



The World Leader in Vibrating Wire Technology

48 Spencer Street
Lebanon, NH 03766, USA
Tel: 603•448•1562
Fax: 603•448•3216
E-mail: geokon@geokon.com
<http://www.geokon.com>

Instruction Manual
Model RB-100
Potentiometer Readout



No part of this instruction manual may be reproduced, by any means, without the written consent of Geokon, Inc.

The information contained herein is believed to be accurate and reliable. However, Geokon, Inc. assumes no responsibility for errors, omissions, or misinterpretation. The information herein is subject to change without notification.

Copyright © 2016-2018 by Geokon, Inc.
(Rev. A, 04/26/18)

Warranty Statement

Geokon, Inc. warrants its products to be free of defects in materials and workmanship, under normal use and service for a period of 13 months from date of purchase. If the unit should malfunction, it must be returned to the factory for evaluation, freight prepaid. Upon examination by Geokon, if the unit is found to be defective, it will be repaired or replaced at no charge. However, the WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion or current, heat, moisture or vibration, improper specification, misapplication, misuse or other operating conditions outside of Geokon's control. Components which wear or which are damaged by misuse are not warranted. This includes fuses and batteries.

Geokon manufactures scientific instruments whose misuse is potentially dangerous. The instruments are intended to be installed and used only by qualified personnel. There are no warranties except as stated herein. There are no other warranties, expressed or implied, including but not limited to the implied warranties of merchantability and of fitness for a particular purpose. Geokon, Inc. is not responsible for any damages or losses caused to other equipment, whether direct, indirect, incidental, special or consequential which the purchaser may experience as a result of the installation or use of the product. The buyer's sole remedy for any breach of this agreement by Geokon, Inc. or any breach of any warranty by Geokon, Inc. shall not exceed the purchase price paid by the purchaser to Geokon, Inc. for the unit or units, or equipment directly affected by such breach. Under no circumstances will Geokon reimburse the claimant for loss incurred in removing and/or reinstalling equipment.

Every precaution for accuracy has been taken in the preparation of manuals and/or software, however, Geokon, Inc. neither assumes responsibility for any omissions or errors that may appear nor assumes liability for any damages or losses that result from the use of the products in accordance with the information contained in the manual or software.

TABLE of CONTENTS

1. GENERAL DESCRIPTION.....	1
2. OPERATING INSTRUCTIONS.....	1
3. MAINTENANCE.....	2
4. SPECIFICATIONS	2
5. WIRING DIAGRAM	3

1. GENERAL DESCRIPTION

The RB-100 Readout Box is designed to read linear potentiometers manufactured by Geokon and others. The unit utilizes a high precision 4½ digit LCD digital voltmeter with circuitry to power and readout a potentiometer. A three-wire ratiometric system is used to minimize errors caused by long lead lengths and varying temperatures.

In use, a regulated voltage is applied to the ends of the potentiometer resistance element and the position of the wiper that is connected to the potentiometer actuating shaft, and rides along the resistance element is determined by the voltage output measured at this point along the element.

A six-channel switch and 15 pin input connector allows the readout of up to six different potentiometers (as used in extensometers). A range switch configures the readout box for different ranges of potentiometers, including 50 mm, 100 mm, 150 mm (2", 4", 6").

The output voltage is displayed on an LCD display to a resolution of one millivolt.

A three-pin connector allows the connection of a single potentiometer. The battery is recharged by connecting to an external power supply of 105-125 VAC.

A shoulder strap is provided so that the unit can be carried conveniently.

2. OPERATING INSTRUCTIONS

The operating instructions appear inside the lid of the readout box, they read as follows:

- 1) Connect the potentiometer to either the single input connector or to the multiple input connector
- 2) Switch the unit on and wait 15 seconds for the unit to warm up.
- 3) Set the range selector to the stroke of the potentiometer in use.
- 4) For a multiple input, turn the position switch to the desired potentiometer or extensometer point.
- 5) Check the battery voltage by setting the range switch to the 'BATT' position. If the voltage drops below 4.5 volts recharge the batteries for not more than eight hours.
- 6) Switch the unit off when not in use.

3. MAINTENANCE

The RB-100 Readout Box is designed for use in wet, dirty humid environments. Keep the box in a warm dry place when not in use. Wipe dirt and moisture from the faceplate.

It is very important to let the battery deep discharge before charging – only charge the battery if its output voltage is below 4.9 volts. Charge the battery for no more than eight hours. **DO NOT OVERCHARGE.**

The faceplate is fully sealed and a desiccant pack is included inside the box. This pack should be changed at intervals in humid environments. To replace the desiccant pack, remove the 10 seal screws that hold down the faceplate. Carefully remove the faceplate by prying up on the edge. Once the desiccant pack has been replaced, reinstall the faceplate, taking care not to pinch the rubber gasket beneath. To maximize water resistance, tighten the screws a little at a time, in a star like pattern, this will avoid overtightening any one side, which may not allow the opposite side to seat properly.

4. SPECIFICATIONS

Range	50 mm, 100 mm, 150 mm (2", 4", 6")
Display	4 ½ digits LCD panel Meter with 0.5" high figures
Resolution	1 millivolt equal to 0.001"
Accuracy	1.0% FS
Temperature Stability	Of the Zero: Auto zeroed to ± 1 count 0 to 50 degrees °C Of the Gain: ± 50 ppm of the reading / °C
Temperature Range	Potentiometers: -30 to +80 °C Readout Box: 0 to 50 degrees °C
Potentiometer Excitation	1 volt
Geokon Potentiometers	Standard Resistance = 1500 Ohms /inch stroke Diameter = 3/4" Length = Stroke plus 2" Body and shaft constructed from stainless steel.
Power (Internal Batteries)	5 Volts from four rechargeable AA Ni-cad cells. Approximate life = 100 hours between charges.
Battery Charger (External Power)	105 to 125 VAC Output = 5.8 volts at 85mA.
Charging Time	8 hours
Case	Aluminum, epoxy painted, spray and dust tight.
Case Dimensions	102 × 165 × 232 mm (4" × 6.5" × 9.1")
Weight	1.8 kg (4 lb.)

5. WIRING DIAGRAM

RB - 100 READOUT BOX SCHEMATIC

