Palintest®

Multi-Parameter Pocket Meter

pH / Conductivity / TDS / Salinity / Temperature

Instruction Manual

Getting Started:

Your instrument has been factory calibrated and usually works well out of the box. However, after extended periods of non-use, it's best to remove the sensor cap and soak the sensor (pictured here) in warm tap water or pH buffer for 10 minutes or so. A brief rinse with deionised (DI) water is OK, but avoid soaking or storing in deionised water as this will shorten the pH electrode life. Prior to taking measurements, periodic calibration with certified standards is recommended for best accuracy.

Your instrument begins in the measuring mode that was previously used. Just prior to measurement or when switching modes, you will see the setting associated with each parameter i.e. pH (buffer group selected), Conductivity (Auto), TDS (factor), Salinity (unit of measure).

Setup:

Your instrument allows customisation of various settings. **To access the setup mode**:

1 With the instrument off, keep the MODE ENT pressed down while you press and release ON OFF (Setup) will appear, then as you release MODE ENT, PArA (Parameter) will appear.

2 Press HOLD or CAL to choose PArA (Parameter Setup) or SYSt (System Setup) menu.

3 Press MODE ENT to enter the selected setup menu.

IMPORTANT It is necessary to save your Parameter and System changes in order for them to take effect.

1 When you are finished making your desired changes, press both HOLD and CAL at the same time and keep them pressed until you see "SA" (Save) on the display.

2 With the primary display "SA" and secondary display "YES" SA YES, press MODE ENT to save the changes. The instrument will resume measurement mode with new setting(s).

Note: If auto-shut off is used, changes will be automatically saved 8.5 minutes after the last change was made.

Parameter Setup:

Select PArA to make changes relating to the parameters - pH, Conductivity TDS, Salinity. Note: only the instrument will have all of these options. See below for menus available from each parameter. To Navigate the menus:

- Press MODE ENT to select or confirm the displayed option.
- Press HOLD or CAL to scroll thru options or change values.

pH Options:

- **USA** or **NIST** Buffer Group for calibration buffer option.
  - ➢ **5-pt** calibration (all points) or **3-pt** calibration (middle three points only).

Salinity (SALt) Option

- Choose **PPt** (parts per thousand) or **Per** (percentage %) as unit of measure.

Total Dissolved Solids (tDS) Option

- **FACt** factor the instrument uses to convert from conductivity to TDS value. Adjustable from **0.40 to 1.00** (default factor is 0.71).

Conductivity Options

- **A.Cal** (Automatic Calibration) Choose **YES** or **NO** (manual).

TIP: The instrument is capable of automatic or manual conductivity calibration. In automatic calibration mode, the meter will automatically choose one of (3) conductivity calibration standards depending on the ranges listed below. If you will only use 84µS, 1413µS, or 12.88mS calibration standards, automatic calibration is a time saving option. If you intend to calibrate with one or more standards that are not listed below, choose "NO" which will disable auto calibration and allow you to enter your desired value manually.

Conductivity Range	Automatic Calibration Value
0.0 - 200.0 µS	84 µS
201 - 2000 µS	1413 µS
2.01 - 20.00 mS	12.88 mS

- **SPC** (Single-Point Calibration) Choose **YES** or **NO** (multi-point calibration).

TIP: The instrument is capable of single or multi-point conductivity calibration. Use Single-Point Calibration to apply a single calibration value across all ranges. Use Multi-Point Calibration for individual calibration in each range. This will restrict an individual calibration so that it is applied to one range only. When using multi-point calibration, perform a calibration in each range that you expect to use for best results.

System Setup:

Select SYSt to make changes relating to the system. See below for available menus.

Note: other than changing Temperature units, it is advised to keep the factory default settings for best results. To Navigate the System menus:

- Press MODE ENT to select or confirm the displayed option.
- Press HOLD or CAL to scroll thru menu options or change values.
- **Unit rSt** (Instrument reset)
  - ➢ **PH** (pH) or **EC** (electrical conductivity / TDS / Salinity)
  - ➢ **CAL** (calibration reset) or **FCt** (Reset to factory default settings)
- **Set A.Off** (Automatic shut off after 8.5 minutes) Choose **YES** or **NO**.
- **Set t.C** (Temperature Coefficient) 0.0-10.0% (2.1% is default).
- **Set AtC** (Auto Temperature Compensation) Choose **YES** or **NO** (25°C is used).
- **Set °C °F** (select temperature units) Choose **°C**elsius or **°F**ahrenheit.

