

# MicroStrain Sensing Product Datasheet

## SG-LVDT

### Subminiature Gauging Displacement Sensor



**SG-LVDT** Robust and highly accurate displacement sensor with a return spring enabling measurement on moving parts

The SG-LVDT delivers high performance in a small package and is designed specifically for tight spaces. A ruby bearing and hardened stainless steel ball guide the spring-loaded tip, providing an exceptionally smooth static and dynamic response and resistance to side load. Configuration options provide cutting-edge features, including sub-micron resolution, linear analog output, flat dynamic response to kHz levels, and very low temperature coefficients. The lightweight, captive cores are small and rugged. Manufactured using corrosion-resistant alloys, the SG-LVDT is suitable for short term submersion in harsh media such as brake fluid and hot saline.

**NOTE:** This sensor is designed for use with LORD Sensing DEMOD signal conditioners.

#### PRODUCT HIGHLIGHTS

- For use with LORD DEMOD signal conditioners
- Easily customized to suit specific requirements
- $\pm 0.2\%$  to  $\pm 2\%$  accuracy
- Plug and play usability

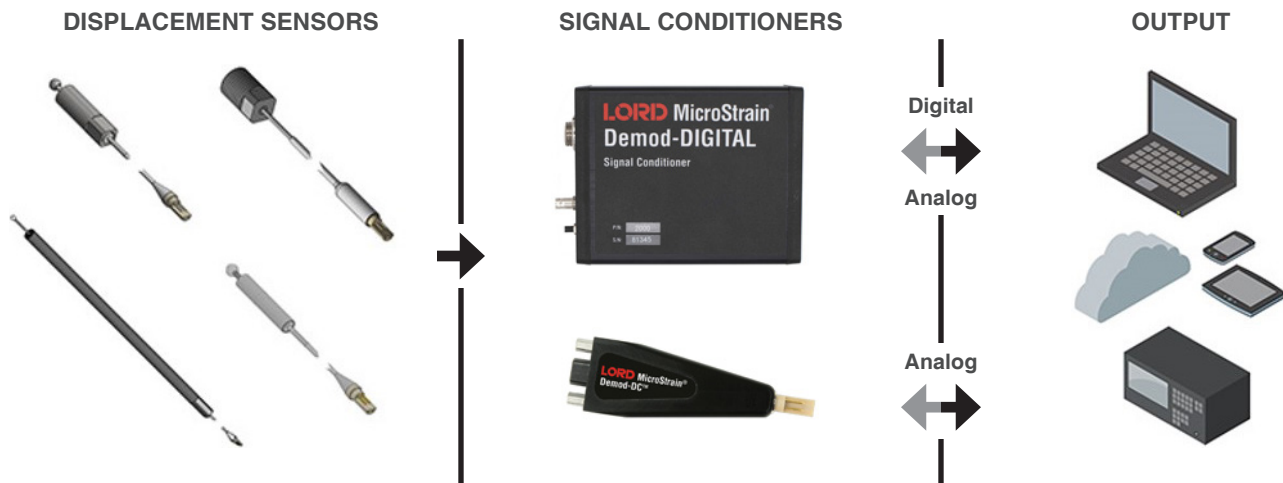
#### FEATURES AND BENEFITS

##### HIGH PERFORMANCE

- Ruggedized core enables measurement on moving parts
- Frictionless design for robust use over millions of cycles
- Suitable for use in harsh fluids and environments
- Sub-micron resolution with large stroke/size ratio

##### APPLICATIONS

- Process control for production line monitoring
- Dimensional gauging for quality control
- Miniature position control elements
- Linear and angular motion control



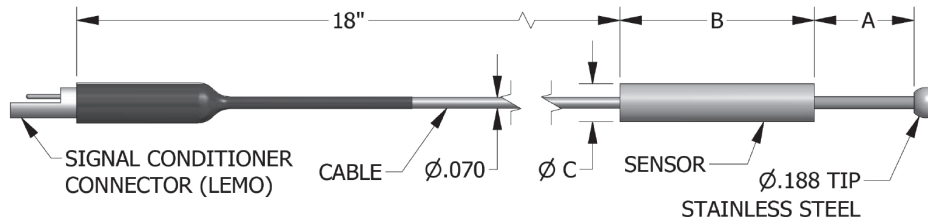
ENGINEERING YOUR SUCCESS.

# SG-LVDT Subminiature Gauging Displacement Sensor

## Specifications

Mechanical Specifications	
<b>Linear stroke lengths</b>	4,8,24,38 mm (standard) 6 mm (high resolution) 500 $\mu$ m or less (nano resolution)
<b>Temperature coefficients</b>	Offset: 0.002% FS/ $^{\circ}$ C (typical) Span: 0.030% FS/ $^{\circ}$ C (typical)
<b>Housing material</b>	400 Stainless steel smooth body 400 Stainless steel threaded body optional (see drawing)
<b>Core material</b>	316 stainless steel
<b>Cable material</b>	Teflon coated
<b>Electrical connector</b>	4 Pin PEEK LEMO connector
<b>Operating Temperature range</b>	-55 – 175 $^{\circ}$ C

Performance Specifications		
	DEMODO-DC	DEMODO-DVRT-2
<b>Resolution</b>	0.2% FS typical	0.04% FS typical
<b>Sensitivity</b>	0-5 VDC FS	0-10 VDC FS
<b>Accuracy @25<math>^{\circ}</math></b>	$\pm$ 1% Peak (typical) ( $\pm$ 2% max) with straight line 0.2% RMS with multi-segment 0.1% RMS with polynomial	
<b>Frequency response</b>	800 Hz standard, 10 Hz -20 kHz optional	



MODEL	X - LINEAR STROKE*	A - MAXIMUM TRAVEL	B - SENSOR LENGTH	C - OUTSIDE DIAMETER	PART NUMBER
SG-LVDT-4	4 mm [.158 in]	5.5 mm [0.217 in]	30.5 mm [1.201 in]	6 mm [.236 in]	6107-0000
SG-LVDT-8	8 mm [.314 in]	9.5 mm [0.374 in]	50.5 mm [1.988 in]	6 mm [.236 in]	6107-0100
SG-LVDT-24	24 mm [.945 in]	25.5 mm [1.004 in]	127 mm [5.000 in]	6 mm [.236 in]	6107-0200
SG-LVDT-38	38 mm [1.496 in]	39.5 mm [1.555 in]	183 mm [7.205 in]	8 mm [.315 in]	6107-0300
HSG-LVDT-6	6 mm [.236 in]	7.5 mm [0.295 in]	50.5 mm [1.988 in]	6 mm [.236 in]	6116-0000
NANO-G-LVDT-0.5	0.5 mm [.019 in]	2 mm [0.079 in]	50.5 mm [1.988 in]	6 mm [.236 in]	6120-0000

\*Linear stroke position varies within maximum travel.

### NOTE:

For more information on mechanical dimension and threaded options, go to:

[www.microstrain.com/displacement/nodes](http://www.microstrain.com/displacement/nodes)

Select the sensor > "Documentation" > "Mechanical Drawing".



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