5000’ (1524m)
Poly Tape
Water Level Meter
(with electric rewind)

Installation and Operation Manual

Rev 12/21/2023 Part # 12050685

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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.

Section 1: System Description

Function and Theory

The Geotech Poly Tape Water Level Meter (WLM) is a portable instrument used to accurately measure water levels in monitoring wells and bore holes. The sensor consists of a stainless steel and Buna-N probe attached to a reel-mounted, polyethylene-coated engineer’s tape. The engineer's tape is marked with standard imperial or metric graduations, and is accurate to 1/100th of a foot.

The sensor relies on fluid conductivity to determine the presence of water. An audible signal and visible LED activate when the probe contacts water. It features adjustable sensitivity, used to prevent false triggering.

The poly tape is intended for use as a depth to water measuring device. Using the tape for any other purpose may compromise safety of the operator and/or void manufacturer’s warranty.

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

System Components

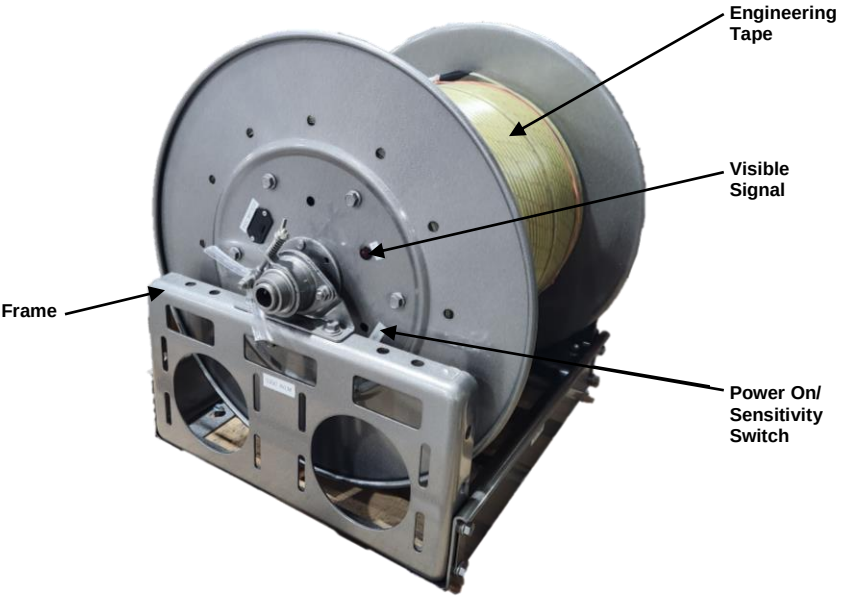

Figure 1-1: Front View

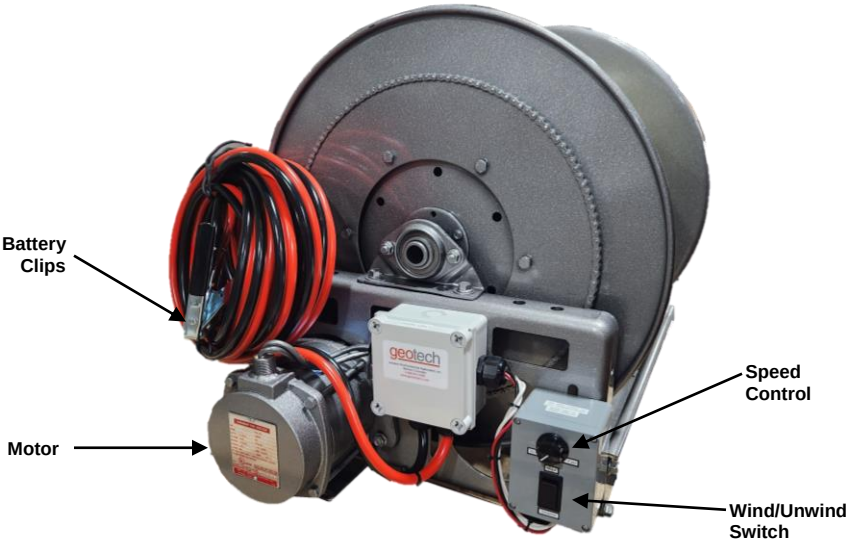

Figure 1-2: Rear View

Section 2: System Installation

24VDC Electric Reel

1. Attach red clip to positive 24VDC battery terminal, and black clip to the negative 24VDC battery terminal.

2. Turn the speed control dial fully counter-clockwise. Press desired button (up/down). Slowly rotate the speed control until reel is rotating at the desired speed.

