



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

**NO MAGNET  
 REQUIRED!**

# MHP-7 Series

## LVIT Linear Position Sensor

Specifically designed for position feedback of hydraulic and pneumatic cylinders

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](http://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:

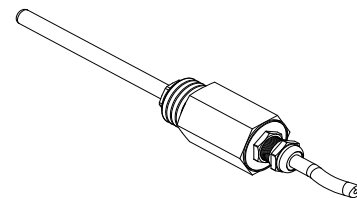
<b>Analog I/Os</b>	0 – 5 V or 0.5 – 4.5 V output with 8 – 30 V input, 35 mA max. 0 – 10 V output with 12 – 30 V input, 35 mA max. 4 – 20 mA (3-wire) output with 18 – 30 V input, 60 mA max. (75 C max.)
<b>Measuring Ranges</b>	0-25 mm to 0-600 mm (1 to 24 inches) Full Scale (nominal)
<b>Linearity Error</b>	±0.15% of Full Scale Output (FSO) typical, ±0.25% of FSO max.
<b>Resolution</b>	0.025% of FSO
<b>Update Rate</b>	300 Hz nominal
<b>Operating Temperature</b>	-20 to 85 C (-40 C to 105 C Extended Range)
<b>Temperature Coefficient</b>	≤±0.015% of FS/deg C
<b>Operating Pressure</b>	5000 psig (350 bar) max operating, 7500 psig (520 bar) proof
<b>Vibration</b>	5-20 Hz 0.5 inch p-p; 20-2000 Hz 4.2 g p-p
<b>Shock</b>	1000g, 11 msec
<b>Terminations</b>	IEC IP-67
<b>Humidity</b>	95% RH, non-condensing

# MHP-7 Series

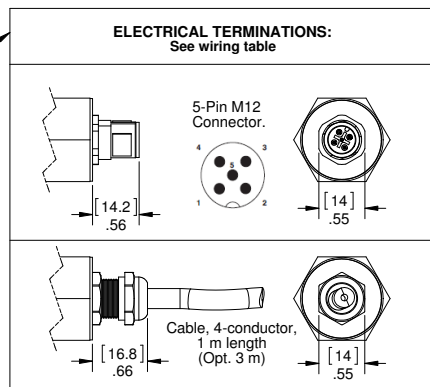
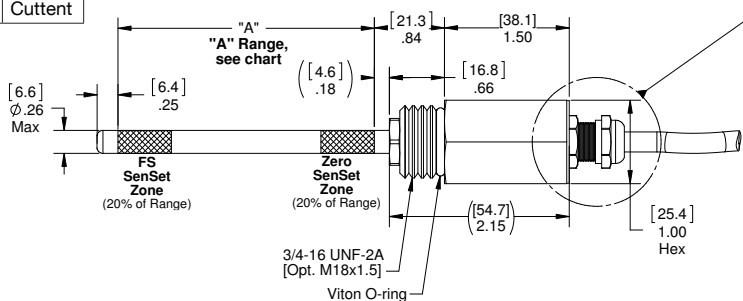


Nominal Range	Dim. "A" In. [mm]	Nominal Range	Dim. "A" In. [mm]
25 mm	1.0 [25.4]	300 mm	12.0 [304.8]
50 mm	2.0 [50.8]	350 mm	14.0 [355.6]
75 mm	3.0 [76.2]	400 mm	16.0 [406.4]
100 mm	4.0 [101.6]	450 mm	18.0 [457.2]
125 mm	5.0 [127.0]	500 mm	20.0 [508.0]
150 mm	6.0 [152.4]	600 mm	24.0 [609.6]
175 mm	7.0 [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		
I/O Function	Pin	Cable Color
+ Power Input	1	Red
Ground	2	Black
Voltage output	3	Green
Current output	4	Green
SenSet™	5	White



Ordering Guide	
Model	Output
MHPE	Voltage
MHPI	Current



## Ordering Information

Series	Output Type	Probe Dia.	Range (mm)	Port Thread	Termination	Output	Housing Material	Bore Size (mm)	Bore Material
<b>MHP</b>	<b>X-</b>	<b>X-</b>	<b>XXX-</b>	<b>XX-</b>	<b>XX-</b>	<b>XX-</b>	<b>X</b>	<b>XX-</b>	<b>XX</b>
	<b>E</b> - Voltage	<b>7 - 7 mm</b>	<b>025 - 250</b>	<b>08</b> - 3/4-16	<b>00</b> - 1 m cable	<b>05</b> - 0.5 to 4.5 V	<b>A</b> - Aluminum	<b>08</b> - 8 (25-100 ranges)	<b>AL</b> - Aluminum
	<b>I</b> - Current		(25 mm increments)	<b>18</b> - M18	<b>01</b> - 5-pin M12	<b>06</b> - 4.5 to 0.5 V	<b>S</b> - 300 Series SS	<b>95</b> - 9.5 (125-200 ranges)	<b>AS</b> - Alloy Steel
				<b>22</b> - M22	<b>03</b> - 5-pin mini 7/8	<b>10</b> - 0 to 10.0 V		<b>11</b> - 11 (250-900 ranges)	<b>CS</b> - Carbon Steel
			<b>250 - 600</b>			<b>11</b> - 10.0 to 0 V			<b>SS</b> - Stainless Steel
			(50 mm increments)			<b>20</b> - 4 to 20 mA			
						<b>21</b> - 20 to 4 mA			
			<b>600 - 900</b>			<b>50</b> - 0 to 5 V			
			(150 mm increment)			<b>51</b> - 5 to 0 V			

**ALLIANCE SENSORS GROUP**  
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