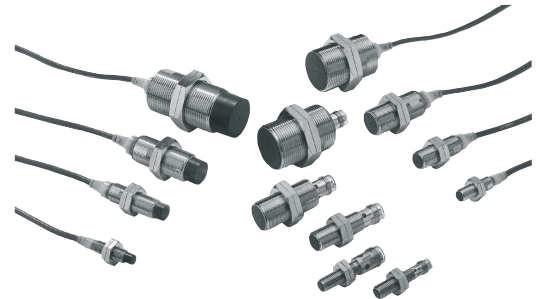


Inductive proximity sensor with stainless steel body

E2A-S

Inductive proximity sensor E2A-S was created and tested for applications in the harsh environment and at tough vibration conditions with stainless body.



- M8, M12, M18, and M30 housings with connector or pre-wired connection
- PNP or NPN output
- NO, NC, or NO+NC operation mode

Ordering Information

DC 3-wire Models (NO, NC) / DC 4-wire Models (NO+NC)

Size	Sensing distance	Connection	Body material	Thread length (overall length)	Output configuration	Operation mode NO	Operation mode NC	Operation mode NO + NC	
M8	Shielded	Pre-wired	Stainless steel	27 (40)	PNP	E2A-S08KS02-WP-B1 2M	E2A-S08KS02-WP-B2 2M	n.a.	
					NPN	E2A-S08KS02-WP-C1 2M	E2A-S08KS02-WP-C2 2M	n.a.	
				49 (62)	PNP	E2A-S08LS02-WP-B1 2M	E2A-S08LS02-WP-B2 2M	E2A-S08LS02-WP-B3 2M	
					NPN	E2A-S08LS02-WP-C1 2M	E2A-S08LS02-WP-C2 2M	n.a.	
				M12 connector	27 (43)	PNP	E2A-S08KS02-M1-B1	E2A-S08KS02-M1-B2	n.a.
						NPN	E2A-S08KS02-M1-C1	E2A-S08KS02-M1-C2	n.a.
		49 (65)			PNP	E2A-S08LS02-M1-B1	E2A-S08LS02-M1-B2	n.a.	
					NPN	E2A-S08LS02-M1-C1	E2A-S08LS02-M1-C2	n.a.	
		M8 connector (3-pin)		27 (39)	PNP	E2A-S08KS02-M5-B1	E2A-S08KS02-M5-B2	n.a.	
					NPN	E2A-S08KS02-M5-C1	E2A-S08KS02-M5-C2	n.a.	
				49 (61)	PNP	E2A-S08LS02-M5-B1	E2A-S08LS02-M5-B2	n.a.	
					NPN	E2A-S08LS02-M5-C1	E2A-S08LS02-M5-C2	n.a.	
	M8 connector (4-pin)			27 (39)	PNP	E2A-S08KS02-M3-B1	E2A-S08KS02-M3-B2	E2A-S08KS02-M3-B3	
					NPN	E2A-S08KS02-M3-C1	E2A-S08KS02-M3-C2	n.a.	
	49 (61)	PNP		E2A-S08LS02-M3-B1	E2A-S08LS02-M3-B2	E2A-S08LS02-M3-B3			
		NPN		E2A-S08LS02-M3-C1	E2A-S08LS02-M3-C2	n.a.			
	Non-shielded	Pre-wired		27 (40)	PNP	E2A-S08KN04-WP-B1 2M	E2A-S08KN04-WP-B2 2M	n.a.	
					NPN	E2A-S08KN04-WP-C1 2M	E2A-S08KN04-WP-C2 2M	n.a.	
				49 (62)	PNP	E2A-S08LN04-WP-B1 2M	E2A-S08LN04-WP-B2 2M	E2A-S08LN04-WP-B3 2M	
					NPN	E2A-S08LN04-WP-C1 2M	E2A-S08LN04-WP-C2 2M	n.a.	
				M12 connector	27 (43)	PNP	E2A-S08KN04-M1-B1	E2A-S08KN04-M1-B2	n.a.
						NPN	E2A-S08KN04-M1-C1	E2A-S08KN04-M1-C2	n.a.
		49 (65)			PNP	E2A-S08LN04-M1-B1	E2A-S08LN04-M1-B2	n.a.	
					NPN	E2A-S08LN04-M1-C1	E2A-S08LN04-M1-C2	n.a.	
M8 connector (3-pin)		27 (39)	PNP	E2A-S08KN04-M5-B1	E2A-S08KN04-M5-B2	n.a.			
			NPN	E2A-S08KN04-M5-C1	E2A-S08KN04-M5-C2	n.a.			
		49 (61)	PNP	E2A-S08LN04-M5-B1	E2A-S08LN04-M5-B2	n.a.			
			NPN	E2A-S08LN04-M5-C1	E2A-S08LN04-M5-C2	n.a.			
	M8 connector (4 pin)	27 (39)	PNP	E2A-S08KN04-M3-B1	E2A-S08KN04-M3-B2	E2A-S08KN04-M3-B3			
			NPN	E2A-S08KN04-M3-C1	E2A-S08KN04-M3-C2	n.a.			
49 (61)	PNP	E2A-S08LN04-M3-B1	E2A-S08LN04-M3-B2	n.a.					
	NPN	E2A-S08LN04-M3-C1	E2A-S08LN04-M3-C2	n.a.					

