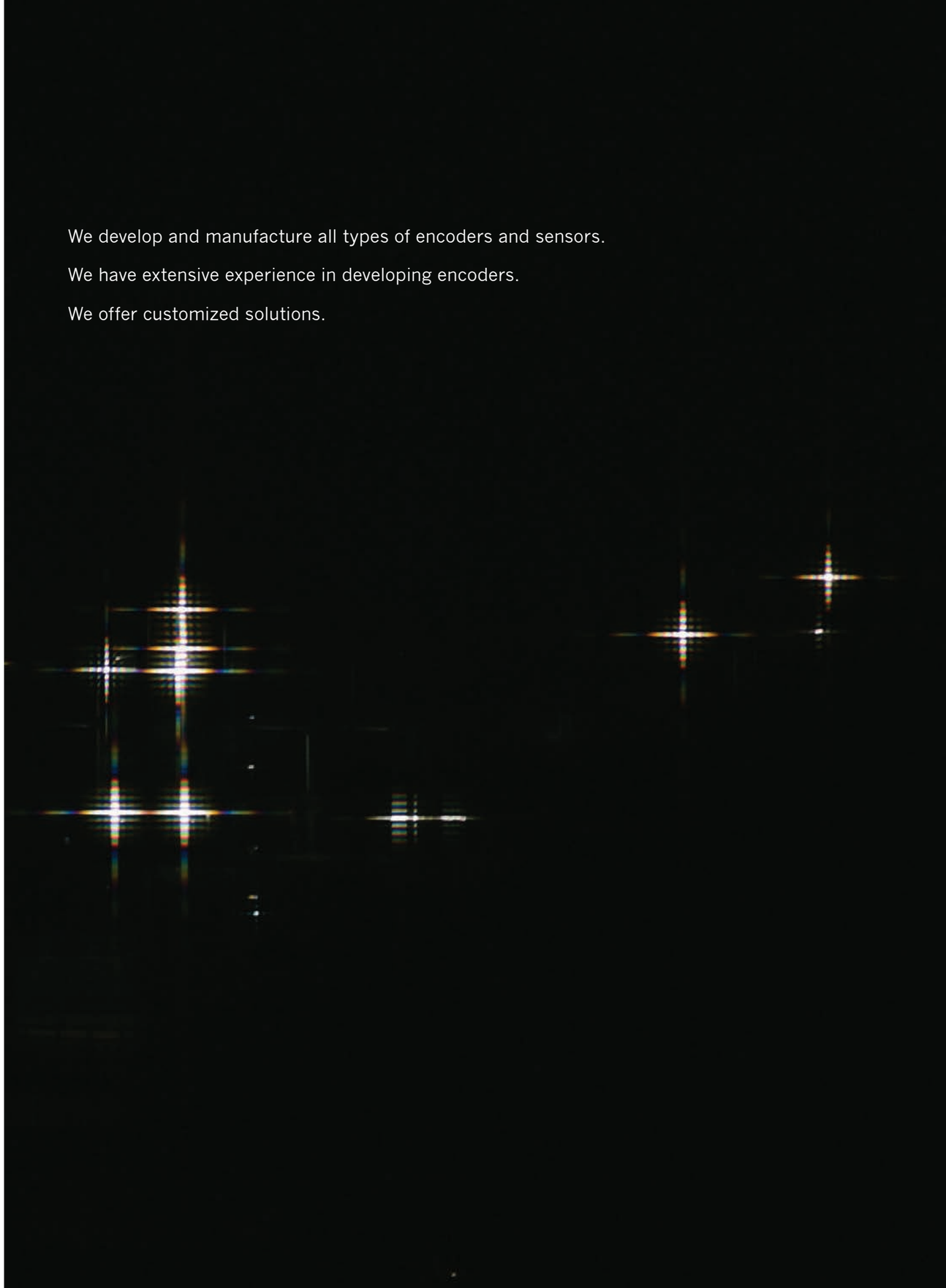

Encoders for Every Where
NRTSensors

NRTSensors

We develop and manufacture all types of encoders and sensors.

We have extensive experience in developing encoders.

We offer customized solutions.



NRTSensors

Who we are

NRTSensors, established in July 2022, is the only team in Korea capable of developing and producing all types of encoders.

What we do

We are the first team in South Korea to successfully localize high-resolution magnetic encoders for collaborative robots. Up to now, we have been manufacturing and developing a wide range of encoders in various fields that can be applied to numerous applications.

We have the capability to develop and manufacture encoders of all types. We can also customize our products to meet the specific requirements of the customers, providing a wide range of options.

Products & Solutions

NRTSensors has been developing and manufacturing nearly all known types of encoders and sensors.

