Operating Instructions
Liquiline System CAT810

Automatic sample preparation system for supplying process measuring devices with filtered samples from pressure pipes
Table of contents

1 Document information ......... 4  Index ........................................ 27
  1.1 Document function ........... 4
  1.2 Warnings ..................... 4
  1.3 Symbols used ................. 4

2 Basic safety instructions ...... 6
  2.1 Requirements for personnel .... 6
  2.2 Designated use ................ 6
  2.3 Occupational safety .......... 6
  2.4 Operational safety .......... 6
  2.5 Product safety ............... 7

3 Product description .......... 7

4 Incoming acceptance and
  product identification ........ 10
  4.1 Incoming acceptance ......... 10
  4.2 Product identification ........ 10
  4.3 Scope of delivery ............ 11
  4.4 Certificates and approvals ... 11

5 Installation .................... 12
  5.1 Installation conditions ....... 12
  5.2 Mounting the sample preparation
      system .......................... 14
  5.3 Cleaning valve (optional) ..... 16
  5.4 Post-installation check ..... 16

6 Electrical connection .......... 17

7 Operation ...................... 17
  7.1 Setup of the version with cleaning
      valve ............................ 18
  7.2 Setup of the version with time control .. 18

8 Maintenance .................... 20
  8.1 Cleaning ....................... 21

9 Repairs ........................ 22
  9.1 Spare parts .................... 22
  9.2 Return ......................... 23
  9.3 Disposal ....................... 23

10 Accessories .................... 23

11 Technical data ................ 24
1 Document information

1.1 Document function

1.1.1 Document function

These Operating Instructions contain all the information that is required in various phases of the life cycle of the device: from product identification, incoming acceptance and storage, to mounting, connection, operation and commissioning through to troubleshooting, maintenance and disposal.

1.2 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 will result in a fatal or serious injury.</td>
</tr>
<tr>
<td>Causes (consequences)</td>
<td>Consequences of non-compliance (if applicable)</td>
</tr>
<tr>
<td></td>
<td>Corrective action</td>
</tr>
</tbody>
</table>

| **WARNING**              | This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation can result in a fatal or serious injury. |
| Causes (consequences)    | Consequences of non-compliance (if applicable) |
|                          | Corrective action |

| **CAUTION**              | This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or more serious injuries. |
| Causes (consequences)    | Consequences of non-compliance (if applicable) |
|                          | Corrective action |

| **NOTICE**               | This symbol alerts you to situations which may result in damage to property. |
| Cause/situation          | |
|                         | Consequences of non-compliance (if applicable) |
|                         | Action note |

1.3 Symbols used

1.3.1 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>
</tbody>
</table>
### 1.3.2 Symbols at the device

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Symbol" /></td>
<td>Reference to graphic</td>
</tr>
<tr>
<td><img src="image2" alt="Symbol" /></td>
<td>Result of a step</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3" alt="Symbol" /></td>
<td>Reference to device documentation</td>
</tr>
</tbody>
</table>
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.
- Measuring point faults may be repaired only by authorized and specially trained personnel.

Repairs not described in the Operating Instructions provided may only be carried out directly by the manufacturer or by the service organization.

2.2 Designated use

The Liquiline System CAT810 sample preparation system is designed to automatically supply process measuring devices with filtered sample from pressure pipes (see Technical data).

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
- Regulations for explosion protection

2.4 Operational safety

1. Before commissioning the entire measuring point, verify that all connections are correct. Ensure that electrical cables and hose connections are undamaged.

2. Do not operate damaged products, and safeguard them to ensure that they are not operated inadvertently. Label the damaged product as defective.

3. If faults cannot be rectified:
   Take the products out of operation and safeguard them to ensure that they are not operated inadvertently.
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.