Temperature Calibration:

The factory temperature calibration should last for the life of the original sensor since it doesn't normally drift. Temperature calibration is always recommended upon sensor replacement. It may also be desirable to adjust the temperature to match a certified accurate thermometer or another Test instrument. The temperature value is common to all parameters so only one calibration is needed. To perform temperature calibration:

1 Press ON OFF to turn on meter. Place the reference thermometer and your instrument into the same sample. Allow enough time for both to stabilise.

2 Press MODE ENT as needed to select the pH measuring mode.
Press CAL to begin pH calibration mode.

3 Press HOLD for 5 seconds to begin temperature calibration mode. The current temperature will be displayed on top while the factory default temperature is below.

4 Press HOLD or CAL to manually adjust to the desired temperature - up to ± 5°C or ± 9° F of the factory default value.

5 Press MODE ENT to confirm and return to the pH measuring mode.

pH Calibration:

For best results, calibrate with certified accurate pH calibration standards (buffers). You may calibrate up to five points with the USA (1.68, 4.01, 7.00, 10.01, 12.45) or the NIST (1.68, 4.01, 6.86, 9.18, 12.45) buffer group.

1 Press ON OFF to turn meter on and MODE ENT to select pH mode as needed.

2 Rinse the sensor with clean water. Immerse the sensor into your pH buffer and press CAL. The primary display will show the un-calibrated pH value, while the secondary display should search for and lock on the closest automatic calibration value.

3 Allow the primary display to stabilise, then press MODE ENT to confirm the calibration value. The primary value will blink briefly before the secondary value automatically scrolls through the remaining pH buffers available for calibration.

4 Repeat steps 2 & 3 with additional buffers or press CAL to return to measurement mode.

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Conductivity Calibration (Automatic):

For best results, calibrate with certified accurate conductivity calibration standards. Selection of multi-point calibration will allow up to three of the following values, while Single-point calibration will allow only one; choose 84µS, 1413µS, or 12.88mS.

Conductivity Range	Automatic Calibration Value
0.0 - 200.0 µS	84 µS
201 - 2000 µS	1413 µS
2.01 - 20.00 mS	12.88 mS

1 Press ON OFF to turn meter on and MODE ENT to select conductivity mode as needed.
2 Rinse the sensor with clean water. Immerse the sensor into your standard and press CAL. The primary display will show the un-calibrated value, while the secondary display should search for and lock on the closest automatic calibration value.
3 Allow the primary display to stabilise, then press MODE ENT to confirm the calibration value. The primary value will blink briefly before returning to measurement mode.
4 Repeat steps 2 & 3 with additional calibrations standards if desired.

Conductivity, TDS, & Salinity Calibration (Manual):

For best results, calibrate with certified accurate calibration standards. 1 point per range.

Conductivity (3-pt)	TDS (3-pt)	Salinity (1-pt)
0.0 - 200.0 µS	0.0 - 99.9 ppm	1.00 - 10 ppt
201 - 2000 µS	100 - 999 ppm	
2.01 - 20.00 mS	1.00 - 10 ppt	

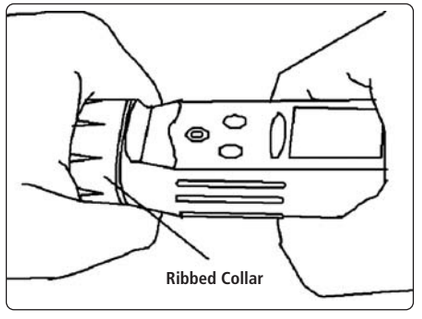
1 Press ON OFF to turn meter on and MODE ENT to select conductivity, TDS, or salinity mode.
2 Rinse the sensor with clean water. Immerse the sensor into your standard and press CAL. The primary display will show the un-calibrated value, while the secondary display will display the factory default calibration.
3 Press HOLD or CAL to manually adjust the primary display to your calibration standard.
4 Press MODE ENT to confirm the new adjusted value. The primary value will blink briefly before returning to measurement mode.
5 Repeat steps 2 & 3 with additional calibration standards if desired.

