

Memosens Laboratory Portfolio

Make it easy and give me values
I can trust



Take your measurements to a new level



Document your measured values quickly and easily with the Memobase Pro app

Make it easy

The new Memosens laboratory portfolio establishes the superb connection between your lab analysis and your process measurements. Ensure reliable spot measurements directly at the sampling point and simply document the results using the supporting Memobase Pro app. By using the identical sensor type in the laboratory as in the process, you are assured the highest comparability. You benefit from a minimized risk of measuring discrepancies and human errors. The integration of the laboratory and process is seamless, with guaranteed reliable measured values for any spot measurement.

Give me values I can trust

This unique laboratory product line comprises Liquiline Mobile CML18 multiparameter instrument with suitable digital Memosens sensors for measuring pH values, conductivity and oxygen. Each Memosens sensor carries a microprocessor that digitalizes the measurement values. As result, you store valuable GLP information such as sensor identity, adjustment values and sensor history. This makes it possible to combine a variety of parameters in a single concept, and guarantees optimum flexibility and reliable measured values under all laboratory and field conditions.

Your advantages at a glance

The Memosens laboratory portfolio offers the ideal solution to connect your process to the adjoining lab. Benefit from:

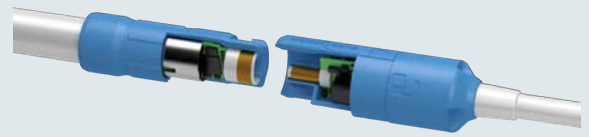
- Easy handling
- Reliable measured values
- Compliance with Good Laboratory Practice (GLP): Easy and automatic GLP documentation with smartphone app
- Integration of proven Endress+Hauser technology from process automation into the laboratory
- Measurement of a variety of parameters, such as pH, conductivity and oxygen

 **Learn more about the Memosens lab portfolio**
<https://eh.digital/labor>



 **Memosens 2.0 Technology**

With the unique laboratory products, you can enjoy all the benefits of Endress+Hauser's outstanding Memosens 2.0 technology. Robust, secure and interconnected liquid analysis with 100% digital data transmission via the inductive and corrosion-free plug-in head and a simple plug-and-play system for minimum process downtime. The pre-calibrated sensors are ready to be used at any time without the need for additional calibrations. You can quickly and easily swap sensors and parameters. Memosens 2.0 offers the perfect basis for all-round IIoT connectivity and the ideal link between your process and the lab.



Endress+Hauser laboratory ecosystem with sensors, mobile handheld device and software

Lab measurement reinvented

pH, dissolved oxygen and conductivity measurements with unique Memosens technology



Oxygen measurement in the aeration basin of a wastewater treatment plant



Memosens sensor connection is unaffected by water, humidity and dirt



A real space saver, one compact instrument for many parameters

Make it easy

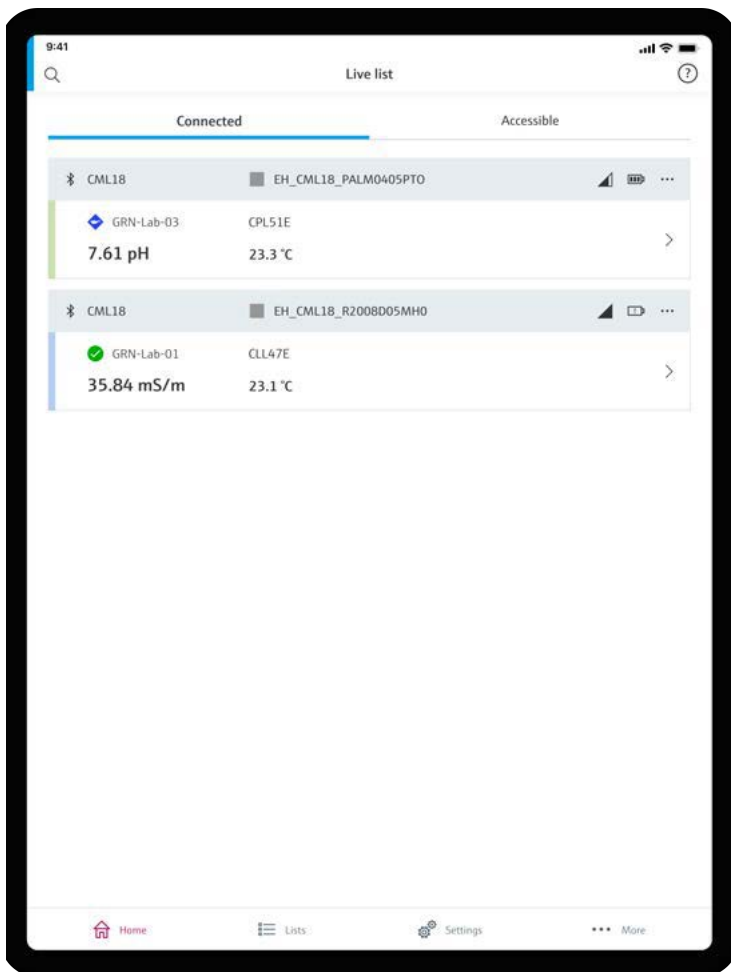
Just connect the sensor for your measuring task to the Liquiline CML18 multiparameter handheld and perform your measurement. To switch between the different parameters (pH, dissolved oxygen and conductivity), simply change the sensor directly on site and start measuring without any further calibration or adjustments. All your measurements can be traceably documented in the Memobase Pro App to meet your GLP requirements.

