OMRON

Cylindrical Proximity Sensor

E2A

Extended Range DC-3 Wire Proximity Sensors

- Ensures a sensing distance approximately 1.5 to 2 times longer than standard proximity sensors.
- Minimizes collisions.
- Full range of standard sizes (M8, M12, M18 and M30; both long and short barrels).
- Choose from prewired, M8 or M12 connector versions.

Ordering Information (Shaded models are normally stocked.)

Size	Type	Sensing distance	Connection	Body material	Thread Length (overall length)	Output configuration	Model number Operation mode NO	Operation mode NC
M8	Shielded	2.0 mm	Pre-wired	Stainless steel	27 (40)	PNP	E2A-S08KS02-WP-B1 2M	E2A-S08KS02-WP-B2 2M
						NPN	E2A-S08KS02-WP-C1 2M	E2A-S08KS02-WP-C2 2M
					49 (62)	PNP	E2A-S08LS02-WP-B1 2M	E2A-S08LS02-WP-B2 2M
						NPN	E2A-S08LS02-WP-C1 2M	E2A-S08LS02-WP-C2 2M
			M12 connector	Stainless steel	27 (43)	PNP	E2A-S08KS02-M1-B1	E2A-S08KS02-M1-B2
						NPN	E2A-S08KS02-M1-C1	E2A-S08KS02-M1-C2
					49 (65)	PNP	E2A-S08LS02-M1-B1	E2A-S08LS02-M1-B2
						NPN	E2A-S08LS02-M1-C1	E2A-S08LS02-M1-C2
				Nickel-plated Brass	27 (43)	PNP	E2A-M08KS02-M1-B1	E2A-M08KS02-M1-B2
						NPN	E2A-M08KS02-M1-C1	E2A-M08KS02-M1-C2
					49 (65)	PNP	E2A-M08LS02-M1-B1	E2A-M08LS02-M1-B2
						NPN	E2A-M08LS02-M1-C1	E2A-M08LS02-M1-C2
			M8 connector (3-pin)	Stainless steel	27 (39)	PNP	E2A-S08KS02-M5-B1	E2A-S08KS02-M5-B2
						NPN	E2A-S08KS02-M5-C1	E2A-S08KS02-M5-C2
					49 (61)	PNP	E2A-S08LS02-M5-B1	E2A-S08LS02-M5-B2
						NPN	E2A-S08LS02-M5-C1	E2A-S08LS02-M5-C2
	Unshielded	4.0 mm	Pre-wired	Stainless steel	27 (40)	PNP	E2A-S08KN04-WP-B1 2M	E2A-S08KN04-WP-B2 2M
						NPN	E2A-S08KN04-WP-C1 2M	E2A-S08KN04-WP-C2 2M
					49 (62)	PNP	E2A-S08LN04-WP-B1 2M	E2A-S08LN04-WP-B2 2M
						NPN	E2A-S08LN04-WP-C1 2M	E2A-S08LN04-WP-C2 2M
			M12 connector	Stainless steel	27 (43)	PNP	E2A-S08KN04-M1-B1	E2A-S08KN04-M1-B2
						NPN	E2A-S08KN04-M1-C1	E2A-S08KN04-M1-C2
					49 (65)	PNP	E2A-S08LN04-M1-B1	E2A-S08LN04-M1-B2
						NPN	E2A-S08LN04-M1-C1	E2A-S08LN04-M1-C2
				Nickel-plated Brass	27 (43)	PNP	E2A-M08KN04-M1-B1	E2A-M08KN04-M1-B2
						NPN	E2A-M08KN04-M1-C1	E2A-M08KN04-M1-C2
					49 (65)	PNP	E2A-M08LN04-M1-B1	E2A-M08LN04-M1-B2
						NPN	E2A-M08LN04-M1-C1	E2A-M08LN04-M1-C2
			M8 connector (3-pin)	Stainless steel	27 (39)	PNP	E2A-S08KN04-M5-B1	E2A-S08KN04-M5-B2
						NPN	E2A-S08KN04-M5-C1	E2A-S08KN04-M5-C2
					49 (61)	PNP	E2A-S08LN04-M5-B1	E2A-S08LN04-M5-B2
						NPN	E2A-S08LN04-M5-C1	E2A-S08LN04-M5-C2

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Ordering Information continued (Shaded models are normally stocked.)

