

Technical Information

Memocheck Plus CYP01D/ Memocheck CYP02D Memocheck Sim CYP03D

Test tools for liquid analysis measuring points

With Memosens technology to simulate contactless, digital signal transmission



Application

- Chemistry and process engineering
- Food-, pharmaceutical industry and biotechnology
- Water and wastewater treatment
- Hazardous areas

Your benefits

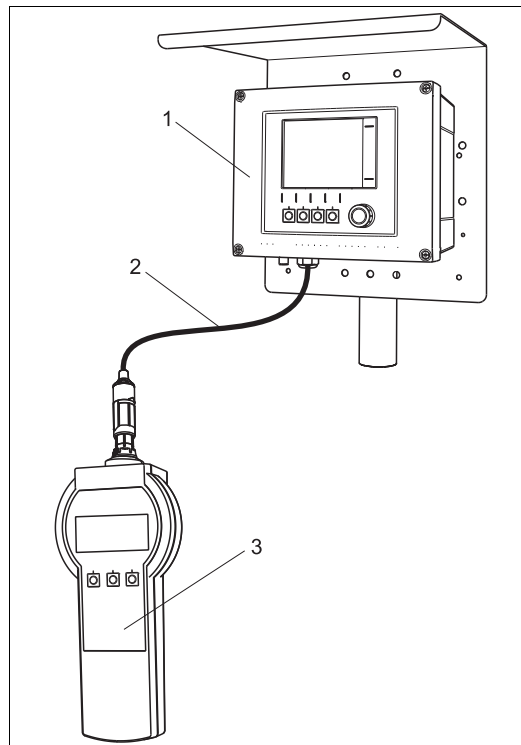
- Easy, fast and reliable sensor simulation with freely definable measured values for CYP03D and fixed values for CYP01D and CYP02D
- Simulation of errors
- Checking of all parameters: pH (glass and ISFET), ORP, conductivity (conductive and inductive), dissolved oxygen (amperometrical and optical), chlorine, turbidity, nitrate
- High variability when commissioning the measuring loop
- Maximum reliability through Memosens technology:
 - No galvanic corrosion
 - Completely watertight
 - No affection by secondary potential thanks to galvanical isolation of simulator and transmitter

Function and system design

Simulation in non-explosion-hazardous areas

The sensor simulation in a complete measuring system includes:

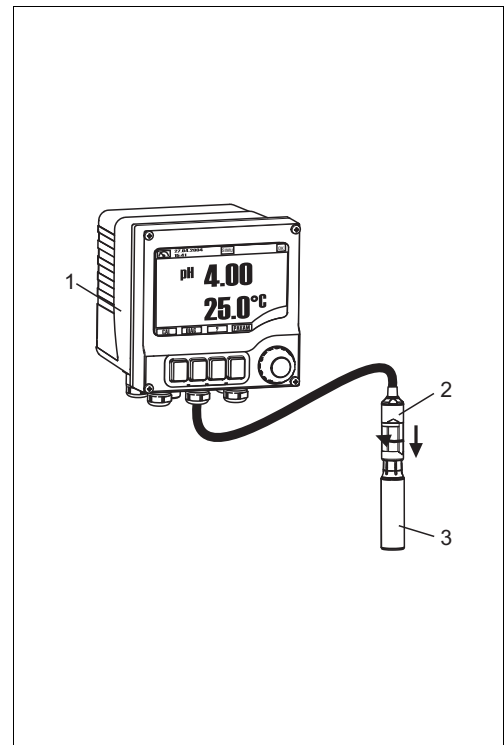
- Memocheck Plus CYP01D/Memocheck CYP02D/Memocheck Sim CYP03D
- Transmitter with Memosens technology
- Memosens data cable CYK10



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Measuring system with Memocheck Sim CYP03D

- 1 Transmitter with Memosens technology, e.g. Liquiline CM44x
- 2 Memosens data cable CYK10
- 3 Memocheck Sim CYP03D

