

Dual Current Sensor Module

“Redundant Dual Current Sensor Module HSM-800 based on Shunt and Hall Sensor”

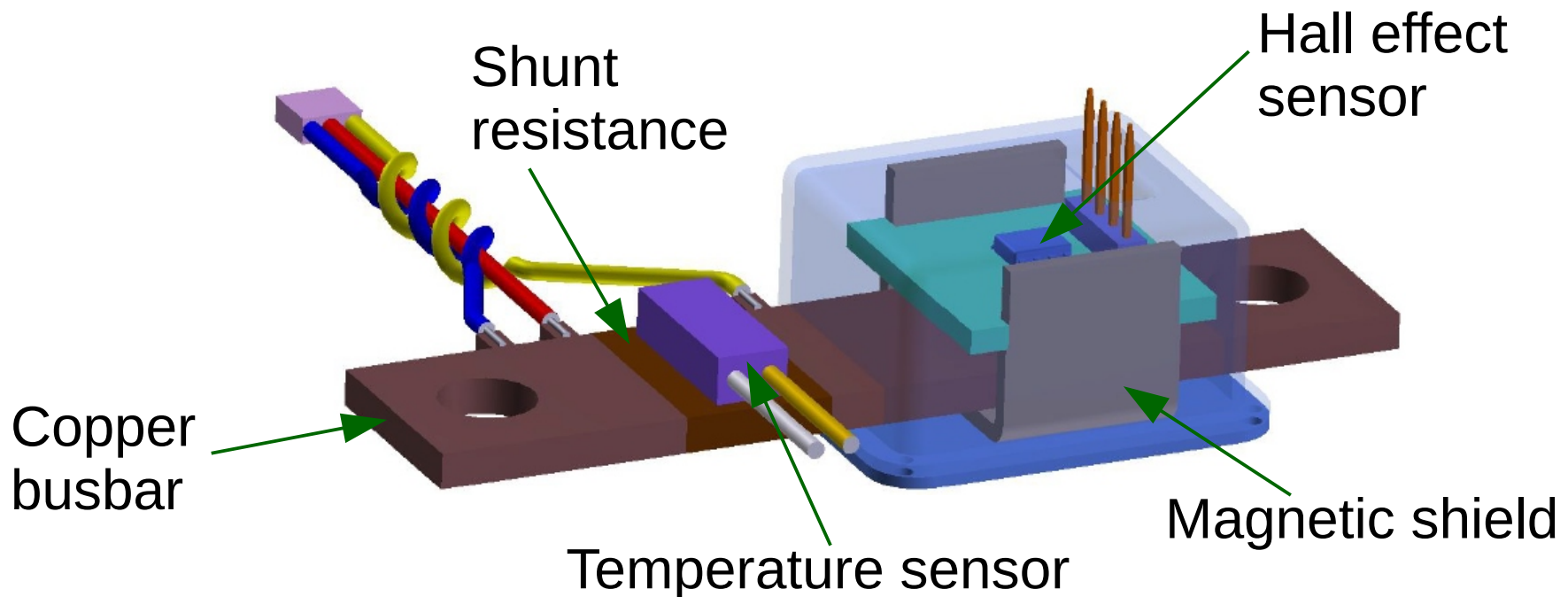
Presentation and Experimental Results

18 July 2017

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Module Summary

- Combined Hall and shunt current sensor module for safety applications
- 380A continuous, 800A peak current



