LIGHTWEIGHT

Celera MOTION
A Novanta Company

Zettlex
Inductive Encoders

IncOder® CORE
Inductive Encoders

Compact, Lightweight,
Inductive Ring Encoders

IncOder® CORE is a robust unpackaged PCB based inductive ring encoder series designed for Robotic joints and rotary actuators

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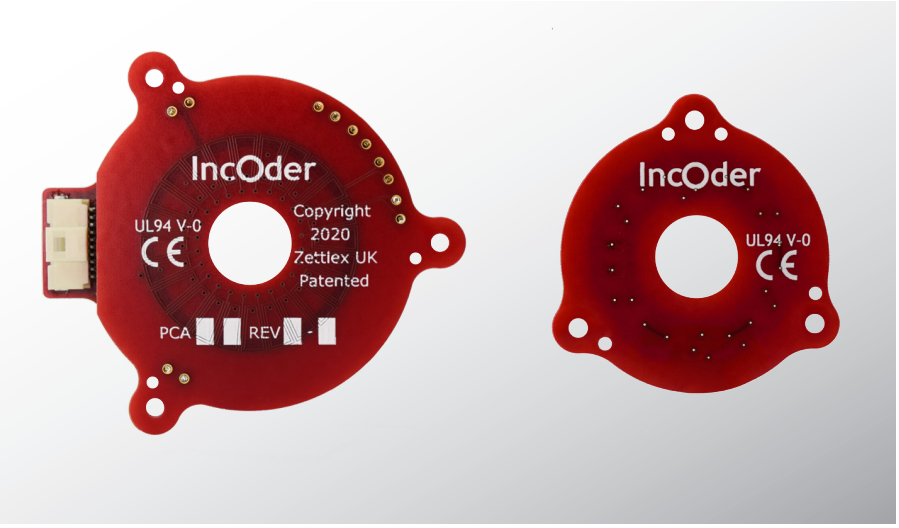

Absolute, Lightweight, Robust

IncOder CORE is a non-contact, lightweight absolute rotary inductive encoder product series fully contained in a printed circuit board kit. The frameless 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 comes in two sizes, 44mm and 70mm, and 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.

IncOder CORE can be configured to output up to 17-bits (44mm) or 20-bits (70mm) of absolute position data in a range of protocol options including SPI, BiSS-C, and SSI. The 70mm IncOder CORE has been specifically sized to complement the Omni+ 60 and Omni+ 70 BLDC motor designs.

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
- Robust position measurement
- Reliable feedback in demanding applications

Specification	44mm IncOder CORE	70mm IncOder CORE
Rotor OD (screw hole PCD)	35.6mm (36mm)	65mm (36.6mm)
Stator OD (screw hole PCD)	44mm (56.8mm)	68.8mm (75mm)
ID	10.4mm	30.3mm
Total Height (Clearance)	12.1mm	13.4mm
Installation	0.5 ± 0.2mm Gap 0.2mm Radial Offset	1.1 ± 0.35mm Gap 0.25mm Radial Offset
Communication Protocols	SSI, BiSS-C, SPI, Async Serial	
Resolution	10 - 17 bits	10 - 20 bits
Accuracy	±360 arcseconds	±125 arcseconds
Repeatability	± 1 LSB	
Max Speed	10,000 rpm	
Supply Voltage	5-12 VDC	
Current Consumption	<100 mA Typically <75mA, does not change significantly with voltage supply	
Measurement Update Rate	10 kHz	
Operating Temperature	-20 to +85 °C	
Temperature Coefficient	<1 ppm	
Mass	2.8g (Target) 11.8g (Stator)	7g (Target) 17g (Stator)
Connector	10-way Molex PicoClasp Suitable connector options to match Ingenia Drives	

RoHS CE

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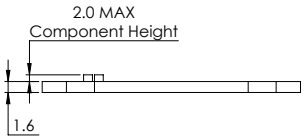
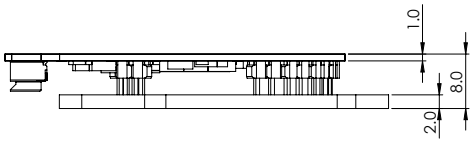
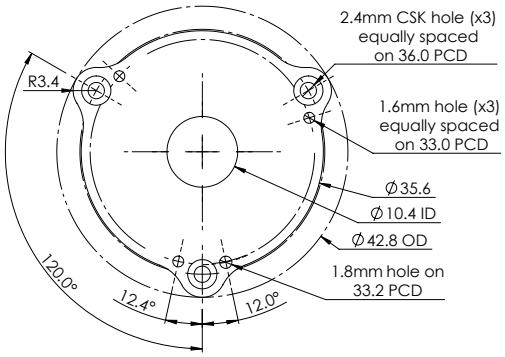
44mm Mechanical Drawings

