thermoscientific

Operating Instructions For Expert CTS

Conditioning Before First Use

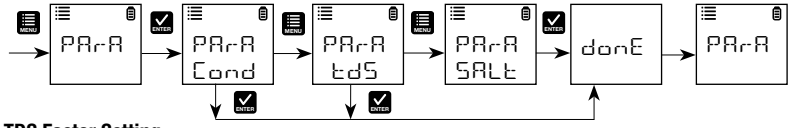
1. Remove the transparent cap and add 20 mm of tap water (approximately ½ full).
2. Recap the Expert CTS tester and soak for at least 15 minutes.
3. The sensor is now activated and ready for use.

Measurement

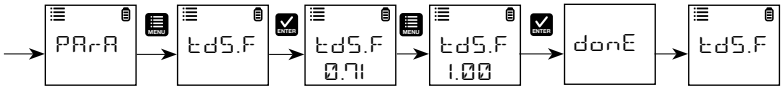
1. Remove the cap and press the ⏻ to power on the tester. The tester will begin in the measurement mode that was used when it was powered off.
2. Dip sensor in at least 30mm of test solution or up to the MAX fill line of the cap.
3. Stir gently while the reading stabilizes and wait for the ⏱ icon to stop blinking. If you are not using the cap for measurement, ensure that the sensor has at least 10mm from the bottom & side wall of your container.
4. The ✓ will appear on the display indicating that the reading is stable and measurement is complete.

Note: The tester automatically shuts off after 8.5 minutes of non-use to conserve batteries if you forget to turn it off.

Measurement Parameter Setting



TDS Factor Setting



Press ⎋ to escape from menu function to measurement mode.

Calibration for Conductivity, TDS, or Salinity

For best results, periodic calibration with an accurate standard is recommended prior to measurement. Use the calibration standard value that is close to your intended sample value. The tester will retain one calibration value in each mode (conductivity, TDS, salinity) when the instrument is powered off. The conductivity value can be calibrated automatically or manually, while the TDS & salinity values require manual calibration. The tester will begin in the measurement mode that was used when it was powered off. See "Measurement parameter setting" to change the desired parameter.

Automatic Calibration for Conductivity

1. Remove the cap and press the ⏻ to power on.
2. Dip the sensor in at least 30mm of calibration standard.
3. Stir gently and press ⎋ to begin the calibration.
4. The display will show CAL followed by the default value. ⎋ is indicated on the display during calibration mode.
5. The ⏱ icon will stop blinking when the reading is stable and the ✓ icon will display.
6. If the reading is within the calibration range of the automatically recognized standards; 80 (84 µS/cm), 1410 (1413 µS/cm), or 12.90 (12.88 mS/cm), the ✓ icon is displayed when the automatic calibration standard value has been detected.
7. Press MENU to accept the auto conductivity standard and finish the calibration. The display will show donE to confirm the auto calibration.

Manual Calibration

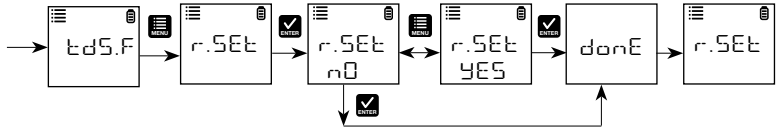
When the conductivity reading is outside calibration range of the automatic conductivity standards or when TDS or salinity is used, the tester will require manual adjustment.

1. Repeat steps 1 to 5 above.
2. Press MENU to manually adjust the value to the desired reading.
   Note: The adjustment will decrease only, however the adjustment will eventually cycle to the highest available value after decreasing by 40% of the initial value.
3. Press ENTER to accept and finish the calibration when the desired value is selected. The display will show donE to confirm the manual calibration.
4. To abort calibration, press ⎋ to escape.

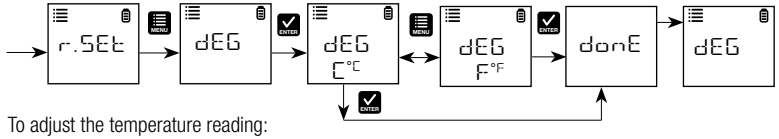
Note: The auto conductivity standards are 84µS/cm, 1413µS/cm & 12.88mS/cm.

Menu (To Change Settings)

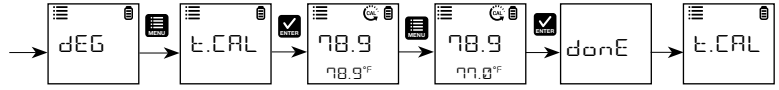
To reset the calibration to factory default condition:



To change celsius / fahrenheit temperature unit:



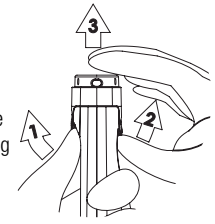
To adjust the temperature reading:



Useful Notes

1. To avoid cross contamination, rinse with clean water between samples and calibration standards.
2. To maintain tester accuracy, calibrate at regular intervals using values that are close to the intended sample values.

Changing Batteries (4) A76 or LR44 button cell type



1. Holding the tester with one hand, slide in the thumb to clear the front catch.
2. While still holding the tester, slide in the other thumb to clear the back catch.
3. With both catches are cleared, vertically slide the battery cover off the tester.
4. Change the batteries noting the polarity (flat positive side to the left). Replace the battery cover onto the tester with the shorter tab above the display locking the front and back to ensure a watertight seal.

Maintenance

1. Rinse sensor with clean water after each use.
2. Clean the sensor with a soft brush and mild dish soap to remove dirt and grease.

Error Messages

1. 🔋 – Batteries are weak and need replacement soon.
2. bAt Lo (low battery supply) – The battery power is too low to power on the instrument and requires immediate replacement.
3. StbL Err (stability error) – Appears when calibration is attempted but the reading is not yet stable. Wait for the reading to stabilize or manually confirm the calibration by pressing enter.
4. Or (over range) – The reading is above the measuring range of tester.

Warranty

This instrument is supplied with a warranty against manufacturing defects for a period of one year from the date of purchase.

Testers and Accessories Order Information

Ordering Code	Product Description
Pocket Tester	
EXPERTCTS	Conductivity/TDS/salinity pocket tester with batteries
Conductivity Standard Solutions and Sachets	
ECCON100BT	100 µS/cm KCl, 480 mL
ECCON1413BT	1413 µS/cm KCl, 480 mL
ECCON1288BT	12.88 mS/cm KCl, 480 mL
ECCON1413BS	1413 µS/cm KCl, box of 20 x 20 mL sachets
TDS 442* Standard Solutions	
EC442300BT	300 ppm 442, 480 mL
EC4421000BT	1000 ppm 442, 480 mL
Salinity (NaCl) Solutions	
ECNACL5PPT	5 ppt NaCl, 480 mL
Other Accessories	
EXPERTCAP	Replacement sensor cap
LANYARD	Tester lanyard

**The 442 scale simulates fresh water dissolved solids as a mixture of 4 parts sodium sulfate, 4 parts sodium bicarbonate, and 2 parts sodium chloride (40% Na_2SO_4, 40% $NaHCO_3$, 20% NaCl).*