

Corporate

TDK and LEM set to collaborate on next-generation TMR-based integrated current sensors for electrification applications

- TDK is a leading magnetic sensor solution provider that pushes forward in the expansion of its product portfolio for electrification in automotive applications and renewable energy and industrial applications.
- LEM is a leader in electrical measurement with a primary focus on the automotive and industrial markets.
- Demand for current sensing has grown rapidly due to continuing electrification trends.

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TDK Corporation (TSE:6762) and LEM International SA (SIX:LEHN) announce that they have entered into a development agreement of custom TMR dies for next-generation integrated current sensors.

TDK, a leading magnetic sensor solution provider, headquartered in Japan will develop tunnel magnetoresistance (TMR) dies for LEM. LEM, a leading current sensing expert, headquartered in Switzerland will incorporate these TMR dies into their integrated current sensors (ICS), a critical component used in rapidly expanding electrification applications like onboard chargers (OBCs) in EVs.

This collaboration will further position TDK's TMR technology to succeed in the automotive and industrial markets, two sectors in which LEM brings deep expertise, especially in booming segments such as energy storage, motor drives, and solar inverters. TDK expects to bolster its market position on magnetic sensors by offering superior products that support existing and upcoming applications in market trends like energy transformation (EX) and digital transformation (DX).

LEM selected TDK as a partner based on its best-in-class technology performance – including accuracy and noise – as well as reliable supply, automotive quality, and process maturity. The current sensor market is fragmented and requires high volume and cost-effective products. For this promising market, TDK and LEM will produce a sensor that is faster, more accurate, and with lower noise than existing solutions.

“As the technology leader of magnetic sensor solution provider, we are proud of this collaboration,” said Takao Tsutsui, CEO of the Sensor Systems Business Company of TDK Corporation. “The combination of our TMR technology and LEM's expertise in electrical measurement will generate outstanding new products for various market segments requiring electrification”.

“LEM is convinced about the benefits of this collaboration, and feedback from our customers has already been very positive regarding a next generation of TMR-based integrated current sensors,” stated Frank Rehfeld, CEO of LEM. “These positive reactions, the megatrend in electrification, and TDK's and LEM's deep expertise will contribute to the success of this collaboration.”

Consumer behaviors and escalating global factors in multiple geographies and legislative bodies are driving growth in electrification. Europe, Asia, and North America are seeing an uptick in sales of EVs as incentives grow and fossil fuel use is discouraged. Yole Développement identifies promising applications and positioning by key players, such as TDK, and LEM, to drive the magnetic sensor market to \$4.5B in 2027*.

* As of 2022, according to Yole Développement's [Magnetic Sensor 2022 Report](#)

Glossary

- ICS: integrated current sensor
- TMR: tunnel magnetoresistance

Main applications

- Automotive
- Industrial
- Electric vehicles
- Onboard chargers
- Autonomous mobility

Main features and benefits

- Reduced noise
- Reduced power consumption
- Increased sensing speed

About TDK Corporation

TDK Corporation is a world leader in electronic solutions for the smart society based in Tokyo, Japan. Built on a foundation of material sciences mastery, TDK welcomes societal transformation by resolutely remaining at the forefront of technological evolution and deliberately “Attracting Tomorrow.” It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products. TDK’s comprehensive, innovation-driven portfolio features passive components such as ceramic, aluminum electrolytic and film capacitors, as well as magnetics, high-frequency, and piezo and protection devices. The product spectrum also includes sensors and sensor systems such as temperature and pressure, magnetic, and MEMS sensors. In addition, TDK provides power supplies and energy devices, magnetic heads and more. These products are marketed under the product brands TDK, EPCOS, InvenSense, Micronas, Tronics and TDK-Lambda. TDK focuses on demanding markets in automotive, industrial and consumer electronics, and information and communication technology. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2023, TDK posted total sales of USD 16.1 billion and employed about 103,000 people worldwide.

About LEM International SA

Leading the world in electrical measurement, LEM engineers the best solutions for energy and mobility, ensuring that our customers’ systems are optimized, reliable and safe. Our 1,700 people in 17 countries transform technology potential into powerful answers. We develop and recruit the best global talent, working at the forefront of megatrends such as renewable energy, mobility, automation and digitization. With innovative electrical sensors and solutions, we are helping our customers and society accelerate the transition to a sustainable future. Listed on the SIX Swiss Exchange since 1986, the company’s ticker symbol is LEHN. www.lem.com

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