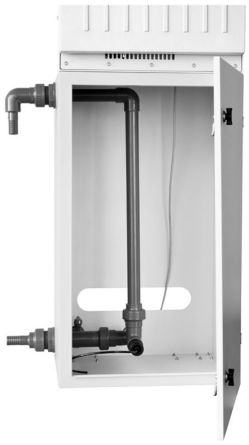
Technical Information
Liquiline System CAT810

Control of sample preparation by the Liquiline System CA80 or a time control system



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

Application

Liquiline System CAT810 enables the fully automatic collection and filtration of aqueous samples. Thanks to the modular concept, the sample preparation system can be adapted to various different process conditions. There are various order options available for this purpose. The sample preparation system can be optionally installed on a mounting plate or in the analyzer stand of a CA80 analyzer.

The device is designed for use in the following applications:
- Secondary clarification of communal and industrial purification plants
- Collection of aqueous samples from industrial processes

Your benefits

- Robust and reliable:
  Optional water or compressed air backflushing function for the filter
- Simple and user-friendly:
  - Control via a CA80 analyzer
  - Alternatively via a time control function
- Cleaning and maintenance:
  Removal of filter without using tools
- Flexible:
  - Modular filter system
  - Accessories for a range of installation conditions

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Function and system design

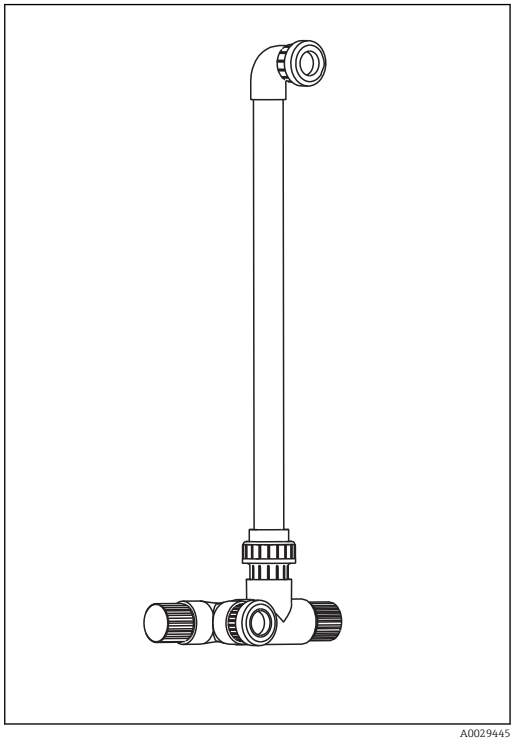
Function

TheLiquiline System CAT810 enables the fully automatic collection and filtration of aqueous samples. The static and dynamic pressure in the process bypass cause the sample to pass through the filter. The filtrate line is connected to the collecting vessel of the downstream analyzer.

Measuring system

A complete sample conditioning system comprises:
Liquiline System CAT810 including filter, with the following depending on the version:
- Cleaning valve
- Vent valve
- Drain valve
- Mounting plate
- Sample hose to analyzer

Installation examples



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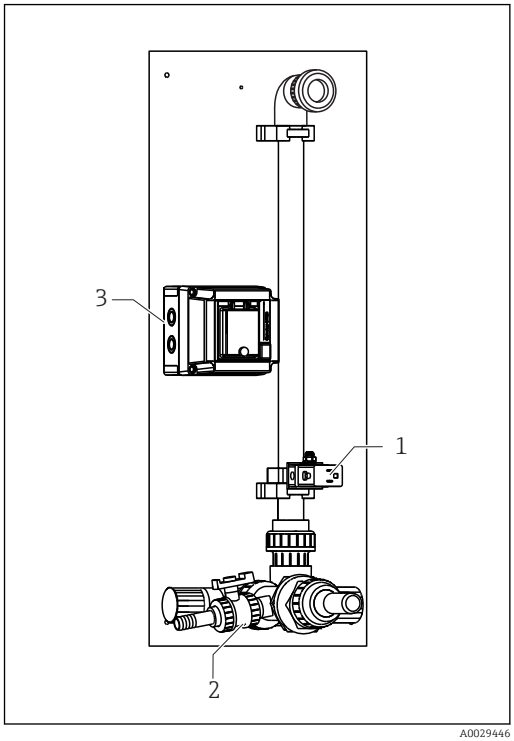
1 CAT810, basic version