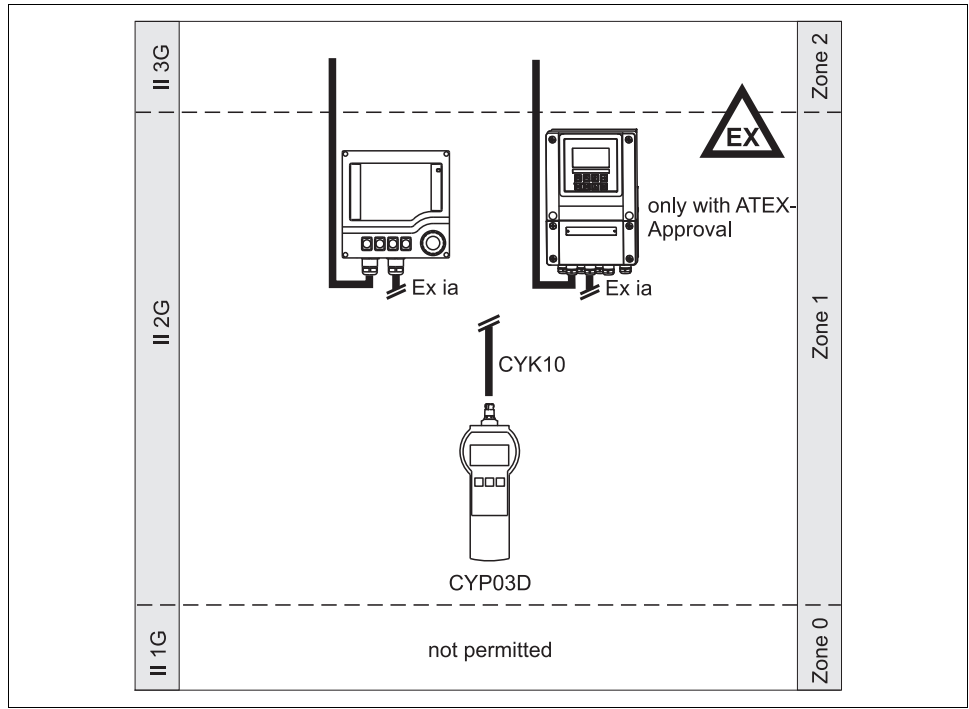


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Measuring system with Memocheck Plus CYP01D

- 1 Transmitter with Memosens technology, e.g. Liquiline M CM42
- 2 Memosens coupling
- 3 Memocheck Plus CYP01D

Simulation in explosion-hazardous areas



Connection in explosion-hazardous areas

Performance characteristics

**Simulation values
Memocheck Plus CYP01D**

Memocheck Plus CYP01D is a set of 5 sensor plug-in heads of the same parameter with different simulation fixed values. Depending on your order you can simulate the following values:

Transmitted simulation values for pH glass:

Plug-in head	1	2	3	4	5
pH value	0T	4	7	10	14
Temperature	-15 °C (5 °F)	25 °C (77 °F)	60 °C (140 °F)	90 °C (194 °F)	135 °C (275 °F)
Sensor status	o.k.	o.k.	o.k.	o.k.	Error

Transmitted simulation values for pH ISFET:

Plug-in head	1	2	3	4	5
pH ISFET	0	4	7	10	14
Temperature	-10 °C (14 °F)	25 °C (77 °F)	60 °C (140 °F)	90 °C (194 °F)	135 °C (275 °F)
Sensor status	o.k.	o.k.	o.k.	o.k.	Error

Transmitted simulation values for ORP:

Plug-in head	1	2	3	4	5
ORP	-1500 mV	-750 mV	0 mV	750 mV	1500 mV
Temperature	-10 °C (14 °F)	25 °C (77 °F)	60 °C (140 °F)	90 °C (194 °F)	135 °C (275 °F)
Sensor status	o.k.	o.k.	o.k.	o.k.	Error

Transmitted simulation values for chlorine:

Plug-in head	1	2	3	4	5
Chlorine	0 nA	5 nA	60 nA	150 nA	300 nA
Temperature	0 °C (32 °F)	10 °C (50 °F)	25 °C (77 °F)	35 °C (95 °F)	45 °C (113 °F)
Sensor status	o.k.	o.k.	o.k.	o.k.	Error

Transmitted simulation values for conductive conductivity:

Plug-in head	1	2	3	4	5
Conductive conductivity	18 MOhm	1 µS/cm	20 µS/cm	200 µS/cm	10 mS/cm
Temperature	25 °C (77 °F)	10 °C (50 °F)	45 °C (113 °F)	25 °C (77 °F)	60 °C (140 °F)
Sensor status	o.k.	o.k.	o.k.	o.k.	Error

