individual types of protection (Ingress Protection (IP), electrical safety, EMC interference immunity) agreed for this product can no longer be guaranteed due, for example to covers being left off or cable (ends) that are loose or insufficiently secured.

6 Operation options

6.1 Overview of operation options

Operation and settings via:
- Internal operating menu with keys
- SmartBlue App → 📄 21

6.1.1 Display and operating elements



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5 Overview of display and operating elements

1 Display
2 "Select" button
3 "Next" button

Button functions

Button	Device switched off	On measuring screen	In the menu
⊞	Switching on	Scroll through measuring screens	Scroll down
⊙	Switching on	Save current measured values (Grab Sample)	Confirm/select
⊞ (long hold)	-	Open the menu	Switch to previous menu level/measuring screen
⊞ + ⊙ (pressed for longer than 7 seconds)	Forced hardware reset	Forced hardware reset	Forced hardware reset

6.1.2 Structure and function of the operating menu

Power-off	
Power-off ▶|	

- **Application**
  - Data logger
    - Data logger
    - Log interval
    - Cond. unit
  - Erase data
    - Erase continuous logs
      - Abort
      - Erase
    - Erase grab values
      - Abort
      - Erase

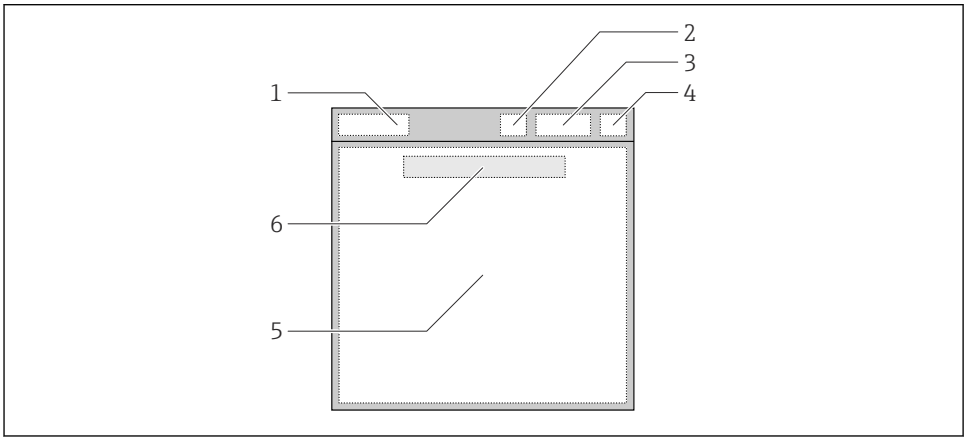
- **Diagnostics**
  - Diagnostics list
  - Data logger entries
  - Display test
  - Device info
    - Manufacturer
    - Software version
    - Serial number
    - Designation
    - Extended order code

- **System**
  - Display language
  - Bluetooth
  - Display brightness
  - Signal sounds
  - M12 Printout
  - Power management
    - Power save w. charger
    - Power save w/o charger
    - Power-off w. charger
    - Power-off w/o charger
  - Regulatory information

Guidance [1]	
2 point calibration	⏭

1) Available only with pH or ISFET sensor

Display structure



6 Schematic representation of the display structure

1 Menu path/title of measuring screen
2 Bluetooth status
3 Battery level, charging information
4 NAMUR indicator
5 Measuring screen
6 Date and time (displayed in main menu and if no sensor is connected)

Status according to NAMUR NE107 categories:

NAMUR indicator	Status
OK	The device and sensor are working reliably.
F	Failure of device or sensor. F status signal as per NAMUR NE107
M	Device or sensor requires maintenance. M status signal as per NAMUR NE107
C	Device or sensor undergoing function check. C status signal as per NAMUR NE107
S	Device or sensor being operated out of specification. S status as per NAMUR NE107

Structure of the measurement window

The measurement window has 3 measuring screens, which the user can scroll through:

Measuring screen (1 of 3)	Measuring screen (2 of 3)	Measuring screen (3 of 3)
Main value	Main and secondary measured value	All measured values of the sensor input

6.1.3 LED status indicator

The status LED is used for the quick visualization of the sensor status.

LED behavior	Status
Solid green	Sensor working correctly
Solid red	No sensor connected
Flashes red	Sensor error

6.1.4 Operation via SmartBlue App

SmartBlue is available for download from the Google Play Store for Android devices and from the Apple App Store for iOS devices.

Download the SmartBlue App.

▶ Use the QR codes to download the app.

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7 Download Links

System requirements

- iOS devices: iPhone 4S or higher from iOS9.0; iPad2 or higher from iOS9.0; iPod Touch 5th Generation or higher from iOS9.0
- Devices with Android: from Android 4.4 KitKat and Bluetooth® 4.0
- Internet access

▶ Open the SmartBlue App.

