LIGHTWEIGHT

Celera MOTION
A Novanta Company

Zettlex
Inductive Encoders

IncOder™ CORE
Inductive Encoders

Compact, Lightweight,
Inductive Ring Encoders

IncOder™ CORE is a robust miniature PCB based inductive ring encoder designed for Robotic joints.

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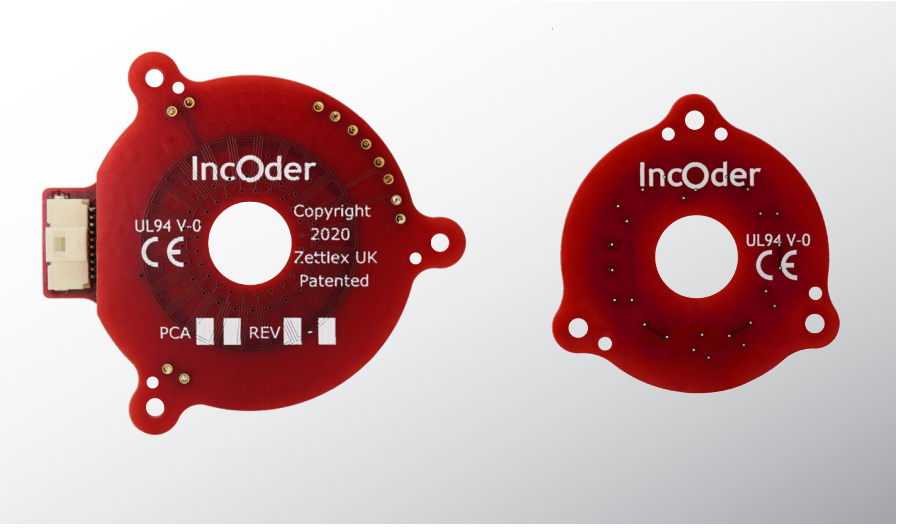

Absolute, Lightweight, Robust.

IncOder CORE is a non-contact, lightweight absolute rotary inductive encoder fully contained in a printed circuit board kit. The ergonomic hollow bore design is suited for integration into rotary actuators. The position sensor utilizes a unique field-proven inductive technique, delivering highly repeatable, reliable, temperature-stable measurement performance.

The angle sensor can be installed simply by mounting the rotor and stator pair into the host assembly by means of M2 mounting holes. With modest installation tolerances, a programmable zero set and no calibration required, the sensor can be screwed (and optionally doweled) in place for quick, practical, and reliable setup.

Each sensor includes a passive rotor target, paired with an active stator. The stator contains all the required processing electronics in a lightweight, stacked circuit board package. The stator features a 10-way Molex PicoClasp connector for power input and data outputs. The IncOder CORE can be supplied with an axial or radial connector.

IncOder CORE can be configured to output up to 17-bits of absolute position data in a range of protocol options including SPI, BiSS-C, and SSI.

Features

- Compact, Lightweight PCB construction
- No precision installation tolerances
- No calibration
- Ergonomic hollow bore design
- Highly repeatable position feedback
- Insensitive to contamination

Benefits

- Reduced system weight and design envelope
- Simple installation
- Reduced OEM production time and cost
- Optimized for use in rotary actuators
- Reliable feedback in demanding applications
- Robust position measurement

Specification	IncOder CORE
Rotor OD (screw hole PCD)	35.6 mm (36mm)
Stator OD (screw hole PCD)	44 mm (56.8 mm)
ID	10.4 mm
Height	13.1 mm
Installation	0.5 ± 0.2 mm Gap 0.2 mm Max Radial Offset
Communication Protocols	SSI, BiSS-C, SPI, Async Serial
Resolution	10 - 17 bits
Accuracy	0.1°
Repeatability	± 1 LSB
Max Speed	10,000 rpm
Supply Voltage	5-12 VDC
Current Consumption	<100 mA
Measurement Update Rate	10 kHz
Operating Temperature	-20 to +85 °C
Temperature coefficient	<1 ppm
Mass	2.8g (Target) 11.8g (Stator)
Connector	10-way Molex PicoClasp

