QP451 Portable pH Meter – Quick User Guide

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Thank you for choosing the QP451 Portable pH meter from EDT directION. This guide will enable you to quickly set up and use the instrument.

	-	Power (On/Off)
	-	Contrast/Backlight
	-	Mode
	-	Calibrate
	-	Logging and Printing
	-	Read/Accept
	-	Navigate the Menu
	-	Set Up Menu

Description

Series 4 instruments have a dynamic LCD display which guides the user through the calibration and measurement process. We hope there will be no need to refer to a manual once you have performed initial set up.

Unpacking

Verify you have received all of the equipment ordered. If you have any questions please contact EDT directION Ltd or your agent.

Check the package for any signs of damage. If there are any signs of rough handling in transit please report it to the agent immediately. Provide photographic evidence if possible. Damage should be reported within 7 days of receipt.

Note: The carrier will not honour any claims unless all shipping material is saved for their examination. Once removed save all packing material in the event that re shipment may be necessary.

Packing List:

If you ordered the QP451 Meter only option the package will only contain the QP451 Portable pH Meter and 4 X AA Batteries. If you ordered the QP451 Portable pH Meter Kit the following items are packed in the case:

Tough carry case, QP451 Meter, 4 x AA Batteries, E8080 pH combination Electrode. ATC/Temp probe, pH 4 and 7 Buffer Solutions, user Guide, USB data stick, Mini USB data cable.

Setting up

Battery installation. (refer to figure 1)

Remove the battery cover by loosening the retaining cross head screw. Please note this screw has a retainer and will therefore remain with the cover to prevent loss.

Once open unpack the 4 AA Batteries supplied and insert ensuring the polarity is correct for each battery.

Replace the cover.

Setting the Time and Date.

1. Switch the unit on using the **on/off** button.
2. Press the **right arrow** Key to Enter the PARAMETERS ADJUST SCREEN
3. Scroll down to the DATE FORMAT option and press **READ** until you arrive at the desired format.
4. Scroll down to the CLOCK option using the **down arrow** key.
5. Press **READ** to enter the CLOCK screen.
6. Select CANCEL using the **down arrow** Key and press **READ** until the current DATE in the entry box is removed. Select the current date digit by digit by selecting the correct number and pressing **READ**.
7. When the entry box contains the correct date select ENTER and press **READ**.
8. You are now in the TIME screen. Repeat from 5 above to select the correct time.
9. From the PARAMETERS ADJUST screen press **READ** to return to the pH Mode.

Figure 1

Calibration and Measurement

Accurate pH measurement requires that you do not cross contaminate buffers and samples. Before using the pH probe ensure it is rinsed with deionised water and blotted dry. Repeat this procedure when transferring between all standards and samples.

1. Connect the pH Electrode to the BNC connector on the top rear of the instrument.
2. Connect the ATC probe Jack into the 3.5 mm Jack socket next to the BNC socket.
3. Press the **on/off** switch. The display will light up.
4. The meter is now in the pH mode. Press **CAL** to start calibration.

5. Insert the pH Probe and ATC electrode into the pH7 Buffer solution and press **READ**

6. The auto endpoint indicator will show the progress of the calibration. When stable the meter will set itself to pH 7.00 (or the corrected value)

7. To use this 1 point calibration press **CAL**. We recommend a 2 point calibration to do this rinse the pH Electrode and ATC electrode with DI water, blot dry and immerse into the pH 4 Buffer solution.
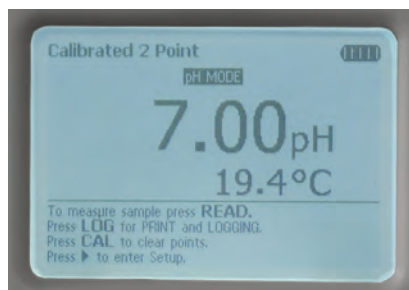

8. Press **READ** to start the second point Calibration.

9. The auto endpoint indicator will show the progress of the calibration. When stable the meter will set itself to pH 4.00 (or the corrected value)

