Advanced Cap Meter Guide

pH, ISE, DO and Redox*

1. INSERT BATTERY

1. Remove the battery cover by placing your thumb on the indented portion on the rear of the battery cover and gently pressing in an upward motion.

2. Insert the new 1/2AA Li-Thionyl Chloride battery in the slot at the top of the unit. When looking at the front of the unit the positive terminal of the battery should be on the left. See internal guide symbols.

3. Replace the battery cover by engaging the front clips and then pressing the rear clips into position with a light pressure on the indented portion of the cover.
NOTE: The battery will not work if inserted the wrong way round. Alternative 3.6V cells can be used but may affect performance

2. ATTACH ELECTRODE

1. Hold the white cap and unscrew the electrode soaker bottle. Move white lid up electrode, pull rubber seal down over electrode tip, then remove lid.

2. Turn the clip attached to the temperature sensor to the left by 90 degrees. Carefully align and screw the pH electrode into the large socket on the base of the unit. Ensure that the electrode is straight and screw gently into the unit. Do not force the electrode as this may damage the thread. Tighten so that the seal is compressed.

3. Now turn the clip 90 degrees to the right so it clicks over the electrode body. Adjust the height of the clip to suit the size of your container. The clip can be used to attach the unit onto most small beakers and the storage stand. Ensure you have sufficient volume in your beaker to balance the unit.

*This guide is designed to get your Cap and app initially set up for pH measurement. Other parameters including Dissolved Oxygen, Redox and Specific Ion (ISE) measurement are detailed in the full manual and videos are available at www.truescience.co.uk. You can also contact our support team if you have any questions by telephone : +44 1954233144 or by email : info@truescience.co.uk

WWW.TRUESCIENCE.CO.UK

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Use the Meter view for basic readings of pH, DO, Ion and Redox. Readings shown in this view are always a live reading of what the electrode is reading.

Swipe to the right anywhere down the left hand side of the app to open the menu and access the inventory, users and other features.

Touch the TRUEscience icon to return to the home screen and switch between different smart caps. Up to 6 caps can be connected to one device.
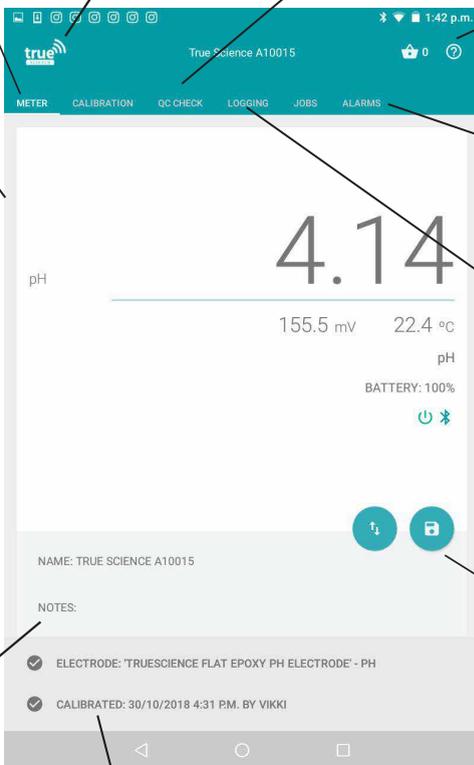
QC Check allows you to verify the accuracy of the electrode in addition to a standard calibration. Use a different buffer that was not used for calibration to get the best accuracy out of the QC check.

Need help? Touch here to talk to one of our technical support advisors on web chat, view the full user manual and more.
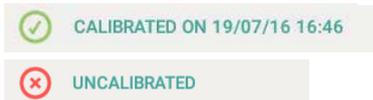
Use the Alarm function to set a visual and audible alarm if your pH goes out of range. You can then leave the smart cap logging or measuring and only be alerted if there is a problem.

Logging allows you to set up the SMART Cap to record results at set time intervals, from a specified start time to a specified end time. This is great for titrations, or for seeing how pH changes over time in a product or experiment.

Touch here to rename your cap or add notes, for example to identify the cap.

Touch **SAVE** at any time to save the current reading into the jobs list with a date and time stamp. In the Jobs tab you can view the saved readings and add notes, photos and GPS location
data to the result. Share the saved results by email, dropbox or other file sharing services.

Remember!
Always rinse the electrode in deionised or distilled water between different buffers or samples to stop carry over.

To switch off and preserve battery life press and hold the blue button on the front panel of the SMART Cap.