3 Product description
A complete sample preparation system consists of:
- Liquiline System CAT810 sample preparation system
- Compressed-air or water cleaning (optional) for extended filter maintenance intervals
**1. CAT810, basic version**

1. Outlet
2. Filter unit
3. Inlet

**2. CAT810 installed on a mounting plate with cleaning valve and drain valve as order options**

1. Outlet
2. Cleaning valve
3. Inlet
4. Drain valve
5. Filter unit
6. Time control system (optional)
CAT810 installed in the analyzer stand with cleaning valve, drain valve and vent valve as order options

1. Outlet pipe
2. Vent valve (optional)
3. Coupling 1 (outlet)
4. Analyzer stand
5. Filter unit
6. Coupling 2 (inlet)
7. Inlet pipe
8. Drain valve (optional)
9. Coupling 3 (mounting location baffle plate)
10. Cleaning valve (optional)
11. Ascending pipe for constant pressure
4 incoming acceptance and product identification

4.1 incoming acceptance

1. Verify that the packaging is undamaged.
   ➔ Notify your supplier of any damage to the packaging.
   Keep the damaged packaging until the matter has been settled.

2. Verify that the contents are undamaged.
   ➔ Notify your supplier of any damage to the delivery contents.
   Keep the damaged products until the matter has been settled.

3. Check the delivery for completeness.
   ➔ Check it against the delivery papers and 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.
   The permitted ambient conditions must be observed (see "Technical data").

If you have any questions, please contact your supplier or your local sales center.

4.2 product identification

4.2.1 nameplate
The nameplate provides you with the following information on your device:
- Manufacturer identification
- Order code
- Serial number
- Power connection
- Degree of protection
- Ambient and process conditions

➤ Compare the data on the nameplate with your order.

4.2.2 product identification

product page
www.endress.com/cat810

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 the product page for your product on the Internet.
2. At the bottom of the page, select the "Online Tools" link followed by "Check your device features".
   
   An additional window opens.

3. Enter the order code from the nameplate into the search field, and then select "Show details".

   You will receive information on each feature (selected option) of the order code.

4.3 Scope of delivery

The scope of delivery comprises:

- 1 Liquiline System CAT810 in the version ordered
- 1 copy of the Operating Instructions (in the desired language on selection of the order option)
- 1 CD-ROM with Operating Instructions in all available languages
- Optional accessories

If you have any questions, please contact your supplier or your local sales center.

4.4 Certificates and approvals

4.4.1 CE mark

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.

4.4.2 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.
5   Installation

5.1   Installation conditions

5.1.1   Dimensions

4   CAT810 basic version, dimensions in mm (in)

5   CAT810 version with mounting plate, dimensions in mm (in)
CAT810 version for analyzer stand, dimensions in mm (in)

5.1.2 Mounting plate

Mounting plate, dimensions in mm (inch)
Fasteners 4 x M 6.5

5.1.3 Orientation

Note the orientation of the sample preparation system.

To ensure that the medium reaches the analyzer without problems, there must be a water column of at least 72 cm. This is guaranteed with the vertical installation of the hydraulic pressure pipe for versions “prepared for analyzer stand (CA80)” and “installed on mounting plate”. Take suitable measures when installing the “basic version” to ensure that there is a water column of at least 72 cm to guarantee sufficient hydraulic counterpressure.

The medium drain must be connected to one of the following process connections:
See the "Process connections" section

The medium must be able to flow without pressure into an approved container.

Ensure that the medium can drain freely. Avoid siphon effects at the outlet. If this is not guaranteed use the optional vent valve.

5.2 Mounting the sample preparation system

Mounting basic version

1. Connect the inlet of the CAT810 to the pressure pipe for the sample.
2. Connect the outlet of the CAT810 to an unpressurized drain that is approved for this purpose.
3. Connect the sample hose of the CAT810 to the collecting vessel of the downstream analyzer.

Mounting pre-installed mounting plate

1. Mount the mounting plate on the wall using four screws as illustrated in the drawing (→ 7, 13).
2. Connect the inlet of the CAT810 to the pressure pipe for the sample.
3. Connect the outlet of the CAT810 to an unpressurized drain that is approved for this purpose.
4. Connect the sample hose of the CAT810 to the collecting vessel of the downstream analyzer.

Mounting in the analyzer stand (CA80)

1. Secure the CAT810 to the analyzer stand of the CA80 analyzer with couplings 1 +2.
2. Connect the inlet of the CAT810 to the pressure pipe for the sample. Use the flat seal supplied.
3. Connect the outlet of the CAT810 to an unpressurized drain that is approved for this purpose. Use the flat seal supplied.
4. Connect the sample hose of the CAT810 to the collecting vessel of the downstream analyzer.
The sample preparation system can be installed in 3 ways:
- on a pipe
- on a post
- on a railing (round or square, clamping range 20 to 61 mm (0.79 to 2.40”)

You will need the post mounting kit (optional) for mounting on a pipe, post or railing.