Transmitted simulation values for dissolved oxygen:

Plug-in head	1	2	3	4	5
Dissolved oxygen	0.0 nA	1.0 nA	60 nA	300 nA	600 nA
Temperature	-10 °C (14 °F)	25 °C (77 °F)	60 °C (140 °F)	90 °C (194 °F)	135 °C (275 °F)
Sensor status	o.k.	o.k.	o.k.	o.k.	Error

The above specified data are displayed by the transmitters Liquiline M CM42, Liquiline CM44x, Liquisys M CPM223/253 and Mycom S CPM153.

Memocheck Plus CYP01D is maintenance-free.

Memocheck Plus CYP01D can be used as a qualification tool for your measuring point with the optional quality certificate. For recertification it can be sent to Endress+Hauser. Your Memocheck Plus CYP01D will be checked and you will get a new quality certificate.

**Simulation values
Memocheck CYP02D**

Memocheck CYP02D consists of two connected independent plug-in heads that provide one parameter each. Depending on your order you can simulate the following values:

Transmitted simulation values for pH glass and pH ISFET:

	Fixed simulation values	Temperature
pH glass	4	25 °C (77 °F)
pH ISFET	7	60 °C (140 °F)

Transmitted simulation values for pH glass and pH glass:

	Fixed simulation values	Temperature
pH glass	4	25 °C (77 °F)
pH glass	7	60 °C (140 °F)

Transmitted simulation values for pH glass and ORP:

	Fixed simulation values	Temperature
pH glass	4	25 °C (77 °F)
ORP	750 mV	90 °C (194 °F)

Transmitted simulation values for pH glass and dissolved oxygen:

	Fixed simulation values	Temperature
pH glass	4	25 °C (77 °F)
Dissolved oxygen	60 nA	60 °C (140 °F)

Transmitted simulation values for pH glass and conductive conductivity:

	Fixed simulation values	Temperature
pH glass	4	25 °C (77 °F)
Conductive conductivity	20 µS/cm	60 °C (140 °F)

Transmitted simulation values for pH glass and chlorine:

	Fixed simulation values	Temperature
pH glass	4	25 °C (77 °F)
Chlorine	60 nA	25 °C (77 °F)

The above specified data are displayed by the transmitters Liquiline M CM42, Liquiline CM44x, Lquisys M CPM223/253 and Mycom S CPM153.
Memocheck CYP02D is maintenance-free.

Simulation values Memocheck Sim CYP03D

You can simulate the following data with Memocheck Sim CYP03D:

- Simulation values
 - Primary values
 - Raw values
 - Temperature
- Parameter
 - pH glass / pH glass SIL
 - pH ISFET
 - ORP
 - Conductivity (conductive and inductive)
 - Dissolved oxygen (amperometrical and optical)
 - Chlorine
 - Turbidity
 - Nitrate
- Main simulation values can be freely defined within the limits of the specification values of the sensor
- Repeating ramp for any step rate
- Errors, e.g. glass breakage, alarm and warning
- Calibration values

All values can be freely configured making them fit to your process.

The above specified data are displayed by the transmitters Liquiline M CM42, Liquiline CM44x, Lquisys M CPM223/253 and Mycom S CPM153.

The Memocheck Sim CYP03D can, with the quality or calibration certificate, also be used as a qualification tool for your measuring point.

The quality and calibration certificates can be renewed:

For such services, you will need to return Memocheck Sim CYP03D to Endress+Hauser, see the "Returns" section.

In the case of **requalification**, the device is tested fully and a new quality certificate is issued.

In the case of **recalibration**, in addition to requalification the device is also incorporated into a calibration procedure. A quality certificate and a certificate of calibration are issued.

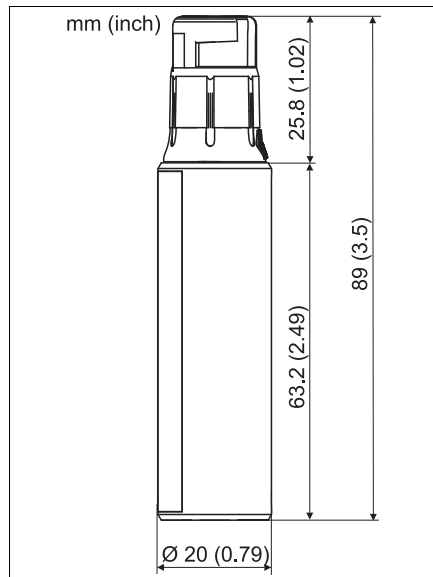
The recommended testing interval is 1 year.

