

Influx Technology and Cambridge University Eco-Racing (CUER)

A Case Study by Amy Livingstone, Head of the Electrical Team (CUER)

Cambridge University Eco-Racing (CUER) is a student run society of 60 undergraduates affiliated with the University of Cambridge's Engineering Department who design, build and race solar powered vehicles. The main competition we take part in is a biennial endurance challenge consisting of a 3,000km journey across the Australian outback, travelling from Darwin to Adelaide.

CUER began using Influx's Rebel XT data logger including multiple add-ons such as the H-box for analogue instrumentation in 2013. We also had 3 software licences for the interface software, DiaLog. As we build a new car each 2-year cycle we have to do extensive testing in a short period of time, which requires maximising the data collected in each run. The Rebel XT data logger allows us to collect the information passing down the CAN bus, including safety related information such as battery cell temperature and performance data like the phase current into the motor. The H-box is used to read the analogue input from our steering angle sensor to a high resolution, while the DiaLog software is very helpful for performing initial data conversions and scaling, as well as viewing data on the go through the oscilloscope function.

We are currently in the process of validating the stability of the 2014 car using steering angle and yaw rate to determine the over steer and understeer. While undertaking constant radius tests and impulse response tests we needed to collect high resolution data over the course of the testing day in order to evaluate the effect of different weight distributions. The Rebel XT was a perfect solution to our data collection needs, allowing us to collect, not only the information we knew was needed for analysis, but also additional information such as acceleration which aided in further clarifying the results. Stability is a very important factor for our confidence in the car and ensuring the safety of our drivers, so the Rebel XT data logger is an extremely valuable data collection tool for us.



Influx Technology and Dearman

A Case Study

Dearman is a technology company developing zero emission power and cooling solutions. At the heart of Dearman's technology portfolio is an innovative piston engine powered by the rapid expansion of liquid nitrogen – the Dearman Engine. It's first application is a zero-emission transport refrigeration system.

The Challenge

The Dearman engine is the first engine to deliver efficient power and cooling from the expansion of a cryogen. Performance and durability in application testing is a vital part of its development. So it is crucial to see all data and to be able to select specific channels for reporting and performance iteration comparisons.

The Solution

Since May 2015, Influx's Rebel CT has enabled the Dearman team to remotely monitor the Dearman engine's health parameters – e.g. pressure and temperature.

The Future

The Influx Rebel CT will be an important part of the remote monitoring process. Its Wifi and GPRS connectivity will enable both the pioneering operator and the Dearman team to gauge the health and performance of the system remotely.



"The Influx Rebel CT continues to be an important part of our refrigerated transport application development programme. Dearman is bringing zero-emission power and cooling technology to market in a compressed time frame, and the Influx Rebel CT has supported our intensive application performance and durability testing programme with outstanding reliability."

Nick Owen, Chief Technology Officer, Dearman