



Special Documentation

Liquiline System CA82HA analyzer

Maintenance booklet for hardness (CaCO_3) single parameter analyzers

Introduction

Note the maintenance instructions in the Operating Instructions for the analyzer. Only a properly maintained analyzer guarantees reliable measurement results. Documenting all the work carried out provides assurance both to the manufacturer in the case of warranty claims and to other departments and authorities.

Commissioning

Commissioning of the analyzer must be carried out by Endress+Hauser specialist staff.

Maintenance

Maintenance work on the analyzer can be carried out by Endress+Hauser specialist staff or by trained user personnel. For optimal maintenance of the analyzer, Endress+Hauser recommends signing a maintenance contract. Further information regarding maintenance contracts is available from your Endress+Hauser sales organization.

Measuring point and commissioning data**Customer data**

Customer	
Address	
Contact	
Site of operation	
Measuring point/TAG no.	


Device data

Order code	
Extended order code	
Serial number	
Function codes	

Commissioning data

Name	
Company	
Date	
Signature	

Maintenance information

Maintenance measures and maintenance intervals depend on many factors; for example, device type (parameters), measuring interval, ambient temperature, device version (1-, 2-, 4-, or 6-channel version). A general maintenance manual is therefore not possible. Please refer to the Operating Instructions for the CA82HA analyzer for the maintenance measures that are currently required (E+H Operating Instructions BA02427C/07/EN). You will find information on the standard maintenance intervals on →  11 in this manual.

CAV800 maintenance kit for Liquiline System CA8x

The contents of the maintenance kit depend on the version of the analyzer.

The maintenance materials are ordered using the **CAV800-R1....** product structure.

The CAV800 maintenance kit contains all the necessary parts for the selected analyzer and the selected maintenance period (see the product structure), for example:

- Dispensers
- Hoses
- Hose connectors
- Cuvette

Product structure for CAV800 maintenance kit:

		Device, parameter			
	R1	CaCO ₃ , CA82HA, 0...2.5 mg/l			
		Annual kit, quantity			
		1	1 kit (for 1 year maintenance)		
		2	2 kits (for 2 years maintenance or 2 devices/1 year)		
		3	3 kits (for 3 years maintenance or 3 devices/1 year)		
		Number of sampling points			
			1	1 sampling point	
			2	2 sampling points	
			4	4 sampling points	
			6	6 sampling points	
			Enclosed accessories		
				PP	Capillaries
				PQ	Magnetic stir bar (2x)
				PR	Pump head, excluding motor
CAV800-	R1				Complete order code

Consumables are not included in the CAV800 maintenance kit, please order separately:

- Order reagents using the product structure CY82HA-R1+SB.
- Order standard solutions using the product structure CY82HA-R1+Tx (x = concentration).
- Zero solution can be ordered using the product structure CY82HA-R1+TB (TB = zero solution).

Documentation of maintenance work

The work must be documented separately since the various maintenance measures are carried out at different times.

- **Regular, six-monthly and annual maintenance operations according to the Operating Instructions:**
Confirm regular six-monthly and annual maintenance on pages 5 - 7. Annual maintenance includes six-monthly maintenance.
- **Needs-based maintenance depending on chemical consumption and component wear:** Confirm needs-based maintenance on pages 8 - 9.
- **Other measures, such as SW update, device modifications, repair:**
Document unscheduled measures on page 10.

- **Shelf life of consumables and operating life of maintenance material:**
An overview of shelf lives and operating lives are provided on page 11.
- **Confirmation of decommissioning of the measuring point:**
Document decommissioning on page 20.
- **Is a new maintenance booklet required for the CA82HA?**
A new maintenance booklet can be obtained either from the Endress+Hauser service department or by downloading it from the spare parts search tool, stating the product root CA82HA, the complete order code or the serial number of the device (printout as a brochure in A4 format required):



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<https://sft-p.cdn.endress.com/>

Maintenance work without documentation

Zero adjustment must be carried out for the CA82HA-R1 on completion of commissioning, see the table. Failure to do so could lead to measurement errors.

