USER MANUAL

BLUETOOTH pH-METER

PCE-PHB 10

ENGLISH

User manuals in various languages (français, italiano, español, português, nederlands, türk, polski) can be found via our product search on:
www.pce-instruments.com

ENVIRONMENTAL CONDITIONS

Before unpacking, ensure that current environmental conditions meet the following requirements.

» Relative humidity is less than 80%

» Ambient temperature between 0° C (32° F) and 50° C (122° F)

» No potential electromagnetic interference

INSTALLING THE BATTERIES

» Take out the tester from carrying case. Twist the electrode collar counter clockwise, pull the electrode (or connector) away from the tester.

» Insert the two AAA alkaline batteries into the battery compartment, note polarity.

» Push the electrode (or connector) into the tester and twist the electrode collar clockwise until tight.

SWITCHING THE TESTER ON AND OFF

Press the POWER-key to switch on the tester, press the key again to switch off the tester.

SAFETY NOTES

- Acquaint yourself with the operation of the measuring device before using it in combination with the app. For this purpose, use the instruction manual which comes with your PCE product. All safety notes from the device's manual have to be observed as well when the device is used with this app.
- The device and the app may only be used by qualified personnel. Damage or injuries caused by non-observance of the manuals are excluded from our liability and not covered by our warranty.
- We do not assume liability for printing errors or any other mistakes in this manual.
- We expressly point to our general warranty terms which can be found in our general terms of business.
- If you have any questions, please contact PCE Instruments. The contact details can be found at the end of this manual.

SYSTEM REQUIREMENTS

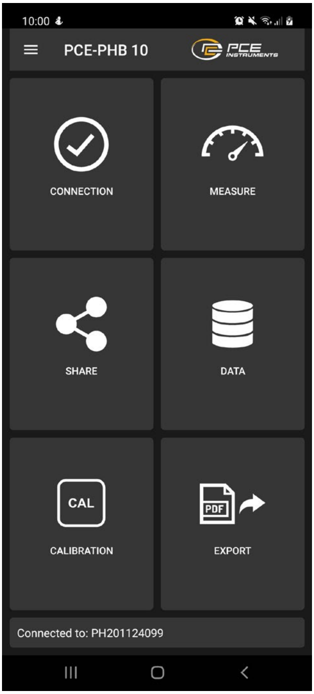
- Android version 9 Pie (API 28) or higher
- Bluetooth interface (version 4.2)
- Screen size 5.71 inches
- A minimum resolution of 1520x720 pixels
- Processor: ARM Cortex-A53, 2000 Mhz, 4 cores
- 2 GB RAM recommended

APP INSTALLATION

Please download the app from the Google Play Store and install it on your smartphone. Then check and grant the access permissions for the location and memory.

DESCRIPTION OF THE USER INTERFACE

The main window is composed of three sections. In the upper toolbar, there is a menu button on the left which opens a side menu. The side menu contains menu items for software information, company information and settings. More detailed information about these menu items will follow below.



Below the toolbar, there are six buttons, each representing a functionality. The lower status bar shows whether there is an active connection to a device.

MEANING OF THE INDIVIDUAL ICONS OF THE MAIN MENU

MAIN MENU

	Open window for Bluetooth connections
	Open window for measurements
	Open window for sharing
	Open window for data
	Open window for calibration
	Open window for export
	Open side menu

CONNECTION

	Device disconnected
	Device connected
SEARCH DEVICE	Search for Bluetooth devices
	Open options menu
DISCONNECT DEVICE	Disconnect device
	Open window for export

MEASURE

	Open options menu
	Back to main menu
START	Start measurement

SHARE

	Back to main menu
	Share selection via messenger
New Measurement 09.11.2020 - 08:26:09	Select a measurement

CALIBRATION

	Back to main menu
START CALIBRATION	Start calibration
Settings	Open menu for device configuration

DATA

	Back to main menu
New Measurement 09.11.2020 - 08:26:09	Open window for measurement data
	Open options menu
Edit	Rename data record
Delete	Delete data record

EXPORT

New Measurement 09.11.2020 - 08:26:09	Select a measurement
	Export selection
	Back to main menu

SETTINGS

	Back to main menu
Calibration points	Select calibration points
SAVE	Save and transfer calibration points to the meter

SIDE MENU

Settings	Open window for device configuration
About	Open window for software and company information
Help	Open window for user manuals

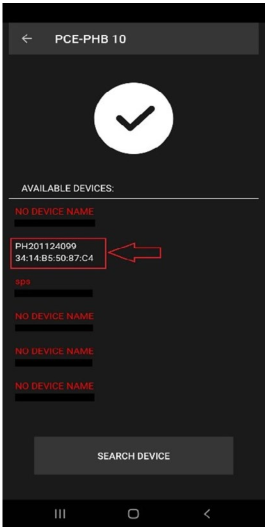
OPERATION

First use of the app

Before the meter can work with the app, make sure that Bluetooth is activated. Furthermore, the access permissions for location and memory must be granted. These are used exclusively to search for Bluetooth devices in the direct vicinity and to save the measurement data to the smartphone as PDF files. The permissions can be granted, depending on the device, via Settings -> Apps -> PCE-PHB 10 -> Permissions. After the access permissions have been granted, the app can be used to its full extent.