10. To accept the Calibration check the Slope is over 80% and Press **CAL**.

11. Remove the pH Probe and ATC from the solution. Rinse with deionised water and blot dry.

12. Insert the pH Probe and ATC Electrode into the sample solution and press **READ**

13. The auto end point will freeze the display when the reading is stable

14. For further samples repeat from 11 above

Using different or Custom Buffer solutions:

The **QP451** comes complete with pH 7 and pH 4 Buffer solutions. These Buffers are automatically set up in the menu as is pH 10 Buffer. The reference temperatures for these buffers is 25 Degrees C. For 20 degree C Buffers or custom values you will need to enter the Set Up menu:

1. After switching the instrument on press the **right arrow** set up key.
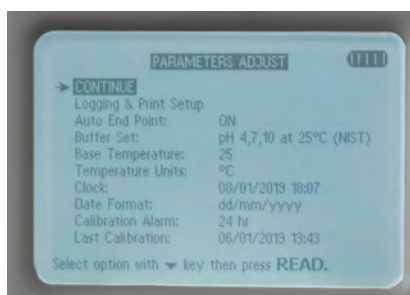
2. In the PARAMETERS ADJUST screen scroll down to "Buffer Set" and press **READ**

3. In the "SELECT BUFFER SET" screen select option 2 and press **READ** to select a pH 4,7 &10 at 20 degrees.

4. 0r Select Option 3 to input custom Buffer values and Press **READ**

5. In the USER BUFFER SET screen select the option 1 and press **right arrow**

6. Press the **down arrow** to select CANCEL. Press **READ** to remove the current value.

7. To select a custom buffer highlight the value and press **READ**.

8. When you have the correct value in the ENTRY box select ENTER and press **READ**.

9. Repeat for Custom buffers 2 and 3. Note: You can still perform 1,2 or 3 point Calibrations. i.e. you don't have to use all 3 buffers.

10. Press **READ** to return to the PARAMETERS ADJUST screen and press **READ** again to revert to the pH Mode.

11. To calibrate follow the Calibration procedure above.

Setting the Time and Date.

1. Switch the unit on using the **on/off** button.

2. Press the **right arrow** Key to Enter the **PARAMETERS ADJUST SCREEN**

3. Scroll down to the **DATE FORMAT** option and press **READ** until you arrive at the desired format.

4. Scroll down to the **CLOCK** option using the **down arrow** key.

5. Press **READ** to enter the **CLOCK** screen.

6. Select **CANCEL** using the **down arrow** key and press **READ** until the current **DATE** in the entry box is removed. Select the current date digit by digit by selecting the correct number and pressing **READ.**

7. When the entry box contains the correct date select **ENTER** and press **READ.**

8. You are now in the **TIME** screen. Repeat from 5 above to select the correct time.

9. From the **PARAMETERS ADJUST** screen press **READ** to return to the pH Mode.

Logging and printing

The **QP451** Portable pH Meter has both a log and a print function. You can print and log directly to an external device when connected via the Mini USB output or straight to file. There is capacity to store 64 files. The oldest will get overwritten if used files are not deleted.

The data logger will accept up to 10,000 data points. If you have selected a log period /log interval combination that exceeds this you will be advised to amend your parameters.

Saving Sample Readings.

Once you have measured a sample in any mode and the reading is frozen you will be offered the option to "Press LOG to print immediate". Press "**LOG**" to store the reading in the internal memory. The file will be stored with the name "AD-HOC x "where x is a sequential number that increases by 1 each time a result is recorded.

Files are accessed by:

- Press **right arrow** after unfreezing the display. This takes you to the "**PARAMETERS ADJUST**" screen.

- Select "Logging and Print set up" and press **READ**

- Select "REVIEW Files" and press **READ**

- Select the desired file and press **right arrow** to reveal the data.

Logging Data

The Series 4 instruments allow the continuous logging of up to 10,000 data points for up to 99 hours at intervals as small as 1 second.

To log data it is important to "Set Up" the logging parameters:

- Press **right arrow** from any Mode to access the set up page.

- This takes you to the "**PARAMETERS   ADJUST**" screen.

