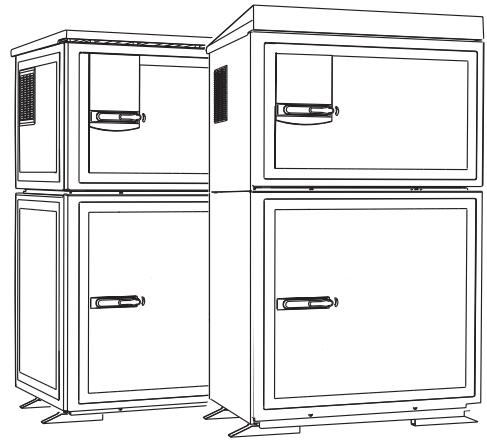
KA01168C/07/EN/07.20
71473506
2020-03-19

Brief Operating Instructions
Liquistation CSF33

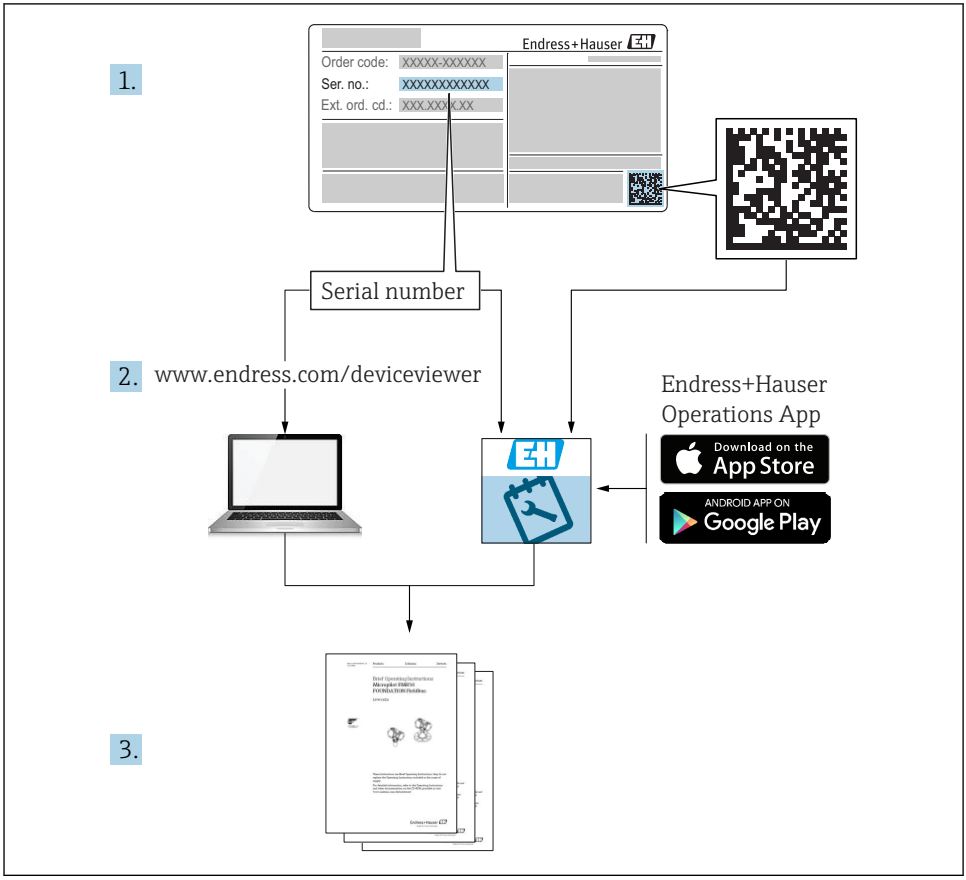
Automatic sampler for liquid media



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

Endress+Hauser
People for Process Automation


1.
Endress+Hauser
Order code: XXXXX-XXXXXX
Ser. no.: XXXXXXXXXXXX
Ext. ord. cd.: XXX.XXX-XXX
Serial number
2.
www.endress.com/deviceviewer
Endress+Hauser
Operations App
Download on the
App Store
ANDROID APP ON
Google Play
3.

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1 About this document

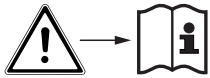
1.1 Warnings

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

1.4 Documentation

The following manuals which are available on the product pages on the internet complement these Operating Instructions:

- Operating Instructions for Liquistation CSF33, BA00479
  - 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 fieldbus and web server
- Special Documentation: Sampler application manual SD01068C
- Documentation on other devices in the Liquiline platform:
  - Liquiline CM44xR (DIN rail device)
  - Liquiline System CA80 (analyzer)
  - Liquiline System CAT8x0 (sample preparation)
  - Liquistation CSFxx (sampler)
  - Liquiport CSP44 (sampler)

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.

2.2 Designated use

Liquistation CSF33 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-designated 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

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 Incoming acceptance and product identification

3.1 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.

NOTICE

Damage to the sampler

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

- ▶ Transport the sampler using a forklift truck. Never lift the sampler by the top. Lift it in the middle between the upper and lower sections.

3.2 Product identification

Nameplates can be found:

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

3.2.1 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.

3.3 Scope of delivery

The scope of delivery comprises:
- 1 Liquistation CSF33 with:
  - The ordered bottle configuration
  - Optional hardware
- Accessories kit
  -
  - Connection nipple for suction line with various angles (straight, 90°), Allen key (for version with vacuum pump only)
- Suction line:
  - Suction line ID 13 mm (1/2"), PVC, reinforced spiral wire, length 10 m (33 ft), suction head V4A for vacuum version
  - Suction line ID 10 mm (1/2"), PVC, reinforced spiral wire, length 10 m (33 ft), suction head V4A for peristaltic version
- 1 print version of Brief Operating Instructions in the language ordered
- Optional accessories

▶ If you have any queries:

Please contact your supplier or local sales center.

3.4 Certificates and approvals

3.4.1 CE mark

Declaration of Conformity

The product meets the requirements of the harmonized European standards. As such, it complies with the legal specifications of the EU directives. The manufacturer confirms successful testing of the product by affixing to it the CE mark.

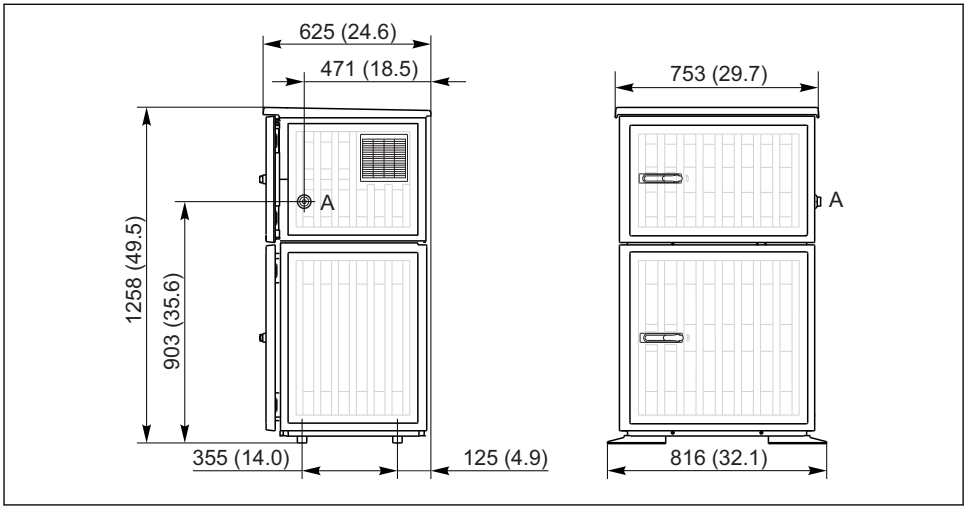
EAC

The product has been certified according to guidelines TP TC 004/2011 and TP TC 020/2011 which apply in the European Economic Area (EEA). The EAC conformity mark is affixed to the product.