Size	Type	Sensing distance	Connection	Body material	Thread Length (overall length)	Output configuration	Model number Operation mode NO	Operation mode NC
M12	Shielded	4.0 mm	Pre-wired	Nickel-plated Brass	34 (50)	PNP	E2A-M12KS04-WP-B1 2M	E2A-M12KS04-WP-B2 2M
						NPN	E2A-M12KS04-WP-C1 2M	E2A-M12KS04-WP-C2 2M
					56 (72)	PNP	E2A-M12LS04-WP-B1 2M	E2A-M12LS04-WP-B2 2M
						NPN	E2A-M12LS04-WP-C1 2M	E2A-M12LS04-WP-C2 2M
			M12 connector	Nickel-plated Brass	34 (48)	PNP	E2A-M12KS04-M1-B1	E2A-M12KS04-M1-B2
						NPN	E2A-M12KS04-M1-C1	E2A-M12KS04-M1-C2
					56 (70)	PNP	E2A-M12LS04-M1-B1	E2A-M12LS04-M1-B2
						NPN	E2A-M12LS04-M1-C1	E2A-M12LS04-M1-C2
	Unshielded	8.0 mm	Pre-wired	Nickel-plated Brass	34 (50)	PNP	E2A-M12KN08-WP-B1 2M	E2A-M12KN08-WP-B2 2M
						NPN	E2A-M12KN08-WP-C1 2M	E2A-M12KN08-WP-C2 2M
					56 (72)	PNP	E2A-M12LN08-WP-B1 2M	E2A-M12LN08-WP-B2 2M
						NPN	E2A-M12LN08-WP-C1 2M	E2A-M12LN08-WP-C2 2M
			M12 connector	Nickel-plated Brass	34 (48)	PNP	E2A-M12KN08-M1-B1	E2A-M12KN08-M1-B2
						NPN	E2A-M12KN08-M1-C1	E2A-M12KN08-M1-C2
					56 (70)	PNP	E2A-M12LN08-M1-B1	E2A-M12LN08-M1-B2
						NPN	E2A-M12LN08-M1-C1	E2A-M12LN08-M1-C2
M18	Shielded	8.0 mm	Pre-wired	Nickel-plated Brass	39 (59)	PNP	E2A-M18KS08-WP-B1 2M	E2A-M18KS08-WP-B2 2M
						NPN	E2A-M18KS08-WP-C1 2M	E2A-M18KS08-WP-C2 2M
					61 (81)	PNP	E2A-M18LS08-WP-B1 2M	E2A-M18LS08-WP-B2 2M
						NPN	E2A-M18LS08-WP-C1 2M	E2A-M18LS08-WP-C2 2M
			M12 connector	Nickel-plated Brass	39 (53)	PNP	E2A-M18KS08-M1-B1	E2A-M18KS08-M1-B2
						NPN	E2A-M18KS08-M1-C1	E2A-M18KS08-M1-C2
					61 (75)	PNP	E2A-M18LS08-M1-B1	E2A-M18LS08-M1-B2
						NPN	E2A-M18LS08-M1-C1	E2A-M18LS08-M1-C2
	Unshielded	16.0 mm	Pre-wired	Nickel-plated Brass	39 (59)	PNP	E2A-M18KN16-WP-B1 2M	E2A-M18KN16-WP-B2 2M
						NPN	E2A-M18KN16-WP-C1 2M	E2A-M18KN16-WP-C2 2M
					61 (81)	PNP	E2A-M18LN16-WP-B1 2M	E2A-M18LN16-WP-B2 2M
						NPN	E2A-M18LN16-WP-C1 2M	E2A-M18LN16-WP-C2 2M
			M12 connector	Nickel-plated Brass	39 (53)	PNP	E2A-M18KN16-M1-B1	E2A-M18KN16-M1-B2
						NPN	E2A-M18KN16-M1-C1	E2A-M18KN16-M1-C2
					61 (75)	PNP	E2A-M18LN16-M1-B1	E2A-M18LN16-M1-B2
						NPN	E2A-M18LN16-M1-C1	E2A-M18LN16-M1-C2
M30	Shielded	15.0 mm	Pre-wired	Nickel-plated Brass	44 (64)	PNP	E2A-M30KS15-WP-B1 2M	E2A-M30KS15-WP-B2 2M
						NPN	E2A-M30KS15-WP-C1 2M	E2A-M30KS15-WP-C2 2M
					66 (86)	PNP	E2A-M30LS15-WP-B1 2M	E2A-M30LS15-WP-B2 2M
						NPN	E2A-M30LS15-WP-C1 2M	E2A-M30LS15-WP-C2 2M
			M12 connector	Nickel-plated Brass	44 (58)	PNP	E2A-M30KS15-M1-B1	E2A-M30KS15-M1-B2
						NPN	E2A-M30KS15-M1-C1	E2A-M30KS15-M1-C2
					66 (80)	PNP	E2A-M30LS15-M1-B1	E2A-M30LS15-M1-B2
						NPN	E2A-M30LS15-M1-C1	E2A-M30LS15-M1-C2
	Unshielded	20.0 mm	Pre-wired	Nickel-plated Brass	44 (64) (See note.)	PNP	E2A-M30KN20-WP-B1 2M	E2A-M30KN20-WP-B2 2M
						NPN	E2A-M30KN20-WP-C1 2M	E2A-M30KN20-WP-C2 2M
		30.0 mm			66 (86)	PNP	E2A-M30LN30-WP-B1 2M	E2A-M30LN30-WP-B2 2M
						NPN	E2A-M30LN30-WP-C1 2M	E2A-M30LN30-WP-C2 2M
		20.0 mm	M12 connector	Nickel-plated Brass	44 (58) (See note.)	PNP	E2A-M30KN20-M1-B1	E2A-M30KN20-M1-B2
						NPN	E2A-M30KN20-M1-C1	E2A-M30KN20-M1-C2
		30.0 mm			66 (80)	PNP	E2A-M30LN30-M1-B1	E2A-M30LN30-M1-B2
						NPN	E2A-M30LN30-M1-C1	E2A-M30LN30-M1-C2