5.2.1 Process connections
The sample preparation system is designed for mounting on pipework. Suitable process connections must be available for this.

The sample preparation system is available with the following process connections:

Inlet
- External thread G2", straight
- Hose nozzle OD 30 mm, straight
- Adhesive fitting, ID 40 mm, straight

Procedure
- External thread G2", straight
- Hose nozzle OD 30 mm, 90˚
- Adhesive coupling, ID 40 mm, 90˚

5.2.2 Mounting adhesive fittings
Proceed as follows to attach the adhesive couplings:

1. Clean the surfaces to be glued (exterior pipe end, sleeve or internal angle piece) with the cleaning cloth.
2. Allow the cleaned surfaces to dry for approx. 5 minutes.
3. Apply the glue evenly (closed adhesive layer) to the adhesive surfaces (first sleeve, then pipe).
4. Join the parts together immediately (screw them together as far as possible).
5. Remove any surplus glue.
6. Allow the glued parts to harden for at least 24 hours before exposing the system to sample.

5.2.3 Mounting baffle plates
Three baffle plates with apertures of different sizes (15 mm, 17 mm and 19 mm) are included in the delivery. These are used to create the backpressure needed to pump the sample through the filter.

1. Insert the baffle plate with the largest aperture (19 mm) into coupling 3 (mounting location baffle plate) (→ 3, 9).
   - If sufficient medium is pumped in the test run, no additional measures are needed.
2. If too little medium is pumped, insert a baffle plate with a smaller aperture (15 mm or 17 mm).
5.3  Cleaning valve (optional)

**CAUTION**

An incorrect connection can cause injuries and damage the device

- Connect a pressure regulator upstream if the water or air pressure can rise to above 5 bar (72.5 psi) (even for very short periods).

The cleaning valve enables the filter to be backflushed with water or compressed air. The automatic backflushing of the filter extends the intervals for manual filter cleaning.

5.3.1  External water connection

Prerequisites:
- Water pressure of 2.0 to 5.0 bar (29.0 to 72.5 psi); but at least 0.5 bar (7.3 psi) > process pressure
- Drinking water quality, free from particles
- Connection: hose nozzle, OD 12 mm, secure hose with worm drive hose clip

When installing the external water connection, use a backflow valve to prevent the wastewater from flowing back into the freshwater system.

Set the response pressure as a function of the applied process pressure.

5.3.2  External compressed air connection

Prerequisites:
- Air pressure of 2.0 to 5.0 bar (29.0 to 72.5 psi); but at least 0.5 bar (7.3 psi) > process pressure
- Air must be filtered (40 µm) and free from water and oil
- No continuous air consumption
- Connection: hose nozzle, OD 12 mm, secure hose with worm drive hose clip

5.4  Post-installation check

- Check that all connections have been established correctly.
- After installation, check the sample preparation system and hoses for damage.
- After mounting, check all the connections to ensure they are secure and leak-tight.
- Ensure that the hoses cannot be removed without force.
- Ensure that the supply voltage matches the voltage indicated on the nameplate (version with cleaning valve or time control)
- Ensure that the suction line and outlet are connected without siphoning effects and that the medium can drain freely.
6 Electrical connection

**WARNING**

Device is live
Incorrect connection may result in injury or death

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

**NOTICE**

The device does not have a power switch

- The device starts as soon as it is supplied with power.
- The customer must provide a protected circuit breaker in the vicinity of the device.
- The circuit breaker must be a switch or power switch, and you must label it as the circuit breaker for the device.
- A fuse with a maximum rating of 6.0 A must be provided by the customer. Observe the local regulations for installation.
- The ground connection must be made before all other connections. Danger may arise if the protective ground is disconnected.

![Wiring diagram for cleaning valve at the Liquiline System CAT810](A0030125)

8 Wiring diagram for cleaning valve at the Liquiline System CAT810

1 Supply voltage 115/230 VAC for cleaning valve or time control for cleaning valve
2 Are not used

- Connect the power supply to terminals L1, N and PE (= mains).

For more information on the electrical connection, please refer to BA01240C.