4 Installation

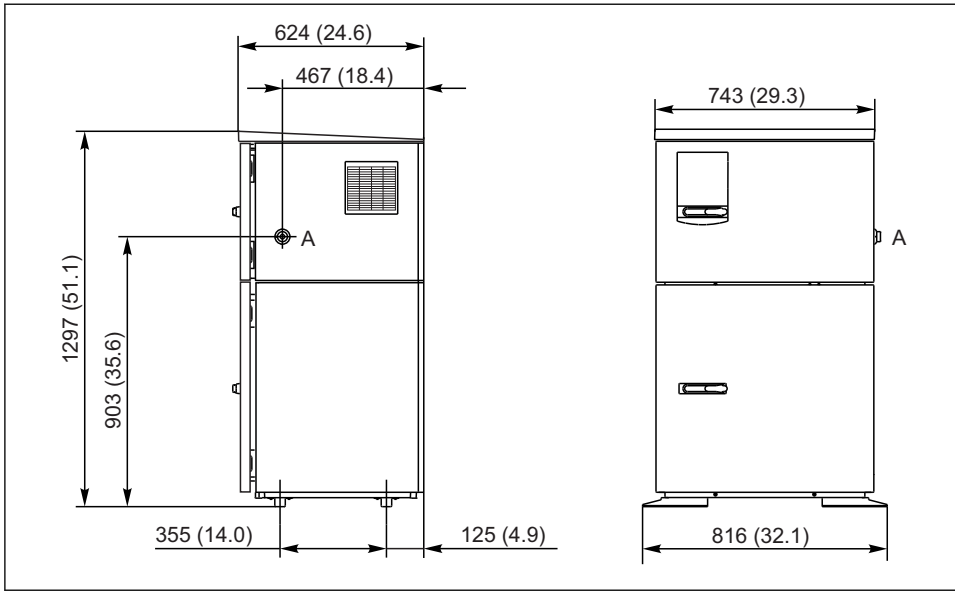
4.1 Installation conditions

4.1.1 Dimensions



1 Dimensions of Liquistation CSF33 plastic version, dimensions in mm (in)

A Suction line connection

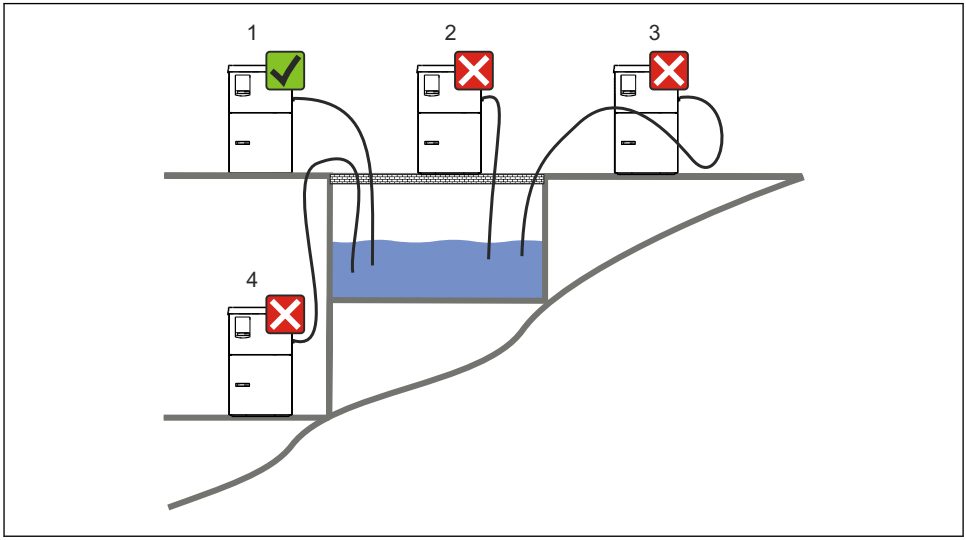


2 Dimensions of Liquistation CSF33CSF33 stainless steel version, dimensions in mm (in)

A Suction line connection

4.1.2 Installation site

For version with pump



3 Liquistation mounting conditions

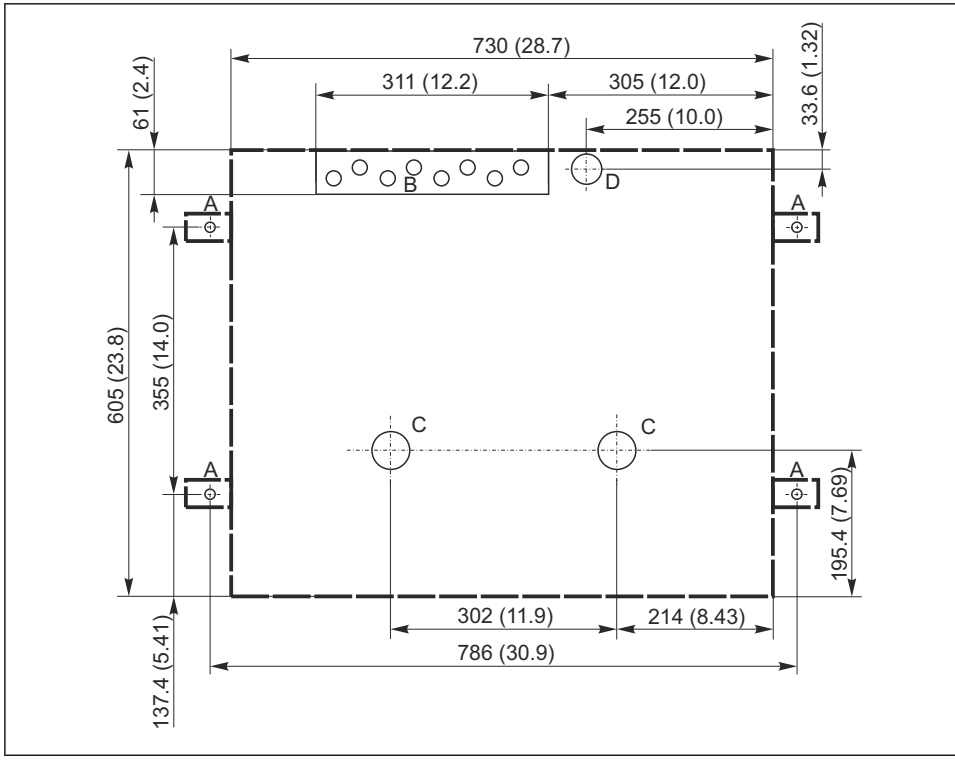
1. Correct
   - ↳ The suction line must be routed with a downward slope to the sampling point.
2. Incorrect
   - ↳ The sampler should never be mounted in a place where it is exposed to aggressive gases.
3. Incorrect
   - ↳ Avoid siphoning effects in the suction line.
4. Incorrect
   - ↳ The suction pipe should never be routed with an upward gradient to the sampling point.

Note the following when erecting the device:
- Erect the device on a level surface.
- Securely connect the device at the fastening points to the surface underneath.
- Protect the device against additional heating (e.g. heater or direct sunlight in the case of PS housing).
- 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") from the wall to the left and right.
- Do not erect the device directly above the inlet channel of a wastewater treatment plant.

4.1.3 Mechanical connection

Foundation plan



4 *Foundation plan*

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

4.1.4 Connection for suctioning samples

- 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: 13 mm (1/2")
  - Peristaltic pump: internal diameter of 10 mm (3/8")
- Intake speed:
  > 0.6 m/s (> 1.9 ft/s) for 10 mm (3/8") 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 route 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.

4.1.5 Connection for sample intake on version with 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: 13 mm (1/2")
  - Peristaltic pump: internal diameter of 10 mm (3/8")
- Intake speed:
  > 0.6 m/s (> 1.9 ft/s) for 10 mm (3/8") 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 route 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.

4.2 Installation

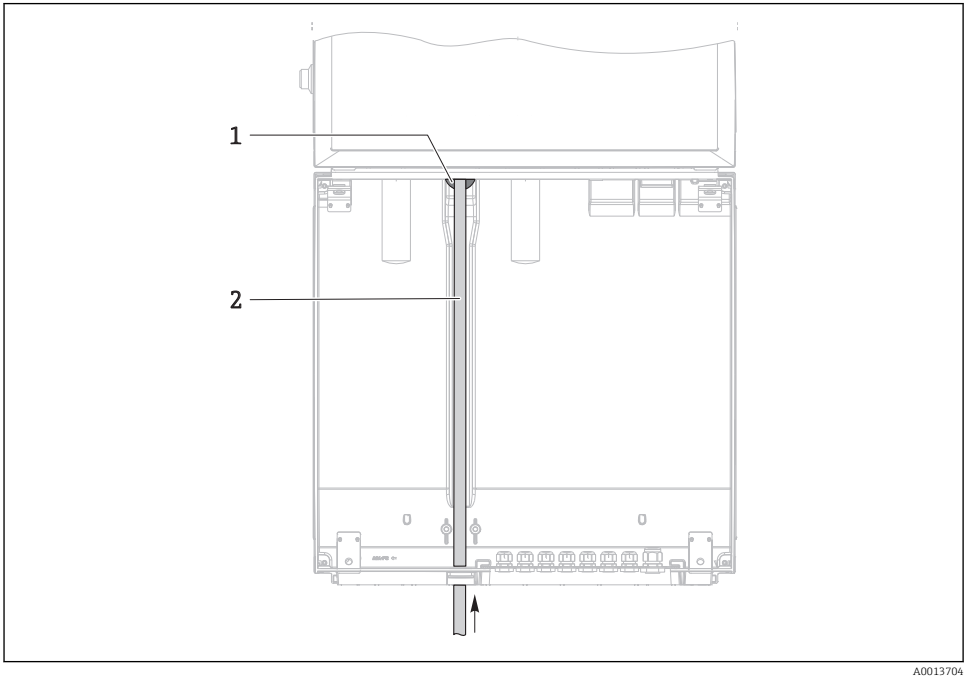
4.2.1 Connecting the suction line at the side on version with pump

1. When installing the device, take the installation conditions into account.
2. Route the suction line from the sampling point to the device.
3. Screw the suction line onto the device's hose connection.