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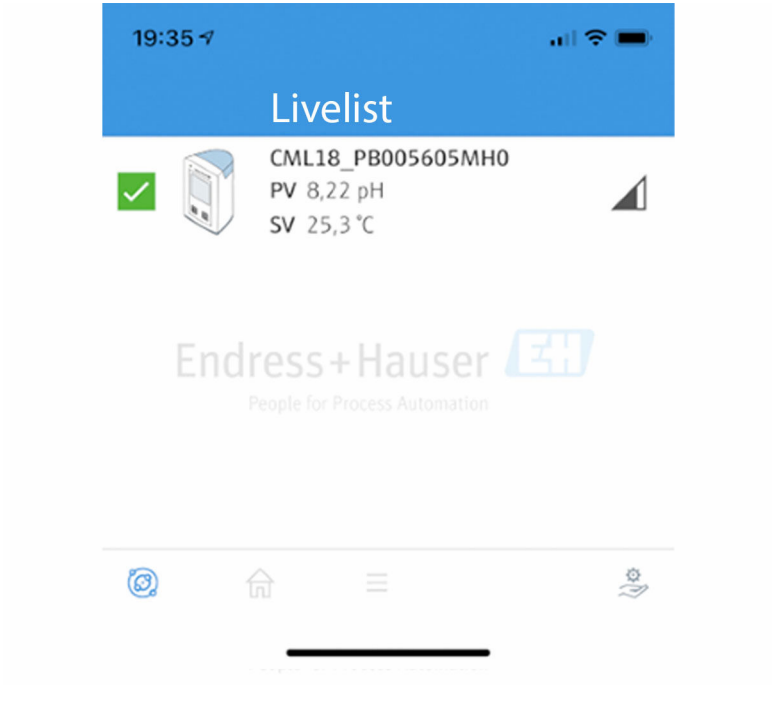
8 SmartBlue App icon

Bluetooth must be enabled on both devices.
Enable Bluetooth → 26



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9 SmartBlue App Livelist

The Livelist displays all of the devices that are within range.

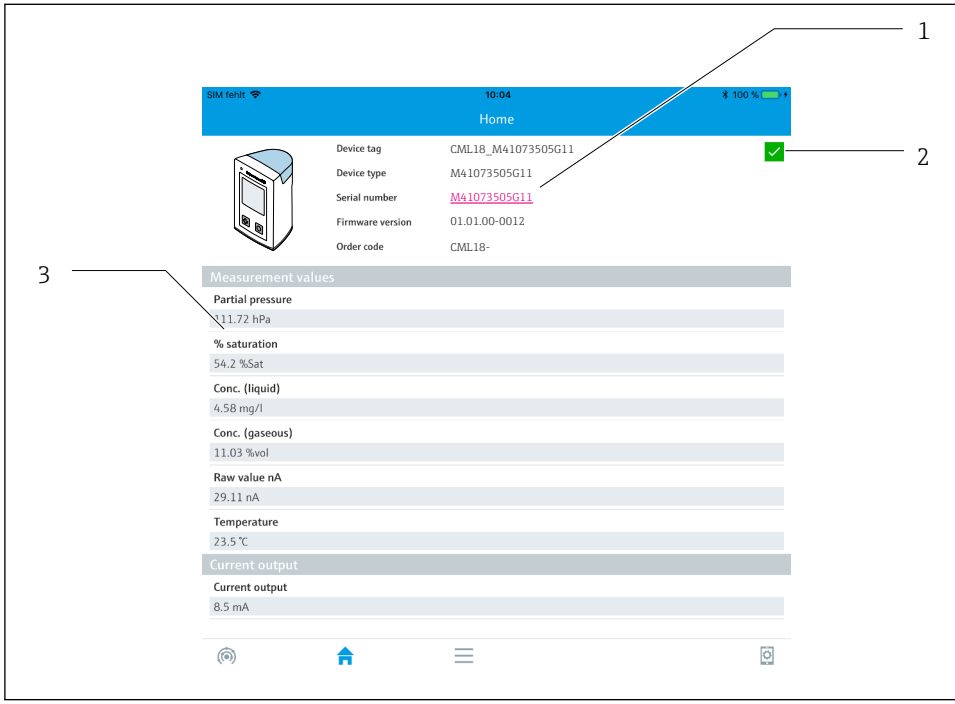
► Tap the device to select it.

To be able to use the device with SmartBlue, the Bluetooth connection must be confirmed by entering a user name and password.

1. User name >> **admin**
2. Initial password >> **device serial number**

Change the user name and password after logging in for the first time.

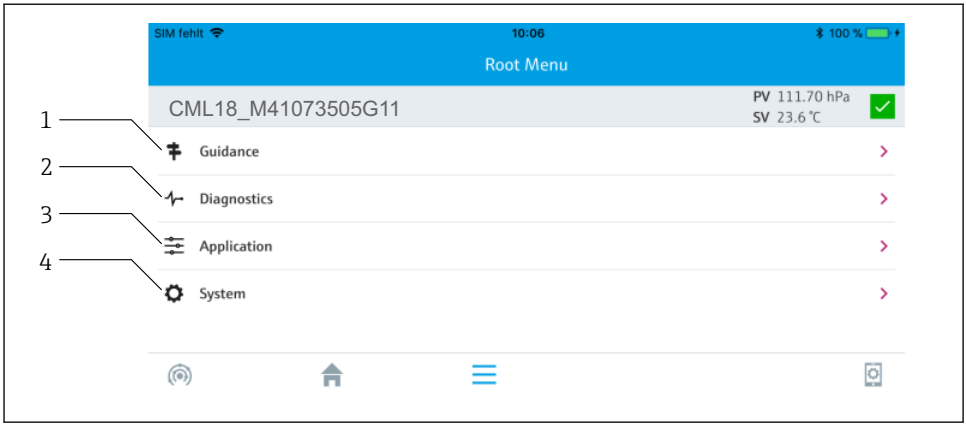
The current measured values are displayed in the Home view. The device information (device tag, serial number, firmware version, order code) is also displayed.



