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SP600Q in-quill scanning probe

A compact, in quill scanning probe

The SP600Q is a highly robust, in-quill analogue probe which is ideal for scanning and point measurement on CMMs. Compact in size, the SP600Q mounts directly onto the quill of the CMM. Along with minimal intrusion into the working volume, the SP600Q provides a cost-effective scanning option to CMM users with small machines.

The SP600Q allows large amounts of data to be rapidly gathered for inspection and digitising purposes. Measurement range in each direction (x, y and z) is ±1mm (±0.04 in) and stylus lengths up to 300 mm (11.81 in) can be used with the SH600 EXT stylus holder.

Kinematic stylus holders provide overtravel protection, and allow rapid and repeatable interchange between stylus configurations. This can be automated by using the SCR600 stylus change rack, or alternatively, individual SCP600 stylus change ports mounted to an MRS.

Key benefits

Maximise working volume
The SP600Q scanning probe is quill-mounted to maximise your working volume.

Repeatable stylus changing
Fast, automatic interchange between stylus configurations permits the best solution for the application and increases productivity.

Low cost of ownership
Excellent product life with a MTBF in excess of 50,000 hours.

Excellent dynamic performance
The SP600Q's low mass, high structural stiffness and friction-free viscous damping give excellent dynamic performance characteristics.

Innovations

Isolated optical metrology
SP600Q directly measures the deflection of the whole mechanism, thus providing outstandingly accurate position sensing. The isolated optical metrology system can detect sources of variable error such as thermal and dynamic effects. By contrast, probes with displacement sensors mounted to stacked axes suffer from increased dynamic latency. This is due to the requirement of any stylus deflection to move a greater mass before transduction in all 3 axes has taken place.

Isolated optical metrology can be explained as a feature of the transducer system. The readheads for each axis are fixed to the body of the probe, and measure the deflection in each direction. Any inter-axis movement caused by the arc motion of each pair of parallel-acting springs are directly measured by the sensor system.

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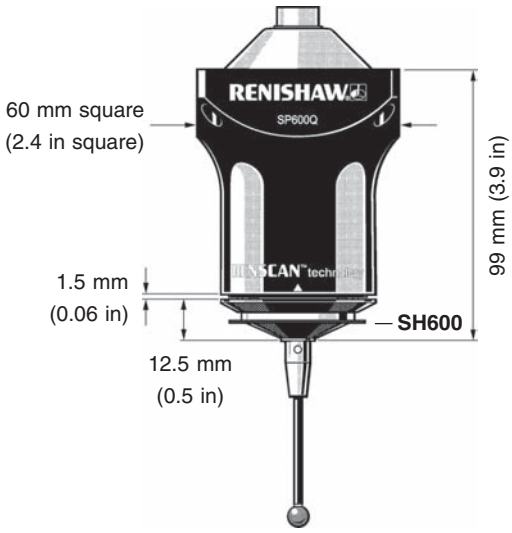
Issued 1003 Part no. H-1000-3159-01-A

Specification

Principle application		High speed, contact form scanning and fast point measurement system
Probe attributes		3 axis measurement X, Y, Z
		Linear and parallel motion in all axes
Measurement range		±1 mm (±0.04 in) X, Y, Z
Overtravel range		±X, ±Y and -Z are protected by a kinematic break out joint on the SH600
		+Z is protected by a bump-stop design
Resolution		0.1 µm (0.000004 in) with optional AC2 interface card
		1.0 µm (0.00004 in) with optional AC1 interface card
Spring rate		1.2 N/mm (7.05 ozf) nominal (X, Y, Z)
Styli	**Thread**	M4 standard range
	Length	200 mm (7.87 in) maximum using SH600 STD
		300 mm (11.8 in) maximum using SH600 EXT
	Mass	20 g (0.7 oz) maximum
Power supply		+12 V to –12 V, 5 V (±10%)
Outputs (X, Y, Z)		Analogue proportional
Weight		299 g (10.5 oz)
Mounting		Direct quill mounting to the CMM
Suitable interface		AC1 or AC2 interface cards (ISA bus)
Change rack system		SCR600 four port change rack
		SCP600 single port unit(s) mounted to MRS



Additional information

Other variants of the SP600Q include SP600 and the SP600M. The SP600 allows simple fixed mounting via a Renishaw shank. The SP600M is mounted via an autojoint and can be orientated using Renishaw's PH10M or PH10MQ motorised probe heads.

For further details on this and other related products, please see www.renishaw.com/SP600Q.

SCR600 change rack

LABORATORIO DE CALIBRACIÓN DIMENSIONAL
Ave. Revolución #3558 Sur Col. Primavera.
Monterrey, Nuevo León 64830, México
tel. 8359 7484 y 82
e-mail: servicio@riitalia.com
www.riitalia.com
riitalia