

Product: DensoFlex[®]: Sensor for Monitoring Lead Acid Batteries

Document: Short Description

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It is well known that the concentration of the sulphuric acid is the best measure for the state of charge of lead acid batteries. One could also try to calculate the state of charge out of the cell voltage or the Ah-balance. Because the cell voltage and Ah-balance are indirect measurements of the state of charge, these methods bear the risk of misinterpreting the data.

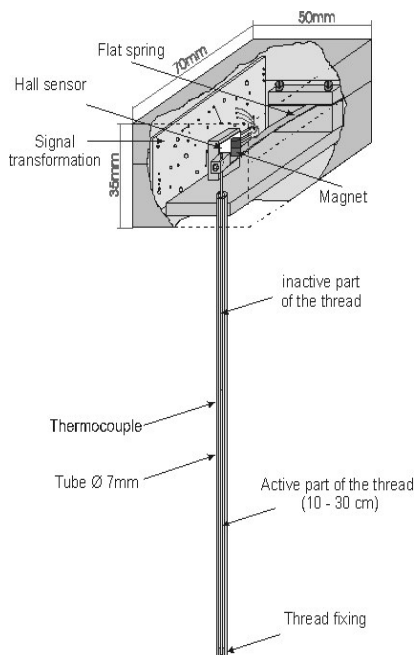


Figure 1: Measuring Principle

The benefit of the density control DensoFlex[®] is the opportunity to measure continuously – even while charging or discharging. The density signal is taken from the bottom to the top of the battery. That means there is an averaged signal across the whole stratification of the electrolyte. The measuring principle of DensoFlex[®] (see Fig.1) is known since 1973, when Prof. Winsel of Varta figured out the swelling properties of plastic in sulphuric acid. First prototypes of this device have been tested by the ISET (German: Institut für Solare Energieversorgungstechnik).

Gaskatel GmbH had the opportunity to carry on the research and development of the mechanical part of the sensor. The University of Technology Zurich contributes to the sensor system by developing the electronics to control the sensor and to transmit the data from different sensors to a central unit.