Check here to quickly see when the electrode was last calibrated. The message will show "uncalibrated" or the last calibration date and time;

✓ CALIBRATED ON 19/07/16 16:46

✗ UNCALIBRATED

▶ **Prefer video instructions?**

www.truescience.co.uk/video
or scan the QR code below!

App screen content

True Science A10015

METER CALIBRATION QC CHECK LOGGING JOBS ALARMS

pH

4.14

155.5 mV   22.4 °C

pH

BATTERY: 100%

NAME: TRUE SCIENCE A10015

NOTES:

✓ ELECTRODE: 'TRUESCIENCE FLAT EPOXY PH ELECTRODE' - PH

✓ CALIBRATED: 30/10/2018 4:31 P.M. BY VIKKI

SET UP TABLET AND APP

1. Ensure your Android tablet is charged

2. Turn your tablet on and allow it to load. You may need to work through setup steps on first use depending on the model of the tablet.

3. On the main screen, swipe down from the top to access the settings and connection options. Ensure that Wifi and Bluetooth are turned on, and connect to your available Wifi network (use the instruction manual for your tablet for device specific instructions on this).

4. Create your Google account as instructed by the tablet.

5. Download the TRUEscience app from the Google Play Store by searching TRUEscience.

6. Touch the app icon to open it. Press and hold the round blue raised button on the front of your TRUEscience cap to turn it on. A blue light will begin to flash on the cap, and you will see the cap is in range as it will appear on the cap overview screen on the tablet. You can view up to 6 caps on one tablet.

Power Button

Blue LED Light

3. REGISTER THE ELECTRODE
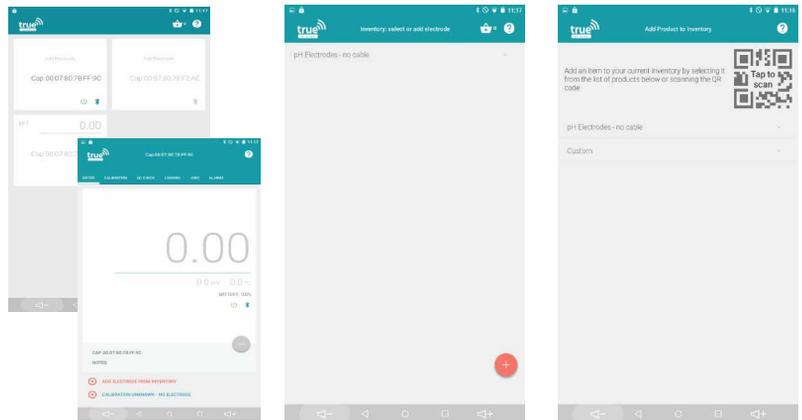
1. Touch the square relating to your cap on the overview screen to open it in meter view as shown above. You can see no electrode is registered yet.

2. Touch the red "Add Electrode from Inventory" message to access the inventory screen shown above. Touch the red + icon to add an electrode.

3. Touch the "Tap to Scan" icon to scan the QR code of a TRUEscience electrode to register it to the cap. (Skip to step 5)
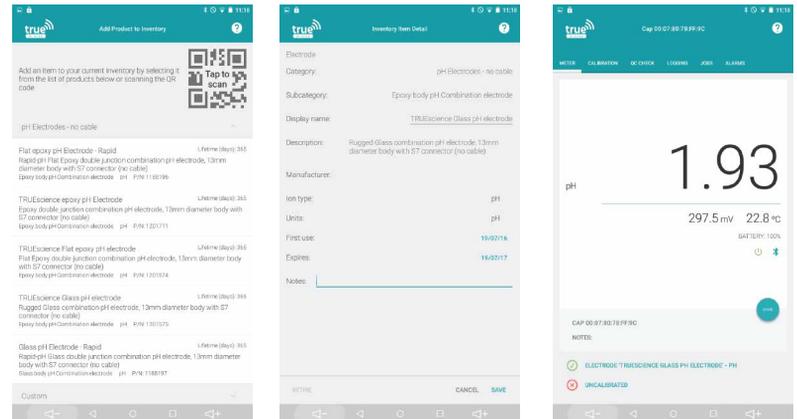
4. Alternatively touch the drop down "pH electrodes - no cable" to select an electrode from the standard list, or enter your own electrode details by pressing the red + and choosing custom.

5. Information about the electrode is displayed. Rename it or change its expiry date here if required. Touch "SAVE" once you are happy with the changes.

