Brief Operating Instructions
Liquiport 2010 CSP44

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
1. Serial number

2. www.endress.com/deviceviewer
   - Endress+Hauser Operations App
     - Download on the App Store
     - Android App on Google Play

3. [Image of manual or document]
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1 About this document

1.1 Warnings

<table>
<thead>
<tr>
<th>Structure of information</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DANGER</strong></td>
<td>This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation <em>will</em> result in a fatal or serious injury.</td>
</tr>
<tr>
<td><strong>WARNING</strong></td>
<td>This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation <em>can</em> result in a fatal or serious injury.</td>
</tr>
<tr>
<td><strong>CAUTION</strong></td>
<td>This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or more serious injuries.</td>
</tr>
<tr>
<td><strong>NOTICE</strong></td>
<td>This symbol alerts you to situations which may result in damage to property.</td>
</tr>
</tbody>
</table>

1.2 Symbols

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>🚸</td>
<td>Additional information, tips</td>
</tr>
<tr>
<td>☑️</td>
<td>Permitted or recommended</td>
</tr>
<tr>
<td>❌</td>
<td>Not permitted or not recommended</td>
</tr>
<tr>
<td>🔗</td>
<td>Reference to device documentation</td>
</tr>
<tr>
<td>⏩</td>
<td>Reference to page</td>
</tr>
<tr>
<td>📢</td>
<td>Reference to graphic</td>
</tr>
<tr>
<td>⚙️</td>
<td>Result of a step</td>
</tr>
</tbody>
</table>
1.3 Symbols on the device

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>![symbol] ![notebook]</td>
<td>Reference to device documentation</td>
</tr>
</tbody>
</table>

1.4 Documentation

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

- Operating Instructions for Liquiport CSP44, BA00465C
  - 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
- Operating Instructions for Memosens, BA01245C
  - Software description for Memosens inputs
  - Calibration of Memosens sensors
  - Sensor-specific diagnostics and troubleshooting
- 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

Liquiport 2010 CSP44 is a portable sampler for liquid media in non-hazardous areas. The samples are taken discontinuously using a peristaltic pump and are then distributed into sampling containers.

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.

3.2 Product identification

Nameplates can be found:
- On the inside of the door
- On the packaging (adhesive label, portrait format)
- On the inside of the device cover

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 Liquiport 2010 CSP44 with:
  - The ordered bottle configuration
  - Optional hardware
  - 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    Ċ€ 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 Ċ€ mark.

MCERTS
The device has been assessed by Sira Certification Service and complies with "MCERTS Performance Standards for Water Monitoring Equipment Part 1, Version 2.1 dated November 2009"; certificate no.: Sira MC100176/02.

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 CSP44 standard version, dimensions in mm (in)
4.1.2 Installation site

The suction line must be routed with a downward slope to the sampling point. Avoid siphon formation!

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.
4.1.3  Connection for suctioning samples

- Maximum suction height: 8 m (26 ft)
- Maximum hose length: 30 m (98 ft)
- Diameter of hose connection: 10 mm (3/8") internal diameter
- Intake speed:
  - > 0.5 m/s (> 1.6 ft/s) as per EN 25667, ISO 5667
  - > 0.6 m/s (> 1.9 ft/s) as per Ö 5893, US EPA

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.

4.1.4  Connection for sample intake on version with pump

- Maximum suction height: 8 m (26 ft)
- Maximum hose length: 30 m (98 ft)
- Diameter of hose connection: 10 mm (3/8") internal diameter
- Intake speed:
  - > 0.5 m/s (> 1.6 ft/s) as per EN 25667, ISO 5667
  - > 0.6 m/s (> 1.9 ft/s) as per Ö 5893, US EPA

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

4.3 Connecting the suction line

1. When installing the device, take the installation conditions into account.
2. Open the device cover at the front fastening clasp.
3. Route the suction line from the sampling point to the device.
4. Screw the suction line onto the device's hose connection.

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

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.

3 Electrical connections of the controller

- 1 Connection socket for charger
- 2 Socket for M12 sensor connector (optional)
- 3 Socket for M12 sensor connector (optional)
- 4 Connection socket for signal cable (optional)
- 5 Service interface

The polarity of the switch connections does not have to be taken into account.

5.1.1 Charging the battery

⚠️ NOTICE

Defective batteries
The batteries can be destroyed if they are discharged completely.

