






ULTRAPEN™ PTBT2 – Quick Start Guide

pH and Temperature Pen for Use with your Mobile Device

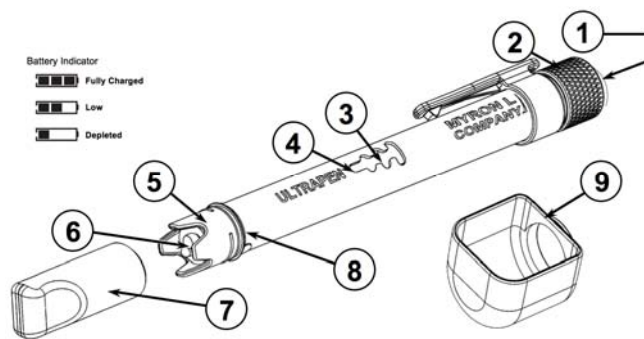
For a complete set of operating instructions, maintenance procedures, calibration procedures, and the **FACTORY CAL** reset procedure download the full the PTBTx Ultrapen App Operation Manual and the PTBT2 Operation Manual from www.myronl.com.

QUICK REFERENCE INSTRUCTIONS

1. Turn ON Ultrapen App: Tap Ultrapen icon on mobile device's home screen.	 Returns the App to the Measurement screen.
2. Turn ON PTBT2: Press and release the push button on PTBT2.	 Displays a list of saved measurements.
3. LED flashes rapidly: Dip PTBT2 in sample solution so sensor is totally submerged.	 Places the App in Calibration mode.
4. LED flashes slowly: Swirl PTBT2 to remove bubbles, keep sensor submerged. Avoid contact with sides/bottom of container. Measurement is ongoing.	 Opens the App's Bluetooth Connect / Disconnect screen.
5. LED turns solid ON then turns OFF: Measurement is complete.	 Opens the App's Preferences and Settings modes. A internet link to full Operation Manual (Help button) is found here.

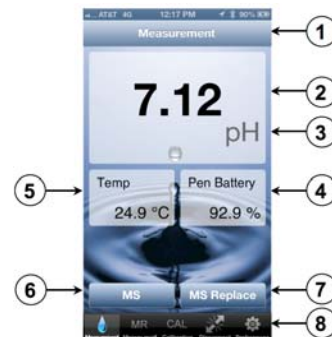
PTBT2 FEATURES

- PUSH BUTTON** – Press to turn ON and select mode settings.
- BATTERY CAP** – Unscrew to access battery for replacement.
- WIRELESS TRANSCIEVER WINDOW** - Bluetooth antenna is located here.
- LED INDICATOR LIGHT** – Tells the user when to dip & swirl PTBT2 during measurements and calibration.
- pH SENSOR** – Measures hydrogen ion concentration of solution.
- pH SENSOR BULB** – Measures test sample's hydrogen ion concentration.
- SOAKER CAP** – Contains pH sensor storage solution to maintain sensor hydration. To remove, twist the soaker cap while pulling off using caution not to spill the storage solution. To replace, fill the soaker cap half full with storage solution. Twist the soaker cap while pushing back on using caution as excess storage 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.
- CAP STOP** – **DO NOT** push the protective cap beyond the cap stop as sensor damage could occur.
- 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 pH sensor remained fully inserted into the PTBT2. If not, download the full PTBT2 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.



DOWNLOADING AND OPENING THE MOBILE DEVICE APP

- Go to the Apple App Store. And search for the "Ultrapen PTBTx" iPhone App.
- Open the Ultrapen page and tap the **Install** button.
- Tap **Ultrapen App** icon on the mobile device's home screen. The App's main **Measurement** screen will appear.



ULTRAPEN APP MEASUREMENT SCREEN

- MOBILE DEVICE STATUS BAR** - Standard Status Bar for your mobile device.
- MEASUREMENT VALUE FIELD** - Displays the measured value of the solution. When the Ultrapen turns OFF, displays the message, "Ultrapen is Offline" and values gray out.
- UNITS OF MEASURE** - Displays correct units for pH measurements.
- ULTRAPEN BATTERY LEVEL** - Displays battery charge level in %. Flashes RED when battery is ≤ 25%.
- SOLUTION TEMPERATURE** - Measured temperature of the solution.
- MEMORY STORE BUTTON** - Tap here to record the measurement in the App's database.
- MEMORY REPLACE BUTTON** - Tap here to replace a previously stored measurement with data from a new measurement.
- FEATURE NAVIGATION BAR** - These buttons activate various App features.

