

# Inductive Gauging Sensor

## EX-200 Series



### Accurate analogue output of minute displacement

The EX-200 Series measures target displacement with a resolution of 0.04% F.S. (0.4  $\mu\text{m}$  with the EX-305 sensor head). The dual analogue outputs (voltage/current) enable connection to external equipment.

### Linearity of $\pm 1\%$ of F.S.

Using the built-in lineariser circuit, the EX-200 Series accurately outputs absolute displacement values.

### High response speed

The EX-200 Series offers a response frequency of up to 18 kHz (with the EX-305), allowing measurement of rapidly vibrating targets.



For standard certification and conformance list, see our website.  
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**Lineup**

Type	Model		Appearance	Measuring range	Resolution	Mounting size
	Sensor head	Controller				
Cylindrical	<b>EX-305</b>	<b>EX-201</b>	 $\phi 5.4 \times 18 \text{ mm}$	 0 to 1 mm	0.4 $\mu\text{m}$	$\phi 5.4 \text{ mm}$
Threaded	<b>EX-110</b>	<b>EX-202</b>	 M10 x 18 mm	 0 to 2 mm	0.8 $\mu\text{m}$	M10
Cylindrical/ Threaded	<b>EX-416</b>	<b>EX-205</b>	 $\phi 14.5 \times 20 \text{ mm}$	 0 to 5 mm	2 $\mu\text{m}$	M16
	<b>EX-422</b>	<b>EX-210</b>	 $\phi 22 \times 35 \text{ mm}$	 0 to 10 mm	4 $\mu\text{m}$	M12

**Specifications**

Type		Cylindrical	Threaded	Cylindrical/Threaded	
		$\phi 5.4$	M10	$\phi 14.5/\text{M16}$	$\phi 22/\text{M12}$
Model	Sensor head	<b>EX-305</b>	<b>EX-110</b>	<b>EX-416</b>	<b>EX-422</b>
	Controller	<b>EX-201</b>	<b>EX-202</b>	<b>EX-205</b>	<b>EX-210</b>
Measuring range		0 to 1 mm	0 to 2 mm	0 to 5 mm	0 to 10 mm
Analogue output	Output voltage	0 to 5 V (Output impedance 100 $\Omega$ )			
	Output current	4 to 20 mA (Applicable load: 0 to 350 $\Omega$ )			
	Resolution	0.04% of F.S. (Response frequency: LOW)			
	Linearity	$\pm 1\%$ of F.S.			
	Response frequency	HIGH	18 kHz (-3 dB)	15 kHz (-3 dB)	13 kHz (-3 dB)
	LOW	1.3 kHz (-3 dB)			
Disconnection alarm output <sup>2</sup>		NPN: 100 mA (40 V) max., Residual voltage: 1 V max. (N.C.)			
Functions		Auto-zero function/Response frequency selecting function			
Temperature fluctuation	Sensor head <sup>1</sup>	0.03% of F.S./ $^{\circ}\text{C}$			
	Controller <sup>1</sup>	0.04% of F.S./ $^{\circ}\text{C}$			
Power supply voltage		12 to 24 VDC $\pm 10\%$			
Current consumption		240 mA max.			
Ambient temperature	Sensor head	-10 to +60 $^{\circ}\text{C}$ , No freezing			
	Controller	0 to +50 $^{\circ}\text{C}$			
Relative humidity		35 to 85%, No condensation			
Enclosure rating		Sensor head: IP67			
Weight	Sensor head	Approx. 45 g	Approx. 55 g	Approx. 75 g	Approx. 200 g
	Controller	Approx. 285 g			

The above data was obtained using a steel target (S45C, SS41, t=1 mm).

When measuring aluminium, copper, or stainless steel targets, refer to the linear characteristics for these materials.

1. When the distance between the sensor head and the target is within 50% of the measuring range.

2. NPN output can easily be converted to PNP output by connecting the optional **OP-5148** PNP output converter.

**Related Products**

Compact Analogue Sensor Controller

**RV-10**


Specifications

Model		<b>RV-10</b>
Measurement function		DC voltage measurement, DC current measurement
A/D converting system		Successive comparison
Measurement range		$\pm 5 \text{ VDC}$ , $\pm 10 \text{ VDC}$ , $\pm 20 \text{ mA DC}$ (selectable)
Display range		-19999 to +19999
Measurement accuracy		$\pm 0.075\%$ of F.S. <sup>1</sup>
Input	Impedance	1 M $\Omega$ (for voltage input), 350 $\Omega$ (for current input)
	System	Single-ended
	Number of inputs	1
Sampling rate		200/s
Display rate		20/s
Display character		7-segment, 3-colour LED
Range-over alarm		FFFF is displayed
Control input	Synchronous	NPN or non-voltage contact signal
	Reset	
	Auto-zero	
Control output	Tolerance setting	Upper/Lower limits 2 steps
	Signal type	NPN (HIGH, GO, LOW): 100 mA max. (40 V max.)
	Response time	10 ms (maximum speed)
	Off-delay time	60 ms (ON/OFF selectable)
Rating	Power supply	24 VDC $\pm 10\%$
	Current consumption	200 mA max.
Ambient temperature		0 to 50 $^{\circ}\text{C}$
Relative humidity		35 to 85%, No condensation
Weight		Approx. 160 g

1. For DC voltage measurement only. At an ambient temperature of +5 $^{\circ}\text{C}$  to +45 $^{\circ}\text{C}$ .

**Features**

- Super-bright two-colour LED display
- 1/4 the size of conventional models
- Multi-function/high-speed processing
- Easy setup and operation