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# Conductivity Sensor Electronic

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## Objectives

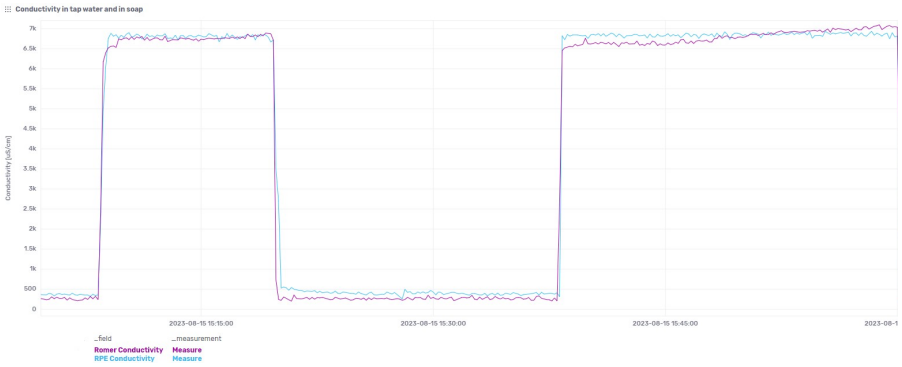
The objective of this project is to design electronics capable of conducting comprehensive tests on a conductivity sensor. This sensor is specifically developed for monitoring water quality within coffee machines manufactured by Eversys.

## Methods | Experiences | Results

Water hardness sensor quantifies water quality through conductivity measurement, which determines its electrical conductivity. Pure water, for instance, conducts very little electricity with a low reading around 0.6µS/cm. In contrast, tap water exhibits conductivity ranging from 50µS/cm to 800µS/cm. This variation arises from the quantity of dissolved minerals in the water. Greater mineral content corresponds to higher electrical conductivity in the solution.

The benefit of employing this sensor in a coffee machine is its ability to prevent excessive mineral accumulation in the water. Excess minerals can result in unpleasant coffee taste and heightened maintenance needs, as these minerals may accumulate within the machine's pipes.

The test bench includes two sensors: a reference sensor, on the right in the image above, and an Eversys-designed sensor on the left. The goal is to test and calibrate the in-house sensor using results from the reference sensor.




The graph shows database results: low point represents tap water with low conductivity, while high points represent water with soap, which increases conductivity.
Both sensors are initially immersed in tap water, then in water with soap for comparison.

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Field of application
*Infotronic*

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