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RoHS
CE

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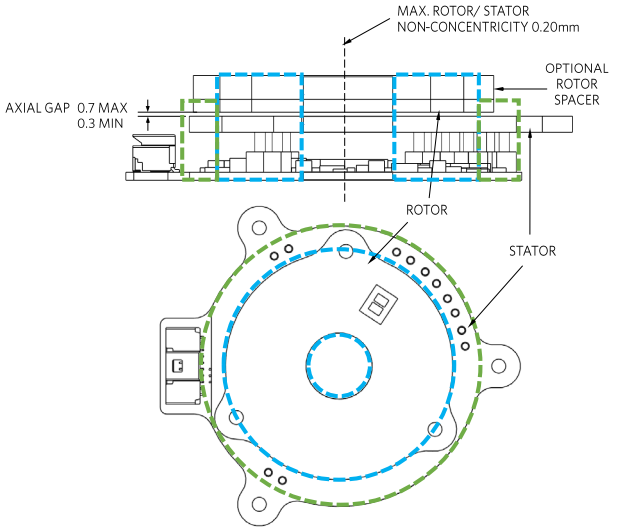
Installation and Testing Guide

IncOder CORE consists of a rotor-stator pair. The rotor and stator should be mounted within the prescribed mounting tolerances as shown, while also taking into consideration the metal exlusion zone (blue and green dashed regions). Other than the central host shaft and rotor mounting screws and dowels, electrically conductive or magnetically permeable objects should not be located within 3mm of the rotor faces during operation. This metal exclusion zone could be established by designing and mounting the encoder with a non-metal spacer as shown (not included). For specific guidance on incorporating IncOder CORE into your mechanical assembly, including where metal will be present within the exclusion zone, please contact Celera Motion (Zettlex).

Recommended installation is to align the unit using the dowel features in the rotor and stator, and screw in place using the screw holes provided.

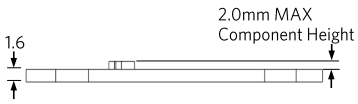


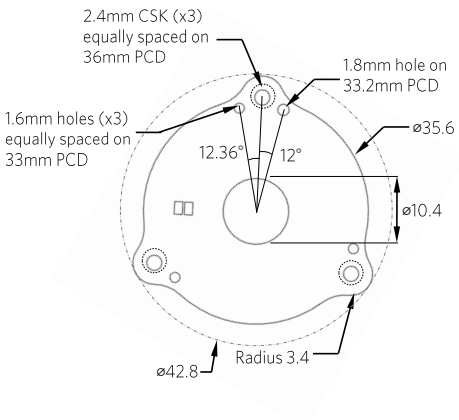
Metal Exclusion Zone (blue dashed region) between rotor mounting hole PCD (ø36mm) and rotor ID (ø10.4mm). 3mm from rear face of rotor to rear face of stator e-board.

Metal exclusion zone (green dashed region) between stator OD (ø44mm) and rotor mounting hole PCD (ø36mm). Rear face of rotor to rear face of stator e-board. Ensure isolation of the rear face of the stator e-board.

Mechanical Drawings

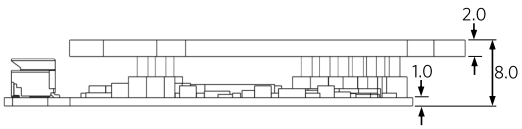
Rotor

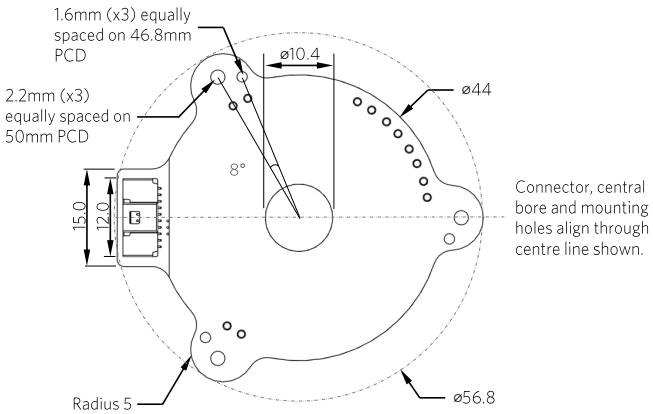




Drawing Tol. = ±0.2mm

Stator





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