- To prevent complete discharge, move the switch to the "OFF" position.
Charge the battery before initial commissioning. It takes approx. 5 hours to fully charge the battery. Please refer to the charger's operating manual for detailed information on the charger.

- Connect the device with the mains plug to the supply voltage.
  - The battery starts charging as soon as the power unit is connected, regardless of the switch position.

Only replace batteries with the following battery type: Panasonic LC-R127R2PG1.

**Connecting the charger when the batteries are installed**

The mains plug of the charger must be easily accessible so that the charger can be easily disconnected from the power supply.

- Connect the battery charger to the connection socket (item 1). If the battery is not fully charged, it is recharged by the charger.

Only use the chargers specified by the manufacturer.

**Connecting the charger when the batteries are removed**

If you are charging batteries that have been removed, you require the adapter cable (accessory no.: 71111882) to connect to the charger.

### 5.1.2 Removing the cover

**WARNING**

**Device is live**

Incorrect connection may result in injury or death

- If a power unit or charger is connected, disconnect it from the power supply.
1. Release both securing screws.
2. Remove the cover of the battery compartment.
3. Remove the old batteries and release the plug-in connections.
4. Connect the new batteries (pay attention to the battery polarity).
5. Insert the new batteries and secure the battery compartment cover.

5.2 Connecting modules and sensors

5.3 Terminal assignment for input/output signals

**Input signals**
- 2 analog signals 0/4 to 20 mA (optional)
- 2 binary signals > 100 ms pulse width or edge (optional)
  - Signals of digital sensors with Memosens protocol (optional)

**Output signals**
- 2 binary signals > 1 s pulse width or edge (optional)
- 2 current outputs 0/4 to 20 mA (optional)
5.4 Signal cable connection (optional)

Pin assignment and wiring diagram of signal cable (version K3)

1. Auxiliary voltage U: 24 V max. 30 mA load capacity
2. Binary inputs BI: > 20 ms, only extra-low voltage Ui £ 30 V DC
3. Binary outputs BO: only extra-low voltage Ui £ 30 V DC, max. current when using ext. auxiliary voltage (max. 200 mA)
4. Analog input AI: 0 to 20 mA, 4 to 20 mA
6  Pin assignment and wiring diagram of signal cable (version K4)

1  Auxiliary voltage U: 24 V max. 30 mA load capacity
2  Binary input BI: > 20 ms, only extra-low voltage $Ui \leq 30$ V DC
3  Binary output BO: only extra-low voltage $Ui \leq 30$ V DC, max. current when using ext. auxiliary voltage (max. 200 mA)
4  Analog inputs AI: 0 to 20 mA, 4 to 20 mA
7  Pin assignment and wiring diagram of signal cable (version K5)

1  Auxiliary voltage U: 24 V max. 30 mA load capacity
2  Binary input BI: > 20 ms, only extra-low voltage Ui £ 30 V DC
3  Binary output BO: only extra-low voltage Ui £ 30 V DC, max. current when using ext. auxiliary voltage (max. 200 mA)
4  Analog inputs AI: 0 to 20 mA, 4 to 20 mA

5.5  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
5.6 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)

8 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

9 Display (example)
6.2  Access to the operating menu via the local display

6.2.1  Operating concept

- **Pressing the soft key:** selecting the menu directly
- **Turning the navigator:** moving the cursor in the menu
- **Pressing the navigator:** launching a function
- **Turning the navigator:** selecting a value (e.g. from a list)
- **Pressing the 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: Menu/Setup/General settings/Extended setup/Data management/Change 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 (X)
  - Delete the character in front of the cursor (X)
  - Move the cursor back one position (←)
  - Finish your entries and save (√)
- Example: Menu/Setup/General settings/Device tag

![Diagram of E+H CSP4 with soft keys and text input area]
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 \( \times \) soft key.
- Example: Menu/Setup/Inputs/pH/Medium comp.

| Temperature | pH  
|------------|------
| 20.0 °C    | pH 6.90  
| 25.0 °C    | pH 7.00  
| 30.0 °C    | pH 7.10  |
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 Switching on the measuring device

The device is delivered with a built-in rechargeable battery. The switch in the battery cover is set to "OFF".