6. The tablet will return to the main meter screen, you can see the live reading and the electrode being used is shown with a tick. The app will now remind you when this electrode is due to be changed.

4. REGISTER THE SMART QR BUFFERS
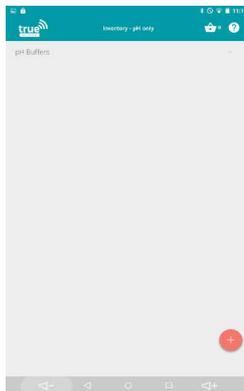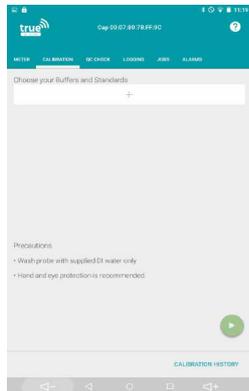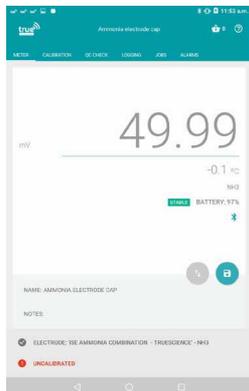
1. The electrode must be calibrated before use. Touch the red "UNCALIBRATED" message at the bottom of the screen to begin.

2. The calibration screen opens. The buffers must be added first, touch the + icon in the white bar at the top of the screen to add buffers.

3. The inventory is shown but there are currently no buffers in the inventory. Touch the red + icon to add the buffers.

4. Add buffers either from the lists of standard or custom buffers, or touch the "tap to scan" icon to quickly add QR TRUEscience buffers.
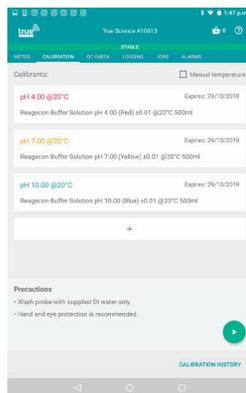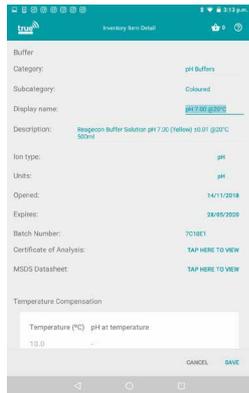
5. The QR scanner opens, point the camera on your device at the QR code on the buffer and hold steady for 2 seconds to allow it to scan.

6. When the buffer has been recognised, the information and documents are shown. View the MSDS or certificates of analysis specific to this buffer by touching the relevant fields here. Touch "SAVE" to finish.

7. The buffer is added to the inventory and the App will now remind you when it is expiring. Note: if you have manually added buffers without adding the expiry date you will not get an expiry reminder.

8. Add the other buffers in the same way. All will be added to the list. You are now ready to calibrate the electrode. To delete a buffer press on the buffer's colour square and swipe right.

5. CALIBRATE THE ELECTRODE

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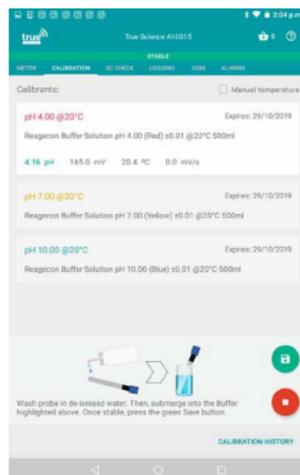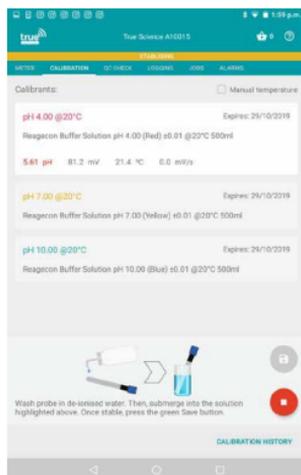
1. Pour a small amount of each buffer into separate beakers and rinse your electrode with de-ionised water and then touch the green play icon to begin.

