

Smart Sensors (Inductive Displacement Type)

ZX-E Series

High-accuracy Detection of Metal Workpiece Displacement

- Sensor Heads support a wide variety of applications.
- Linearity can be adjusted for non-ferrous metals, such as SUS and aluminum, using the material selection function.
- Simple linearity compensation (teaching).
- Easily perform calculation for two Sensors by using a Calculating Unit.
- Prevent mutual interference for up to five Units by using a Calculating Unit



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

Ordering Information

■ Sensors

Sensor Heads (Refer to Dimensions on page 11.)

Shape	Dimensions	Sensing distance	Resolution *1	Model
Cylindrical	3 dia. x 18 mm	0.5 mm	1 μm	ZX-EDR5T
	5.4 dia. x 18 mm	1 mm		ZX-ED01T *2
	8 dia. x 22 mm	2 mm		ZX-ED02T *2
Screw-shaped	M10 x 22 mm			ZX-EM02T *2
	M18 x 46.3 mm	7 mm		ZX-EM07MT *2
Flat	30 x 14 x 4.8 mm	4 mm		ZX-EV04T *2 *3
Heat-resistant, cylindrical	M12 x 22 mm	2 mm	ZX-EM02HT *4	


*1: For an average count of 4,096.

*2: Models with Protective Spiral Tubes are also available. Add a suffix of "-S" to the above model numbers when ordering. (Example: ZX-ED01T-S)
As for ZX-EM07MT, please mention ZX-EM07M-S when ordering.
For detailed dimensions of the Protective Spiral Tube, refer to the information on the E39-F32A on the OMRON website.

*3: Be sure to use ZX-EDA Amplifier Unit version 1,200 or later with the ZX-EV04T.

*4: Be sure to use ZX-EDA Amplifier Unit version 1,300 or later with the ZX-EM02HT.


Amplifier Units (Refer to Dimensions on page 13.)

Appearance	Power supply	Output type	Model
	DC	NPN	ZX-EDA11 2M
		PNP	ZX-EDA41 2M

Note: Compatible connection with the Sensor Head.

Accessories (Order Separately)



Calculating Unit (Refer to Dimensions on page 14.)

Appearance	Model
	ZX-CAL2

Amplifier Mounting Brackets



A ZX-XBE1 is provided with the Sensor. Order an Amplifier Mounting Bracket separately if required.

(Refer to Dimensions on page 14.)

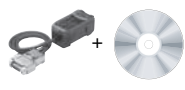
Appearance	Model	Remarks
	ZX-XBE1	Attached to each Sensor Head
	ZX-XBE2	For DIN track mounting

Logging Tool for Personal Computers

(Refer to Dimensions on page 15.)

Appearance	Name	Model
	Communications Interface Unit (RS-232C)	ZX-SF11
	Smart Monitor (Logging Software + Function Setting Software)	ZX-SW11EV3 (See note 1.)

Setup Tool for Personal Computer

Appearance	Name	Model
	Communications Interface Unit (RS-232C) + Smart Monitor Basic*2 (Function Setting Software)	ZX-SFW11EV3 (See note 1.)

Note 1. The ZX-SFW11EV3 or ZX-SW11EV3 is required to use the Smart Monitor with the ZX-LDA11-N/41-N. Earlier versions cannot be used.


2. The Smart Monitor Basic does not have a logging function. Other than the logging function, the Smart Monitor Basic supports the same functions as the Smart Monitor.

Cables with Connectors on Both Ends (for Extension) (Refer to Dimensions on page 15.)*

Cable length	Model	Quantity
1 m	ZX-XC1A	1
4 m	ZX-XC4A	
8 m	ZX-XC8A	

* Robot cable models are also available. The model numbers are ZX-XC□R.

Bank Unit

Appearance	Model
	ZX-SB11

Specifications

■ Sensor Heads

Model		ZX-EDR5T	ZX-ED01T	ZX-ED02T/ EM02T	ZX-EM07MT	ZX-EV04T	ZX-EM02HT	
Measurement range		0 to 0.5 mm	0 to 1 mm	0 to 2 mm	0 to 7 mm	0 to 4 mm	0 to 2 mm	
Sensing object		Magnetic metals (Measurement ranges and linearities are different for non-magnetic metals. Refer to <i>Engineering Data</i> on page 4.)						
Standard reference object		18×18×3 mm	30×30×3 mm	60×60×3 mm	45×45×3 mm			
		Material: ferrous (S50C)						
Resolution *1		1 μm						
Linearity *2		±0.5% F.S.					±1.0% F.S. *5	
Linear output range		Same as measurement range.						
Temperature characteristic *3 (including Amplifier Unit)		0.15% F.S./°C		0.07% F.S./°C		0.1% F.S./°C		
Ambient temperature	Operating *4	0 to 50°C (with no icing or condensation)		-10 to 60°C (with no icing or condensation)		-10 to 200°C		
	Storage *4	-20 to 70°C (with no icing or condensation)		-20 to 70°C (with no icing or condensation)		(with no icing or condensation)		
Ambient humidity		Operating and storage: 35% to 85% (with no condensation)						
Insulation resistance		50 MΩ min. (at 500 DC)						
Dielectric strength		1,000 VAC, 50/60 Hz for 1 min between charged parts and case						
Vibration resistance (destruction)		10 to 55 Hz with 1.5-mm double amplitude for 2 h each in X, Y, and Z directions						
Shock resistance (destruction)		500 m/s ² , 3 times each in X, Y, and Z directions						
Degree of protection (Sensor Head)		IEC60529, IP65		IEC60529, IP67		IEC60529, IP60 *6		
Connection method		Connector relay (standard cable length: 2 m)						
Weight (packed state)		Approx. 120 g	Approx. 140 g	Approx. 160 g	Approx. 130 g	Approx. 160 g		
Materials	Sensor Head	Case	Brass	Stainless steel	Brass	Zinc (nickel-plated)	Brass	
		Sensing surface	Heat-resistant ABS				PEEK	
		Tightening nut	---		Brass (nickel-plated) (except ZX-ED02T)		---	
		Toothed washer	---		Iron (zinc-plated) (except ZX-ED02T)		---	
Preamplifier		PES						
Accessories		Amplifier Mounting Brackets (ZX-XBE1), Instruction Manual						