

Brief Operating Instructions

Liquistation CSF28

Automatic sampler for liquid media



These instructions are Brief Operating Instructions; they are not a substitute for the Operating Instructions pertaining to the device.

Detailed information on the device can be found in the Operating Instructions and in the other documentation available at:

- www.endress.com/device-viewer
- Smart phone/tablet: Endress+Hauser Operations App

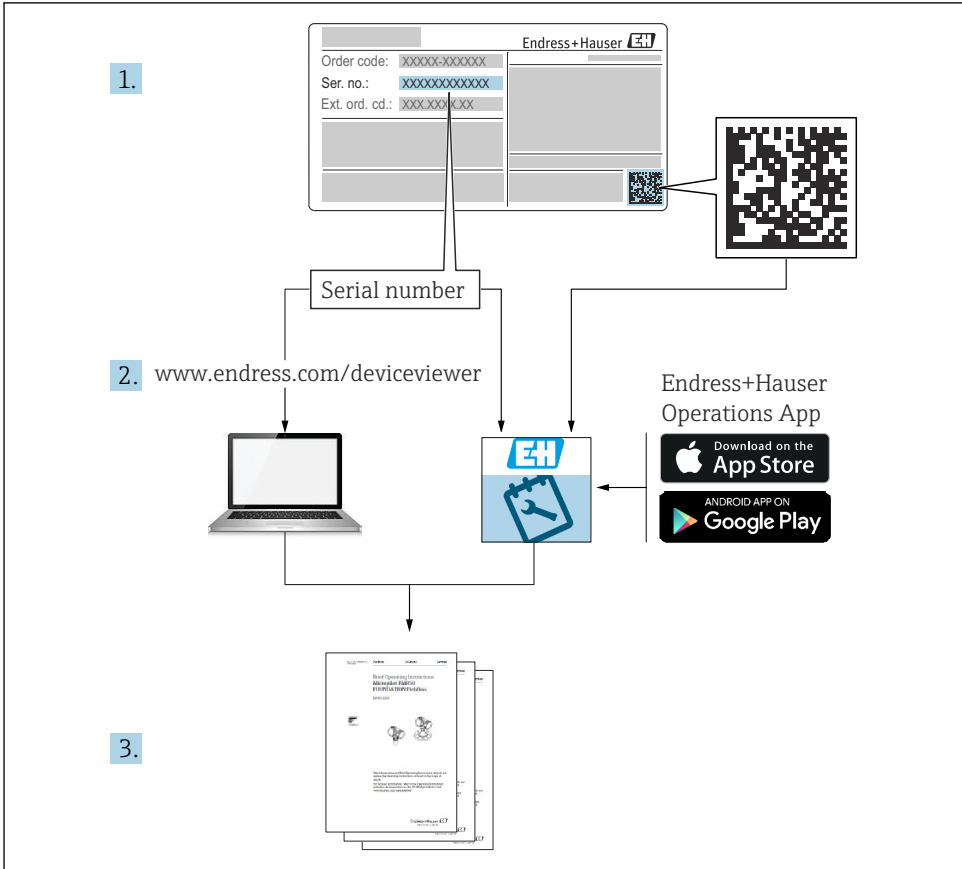






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1 About this document



1.1 Warnings

Structure of information	Meaning
<p> DANGER</p> <p>Causes (/consequences) If necessary, Consequences of non-compliance (if applicable)</p> <ul style="list-style-type: none"> ▶ Corrective action 	<p>This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation will result in a fatal or serious injury.</p>
<p> WARNING</p> <p>Causes (/consequences) If necessary, Consequences of non-compliance (if applicable)</p> <ul style="list-style-type: none"> ▶ Corrective action 	<p>This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation can result in a fatal or serious injury.</p>
<p> CAUTION</p> <p>Causes (/consequences) If necessary, Consequences of non-compliance (if applicable)</p> <ul style="list-style-type: none"> ▶ Corrective action 	<p>This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or more serious injuries.</p>
<p> NOTICE</p> <p>Cause/situation If necessary, Consequences of non-compliance (if applicable)</p> <ul style="list-style-type: none"> ▶ Action/note 	<p>This symbol alerts you to situations which may result in damage to property.</p>

1.2 Symbols

-  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

-  Reference to device documentation
-  Do not dispose of products bearing this marking as unsorted municipal waste. Instead, return them to the manufacturer for disposal under the applicable conditions.

1.4 Documentation

The following manuals complement these Brief Operating Instructions and are available on the product pages on the Internet:

- Operating Instructions Liquistation CSF28, BA02242C
 - Device description
 - Commissioning
 - Operation
 - Software description (excluding sensor menus; these are described in a separate manual - see below)
 - Device-specific diagnostics and troubleshooting
 - Maintenance
 - Repair and spare parts
 - Accessories
 - Technical data
- Guidelines for communication via web server
Web server (optional), SD01190C
- Special Documentation: Sampler application manual SD01068C
- Documentation on other devices in the Liquiline platform:
 - Liquiline CM44xR (DIN rail device)
 - Liquistation CSFxx (sampler)
 - Liquiport CSP44 (sampler)

2 Basic safety instructions

2.1 Requirements for the 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.

2.2 Intended use

Liquistation CSF28 is a stationary sampler for liquid media. The samples are taken discontinuously using a vacuum pump or peristaltic pump and are then distributed into sampling containers and refrigerated.

The sampler is designed for use in the following applications:

- Communal and industrial wastewater treatment plants
- Laboratories and water management offices
- Monitoring of liquid media in industrial processes

Use of the device for any purpose other than that described poses a threat to the safety of people and of the entire measuring system, and is therefore not permitted. The manufacturer is not liable for damage caused by improper or non-intended use.

2.3 Workplace safety

As the user, you are responsible for complying with the following safety conditions:

- Installation guidelines
- Local standards and regulations

Electromagnetic compatibility

- The product has been tested for electromagnetic compatibility in accordance with the applicable international standards for industrial applications.
- The electromagnetic compatibility indicated applies only to a product that has been connected in accordance with these Operating Instructions.

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.

Devices connected to the sampler must comply with the applicable safety standards.

2.5.2 IT security

We only provide a warranty if the device is installed and used as described in the Operating Instructions. The device is equipped with security mechanisms to protect it against any inadvertent changes to the device settings.

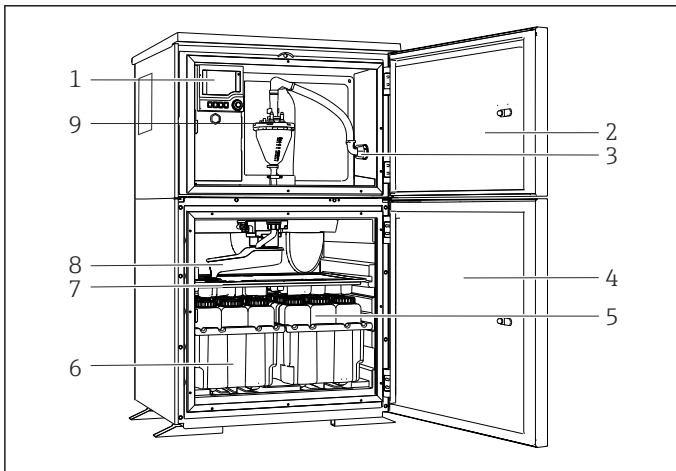
IT security measures in line with operators' security standards and designed to provide additional protection for the device and device data transfer must be implemented by the operators themselves.

