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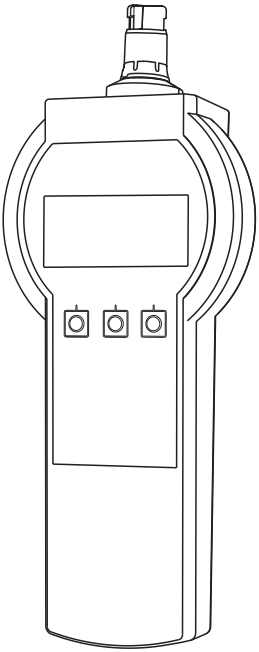
valid from:
Software version 1.00.03

Operating Instructions
Memocheck Sim CYP03D

Testing tool for analysis measuring points



Endress+Hauser
People for Process Automation

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1 Document information

1.1 Safety messages

The structure, signal words and safety colors of the signs comply with the specifications of ANSI Z535.6 ("Product safety information in product manuals, instructions and other collateral materials").

Safety message structure	Meaning
⚠ DANGER **Causes (/consequences)** Consequences if safety message is not heeded ▶ Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid the situation **will** result in a fatal or serious injury.
⚠ WARNING **Causes (/consequences)** Consequences if safety message is not heeded ▶ Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid the situation **can** result in a fatal or serious injury.
⚠ CAUTION **Causes (/consequences)** Consequences if safety message is not heeded ▶ Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or more serious injuries.
NOTICE **Cause/situation** Consequences if safety message is not heeded ▶ Action/note	This symbol alerts you to situations that can result in damage to property and equipment.

1.2 Symbols used

- Additional information, tip
- Permitted or recommended
- Forbidden or not recommended

2 Basic safety instructions

2.1 Requirements for the personnel

- Installation, commissioning, operation and maintenance of the measuring system must only be carried out by specially trained technical personnel.
- The technical personnel must be authorized to perform the tasks by the owner-operator.
- The electrical connection may only be established by an electrical technician.
- The technical personnel must have read and understood these Operating Instructions and must follow the instructions they contain.
- Faults at the measuring point may only be rectified by authorized and properly trained personnel.

Repairs not described in the Operating Instructions provided may only be carried out directly at the manufacturer's or by the Service Organization.

2.2 Designated use

If the device is used for any purpose other than that described, this poses a threat to the safety of people and the entire measuring system and is thus not permitted.
The manufacturer does not accept liability for damage caused by improper or non-designated use.

2.3 Workplace safety

As the user, you are responsible for observing the following safety regulations:
- Installation guidelines
- Local standards and regulations

Electromagnetic compatibility
The product has been tested for electromagnetic compatibility in accordance with the applicable European standards for industrial environments.
The electromagnetic compatibility indicated only applies to a product that has been connected as described in these
Operating Instructions.

2.4 Operational safety

- Prior to commissioning the entire measuring point, check that all connections are correct. Make sure that electric cables and hose connections are not damaged.
- Do not commission damaged products. Protect them against unintentional startup. Label and identify the damaged product as defective.
- If the faults cannot be eliminated, take the products out of service and protect them against unintentional startup.

2.5 Product safety

2.5.1 State of the art

The product is designed to meet state-of-the-art safety requirements, has been tested and left the factory in a condition in which it is safe to operate.
The applicable regulations and European standards have been taken into account.

2.5.2 Safety instructions for electrical equipment in hazardous areas

The Memosens inductive sensor cable connection system consists of:
- Memocheck Sim (Memosens technology) CYP03D and
- Measuring cable CYK10

This connection system is approved for measuring applications in explosive atmospheres in accordance with:

a) IECEx design approval, IECEx BVS 12.0007
b) ATEX design approval BVS 12 ATEX E 121 008 with amendments.

The IECEx certificate to this effect and the EC certificate of conformity for ATEX are an integral part of these Operating Instructions.

- Power is supplied to the Memocheck Sim CYP03D via three alkaline batteries with a total nominal voltage of 4.5 V. Only the following types of battery may be used for this purpose:

	Type 1	**Type 2**
Manufacturer	Duracell Plus batteries	Energizer
Type	MN1500	EN91
Designation	LR6 (IEC)	LR6 (IEC)
$U_{battery, nominal}$	1.5 V	1.5 V
Chemical composition	Zinc/manganese dioxide (Zn / MnO_2)	Zinc/manganese dioxide (Zn / MnO_2)

- Memocheck Sim CYP03D may not be opened in hazardous areas.
- Before putting the Memocheck Sim CYP03D into operation, make sure that the battery compartment is closely securely with a screw.
- Ex-rated digital sensors and simulators with Memosens technology are indicated by an orange-red ring on the plug-in head.
- The maximum permissible cable length is 100 m (330 ft).
- Full compliance with regulations for electrical systems in hazardous areas (EN/IEC 60079-14) is mandatory when using the devices and sensors.
- The conductive protective coating on the device is part of the Ex-related safety concept. Make sure there is no damage >4 cm^2 on the protective coating.

3 Device description

3.1 Measuring system

Sensor simulation in a complete measuring system consists of:
- Memocheck Sim CYP03D
- Transmitter with Memosens technology
- Memosens data cable CYK10

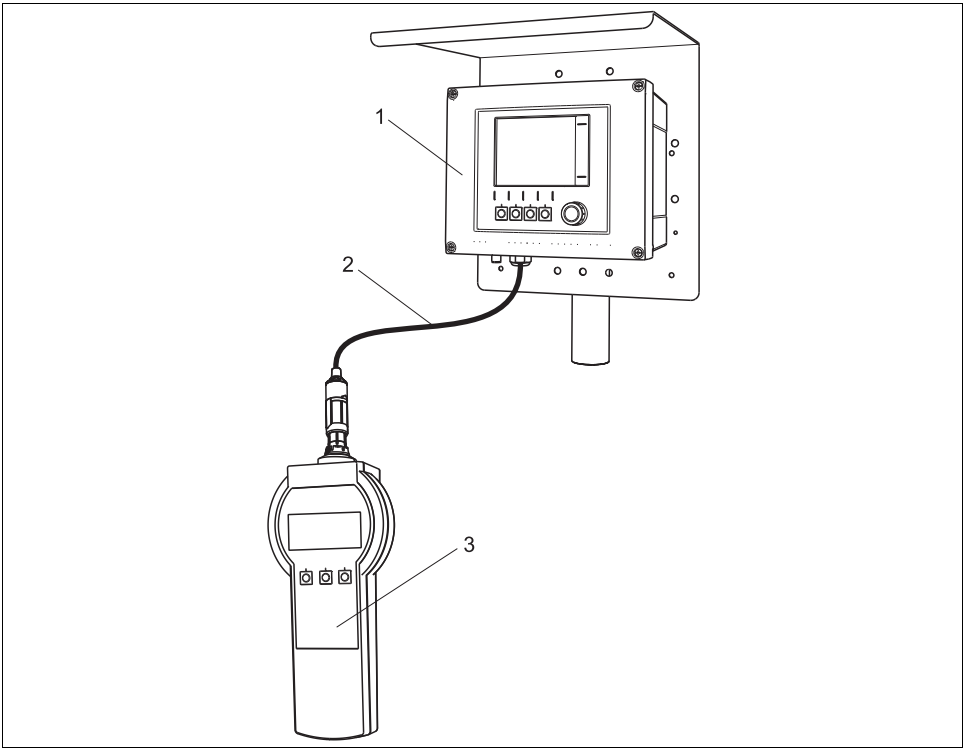


Fig. 1: Measuring system with Memocheck Sim CYP03D

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

3.2 IECEx

The approved digital Memocheck Sim CYP03D sensor simulator may only be connected in IECEx-rated environments using the following IECEx-certified measuring cable:
1. CYK10-G*** (IECEx BVS 11.0052X)
2. It may also be connected using a Memosens measuring cable which has IECEx certification and is identical both in terms of design, appliance technology and function.

