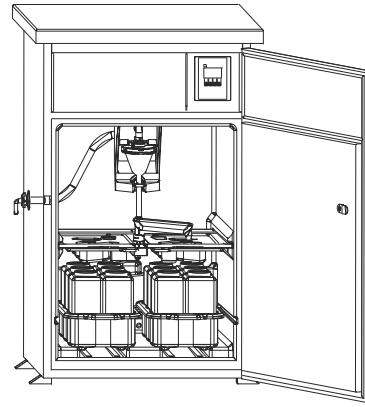
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Brief Operating Instructions
ASP Station 2000 RPS20B

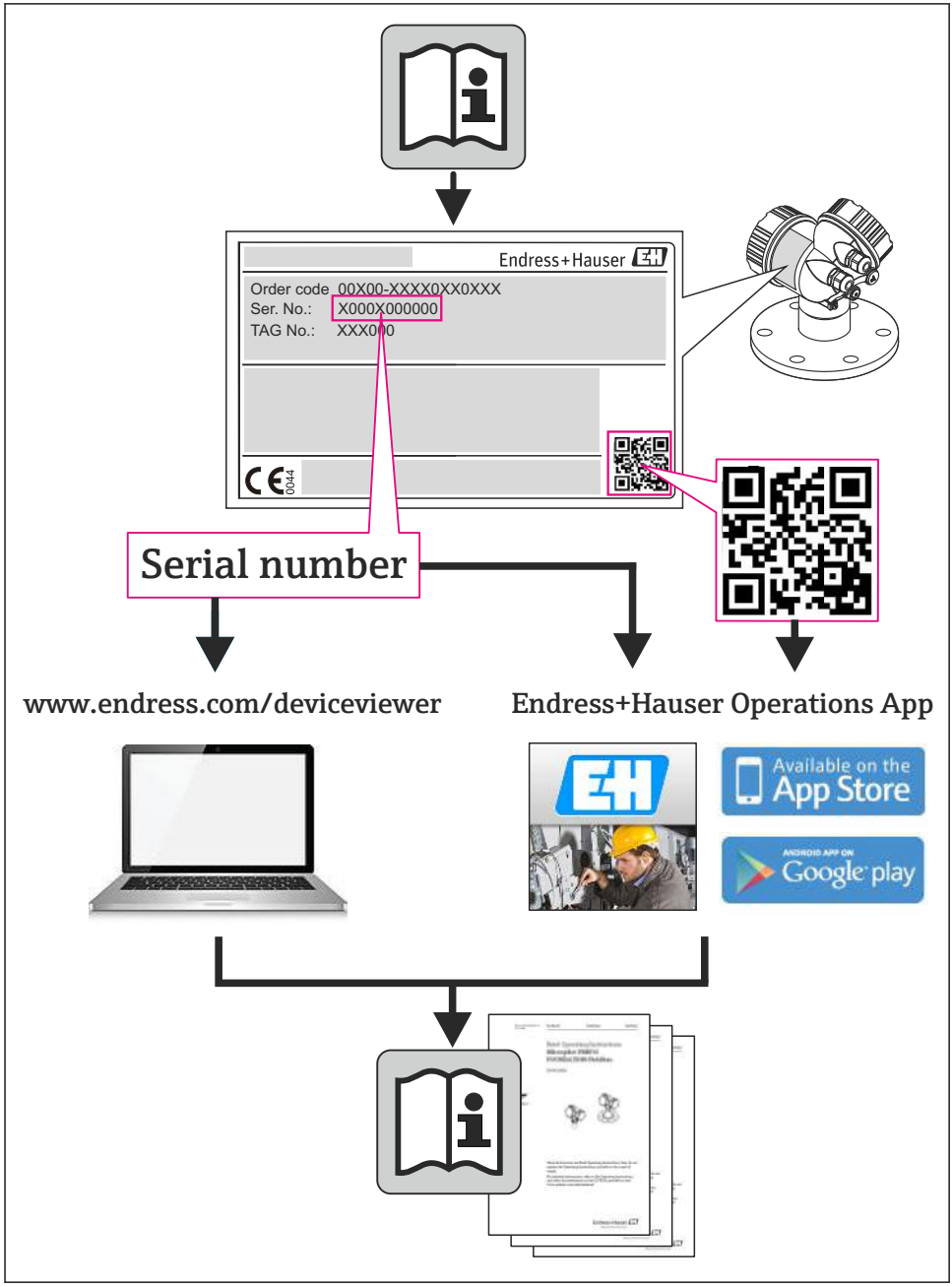
Stationary sampler for liquid media



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


Endress+Hauser
Order code 00X00-XXXX0XX0XXX
Ser. No.: X000X000000
TAG No.: XXX000
Serial number
www.endress.com/deviceviewer
Endress+Hauser Operations App
Available on the App Store
Google play