10 Home view of SmartBlue App with current measured values

1 CML18 system and device information
2 Shortcut to diagnostic list
3 Overview of measured values of connected sensor

Operation is via 4 main menus:



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11 *Main menus of the SmartBlue App*

1 *Guidance*
2 *Diagnostics*
3 *Application*
4 *System*

Menu	Function
Guidance	Contains functions involving a self-contained sequence of activities, e.g. for calibration (= "Wizard", guided operation).
Diagnostics	Contains information regarding operation, diagnostics and troubleshooting, as well as the configuration of the diagnostic behavior.
Application	Sensor data for specific optimization and for detailed process adjustment. Adjustment of measuring point to the application.
System	These menus contain parameters for configuring the overall system.

7 Commissioning

7.1 Preparatory steps

Charge the device.→ 14

Connect the sensor.→ 14

7.2 Function check

WARNING

Connection errors

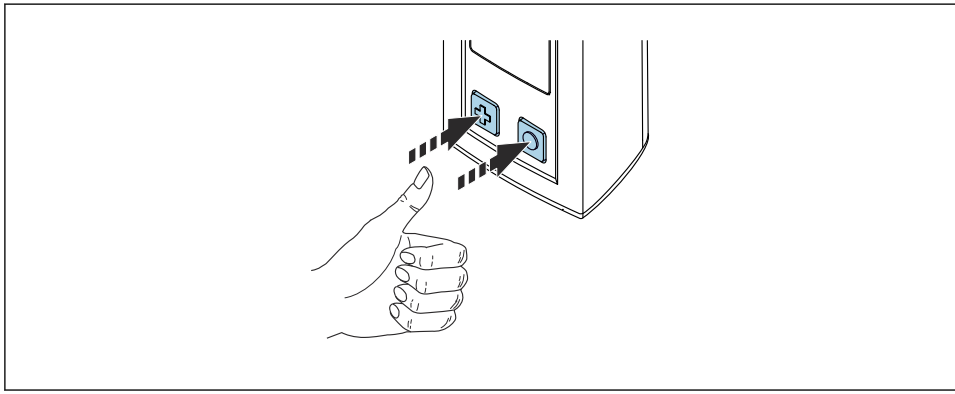
The safety of people and of the measuring point is at risk!

- Put the device into operation only if you can answer **yes** to **all** the following questions.

Device condition and specifications

- Are the device and all the cables free from damage on the outside?
- Are the mounted cables strain relieved?
- Are the cables routed without loops and cross-overs?

7.3 Switching on the device



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12 *Switching on the device*

- Press ⊕ or ⊙.
  - The device starts up.

A connected sensor is recognized automatically.

The time required before a measured value is displayed depends on the sensor type and measuring principle and can vary.

7.4 Setting the display language

1. Navigate to: **Display language**
   ↳ **Main menu** >> **System** >> **Display language**
2. Press ⊙ to scroll through the predefined values.

Description of setting	Configuration options
Change the language of the operating menu.	▪ Deutsch ▪ English

7.5 Configuring the measuring device

7.5.1 Configuring the Bluetooth connection

1. Navigate to: **Bluetooth**
   ↳ **Main menu** >> **System** >> **Bluetooth**
2. Press ⊙ to scroll through the predefined values.

Description of setting	Configuration options
Switch Bluetooth connection on/off	▪ Enabled ▪ Disabled

If the Bluetooth connection is disabled, operation via the SmartBlue App is not possible.

7.6 Advanced settings

7.6.1 Displaying device information

1. Navigate to: **Device info**
   ↳ **Main menu** >> **Diagnostics** >> **Device info**
2. Press ⊙ to scroll through the **Device info**.

The following information about the device is shown on the display:
- Manufacturer identification
- Software version
- Serial number
- Designation
- Extended order code

7.6.2 Adjusting the energy settings

A maximum battery life of 48 h can be achieved with the energy settings.

1. Navigate to: **Power management**
   ↳ **Main menu** >> **System** >> **Power management**

2. Press ⊙ to scroll through the predefined values.

The following energy settings are available:
- **Power save w. charger** (power saving with charger)
- **Power save w/o charger** (power saving without charger)
- **Power-off w. charger** (power off with charger)
- **Power-off w/o charger** (power off without charger)

The power save mode is activated after the set time if there is no user interaction.

In the power save mode, the display is switched off and the device remains on standby.

There are 2 power save settings:

Power save w. charger *(power saving with charger)*

Description of setting	Configuration options
Set the time until the power save mode is activated if the device is connected to the mains.	▪ 1 min ▪ 5 min ▪ 15 min ▪ 30 min ▪ 1 h ▪ 2 h ▪ Never

Power save w/o charger *(power saving without charger)*

Description of setting	Configuration options
Set the time until the power save mode is activated if the device is running on the battery.	▪ 1 min ▪ 5 min ▪ 15 min ▪ 30 min ▪ 1 h

The device is automatically switched off after the selected time.

The device is not switched off automatically if the Bluetooth connection is enabled.

There are 2 power-off settings:

Power-off w. charger *(power off with charger)*

Function description	Configuration options
Set the time until the device switches off automatically if it is connected to the mains.	▪ 1 min ▪ 5 min ▪ 15 min ▪ 30 min ▪ 1 h ▪ 2 h ▪ Never

Power-off w/o charger *(power off without charger)*

Function description	Configuration options
Set the time until the device switches off automatically if it is running on the battery.	▪ 1 min ▪ 5 min ▪ 15 min ▪ 30 min ▪ 1 h ▪ 2 h ▪ Never

7.6.3 Signal sounds

1. Navigate to: **Signal sounds**
   ↳ **Main menu** >> **System** >> **Signal sounds**
2. Press ⊙ to scroll through the predefined values.

