



Technical Information

Liquiline Control CDC90

The smart system for automated measuring points



Application

The Liquiline Control CDC90 automates the cleaning and calibration of Memosens pH and ORP measuring points in all industries.

Your benefits

- Enhanced workplace safety for your employees: Liquiline Control CDC90 minimizes maintenance and servicing requirements – a significant advantage particularly in hard-to-reach or hazardous environments.
- With customizable cleaning and calibration intervals for up to two sensors, you can ensure a high process reliability, product quality, and optimum product yield. Blockages and soiling of the sensors are removed promptly.
- Smart media distribution and dosing guarantee reproducible calibration results and ensures reliable measured values at all times.
- Minimize operating costs by optimizing buffer and cleaning agent consumption of both measurement points. This is ensured by the sophisticated hydraulics of Liquiline Control CDC90.
- Seamless integration into your process control system thanks to certified communication standards. Analog or digital signals, as well as fieldbus systems, are supported, with options including 0/4–20 mA, PROFIBUS DP, Modbus TCP, EtherNet/IP, PROFINET, and web server technology.

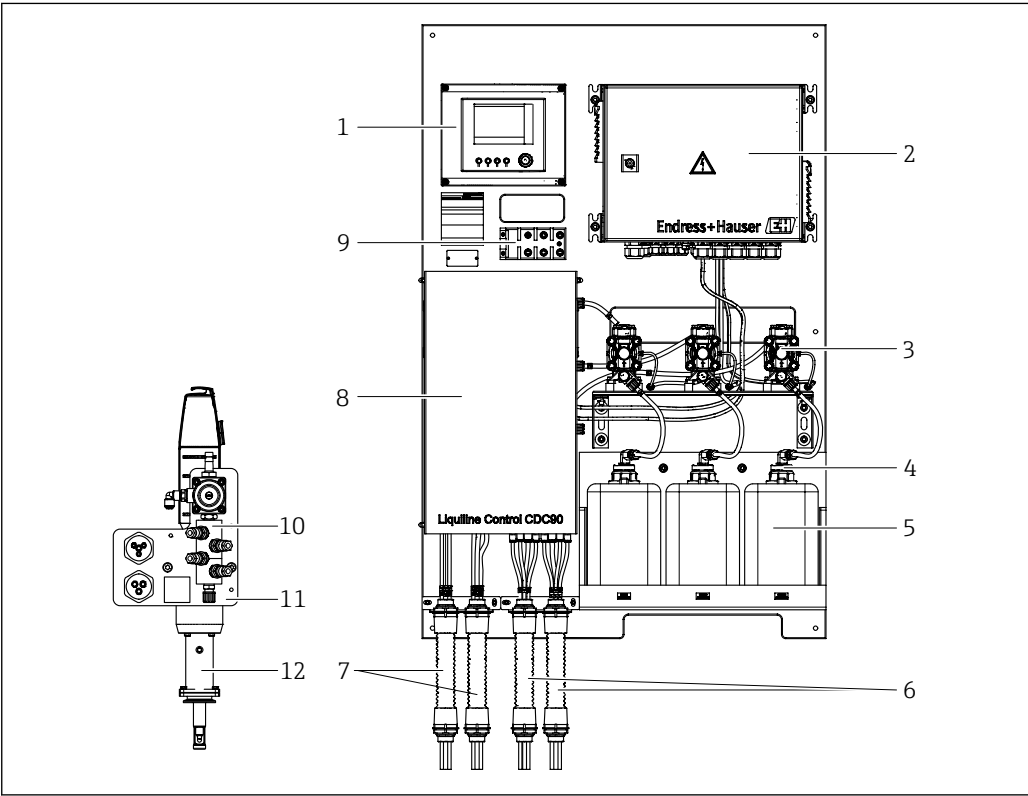
Table of contents

Function and system design	3	Operability	20
Measuring principle	3	Onsite operation	20
Measuring system	3		
Cleaning/calibration programs	3	Certificates and approvals	22
Calibrating	4		
Device architecture	4	Ordering information	23
Communication and data processing	8	Product page	23
Reliability	9	Product configurator	23
		Scope of delivery	23
Input	9		
Measured variables	9	Accessories	23
Measuring ranges	9	Assemblies	23
Types of input	9	Sensors	24
Input signal	9	Additional functionality	26
Digital sensor inputs, passive in the CDC90 control unit	10	Other accessories	26
Digital inputs, passive in the CDC90 control unit	10		
Digital inputs, passive in the pneumatic control unit	10		
Analog inputs, passive in CDC90 control unit	10		
Output	11		
Output types	11		
Analog outputs, active in CDC90 control unit	11		
Digital outputs, active in the pneumatic control unit	11		
Protocol-specific data	11		
Power supply	13		
Supply voltage	13		
Frequency	13		
Power consumption	13		
Cable specification	13		
Overvoltage protection	13		
Electrical connection	13		
Performance characteristics	14		
Response time	14		
Reference temperature	14		
Measurement error for sensor inputs	14		
Measurement error for current inputs and outputs	14		
Frequency tolerance of digital inputs and outputs	14		
Resolution of current inputs and outputs	14		
Repeatability	14		
Environment	14		
Ambient temperature range	14		
Storage temperature	14		
Relative humidity	14		
Operating height	14		
Degree of protection	14		
Climate class	14		
Electromagnetic compatibility	14		
Pollution degree	15		
Mechanical construction	16		
Dimensions	16		
Weight	17		
Materials	18		
Hose specification	18		

Function and system design

Measuring principle	The Liquiline Control CDC90 automates the cleaning and calibration of Memosens pH and ORP measuring points in all industries. It automatically cleans, calibrates, and monitors up to two sensors, thereby reducing maintenance costs, improving workplace safety in hazardous environments and increasing product yield and quality. Liquiline Control CDC90 can be easily integrated into existing plant infrastructures and allows practical remote operation of your measuring points via the control center.
---------------------	---

Measuring system	A complete measuring system comprises the following components: ■ Liquiline Control CDC90 ■ Retractable assembly (e.g. Cleanfit series) ■ pH/ ORP/combined sensor ■ Lines for compressed air, water and electrics ■ Digital measuring cable The system is available in different versions. Here is a complete overview comprising all of the system's modules.
------------------	--



A0055118

1 Overview of CDC90

1	CDC90 control unit	7	Multihoses M1/M3
2	Pneumatic control unit	8	Cover
3	Pumps	9	Ethernet switch
4	Float switch	10	Rinsing block
5	Canister for buffer solutions and cleaner	11	Rinsing block bracket
6	Multihoses M2/M4	12	Assembly (not included in delivery)

Cleaning/calibration programs	You can choose from the following cleaning and calibration options:
-------------------------------	--

Predefined programs for:

- Cleaning the sensor
- Cleaning and calibrating the sensor
- Assembly retraction in measuring and service position

All preconfigured programs can be customized to meet your specific requirements. Additionally, you can freely configure new programs to optimally tailor the device to your process. The predefined programs are used for faster configuration.