10 Switch position

1. Prior to initial commissioning, charge the batteries by connecting the power unit.
   ▶ The battery starts charging as soon as the power unit is connected, regardless of the switch position. It takes approx. 5 hours to fully charge the battery. Please refer to the charger's operating manual for detailed information on the charger.
2. Once the charging process is complete, press the switch on the battery cover to the "ON" position.
   ▶ The transmitter starts up.
3. Wait for the boot process to complete.
Disconnecting the batteries when the sampler is not in use:
- Press the switch on the battery cover to the "OFF" position.
  - When the switch is in the "OFF" position, it provides reliable and effective protection against the battery discharging completely and thus becoming irreparably damaged.

### 7.3 Setting the operating language

**Configuring the language**

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

1. Connect the rechargeable battery (see "Electrical connection" section).
   - 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.

### 7.4 Configuring the measuring device

#### 7.4.1 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**

#### 7.4.2 Display behavior

<table>
<thead>
<tr>
<th>Menu/Operation/Display</th>
<th>Options</th>
<th>Info</th>
</tr>
</thead>
</table>
| **Contrast**           | 5 to 95 %
| Factory setting       | 50 %    |
|                        |         | Adjust the screen settings to suit your working environment. **Backlight = Automatic**
| **Backlight**          | Selection
|                        | On
|                        | Off
|                        | Automatic
| Factory setting       | 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. |

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.
### Menu/Operation/Display

<table>
<thead>
<tr>
<th>Function</th>
<th>Options</th>
<th>Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screen rotation</td>
<td>Selection</td>
<td>If <strong>Automatic</strong> is selected, the single-channel measured value display switches from one channel to the next every second.</td>
</tr>
<tr>
<td></td>
<td>Manual</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Automatic</td>
<td></td>
</tr>
<tr>
<td>Factory setting</td>
<td>Manual</td>
<td></td>
</tr>
<tr>
<td>Current program:</td>
<td>Read only</td>
<td>The name of the sampling program currently selected is displayed.</td>
</tr>
<tr>
<td>Status</td>
<td>Read only</td>
<td>Active \nThe sampling program has been started and the device takes a sample as per the set parameters.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inactive \nNo sampling program has been started, or a program that was running has been stopped.</td>
</tr>
<tr>
<td>▶ Start</td>
<td>Action</td>
<td>The selected sampling program is started.</td>
</tr>
<tr>
<td>▶ Measurement</td>
<td></td>
<td>Current measured values at the inputs are displayed. Analog and binary inputs cannot be modified here.</td>
</tr>
<tr>
<td>▶ Show summary of current program</td>
<td></td>
<td>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'.</td>
</tr>
<tr>
<td>▶ Show summary of inputs</td>
<td></td>
<td>The configured counters of the analog and binary input are displayed.</td>
</tr>
</tbody>
</table>

#### 7.4.3 User definable screens

<table>
<thead>
<tr>
<th>Function</th>
<th>Options</th>
<th>Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ Meas. screen 1 ... 6</td>
<td></td>
<td>You can create 6 measuring screens of your own and give them a name. The functions are identical for all 6 measuring screens.</td>
</tr>
<tr>
<td>Meas. screen</td>
<td>Selection</td>
<td>Once you have defined your own measuring screen, you can switch it on here. You can find the new screen under <strong>User definable screens</strong>.</td>
</tr>
<tr>
<td></td>
<td>On</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>Factory setting</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>Label</td>
<td>Customized text, 20 characters</td>
<td>Name of the measuring screen Appears in the status bar of the display.</td>
</tr>
</tbody>
</table>
### Menu/Operation/User definable screens

