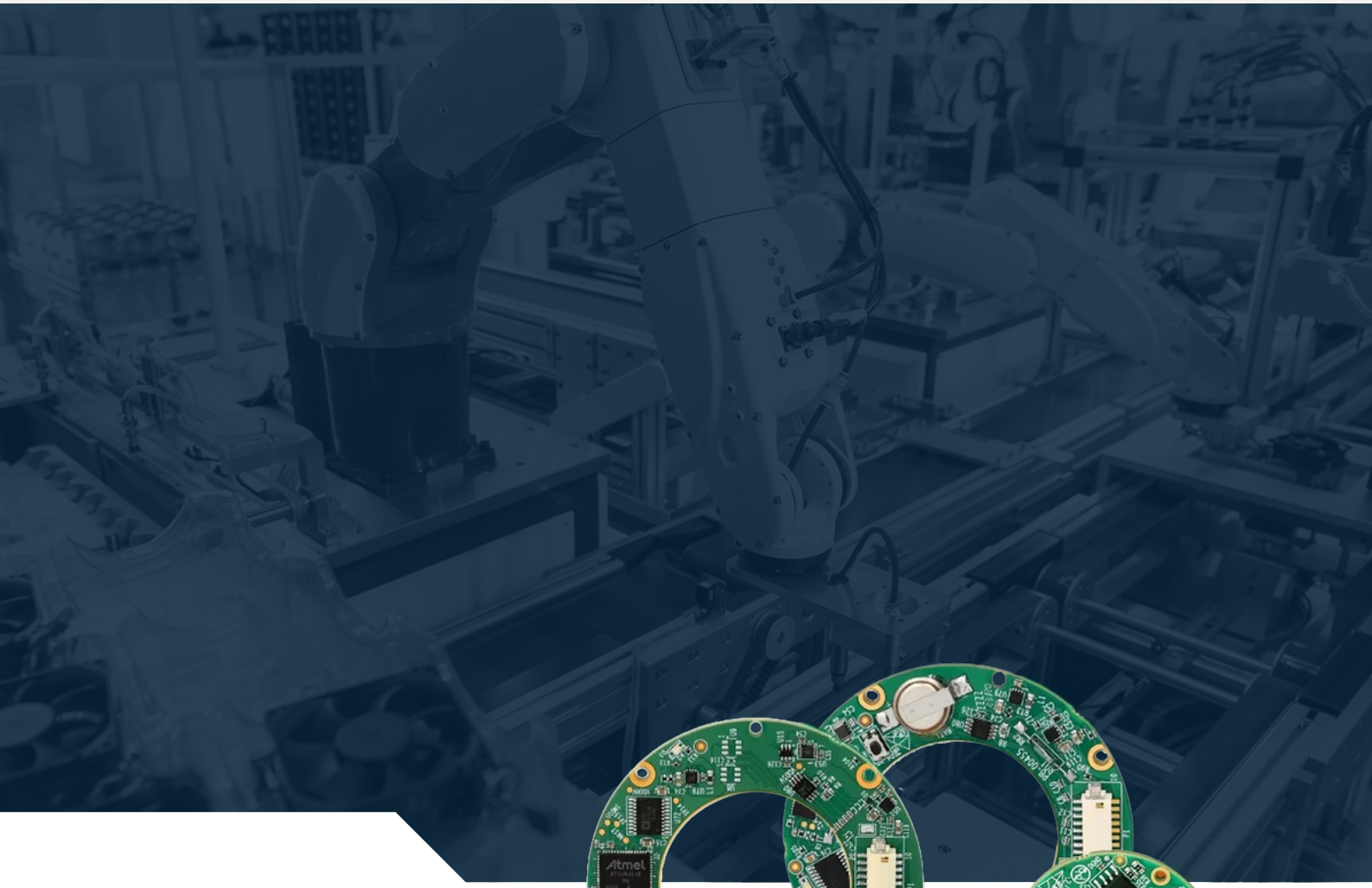


PENLINK

INTRODUCTION

New Absolute Rotary Encoders for Industrial Automation

Our high precision rotary encoders are designed with new Q-Core processing, enabling quick and precise positioning. The VLX and DS product lines offer low-cost OEM position sensors for automotive, medical, robotics, and industrial automation applications.

The extremely compact and low-profile design fits into the demanding design of the robotic joint. It can be used both for position feedback and for optimizing the commutation of the frameless motor while enabling passage of leads through the hollow shaft.

