MAINTENANCE

The Nitrate sensor needs to be conditioned after long-term storage (see SENSOR CONDITIONING section above). The PTBT6 MUST be recalibrated any time the Nitrate sensor is replaced.

ROUTINE MAINTENANCE

1. After each use ALWAYS rinse the Nitrate sensor with DI, RO, or distilled water and then carefully blot the ISE sensor with a soft, clean, lint-free cloth or tissue to remove any water drops.
2. **ALWAYS** replace the protective cap on the Nitrate sensor after each use.
3. Do not touch the ISE electrode as oil from your finger may contaminate the sensor.
4. Do not drop, throw, or otherwise strike the PTBT6. This voids the warranty.

STORAGE

After each use ALWAYS rinse the Nitrate sensor with clean water (preferably DI, RO, or distilled) and then carefully pat the sensor with a clean, soft, lint-free cloth to remove any water drops.

SHORT TERM STORAGE (≤ 3 DAYS):

- Keep the sensor in the protective cap filled half-full with prepared 100 ppm standard solution.
  - **DO NOT** store the PTBT6 with the cap filled with Reference Solution mixed with Nitrate Interference Suppression Buffer (NISBSOL).
- Store the PTBT6 in a cool place.

LONG TERM STORAGE (>3 DAYS):

1. Rinse the Nitrate sensor with clean water (preferably DI, RO, or distilled) and then carefully pat the sensor with a clean, soft, lint-free cloth to remove any water drops.
2. Rinse the protective cap with clean water (preferably DI, RO, or distilled).
3. Dry protective cap with a clean, soft, lint-free cloth to remove any water drops, inside and out.
4. Put the protective cap on the sensor and store the PTBT6 in a cool place.

REPLACING OR REINSTALLING THE NITRATE SENSOR

Follow the instructions that come with your replacement sensor.
Only remove/replace the Nitrate sensor in a CLEAN and DRY environment.

TO REMOVE THE NITRATE SENSOR:

1. Remove the protective cap by wiggling it side to side while you pull it off the PTBT6.
2. Make sure the PTBT6 (including the sensor) is clean and dry.
3. Loosen the battery tray (to allow pressure equalization).
4. Firmly grasp the sensor body and slowly pull the sensor out. DO NOT allow any dust or moisture into the body of the PTBT6.

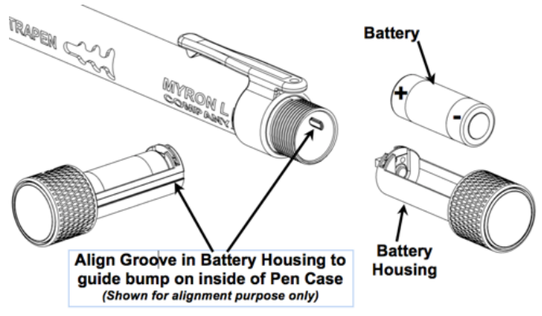
TO INSTALL A NEW NITRATE SENSOR:

1. Line up the alignment tabs on the sensor with the alignment slots on the PTBT6 unit.
2. Gently push the sensor into position.
3. Tighten the battery tray cap.

BATTERY REPLACEMENT

When PTBT6 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 PTBT6.
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 PTBT6 case and slide the battery housing back in.
6. Screw the battery cap back on in a clockwise direction. Do not over tighten.



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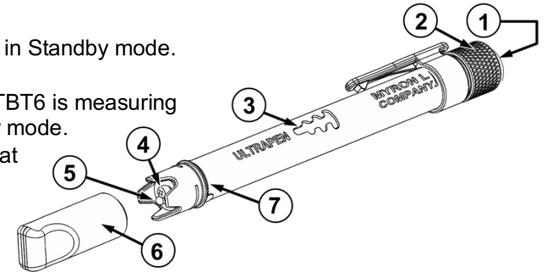
Quick Start Guide: ULTRAPENX2™ PTBT6 with the PTBTX2™ App
Nitrate Concentration and Temperature Pen for Use with your Mobile Device

This document contains basic instructions for making Nitrate measurements with your PTBT6.

