Getting Started
The CTStestr 50 Pocket Tester has been factory calibrated and usually works well out of the box. However, after some time in storage or use, it is best to remove the sensor cap and soak the sensor in warm tap water for 10 min or so. Prior to taking the measurements, periodic calibration with certified standards is recommended for best accuracy.

Measurement Parameter Setting
1. Press ON/OFF (COND) to power on the tester.
2. Press MENU/v to enter setup window. Scroll down by pressing MENU/v to select Settings. The display shows Cond, TDS and Salinity.
3. Scroll down by pressing MENU/v to toggle between Cond, TDS and Salinity. Press HOLD/v to select Cond. The display shows the selected measurement parameter setting with a ✔.
4. The lower display shows the current measured temperature reading. The display will show Temp Set, Temp Cal and Temp Coeff. To exit this program without confirming the calibration, press CAL/ESC.

Temperature Calibration
1. Press MENU/v to enter setup window. Scroll down by pressing MENU/v to select Temp Set. Press HOLD/v to select Temp Set. The display shows Set °C/°F, Temp Cal and Temp Coeff.
2. Press HOLD/v to select °C/°F. Scroll down by pressing MENU/v to toggle between °C and °F.
3. The display will show the selected temperature unit. The display shows the selected temperature setting with a ✔.
4. The display will show CAL followed by the default value. CAL is indicated on the display during calibration mode.
5. The tester will automatically shut off to conserve batteries.

Temperature Settings
1. Press MENU/v to enter setup window. Scroll down by pressing MENU/v to select Temp Set. The display shows Set °C/°F, Temp Cal and Temp Coeff.
2. The display will show CAL followed by the default value. CAL is indicated on the display during calibration mode.

TDS Factor Setting
1. Press MENU/v to enter setup window. Scroll down by pressing MENU/v to select Settings.
2. Press HOLD/v to select Settings. The display shows TDS factor and Backlight.
3. Press HOLD/v to select the default TDS factor setting or MENU/v to adjust the setting.
4. Press HOLD/v to confirm the selection of the setting. The display shows the set TDS factor with a ✔.
5. The display shows the selected TDS factor with a ✔.

Backlight Settings
1. Press MENU/v to enter setup window. Scroll down by pressing MENU/v to select Settings.
2. Press HOLD/v to select Settings. The display shows TDS Factor and Backlight.
3. Scroll down by pressing MENU/v to toggle between TDS Factor and Backlight. Press HOLD/v to select Backlight.
4. The display shows ON and OFF. Scroll down by pressing MENU/v to toggle between ON and OFF. Backlight ON increases readability in low-light conditions.
5. Press HOLD/v to select the desired backlight option. The display shows the selected backlight option with a ✔.

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 for 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.

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 4 from “Automatic Calibration for Conductivity”.
2. Press MENU/v 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 HOLD/v to accept and finish the calibration when the desired value is selected.

Note: To abort calibration, press CAL/ESC to escape.
4. Once the calibration is finished and user has accepted the changes, measurement window will now show the calibrated reading.

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

CTS Measurement
1. Press ON/OFF (COND) to power on the tester on or needed.
2. Dip the electrode about 2 cm to 3 cm into the test solution. Stir and let the reading stabilize. The timer icon will blink during this time. Once the reading is stabilized, the timer stops blinking and FO will appear to indicate the stability of the reading.

CAUTION: Testing dry samples is not accurate and can lead to sensor damage or breakage. Soils must be wet and free of particulates that may scratch the glass sensor. Excessive force into dry samples can cause glass breakage.
3. Note the CTS value or press HOLD/v to freeze the reading. To release the reading, press HOLD/v again.
4. Press ON/OFF (COND) for 3 seconds to turn off tester. If key is not pressed for 8.5 minutes, the tester will automatically shut off to conserve batteries.

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1-800-833-7958
www.geotech.com
User Reset
Reset the CTS calibration to the user’s default settings by using the user reset function. Temperature user calibration is not affected by the user reset function.
2. Press HOLD/+ to select User Reset.
3. The display automatically shows No and Yes. Scroll down by pressing MENU+/ to toggle between No and Yes.
4. Press HOLD/+ to confirm either No or Yes. Display shows User Reset option with a ✓.

Factory Reset
Reset the CTStestr to the factory default settings by using the factory reset function.
1. Press MENU+/ to enter setup window. Scroll down by pressing the MENU+/ to select Reset. Press HOLD/+ to select Reset. The display shows User Reset and Factory Reset.
2. Scroll down by pressing MENU+/ to toggle between the resets. Press HOLD/+ to select Factory Reset.
3. The display automatically shows No and Yes. Scroll down by pressing MENU+/ to toggle between No and Yes.
4. Press HOLD/+ to confirm either No or Yes. The display shows the Factory Reset option with a ✓.