Note: M30 unshielded 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.

DC 3-wire Models

Size		M8		M12	
Type		Shielded	Unshielded	Shielded	Unshielded
Item		E2A-M08□S02-M1-B1	E2A-M08□N04-M1-B1	E2A-M12□S04-□□-B1	E2A-M12□N08-□□-B1
		E2A-M08□S02-M1-B2	E2A-M08□N04-M1-B2	E2A-M12□S04-□□-B2	E2A-M12□N08-□□-B2
		E2A-M08□S02-M1-C1	E2A-M08□N04-M1-C1	E2A-M12□S04-□□-C1	E2A-M12□N08-□□-C1
		E2A-M08□S02-M1-C2	E2A-M08□N04-M1-C2	E2A-M12□S04-□□-C2	E2A-M12□N08-□□-C2
		E2A-S08□S02-□□-B1	E2A-S08□N04-□□-B1		
		E2A-S08□S02-□□-B2	E2A-S08□N04-□□-B2		
		E2A-S08□S02-□□-C1	E2A-S08□N04-□□-C1		
		E2A-S08□S02-□□-C2	E2A-S08□N04-□□-C2		
Sensing distance		2 mm ±10%	4 mm ±10%	4 mm ±10%	8 mm ±10%
Setting distance		0 to 1.6 mm	0 to 3.2 mm	0 to 3.2 mm	0 to 6.4 mm
Hysteresis		10% max. of sensing distance			
Target		Ferrous metal (The sensing distance decreases with non-ferrous metal.)			
Standard target (mild steel ST37)		8 x 8 x 1 mm	12 x 12 x 1 mm	12 x 12 x 1 mm	24 x 24 x 1 mm
Response frequency (See note 1.)		1,500 Hz	1,000 Hz	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; For details, refer to the timing charts.			
Protection circuit		Power source circuit reverse polarity protection, Surge suppressor, Short-circuit protection		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/s², 10 times each in X, Y and Z directions		1,000 m/s², 10 times each in X, Y and Z directions	
Standards and listings		IEC60529: IP67, Degree of protection EN60947-5-2: EMC UL (CSA) [E196555] (See note 3.)			
Connection method		-WP models: Pre-wired models (Standard length: 2 m) -M1 models: M12 4-pin connector models -M5 models: M8 3-pin connector models			
Weight (packaged)	Pre-wired model	Approx. 65 g		Approx. 85 g	
	M12 connector model	M12 connector models: Approx. 20 g M8 connector models: Approx. 15 g		Approx. 35 g	
Material	Case	Stainless steel or brass-nickel plated		Brass-nickel plated	
	Sensing surface	PBT			
	Cable	PVC			
	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. UL (CSA) [E196555]: Use class 2 circuit only.

