

## **Novel torque transducer technology can be integrated in critical power transmission components**

**Towcester – UK – May 2011:** A patented torque and force transducer technology called Pulsed Current Modulated Encoding (PCME) that offers exceptional performance even in extreme temperatures and harsh environmental conditions is now available from Ixthus Instrumentation.

Developed by the German sensor innovator NTC Engineering with UK and Ireland distribution through Ixthus, the technology is available in a range of standard products or can be integrated directly in performance critical torque transmission components without the need to make functional design changes. Such components can be submerged in oil or other mediums at high temperatures.

Employing an effect known as inverse magnetostriction, the sensor determines torque and force at high bandwidths with high accuracy and fine resolution where the magnetic properties of specially processed ferromagnetic object change in proportion to the mechanical forces acting upon it.

PCME technology comprises three key elements; a primary sensor such as a torque transmitting shaft which is processed to generate a directional magnetic field pattern when the force to be measured is applied, a secondary sensor unit which houses the measurement coils, and a third signal processing and conditioning module that can be located at a distance from the sensing elements.

These elements are available as competitively priced integrated torque sensors in standard pillow block and torquemeter designs with optional accuracy grades covering torques up to 3000 Nm, shaft speeds to 20,000 rpm and bandwidth to 30 kHz. Alternatively Ixthus can provide a complete design service in conjunction with NTC applications engineers to integrate PCME technology directly into customer's components. Due its low complexity and space saving features, the price-performance ratio for the complete component can be exceptionally high.

The technology has been successfully applied across a wide range of application areas including motorsports, automotive, aircraft & railways, engine & plant construction, and industrial test & measurement. Specific applications include load pins for shear force measurement on cranes, regulation and speed sensing for electric cycles, torque measurement on high speed wind turbine couplings, torque regulation on heavy duty materials processing, and KERS torque measurement for Formula 1 motorsports.

As well as the technological benefits of high temperature operation, insensitivity to shock and vibration, bending and radial forces, high speed data capture and low system complexity, other notable design characteristics of the PCME technology include insensitivity to bending and radial forces, operational temperature range from  $-40^{\circ}\text{C}$  to  $+250^{\circ}\text{C}$ , efficient power consumption of only 5 mA and long life/ maintenance free operation with no corrosion and no contacting parts.

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**IXTHUS**  
Instrumentation

High resolution image available for download from [www.tacticalmarcomms.com](http://www.tacticalmarcomms.com) under downloads for Ixthus.

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