We develop and manufacture optical encoders using Reflective Optical technology, both for rotary encoders and linear encoders. Leveraging the characteristics of Reflective Optical technology, we produce a wide range of encoders, including high-precision encoders commonly used and even ultra-compact/miniature type encoders.

We utilize traditional inductive technology to develop products for inductive encoders. We offer customized solutions for rotary and linear encoders, and other types of encoders, catering to diverse systems' needs. Inductive encoders are known for their high precision measurement capabilities and remarkable robustness to the noise like vibration, dust, moisture, external magnetic interference. These qualities make them highly suitable for a wide range of challenging environments where traditional optical or magnetic encoders may not be well-suited, providing excellent usability and performance.



We possess extensive experience in developing encoders suitable for collaborative robots, factory automation equipment, and various types of motors. We have a diverse range of encoder solutions to design and develop encoders tailored to meet customer needs. With a focus on reducing product development lead time and ensuring product reliability, We are dedicated to precisely meeting customer requirements, providing encoder and sensor solutions that guarantee stability and cater to their specific needs.

With a high level of technical expertise and extensive experience in product development, including the successful localization of Inductive Encoders for the first time in Korea, We provide support to both domestic and international industries. We are driving advancements in new technology development. Furthermore, we offer a range of technologies tailored to customers' needs, proposing and supporting various solutions for the robotics and control industries.

We make significant contributions to enhancing the competitiveness of various domestic products and applications by utilizing diverse encoder technologies to develop and manufacture encoders from ultra-compact/miniature to tough environments with proper encoder solutions according to the specific needs of their customers.

Furthermore, we maximize customer satisfaction by providing various products and technical support needed for control and motion applications as well.



Vision

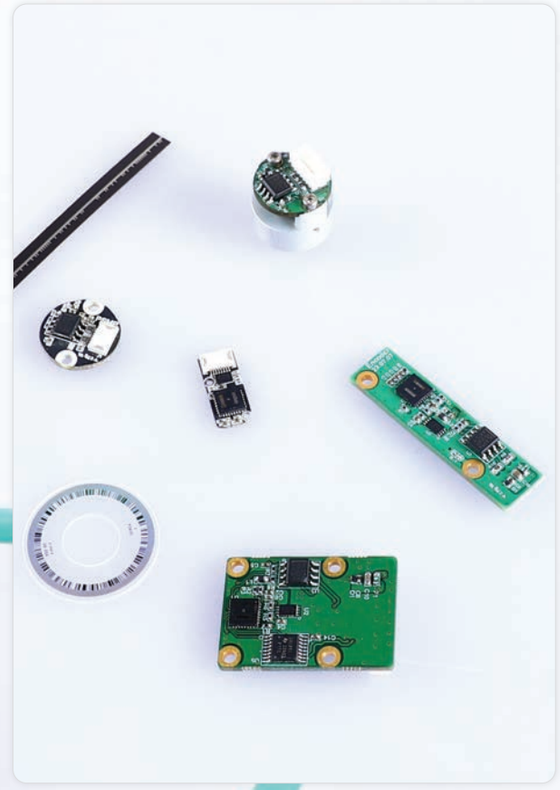
We, a leading developer and manufacturer of encoders in Korea, continue to evolve as a globally recognized team renowned for its technology and reliability in the field of encoders and sensors.

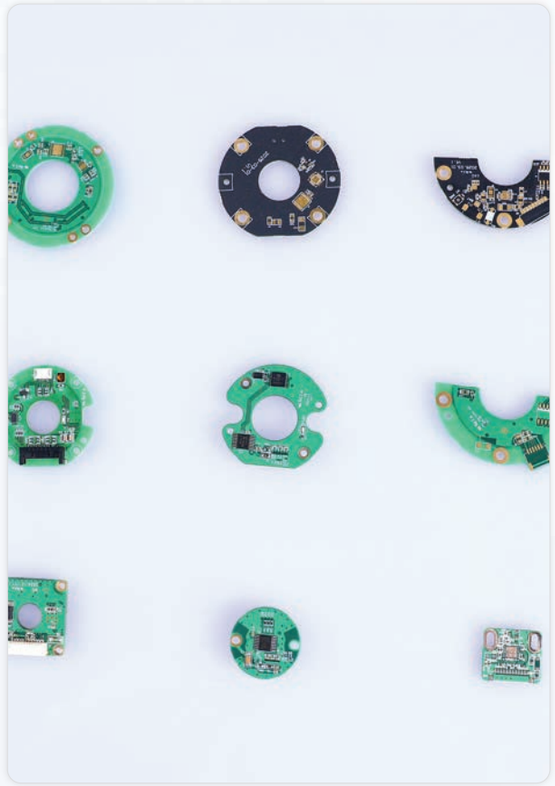
Products

Basic Encoder Lineup

NRTSensors develops and manufactures encoder products using a wide range of advanced technologies for encoders.