Environment

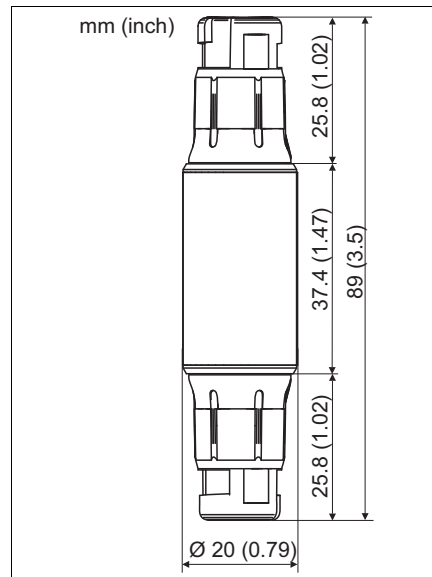
Ambient temperature	Memocheck Plus CYP01D/Memocheck CYP02D: -15 to 70 °C (5 to 158 °F)
	Memocheck Sim CYP03D: -20 to 50 °C (-4 to 122 °F)
Storage temperature	Memocheck Plus CYP01D/Memocheck CYP02D: -15 to 70 °C (5 to 158 °F)
	Memocheck Sim CYP03D: -20 to 55 °C (-4 to 131 °F)
Ingress protection Memocheck Sim CYP03D	IP 65
Electromagnetic compatibility Memocheck Sim CYP03D	Interference emission and interference immunity as per EN 61326-1: 2006, class A for industry

Mechanical construction

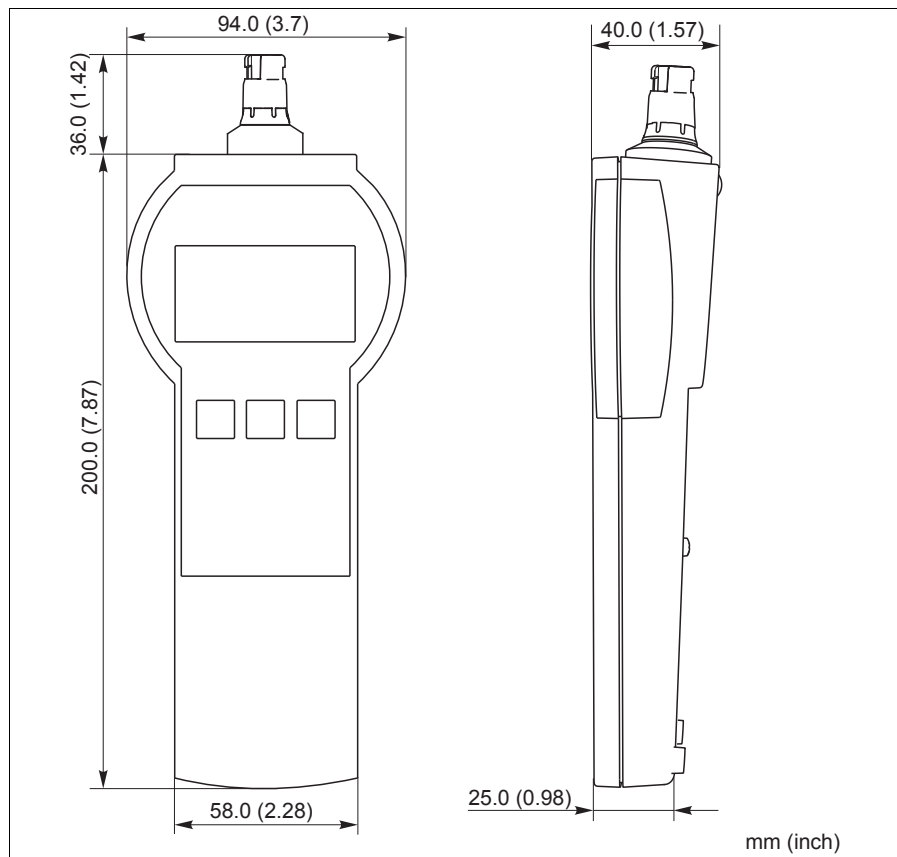
Dimensions



Dimensions of Memocheck Plus CYP01D



Dimensions of Memocheck CYP02D



Dimensions of Memocheck Sim CYP03D

Weight
Memocheck Sim CYP03D

Weight (including batteries): 0.3 kg (0.7 lbs)