When winding the tape up on the reel, pay careful attention so that the tape and/or probe do not get caught or tangled.

Keep hands and loose article of clothing away from chain.
DO NOT operate unit without a guard!

3. Carefully lower the probe into the well, using the tape guard to prevent damage to the tape.

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

In wells larger than 4” (10 cm) be careful not to let the tape scrape against the lip of the well casing.

If you are not able to hang the frame onto the wellhead, then either use the white plastic leader guard (standard with all units), or the optional Tape Guide, to prevent the edge of the wellhead from damaging the tape. Figure 2-1 is an example of the two parts

Figure 2-1: Tape Leader Guard, Tape Guide, and Tape Weight (Optional)

Do not use the tape leader guard in wells larger than 4" (10cm), as it may fall down the well. The optional tape weight helps sink probe into a deep or crooked well.

Optional Tape Weight Installation

Attach tape weight to tape near probe end being lowered into well.

1) Loosen the screws using an Allen wrench.
2) Slide the weight onto the tape.
3) Tighten the screws.

Figure 2-2: Fitting (Optional) Tape Weight

Figure 2-3: Tightening (Optional) Tape Weight

Section 3: System Operation

1. Turn the instrument on with the ON/SENSITIVITY switch. If the buzzer makes a loud signal and the light is visible, the battery is adequate for normal operation.

2. Lower the probe down the well to the water surface. The light and buzzer will activate. At this point, adjust the probe sensitivity dial by rotating it counter-clockwise until the light and buzzer shut off.

3. With the probe still in contact with the water, adjust the probe sensitivity dial clockwise until the light and buzzer barely activate. In this setting, the probe will detect water levels but will not be affected by false triggering.

4. Water level measurements can now be taken from the top of the casing or any reference point.

5. The meter should be stored with the switch in the OFF position. If the meter will be stored and not used for three (3) months or longer, remove the battery to prevent battery leakage from damaging the meter.

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

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 poly tape can be cleaned with mild detergents such as trisodium phosphate (TSP). If other detergents are used, take care to select detergents that are compatible with Buna-N, polypropylene, and stainless steel. The reel should not be submerged in any liquid, but may be cleaned with a damp cloth.

Cleaning the Conductivity Contact

The conductivity contact of the probe should be periodically cleaned with a non-abrasive cleaner such as isopropyl alcohol, xylene, methanol, phosphate free type cleaner. To clean the conductivity contact, place a small amount of the cleaner on a cotton swab; rub the conductivity contact to remove all foreign matter. Repeat this process until all foreign matter has been removed.

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 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.

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

Solutions:

- 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

Geotech has taken steps to remove all polyflouroalkyl substances (PFAS) materials from Water Level Meters.

Probe

Material:	Stainless Steel and Buna-N
Weight:	4.53oz (128 g)
Diameter:	5/8 inch (1.6 cm)
Length:	7 ¾ inches (19.7 cm)
Minimum Detectable Conductivity:	10 µS

Tape

Material:	Polyethylene coated stainless
Length:	5000’ (1524m)
Tape accuracy:	100th of a foot (3mm) / 100’ (30.5m)

Reel/Frame

Material:	Steel and Aluminum
Size:	23.5“ H x 31“ L x 23“W (60cm x 79cm x 58cm)