We offer ultra-compact, high-precision optical encoders; magnetic encoders in both hollow-shaft and solid-shaft configurations across various sizes and resolution; and robust, high-accuracy inductive encoders designed to perform reliably in harsh environmental conditions.

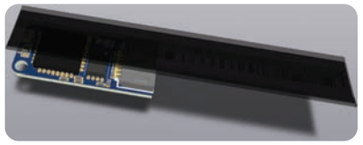




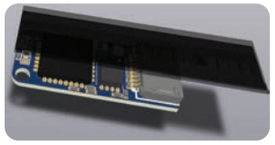


Basic Encoder Lineup

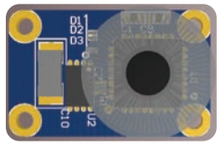
Miniature Optical Encoder



- Sensor Size : 40mm×10mm
- Resolution : 0.1um
- Output : Absolute(BiSS-C)



- Sensor Size : 15.5mm×7mm
- Resolution : 0.1um
- Output : Absolute(BiSS-C), Incremental

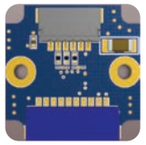


- Sensor Size : 15mm×9.4mm
- Resolution : 17bit
- Output : Absolute(BiSS-C)



- Sensor Size : Ø15.5
- Resolution : 17bit
- Output : Absolute(BiSS-C)

Solid Shaft Magnetic Encoder



- Sensor Size : 16mm×16mm
- Output : Incremental
- Magnet Size : Ø4, Ø6, Ø8



- Sensor Size : Ø24
- Output : Incremental
- Magnet Size : Ø4, Ø6, Ø8

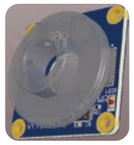


- Sensor Size : Ø24
- Output : Incremental
- Magnet Size : Ø4, Ø6, Ø8

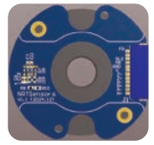


- Sensor Size : 30Pi
- Output: Absolute, BiSS-C
- Magnet Size : Ø4, Ø6, Ø8

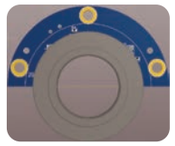
Hollow Shaft Magnetic Encoder



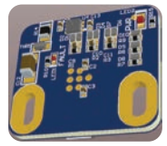
- Sensor Size : Ø28
- Output : Incremental
- Magnet ID : Ø6, Ø8
- OD : Ø24



- Sensor Size : Ø38
- Output : Incremental
- Magnet ID : Ø8, Ø15, Ø19
- OD : Ø34

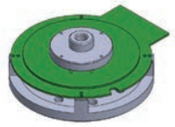


- Sensor Size : Ø51
- Output : Absolute, BiSS-C
- Magnet ID : Ø8, Ø15, Ø19
- OD : Ø34

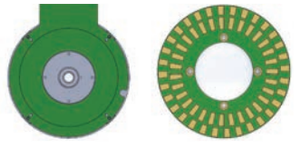


- Sensor Size : 20mmx18mm
- Output : Incremental
- Magnet : 2mm pitch Linear or Radial magnet for Linear system

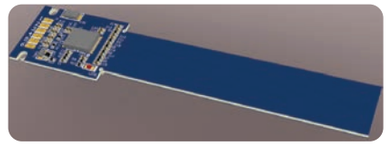
Inductive Encoder



- Size : OD Ø102
- Output : Absolute(BiSS-C)



- Size : OD Ø72
- Output : Absolute(BiSS-C)



- Sensing Stroke : 30mm / 60mm / 100mm / 150mm
- Output : 1period Sin / Cos or Absolute (BiSS-C)