Description of setting	Configuration options
Switch signal sounds on/off	▪ Enabled ▪ Disabled

7.6.4 Configuring the M12 output

Measured values can be output to other devices via the device's M12 connection.

1. Navigate to: **M12 Printout**
   ↳ **Main menu** >> **System** >> **M12 Printout**
2. Press ⊙ to scroll through the predefined values.

Description of setting	Configuration options
Switch on/off M12 output	▪ On ▪ Off

When the output via the M12 connection is switched on, no sensor can be operated via cable. Operation via the Memosens connection on the device is still possible.

7.6.5 Adjusting the display brightness

1. Navigate to: **Display brightness**
   ↳ **Main menu** >> **System** >> **Display brightness**
2. Press ⊙ to adjust the display brightness.

Description of setting	Configuration options
Set the display brightness	▪ Low ▪ Medium ▪ High ▪ Maximum

7.6.6 Emergency restart

This type of restart should only be performed in an emergency if the device does not respond to any other input.

▶ Press and hold ⊙ and ⊕ simultaneously for at least 7 seconds.
↳ The device restarts.

7.6.7 Displaying regulatory information and approvals

1. Navigate to: **Regulatory information**
   ↳ **Main menu** >> **System** >> **Regulatory information**
2. Press ⊙ to display regulatory information and approvals.

7.6.8 Data logger

Defining the log interval

The log interval can only be changed if the data logger is deactivated.

1. Navigate to: **Log interval**
   ↳ **Main menu** >> **Application** >> **Data logger** >> **Log interval**
2. Press ⊙ to scroll through the predefined values.

Description of setting	Configuration options
Set the time until the next measured value is saved automatically.	▪ 1 s ▪ 2 s ▪ 10 s ▪ 20 s ▪ 30 s ▪ 1 min ▪ 5 min ▪ 30 min ▪ 1 h

If the device is woken up to record a log value, any existing switch-on / settling times of the connected sensor are not taken into account.

Adjust the energy settings:→ 🖹 26

Enabling/disabling the data logger

1. Navigate to: **Data logger**
   ↳ **Main menu** >> **Application** >> **Data logger** >> **Data logger**
2. Press ⊙ to scroll through the predefined values.

Description of setting	Configuration options
Enable/disable automatic data logger	▪ On ▪ Off

3. Exit the menu.
   ↳ Once activated, the data logger automatically starts recording the measured values.

If the data logger is activated, the display flashes alternately between the "**Logging...**" message and the current menu path/measuring screen title.

4. Use ⊞ to change the active measuring window.

Configuring the data logger for ultrapure water

The unit of the measured value can be adjusted for conductivity measurement with the data logger in ultrapure water. An adjustment is necessary to eliminate rounding errors in the smallest measured values.

1. Navigate to: **Cond. unit**
   ↳ **Main menu** >> **Application** >> **Data logger** >> **Data logger** >> **Cond. unit**
2. Press ⊙ to scroll through the predefined values.

8 Operation

8.1 Two-point calibration (pH or ISFET sensor)

For two-point calibration of pH or ISFET sensors, the calibration settings are configured via the SmartBlue app. The calibration can then be started from the device.

Configuring the calibration settings:

1. Enable Bluetooth. → 26
2. Link the device to a mobile end device via the SmartBlue App. → 21
3. Select the device in the SmartBlue App.
4. Navigate to: **Calibration settings**
   ↳ **Application** >> **Sensor** >> **Advanced settings** >> **Calibration settings**
5. Configure the calibration settings.

Perform two-point calibration on the device:

1. Navigate to: **2 point calibration**
   ↳ **Guidance** >> **2 point calibration**
2. Use ⊙ to navigate through the calibration.

8.2 Reading measured values

Measuring screens are shown on the display when a sensor is connected.

For each sensor, there are 3 measuring screens with different measured variables→ 21.

To scroll through the measuring screens:

▶ Press ⊕.

After the last measuring screen, the display returns to the first measuring screen.

8.2.1 Saving the individual measured value (Grab Sample)

Individual measured values can be assigned IDs and a user-definable text. By assigning an ID, individual measured values can be assigned more easily to a measuring point, for example.

IDs and the associated texts can be adjusted via the SmartBlue app.→ 32

1. In the measurement window, press ⊙.
   ↳ A new screen appears.
2. Label individual measured value with ID.
   ↳ Press ⊕ to scroll through the available IDs.
3. Press ⊙ to save the individual measured value with the selected ID.
   ↳ Or: Press and hold ⊕ to discard the individual measured value.

8.2.2 Adjusting individual measured value IDs

The 10 pre-set IDs for individual measured values can be adjusted via SmartBlue.

Preparatory steps

1. Enable Bluetooth. → 26
2. Link the device to a mobile end device via the SmartBlue App. → 21

Transferring the data

1. Select the device in the SmartBlue App.
2. Select "Grab sample".
3. Select ID text.
   ↳ Click in the line of text to assign an individual text for the selected ID.

Depending on the input language selected, there are up to 32 characters available for the assignment of the individual ID.

8.2.3 Saving measured values automatically (Data logger)

Configure the data logger → 29.

8.2.4 Displaying saved measured values

▶ Navigate to: **Log entries**
↳ **Main menu** >> **Diagnostics** >> **Log entries**

This menu displays the number of saved entries for the different log procedures.

