AksIM-4™ with HIPERFACE DSL protocol:
Market-leading absolute encoder, soon even easier to integrate in servo motor applications

PRESS RELEASE

September 2025 – RLS, a leading global supplier of high-performance encoders, will soon introduce the AksIM-4™ absolute encoder with HIPERFACE DSL® (HDSL) protocol. This upcoming product will combine the proven capabilities of the AksIM-4 series with seamless one-cable connectivity for servo motor applications – setting a new benchmark for compact, high-resolution motor feedback systems. AksIM-4 will be the first open PCB hollow shaft encoder supporting HDSL communication protocol.

The team SICK visits the RLS headquarters on 22 April 2025 – cooperation on HIPERFACE DSL integration is strengthened and the way is paved for the market launch of the AksIM-4™ with HDSL protocol.

Already established as the absolute no. 1 position encoder in robotics, the AksIM-4 will be further optimized for automation and embedded motion control platforms through the integration of the HDSL protocol – a fast, digital communication protocol based on RS-485.

"Integrating motor feedback shouldn't add complexity. With AksIM-4 HDSL, engineers will get the performance they expect from our encoders – along with simpler cabling, faster setup, and lower system costs." Matej Polak, Product Manager for AksIM encoders at RLS

The AksIM-4 HDSL will be developed for space-constrained applications in industrial automation, and servo systems. Its flat PCB readhead combined with axially magnetised rings will enable precise, non-contact absolute position feedback, while minimizing system integration complexity. In addition, the encoder will support advanced features such as real-time temperature and speed monitoring, diagnostics and self-calibration through a robust resource communication structure.

"The AksIM-4 will be a perfect addition to our portfolio of HIPERFACE DSL supporting products and supporting a multi-sourcing strategy of OEMs. Its open PCB and hollow-shaft design will offer the kind of flexible, high-performance encoder our customers are looking for in integrated and space-sensitive motor solutions." Clemens Bitsch, Strategic Product Manager & Business Development Manager for Industrial Sensing at SICK AG

The integration of the HDSL protocol will enable power and communication to be transmitted over a single shielded twisted pair – reducing cable volume, simplifying installation, and allowing real-time data exchange for predictive maintenance and enhanced machine diagnostics. The protocol will support plug-and-play

functionality and data handling, helping machine builders streamline commissioning and improve system reliability.

The AksIM-4 provides true absolute off-axis measurement in a compact, hollow-shaft format, supports up to 20-bit singleturn and 16-bit multiturn resolutions and withstands harsh operating environments with high resistance to shock, vibration and temperatures ranging from –40 °C to +105 °C. A built-in self-calibration function also helps to simplify system setup and ensure long-term accuracy.

Availability

The samples of AksIM-4™ with HDSL protocol will be available from November 2025.

More information:

For detailed specifications, data sheet or to request a sample, please visit:

www.rls.si/AksIM-HDSL and https://hiperfacedsl.com/

About SICK:

SICK AG is a global leader in sensor technology and industrial automation. As the developer of the HIPERFACE DSL® protocol, SICK offers a robust, digital one-cable interface that simplifies the integration of motor feedback while enabling advanced diagnostic and safety functions.

About RLS:

RLS is a renowned manufacturer of high-performance magnetic encoders and linear encoder systems. With a strong focus on innovation and quality, RLS products are used worldwide in robotics, industrial automation and other demanding motion control applications.

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