**For use in:**

Hydraulic and Pneumatic Cylinders
Embeddable Subsea Actuators
Mobile Hydraulic Equipment

MHE-7 Series

28 mm Diameter In-cylinder LVIT Inductance Position Sensors

Lower Cost, More Robust Alternative to Other Embeddable Sensors

The MHE-7 Series LVIT (Linear Variable Inductance Transducer) Position Sensor from Alliance Sensors Group offers more robust construction and a lower cost of ownership than other embeddable, in-cylinder sensing technologies, making the MHE-7 a preferred choice of cylinder users. These sensors can be embedded into the end cap of industrial or mobile hydraulic cylinders or electric linear actuators. They're based on a contactless, inductive, sensing technology that employs a 7 mm diameter probe with a shorter stroke-to-length ratio than most other sensing technologies. It uses a simple gun-drilled, blind hole in the cylinder rod to sense the rod's position without requiring any additional targeting element (s) on the piston making for less machining, fewer parts and simplified design.

An MHE-7 has a 28 mm (1.10 inch) diameter sensor head with an O-ring and back-up ring in a groove. It can be mounted in an industry standard 28 mm diameter cavity in the cylinder cap and locked in with radial set screws or a snap ring. Being contactless, an MHE-7 Series sensor does not wear out and has no output signal deterioration over the life of the sensor because it uses a simple inductive coil. The MHE-7 sensor can withstand much greater shock and vibration than other technologies. A very useful feature of an MHE-7 sensor is ASG's proprietary SenSet™ field scaling process so the sensor's analog output can be adjusted after installation to precisely match the range of motion of the cylinder rod.

Features:

- LVIT Technology™ (Linear Variable Inductance Transducer)
- Senses the cylinder rod itself
- Extremely robust construction
- Contactless sensing for long sensor life
- Easily adapts to existing cylinder designs
- High resolution with choice of several analog I/Os
- SenSet™ feature for field scalability of analog output

Specifications:

Analog I/Os: 0-5 V or 0.5-4.5 V output, 8-30 V input, 35 mA max.
0-10 V output, 12-30 V input, 35 mA max.
4-20 mA, 3-wire sourcing output, 18-30 V input, 60 mA max (75 C max).

Measuring Ranges: 0-25 to 0-900 mm (1 to 36 inches)

Linearity Error: $\pm 0.15\%$ of FSO (Full Span Output) typical, $\pm 0.25\%$ of FSO max.

Resolution: 0.025% of FSO

Update Rate: 300 Hz nominal

Operating Temperature: -20 to 85 C (-40 to 105 C extended temperature range)

Temperature Coefficient: $\leq \pm 0.015\%$ of FSO/°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: 1000 g, 11 msec.

Terminations: IEC IP-67

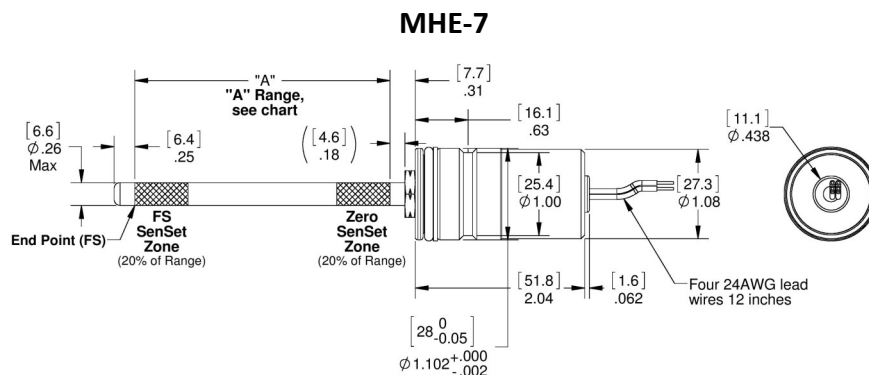
Humidity: 95% RH, non-condensing

All specifications are subject to change without notice.

ALLIANCE SENSORS GROUP
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MHE-7 Series

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



| Wiring Table | |
|---------------|-------------|
| Function | Cable Color |
| Power Input | Red |
| Ground | Black |
| Analog Output | Green |
| SenSet™ | White |

Ordering Information:

| LVIT Series | Electrical Output | Probe Diameter | Range (mm) | Housing OD | Termination | DC Output | Rod Hole Size (mm) | Housing Material |
|-------------|-------------------|----------------|--------------------------------|------------|-------------------|-----------------|--------------------------|---------------------|
| MHE | X- | X- | XXX- | XX- | XX- | XX- | XX- | X- |
| | E- Voltage | 7- 7 mm | 025-250 (25 mm increments) | 28- 28 mm | 00- 1 m cable | 05- 0.5-4.5 VDC | 08- 8 (25-100 ranges) | AL- Aluminum |
| | I- Current | | | | 01- 12 inch leads | 06- 4.5-0.5 VDC | 95- 9.5 (125-200 ranges) | AS- Alloy Steel |
| | | | 250-500 (50 mm increments) | | | 10- 0-10 VDC | 11- 11 (225-900 ranges) | CS- Carbon Steel |
| | | | | | | 11- 10-0 VDC | | SS- Stainless Steel |
| | | | 500-900 (100 mm increments) | | | 20- 4-20 mA | | |
| | | | | | | 21- 20-4 mA | | |
| | | | | | | 50- 0-5 VDC | | |
| | | | | | | 51- 5-0 VDC | | |

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