

Installation Instructions

Liquiline System CA80TN

analyzer

Maintenance kit CAV880-SX



Table of contents

1 Overview 3

2 Intended use 7

3 Personnel authorized to carry out conversion 8

4 Safety instructions 8

5 Scope of delivery 10

6 Notes on maintenance work 14

7 Additional documentation 15

8 Disposal 16

1 Overview

1.1 Product structure

	Parameter				
	SX	TN total nitrogen			
		Measuring range			
		S5	0 to 10 mg/l Total nitrogen		
		S6	0 to 50 mg/l Total nitrogen		
		S7	0 to 200 mg/l Total nitrogen		
			Annual kit, number of years		
			1	1 year	
				Enclosed accessories	
				R2	PTFE hose
				RB	Reactor O-rings
				RC	Hose connector
				RD	Foam rubber seal
CAV880-	SX	Sx	1	Rx	Complete order code

1.2 Overview of CA80TN (total nitrogen)

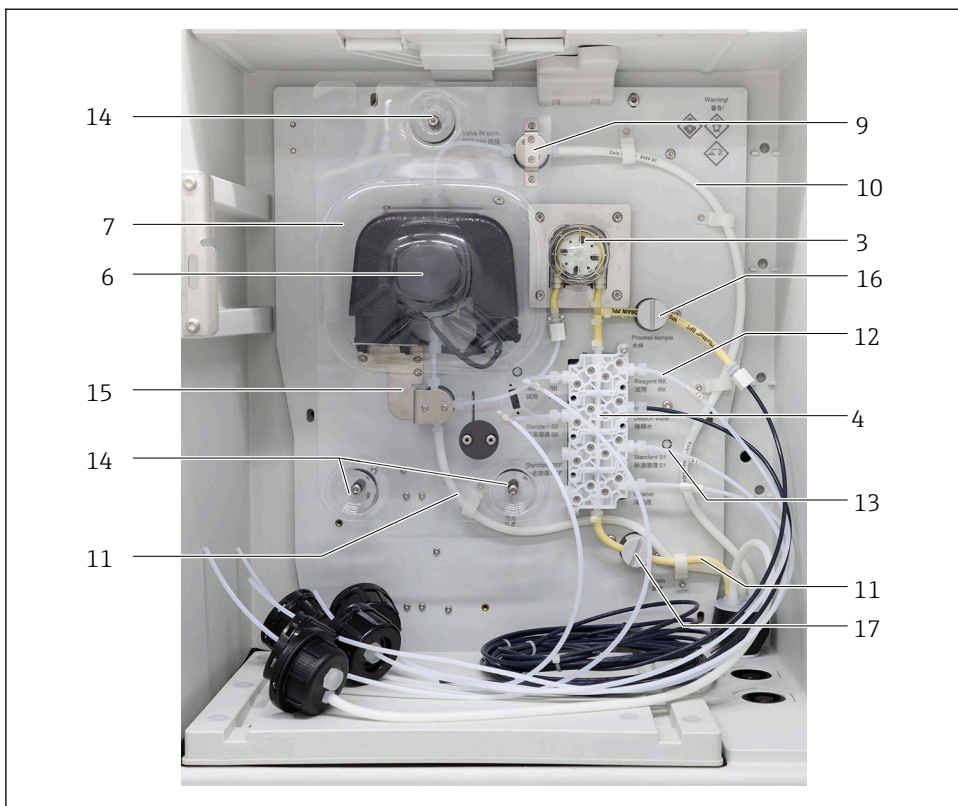
The figures below show an overview of the CA80TN for the photometric measurement of the total nitrogen.



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 1 CA80TN assembly overview

- 1 Electronics compartment cover
- 2 Carrier plate
- 3 Peristaltic pump
- 4 Valve block for reagent dosing
- 5 Bottle tray for reagents, sample + standard
- 6 Reactor (behind protective cover)
- 7 Protective cover
- 8 Measuring and control device

