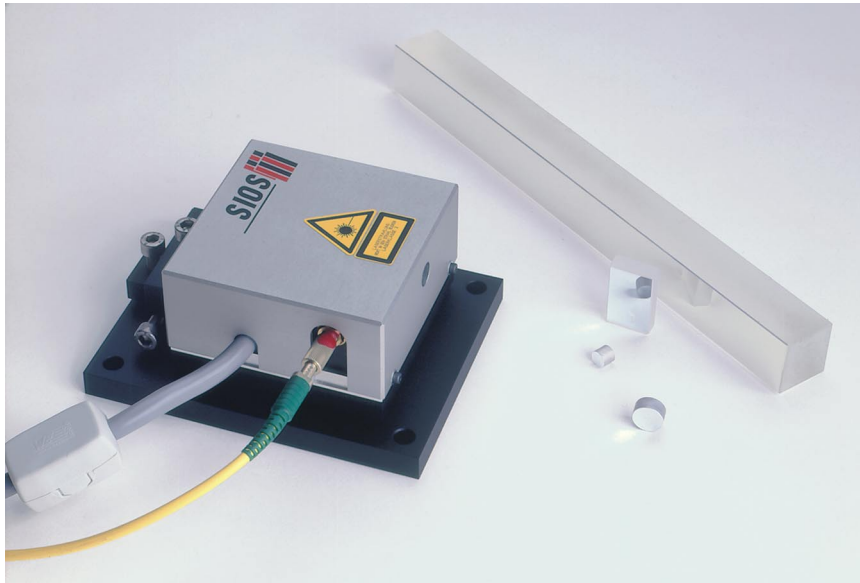


SP-series Miniature Plane-mirror interferometers



The SP series systems are precision length measurement instruments designed for incorporation into customer-supplied equipment, and are readily adapted to a wide variety of experimental set-ups and tasks. The miniaturised sensor head allows their employment as permanently installed metrology systems.

A planar mirror or other optical quality reflective surface may be employed as a retroreflector and may be misaligned by as much as several minutes of arc with respect to the laser beam without adversely affecting the operation of the system. The beam from the laser light source is transmitted to the sensor head by a fibre optic cable.

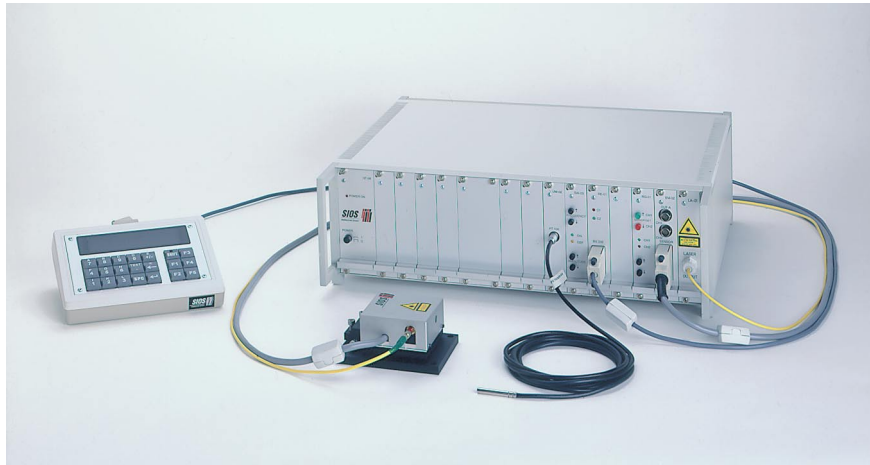
The miniature interferometer converts the motion of the planar mirror along the beam axis into optical-interference signals that are transmitted to the optoelectronic signal processing/power supply unit for processing and output as length.

Instrument operation and display of the measurement results may be via either a separate keypad/display unit or a PC running an optional software package.

Applications:

- Precision laser-interferometric length measurement on translation stages, microscope stages, positioning stages, metrological equipment or machine tools.
- Single/dual/multi-axis co-ordinate measurements.
- Dual-co-ordinate measurements in a single plane.
- Calibrating length-measurement instrumentation.
- Vibration measurements.
- Angular measurements.
- Simultaneous length and angular measurements, eg vacuum chambers.
- Non-contact surface profiling.

Technical Data for SP 120 & SP 2000



	Model SP 120	Model SP 2000
Measuring range	100 mm	2000 mm
Metric resolution	0.1 nm	0.1 nm
Nominal laser wavelength	632.8 nm	632.8 nm
Laser frequency stability (after warm up)	3×10^{-7}	2×10^{-8}
Laser warm up period	1 min	10 – 20 min
Operating temperature range	15 – 30 °C	15 – 30 °C
Maximum mirror translation rate	600 mm/s	600 mm/s
Dimensions (H x W x D):		
- Sensor head	36x70x70 mm	36x70x70 mm
- Signal processor/power supply	150x450x400 mm	150x450x400 mm
- Keypad/display unit	48x 190x138 mm	48x 190x138 mm
Weights:		
- Sensor head	200 g	200 g
- Signal processor/power supply	9.5 kg	9.5 kg
- Keypad/display unit	630 g	630 g
Interface:		
- serial	RS 232C	RS 232C
- parallel (optional)	IEEE 488	IEEE 488
PC plug-in circuit board	ISA-bus	ISA-bus
Fibre optic cable length	3, optionally up to 25 m	3, optionally up to 25 m
Supply-line voltage	100 – 240 VAC	100 – 240 VAC
Supply-line frequency	47 – 60 Hz	47 – 60 Hz

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