Connect to the meter

After starting the app, a Bluetooth connection to the meter can be established. It must be ensured that the smartphone and the meter are not more than 5 m apart. To establish the connection, navigate to the corresponding menu by tapping on **Connection** in the main menu. Bluetooth connections can be managed under Connection. To establish a connection, a suitable meter must be searched for. This can be initiated by tapping on the **SEARCH DEVICE** button. The devices found are then displayed in a list, see figure right.



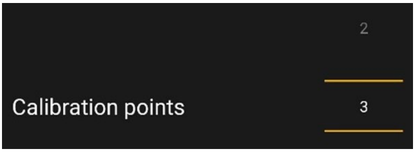
Once the meter has been found (e. g. PH201124099), a connection can be established by tapping on the meter in the list. After the connection has been successfully established, the user immediately receives a confirmation on the display that the devices are connected and is forwarded directly to the main menu.

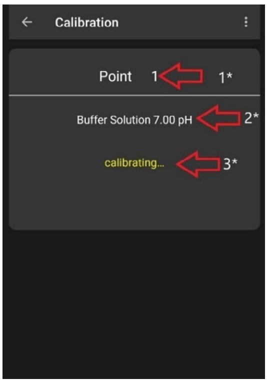
Disconnect from the meter

Tap on the icon **DISCONNECT DEVICE** to disconnect the meter. Closing the app while the Bluetooth connection is active disconnects the devices.

Set calibration points

The pH meter offers the possibility to perform a calibration with up to three calibration points. The number can be set via the Settings menu in the side menu. To do this, navigate to the side menu via the main menu using the button **SIDE MENU** and select the menu item Settings. In the settings, you can set the desired number of calibration points by swiping up and down on the calibration points combo box, see figure. It is also possible to call up the settings menu via the options menu of the calibration dialogue. The setting must then be confirmed with the **SAVE** button. The settings are then saved to the device.





Calibration

The device must be calibrated before its first use. In the first step, connect the meter to your smartphone via Bluetooth. After the successful connection, go to Settings and set the calibration points. After setting the number of calibration points, navigate to the menu item **Calibration** via the main menu. In the overview, you will see a dialogue that guides you through the calibration.

The dialogue contains several items that describe the current status of the calibration.
1* shows the current calibration point
2* shows which buffer solution is needed for the calibration point
3* shows the status of the calibration process

» To start the calibration, pour in the required buffer solution and swirl the meter for a few seconds to cover the sensor with the solution.

» Then tap on the **Start Calibration** button.

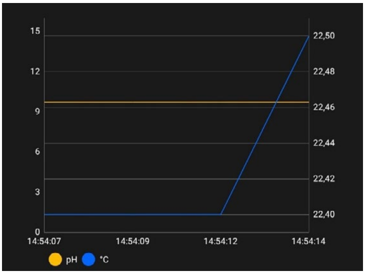
» When the calibration has started, you will see the current status in the status display.

» As soon as all steps of the calibration have been completed successfully, you will receive a notification.

Make a measurement
The menu item **Measure**, which can be reached from the main menu, offers the possibility to perform a measurement. Before making the first measurement, ensure that there is an active Bluetooth connection between the smartphone and the meter and that the meter has been calibrated as described in the instructions. Before making a measurement, make sure that the samples are filled into suitable containers and are not contaminated by other liquids in order to obtain correct measurement results. For a measurement, place the meter with the sensor in the liquid and swirl it for a few seconds to cover the galvanic cell with the liquid. The measurement is started by tapping on the **START** button.

After starting the measurement process, the measured values are displayed on the user interface. As soon as the measured values are stable, the pH value appears in green letters and the measurement can be stopped via the **STOP** button. The measurement is then saved to the database and is listed in the Data menu along with the time of the measurement.
The options menu contains the menu items **Calibration Report** and **Show Temperature,** via which you can enable and disable the indication of the temperature in the graph and view the calibration report where the data of the last calibration are recorded.

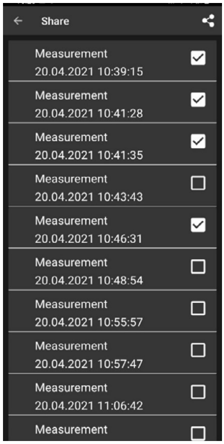
Graphical representation
In the area for graphical evaluation, the pH value and optionally the temperature (°C) are displayed on the y axis, depending on the setting, and the x axis represents a time axis with a continuous time stamp that is updated every 2 … 3 seconds.