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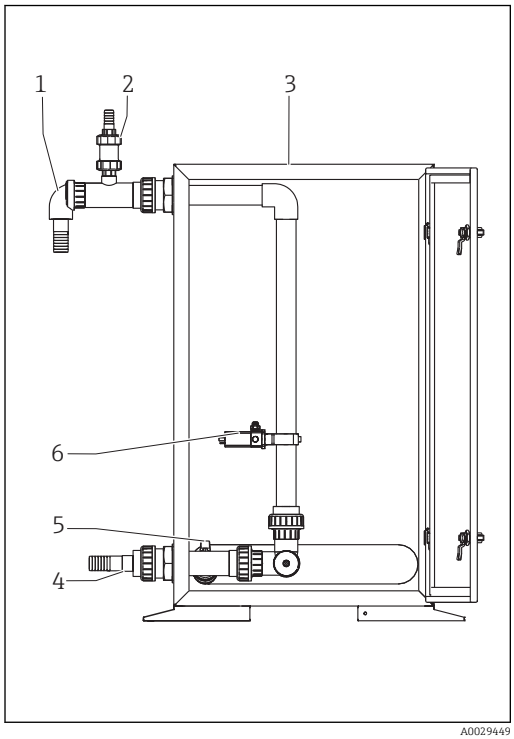
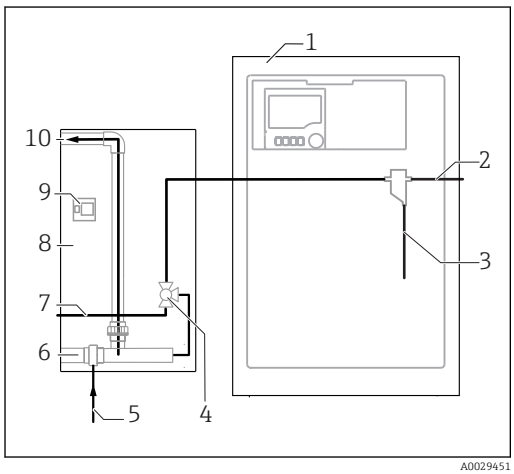
2 CAT810 installed on a mounting plate with cleaning valve and drain valve as optional extras

1 Cleaning valve
2 Drain valve
3 Time control system



3 CAT810 installed in the tower housing with cleaning valve, drain valve and vent valve

1 *Outlet*
2 *Vent valve*
3 *Analyzer stand*
4 *Inlet*
5 *Drain valve*
6 *Cleaning valve*



4 Liquiline System CAT810 with cleaning valve connected to Liquiline System CA80

1 *Liquiline System CA80*
2 *Sample collecting vessel overflow*
3 *Sample*
4 *Cleaning valve*
5 *Inlet pipe for pressurized sample*
6 *Filter unit*
7 *Purge connection (compressed air or water)*
8 *Liquiline System CAT810*
9 *Time control system (optional)*
10 *Overflow*

Functioning with control via Liquiline System CA80 analyzer	The Liquiline System CAT810 sample preparation system enables automatic filter backflushing and the configuration of different backflush intervals, controlled via the Liquiline System CA80. All media-bearing parts can be removed and cleaned without tools.
Functioning with time control system	The time-controlled Liquiline System CAT810 sample preparation system enables the configuration of different backflush intervals. All parts in contact with medium can be removed without tools and cleaned.

Communication and data processing

Controller

The Liquiline System CAT810 sample preparation system is controlled by a Liquiline System CA80. The sample preparation system is configured using the display and operating elements of the analyzer.

Version with time control function:
The time control function makes it possible to set the cleaning time and the cleaning interval.

Dependability

Reliability thanks to Memosens technology

Memosens

Memosens makes your measuring point safer and more reliable:

- Non-contact, digital signal transmission enables optimum galvanic isolation
- Completely watertight
- Sensor can be calibrated in a lab, thus increasing the availability of the measuring point in the process
- Intrinsically safe electronics mean operation in hazardous areas is not a problem.
- Predictive maintenance thanks to recording of sensor data, e.g.:
  - Total hours of operation
  - Hours of operation with very high or very low measured values
  - Hours of operation at high temperatures
  - Number of steam sterilizations
  - Sensor condition

Maintainability	**Modular design** The sample preparation system can be adapted to suit your needs: ▪ Retrofitting the cleaning valve ▪ Retrofitting the vent valve

Power supply

Electrical connection of the optional cleaning valve	--> For detailed wiring diagram, see Operating Instructions for the Liquiline System CAT810
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.
Power consumption of optional cleaning valve	Max. 30 VA

Performance characteristics

Sampling methods

Depending on version:
- Program-controlled (Liquiline System CA80 control unit)
- Time-controlled

Installation

Installation instructions

Mounting conditions

Correct
The inlet pipe (6) must be routed with a downward gradient to the sampling point.

Incorrect
The inlet pipe (6) must never be routed with an upward gradient to the sampling point.

Note the following when erecting the device:
- Make sure that the fluid can drain freely, or use the optional vent valve
- Installation in a horizontal pipe is advisable.
- Do not install in a vertical pipe
- Avoid siphoning effects in the sample line.

