Space-Saving 35 mm by 14.5 mm by 28 mm 40 LHE Absolute Contactless Linear Position Sensor Delivers High Accuracy Displacement Measurement to 40 mm in Harsh Environments, Linearity Down to ± 1 %, Resolution of 12 µm, and a Lifespan of > 10 Million Cycles

Product Benefits:

- Non-contacting Hall Effect technology
- Linearity down to ± 1 % (full stroke)
- Resolution of 12 µm
- Long life greater than 10 million cycles
- Space-saving 35 mm by 14.5 mm by 28 mm design
- Electrical strokes from 0 mm to 40 mm
- Reliable operation in harsh environments:
  - IP67 sealing
  - Withstands high frequency vibration up to 20 g and shocks up to 50 g
  - Integrated reverse voltage (-10 V_{DC}) and overvoltage (+20 V_{DC}) input protections
- Easy and flexible integration into automation systems
  - Analog ratiometric or digital (PWM) output signals
  - Versatile “2 faces” fixing holes for horizontal or vertical mounting
- Available with a spring return option
- Customizable on request to meet the most demanding needs
- RoHS-compliant

Market Applications:

- Infrastructure integrity monitoring ("crackmeters" in bridges and buildings), digital farming (dendrometers), in-line process measurement, robotic grippers in industrial automation systems, and medical robotic grasping forceps
- Throttle and pedal position sensors for e-bikes and motorcycles, railway equipment and ships, and agricultural machinery

The News:

Vishay Intertechnology introduces a new compact, ready to use linear position sensor designed for high accuracy performance in demanding environments. Featuring non-contacting Hall Effect technology, the Vishay Sfernice 40 LHE delivers linearity down to ± 1 % (full stroke), resolution of 12 µm, and a lifespan greater than 10 million cycles — all in a space-saving 35 mm by 14.5 mm by 28 mm design.

- While previous-generation devices offered electrical strokes up to 10 mm, the 40 LHE extends this capability to 40 mm. Combined with its high accuracy and resolution, this makes the device ideal for servo loop motion control systems requiring small displacement monitoring

- Integrated reverse voltage and overvoltage input protections reduce costs by eliminating the need for external protection circuitry
- As a “true power on” device, the 40 LHE reports its position immediately upon power-up without requiring recalibration, re-homing, or initialization routines — even after a power loss. This further reduces costs by eliminating the need for a battery back-up

The Key Specifications:

- Electrical stroke: up to 40 mm
- Linearity:
  - Analog output: ± 1 % at $V_{max.}$ = 0.5 m/s; ± 2 % at $V_{max.}$ = 1 m/s
  - PWM output: ± 1 % at $V_{max.}$ = 0.4 m/s; ± 2 % at $V_{max.}$ = 0.8 m/s
- Resolution (40 mm stroke): 12 µm
- Lifespan: > 10 million cycles
- Dimensions: 35 mm by 14.5 mm by 28 mm
- Reverse voltage protection (input): -10 V_{DC}
- Overvoltage protection (input): +20 V_{DC}
- Supply voltage: 5 V_{DC} ± 10 %
- Supply current: < 16 mA typical
- Recommended load resistance for analog and PWM output: 1 kΩ

Availability:
Samples and production quantities of the 40 LHE are available now, with lead times of 12 weeks.

To access the product datasheet on the Vishay Website, go to
http://www.vishay.com/ppg?57124 (40 LHE)

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