Application Focus

- → Industrial Robots and Collaborative robots
- → Medical and Surgical Robots
- → Wafer Handling in the Semiconductor Industry

PENLINK SOLUTION

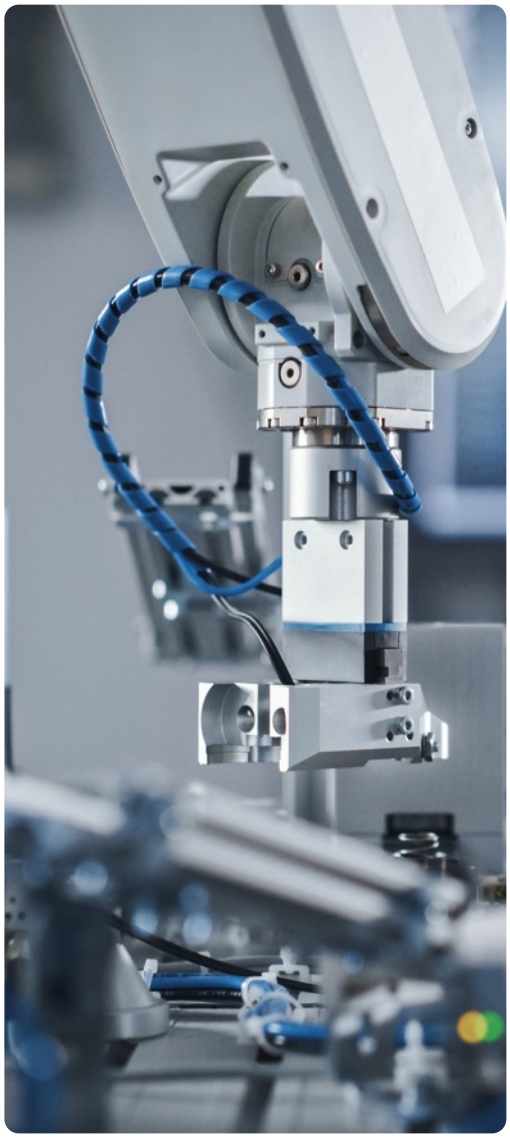
The Ultimate Position Sensors

Our encoders, designed and manufactured under the ISO 13485:2016 standard for medical devices, deliver the reliability and accuracy needed for your high-end medical equipment. They are fully resistant to magnetic fields, making them ideal for the compact mechanical designs of servo drives and motors.

The contactless design ensures precise, fast, and controllable motion without generating particles.

These cost-effective OEM position sensors, featuring advanced Q-Core processing, are perfect for industrial and medical robotics, automotive, and industrial automation applications.

Built to endure demanding environments, our encoders comply with EMC standards IEC 6100-6-2 and IEC 6100-6-4, and function in temperatures ranging from -25°C to +65°C. They can withstand up to 98% relative humidity (non-condensing), endure shocks of 100g for 11 ms, and resist vibrations of 20g across 10 to 2000 Hz.



Typical Environment Conditions

EMC	IEC 6100-6-2, IEC 6100-6-4
Operating Temp. Range	-25°C to +65°C
Relative Humidity	< 98% non-condensing
Shock Endurance	100 g for 11 ms
Vibration Endurance	20 g for 10 to 2000 Hz

ELECTRICAL ENCODERS

Encoders for Industrial Robots and Cobots

The "Cobot," a compact anthropomorphic arm joint, is designed for flexible production lines that require a compact layout and high precision for accurate assembly. This necessitates reliable position data to ensure high accuracy and stability.

Our VLX 60 electrical encoder can be seamlessly integrated into the robotic arm along with a frameless motor and servo drive. The VLX 60 is compact, low-profile, lightweight, and features a wide bore, making it ideal for high-level integration in low-profile arm joint designs. Its frameless and contactless design adds negligible weight, introducing no extra mass or inertia to the system.

Technological Advantages

- → Magnetic Interference Immunity: Works well near motor magnets.
- → High Resolution & Accuracy: Very precise rotation.
- → Digital Interfaces: Compatible with SSi and BiSS.
- → Safety Algorithms: Real-time safety checks.