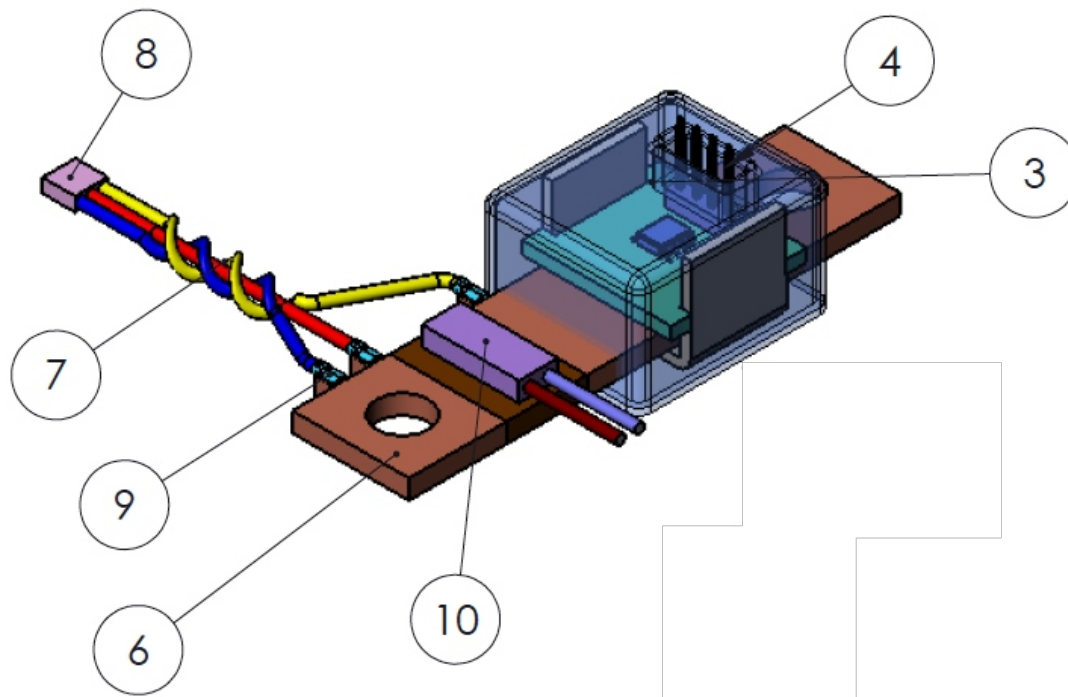
Summary of Specs

- Preliminary specifications

Parameter	Value	Unit
Peak Input Current Range	±800 (10s)	A
Continuous Input Current	±380	A
Cu-Mn Shunt Resistance	100	μOhm
Hall Sensor Sensitivity	2.50	mV/A
Operating Temperature Range (prototype)	-50...+150 (-40...+85)	°C
PT100 Temperature Sensor	100	Ohm

Module Parts

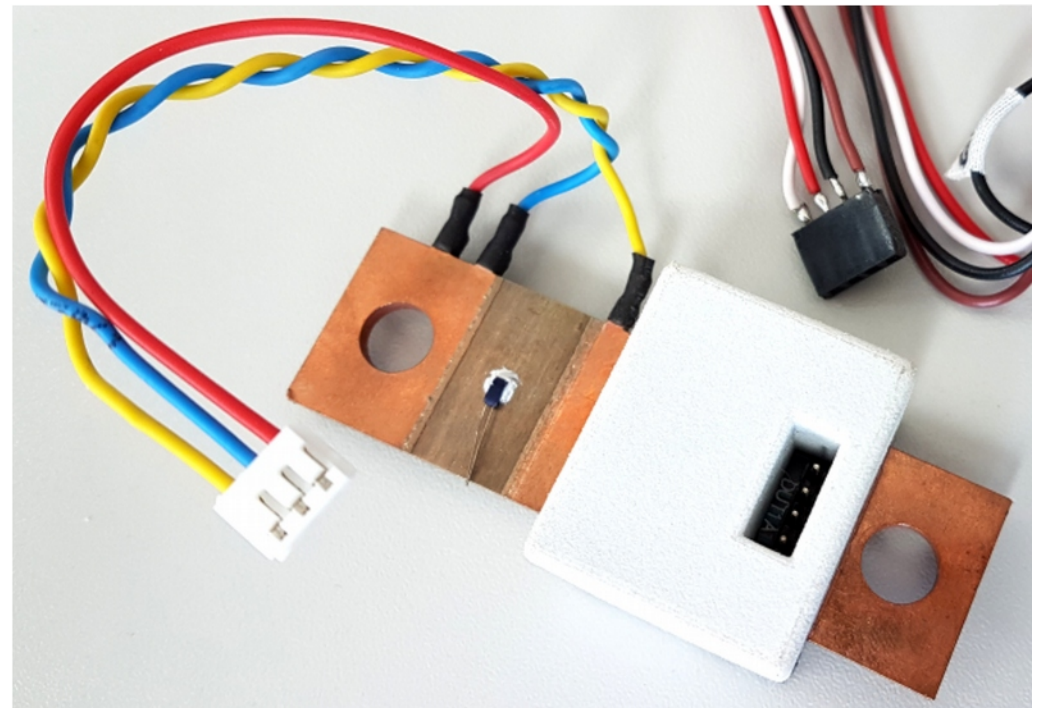
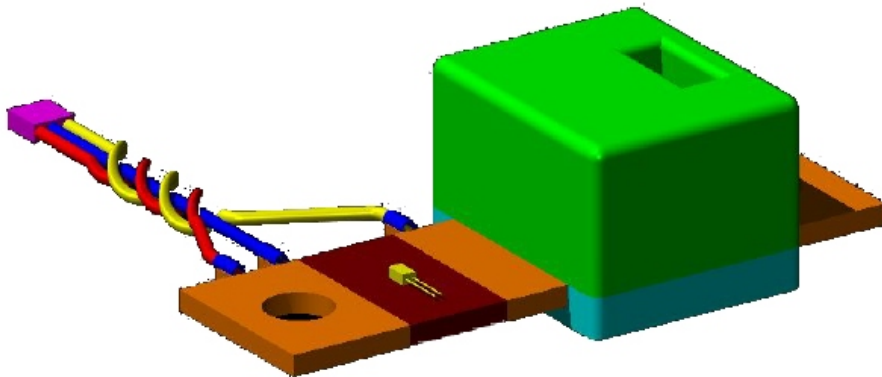
- Containing shunt resistor, Hall sensor, temperature sensor