Connection may only be established to the IECEx-certified intrinsically safe sensor output circuit of the Liquiline M CM42 transmitter (IECEx TUR 11.0007X) or alternatively to an IECEx-certified intrinsically safe Memosens sensor output that supports the following maximum values. In particular, the effective inner inductance and the capacitance of the approved, intrinsically safe sensor output may not exceed the values indicated below:

1. Entity parameters[1)]	2. Entity parameters[1)]
U_0 = 5.1 V	U_0 = 5.04 V
I_0 = 130 mA	I_0 = 80 mA
P_0 = 166 mW (linear output curve)	P_0 = 112 mW (trapezoid output curve)
C_i = 15 µF	C_i = 14.1 µF
L_i = 95 µH	L_i = 237.2 µH

1) Ex-relevant electrical connection parameters

Electrical connection must be established in accordance with the wiring diagram.

3.3 ATEX

The approved digital Memocheck Sim CYP03D sensor simulator may only be connected in ATEX-rated environments using the following measuring cable:
1. CYK10-G*** (BVS 04 ATEX E 121 X incl. amendments N9 and N9 amendment information)
2. It may also be connected using a Memosens measuring cable which is identical both in terms of design, appliance technology and function.

Connection may only be established to the ATEX-certified intrinsically safe sensor output circuit of the Mycom S CPM153-G or Liquiline M CM42 transmitter or alternatively to an ATEX-certified intrinsically safe Memosens sensor output that supports the following maximum values. In particular, the effective inner inductance and the capacitance of the approved, intrinsically safe sensor output may not exceed the values indicated below:

1. Entity parameters[1)]	2. Entity parameters[1)]
U_0 = 5.1 V	U_0 = 5.04 V
I_0 = 130 mA	I_0 = 80 mA
P_0 = 166 mW (linear output curve)	P_0 = 112 mW (trapezoid output curve)
C_i = 15 µF	C_i = 14.1 µF
L_i = 95 µH	L_i = 237.2 µH

1) Ex-relevant electrical connection parameters

Electrical connection must be established in accordance with the wiring diagram.

3.4 Quick wiring guide in Ex areas

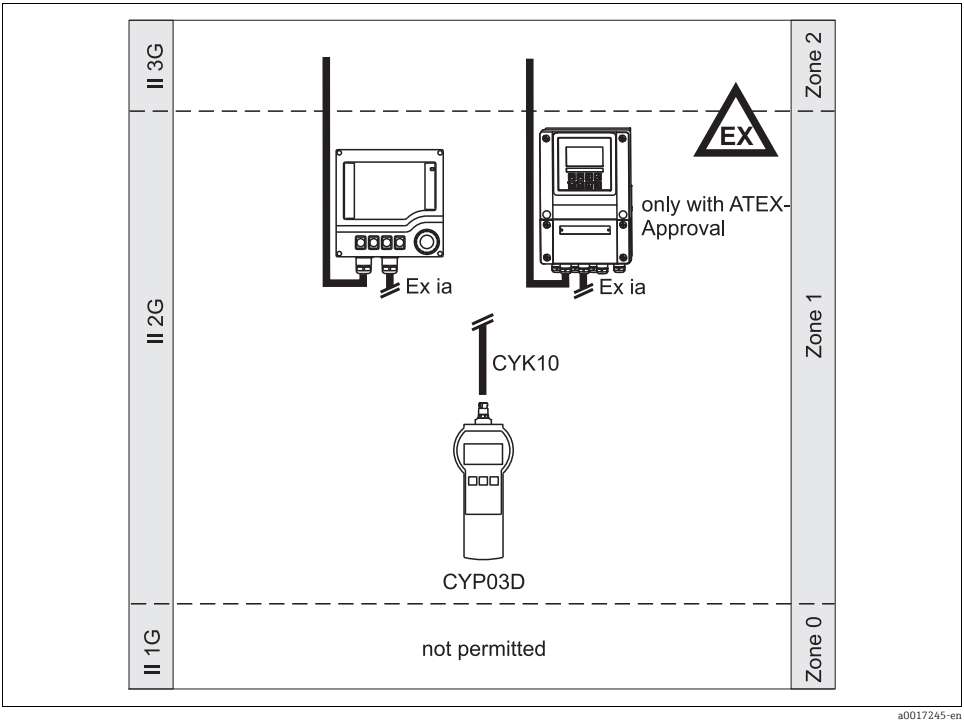


Fig. 2: Connection in hazardous areas

3.5 Temperature classes

Simulator		Ambient temperature range T_a	Temperature class
CYP03D-**-**	Memocheck Sim	-20 to +50 °C (-4 to 122 °F)	T4

If the ambient temperatures shown above are not exceeded no invalid temperatures for the particular temperature class will occur at the simulator.

4 Incoming acceptance and product identification

4.1 Incoming acceptance

1. Make sure the packaging is not damaged!
   ↳ Inform your supplier of any damage to the packaging.
   Please keep the damaged packaging until any issues have been resolved.
2. Make sure the contents are not damaged!
   ↳ Inform your supplier of any damage to the contents.
   Please keep the damaged goods until any issues have been resolved.
3. Make sure the delivery is correct and nothing is missing.
   ↳ Check the delivery against the delivery papers and your order.
4. For storage and transportation: pack the product in such a way as to protect it reliably against impact and moisture.
   ↳ Optimum protection is provided by the original packaging materials.
   The permitted ambient conditions must be observed (see Technical data).

If you have any queries, contact your supplier or local sales center.

4.2 Product identification

4.2.1 Nameplate

The nameplate is located on the back of the device.

The nameplate provides you with the following information on your device:
- Order code
- Serial number
- Ex approval, if applicable

Compare the data on the nameplate with your order.

4.2.2 Serial number and order code

The order code and serial number of your device can be found in the following locations:
- On the nameplate
- In the delivery papers
- On the packaging

To establish the version of your device, enter the order code from the nameplate into the search field at the following address:
www.products.endress.com/order?ident

4.3 Scope of delivery

The delivery comprises:
- Memocheck Sim CYP03D
- Operating Instructions
- Quality certificate
- Cable as per order (optional)
- Case to store CYP03D and cable (optional)
- Certificate of calibration (optional)

4.4 Certificates and approvals

Declaration of Conformity
The product meets the requirements of harmonized European standards.
It therefore meets the legal specifications of EU guidelines.
The manufacturer confirms that the product has been successfully tested by applying the CE mark.

