



ISABELLENHÜTTE

**Press Release
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Current sensor controls high-speed electric motor

Isabellenhütte provides Formula 1 teams with controlled means of acceleration

Nine top teams are using the IVT-F current sensor made by Isabellenhütte Heusler GmbH & Co. KG, Hesse, Germany, during the 2012 Formula 1 season, which will start on March 18th in Melbourne, Australia. The module has been integrated in the so-called E-KER systems: E-KERS is an Electric Kinetic Energy Recovery System that was used for the first time in 2009 and which was integrated in Formula 1 cars again for the 2011 season.

E-KERS forms part of the power transmission of F1 cars. It converts kinetic energy won during the braking process into electricity with the help of an electric motor that also performs as a generator. This power is stored in lithium-ion batteries and fed back into an electric motor in strictly regulated quantities, which in turn boosts the Formula 1 car's combustion engine during acceleration periods. Isabellenhütte's IVT-F integrated current sensor controls the quantity of power supplied by the E-KERS. The Formula 1 aims to ensure in this way that the racing teams will not use E-KERS to break the rules. It took just two months to develop the modules and they are specifically designed for use in Formula 1. Isabellenhütte's measurement segment aims to cement its position as technological leader in the field of shunt-based current measurement with these products.

Jens Hartmann, Sales Director Measurement at Isabellenhütte Heusler GmbH & Co. KG comments: "We are already working on sensors for the 2013 and 2014 Formula 1 seasons."

IVT-F technical data

- Three-channel measuring system for current, voltage and temperature (I,U,T)
- Internal sample rate: 3.5KHz

- Fixed calculation of mean value over 16 sampling values
- U/I with input filter cut-off frequency of $f_g=350\text{Hz}$
- 500 Hz measured value output
- CAN-Bus with 1 MBit data rate
- Operating life: minimum 2,000 km

About Isabellenhütte Heusler

Isabellenhütte Heusler GmbH & Co. KG is a leader in the field of shunt-based current measurement technology. The company has combined its precision measuring systems under the new brand name ISAscale®. The company has been owned by the Heusler family since 1827. Around 650 staff are employed at its headquarters and production site in Dillenburg, Hesse.

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