2. Place the electrode in the buffer highlighted on screen and stir gently. Stop stirring to allow reading to stabilise.

3. Once the reading is stable, the SAVE icon turns green: Touch the SAVE icon to save the calibration point and move on to the next highlighted buffer.
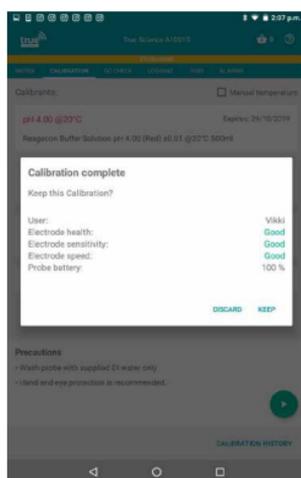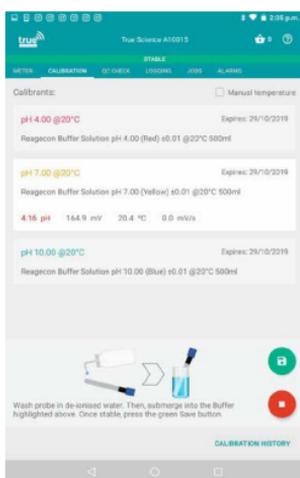
4. Repeat until all buffers have been used. Rinse the electrode between each reading. If icon does not turn green replace your buffers and ensure your rinse step is adequate.

5. Once all buffers have been used a message will appear showing the completed calibration results and electrode health. Touch "KEEP" to save the calibration and return to the calibration screen.

6. Touch "METER" to return to the meter view. We can now see the live reading and can see the electrode is connected and calibrated. You can now begin testing. The App will remind you when the next calibration is due.

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Combination pH electrode glass with S7 connector	1201575
Combination pH electrode double junction flat with S7 connector	1201574
Combination pH electrode double junction epoxy with S7 connector	1201711
Replacement Lithium battery for SMART Cap	1201564
Spare battery covers colour coded Grey, Teal, Red (Set of 3)	1201710
Spare battery covers colour coded White, Teal, Red (Set of 3)	1201813
Tablet 7"/ 8" Bluetooth® enabled Android	1201708
Storage Stand (includes storage tubes)	1201695
Spare storage tubes for storage stand (Pack of 2)	1201696
Charging tablet stand includes USB Cable	1201562
Height adjustable tablet stand, Stainless steel, non-charging	1201563
Replacement SMART Clip	1201698
Additional SMART Cap (supplied withbattery and 3x colour coded covers, without electrode)	1201689

	250ml	500ml	1000ml
Buffer solution pH 4.00 ± 0.01 @ 20°C Red	1201459	1144885	1144887
Buffer solution pH 7.00 ± 0.01 @ 20°C Yellow	1201458	1144955	1144960
Buffer solution pH 10.00 ± 0.01 @ 20°C Blue	1201460	1145008	1145011
pH electrode storage solution	-	1145514	-
Electrode cleaning solution (pepsin/hydrochloric)	-	1145463	-

Tablet Requirements: The TRUEscience App has been designed with responsive screensso is suitable for a wide range of Android phones and tablets. Bluetooth® 4.0 or later and Android 4.4 or later are required. You will require a WiFi connection for data sharing and full App functionality. The App will run in the background and will require access to GPS, Camera, Bluetooth® and sharing Apps such as GMail, Dropbox and Googledrive.

TECHNICAL SPECIFICATION

pH Range	0-14 pH units
Resolution	0.01pH , 0.1mV, 0.1°C
Meter Precision	±0.002pH
Electrode accuracy	±0.02pH
Calibration points	up to 5 points
Buffer Recognition	QR Code Input
Automatic temperature compensation	0°C - 100.0°C
Electrode diagnostics	Yes
mV range	±1000mV
mV accuracy	±0.1mV
Temperature accuracy	±0.5°C
Store values	10,000 measurements/log
Battery Life	1 year normal use
Battery Type	1/2 AA Lithium Thionyl Chloride, 3.6V, 1200mA
Tablet and App requirements	See above or specified list of tested models on our website
Dimensions of Cap	W48 x D24 x L218 mm including temperature probe
Temperature probe length	130mm long
Weight	91.5 g
Operating/Storage Temperature	0-55°C
Calibration Certainty	Yes, App indicates calibration status, time and date
Electrode health reminders	Yes
Colour keyed battery covers	Yes
Multiple Cap Measurements	Yes, up to 6 simultaneously
Consumables ordering online	Yes
Compatible with any S7 connector pH electrode	Yes
Interval logging	Yes

FCC   Contains transmitter module FCC ID:QOQBLE113. The Bluetooth® transceiver device meets the requirement for modular transmitter approval as detailed in FCC public notice DA00-1407

EN61236-1:2006 - Annex A and B 2008: 1999/5/EC Annex III - Complies with R&TTE Directive 1999/5/EC and RoHS recast directive 2011/65/EU

Patents   Multiple patents pending