

Operating Principle

The Solinst Model 122M Mini Interface Meter has a narrow 5/8" (16 mm) diameter probe, and uses laser-marked PVDF jacketed cable. It is certified to CSA Standards, for use in hazardous locations Class 1, Div. 1, Groups C & D T3C, and is ATEX certified under directive 94/9/EC, as II 3 G Ex ic IIB T4 Gc. An infra-red circuit detects the presence of a liquid and a conductivity circuit differentiates between conductive liquid (water) and non-conductive liquid (LNAPL or DNAPL product).

Equipment Check

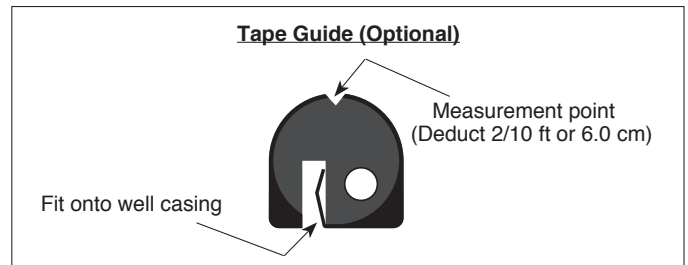
Check the electronics and battery condition by pushing the 'On/OFF' button. Five brief tones and red light flashing indicates that the meter is functional. It will automatically turn off after 5 minutes to preserve battery life.

IMPORTANT

For safety, always ground the meter by attaching the ground cable to the metal well casing or to a suitable grounding rod. Failure to properly ground this instrument could cause damage to probe/electronics or result in an explosion from any flammable gases trapped in well.

Field Measurements

1. Push the 'On/OFF' button. Five brief tones and the red light flashing indicates that the meter is functional. The meter automatically turns off after 5 minutes. Press the 'On/OFF' button as necessary during operation to turn the meter back on.
2. Lower probe into well. If a tape guide is used, lay the laser-marked PVDF cable onto the groove on the top. Measurements are read at the V-notch on the tape guide. Remember to deduct 2/10 ft or 6.0 cm.



3. A steady tone and light indicate a non-conductive liquid (e.g. product). An intermittent tone and light indicate a conductive liquid (e.g. water).
4. For floating product (LNAPL), take the air/product interface measurement on the way into the liquid.
5. The interface between the LNAPL and water should be measured as the probe is raised very slowly back up. Once the interface is detected, the probe can be raised and lowered in small increments to precisely determine the interface.
6. Repeat measurements to confirm, reading the levels directly from the cable and subtract one from the other to determine thickness.
7. To determine if there is any sinking product (DNAPL) in the well, continue lowering the probe slowly. If steady signals activate, determine the top of the sinking layer by reading directly from the cable.
8. Continue lowering the probe slowly until the cable slackens when the well bottom is reached. Read the level directly from the laser-marked PVDF cable and subtract one from the other to determine thickness.
9. Upon completion of readings, clean the cable and probe as described overleaf.

Cleaning and Maintenance

After each use, the laser-marked PVDF cable should be wiped clean and carefully rewound onto the reel. An alternative is to steam clean the cable only. The probe should be cleaned as follows:

1. Wash the probe thoroughly with a non-abrasive mild detergent. **DO NOT USE ANY SOLVENTS.** Use a soft cloth around the pins and on the prism on the end of the probe to remove all product. Use lukewarm water, not hot water or you may damage the probe.
2. Rinse probe thoroughly with distilled water, wipe dry.
3. Return the probe to the holder.

Battery Replacement

If the tones get weak, battery power is getting low and you should replace the battery before you go into the field. Push battery drawer in and up and then pull out. The battery drawer should eject slightly to make pulling out easier. Replace the battery with an alkaline 9 volt battery.

IMPORTANT

Reverse polarity can cause probe damage. Ensure correct battery placement.

General Tips

1. The probe should be cleaned after each use.
2. Always use the grounding cable.
3. Do not drop probe.
4. If the tones are weak, replace battery.
5. Where possible, use a Solinst tape guide to protect the cable from scraping on well casing.
6. Before storage, make sure that the meter is turned 'OFF'. If the Mini Interface Meter is going to be stored for longer than two months, the 9V alkaline battery should be removed to avoid potential leakage.
7. The meter can be checked by placing the probe in distilled (non-conductive) water or pure phase product, for example lamp oil (**avoid bright sunlight during testing and resting the probe on the bottom of the container**). A steady tone and light should be observed.
8. To maintain Intrinsic Safety Certifications, do not splice the cable.

Note: In rare circumstances it is possible that the 122 might sound when directed toward sunlight, and not in a liquid. This is normal and does not affect proper operation in a monitoring well.

Troubleshooting

When instrument is turned 'ON' there is a solid red light (no tone)

1. Indicates a connection issue. Contact Solinst for further troubleshooting options.

Instrument will not turn 'ON' (no starting tone)

1. Replace the battery
2. Check the polarity of the battery in the drawer: make sure the + and - on the battery and the drawer match. The probe may be harmed by a reversed battery.
3. ON/OFF button could be faulty. Contact Solinst.

When instrument is turned 'ON', it immediately sounds product tone or intermittent water tone

1. Probe sensor may be dirty. Clean according to Cleaning and Maintenance instructions.
2. Water may have leaked into the probe. Carefully, remove the probe, keeping the wires connected. Dry out the probe, wipe and inspect the o-ring, replace if necessary and/or lubricate with silicone. To avoid any nicks, make sure the wires are tucked back into the probe body when replacing the probe. See Probe Replacement Instructions.
3. Cable may be damaged. Clean the cable and look for any cuts or nicks. If necessary, replace the damaged cable. To maintain the 122M Intrinsic Safety rating, do not splice or repair a damaged cable. You may contact Solinst for assistance.

4. The reel or probe circuitry could be damaged. Please contact Solinst.

Instrument does not detect liquid

1. Check battery. Replace if necessary.
2. Clean probe tip following the Cleaning and Maintenance instructions.
3. Probe may be damaged. Please contact Solinst.

Instrument detects "Product" as "Water"

1. Note that this can happen if the probe is pulled into product too quickly and therefore pulls water in with it. Thoroughly dry the probe tip or shake the probe and try again at a slower speed.
2. Product may have degraded or is now disturbed enough to become an emulsion. If it has a detectable level of conductivity, it will read water. Wait for it to settle and try again.

Instrument does not detect water

1. Clean the probe tip. Follow the Cleaning and Maintenance instructions.
2. The water could be pure and non-conductive or product may be coating the probe, in which case, shake the probe for a while in the water column to clean product from the probe.
3. The probe circuitry could be damaged due to high voltage (static) in the well. Always use a ground cable. Please contact Solinst.

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