Applications

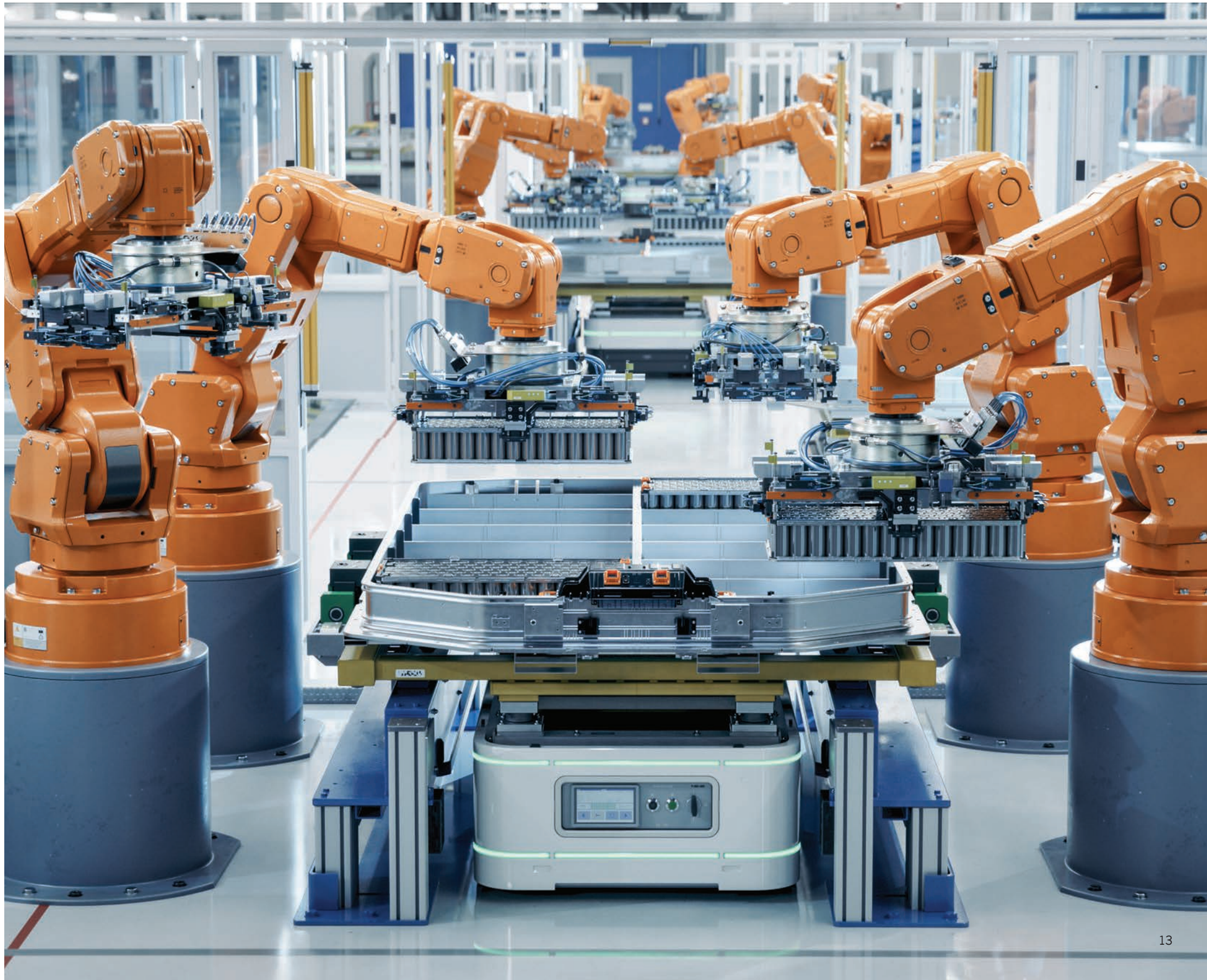
Depending on the encoder technology and product type, NRTSensors provides solutions for a wide range of applications.

Solid-shaft encoders are applied to various types of motors and cost-efficient systems, while hollow-shaft encoders are ideal for robotic systems including hollow shaft motors.

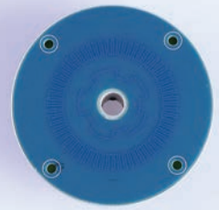
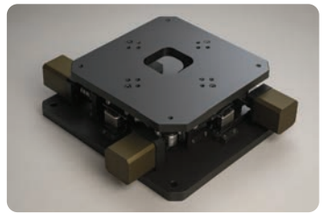
Ultra-compact and thin optical linear and rotary encoders are suited for high-precision, space-constrained systems such as pick-and-place units and micro stage systems.

Inductive encoders are versatile solutions that offer high precision even in harsh or variable environments.