7 Operation

The operation of a Liquiline System CAT810 with an analyzer is possible only in combination with a sample collecting vessel.
7.1 **Setup of the version with cleaning valve**

The sample preparation menu is configured via the display and operating elements of a Liquiline System CA80 analyzer. For more information please refer to documentation BA01240C.

7.2 **Setup of the version with time control**

![Diagram of display and operating elements]

**Display and operating elements**

1. Display
2. Power switch
3. LOCK function (press both keys at the same time)
4. SET button
5. RESET button

You can use the timer to configure the flushing interval and the duration of the flushing process. The **flushing interval** is the time between two flushing processes (from the end of the last to the start of the next flushing process). The three-way valve is open between the flushing processes. Sample flows across the filter to the collection vessel or the analyzer.
The **flushing duration** is the time during which the solenoid valve (right) opens for the supply of flushing medium. This initiates the backflushing process. Any residues on the filter are removed and flushed away. The left-hand side of the solenoid valve is closed during this time. No sample is processed.

ℹ️ The timer allows the user to set several modes that are not required. Therefore do not change the mode setting once selected!

Two time settings (flushing interval and flushing duration) can be configured in Pu-b mode. The switching operation is carried out without delay in accordance with the set times.

### 7.2.1 Programming default parameters

The following table provides an overview of the configuration options.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Configuration options (recommended setting in bold)</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Pu-A, Pu-b, Pu-c, In-A, In-b, In-c</td>
<td>Use only Pu-b mode. It is only possible to set two times in this mode.</td>
</tr>
<tr>
<td>Time range</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.01 to 99.99 s</td>
<td>On  On  On  On  On  On  On  On</td>
<td></td>
</tr>
<tr>
<td>0.1 to 999.9 s</td>
<td>Off  Off  Off  Off  Off  Off  Off  Off</td>
<td></td>
</tr>
<tr>
<td>1 to 9999 s</td>
<td>On  Off  Off  On  Off  Off  Off  Off</td>
<td></td>
</tr>
<tr>
<td>0:01 to 99:59 min:s</td>
<td>Off  On  Off  Off  On  Off  Off  Off</td>
<td></td>
</tr>
<tr>
<td><strong>0.1 to 999.9 min</strong></td>
<td>On  On  Off  On  On  On  Off  Off</td>
<td></td>
</tr>
<tr>
<td>0:01 to 99:59 h:min</td>
<td>Off  On  Off  On  Off  Off  On  Off</td>
<td></td>
</tr>
<tr>
<td>0.1 to 999.9 h</td>
<td>On  Off  Off  On  Off  Off  On  Off</td>
<td></td>
</tr>
<tr>
<td>1 to 9999 h</td>
<td>Off  On  On  Off  On  Off  On  On</td>
<td></td>
</tr>
</tbody>
</table>

**Configuring the default parameters**

1. Set the power switch to "1" (power supply on).
2. Press "SET" and the 1st rocker key (top or bottom) at the same time until the previously used mode appears (on the bottom line).
3. You can select a different mode with the 4th rocker key. You should only do this if Pu-b has not been previously selected.
4. Press "RESET". This will save the selected mode.
Changing the time range
1. Set the power switch to "0" (off).
2. Set DIP switches 1-3 and 6-8 on the timer housing to the desired combination (= time range, see table above).
3. Reset the power switch to "1" (on).

7.2.2 Configuring the flush interval and flush duration
You can also change the times for the flushing interval and the flushing duration during operation (power supply "1").

Recommended settings:
Discharge measurement:
Flushing interval 30 minutes, flushing duration 10 seconds

Select a suitable flushing interval to ensure that all of the flushing water is replaced by a fresh sample before the next analysis. Between backflushing the filter and the next sampling process there should be a minimum interval of two minutes to exclude the possibility of unwanted dilution.

Configuring the flush interval
1. If "LOCK" lights up on the display, press "SET" and the first rocker key at the same time.
2. Press "SET" until time $T_1$ (flushing interval) is shown on the display.
3. Use all 4 rocker keys to set the time. Each rocker key changes one digit in the time display.
4. After setting the last digit, save the value for the flushing interval by pressing "RESET".

