

Interface Probe with Float

Installation and Operation Manual



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DOCUMENTATION CONVENTIONS

This uses the following conventions to present information:



WARNING

An exclamation point icon indicates a **WARNING** of a situation or condition that could lead to personal injury or death. You should not proceed until you read and thoroughly understand the **WARNING** message.



CAUTION

A raised hand icon indicates **CAUTION** information that relates to a situation or condition that could lead to equipment malfunction or damage. You should not proceed until you read and thoroughly understand the **CAUTION** message.



NOTE

A note icon indicates **NOTE** information. Notes provide additional or supplementary information about an activity or concept.



Notice for consumers in Europe:

This symbol indicates that this product is to be collected separately.

The following applies only to users in European countries:

- This product is designated for separate collection at an appropriate collection point. Do not dispose of as household waste.
- For more information, contact the seller or the local authorities in charge of waste management.

Section 1: System Description

Function and Theory

The Geotech Interface Probe with Float is a portable instrument used to accurately measure water and hydrocarbon layer thickness in monitoring wells. The unit consists of a stainless steel and PTFE probe attached to a reel-mounted, Kynar-coated engineer's tape. The engineer's tape comes in standard or metric graduations, and is accurate to 1/100th of a foot, or 1 millimeter. The probe also contains a float which detects hydrocarbon levels and a pair of stainless steel contacts for sensing conductive fluids.

The Interface Probe reel has an audible signal and a visible red LED which are activated when the probe reaches water or product. The unit features an auto shutoff circuit to prevent battery discharge. This auto shutoff circuit allows the instrument 10 minutes of continuous operation before the unit shuts off.

When the probe is lowered down a well and contacts any fluid with a specific gravity of .60 or greater, the stainless steel contacts and float will activate the visible and audible signals. If the fluid is non-conductive, the LED will be red and a solid tone will sound. If the fluid is water or other conductive fluid, the conductive contacts will cause the LED to turn green and the tone will oscillate. If the probe is lowered through the water layer to a non-conductive layer (such as DNAPL) the tone will go solid again and the LED will return to red.

The Geotech Interface Probe with Float is intended for use as a depth to water or product measuring device. Using the Interface Probe for any other purpose may compromise safety of the operator and/or void manufacturer's warranty.



To avoid damage to the tape and strain relief, do not over tighten the reel with probe when placed in storage.

System Components

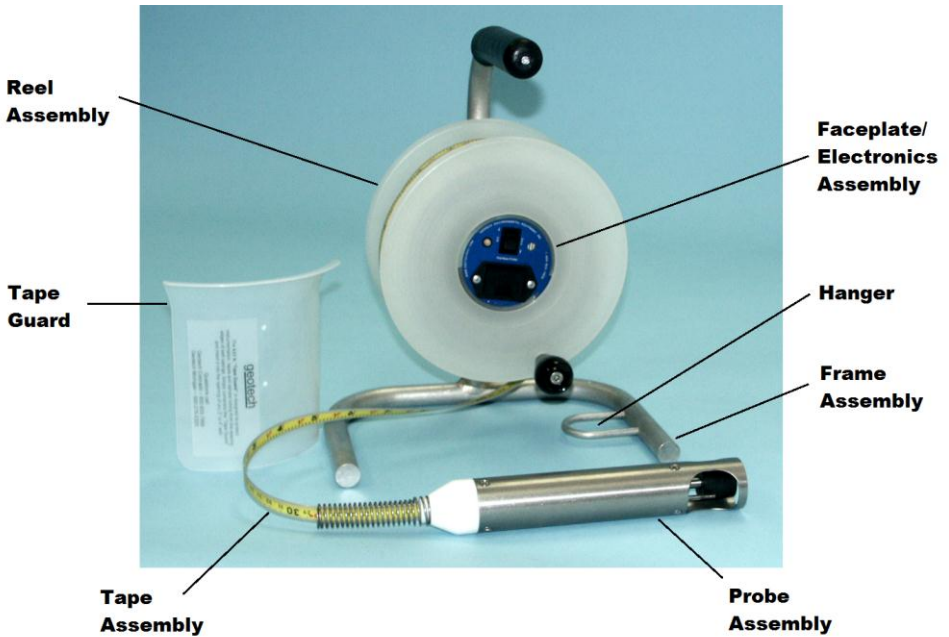


Figure 1-1 – System Components

Measuring Tape

The specially coated measuring tape connects the probe with the reel assembly and provides an accurate means of measuring the distance from the well head or tank port to the air/water, air/oil or oil/water interface. The tape contains all the wires running between the probe and the circuitry in the housing assembly. Engineering tape assemblies are in decimal feet and Metric tape assemblies are in meters (down to millimeters).

