

New Scale News

July 2014

Welcome to New Scale News. In this issue we focus on our ongoing innovations in **drive electronics** and **position sensing** technology. Both of these areas are critical for optimizing piezo motor system performance. They're key to making better, smaller all-in-one stages, modules and actuators.

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~ Behind the design

Off-axis, absolute position sensor miniaturizes optical devices

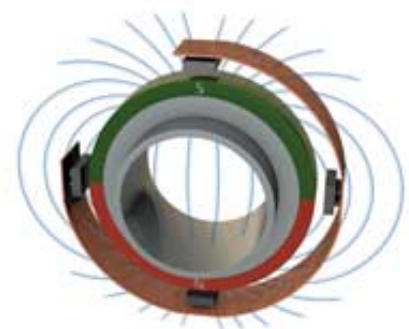
Unique off-axis rotary position sensor delivers absolute angular position information with a wide clear aperture, very small size and low power use.

Many optical applications require an off-axis sensor configuration to leave a clear aperture for light transmission through the center of a rotating optical element, which may be a polarizing optic, a micro filter wheel, a wedged prism or other component.

Hall effect position sensors with on-chip analog-to-digital conversion (ADC) lend themselves to very tiny systems.

Using a novel implementation of these integrated linear position sensors, engineers at New Scale Technologies created a unique off-axis rotary position sensor that delivers absolute angular position information over a standard I2C serial digital interface.

This sensor has a wide clear aperture, very small size and low power use. Coupled with New Scale's tiny piezoelectric motors, it enables highly-miniaturized optical systems.

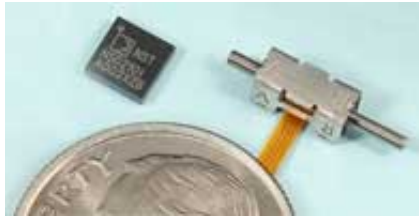


Four Hall-effect position sensors can provide absolute off-axis position sensing with large clear aperture for miniature optical systems.

[Read the full article](#)

~ Patents

Innovative drive technique delivers consistent, optimum performance



Our latest patent covers the our unique method for automatically finding a piezoelectric motor's optimum drive frequency and operating at that frequency as it changes with temperature and load during operation. This technology has been used in New Scale's miniature motion systems since 2009 and is a core feature of its M3 all-in-one smart stages, motion modules and actuators. [Learn more at newscaletech.com](http://www.newscaletech.com)

~ Technical Paper SQUIGGLE-based fiber positioner update

Our custom rotary smart module was featured in the paper *"Developing engineering model Cobra fiber positioners for the Subaru telescope's prime focus spectrometer,"* presented by JPL at the SPIE Astronomical Telescopes + Instrumentation conference in Montreal last month.

Paper 9151-68, Session 15, Optical Fibers and Positioners

- [Learn more about the Cobra fiber positioner](#)
- [Email us](#) if you'd like a copy of the latest paper.

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