IECEx
Ex ia IIC T4 Gb

ATEX
II 2G Ex ia IIC T4 Gb

5 Operation options

5.1 Overview

5.1.1 Display

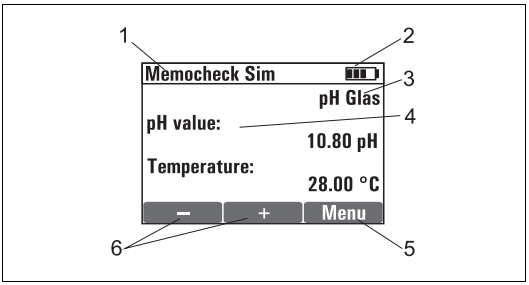


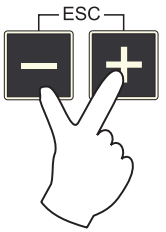
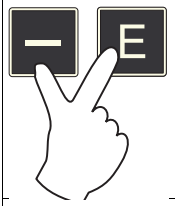
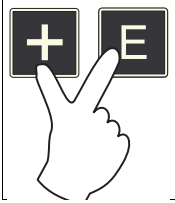
Fig. 3: Display (Example: simulation mode)

1 *Menu path and/or device designation*
2 *Battery status*
3 *Simulated parameter*
4 *Sim main value*
5 *Assignment of soft key, e.g. Menu: Displays main menu Enter: Confirms data entered*
6 *Assignment of soft keys, e.g. "-/+": Configures numerical data*

If an error message occurs, reset the device. If this action does not rectify the error, contact your Endress+Hauser sales center.

5.1.2 Key functions

E	**ENTER key** The ENTER key has the following functions: ▪ Switches on the device (press for at least 3 seconds) ▪ Calls up menu when in simulation mode ▪ Saves (confirms) data entered ▪ Selects a menu option ▪ Switches off the device (press for at least 3 seconds)
– +	**MINUS key and PLUS key** In setup mode, the MINUS and PLUS keys have the following functions: ▪ Configuration of parameters and numerical values ▪ Navigation through menu In simulation mode, the MINUS and PLUS keys have the following functions: ▪ "Run through" of sim. main values, with each values being changed by the amount of the delta value

	**Escape function** Pressing the MINUS and PLUS keys simultaneously brings you up one level in the menu. Pressing the MINUS and PLUS keys for longer when in the main menu brings you back to simulation mode.
	**MINUS key and ENTER key** Pressing the MINUS and ENTER keys simultaneously for longer allows you to reset the device.
	**PLUS key and ENTER key** Pressing the PLUS and ENTER keys simultaneously for longer allows you to reset the device to the factory settings. This also deletes all the setups saved.

5.2 Structure and function of the operating menu

5.2.1 Operating menu

Menu

- Language
- Display
  - Illumination
  - Contrast
- Setup
  - Simulation
    - Parameter
      - Memosens
        - pH glass
        - pH + ORP
        - pH ISFET
        - ORP
        - Conductive cond.
        - Oxygen amper.
        - Chlorine
        - pH glass SIL
      - Fixed cable
        - Toroidal conductivity
        - Oxygen optical
        - Turbidity
        - Nitrate
        - SAC
    - Sim main value
    - Test values
  - Save setup
  - Load setup
  - Advanced
    - Date
    - Time

Menu

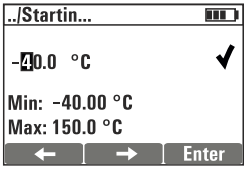
- Switch off auto.
- Advanced functions
  - Calibration value
  - Error simulation
  - Ramp
- Diagnostics
  - Diagnostic list
  - Order code
  - Serial number
  - Software
  - Hardware
  - Reset
  - Factory setting
- Switch off

5.2.2 Setting values

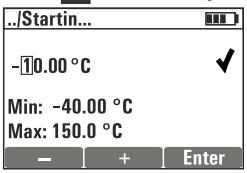
Changing values within the menu
Example: defining the start value of a ramp

Maximum and minimum values are displayed in the editor. You can only configure values within these limits.

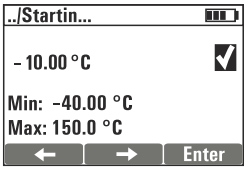
1. Use the arrow keys to select the digit of the value that you want to change.
2. Press E to change the value.
   ↳ The digit flashes.



3. Press + or − to increase or decrease the value.
4. Press E to confirm your entry.



   ↳ The "Escape" function (− and + pressed simultaneously) is disabled here in order to prevent incorrect entries.
5. Select the tick mark (arrow key) and press E.
   ↳ The edited value is accepted.



6 Commissioning

6.1 Switching on the measuring device

Switching on

▶ Press and hold E for at least 3 seconds.

↳ This loads the last setup that was saved.

Switching off

▶ Press and hold E for at least 3 seconds.

6.2 Configuring the operating language and getting started

After switching off, it is necessary to carry out some settings in order to configure the most important device functions. The following is an example.

Configuring the language

1. Press "Menu".
2. Select "Language" (using E).

Available languages (factory settings in bold):
- Deutsch
- **English**
- Français
- Español
- Italiano

3. Select your language, e.g. "Deutsch".
4. Confirm with E.

↳ From now on, you will be guided through the menu in the language of your choice.

Pressing − and + takes you back to the main menu.

Selecting a parameter and configuring test values
Available parameters:
- Memosens
  - **pH glass**
  - pH + ORP
  - pH ISFET
  - ORP
  - Conductive conductivity
  - Oxygen amperometric
  - Chlorine
  - pH glass SIL
- Fixed cable
  - Toroidal conductivity
  - Oxygen optical
  - Turbidity
  - Nitrate
  - SAC

1. Under "Setup/Simulation", select the desired parameter, e.g. "ORP".
   ↳ Press E to confirm your entry.

Ranges of adjustment
- pH value:
  -2.0 to 16.0 pH
- Temperature:
  -40.0 to 150.0 °C
- Raw value:
  -750.0 to 750.0 mV
- Raw value temperature:
  -40.0 to 150.0 °C
- SCS resistance:
  0.001 MOhm to 1.000 TOhm

2. Under "Setup/Simulation/Test values", enter the test values (see the section "Configuring sim. main value and test values").
3. Press − and + simultaneously.
   ↳ You are in the simulation mode.

You can now simulate the selected parameter using the selected settings.

Once you connect the Memocheck Sim CYP03D to a Memosens transmitter, the Memosens symbol appears in the status line of the simulator.
It indicates that the simulator is communicating with the transmitter.

The simulation symbol displayed indicates whether or not the transmitter is in simulation mode:
- e.g. Liquiline CM442:
  The symbol for simulation SIM appears in the line of the simulated parameter.
- e.g. Liquiline M CM42:
  The symbol for simulation SIMU appears in the status line.

You can connect the simulator to all transmitters using Memosens technology.

6.3 Configuring the measuring device

6.3.1 General settings

In the "Display" menu you can carry out the following settings:
- Illumination
- Contrast

Change the illumination or contrast setting of the display by pressing − or +. Confirm your entry by pressing E.