HOLD Function
This feature helps to freeze the display for a delayed observation.
1. Press HOLD/+ button to freeze measurement.
2. Press HOLD/+ again to release measurement.

Sensor Replacement
Replace the sensor module at the fraction of the cost of a new tester. When the tester fails to calibrate or gives fluctuating readings in calibration standards, you need to change the electrode.
1. With dry hands, grip the ring with sensor facing you. Twist the ring counter-clockwise. Save the ring for later use.
2. Pull the old sensor module away from the tester.
3. Align the four tabs on the new module so that they match the four slots on the tester.
4. Gently push the module onto the slots to sit it in position. Push the smaller O-ring fully onto the new sensor module. Push the other O-ring over the module and thread it into place firmly twisting clockwise.

Note: It is necessary that you recalibrate your tester prior to measurement after a sensor replacement.

Replacing the Batteries
The CTStestr 50 Pocket Tester uses four AAA 1.5 V batteries.
1. To remove the battery cover, see Figure 1. Clear the front catch and then the back catch, before sliding the cover off.
2. To remove the battery plate, push the center tab towards the front of the tester as shown in Figure 2. Once unlocked, remove the plate to access the batteries.
3. Insert the tester upside down to remove the batteries. Each side uses two AAA batteries. Orient each battery with positive terminal facing downward.
4. To lock the battery plate, align the small tabs (Figure 3) into the guide ribs on the housing and then press down.

Sensor Maintenance
1. Always keep the sensors electrodes clean. Rinse the electrodes with deionized water and wipe them dry with clean cloth before storing with its protective cap. For cup type electrodes, remove the white plastic cup and protective cap. For chloride electrodes, rinse with de-ionized water before starting any measurement process. This is to remove dirt and oil stains on the electrode which may affect the accuracy of the measurements.

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

Return of Items
Authorization must be obtained from your distributor before returning items for any reason. When applying for authorization, please include information regarding the reason the item(s) are to be returned.
We reserve the right to make improvements in design, construction and appearance of products without notice. Prices are subject to change without notice.

Self-Diagnostic Messages

Specifications CTStestr 50

<table>
<thead>
<tr>
<th>Conductivity</th>
<th>Temperature range 0 to 130°C (80°F to 266°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>0.1°C, 0.1°F, 1°C, 1°F</td>
</tr>
<tr>
<td>Relative accuracy</td>
<td>±3% full scale</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>TDS factor</th>
<th>Temperature compensation Yes (Automatic Temperature Compensation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>0.1 to 1000 ppm, 100 to 10000 ppm, 0.1 to 10.00 ppm, 0.01 to 1 ppm</td>
</tr>
<tr>
<td>Relative accuracy</td>
<td>±3% full scale</td>
</tr>
<tr>
<td>Calibration points</td>
<td>1</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Ambient operating temperature 5 to 40°C / 41 to 113°F</th>
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</thead>
<tbody>
<tr>
<td>Relative humidity</td>
<td>5% to 85% noncondensing</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-20 to 60°C / -4 to 140°F</td>
</tr>
<tr>
<td>Storage humidity</td>
<td>5% to 85% noncondensing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accessories</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>35634-07</td>
<td>Replacement sensor module for CTStestr 50 Pin-style tester</td>
</tr>
<tr>
<td>35634-08</td>
<td>Replacement sensor module for CTStestr 50C pin-style tester</td>
</tr>
<tr>
<td>35634-09</td>
<td>Replacement sensor cap</td>
</tr>
<tr>
<td>35634-55</td>
<td>CTStestr 50P pin-style pocket tester with case, lanyard, and batteries</td>
</tr>
<tr>
<td>35634-57</td>
<td>Replacement sensor module for CTStestr 50 Pin-style tester</td>
</tr>
<tr>
<td>35634-58</td>
<td>Replacement sensor module for CTStestr 50C pin-style tester</td>
</tr>
<tr>
<td>35634-59</td>
<td>Replacement sensor cap</td>
</tr>
<tr>
<td>35635-00</td>
<td>Replacement alkaline batteries, AAA, 1.5 V, Pack of 12</td>
</tr>
<tr>
<td>17101-45</td>
<td>NIST-traceable calibration data for pocket testers</td>
</tr>
</tbody>
</table>

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