

ULTRAPEN™ PT4 – Quick Start Guide

Free Chlorine Equivalent (FC^E) and Temperature Pen

For a complete set of operating instructions, maintenance procedures, calibration procedures, and the **FACTORY CAL** reset procedure download the full PT4 Operation Manual from www.myronl.com.

QUICK REFERENCE INSTRUCTIONS

1. Press and release Push Button to turn ON the PT4.
2. LED flashes rapidly: Dip pen in sample solution so sensor is totally submerged.
3. LED flashes slowly: Swirl pen in sample, keeping sensor submerged. Avoid contact with sides/bottom of container.
LIVE Mode: Display will alternate between live pH and temperature readings. Note readings for your records.
HOLD Mode: LED turns Solid ON when Measurement is complete then pen turns OFF.

NOTE: After turning the PT4 ON, press and hold the push button to enter either the calibration or configuration mode.

FEATURES

1. **PUSH BUTTON** – Press to turn PT4 ON and select mode settings.
2. **BATTERY CAP** – Unscrew to access battery for replacement.
3. **BATTERY INDICATOR** – Shows battery charge level.
4. **DISPLAY** - Displays measurements and menu options.
5. **LED INDICATOR LIGHT** - Tells the user when to dip & swirl PT4 during measurements and calibration.
6. **FC^E SENSOR** – Contains pH, ORP and Temperature Sensors.
7. **PLATINUM ELECTRODE (ORP sensor)** – Measures oxidation-reduction potential (ORP) or redox of solution.
8. **pH SENSOR BULB** – Measures test sample's Hydrogen ion concentration.
9. **THERMISTOR** – Measures test sample's temperature.
10. **SOAKER CAP** – Contains a sponge soaked in Sensor Storage Solution to maintain sensor hydration.
 - To remove, twist the cap and pull off. Do not spill the Storage Solution.
 - To store the PT4 between uses, fill the cap until sponge is covered. Twist the cap while pushing it onto the FC^E Sensor. Do not over fill the cap or excess solution may squirt out.

NOTE: The formation of KCl crystals around the soaker cap is normal.

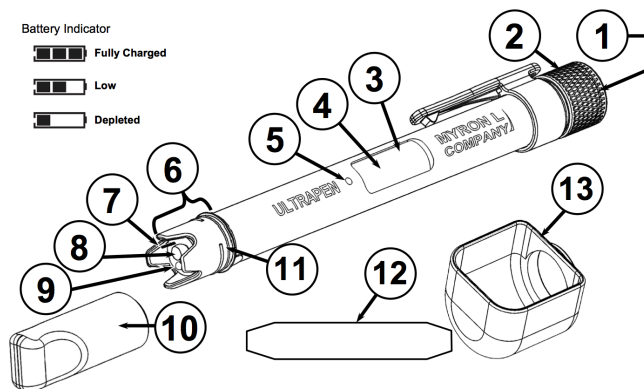
• These crystals do not affect the sensor life, performance, or accuracy.

• **ALWAYS** rinse them off with clean water prior to a performing a test.

11. **CAP STOP** - **DO NOT** push the Soaker Cap beyond the Cap Stop as sensor damage could occur.

12. **ORP ELECTRODE CLEANING PAPER** - For deep cleaning the platinum electrode.

13. **SCOOP** - Used to hold sample solution when dipping is not possible. To install, push the scoop onto the sensor while shifting side-to-side. To remove, pull the scoop off while shifting side-to-side. Verify the sensor remained fully inserted into the PT4. If not, download the full PT4 Operation Manual from the Myron L® Company website for instructions on reinstalling the Sensor. To use, hold the scoop directly under a vertical stream during measurement, avoiding bubbles.



PT4 DEFAULT SETTINGS

Temperature Units: °C (Temp. value alternates on Display with FC^E value) **FC^E Mode:** HOLD

NOTE: For instructions on changing the temperature units to °F or switching the PT4 to LIVE measurement mode download the full PT4 Operation Manual from the Myron L® Company website.

