iDSS™ - intelligent Distributed Strain Sensor

Silixa's iDSS, intelligent Distributed Strain Sensor, introduces a step-change in long-term monitoring by delivering the finest resolution distributed static strain measurements.

This cutting-edge innovation is a versatile fibre optic sensing system that measures absolute static strain along a singlemode or multimode fibre optic cable down to the micro-strain resolution level. Uniquely, iDSS is able to record strain at a rate as high as 10Hz.

Performance

Sensing range *	50 km
Strain resolution at 0 km †	1 με
Strain resolution at 50 km †	25 με
Dynamic range ‡	4 GHz
Spatial resolution **	60 cm
Sample spacing	10 cm
Measurement time	0.1 s

* Defined for singlemode fibre.

† Calculated from strain values over distance, measured using 50 km Corning SMF28 ULL fibre with 1 hour averaging, 5 m sampling and 100 ns pulse width settings.

‡ Across the operating temperature range of 5 °C to 40 °C.

** The distance between 10% and 90% of a step change in measured strain.

I/O Connections

Fibre	1 x E2000/APC (singlemode or multimode fibre compatible)
Power	1 x IEC 60320-1 C20 inlet
Ethernet	2 x 1 GbE RJ45 port
USB	2 x USB 3.0 port and 4 x USB 2.0 port
Display	2 x DisplayPort
Internal data storage	1 x 4TB SSD RAID module
External data storage connection	2 x 10 GbE SFP+ port and 2 x PCIe x4 cable port
Temperature	2 x LEMO port for supplied Pt100 probes

Electrical

Input voltage range	100 to 240 VAC
Input voltage frequency	50 to 60 Hz
Power consumption	250 W (typical)

Mechanical and Environmental

Dimensions	195 mm (with feet) x 464 mm (with handles) x 518 mm (H x W x D)
Rackmount	1 x 19” Rackmount kit supplied
Weight	22.4 kg
Operating temperature	5 ° C to 40 ° C
Operating relative humidity range	10% - 90%, non-condensing

Compliance

Laser safety	Class 1
Product marking	CE, UKCA and FCC