

DEMOD-DC®

Using a Multimeter with the DEMOD-DC®

Overview

The LORD MicroStrain® **DEMOD-DC®** Miniature In-Line Signal Conditioner provides signal conditioning electronics for all LORD MicroStrain® **DVRT®** Differential Variable Reluctance Transducers. The user connects power, ground and analog out, and the DEMOD-DC® outputs a buffered, high-frequency response voltage proportional to the linear position of the DVRT®. Typically the user will acquire the analog signal with a DAQ for further processing, analog-to-digital conversion, etc. Data acquisition can be conducted in its simplest form by connecting a multimeter. This technical describes this method and assumes that the user has familiarity with the DEMOD-DC® and its paired DVRT®.



Figure 1: DEMOD-DC®

Method

- Connect the 4-pin LEMO connector of the DVRT® sensor cable to the 4-pin LEMO connector of the DEMOD-DC® as normal. For purposes of the technical note, we are using an [SG-DVRT-8](#) displacement transducer.
- Connect the micro DB-9 connector of the 3-wire pigtail to the micro DB-9 connector of the DEMOD-DC® as normal.
- Review this wiring guide: <http://files.microstrain.com/DEMOD-DC-Assembly.pdf>
- For purposes of this technical note, we are using a bench top regulated DC power supply; set the power supply to 6 volts. Other appropriate power sources may be used.
- Turn the power supply off.
- Connect the BLACK lead of the pigtail to the power supply GROUND.
- Connect the RED lead of the pigtail to the power supply POSITIVE.
- Set the multimeter to measure Volts DC.
- Connect the POSITIVE probe of the multimeter to the WHITE lead of the pigtail.
- Connect the GROUND probe of the multimeter to the BLACK lead of the pigtail.
- Turn the power supply on.
- Move the core of the SG-DVRT-8 in and out, and observe the voltage change on the multimeter:
 - with the core in its default position, i.e., fully extended by the spring loading, the voltage will be at/near 0 (zero) volts;
 - with the core pushed half way in, the voltage will be at/near +2.5 volts;
 - with the core fully pushed in, the voltage will be at/near +5.0 volts.
- As reported on the Certificate of Calibration, the full scale output of the transducer is 0 to 5 volts.
- The Slope and Offset reported in the Certificate of Calibration are calculated on this 5 volt range.

Support

LORD MicroStrain® support engineers are always available to expand on this subject and support you in any way we can.