Configuring the flush duration
1. If "LOCK" lights up on the display, press "SET" and the first rocker key at the same time.
2. Press "SET" until time $T_2$ (flushing duration) is shown on the display.
3. Use all 4 rocker keys to set the time. Each rocker key changes one digit in the time display.
4. After setting the last digit, save the value for the flushing duration by pressing "RESET".

8 Maintenance

⚠️ WARNING
Electrical voltage
Risk of serious or fatal injury
- Make sure the device is de-energized before you open it.
Liquiline SystemCAT810

Maintenance

⚠️ CAUTION
Risk of injury/infection from escaping medium or uncleaned filters
- Before carrying out any maintenance work, ensure that the automatic cleaning function is deactivated.
- Before carrying out any maintenance work, ensure that the sample line is depressurized, empty, and flushed.
- Clean the filter immediately after a sample has been taken; only store cleaned filters.

8.1 Cleaning

⚠️ CAUTION
Risk of injury from cleaning solutions
- Wear protective gloves, protective goggles and protective clothing.
- When disposing of unused cleaning solutions, observe local regulations.

NOTICE
Cleaning agents not permitted
Damage to the plastic surfaces
- Never use concentrated mineral acids or alkaline solutions for cleaning.
- Never use organic cleaners such as acetone, benzyl alcohol, methanol, methylene chloride, xylene or concentrated glycerol cleaner.
- Never use high-pressure steam for cleaning purposes.

8.1.1 Cleaning agent
The choice of cleaning agent depends on the degree and type of contamination. The most common types of contamination and the appropriate cleaning agents can be found in the following table.

<table>
<thead>
<tr>
<th>Type of soiling</th>
<th>Cleaning agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greases and oils</td>
<td>CY820 alkaline cleaning solution</td>
</tr>
<tr>
<td>Limescale deposits, metal hydroxide buildup</td>
<td>CY820 acidic cleaning solution</td>
</tr>
<tr>
<td>Protein buildup</td>
<td>CY820 acidic cleaning solution</td>
</tr>
<tr>
<td>Fibers, suspended substances</td>
<td>CY820 alkaline cleaning solution</td>
</tr>
<tr>
<td>Light biological buildup</td>
<td>CY820 oxidizing cleaning solution</td>
</tr>
<tr>
<td>Antisoluble biological buildup</td>
<td>CY820 oxidizing cleaning solution, then CY820 acidic cleaning solution</td>
</tr>
</tbody>
</table>

8.1.2 Cleaning parts in contact with medium
For stable and safe sampling, the parts of the sample preparation system that come into contact with media must be cleaned regularly. The frequency and intensity of the cleaning process depend on the medium. A typical filter cleaning interval for discharge applications, for example, is 8 weeks.

1. Remove light soiling with suitable cleaning solutions (see section "Cleaning agents").
2. High levels of contamination are removed using a soft brush and a suitable cleaning agent.

3. For very persistent dirt, soak the parts in a cleaning solution. Then clean the parts with a brush.

9 Repairs

⚠️ CAUTION
Danger resulting from improper repair
- Following all repair and maintenance work, suitable measures must be taken to ensure that the sample preparation system is leak-tight. Once the work is complete, the sample preparation system must once again meet the specifications in the technical data. Replace all other damaged components immediately.

9.1 Spare parts

Contact your Endress+Hauser Service Department if you have any questions about the spare parts.

Detailed information on the spare parts kits is available from the "Spare Part Finding Tool" on the internet at: [www.products.endress.com/spareparts_consumables](http://www.products.endress.com/spareparts_consumables)