Path: Menu/Setup/Advanced

Function	Configuration options (factory settings in bold)	Info
To accept the configured value, use the arrow keys to go right until the check mark is highlighted. Confirm with E.		
▶ Date		
▶ Year	**10** 09 to 99	Set the current date.
▶ Month	**03** 01 to 12	
▶ Day	**28** 01 to 31	
▶ Time		
▶ Hour	**06** 00 to 23	Set the current time.
▶ Minute	**30** 00 to 59	
▶ Second	**21** 00 to 59	

Path: Menu/Setup/Advanced

Function	Configuration options (factory settings in bold)	Info
▶ Switch off auto.	**20 min** 5 to 100 min	Set the number of minutes after which the device is automatically switched off. If the simulator is connected to a transmitter, this function is deactivated. In this case, the simulator does not switch off automatically.

6.3.2 Selecting parameters

In the setup, you configure which parameters are to be simulated.

Path: Menu/Setup

Function	Configuration options (factory settings in bold)	Info
▶ Simulation		
▶ Parameter		The parameters currently configured are displayed.

If you change the parameter, the following prompt appears:

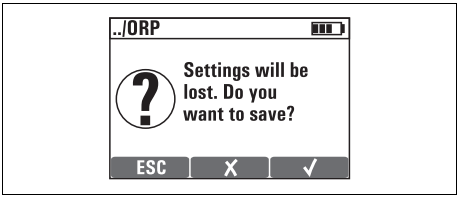


Fig. 4: Prompt when parameters are changed

You have the following options:

- Use ESC to go back and cancel the change.
- Use X to change parameter directly. Your last settings for the current parameter will be lost.
- Use ✓ to save the current setup. In the next prompt, select a designated storage location for the setup. Select a free storage location to ensure that none of the settings previously saved are overwritten.

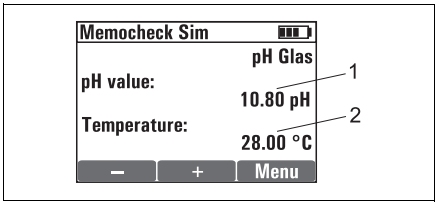
In the "Setup/Save setup" menu, you can save up to 10 setups under the relevant parameter name.
If you wish to use a saved setup, select it under the "Setup/Load setup" menu.

6.3.3 Configuring sim. main value and test values

A setup comprises the selected parameter, its test values and a sim. main value.
The test values contain all the measured values of a test setup. Changes are accepted immediately and displayed on the transmitter. The sim. main value is defined can be changed in simulation mode by a freely definable delta value. By pressing + or − the delta value defines the increase or decrease in the value.

Configuring the sim. main value as follows:
1. In the "Setup/Simulation/Sim. main value" menu, select the value you wish to simulate.
2. Enter the desired delta value in the data editor.

Simulation mode



1 Sim main value
2 2nd test value

Fig. 5: Display in simulation mode

Sim. main values are displayed as the first value in simulation mode and can be changed using − and +. An additional test value is displayed as the second value. Pressing − and + does not affect this value. You can change the 2nd test value in the "Setup/Simulation/Test values" menu.
Other test values which are not visible on the display can be read at the transmitter.

To ensure that the simulator and transmitter display the identical chlorine concentration, the pH value which is used for calculation purposes must be the same for the transmitter and the simulator.

The configuration options depend on the parameter selected. The factory settings are highlighted in bold in the following.

Memosens:

- pH glass/pH glass SIL:
  - **pH value**
  - Temperature
  - Raw value
  - Raw value temperature
  - SCS resistance
- pH + ORP:
  - **pH value**
  - ORP potential
  - rH value
  - Temperature

Memosens:

- pH ISFET:
  - **pH value**
  - Temperature
  - Raw value
  - Raw value temperature
- ORP:
  - **ORP potential**
  - ORP [%]
  - Temperature
  - Raw value
  - Raw value temperature
- Conductive conductivity:
  - **Conductivity**
  - Temperature
  - Resistance
  - Raw value temperature
  - Phase
- Oxygen amperometric:
  - **O_2 concentration**
  - Current
  - O_2 saturation
  - O_2 partial pressure
  - Temperature
  - Salinity
  - Raw value current
  - Raw value temperature
- Chlorine:
  - **Chlorine concentration**
  - Current
  - Temperature
  - Raw value current
  - Raw value temperature

Fixed cable:

- Toroidal conductivity:
  - **Conductivity**
  - Temperature
  - Resistance
  - Raw value temperature
  - Phase
- Oxygen optical:
  - **O_2 partial pressure**
  - O_2 saturation
  - O_2 content
  - Temperature
  - Raw value temperature
  - Slope

Fixed cable:

- Turbidity:
  - **Temperature**
  - TU value [FNU]
  - TU value [g/l]
  - Raw value temperature
- Nitrate:
  - **NO_3 content**
  - NO_3-N content
  - Temperature
  - Raw value temperature
- SAC:
  - **Temperature**
  - SAC value
  - KHP value [mg/l]
  - Raw value temperature

6.4 Advanced settings

In the "Advanced functions" menu, you can enter the following values. These values always refer to the last parameters selected under "Simulation".

- Calibration value
- Error simulation
- Ramp

Calibration value

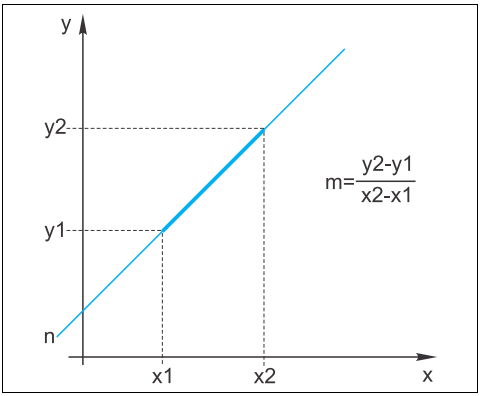
- The calibration value of the simulated sensor is the value to which the sensor adjustment refers.
- If you change a calibration value, there will be a brief interruption to communication between the Memocheck Sim CYP03D and the transmitter to allow the transmitter to accept the calibration settings.
- An unfavorable configuration may result in measured values outside the specified measuring range. This can lead to fault states in the transmitter.
  --> More information on calibration can be found in the Operating Instructions for your transmitter.

Error simulation

- You receive a list of possible errors.
- The different errors can be combined with each other.
- The error categories in accordance with NAMUR (F, M, C, S) are treated as follows:
  - The errors declared as "F" in the transmitter are indicated by a flashing display.
  - Errors in other categories are displayed in the transmitter's diagnostic list.

Ramp

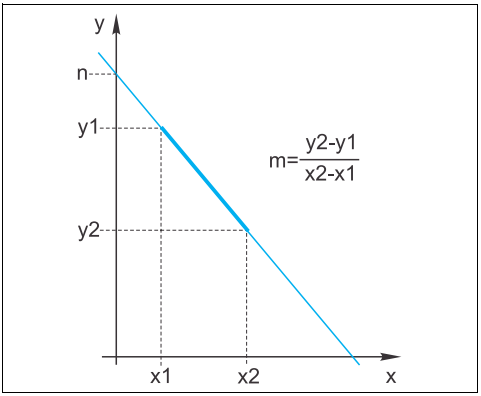
- You determine the starting value, stop value and duration for the ramp. The duration enables you to set the time taken for one ramp interval to elapse e.g. pH 2.5 to pH 12.0 in 20 sec.
- The ramp repeats itself automatically until you stop it.
- The ramp is a simple linear function y = mx + n. The linear element "n" is normally equal to the zero point. The factor "m" is the slope of the line.



n Zero point
m Slope
y1 Starting value
y2 Stop value
x Time
x2-x1 Duration

Fig. 6: Linear function

- You will obtain a negative slope for the ramp if you set the starting value higher than the stop value.

