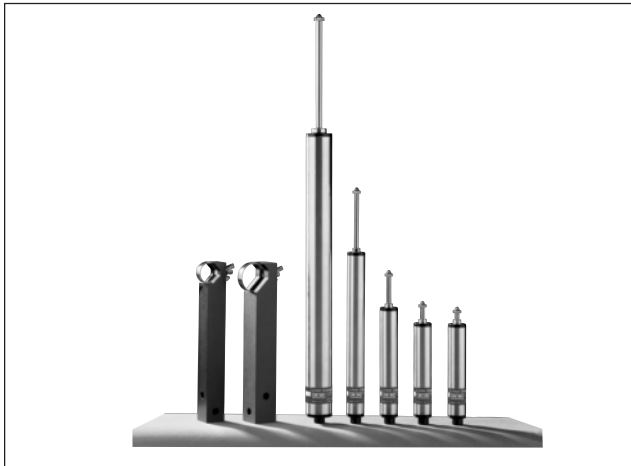


## Linear Displacement Sensor



### INTRODUCTION

Vishay Micro-Measurements Linear Displacement Sensors use a fully active 350-ohm strain-gage bridge to sense spindle displacement, giving infinite resolution and excellent linearity. They are compatible with all standard strain-gage instrumentation with bridge excitation from 2 to 10 volts. With a selection of models having full-scale ranges from 1/4 in (5 mm) to 4 in (100 mm), Vishay Micro-Measurements Linear Displacement Sensors feature a unique design that produces maximum operating forces of less than 1 lb (4.4 N). Available with specially designed mounting fixtures, these versatile sensors are ideally suited for use in research, manufacturing and process control applications.

### ACCURACY

Vishay Micro-Measurements Linear Displacement Sensors produce an output voltage proportional to a captive, guided spindle displacement by means of a 350-ohm strain gage bridge with four active arms. This arrangement provides excellent temperature compensation and linearity.

### COMPATIBILITY

Vishay Micro-Measurements Linear Displacement Sensors exhibit the same inherent advantages for linearity, versatility and precision as many other strain-gage-based sensors. As



### FEATURES

- Infinite resolution
- True output linearity over the entire measurement range
- Low operating forces
- Excellent stability and temperature compensation

such, they are systems-compatible with a wide range of commonly used sensors for pressure, load, acceleration, vibration, etc. and normally utilize the same instrumentation.

### VALUE

In engineering, in research, in manufacturing, and in process control, Vishay Micro-Measurements Linear Displacement Sensors will yield more value for your sensor investment by producing better results, more reliable test data, and more accurate feedback and control — all with the economy of utilizing a common instrumentation system.

### QUALITY

Rugged construction, low voltage and current consumption, as well as system and sensor compatibility are key factors in the design of any sensor. These design factors, together with precision engineering and stringent product quality control, make the Vishay Micro-Measurements Linear Displacement Sensor a world leader in strain gage displacement devices.



### Model HS25

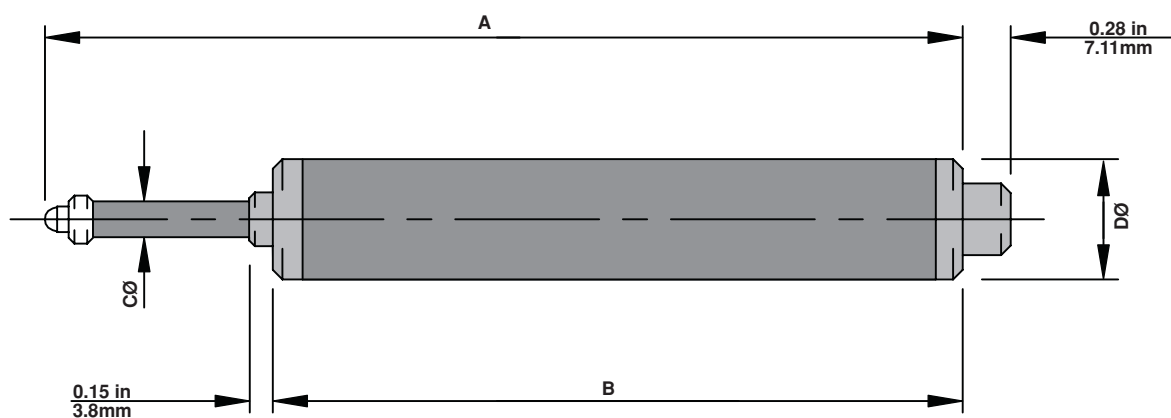
Manufactured with the same attention to quality as Vishay Micro-Measurements strain gages.

