

Special Use Sensors—Linear Displacement Sensors

FEATURES

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

DESCRIPTION

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), 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.

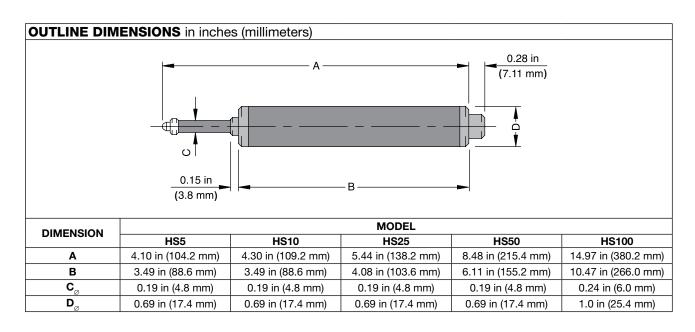
ACCURACY

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

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



Linear Displacement Sensors



Document No.: 11350 Revision: 25-Apr-2018

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SPECIFICATIONS							
PARAMETERS	MODEL						
	HS5	HS10	HS25	HS50	HS100		
Displacement Range*	0.25 in (6.5 mm)	0.5 in (11.2 mm)	1 in (26 mm)	2 in (51.5 mm)	4 in (102 mm)		
Weight	0.31 lb (140 g)	0.31 lb (140 g)	0.33 lb (150 g)	0.44 lb (200 g)	1.10 lb (500 g)		
Spring Force*	0.44 lb (200 g)	0.55 lb (250 g)	0.55 lb (250 g)	0.66 lb (300 g)	0.77 lb (350 g)		
Excitation	2 to 10 V, AC or DC						
Frequency Response*	5-mm displacement: 100 Hz; 100-mm displacement: 10 Hz						
Rated (F.S.) Output*	4.5 mV/V	5.3 mV/V	7.0 mV/V	3.6 mV/V	5.2 mV/V		
Nonlinearity (Best-Fit Method)*	0.5% FS	0.5% FS	0.5% FS	0.5% FS	0.5% 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 (<0.01%/°C)			Span <0.006%/°F (<0.01%/°C)			
Termination	0.18 in PVC 7/0.008 (4.5 mm PVC 7/0.2), 4-core shielded, 6.6 ft (2.2 m) long						
Electrical Connections	Input: Red+ Black- ; Output: Green+ White-						

^{*} Typical figures: actual values subject to calibration

DISPLACEMENT (INCHES)						
0.25	0.50	1.00	2.00	4.00		
ominal)						
5.00E+04						
5.00E+05	5.00E+04					
5.00E+06	5.00E+05	5.00E+04				
5.00E+06	5.00E+06	5.00E+06	5.00E+05			
5.00E+06	5.00E+06	5.00E+06	5.00E+05	5.00E+04		
4.50						
2.65	5.30					
1.75	3.50	7.00				
0.45	0.90	1.80	3.60			
0.32	0.65	1.30	2.60	5.20		
	5.00E+04 5.00E+05 5.00E+06 5.00E+06 5.00E+06 4.50 2.65 1.75 0.45	0.25 0.50 lominal) 5.00E+04 5.00E+05 5.00E+04 5.00E+06 5.00E+05 5.00E+06 5.00E+06 5.00E+06 5.00E+06 4.50 2.65 1.75 3.50 0.45 0.90	0.25 0.50 1.00 Iominal) 5.00E+04 5.00E+04 5.00E+05 5.00E+04 5.00E+06 5.00E+05 5.00E+04 5.00E+06 5.00E+06 5.00E+06 5.00E+06 5.00E+06 5.00E+06 4.50 2.65 5.30 1.75 3.50 7.00 0.45 0.90 1.80	0.25 0.50 1.00 2.00 lominal) 5.00E+04 5.00E+04 5.00E+05 5.00E+04 5.00E+06 5.00E+05 5.00E+04 5.00E+06 5.00E+05 5.00E+06 5.00E+06 5.00E+06 5.00E+05 4.50 2.65 5.30 7.00 0.45 0.90 1.80 3.60		

^{*} Please note that recommended displacements are indicated by shading



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Document No.: 63999 Revision: 15-Jul-2014