Section 2: System Installation

The reel frame has a metal loop called the “hanger”. The hanger can be used to hang the reel frame onto the well casing (as shown in Figure 2-1). The tape can then slide easily over the side of the reel leg.

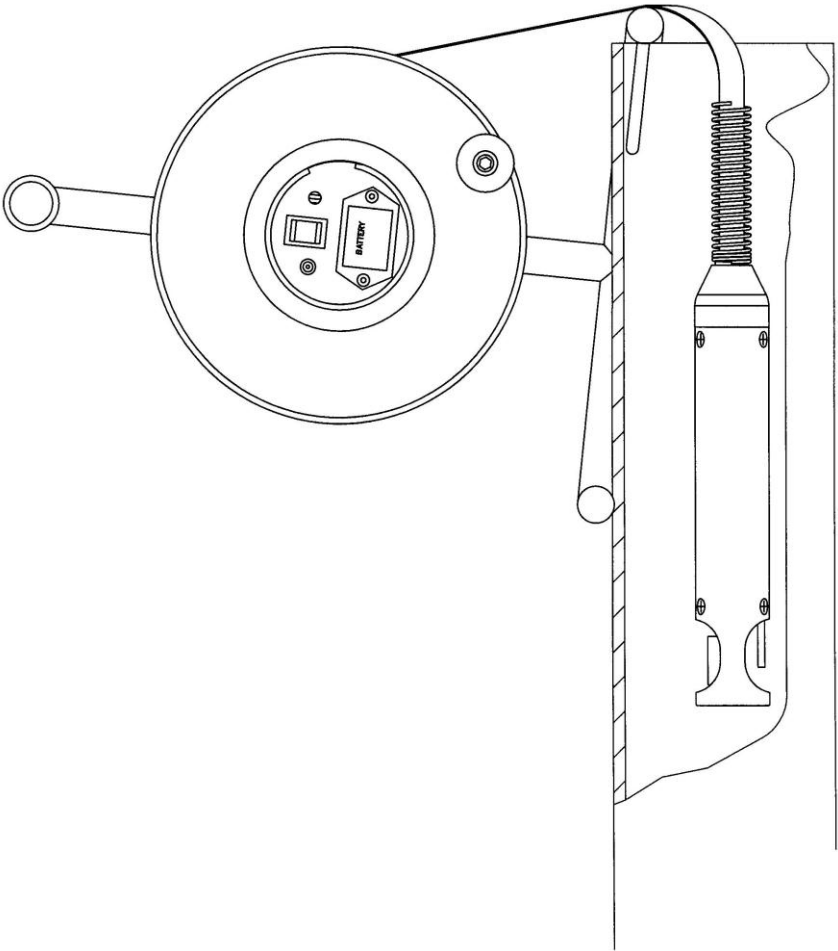


Figure 2-1 Reel frame on well casing.

If you are not able to hang the frame onto the well head, then either use the white plastic leader guard (standard with all units), or the optional Tape Guide, to prevent the edge of the well head from damaging the tape. Figure 2-2 is an example of the two parts.



Figure 2-2 Tape Leader Guard and Tape Guide



Do not use the tape leader guard in wells larger than 4” (10cm), as it may fall down the well.

Section 3: System Operation

Verify Operation of the Probe

Test the battery by pressing the "ON/TEST" button. If the buzzer makes a loud signal and the LED is visible, the battery is adequate for normal operation. Pressing the "ON/TEST" button provides 10 minutes of operation.

Test the instrument operation. Remove the probe from the retaining clip and raise the phenolic float. When the float switch triggers, the visible signal will be red and the audible signal will emit a steady tone. With the float still raised, moisten your fingers and touch the float shaft and the conductive contact. If the battery is properly charged, the visible signal will turn green and the tone will oscillate. Successful completion of these tests will indicate that the unit is operating properly.

Measuring Fluid Levels

Lower the probe down the well until the signals activate and then read the measurement at the top of the well casing or other reference point. Record this figure as the first fluid level.

Continue to lower the probe until the signals change. Record the measurement at the reference point as the second fluid level.

To determine the product layer thickness, subtract the first reading from the second reading.

Measuring Water Levels in Product-Free Wells

If the probe immediately emits a green light, nonconductive fluids are absent from the surface of the water.



To avoid damage to the tape and strain relief, do not over tighten the reel with probe when placed in storage.