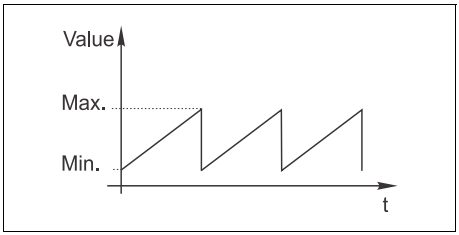


n Zero point
m Slope
y1 Starting value
y2 Stop value
x Time
x2-x1 Duration

Fig. 7: Negative slope

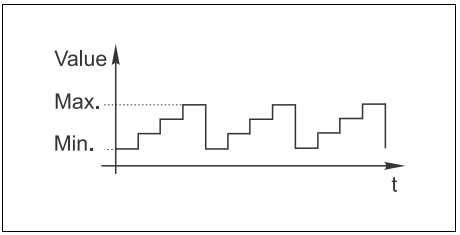
There are two types of ramp:

Continuous ramp
The ramp rises continuously without any jumps.



a0017397-en

Gradual ramp
The ramp is gradual. The dwell time per step can be adjusted.



a0017398-en

6.4.1 Advanced functions: pH glass/pH glass SIL

Path: Menu/Advanced functions

Function	Configuration options (factory settings in bold)				
▶ Calibration value					
▶ Slope	**59.16 mV/pH** 0.01 to 65.0 mV/pH				
▶ pH comp. isoth.	**7.0 pH** 0.0 to 12.0 pH				
▶ mV comp. isoth.	**0.0 mV** -3.0 to 3.0 V				
▶ Zero point	**7.0 pH** 0.0 to 12.0 pH				
▶ Temp. offset	**0.0 °C** -10.0 to 10.0 °C				
▶ Error simulation	Glass SCS failure Temp. sens. defect Glass SCS warning	Once you have selected an error using E, the error is output at the transmitter. To delete the error again, remove the check mark using E.			
▶ Ramp					
Sim main value	**Starting value**	**Stop value**	**Duration** (Continuous ramp)	**Number of steps** (Gradual ramp)	**Time per step** (Gradual ramp)
pH value	**-2.0 pH** -2.0 to 16.0 pH	**16.0 pH** -2.0 to 16.0 pH	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Temperature	**-40.0 °C** -40.0 to 150.0 °C	**150.0 °C** -40.0 to 150.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Raw value	**-750.0 mV** -750.0 to 750.0 mV	**750.0 mV** -750.0 to 750.0 mV	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Raw value temperature	**-40.0 °C** -40.0 to 150.0 °C	**150.0 °C** -40.0 to 150.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s

Path: Menu/Advanced functions

Function	Configuration options (factory settings in bold)				
SCS resistance	**0.001 MOhm** 0.001 MOhm to 1.0 TOhm	**1.0 TOhm** 0.001 MOhm to 1.0 TOhm	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s

6.4.2 Advanced functions: pH + ORP

Path: Menu/Advanced functions

Function	Configuration options (factory settings in bold)
▶ Calibration value	
▶ pH value	
▶ pH comp. isoth.	**7.0 pH** 0.0 to 12.0 pH
▶ mV comp. isoth.	**0.0 mV** -300.0 to 300.0 mV
▶ Slope	**56.12 mV/pH** 0.01 to 65.0 mV/pH
▶ Zero point	**7.0 pH** 0.0 to 12.0 pH
▶ ORP potential	
▶ Cal. point 1 [mV]	**-200.0 mV** -2.0 to 2.0 V
▶ Cal. point 2 [mV]	**200.0 mV** -2.0 to 2.0 V
▶ Cal. point 1 [%]	**10 %** 0.0 to 100.0 %
▶ Cal. point 2 [%]	**30 %** 0.0 to 100.0 %
▶ ORP % slope	**20.0 mV/%** -30.0 to 30.0 mV/%
▶ ORP % zero point	**-400.0 mV** -1.0 to 1.0 mV
▶ rH value	
▶ rH offset	**0.0 rH** -300.0 to 300.0 rH
▶ Temperature	
▶ Temp. offset	**0.0 °C** -10.0 to 10.0 °C

Path: Menu/Advanced functions

Function	Configuration options (factory settings in bold)				
▶ Error simulation	Glass SCS failure Ref. SCS failure Temp. sens. defect Glass SCS warning Ref. SCS warning Counter spillover Meas. value inval.	Once you have selected an error using E, the error is output at the transmitter. To delete the error again, remove the check mark using E.			
▶ Ramp					
Sim main value	**Starting value**	**Stop value**	**Duration** (Continuous ramp)	**Number of steps** (Gradual ramp)	**Time per step** (Gradual ramp)
▶ pH value					
pH value	**-2.0 pH** -2.0 to 16.0 pH	**16.0 pH** -2.0 to 16.0 pH	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Raw val. C1-C2 (pH)	**-750.0 mV** -750.0 to 750.0 mV	**750 mV** -750.0 to 750.0 mV	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
SCS resistance	**0.001 MOhm** 0.001 MOhm to 1.0 TOhm	**1.0 TOhm** 0.001 MOhm to 1.0 TOhm	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
▶ ORP potential					
ORP potential	**-2.0 V** -2.0 to 2.0 V	**2.0 V** -2.0 to 2.0 V	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
ORP [%]	**0.0 %** 0.0 to 100.0 %	**100.0 %** 0.0 to 100.0 %	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Raw val. C2 (ORP)	**-2.0 V** -2.0 to 2.0 V	**2.0 V** -2.0 to 2.0 V	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Raw value C1	**-3.0 V** -3.0 to 3.0 V	**3.0 V** -3.0 to 3.0 V	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
▶ rH value	**-40.0 rH** -40.0 to 50.0 rH	**50.0 rH** -40.0 to 50.0 rH	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
▶ Temperature					
Temperature	**-40.0 °C** -40.0 to 150.0 °C	**150.0 °C** -40.0 to 150.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Raw val. temp.	**-40.0 °C** -40.0 to 150.0 °C	**150.0 °C** -40.0 to 150.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s