Other Instructions:

- **PTBT6 Basic CAL Instruction sheet**: Includes instructions on performing a basic, 1-point calibration of the PTBT6 (*included with your instrument)*.
- **PTBT6 Operation Manual**: Includes detailed instructions on making measurements, changing parameters, precision calibration and maintaining the PTBT6. Download from the Myron L® Company website (*www.myronl.com*; *Downloads tab*).
- **PTBTX2 App Operation Manual:** Includes detailed instructions on operating all of the PTBTX2 App's many features and functions. Download from the Myron L® Company website *(www.myronl.com, Downloads tab).*

PTBT6 - LAYOUT



1. **PEN BUTTON –** Press to turn Ultrapen ON and place it in Standby mode.
2. **BATTERY CAP** – Unscrew to change battery.
3. **LED INDICATOR LIGHT** – Flashes rapidly when the PTBT6 is measuring or once every 5 seconds when the PTBT6 is in Standby mode.
4. **ISE ELECTRODE –** An Ion Selective Electrode (ISE) that detects the concentration of Nitrate in a liquid.
5. **THERMISTOR** – Measures temperature of sample solution.
6. **PROTECTIVE CAP** – Protects sensor from damage and can be used to hold solution when conditioning sensor.
   - See MAINTENANCE section below for storage instructions.
   - When removing or replacing the cap, gently wiggle it back and forth while pulling / pushing. **DO NOT twist!**
7. **CAP STOP** – **DO NOT** push the protective cap beyond the cap stop as sensor damage may occur.

SENSOR CONDITIONING

If the sensor is new and/or has been stored dry, the sensor needs to be conditioned before calibration or measurement.

1. Remove the protective cap.
2. Rinse the sensor with clean water (preferably DI, RO, or distilled) and pat it dry with a clean soft lint-free cloth.
3. Fill the protective cap half-full with prepared calibration solution with Nitrate Ionic Strength Adjuster (NISA) added, see Step 4, PREPARING SOLUTIONS, below.
4. Carefully put the cap back on the sensor for conditioning (use caution as excess solution may squirt out).
   NOTES:
   - It may take up to an hour for sensor to restore stable readings after dry storage.
   - For best results, you should always condition the PTBT6 sensor using a prepared reference solution with a value close to the lower end of the concentration values you will be measuring.

USING THE PTBT6

STEP 1 – DOWNLOAD THE "ULTRAPEN PTBTX2" APP

On Download on the App Store and GET IT ON Google Play look for Apple X2 MYRON L COMPANY Google X2 MYRON L COMPANY

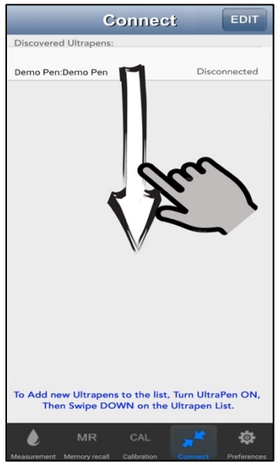
SYSTEM REQUIREMENTS

iOS device running iOS 10.0 or later.
If you are using an iPad,
search for iPhone App.

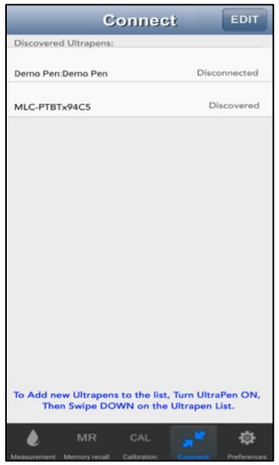
Android device running OS 7.0 or later.

STEP 2 – CONNECT THE PTBT6 TO THE APP

1. Press and release the PEN BUTTON to turn the PTBT6 ON and place it in Standby mode.
2. On your Device's Home Screen, tap the BLUE **PTBTX2** icon to open the PTBTX2 App.
3. Tap the CONNECT button at the bottom of the App display.
   - The App will switch to the Connect screen.



4. Swipe down on the screen. The PTBT6 will appear on the list.



5. Tap the PTBT6's name when it appears. Default: ***MLC-PTBTX[Hexadecimal ID]***

6. The PTBT6 will move to the top of the list and a check mark will appear.

NOTES:

- Some Mobile Devices switch their wireless transmitters to a low power mode when their battery level gets too low.
- This could affect how easily your PTBT6 and your device connects and communicates.
- ALWAYS keep your Mobile Device charge level as high as possible.

STEP 3 – CALIBRATE THE PTBT6

- **IMPORTANT:** Perform a basic calibration on the PTBT6 before making measurements. Refer to the PTBT6 Basic CAL Instruction sheet included with your instrument.

Always check the calibration just prior to making measurements:

1. Choose one standard solution within the testing range, and prepare the solution according to Step 4- Preparing Solutions procedure, below.
2. Take a measurement.
   - The value should be within 10% of the expected value.
   - If not, the measurement result may not be reliable.
   - The source of error should be identified and the measurement should be redone after correction.

