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 counterparts 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

For use in:
Steel, Aluminum, and Paper Mills
Power Generation Steam Valves
Material Creep Measurements
Roadway/Bridge Expansion
Hydro Power Plants
### LV-45 Series

#### Wiring Table

<table>
<thead>
<tr>
<th>Function</th>
<th>Pin</th>
<th>Cable Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>+DC Power Input</td>
<td>1</td>
<td>Red</td>
</tr>
<tr>
<td>Ground</td>
<td>2</td>
<td>Black</td>
</tr>
<tr>
<td>Voltage output*</td>
<td>3</td>
<td>Green</td>
</tr>
<tr>
<td>Current output*</td>
<td>4</td>
<td>Green</td>
</tr>
<tr>
<td>SenSet**</td>
<td>5</td>
<td>White</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Linear Range</th>
<th>Length “A”</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 inches</td>
<td>9.88 inches [250.9 mm]</td>
</tr>
<tr>
<td>6 inches</td>
<td>11.88 inches [301.7 mm]</td>
</tr>
<tr>
<td>8 inches</td>
<td>13.88 inches [352.5 mm]</td>
</tr>
<tr>
<td>10 inches</td>
<td>15.88 inches [403.3 mm]</td>
</tr>
<tr>
<td>12 inches</td>
<td>17.88 inches [454.1 mm]</td>
</tr>
<tr>
<td>15 inches</td>
<td>20.88 inches [530.4 mm]</td>
</tr>
<tr>
<td>18 inches</td>
<td>23.88 inches [606.6 mm]</td>
</tr>
</tbody>
</table>

#### Ordering Guide

<table>
<thead>
<tr>
<th>Model</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>LV</td>
<td>Voltage</td>
</tr>
<tr>
<td>LVI</td>
<td>Current</td>
</tr>
</tbody>
</table>

#### Electrical Termination

<table>
<thead>
<tr>
<th>Range (mm)</th>
<th>Axial or Radial</th>
<th>Termination</th>
<th>Output</th>
<th>Housing Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>45-45</td>
<td>A- Axial</td>
<td>00-1 m cable</td>
<td>05-0.5 to 4.5 V</td>
<td>A- Aluminum</td>
</tr>
<tr>
<td>45-45</td>
<td>R- Radial</td>
<td>01-5-pin M12</td>
<td>06-4.5 to 0.5 V</td>
<td>S-300 Series SS</td>
</tr>
<tr>
<td>200</td>
<td>03-5-pin mini 7/8 (axial only)</td>
<td>10-0 to 10.0 V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>01-5-pin M12</td>
<td>11-10.0 to 0 V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>02-4 to 20 mA</td>
<td>20-4 to 20 mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>375</td>
<td>02-4 to 20 mA</td>
<td>21-20 to 4 mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>450</td>
<td>02-4 to 20 mA</td>
<td>50-0 to 5 V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>02-4 to 20 mA</td>
<td>51-5 to 0 V</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Ordering information:

**Series**

- LV
- E- Voltage 45-45 mm
- I- Current

**Output**

- X- XX- XXX-

**Housing Diameter**

- 100
- 150
- 200
- 250
- 300
- 375
- 450

**Range (mm)**

- 100
- 150
- 200
- 250
- 300
- 375
- 450

**Termination**

- Axial or Radial
- 00-1 m cable
- 01-5-pin M12
- 03-5-pin mini 7/8 (axial only)
- 10-0 to 10.0 V
- 11-10.0 to 0 V
- 20-4 to 20 mA
- 21-20 to 4 mA
- 50-0 to 5 V
- 51-5 to 0 V

**Housing Material**

- A- Aluminum
- S-300 Series SS

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All specifications are subject to change without notice. © Alliance Sensors Group, 2017

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