8.2.5 Exporting saved measured values

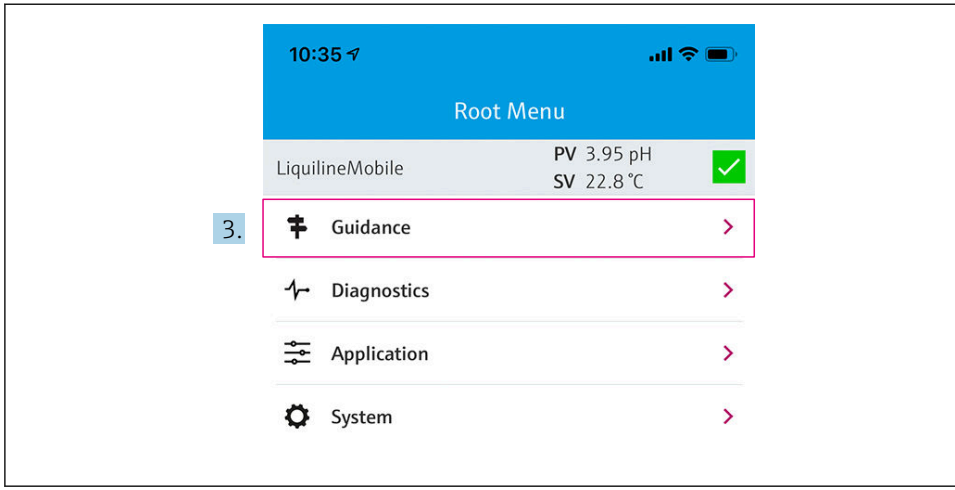
Saved data can be transmitted from the internal device memory to mobile end devices.

Preparatory steps

1. Enable Bluetooth. → 26
2. Link the device to a mobile end device via the SmartBlue App. → 21

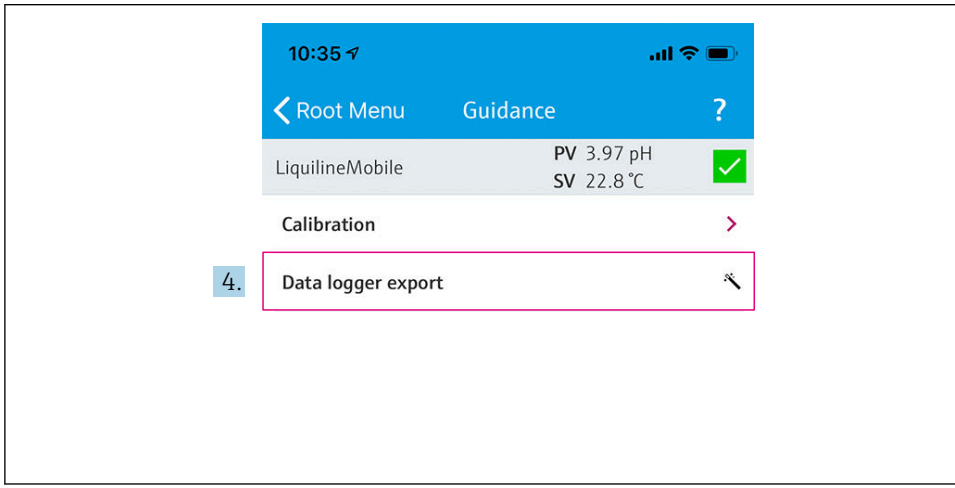
Transferring the data

1. Select the device in the SmartBlue App.
2. Select ☰ in the SmartBlue App.



A0042257

3. Select **Guidance**.



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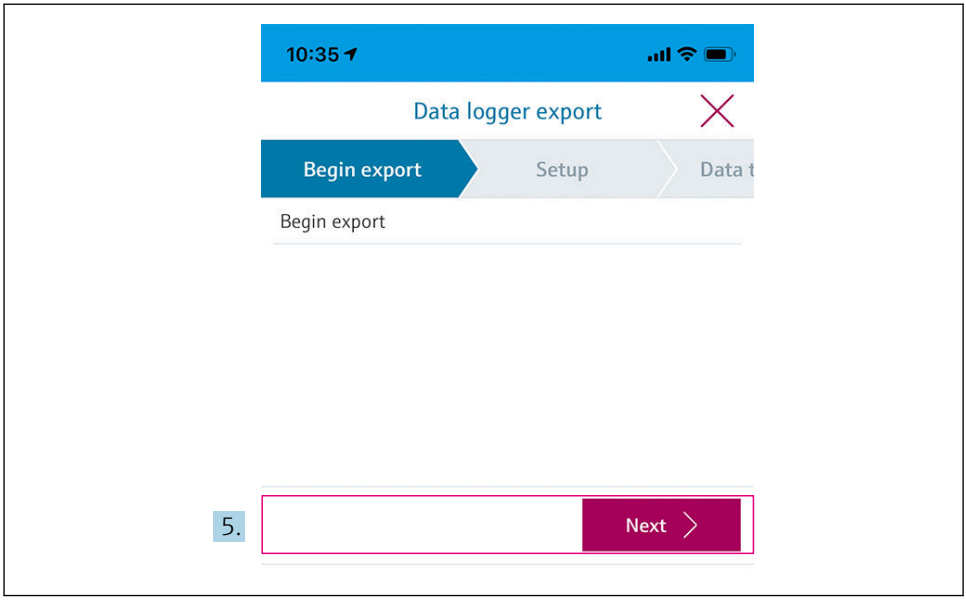
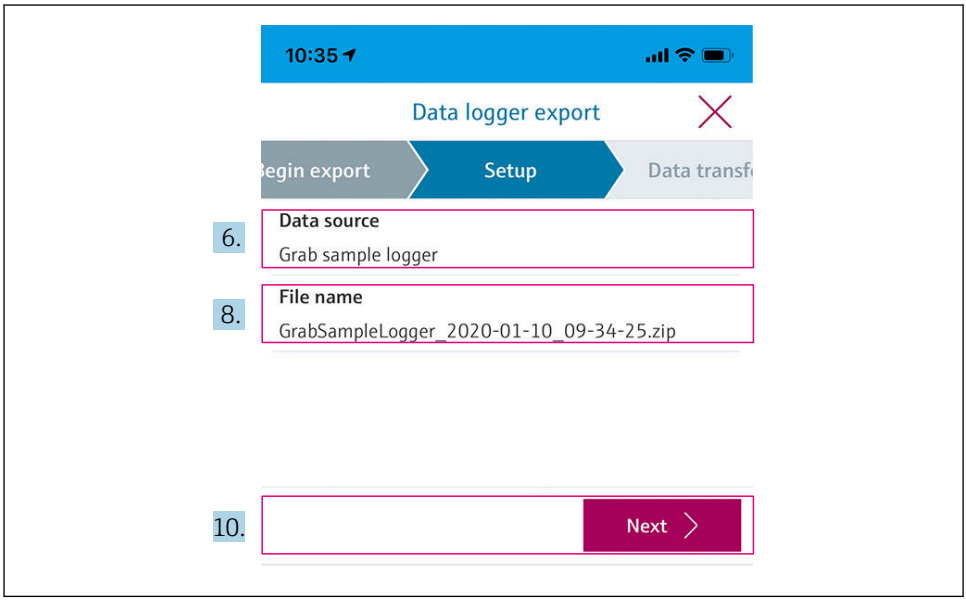
4. Select **Data transfer**.