4.2.2 Connecting the suction line from the bottom on version with pump

If the suction line is connected from below, the suction line is routed upwards behind the rear panel of the sample compartment. First remove the rear panel of the dosing compartment and sample compartment as described in the "Electrical connection" section.

1. Remove the drain plug from the hose gland located at the back of the device base.
2. As illustrated, guide the suction line upwards and through the opening towards the front.



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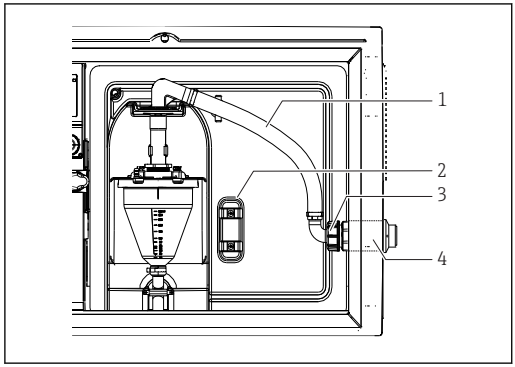
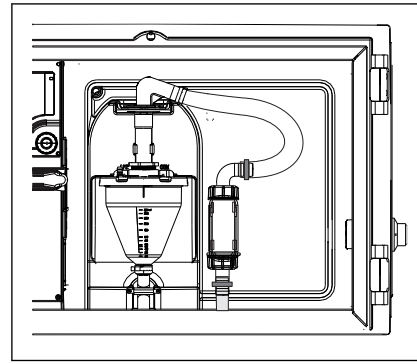
5 Sample supply from below

1 Gland for the suction line
2 Suction line

Connecting the suction line on version with vacuum pump



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

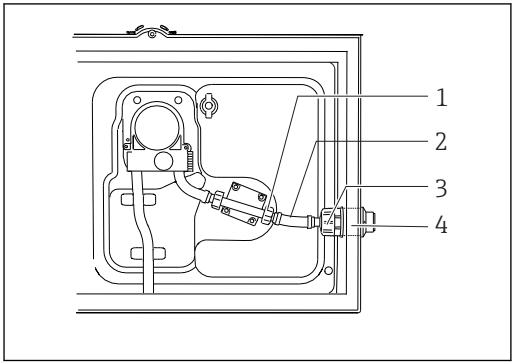


7 *Suction line connected from below*

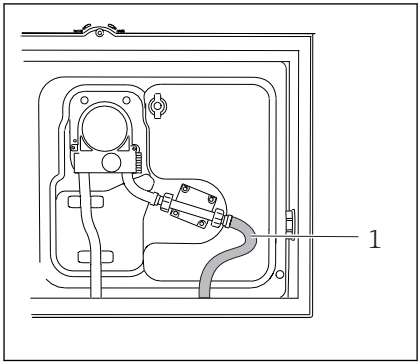
1 Hose
2 Fixing clip for hose gland
3 Thread adapter nut
4 Hose gland

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



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



9 Suction line

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

1. Unscrew the thread adapter nut (item 3) and the hose fitting (item 4) from the side panel.
2. Unscrew the small thread adapter nut (item 1) and remove the hose.
3. Connect the suction line from below as illustrated.
4. Insert the dummy plugs supplied.

4.3 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 rotating arm is correctly engaged.
4. Allow the sampler to rest for a minimum of 12 hours following installation and before switch-on. Otherwise you may cause damage to the climate control module.

5 Electrical connection

5.1 Connecting the sampler

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.
- Use a HBC fuse with 10 A, 250 V AC for samplers with CSA approval.
- The circuit breaker must be a switch or power switch, and you must label it as the circuit breaker for the device.
- The ground connection must be made before all other connections. Danger may arise if the protective ground is disconnected.
- A circuit breaker must be located near the device.
- For 24V versions, the power supply at the voltage source must be isolated from cables carrying low voltage (110/230V AC) by double or reinforced insulation.

Operation with non-stationary power cable connection to sampler (optional)

5.1.1 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).
-

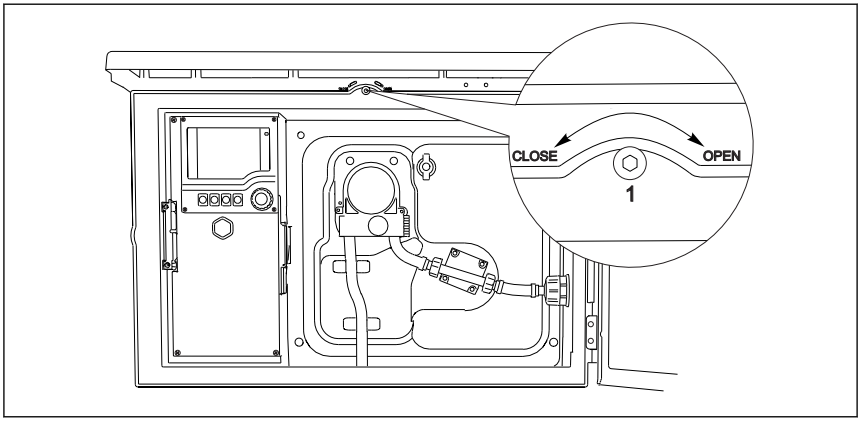
5.1.2 Cable types

- Power supply: e.g. NYY-J; 3-wire; min. 2.5 mm^2
- Analog, signal and transmission cables: e.g. LiYY 10 x 0.34 mm^2

The terminal connection is located under an additional protective cover in the upper rear section of the device. Prior to commissioning, therefore, remove the rear panel of the device to connect the power supply. The terminal cross-section must be at least 2.5 mm^2 for devices with 24V power supply. With 24V power supply, a current of up to 10A can flow. For this reason pay attention to the voltage drop on the supply line. The voltage at the device terminals must be within the specified range (→ 29).

5.1.3 Removing the rear panel of the dosing compartment

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



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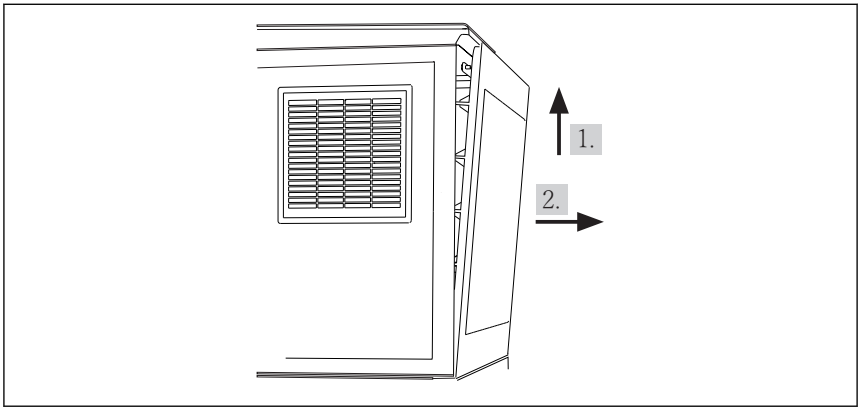
3. Lift up the rear upper panel and pull it off towards the back.