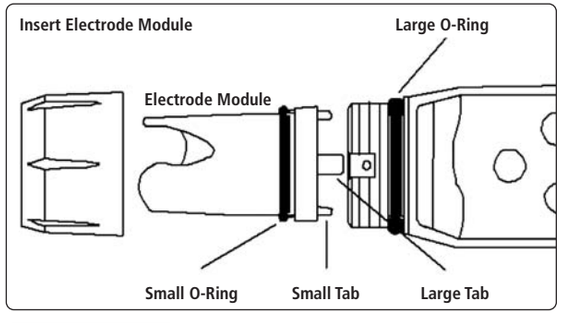
Hold Function:

For prolonged observation of a reading, press HOLD during measurement mode to freeze the display. The "HOLD" indicator will display when the reading is held. To release the held value and resume live measurement, press HOLD.

Sensor Replacement:

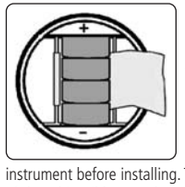
Your instrument includes a replaceable sensor (Part Code PT162/1). If the tip gets damaged or as the sensor wears over time, the entire sensor can easily be replaced. To remove the old sensor, simply twist off the ribbed collar and pull the sensor straight out.





To install the new sensor, line up the tabs and 8 pins of the sensor to the instrument body. Twist ribbed collar back on to keep waterproof rating and secure sensor. The O-rings should create a watertight seal and provide some resistance when twisting.

Battery Replacement:



Your Test instrument includes (4) 1.5V alkaline batteries. LR44 or A76 battery types are suitable and commonly available. Replace all (4) batteries together. **Note: Waiting too long to replace the batteries can lead to inaccurate readings and is the most common cause of problems**. Twist and unscrew to remove the battery cover at the top of the instrument. Pull on the white ribbon to remove the batteries. Note the correct polarity of the instrument before installing. The flat side of the battery is +. Place new batteries on top of the white ribbon so they can be easily removed next time. Hand tighten the battery cover to keep waterproof rating.

Storage:

The sensor does not require special storage. Rinse with clean water after use and cover the sensor with the included cap. Keep at room temperature away from extreme temperatures. The sensor can easily be re-hydrated by soaking if stored dry.

Self Diagnostic Messages

Message	Indicates
	>75% battery life remaining
	50-75% battery life remaining
	25-50% battery life remaining
	No bars & blinking = replace batteries
Err	Calibration error, usually attempting to calibrate to a value which is out of range or under range.
Unstable pH reading / Slow response	Broken or dirty sensor. Clean, rehydrate, and replace if necessary. Could also be due to low battery condition or sample with temperature that has not stabilised.
"Ur" (Under range) or "Or" (Over range)	Measured value is out of range. Most often caused by dry electrode that needs to be re-hydrated / soaked. Sensor may not be completely submersed or is not connected to Test instrument body properly.
Meter not responsive	If "Hold" on display, press Hold key to resume live measurement.
Secondary display continually scrolls	The automatic calibration standard is not within expected calibration range. Use fresh standard or an alternate calibration standard.

Customer support:

Palintest Ltd
Palintest House, Kingsway, Team Valley,
Gateshead, NE11 0NS
Tel: +44 (0)191 491 0808
Fax: +44 (0)191 482 5372
sales@palintest.com (UK)
export@palintest.com (International)

Palintest China
Room 1711, Fanli Mansion,
22 Chaowai Street, Chaoyang District,
Beijing, 100020, PRC
Tel: +86 10 6588 6200
Fax: +86 10 6588 8311
china@palintest.com

Palintest Australia and Asia Pacific
1/53 Lorraine Street,
Peakhurst Business Centre,
Peakhurst, NSW 2210, Australia
Tel: +61 1300 131516
Fax: +61 1300 131986
palintest@palintest.com.au

Palintest Middle East
PO Box 27709, Engomi 2432,
Nicosia, Cyprus
Tel: +357 226 66080
Fax: +357 226 60355
sales@palintest.me

Palintest USA
1455 Jamike Avenue (Suite 100),
Erlanger, Kentucky, 41018, USA
Tel: +1 859 341 7423
Toll Free: 800 835 9629
Fax: +1 859 341 2106
info@palintestusa.com

www.palintest.com

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