Calibrating

Calibration options

- pH glas, ISFET sensors
 - One-point calibration
 - Two-point adjustment or two-point calibration
- ORP sensors
 - One-point calibration
 - One-point adjustment

Setting the buffer solutions used allows automatic pH value calculations to be performed, depending on the temperature (temperature compensation). Buffer tables, e.g. Endress+Hauser, DIN are stored in Liquiline Control CDC90.

Device architecture

Inputs and outputs

The CDC90 control unit consists of various modules and a separate industrial PC (IPC).

The CDC90 control unit acts as a peripheral interface for signal processing. Dedicated software is used to manage automation functions for this purpose.

The control of actuators (e.g. retractable assemblies, pumps, valves), as well as the processing of signals and states, takes place within a pneumatic control unit by a pilot valve manifold.

The device is pre-configured; individual inputs and outputs can be freely configured during commissioning. Operation and configuration of the CDC90 is carried out via the CDC90 control unit. Operation and configuration can also be performed via an integrated web server.

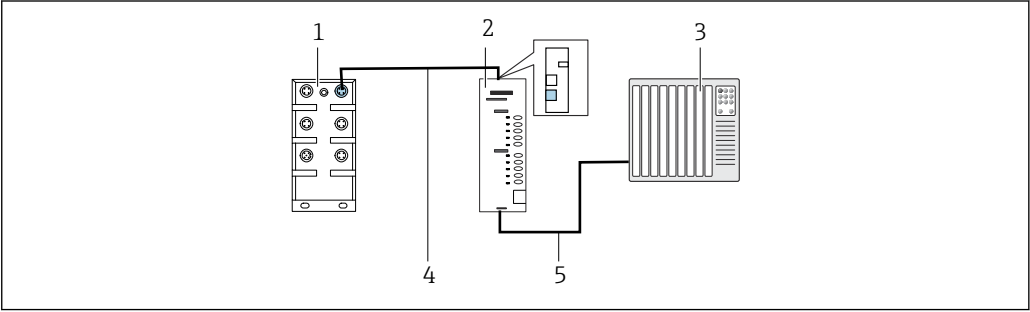
An optional gateway is available. The gateway connects a Modbus TCP network with a fieldbus network, enabling seamless information flow between the device and a control system. Only one gateway is required for a one-channel and two-channel system and is included with the order.

Wiring of external inputs and outputs, such as a flowmeter, is carried out within the pneumatic control unit.

The assignment of the inputs and outputs is provided in the following table:

	CDC90 control unit	Pneumatic control unit
Inputs		
Digital		12x0/24 VDC, passive
Analog	1 x 0/4 to 20 mA, passive, potentially isolated from one another and from the sensor inputs	
Outputs		
Digital		16x0/24 VDC, 0.5 mA per output
Analog	1 or 5 x 0/4 to 20 mA, active, galvanically isolated from each other and from the sensor circuits	
Fieldbuses		
	■ Modbus TCP ■ EtherNet/IP via Modbus TCP/ EtherNet/IP Gateway ■ PROFIBUS DP via Modbus TCP/ Profibus DP Gateway ■ PROFINET via Modbus TCP/ PROFINETGateway	

Fieldbus communication

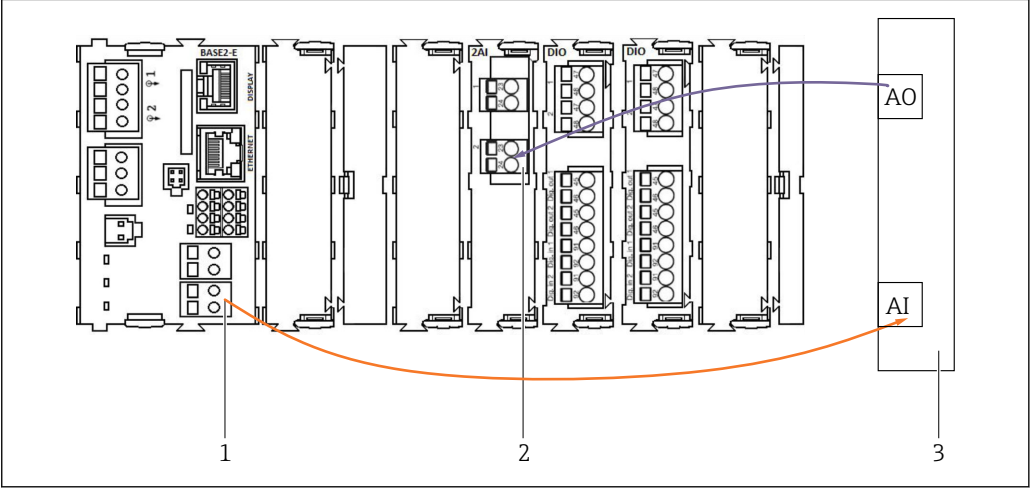


A0044818

2 Example connection for fieldbus communication with optional gateway

- 1 Ethernet switch on the CDC90
- 2 Gateway (optional for EtherNet/IP, PROFIBUS DP, Profinet)
- 3 Process control system
- 4 Ethernet cable, CDC90/gateway communication (3 m (9.8 ft) cable M12-RJ45 included in scope of supply)
- 5 Communication connection, gateway/process control system

Analog communication, external inputs and outputs

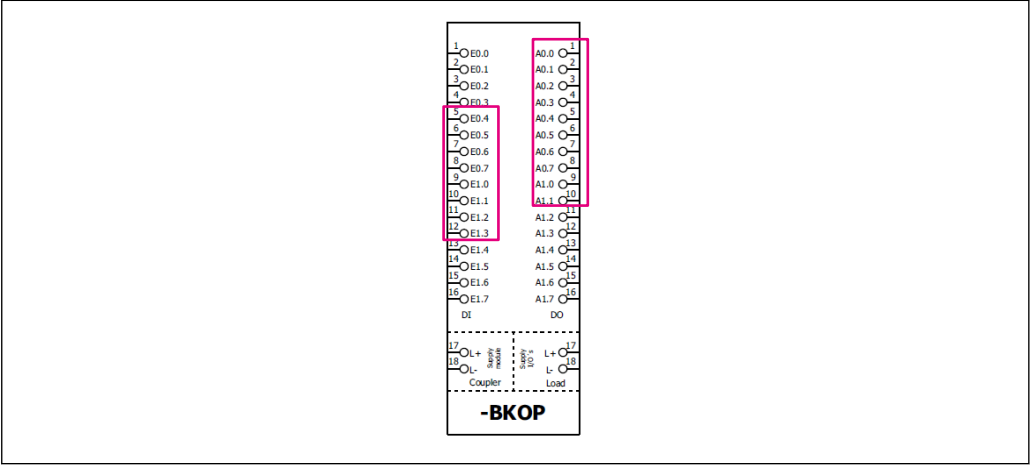


A0044848

3 Example connection for analog communication

- 1 Analog output in BASE2-E
- 2 Analog input 2AI
- 3 Process control system, PCS

Digital communication, external inputs and outputs



A0055909

4 Example connection for external inputs and outputs in the remote IO/DIO

CDC90 control unit*CDC90 control unit, inside*

Modules:

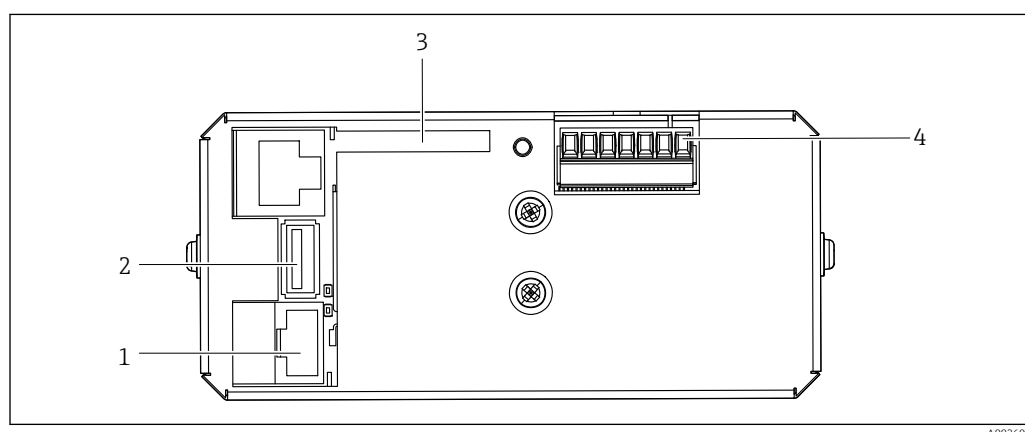
- Slot 1: base module BASE2-E (contains 2 sensor inputs, 2 current outputs)
- Slot 2 and 3: empty
- Slot 4: 2AI module (2 current inputs)
- Slot 5 and 6: 2x DIO module
- Slot 7: optional: module 4AO (4 current outputs)

Basic rule for hardware upgrades**Please note the following if upgrading the device:**

- Upgrade only to 1x 4 AO module possible
- A maximum of two "DIO" modules may be used.

IPC ports

Connection to Ethernet switch.

