Driving efficiency into electric vehicle R&D with wireless torque sensor

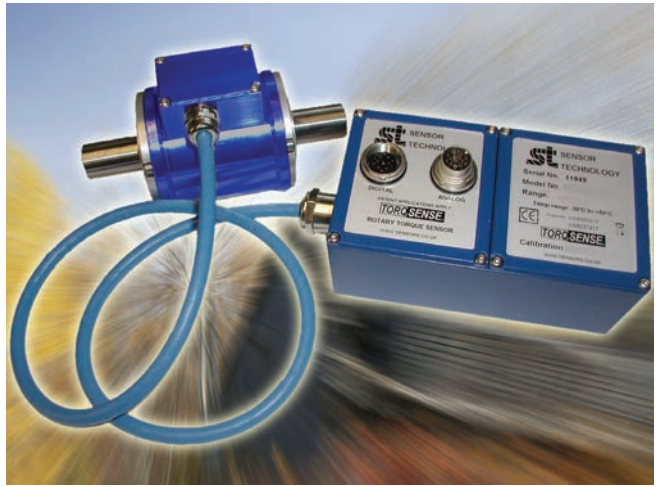
Sevcon in Gateshead, which designs and manufactures high-quality motor controllers and system components for hybrid and electric vehicles, uses TorqSense transducers from Sensor Technology of Banbury to standardise their equipment testing.

The stakes are high in the race to develop electric and hybrid vehicle technologies. Sevcon develops drives for electric vehicles such as fork lift trucks, aircraft tow vehicles, golf buggies and scooters.

Sevcon's latest GEN5 on-road electric motor controller is the result of a collaborative High Torque Density Switched Reluctance Drive System R&D project.

Sevcon's Howard Slater says: "In 2011 we focused on bus and truck applications, but many different vehicles need similar levels of power.

TorqSense is a wireless sensor, the aft twists very slightly when it rotates, the amount of deformation being proportional to the torque. TorqSense measures the deformation so that it can calculate torque. To do this two tiny piezoelectric combs are glued to the surface of the shaft at right angles to one another; shaft deformation will expand one comb and compress the other. An RF signal emitted by the TorqSense is reflected back by the combs, with its frequency changed in proportion to the combs' deformation.



"The procedure to set up the TorqSense is simple and takes only moments," says Mark Ingham of Sensor Technology. "Other technologies would probably take several hours to set up".

"TorqSense has an enormous overload capacity, which enables it to cope with robust and demanding test cycles, while its digital output signal can be fed into a computer for instant analysis."

www.sensors.co.uk