

**For use in:**

Steel, Aluminum, and Paper Mills
Power Generation Steam Valves
Material Creep Measurements
Roadway/Bridge Expansion
Hydro Power Plants

LV-45 Series

LVIT Linear Position Sensor

Designed Specifically for Heavy Duty Industrial and Civil Engineering Applications

Alliance Sensors Group LV-45 series LVIT (Linear Variable Inductance Transducer) position sensors are specifically targeted for measuring applications requiring rugged devices, whether measuring position of steam turbine valves, mounted in a paper mill head box or calendar roll stand, or operating outdoors fastened to a bridge or structure. LV-45 sensors use a contactless inductive technology that allows them to replace other technology sensors like potentiometers and DC LVDTs in most applications. With a simple coil design, a captive connecting rod, and a thick walled housing, the sensors are both shorter and more robust than their DC-LVDT counter parts while operating over a wider temperature range, so they can withstand the vibration and shock levels found in mills and power plants, as well as the temperature and humidity found in outdoor applications. Once a sensor has been installed, ASG's SenSet™ range adjustment process permits a user to match the sensor's zero and full scale output to the workpiece's actual range of motion.

Additional information can be found at www.alliancesensors.com

Features:

- LVIT Technology™ (Linear Variable Inductance Transducer)
- Contactless operation
- Excellent stroke to length ratio
- Proprietary SenSet™ field adjustable range scaling

Specifications:

Analog I/Os	0 – 5 V or 0.5 – 4.5 V output with 8 – 30 V input, 35 mA max 0 – 10 V output with 12 – 30 V input, 35 mA max. 4 – 20 mA (3-wire) output with 18 – 30 V input, 60 mA max. (75 C max.)
Measuring Range	100 mm to 450 mm (4 to 18 inches) full scale (nominal)
Linearity Error	±0.15% of Full Scale Output (FSO) typical, ±0.25% max.
Resolution	0.025% of FSO
Update Rate	300 Hz nominal
Operating Temperature	-20 to 85 C (-40 to 105 C extended range)
Temperature Coefficient	≤±0.015% of FS/deg C
Vibration	5-20 Hz 0.5 inch p-p; 20-2000 Hz 4.2 g p-p
Shock	1000 g, 11 ms
Terminations	IEC IP-67
Humidity	95% RH, non-condensing

LV-45 Series



Wiring Table		
Function	Pin	Cable Color
+DC Power Input	1	Red
Ground	2	Black
Voltage output*	3	Green
Current output*	4	Green
SenSet™	5	White

*choose output Pin 3 or output Pin 4, but not both

Linear Range	Length "A"	
4 inches	100 mm	9.63 inches [244.5 mm]
6 inches	150 mm	11.63 inches [295.4 mm]
8 inches	200 mm	13.63 inches [346.2 mm]
10 inches	250 mm	15.63 inches [397.0 mm]
12 inches	300 mm	17.63 inches [447.8 mm]
15 inches	375 mm	20.63 inches [524.0 mm]
18 inches	450 mm	23.63 inches [600.2 mm]

Ordering Guide	
Model	Output
LVE	Voltage
LVI	Current

Technical drawings showing LVX-45-A and LVX-45-R sensors. Dimensions include: .65, 1.25 Fully Retracted, .75, 1/2-20 UNF Thread, [31.7] 1.25, .47 Typ, [69.9] 2.75 Retracted Start Point, ϕ 1.75, ϕ 1.75, ϕ .70, 2X ϕ .50 Eye, .50, .63, and Field adjustable for cable or connector orientation.

Axial M-12 Connector (Standard)



Radial Connector with Rod Eye End



1/2-20 Threaded End (Standard)



Rod Eye End



Ordering information:

Series	Output	Housing Diameter	Range (mm)	Electrical Termination		Output	Housing Material
				Axial or Radial	Termination		
LV	X-	XX-	XXX-	X-	XX-	XX	X-
	E- Voltage	45- 45 mm	100	A- Axial	00- 1 m cable	05- 0.5 to 4.5 V	A- Aluminum
	I- Current		150	R- Radial	01- 5-pin M12	06- 4.5 to 0.5 V	S- 300 Series SS
			200		03- 5-pin mini 7/8 (axial only)	10- 0 to 10.0 V	
			250			11- 10.0 to 0 V	
			300			20- 4 to 20 mA	
			375			21- 20 to 4 mA	
			450			50- 0 to 5 V	
						51- 5 to 0 V	

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