

基于磁阻传感器的数字式磁强计的设计

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摘要：

为了实时准确地获取地磁参数，利用Honeywell的HMC1001单轴磁阻传感器和HMC1002双轴磁阻传感器设计了一种基于AD7734和C8051F410的小型化的数字式磁强计，采用恒流源电路和置位电路有效地解决了传感器失调和漂移的影响。本文阐述了系统硬件设计、软件流程。对数字式磁强计进行了测试，综合精度高于5%，试验结果验证了该设计方案的可行性。

关键词：测试计量；磁阻传感器；恒流源电路；置位电路

The Design of Digital Magnetometer Based On Magnetic Resistance Sensor

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Abstract:

In order to obtain real-time accurate magnetic parameters, designed a miniaturization digital magnetometer based on AD7734 and C8051F410 using Honeywell HMC1001 uniaxial magnetic resistance sensor and HMC1002 biaxial magnetic resistance sensor, using constant current source circuit and setting circuit can effectively solve the disorder of sensors and the impact of drift. This paper expounds the system hardware design and software flow. Digital magnetometer was tested, overall accuracy is better than 5 %, the test results verify the feasibility of the design.

Keywords: measurement; magnetoresistive sensor; Constant current source circuit; Setting circuit

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