3 Product description

3.1 Product design

Depending on the version, a complete sampling unit for open channels comprises:

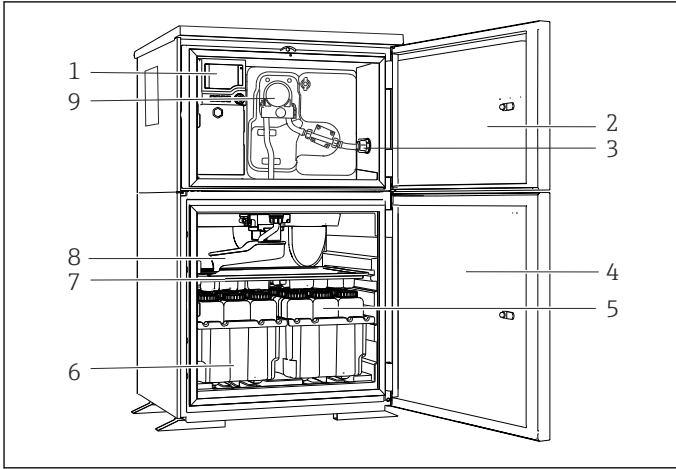
- Controller with display, soft keys and navigator
- Vacuum or peristaltic pump for sampling
- PE sample bottles for sample preservation
- Sampling chamber temperature regulator for safe sample storage
- Suction line with suction head




- 1 Controller
- 2 Dosing compartment door
- 3 Suction line connection
- 4 Sampling chamber door
- 5 Sample bottles, e.g. 2 x 12 bottles, PE, 1 liter
- 6 Bottle trays (depending on sample bottles selected)
- 7 Distribution plate (depending on sample bottles selected)
- 8 Distribution arm
- 9 Vacuum system, e.g. Dosing system with conductive sample sensor

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1 Example of a Liquistation, version with vacuum pump



- 1 Controller
- 2 Dosing compartment door
- 3 Suction line connection
- 4 Sampling chamber door
- 5 Sample bottles, e.g. 2 x 12 bottles, PE, 1 liter
- 6 Bottle trays (depending on sample bottles selected)
- 7 Distribution plate (depending on sample bottles selected)
- 8 Distribution arm
- 9 Peristaltic pump

 2 Example of a Liquistation, version with peristaltic pump

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

Nameplates can be found:

- On the inside of the door
- On the packaging (adhesive label, portrait format)
- On the top housing section

4.2.1 Nameplate

The nameplate provides you with the following information on your device:

- Manufacturer identification
 - Order code
 - Extended order code
 - Serial number
 - Firmware version
 - Ambient and process conditions
 - Input and output values
 - Activation codes
 - Safety information and warnings
- ▶ Compare the information on the nameplate with the order.

4.2.2 Product identification

Product page

www.endress.com/CSF28

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. Page search (magnifying glass symbol): Enter valid serial number.
3. Search (magnifying glass).
 - ↳ The product structure is displayed in a popup window.
4. Click the product overview.
 - ↳ A new window opens. Here you fill information pertaining to your device, including the product documentation.

4.2.3 Manufacturer address

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

4.3 Storage and transport

NOTICE

Damage to the sampler

If transported incorrectly, the roof may become damaged or tear off.

- ▶ Transport the sampler using a lifting truck or forklift. Do not lift the sampler by the roof. Lift it in the middle between the top and bottom sections.

4.4 Scope of delivery

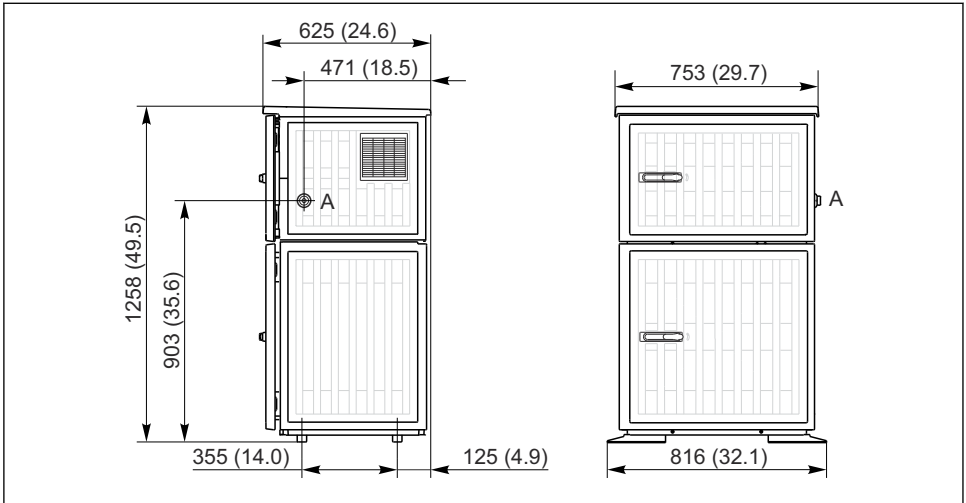
The scope of delivery comprises:

- 1 Liquistation CSF28 with:
 - The ordered bottle configuration
 - Accessories kit
 - For peristaltic or vacuum pump:
 - Hose adapter for suction line with various angles (straight, 90°), Allen screw (for version with vacuum pump only)
 - 1 printed copy of the Brief Operating Instructions in the language ordered
 - Optional accessories
- ▶ If you have any queries:
 - Please contact your supplier or local sales center.

5 Mounting

5.1 Mounting requirements

5.1.1 Dimensions



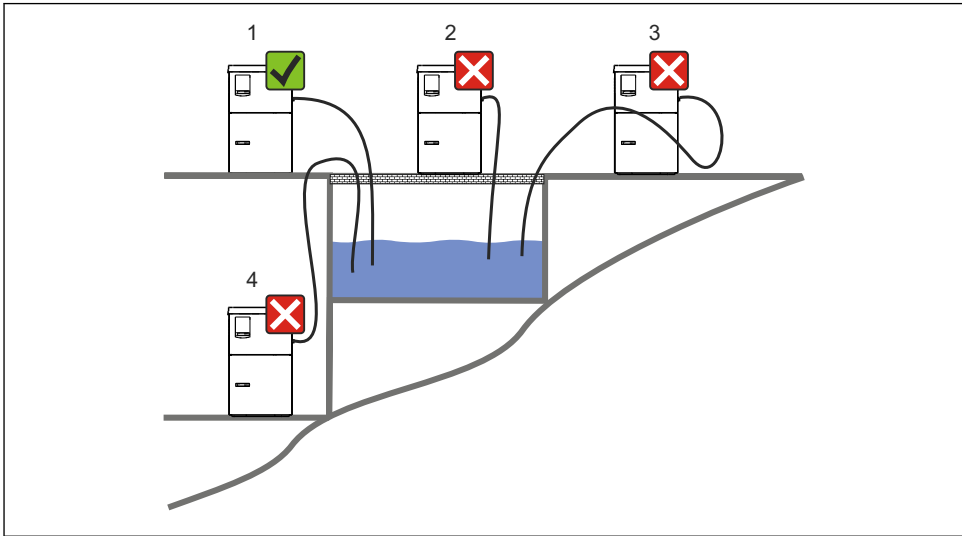
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3 Dimensions of Liquistation, plastic version. Unit of measurement mm (in)

A Suction line connection

5.1.2 Installation site

For version with sample pump



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4 Liquistation mounting conditions

Mounting conditions

Route the suction line with a downward gradient to the sampling point.

Never mount the sampler in a place where it is exposed to aggressive gases.

Avoid siphoning effects in the suction line.

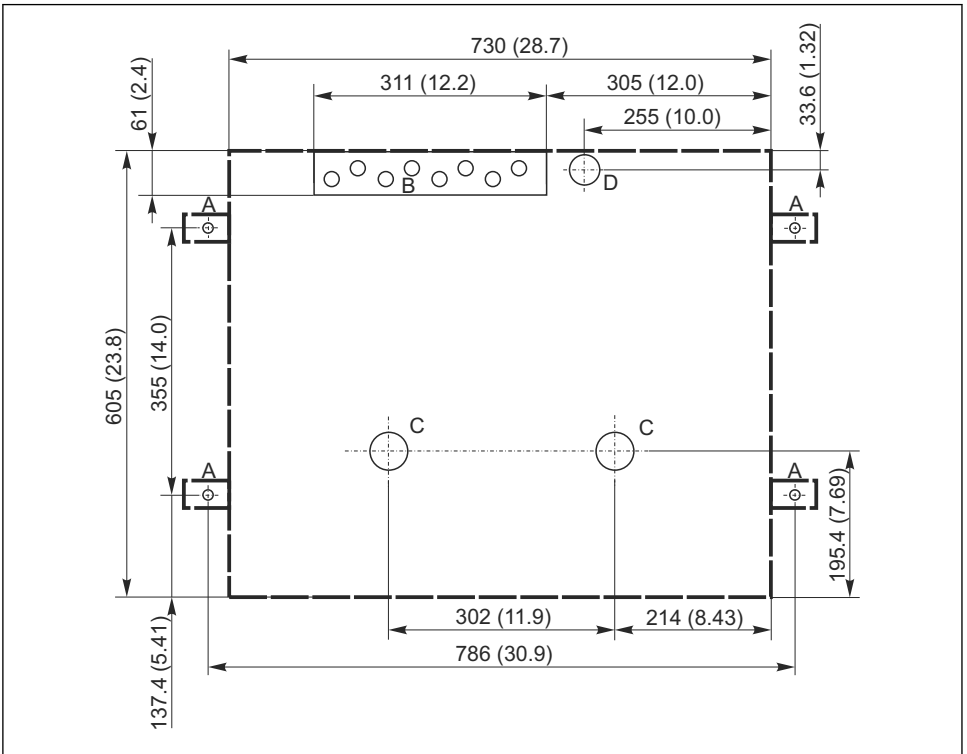
Do not route the suction line with an upward gradient to the sampling point.

