

**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](http://www.alliancesensors.com)

### Features:

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

### Specifications:

Analogue 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

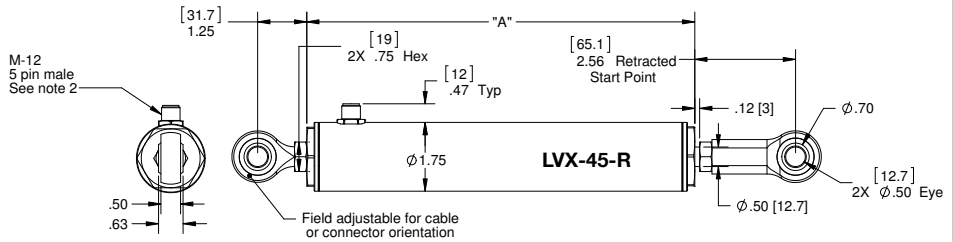
# LV-45 Series



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

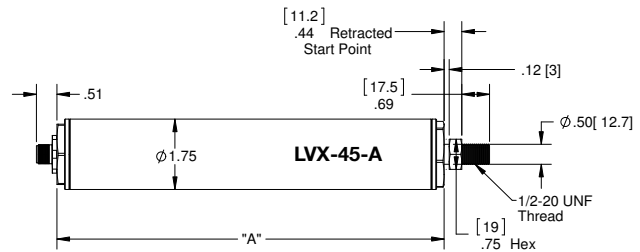
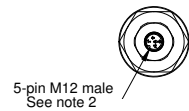
\*choose output Pin 3 or output Pin 4, but not both

Linear Range	Length "A"	
4 inches	100 mm	9.88 inches [250.9 mm]
6 inches	150 mm	11.88 inches [301.7 mm]
8 inches	200 mm	13.88 inches [352.5 mm]
10 inches	250 mm	15.88 inches [403.3 mm]
12 inches	300 mm	17.88 inches [454.1 mm]
15 inches	375 mm	20.88 inches [530.4 mm]
18 inches	450 mm	23.88 inches [606.6 mm]



### Ordering Guide

Model	Output
LVE	Voltage
LVI	Current



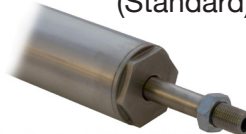
Axial M-12 Connector (Standard)



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	

**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