

 Press Information

## MEMS Sensors

# TDK expands its high-temperature MEMS accelerometer portfolio for energy market applications

January 21, 2026

TDK Corporation (TSE:6762) announces the extension of its high-performance MEMS inertial sensors portfolio with Tronics AXO315<sup>®</sup>T1, a high-temperature MEMS accelerometer with  $\pm 14 g$  input range and a digital interface for measurement while drilling (MWD) applications operating up to +175 °C.

With this launch, TDK is taking the next step in temperature robustness, following the release of the Tronics AXO315T0 in June 2025 — its first digital MEMS accelerometer to be qualified for oil and gas applications at temperatures of up to +150 °C. This confirms the company's position as a leading provider of high-reliability MEMS inertial sensors for precise downhole navigation in extreme environments.

The AXO315T1 is powered by TDK's unique closed-loop architecture, which has already been proven on several Tronics sensors. This architecture enables a 10x improvement in vibration rectification error compared to traditional open-loop MEMS accelerometers. The device is a cost-effective, digital, and low-SWaP (Size, Weight, and Power) alternative to quartz accelerometers for inclination measurement in directional drilling tools operating in harsh temperature and vibration conditions.

With a lifetime of more than 1000 hours at +175 °C, it paves the way for a new generation of MWD tools to meet the accuracy and productivity requirements of complex and unconventional drilling operations.

AXO315T1 sensors and evaluation boards are available for sampling and customer evaluations.

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### Glossary

– *g*: Standard gravity (9.806 m/s<sup>2</sup>)

### Main applications

- Measurement while drilling (MWD)
- Logging while drilling (LWD)
- Directional drilling
- Wireline

**Main features and benefits**

- Input range (one axis).  $\pm 14 g$
- Temperature range:  $-30\text{ }^{\circ}\text{C}$  to  $+175\text{ }^{\circ}\text{C}$
- Bias residual error over temperature range:  $1.7\text{ mg}$
- Powered lifetime:  $>1000$  hours at  $+175\text{ }^{\circ}\text{C}$
- Vibration rejection:  $20\text{ }\mu\text{g}/g^2$
- Noise density:  $10\text{ }\mu\text{g}/\sqrt{\text{Hz}}$

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**About TDK Corporation**

TDK Corporation (TSE:6762) is a global technology company and innovation leader in the electronics industry, based in Tokyo, Japan. With the tagline “In Everything, Better” TDK aims to realize a better future across all aspects of life, industry, and society. For over 90 years, TDK has shaped the world from within; from the pioneering ferrite cores to cassette tapes that defined an era, to powering the digital age with advanced components, sensors, and batteries, leading the way towards a more sustainable future. United by TDK Venture Spirit, a start-up mentality built on visions, courage and mutual trust, TDK’s passionate team members around the globe pursue better—for ourselves, customers, partners, and the world. Today, the state-of-the-art technologies of TDK are in everything, from industrial applications, energy systems, electric vehicles, to smartphones and gaming, at the core of modern life. TDK’s comprehensive, innovative-driven portfolio includes cutting-edge passive components, sensors and sensor systems, power supplies, lithium-ion and solid-state batteries, magnetic heads, AI and enterprise software solutions, and more—featuring numerous market-leading products. These are marketed under the product brands TDK, EPCOS, InvenSense, Micronas, Tronics, TDK-Lambda, TDK SensEI, and ATL. Positioning the AI ecosystem as a key strategic area, TDK leverages its global network across the automotive, information and communication technology, and industrial equipment sectors to expand its business in a wide range of fields. In fiscal 2025, TDK posted total sales of USD 14.4 billion and employed about 105,000 people worldwide.

**About Tronics Microsystems**

Tronics Microsystems, a TDK Group Company, is a provider of MEMS (Micro-Electro-Mechanical-System) inertial sensor solutions for precise motion sensing, positioning, navigation, and condition monitoring of critical assets. The company offers a comprehensive range of accelerometers, gyroscopes, vibration sensors, and inertial MEMS foundry services, contributing to the digital transformation of transportation, energy, and industrial markets. Founded in 1997, Tronics employs around 100 people in Crolles, near Grenoble (France), where it operates its EN 9100-certified MEMS wafer fab, assembly, packaging, and test facilities.

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