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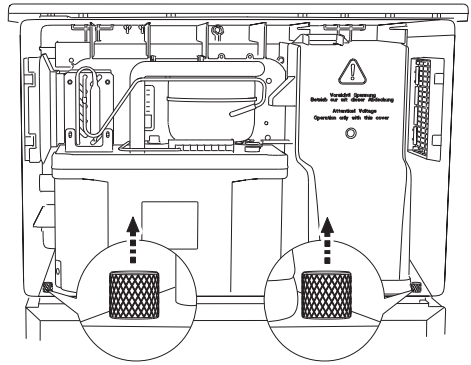
10 Remove the rear panel.

5.1.4 Removing the rear panel of the sampling compartment



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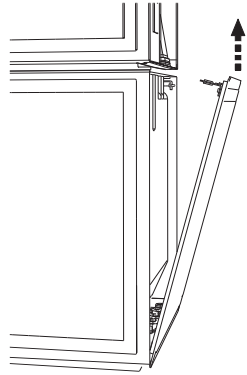
► Remove the bolt on the rear of the dosing compartment.
↳



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► Remove the bolt on the rear panel.

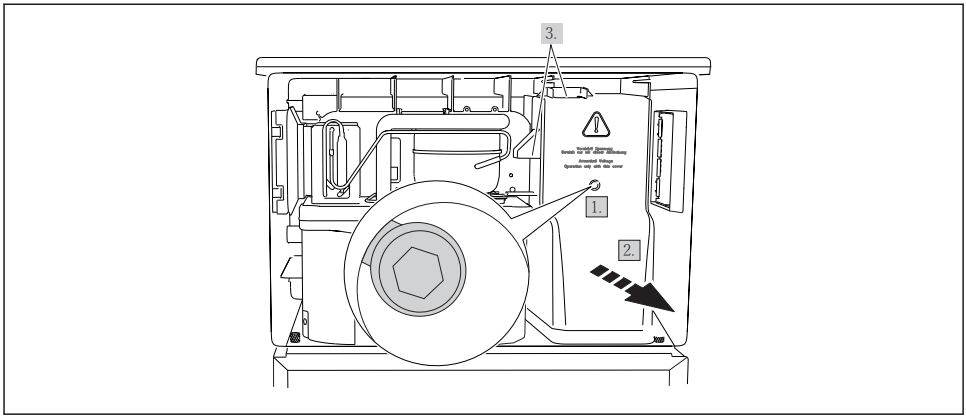
5.1.5 Removing the cover

⚠ WARNING

Device is live

Incorrect connection may result in injury or death

► Make sure the device is disconnected from the power source before you remove the cover of the power unit.



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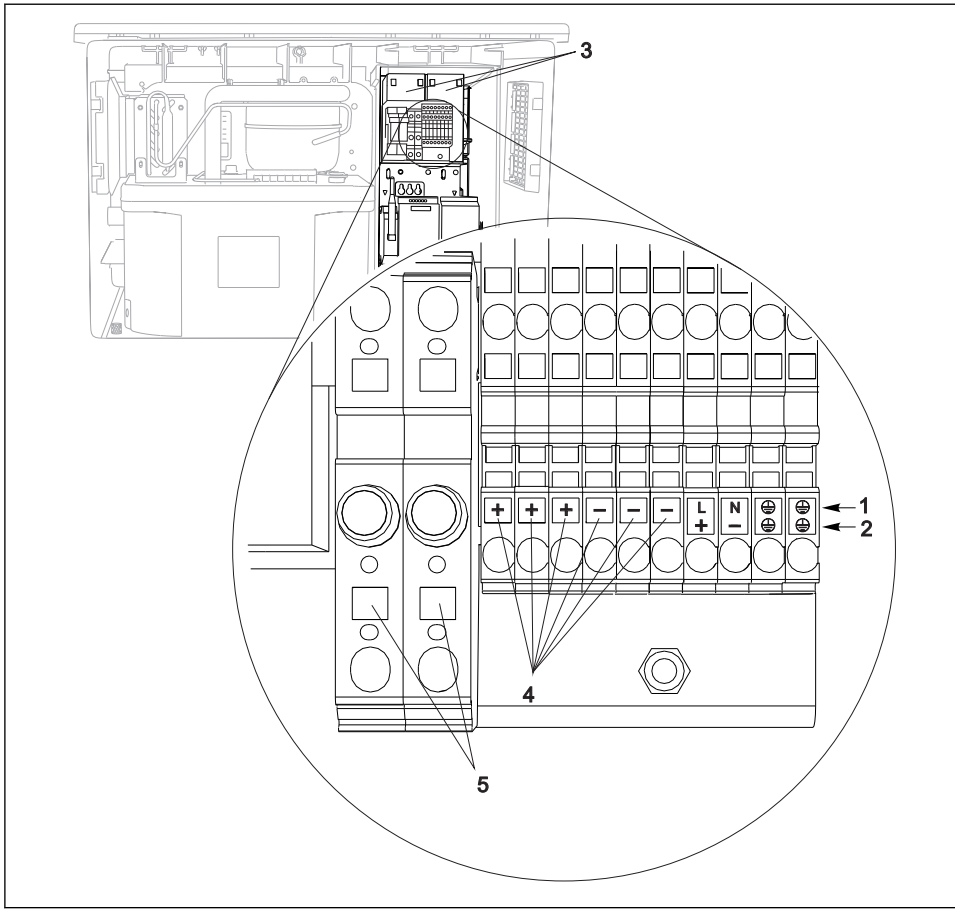
1. Release the screw with an Allen key (5 mm).
2. Remove the cover of the power unit from the front.
3. When reassembling make sure that the seals are seated correctly.

5.1.6 Power supply terminal assignment

The power supply is connected via plug-in terminals.

► Connect the ground to one of the ground connections.

Batteries and fuses are available as an optional extra.
Use rechargeable batteries only.



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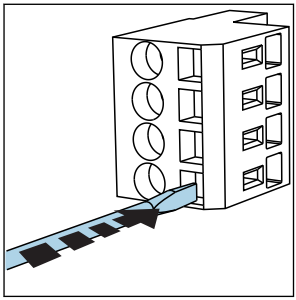
11 *Terminal assignment*

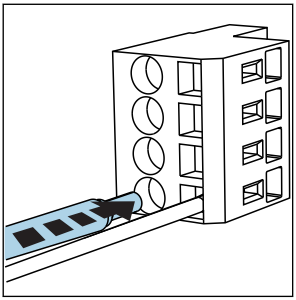
1 *Assignment: 100 to 120 V/200 to 240 V AC ±10 %*
2 *Assignment: 24 V DC +15/-9 %*
3 *Rechargeable batteries (optional)*
4 *Internal 24 V voltage*
5 *Fuses (only for batteries)*

5.1.7 Cable terminals

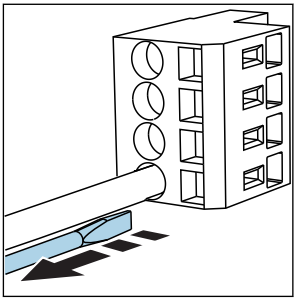
After connection, make sure that every cable end is securely in place. Terminated cable ends, in particular, tend to come loose easily if they have not been correctly inserted as far as the limit stop.



12 Press the screwdriver against the clip (opens the terminal)



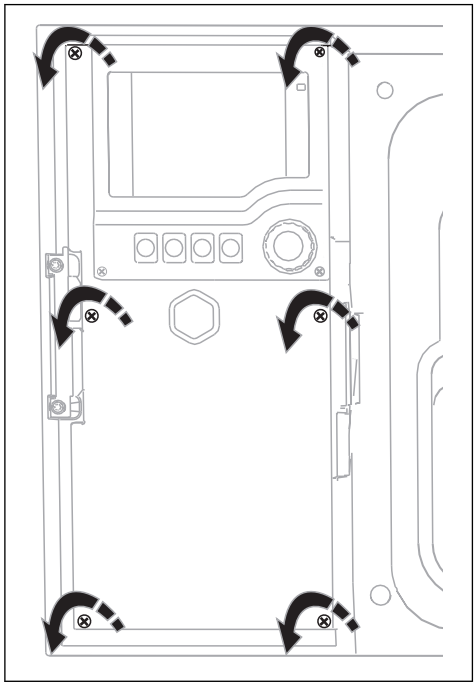
13 Insert the cable until the limit stop



14 Remove the screwdriver (closes the terminal)

5.2 Connecting modules and sensors

5.2.1 Connection compartment in the controller housing



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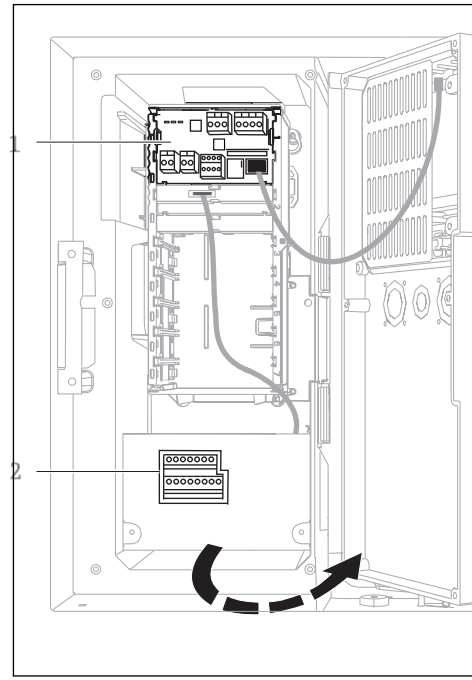
The controller housing has a separate connection compartment. Release the six cover screws to open the connection compartment:

- Release 6 cover screws with a Phillips screwdriver to open the display cover.