Unit

Weight:	188 lbs (85kg)
Battery:	9V alkaline
Battery Life:	Continuously detecting 8 hours On not detecting >1 year
Output tone:	5 kHz
Operating Temperature:	32-140°F (0-60°C)
Storage Temperature:	-40-150°F (-40-66°C)
Response Time:	<10 milliseconds
Tape Weight (Optional)	1” (2.54cm) OD, 4” (10.16cm) Long, 12.74oz (361g)

Section 7: System Schematic

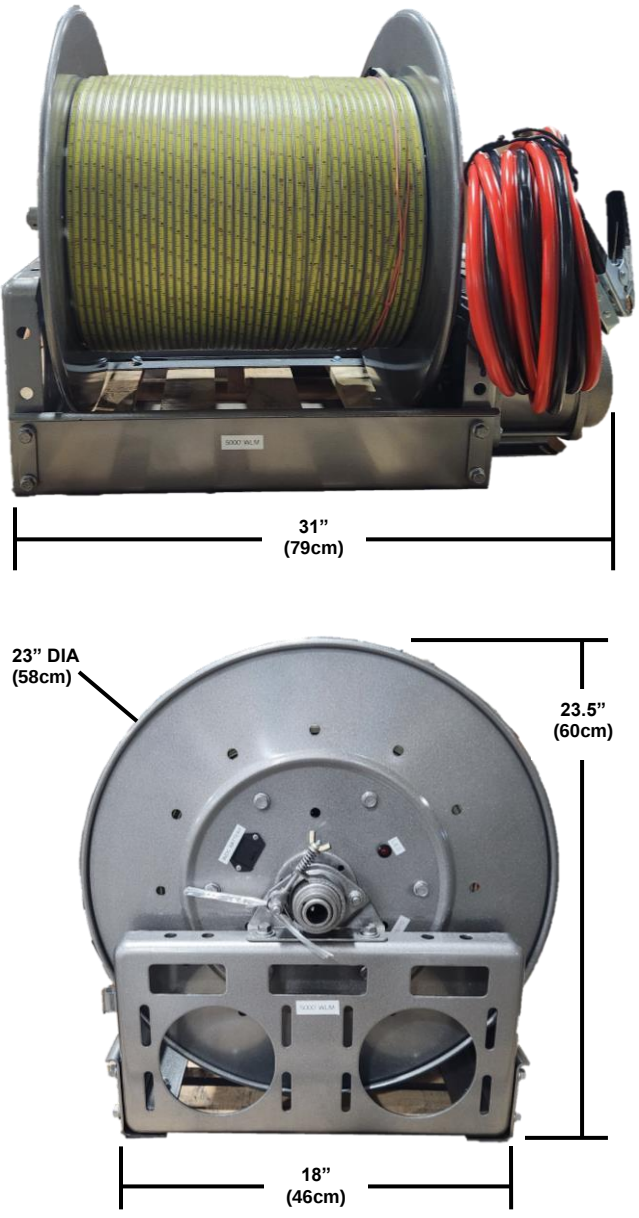

Figure 7-1: Dimensions Front and Side View

Section 8: Replacement Parts List

Parts Decription	Part Number
REPAIR,TAPE,WLM,POLY,5000',5/8" PROBE	52050333
ASSY,PROBE,GEOWLM	52050052
GUARD,LEADER,PROPAMIDE,NATURAL	12050060
GUIDE,TAPE,DELRIN	22050255
MANUAL,WATER LEVEL 5000' METER, ELEC REW	12050685
TAPE WEIGHT (OPTIONAL)	52050277
BATTERY, HOLDER, 9V, QUICK CHANGE POCKET	12050065
O-RING, BUNA, .484 X .039	12050255

Revision History		
Project #	**Description**	**Date**
M2362	Release – GR	12/21/2023

NOTES

NOTES

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.

Geotech Environmental Equipment, Inc.
2650 East 40th Avenue Denver, Colorado 80205
(303) 320-4764 ● **(800) 833-7958** ● FAX (303) 322-7242
email: sales@geotechenv.com website: www.geotechenv.com