- Select "Logging and Print set up" and press "**READ**"

- Select User ID and Press "**READ**". Input the USER ID details.

- Select "Set Time Interval" and press "**READ**". Input time interval.

- Select "Time Period to Log" and press "**READ**". Input Time period.

- Select "Filename" and press "**READ**". Input File Name.

- Select "CONTINUE" and press "**READ**"

- Ensure the instrument is Calibrated in the mode you are about to **LOG.**

- Press "**LOG**" then Press "**LOG**" to start logging.

The instrument will start logging immediately. The Screen will display "**LOGGING**" then go into a low energy mode to preserve battery life during the measurement.

To terminate the logging prematurely press "**ON/OFF**". The display will show "**Logging Aborted**".
When the Logging is finished press "**READ**" to finish.

To read the logged data:

- Press **right arrow** to enter **SET UP** page.

- Select "Logging and Print set up" and press "**READ**"

- Select "REVIEW Files" and press "**READ**"

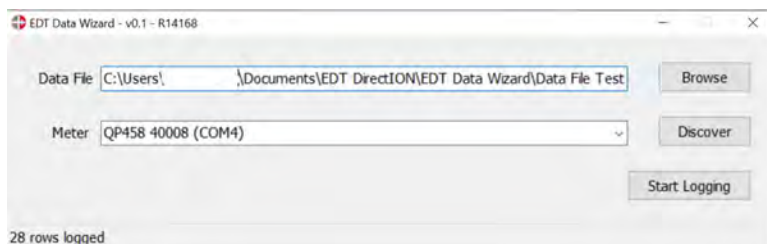- Select the desired file and press **right arrow** to reveal the data.

- To download the data to Excel use the **EDT Data Wizard.**

The EDT Data Wizard

The Series 4 Portable Meters have the facility to store Readings, Calibration data and Logged data in its internal memory filing system.

To transfer this data directly into Excel for printing or further manipulation you will need to install the EDT data Wizard. This is provided in the Series 4 Data Kit which comprises:

- USB flash drive with the EDT data Wizard Software.

Troubleshooting

The **QP451** will automatically diagnose and indicate errors or issues on the display.

Most errors in pH measurement will be a s a result of a problem with the pH probe and not the meter. Please ensure your Electrode is in good condition, has been cleaned and that before every measurement it is rinsed in deionised water and blotted dry.

Ensure you have sufficient battery power. There is a battery life indicator in the top right of the display. If there are no solid sections the battery will need replacing. To save battery life reduce the screen brightness and contrast by selecting the "Lightbulb" button.

Technical Specifications

QP451 Portable pH Meter	
pH Range	-2 to 16 pH Units
pH Accuracy	+/- 0.01 pH units
mV Range and Accuracy	+/- 1999.9 mv to +/= 0.1 mV
Commodity Code	90278011
Environment	Operates between 0-50 degrees and 0-100% RH
Relative mV mode	Sets any solution to 0mV.
Connection	BNC for Combined pH Electrode. 3.5 mm Jack for ATC probe
Data Output	Mini USB. Outputs csv at 38400 Baud
Data Storage	Dynamic Internal storage of up to 64 files. Logging maximum 10,000 data points
Display	Backlit LCD Graphic Display
Power requirement	4 X AA Batteries. Over 200 Hours continuous use. Power saving features include: Auto off, Backlight control, logging sleep mode.
Reference Temperature	Set at 25 degrees C.
Size	175x88x48mm (lxwxh). Meter Only
Temperature Coefficient	Set at 2% Per degree.
Temperature Range	0 to +105 Degrees Centigrade
Weight	350g Meter Only

Contact Us

For Help and Technical Support take a look at our support pages on www.edt.co.uk or contact us:

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Related Products:

Series 4 Portable pH Meter Kit

pH/ATC Polymer Combination Triode (E8400)

Glass pH Combination Electrode (E8081)

A3147 pH 7 Buffer Solution (Yellow) 500ml

Saturated KCl Filling Solution (E8067)

QP458 Portable pH and Conductivity/TDS Meter