

Digital Amplifier Ultrasonic Sensor

E4C-UDA

CSM_E4C-UDA_DS_E_12_4

Compact, Cylindrical Reflective Ultrasonic Sensor with Easy Setting

- Stable operation for a variety of objects regardless of color, transparency, or material (metallic or non-metallic).
- Compact M18-sized cylindrical Head.
Product lineup includes Side-view Heads.
- Check the sensing object distance and sensing position (i.e., threshold) on the digital display.
- Easily make settings for workpiece presence/absence and elimination of background influence by using teaching.
- Amplifiers include models with analog outputs.



 Be sure to read *Safety precautions* on page 4.

Note: Orders for E4C-DS Series and E4C-UDA Series will be accepted until the end of March 2023.

Ordering Information

Sensor

Sensor Heads (Refer to Dimensions on page 5.)

Shape	Model	Measurement range	Model
M18	Straight	60 to 275 mm	E4C-DS30
	Side view		E4C-DS30L
	Straight	85 to 735 mm	E4C-DS80
	Side view		E4C-DS80L
	Straight	110 to 910 mm	E4C-DS100

Amplifiers (Refer to Dimensions on page 5.)

Shape	Power supply	Output specifications	Model
	DC	NPN output	E4C-UDA11
			E4C-UDA11AN
		PNP output	E4C-UDA41
			E4C-UDA41AN

Accessories (Order Separately)

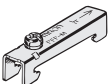
Mounting Bracket (Refer to E39-L, E39-S, and E39-R.)

A Mounting Bracket is not provided with the Amplifier Unit. Order a Mounting Bracket separately if required.

Appearance	Model	Quantity
	E39-L143	1

End Plate (Refer to PFP-□.)

An End Plate is not provided with the Amplifier Unit. Order an End Plate separately if required.

Appearance	Model	Quantity
	PFP-M	1

Ratings and Specifications

Sensor Heads

Item	Model	E4C-DS30	E4C-DS30L	E4C-DS80	E4C-DS80L	E4C-DS100
Measurement range		60 to 275 mm		85 to 735 mm		110 to 910 mm
Standard sensing object		100 × 100 mm SUS flat plate				
Near distance dead band		0 to 50 mm		0 to 70 mm		0 to 90 mm
Ultrasonic oscillation frequency		Approx. 390 kHz		Approx. 255 kHz		
Response speed *		30 ms		100 ms		125 ms
Ambient temperature range		Operating: −25 to +70°C, Storage: −40 to +85°C (with no icing or condensation)				
Ambient humidity range		Operating and storage: 35% to 85% (with no condensation)				
Insulation resistance		50 MΩ min. (at 500 VDC)				
Dielectric strength		1,000 VAC, 50/60 Hz for 1 min				
Vibration resistance		10 to 55 Hz, 1.5-mm double amplitude, 2 hours each in X, Y, and Z directions				
Shock resistance		500 m/s ² , 3 times each in X, Y and Z directions				
Enclosure rating		IP65				
Indicator		(Yellow) Lit: Sensor within sensing range (Green) Lit: Power indicator				(Yellow) Lit: Sensor within sensing range
Weight		Approx. 150 g				Approx. 170 g
Materials		Case: Nickel-plated brass, Oscillator surface: Glass epoxy resin and polyurethane				
Accessories		Instruction Manual, XS2F-D523-D80-A (Cable length: 2 m), XN2A-1430				

* This value is the average number of operations set to 256.

Amplifiers

Model		E4C-UDA11	E4C-UDA41	E4C-UDA11AN	E4C-UDA41AN
Item	Type	Twin Output Models		Analog Output Models	
Output configuration		NPN output	PNP output	NPN output	PNP output
Connection method		Pre-wired			
Supply voltage		12 to 24 VDC ±10%, ripple 10% max.			
Current consumption		80 mA max.			
Control output		NPN open collector (26.4 VDC max.), Load current: 50 mA max., Residual voltage: 1 V max.			
Timer		OFF/OFF-delay/ON-delay/one-shot			
Timer time		1 ms to 5 s			
Analog output	Connected load	---		Voltage output (1 to 5 VDC)	
	Output form	---		10 kΩ min.	
	Resolution	---		1.0% F.S.	
	Temperature characteristics	---		0.3% F.S./°C	
	Repeat accuracy	---		2.0% F.S. *	
	Linearity	---		Within ±2% F.S.	
Protective circuit		Power supply reverse polarity protection, output short-circuit protection			
Ambient temperature range		Operating: -25 to +55°C, Storage: -30 to +70°C (with no icing or condensation)			
Ambient humidity range		Operating and storage: 35% to 85% (with no condensation)			
Insulation resistance		20 MΩ min. (at 500 VDC)			
Dielectric strength		1,000 VAC, 50/60 Hz for 1 min			
Vibration resistance		10 to 55 Hz, 1.5-mm double amplitude, 2 hours each in X, Y, and Z directions			
Shock resistance		500 m/s ² , 3 times each in X, Y and Z directions			
Enclosure rating		IP 50			
Materials		Case: PBT (polybutylene terephthalate), Cover: Polycarbonate			
Weight (packed state)		Approx. 100 g			
Accessories		Instruction Manual			

* Value one hour after the product is turned ON. External disturbances, however, sometimes cause minute outputs.