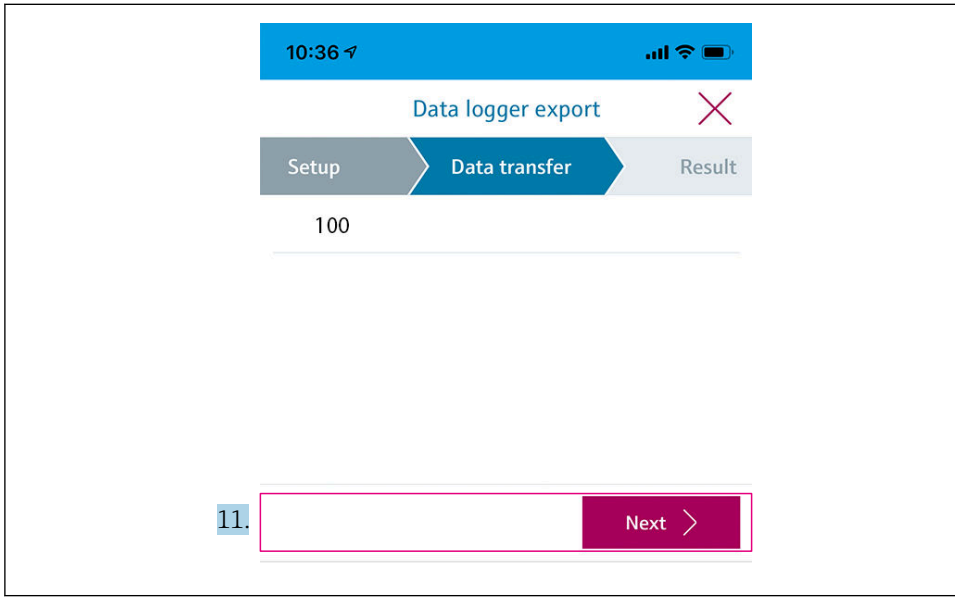
A0042261

5. Select **Next** to continue.



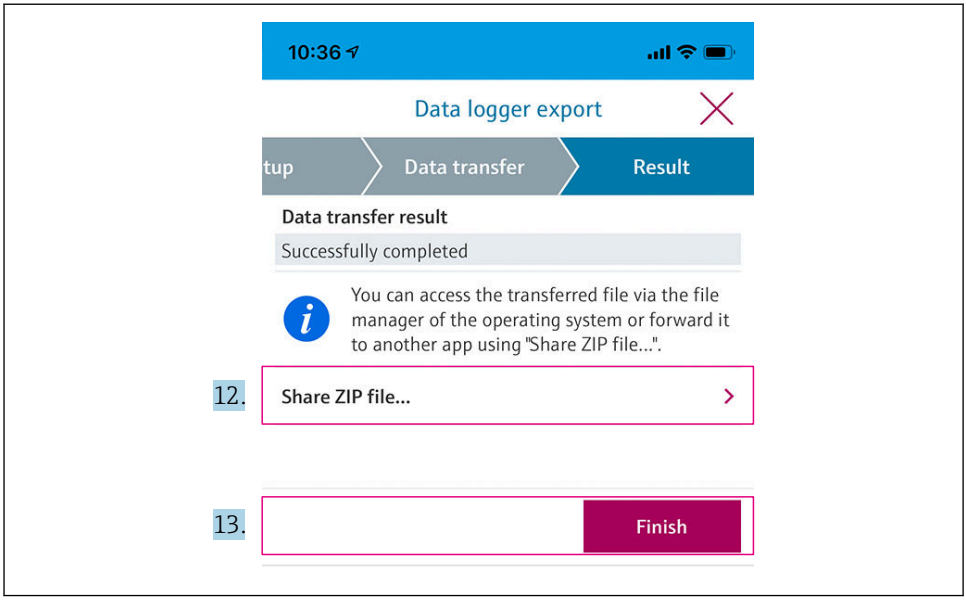
A0042260

6. Select **Data source**.
   ↳ Select **Grab sample logger** for saved individual measured values.
   Select **Cont. data logger** for data records of the data logger.
7. Press **Ok** to confirm.
   ↳ Select ← to discard changes and close the selection menu.
8. Select **File name**.
   ↳ Click the text line to enter an individual name for the generated data package.
9. Press **Ok** to confirm.
   ↳ Select ← to discard changes and close the selection menu.
10. Select **Next** to continue.
    ↳ Data transfer starts.
    A progress bar indicates the progress percentage.