Note the following when erecting the device:

- Erect the device on a level surface.
- Connect the device securely to the surface at the fastening points.
- Protect the device against additional heating (e.g. heaters or direct sunlight).
- Protect the device against mechanical vibrations.
- Protect the device against strong magnetic fields.
- Make sure air can circulate freely at the side panels of the cabinet. Do not mount the device directly against a wall. Allow at least 150 mm (5.9 in.) from the wall to the left and right.
- Do not erect the device directly above the inlet channel of a wastewater treatment plant.

5.1.3 Mechanical connection

Foundation plan



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5 Foundation plan. Unit of measurement mm (in)

- A Fasteners (4 x M10)
- B Cable inlet
- C Outlet for condensate and overflow > DN 50
- D Sample supply from below > DN 80
- Dimensions of Liquistation

5.1.4 Connection for sample intake and for version with sample pump

- Maximum suction height:
 - Vacuum pump: standard 6 m (20 ft)
 - Peristaltic pump: standard 8 m (26 ft)
- Maximum hose length: 30 m (98 ft)
- Hose connection diameter
 - Vacuum pump: 10 mm (3/8 in) or 13 mm (1/2 in)
 - Peristaltic pump: 10 mm (3/8 in) internal diameter
- Intake speed:
 - > 0.6 m/s (> 1.9 ft/s) for 10 mm (3/8 in) ID, as per Ö 5893, US EPA
 - > 0.5 m/s (> 1.6 ft/s) for ≤ 13 mm (1/2") ID, in accordance with EN 25667, ISO 5667

Note the following when erecting the device:

- Always lay the suction line so that it slopes upwards from the sampling point to the sampler.
- The sampler must be located above the sampling point.
- Avoid siphoning effects in the suction line.

Requirements for the sampling point:

- Do not connect the suction line to pressurized systems.
- Use the suction filter to impede coarse and abrasive solids and solids which can cause clogging.
- Immerse the suction line in the direction of flow.
- Take the sample at a representative point (turbulent flow, not directly at the bottom of the channel).

Useful sampling accessories

Suction filter:

Impedes coarser solids and solids which can cause clogging.

5.2 Setting up the device

5.2.1 Side connection of the suction line

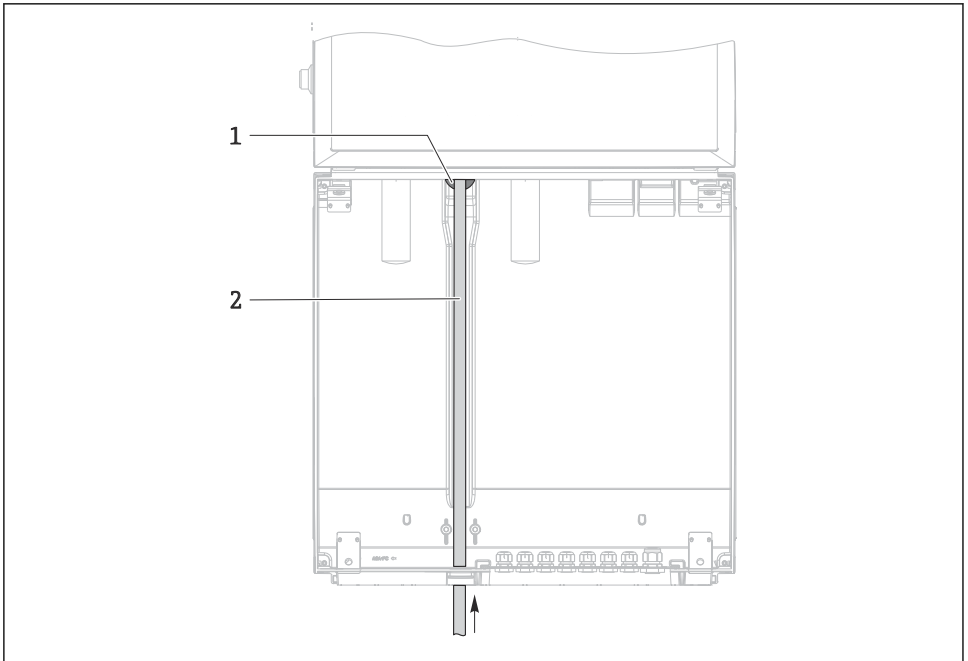
1. When setting up the device, take the installation conditions into account.
2. Route the suction line from the sampling point to the device.
3. Fit a hose adapter on the hose.
4. Secure the hose adapter with a worm drive hose clip.
5. Screw the suction line onto the device's hose connection.

5.2.2 Connection of suction line from below

If the suction line is connected from below, the suction line is routed upwards behind the rear panel of the sample compartment.

1. Remove the rear panel of the dosing compartment and sample compartment beforehand.
2. Remove the drain plug from the hose gland located at the back of the device base.

3. Guide the suction line upwards and through the opening towards the front, as illustrated.

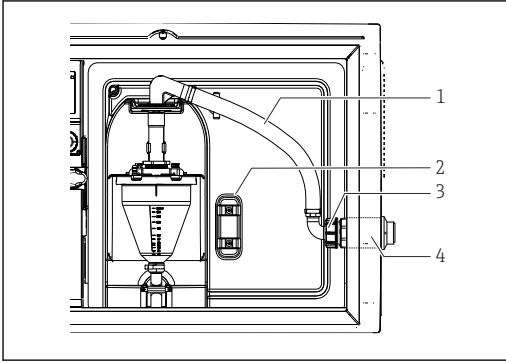


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6 *Sample supply from below*

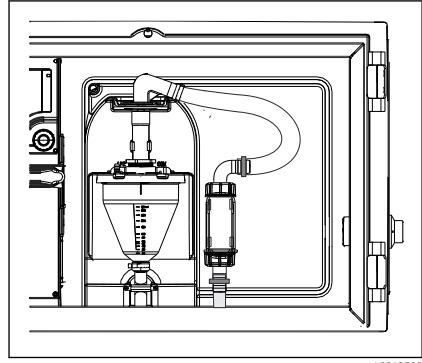
- 1 *Gland for the suction line*
- 2 *Suction line*

Connecting the suction line on version with vacuum pump



7 Connecting the suction line from the side (as-delivered state)

- 1 Hose
- 2 Fixing clip for hose gland
- 3 Thread adapter nut
- 4 Hose gland

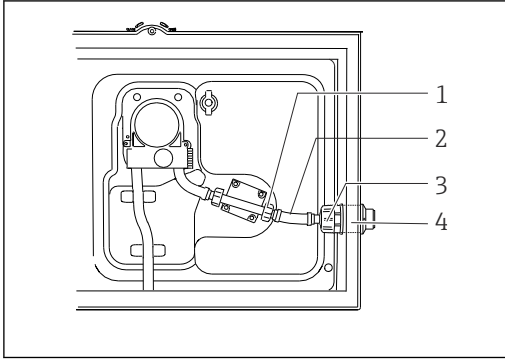


8 Suction line connected from below

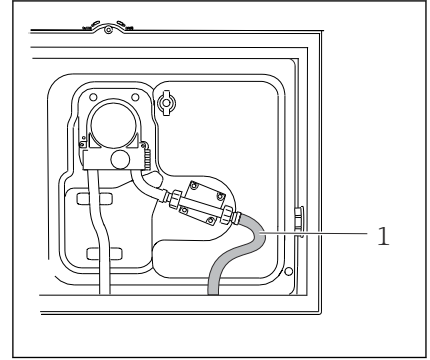
Modification of the suction line from side connection to connection from below

1. Unscrew the thread adapter nut (item 3).
2. Unscrew the hose gland (item 4) from the side panel.
3. Fit the hose gland in the fixing clamp (item 2) as illustrated.
4. Screw the hose tight from above.
5. Attach the hose adapter supplied to the suction line and screw it onto the hose gland from below.
6. Insert the dummy plugs supplied.

Connecting the suction line on version with peristaltic pump



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9 Connecting the suction line from the side (as-delivered state)

10 Suction line connected from below

- 1 Small thread adapter nut
- 2 Hose
- 3 Thread adapter nut
- 4 Hose gland

Modification of the suction line from side connection to connection from below

1. Unscrew the thread adapter nut (item 3) and the hose gland (item 4) from the side panel.
2. Unscrew the small thread adapter nut (item 1) and remove the hose.
3. Fit a hose adapter on the hose.
4. Secure the hose adapter with a worm drive hose clip.
5. Connect the suction line from below as illustrated.
6. Insert the dummy plugs supplied.

5.3 Post-installation check

1. Verify that the suction line is securely connected to the device.
2. Visually check that the suction line is installed correctly from the sampling point to the device.
3. Verify that the distribution arm is correctly engaged.
4. Allow the sampler to rest for at least 12 hours after setup and before switching it on. Otherwise you may cause damage to the climate control module.