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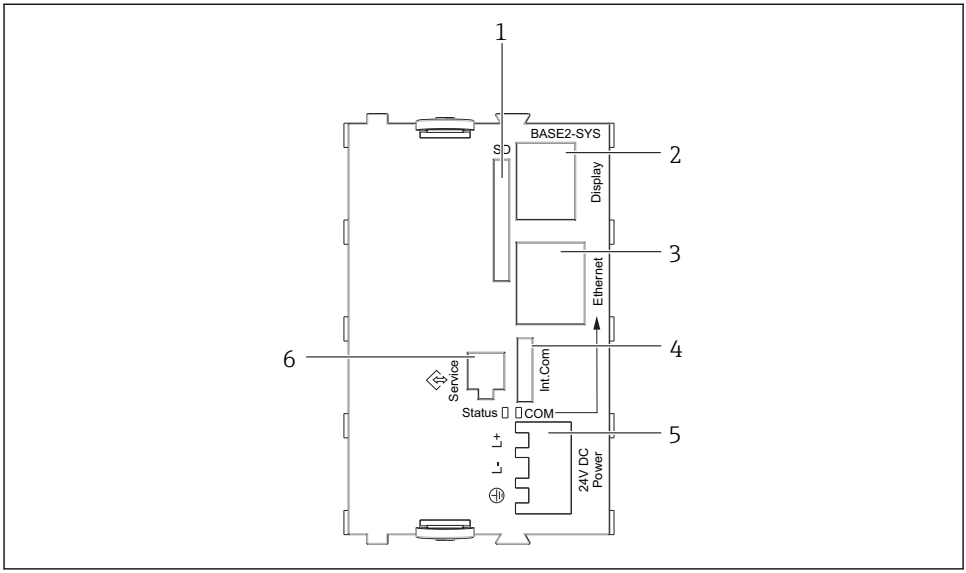
1 1 E base module
2 Sampler controller

Display cover open, version with base module E

5.2.2 Base module SYS



15 Base module SYS (BASE2-SYS)

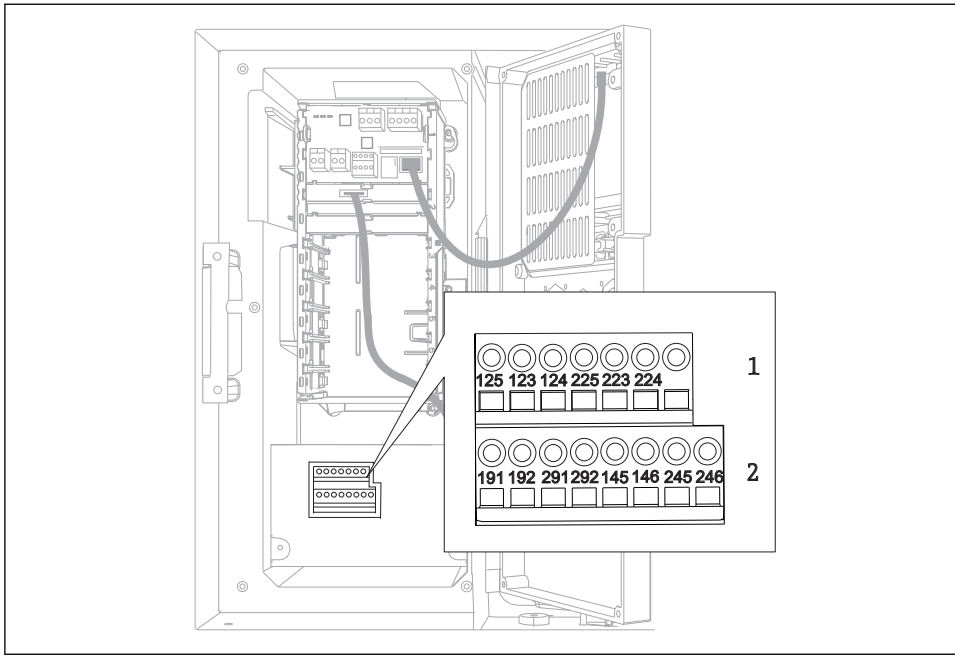
1 SD card slot
2 Slot for display cable[1)]
3 Ethernet interface
4 Connecting cable to sampler controller[1)]
5 Voltage connection[1)]
6 Service interface[1)]

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

5.2.3 Sampler controller

The connections for the sampler controller are located in the controller housing (→ 25).

Analog inputs and binary inputs/outputs

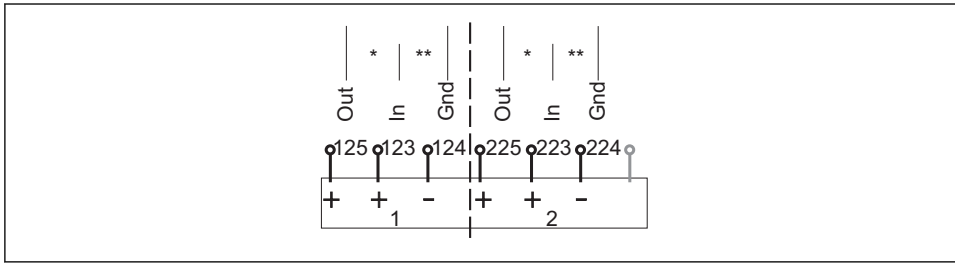


A0042282

16 *Position of the terminals*

1 Analog inputs 1 and 2
2 Binary inputs/outputs

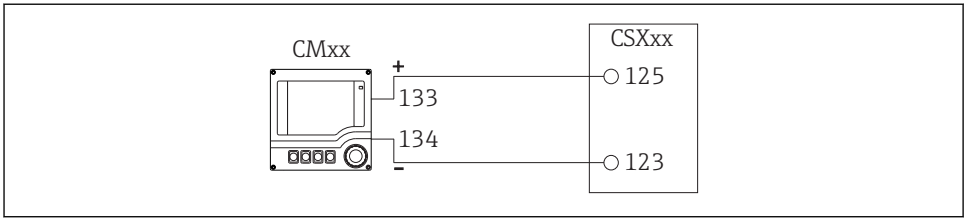
Analog inputs



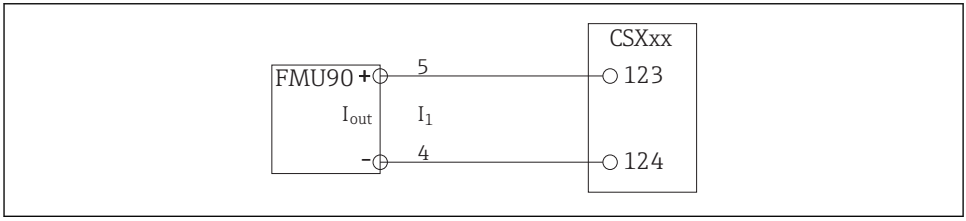
A0012989

17 *Assignment of analog inputs 1 and 2*

* *Analog input for passive devices (two-wire transmitter), Out + In terminals (125/123 or 225/223)*
** *Analog input for active devices (four-wire transmitter), In + Gnd terminals (123/124 or 223/224)*