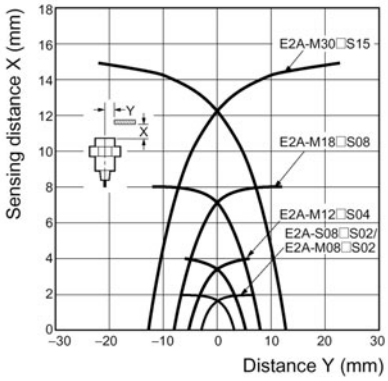
DC 3-wire Models

Size		M18		M30		
Type		Shielded	Unshielded	Shielded	Unshielded	Unshielded
Item		E2A-M18□S08-□□-B1	E2A-M18□N16-□□-B1	E2A-M30□S15-□□-B1	E2A-M30KN20-□□-B1	E2A-M30LN30-□□-B1
		E2A-M18□S08-□□-B2	E2A-M18□N16-□□-B2	E2A-M30□S15-□□-B2	E2A-M30KN20-□□-B2	E2A-M30LN30-□□-B2
		E2A-M18□S08-□□-C1	E2A-M18□N16-□□-C1	E2A-M30□S15-□□-C1	E2A-M30KN20-□□-C1	E2A-M30LN30-□□-C1
		E2A-M18□S08-□□-C2	E2A-M18□N16-□□-C2	E2A-M30□S15-□□-C2	E2A-M30KN20-□□-C2	E2A-M30LN30-□□-C2
Sensing distance		8 mm ±10%	16 mm ±10%	15 mm ±10%	20 mm ±10%	30 mm ±10%
Setting distance		0 to 6.4 mm	0 to 12.8 mm	0 to 12 mm	0 to 16 mm	0 to 24 mm
Hysteresis		10% max. of sensing distance				
Target		Ferrous metal (The sensing distance decreases with non-ferrous metal.)				
Standard target (mild steel ST37)		24 x 24 x 1 mm	48 x 48 x 1 mm	45 x 45 x 1 mm	60 x 60 x 1 mm	90 x 90 x 1 mm
Response frequency (See note 1.)		500 Hz	400 Hz	250 Hz	100 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; 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				
Standards and listings		IEC60529: IP67, Degree of protection EN60947-5-2: EMC UL (CSA) [E196555] (See note 3.)				
Connection method		-WP models: Pre-wired models (Standard length: 2 m) -M1 models: M12 4-pin connector models -M5 models: M8 3-pin connector models				
Weight (packaged)	Pre-wired model	Approx. 160 g		Approx. 280 g	Approx. 280 g	Approx. 370 g
	M12 connector model	Approx. 70 g		Approx. 200 g	Approx. 200 g	Approx. 260 g
Material	Case	Brass-nickel plated				
	Sensing surface	PBT				
	Cable	PVC				
	Clamping nut	Brass-nickel plated				

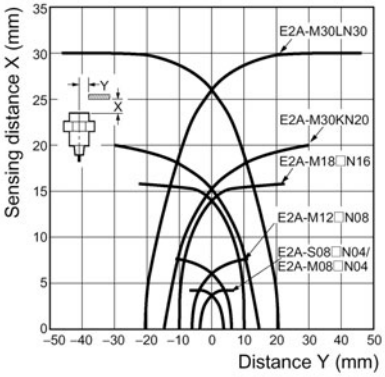
Note 1. The response frequency is an average value. Measurement conditions are as follows: standard target, a distance of twice the standard target distance between targets, and a setting distance of half the sensing distance.
2. When using any model at an ambient temperature between -40°C and -25°C and a power voltage between 30 and 32 VDC, use a load current of 100 mA max.
3. UL (CSA) [E196555]: Use class 2 circuit only.

