

2D Image Correlation Encoder MICSYS

Bulletin No. 2029



**Making small, non-contact, 2D-displacement
measurements at the nanometer level**

Mitutoyo

Two-dimensional micro-displacement measurement achieved with high resolution and high accuracy.

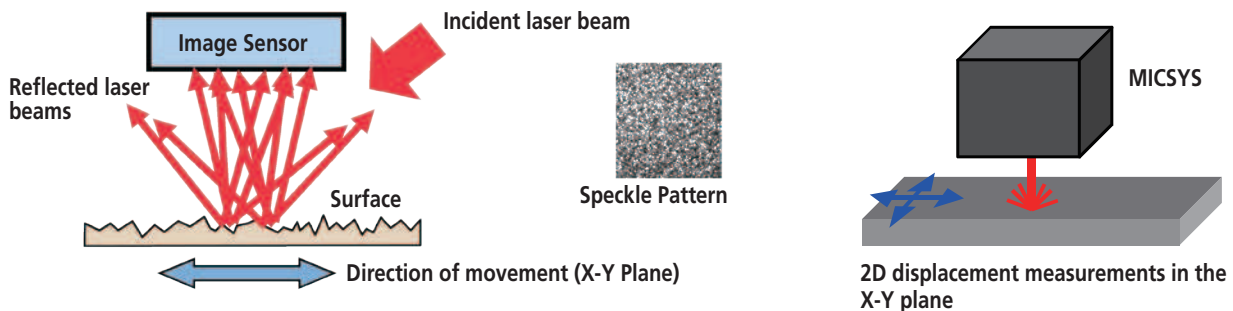
FEATURES

- High accuracy non-contact 2D encoder using image correlation.
- Simultaneous X-Y position measurements.
- Nanometer resolution.
- Easy alignment.
- Allows minute strain and deflection measurements.



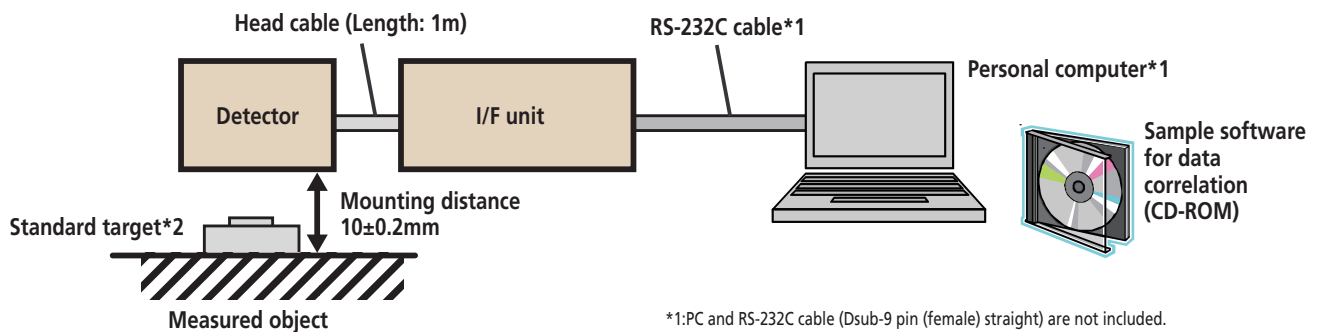
Measuring principle

When the rough surface of an object is irradiated by a laser beam, the beam is scattered into multiple reflected beams that, due to the coherent nature of laser radiation, interfere with each other to form a particular kind of reflection called a speckle pattern. Now, if the object is moved, the speckle pattern image is also moved in proportion, and this effect can be used to track the 2D displacement of the object at the nanometer resolution level by comparing the speckle images obtained before and after the movement (image correlation).



System Configuration

Standard configuration: Detector, I/F unit, Head cable, Sample software for data correlation, Standard target

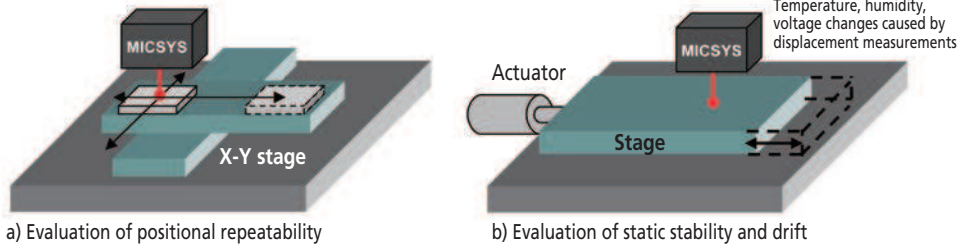


*1: PC and RS-232C cable (Dsub-9 pin (female) straight) are not included.

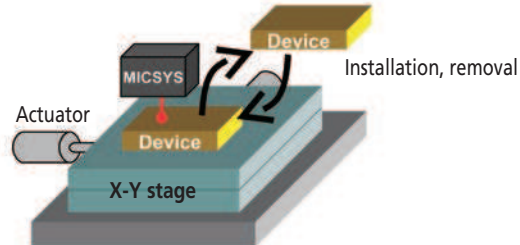
*2: For stable measurements, we recommend the installation of a standard target provided.

Applications

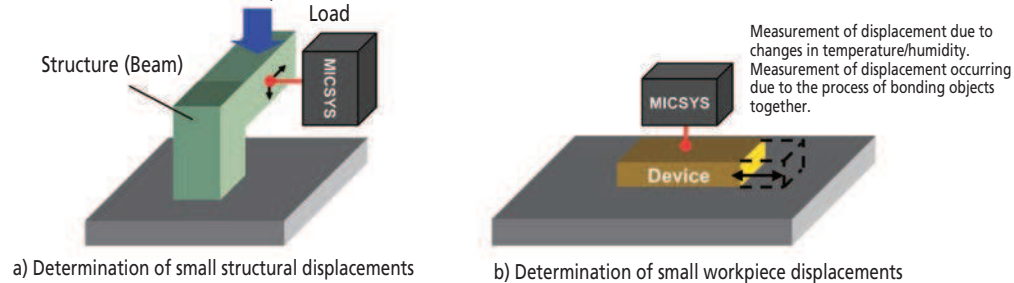
1. Evaluation stage system for various types of manufacturing and inspection equipment



2. High-precision positioning for various types of workpiece (device)



3. Determination of a small displacement



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Vision Measuring Systems

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