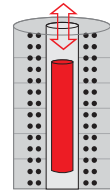




# More Precision.

**indu**SENSOR

Linear inductive displacement sensors



## LDR series linear displacement sensors

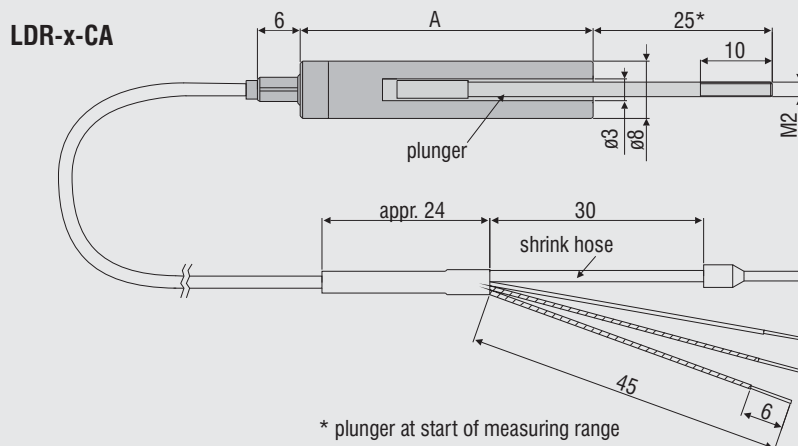


**No wear and no maintenance**  
**Excellent temperature stability**  
**Operating temperature range up 160°C**  
**Compact design - short installed length**  
**Small sensor diameter**  
**High measurement signal quality**

The specific sensor configuration of the linear displacement sensors in the LDR series is characterized by a short, compact design with small diameter. Three connections are required as an interface to the sensor. The compact design and the small sensor diameter facilitate the installation of the measurement systems in locations where space is restricted.

### Fields of use and applications

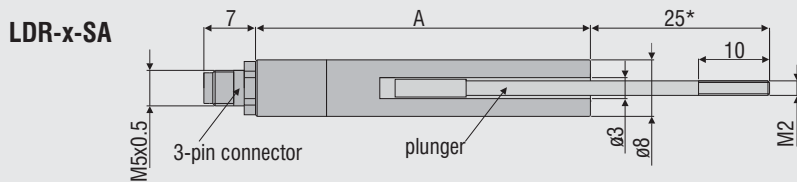
The inexpensive LDR sensors are also particularly suitable for large-scale installation under restricted spatial conditions and in industrial environments with a high measuring rate.



Model	A
LDR-10-CA	41 mm
LDR-25-CA	67 mm
LDR-50-CA	121 mm

Model	LDR-10-		LDR-25-		LDR-50-	
	SA	CA	SA	CA	SA	CA
Measuring range	10 mm		25 mm		50 mm	
Measuring principle	LDR - Sensor					
Linearity	typ. $\pm 0.30$ % FSO		typ. $\pm 0.35$ % FSO		typ. $\pm 0.7$ % FSO	
	0.030 mm		0.088 mm		0.225 mm	
	max. $\pm 0.50$ % FSO					
Excitation frequency	16 kHz		12 kHz		8 kHz	
Excitation amplitude	1 V <sub>eff</sub>		1 V <sub>eff</sub>		2.6 V <sub>eff</sub>	
Sensitivity	51 mV/Vmm		21 mV/Vmm		5.5 mV/Vmm	
Temperature range	SA	storage -40 °C ... +80 °C / operation -15 °C ... +80 °C				
	CA	storage -40°C ... +160 °C / operation -40 °C ... +160 °C				
Temperature stability	zero	$\pm 30$ ppm / °C				$\pm 40$ ppm / °C
	sensitivity	$\pm 100$ ppm / °C				$\pm 150$ ppm / °C
Housing (material)	ferromagnetic stainless steel					
Weight sensor (without plunger)	9 g	24 g	14 g	28 g	23 g	37 g
Weight plunger	1.5 g		2.2 g		3.5 g	
Sensor cable - minimum bending radius fixed / moved	8 / 15 mm	10 / 30 mm	8 / 15 mm	10 / 30 mm	8 / 15 mm	10 / 30 mm
Outer cable diameter	3.1 mm	1.8 mm	3.1 mm	1.8 mm	3.1 mm	1.8 mm
Protection class	IP 67					
Shock	IEC 68-2-29	40 g, 3000 shocks / axis				
	IEC 68-2-27	100 g radial, 300 g axial				
Vibration	IEC 68-2-6	5 Hz ... 44 Hz $\pm 2.5$ mm / 44 Hz ... 500 Hz $\pm 20$ g				
Electric connection	SA	3-pin connector (accessory cable, article 0157047/047, 3 or 5 m)				
	CA	integral axial cable (shielded), 2 m				