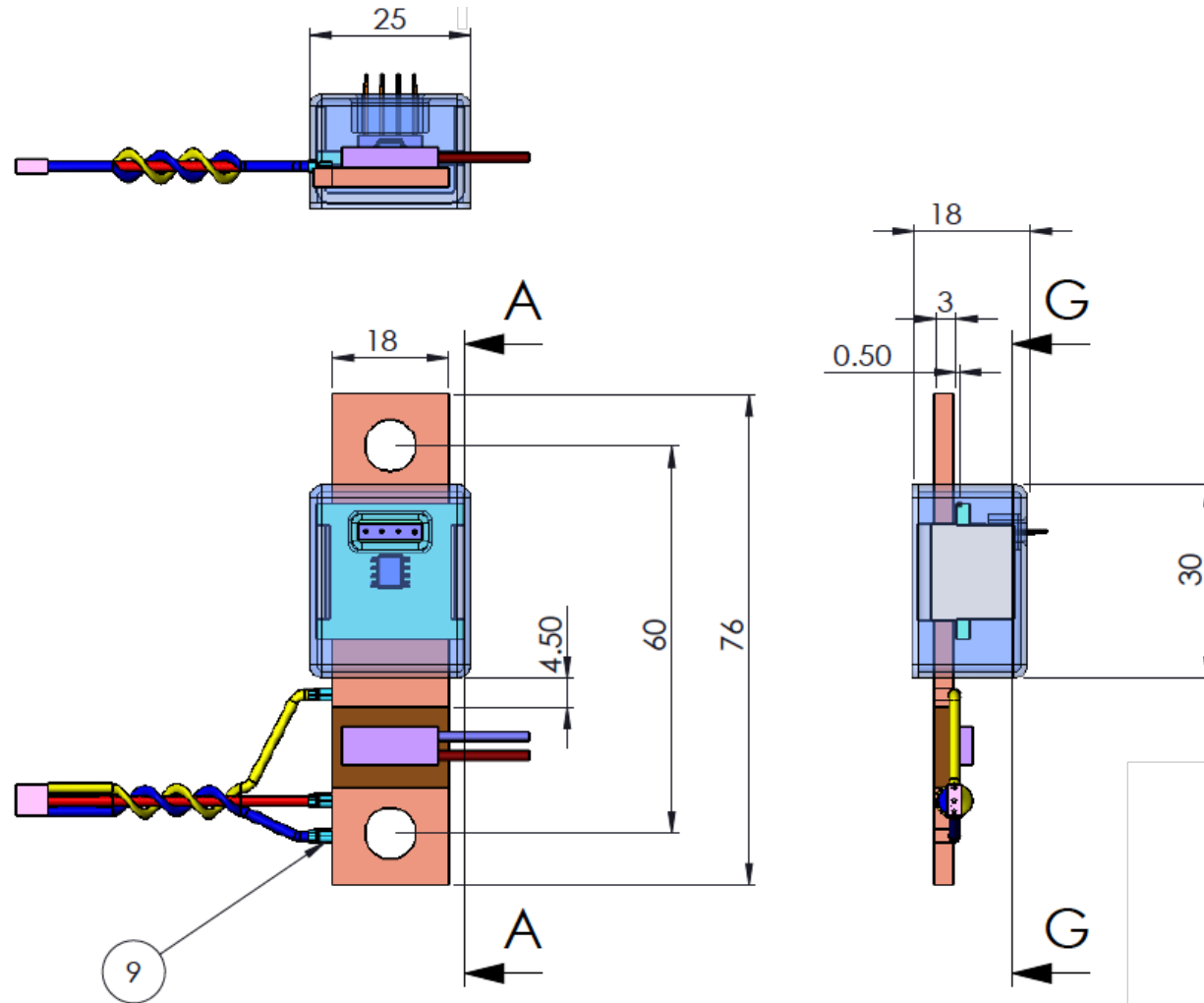
Pos	Description
3	Housing
4	Hall sensor connector
6	Copper busbar with shunt
7	Shunt wires
8	Shunt connector
9	Shunt to wire joint
10	Temperature sensor