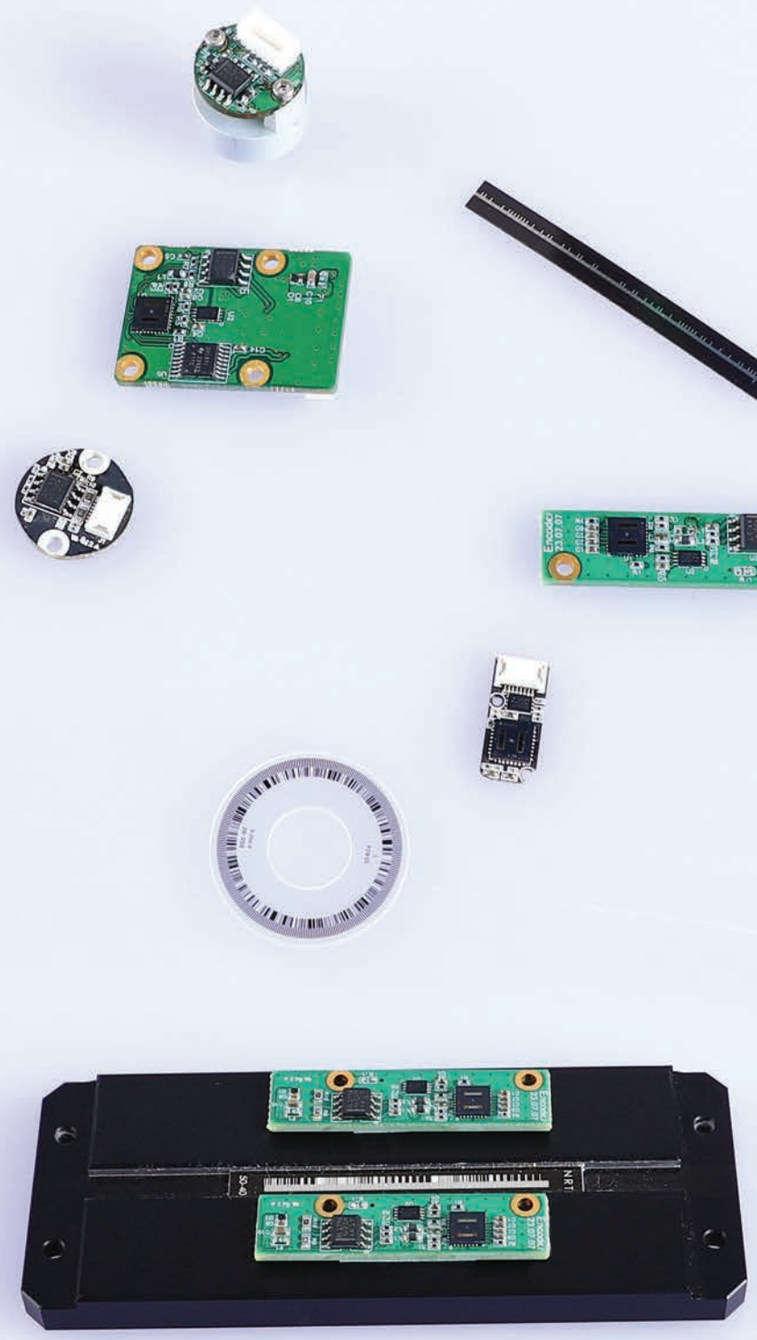
NRTSensors develops encoders tailored to the specific needs and purposes of the customer's system.



Applications

Solid Shaft Magnetic Encoder	Hollow Shaft Magnetic Encoder	Miniature Optical Linear Encoder	Miniature Optical Rotary Encoder	Inductive Encoder
				
Micro Actuator	Shaft Motor	Pick & Place	Pick & Place	Collaborative Robots
				
Robot Hands	Kit Encoder	Micro Stage	Actuator	Servo Motor
				
BLDC Motor	Collaborative Robots	UVW	Motorized Stage	Linear Actuator

Micro/Miniature Reflective Optical Encoder



Compact / Ultra-Thin Reflective Optical Encoders (Linear, Rotary)

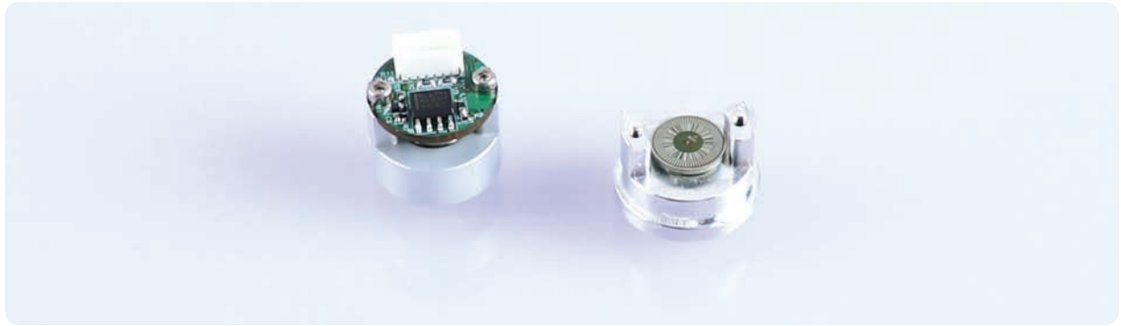
- Reflective optical encoder with diameters ranging 9.4mm~Ø15
- Ultra-miniature design technology (thickness less than 4mm)
- Customizable in various sizes and interfaces according to customer requirements
- Scale / Code wheel
  – Code wheel : Ø9 (Aluminum or glass)
  – Scale : 21.6mm, 35mm, 50mm, etc. (Aluminum, SUS)