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description and contents</th>
<th>Order number Spare parts kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>209</td>
<td>CAT8xx kit: filter O-ring set (20 x)</td>
<td>71222206</td>
</tr>
<tr>
<td></td>
<td>Kit instructions: CAT8xx filter</td>
<td></td>
</tr>
<tr>
<td>213</td>
<td>Kit CAT8xx: 10 x hose conn. 90°</td>
<td>71222214</td>
</tr>
<tr>
<td></td>
<td>Kit instructions: CA8x / CAT8xx hose connection</td>
<td></td>
</tr>
<tr>
<td>214</td>
<td>Kit CAT8xx: 10 x hose conn. G1/4&quot;</td>
<td>71222216</td>
</tr>
<tr>
<td></td>
<td>Kit instructions: CA8x / CAT8xx hose connection</td>
<td></td>
</tr>
<tr>
<td>219</td>
<td>CAT8xx kit: PTFE hose, transparent, 5m</td>
<td>71222222</td>
</tr>
<tr>
<td></td>
<td>Kit instructions: CAT820 / 860, electronics compartment</td>
<td></td>
</tr>
<tr>
<td>232</td>
<td>CAT810 kit: cleaning valve, 230 V</td>
<td>71222225</td>
</tr>
<tr>
<td></td>
<td>Kit instructions: CAT810</td>
<td></td>
</tr>
<tr>
<td>233</td>
<td>CAT810 kit: cleaning valve, 115 V</td>
<td>71222226</td>
</tr>
<tr>
<td></td>
<td>Kit instructions: CAT810</td>
<td></td>
</tr>
<tr>
<td>234</td>
<td>CAT810 kit: gauze filter holder, PVC</td>
<td>71222228</td>
</tr>
<tr>
<td></td>
<td>Kit instructions: CAT810</td>
<td></td>
</tr>
<tr>
<td>236</td>
<td>Kit CAT810: 10 hose conn. G1/4&quot;, 90°</td>
<td>71222236</td>
</tr>
<tr>
<td></td>
<td>Kit instructions: CAT810</td>
<td></td>
</tr>
<tr>
<td>237</td>
<td>CAT810 kit: control relay, 100-240 V AC</td>
<td>71235287</td>
</tr>
<tr>
<td></td>
<td>Kit instructions: CAT810</td>
<td></td>
</tr>
</tbody>
</table>
### 10 Accessories

The following are the most important accessories available at the time this documentation was issued. For accessories not listed here, please contact your service or sales office.

- **CAT810 kit: inlet pipe with cock, basic, panel**  
  Order No. 71251165
- **CAT810 kit: inlet pipe without cock, basic, panel**  
  Order No. 71251167
- **CAT810 kit: vent valve, base, basic, panel**  
  Order No. 71251168

---

### 9.2 Return

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

To ensure swift, safe and professional device returns, please read the return procedures and conditions at [www.endress.com/support/return-material](http://www.endress.com/support/return-material).

### 9.3 Disposal

The device contains electronic components and must therefore be disposed of in accordance with regulations on the disposal of electronic waste.

Observe the local regulations.

> **Always dispose of batteries in accordance with local regulations on battery disposal.**

---

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description and contents</th>
<th>Order number Spare parts kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>238</td>
<td>CAT810/820 kit: PU hose, 4 mm, black, 5m</td>
<td>71235288</td>
</tr>
<tr>
<td></td>
<td>Kit instructions: CAT810</td>
<td></td>
</tr>
<tr>
<td>239</td>
<td>CAT810 kit: sieve filter 50 µm, complete</td>
<td>71242664</td>
</tr>
<tr>
<td></td>
<td>Kit instructions: CAT810</td>
<td></td>
</tr>
<tr>
<td>251</td>
<td>CAT8xx kit: compressor 230 V</td>
<td>71249987</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maintenance kit</th>
<th>Order number Spare parts kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAT810 kit: 3 year maintenance</td>
<td>71242670</td>
</tr>
</tbody>
</table>
11  Technical data

11.1  Power supply

11.1.1  Electrical connection of optional cleaning valve
See the "Electrical connection" section

11.1.2  Supply voltage
- 100 to 120 V AC / 200 to 240 V AC
- 50 or 60 Hz

**NOTICE**
The device does not have a power switch
- The customer must provide a protected circuit breaker in the vicinity of the device.
- The circuit breaker must be a switch or power switch, and you must label it as the circuit breaker for the device.

11.1.3  Power consumption of optional cleaning valve
Max. 30 VA

11.2  Performance characteristics

11.2.1  Sampling methods
Depending on version:
- Program-controlled (Liquiline System CA80 control unit)
- Time-controlled
11.3 Environment

11.3.1 Ambient temperature range
+5 to +40 °C (41 to 104 °F)

11.3.2 Storage temperature
-20 to +60 °C (-4 to 140 °F)

11.3.3 Humidity
10 to 95%, not condensing

11.3.4 Degree of protection
IP65

11.3.5 Electromagnetic compatibility
Interference emission and interference immunity as per EN 61326-1:2006, class A for industrial sectors