6 Electrical connection

WARNING

Device is live!

Incorrect connection may result in injury or death!

- ▶ The electrical connection may be performed only by an electrical technician.
- ▶ The electrical technician must have read and understood these Operating Instructions and must follow the instructions contained therein.
- ▶ **Prior** to commencing connection work, ensure that no voltage is present on any cable.

NOTICE

The device does not have a power switch

- ▶ A fuse with a maximum rating of 10 A must be provided by the customer. Observe the local regulations for installation.
- ▶ The circuit breaker must be a switch or power switch, and you must label it as the circuit breaker for the device.
- ▶ The protective ground connection must be established before all other connections. If the protective ground is disconnected, this can be a source of danger.
- ▶ A circuit breaker must be located near the device.

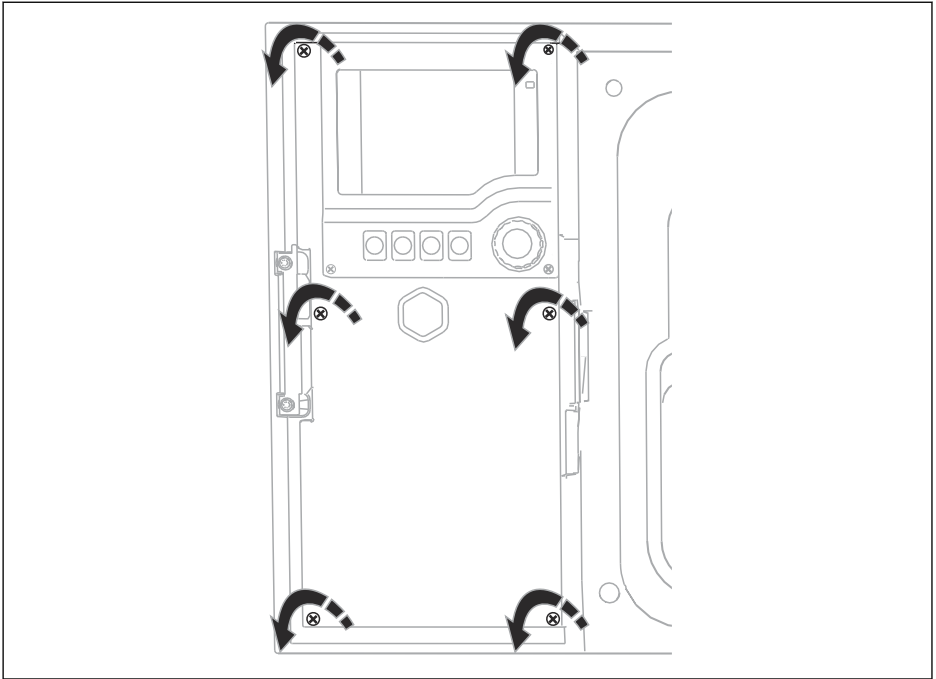
NOTICE

The device does not have a power switch

- ▶ The mains switch can be ordered via a TSP modification.
- ▶ A fuse with a maximum rating of 10 A must be provided internally when operating with a power cable. The fuse can be mounted under the rear cover.
- ▶ The protective ground connection must be established before all other connections. If the protective ground is disconnected, this can be a source of danger.

6.1 Connecting the flowmeter

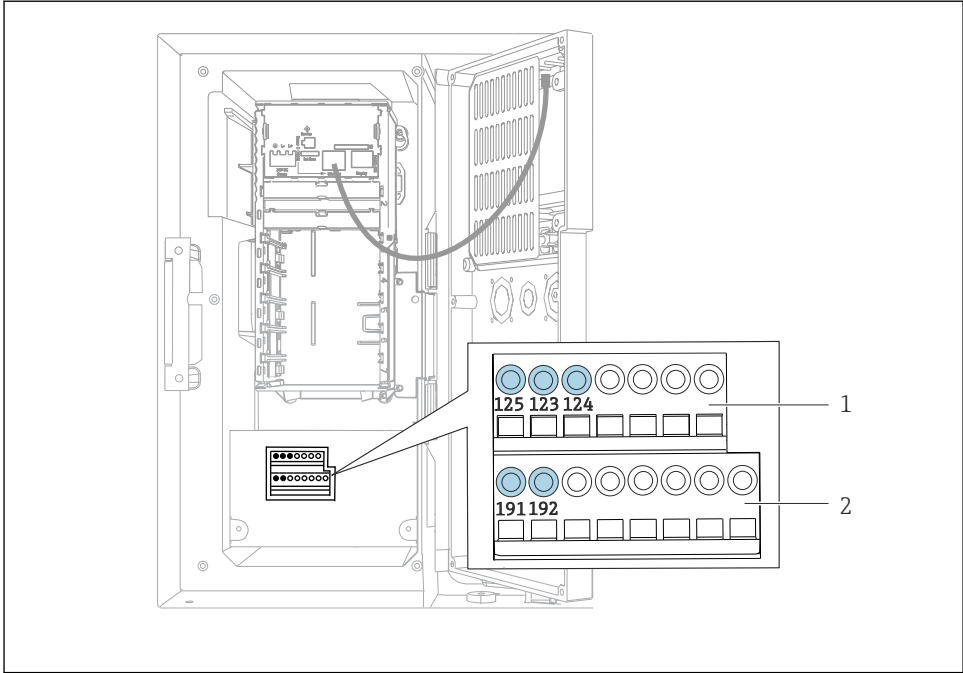
6.1.1 Wiring the current and binary input



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To open the display cover, slacken the 6 cover screws with the Phillips head screwdriver.

↳ The inputs can be found in the bottom section of the housing:

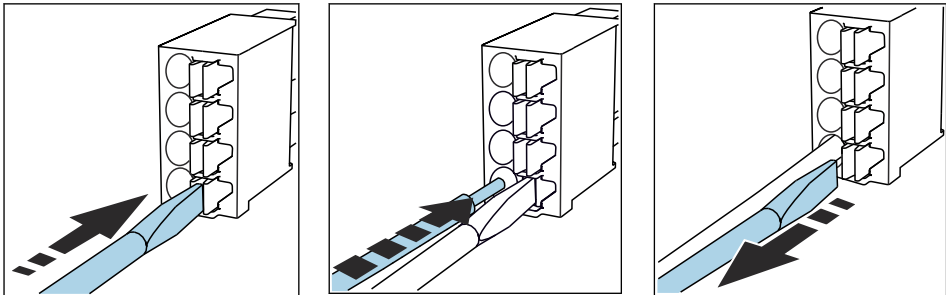


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11 Interior of the controller housing

- 1 Current input
- 2 Binary input

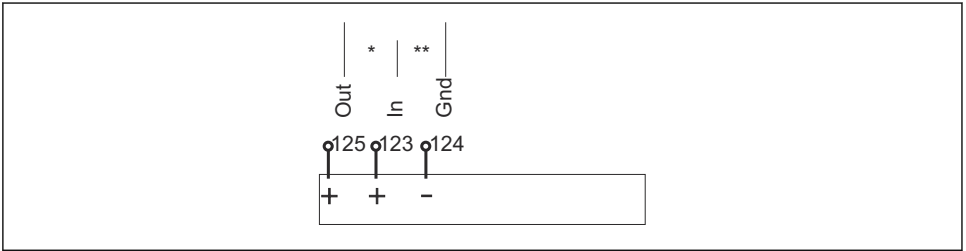
Connecting the plug-in terminals



- ▶ Press the screwdriver against the clip (opens the terminal).
- ▶ Insert the cable until the limit stop.
- ▶ Remove the screwdriver (closes the terminal).