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1 About this document

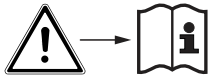
1.1 Warnings

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 used

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

1.2.1 Symbols on the device

Symbol	Meaning
	Reference to device documentation

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 Designated use

The ASP Station 2000 RPS20B is a stationary sampler for liquid media. The samples are extracted discontinuously by means of a vacuum system. They are put into one or several sampling containers and stored in a cool place.

The sampler is designed for use in the following applications:
- Communal and industrial wastewater treatment plants
- Laboratories and water management offices

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 Occupational 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 European 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 European standards have been observed.

Devices connected to the 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.

⚠ CAUTION

Incorrect transportation may result in injuries or damage to the device.

- ▶ Transport the sampler using suitable lifting equipment, e.g. pallet truck or forklift truck.
- ▶ Do not lift the sampler by the roof.

3.2 Product identification

3.2.1 Nameplate

Nameplates can be found:

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

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

- Manufacturer identification
- Extended order code
- Serial number
- Safety information and warnings

- ▶ Compare the information on the nameplate with the order.

3.2.2 Product identification

Interpreting the order code

The order code and serial number of your product can be found in the following locations:

- On the nameplate
- In the delivery papers

Obtaining information on the product

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

3.3 Scope of delivery

The scope of delivery comprises:
- ASP Station 2000 RPS20B with
  - The ordered bottle configuration
  - Optional hardware
- Connection nipple for suction line
- Brief Operating Instructions in the language ordered
- Optional accessories

Operating Instructions in other languages can be downloaded on the product page.

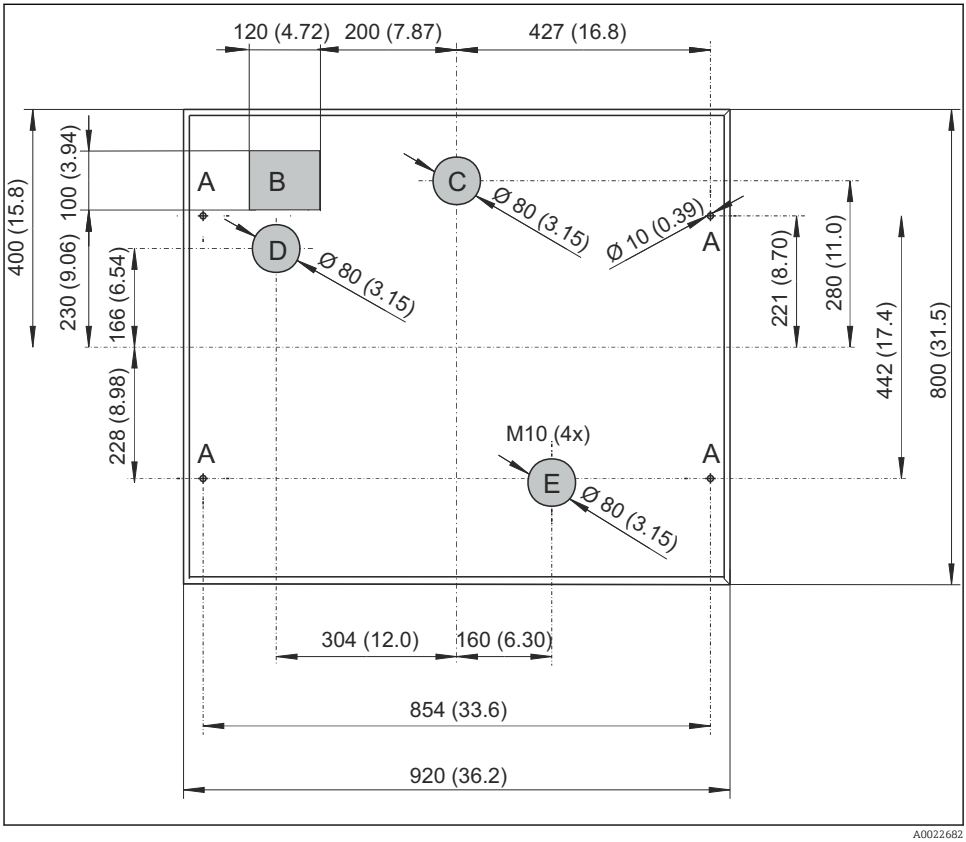
3.4 Certificates and approvals

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.

