



Redefining Repeatability in Screen Printing with the Artos Encoder System

CASE STUDY

Customer:

INO d.o.o., Žiri, Slovenia

Industry:

Printing

Challenge:

Maintaining precise and repeatable printing-table positioning while avoiding time-consuming homing after machine interruptions.

Solution:

Artos™ absolute linear magnetic encoder system

BACKGROUND

Industrial screen printing is used for much more than decorative graphics. It also plays an important role in manufacturing applications such as printed electronics, where functional materials are printed onto thin sheets and films. In these applications, accurate positioning is particularly important because successive printed features must align correctly.

INO is a Slovenian, family-owned manufacturer of screen-printing and automation equipment. One of its solutions is the **PRINT M family**, a range of high-precision, sheet-fed screen printing machines. These machines were developed particularly for sensitive materials and applications where accurate, repeatable printing is required.

Its modular design allows customers to begin with a manual or semi-automatic configuration.

The system can later be upgraded to fully automatic production without replacing the base printing unit. This also means that settings established during R&D can be carried over as production grows.



PRINT M6 modular screen printing machine

CHALLENGE

A key element of the PRINT M machine is its moving printing table. To produce consistent results, the machine needs to know the table's exact linear position throughout the printing process.

With a positioning system that needs to establish its reference point again after a restart, the machine must perform a homing sequence. This adds time to the restart process and therefore increases downtime.

For INO, eliminating this extra step was important as the company expanded its work in printed electronics, where requirements for accuracy and repeatability continue to increase. The position sensor also needed to be straightforward to install and sufficiently protected for use inside an industrial machine.



Right from the beginning, the requirement was that we do not lose position during cycle interruptions, which is why we decided on an absolute encoder.

– Tilen Justin, Mechanical designer

SOLUTION

INO selected the **Artos™ absolute linear magnetic encoder system** to measure the precise position of the printing table.

Unlike incremental systems, Artos delivers absolute position information immediately after power-up, allowing the machine to begin operating without a homing sequence. Its non-contact magnetic measuring principle eliminates mechanical wear between the sensor and scale while maintaining accurate position measurement over the full travel of the axis.

The compact design and straightforward integration make Artos well suited to the modular architecture of the PRINT M family, supporting both standard and customised machine configurations.

By integrating the Artos absolute linear encoder system, INO has created a printing solution that combines modularity with high positioning accuracy.

The encoder supports reliable machine operation, repeatable print registration and simplified commissioning, while reinforcing the company's vision of scalable industrial printing solutions.

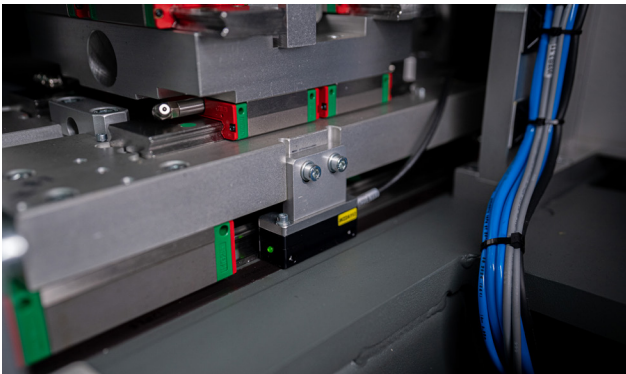


Artos absolute linear magnetic encoder

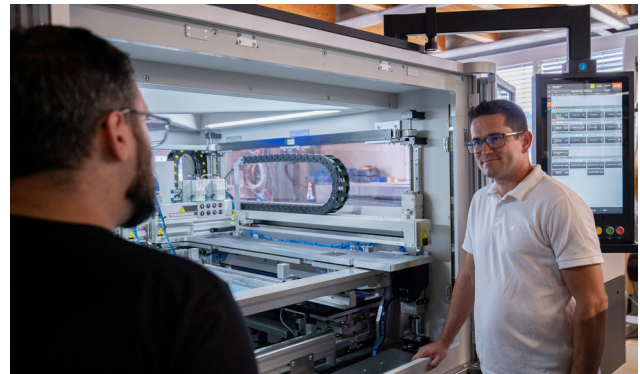
RESULTS

Integrating the Artos absolute linear encoder system enabled INO to achieve highly accurate, repeatable positioning of the printing table, contributing to stable, consistent print quality. The ability to provide absolute position immediately after a power loss or system restart eliminates the need for homing, reducing machine start-up time and increasing productivity.

The straightforward integration, robust design and reliable operation in an industrial environment have made Artos a dependable part of the PRINT M family. According to INO, the complete system achieves an overall print repeatability of $\pm 20 \mu\text{m}$, delivering the positioning performance required for demanding screen printing applications.



Artos encoder installation



INO screen printing machine

FUTURE GOALS

INO plans to continue strengthening its presence in printed electronics, an area where requirements for accuracy and repeatability are becoming increasingly demanding. As these applications develop, dependable position feedback will remain an important part of maintaining consistent machine performance.

Based on its experience with Artos, INO expects to continue using RLS encoder technology as its screen printing solutions evolve.



ABOUT INO

INO is a Slovenian family-owned engineering company that develops and manufactures industrial screen printing and automation equipment. The company supplies individual machines as well as complete production lines for applications including printed electronics, textile heat transfers and other precision manufacturing processes. Its engineering, software, assembly and commissioning capabilities are developed in-house, enabling INO to support customers from initial process development through industrial production.

For more information visit ino.tech

ABOUT RLS

RLS is a Renishaw associate company. RLS produces a range of robust magnetic rotary and linear motion sensors for applications such as industrial automation, metalworking, textiles, packaging, electronic chip/board production, robotics and more.

RLS d. o. o.

Poslovna cona Žeje pri Komendi
Pod vrbami 2
SI-1218 Komenda
Slovenia

T +386 1 5272100
E mail@rls.si

www.rls.si

For worldwide contact details,
visit www.rls.si/contact.

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