DIPMETER

OPERATING MANUAL

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**MANUAL GUIDELINES**

**Introduction**

This manual shows you how to use Geotech’s dipmeter, this includes the following models: DM2.1-30, DM2.1-60 and DM2.1-100.

It also shows you how to troubleshoot the meter, in case you have any issues, and includes the declaration of conformity.

**Hazard warnings and safety symbols**

Information in this manual that may affect the safety of users and others will be placed in a box identical to this one.

**Notes**

Important/useful information and instructions are shown clearly throughout the manual in a note format. For example:

**Note:** For further information please contact Technical Support at Geotech on +44(0)1926 338111 or email technical@geotech.co.uk.
GENERAL OPERATIONAL FEATURES

FRONT

A Battery compartment
B Probe
C Tape guide
D Instrument test function
E Maximum depth

REAR

F Brake
G Test button
H Sensitivity knob
I Fascia securing screws

Note: You must ensure the Fascia screws (annotation I) are tight during use.
Operational notes

Reel Lock
To lock the reel turn the plastic knob on the rear clockwise until locked.

![Reel Lock Diagram]

Equipment Check
- Test tape and probe by shorting out the centre conductor and probe body on the stud on the back axle of the unit.

The buzzer and light should activate. If not, replace the battery (one 9V) by:

1. Removing the battery compartment on the front of the instrument (see annotation A on General Operational Features)
2. Remove and replace the battery (disposing of the old battery in the appropriate manner)
3. Re-insert the battery compartment.

- Test the unit in tap water before going out to the field. **DO NOT** use distilled or deionised water.
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Use in the Field

- Lower the tape down the well carefully, avoiding the edge of the well casing. Hang the unit on the casing, where possible, and run the tape over the tape guide to avoid cuts and nicks to the tape.
- When the unit sounds, carefully measure the depth to water from your reference point by slowly lowering and raising the probe to the air/water interface. Raise the probe, shake off the water and repeat the measurement.
- The probe is rated to full depth and can be used to measure depth to the bottom of well. Reel the tape until the probe touches the bottom and the tape becomes slack. **DO NOT** let the probe fall under gravity or it will be damaged when it hits the bottom of the well. **DO NOT** use the unit to measure sand backfill as the tape and probe may get "locked" in the backfill.
- Wind the tape back onto the reel, removing any excess moisture and dirt.

Cleaning the Dipmeter

- Always clean the meter after use in the field to maintain optimal performance and extend the life of the unit.
- Unwind the tape and probe and wash with a mild detergent or soapy water. Rinse thoroughly with water afterwards, wipe, dry and rewind onto the reel.
- Wash reel if necessary. The reel may be cleaned with detergent/soapy water. **DO NOT** use abrasives, partially halogenated hydrocarbons or ketones to clean the reel or tape.

Troubleshooting

To test the system

No sound when the unit is tested

- Remove the battery compartment and replace battery if low.
- Check probe conductor to make sure it is clean and not crusted with mineral deposits. Check tape/probe connection for any breaks.
- Make sure the fascia securing screws are tight.

Continuous sound when the unit’s probe is removed from water

- Make sure probe conductor tip is clean.
- Check for excess moisture on the back of the electronic panel.
- Check probe/tape connection and tape for any breaks or leaks where water might get in.

Precautions

- Avoid sharp edged casing.
- Avoid entanglement with other equipment in boreholes and wells.
- **DO NOT** use as guide to backfilling with sand etc., Instrument may get locked in sand.
- Rewind tape onto reel after each use.
- The meter may be used outdoors; however, it should not be used in positions where it may be subjected to long periods of inclement weather without further protection.