A0042263

11. After data transfer, click **Next** to continue.
    ↳ The result of the data transfer is displayed.



12. Use **Share ZIP file...** to save the exported data records locally or to send them.
13. Select **Finish** to complete the export.

8.2.6 Deleting saved measured values

▶ Navigate to: **Erase data**
↳ **Main menu** >> **Application** >> **Data logger** >> **Erase data**

The data are divided into 2 categories:
- Erase continuous logs
  Selects all data logger entries for deletion.
- Erase grab values
  Selects all grab values (individual measured values) for deletion.

NOTICE

Deletion of data!
Once data are deleted, they cannot be restored. The deletion of data must be confirmed.
▶ Save data before deletion.

1. Use ⊕ to navigate to the desired category.
2. Press ⊙ to select the category to be deleted.
3. Press ⊕ to select **Erase** or **Abort**.
4. Press ⊙ to select **Erase** or **Abort**.

8.2.7 Switching off the device

1. Navigate to: **Power-off**
   ↳ **Main menu** >> **Power-off**
2. Press ⏻ to switch off the device.

9 Firmware update

The firmware of the device can be updated to the latest version via Smartblue.

All stored data logger entries must be exported before each firmware update.

A firmware update can take up to one hour.

The battery must have sufficient capacity.

The device is prevented from switching off automatically if is connected to the SmartBlue app.

NOTICE

Damage to firmware!

Risk of incomplete update and limited functionality of the device.

▶ Do not switch off the device manually during a firmware update.

Preparatory steps

1. Enable Bluetooth. → 🖹 26
2. Link the device to a mobile end device via the SmartBlue App. → 🖹 21

Starting a firmware update

1. Select the device in the SmartBlue App.
2. Select ☰ in the SmartBlue App.
3. Select **System**.
4. Select **Firmware update**.
5. Select available software version.
   ↳ If the update is not displayed, the file needs to be opened once using SmartBlue.
6. Start the update.

After a firmware update, Bluetooth functionalities are restarted in the background.

This process may take some time.

All other functions of the device can be used immediately.

10 Diagnostics and troubleshooting

10.1 Diagnostics information via the onsite display

10.1.1 Opening the diagnostics list

1. Navigate to: **Diagnostics list**
   ↳ **Main menu** >> **Diagnostics** >> **Diagnostics list**
2. Press ⊙ to open the diagnostics list.

10.1.2 Display testing

1. Navigate to: **Display test**
   ↳ **Main menu** >> **Diagnostics** >> **Display test**
2. Press ⊙ to invoke the screen test.
3. Press ⊙ to scroll through the test windows and check the display for damage.

11 Maintenance

11.1 Maintenance tasks

11.1.1 Cleaning

▶ Only clean with a damp cloth and commercially available cleaning agents.

The device is resistant to:
- Ethanol (for a short time)
- Soap-based household cleaning agents
- Dishwashing detergent

NOTICE

Cleaning agents not permitted

Damage to the housing surface or housing seal

▶ Do not use concentrated mineral acids or alkaline solutions for cleaning.
▶ Do not use organic cleaners such as acetone, benzyl alcohol, methanol, methylene chloride, xylene or concentrated glycerol cleaner for cleaning.
▶ Do not use high-pressure steam for cleaning.

11.2 Measuring and test equipment

Calibrated and adjusted sensors with Memosens technology save their calibration data directly in the sensor.

The sensors can be used as testing equipment thanks to this functionality.

The device can be used to display the measured values of such test equipment. Each connected sensor uses its own calibration data.

Using the SmartBlue App, a sensor can be calibrated, recalibrated and adjusted in a suitable testing medium directly at the device.

12 Repair

12.1 Return

The product must be returned if repairs or a factory calibration are required, or if the wrong product was ordered or delivered. As an ISO-certified company and also due to legal regulations, Endress+Hauser is obliged to follow certain procedures when handling any returned products that have been in contact with medium.

To ensure the swift, safe and professional return of the device:

- Refer to the website www.endress.com/support/return-material for information on the procedure and conditions for returning devices.

12.2 Disposal

The device contains electronic components. The product must be disposed of as electronic waste.

- Observe the local regulations.

If required by the Directive 2012/19/EU on waste electrical and electronic equipment (WEEE), the product is marked with the depicted symbol in order to minimize the disposal of WEEE as unsorted municipal waste. Do not dispose of products bearing this marking as unsorted municipal waste. Instead, return them to Endress+Hauser for disposal under the applicable conditions.

The battery cannot be removed or replaced by the end customer!

The battery may only be disposed of by properly trained staff. For this, the 4 screws on the top of the device must be untightened in order to remove the device interior, along with the accumulator battery, from the housing.