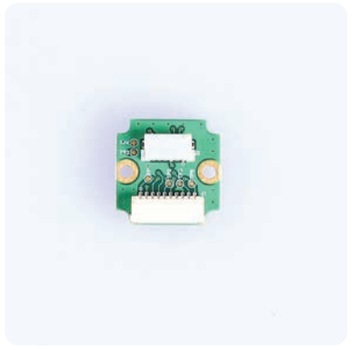
High Resolution and Accuracy

- Resolution below 0.1um (Linear type)
- 17bit absolute resolution (Rotary type)

Stable System and Signal Quality

- Stable signal quality with strong resistance to external noise










Compact Solid Shaft Encoders

- Ultra-compact and small-size design, such as for finger motors of humanoid hands
- Available in various sizes from Ø16~Ø30
- Customizable dimensions and interfaces to meet customer requirements
- Compatible with a variety of magnet sizes
  – Ø4, Ø6, Ø8, etc.

High Resolution and Accuracy

- Up to 16,384PPR (Incremental)
- Up to 17bit (Absolute via BiSS-C/SSI)
- Angular accuracy within 0.1°

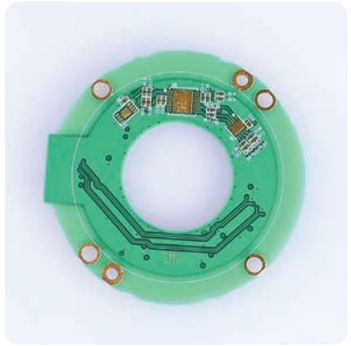
Stable System and Signal Quality

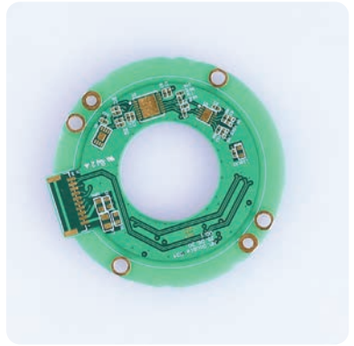
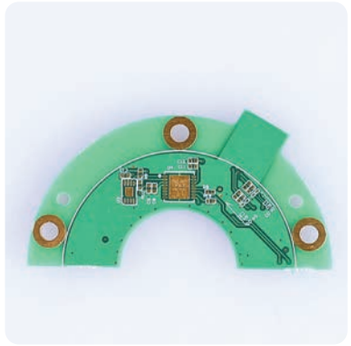
- Consistent and reliable signal quality
- Strong immunity to various external noise









Compact Hollow Shaft Encoders

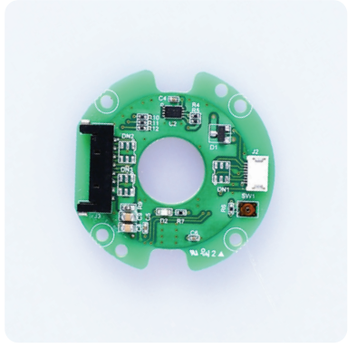
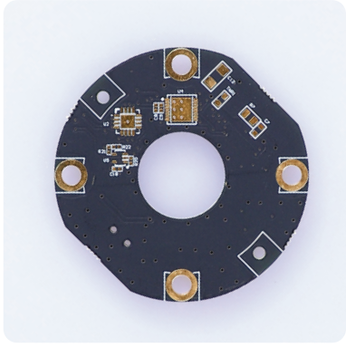
- Available in various sizes from 26mm×26mm to Ø50
- Supports a wide range of sizes and interfaces based on customer requirements
- Ultra-compact design technology
- Compatible with magnets in various sizes
  – Outer diameter : Ø24, Ø30, Ø34
  – Inner diameter : Ø8, Ø10, Ø11.5, Ø15, Ø19

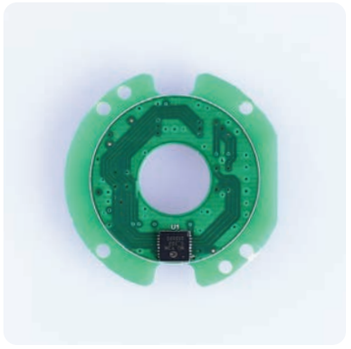
High Resolution and Accuracy

- Up to 65,536PPR (Incremental)
- Up to 18bit (Absolute via BiSS-C/SSI)
- Angular accuracy within 0.1°

