20MT168 pH Sensor Calibration Procedure

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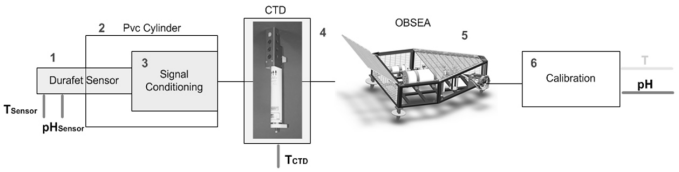
This paper describes the calibration of pH sensor located at the OBSEA marine observatory. This instrument is based on an industrial pH sensor that is connected to a CTD (Conductivity, Temperature, and Depth).
The calibration of the pH sensor has been done using a calibrated pH sensor from Institute of Marine Sciences (ICM), and in this way it has been obtained a numerical function for the pH sensor proportional to real pH.

Index Terms—pH sensor, CTD, Calibration, OBSEA



The measurement system

21AD027 Improving the Single Point Calibration Technique in Direct Sensor-to-Microcontroller Interface by Increasing Nonlinearity

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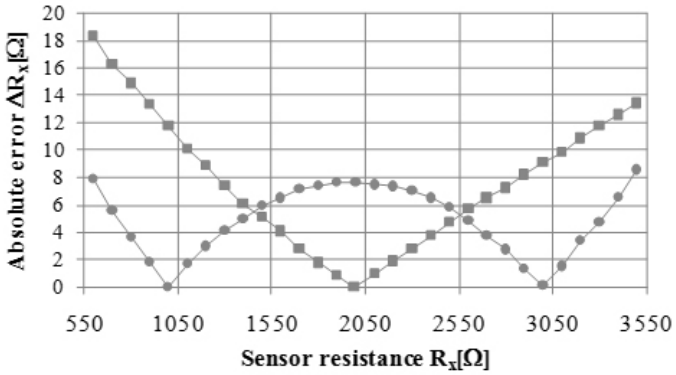
An improved single point calibration technique applied on direct sensor-to-microcontroller interface is presented. The improvements are in reducing the maximal absolute error in a given measurement range by increasing the transfer characteristics nonlinearity. The experimental results showed that this approach reduces the overall absolute error of the measurements more than twice and increases the measurement speed. In the paper, theoretical and experimental analyses are performed for resistive modulating sensors.



Absolute error for the improved (circles) and standard (squares) single point calibration