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AQUAREAD
water monitoring instruments

CALIBRATION GUIDE EC

OBJECTIVE

Procedure for calibrating the electrical conductivity (EC) sensor.

PREPARATORY STEPS

1. Check

The sensor's gold rings must be in good clean condition. The gold EC sensors can be polished with fine sandpaper (1500 grade) if they are dirty or look corroded.

2. Required Items

- EC calibration solution, choose from one of the three options; Rapidcal (used for freshwater applications), SC-35 (used for salt water applications) or a user defined solution of any concentration between 100uS/cm and 99,999uS/cm.
- Water bath set to 25˚C, where possible.

3. Preparation

The chosen calibration solution should be placed in the water bath, so that the temperature is brought up to 25˚C. If no water bath is available, the solutions should be placed on the bench so that they can reach room temperature overnight, prior to starting the calibration procedure.

Ensure you have enough calibration solution to cover the probes EC rings fully with the liquid level at least 2cm above the top EC ring. There is a line on the outside of the probe sleeve to indicate where the calibration solution needs to cover.

The Probe sleeve forms an integral, working part of the Probe's EC measurement system, and **MUST** be fitted during calibration and measurement for correct operation.

Remove the pH storage cap from the probes pH sensor prior to probe insertion, rinse and dry thoroughly with deionised water.

4. Conditioning

If using a water bath, or calibrating on the bench, the Aquaprobe should be placed into the calibration solution, for approximately 30 minutes so that the temperature of the probe and calibration solution can reach equilibrium.

5. Equipment

- Aquaprobe.
- Calibration instrument; Aquameter / Bluelink / Aquacal PC software
- Chosen calibration solution.
- Water bath.

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OPERATING MODE

CALIBRATION

Calibration guidance will assume you are using an Aquameter, procedure will be similar when using Bluelink or AquaCal.

Procedure :

1. With the Aquaprobe having soaked in the calibration solution for 30 minutes ensure the temperature and EC measurements are completely stable on the Aquameter screen.
2. Select the desired calibration solution. Press the MENU key then select Calibration>Full Cal>DO/EC to enter the DO/EC calibration screen.
3. Move the cursor downwards to the EC section. By pressing the right arrow on the Aquameter you can move the cursor to Rcal. Pressing the up and down arrows will change the calibration solution between Rcal, SC-35 or User Defined. To adjust the user defined concentration, press the right arrow again and then use the up and down arrows to adjust the calibration concentration.
4. Once your desired calibration option is selected, press the OK button on the Aquameter to begin the calibration process.
5. A calibration report value will be displayed after the calibration is complete.

CONTROL

Check the calibration report value is within the acceptable range. This value will vary between probe types. **The acceptable range is 0.4-0.7 (AP-6000, 7000, Pro) – 0.6-1.4 (AP700, 800, 2000, 5000)**

Once calibration is complete press the escape button until you can see the live readings. Check that the shown EC value matches the chosen calibration solution. For Rapidcal this will be approximately 2570µS, for SC-35 this will be approximately 53,000µS, for user defined it should match your chosen concentration (please note EC displayed will depend upon calibration temperature and settings i.e ref to 25C, ref to 20C or absolute).

Check that the reading is stable and does not gradually increase or decrease. If the value does increase/decrease it would suggest that the temperature was not in equilibrium with the probe when the calibration started. You must soak the probe in the calibration solution for 30 minutes prior to beginning the calibration.

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26/11/24	1	Review and fine adjustment	GP

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