







# More Precision.

indu**SENSOR** // Linear inductive displacement sensors



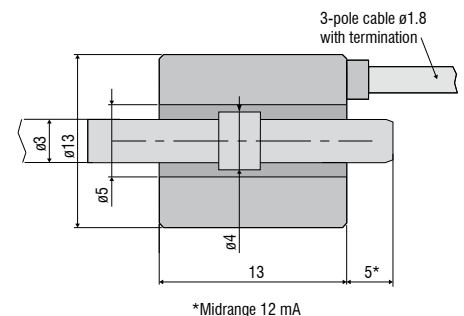


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**Compact design for restricted installation spaces**
- 
**Precise measurement of stroke movements**
- 
**With external controller**
- 
**Operating temperature up to 150 °C**

#### Sensor for needle stroke movements

The compact LVP-3-Z13-5-CA displacement sensor is suitable for acquiring small measuring ranges with high accuracy. The large free hole for the passage of the core also enables over-strokes. The measuring object, realized as a simple aluminum ring, is mounted on the rod, plunger, pin, needle or other similar part to be measured. In a typical application the displacement sensor

LVP-3-Z13-5-CA is used in automatic glue application guns. The continuously measuring sensor monitors the switching point, also for wear of the needle seating. Additionally, the continuous measurement offers the option of checking the needle for the correct stroke position. The small, compact sensor is easy to integrate even in tight installation spaces.



Model	LVP-3-Z13-5-CA	
Measuring range		3 mm
Linearity	typ. $\leq \pm 0.3\%$ FSO	$\leq \pm 9 \mu\text{m}$
Temperature stability	Max. temp. error	$\leq 500$ ppm FSO/K
Excitation frequency		25 kHz
Excitation voltage		550 mV
Measuring object	Standard	Ring on plunger $\varnothing 3$ mm, length 30 mm with M3 thread (included in delivery)
	Option 01	Aluminum ring $\varnothing 3$ mm, length 3.3 mm (included in delivery)
Connection		integrated cable (2 m) with open ends; axial cable outlet, cable diameter 1.8 mm, min. bending radius 10 mm (fixed installation)
Mounting		circumferential clamping
Temperature range	Storage	$-40 \dots +150$ °C
	Operation	$-40 \dots +150$ °C
Protection class (DIN EN 60529)		IP67
Material		Stainless steel, PEEK
Weight	Sensor	approx. 20 g
	Target ring	$< 0.1$ g
Compatibility		MSC7401, MSC7602, MSC7802

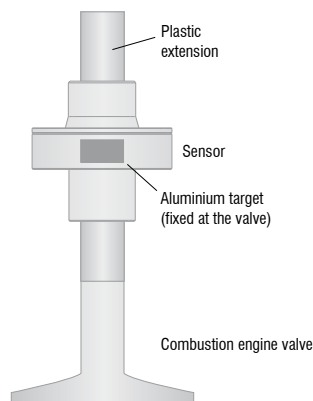
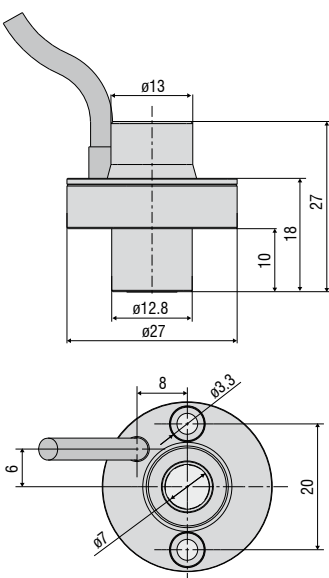
### Valve stroke sensor in stainless steel housing

The LVP-14-F-5-CR is designed for valve lift measurements in combustion engines. The sensor detects the displacement of the electromechanically or electro-hydraulically driven inlet and outlet valves.

The measured values are fed into the control loop in order to enable variable inlet and outlet control of the valves. Ultimately, this reduces fuel consumption, emission values and adapts engine power to the individual driving situation.

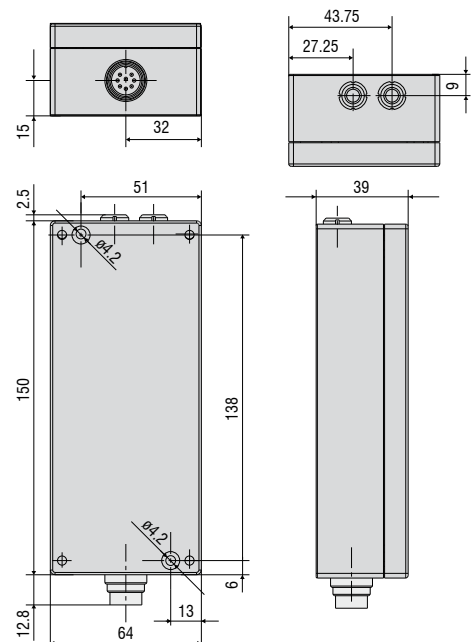
Model	LVP-14-F-5-CR	
Measuring range	14 mm	
Resolution	0.02 % FSO	
Frequency response (-3dB)	20 kHz	
Linearity	typ. $\leq \pm 1\%$ FSO	$\leq \pm 140 \mu\text{m}$
Temperature stability	Zero	$\leq 150 \text{ ppm FSO/K}$
	Max. temp. error	$\leq 250 \text{ ppm FSO/K}$
Supply voltage	12 VDC $\pm 10\%$	
Analog output	2x voltage outputs (1 ... 9 V)	
Measuring object	Aluminum ring: inner diameter 4 mm, outer diameter 6 mm, height 3.5 mm (optionally available)	
Connection	Supply/signal: pluggable cable via 8-pin Lumberg KV81 connector, length 6 m; Sensor: integrated cable, length 0.5 m, optional extension by 2 m (see accessories for suitable connection cable)	
Mounting	Sensor: through bores for 2x M3 screws Controller: through bores for 2x M4 screws	
Temperature range	Storage	Sensor: $-30 \dots +150 \text{ }^\circ\text{C}$ Controller: $+10 \dots +50 \text{ }^\circ\text{C}$
	Operation	Sensor: $-30 \dots +150 \text{ }^\circ\text{C}$ Controller: $+10 \dots +50 \text{ }^\circ\text{C}$
Protection class (DIN EN 60529)	Sensor: IP67 Controller: IP40 (plugged)	
Material	Stainless steel, PEEK	
Weight	Sensor	approx. 50 g
	Controller	approx. 400 g
	Target ring	< 0.2 g
Compatibility	MSC739VS-U	
No. of measurement channels	2	

FSO = Full Scale Output



Dimensions in mm, not to scale

### MSC739VS-U Controller



## Sensors and Systems from Micro-Epsilon



Sensors and systems for displacement, distance and position



Sensors and measurement devices for non-contact temperature measurement



Measuring and inspection systems for metal strips, plastics and rubber



Optical micrometers and fiber optics, measuring and test amplifiers



Color recognition sensors, LED analyzers and inline color spectrometers



3D measurement technology for dimensional testing and surface inspection