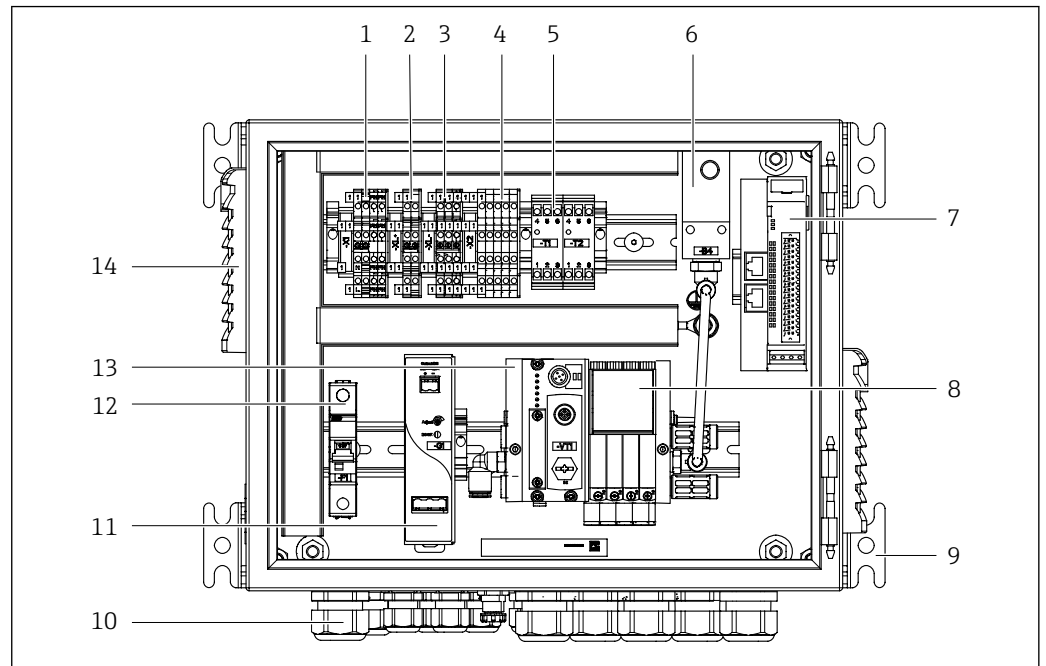


5 CDC90 control unit, IPC

- 1 Connection to Ethernet switch
- 2 USB port
- 3 SD card
- 4 Supply voltage

Pneumatic control unit

1-channel

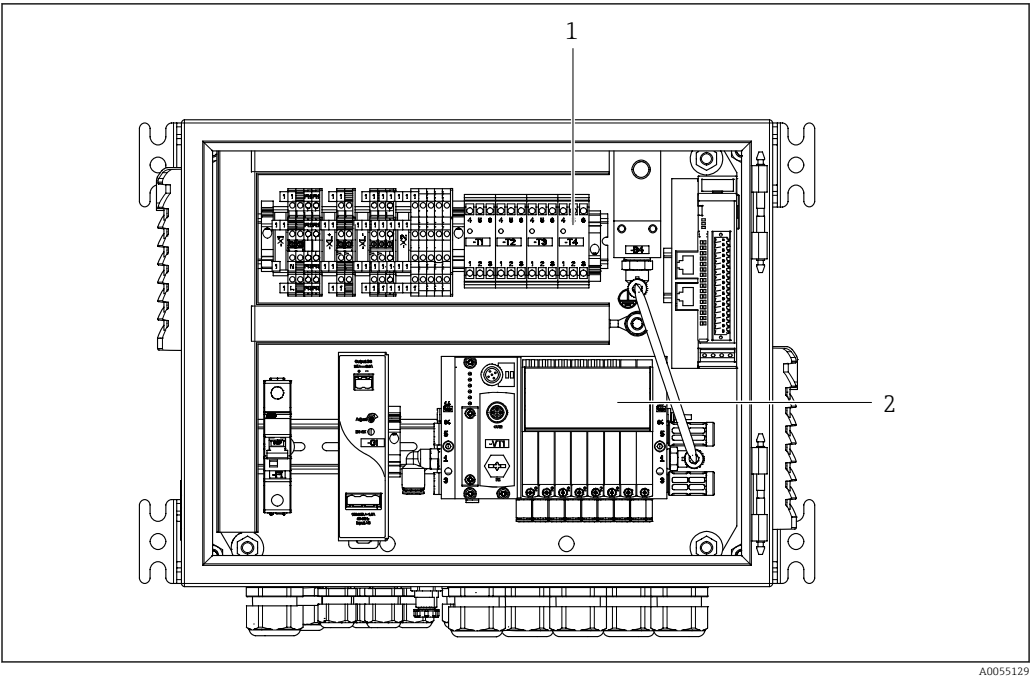


A0055128

6 Pneumatic control unit for a single channel

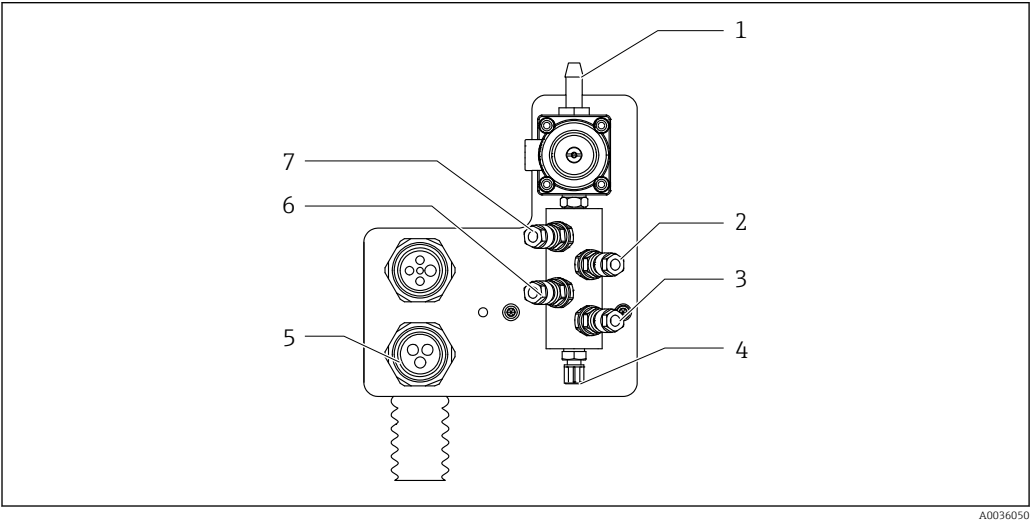
- | | | | |
|---|---|----|--------------------------------|
| 1 | 100 / 230 VAC terminal | 8 | Pilot valves |
| 2 | +24 V terminal | 9 | Mounting |
| 3 | 0 V terminal | 10 | Cable gland |
| 4 | Terminals for float switches and pressure switches | 11 | 24 VDC power unit |
| 5 | Output interface terminal for assemblies, limit position switch | 12 | F1 system fuse |
| 6 | Pressure switch | 13 | Pilot valve manifold, bus node |
| 7 | External remote IO, DIO | 14 | Ventilation slot |

2-channel



7 *Pneumatic control unit for 2 channels*
1 *Extension of the output interface terminals for a 2nd measuring point*
2 *Extension of the pilot valves for a 2nd measuring point*

Rinsing block



8 *Rinsing block*

1	Water connection (hose barb D12 PP)	5	Multihose connection
2	Pump A, liquid	6	Pump B, liquid
3	Pump C, liquid	7	Rinsing block, air
4	Outlet rinse connection to assembly		

Communication and data processing

Types of communication

Several digital communication protocols are available so that the Liquiline Control CDC90 can be integrated into a customer's digital infrastructure (process control system).

Additional Special Documentation is available for the integration process. If analog signals are used (current inputs/outputs), the current input and output modules of the CDC90 control unit, inside, serve as an interface to customer control/process control system.

The Liquiline Control CDC90 features internal communication via Modbus TCP and EtherCAT.

The following communication options are available:

- Analog current output, current signals (4 to 20 mA) and digital inputs and outputs
- EtherNet/IP (adapter)
- PROFIBUS DP (slave)
- Modbus TCP (server)
- PROFINET (device)



More detailed information on fieldbus communication is provided on the product pages on the Internet:

- Ethernet/IP (adapter) via Modbus TCP - Ethernet/IP gateway: [BA02241C](#)
- Modbus TCP (server): [BA02238C](#)
- PROFIBUS DP (slave) via Modbus TCP - PROFIBUS DP gateway: [BA02239C](#)
- PROFINET (device) via Modbus TCP - PROFINET gateway: [BA02240C](#)

Reliability

Reliable function

- The status light clearly displays the device status according to NAMUR.
- Level and consumption indicator
The level and amount of buffer or cleaning solution are displayed.
- Color display with indication of device status and current measured values. Displays currently active and scheduled programs.
- Automatic sensor monitoring
If a tolerance range is exceeded during calibration, Liquiline Control rejects the calibration values. Therefore you are guaranteed that your measured value is always accurate.
- Predictive maintenance
Monitoring of operating hours as well as switching and movement cycles of pumps, valves, and assemblies. This allows operating and wearing parts to be maintained and replaced before failure occurs.
- System pressure monitoring to activate the assembly and pumps. If the pressure drops below the minimum level, the system signals an alarm.

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
- Maintenance thanks to recording of sensor data, e.g.:
Total hours of operation

Input

Measured variables	→ Documentation of the connected sensor
Measuring ranges	→ Documentation of the connected sensor
Types of input	■ Digital sensor inputs for sensors with Memosens protocol (Base-E module in the CDC90 control unit) ■ Digital inputs (DIO module in the CDC90 control unit) ■ Digital inputs, Namur (pneumatic control unit) ■ Analog inputs (AI module in the CDC90 control unit)
Input signal	Depending on version: ■ Max. 2 x binary sensor signal ■ Standard: 2 x 0/4 to 20 mA ■ 0 to 30 V DC

Digital sensor inputs, passive in the CDC90 control unit
Range

> 0 to 20 mA

Signal characteristic

Linear

Internal resistance

Non-linear

Test voltage

500 V

Digital inputs, passive in the CDC90 control unit
Electrical specification

- Drawing power (passive)
- Galvanically isolated

Range

- High: 11 to 30 V DC
- Low: 0 to 5 V DC

Nominal input current

max. 8 mA

PFM function

Minimum pulse width: 500 µs (1 kHz)

Test voltage

500 V

Cable specification

Max. 2.5 mm² (14 AWG)

Digital inputs, passive in the pneumatic control unit
Range

- High: 11 to 30 V DC
- Low: 0 to 5 V DC

Nominal input current

max. 8 mA

Cable specification

Max. 2.5 mm² (14 AWG)

Analog inputs, passive in CDC90 control unit
Range

> 0 to 20 mA

Signal characteristic

Linear

Internal resistance

Non-linear

Output

Output types

- Analog outputs (active), connection in CDC90 control unit
- Digital outputs (active), connection in pneumatic control unit

Analog outputs, active in CDC90 control unit

Signal on alarm

Adjustable, as per NAMUR Recommendation NE 43

- In measuring range 0 to 20 mA:
failure current from 20 to 23 mA
- In measuring range 4 to 20 mA:
failure current from 2.4 to 23 mA
- Factory setting for failure current for both measuring ranges:
22.5 mA

The failure current of 22.5 mA represents "Failure-category" alarms of the transmitter. More detailed information is available in the Operating Instructions for the transmitter.

