Datasheet: SENIS Surface Precision Hall Probes

Redefining Magnet Inspection

DESCRIPTION:

Senis' new series of precision Hall probes is set to revolutionize magnet inspection. Our commitment to precision and consistency brings you closer to the magnet's surface than ever before. The Hall sensor is positioned beneath the surface with micron-level precision, thanks to interferometric depth control during manufacturing. You will achieve unmatched measurement consistency because the distance to the magnet remains the same for every probe you use.

We provide three options:

SurfaceProbe175, with a sensing distance of 175µm ±25µm below the surface;
SurfaceProbe125, with a sensing distance of 125 ±20µm below the surface;
Groundbreaking **SurfaceProbe85**, which reaches an astonishing 85±15µm beneath the surface.

Senis Precision Hall Probes are groundbreaking solution for inline magnet inspection and quality control, ensuring unmatched precision and consistency for all your measurement requirements.

The back part of the probe can be customized to meet specific requirements of your system and to fulfill your unique measurement requirements.

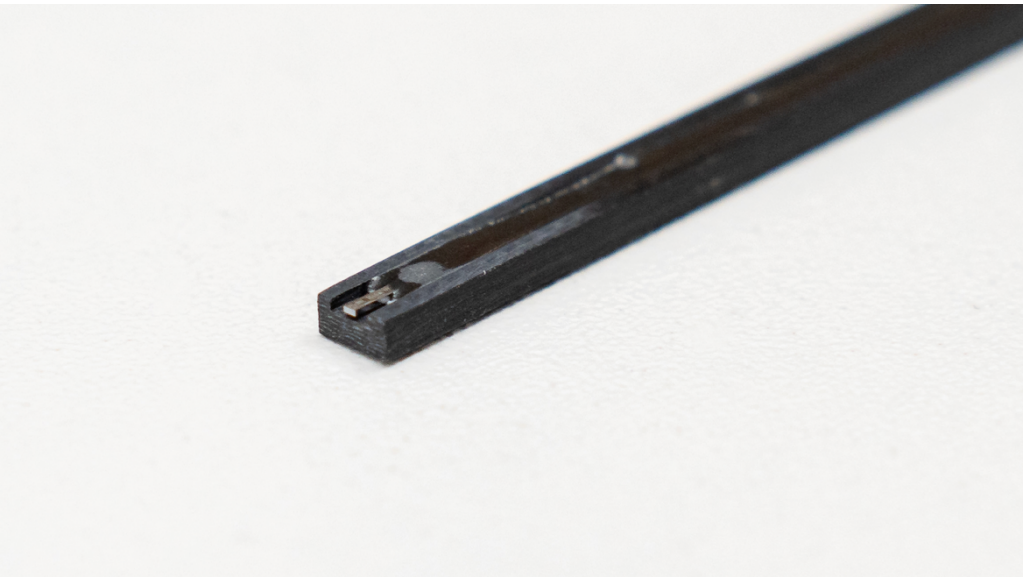

Figure 1: SENIS SurfaceProbe85, carbon fiber reinforced nose with 3D Hall sensor

KEY FEATURES:

- Better than 15µm repeatable position of Field Sensitivity Volume below the top surface
- Measures all three 3 field components of a magnetic field (Bx, By, Bz)
- Small sensitive volume of 150µm x 150µm x 10µm
- Carbon fiber reinforced stiff nose for accurate positioning
- Back part of the probe can be customized according to the requirements

