

## News from RLS

January 2018 – for immediate release

### NEW AKSiM-2 absolute encoders with improved performance and design

Following the success of AksIM absolute magnetic encoders in January 2013 the Slovene developer and producer of magnetic encoders, RLS d. o. o. has just launched the second generation of absolute magnetic ring encoders, AksIM-2. AksIM absolute encoders are widely used in robotic applications, including humanoid robots by PAL Robotics, Spain and collaborative robots by [Universal Robots](http://www.universal-robots.com), Denmark and the new generation of AksIM-2 encoders is promising to bring even more value to the robotic market.

Aljaz Ogrin, Senior Engineer and Product Manager for AksIM products has revealed that with the robotic market getting stronger and the applications more versatile, the absolute encoder products are becoming more popular than ever. In robotic applications, encoders are mainly used to monitor the rotation of the robot's joint. The unique design of AksIM absolute magnetic encoders allows them to be installed on the speed reducer's output which brings the advantage of directly monitoring the actual rotating angle of the robot's joint. This approach eliminates several system errors, resulting in the repeatability of  $\pm 0.1$  mm, which is sufficient to meet the majority of robotic market needs.

Adding to the renowned AksIM true absolute magnetic encoder technology where absolute position is determined immediately upon power-on without the need of a battery backup the main benefits of AksIM-2 encoders are:

- Compensation of the ring's eccentricity error after encoder installation with upgraded AksIM-2 self-calibration feature
- Remembering of shaft turns and compensation for  $<90^\circ$  rotation during power-off by use of shaft turn counter
- Extended operating temperatures and significantly increased immunity to external magnetic fields.

AksIM-2 has a built-in advanced self-monitoring function, continually checking several internal parameters. Error reporting, warnings and other status signals are available on all communication interfaces and are visualised with the on-board LED. Absolute position can be output through SSI, bidirectional BiSS-C, asynchronous serial communication interfaces and is available in a range of binary resolutions up to 20 bits per revolution. An optional, 16 bit multiturn (shaft turn) counter is also available.



AksIM-2 encoders are available in a variety of shapes and sizes (29 mm, 39 mm, 49 mm, 53 mm, 64 mm and 80 mm outer diameter) and the low profile design makes them suitable for integration into space-constrained applications. Connection options include Molex connector, FCI or soldering pads.

Along with the new hardware design, the firmware has also been improved, enabling AksIM-2 to read position at an update rate of up to 20 kHz, thus increasing servo bandwidth.

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The ring's magnetization pattern has been updated for better immunity to external magnetic fields up to  $\pm 25$  mT. For harsh environmental conditions, AksIM-2 encoders operate in extended temperatures from  $-40$  °C to  $+105$  °C and are highly resistant to shock and vibrations.

AksIM-2 encoders are suitable for use in industrial and medical applications. A typical application is a robotic arm joint with a cable feed running through the ring or a precision gearbox where the ring is attached to the transmission output shaft. Custom design service for OEM integration is available.

Availability: Now, at [www.rls.si/aksim-2](http://www.rls.si/aksim-2)  
For more information visit [www.rls.si/aksim-2](http://www.rls.si/aksim-2) or contact your local distributor at [www.rls.si/support](http://www.rls.si/support).

RLS is a world leader in the development of high performance magnetic encoder feedback solutions and together with its associate company Renishaw offers worldwide sales and technical support.  
[www.rls.si](http://www.rls.si), [www.renishaw.com](http://www.renishaw.com)

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