In addition, a failure current of 10 mA represents "Failure-category" alarms of the overall system. More detailed information is available in the Special Documentation on Analog Communication.
[SD02527C](#)

Load

Max. 500 Ω

Linearization/transmission behavior

Linear

Digital outputs, active in the pneumatic control unit

Electrical specification

- Outputs: 16
- Max. current: 0.5 A per output
- Total current: max. 8A

Cable specification

Max. 2.5 mm² (14 AWG)

Protocol-specific data

IPC output signals

	Modbus TCP	EtherNet/IP (via gateway)	PROFIBUS DP (via gateway)	PROFINET (via gateway)
Signal encoding	IEEE 802.3 (Ethernet)	IEEE 802.3 (Ethernet)	PROFIBUS-DP-compliant as per IEC 61158	IEEE 802.3 (Ethernet), IEC 61131-3-Code
Data transmission rate	10 / 100 Mbit/s	10 / 100 Mbit/s	9.6 kBit/s - 12 MBit/s autodetect	10 / 100 Mbit/s
Galvanic isolation	Yes	Yes	Yes	Yes
Connection	M12	See gateway	See gateway	See gateway
IP address	192.168.0.1	192.168.0.6	192.168.0.5	192.168.0.7
Address			77	

Modbus TCP

NOTICE

The device uses an EtherCat connection for internal communication. Depending on the network load, EtherCAT may cause failures in the CDC90 IPCs if multiple CDC90 devices are integrated in the same network.

- To reduce the network load in the case of a Modbus TCP connection, the networks must be separated. This can be achieved either through physical separation using a VLAN-capable switch e.g. Layer 2 Managed Switch or via software-based separation.

TCP port	502	
TCP connections	3	
Protocol	TCP	
Function codes	03, 04, 06, 08, 16, 23	
Broadcast support for function codes	06, 16, 23	
Supported features	Address can be configured using DHCP or software	
IO data	Input (T → O)	Program control
	▪ Output (O → T) ▪ System Information ▪ Measured values and status ▪ IO Feedback	▪ Program feedback ▪ Status signals ▪ Measured values ▪ Sensor calibration



More detailed information on fieldbus communication is provided on the product pages on the Internet:

- Ethernet/IP (adapter) via Modbus TCP - Ethernet/IP gateway: [BA02241C](#)
- Modbus TCP (server): [BA02238C](#)
- PROFIBUS DP (slave) via Modbus TCP - PROFIBUS DP gateway: [BA02239C](#)
- PROFINET (device) via Modbus TCP - PROFINET gateway: [BA02240C](#)

Web server

The Liquiline Control's IPC features a web server that allows users to configure the device, visualize measurement values and carry out a diagnostic inspection of the entire system.

The web server allows full access to the visualization from the CDC90. When the web server is active, the on-site visualization on the CDC90 is locked.

Power supply

Supply voltage	100 to 230 V AC Fluctuations in the mains voltage may not exceed ± 10 percent of the nominal voltage.
Frequency	50/60 Hz
Power consumption	Max. 50 VA
Cable specification	Power supply cable (mains) Cable cross-section: ■ Minimum cross-section 3 x 0.75 mm² to 10 m length ■ Minimum cross-section 3 x 1.5 mm² to 20 m length
Overvoltage protection	Integrated overvoltage protection according to EN 61326 Protection category 1 and 3
Electrical connection	Electrical safety IEC 61010-1, Class I equipment Low voltage: overvoltage category II Environment < 2000 m (< 6562 ft) above MSL

Performance characteristics

Response time	Current outputs t_{90} = max. 500 ms for an increase from 0 to 20 mA Current inputs t_{90} = max. 330 ms for an increase from 0 to 20 mA Digital inputs and outputs t_{90} = max. 330 ms for an increase from low to high
Reference temperature	25 °C (77 °F)
Measurement error for sensor inputs	→ Documentation of the connected sensor
Measurement error for current inputs and outputs	Typical measured errors: < 20 µA (with current values < 4 mA) < 50 µA (with current values 4 to 20 mA) at 25 °C (77 °F) each Additional measured error depending on the temperature: < 1.5 µA/K
Frequency tolerance of digital inputs and outputs	≤ 1%
Resolution of current inputs and outputs	< 5 µA
Repeatability	→ Documentation of the connected sensor

Environment

Operate the system only using liquids with a conductivity of > 10 nS/cm.
This device may only be used indoors.

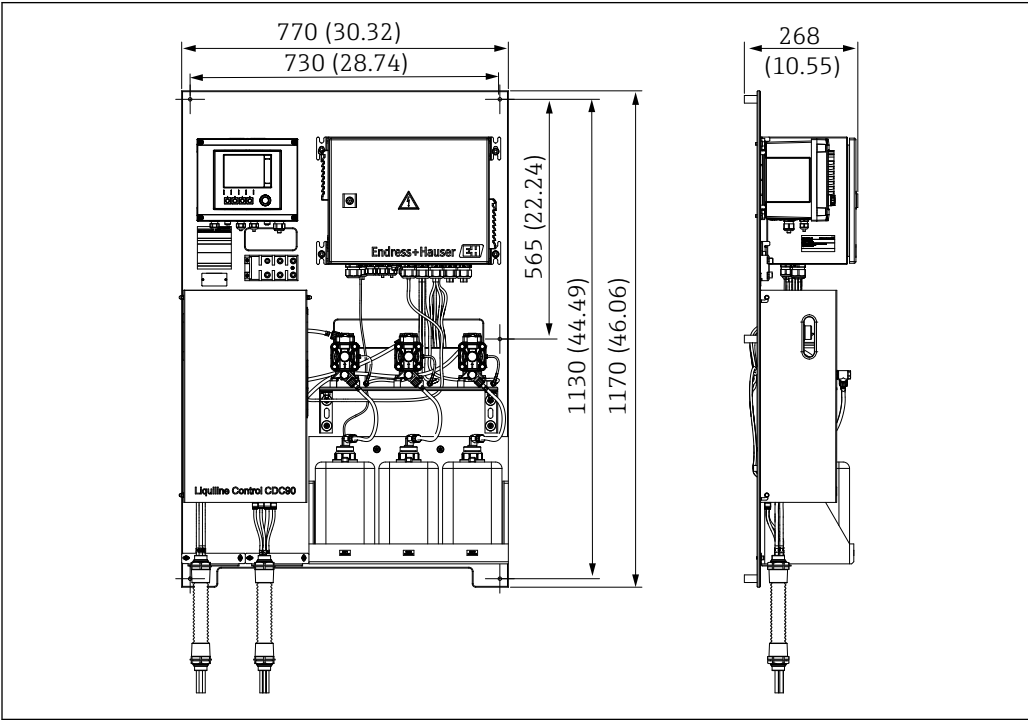
Ambient temperature range	0 to 45 °C (32 to 113 °F)
Storage temperature	-20 to 70 °C (-4 to 158 °F)
Relative humidity	10 to 90 %, non-condensating
Operating height	Max. altitude above MSL < 2000 m (< 6562 ft) above MSL
Degree of protection	This product is designed for indoor use only and should not come into contact with any wetness or be used in a wet environment. CDC90 control unit IP66/Type 4X Pneumatic control unit IP54/Type 12
Climate class	As per IEC 60654-1: B2
Electromagnetic compatibility	Interference emission and interference immunity as per EN 61326-1, class A for industrial areas

Pollution degree	The product is suitable for pollution degree 2.
-------------------------	---