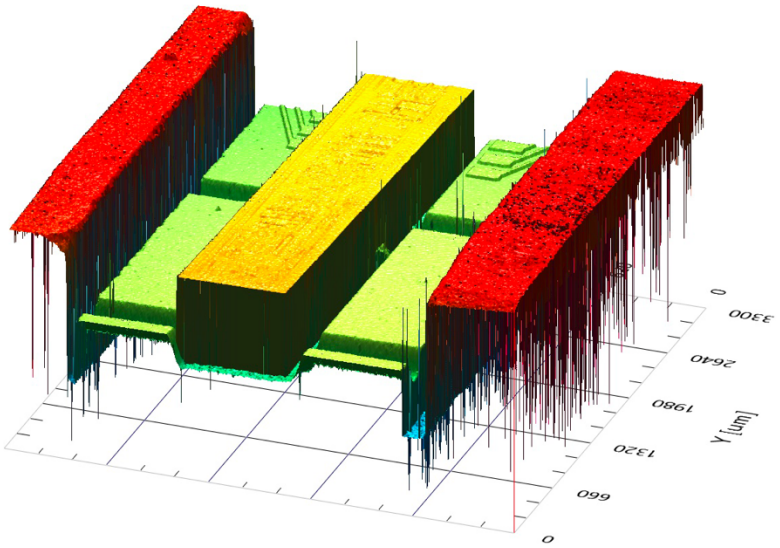

Figure 2: Interferometric 3D measurement of probe and Hall sensor

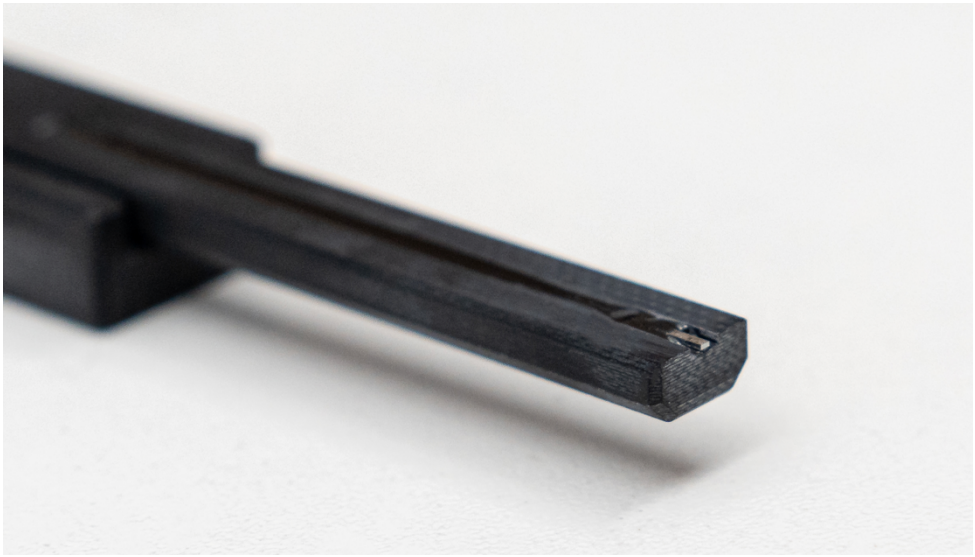

Figure 3: SENIS SurfaceProbe125

TYPICAL APPLICATIONS:

- Inline inspection of permanent magnets and systems
- Quality control of magnets and systems
- Application in laboratories and in production lines