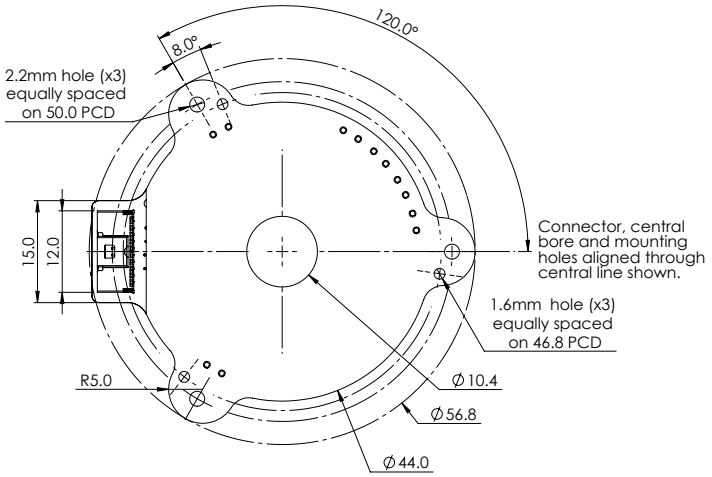
Rotor



Stator

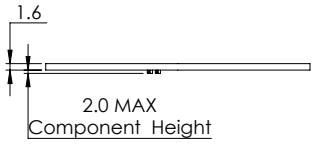




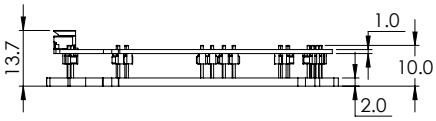


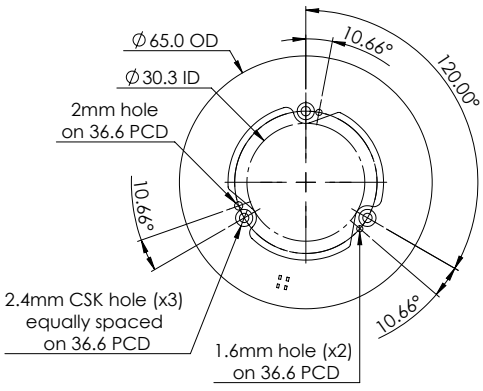
70mm Mechanical Drawings

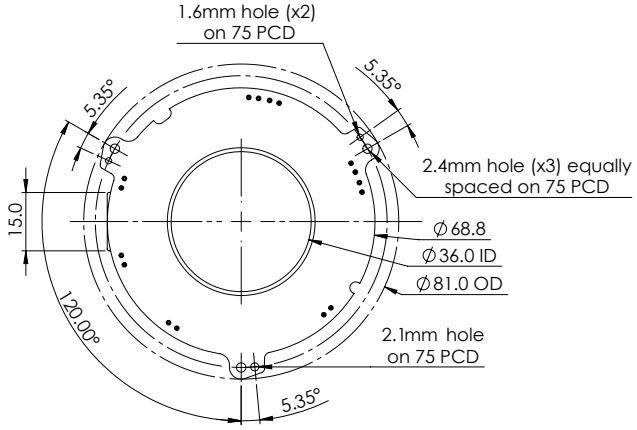
Rotor



Stator







Drawing Tol = ±0.2mm

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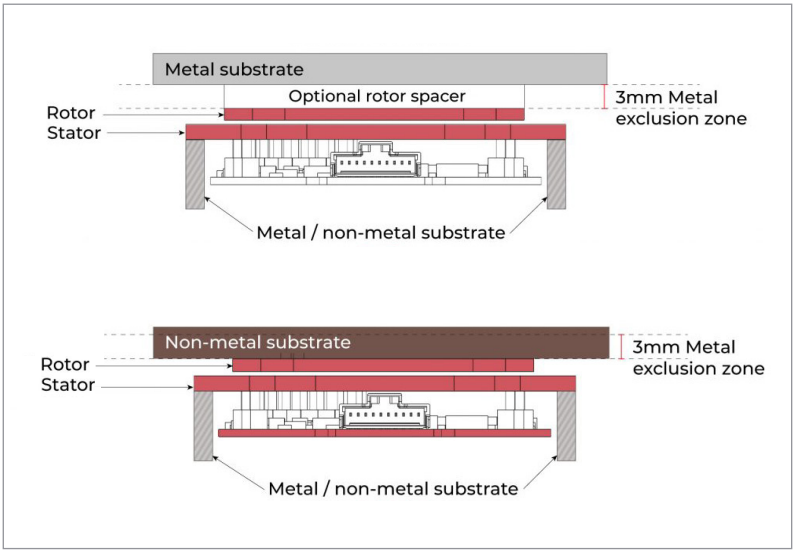
Installation and Testing Guide

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. 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.

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.



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