6.4.3 Advanced functions: pH ISFET

Path: Menu/Advanced functions

Function	Configuration options (factory settings in bold)				
▶ Calibration value					
▶ Slope	**59.16 mV/pH** 0.01 to 65.0 mV/pH				
▶ pH comp. isoth.	**7.0 pH** 0.0 to 12.0 pH				
▶ mV comp. isoth.	**0.0 mV** -3.0 to 3.0 V				
▶ Zero point	**0.0 mV** -3.0 to 3.0 V				
▶ Temp. offset	**0.0 °C** -10.0 to 10.0 °C				
▶ Error simulation	Leak curr. alarm Leak. curr. warn Temp. sens. defect Sensor supply	Once you have selected an error using E, the error is output at the transmitter. To delete the error again, remove the check mark using E.			
▶ Ramp					
Sim main value	**Starting value**	**Stop value**	**Duration** (Continuous ramp)	**Number of steps** (Gradual ramp)	**Time per step** (Gradual ramp)
pH value	**-2.0 pH** -2.0 to 16.0 pH	**16.0 pH** -2.0 to 16.0 pH	**60 s** 10 to 6000s	**10** 1 to 200	**1 s** 0.5 to 600 s
Temperature	**-40.0 °C** -40.0 to 150.0 °C	**150.0 °C** -40.0 to 150.0 °C	**60 s** 10 to 6000s	**10** 1 to 200	**1 s** 0.5 to 600 s
Raw value	**-750.0 mV** -750.0 to 750.0 mV	**750.0 mV** -750.0 to 750.0 mV	**60 s** 10 to 6000s	**10** 1 to 200	**1 s** 0.5 to 600 s
Raw value temperature	**-40.0 °C** -40.0 to 150.0 °C	**150.0 °C** -40.0 to 150.0 °C	**60 s** 10 to 6000s	**10** 1 to 200	**1 s** 0.5 to 600 s

6.4.4 Advanced functions: ORP

Path: Menu/Advanced functions

Function	Configuration options (factory settings in bold)					
▶ Calibration value						
▶ Cal. point 1 [mV]	**-500.0 mV** -2.0 to 2.0 V					
▶ Cal. point 2 [mV]	**500.0 mV** -2.0 to 2.0 V					
▶ Cal. point 1 [%]	**20 %** 0.0 to 100.0 %					
▶ Cal. point 2 [%]	**80 %** 0.0 to 100.0 %					
▶ ORP mV offset	**0.0 mV** -1.0 to 1.0 V					
▶ Temp. offset	**0.0 °C** -10.0 to 10.0 °C					
▶ ORP % slope	**16.67 mV/%** -30.0 to 30.0 mV/%					
▶ ORP % zero point	**-833.3 mV** -1.0 to 1.0 V					
▶ Error simulation	Temp. sens. defect Sensor supply	Once you have selected an error using E, the error is output at the transmitter. To delete the error again, remove the check mark using E.				
▶ Ramp						
Sim main value	**Starting value**	**Stop value**	**Duration** (Continuous ramp)	**Number of steps** (Gradual ramp)	**Time per step** (Gradual ramp)	
ORP potential	**-2.0 V** -2.0 to 2.0 V	**2.0 V** -2.0 to 2.0 V	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s	
ORP [%]	**0.0 %** 0.0 to 100.0 %	**100.0 %** 0.0 to 100.0 %	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s	
Temperature	**-40.0 °C** -40.0 to 150.0 °C	**150.0 °C** -40.0 to 150.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s	
Raw value	**-2.0 V** -2.0 to 2.0 V	**2.0 V** -2.0 to 2.0 V	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s	
Raw value temperature	**-40.0 °C** -40.0 to 150.0 °C	**150.0 °C** -40.0 to 150.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s	

6.4.5 Advanced functions: Conductive/Toroidal conductivity

Path: Menu/Advanced functions

Function	Configuration options (factory settings in bold)	
▶ Calibration value		
▶ Cell constant (for conductive conductivity)	**10.0*e^{-3} 1/cm** 0.001*e^{-3} to 10.0 1/cm	
▶ Cell constant (for toroidal conductivity)	**2.9 1/cm** 0.001*e^{-3} to 10.0 1/cm	
▶ Reference value (for conductive conductivity)	**0.005 mS/cm** 0.001 mS/cm to 1.0 S/cm	
▶ Reference value (for toroidal conductivity)	**100.0 mS/cm** 0.001 mS/cm to 1.0 S/cm	
▶ Reference temperature (for conductive conductivity)	**25.58 °C** 0.0 to 60.0 °C	
▶ Reference temperature (for toroidal conductivity)	**25.0 °C** 0.0 to 60.0 °C	
▶ Temp. offset	**0.0 °C** -10.0 to 10.0 °C	
▶ Temp. gradient	**1.0** -3.0 to 3.0	
▶ Error simulation	For conductive conductivity: Polarization warning No Cond. display Temp. sens. defect Sensor supply For toroidal conductivity: Conductivity sensor defective Invalid conductivity value Temp. sens. defect Temp. value invalid High coil current Low coil current	Once you have selected an error using E, the error is output at the transmitter. To delete the error again, remove the check mark using E.
▶ Ramp		

Path: Menu/Advanced functions

Function	Configuration options (factory settings in bold)				
Sim main value	**Starting value**	**Stop value**	**Duration** (Continuous ramp)	**Number of steps** (Gradual ramp)	**Time per step** (Gradual ramp)
Conductivity	**0.001 µS/cm** 0.001 µS/cm to 2000 S/cm	**2000 S/cm** 0.001 µS/cm to 2000 S/cm	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Temperature	**-40.0 °C** -40.0 to 150.0 °C	**150.0 °C** -40.0 to 150.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Resistance	**0.001 MOhm** 0.001 mOhm to 1.0 GOhm	**1.0 GOhm** 0.001 mOhm to 1.0 GOhm	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Raw value temperature	**-40.0 °C** -40.0 to 150.0 °C	**150.0 °C** -40.0 to 150.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Phase	**0.0 °** 0.0 to 320.0 °	**320.0 °** 0.0 to 320.0 °	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s

6.4.6 Advanced functions: Oxygen amperometric

Path: Menu/Advanced functions

Function	Configuration options (factory settings in bold)
▶ Calibration value	
▶ Slope	**313.5 pA/hPa** 0.1 pA/hPa to 5.0 nA/hPa
▶ Zero point	**0.0 pA** -100.0 nA to 100.0 nA
▶ Temp. offset	**0.0 °C** -10.0 to 10.0 °C
▶ Temp. gradient	**1.0** -3.0 to 3.0
▶ Temp. coeff. 1	**0.03079** 0.02 to 0.04
▶ Temp. coeff. 2	**0.0004476** 0.0001 to 0.0005
▶ Temp. coeff. 3	**0.000004224** 0.0000005 to 0.000005
▶ Temp. coeff. 4	**0.00000006675** 0.000000001 to 0.00000007