Measured values you can trust

Memosens 2.0 sensor technology ensures a trouble-free measurement with a stable digital signal with 100% integrity without any risk of signal loss. This technology is unique in lab measurements and makes your daily work easier on all levels. Using one technology for all measurements in the lab and processes guarantees end-to-end consistency and trusted measured values all the time.

The simple way to measure multiple parameters

No matter if you want to measure conductivity, pH or oxygen, all values are captured easily and intuitively with Memosens 2.0 technology. Thanks to plug-and-play capabilities, simply connect the sensor to the handheld and start measuring, regardless of the parameter. Liquiline CML18 will acquire all the sensor data and no further adjustments are necessary. Additionally, you can charge the handheld device with a wireless charger.



Memobase Pro software for smartphone and tablet

Simple as that

Work more efficiently, make things easier and get more reliable measured values. With Memobase Pro installed in your existing smartphone/tablet, you will experience a completely new way to measure and document your values and data in the field and in the laboratory.

Measurement values are saved just by a touch of the button on Liquiline Mobile CML18 handheld or by the surface of your smartphone/tablet. Wherever you work, we keep the usability and measuring reliability in the forefront.



Scan buffer or sample information with your smartphone camera, all data is automatically captured and saved in Memobase Pro app

Ideal software support with the Memobase Pro app

Install the Memobase Pro app to make the most of your Liquiline Mobile device. Benefit from functions, such as the ability to scan buffer solutions for full traceability or sample IDs including photos. Of course, the measurement results can be easily saved and adding photos or comments is completely straightforward. Your measured values can be sent by email for further processing and analysis. Additionally, the Memobase Pro App can be synchronized with the PC version of Memobase Pro so that your values can be transferred directly to your PC for your reports.

Fits in every pocket: the Liquiline Mobile CML18 handheld

The practical accessory for mobile measurements in the laboratory and process

Measure with the touch of a button with the Liquiline Mobile CML18 handheld. The multiparameter handheld device enables reliable measurements with 100% signal integrity. Thanks to true plug-and-play and pre-calibrated Memosens sensors, users can quickly switch parameters between pH, conductivity and oxygen. This allows you to conduct flexible, precise and reliable measurements at every point of your laboratory and your production process. Save more than 10,000 spot measured values with a time, date and measuring point stamp and additional 10,000 measured values by the automatic logging function. Afterwards, you can synchronize and manage the measured values with the Memobase Pro App.

Your advantages at a glance:

- Easy to operate: Measurement by touching a button - Bluetooth connection to smartphones and tablets
- Safe and connected with Memosens 2.0 technology
- Consistent and reliable measured values in the lab and in the process
- Flexibility: Simply bring the handheld device to the place of measurement and start measuring