E2A-S

Size	Sensing distance	Connection	Body material	Thread length (overall length)	Output configuration	Operation mode NO	Operation mode NC	Operation mode NO + NC
M12	Shielded	Pre-wired	Stainless steel	34 (50)	PNP	E2A-S12KS04-WP-B1 2M	E2A-S12KS04-WP-B2 2M	n.a.
					NPN	E2A-S12KS04-WP-C1 2M	n.a.	n.a.
				56 (72)	PNP	E2A-S12LS04-WP-B1 2M	E2A-S12LS04-WP-B2 2M	n.a.
		NPN			E2A-S12LS04-WP-C1 2M	n.a.	n.a.	
		M12 connector		34 (48)	PNP	E2A-S12KS04-M1-B1	E2A-S12KS04-M1-B2	n.a.
					NPN	E2A-S12KS04-M1-C1	E2A-S12KS04-M1-C2	n.a.
	56 (70)			PNP	E2A-S12LS04-M1-B1	n.a.	n.a.	
		NPN		E2A-S12LS04-M1-C1	n.a.	E2A-S12LS04-M1-C3		
	M8 connector (3-pin)	34 (48)		PNP	E2A-S12KS04-M5-B1	E2A-S12KS04-M5-B2	n.a.	
				NPN	E2A-S12KS04-M5-C1	n.a.	n.a.	
		Non-shielded		Pre-wired	34 (50)	PNP	E2A-S12KN08-WP-B1 2M	n.a.
	NPN					E2A-S12KN08-WP-C1 2M	n.a.	n.a.
34 (48)	PNP		E2A-S12KN08-M1-B1		n.a.	n.a.		
	NPN		n.a.	n.a.	n.a.			
56 (70)	PNP		E2A-S12LN08-M1-B1	n.a.	E2A-S12LN08-M1-B3			
	NPN		n.a.	n.a.	E2A-S12LN08-M1-C3			
M18	Shielded	Pre-wired	39 (59)	PNP	E2A-S18KS08-WP-B1 2M	E2A-S18KS08-WP-B2 5M	n.a.	
				NPN	E2A-S18KS08-WP-C1 2M	n.a.	n.a.	
			61 (81)	PNP	E2A-S18LS08-WP-B1 2M	n.a.	n.a.	
		NPN		E2A-S18LS08-WP-C1 2M	E2A-S18LS08-WP-C2 2M	n.a.		
		M12 connector	39 (53)	PNP	E2A-S18KS08-M1-B1	E2A-S18KS08-M1-B2	n.a.	
				NPN	E2A-S18KS08-M1-C1	n.a.	n.a.	
			61 (75)	PNP	E2A-S18LS08-M1-B1	n.a.	E2A-S18LS08-M1-B3	
		NPN		E2A-S18LS08-M1-C1	n.a.	n.a.		
		M8 connector (3-pin)	39 (53)	PNP	E2A-S18KS08-M5-B1	E2A-S18KS08-M5-B2	n.a.	
	NPN			n.a.	n.a.	n.a.		
	Non-shielded		Pre-wired	39 (59)	PNP	E2A-S18KN16-WP-B1 2M	E2A-S18KN16-WP-B2 5M	n.a.
		NPN			n.a.	n.a.	n.a.	
		61 (81)		PNP	E2A-S18LN16-WP-B1 2M	n.a.	n.a.	
			NPN	n.a.	n.a.	n.a.		
		M12 connector	39 (53)	PNP	E2A-S18KN16-M1-B1	n.a.	n.a.	
				NPN	n.a.	n.a.	n.a.	
			61 (75)	PNP	n.a.	n.a.	E2A-S18LN16-M1-B3	
		NPN		n.a.	n.a.	n.a.		
M30		Shielded	Pre-wired	44 (64)	PNP	E2A-S30KS15-WP-B1 2M	n.a.	n.a.
	NPN				E2A-S30KS15-WP-C1 5M	n.a.	n.a.	
	66 (86)			PNP	E2A-S30LS15-WP-B1 2M	n.a.	n.a.	
			NPN	n.a.	n.a.	n.a.		
	M12 connector		44 (58)	PNP	E2A-S30KS15-M1-B1	n.a.	n.a.	
				NPN	n.a.	n.a.	n.a.	
		44 (58)	PNP	E2A-S30KS15-M5-B1	n.a.	n.a.		
	NPN		n.a.	n.a.	n.a.			
	Non-shielded	20.0 mm	M12 connector	44 (58) (See note.)	PNP	E2A-S30KN20-M1-B1	n.a.	n.a.
					NPN	n.a.	n.a.	n.a.

