

# Quick Start Guide

## MTOL+™ Turbidimeter

Models 28052 & 28053



This guide will assist you with simplified instructions for installation and operation. It is not intended to replace the Owner's & User's Manual or to provide service instructions.

If you are ever uncertain about a particular task or the proper method of operating this equipment, ask your supervisor, consult the full Owner's and User's Manual, access [www.hfscientific.com](http://www.hfscientific.com), or contact Customer Service at 888-203-7248.

## Installation

### Mounting



The junction box is located under the sensor portion as shown above. Use appropriate screws and hardware as needed for mounting the instrument to the chosen surface.

Generally you will want to locate and mount the junction box first using two M4 or #8 screws. Ensure that the head of the screw used for mounting the junction box fits inside the access tube.

Next mount the sensor portion on top of the junction box. The recommended mounting hardware is M6 or ¼” screws. Four screws are needed.

## Plumbing



The lower sections of the sensor are equipped with push to connect fittings for use in both the intake and drain. Use ¼” OD tubing. Flexible polyethylene or polypropylene tubing is recommended. To lower algae growth opaque tubing is highly encouraged. Make sure the flow through is connected before starting the water flow. We recommended that the flow through be tested for leaks before inserting it into the sensor.

## Electrical Connections



All electrical connections are made inside the junction box. Choose the appropriate cable gland for each connection.

### Power Connection

A method of power disconnect should be provided prior to the instrument to allow for service. This can be a power cord.

The MTOL+ can accept 100-240VAC 47-63Hz and requires approx. 80VA of power. Connections are made the green terminal block on the left hand. This block is socketed and can be removed for easy access.



The MTOL+ has outputs for both 4-20mA and Modbus. These are located on grey terminal block on the lower row. The connections are marked on the PCB surface. These spring-loaded terminal blocks are operated by inserting a 3mm (1/8") flat blade screwdriver in the smaller opening directly above the connection. Tilting the screwdriver up will open the connection and allow for wire insertion.

### **Alarm Connections**

The upper row of the grey terminal block provides connections for the two C form alarm relays. These are operated as described in I/O connections. Refer to the PCB for terminal function.

## **Desiccant Installation**



Ensure the provided desiccant is installed in the lower section of the sensor. The sensor can be opened using the four corner thumb screws. The desiccant is simply placed on the lower tray. Ensure the thumb screws are securely tightened to increase desiccant life. DESC will show on the screen when replacement is required.

## **General Operation**

Once power is applied the MTOL+ will start in the AUTO mode. This is the normal measurement mode. If the flow through unit has been inserted and water connected you are now measuring your sample.

## Calibration

Out of the box the instrument has been factory calibrated for 0-100 NTU and can be used right away.

If you chose to calibrate, this can be easily done. Before starting, the ProCal standards need to be prepared as stated in the info sheets provided with the calibration kits. For the best calibration the standards should be indexed. This involves inserting the standards in the optical well while the instrument is in AUTO and rotating the standards to the lowest value. The provided indexing ring is then placed on the standard facing forward toward the index mark on top of the MTOL+.



To calibrate from AUTO:

1. Press the down arrow on MTOL+ once. The screen will show the arrow beside CAL and the ↵ button.
2. Press the center ↵ button.



3. The lower screen will flash between 100 and ↵ , indicating you need to insert the 100 NTU standard and press the center ↵ button.
4. Once this is done a 30 second countdown will begin.
5. The lower screen will flash between 10 and ↵ , indicating you need to insert the 10 NTU standard and press the center ↵ button.
6. Once this is done a 60 second countdown will begin.
7. The lower screen will flash between .02 and ↵ , indicating you need to insert the .02 NTU standard and press the center ↵ button.
8. Once this is done 30 second countdown will begin.

If the calibration is good it will display GOOD and start the AUTO mode. If the calibration fails, the MTOL+ will use the last good calibration.