Stable System and Signal Quality

- Reliable signal output with strong immunity to external signal noise

Hall Sensor Type Magnetic Encoder for Linear System







Hall sensor type Magnetic Encoder for Linear System

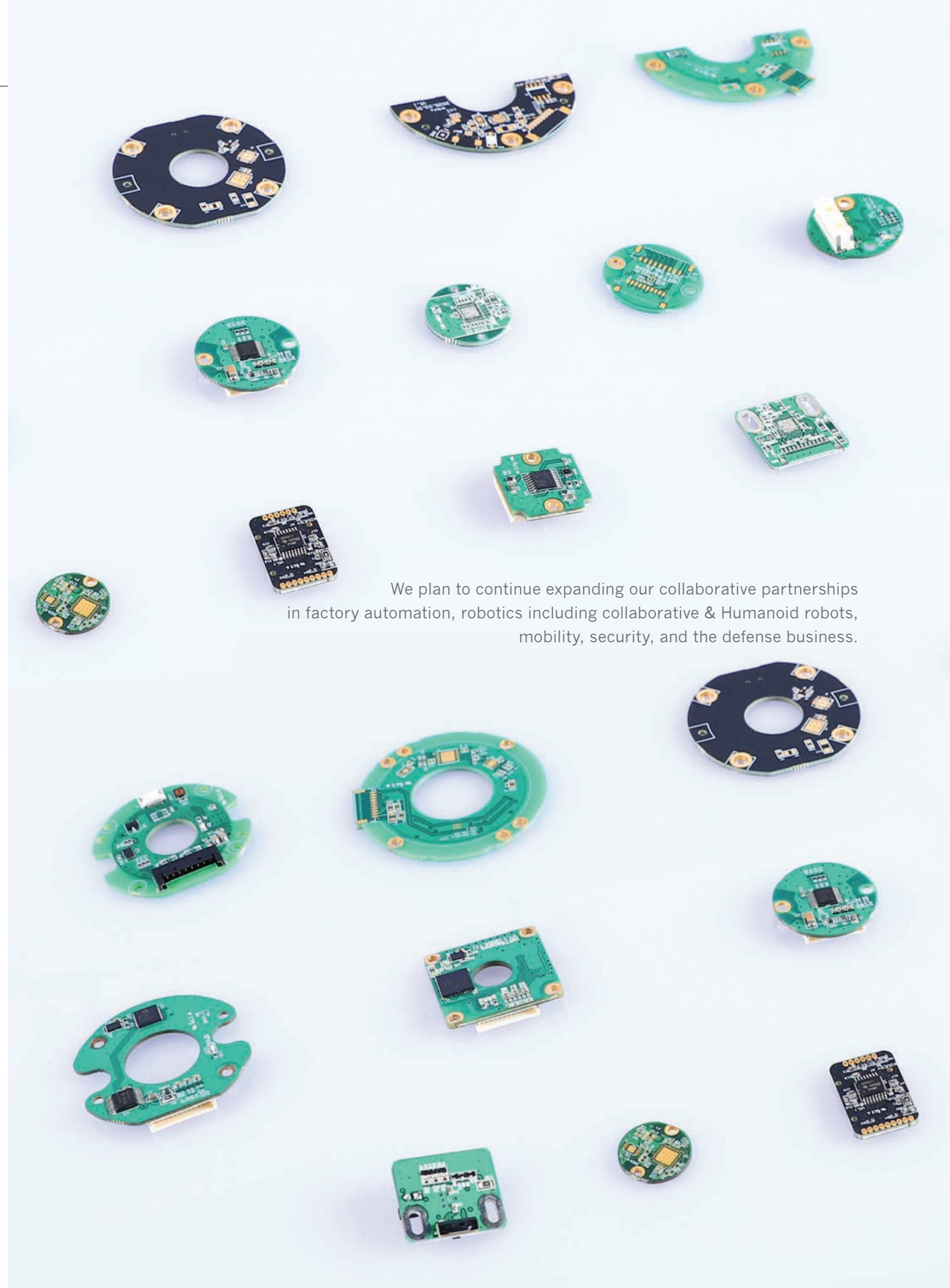
- Ultra compact design with dimensions under 20mm×20mm
- Customizable sizes and interface options based on customer requirements
- Advanced miniaturized design technology
- Supports various sizes of linear motor and radial magnets
  – Pole Pitch : 1mm, 2mm and up to 18mm, etc.

High Resolution and Accuracy (Examples)

- 0.03um resolution (Incremental, 1mm pole pitch, 16bit interpolation)
- 0.5um resolution (Incremental, 18mm pole pitch, 16bit interpolation)
- 1um resolution (Absolute, 1.5mm Pole pitch, 12bit interpolation)
- ETC.

Stable Signal Quality

- Consistent and reliable signal output
- Excellent immunity to external signal noise



We plan to continue expanding our collaborative partnerships
in factory automation, robotics including collaborative & Humanoid robots,
mobility, security, and the defense business.