Batteries

No batteries are needed for Memocheck Plus CYP01D and Memocheck CYP02D.

Only use the following battery types for Memocheck Sim CYP03D, as only those are included in the Ex approval:

- Duracell Batteries, MN1500 (AA, 1.5 V, LR6 according to IEC), 3 pieces
- Energizer, EN91 (AA, 1.5 V, LR6 according to IEC), 3 pieces

Storage temperature of the batteries: -20 to 35 °C (-4 to 95 °F)

Material

Memocheck Plus CYP01D/Memocheck CYP02D:

White plastic: PET
Blue plastic: PPS GF 40


Memocheck Sim CYP03D:

Housing: ABS (UL 94 HB)


Certificates and approvals

Ex approval

Memocheck Plus CYP01D

 II 2G Ex ia IIC T6 Gb

Memocheck CYP02D


 II 2G Ex ia IIC T6 Gb

Memocheck Sim CYP03D

- **IECEX**

Ex ia IIC T4 Gb

- **ATEX**

 II 2G Ex ia IIC T4 Gb

Ordering information

Order code

You can create a complete and valid order code by using the configurator on the internet product page.

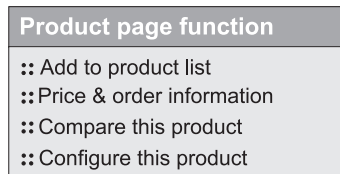
Enter the following address to access the product page:

www.products.endress.com/cyp01d

www.products.endress.com/cyp02d

www.products.endress.com/cyp03d

1. You can choose from the following options on the product page located on the right:



2. Click "Configure this product".
3. The configurator opens in a separate window.
Use the radio buttons to configure the order code from the nameplate of your device.
4. Afterwards, you can export the order code as a PDF or Excel file.
To do so, click the appropriate button at the top of the page.

Scope of delivery

Memocheck Plus CYP01D

The scope of delivery includes:

- 5 plug-in heads in a case
- 1 quality certificate (according to your order)
- 1 Brief Operating Instructions (German + English)

Memocheck CYP02D

The scope of delivery includes:

- 1 Memocheck CYP02D with 2 plug-in heads
- 1 Brief Operating Instructions (German + English)

Memocheck Sim CYP03D

The scope of delivery includes:

- Memocheck Sim CYP03D
- Operating Instructions
- Quality certificate
- Cables according to your order (optional)
- Case for Memocheck Sim CYP03D and cable (optional)
- Calibration certificate (optional)

Accessories



In the following sections, you find the accessories available at the time of issue of this documentation.

For information on accessories that are not listed here, please contact your local service or sales representation.

Memosens data cable

Order No.	Memosens data cable CYK10 (optional)
71128718	CYK10-A032 + adapter, cable ends; Non-Ex
71128721	CYK10-G032 + adapter; only for CYP03D, Ex

For Memocheck Plus CYP01D and Memocheck CYP02D use the Memosens data cable CYK10 which belongs to the measuring point.

To connect Memocheck Sim CYP03D to a transmitter with M12 socket and PG glands you require the Memosens data cable CYK10. It is always provided with an adapter making it fit to M12 sockets as well as PG glands.

If you want to simulate fixed-cable sensors with Memocheck Sim CYP03D (turbidity, nitrate, conductivity inductive, dissolved oxygen), you require the Memosens data cable CYK10.

If you use sensors with inductive Memosens plug-in heads the fitting cable is a component of the measuring point.

Case for storing

Order No.	Case for Memocheck Sim CYP03D
71183327	Ex

In the hazardous area, the Memocheck simulator case should only be opened to remove or put back the Memocheck simulator. When opened, the case should never be exposed to process-related intensive electrostatic charges.

www.addresses.endress.com