4 Installation

4.1 Installation conditions

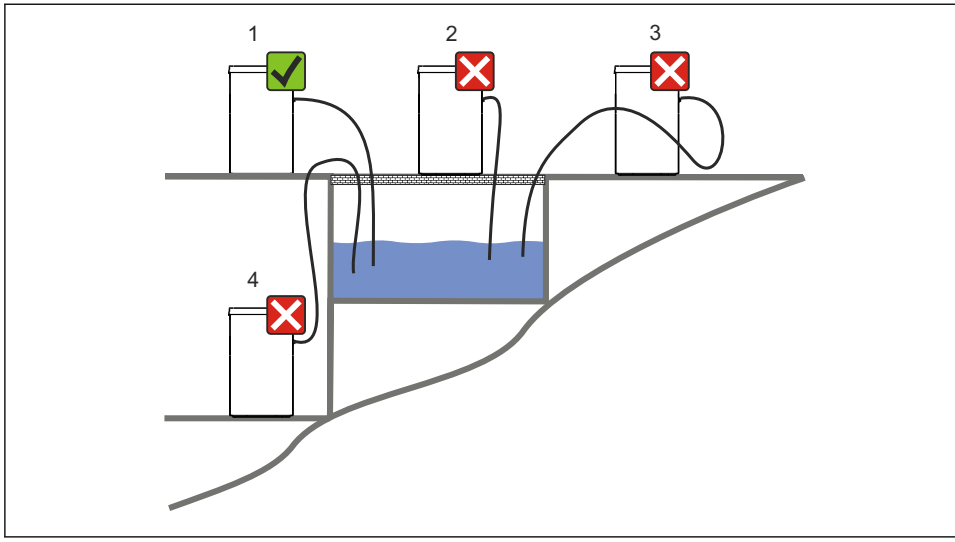
4.1.1 Foundation plan



1 Foundation plan for standard cabinet with and without base, dimensions in mm (inch)

A Fasteners (4 x M10)
B Cable duct
C Drain for condensation
D Hose entry, bottom (option)
E Drain for overflow

4.1.2 Installation site



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1. **Correct**
   ↳ The suction line must be routed with a downward gradient 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.
- Protect the device against additional heating (e.g. from heaters).
- 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. Distance from wall on left and right: min. 150 mm (5.9").
- Do not erect the device directly above the inlet channel of a wastewater treatment plant.

4.1.3 Connection for suctioning samples

Intake speed:

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.
- Immersion assembly:
  The adjustable immersion assembly fixes the suction line at the sampling point.

4.2 Installation

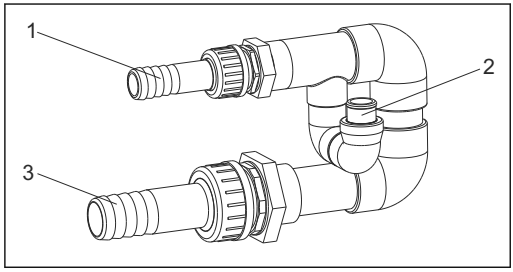
1. When installing the device, take the installation conditions into account.
2. Lay the suction line from the sampling point to the device.
3. Screw the suction line onto the device's hose connection.

4.3 Sampling with a flow assembly

The sample is extracted either directly from the flow assembly which is installed in the base or from an external flow assembly.

The flow assembly is used for sampling in pressurized systems e.g.:
- Tanks positioned at a height
- Pressure piping
- Conveyance using external pumps

The max. flow rate should be 1000 to 1500 l/h.