**Note:** Warranty is conditional upon adherence to these guidelines.
## TECHNICAL SPECIFICATION

### Physical

<table>
<thead>
<tr>
<th><strong>Power source</strong></th>
<th>9V Battery</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tape length</strong></td>
<td>According to model selected: 30m, 60m, 100m</td>
</tr>
<tr>
<td><strong>Operating temperature</strong></td>
<td>&lt;br&gt;Reel: 100 °C (max) &lt;br&gt;Probe: 150 °C (max)</td>
</tr>
<tr>
<td><strong>Reel seal</strong></td>
<td>Silicone and epoxy resin</td>
</tr>
</tbody>
</table>

### Dimensions and weight

<table>
<thead>
<tr>
<th><strong>Length</strong></th>
<th><strong>30m</strong></th>
<th><strong>60m</strong></th>
<th><strong>100m</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Height</strong></td>
<td>348mm</td>
<td>348mm</td>
<td>348mm</td>
</tr>
<tr>
<td><strong>Width</strong></td>
<td>270mm</td>
<td>270mm</td>
<td>270mm</td>
</tr>
<tr>
<td><strong>Depth</strong></td>
<td>200mm</td>
<td>200mm</td>
<td>200mm</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>4Kg</td>
<td>6Kg</td>
<td>7Kg</td>
</tr>
<tr>
<td><strong>Probe diameter</strong></td>
<td>16mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Probe length</strong></td>
<td>190mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Materials of Manufacture

<table>
<thead>
<tr>
<th><strong>Reel</strong></th>
<th>Nylon disc, hub and electronic panel</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main bearing</strong></td>
<td>Delrin</td>
</tr>
<tr>
<td><strong>Frame</strong></td>
<td>Polyurethane powder coated mild steel</td>
</tr>
<tr>
<td><strong>Fitting</strong></td>
<td>Stainless steel (where possible)</td>
</tr>
<tr>
<td><strong>Probe</strong></td>
<td>Stainless steel and Teflon®</td>
</tr>
<tr>
<td><strong>Electronic</strong></td>
<td>Epoxy Coated</td>
</tr>
<tr>
<td><strong>Tape</strong></td>
<td>Linear medium density polyethylene, with two 7-strand stainless steel conductors with Kevlar reinforcement. &lt;br&gt;Scale printed in black; unitary numbers in red &lt;br&gt;Graduations: &lt;br&gt;Metres, centimetres, millimetres &lt;br&gt;Unitary metres in red, other markings in black</td>
</tr>
</tbody>
</table>
EU Declaration of Conformity

This Declaration of Conformity is issued under the sole responsibility of the manufacturer:

Geotechnical Instruments (UK) Ltd.
Sovereign House, Queenoway
Leamington Spa, Warwickshire
CV31 3JR
ENGLAND

Product: DM2.1-30 DM2.1-60 DM2.1-100

Type of equipment: Dipmeter for detecting water levels.

The DM2.1 (all varieties) described above is in conformity with the relevant Union harmonisation legislation:

2014/30/EU: Electromagnetic capability (EMC)

- IEC 61326-1:2012 / EN 61326-1:2013

2011/65/EU: Restriction of the use of hazardous substances in electrical and electronic equipment (RoHS)

Signed for and on behalf of:

[Signature]

Name: Mr. Craig Millar
Position: Project Manager
Done at: Geotechnical Instruments (UK) Ltd
On: 26th October 2017
WEEE COMPLIANCE

The wheelie bin symbol displayed on equipment supplied by Geotechnical Instruments signifies that the apparatus must not be disposed of through the normal municipal waste stream but through a registered recycling scheme.

The Waste Electrical and Electronic Equipment directive (WEEE) makes producers responsible from July 1st 2007 in meeting their obligations, with the fundamental aim of reducing the environmental impact of electrical and electronic equipment at the end of its life.

Geotechnical is now registered with the Environmental Agency as a producer and has joined a recycling scheme provider who will manage and report on our electrical waste on the company’s behalf.

When your instrument is at the end of its life, please contact the Geotechnical Instruments sales team who will advise you on the next step in order to help us meet our WEEE obligations.