Mechanical construction

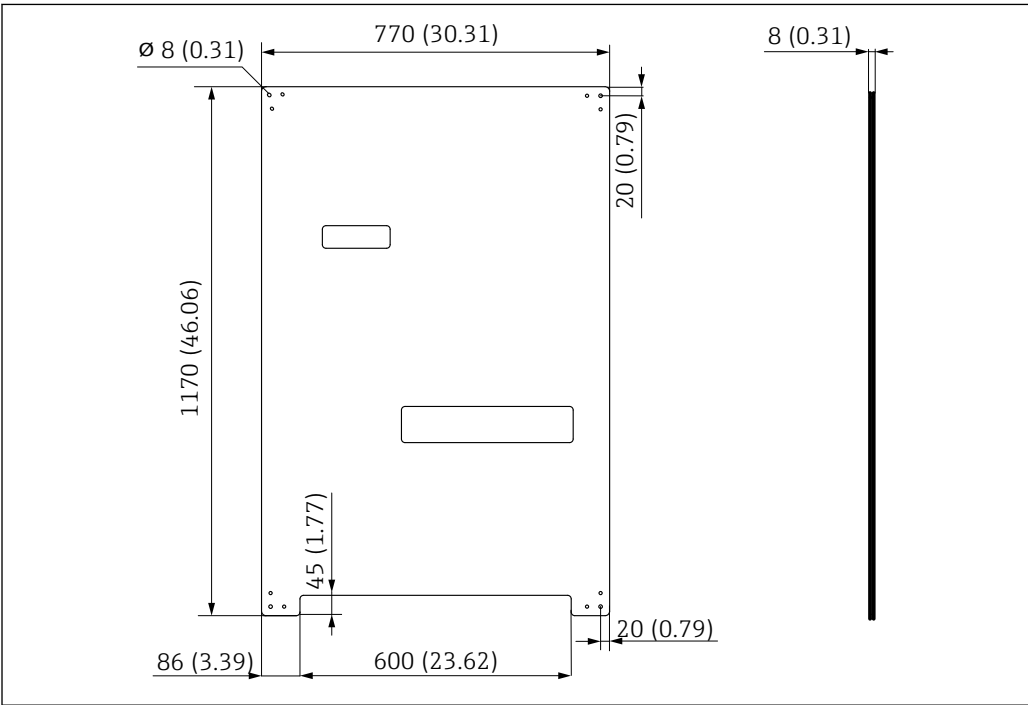
Dimensions

CDC90 panel



A0055127

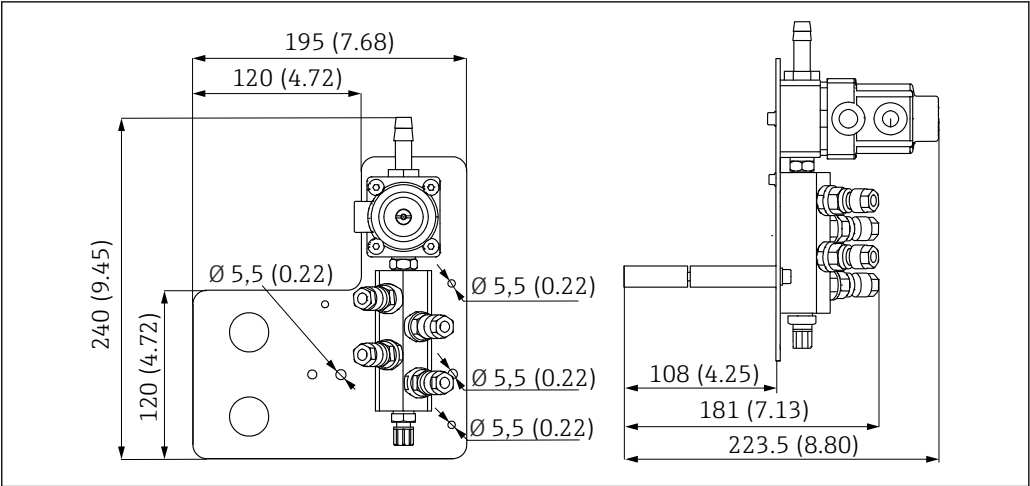
9 Panel dimensions. Unit of measurement mm (in)



A0031946

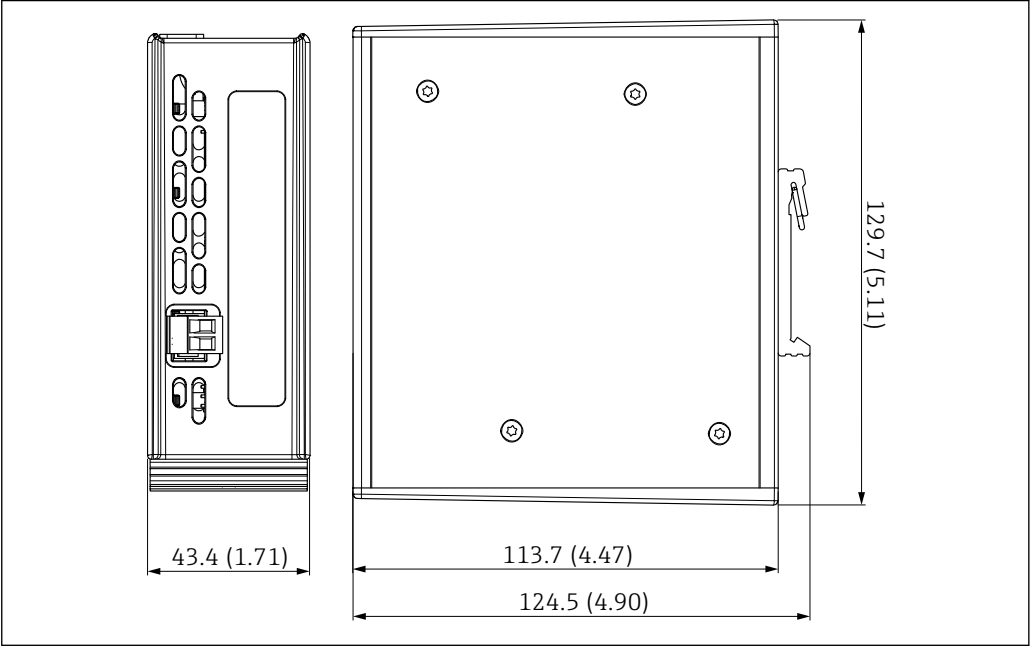
10 Dimensions of mounting plate. Unit of measurement mm (in)

Rinsing block



11 Dimensions of PVDF rinsing block. Unit of measurement mm (in)

Gateway (optional)



12 Gateway dimensions. Unit of measurement mm (in)

Weight

Complete device on mounting plate:
Approx. 71 Kg (156.528 lbs)