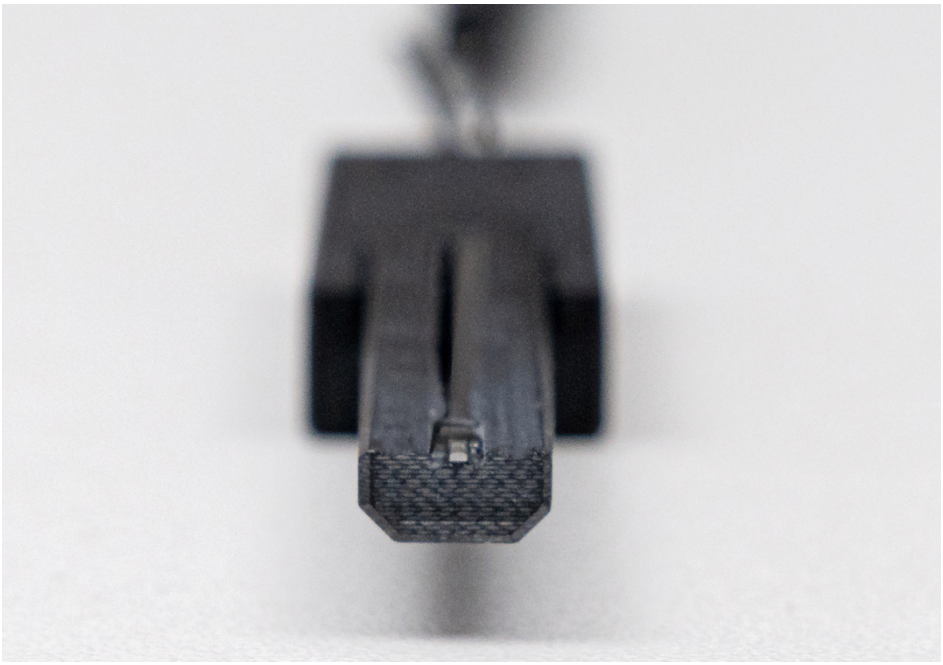

Figure 4: SENIS SurfaceProbe175

SPECIFICATIONS:

Properties	
Sensor Type	Integrated 3axis Hall Sensor with proprietary vertical Hall
Measurement Volume (FSV)	150µm x 150µm x 10µm
Bandwidth	25 kHz standard, 75 kHz optional
Angular Accuracy of axes	Better than ±0.5° with respect to top surface
Probe	
Distance between FSV and top	85µm, 125µm, 175µm depending on the type
Accuracy of distance below top	±15µm, ±20µm, ±25µm depending on the type
Probe material	Carbon fiber reinforced epoxy, ultra-stiff and lightweight
Operating temperature	10°C - 50°C

DIMENSIONS:

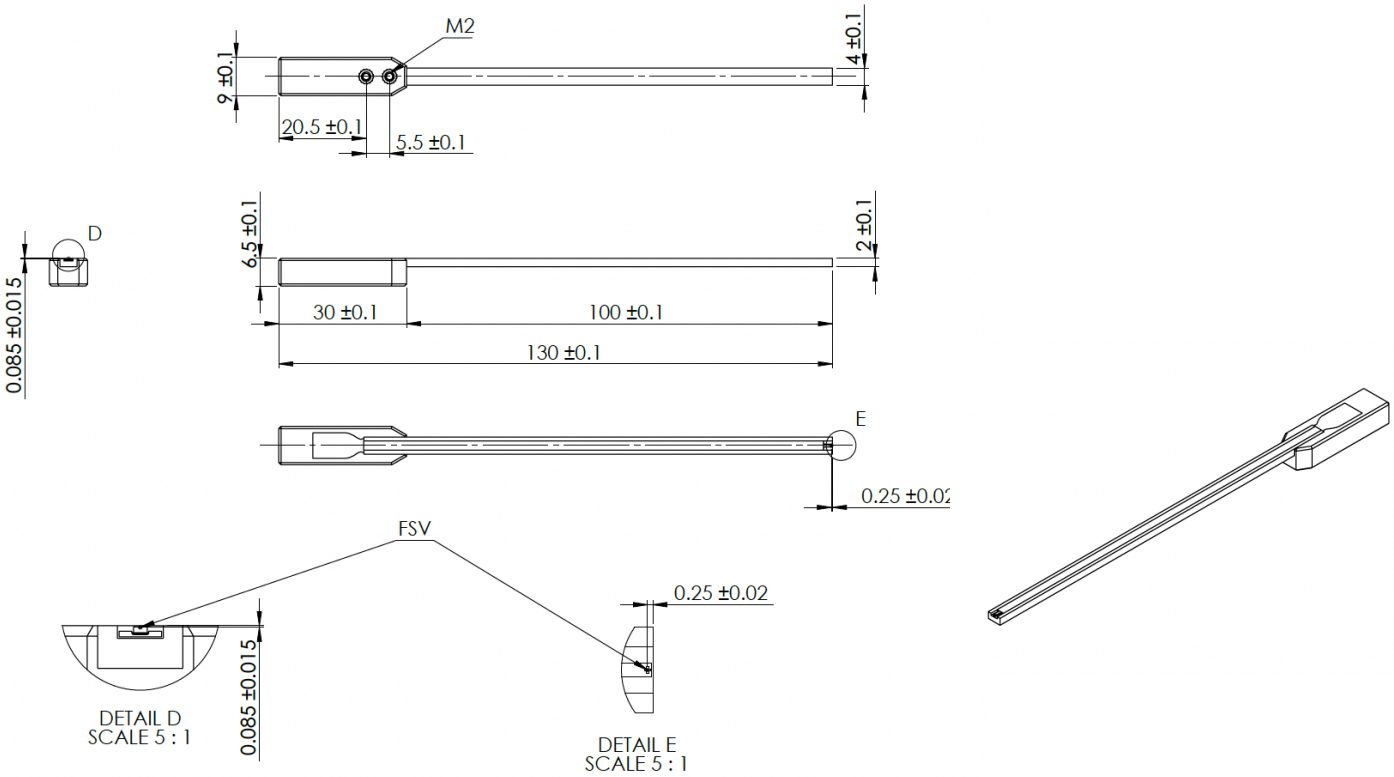

Figure 5: SENIS SurfaceProbe85

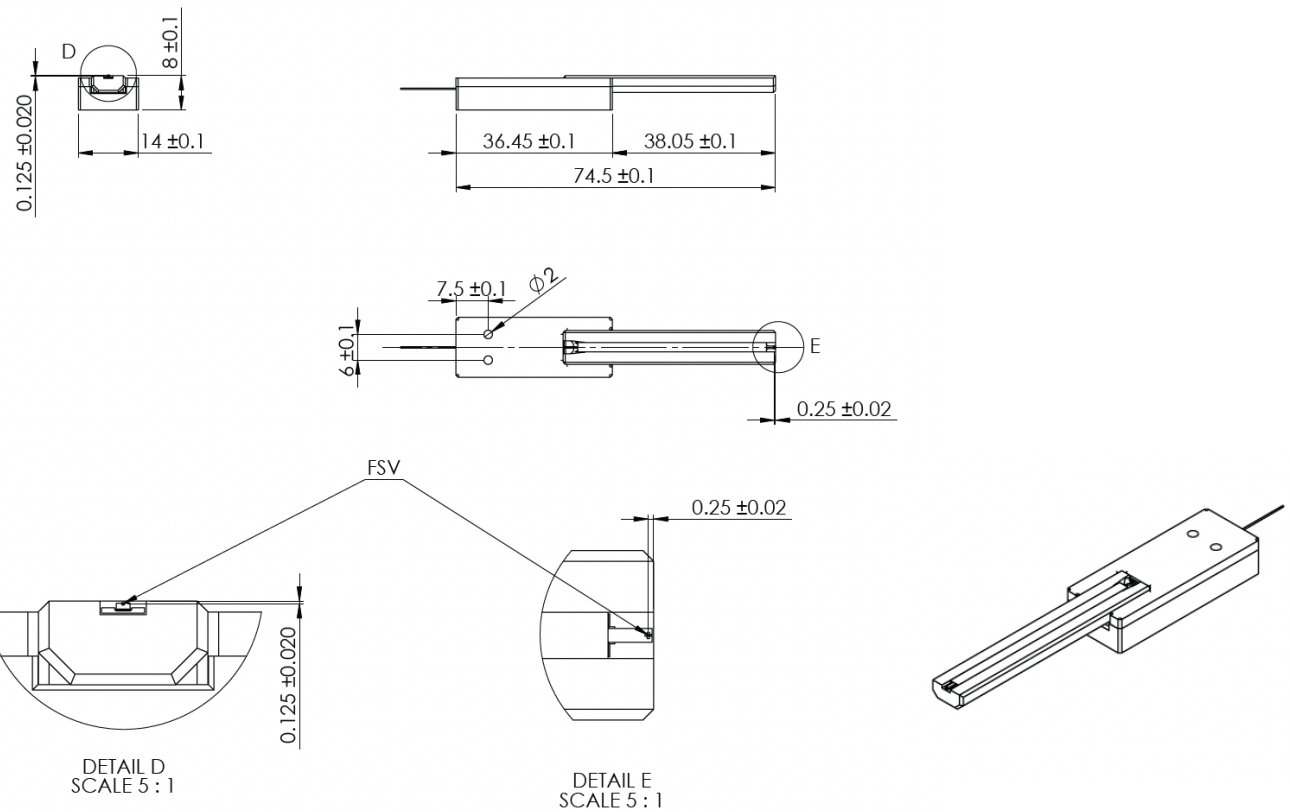