<table>
<thead>
<tr>
<th>Function</th>
<th>Options</th>
<th>Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of lines</td>
<td>1 to 8</td>
<td>Specify the number of measured values displayed.</td>
</tr>
<tr>
<td></td>
<td><strong>Factory setting</strong> 8</td>
<td></td>
</tr>
<tr>
<td>▶ Line 1 ... 8</td>
<td><strong>User interface</strong></td>
<td>Specify the content of <strong>Label</strong> in the submenu of each line.</td>
</tr>
<tr>
<td>Source of data</td>
<td><strong>Selection</strong></td>
<td>▶ Select a source of data. You can choose from the following:</td>
</tr>
<tr>
<td></td>
<td>■ None</td>
<td>■ Sensor inputs</td>
</tr>
<tr>
<td></td>
<td>■ See list in 'Info' column</td>
<td>■ Binary inputs</td>
</tr>
<tr>
<td></td>
<td><strong>Factory setting</strong> None</td>
<td>■ Current inputs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Temperature</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Memosens sensor input (optional)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Fieldbus signals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Mathematical functions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Binary inputs and outputs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Current outputs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Relay</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Measuring range switching</td>
</tr>
<tr>
<td>Measured value</td>
<td><strong>Selection</strong></td>
<td>You can display different main, secondary and raw measured values</td>
</tr>
<tr>
<td></td>
<td>Depends on the input</td>
<td>depending on the type of input. No options can be selected for</td>
</tr>
<tr>
<td></td>
<td><strong>Factory setting</strong> None</td>
<td>outputs here.</td>
</tr>
<tr>
<td>Label</td>
<td>Customized text, 20 characters</td>
<td>User-defined name for the parameter to be displayed</td>
</tr>
<tr>
<td>▶ Set label to &quot;%0V&quot;1)</td>
<td><strong>Action</strong></td>
<td>If you perform this action you accept the parameter name that is</td>
</tr>
<tr>
<td></td>
<td></td>
<td>automatically suggested. Your own parameter name (Label) is lost!</td>
</tr>
</tbody>
</table>

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.

### 7.4.4 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.

If you wish to configure your most important input and output parameters in the **Basic setup**:
- Configure the current inputs, limit switches, cleaning cycles and device diagnostics with the following submenus.

### 7.4.5 Sampling programs

#### Difference between program types

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

<table>
<thead>
<tr>
<th>Basic (1 sampling program)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Start condition:</strong></td>
</tr>
<tr>
<td>- Immediate</td>
</tr>
<tr>
<td>- Date/time</td>
</tr>
<tr>
<td>- Immediate activation</td>
</tr>
<tr>
<td>- Time-paced, volume-paced or flow-paced (CTCV, VTCV, CTVV), external signal,</td>
</tr>
<tr>
<td>- Bottle change after time or number of samples, external signal</td>
</tr>
<tr>
<td>- Bottle synchronization</td>
</tr>
<tr>
<td>- Multiple bottles</td>
</tr>
<tr>
<td><strong>Stop condition:</strong></td>
</tr>
<tr>
<td>- Program end</td>
</tr>
<tr>
<td>- Continuous operation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard (1 sampling program with 1-5 sub-programs)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Start condition:</strong></td>
</tr>
<tr>
<td>- Immediate</td>
</tr>
<tr>
<td>- Date/time</td>
</tr>
<tr>
<td>- Volume</td>
</tr>
<tr>
<td>- Immediate activation, individual times, multiple times, interval, deactivation of sub-program 1</td>
</tr>
<tr>
<td>- Time-paced, volume-paced or flow-paced (CTCV, VTCV, CTVV), external signal</td>
</tr>
<tr>
<td>- Bottle change after time or number of samples, external signal</td>
</tr>
<tr>
<td>- Bottle synchronization</td>
</tr>
<tr>
<td>- Multiple bottles</td>
</tr>
<tr>
<td><strong>Stop condition:</strong></td>
</tr>
<tr>
<td>- Program end</td>
</tr>
<tr>
<td>- Continuous operation</td>
</tr>
<tr>
<td>- Date/time</td>
</tr>
</tbody>
</table>
**Advanced (1 sampling program with 1-24 sub-programs)**

<table>
<thead>
<tr>
<th>Start condition:</th>
<th>Stop condition:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Immediate</td>
<td>• Program end</td>
</tr>
<tr>
<td>• Date/time</td>
<td>• Continuous operation</td>
</tr>
<tr>
<td>• Volume</td>
<td>• Date/time</td>
</tr>
<tr>
<td>• External signal</td>
<td></td>
</tr>
</tbody>
</table>

- Immediate activation, individual times, multiple times, interval, event, external start, deactivation of sub-program 1
- Time-paced, volume-paced or flow-paced (CTCV, VTCV, CTVV), single sample, sample table, external signal
- Bottle change after time or number of samples, external signal, fieldbus
- Sample synchronization
- Bottle synchronization
- Multiple bottles

---

**Manual sampling**

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** 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:

```
Menu/... programs/Setup program OK
Program name: Program4
Bottle configuration  2x - PE Direct dis...
Bottle volume  15000 ml
Sampling mode  Time paced CTCV
Sampling interval  10 min
Sampling volume  100 ml
Samples per bottle  144
Start condition  Immediate
ESC  SAVE  ?  MODE
```

The program can be started.