Operating Range (Typical)

Shielded Models



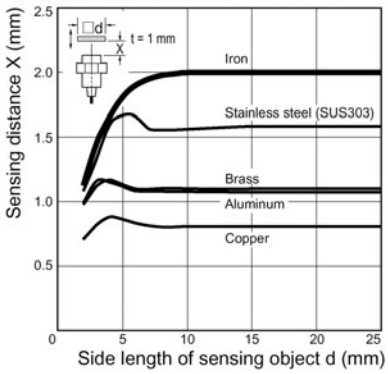
Unshielded Models



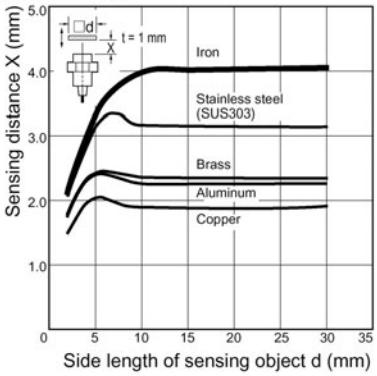
Influence of Sensing Object Size and Materials

Shielded Models

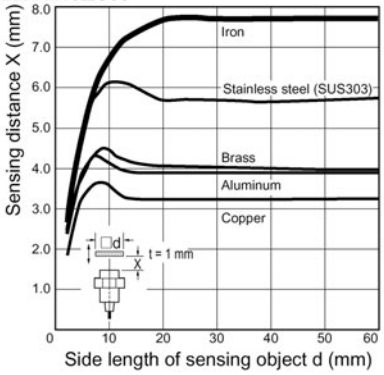
E2A-S08□S02/M08□S02



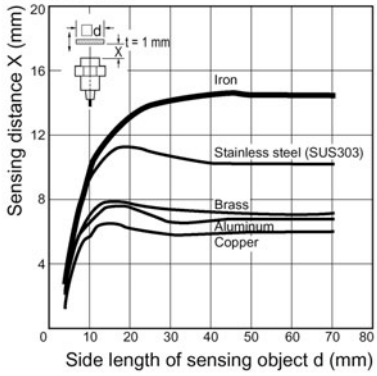
E2A-M12□S04



E2A-M18□S08

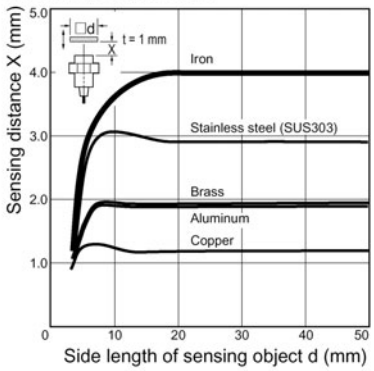


E2A-M30□S15

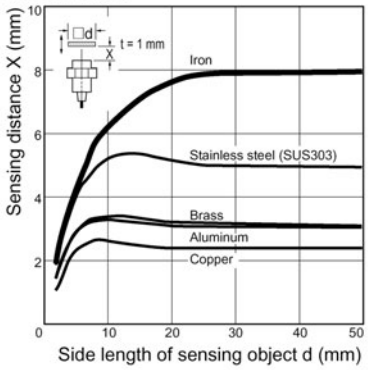


Unshielded Models

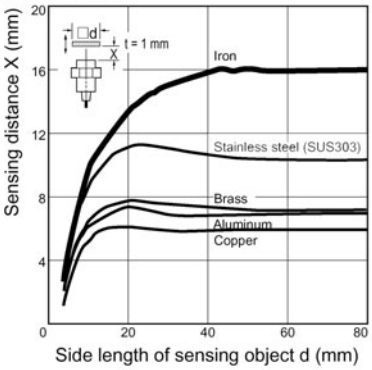
E2A-S08□N04/M08□N04



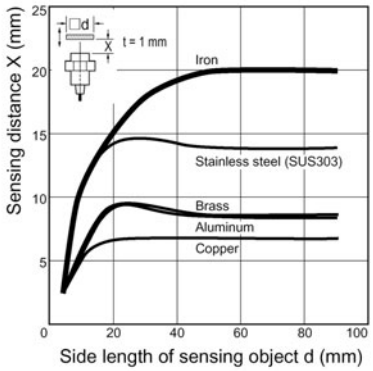
E2A-M12□N08



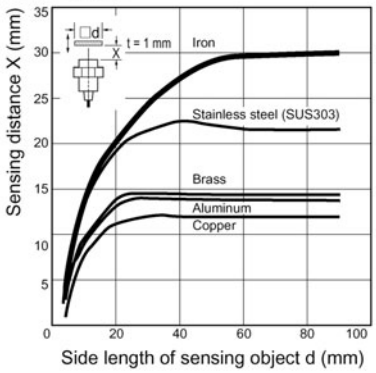
E2A-M18□N16



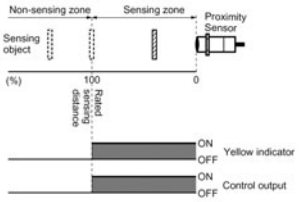
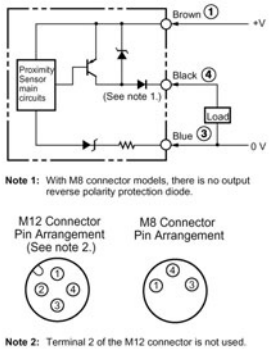
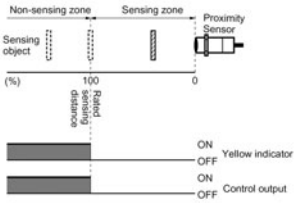
