

Interface Meter

Model 122

Solinst Oil/Water Interface Meters give clear and accurate measurements of product level and thickness in wells and tanks.

Determination of both light (floating) non-aqueous phase liquids (LNAPL) and dense (sinking) non-aqueous phase liquids (DNAPL) is quick and easy. The factory-sealed probe is pressure proof (up to 500 psi) and tapes are available in a range of lengths from 100 - 1000 ft (30 - 300 m).

The 5/8" (16 mm) diameter probe allows easy access through tight spaces and into narrow wells. The probe is designed for use in various monitoring applications. 122M Mini Interface Meters also available, see 122M Data Sheet for more information.

Hazardous Locations Use

Model 122 Interface Meters have been approved for use in explosive environments. They are suitable for use in hazardous locations Class I, Div 1, Groups C&D based on standards of the Canadian Standards Association (CSA).

The Model 122 Interface Meter with laser marked PVDF tape is now ATEX certified under directive 94/9/EC, as II 3 G Ex ic IIB T4 Gc.

The grounding strap is a safety essential when the meter is used in potentially explosive environments. It also ensures that the electronics are properly protected.

Operating Principles

Product (Non-conductive liquid) = Steady light and tone

Water (Conductive liquid) = Intermittent light and tone

To detect liquids, Solinst Interface Meters use an infra-red beam and detector. When the probe enters a liquid the beam is refracted away from the detector which activates an audible tone and light.



If the liquid is a non-conductive oil/product the signals are steady. If the liquid is water (conductive liquid greater than 20 $\mu\text{S}/\text{cm}$), the conductivity of the water completes a conductivity circuit. This overrides the infra-red circuit, and the tone and light are intermittent.

The 122 Interface Meter sensor provides an accuracy as good as 1/200 ft or 1.0 mm. The high accuracy enables the sensor to detect the slightest sheen of oil on the surface of the water.



Accurate, Reliable, Robust

- Designed for rugged field use
- Stable electronics with automatic circuitry testing
- Laser marked PVDF flat tape is easy to decontaminate; resists stains
- Tape uses stranded stainless steel and copper coated steel conductors:
 - high in tensile strength; electrical efficiency
 - non-stretch; does not corrode
- Sturdy free-standing reel with carrying handle

High Quality Design

The state-of-the-art electronics include automatic circuitry testing when the 'On' button is used; 120 hours of on-time battery life; clear signals; and high accuracy. The circuits are powered by a single standard 9V battery which is housed in an easy-access drawer in the faceplate of the reel.

Infra-red refraction is used to detect liquids and conductivity to distinguish water. Both optical and electronic sensors are precisely aligned at the same zero point. The factory sealed probe does not need to be accessed by the user. An integral stainless steel shield protects the sensors. It is set permanently into place, yet allows for easy cleaning.

Features

- Sensor accuracy to 1/200 ft or 1.0 mm
- Certified intrinsically safe
- 5/8" (16 mm) diameter probe
- Easy access 9V battery
- Automatic shut off after 10 minutes
- Replacement tapes are interchangeable with other Meters

Model 122 is QPS approved for use in hazardous locations Class I, Div 1, Groups C&D based on CSA Standards and is ATEX certified under directive 94/9/EC as II 3 G Ex ic IIB T4 Gc

Obtaining Product Measurements

To measure the thickness of a product layer, lower the probe into the well until the signals activate. If there is an oil/product layer on the top of the water (LNAPL), the light and tone will be steady, indicating an air/product interface.

Read the depth off the permanently marked tape. Lower the probe further into the water, where the signals become intermittent, then pull back up and take a reading at the product/water interface. The thickness of the product layer is then determined by subtracting the first reading from the second.



P8 Probe

The 122 Interface Meter uses the P8 Probe, which is 5/8" (16 mm) in diameter and stainless steel. It is pressure proof, up to 500 psi. The beam is emitted from within a Hydrex cone-shaped tip. The tip is protected by an integral stainless steel shield, and is excellent for the vast majority of product monitoring situations.



If there is only water in the well and no product, there will only be intermittent (water) signals. The presence or absence of dense (sinking) non-aqueous layers (DNAPL) is determined by continuing to lower the probe to the bottom of the well.

If the steady tone and light return, this indicates a non-conductive liquid. Measure the depth and continue lowering the probe until it touches bottom and the tape goes slack.

To determine the thickness of the DNAPL layer, subtract the first reading from the bottom depth.

Included Equipment

Each full size meter is provided with a grounding cable, cleaning brush, a convenient carrying case with shoulder strap, and a tape guide/datum.

The tape guide may be used to provide support for a small reel on the well casing. It acts as a datum allowing repeatably accurate measurements; ensures that the probe hangs in the centre of the well; and protects the tape from damage.

It is essential to use the grounding cable to ensure safety and proper function of the electronics in all applications.

Laser Marked PVDF Flat Tape

The PVDF flat tape is extremely accurate, traceable to NIST and EU measurement standards.

The easy-to-read markings on the 3/8" (10 mm) PVDF flat tape are permanently laser-marked. The dog bone shaped tape avoids adherence to wet surfaces in wells. It is resistant to most chemicals, and the smooth surface of the tape is easy to decontaminate and easy to handle.

LM2: Feet and tenths: with markings every 1/100 ft.

LM3: Meters and centimeters: with markings every mm.

