

## T10 Turbidity Meter Quick Start Guide for Benchtop Systems

### TO BEGIN – Every Day

- Switch the instrument on by connecting the USB cable to a computer or USB wall outlet adapter and pressing the READ button; the screen will be illuminated after a few seconds
- Ensure the you have the following items ready and available near the T10 meter:
  - T10 Calibration Kit
  - T10 Secondary Standards Kit (optional)
  - Empty Cuvettes for T10 Meter
  - Laboratory Gloves
  - \*\*wear at all times when performing turbidity calibrations or analysis\*\***
  - Lint-Free Wipes
  - Samples for Analysis



### PERFORM THE GUIDED CALIBRATION – Every 3 Months or As Needed

- Hold the MENU button for three seconds to bring up the instrument menu.
- Press the ↓ (Down) button to show Calibrate, press the READ button to show Guided Cal, then press the READ button again to start the calibration
- Use a lint-free wipe to wipe down the sides of the sealed 0.02NTU standard cuvette, then place it in the measuring chamber and close the lid
- Press READ to start the measurement, and you will see Reading Standard show on the meter screen. Prepare the 20NTU standard at this time by inverting it slowly 10-20 times
- When prompted to insert the 20NTU standard, use a lint-free wipe to wipe down the sides of the sealed 20NTU standard cuvette, then place it in the measuring chamber
- Press READ to start the measurement, then repeat the above steps for the 100NTU and 800NTU sealed standards
- Upon finishing the measurement of the 800NTU standard, the meter screen will return to the calibration menu. Press the ESC button until you see the NTU reading on screen

NOTE: If the calibration fails the internal criteria of slope > 4 or < 0.25 the screen will display “Calibration Fail” and it will need to be performed again.

### PERFORM THE FREE CALIBRATION – Every Month or As Needed

- Prepare an NTU standard according to the table below, and pour into one of the empty cuvettes

NTU Standard	mL 100NTU Stock	mL DI Water	NTU Standard	mL 100NTU Stock	mL DI Water
0.5 NTU	0.2 mL	39.8 mL	10.0 NTU	4.0 mL	36.0 mL
1.0 NTU	0.4 mL	39.6 mL	20.0 NTU	8.0 mL	32.0 mL
5.0 NTU	2.0 mL	38.0 mL	50.0 NTU	20.0 mL	20.0 mL

- Hold the MENU button for three seconds to bring up the instrument menu.
- Press the ↓ (Down) button to show Calibrate, press the READ button to enter the calibration menu, press the ↓ (Down) button to show Free Cal, then press the READ button again to start the calibration
- Use a lint-free wipe to wipe down the sides of the cuvette containing the NTU standard, then place it in the measuring chamber and close the lid
- Press the READ button and the meter will start the measurement. You will see the result appear on screen once done.
- Use the arrow buttons to adjust the measured NTU to the expected NTU value of the standard. Hold the SAVE button for 3 seconds to save the free calibration point.
- Repeat the above steps for additional standards, if desired. Once finished, press the ESC button until the NTU reading appears back on screen.

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### ANALYZING SAMPLES

- Perform a quality control check by analyzing a known standard from the calibration kit, secondary standards kit, or prepared from a stock solution. If the result of the quality control check is more than 5% different from the expected value, re-read the QC. If it continues to read >5% off expected, perform a new guided and free calibration.
- Ensure samples are well mixed by slowly inverting the sample containers 10-20 times. Avoid causing bubbles to form in the samples.
- Pour samples directly into the empty cuvettes, being sure to keep track of which sample is which. You may use the top of the cap to identify samples if preferred, but do NOT put any markings or identification directly on the cuvette glass
- Ensure the cap is screwed on tight and the cuvette is filled to the neck
- Use a lint-free wipe to wipe down the sides of the cuvette, then place it in the measuring chamber and close the lid
- Press the **READ** button and the meter will start the measurement. A progress bar on the meter screen shows the analysis proceeding. You will see the NTU result appear on screen once done.
- Repeat the above process for all samples in the set.

### TROUBLESHOOTING

#### *What do I do if my QC checks are failing?*

1. Re-pour QC standard from bottle in a different clean cuvette and read again
  - a. If second attempt does not pass, move to step 2
2. Re-attempt free calibration at one or several points according to your standard operating procedure
  - a. Then re-attempt a read of the QC standard
  - b. If third attempt does not pass, move to step 3
3. Re-attempt guided calibration using sealed cuvette standards
  - a. Then re-attempt free calibration, followed by a read of a QC standard
  - b. If this attempt does not pass, move to step 4
4. Purchase a new sealed calibration kit
  - a. The shelf life for the kits is 2 years, however this can sometimes be shorter depending on storage conditions
  - b. After acquiring the new kit, repeat step 3 above.
  - c. If the QC standard is still not passing, contact MANTECH support to send your T10 meter in for service

#### *How often should I calibrate?*

1. Guided calibrations are recommended at a minimum once every three months
2. Free calibrations are recommended at a minimum once per month
3. QC checks are recommended every day that you are analyzing samples

#### *How do I adjust the measuring time?*

1. Hold the MENU button for three seconds
2. Use the Arrows and READ buttons to navigate to **Menu>Config>Instrument>Sample**
3. This setting adjusts the number of measurements used to calculate each result. Higher numbers will result in longer measuring time.
4. Use the Arrow keys to adjust the setting between **8-100**.
5. Hold the SAVE button to save the new setting, then press the ESC button until the NTU reading is back on screen
6. Perform a new guided calibration and free calibration before performing sample analysis

### CONTACT

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