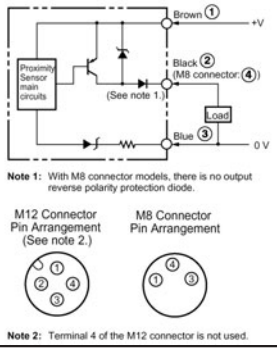
E2A-M30KN20



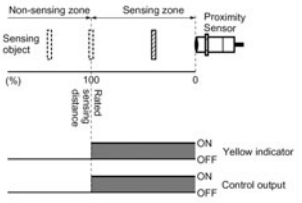
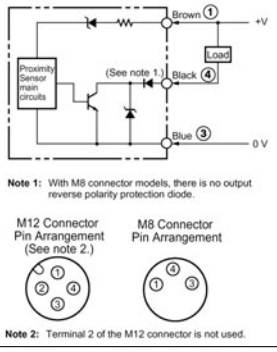
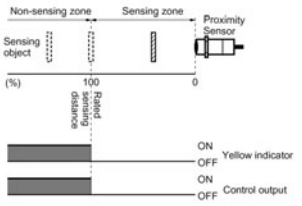
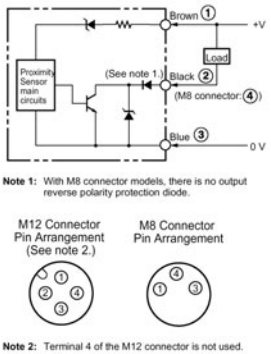
E2A-M30LN30



PNP Output

Operation mode	Model	Timing chart	Output circuit
NO	E2A-□-□-B1		
NC	E2A-□-□-B2		

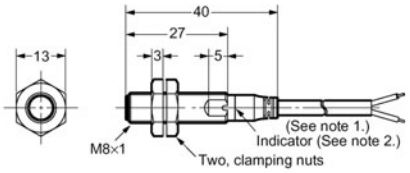
NPN Output

Operation mode	Model	Timing chart	Output circuit
NO	E2A-□-□-C1		
NC	E2A-□-□-C2		

Note: All units are in millimeters unless otherwise indicated.

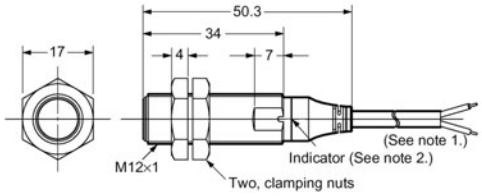
Pre-wired Models (Shielded)

E2A-S08KS02-WP-□□



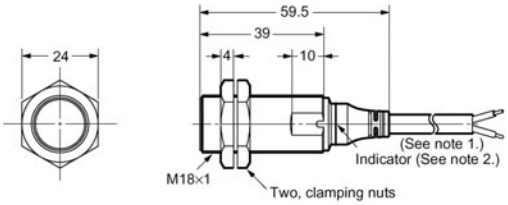
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M12KS04-WP-□□