6.1.2 current input

► Connect the current input as follows:



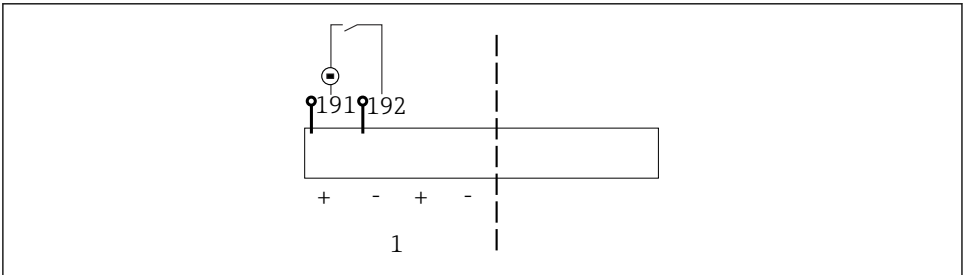
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12 Assignment of the analog input

- * Current input for passive devices (e.g. flowmeter), Out + In terminals (125/123)
- ** Current input for active devices (e.g. flowmeter), In + Gnd terminals (123/124)

6.1.3 Binary input

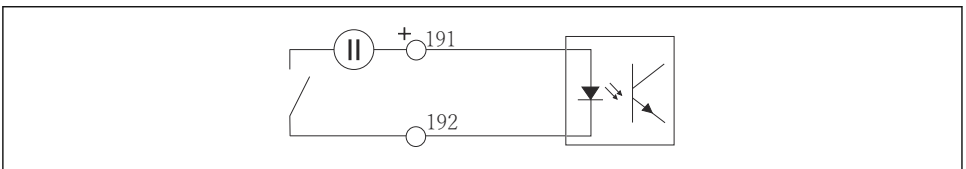
► Connect the binary input as follows:



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13 Assignment of the binary input

1 Binary input 1 (191/192)



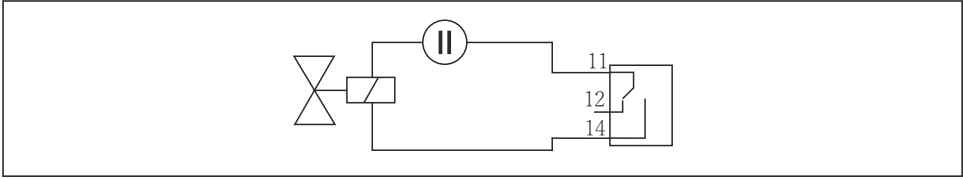
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14 Binary input with external voltage source

- ▶ When connecting to an internal voltage source, use the terminal connection on the rear of the dosing compartment. The connection is located on the lower terminal strip (on the far left, + and -), ()

6.2 Connecting the signal transmitter to the alarm relay

The sampler allows you to connect signal transmitters, such as LED lights. A binary output coupled with a relay is provided on the back of the sampler for this purpose.

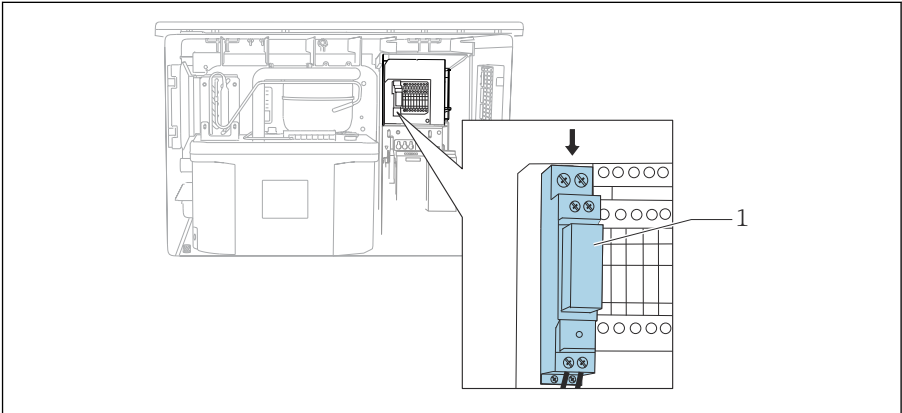


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15 Connection example for binary output with relay

1. Remove the cover on the rear panel.

- 2.



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16 Wiring the binary output

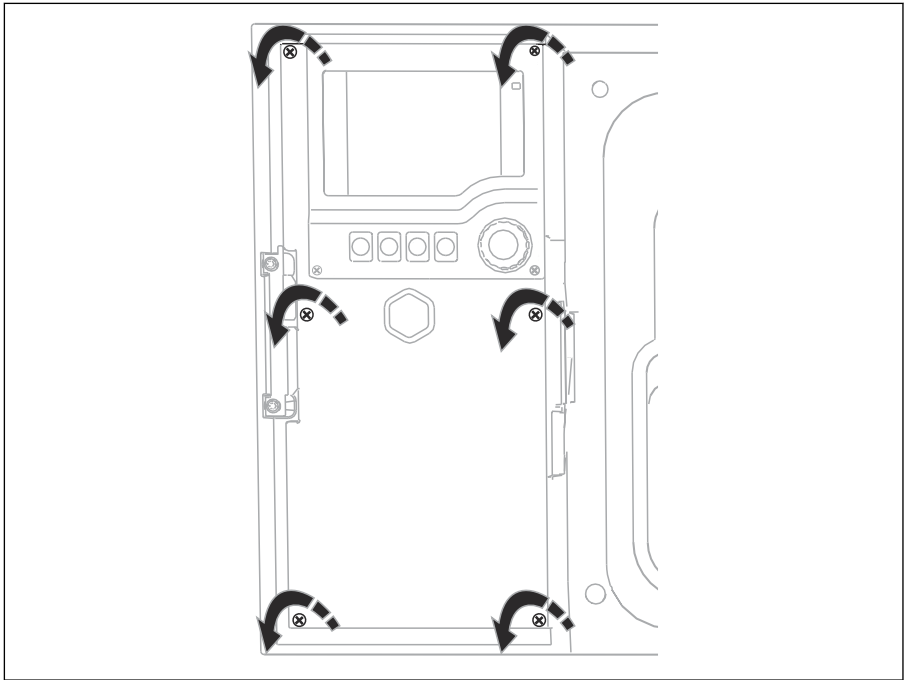
- 1 Relay (coupled with binary output)

Wire the signal transmitter at the relay at the top.

6.3 Connecting the communication

Communication is connected in the controller housing:

1.

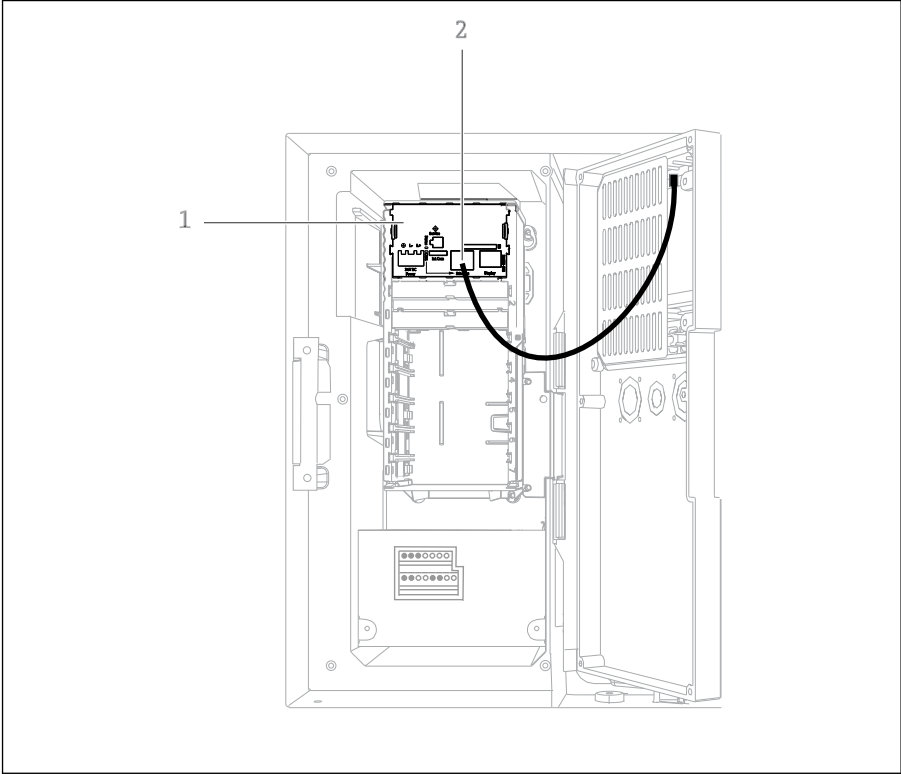


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To open the display cover, slacken the 6 cover screws with the Phillips head screwdriver.

↳ You can now see the base module SYS (1) in the housing.

2.