FSO = Full Scale Output SA = connector axial CA = cable axial



\* plunger at start of measuring range

Model	A
LDR-10-SA	47 mm
LDR-25-SA	73 mm
LDR-50-SA	127 mm

## MSC7210 sensor controller for LDR series



**Rugged die-cast housing**

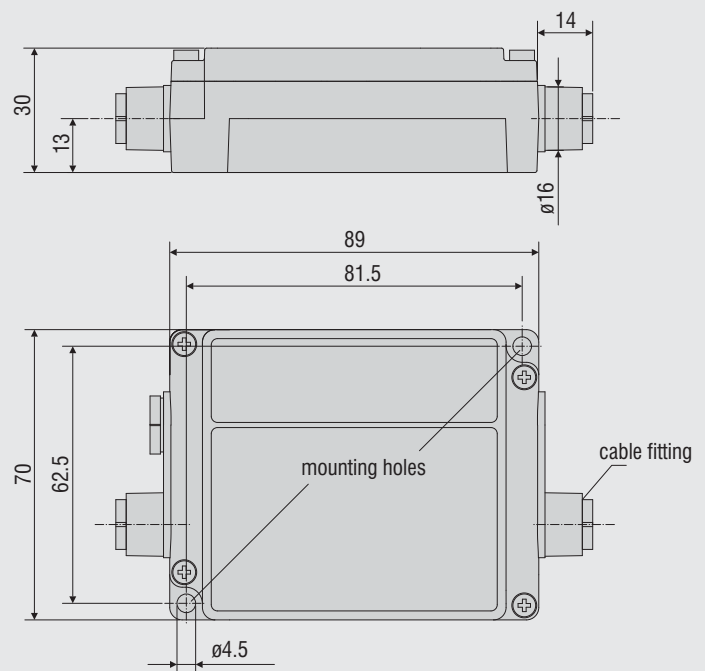
**For all sensors in the LDR series**

**Adjustable excitation frequency 4-33 kHz**

**Zero point and gain can be adjusted**

**High resolution and linearity**

The MSC7210 is a single-channel electronic unit for the operation of inductive displacement transducers according to the LDR principle. The zero point and gain can be set over a wide range using trimming potentiometers. Due to the small size, the electronic unit is versatile in mounting.



Model		MSC7210-U	MSC7210-I
Power supply		18 ... 30 VDC	
Protection		Polarity reversal and overvoltage protection	
Sensor principle		LDR sensor	
Sensor excitation		1000 ... 2600 mV 4 ... 33 kHz (16 steps selectable via DIPswitch)	
Range	gain	-20 ... +270 % FSO (trimpot)	
	zero	±70 % FSO (trimpot)	
Output signal		2 ... 10 VDC	4 ... 20 mA
Noise		< 1.5 mV <sub>eff</sub> *	< 3 μA <sub>eff</sub> *
		< 15 mV <sub>ss</sub>	< 30 μA <sub>ss</sub>
Linearity		< ± 0.02 % FSO	
Frequency response		300 Hz	
Temperature range	storage	-40 °C ... +85 °C	
	operating	0 °C ... +70 °C	
Temperature stability		±100 ppm / °C	
Housing material		Zinc die cast	
Electromagnetic compatibility (EMC)		EN 50 081-2 (spurious emission)	
		EN 50 082-2 (immunity to interference)	
Protection class		IP 65	
Shock		test signal: Half sine wave peak acceleration 15 g shock duration 6 ms test axes x, y, z No. of impacts per axis: 1000	
		test signal: Sine - sweep frequency: 20 ... 500 Hz test axes x, y, z No. of frequency cycles per axis: 10	
Sensor connection		plugable screw clamp 4-pin	
Signal/supply connection		plugable screw clamp 5-pin	

FSO = Full Scale Output

\* RMS AC measurement, frequency 3 Hz ... 300 Hz

# More Precision.

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### Sensors and systems

for displacement, position and dimension

### Sensors and measurement devices

for non-contact temperature measurement

### Measurement systems

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