OPERATING INSTRUCTIONS

- I. **MEASUREMENT SETUP:** The following steps should be taken prior to performing a measurement with your PT4:

- Make sure the pen is clean
- Myron L® Company recommends that you calibrate of the PT4 before taking measurements (See section III. Calibration, below).

- II. **NORMAL OPERATION:** **CAUTION:** To measure solution at the extremes of the specified temperature range, allow the pen to equilibrate by submerging the sensor in the sample solution for 1 minute prior to taking a measurement.

NOTE: When testing a vertical stream of sample, use the scoop. Recalibrate the pen using the scoop to for best results.

1. Rinse the sensor by swirling it in a container of fresh sample solution for approximately 30 seconds.
 - If using the scoop, hold the scoop under the sample stream for approximately 30 seconds
2. Refill the sample container with fresh test sample.
3. Push and release the push button to turn the PT4 ON.
4. Grasp the pen near the battery cap to avoid sample contamination.
5. Swirl the PT4 in the sample solution while measurement is taking place.
 - If you do not submerge the sensor in solution before the flashing slows, allow the pen to power OFF and retake the reading.
 - If possible, keep the pen at least 1 inch (2½ cm) away from sides/bottom of container, if applicable.
6. The following table explains how to follow LED prompts during measurement and shows the duration of each prompt:

LED SIGNAL	ACTION	DURATION
Rapid Flashing	Dip pen in test sample and swirl.	6 sec
Slow Flashing	Measurement in process; continue to swirl.	20 - 120 sec in Hold mode 5 min in LIVE mode
	<ul style="list-style-type: none"> • In Hold mode real-time readings are displayed until the LED turns ON solid. • In Live mode real-time readings are displayed until the PT4 turns OFF. 	
Solid Light (Hold mode only)	Measurement is complete. Values are displayed until the PT4 turns OFF.	6 sec

ULTRAPEN™ PT4 – Quick Start Guide

Free Chlorine Equivalent (FC^E) and Temperature Pen

III. CALIBRATION: Myron L® Company recommends calibrating both the pH sensor and the ORP sensor twice a month or any time measurements are not as expected.

- The PT4 will recognize the pH or ORP values of the standard solutions and buffers used in these calibrations. If “Error” appears on the display, check to make sure you are using a proper solution/buffer. If the solution is correct, clean the sensor, as described in the full PT4 Operation Manual downloadable from the Myron L® Company website.
- Small bubbles trapped in the sensor may give a false calibration.
- If possible, keep the pen at least 1 inch (2½ cm) away from sides/bottom of container.
- Always grasp the pen near the battery cap to avoid sample contamination.

A. SELECTING THE CALIBRATION TYPE:

1. Rinse the PT4 sensor in clean water (preferably DI, RO, or purified water).
2. Press and release the push button to turn the PT4 ON.
3. Push and hold the button down.
4. Release the button when “CAL” is displayed. The display will alternate between “PUSHnHLD” and “CAL”
5. Push and hold the button down again.
 - To perform a pH calibration release the button when “PH” is displayed.
 - To perform an ORP calibration release the button when “ORP” is displayed.

B. pH CALIBRATION:

- Always start with pH 7.0 buffer.
1. While the LED flashes rapidly, dip the pen in fresh pH 7.0 buffer so that the sensor is completely submerged.
 2. While the LED flashes slowly, swirl the pen around to remove bubbles, keeping the sensor submerged.
 - **NOTE:** If you do not submerge the sensor in solution before the flashing slows, or at any point of the calibration the sensor is no longer submerged, allow the pen to power OFF and retake the reading.
 3. If the 7.0 pH calibration is successful, the PT4 display will say “SAVED”, then “PUSHCONT”.
 4. Follow Steps 1 through 3 above using either 4.0 or 10.0 pH buffer.
 5. After the last calibration point is successfully saved, the display will show “SAVED” and power OFF.