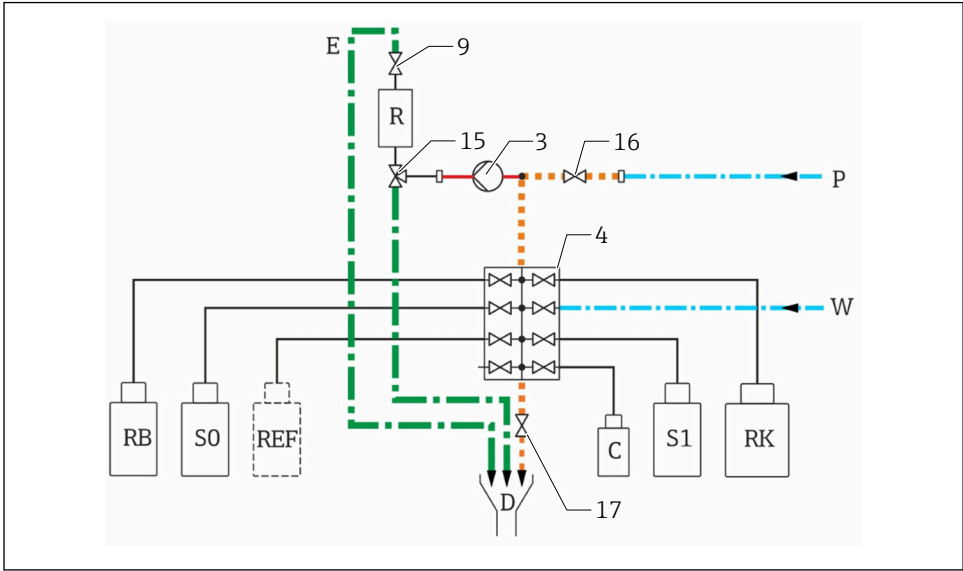


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2 CA80TN carrier plate

- 9 Vent valve
- 10 Ventilation hose
- 11 Drain hoses
- 12 Sample hose
- 13 Dilution water hose
- 14 Screws of protective cover
- 15 Reactor valve
- 16 Sample valve
- 17 Drain valve

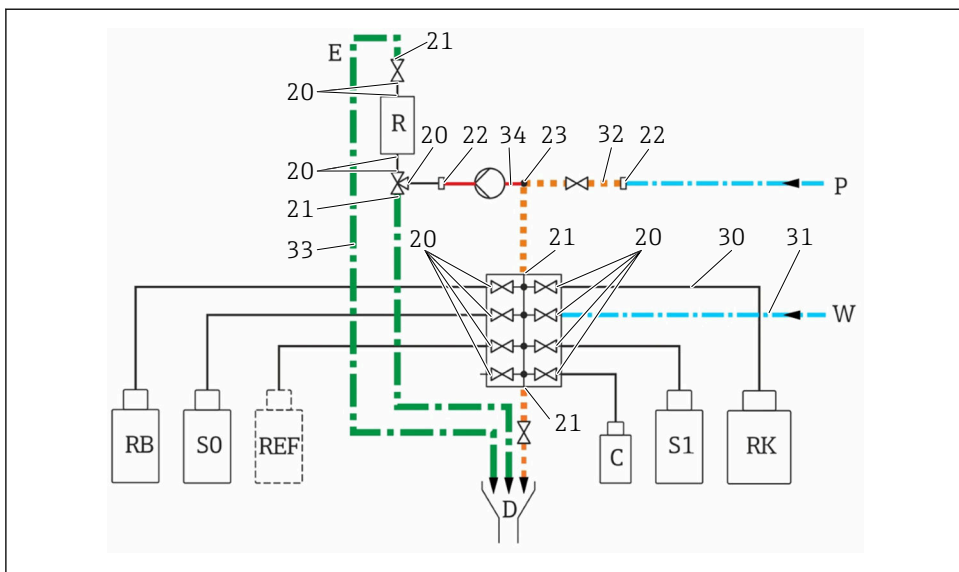
1.3 Overview plan and hose system



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3 CA80TN layout

- 3 Peristaltic pump
- 4 Valve block for reagent dosing
- 9 Vent valve
- 15 Reactor valve
- 16 Sample valve
- 17 Drain valve
- R Reactor
- E Vent
- P Sample
- W Dilution water
- S0 Standard S0
- S1 Standard S1
- RB Reagent RB
- RK Reagent RK
- REF CA80TN-HRxxxx only
- D Drain
- C Cleaner



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4 Hose system, hose connectors and chemicals

- 20 1/4"-28 UNF fitting for hose ID 1.6 mm with cone
- 21 1/4"-28 UNF fitting with nozzle for hose ID 3.2 mm
- 22 Hose conn. OD 3.2 to ID 3.2
- 23 T-reduction 1/8" - 3/32"
- 30 Rigid hose PTFE WT ID 1.6 (1/16") / OD 3.2 (1/8")
- 31 Rigid hose PTFE BK ID 1.6 (1/16") / OD 3.2 (1/8")
- 32 PharMed® flexible hose ID 3.2 mm (1/8")
- 33 C-Flex flexible hose WT ID 3.2 mm (1/8")
- 34 Pump hose ID 1.6 (1/16") / AD 4.8 (3/16")

2 Intended use

- The parts of the kits must only be used as spare parts for CA80TN analyzers. Any other use is not permitted!
- Use only original parts from Endress+Hauser.
- In the Device Viewer, check if the spare part is suitable for the device in question.