Environment

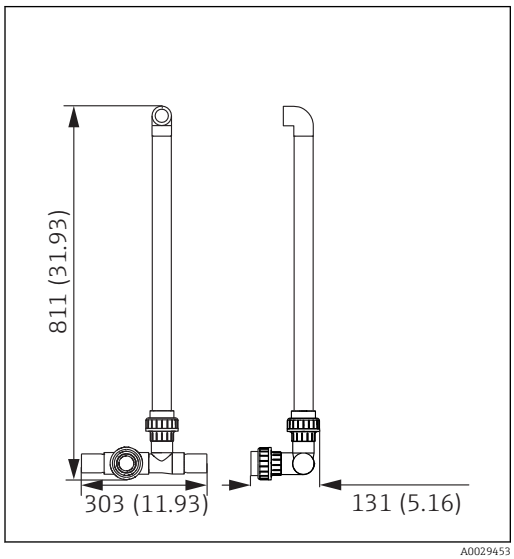
Ambient temperature range	+5 to +40 °C (41 to 104 °F)
Storage temperature	-20 to +60 °C (-4 to 140 °F)
Humidity	10 to 95%, not condensing
Degree of protection	IP65
Electromagnetic compatibility	Interference emission and interference immunity as per EN 61326-1:2006, class A for industrial sectors
Electrical safety	IEC 61010-1, Class I equipment Low voltage: overvoltage category II Environment < 2000 m (< 6562 ft) above MSL
Degree of contamination	The product is suitable for pollution degree 2.

Process

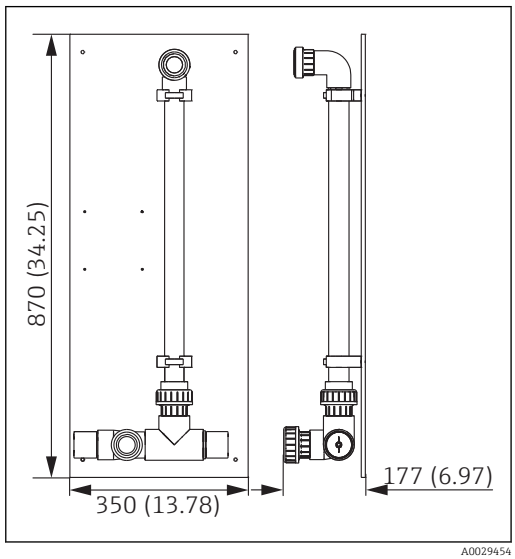
Sample temperature	4 to 40 °C (39 to 104 °F)
Process pressure	1.5 to 4.0 bar (21.76 to 58.01 psi)
Pressure for optional automatic cleaning	2.0 to 5.0 bar (29.0 to 72.5 psi); but at least 0.5 bar (7.3 psi) > process pressure
Process connection	The sample preparation system is designed for mounting on 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°

Mechanical construction

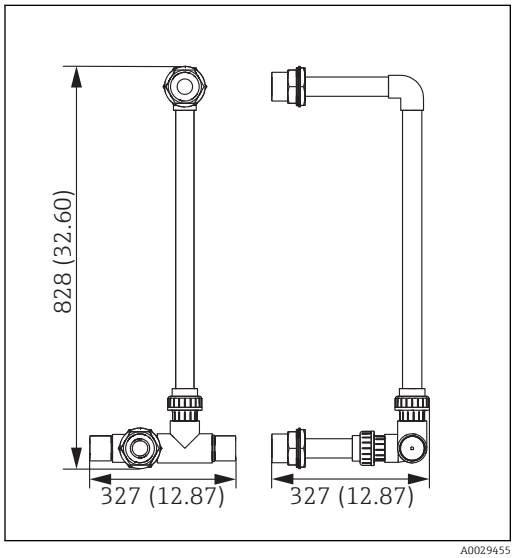
Dimensions



5 *CAT810 basic version, dimensions in mm (in)*



6 *CAT810 version with mounting plate, dimensions in mm (in)*



7 *CAT810 version for analyzer stand, dimensions in mm (in)*

Weight

Order version	Weight
Basic version	1 kg (2.2 lbs)
Installed on a mounting plate	4 kg (8.8 lbs)
Installed on a mounting plate, time control for cleaning valve	6 kg (13.2 lbs)
Prepared for a CA80 analyzer stand	2 kg (4.4 lbs)

Materials

Parts not in contact with medium	
Mounting plate	PVC

Parts in contact with medium	
Pipes	PVC
Cleaning valve Seal	PP EPDM
Drain valve	PVC
Glue	Tangit
Vent valve	PVC

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.

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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.

Ordering information

Product page

www.endress.com/cat810

Product Configurator

On the product page there is a "Configuration" button to the right of the product image.

1. Click this button.
   ↳ The Configurator opens in a separate window.
2. Select all the options to configure the device in line with your requirements.
   ↳ In this way, you receive a valid and complete order code for the device.
3. Export the order code as a PDF or Excel file. To do so, click the appropriate button on the right above the selection window.

For many products you also have the option of downloading CAD or 2D drawings of the selected product version. To do so, click the "CAD" tab and select the desired file type using drop-down lists.

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

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.

Cleaning valve
- 200 to 240 V AC, 50/60 Hz
- Order No. 71222748

Cleaning valve
- 100 to 120 V AC, 50/60 Hz
- Order No. 71223912

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

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