11.3.6 Electrical safety
IEC 61010-1, Class I equipment
Low voltage: overvoltage category II
Environment < 2000 m (< 6562 ft) above MSL

11.3.7 Degree of contamination
The product is suitable for pollution degree 2.

11.4 Process

11.4.1 Sample temperature
4 to 40 °C (39 to 104 °F)

11.4.2 Process pressure
1.5 to 4.0 bar (21.76 to 58.01 psi)

11.4.3 Pressure for optional automatic cleaning
2.0 to 5.0 bar (29.0 to 72.5 psi); but at least 0.5 bar (7.3 psi) > process pressure

11.5 Mechanical construction

11.5.1 Dimensions
--> "Installation" section
11.5.2 Weight

<table>
<thead>
<tr>
<th>Order version</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic version</td>
<td>1 kg (2.2 lbs)</td>
</tr>
<tr>
<td>Installed on a mounting plate</td>
<td>4 kg (8.8 lbs)</td>
</tr>
<tr>
<td>Installed on a mounting plate, time control for cleaning valve</td>
<td>6 kg (13.2 lbs)</td>
</tr>
<tr>
<td>Prepared for a CA80 analyzer stand</td>
<td>2 kg (4.4 lbs)</td>
</tr>
</tbody>
</table>

11.5.3 Materials

<table>
<thead>
<tr>
<th>Parts not in contact with medium</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting plate</td>
<td>PVC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parts in contact with medium</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipes</td>
<td>PVC</td>
</tr>
<tr>
<td>Cleaning valve</td>
<td>PP</td>
</tr>
<tr>
<td>Seal</td>
<td>EPDM</td>
</tr>
<tr>
<td>Drain valve</td>
<td>PVC</td>
</tr>
<tr>
<td>Glue</td>
<td>Tangit</td>
</tr>
<tr>
<td>Vent valve</td>
<td>PVC</td>
</tr>
</tbody>
</table>
Index

A
Accessories ........................................ 23
Adhesive sleeves
   Installation ........................................ 15
B
Baffle plates ....................................... 15
Basic version
   Installation ........................................ 14
C
Check
   Installation ....................................... 16
Cleaning agent ..................................... 21
Cleaning valve ..................................... 16
Compressed air connection
   external ............................................ 16
Connection
   Electrical ......................................... 17
D
Declaration of Conformity ...................... 11
Description
   Product ............................................ 7
Designated use .................................... 6
Dimensions ....................................... 12
Disposal .......................................... 23
Document
   Function .......................................... 4
   Document function .............................. 4
E
Electrical connection ................................ 17
F
Flushing duration
   Setting ............................................ 20
I
Incoming acceptance ............................. 10
Installation
   Adhesive sleeves ................................. 15
   Basic version .................................... 14
   Check ............................................. 16
   in the analyzer stand ......................... 14
   pre-installed mounting plate ................ 14
Sample preparation ............................. 14
Installation conditions ....................... 12
M
Maintenance ....................................... 20
Mounting plate .................................... 13
N
Nameplate .......................................... 10
O
Occupational safety ............................. 6
Operation ........................................... 17
Operational safety ............................... 6
Orientation ......................................... 14
P
Performance characteristics ................... 24
Power consumption ................................ 24
Process connections .............................. 15
Product description .............................. 7
Product identification ......................... 10
Product safety .................................... 7
Programming
   default parameters ............................. 19
R
Repairs .............................................. 22
Requirements for personnel .................... 6
Return .............................................. 23
Rinsing interval
   Setting ............................................ 20
S
Safety
   Occupational safety ............................ 6
   Operation ........................................ 6
   Product ........................................... 7
Safety instructions .............................. 6
Sample preparation
   Installation ....................................... 14
Scope of delivery ................................ 11
setup
   Time-controlled version ...................... 18
   Version with cleaning valve ................... 18
Spare parts ........................................ 22
Index

State of the art ................................ 7
Supply voltage .............................. 24
Symbols .................................... 4, 5

T
Technical data
  Environment ................................ 25
  Mechanical construction ................. 25
  Power supply ............................. 24
  Process .................................. 25
Technical personnel ....................... 6

U
Use
  Designated .............................. 6

W
Warnings ................................. 4
Water connection
  External ............................... 16