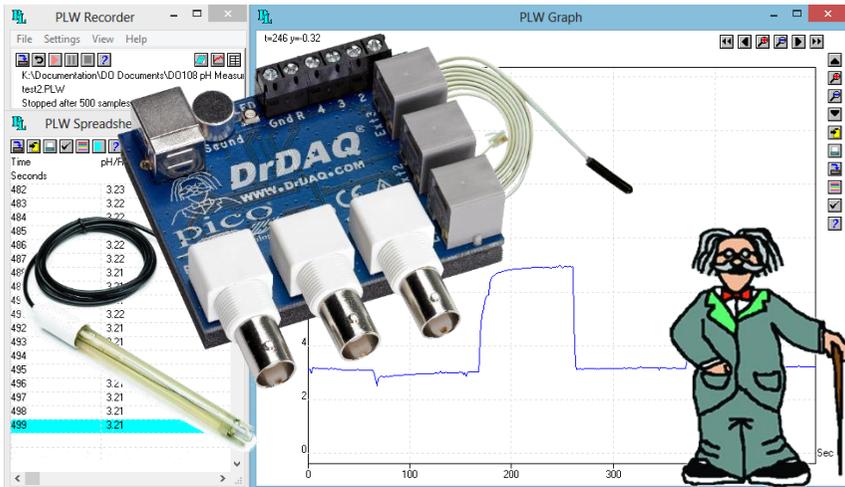# USB DrDAQ
pH Measuring Kit

Pico pH Measuring Kit overview

The easy-to-use pH Measuring Kit contains all of the hardware and software required for you to accurately monitor, record, and analyse the acidity or alkalinity of a solution using a Windows-based PC. The pH logger simply connects to a USB port, and is accompanied by a software package that makes full use of the PC's processing capabilities, large screen and familiar user interface.

Main features

- Measures the full pH scale
- Automatic Temperature Compensation
- Requires no external power supply
- Suitable for use both in the lab and in the field

The pH Measuring Kit is suitable for use in many industries and the education sector. It provides accurate pH measurements and versatile pH data logging capabilities in an easy-to-use package.

Contents of your pH Measuring Kit

Your pH Measuring Kit contains the following components:

- pH logger (USB DrDAQ data logger)
- pH sensor DD011
- Temperature sensor DD100
- USB cable
- PicoLog software CD-ROM
- User manuals

If you already own a USB DrDAQ data logger you can upgrade to a pH Measuring Kit by purchasing a pH sensor and a temperature sensor.

Software overview

The pH Measuring Kit is supplied with the following software:

- PicoLog data acquisition software that transforms your PC into a high-speed data logger.
- Pico programming libraries to interface with the instrument using third-party software such as C, C++, Excel, and LabVIEW.

PicoLog is a powerful and flexible data acquisition program for collecting, analysing and displaying data over long or short periods of time. It can collect up to one million samples, and allows you to view the data both during and after collection, in either a spreadsheet or graphical format. You can also export the data to other applications such as Excel.

For users who wish to write their own or use third-party software, we provide a range of drivers and examples free of charge. Drivers are included for Windows XP (SP3), Vista, Windows 7, and Windows 8 (not Windows RT). Programming examples are supplied for C, C++, Excel, and LabView.
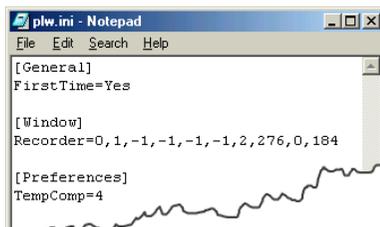
Getting started

Please note: do not connect the pH logger until you have installed the PicoLog software and restarted your PC.

1) Insert the Pico Software & Reference CD, and after a short delay the Pico installer should start automatically. If this does not happen, follow these steps:
   a. Go to the Windows **Start** menu.
   b. Select **My Computer** followed by the CD drive labelled **PICO** (identified by the rainbow-coloured icon shown on the right).
   c. Select the file named **pico.exe**.
2) In the Pico installer, select **Install Software** or **Install PicoLog** on the first four screens, as shown below.

3) Follow the on screen instructions to complete the installation. **Do not** restart your PC yet.
4) Once the installation program has finished, enable Automatic Temperature Compensation by following these steps:
   a. Search for the text file **plw.ini** on the Windows C: drive, and open it using Notepad.
   b. Look for a line that contains only the text *[Preferences]*. If there is no such line, add a blank line to the end of the file and type *[Preferences]*.
   c. Add another blank line immediately after the *[Preferences]* line, and type *TempComp=4*.
   d. Check that the *[Preferences]* and *TempComp=4* lines now appear as shown in the figure (right), and then save the file.
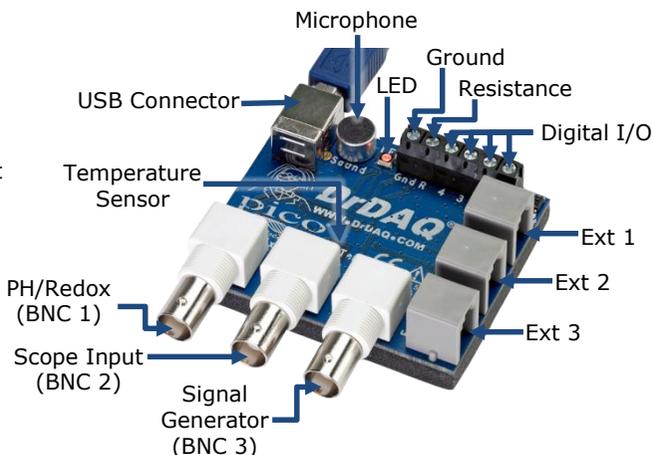

A typical plw.ini file after editing

5) Now restart your PC.
6) Connect the pH logger to a USB port on your PC using the cable supplied.
7) Plug the round connector of the pH sensor into the pH BNC 1 port on the pH logger.
8) Plug the flat connector of the temperature sensor into the Ext 1 port on the pH logger.
9) Select **PicoLog Recorder** from the Windows program list to begin using the pH logger.

You can find the latest detailed instructions for installing and using the DrDAQ pH logger and PicoLog software on our web site at www.picotech.com/download.html. You can also find copies of the manuals on your Pico Software & Reference CD; press the **User Manuals** button, then select **DrDAQ** or **PicoLog**.

DrDAQ connector details

BNC 1   pH sensor (supplied)
BNC 2   Oscilloscope input
BNC 3   Signal generator output
Ext 1   Temperature probe
            (supplied)
Ext 2   Spare input
Ext 3   Spare input

Microphone

USB Connector

LED

Ground

Resistance

Digital I/O

Temperature
Sensor

Ext 1

Ext 2

Ext 3

PH/Redox
(BNC 1)

Scope Input
(BNC 2)

Signal
Generator
(BNC 3)

pH Measuring Kit specifications

Range (pH)	0 to 14
Resolution	pH: 0.02 pH Temperature: 0.1 °C (at 25 °C)
Accuracy	pH: calibration-dependent Temperature: 2 °C (at 25 °C)
PC connection	USB 2.0 or 3.0 compliant port
Power supply	From USB port
Dimensions	pH Logger: 77 x 70 x 23 mm pH Sensor (body): Ø12 x 120 mm
Weight	pH Logger: 60g approx.
Supplied software	PicoLog data acquisition software supplied on CD Drivers and example code (C, C++, Excel, and LabView) Compatible with Windows XP (SP3), Vista, Windows 7, and Windows 8 (not Windows RT)