

## Task

## Voltage fluctuation of the alternator

Task: Voltage fluctuation of the alternator

required material:

- car
- oscilloscope

After rectifying the alternating current produced by the alternator, a small voltage fluctuation remains. The voltage fluctuations may not exceed 500 mV. A fluctuation more than 500 mV causes various problems in the electronic circuits.

Task

- Connect the probes of the oscilloscope directly to the positive and negative poles of the battery.
- Put a load on the alternator by switching on the lights.
- Select the AC input coupling on the oscilloscope. Adjust the time base to 20 ms/Div and the amplitude to 50 mv/Div.
- Start the engine, fine tune the oscilloscope and take a close look at the signal.
- Change the number of revolutions of the engine and see if there are any changes in the signal.
- Change the load of the alternator and see if there are any changes in the signal.
- How do we adjust the oscilloscope in order to measure the regulated voltage? Try this out on your own.
- Draw the clearest signal.

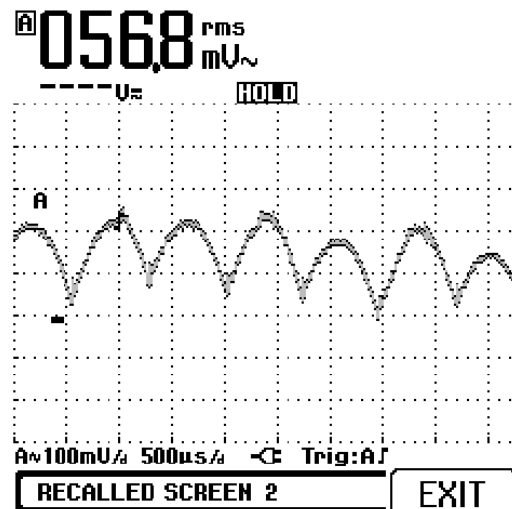


Fig. 1 The voltage fluctuation of the alternator measured over the battery.

Question: Write down the Ut of the signal. Is this correct?