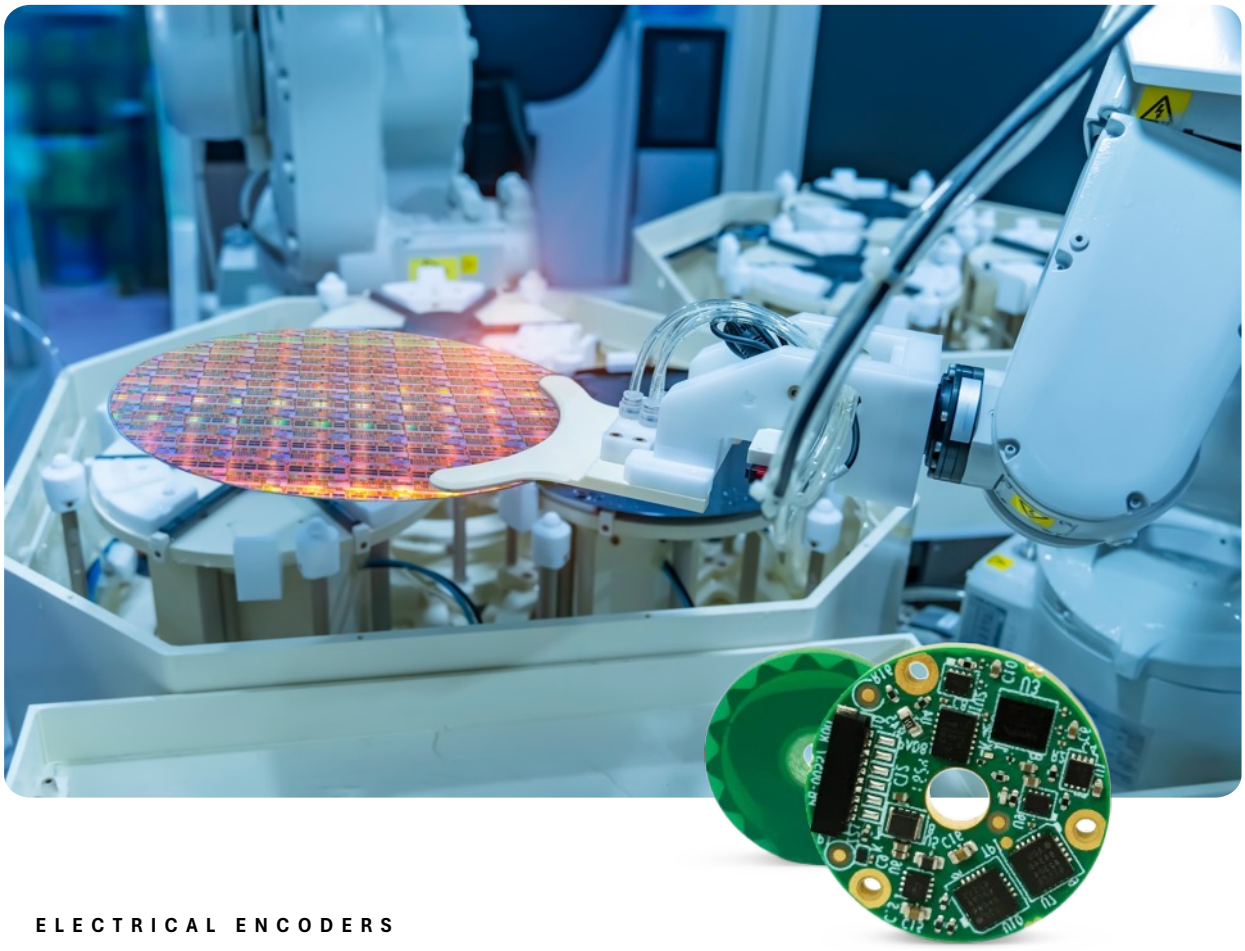
ELECTRICAL ENCODERS

Encoders for Surgical Robots

For certain medical procedures, surgical robots are increasingly preferred over the human hand. The human hand may lack the necessary stability with a scalpel, be too large, or require multi-joint articulation to access hard-to-reach areas. Surgical robots are becoming more prevalent in performing spine operations, delicate brain surgeries, and interbody probes that reach the abdomen without the need for costly and dangerous full surgical operations.

Our miniature DS-16 electric encoder is a reliable, high-precision device that consistently delivers excellent performance. Its compact dimensions are specifically designed for integration into high-end surgical robots, ensuring accurate and reliable measurement of the robotic arms' exact position throughout the entire surgical procedure.

The DS line of encoders is immune to magnetic fields and resistant to "surgical energy," providing stable position measurements in the demanding environment of remote surgery. These encoders meet the highest standards required by certification authorities for surgical robots.



ELECTRICAL ENCODERS

Encoders for Semiconductors

For semiconductors it's important to control the polarizer rotary axis of the machine. This system is used in the testing process to support the development and production of micro-IC devices.