Representation of floating-point numbers
The representation of the floating-point numbers depends on the set language of the Android smartphone. Depending on the language setting, the values are separated by a dot or a comma.

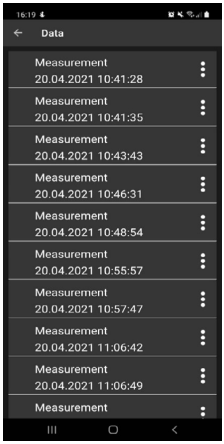
Share measurement data
All performed measurements can be shared via all common messengers as a PDF file. To do so, call up the menu item Share in the main menu. The window contains a list of all measurements that have been made. The desired measurements can be marked accordingly by placing check marks.

Subsequently, the selected measurements can be shared by tapping on the **SHARE** button. An options dialogue opens to select the desired messenger. After the selection, the chosen measurements are attached as PDF documents and can be sent.



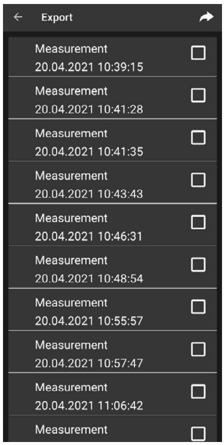
Save measurement data
All performed measurements are saved to a database in the memory of the smartphone. These can be viewed, edited or deleted at any time. To do this, call up the menu item Data in the main menu. The view contains all measurement data named according to the time stamp of the measurement.

Each measurement can be renamed or deleted via the associated options menu. Furthermore, it is possible to view the measured values by tapping on the desired measurement.



Export series of measurements
Series of measurements can be exported via the menu item Export in the main menu.

In the Export window, individual series of measurements can be selected and then exported by tapping on the **BACK** button. A progress bar is displayed while the data are being processed for export. After processing, the series of measurements are saved to the **Documents** folder of the Android file system as a PDF file.



DISPOSAL

For the disposal of batteries in the EU, the (EU) 2023/1542 directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose. In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law. For countries outside the EU, batteries and devices should be disposed of in accordance with your local waste regulations. If you have any questions, please contact PCE Instruments.

PCE INSTRUMENTS CONTACT INFORMATION

Germany
PCE Deutschland GmbH
Im Langel 26
D-59872 Meschede
Deutschland
Tel.: +49 (0) 2903 976 99 0
Fax: +49 (0) 2903 976 99 29
info@pce-instruments.com
www.pce-instruments.com/deutsch

France
PCE Instruments France EURL
2, rue Georges Kuhnmunch
67250 Soultz-sous-Forêts
France
Tel.: +33 (0) 972 35 37 17
Fax.: +33 (0) 972 35 37 18
info@pce-france.fr
www.pce-instruments.com/french

Spain
PCE Ibérica S.L.
Calle Mula, 8
02500 Tobarra (Albacete)
España
Tel. : +34 967 543 548
info@pce-iberica.es
www.pce-instruments.com/espanol

United Kingdom
PCE Instruments UK Ltd
Trafford House
Chester Rd, Old Trafford
Manchester M32 0RS
United Kingdom
Tel: +44 (0) 161 464902 0
Fax: +44 (0) 161 464902 9
info@pce-instruments.co.uk
www.pce-instruments.com/english

Italy
PCE Italia s.r.l.
Via Pesciatina 878 / B-Interno 6
55010 Loc. Gragnano
Capannori (Lucca)
Italia
Telefono: +39 0583 975 114
Fax: +39 0583 974 824
info@pce-italia.it
www.pce-instruments.com/italiano

Turkey
PCE Teknik Cihazları Ltd.Şti.
Halkalı Merkez Mah.
Pehlivan Sok. No.6/C
34303 Küçükçekmece - İstanbul
Türkiye
Tel: 0212 471 11 47
Faks: 0212 705 53 93
info@pce-cihazlari.com.tr
www.pce-instruments.com/turkish

The Netherlands
PCE Brookhuis B.V.
Twentepoort West 17
7609 RD Almelo
Nederland
Telefoon: +31 (0)53 737 01 92
info@pcebenelux.nl
www.pce-instruments.com/dutch

United States of America
PCE Americas Inc.
1201 Jupiter Park Drive, Suite 8
Jupiter / Palm Beach
33458 FL
USA
Tel: +1 (561) 320-9162
Fax: +1 (561) 320-9176
info@pce-americas.com
www.pce-instruments.com/us

Denmark
PCE Instruments Denmark ApS
Birk Centerpark 40
7400 Herning
Denmark
Tel.: +45 70 30 53 08
kontakt@pce-instruments.com
www.pce-instruments.com/dansk

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