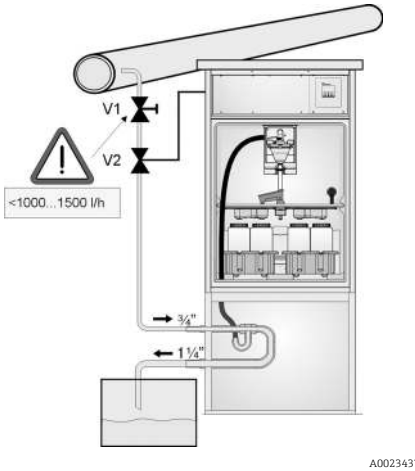


1 Flow assembly inflow: ¾"
2 Sampling connection
3 Flow assembly outflow: 1¼"

2 Connections on flow assembly 71119408

The outlet of the flow assembly must be unpressurized (e.g. drain, open channel).

Application example: Taking samples from pressure piping



Use diaphragm valve 1 to set the flow rate to a maximum of 1000 l/h to 1500 l/h. When the sampling cycle begins, one of the relay outputs can be used to control and open ball valve 2. The medium flows through the pipe and the flow assembly and into the outflow. Once an adjustable delay time has elapsed, the sample is taken directly from the flow assembly. Ball valve 2 is closed again once the sample has been taken.

The ball valve and the diaphragm valve are not included in the scope of supply. If necessary, please request a quote from your Endress+Hauser sales center.

3 Taking samples from pressure piping

V1 Diaphragm valve
V2 Ball valve
3 Flow assembly

4.4 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.

5 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.

5.1 Connecting the sampler

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 ground connection must be made before all other connections. Danger may arise if the protective ground is disconnected

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

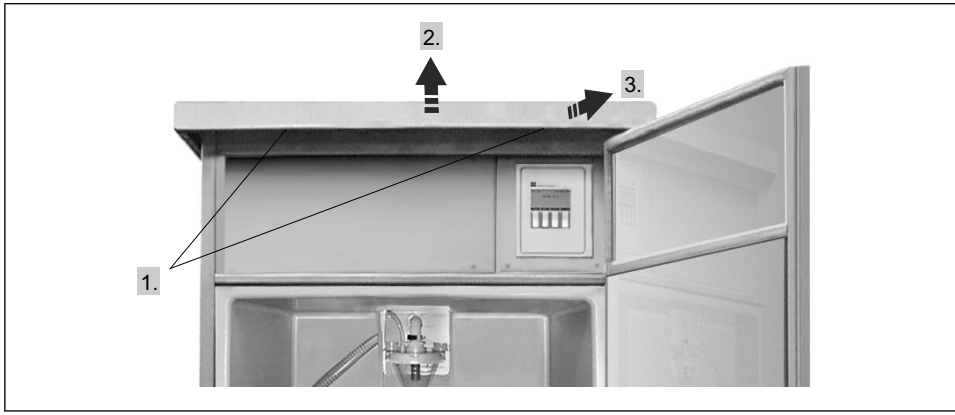
Power supply:	e.g. NYY-J, 3-wire, 1.5 mm^2 - 2.5 mm^2
Analog and signal cables:	e.g. LiYY 10 x 0.34 mm^2

5.1.3 Removing the cover and the rear panel

The terminal connection (analog/digital signal lines) as well as the terminal strip (mains connection) are in a protected location underneath the cabinet roof in the electronics compartment of the device.

Therefore, to connect the power supply, you must remove the rear panel and the cover of the device prior to commissioning.

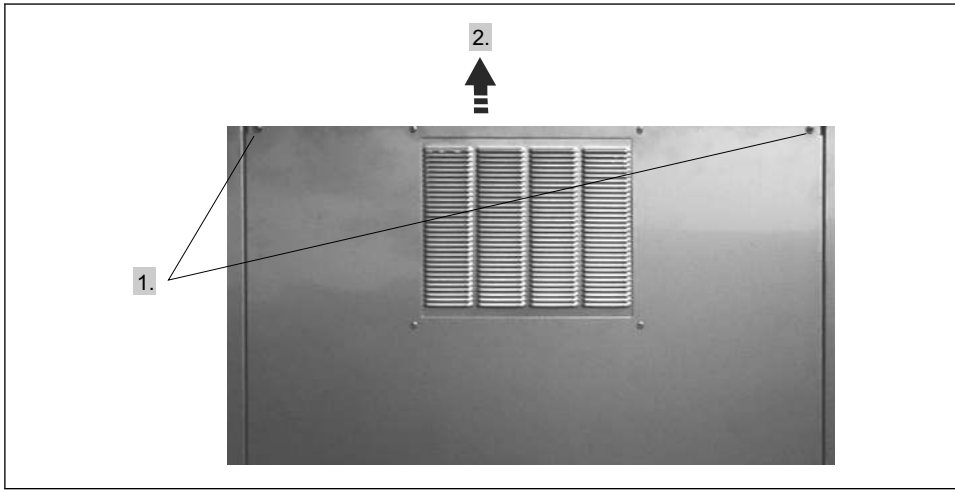
Removing the cabinet cover



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1. Release the securing screws.
2. Lift the cabinet roof at the front.
3. Pull the cabinet roof forwards and lift.
   ↳ You can now remove the rear panel.