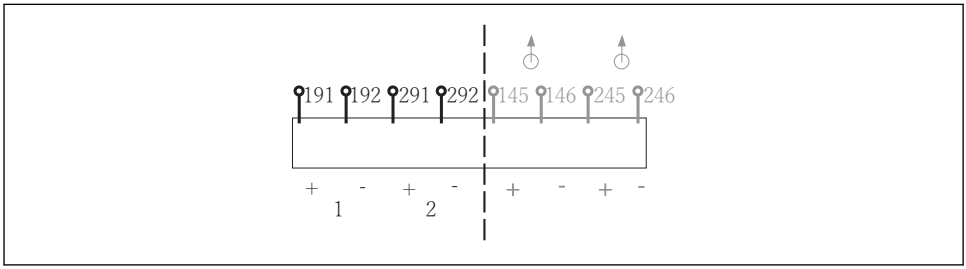


18 *With two-wire transmitter, e.g. Liquiline M CM42*



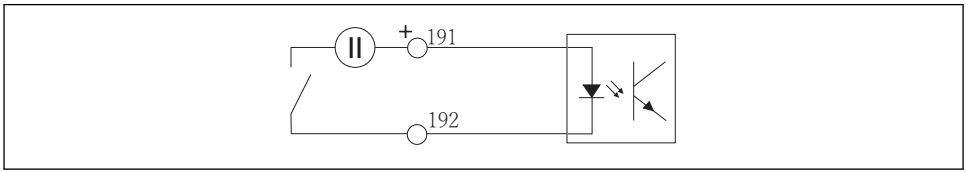
19 *With four-wire transmitter, e.g. Prosonic S FMU90*

Binary inputs



20 *Assignment of binary inputs 1 and 2*

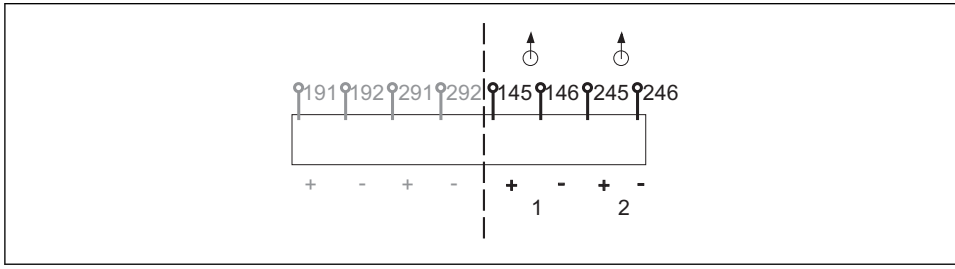
1 *Binary input 1 (191/192)*
2 *Binary input 2 (291/292)*



21 *Binary input with external voltage source*

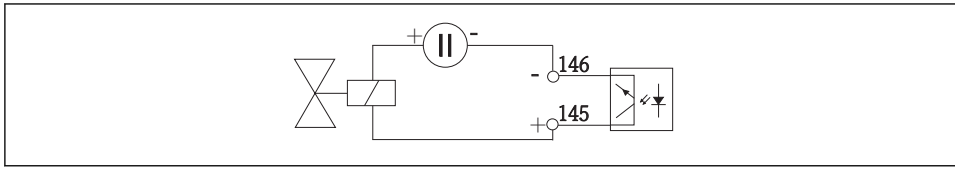
When connecting to an internal voltage source, use the terminal connection on the rear of the dosing compartment. The connection is located on the lower terminal strip (on the far left, + and -), (→ 🖹 22)

Binary outputs



22 *Assignment of binary outputs 1 and 2*

1 Binary output 1 (145/146)
1 Binary output 2 (245/246)



23 *Binary output 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 -) (→ 🖹 22)

5.3 Terminal assignment for input/output signals

Input signals
- 2 analog signals 0/4 to 20 mA
- 2 binary signals > 100 ms pulse width or edge

Output signals
2 binary signals > 1 s pulse width or edge

5.4 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

5.5 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.

Instrument status and specifications

▶ Are the device and all the cables free from damage on the outside?

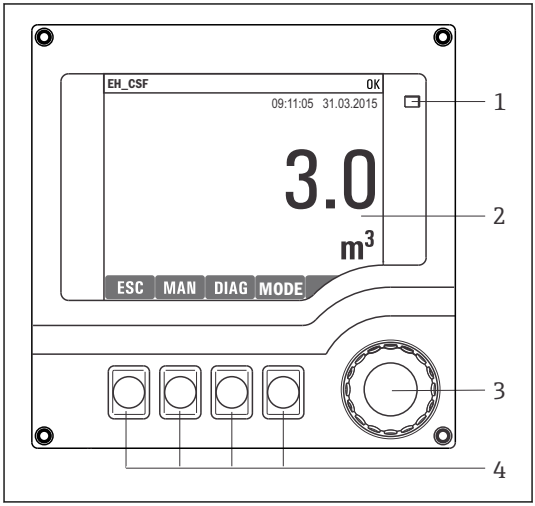
Electrical connection

▶ 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?

6 Operation options

6.1 Overview

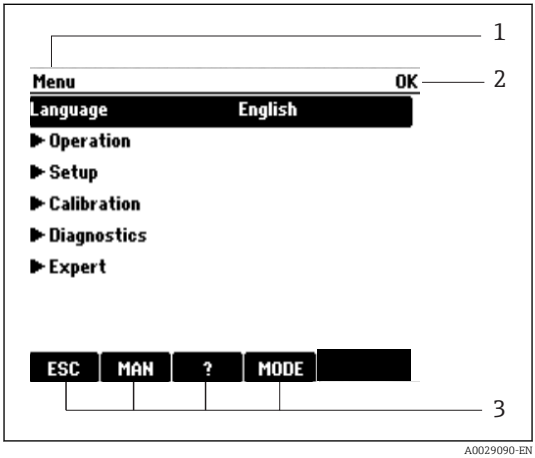
6.1.1 Display and operating elements



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

24 Overview of operation

6.1.2 Display

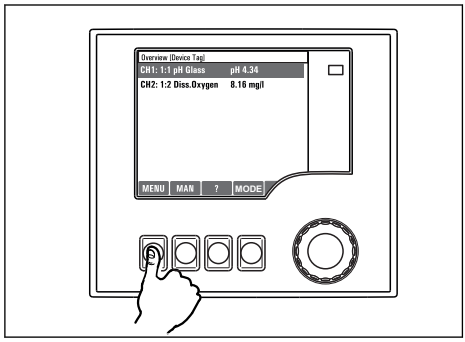


1 *Menu path and/or device designation*
2 *Status display*
3 *Assignment of soft keys, e. g.:*
ESC: escape or abortion of a sampling process
MAN: manual sample
?: Help, if available
MODE: switch the device to standby or cancel the program

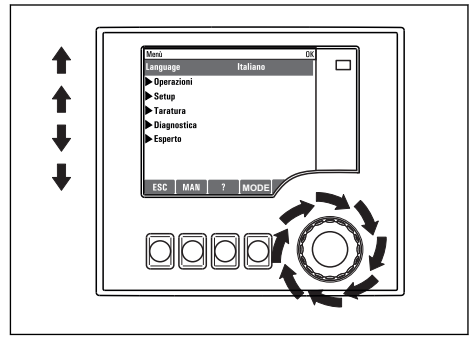
25 Display (example)

6.2 Access to the operating menu via the local display

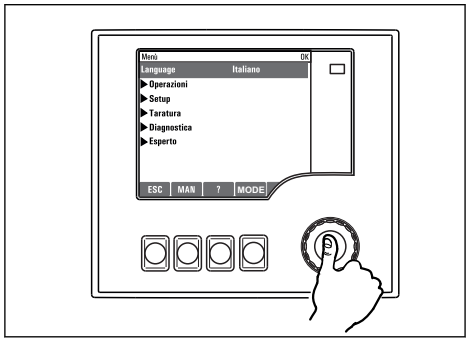
6.2.1 Operating concept



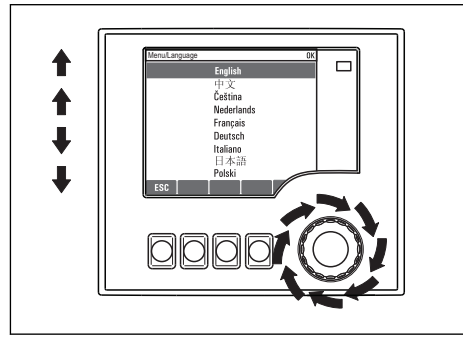
Pressingthe soft key: selecting the menu directly