## Linear Displacement Sensor

SPECIFICATIONS								
MODEL HS			5	10	25	50	100	
*Displacement Range		in	0.25	0.5	1	2	4	
		mm	6.5	11.2	26	51.5	102	
Dimensions		A	in	4.10	4.30	5.44	8.48	14.97
			mm	104.2	109.2	138.2	215.4	380.2
		B	in	3.49	3.49	4.08	6.11	10.47
			mm	88.6	88.6	103.6	155.2	266.0
		CØ	in	0.19	0.19	0.19	0.19	0.24
			mm	4.8	4.8	4.8	4.8	6.0
		DØ	in	0.69	0.69	0.69	0.69	1.00
			mm	17.4	17.4	17.4	17.4	25.4
Weight		lb	0.31	0.31	0.33	0.44	1.10	
		g	140	140	150	200	500	
*Spring Force		lb	0.44	0.55	0.55	0.66	0.77	
		g	200	250	250	300	350	
Excitation			2 to 10V, ac or dc					
*Frequency Response			5-mm displacement: 100 Hz; 100-mm displacement: 10 Hz					
*Rated (F.S.) Output		mV/V	4.5	5.3	7.0	3.6	5.2	
*Nonlinearity (Best-Fit Method)			0.1% FS	0.1% FS	0.1% FS	0.1% FS	0.2% FS	
Resolution			Infinite					
Bridge Resistance (Nominal)			350 ohms Bridge, 100K ohms Zero Balance					
Temperature Range			+15 to +140°F		-10 to +60°C			
*Temperature Coefficient (%FS)			Zero <0.006%/°F		Span <0.006%/°F			
			Zero <0.01%/°C		Span <0.01%/°C			
Termination			0.18 in PVC 7/0.008, 4-core shielded, 6.6 ft long					
			4.5 mm PVC 7/0.2, 4-core shielded, 2 m long					
Electrical Connections			Input: Red+ Black-		Output: Green+ White-			

\*Typical figures: Actual values subject to calibration.

## DIMENSIONS



## Linear Displacement Sensor

### GENERAL APPLICATIONS

#### Research & Development

Remote sensing, indicating, recording and/or processing of physical displacements, deflection or movement in engineering structures, loaded beams and members, concrete, rock, soil.

Measurement of volumetric displacement of fluids, linear displacement of specimens under load, general laboratory applications.

#### Industry & Commercial

Remote sensing, indicating, recording, and control of automatic machine systems, robots, weighing and batching systems, machine tools, instruments and mechanisms, general industrial applications.

#### Examples of Specific Applications

##### Aerospace

Airframe deflection testing and analysis (static and dynamic), missile stage separation sensing, axis position feedback (flight simulation).