Materials

Device	Material
CDC90 control unit	
Module housing	PC (polycarbonate)
Soft keys	TPE (thermoplastic elastomers)
LED	POM
Cable mounting rail	Stainless steel 1.4301 (AISI 304)
Display glass	Plastic capacitive touchscreen
Cable glands	PA (polyamide) V0 as per UL94
M12 cable glands	PA (polyamide)
Housing seals	EPDM
Cable gland O-ring	EPDM
Pneumatic control unit	
Housing	Stainless steel 1.4301 (AISI 304), painted steel
Housing seals	EPDM (ethylene propylene diene rubber)
Cable glands	PA (polyamide) V0 as per UL94
Housing seals	EPDM
Pumps + canister unit	
Pump	PVDF+CF/PP/NBR+PTFE/PTFE/PP
Canister	PE
Float switch	PVC/EPDM/PE
Bracket M5 L110*B40 W8	PP
O-ring	EPDM
Coupling DMG/8*6 1/4	PP
Canister shelf	PP
Rinsing block	
Process valve	EPDM/PP/stainless steel:1.4408/PTFE
Rinsing body	PVDF/1.4401
Rinse connection	PP
Check valves	PVDF+FKM/PVDF+FFKM/1.4571+FKM
Bracket, metal plate	1.4571
Bracket, clamp	1.4404
Hose bracket/cable gland	PA
Sealing plug	Teflon
Double nipple	PVDF
O-ring	FKM/FFKM
Hoses	
Compressed air	PUN-A
Liquid	PUN-A+/PTFE

Hose specification**Medium hoses**

Max. 6 bar (87 psi)

Compressed air hoses

Pressure ratings of pilot valve manifold:

Max. 10 bar (145 psi)

Pressure switch:
Max. 12 bar (174 psi)

Pump

Vacuum pump:

Max. 6 bar (87 psi) (corresponds to 6 l/min delivery rate. The precise delivery rate depends on the system's counterpressure)

Lines

Max. 10 bar (145 psi)

Operating compressed air

Max. 6 bar (87 psi)

Connections

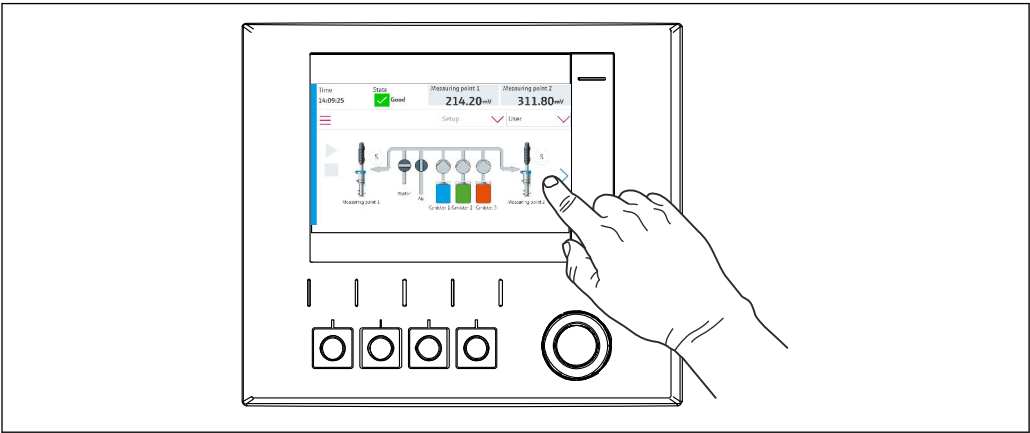
Water connection	Size
Water connection via hose barb	Hose barb D12 PP for hoses with internal diameter 12 mm (0.47 in)
Water connection, rinsing block	
Assembly inlet and outlet	Hose coupling D6/8 mm (0.24/0.31 in) PVDF

Hose diameter	Size
Medium	ID 6 mm (0.24 in)/ OD 8 mm (0.31 in)
Compressed air	Compressed air supply, purge air: ID 6 mm (0.24 in)/ OD 8 mm (0.31 in) Compressed air of assemblies, valves, pumps: ID 4 mm (0.16 in)/ OD 6 mm (0.24 in) Pump input, air: ID 2.5 mm (0.1 in)/ AD 4 mm (0.16 in)
Multihoses	Maximum length: 10 m (32.8 ft) OD of the coupling nut: 60 mm (2.36 in)

Operability

Operation and configuration of the CDC90 are carried out via the CDC90 control unit and are additionally accessible via an integrated web server.

Onsite operation

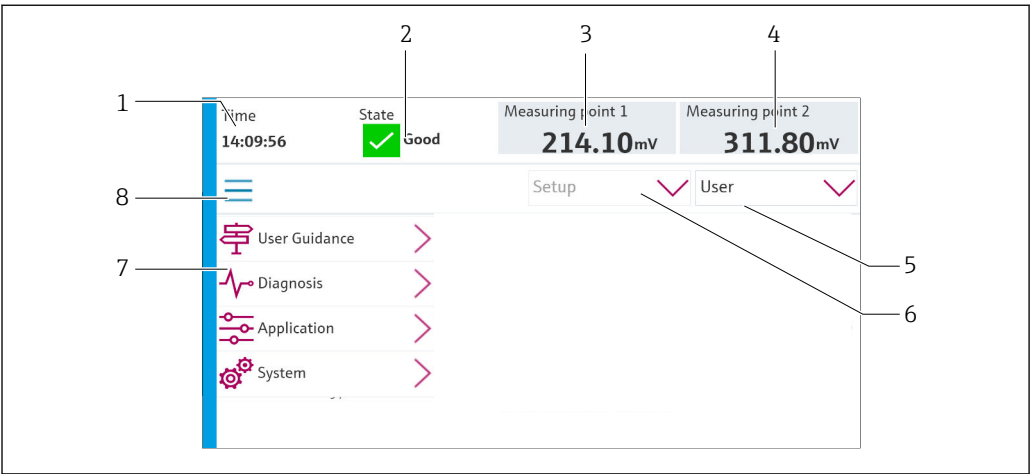


A0033711

13 Touchscreen display

The Liquiline Control CDC90 can be operated via a touchscreen display. Soft keys are also available for program operation.

Menu overview



A0033714

Item	Function
1	Time
2	Display and fast access to the most important error message
3	Navigation to measuring point 1 and display of: ■ pH sensor: pH value ■ ORP sensor: ORP value in mV ■ Combined pH-/ORP sensor: pH value
4	For one measuring point: ■ pH sensor: temperature in °C ■ ORP sensor: or ORP value in mV ■ Combined pH/ORP sensor: temperature in °C For two measuring points: Navigation to measuring point 2 and display of: ■ pH sensor: pH value ■ ORP sensor: ORP value in mV ■ Combined pH-/ORP sensor: pH value

Item	Function
5	User profile display and log-in
6	Operating mode
7	Overview of main menu
8	Navigation

Certificates and approvals

Current certificates and approvals for the product are available at www.endress.com on the relevant product page:

1. Select the product using the filters and search field.
2. Open the product page.
3. Select **Downloads**.

Ordering information

Product page	www.endress.com/cdc90
Product configurator	1. Configure: Click this button on the product page. 2. Select Extended selection. ↳ The Configurator opens in a separate window. 3. Configure the device according to your requirements by selecting the desired option for each feature. ↳ In this way, you receive a valid and complete order code for the device. 4. Accept: Add the configured product to the shopping cart.  For many products, you also have the option of downloading CAD or 2D drawings of the selected product version. 5. CAD: Open this tab. ↳ The drawing window is displayed. You have a choice between different views. You can download these in selectable formats.