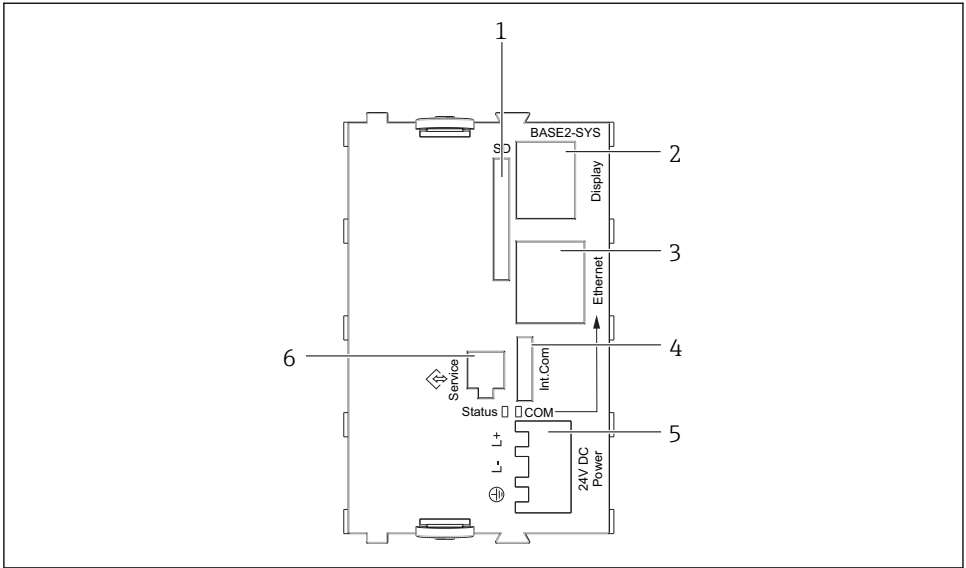
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Connect the communication to the web server to the Ethernet interface (2) in the base module SYS (1).



The connection to the service interface is also located on the base module SYS.

6.3.1 Description of base module SYS



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17 Base module SYS (BASE2-SYS)

- 1 SD card slot
- 2 Slot for display cable¹⁾
- 3 Ethernet interface
- 4 Connecting cable to sampler controller¹⁾
- 5 Voltage connection¹⁾
- 6 Service interface¹⁾

¹⁾Internal device connection, do not disconnect the plug.

6.4 Connecting the supply voltage

6.4.1 Laying the cable

- ▶ Lay the cables so that they are protected behind the rear panel of the device.
- Cable glands (up to 8 depending on the version) are available for the cable entry.
- The cable length from the foundation to the terminal connection is approx. 1.7 m (5.6 ft).
- For analyzer stands, the cable length is approx. 1.8 m (5.9 ft) from the foundation.

6.4.2 Cable types

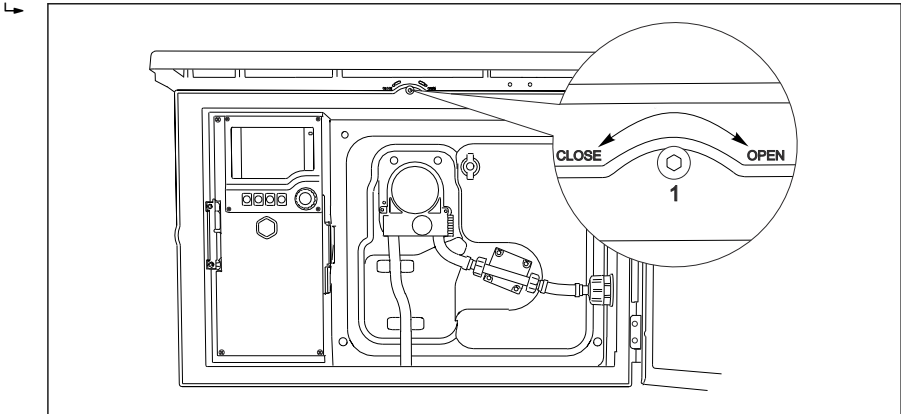
- Power supply: e.g. NYY-J; 3-wire; min. 2.5 mm²
- Analog, signal and transmission cables: e.g. LiYY 10 x 0.34 mm²

The terminal connection is protected under an additional cover in the top rear section of the device.

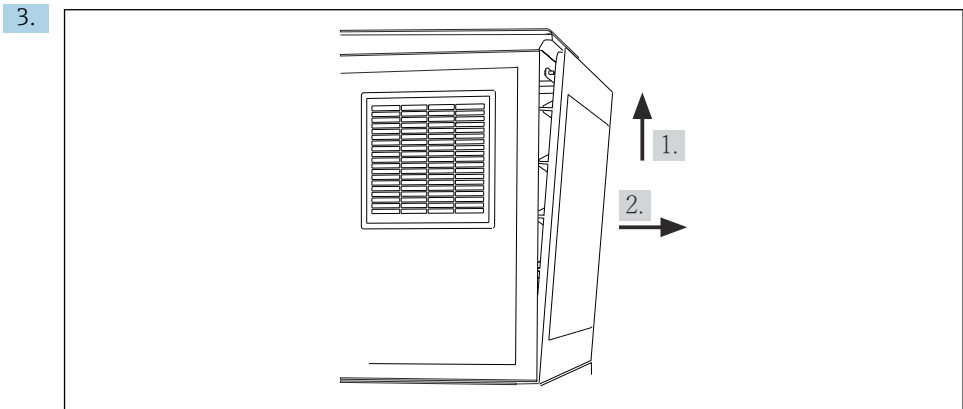
- ▶ Therefore remove the rear panel of the device to connect the power supply before commissioning.

6.4.3 Removing the rear panel of the dosing compartment

1. Open the dosing compartment door.
2. Using an 5 mm (0.17 in) Allen key, release the rear panel by turning the lock clockwise.



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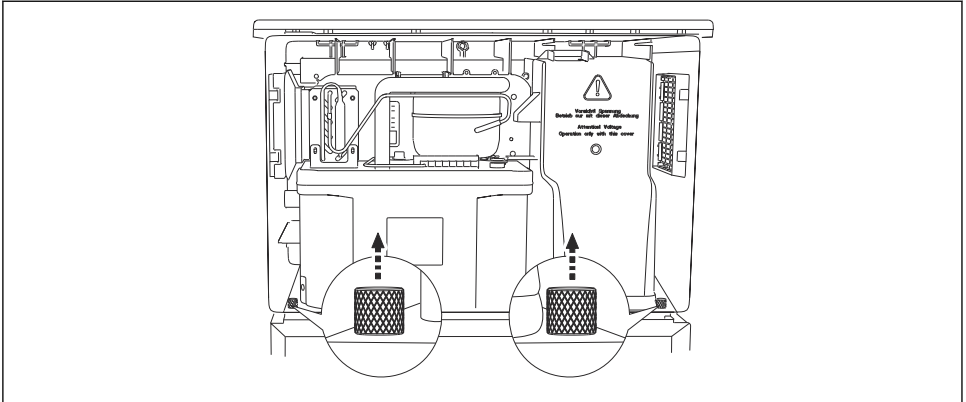
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Lift up the upper rear panel and pull it off towards the back.

4. Remove the rear panel.

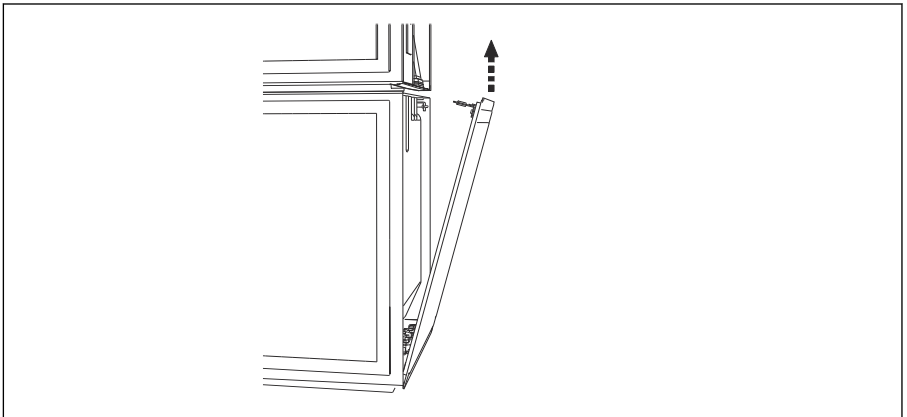
6.4.4 Removing the rear panel of the dosing compartment



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1. Remove the bolt on the rear of the dosing compartment.

2.



A0012824

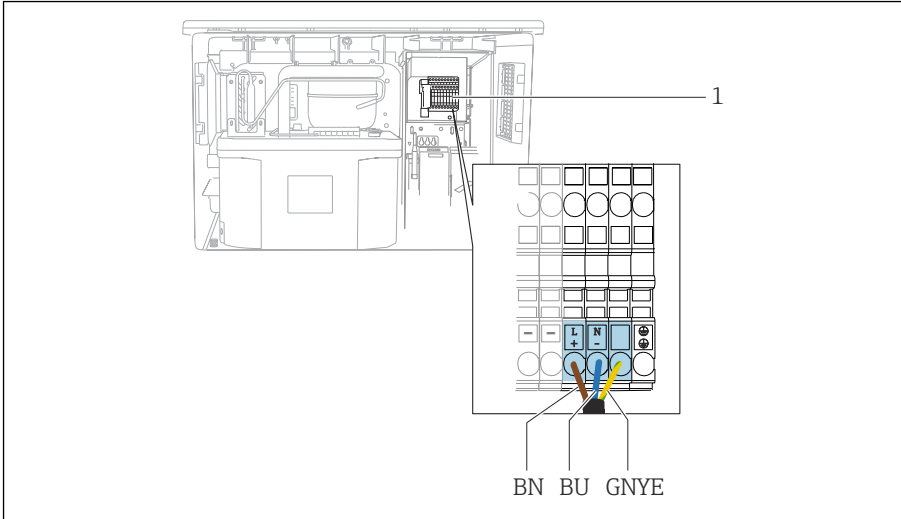
Remove the bolt on the rear panel.