PTBT2 DEFAULT SETTINGS



TEMPERATURE UNITS: °C (Temp. value alternates on Display with pH value) **MEASUREMENT MODE:** HOLD
NOTE: For or a full description of the PTBT2 and Mobile App settings, download the PTBTx App Operation Manual by tapping the **Preferences** button on the **Feature Navigation Bar**, select the **Help** option, then select **PTBTxOM** Operation Manual.

OPERATING INSTRUCTIONS

I. CONNECTING THE ULTRAPEN TO THE MOBILE DEVICE



- Tap the **Connect** in the **Feature Navigation Bar**.
- Press and release the push button on the PTBT2 to turn it ON.
- When the PTBT2's name appears on the **Connect** screen, select that line. A checkmark will appear next to PTBT2's name.

NOTE: The default name for all PTBT2's is, "MLC-PTBTx". For instructions on editing the PTBT2's name, tap the **Preferences** on the **Feature Navigation Bar**, select the **Help** option and refer to the **Ultrapen Settings** section.



NOTE: To unpair from a PTBTx, tap the red **Unpair** next to the PTBT2's name then select **Disconnect**.

II. MAKING MEASUREMENTS: Make sure the PTBT2 is clean. Myron L[®] Company recommends that you calibrate the PTBT2 before taking measurements. **CAUTION:** To measure solution at the extremes of the specified temperature range, allow the PTBT2 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 PTBT2 using the scoop to retain accuracy.



- Rinse the sensor by swirling it in clean water (preferably DI, RO, or purified water) patting it dry with a clean cloth or tissue.
- Open the Ultrapen App.
- Tap the **Measurement** in the **Feature Navigation Bar**. The screen will say, "Paired Ultrapen is Offline".

4. Press and release the push button to turn the PTBT2 ON.

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5. Grasp the PTBT2 near the battery cap to avoid sample contamination.
6. Follow the PTBT2 LED prompts as shown in the table below.

LED SIGNAL	ACTION	DURATION
Rapid Flashing	Dip PTBT2 in solution and swirl.	6 sec
Slow Flashing	Measurement in process; continue to swirl. <ul style="list-style-type: none"> • In HOLD mode real-time readings are displayed until the LED is ON solid. • In LIVE mode real-time readings are displayed until the PTBT2 turns OFF. 	20 - 120 sec in HOLD mode 5 min in LIVE mode
Solid Light (HOLD mode only)	Measurement is complete. Values are displayed until the PTBT2 turns OFF.	4 sec

III. MEASUREMENT DATA RECORDS: Measurement data records may be created, sorted, filtered and exported by the Ultrapen PTBTx App. For instructions tap the **Preferences** button on the **Feature Navigation Bar** and select the **Help** option refer to the **Measurement Records** section.

IV. 3-POINT CALIBRATION: Myron L[®] Company recommends calibrating the PTBT2 twice a month or any time measurements are not as expected. For best results, fill 2 clean containers with each pH buffer, one as a rinse & one for actual calibration. If you don't have enough buffer, use clean water (preferably DI, RO, or purified water for all rinsing. Always rinse the pH sensor between buffer solutions.

1. Rinse the PTBT2 sensor in Myron L[®] Company 7.0 pH buffer or clean water (preferably DI, RO, or purified water). If possible do not use the same container of solution to perform the calibration that was used as a pre-calibration rinse.

2. Open the Ultrapen App. Tap the **CAL** button in the **Feature Navigation Bar**.
3. Press and release the push button to turn the PTBT2 ON.
4. Press and hold the push button down.