Note: M30 non-shielded Models with double sensing distance and short barrels cannot be mounted due to the necessary separation distance from the surrounding metal. Standard sensing models are thus available.

Specifications

Size		M8	
Type		Shielded	Non-shielded
Model		E2A-S08□S02-□□-B1 E2A-S08□S02-□□-C1	E2A-S08□N04-□□-B1 E2A-S08□N04-□□-C1
Sensing distance		2 mm ± 10%	4 mm ± 10%
Setting distance		0 to 1.6 mm	0 to 3.2 mm
Differential travel		10% max. of sensing distance	
Target		Ferrous metal (The sensing distance decreases with non-ferrous metal.)	
Standard target (mild steel ST37)		8×8×1 mm	12×12×1 mm
Response frequency (See note 1.)		1,500 Hz	1,000 Hz
Power supply voltage (operating voltage range)		12 to 24 VDC. Ripple (p-p): 10% max. (10 to 32 VDC)	
Current consumption (DC 3-wire)		10 mA max.	
Output type		-B models: PNP open collector -C models: NPN open collector	
Control output	Load current (See note 2.)	200 mA max. (32 VDC max.)	
	Residual voltage	2 V max. (under load current of 200 mA with cable length of 2 m)	
Indicator		Operation indicator (Yellow LED)	
Operation mode (with sensing object approaching)		-B1/-C1 models: NO -B2/-C2 models: NC -B3/ -C3 models: NO+NC For details, refer to the timing charts. (See note 4.)	
Protection circuit		Power source circuit reverse polarity protection, Surge suppressor, Short-circuit protection	
Ambient air temperature		Operating: -40°C to 70°C, Storage: -40°C to 85°C (with no icing or condensation)	
Temperature influence (See note 2.)		±10% max. of sensing distance at 23°C within temperature range of -25°C to 70°C ±15% max. of sensing distance at 23°C within temperature range of -40°C to 70°C	
Ambient humidity		Operating: 35% to 95%, Storage: 35% to 95%	
Voltage influence		±1% max. of sensing distance in rated voltage range ±15%	
Insulation resistance		50 MΩ min. (at 500 VDC) between current carry parts and case	
Dielectric strength		1,000 VAC at 50/60 Hz for 1 min between current carry parts and case	
Vibration resistance		10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y and Z directions	
Shock resistance		500 m/s ² , 10 times each in X, Y and Z directions	
Standard and listings (See note 3.)		IP67 after IEC 60529 IP69k after DIN 40050 EMC after EN60947-5-2	
Connection method		Pre-wired models (standard is dia 4mm PVC cable with length = 2m). Please see chapter 'Connectivity' for details on different cable materials and lengths and M8 or M12 connectors.	
Weight (packaged)	Pre-wired model	Approx. 65 g	
	Connector model	M12 connector models: Approx. 20 g M8 connector models: Approx. 15 g	
Material	Case	Stainless steel (SUS 303 EN1.4305)	
	Sensing surface	PBT	
	Cable	Standard cable is PVC dia 4mm. For other cable materials or diameters please refer to chapter 'Connectivity'	
	Clamping nut	Brass-nickel plated	