STEP 4 – PREPARING SOLUTIONS

- Add Ionic Strength Adjuster (NISA) to standard and sample solutions used for conditioning, calibration and measurement at a ratio of 1:50 by volume.
- NOTE: Use Nitrate Interference Suppression Buffer (NISB) at 1:1 volume ratio instead of Nitrate Ionic Strength Adjuster (NISA) for all solutions if samples have high interference ions (see PTBT6 Operation Manual Section IV. INTERFERENCE).

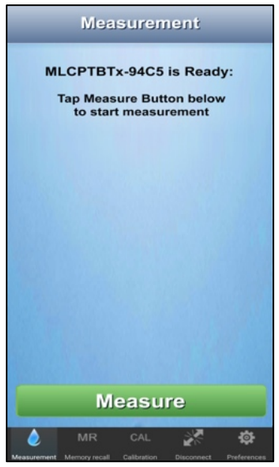
1. Fill the graduated cylinder to the 10 mL line with solution to be tested.
2. Add 200 µL of the Nitrate Ionic Strength Adjuster (NISA) to the graduated cylinder (using the supplied 100 µL pipette). When using the pipette to draw solution:
   - Depress the pipette plunger to 1st stop, then place tip in solution and slowly release.
   - To dispense, depress the pipette plunger completely to the 2nd stop.
   - Do not contaminate the pipette tip by touching it with your fingers or setting it on a dirty surface. Do not dip the pipette tip in the calibration solution as this will cause cross-contamination between solutions.
3. Replace the cap on the graduated cylinder and shake well to mix the prepared test solution.

Quick Start Guide: ULTRAPENX2™ PTBT6 with the PTBTX2™ App
Nitrate Concentration and Temperature Pen for Use with your Mobile Device

STEP 5 – MAKE A BASIC NO_3^- -N HOLD MEASUREMENT

1. If the PTBT6 is OFF, press and release the PEN BUTTON to turn the PTBT6 ON and place it in Standby mode.
2. **COMPLETELY** submerge the PTBT6 sensor in the prepared sample solution and swirl it around to remove any bubbles.
3. Tap the MEASUREMENT button 

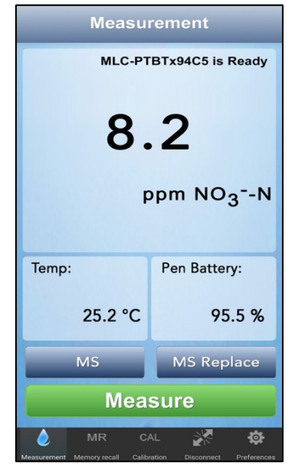
in the Feature Navigation Bar.



4. Tap the GREEN MEASURE button.

5. Hold the PTBT6 steady in the sample while the PTBT6 is measuring. The PTBT6's LED will flash rapidly.

- The MEASURE button will be inactive.



6. When the PTBT6 completes the measurement the App will display the values.

- The MEASURE button will turn GREEN and be active.

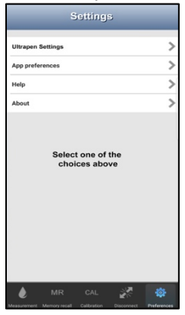
- **MS Button**
  Tap to record the last measurement.
- **MS REPLACE Button**
  Tap to replace data in an existing record with data from the last measurement.

CHANGING THE PTBT6 LIVE / HOLD MODE

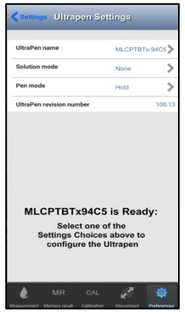
1. Press and release the PEN BUTTON on the PTBT6 to turn it ON and place the Ultrapen into STANDBY mode.

2. Tap the PREFERENCES button 

in the Feature Navigation Bar.



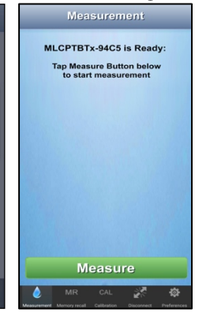
3. Tap the Line that says Ultrapen Settings.



4. Tap the Pen Mode line on the screen.

5. The App will display the current mode setting.
Tap the Pen Mode Field.

6. Select Live or Hold, then tap APPLY.



7. Return to the Measurement screen and tap the GREEN MEASURE Button.

8. Either tap the BLUE button to manually stop LIVE mode, or it will stop by itself after 5 minutes.