

A patented SoC purpose-built for next-generation robotic joints. Real-time on-chip **2D dynamic compensation** targets **0.01° native accuracy** — no precision fixturing, no factory calibration, no trade-offs. True drop-in integration where conventional encoders demand precision alignment.



● Patented SoC

● Patented 2D code

ULTRA-LOW FOOTPRINT

Fits any robotic joint configuration

● EOS · HS · Direct Shaft

● <10 mm axial depth

KEY FEATURES

- ✓ True 2D (X/Y) absolute position sensing
- ✓ On-chip dynamic eccentricity compensation
- ✓ 60% FOV contamination immunity
- ✓ SPI · BiSS-C · SSI · I²C interfaces
- ✓ 24-bit single-turn resolution
- ✓ 500 kHz incremental · 50 kHz absolute output
- ✓ ±2.5 mm / ±5° mounting tolerances
- ✓ Zero factory calibration

TARGET APPLICATIONS



Humanoid & cobot joints



Servo drives



Industrial automation

PERFORMANCE HIGHLIGHTS

Dynamic Compensation

X-Y processing automatically removes error due to mounting, runout or dynamic loading, targeting 0.01° residual error.



Robustness to Contamination

Full performance maintained when oil, grease, water, or dust obscures up to 60% of the optical FOV.



High Mounting Tolerances

Tolerates ±2.5 mm radial/axial and ±5° tilt/twist — no precision fixturing or factory calibration required.

±2.5 mm
X / Y / Z
OFFSET

±5°
TILT & TWIST

JOINT INTEGRATION CONFIGURATIONS

Hollow Shaft (HS)

∅ 40–200 mm



- ▶ Disc on output flange
- ▶ PreciSen PCB in housing

→ Backlash-free read after gearbox

End-of-Shaft (EOS)

∅ 15–60 mm



- ▶ Disc clamped on shaft end
- ▶ PreciSen PCB on endplate

→ Highly compact servo assemblies

Direct Shaft

∅ 10–25 mm



- ▶ 2D code laser marked on shaft, no disc
- ▶ PreciSen PCB radial to shaft

→ Ultra low footprint, high precision