

Model 122

## Interface Meter

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

Determination of both floating non-aqueous liquids (LNAPL) and sinking non-aqueous liquids (DNAPL) is quick and easy. The factory-sealed probes are pressure proof and tapes are available in a range of lengths up to 1,500 ft. (450 m).

The 5/8" (16 mm) diameter P1 probe allows easy access through tight spaces and into narrow wells, making this the Interface Probe of choice for most applications. The 1.5" (38.1 mm) P2 probe has a glass cylinder covering the optics which is resistant to all chemicals. The extra weight of the P2 probe is useful on longer tape lengths and when DNAPL is being measured to ensure that the probe continues to hang straight in the well.

## Sturdy

- Designed for rugged field use
- Tape uses stranded stainless steel conductors:
  - non-stretch; does not corrode
  - resists kinking and breaks
  - easy to repair and splice
- Rugged free-standing reel with carrying handle



## Advantages

- 5/8" (16 mm) diameter 122/P1 probe
- Easy access batteries; minimum 120 hours of life
- Sensor accuracy to 1/100 ft. or 1.0 mm.
- Clear signals
- Automatic shut off after 10 minutes
- Inexpensive, simple repairs
- Lengths from 50 - 1500 ft. (15 - 450 m)
- Carrying Bag and Tape Guide included



Model 122 is CSA approved for use in hazardous locations Class I, Groups C&D



## High Quality Design

The state-of-the-art electronics includes automatic circuitry testing when the 'On' button is used; extended battery life; clear signals; and high accuracy.

Infra-red refraction is used to detect liquids and conductivity to distinguish water. Both optical and electronic sensors are precisely at the zero point. A steady light and tone indicate product. Water is indicated by intermittent signals.

The factory sealed probes do not need to be accessed by the user. The sensors of the P1 probe are protected by an integral stainless steel shield, which allows easy cleaning. The P2 probe has the infra-red emitter and detector protected behind a chemically resistant glass cylinder. Power is supplied by 2 standard 9V batteries, located in easy access drawers in the reel.

## Tape

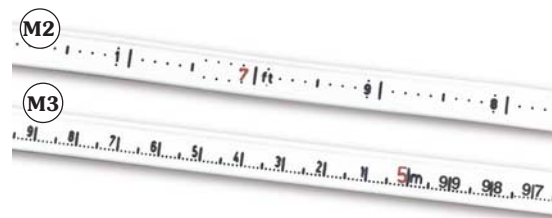
The markings on the tape are easy-to-read, and are permanently heat-stamped into the tape. The dog bone shaped tape avoids adherence to wet surfaces in wells. It is resistant to most chemicals, and the smooth surface of the tape is easy to decontaminate.

The following marking options are available:

**M2 Each 1/100 ft.** in black; feet in red.

**M3 Each mm** in black; metres in red.

**M4 Both sides:** any scale combination.



## Operating Principles

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, the conductivity of the water completes a conductivity circuit. This overrides the infra-red circuit, and the tone and light are intermittent.

Both sensors use exactly the same zero point, giving accuracy as good as 1/200 ft. or 1.0 mm. The circuits are powered by 2 standard 9V batteries which are housed in easy-access drawers on the faceplate of the reel.



## Obtaining Product Measurements

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

Read the depth off the permanently marked tape. Then 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.

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 till the probe touches bottom and the tape goes slack. Record that depth. The thickness of the DNAPL layer is determined by subtracting the first reading from the second.

## Discrete Interval Sampler

The Solinst Discrete Interval Sampler is excellent for the collection of representative groundwater samples from below oil layers, and for obtaining product samples, including DNAPL. See Data Sheet #425.

## Hazardous Locations Use

The Model 122 Interface Meter has been approved by the Canadian Standards Association (CSA) for use in explosive environments. It is suitable for use in hazardous locations Class 1, Groups C&D.

The grounding clip is a safety essential when the meter is used in potentially explosive environments. It also helps ensure that the electronics work properly.



## Probes

P1 & P2 probes are interchangeable when necessary.

**122/P1 Narrow Diameter:** 5/8" diameter (16 mm) stainless steel. The beam is emitted from within a cone-shaped tip made from a rigid polyurethane material. The tip is protected by an integral stainless steel shield.

This probe is excellent for the vast majority of product monitoring situations.

**122/P2 Probe\*:** 1.5" diameter (38.1 mm) stainless steel with Teflon® filled Delrin® tip. The infra-red emitter and detector are protected by glass, which is resistant to all chemicals.

This probe should be considered for deep applications, due to the extra weight, and in the occasional situation where there is difficulty reading product with the P1 probe.

## Standard Equipment

Each meter has a grounding clip, a convenient carrying bag with shoulder strap, and a tape guide/datum.

The tape guide may be used to provide support for the reel on the well casing. It acts as a datum, ensures that the probe hangs in the centre of the well, and protects the tape from damage on rough edges of well casing. If the tape guide/datum is used every time a reading is taken, it allows repeatably accurate measurements, always taken at the same place on the casing.