Scope of delivery	The scope of delivery comprises: Basic version ▪ 1 Liquiline Control CDC90, version as ordered ▪ 1 x Brief Operating Instructions (hard copy) ▪ USB stick for data transmission and backup, software update ▪ Gateway (optional, only for EtherNet/IP, PROFIBUS DP, Profinet version) ▪ Cabinet key for pneumatic control unit ▪ Ethernet cables ▪ Distance sleeves for wall mounting 1-channel version ▪ 2 hose packs for compressed air and liquid ▪ 1 rinsing block with mount for installation ▪ 2 conduit adapters G 1/4" for hose 6/8 mm (ID/AD) for the rinse connections of the assembly 2-channel version ▪ 4 Hose packs for compressed air and liquid ▪ 2 rinsing block with mount for installation ▪ 4 conduit adapters G 1/4" for hose 6/8 mm (ID/AD) for the rinse connections of the assembly
--------------------------	--

Accessories

The following are the most important accessories available at the time this documentation was issued.

Listed accessories are technically compatible with the product in the instructions.

- 1.** Application-specific restrictions of the product combination are possible.
Ensure conformity of the measuring point to the application. This is the responsibility of the operator of the measuring point.
- 2.** Pay attention to the information in the instructions for all products, particularly the technical data.
- 3.** For accessories not listed here, please contact your Service or Sales Center.

Assemblies	Cleanfit CPA472D ▪ Robust retractable assembly for pH, ORP and other industrial sensors ▪ Heavy-duty version made of durable materials ▪ For manual or pneumatic, remote-controlled operation ▪ Product Configurator on the product page: www.endress.com/cpa472d  Technical Information TI00403C
-------------------	---

Cleanfit CPA473

- Stainless steel process retractable assembly with ball valve shutoff for particularly reliable separation of the medium from the environment
- Product Configurator on the product page: www.endress.com/cpa473



Technical Information TI00344C

Cleanfit CPA474

- Plastic process retractable assembly with ball valve shutoff for particularly reliable separation of the medium from the environment
- Product Configurator on the product page: www.endress.com/cpa474



Technical Information TI00345C

Cleanfit CPA871

- Flexible process retractable assembly for water, wastewater and the chemical industry
- For applications with standard sensors with 12 mm diameter
- Product Configurator on the product page: www.endress.com/cpa871



Technical Information TI01191C

Cleanfit CPA875

- Retractable process assembly for sterile and hygienic applications
- For in-line measurement with standard sensors with 12 mm diameter, e.g. for pH, ORP, oxygen
- Product Configurator on the product page: www.endress.com/cpa875



Technical Information TI01168C

Sensors**Glass electrodes****Memosens CPS11E**

- pH sensor for standard applications in process and environmental engineering
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps11e



Technical Information TI01493C

Memosens CPS31E

- pH sensor for standard applications in drinking water and swimming pool water
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps31e



Technical Information TI01574C

Memosens CPS71E

- pH sensor for chemical process applications
- With ion trap for poison-resistant reference
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps71e



Technical Information TI01496C

Memosens CPS91E

- pH sensor for heavily polluted media
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps91e



Technical Information TI01497C

ORP sensors**Memosens CPS12E**

- ORP sensor for standard applications in process and environmental engineering
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps12e



Technical Information TI01494C

Memosens CPS42E

- ORP sensor for process technology
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps42e



Technical Information TI01575C

Memosens CPS72E

- ORP sensor for chemical process applications
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps72e



Technical Information TI01576C

Memosens CPS92E

- ORP sensor for use in heavily polluted media
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps92e



Technical Information TI01577C

pH-ISFET sensors

Memosens CPS47E

- ISFET sensor for pH measurement
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps47e



Technical Information TI01616C

Memosens CPS77E

- Sterilizable and autoclavable ISFET sensor for pH measurement
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps77e



Technical Information TI01396

Memosens CPS97E

- ISFET sensor for pH measurement
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps97e



Technical Information TI01618C

Combined sensors

Memosens CPS16E

- pH/ORP sensor for standard applications in process technology and environmental engineering
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps16e



Technical Information TI01600C

Memosens CPS76E

- pH/ORP sensor for process technology
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps76e



Technical Information TI01601C

Memosens CPS96E

- pH/ORP sensor for heavily polluted media and suspended solids
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps96e



Technical Information TI01602C

Additional functionality	Hardware extension modules Kit, extension module 4AO ■ 4 x analog output 0/4 to 20 mA ■ Order number: 71135633
Other accessories	Cables Memosens data cable CYK10 ■ For digital sensors with Memosens technology ■ Product Configurator on the product page: www.endress.com/cyk10  Technical Information TI00118C Storage options ■ Industrial Flash Drive, 1 GB ■ Order number: 71110815 CDC90 USB stick kit ■ 64 GB ■ Order No. 71518248 Cable glands Kit CM44x: gland M ■ Set, 6 pieces ■ Order number: 71101768 Kit CM44x: gland NPT ■ Set, 6 pieces ■ Order number: 71101770 Kit CM44x: gland G ■ Set, 6 pieces ■ Order number: 71101771 Kit CM44x: dummy plug for cable gland ■ Set, 6 pieces ■ Order number: 71104942 M12 built-in socket and cable junction with Velcro strip CM442/CM444/CM448/CSF48 kit: M12 built-in socket for digital sensors ■ Pre-terminated ■ Order number: 71107456 CM442/CM444/CM448/CSF48 kit: M12 built-in socket for Ethernet ■ Only for devices with BASE-E module ■ D-coded, pre-terminated ■ Order number: 71140893 CDC90 Ethernet cable kit, M12-RJ45 90° For devices with BASE2-E module: Order number: 71518244 Kit: external CDI socket, complete ■ Retrofit kit for CDI interface, with terminated connecting cables ■ Order number: 51517507 Cable junction with Velcro strip ■ 4 pieces, for sensor cable ■ Order number: 71092051 Graphic display ■ For installation in the control cabinet door or panel ■ Order number: 71185295 Service display ■ Portable, for commissioning ■ Order number: 71185296

Buffer solutions

High-quality buffer solutions from Endress+Hauser - CPY20

Solutions that are produced in the production laboratory and bottled for testing in the calibration laboratory are used as secondary reference buffer solutions. This test is carried out on a partial sample in accordance with the requirements of ISO 17025.

Product Configurator on the product page: www.endress.com/cpy20

ORP buffer solution CPY3

- 220 mV, pH 7
- 468 mV, pH 0.1

Product Configurator on the product page: www.endress.com/cpy3



info@lennotech.com Tel. +31-152-610-900
www.lennotech.com Fax. +31-152-616-289