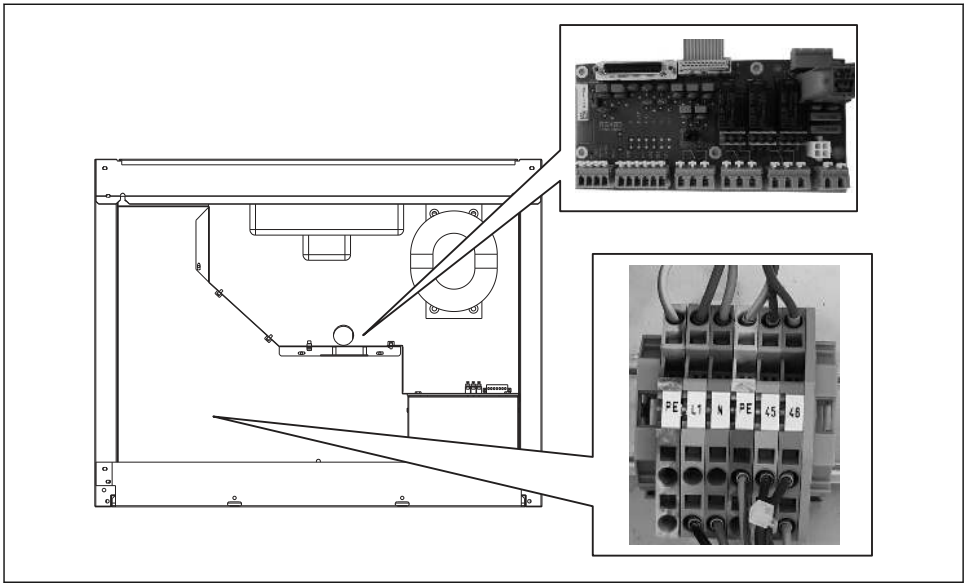
Removing the rear panel



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1. Release the securing screws.
2. Lift the rear panel up and remove it.
   ↳ The terminal board and the terminal strip in the electronics compartment are now exposed for wiring.

