

## Introduction

This tutorial will guide you to test the signal of the mag pickup sensor and How the MagPU Adapter polarity affects the RPM readings.

## Materials

- Lenz
- Vibration Cable
- Mag Pickup
- Triax Cable (Optional)
- XYZ Box (Optional)

## Hardware Setup

The Lenz can be used to determine the polarity and magnitude of the signal coming from the mag pickup sensor. The “T” channel is used to measure the mag pickup sensor.

With an AV-CBL (accelerometer cable) the mag pickup can be plugged directly into the Lenz as shown.



*Lenz connected to a Mag Pickup through an Accelerometer Cable, for test purposes only.*

Optionally, the MAG-PICKUP cable can be plugged into the X channel of the X-Y-Z breakout box which is part of the vibration kit.

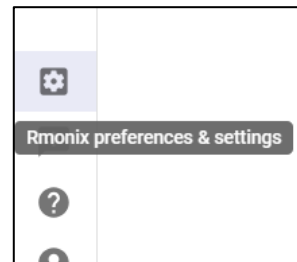


*Lenz connected to a Mag Pickup through a XYZ Box, for test purposes only.*

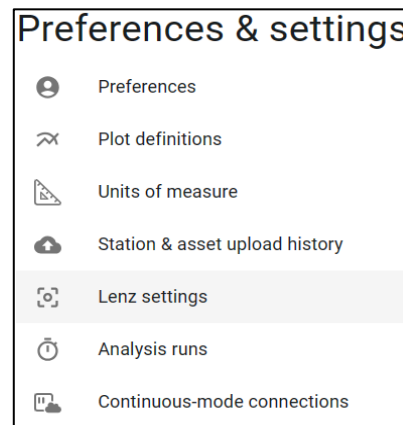
## Software Setup

Bring up Rmonix in the browser, and follow the next steps:

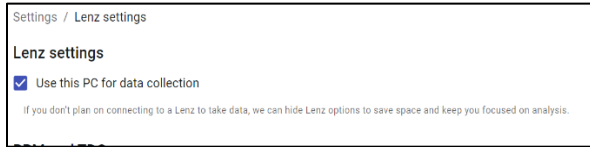
1. Go to “Rmonix preferences & settings.”



2. On the right menu, click on “Lenz Settings.”



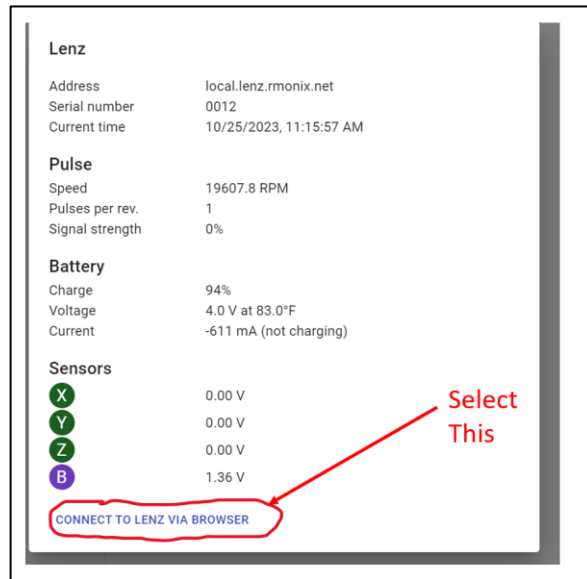
3. Be sure the box: “Use this PC for data collection” is checked.



4. Then, make sure you are connected to the Lenz WiFi, select “Take data”, then select the “Lenz” icon.

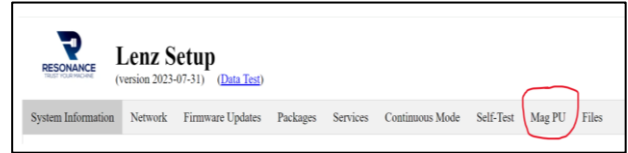


5. This will bring up the Lenz status form that shows several things including battery and sensor status

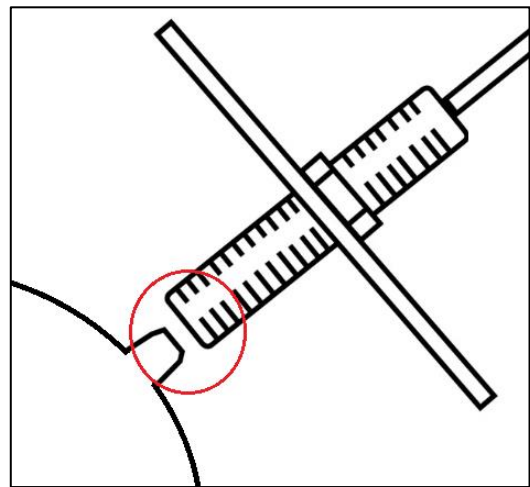


6. Press the “Connect to Lenz via Browser” at the bottom of the form.

7. This will create a new tab in the browser entitled “Lenz Setup.” This page shows a number of things about the Lenz including the Lenz’s time, firmware revision, etc. Select the “Mag PU” tab near the top of the form.



