Model 1500

Linear Potentiometer

Instruction Manual

GEOKON®

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1. INTRODUCTION

The GEOKON Model 1500 Linear Potentiometer is designed for making displacement measurements. It can be used as a replacement for the equivalent vibrating wire displacement transducers such as extensometers, crackmeters, jointmeters, and the like.

The sensor is essentially a rheostat that consists of a conductive plastic element used as the resistor in a linear voltage divider circuit. The sensor is housed in a rugged 3/4" diameter stainless steel tube, sealed for outdoor use.

Two versions are available. In one version, the shaft protrudes from one end only. In the other, the shaft goes through the instrument. In either case, the shaft is free to rotate without affecting the reading. The choice of which type to use depends on the sensor and application.

2. WIRING

Various wiring codes are used for extension cables and with installations such as with multipoint extensometer installations, a common ground can be used for more than one sensor. Thermistors, requiring two conductors, can be included with the sensors, or in a group of sensors such as with an extensometer, for temperature measurement.

Each Potentiometer has three leads colored white, green, and red. A wiring diagram is shown in Figure 1.

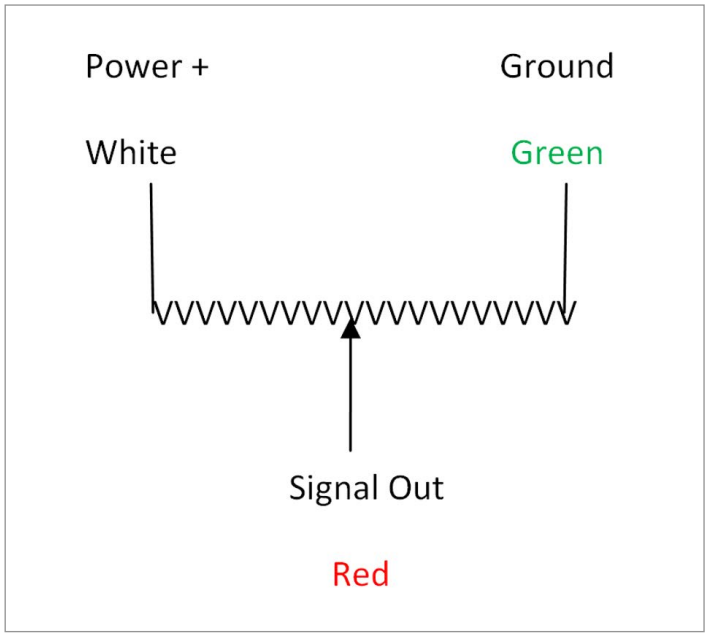

FIGURE 1: *Wiring Diagram*

3. TAKING READINGS

The GEOKON Model 1500 uses a three wire ratio-metric system 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 a wiper, which rides along the element, can be determined by the voltage measured at this point.

The output voltage is directly proportioned to the input voltage, therefore it is very important that the input voltage be accurately controlled @ 12 VDC. If any other voltage is used, the resulting data must be adjusted accordingly.

Readings are taken with an ohmmeter and VDC regulated power supply, use the wiring chart in Section 2.

Warning! Incorrect connection may cause permanent and irreparable damage to the sensor.

APPENDIX A. SPECIFICATIONS

A.1 MODEL 1500 SPECIFICATIONS

Available Ranges	50 mm	100 mm	150 mm	200 mm	250 mm
Total Resistance	5 kΩ		10 kΩ		
Accuracy[1]	±0.25% F.S.				
Nonlinearity	<0.5% F.S.				
Repeatability	0.1 mm				
Max Applied Voltage DC	42				
Operating Temperature	-40 to +100 °C				
Least Reading	0.025 mm				

TABLE 1: *Model 1500 Linear Potentiometer Specifications*

Note:

[1] Accuracy established under laboratory conditions. Accuracy of ±0.1% available on request.

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