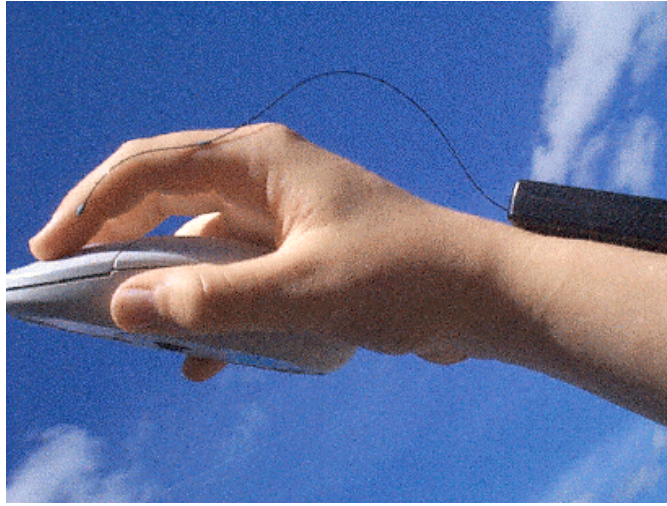


# S720 MINIATURE JOINT ANGLE ShapeSensor™

Revision 20030114



The S720 ShapeSensor™ is a comfortable, flexible, joint angle sensor. It can be used to measure the angle of any small 1 degree of freedom joint including fingers, toes, or mechanical parts. Because of its small size, the S720 can be mounted with a reusable, flexible adhesive polymer, which allows easy adjustment to a natural form along the neutral axis of the joint. The polymer may be used either directly on the skin, on a glove or on bio-compatible tape.

**Stand Alone:** Apply your own regulated power supply, 5 to 15 volts. The output is a high level signal, ratiometric with the supply voltage, that requires no additional signal conditioning. This sensor is ready to make measurements right out of the box.

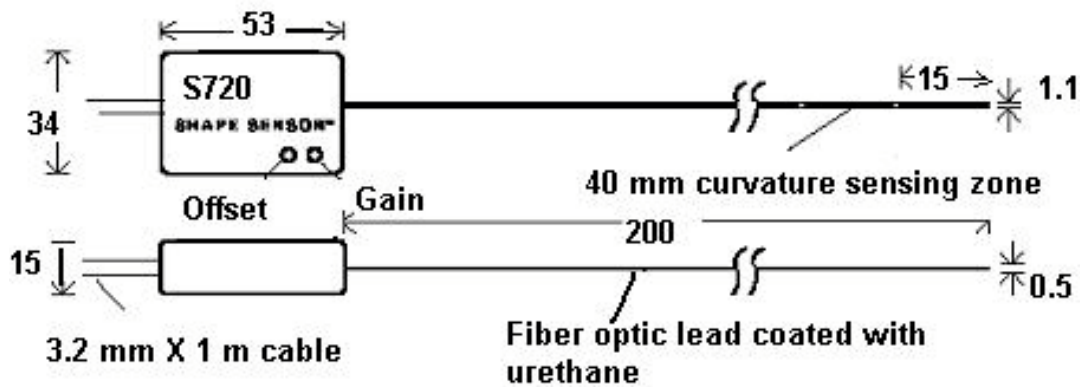
**Options:** The S290, a 12 bit data acquisition system, is available in four, eight

and sixteen channel versions, and includes a 12 bit A/D converter and Windows software, allowing the display and storage of sensor data. Power for up to sixteen sensors is supplied by the A/D.

The S720 ShapeSensor™ can be made longer to extend the distance from the electronics to the sensor for measurements in magnetic-sensitive and explosive environments. The S720 can also be made splash proof.

**Larger Joints:** For larger one degree of freedom joints you can use our S700 Joint Angle ShapeSensor™.

**Multiple Joints:** For multiple joints or joints with multiple degrees of freedom try our ShapeTape™ "the tape that knows where it is."



(Dimensions in mm unless otherwise indicated)

#### CHARACTERISTICS

These typical characteristics are approximate and subject to change without notice  
 Characteristics are for 5 VDC supply.

Full scale (FS) range:  $\pm 1.0$  V for  $\pm 90$  joint angles.

Output voltage for straight sensor: 2.5 V,  $\pm 0.2$  V.

Accuracy:  $\pm 4\%$  of FS.

Resolution: 0.5 degrees

Noise floor: 0.07 mVrms/Hz<sup>1/2</sup>.

3dB Bandwidth: 1.0 kHz.

Environmental: 0 C to +50 C.

Excitation: 5 to 15 VDC (Supply current at 5 VDC, 15 C: 10 mA).

Electrical Connections: Red: Power Supply (5 to 15 volts regulated); Black: Ground(Power Supply and Signal); White: Sensor Output.

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