- Note:**
1. The response frequency is an average value. Measurement conditions are as follows: standard target, a distance of twice the standard target distance between targets, and a setting distance of half the sensing distance.
 2. When using any model at an ambient temperature between -40°C and -25°C and a power voltage between 30 and 32 VDC, use a load current of 100 mA max.,
 3. For USA and Canada: use class 2 circuit only.
 4. -B3/ -C3 NO+NC models are available in M12, M18 and M30 housings with M12 connectors, pre-wired and with cable end connectors.

Size		M12	
Type		Shielded	Non-shielded
Item	Model	E2A-S12□S04-□□-B□ E2A-S12□S04-□□-C□	E2A-S12□N08-□□-B□ E2A-S12□N08-□□-C□
Sensing distance		4 mm ± 10%	8 mm ± 10%
Setting distance		0 to 3.2 mm	0 to 6.4 mm
Differential travel		10% max. of sensing distance	
Target		Ferrous metal (The sensing distance decreases with non-ferrous metal.)	
Standard target (mild steel ST37)		12×12×1 mm	24×24×1 mm
Response frequency (See note 1.)		1,000 Hz	800 Hz
Power supply voltage (operating voltage range)		12 to 24 VDC. Ripple (p-p): 10% max. (10 to 32 VDC)	
Current consumption (DC 3-wire)		10 mA max.	
Output type		-B models: PNP open collector -C models: NPN open collector	
Control output	Load current (See note 2.)	200 mA max. (32 VDC max.)	
	Residual voltage	2 V max. (under load current of 200 mA with cable length of 2 m)	
Indicator		Operation indicator (Yellow LED)	
Operation mode (with sensing object approaching)		-B1/-C1 models: NO -B2/-C2 models: NC -B3/ -C3 models: NO+NC For details, refer to the timing charts. (See note 4.)	
Protection circuit		Output reverse polarity protection, Power source circuit reverse polarity protection, Surge suppressor, Short-circuit protection	
Ambient air temperature		Operating: -40°C to 70°C, Storage: -40°C to 85°C (with no icing or condensation)	
Temperature influence (See note 2.)		±10% max. of sensing distance at 23°C within temperature range of -25°C to 70°C ±15% max. of sensing distance at 23°C within temperature range of -40°C to 70°C	
Ambient humidity		Operating: 35% to 95%, Storage: 35% to 95%	
Voltage influence		±1% max. of sensing distance in rated voltage range ±15%	
Insulation resistance		50 MΩ min. (at 500 VDC) between current carry parts and case	
Dielectric strength		1,000 VAC at 50/60 Hz for 1 min between current carry parts and case	
Vibration resistance		10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y and Z directions	
Shock resistance		500 m/s ² , 10 times each in X, Y and Z directions	
Standard and listings (See note 3.)		IP67 after IEC 60529 IP69K after DIN 40050 EMC after EN60947-5-2	
Connection method		Pre-wired models (standard is dia 4mm PVC cable with length = 2m). Please see chapter 'Connectivity' for details on different cable materials and lengths and M8 or M12 connectors.	
Weight (packaged)	Pre-wired model	Approx. 85 g	
	Connector model	Approx. 35 g	
Material	Case	Stainless steel (SUS 303 EN1.4305)	
	Sensing surface	PBT	
	Cable	Standard cable is PVC dia 4mm. For other cable materials or diameters please refer to chapter 'Connectivity'	
	Clamping nut	Stainless steel (SUS 303 EN1.4305)	

Note: 1. The response frequency is an average value. Measurement conditions are as follows: standard target, a distance of twice the standard target distance between targets, and a setting distance of half the sensing distance.