3 Personnel authorized to carry out conversion

- 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 perform the stated tasks.
- The electrical connection may only be established by an electrical technician.
- The technical personnel must have read and understood these Installation Instructions and must follow the instructions they contain.
- Measuring point faults may be repaired only by authorized and specially trained personnel.
- In the case of Ex-certified devices, the technical staff must also be trained in explosion protection.



Repairs not described in the Operating Instructions provided must only be carried out directly at the manufacturer's site or by the service organization.

4 Safety instructions

WARNING

Risk of death due to electric shock!

- ▶ Perform work on the device with the utmost caution, especially when the device remains fully or partially powered on during maintenance tasks.
- ▶ The analyzer has no power switch. If necessary, use the system-side circuit breaker.
- ▶ Follow the instructions in the relevant chapters of this manual, as the procedure for electrical safety depends on the service kits used.
- ▶ All work must be carried out according to applicable safety standards.
- ▶ Follow the instructions in the Operating Instructions for the device.

CAUTION

Risk to health due to contact with reagents, chemicals or process solutions!

- ▶ Wear protective gloves, protective goggles and protective clothing.
- ▶ Immediately rinse splashes with plenty of water and a 1% sodium bicarbonate solution (NaHCO_3 , baking soda).
- ▶ In case of eye contact, rinse the affected area with plenty of water and then seek medical advice. Show the relevant safety data sheet to the physician.
- ▶ Note the nationally applicable workplace safety regulations for the work area when handling toxic or corrosive chemicals.

⚠ CAUTION**Electronic assemblies are sensitive to electrostatic discharges (ESD)!**

- ▶ Before removing an assembly from the antistatic packaging, it must be discharged, e.g. at a protective ground. Continuous grounding, e.g. with an ESD wristband, is recommended.

**Potential impact on the process**

Before decommissioning an active device, the potential impact on the overall process must be taken into account! This applies in particular when using the switching contacts, the analog signal outputs or the communication interface of the associated measuring instrument to control process variables. Coordinate service tasks with the operator!



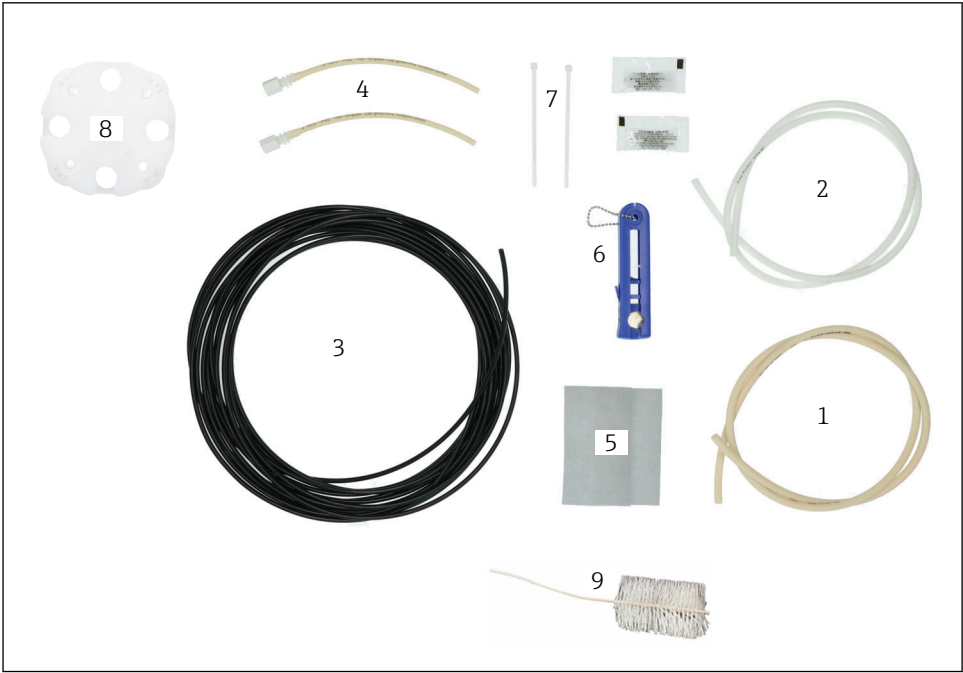
Contact Endress+Hauser Service if you have questions: www.addresses.endress.com

