

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.

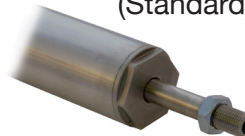
Axial M-12 Connector (Standard)



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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