The MHP-7 Series LVIT (Linear Variable Inductance Transducer) Position Sensors from Alliance Sensors Group were designed to be installed into the rear endcap of hydraulic cylinders having a female o-ring port. Their 1-inch hex aluminum or stainless steel housings are ideal for operation up to 5000 psig (350 bar) in high pressure mobile hydraulic systems, factory automation machinery, or oil and gas exploration equipment.

The MHP-7 series sensors are based on a proprietary contactless sensing technology with a good stroke-to-length ratio. They employ a 7 mm diameter sealed inductive probe inserted into a gun-drilled hole in the cylinder rod to measure its position rather than using a ring magnet or a potentiometer’s contact spool. They are offered in full scale ranges from 25 to 600 mm (1 to 24 inches), with a wide variety of analog I/Os, and either connector or cable terminations. The MHP-7 is also offered with ASG’s proprietary SenSet™ feature whereby a sensor’s analog output can be easily adjusted in the field after installation to match the range of motion of the cylinder rod.

Additional information can be found at www.alliancesensors.com.

Features:
- LVIT Technology™ (Linear Variable Inductance Transducer)
- Senses cylinder rod… NO MAGNET REQUIRED
- 1-inch hex aluminum or stainless steel housing
- Easily adapts to existing cylinder designs
- Contactless sensing for long sensor life
- Proprietary SenSet™ for 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 Ranges
  - 0-25 mm to 0-600 mm (1 to 24 inches) Full Scale (nominal)
- Linearity Error
  - ±0.15% of Full Scale Output (FSO) typical, ±0.25% of FSO max.
- Resolution
  - 0.025% of FSO
- Update Rate
  - 300 Hz nominal
- Operating Temperature
  - -20 to 85 C (-40 C to 105 C Extended Range)
- Temperature Coefficient
  - ≤±0.015% of FS/deg C
- Operating Pressure
  - 5000 psig (350 bar) max operating, 7500 psig (520 bar) proof
- Vibration
  - 5-20 Hz 0.5 inch p-p; 20-2000 Hz 4.2 g p-p
- Shock
  - 1000g, 11 msec
- Terminations
  - IEC IP-67
- Humidity
  - 95% RH, non-condensing

Use with:
- Oil and Gas E&P Equipment
- Industrial and Mobile Hydraulics
- Off-road and Construction Vehicles

NO MAGNET REQUIRED!
MHP-7 Series

**Nominal Range**  | **Dim. “A”**  | **Nominal Range**  | **Dim. “A”**
---|---|---|---
25 mm | 1.0 [25.4] | 300 mm | 12.0 [304.8]
50 mm | 2.0 [50.8] | 350 mm | 14.0 [355.6]
75 mm | 3.0 [76.2] | 400 mm | 16.0 [406.4]
100 mm | 4.0 [101.6] | 450 mm | 18.0 [457.2]
125 mm | 5.0 [127.0] | 500 mm | 20.0 [508.0]
150 mm | 6.0 [152.4] | 600 mm | 24.0 [609.6]
175 mm | 7.0 [177.8] | 700 mm | 28.0 [711.2]
200 mm | 8.0 [203.2] | 750 mm | 30.0 [762.0]
225 mm | 9.0 [228.6] | 800 mm | 32.0 [812.8]
250 mm | 10.0 [254.0] | 900 mm | 36.0 [914.4]

**Wiring Table**

<table>
<thead>
<tr>
<th>I/O Function</th>
<th>Pin</th>
<th>Cable Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 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>

**Ordering Information**

<table>
<thead>
<tr>
<th>Series</th>
<th>Output Type</th>
<th>Probe Dia.</th>
<th>Range (mm)</th>
<th>Port Thread</th>
<th>Termination</th>
<th>Output</th>
<th>Housing Material</th>
<th>Bore Size (mm)</th>
<th>Bore Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>MHP</td>
<td>X-</td>
<td>X-</td>
<td>XXX-</td>
<td>XX-</td>
<td>XX-</td>
<td>X</td>
<td>XX-</td>
<td>XX</td>
<td></td>
</tr>
<tr>
<td>E - Voltage</td>
<td>7 - 7 mm</td>
<td>025 - 250</td>
<td>08 - 3/4-16</td>
<td>00 - 1 m cable</td>
<td>05 - 0.5 to 4.5 V</td>
<td>A - Aluminum</td>
<td>08 - 8 (25-100 ranges)</td>
<td>AL - Aluminum</td>
<td></td>
</tr>
<tr>
<td>I - Current</td>
<td>(25 mm increments)</td>
<td>18 - M18</td>
<td>01 - 5-pin M12</td>
<td>06 - 4.5 to 0.5 V</td>
<td>S - 300 Series SS</td>
<td>95 - 9.5 (125-200 ranges)</td>
<td>AS - Alloy Steel</td>
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<td></td>
</tr>
<tr>
<td>250 - 600</td>
<td></td>
<td>22 - M22</td>
<td>03 - 5-pin mini 7/8</td>
<td>10 - 0 to 10.0 V</td>
<td>11 - 11 (250-900 ranges)</td>
<td>CS - Carbon Steel</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(50 mm increments)</td>
<td></td>
<td></td>
<td>11 - 10.0 to 0 V</td>
<td></td>
<td>SS - Stainless Steel</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>600 - 900</td>
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<td>00 - 500</td>
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<td>50 - 0 to 5 V</td>
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<td></td>
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<tr>
<td></td>
<td>(150 mm increments)</td>
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<td></td>
<td>51 - 5 to 0 V</td>
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</tr>
</tbody>
</table>

Alliance Sensors Group
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