Storage

If the KIR is not used and is stored for longer than three (3) months, remove the battery to prevent battery leakage, which can cause internal damage.

Geotech Interface Probe with Float Correction Factors

2nd Reading _____'/m + .08' (.024 m) = _____'/m
(total depth)

MINUS —

1st Reading _____'/m - .08' (.024 m) = _____'/m
(to product layer)

CORRECTED PRODUCT THICKNESS = _____'/m

Example:

You find that a sinker (DNAPL) begins at 22.36' / 6.82 m (1st reading) and the total depth of your well is 23.61' / 7.20 m (2nd reading). Use the above formula to get your correct product thickness.

2nd Reading 23.61' + .08' = 23.69'
(total depth) (7.20 m + .024 m) = (7.22 m)

MINUS —

1st Reading 22.36' - .08' = 22.28'
(to product layer) (6.82 m - .024 m) = (6.79 m)

CORRECTED PRODUCT THICKNESS = 1.41' (.429 m)

Product thickness can be determined by adding .15' (.045 m) to the difference of your original measurements.

Section 4: System Maintenance

Battery Replacement

Replace the battery when the audible and visible signals become weak or the unit does not operate.

1. Gently remove the battery tray.
2. Remove the old battery and replace it with a new one.



Be aware of the polarity (+, -) of the battery when placing the new battery in the tray. Use a 9V alkaline battery only.

Cleaning

The Geotech Interface Probe with Float can be cleaned with mild detergents such as trisodium phosphate (TSP), Alconox or Liquinox. If other detergents are used, take care to select detergents that are compatible with PTFE (Teflon), polypropylene, and stainless steel. The reel should not be submerged in any liquid, but may be cleaned with a damp cloth.

If the float becomes covered with silt or mud, remove the float retaining clip, slide the float off the shaft, and clean both the float and the float shaft. Replace the float so the arrow is facing the top of the probe and replace the retaining clip.

The conductive contact can be cleaned with detergent and a small brush.



The float shaft at the bottom of the probe is not designed to be removed.

Field calibration of the probe is not normally required.

Section 5: System Troubleshooting

Problem: No signal (audible or visible) when unit is turned on.

Solutions:

- The battery is discharged. Check or change battery (Section 4).
- The circuit is malfunctioning. Contact Geotech Service.

Problem: No indication of product.

Solutions:

- The float is stuck. Clean the float and travel path (Section 4).
- Water is bridging at the bottom of the probe. Clean the probe. Do not unscrew the float switch.
- The circuit is malfunctioning. Contact Geotech Service.

Problem: No indication of water.

Solutions:

- The conductive contact is dirty. Clean the contact (Section 4).
- There is an open connection in the tape. Replace tape and/or probe.
- The circuit is malfunctioning. Contact Geotech Service.

Problem: The signal (audible or visible) is intermittent.

Solutions:

- There is an open connection in the tape. Replace tape and/or probe.
- There is a loose connection in the circuit or the probe. Repair the connection.
- The float is damaged or missing. Replace the float.

Problem: The signal (audible or visible) is continuous when not in water.

Solutions:

- Make sure the meter is in standard mode. Place the mode switch to the "Right", for normal operation.
- The conductive contact is dirty (causing bridging). Clean the contact (Section 4).
- There is a short in the tape and/or probe. Replace tape and/or probe.
- The circuit is malfunctioning. Contact Geotech Service.

For technical assistance, call Geotech Environmental Equipment at 1-303-320-4764 or 1-800-833-7958

Section 6: System Specifications

Length/Weight:	100 foot (30 meters) = 9 lbs (4 kg)
	200 foot (60 meters) = 11 lbs (5 kg)
	300 foot (100 meters) = 14 lbs (6.5 kg)

Probe

Material:	Stainless steel, PTFE, Viton
Weight:	19.75 oz (560 g)
Diameter:	1.5" (3.8 cm)
Length:	8.9" (22.6 cm)
Minimum Conductivity	
Threshold (detects water at):	>6.7 μ S
Minimum Detectable	
Hydrocarbon	.01 foot

Tape

Material:	Kynar coated steel tape w/ stainless steel conductors
Accuracy:	100th of a foot/100' (3 mm/30.5 meters)
	Per Federal Specification: GGG-T-106E

Reel/Frame

Material:	Polypropylene & aluminum
Size:	13" H x 11" W x 7" D (33 cm H x 28 cm W x 18 cm D)