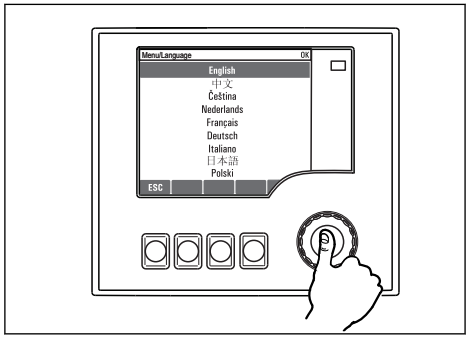
Turningthe navigator: moving the cursor in the menu



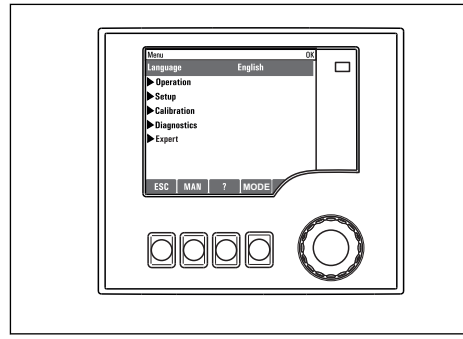
Pressingthe navigator: launching a function



Turningthe navigator: selecting a value (e.g. from a list)



Pressingthe navigator: accepting the new value



↳ *New setting is accepted*

6.2.2 Locking or unlocking operating keys

Locking operating keys

- ▶ Press the navigator for longer than 2 s.
  - ↳ 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. This password is set here: **MenuSetupGeneral settingsExtended setupData managementChange lock password**

- ▶ Choose whether you want to lock without or without a password.
  - ↳ The keys are locked. No more entries can be made. In the soft key bar, you will see the 🔒symbol.

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 s.
   - ↳ A context menu for unlocking the operating keys is displayed.
2. Select **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.

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.

6.3 Configuration options

6.3.1 Display only

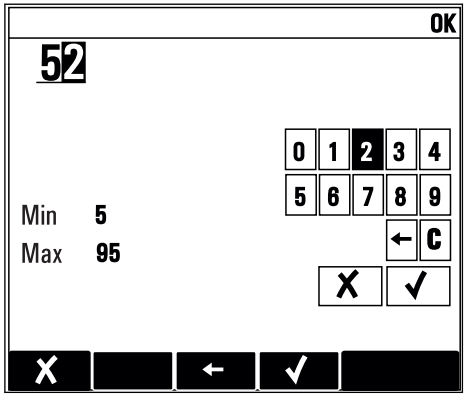
- You can only read the values but cannot change them.
- Typical read-only values are: sensor data and system information
- Example: **Menu/Setup/Inputs/../Sensor type**

6.3.2 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.
- Example: **Menu/Setup/General settings/Temperature unit**

6.3.3 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.
- Example: **Menu/Operation/Display/Contrast**

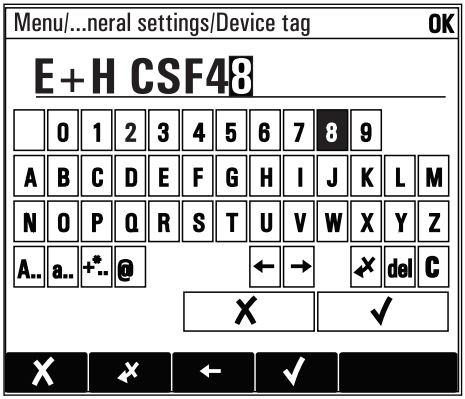


6.3.4 Actions

- 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
  - Triggering cleaning programs
- Examples of typical actions include:
  - Start a sampling program
  - Start manual sampling
  - Saving or loading configurations
- Example: **Menu/Manual sampling/Start sampling**

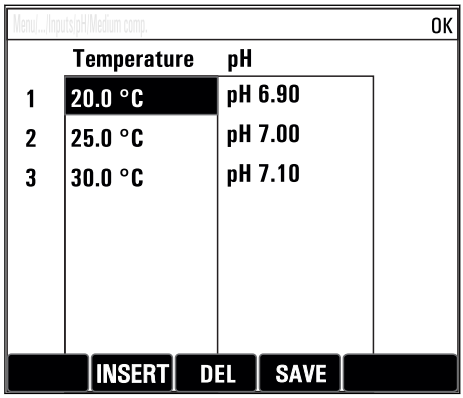
6.3.5 Free text

- 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 (✓)
- Example: **Menu/Setup/General settings/Device tag**



6.3.6 Tables

- Tables are needed to map mathematical functions or to enter irregular interval samples.
- You edit a table by navigating through rows and columns with the navigator and changing the values of the cells.
- You only edit the numerical values. The controller automatically takes care of the engineering units.
- You can add lines to the table (**INSERT**) or delete lines from the table (**DEL**).
- Afterwards, you save the table (**SAVE**).
- You can also cancel your entries any time using the ✗ soft key.
- Example: **Menu**/**Setup**/**Inputs**/pH/**Medium comp.**



7 Commissioning

7.1 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 basic module.
2. Press the navigator button for at least 3 seconds.
3. In the context menu select the "Screenshot" item.
   ↳ The current screen is saved as a bitmap file to the SD card in the "Screenshots" folder.

7.2 Setting the operating language

Configuring the language

If you have not already done so, close the housing cover and screw the device closed.

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

7.3 Configuring the measuring device

7.3.1 Start screen

You can find the following menu items and soft keys on the initial screen:
- **Select sampling program**
- **Edit program %0V** [1)]
- **Start program %0V**[1)]
- **MENU**
- **MAN**
- **MEAS**
- **MODE**

1) "%0V" here stands for text that depends on the context. This text is generated automatically by the software and inserted in place of %0V.

7.3.2 Display behavior

Menu/Operation/Display		
Function	**Options**	**Info**
Contrast	5 to 95 % **Factory setting** 50 %	Adjust the screen settings to suit your working environment. **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. **Backlight** = **On** The backlighting does not switch off automatically.
Backlight	**Selection** ▪ On ▪ Off ▪ Automatic **Factory setting** Automatic	
Screen rotation	**Selection** ▪ Manual ▪ Automatic **Factory setting** Manual	If **Automatic** is selected, the single-channel measured value display switches from one channel to the next every second.
Current program:	Read only	The name of the sampling program currently selected is displayed.
Status	Read only	Active The sampling program has been started and the device takes a sample as per the set parameters. Inactive No sampling program has been started, or a program that was running has been stopped.
▷ Start	Action	The selected sampling program is started.
▶ Measurement		Current measured values at the inputs are displayed. Analog and binary inputs cannot be modified here.
▶ Show summary of current program		The bottle statistics for the sampler are displayed. The statistics appear for each individual bottle after the start of the program. You can find more information in the Chap. "Bottle statistics".
▶ Show summary of inputs		The configured counters of the analog and binary input are displayed. Max. 8 lines

7.3.3 User definable screens

Menu/Operation/User definable screens		
Function	**Options**	**Info**
▶ Meas. screen 1 … 6		You can create 6 measuring screens of your own and give them a name. The functions are identical for all 6 measuring screens.
Meas. screen	**Selection** ▪ On ▪ Off **Factory setting** Off	Once you have defined your own measuring screen, you can switch it on here. You can find the new screen under **User definable screens**.
Label	Customized text, 20 characters	Name of the measuring screen Appears in the status bar of the display.
Number of lines	1 to 8 **Factory setting** 8	Specify the number of measured values displayed.
▶ Line 1 … 8	**User interface** Label	Specify the content of **Label** in the submenu of each line.
Source of data	**Selection** ▪ None ▪ See list in "Info" column **Factory setting** None	▶ Select a source of data. You can choose from the following: ▪ Sensor inputs ▪ Binary inputs ▪ Current inputs ▪ Temperature ▪ Memosens sensor input (optional) ▪ Fieldbus signals ▪ Mathematical functions ▪ Binary inputs and outputs ▪ Current outputs ▪ Relay ▪ Measuring range switching
Measured value **Source of data** *is an input*	**Selection** Depends on the input **Factory setting** None	You can display different main, secondary and raw measured values depending on the type of input. No options can be selected for outputs here.
Label	Customized text, 20 characters	User-defined name for the parameter to be displayed
▷ Set label to "%0V" [1]	Action	If you perform this action you accept the parameter name that is automatically suggested. Your own parameter name (**Label**) is lost!

1) "%0V" here stands for text that depends on the context. This text is generated automatically by the software and inserted in place of %0V. In the simplest situations, the generated text could be the name of the measuring channel, for example.