5. When the App prompts you to, press and hold the push button,

6. Select the green **CAL** button from the App display.

7. Grasp the PTBT2 near the battery cap to avoid sample contamination.

8. While the LED flashes rapidly, dip the PTBT2 in fresh sample solution so that the sensor is completely submerged. If you do not submerge the sensor in solution before the flashing slows, allow the PTBT2 to power OFF and retake the reading. Small bubbles trapped in the sensor may give a false calibration. Keep the sensor submerged and preferably at least 1 inch (2½ cm) away from sides/bottom of container.

9. If the 7.0 pH calibration is successful, the App will display "7.0 pH CAL SAVED".

- If "Error" is displayed, check to make sure you are using a proper pH buffer solution. If the solution is correct, download the full PTBT2 Operation Manual from the Myron L[®] Company website for troubleshooting instructions.

10. Follow Steps 1 through 9 above using either 4.0 or 10.0 pH buffer. The PTBT2 will automatically recognize and calibrate the proper point based on the solution used.

11. After the 3rd Cal point is completed, tap the **DONE** button on the App display to exit the **CAL** mode and turn OFF the PTBT2.

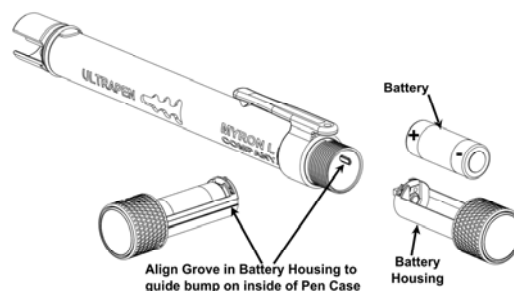
V. FACTORY CALIBRATION: Factory Calibration (FAC CAL) resets the PTBT2 to its factory settings. Tap the **Preferences** button on the **Feature Navigation Bar** and select the **Help** option refer to the **Factory Calibration** section.

MAINTENANCE

I. BATTERY REPLACEMENT

When PTBT2 charge level falls below 25% immediately replace the battery with a new N type battery.

1. In a **CLEAN DRY** place unscrew the battery cap in a counter-clockwise motion.
2. Slide the cap and battery housing out of the PTBT2.
3. Remove the depleted battery from its housing.
4. Insert a new battery into the battery housing oriented with the negative end touching the spring.
5. Align the groove along the battery housing with the guide bump inside the PTBT2 case and slide the battery housing in.
6. Screw the PTBT2 cap back on in a clockwise direction. Do not over tighten.



II. ROUTINE MAINTENANCE

- 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.
- **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.
- Do not drop, throw or otherwise strike the PTBT2. This voids the warranty.
- Do not store the PTBT2 in a location where the ambient temperatures exceed its specified Operating/Storage Temperature limits.

II. SENSOR CLEANING AND REPLACEMENT: For sensor cleaning and replacement instructions download the full PTBT2 Operation Manual from the Myron L[®] Company website.

SPECIFICATIONS

Measurement Ranges	0.00 pH – 14.0 pH, Temp: 0°-71° C / 32-160° F	Accuracy	± 0.01 pH, Temp. Accuracy ± 0.1°C / ± 0.1°F
Resolution	0.01 pH, Temp: ± 0.1°C / ± 0.1°F	Repeatability	± 0.01 pH, Temp: ± 0.1°C / ± 0.1°F
Operating/Storage Temp	0° - 55°C / 32° - 131°F	Calibration Solutions	4.0 pH, 7.0 pH, 10.0 pH
Temp Compensation	Automatic In Calibration Mode at 25°C	Time to Stable Reading	10 - 30 seconds
Power Consumption	Active Mode: 137 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: 54.4g / 1.78oz. (without soaker cap & lanyard)	Case:	Anodized Aircraft Aluminum with Protective Coating
Water Resistance	IP67 and NEMA 6	EN61236-1: 2006 -Annex A: 2008; 1999/5/EC Annex III CE	
FCC ID: T7VPAN17: The Bluetooth transceiver device meets the requirements for modular transmitter approval as detailed in FCC public Notice DA00-1407.		Canada (IC), license: IC: 216Q-PAN17: The Bluetooth transceiver device meets the requirements for modular transmitter approval as detailed in RSS-GEN.	

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