C. ORP CALIBRATION:

- the PT4’s ORP sensor can be calibrated with either: 80 mv quinhydrone, 260 mv quinhydrone, or 470 mv light’s solution.
1. While the LED flashes rapidly, dip the pen in fresh ORP reference solution so that the sensor is completely submerged.
 2. While the LED flashes slowly, swirl the pen around to remove bubbles, keeping the sensor submerged.
 - **NOTE:** If you do not submerge the sensor in solution before the flashing slows, or at any point of the calibration the sensor is no longer submerged, allow the pen to power OFF and retake the reading.
 3. When the LED turns ON solid, remove the pen from solution.
 - The display will read “CAL SAVED” and the PT4 will turn OFF.

FACTORY CALIBRATION: Factory Calibration (FAC CAL) resets the PT4 to its factory settings. For instructions on how to perform a FAC CAL download the full PT4 Operation Manual from the Myron L® Company website.

MAINTENANCE

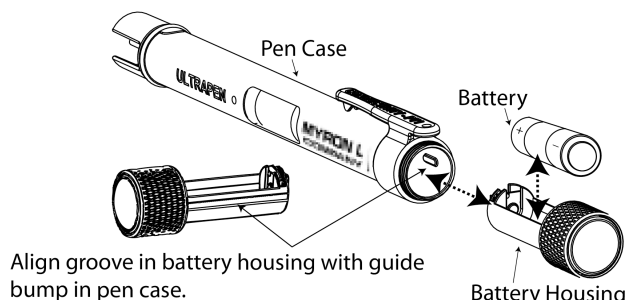
I. BATTERY REPLACEMENT

1. In a **CLEAN DRY** place unscrew the battery cap in a counter-clockwise motion and slide the cap and battery housing out.
2. Remove the depleted battery and insert a new battery into the battery housing with the negative end touching the spring.
3. Align the groove along the battery housing with the guide bump inside the pen case and slide the battery housing in.
4. Screw the pen cap back on in a clockwise direction. Do not over tighten.

II. ROUTINE MAINTENANCE

1. After each use, **ALWAYS** rinse the sensor with clean water (preferably DI, RO, or purified water), then carefully blot the sensor with a soft, clean cloth to remove any water drops.
2. **ALWAYS** replace the Soaker Cap (filled with enough Myron L® Company Storage Solution to cover the sponge inside) on the sensor after each use. **DO NOT** push the cap past the Cap Stop.
3. Do not drop, throw or otherwise strike the PT4. This voids the warranty.
4. Do not store the PT4 in a location where the ambient temperatures exceed its specified Operating/Storage Temperature limits.

III. SENSOR CLEANING AND REPLACEMENT: For sensor cleaning and conditioning instructions download the full PT4 Operation Manual from the Myron L® Company website.



SPECIFICATIONS

Measurement Ranges	FC ^E 0– 10.0 ppm, Temperature: 0°-71° C / 32-160° F	FC ^E Accuracy	FC ^E 5.00ppm ±0.3 ppm, ≥5.00ppm ±0.5 ppm
Resolution	FC ^E 0.01 ppm, Temperature: ± 0.1°C / ± 0.1°F	Temp. Accuracy	± 0.1°C / ± 0.1°F
Operating/Storage Temp	0° - 55°C / 32° - 131°F	Calibration Solutions	pH4, pH7, pH10, ORP: 80mV, 260mV, 470mV
Temp Compensation	Automatic In Calibration Mode From 15°C to 30°C	Time to Stable Reading	10 – 120 seconds
Power Consumption	Active Mode: 37 mA, Sleep Mode: 2 µA	Battery Type	N type, Alkaline 1.5 V
Physical Dimensions	17.15 cm L x 1.59 cm D or 6.75 in. L x .625 in. D; Weight: 50.4g / 1.78oz.	Case:	Anodized Aircraft Aluminum with Protective Coating
Water Resistance	IP67 and NEMA 6	EN61236-1: 2006 - Annex A: 2008; Electrostatic discharge to case of instrument may cause PT4 to spontaneously power ON. In this case, the PT4 will power OFF after several seconds.	

MYRON L® COMPANY

2450 Impala Drive ♦ Carlsbad, CA 92010-7226 ♦ Phone: +1-760-438-2021
 E-Mail: Customer Service – info@myronl.com ♦ Technical Support – techquestions@myronl.com
 Website: www.myronl.com