#### Industrial

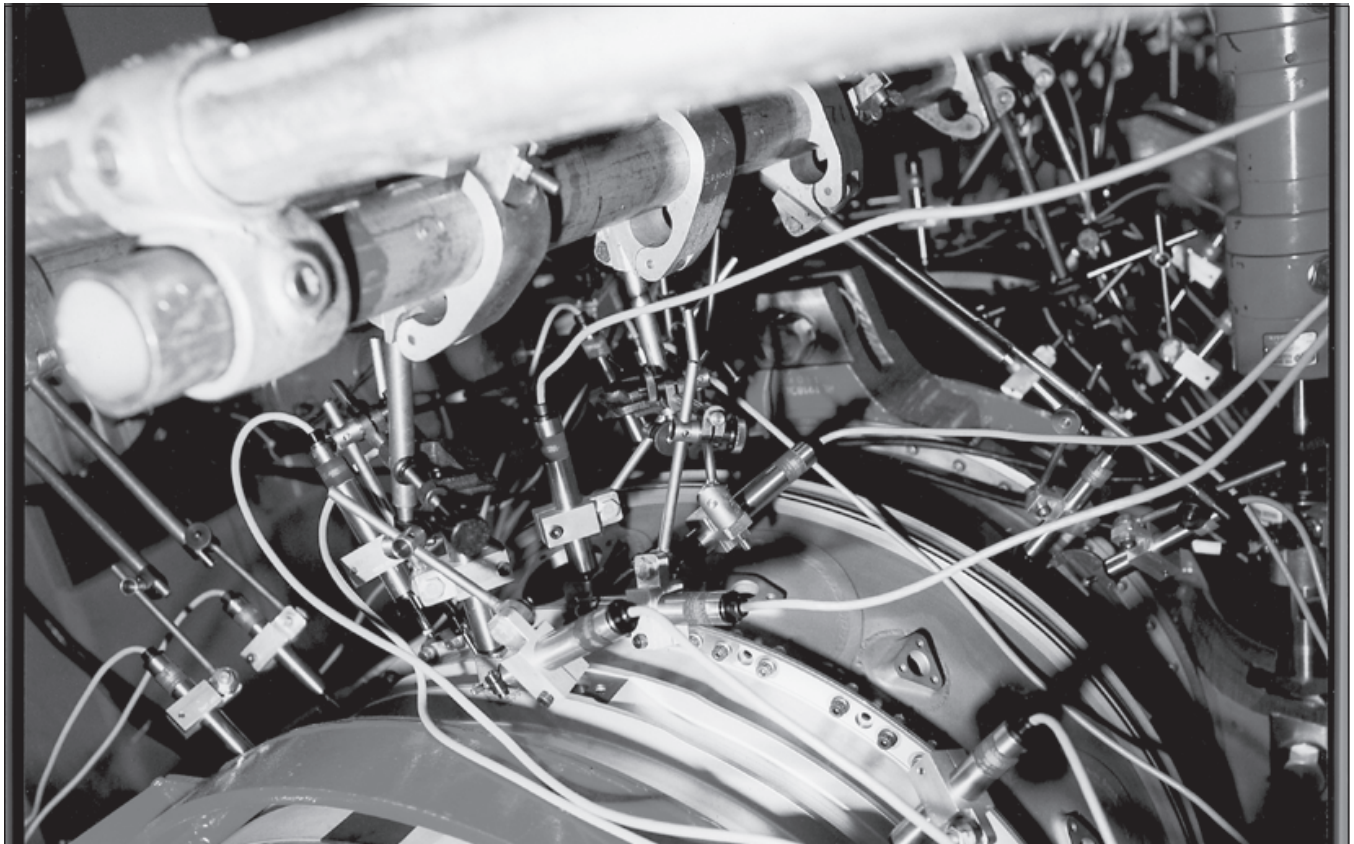
Valve actuator testing, position measurement (machine tools), remote sensing (process control lines), feedback loop sensing (robotic/automatic machine systems), direct measurements (roll forming machines).

#### Civil Engineering

Seismic monitoring, deflection testing (steel, wood, concrete structures), soil consolidation testing, monitoring of compression for triaxial testing, creep monitoring in structures (above and below ground).

#### Automotive

Gaging of body fabrications, test run monitoring (engine and suspension development).



Displacement sensors being used in testing an aircraft engine case.