Path: Menu/Advanced functions

Function	Configuration options (factory settings in bold)					
▶ Error simulation	Leak curr. alarm Leak. curr. warn Temp. sens. defect Sensor supply	Once you have selected an error using E, the error is output at the transmitter. To delete the error again, remove the check mark using E.				
▶ Ramp						
Sim main value	**Starting value**	**Stop value**	**Duration** (Continuous ramp)	**Number of steps** (Gradual ramp)	**Time per step** (Gradual ramp)
O_2 concentration	**-0.02 mg/l** -0.02 to 120.0 mg/l	**120.0 mg/l** -0.02 to 120.0 mg/l	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Current	**0.0 pA** 0.0 pA to 640.0 nA	**640.0 nA** 0.0 pA to 640.0 nA	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
O_2 saturation	**-0.02 % sat** -0.02 to 1000 % sat	**1000 % sat** -0.02 to 1000 % sat	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
O_2 partial pressure	**0.0 hPa** 0.0 to 440.0 hPa	**440.0 hPa** 0.0 to 440.0 hPa	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Temperature	**-40.0 °C** -40.0 to 60.0 °C	**60.0 °C** -40.0 to 60.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Salinity	**0.0 g/kg** 0.0 to 40.0 g/kg	**40.0 g/kg** 0.0 to 40.0 g/kg	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Raw value current	**0.0 pA** 0.0 pA to 640.0 nA	**640.0 nA** 0.0 pA to 640.0 nA	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Raw value temperature	**-40.0 °C** -40.0 to 60.0 °C	**60.0 °C** -40.0 to 60.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s

6.4.7 Advanced function: Oxygen optical

Path: Menu/Advanced functions

Function	Configuration options (factory settings in bold)
▶ Calibration value	
▶ Slope	**100.0 %** 0.0 to 200.0 %
▶ Tau	**20.0 µs** 5.0 to 100.0 µs
▶ Temp. offset	**0.0 °C** -10.0 to 10.0 °C

Path: Menu/Advanced functions

Function	Configuration options (factory settings in bold)	
▶ Temp. gradient	**1.0** -3.0 to 3.0	
▶ Error simulation	Tau too low Tau too high No signal dropout No amplitude Temperature too low Temperature too high LED voltage No LED current Dynamic error	Once you have selected an error using E, the error is output at the transmitter. To delete the error again, remove the check mark using E.

▶ Ramp

Sim main value	Starting value	Stop value	Duration (Continuous ramp)	Number of steps (Gradual ramp)	Time per step (Gradual ramp)
O_2 partial pressure	**0.0 hPa** 0.0 to 440.0 hPa	**440.0 hPa** 0.0 to 440.0 hPa	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
O_2 saturation	**-0.02 % sat** -0.02 to 1000 % sat	**1000 % sat** -0.02 to 1000 % sat	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
O_2 content	**-0.02 mg/l** -0.02 to 120.0 mg/l	**120.0 mg/l** -0.02 to 120.0 mg/l	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Temperature	**-40.0 °C** -40.0 to 60.0 °C	**60.0 °C** -40.0 to 60.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Raw value temperature	**-40.0 °C** -40.0 to 60.0 °C	**60.0 °C** -40.0 to 60.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Slope	**0.0 %** 0.0 to 200.0 %	**200.0 %** 0.0 to 200.0 %	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s

6.4.8 Advanced functions: Chlorine

Path: Menu/Advanced functions

Function	Configuration options (factory settings in bold)
▶ Calibration value	
▶ Slope	**-25.0 nA/g/l** -500.0 to -0.01 nA/g/l
▶ Zero point	**0.0 pA** -100.0 nA to 100.0 nA

Path: Menu/Advanced functions

Function	Configuration options (factory settings in bold)	
▶ Temp. offset	**0.0 °C** -10.0 to 10.0 °C	
▶ Temp. gradient	**1.0** -3.0 to 3.0	
▶ Error simulation	Temp. sens. defect Sensor supply	Once you have selected an error using E, the error is output at the transmitter. To delete the error again, remove the check mark using E.

▶ Ramp

Sim main value	Starting value	Stop value	Duration (Continuous ramp)	Number of steps (Gradual ramp)	Time per step (Gradual ramp)
Chlorine concentration	**0.0 mg/l** 0.0 to 200.0 mg/l	**200.0 mg/l** 0.0 to 200.0 mg/l	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Current	**-1.5 µA** -1.5 µA to 0.0 pA	**0.0 pA** -1.5 µA to 0.0 pA	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Temperature	**-40.0 °C** -40.0 to 60.0 °C	**60.0 °C** -40.0 to 60.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
pH value	**-2.0 pH** -2.0 to 16.0 pH	**16.0 pH** -2.0 to 16.0 pH	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Raw value current	**-1.5 µA** -1.5 µA to 0.0 pA	**0.0 pA** -1.5 µA to 0.0 pA	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Raw value temperature	**-40.0 °C** -40.0 to 60.0 °C	**60.0 °C** -40.0 to 60.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s

6.4.9 Advanced functions: Turbidity

Path: Menu/Advanced functions

Function	Configuration options (factory settings in bold)	
▶ Calibration value		
▶ Temp. offset	**0.0 °C** -10.0 to 10.0 °C	
▶ Error simulation	LED error Turbidity too high Electronics test Sensor polluted Uncertain measured value No calibration data Temperature error Invalid measured value Measurement stop	Once you have selected an error using E, the error is output at the transmitter. To delete the error again, remove the check mark using E.

Path: Menu/Advanced functions

Function	Configuration options (factory settings in bold)				
▶ Ramp					
Sim main value	**Starting value**	**Stop value**	**Duration** (Continuous ramp)	**Number of steps** (Gradual ramp)	**Time per step** (Gradual ramp)
Temperature	**-40.0 °C** -40.0 to 150.0 °C	**150.0 °C** -40.0 to 150.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
TU value [FNU]	**0.0 FNU** 0.0 to 10000.0 FNU	**10000.0 FNU** 0.0 to 10000.0 FNU	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
TU value [g/l]	**0.001 mg/l** 0.001 to 1000 g/l	**1000 g/l** 0.001 to 1000 g/l	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Raw value temperature	**-40.0 °C** -40.0 to 150.0 °C	**150.0 °C** -40.0 to 150.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s

6.4.10 Advanced functions: Nitrate

Path: Menu/Advanced functions

Function	Configuration options (factory settings in bold)				
▶ Calibration value					
▶ Temp. offset	**0.0 °C** -10.0 to 10.0 °C				
▶ Error simulation	Flash lamp defect Turbidity too high Electronics test Filter change Uncertain measured value No calibration data Temperature error Measurement stop Invalid measured value	Once you have selected an error using E, the error is output at the transmitter. To delete the error again, remove the check mark using E.			
▶ Ramp					
Sim main value	**Starting value**	**Stop value**	**Duration** (Continuous ramp)	**Number of steps** (Gradual ramp)	**Time per step** (Gradual ramp)
NO_2 content	**0.001 mg/l** 0.001 mg/l to 3.0 g/l	**3.0 g/l** 0.001 mg/l to 3.0 g/l	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
NO_2 N content	**0.0 mg/l** 0.0 µg/l to 500.0 mg/l	**500.0 mg/l** 0.0 µg/l to 500.0 mg/l	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s

Path: Menu/Advanced functions

Function	Configuration options (factory settings in bold)				
Temperature	**-40.0 °C** -40.0 to 150.0 °C	**150.0 °C** -40.0 to 150.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Raw value temperature	**-40.0 °C** -40.0 to 150.0 °C	**150.0 °C** -40.0 to 150.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s