9. Adjust the gap between the sensor and the target.

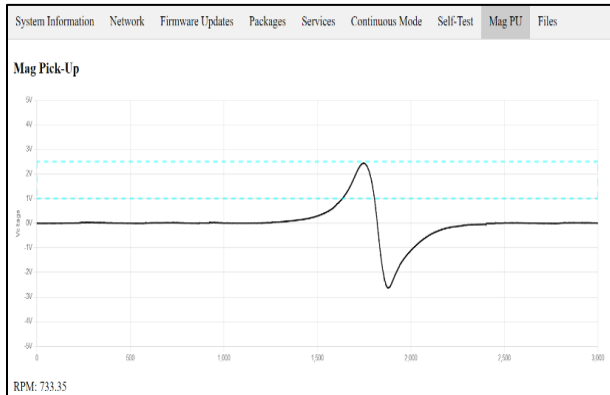


Magnetic Pickup Gap

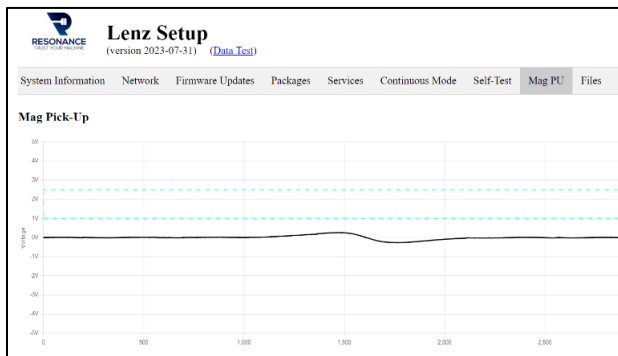
If no signal is detected, the chart will display “No peaks found.” This means that the signal from the mag pickup is too small to be detected, so the gap between the sensor and the target should be reduced.



If the signal is detected and the gap is adequate. The next picture shows the ideal signal strength. Reliable operation is assured when the peak is between 1V and 5V.



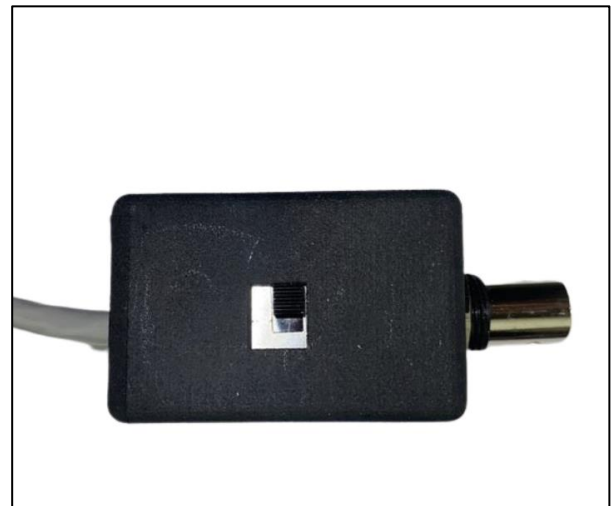
The next picture shows a signal that is large enough to be detected, but smaller than desired. Reduce the gap between the sensor and the target to increase the signal size.



## Polarity

Depending upon the wiring of the mag pickup and the target, the signal generated may either go positive first or negative first. All the previous examples show a positive going signal. The MAG-PU-ADPT must be properly configured based on the polarity of the input signal.

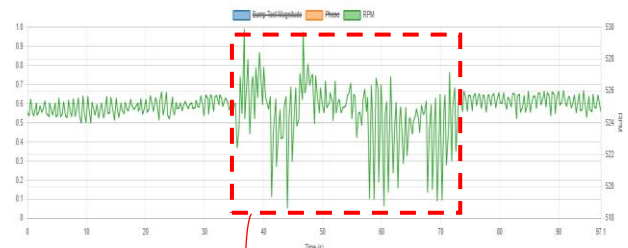
The position of the switch on the adapter should be as follows:



*Mag PU Adapter Switch*

With the adapter oriented with the BNC on the right, the switch should be up for a positive going signal and down for a negative going signal.

Improper polarity setting typically results in an unstable RPM and poor-quality data.



Unstable RPM,  
due to change in  
polarity switch.