5 Scope of delivery

5.1 CAV880-SXSx1 = Basic maintenance kit

The kit contains the following parts →  5,  10:

1	1 m	Hose, ID 3.2, W 1.6 mm, PharMed® yellow	6	1 x	Hose cutter, SMC, TK-3, 12 mm
2	1 m	Hose, ID 3.2, W 1.6 mm, C-Flex, white	7	14 x	Cable ties T18r
3	2 x 5.5 m	Hose ID, 1.6, W 0.8 mm, PTFE black	8	1 x	Pump rotor
4	2 x	Pump hose, ID 1.6, W 1.6 mm, BPT	9	1 x	Cleaning brush, 20 mm, nylon
5	2 x	Filter mat, G2 55x95x10 mm		1 x	Kit instructions



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 5 CAV880-SXSx1 = Basic maintenance kit

5.2 Additional scope of delivery, maintenance kit: option R2 = hose PTFE

The kit contains the following parts →  6,  11:

5 m PTFE hose ID 1.6 OD 3.2 mm natural color



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 6 Kit CAV880-SXSx1 option R2, hose PTFE

5.3 Additional scope of delivery, maintenance kit: option RB = Reactor O-rings

The kit contains the following parts →  7,  12:

1	2 x	O-ring, ID 4.47, W 1.78 mm, FFKM	7	1 x	Cover, ID 15, OD 18 mm, PE SW
2	2 x	O-ring ID 19 W 1 mm FKM	8	1 x	Cover, ID 12, OD 16 mm, PE SW
3	1 x	O-ring ID 48.90 W 2.62 mm Viton	9	3 x	Cleaning cloth, 60x90 mm, isopropyl
4	2 x	O-ring ID 16 W 2 mm FFKM	10	2 x	Nitrile gloves, 0.2 mm, size M
5	4 x	Cylinder pin 3m 6x8 DIN 6325	11	2 x	Fitting with cone 1/8"
6	1 x	Cover, ID 17.3, OD 20 mm, PE SW			



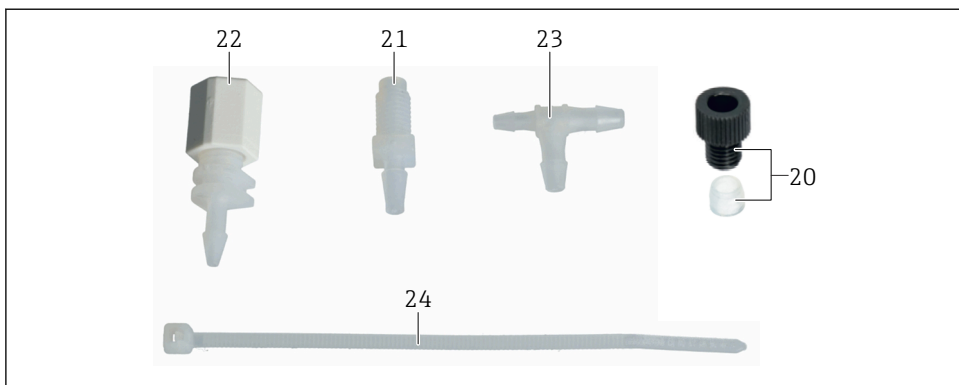
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7 Kit CAV880-SXSx1, option RB, reactor O-rings

5.4 Additional scope of delivery, maintenance kit: option RC = hose connector

The kit contains the following parts → 8, 13; the items refer to → 8, 13 and → 4, 7:

20	12 x	Fitting with cone 1/8"	23	1 x	T-section with reduction 1/8" - 3/32"
21	4 x	1/4"-28 fitting with Nozzle f. ID 3.2 mm	24	7 x	Cable ties
22	2 x	Hose connector ID 3.2 to OD 3.2 mm			



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8 Kit CAV880-SXSx1, option RC, hose connector

5.5 Additional scope of delivery, maintenance kit: option RD = foam rubber seal

The kit contains the following parts → 9, 13:

1 x Foam rubber seal

2 x Isopropyl alcohol wipes



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9 Kit CAV880-SXSx1 option RD, foam rubber seal

6 Notes on maintenance work

6.1 Description of maintenance measures



The maintenance measures are described in the operating instructions for the CA80TN analyzer.