Unit

Battery:	9 volt alkaline
Self shut-off time:	10 minutes
Output tone:	500 Hz
Modulation (water detected):	3.5 Hz
Operating temperature range:	32 – 140 °F (0 – 60 °C)
Storage temperature range:	-40 – 158 °F (-40 – 70 °C)
Response time:	<10 milliseconds

Section 7: System Schematic

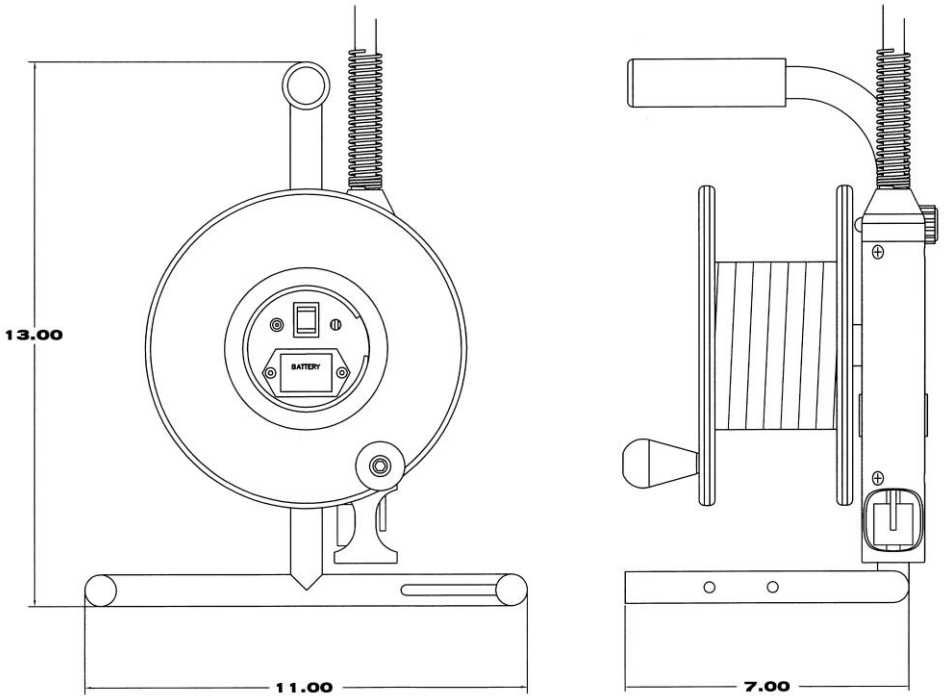


Figure 7-1 – Geotech Interface Probe with Float (front and side view)