6.4.5 Terminal assignment

The voltage is supplied at the plug-in terminals on the rear of the sampler.

1. Remove the protective cover of the electronics module.

2.



A0048602

19 Terminal assignment

1 Assignment of plug-in terminal with 100 to 120 V/200 to 240 V AC $\pm 10\%$

BN Brown cable

BU Blue cable

GNY Ground cable

E

Wire the supply voltage at the terminals provided.

6.5 Special connection instructions

6.5.1 Terminal assignment for input/output signals

Input signals

- 1 analog signal 0/4 to 20 mA
- 1 binary signal coupled with alarm relay

Output signals

2 binary signals > 1 s pulse width or edge

The controller must be opened to connect the output and input signals.

6.6 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.

Individual types of protection permitted for this product (impermeability (IP), electrical safety, EMC interference immunity) can no longer be guaranteed if, for example :

- Covers are left off
- Different power units to the ones supplied are used
- Cable glands are not sufficiently tightened (must be tightened with 2 Nm (1.5 lbf ft) for the permitted level of IP protection)
- Unsuitable cable diameters are used for the cable glands
- Modules are not fully secured
- The display is not fully secured (risk of moisture entering due to inadequate sealing)
- Loose or insufficiently tightened cables/cable ends
- Conductive cable strands are left in the device

6.7 Post-connection check

WARNING

Connection errors

The safety of people and of the measuring point is at risk! The manufacturer does not accept any responsibility for errors that result from failure to comply with the instructions in this manual.

- ▶ 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?

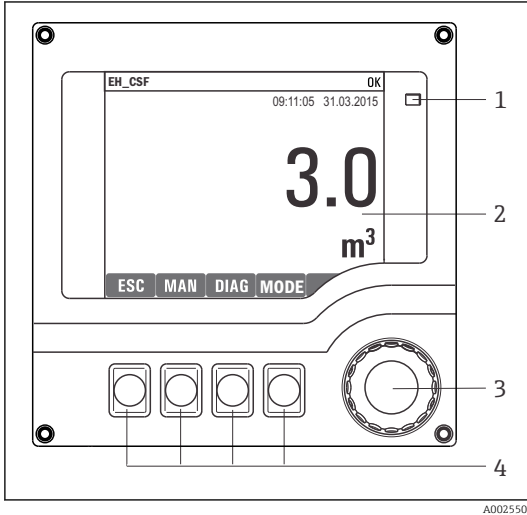
Electrical connection

- ▶ Are the mounted cables strain relieved?
- ▶ Are the cables routed without loops and cross-overs?
- ▶ Are the signal cables correctly connected as per the wiring diagram?
- ▶ Are all plug-in terminals securely engaged?
- ▶ Are all the connection wires securely positioned in the cable terminals?

7 Operation options

7.1 Overview of operation options

7.1.1 Display and operating elements



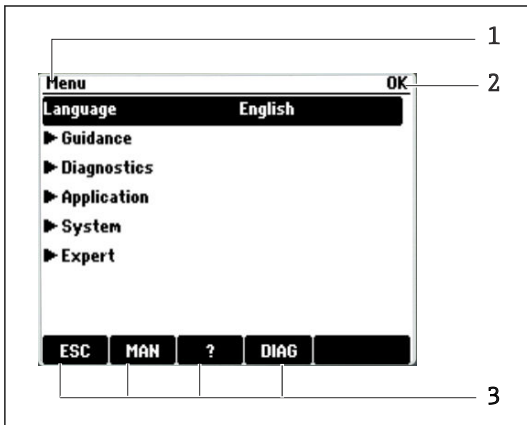
- 1 LED
- 2 Display (with red display background in alarm condition)
- 3 Navigator (jog/shuttle and press/hold function)
- 4 Navigator (jog/shuttle and press/hold function)
Soft keys (function depends on menu)

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20 Overview of operation

7.2 Structure and function of the operating menu

7.2.1 Display



- 1 Menu path and/or device designation
- 2 Status indicator
- 3 Assignment of soft keys, e.g.:
ESC: escape or abortion of a sampling process
MAN: manual sample
?: Help, if available
DIAG: link to Diagnostics menu
(If the program is active: MODE: stop program)

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7.2.2 Configuration options

Display only

- You can only read the values but cannot change them.
- Typical read-only values are: sensor data and system information

Picklists

- You receive a list of options. In a few cases, these also appear in the form of multiple choice boxes.
- Usually you just select one option; in rare instances you select one or more options.

Numerical values

- You are changing a variable.
- The maximum and minimum values for this variable are shown on the display.
- Configure a value within these limits.

Actions

- You trigger an action with the appropriate function.
- You know that the item in question is an action if it is preceded by the following symbol: ▷
- Examples of typical actions include:
 - Deleting log entries
 - Saving or loading configurations
- Examples of typical actions include:
 - Start a sampling program
 - Start manual sampling
 - Saving or loading configurations
-

User-defined text

- You are assigning an individual designation.
- Enter a text. You can use the characters in the editor for this purpose (upper-case and lower-case letters, numbers and special characters).
- Using the soft keys, you can:
 - Cancel your entries without saving the data (✕)
 - Delete the character in front of the cursor (✕)
 - Move the cursor back one position (←)
 - Finish your entries and save (✓)

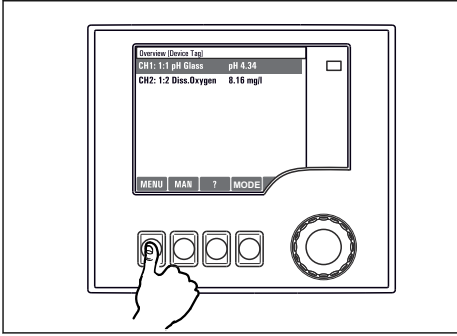
7.3 Access to the operating menu via the local display

7.3.1 Operating concept

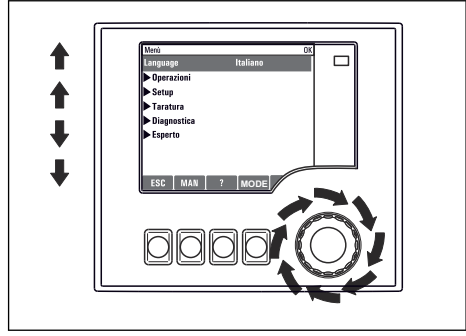
The device is operated by:

- Pressing the soft key: select the menu directly
- Turning the navigator: move the cursor in the menu
- Pressing the navigator: launch a function
- Turning the navigator: select a value (e.g. from a list)
- Pressing the navigator: accept the new value

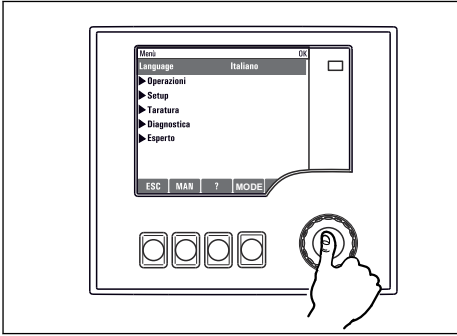
Example:



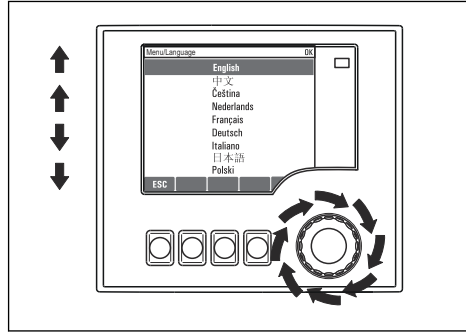
Press the soft key: select the menu directly



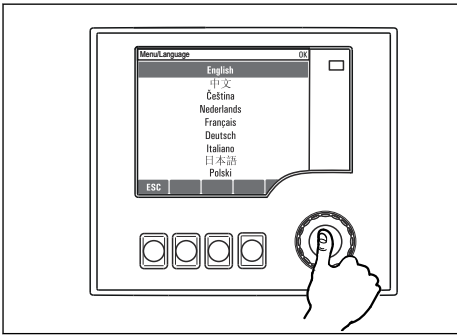
Turn the navigator: move the cursor in the menu



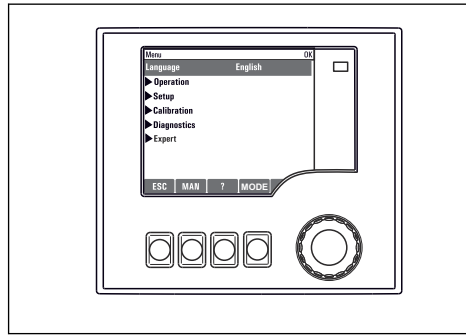
Press the navigator: launch a function



Turn the navigator: select a value (e.g. from a list)



Press the navigator: accept the new value




↳ New setting is accepted

7.3.2 Locking or unlocking operating keys

Locking operating keys

- ▶ Press the navigator for longer than 2 seconds
 - ↳ A context menu for locking the operating keys is displayed.


