

COR-TEST-MS5 Setup & Calibration

The following is the information needed to set up and calibrate the NanoTron-M to the COR-TEST-MS5 apparatus. This calibration procedure is recommended for use with firmware version 3.1.2 and greater.

Materials Required:

- NanoTron-M controller (firmware version 3.1.2 or greater)
- Small, flathead screwdriver
- #2 Phillips head screwdriver
- COR-TEST-MS5 calibration plug



Setup Procedure:

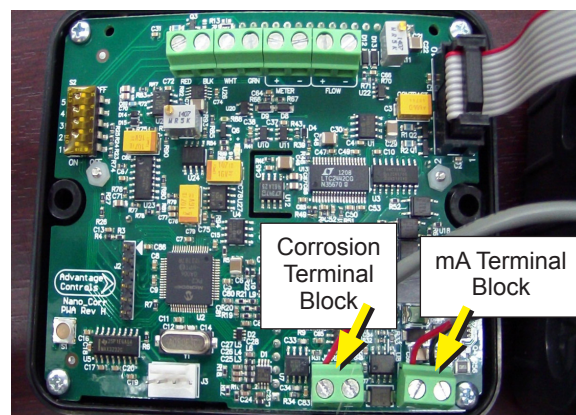
Releasing the Logic Board

1. Loosen the liquid tight connector, located on the right side of the case, by turning counter clockwise.
2. Remove the faceplate from the NanoTron-M by loosening the screws from the lower casing. *Note: The #2 Phillips screwdriver fits the two faceplate screws.*
3. Flip the faceplate, graphic side down.



Installation of Cor-Test-MS5

1. Loosen the screws securing the black and red conductors, located on the corrosion probe terminal block, using the flathead screwdriver. See figure below.



Note: The corrosion probe input terminal block is closer to the center of the board and the milli amp terminal block is closer to the outside edge of the board

2. Pull the two conductors out of the corrosion probe terminal block.
3. Pull the pair of conductors through the side liquid tight fastener.
4. Set the corrosion probe aside.
5. Insert both the red and black conductors of the COR-TEST-MS5 into the corrosion terminal block. *Note: The orientation/polarity of the wire colors are not significant.*
6. Tighten the screws of the corrosion probe terminal block.

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Faceplate Reinstallation

1. Flip the faceplate; graphic side up.
2. Attach the faceplate with the screws removed earlier.
3. Apply power to the NanoTron-M by plugging in the power cord.



Note: The LCD display will illuminate and a startup sequence will commence upon power-up. When the "Initializing" message appears on the display, the NanoTron-M is ready for user interaction.

Configure Probe Tip Type

1. Press the down or up arrow buttons to navigate to the "Probe Tip Type" menu heading.



2. Press the ENTER button. *Note: Take note of the current probe tip type. After the calibration procedure has been performed, changing the probe tip type will be required for installations that use a tip type other than Mild Steel.*
3. Press the up or down buttons to select the probe tip type "Mild Steel". Press the ENTER button to confirm.

Configure Dwell Time

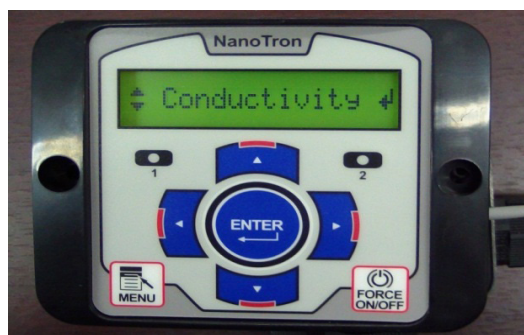
1. Press the down or up arrow buttons to navigate to the "Dwell Time" menu heading.



2. Press the ENTER button to confirm. *Note: The factory default is 10:00 minutes. It is recommended to return the dwell time to the ten minute default after the calibration procedure has been performed.*
3. Press the down or up arrow buttons to adjust the dwell time to :30
4. Press the ENTER button to confirm dwell time.

Configure Conductivity

1. Press the down or up arrow buttons to navigate to the "Conductivity" menu heading and then press the ENTER button.



2. Press the down or up arrow buttons to change the conductivity value to 0388 uS/cm.
3. Press the ENTER button to confirm.

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Corrosion Rate Verification

1. Press the MENU button to return to the Run Screen.



Note: The display will cycle "Status OK" & "Initializing" for approximately one minute.

2. Monitor the display of the NanoTron-M until a corrosion rate reading appears. *Note: Carbon Steel will have a corrosion rate value between 4.90 and 5.10 mils per year.*

3. If the corrosion rate is between 4.90 and 5.10 mils per year, then further calibration is not required. Remove the Cor-Test-MS5, reinstall the corrosion probe in to the corrosion terminal block, and perform the reverse of the previously stated procedures.

4. If corrosion rate is below 4.90 or above 5.10 mils per year, then continue on to the 'Corrosion Rate Calibration' section outlined below.

Corrosion Rate Calibration

1. Press the MENU button to enter into the Main Menu.

2. Press the down or up arrow buttons to navigate to the "Calibration" menu heading.



3. Press the ENTER button when the "Calibration" menu heading has appeared.

4. Press the ENTER button when the "Cal Corr Rate" menu heading has appeared.

5. Refer to Appendix A to determine the corrosion rate value that should be present when using the Cor-Test-MS5 calibration plug.

6. Press the arrow buttons to modify the currently displayed corrosion rate value and press ENTER.

7. Press the MENU button to return to the Run Screen.

8. Monitor the display of the NanoTron-M to see the effects of the calibration process.

9. If the corrosion rate is now between 4.90 and 5.10 mils per year, then further calibration is not required. Remove the Cor-Test-MS5, reinstall the corrosion probe into the corrosion terminal block, and perform the reverse of the previously stated procedures.

10. If corrosion rate is below 4.90 or above 5.10 mils per year, then investigate all physical connections and review prior steps to ensure that all configurations were performed correctly. Then repeat the 'Corrosion Rate Calibration' procedure.

Note: Reset the calibration to the factory default by entering a value of 00.00 into the 'Cal Corr Rate' menu. Use the 'Last Cal #' menu to view the last calibration value entered.

Appendix A:

Probe Tip Type	Mils/Yr Corrosion Rate	Conductivity Value
Mild Steel	5.00	0388 uS/cm ³
Copper	10.00	0388 uS/cm ³
Stainless Steel 316	4.50	0388 uS/cm ³
Stainless Steel 304	4.45	0388 uS/cm ³
Cupro-Nickel	8.99	0388 uS/cm ³
Admiralty Bass	8.34	0388 uS/cm ³
Aluminum 7075	4.24	0388 uS/cm ³