Section 8: Replacement Parts List

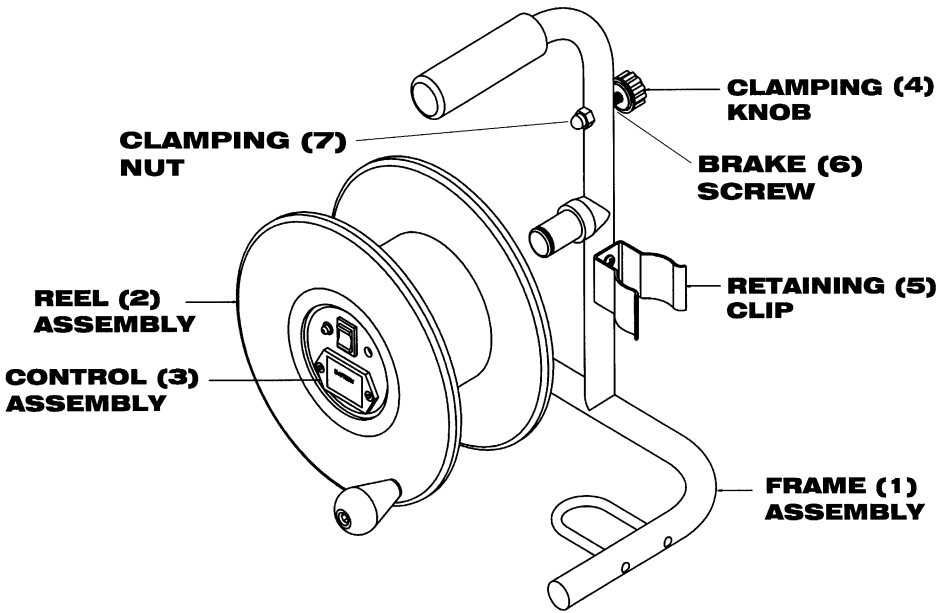


Figure 8-1 Frame, Reel & Control Assembly Parts List

Item #	Parts Description	Parts List
1	ASSY,FRAME,KIR	52050027
2	ASSY,REEL,100FT,GEOWLM	52050029
	ASSY,REEL,200FT,GEOWLM	52050030
	ASSY,REEL,300FT,GEOWLM	52050031
3	ASSY,CONTROL,KIR IP TAPE LENGTH REQUIRED	52050036
4	KNOB,KNURLED,3/4X5/16",BLK (USE WITH #12050525)	12050524
5	CLIP,RETAINING,KIR PROBE,BLACK	12050001
6	SCREW,SS8,1/4-20X1.375",SHCS	12050525
7	NUT,NYL,1/4-20,HEX	17500129
	GUARD,LEADER,PROPAMIDE,NATURAL	12050060
	GUIDE,TAPE,PVC	22050601
	CASE,WLM/IP,100-300'	12050059
	MANUAL,INSTRUCTION,IP W/FLOAT	12050096

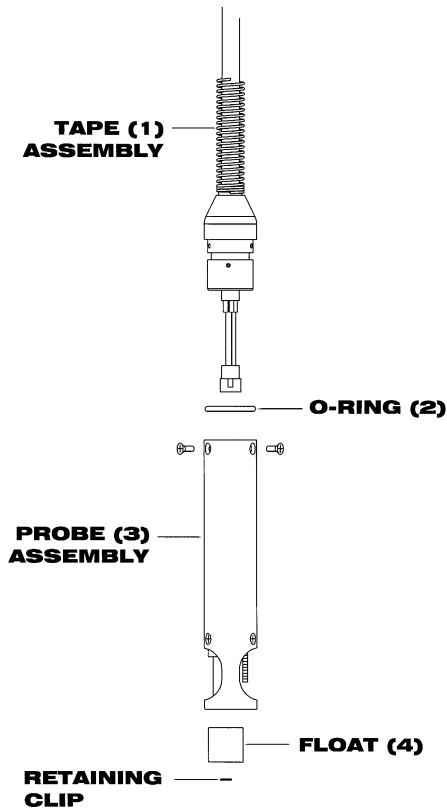


Figure 8-2 Tape/Probe Parts List

Item #	Parts Description	Parts List
1	ASSY,TAPE,KIR IP,30M KYNAR TAPE	52050040
	ASSY,TAPE,KIR IP,60M KYNAR TAPE	52050041
	ASSY,TAPE,KIR IP,100M KYNAR TAPE	52050011
	ASSY,TAPE,KIR IP,100FT KYNAR TAPE	52050032
	ASSY,TAPE,KIR IP,200FT KYNAR TAPE	52050033
	ASSY,TAPE,KIR IP,300FT KYNAR TAPE	52050034
2	O-RING,VITON,#215,BROWN	12050028
3	ASSY,PROBE,KIR IP,1.5",W/FLOAT	52050028
4	KIT,FLOAT,KIR IP,(2 PK) INCLUDES 2 "E" CLIPS	52050038

The Warranty

For a period of one (1) year from date of first sale, product is warranted to be free from defects in materials and workmanship. Geotech agrees to repair or replace, at Geotech's option, the portion proving defective, or at our option to refund the purchase price thereof. Geotech will have no warranty obligation if the product is subjected to abnormal operating conditions, accident, abuse, misuse, unauthorized modification, alteration, repair, or replacement of wear parts. User assumes all other risk, if any, including the risk of injury, loss, or damage, direct or consequential, arising out of the use, misuse, or inability to use this product. User agrees to use, maintain and install product in accordance with recommendations and instructions. User is responsible for transportation charges connected to the repair or replacement of product under this warranty.

Equipment Return Policy

A Return Material Authorization number (RMA #) is required prior to return of any equipment to our facilities, please call our 800 number for appropriate location. An RMA # will be issued upon receipt of your request to return equipment, which should include reasons for the return. Your return shipment to us must have this RMA # clearly marked on the outside of the package. Proof of date of purchase is required for processing of all warranty requests.

This policy applies to both equipment sales and repair orders.

FOR A RETURN MATERIAL AUTHORIZATION, PLEASE CALL OUR
SERVICE DEPARTMENT AT 1-800-833-7958.

Model Number: _____

Serial Number: _____

Date of Purchase: _____

Equipment Decontamination

Prior to return, all equipment must be thoroughly cleaned and decontaminated. Please make note on RMA form, the use of equipment, contaminants equipment was exposed to, and decontamination solutions/methods used. Geotech reserves the right to refuse any equipment not properly decontaminated. Geotech may also choose to decontaminate the equipment for a fee, which will be applied to the repair order invoice.

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