You have the choice of locking the keys with or without password protection. "With password" means that you can only unlock the keys again by entering the correct password. Set the password here: **Menu/Change key lock password**

- ▶ Select whether to lock keys with or without a password.
 - ↳ The keys are locked. No more entries can be made. You will see the  symbol in the softkey bar.



The password is 0000 when the device is delivered from the factory. **Make sure to note down any changes to the password**, as otherwise you will not be able to unlock the keypad yourself.

Unlocking operating keys

1. Press the navigator for longer than 2 seconds
 - ↳ A context menu for unlocking the operating keys is displayed.
2. Select the **Key unlock**.
 - ↳ The keys are unlocked immediately if you did not choose to lock with a password. Otherwise you are asked to enter your password.
3. Only if keypad is password-protected: enter the right password.
 - ↳ The keys are unlocked. It is possible to access the entire onsite operation again. The  symbol is no longer visible on the display.

8 System integration

8.1 Integrating the sampler in the system

8.1.1 Web server

Connecting the web server

- ▶ Connect the communication cable of the computer to the Ethernet port of the SYS base module in the controller housing.

Establishing the data connection

You need an activation code for the web server.

To ensure that your device has a valid IP address, you must disable the **DHCP** parameter in the Ethernet settings.

- ▶ Switch off **DHCP** in the **System/Webserver/Ethernet settings** menu.



You can assign the IP address manually in the same menu (for point-to-point connections).

Setting the IP address under Microsoft Windows 10

The IP address and subnet mask of the device can be viewed in the **Diagnostics/System information/Ethernet** menu

1. Start the PC.
2. First, configure a manual IP address in the network connection settings of the operating system.
3. Open Network and Sharing Center.
 - ↳ Apart from your standard network, you should see an additional Ethernet connection (e.g. as an "unidentified network").
4. Select the link to this Ethernet connection.
5. In the pop-up window select the "Properties" button.
6. Double-click "Internet Protocol Version 4 (TCP/IPv4)".
7. Select "Use the following IP Address".
8. Enter the desired IP address. This address must be in the same subnet as the IP address of the device, e.g.:
 - ↳ IP address for Liquistation: 192.168.1.212 (as configured previously)
 - IP address for PC: 192.168.1.213.

Operating Liquistation via the web browser

1. Start the Internet browser.
2. If you use a proxy server to connect to the Internet:
Disable the proxy (browser settings under "Connections/LAN settings").

3. Enter the IP address of your device in the address bar (192.168.1.212 in the example).
 - ↳ The system takes a few moments to establish the connection and then the CM44 web server starts. You might be asked for a password. The factory setting is "admin" for the user name and "admin" for the password.
4. Enter the following address(es) to download logbooks:
 - ↳ 192.168.1.212/logbooks_csv.fhtml (for logbooks in CSV format)

The menu structure of the web server corresponds to the onsite operation.

- Clicking a menu name or a function corresponds to pressing the navigator.
- You can make your settings conveniently via the computer keyboard.



Instead of using an Internet browser, you can also use FieldCare for configuration via Ethernet. The Ethernet DTM required for this is an integral part of the "Endress+Hauser Interface Device DTM Library".

Download: <https://portal.endress.com/webdownload/FieldCareDownloadGUI/>

8.1.2 Service interface

Connecting the service interface

You can connect the device to a computer via the service interface and configure it using "FieldCare". Furthermore, configurations can also be saved, transferred and documented.

1. Connect the service connector to the interface on the SYS base module in the controller housing.
2. Connect the service connector to the Commubox.
3. Connect the Commubox via the USB connection to the computer on which FieldCare is installed.

Establishing the data connection

1. Start FieldCare.
2. Establish a connection to the Commubox. To do so, select the "CDI Communication FXA291" ComDTM.
3. Then select the "Liquiline CM44x" DTM and start configuration.

You can now start online configuration via the DTM.

Online configuration competes with onsite operation, i.e. each of the two options blocks the other one. On both sides it is possible to take away access from the other side.

Operation

- In the DTM the menu structure corresponds to the onsite operation. The functions of the Liquiline soft keys are found in the main window on the left.
- Clicking a menu name or a function corresponds to pressing the navigator.
- You can make your settings via the computer keyboard.
- You can use FieldCare to save logbooks, make backups of configurations and transfer configurations to other devices.
- You can also print out configurations or save them as PDFs.

9 Commissioning

9.1 Function check

WARNING

Incorrect connection, incorrect supply voltage

Safety risks for staff and device malfunctions!

- ▶ Check that all connections have been established correctly in accordance with the wiring diagram.
- ▶ Ensure that the supply voltage matches the voltage indicated on the nameplate.

Saving displays as a screenshot

Via the local display, you can take screenshots at any time and save them to an SD card.


1. Insert an SD card into the SD card slot in the base module.
2. Press the navigator button for at least 3 seconds.
3. Select the "Screenshot" item in the context menu.
 - ↳ The current screen is saved as a bitmap file to the SD card in the "Screenshots" folder.

9.2 Setting the operating language

Setting the language via the menu

The Commissioning Wizard starts when you boot the device for the first time. You can select the language here. Alternatively, the language can also be set in the menu:

1. Switch on the supply voltage.
 - ↳ Wait for the initialization to finish.
2. Set the language in the top menu item.
 - ↳ The device can now be operated in your chosen language.

 The Commissioning Wizard starts each time the device is restarted until the user has run through all the steps of the commissioning process once in the Wizard.

9.3 Configuring the measuring device

9.3.1 Start screen

You can find the following menu items and soft keys on the initial screen:

- Select sampling program
- Edit program %OV¹⁾
- **Start program %OV¹⁾**
- MENU

1) "%OV" here stands for context-dependent text, which is automatically generated by the software and is used instead of %OV.

- MAN
- MEAS
- DIAG

9.3.2 Starting the Commissioning Wizard

Initial commissioning is performed by a Commissioning Wizard.

The Commissioning Wizard starts as soon as the device is connected to the electricity supply. At the start, it is executed repeatedly until the user has fully completed all the steps of the commissioning process in the Wizard.

The following settings can be made in the Wizard:

- Selection of language for initial execution
 - Date and time
 - Sample temperatures
 - Bottle distribution
 - Information about the flowmeter
Flowmeter present: if so, settings for the flow input (analog/binary)
 - Sampling volume (only for vacuum device)
 - Calibration of sampling volume for peristaltic pumps
 - Distribution arm calibration
 - Switch to Program Wizard
 - Create backup copy
- In the **Guidance** menu, start the **Commissioning wizard** and follow the instructions.
- ↳ A wizard now guides you through the settings.

9.3.3 Starting the Program Wizard

Creating the sampling program

A Program Wizard is available for the configuration of one or more sampling programs (max. 3).

Some settings can be made for all program types:

- Sampling mode
- Sampling volume (for peristaltic pump)
- Sampling interval (for time- and flow-paced sampling)
- Change times for bottle changes
- Bottle synchronization
- Stop conditions

The following settings can also be made depending on the mode:

- Pulse (binary input)
 - Current input
- In the **Guidance** menu, start the **Program wizard** and follow the instructions.
- ↳ A wizard now guides you through the settings.



During commissioning, you can call up and run through the Program Wizard directly.

9.3.4 Display behavior

The screen can be adjusted to the working environment with the following settings:

- Contrast
 - Backlight
 - Automatic
The backlighting is switched off automatically after a short time if a button is not pressed. It switches back on again as soon as you press the navigator button.
 - On
The backlighting does not switch off automatically.
 - Screensaver
 - Screen rotation
If **Automatic** is selected, the single-channel measured value display switches from one channel to the next every second.
- Change the screen settings in the **System/ Display** menu.



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