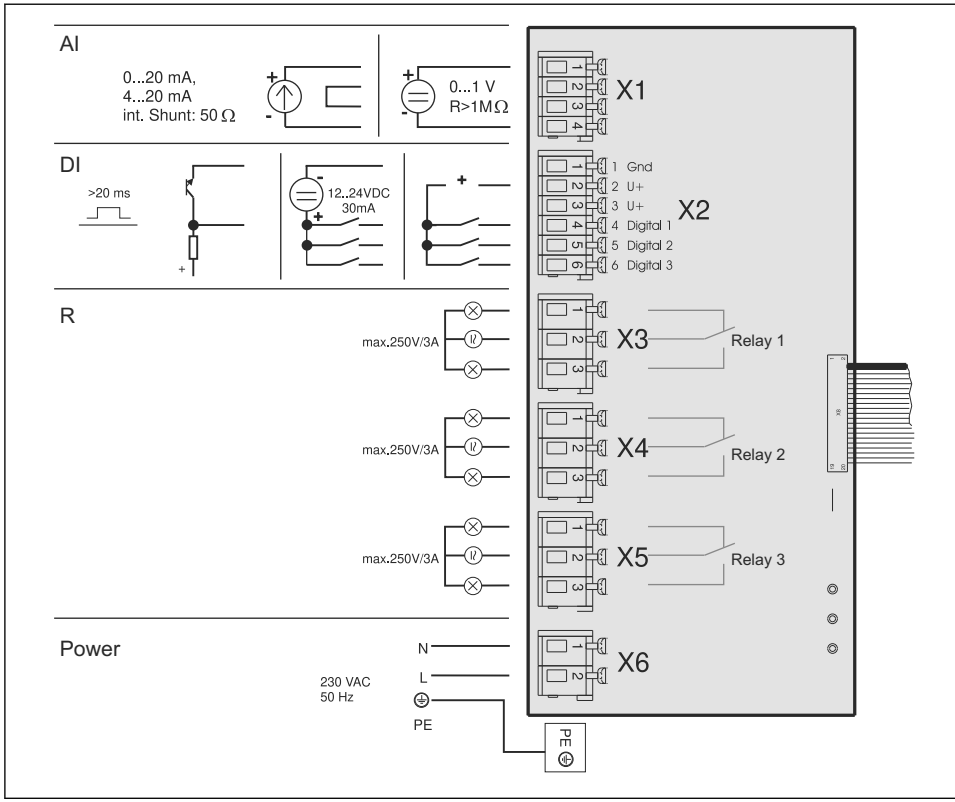
5.1.4 Terminal assignment



4 *Position of terminal board and terminal strip in the electronics compartment*

▶ Connect the supply voltage at the terminal strip in accordance with the following assignment:

PIN	Assignment
PE	Protective ground (provided by customer)
L1	Phase (provided by customer)
N	Neutral wire (provided by customer)
PE	Optional protective ground
45	Optional phase
46	Optional neutral wire



AI Analog input
DI Digital input
R Relay output
X1-6 Terminal blocks

You can connect the following signals to the terminals:
- 3 digital input signals > 20 ms
- 1 analog input signal 0 to 1 V,0 to 20 mA or 4 to 20 mA
- 3 relay output signals

5.2 Ensuring the degree of protection

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

► Exercise care when carrying out the work.

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

5.3 Post-connection check

⚠ WARNING

Connection errors

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

► Put the transmitter into operation only if you can answer "yes" to all questions.

Device condition and specifications

Are the sampler, suction line and all cables undamaged externally?

Electrical connection

- Are the mounted cables strain-relieved?
- Have the cables been routed without loops and cross-overs?
- Have the signal lines been connected correctly in accordance with the wiring diagram?
- Have all the other connections been established correctly?
- Have you connected unused connection wires to the protective ground connection?
- Are all the connection wires securely positioned in the cable terminals?
- Are all the cable entries installed, tightened and sealed?
- Does the supply voltage match the voltage indicated on the nameplate?

