BUFFER SOLUTIONS/CAPSULES

It is recommended that you use buffer solutions closest to your expected measurement range. If you are measuring approx. 5 pH then calibrate using 7.00 & 4.01 pH buffer solutions.
Rinse the pH & temperature probes in de-ionised water before placing in each buffer solution, if this is not available tap water is acceptable. The buffer solution's value changes with temperature and so the instrument automatically compensates for this during calibration. Therefore only buffer solutions that follow the temperature coefficients shown in the table below should be used with these instruments for best accuracy.

temperature	4.01 pH	7.00 pH	10.01 pH
0	4.01	7.12	10.32
5	4.01	7.09	10.25
10	4.01	7.06	10.18
15	4.00	7.04	10.12
20	4.00	7.02	10.06
25	4.01	7.00	10.01
30	4.01	6.99	9.97
35	4.02	6.98	9.93
40	4.03	6.97	9.89
45	4.04	6.97	9.86
50	4.06	6.97	9.83
55	4.08	6.97	9.81
60	4.10	6.98	9.79

WARNING: IPA and other solvents may cause damage to the case and screen of this instrument.

ACCESSORIES

Cleaning Solution
816-040 pH electrode cleaning solution 500 ml
Storage Solution
816-041 pH electrode storage solution - 500 ml
Buffer Solutions
816-050 4.01 pH buffer solution pink - 100 ml
816-051 7.00 pH buffer solution yellow - 100 ml
816-052 10.01 pH buffer solution blue - 100 ml
Buffer Capsules
816-004 4 pH buffer capsules - pack of 10
816-007 7 pH buffer capsules - pack of 10
816-009 9 pH buffer capsules - pack of 10
816-010 10 pH buffer capsules - pack of 10
pH Electrodes
823-504 Budget pH electrode - 0 to 60 °C
823-501 General purpose pH electrode - 0 to 100 °C
823-502 12 mm Spear Combination pH electrode
823-503 6 mm Spear Combination pH electrode
823-514 Knife probe electrode

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8000/8100 pH METERS



Operating Instructions

GETTING STARTED

To begin taking measurements, connect the probe/s to the socket/s on the instrument and remove the cap or bottle covering the electrode. ***Please note:*** a small amount of soaking solution is within the cap/bottle to ensure the electrode remains in good moist condition when in storage. White crystals may form on or around the electrode, this is normal and can be removed with a clean damp cloth. Calibrate the unit as per instructions in the Calibration section. Switch the unit on and place the electrode into the solution to be measured. The 8000 or the 8100 with probe disconnected will display the set temperature for 10 seconds. With the probe plugged in, the 8100 meter will display the temperature continuously. Stir the solution and wait for the measurement to stabilise. To prolong the life of the electrode, please read the Care & Maintenance and Storage & Cleaning sections.

CALIBRATION

It is recommended that you calibrate the unit daily to achieve consistent and accurate results. Turn the meter on and place the electrode and temperature probe into 7.00 pH buffer solution. If using the manual temperature adjustment, first measure the solution with a thermometer and adjust the instrument to this reading as per the Temperature adjustment 8000/8100 (manual) section. With the electrode in the 7.00 pH solution allow the reading to stabilise. Stir then press and hold down the 'CAL' button for 3 seconds, 'CAL' will be shown in the display and the reading displayed will flash. With the display continuing to flash, place the electrode into 4.01 pH or 10.01 pH solution and allow the reading to stabilise, again stir the solution to remove air bubbles. If you are measuring approx. 5pH then calibrate using 7.00 & 4.01 pH buffer solutions. If you are measuring approx. 8pH then calibrate using 7.00 & 10.01 pH buffer solutions. To finish press the 'CAL' button and the display will show the solution value that it is currently in. To abort calibration at any point press the 'ON/OFF' button - the meter will revert back to any previous calibration values.

INSTRUMENT FUNCTIONS

Auto-Off - The instrument will switch off automatically after 10 minutes. To disable the auto-off function press and hold the '▲' button whilst switching on the unit – auto-off disabled will scroll across the screen to confirm this. **Please note:** when the unit is turned off the auto-off function will be re-enabled.

C/F Selection - With the unit switched off, press and hold the 'ON/OFF' button for 5 seconds to switch the units between C and F.

Temperature adjustment 8000/8100 (manual) - To manually adjust the temperature hold down the 'TEMP' button for 3 seconds until 'Set' is displayed. Press or hold the '▲' or '▼' button to adjust the temperature in whole degrees. Press the 'ON/OFF' button to store the temperature change. **Please note:** Manual temperature adjustment on 8100 requires the temperature probe not to be plugged in. To view the set temperature, press the 'TEMP' button and the temperature will be displayed for 10 seconds on screen.

Temperature adjustment 8100 (ATC only) - When the temperature probe is connected to the 8100 meter it will be automatically detected and on connection the temperature is displayed continuously. Please note that with the probe attached the meter can measure from 0 to 100 °C (32 to 212 °F). If the probe is removed from the meter the temperature is displayed for 10 seconds. If the temperature probe is not used with the meter please refer to the manual temperature adjustment.

ERRORS

Calibration - 'Err' will be shown if you do not calibrate at 7.00 pH first. If the electrode & buffer solution's combined error is greater than 1 pH then 'Err' will be displayed and calibration aborted. If the electrode & buffer solution's combined slope error is greater than 0.5 pH 'Err' will be displayed. To abort calibration press the 'ON/OFF' button - the meter will revert back to any previous calibration values.

pH Electrode - The pH electrode is connected via the BNC connector, if this is not connected the readings displayed are meaningless. If 'Hi' is displayed the readings are higher than 14 pH and if 'Lo' is displayed the readings are below 0 pH. 'Err' is displayed if readings are more significantly outside of the specified measurement range or the electrode is damaged.

Temperature Probe - 'Hi' is displayed if the readings are above 100 °C (212 °F) and 'Lo' is displayed if readings are below 0 °C (32 °F). **Please note:** ATC only works between 0 °C (32 °F) and 60 °C (140 °F).

CARE & MAINTENANCE

This pH meter and electrode should give years of service as long as the electrode is maintained correctly. Over time the electrode sensor will degrade but regular calibrating, cleaning and storage of the unit will prolong its life. If the electrode readings are slow or erratic, place the sensor into cleaning solution or 7.00 pH solution for at least half to one hour before testing again.

ELECTRODE STORAGE & CLEANING

Ensure that the electrode glass bulb is kept wet by replacing the storage cap after each use. Storage solution can be used in the cap/bottle.

Always rinse the pH electrode with cleaning solution or de-ionized water before next use. If this is not available tap water can be used. Do not touch the glass bulb or clean with harsh materials.

BATTERY REPLACEMENT

Replace the battery when battery icon is displayed. This meter will continue to measure accurately but after further usage the meter will display "flat bat" and shutdown. Unscrew the screw on the back of the meter and replace with three AAA batteries, ensuring the polarities are correct.

EMC/RFI

Reading may be affected if the unit is operated within radio frequency electromagnetic field strength of greater than 1 volt per metre. Performance of the instrument will not be permanently affected.

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