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## Reliable measured values – anytime and anywhere, from lab to process

On-line measured values commonly need verification by grab sample analysis in the laboratory. This is a challenge for many operators and laboratory workers due to measurement discrepancies that arise from different sensors, variable algorithms or varying ambient conditions. The multiparameter handheld instrument from Endress+Hauser provides values you can trust and enables easy and reliable control and verification. Whether it's done in the lab or in the field at the sampling point, the Liquiline Mobile CML18 can be used in a wide range of applications and it fits in any shirt pocket.

The Liquiline Mobile CML18 handheld instrument measures pH, ORP, conductivity and dissolved oxygen – four parameters in just one device. It utilizes reliable Memosens technology that converts all sensor signals to robust digital signals that are not affected by moisture or other environmental influences, ensuring 100% data integrity. In addition, the Memosens technology makes switching between different sensors easy. After replacing the sensor, the device immediately detects which sensor is connected, automatically loads the saved sensor data and displays the correct measured value. Operation of the portable instrument is easy and intuitive using the SmartBlue app on a smartphone or tablet. All measured values and sensor data are transferred via a secure Bluetooth connection that transforms and encrypts all data. The high security protection level of this connection has been confirmed by a renowned German institute. The SmartBlue app provides a convenient way to configure or adjust the device and read out sensor values and measured values. It also makes these values available for Industry 4.0 applications. Liquiline Mobile CML18 features all the properties of a flexible all-round device, suitable for a wide range of applications in sample analysis or temporary measurement.

### **Robust grab sample measurement directly at the sampling point**

Laboratory and maintenance staff in process industries commonly need to verify their on-line analytical measurement values. Typically, this is done by grab sample measurement. Samples can be measured directly at the sampling point using a portable instrument. However, many handheld and laboratory instruments are sensitive to harsh process environments and cannot handle high humidity without signal loss. This can lead to incorrect measured values and the operators do not know which values they can trust. Thanks to its robust Memosens technology, Liquiline Mobile provides reliable measured values even under harsh ambient conditions and supports operators in quickly taking required measurements and keeping the process running under optimized conditions.

When grab samples are measured at the sampling point, the values must be documented in one way or another. A paper and a pen have been traditionally used, but this is hardly comfortable or useful. It is better to use the internal memory inside the portable device. Liquiline Mobile has a memory for grab samples taken in the field. The operator simply needs to press the store button and choose the predefined location. Time, date, location and measured values are securely saved. The stored values can then be easily transferred to a smartphone via the SmartBlue app and shared.

### **Consistent grab sample measurement in the laboratory**

Another method of grab sample measurement is bringing a sample from the measuring point to a laboratory or maintenance shop. The challenge of this kind of monitoring is that samples are often not stable over time; the sample changes its values between the time it was taken at the sampling point and when it is analyzed in the laboratory, and the sample temperature can influence the sample values. In addition, the use of different measuring technologies in the lab can often result in deviations between the lab measurement and the measurement recorded in the process. With the Liquiline Mobile CML18, the identical Memosens sensors that are used in the process can also be used in the lab. This guarantees consistency of data between lab and process measurements. In cases requiring a particularly fast response time, the new robust lab pH sensor, the Memosens CPL51E, is the ideal choice. It uses the same Memosens technology as the process sensors but is optimized for a fast response time in sample analysis and laboratory applications that do not require a high degree of temperature- and pressure-resistance.

### **Occasional or temporary measurement at process points with no on-line measuring device**

Ensuring the quality of products and processes also requires monitoring in places where no on-line measurement is installed. In these cases, grab sample analysis is often done in the laboratory, again with a high risk that sample values change due to temperature or contamination. The compact Liquiline Mobile and the robust Memosens sensors are suitable for random measurements in the process because they are easy to carry to any point in the plant and are not affected by wet ambient conditions.

If a certain point in the process needs to be monitored over a specific time, customers can easily set up a temporary measurement with Liquiline Mobile, as the integrated data logger can store 10,000 measured values with a date and time stamp. Afterwards, the data can be quickly transferred to a mobile device via the SmartBlue app and exported into a computer as a CSV file.

### **Conclusion**

The Liquiline Mobile CML18 multiparameter instrument is the perfect tool for anyone who wants to have values they can trust, in the laboratory or at the sampling point. It is robust like a field device and brings identical sensor technology and measurement algorithms from the process to the laboratory, eliminating all uncertainties and discrepancies in measured values caused by different measuring technologies. Thanks to its compact design and easy operation via the SmartBlue app, Liquiline Mobile CML18 can be applied wherever and whenever it is needed.

## Pictures



**Fig. 1**  
Liquiline Mobile CML18 – Multiparameter handheld device for pH, ORP, conductivity, dissolved oxygen



**Fig. 2**  
Robust grab sample measurement directly at the sampling point



**Fig. 3**  
Consistent grab sample measurement in the lab



**Fig. 4**  
Occasional measurement at process points where no on-line measurement is installed



**Fig. 5**  
Temporary measuring point thanks to integrated data logger

## **The Endress+Hauser Group**

Endress+Hauser is a global leader in measurement and automation technology for process and laboratory applications. The family company, headquartered in Reinach, Switzerland, achieved net sales of over 2.6 billion euros in 2019 with a total workforce of 14,000.

Endress+Hauser devices, solutions and services are at home in many industries. Customers thus use them to gain valuable knowledge from their applications. This enables them to improve their products, work economically and at the same time protect people and the environment.

Endress+Hauser is a reliable partner worldwide. Own sales companies in 50 countries as well as representatives in another 70 countries ensure competent support. Production facilities on five continents manufacture quickly and flexibly to the highest quality standards.

Endress+Hauser was founded in 1953 by Georg H Endress and Ludwig Hauser. Ever since, the company has been pushing ahead with the development and use of innovative technologies, now helping to shape the industry's digital transformation. 8,000 patents and applications protect the Group's intellectual property.

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