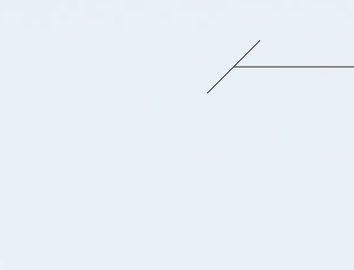
High Accuracy Inductive Encoder

High Precision Inductive Encoders in Various Sizes

- Fully customizable to meet specific application requirements
- Available in a wide range of sizes
  – Linear type : 30mm to 150mm
  – Rotary type : Ø40 to Ø100

High Resolution and Accuracy

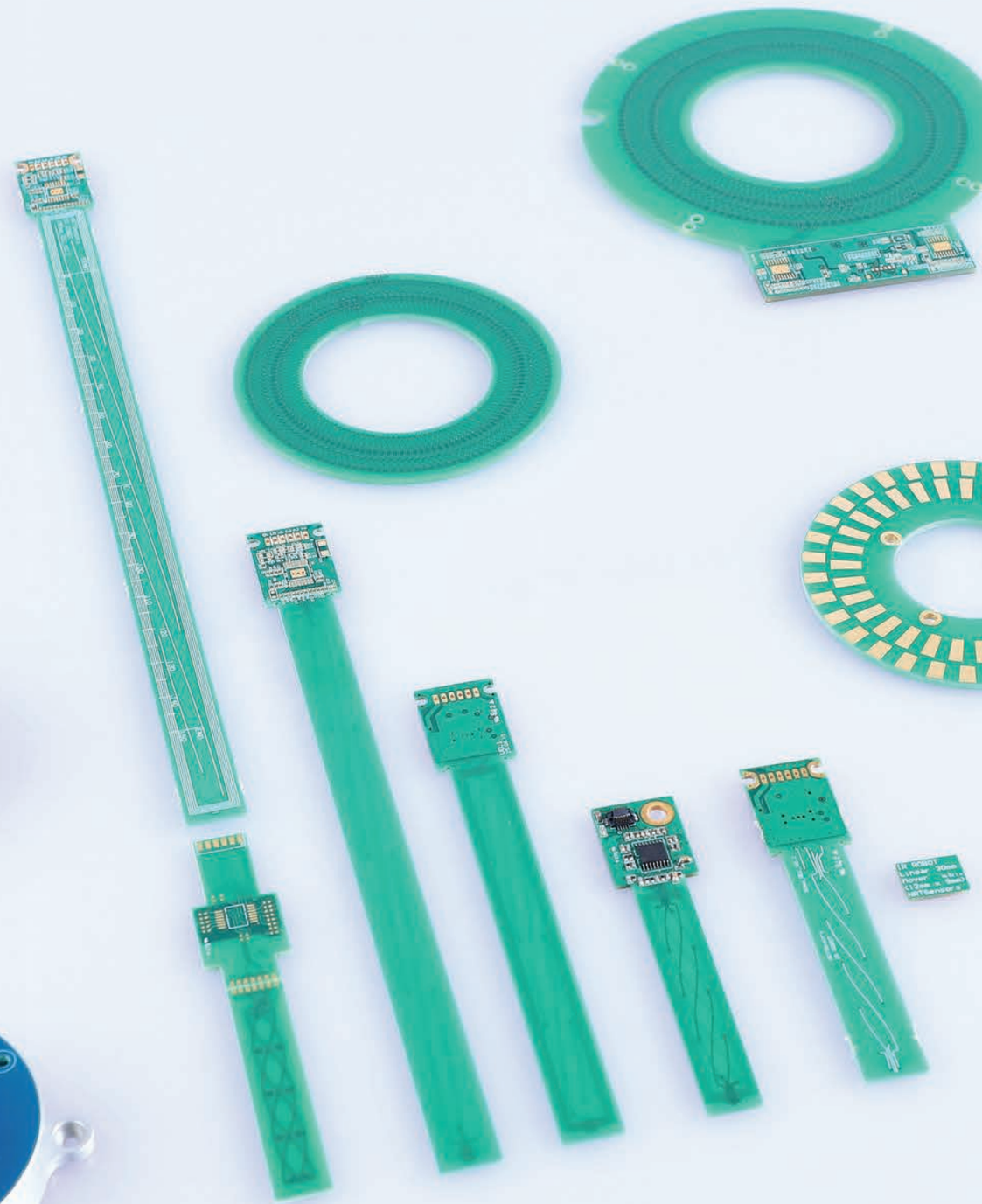
- Up to 0.45um resolution (Linear type, 30mm travel, 16bit interpolation)
- Up to 19bit resolution (Rotary type), equivalent to 0.0007°



Robust Performance and Stable System and Signal Quality

- Reliable signal quality with strong immunity to external signal noise
- System designed to withstand vibration, dust, and magnetic field interference







NRTSensors

Team. MS

Technology Experts, Advancers for Masterpiece,
Masterpiece of Sensors.

www.nrtsensor.com

contact@nrtsensor.com



We are the only one team in Korea to achieve full localization of encoder technologies and provide advanced high-performance encoders for the Robotics and FA industries.

NRTSensors