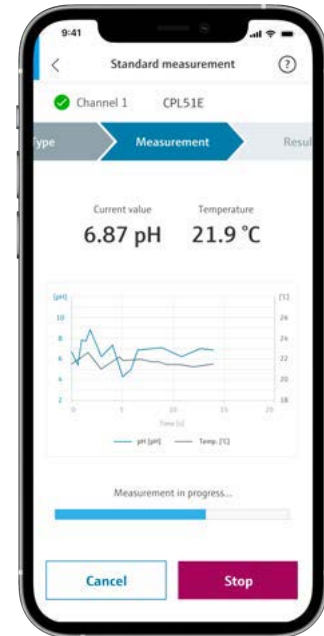


The Memobase Pro app - take your Liquiline Mobile handheld to the next level

Simple sample measurements and sensor calibrations with your smartphone

With the powerful Memobase Pro app, your smartphone becomes an intelligent measuring and calibration system. Simply connect your smartphone to a Liquiline Mobile CML18 via Bluetooth and digitally perform many daily measuring tasks quickly and easily. Document the measured data directly in the app and add supplementary information such as GPS coordinates and a photo of the measuring point, to enrich the sample measurements. In addition, you can calibrate and adjust your sensors via a guided procedure and benefit from convenient management of the reference solutions used.

- Interface with excellent usability, dashboards and sophisticated visualizations
- Boost your GLP and save measured data automatically with a unique ID and time stamp and add GPS coordinates, photos and comments if required
- Traceable sensor management including operation and calibration history and status indication as per NAMUR NE107
- Make it easy and scan the QR code to import all the data of the reference solutions used and traceably document the sensor calibrations with the app
- Sample measurements and calibrations with the associated sensor data and reference solutions can be directly accessed on the smartphone at all times



Memobase Pro visualizes measured values in chart or table format

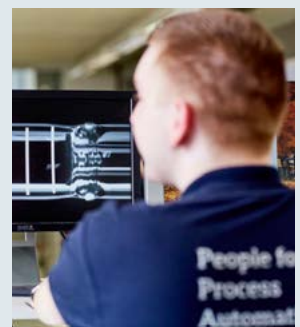
With the Memobase Pro App, you can connect your iOS or Android smartphone or tablet with two Liquiline Mobile CML18 handhelds simultaneously

Memosens 2.0 sensors for values you can trust

Memosens 2.0 sensors give you an outstanding measuring performance in combination with excellent usability and traceability. The laboratory sensors use the same super powerful microprocessors, to transform the measured values to a secure digital signal. This digital signal is transferred over the inductive Memosens coupling. This combination is extremely robust and absolutely unaffected by environmental interferences such as water, humidity or dirt. The microprocessor inside the sensor head stores the actual and historical adjustment values as well as values from the factory calibration. To make your GLP documentation easy, sensor identity with serial numbers and order codes are stored in parallel to measured values. Sensor data e.g. hours used and manufacturing date can be visualized over Memobase Pro app.



pH lab sensors Memosens CPL51E, CPL53E, CPL57E, CPL59E, conductivity sensor Memosens CLL47E and oxygen sensor Memosens COL37E



Each sensor is tested and calibrated in our German factory before delivery

Spotlight on our unique Memosens sensors

Robust Memosens 2.0 pH sensor

Memosens CPL51E

- pH sensor for drinking water and wastewater applications
- Polymer shaft protects the sensor from breaking
- Open junction to minimize the risk of clogging

www.endress.com/CPL51E

Versatile Memosens 2.0 pH sensor

Memosens CPL53E

- pH measurement for standard laboratory applications such as watery media
- Long lasting pH sensor with fast response time
- Large dirt-repellent PTFE junction to avoid soiling

www.endress.com/CPL53E

Memosens 2.0 pH sensor for measurements of pure and ultrapure water

Memosens CPL57E

- pH sensor for boiler feed water and water with low conductivity
- High accuracy and long-time stability in pure water thanks to additional KCl salt storage

www.endress.com/CPL57E

Rugged Memosens 2.0 pH sensor for demanding media

Memosens CPL59E

- pH sensor for aggressive media
- Ion trap provides long time stability and stable values in harsh samples with oxidizing agents
- Large dirt-repellent PTFE junction to avoid soiling

www.endress.com/CPL59E

Four-electrode conductivity sensor for wide measuring ranges

Memosens CLL47E

- Wide measuring range thanks to 4-pole technology: enables analysis of many different samples
- Solid platinum electrodes provide easy cleaning and long lifetime

www.endress.com/CLL47E

Agile Memosens 2.0 oxygen sensor

Memosens COL37E

- C-shaped optical cap for stable measurements without interference from air bubbles
- Excellent performance and low maintenance due to optical oxygen measuring principle

