



RENISHAW SFM-E2 Surface Finish Probe Module Installation Guide

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SFM-E2
Surface finish probe module



Typical applications
Automatic transmission valve bodies,
minimum feature access (mm):

Ø9 × 122 (max. depth).

Enhanced access and inspection capability for integrated surface finish measurement

The SFP2 system consists of a probe and a range of SFM modules that have been designed to suit the demands of specific parts and features encountered in a precision manufacturing environment. The probe and modules can be automatically interchanged with all other REVO® probe options, providing the flexibility to easily select the optimum tool to inspect a wide range of features. Each SFM module is its own miniature measuring device, incorporating Renishaw's proprietary encoder system to transduce the motion of the stylus tip.

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Features

The E-series of modules use dual skids with a central stylus. This makes them ideal for short scans on small to medium-sized bores which may be deep within the workpiece.

Due to the extreme length of this module, Renishaw recommends that the CMM's capability to use the SFM-E2 should be verified before full implementation.

NOTES: Not compatible with SFH-2.

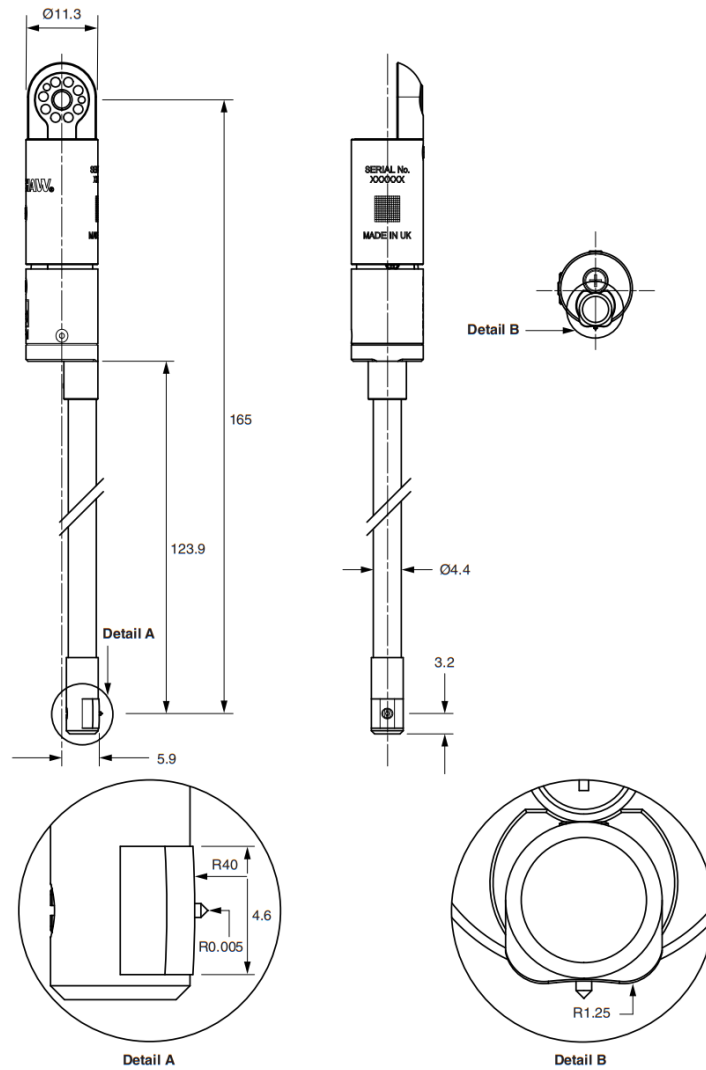
Scan speeds may need to be reduced for finer finishes.

Specification

Diamond tip radius (pm)	5
Surface finish measurement range (pm)	6.3 to 0.10 Ra
Typical surface finish accuracy (of nominal Ra)) ‘	$\pm(20\% + 60 \text{ nm})$
Skid / stylus arrangement	Stylus central to dual skids
Skid material	DLC coated stainless steel
Nominal stylus tip protrusion beyond skid (mm)	0.6
Minimum feature access (mm)	09 x 122 (maximum depth)
Skid length / radius (mm)	4/6/40
Skid width / radius (mm)	5.0 (total) / n/a
Skid contact force (N)	0.15
Stylus contact force (N)	0.01
SFM / SFH knuckle adjustment range	$\pm 90^\circ$
Weight (g)	13
Resolution (nm)	1
Measurement speed (mm/s)	Up to 0.5
Stylus holder compatibility	SFH-1 only
Lateral scanning capability	No

* Accuracy values are dependent upon a number of system variables. These include the machine size and configuration, scan orientation, condition of the stylus tip, part fixturing system, and environmental noise.

All dimensions in mm.



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Documents / Resources

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References

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[SFP2 surface finish probe for the REVOÂ® system](#)