13 Accessories

The latest list of accessories and all compatible Memosens sensors is provided on the product page:

www.endress.com/CML18

14 Technical data

14.1 Input

14.1.1 Input power

Wireless charging	5 W
M12 connection	5 V; 0.6 A

14.1.2 Measured variables

- pH
- ORP
- pH/ORP
- Oxygen
- Conductivity
- Temperature

14.1.3 Measuring range

→ Documentation of the connected sensor

14.1.4 Type of input

Memosens connection for sensors with Memosens technology

M12 connection for digital measuring cable CYK10, CYK20 for sensors with Memosens technology

Memosens sensors CLS50D and CLS54D

A complete list of supported sensors can be found on the product page of the device: www.endress.com/CML18

14.2 Output

14.2.1 Output signal

Memosens M12 (maximum 80 mA)

14.3 Power supply

14.3.1 Supply voltage

Inductive charging via Qi: Baseline Power (use Qi-certified devices)

5 W output power (5 V/1500 mA input)

14.3.2 Battery rated capacity

1 000 mAh (min. 950 mAh)

14.3.3 Battery life

Max. 48 h

14.3.4 Overvoltage protection

IEC 61 000-4-4 with 0.6 kV

IEC 61 000-4-5 with 2.0 kV

14.3.5 Sensor connection

Sensors with Memosens technology

14.3.6 Cable specification

Digital measuring cable CYK10-Axx2+x

Digital measuring cable CYK20-AAxxC1

14.4 Environment

14.4.1 Ambient temperature range

Charging: 0 to +45 °C (32 to 113 °F)

Operation: –10 to +60 °C (14 to 140 °F)

The maximum ambient temperature depends on the process temperature and the installation position.

14.4.2 Storage temperature

–20 to +45 °C (–4 to 113 °F)

Elevated storage temperatures reduce the battery capacity.

14.4.3 Humidity

0 to 95 %

14.4.4 Degree of protection

IP66

14.4.5 Electrical safety

EN 61010-1

14.4.6 Pollution degree

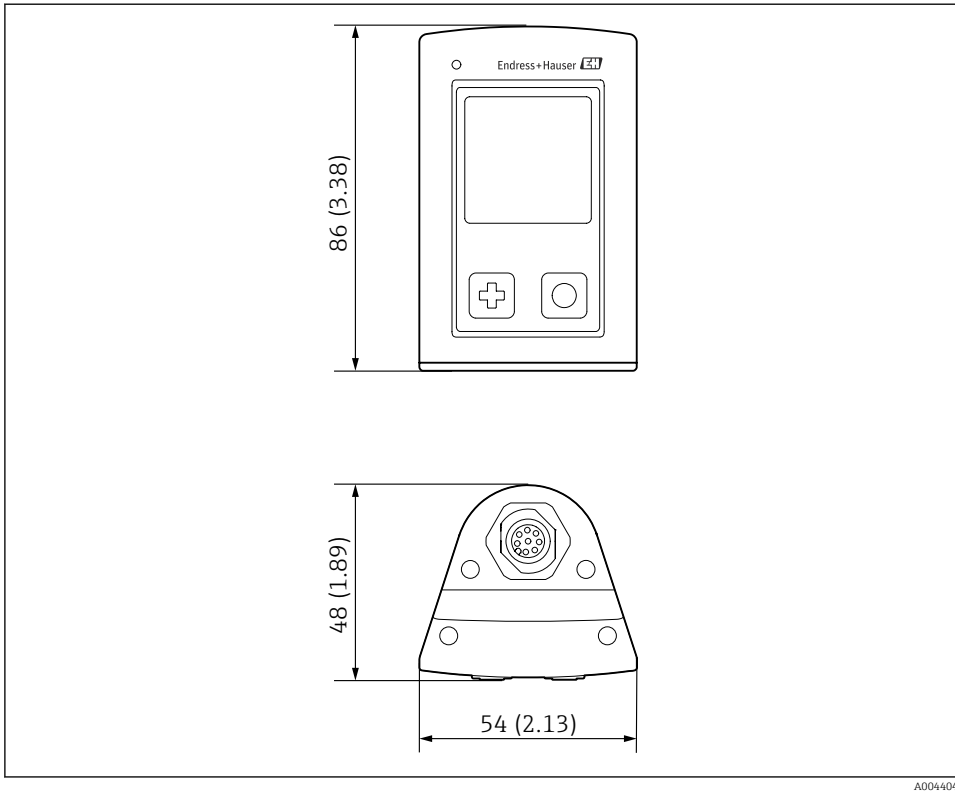
Complete device:	Pollution level 4
Internal:	Pollution level 2

14.4.7 Radio standards

- EN 300 328 (Europe)
- 47 CFR 15.247 (United States)
- RSS-247 Issue 2 (Canada)
- RSS-GEN Issue 5 (Canada)

14.5 Mechanical construction

14.5.1 Dimensions



13 Dimensions: mm (in)

14.5.2 Materials

Components	Material
Housing	PBT
Display window, light guide	PMMA

Components	Material
Buttons, cap	TPE
M12 connection	CuZn, nickel-plated

14.5.3 Materials not in contact with the medium

Information according to REACH Regulation (EC) 1907/2006 Art. 33/1:

The device battery contains the SVHC 1.2 dimethoxyethane; ethylene glycol dimethyl ether (CAS number [1)] 110-71-4) with more than 0.1% (w/w). The product does not present a hazard if it is used as designated.

14.5.4 Impact loads

The product is designed for mechanical impact loads of 1 J (IK06) as per the requirements of EN61010-1.

14.5.5 Weight

Liquiline Mobile CML18	155 g (5.5 oz)

1) CAS = Chemical Abstracts Service, international identification standard for chemical substances

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