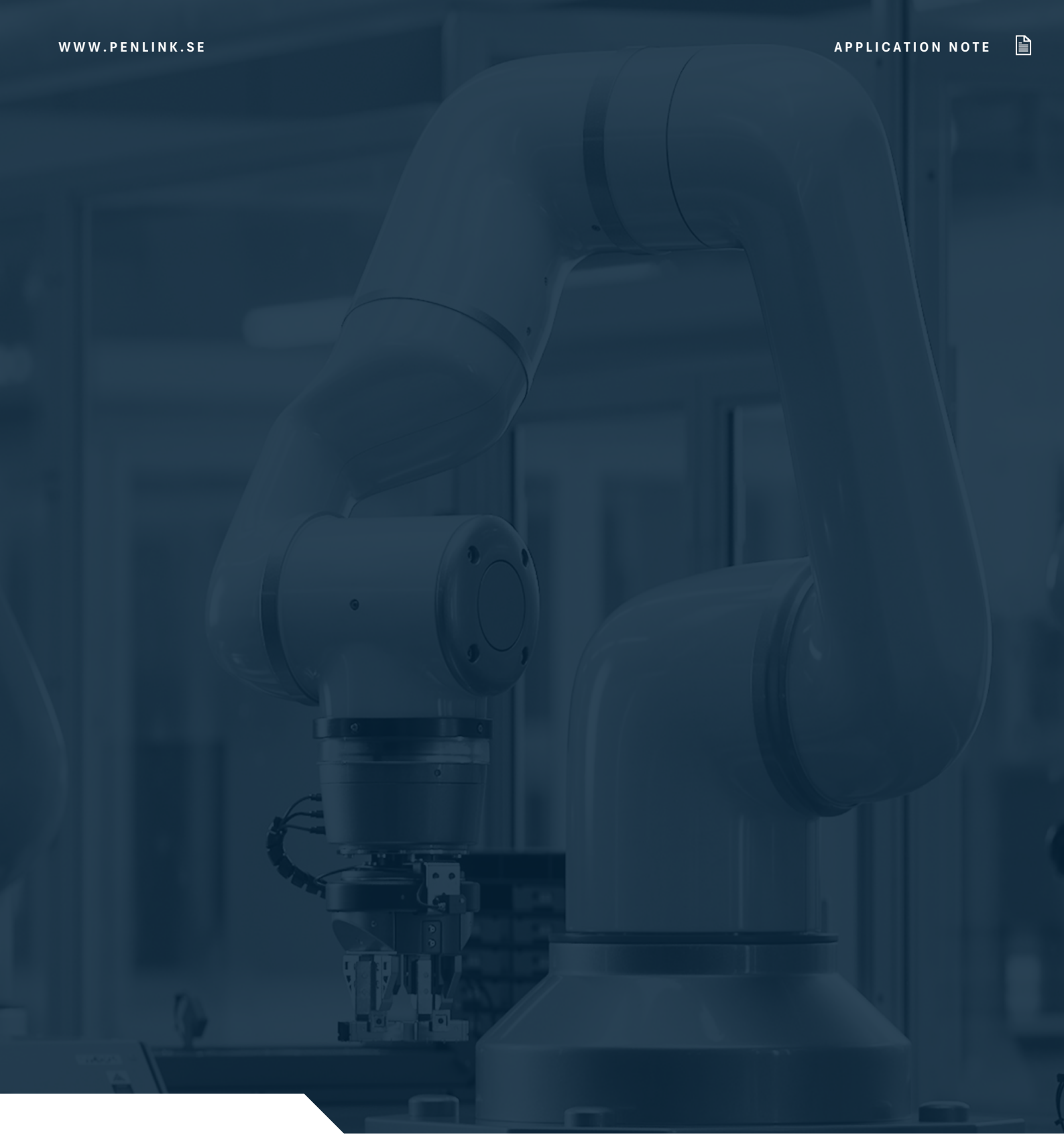
Our encoders can be incorporated on the load with a near-by frameless motor and servo drive. The compact, low profile, lightweight and wide bore allows for high level and easy integration for a low-profile design. With the frameless and contact-less body and a negligible rotor weight there will be no operating mechanical parts, which results in a long-lasting operational time and causes no extra weight & inertia (load) to the system.

The encoders are immune to magnetic interference: Can be very close to frameless motor magnets. High resolution 17-19 bit & accuracy < 0.010 deg for smooth and high accuracy rotation with high repeatability of 1 count.

Technological Advantages

→ Standard digital serial interfaces, SSi, BiSS.

→ Special safety algorithms with real-time BIT (Built-In Test) over SSI or BiSS.



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PENLINK

No matter what solutions you are looking for we have the knowledge and resources to design and manufacture customized options if needed. Which makes it easier for you to get the right component for your project.