Figure 6: SENIS SurfaceProbe125

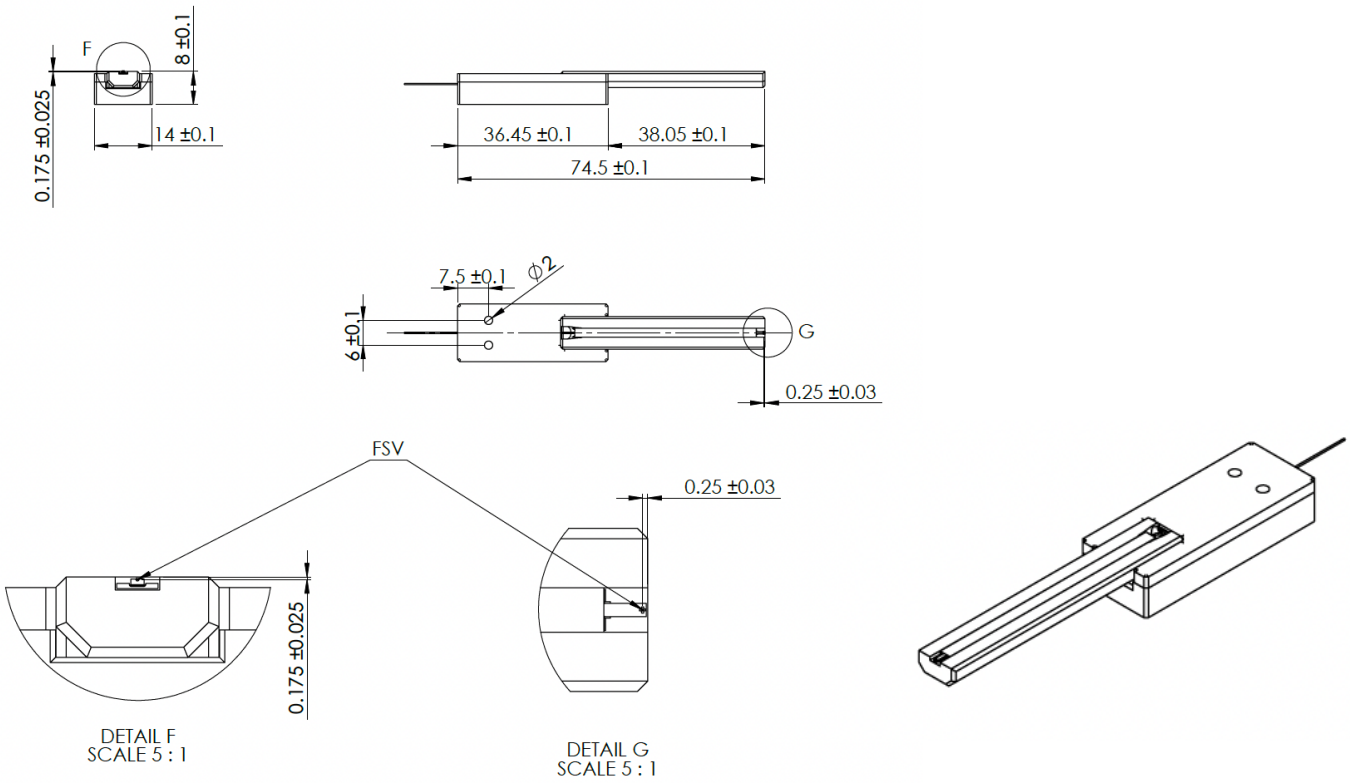

Figure 7: SENIS SurfaceProbe175