www.endress.com/COL37E



Choose the right pH sensor for your application

pH selection table

	CPL51E	CPL53E	CPL57E	CPL59E
Water and wastewater				
Drinking water	✓	✓	(✓)	-
Wastewater	✓	✓	-	-
Water, pure and condensate	✓	✓	(✓)	-
Chemical industry				
Cleaning agents	-	(✓)	(✓)	✓
Fertilizer solutions	-	-	-	✓
Fixing baths, galvanic baths/ electroplating	(✓)	✓	(✓)	✓
Oxidizing agents in water solution	-	-	-	✓
Paint (water-based and non-water-based)	-	✓	(✓)	✓
Salt solutions	(✓)	(✓)	(✓)	✓
Food and Beverage industry				
Crème fraîche, milk, cream and starch solution	(✓)	✓	(✓)	(✓)
Fat	-	✓	(✓)	(✓)
Fruit & vegetable juice, soft drinks	✓	✓	(✓)	(✓)
Jam	(✓)	✓	(✓)	(✓)
Oil	-	✓	(✓)	✓
Protein-containing samples	✓	✓	(✓)	✓
Life Science industry				
Bacteria cultures and fermentation solutions	(✓)	✓	(✓)	(✓)
Cosmetics	-	✓	(✓)	(✓)
Enzyme solutions	(✓)	✓	(✓)	(✓)
Phosphate buffer	✓	✓	(✓)	✓
Soap, washing powder	(✓)	(✓)	(✓)	✓
TRIS buffer	(✓)	(✓)	(✓)	✓
Multi industries				
Acids	-	-	-	✓
Aqueous emulsions, suspensions and solutions	(✓)	✓	✓	✓
Dissolved soil in water	✓	✓	(✓)	(✓)
Semi-aqueous solutions and suspensions	(✓)	✓	(✓)	(✓)
Viscous samples	(✓)	✓	✓	✓
Minerals, Metals and Mining				
Cyanide decontamination	-	-	-	✓

✓ recommended (✓) possible - not suitable

Ordering information and technical overview

Lab sensors

Product and order number	Measurement parameter	Measuring range	Temperature range	Applications
Memosens CPL51E CPL51E-8A7AHH2	pH	pH 0 to 14	-5 to 80 °C (23 to 176 °F)	Robust Memosens pH sensor
Memosens CPL53E CPL53E-8A7AAA2	pH	pH 0 to 14	-5 to 100 °C (23 to 212 °F)	Versatile Memosens 2.0 pH sensor
Memosens CPL57E CPL57E-8A7AAS2	pH	pH 0 to 14	-5 to 100 °C (23 to 212 °F)	Memosens 2.0 pH sensor for pure and ultrapure water
Memosens CPL59E CPL59E-8A7BTA2	pH	pH 0 to 14	0 to 135 °C (32 to 275 °F)	Rugged Memosens 2.0 pH sensor for demanding media
Memosens COL37E COL37E-8A24ACLB1	Oxygen	0 to 200% SAT/ 0 - 20 mg/l	-5 to +60 °C (23 to 140 °F)	Agile Memosens 2.0 oxygen sensor
Memosens CLL47E CLL47E-8APL30	Conductivity	5 µS/cm to 200 mS/cm	0 to 100 °C (32 to 212 °F)	Four-electrode sensor with large measuring range



For further information visit www.endress.com

Liquiline Mobile CML18 and Lab set

Product/set	Order number	Description
Liquiline Mobile CML18	CML18-AAACA1	Liquiline Mobile CML18 handheld for the measurement of pH, conductivity, oxygen and temperature, including USB data and charging cable.
Liquiline Mobile Labset 3	71550073	Value pack including Liquiline Mobile CML18, USB data and charging cable and the robust pH sensor Memosens CPL51E.
Liquiline Mobile Labset 4	71550075	Value pack comprising the Liquiline Mobile CML18 handheld, USB data and charging cable and the robust pH sensor Memosens CPL51E, Memosens sensor cable CYK20 (1.5m) and carry case.
Liquiline CML18 Protective cover	71530939	Protective cover for the Liquiline Mobile CML18 handheld
Memobase Pro App	Free download	The app is available for download from the Apple App Store and the Google Play Store and can be used with every Liquiline Mobile CML18 handheld device. For more information, visit eh.digital/memobase-pro .

Start now!

Download the free Memobase Pro App for your iOS or Android device



Simply download the free app from the Google Play Store.



To download for Apple devices, open the App Store via the QR code.

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