6.4.11 Advanced functions: SAC

Path: Menu/Advanced functions

Function	Configuration options (factory settings in bold)				
▶ Calibration value					
▶ Temp. offset	**0.0 °C** -10.0 to 10.0 °C				
▶ Error simulation	Flash lamp defect Turbidity too high Electronics test Filter change Uncertain measured value No calibration data Temperature error Measurement stop	Once you have selected an error using E, the error is output at the transmitter. To delete the error again, remove the check mark using E.			
▶ Ramp					
Sim main value	**Starting value**	**Stop value**	**Duration** (Continuous ramp)	**Number of steps** (Gradual ramp)	**Time per step** (Gradual ramp)
Temperature	**-40.0 °C** -40.0 to 150.0 °C	**150.0 °C** -40.0 to 150.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
SAC value	**0.0 1/m** 0.0 to 100.0*e^3 1/m	**100.0*e^3 1/m** 0.0 to 100.0*e^3 1/m	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
KHP value [mg/l]	**0.0 mg/l** 0.0 mg/l to 10.0 g/l	**10.0 g/l** 0.0 mg/l to 10.0 g/l	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s
Raw value temperature	**-40.0 °C** -40.0 to 150.0 °C	**150.0 °C** -40.0 to 150.0 °C	**60 s** 10 to 6000 s	**10** 1 to 200	**1 s** 0.5 to 600 s

7 Diagnostics

Path: Menu/Diagnostics

Function		Info
▶ Diagnostic list		The diagnostic messages provide information to Endress+Hauser service personnel.
Order code	CYP03D-xxx	
Serial no.	xxxxxxxxxx	
Software	x.xx.xx	
Hardware	x.xx.xx	
▷ Reset		Device is restarted. Your stored settings will be preserved.
▷ Factory setting		All device settings are reset to the factory settings. All the setups saved are deleted.

8 Maintenance

8.1 Cleaning

Clean the device only using conventional mild household cleaning agents.

8.2 Battery replacement

The battery compartment is accessed from behind. The permitted battery types can be found in the "Safety instructions" section.

Only ever open the battery compartment in the non-hazardous area!

8.3 Calibration and qualification

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.

9 Repair

9.1 Spare parts

Order No.	Designation
71138380	Battery compartment cover

9.2 Return

The product must be returned if repairs or a factory calibration are required, or if the wrong product has been ordered or delivered. According to legal regulations Endress+Hauser, as an ISO-certified company, is required to follow certain procedures when handling returned products that are in contact with the medium.

To ensure the safe, quick and professional return of your device,
check our website for information about the procedure and basic conditions:
www.services.endress.com/return-material

9.3 Disposal

The device contains electronic components and must therefore be disposed of in accordance with regulations on the disposal of electronic waste.
Observe local regulations.

Always dispose of batteries in accordance with local regulations on battery disposal.

10 Accessories

The most important accessories available at the time this document went to print are listed below. Contact your service department or sales center for accessories that are not listed here.

10.1 Memosens data cable

	Memosens data cable CYK10 (optional)
71128718	CYK10-A032 + adapter, cable ends; Non-Ex
71128721	CYK10-G032 + adapter; only for CYP03D, Ex

The Memosens data cable CYK10 is always supplied with an adapter piece. This enables you to connect the simulator with the cable to transmitters with M12 sockets and PG couplings.
If you wish to simulate fixed cable sensors (turbidity, nitrate, toroidal conductivity, oxygen optical), the Memosens data cable CYK10 is essential.
When using sensors with an inductive Memosens plug-in head, the appropriate cable is already included in the measuring point.

10.2 Storage case

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.

11 Technical data

11.1 Environment

11.1.1 Ambient temperature range

-20 to 50 °C (-4 to 122 °F)

11.1.2 Storage temperature

- Without batteries: -20 to 50 °C (-4 to 122 °F)
- With batteries: -20 to 35 °C (-4 to 95 °F)

11.1.3 Degree of protection

IP 65

11.1.4 Electromagnetic compatibility

Interference emission and interference immunity as per EN 61326?-1: 2006, class A for industry

11.2 Mechanical construction

11.2.1 Weight

Weight (incl. batteries): 0.3 kg (0.7 lbs)

11.2.2 Battery

For the Memocheck Sim CYP03D, use only the following battery types, as only these are covered by the Ex approval:
- Duracell batteries, MN1500 (AA, 1.5 V, LR6 as per IEC), x 3
- Energizer, EN91 (AA, 1.5 V, LR6 as per IEC), x 3

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

11.2.3 Material

Housing: ABS (UL 94 HB)

12 Appendix

EG 187A/07/a3

EG-Konformitätserklärung
EC Declaration of Conformity
CE Déclaration de Conformité

Endress+Hauser Conducta Gesellschaft für Mess- und Regeltechnik mbH+Co. KG
Dieselstrasse 24, 70839 Gerlingen, Germany

erklärt in alleiniger Verantwortung, dass die Produkte
declares in sole responsibility that the products
déclare sous sa seule responsabilité que les produits

Sensor-Simulatoren / sensor simulators / simulateurs de capteurs

Memocheck Sim CYP03D-BB+**

zusammen mit Messkabel / together with measuring cable / ensemble avec câble de mesure

CYK10-Ga, a = 1, 2**

EG-Baumusterprüfbescheinigung:
EC type examination certificate: **BVS 12 ATEX E 008 X**
Certificat de l'examen CE de type :

mit den Vorschriften folgender Europäischen Richtlinien übereinstimmen:
are in conformity with the regulations of the following European Directives:
sont conformes aux prescriptions et directives Européennes suivantes:

94/9/EG	(Geräte zur Verwendung in explosionsgefährdeten Bereichen) (Equipment for use in potentially explosive atmospheres) (Appareils et systèmes de protection en atmosphère explosive)
2004/108/EG	(Elektromagnetische Verträglichkeit) (Electromagnetic Compatibility) (Compatibilité électrotechnique)

Angewandte harmonisierte Normen oder normative Dokumente:
Applied harmonized standards or normative documents:
Normes harmonisées ou documents normatives appliquées:
EN 60079-0:2009, EN 60079-11:2007
EN 61326-1:2006, EN 61326-2-3:2006

Benannte Stelle für QS-Überwachung:
Notified body for QA control:
Organisme notifié pour l'assurance qualité :
DEKRA EXAM GmbH
Kennnummer / Identification number /
numéro d'identification (0158)

Gerlingen, 2012-02-16

i.V. Jörg-Martin Müller
Director Development

i.V. Peter Dierich
Certifications and Approvals

Endress+Hauser
People for Process Automation

a0017231

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx BVS 12.0007 issue No.:0	Certificate history:
Status:	Current	
Date of Issue:	2012-02-03 Page 1 of 4	

Applicant: **Endress+Hauser Conducta Gesellschaft für Mess- und Regeltechnik mbH + Co. KG**
Dieselstr. 24
70839 Gerlingen
Germany

Electrical Apparatus: **MEMOSENS sensor simulator Memocheck Sim**
Optional accessory: Type CYP03D-IA+**

Type of Protection: **IEC 60079-11:2006-07: Intrinsic Safety 'i'**

Marking: Ex ia IIC T4 Gb

Approved for issue on behalf of the IECEx Certification Body: H.-Ch. Simanski

Position: Head of Certification Body

Signature: (for printed version)

Date: 3.II.2012

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA EXAM GmbH

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www.addresses.endress.com

Endress+Hauser

People for Process Automation