Please carry out the maintenance work as specified in these instructions.



The replacement of the O-rings for the reactor is not described in the operating instructions, since the reactor O-rings may only be replaced by trained Endress+Hauser personnel.

The required work is therefore described in a separate set of instructions.

To arrange replacement of the reactor O-rings, please contact the responsible Endress+Hauser service center.

The replacement of hose connectors is also not described in the Operating Instructions. See →  15.



The hose in the pump rotor must be lubricated when the pump rotor is replaced.



The Pharmed hose must be lubricated when it is replaced.

6.2 Maintenance intervals

The various maintenance intervals are also explained in the Operating Instructions.

Unauthorized extension of these intervals can lead to measurement errors and voiding of the warranty.

The maintenance intervals may need to be reduced under extreme measuring conditions (cold, heat, dirt, aggressive medium, etc.).

6.3 Documentation of maintenance

All maintenance and repair work must be documented.

A maintenance booklet is enclosed with each analyzer for this purpose. Please document all work carried out on the analyzer in this booklet.

A new maintenance booklet is available from the Endress+Hauser service organization. A download is also available. Please use the following

link https://portal.endress.com/picpool/sft/advicepdfs/71303421_ca80_maintenance.pdf

6.4 Loss of warranty

If the prescribed maintenance work is not carried out or is not documented, this will result in the loss of the factory warranty.

6.5 Replacing the hose connectors

 The hose connectors are only replaced when necessary, e.g., due to embrittlement, rupture, thread damage, or leakage.

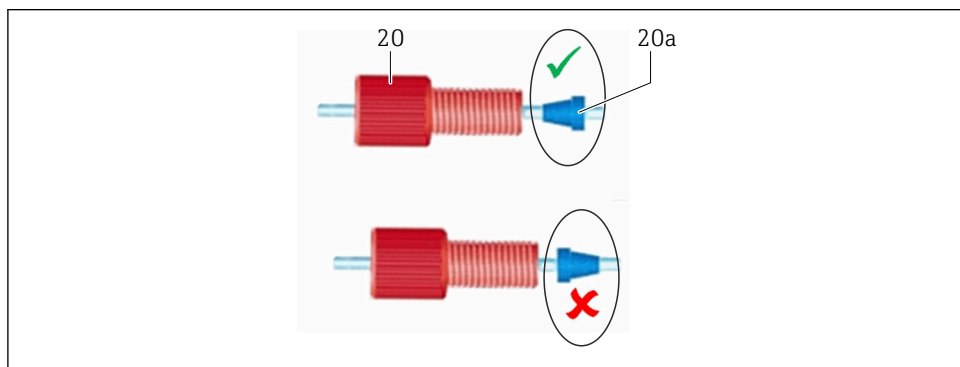
Preparatory steps and recommissioning: If the hose connectors are replaced as part of maintenance, carry out the preparatory steps and recommissioning as described in the CA80TN Operating Instructions in the "Maintenance" section.

Replacing the hose connectors: The threads of the plastic hose connectors are sensitive. Carefully tighten the connectors and union nuts; finger tight only!

The positions of the hose connectors are shown in the hose connection diagram →  4,  7.

For the $\frac{1}{8}$ " fittings with separate clamping cone, ensure the cone is installed in the correct position (→  10,  15).

For all hose connections with a hose nozzle (items 21, 22, and 23), secure the flexible hoses with cable ties.



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 10 Fitting with clamping cone

20 Fitting $\frac{1}{8}$ " short

20a Clamping cone

7 Additional documentation

Detailed information on the devices can be found in the Operating Instructions for the analyzer and in the other documentation, available at:

- www.endress.com/device-viewer
- Smartphone/tablet: Endress+Hauser Operations app

8 Disposal

 If required by the Directive 2012/19/EU on waste electrical and electronic equipment (WEEE), the product is marked with the depicted symbol in order to minimize the disposal of WEEE as unsorted municipal waste. Do not dispose of products bearing this marking as unsorted municipal waste. Instead, return them to the manufacturer for disposal under the applicable conditions.



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