



For use in:

Factory Automation  
Part Inspection and Location  
Automation Systems  
Assembly Machinery  
Packaging Equipment

# LZ-13 Series

## LVIT Miniature Linear Position Sensor

Through-bore LVIT sensor for applications where size is a constraint and/or superior stroke-to-length ratio is required.

The LZ-13 series of LVIT (Linear Variable Inductance Transducer) miniature position sensors are inductive, contactless devices designed for use in factory automation or assembly machinery applications where space is a premium. The LVIT is offered in nominal full-scale ranges from 2.5 to 200 mm (0.1 to 8 inches) with an excellent stroke-to-length ratio. The sensor has 12.7 mm (1/2 inch) outside diameter stainless steel body with a 1 m cable for I/O connections. The 4.78 mm (.188 inch) diameter through-bore of an LZ-13 provides clearance for its 4 mm (.157 inch) diameter moving target rod with M4 thread and hex nut, which is made of the same material as its housing. This through-bore feature also means that the sensor is not subject to damage from typical mechanical overstroking.

### Features:

- LVIT Technology™ (Linear Variable Inductance Transducer)
- Contactless operation prevents internal wearout from dithering or rapid cycling
- Excellent stroke-to-length ratio
- Full-scale ranges from 2.5 to 200 mm (0.1 to 8 inches)
- Through-bore design eliminates mechanical overstroking
- DC in / DC out operation with built-in electronics
- Proprietary SenSet™ field adjustable range scaling

### Specifications:

**Analog I/Os:** 0-5 VDC or 0.5 - 4.5 VDC output, 8-30 VDC input, 20 mA nominal  
0-10 V DC output; 12-30 V input, 20 mA nominal  
0-3 VDC output; 5 VDC input, 20mA nominal

**Measuring Ranges:** 2.5 to 200 mm (0.1 to 8 inches)

**Linearity Error:**  $\pm 0.15\%$  of Full Scale Output (FSO) typical,  $\pm 0.25\%$  FSO max.

**Resolution:** 0.025% of FSO

**Bandwidth:** 300 Hz nominal

**Operating Temperature:** -20 to 105 C

**Temperature Coefficient:**  $\pm 0.015\%$  of FSO/K

**Vibration:** 5-20 Hz, 0.5 inch p-p; 20-2000 Hz, 4.2 g p-p

**Shock:** 1000 g, 11 msec.

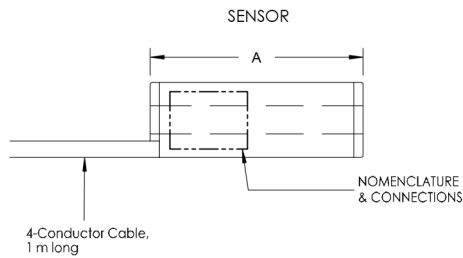
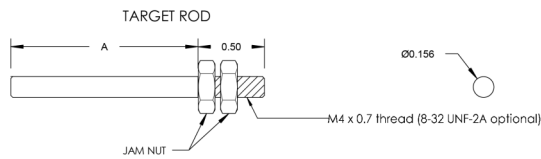
**Environmental Sealing:** IEC IP-67

**Humidity:** 95% RH, non-condensing

**ALLIANCE SENSORS GROUP**  
A DIVISION OF H.G. SCHAEVITZ LLC

# LZ-13 Series

Wiring Table	
I/O Function	Cable Color
+ Power input	Red
Ground	Black
Analog output	Green
SenSet™	White
Shield/Drain*	Shield
*Shield not connected internally	



Unit Length Table	
Linear Range	Length "A"
0.10 inches [2.5 mm]	1.41 inches [35.8 mm]
0.25 inches [6.4 mm]	1.41 inches [35.8 mm]
0.50 inches [12.7 mm]	1.41 inches [35.8 mm]
0.75 inches [19.0 mm]	1.41 inches [35.8 mm]
1.0 inch [25 mm]	1.41 inches [35.8 mm]
2.0 inches [50 mm]	2.41 inches [61.2 mm]
3.0 inches [75 mm]	3.41 inches [86.6 mm]
4.0 inches [100 mm]	4.41 inches [112.0 mm]
6.0 inches [150 mm]	6.50 inches [165.1 mm]
8.0 inches [200 mm]	8.50 inches [215.9 mm]

## Ordering Information:

Series	Output	Housing Diameter	Range (mm)	Electrical Termination		Output	Housing/Rod Material
					Termination		
LZ	X-	XX-	XXX-	X-	XX-	XX-	X-
	E- Voltage	13- 12.7 mm	2.5	A- Axial	00- 1 m cable	05- 0.5 to 4.5 VDC	S- 300 Series SS
			6.4			06- 4.5 to 0.5 VDC	
			12.7			10- 0 to 10 VDC	
			19			11- 10 to 0 VDC	
			25			50- 0 to 5 VDC	
			50			51- 5 to 0 VDC	
			75				
			100				
			150	Longer ranges available upon request			
			200				

**ALLIANCE SENSORS GROUP**  
A DIVISION OF H.G. SCHAEVITZ LLC

Alliance Sensors Group  
102 Commerce Drive, Unit 8  
Moorestown, New Jersey 08057 USA  
Ph: 856-727-0250  
www.alliancesensors.com  
info@alliancesensors.com