6 Commissioning

6.1 Function check

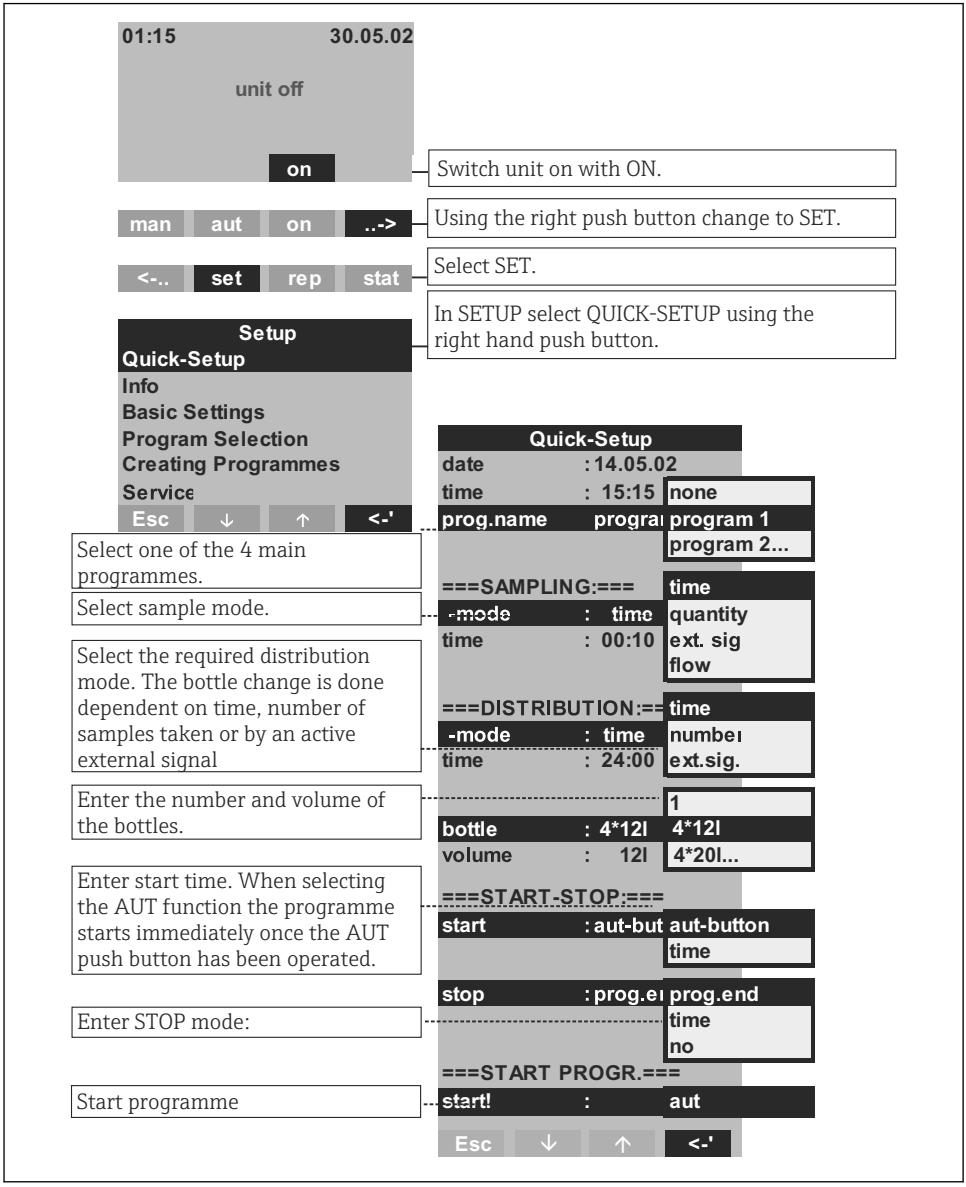
WARNING

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.

6.2 Switching on

1. Switch on the supply voltage.
   ↳ The display starts to light up and displays the message "UNIT OFF".
2. Press the operating key below the "ON" field.
   ↳ The message "UNIT ON" appears. The device is in operation and you can perform the Quick Setup.

6.3 Quick Setup



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5 Quick Setup

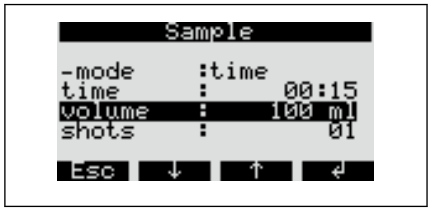
6.4 Configuring the tap (calibrating)

- You must configure the tap if:
- The tap motor was replaced
- The error message "Tap calibration" appears in the display.

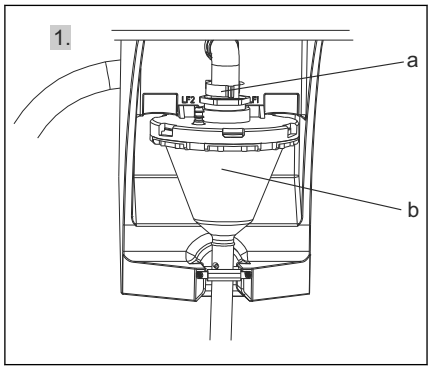
1. Select: SET --> SERVICE --> CALIBRATION --> DIST. TAB.
2. Select "Start".
   ↳ The tap continues moving and stops just before the calibration position.
3. Keep pressing "1 step" until the arrow on the front of the tap is positioned exactly in the notch in the middle of the distribution pan.
4. Select SAVE.
   ↳ The tap is calibrated.

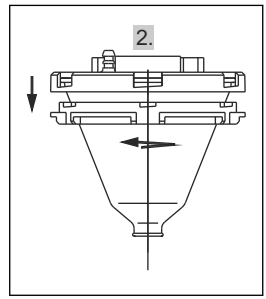
6.5 Manual setting of sample volume

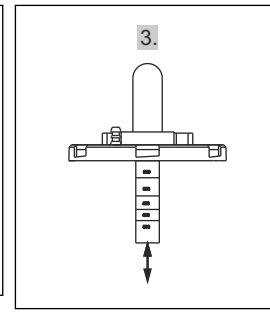
The required sample volume is set by moving the dosing pipe manually.



Check which sample volume is set in the active program.







1. Stop or pause any sampling programs running.
2. Release the clamping lever and air tube (a). Pull the dosing glass (b) forwards and remove it.
3. Open the bayonet lock and open the dosing glass.
4. Set the sample volume by moving dosing pipe.
5. Then re-install the dosing glass in the reverse order.



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