Documentation of zero adjustment is not necessary. Zero adjustment is described in the Operating Instructions for the CA82HA device.

Parameter	Zero solution	Zero adjustment		
		Not required	After commissioning, after every reagent replacement, after maintenance and repair	Monthly
CA82HA-R1	CY82HA-R1+TB	-	X	-

Proof of regular maintenance**Six-monthly maintenance performed according to the instructions in the Operating Instructions**

Date	
Name	
Signature	

Annual maintenance performed according to the instructions in the Operating Instructions

Date	
Name	
Signature	

Six-monthly maintenance performed according to the instructions in the Operating Instructions

Date	
Name	
Signature	

Annual maintenance performed according to the instructions in the Operating Instructions

Date	
Name	
Signature	

Six-monthly maintenance performed according to the instructions in the Operating Instructions

Date	
Name	
Signature	

Annual maintenance performed according to the instructions in the Operating Instructions

Date	
Name	
Signature	

Six-monthly maintenance performed according to the instructions in the Operating Instructions

Date	
Name	
Signature	

Annual maintenance performed according to the instructions in the Operating Instructions

Date	
Name	
Signature	

Six-monthly maintenance performed according to the instructions in the Operating Instructions

Date	
Name	
Signature	

Annual maintenance performed according to the instructions in the Operating Instructions

Date	
Name	
Signature	

Six-monthly maintenance performed according to the instructions in the Operating Instructions

Date	
Name	
Signature	

Annual maintenance performed according to the instructions in the Operating Instructions

Date	
Name	
Signature	

Six-monthly maintenance performed according to the instructions in the Operating Instructions

Date	
Name	
Signature	

Annual maintenance performed according to the instructions in the Operating Instructions

Date	
Name	
Signature	

Six-monthly maintenance performed according to the instructions in the Operating Instructions

Date	
Name	
Signature	

Annual maintenance performed according to the instructions in the Operating Instructions

Date	
Name	
Signature	

Proof of needs-based maintenance: reagents



Note on completing the table:

Please do **not** use an "OK" sign (✓), but confirm the relevant fields with **"EH"** if the reagents were ordered **directly** from Endress+Hauser sales.

Confirm the relevant fields with “FA” for deliveries from third-party suppliers, **even if the reagents are labeled “Endress +Hauser” or “E+H”!**

[illegible]

[illegible]

Proof of other measures (SW update, device modification, repair etc.)

Company and name	Abbreviation	Date	Description of measures

Overview of shelf life of consumables and range

CA82HA	Reagent RB, RK, RN				Standard S1		
	Order code	Shelf life of new reagents	Shelf life of RN after mixing ¹⁾	Theoretical range with 1 bottle ²⁾	Order code	Shelf life of new standards	Theoretical range with 1 bottle
	CY82HA-R1+SB	6 months	3 months	68 days	CY82HA-R1+Tx	6 months	68 days

1) Minimum shelf life

2) For measuring interval of 4 days (calibration interval 96 h)

Overview of maintenance material operating life

The operating life of the components depends on the operating conditions. These lifetimes are based on the factory settings (measuring interval of 10 minutes and calibration interval of 48h) and determine the standard maintenance intervals. Specific operating conditions can change the operating life of the components. In this case, the maintenance intervals must be adapted.

CA82HA	Dispenser 2.5 ml		Dispenser holder		Hose connector	
	Order code	Operating life	Order code	Operating life	Order code	Operating life
	CAV800-R1xx	6 months	CAV800-R1xx	6 months	CAV800-R1xx	6 months
	Cuvette				Hoses	
	Order code	Operating life			Order code	Operating life
	CAV800-R1xx	6 to 12 months Visual inspection for cracks every 6 months, replace in case of damage			CAV800-R1xx	1 year

Proof of decommissioning

Decommissioning is carried out according to the instructions in the Operating Instructions. All chemicals are disposed of in accordance with requirements. Electrical cables are removed and/or protected against contact.

Company
Name
Date
Signature
Final disposition of the device
Comments