Module Design

- Compact design: Complete module at the size of a standard 60mm shunt



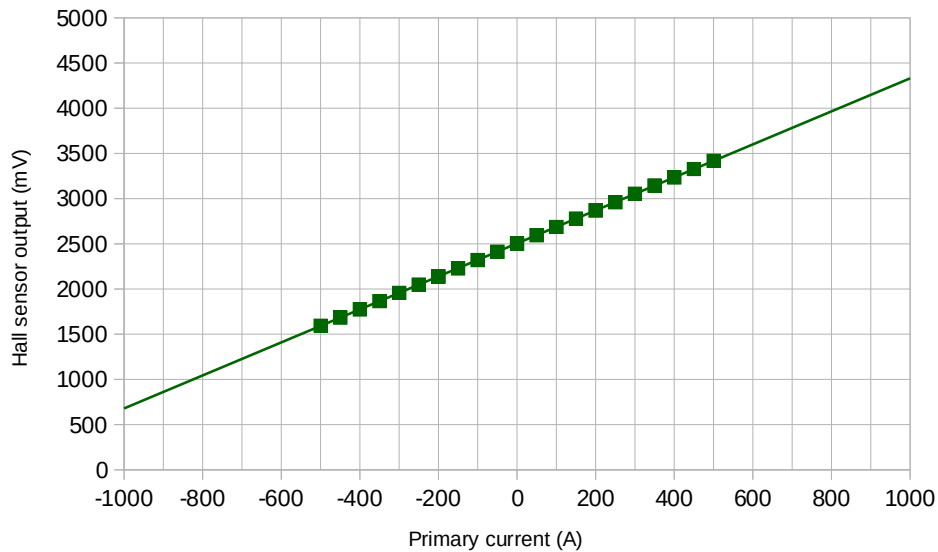
Module Dimensions



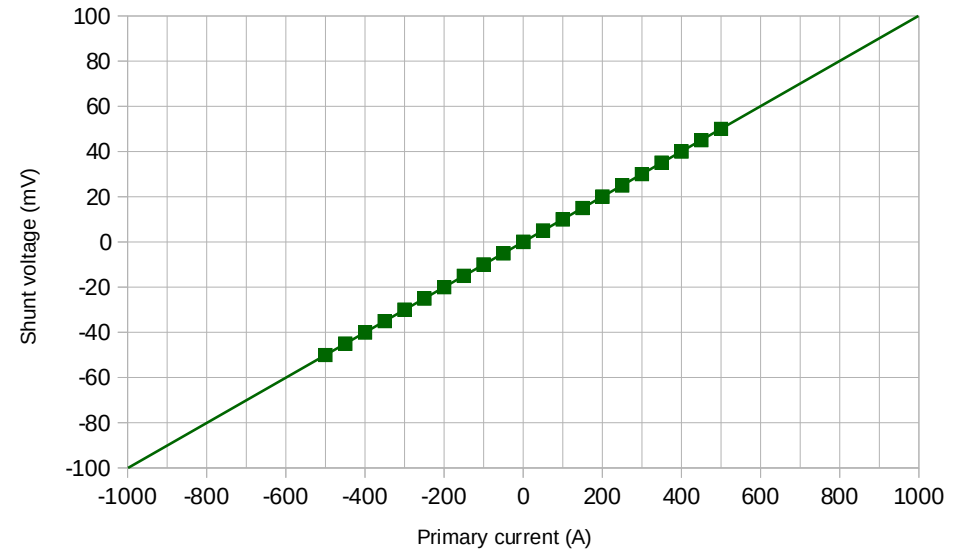
Experimental Results

- Module output as a function of primary current

Hall



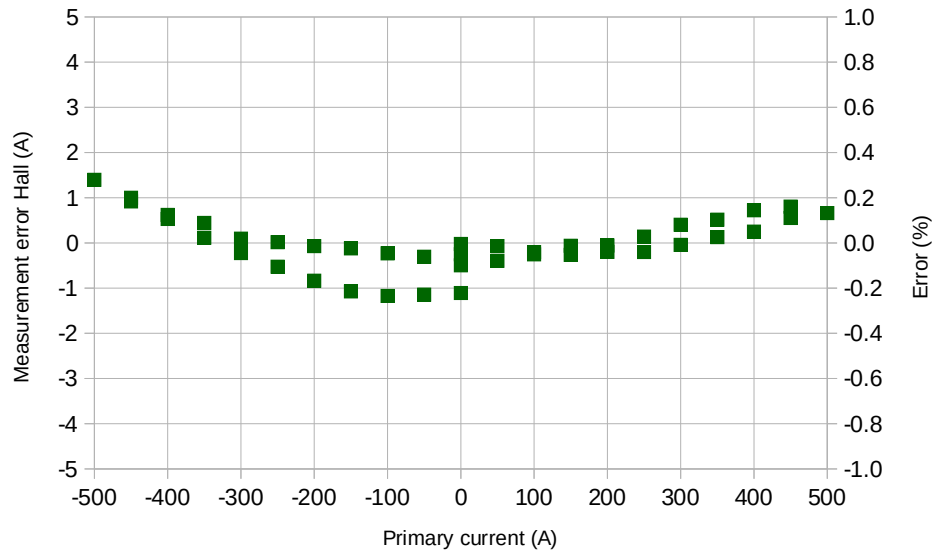
Shunt



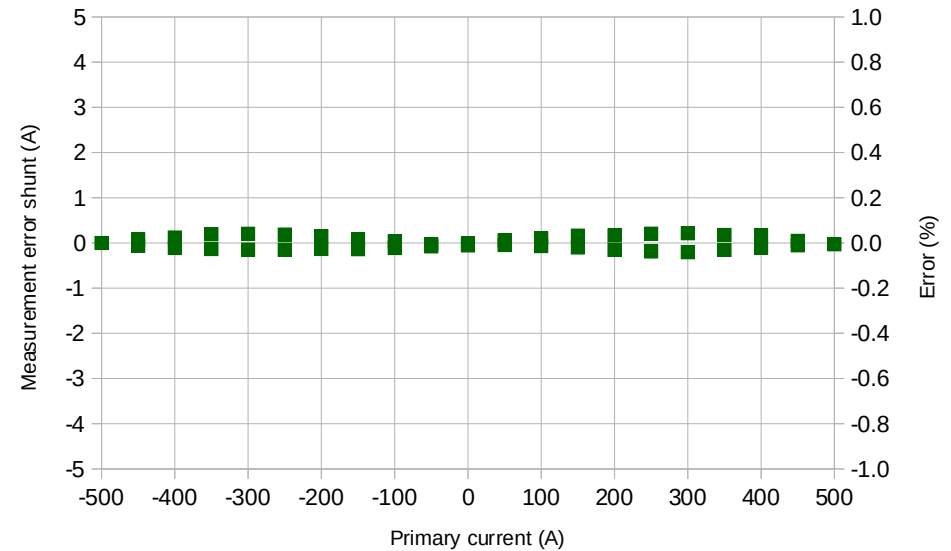
Experimental Results

- Output error as a function of primary current

Hall



Shunt



Conclusions

- Combined shunt and Hall current sensor for functional safety applications
- Compact design: Size of 60mm shunt
- High linearity and high accuracy
- Redundancy through shunt-based current sensing and contactless Hall-based current sensing

Thank you for choosing
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