

## ROADTRAX BL TEST EQUIPMENT

For testing the Roadtrax® BL Piezoelectric Axle Sensor, it is good to have an oscilloscope and a LCR meter. The LCR meter will be used for testing the sensor before installation and immediately after, but before opening the road to traffic.

With the LCR meter, you will be testing the capacitance of the sensor and cable, the dissipation factor, and the insulation resistance. For the capacitance and the dissipation factor, the values found with the LCR meter will be compared with those on the data sheet that is included with each sensor. For insulation resistance, we want a value that is greater than 20 MΩ, basically “OL” on most meters. An example of an LCR meter is model 380193: Passive Component LCR meter from Extech (<http://www.extech.com/instruments/product.asp?catid=56&prodid=349>).

After the sensors have been installed, the next testing will be done with an oscilloscope. When a vehicle drives over the installed sensor, it is possible to view the voltage output of the sensor and record it for future comparison by using an oscilloscope. PicoScope manufactures and sells very versatile devices that connect to a laptop via USB so that waveforms can easily be saved. A good example would be PicoScope model 2204 (<https://www.picotech.com/oscilloscope/2200/picoscope-2200-specifications>).

There are also several models offered by Fluke, however, those are limited in the number of samples that can be saved before it would be necessary to upload them to a computer. Furthermore, the quality of the saved image is grater with the PicoScope which can be clearly seen by comparing the two pictures below.

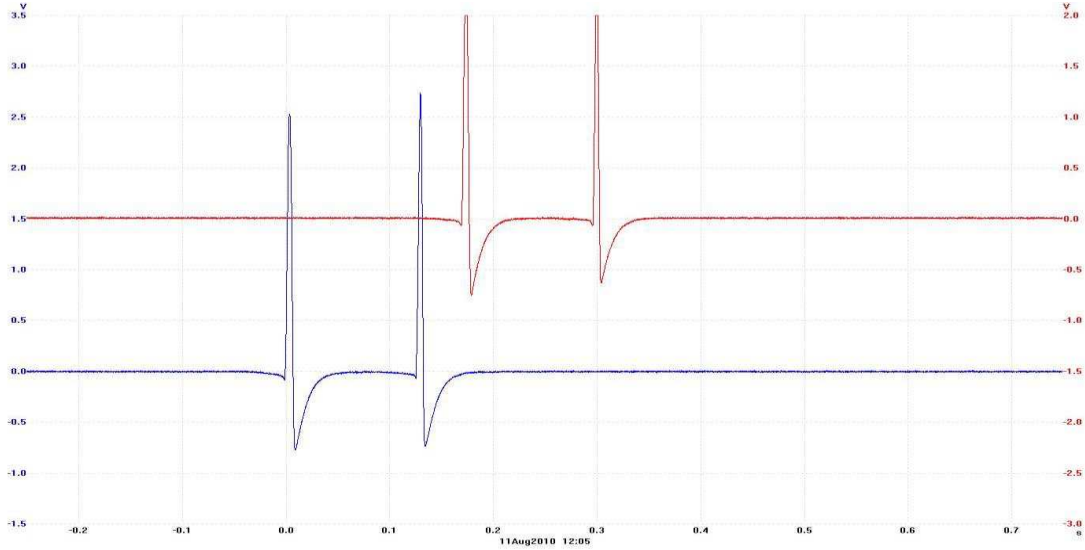


Figure 1: Sample from a PicoScope

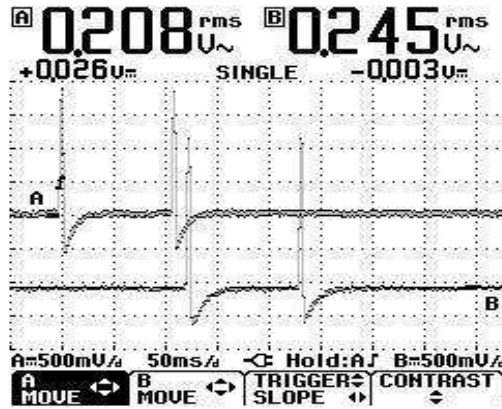


Figure 2: Sample from a Fluke

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