2. When using any model at an ambient temperature between -40°C and -25°C and a power voltage between 30 and 32 VDC, use a load current of 100 mA max.,

3. For USA and Canada: use class 2 circuit only.

4. -B3/ -C3 NO+NC models are available in M12, M18 and M30 housings with M12 connectors, pre-wired and with cable end connectors.

Size		M18		M30	
Type		Shielded	Non-shielded	Shielded	Non-shielded
Item	Model	E2A-S18□S08-□□-B□ E2A-S18□S08-□□-C□	E2A-S18□N16-□□-B□ E2A-S18□N16-□□-C□	E2A-S30□S15-□□-B□ E2A-S30□S15-□□-C□	E2A-S30KN20-□□-B□ E2A-S30KN20-□□-C□
	Sensing distance		8 mm±10%	16 mm±10%	15 mm±10%
Setting distance		0 to 6.4 mm	0 to 12.8 mm	0 to 12 mm	0 to 16 mm
Differential travel		10% max. of sensing distance			
Target		Ferrous metal (The sensing distance decreases with non-ferrous metal.)			
Standard target (mild steel ST37)		24×24×1 mm	48×48×1 mm	45×45×1 mm	60×60×1 mm
Response frequency (See note 1.)		500 Hz	400 Hz	250 Hz	100 Hz
Power supply voltage (operating voltage range)		12 to 24 VDC. Ripple (p-p): 10% max. (10 to 32 VDC)			
Current consumption (DC 3-wire)		10 mA max.			
Output type		-B models: PNP open collector -C models: NPN open collector			
Control output	Load current (See note 2.)	200 mA max. (32 VDC max.)			
	Residual voltage	2 V max. (under load current of 200 mA with cable length of 2 m)			
Indicator		Operation indicator (Yellow LED)			
Operation mode (with sensing object approaching)		-B1/-C1 models: NO -B2/-C2 models: NC -B3/-C3 models: NO+NC For details, refer to the timing charts.			
Protection circuit		Output reverse polarity protection, Power source circuit reverse polarity protection, Surge suppressor, Short-circuit protection			
Ambient air temperature		Operating: -40°C to 70°C, Storage: -40°C to 85°C (with no icing or condensation)			
Temperature influence (See note 2.)		±10% max. of sensing distance at 23°C within temperature range of -25°C to 70°C ±15% max. of sensing distance at 23°C within temperature range of -40°C to 70°C			
Ambient humidity		Operating: 35% to 95%, Storage: 35% to 95%			
Voltage influence		±1% max. of sensing distance in rated voltage range ±15%			
Insulation resistance		50 MΩ min. (at 500 VDC) between current carry parts and case			
Dielectric strength		1,000 VAC at 50/60 Hz for 1 min between current carry parts and case			
Vibration resistance		10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y and Z directions			
Shock resistance		1,000 m/s ² , 10 times each in X, Y and Z directions			
Standard and listings (See note 3.)		IP67 after IEC 60529 IP69K after DIN 40050 EMC after EN60947-5-2			
Connection method		Pre-wired models (standard is dia 4mm PVC cable with length = 2m). Please see chapter 'Connectivity' for details on different cable materials and lengths and M8 or M12 connectors.			
Weight (packaged)	Pre-wired model	Approx. 160 g		Approx. 280 g	Approx. 280 g
	Connector model	Approx. 70 g		Approx. 200 g	Approx. 200 g
Material	Case	Stainless steel (SUS 303 EN1.4305)			
	Sensing surface	PBT			
	Cable	Standard cable is PVC dia 4mm. For other cable materials or diameters please refer to chapter 'Connectivity'			
	Clamping nut	Stainless steel (SUS 303 EN1.4305)			

Note: 1. The response frequency is an average value. Measurement conditions are as follows: standard target, a distance of twice the standard target distance between targets, and a setting distance of half the sensing distance.

2. When using any model at an ambient temperature between -40°C and -25°C and a power voltage between 30 and 32 VDC, use a load current of 100 mA max.

3. For USA and Canada: use class 2 circuit only.