7.3.4 Basic setup

Making basic settings

1. Switch to the **Setup**/**Basic setup** menu.
   ↳ Make the following settings.
2. **Device tag**: Give your device any name of your choice (max. 32 characters).
3. **Set date**: Correct the set date if necessary.
4. **Set time**: Correct the set time if necessary.
5. **Number of bottles**: Correct the set number of bottles if necessary.
6. **Bottle volume**: Correct the set bottle volume if necessary.
   ↳ For quick commissioning, you can ignore the additional settings for outputs etc. You can make these settings later in the specific menus.
7. To return to the display overview: press the soft key for **ESC** for at least one second.
   ↳ Your sampler now works with your basic settings. The sensors connected use the factory settings of the sensor type in question and the individual calibration settings that were last saved.

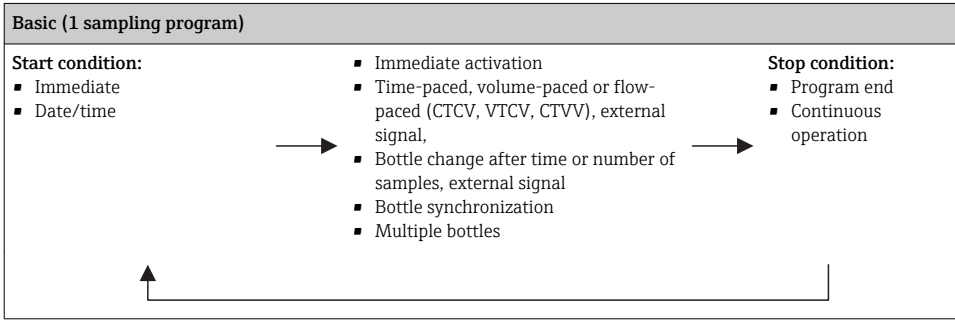
If you wish to configure your most important input and output parameters in the **Basic setup** :

► Configure the current inputs, relays, limit switches, cleaning cycles and device diagnostics with the following submenus.

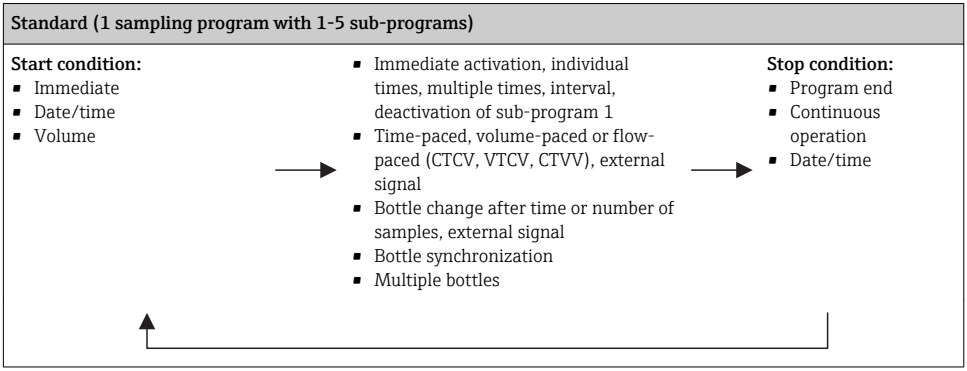
7.3.5 Sampling programs

Difference between program types

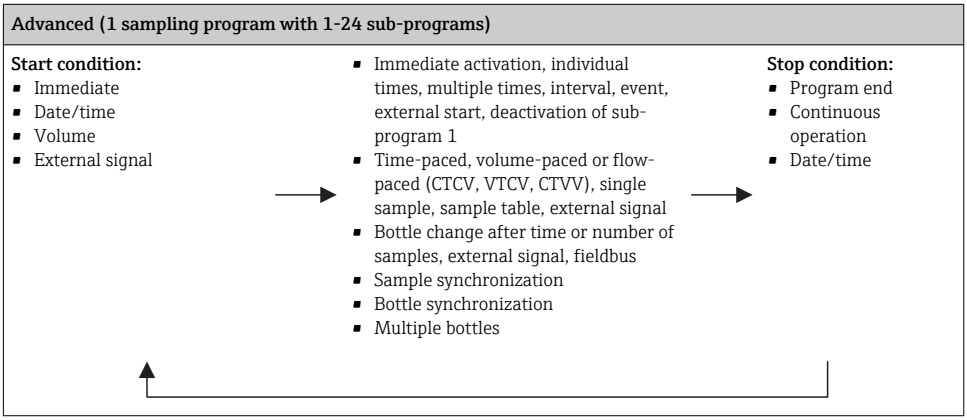
The following box provides an overview of the differences between the Basic, Standard and Advanced program types.



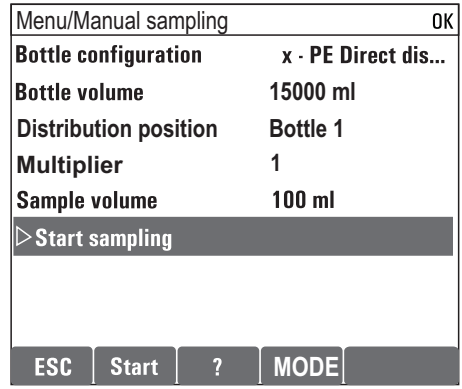
Standard (1 sampling program with 1-5 sub-programs)



Advanced (1 sampling program with 1-24 sub-programs)



Manual sampling



A0036865-EN

1. Manual sampling is triggered by the **MAN** soft key. This pauses any program currently running.
   ↳ The current bottle configuration and the current sample volume are displayed. You can select the distributor position. In peristaltic systems, you can also change the sample volume.
   In vacuum systems, **Multiplier** a multiple of a single manual sample can be taken under . Specification of **Multiplier**range of adjustment 1 to 50.
2. Select **Start sampling**
   ↳ A new screen is displayed indicating the progress of the sampling process.
3. After manual sampling, a running program can be displayed and continued with the ESC **ESC** button.
   ↳ The sample volume for "Manual sampling" is not taken into account in the calculated bottle volumes.

Programming for automatic sampling

Create a simple sampling program in the general overview under **Select sampling program/New/Basic** or in the menu **Menu/Setup/Sampling programs/Setup program/New/Basic** :

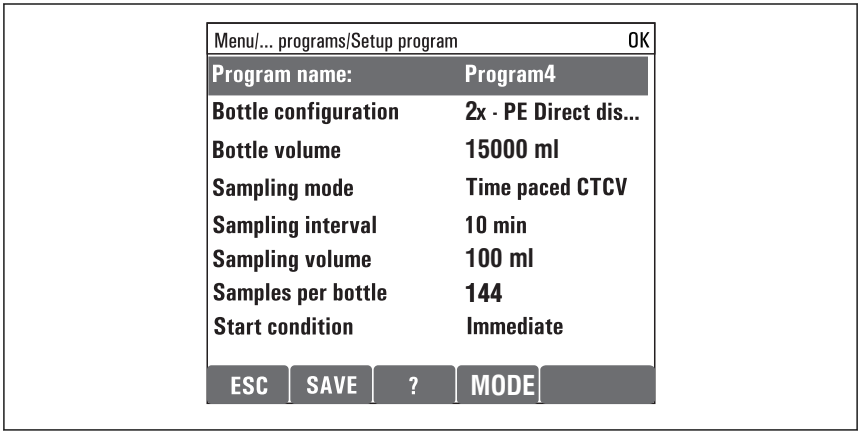
1. Enter the "Program name".
2. The settings from the **Basic setup** for bottle configuration and bottle volume are displayed.
3. **Sampling mode**=**Time paced CTCV** is preset.
4. Enter the **Sampling interval** .
5. Enter the **Sampling volume** per sample. (For version with vacuum pump, configure under **Menu/Setup/General settings/Sampling** .)

6. Select the **Bottle change mode** after number of samples or time for average samples.

With the option "Bottle change after a time", you can enter the change time and bottle synchronization (None, 1st bottle change time, 1st time of change + bottle number). The description for this can be found in the "Bottle synchronization" section.

With the option "Bottle change after a time", you can choose the bottle synchronization before the start condition (None, 1st bottle change time, 1st time of change + bottle number). The description for this can be found in the "Bottle synchronization" section.

1. For **Multiple bottles** enter the number of bottles the sample should be distributed over.
2. **Start condition**: immediately or after date/time
3. **Stop condition**: after program end or continuous operation.
4. Pressing the **SAVE** saves the program and ends data entry.
   ↳ Example:



A0029242-EN

The program can be started.

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