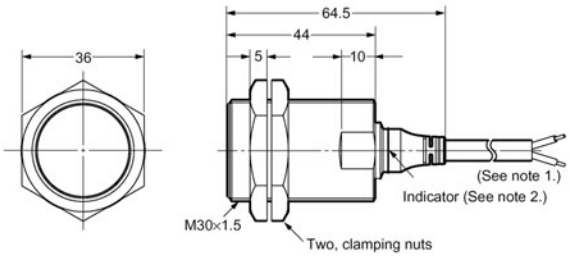
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M18KS08-WP-□□



Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

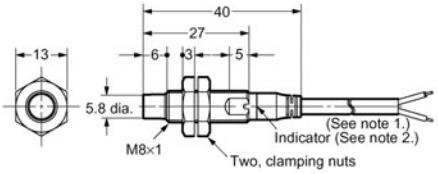
E2A-M30KS15-WP-□□



Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

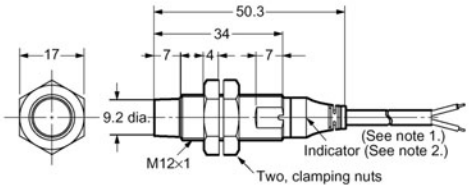
Pre-wired Models (Unshielded)

E2A-S08KN04-WP-□□



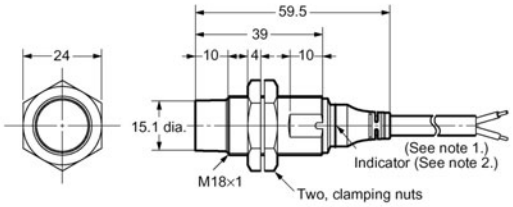
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M12KN08-WP-□□



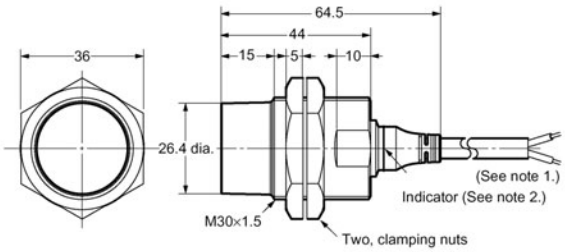
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M18KN16-WP-□□



Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M30KN20-WP-□□

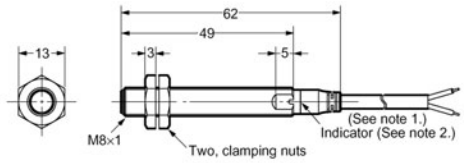


Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

Note: All units are in millimeters unless otherwise indicated.

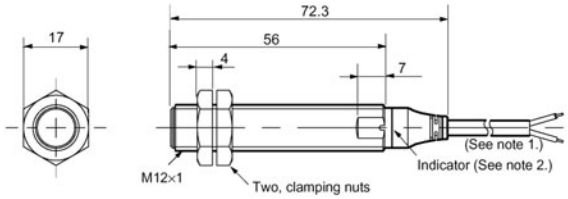
Pre-wired Models (Shielded)

E2A-S08LS02-WP-□□



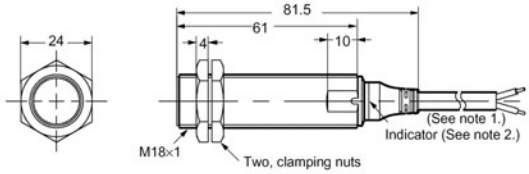
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M12LS04-WP-□□



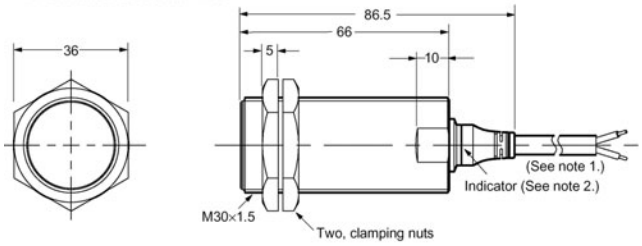
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M18LS08-WP-□□



Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

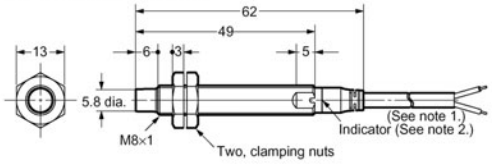
E2A-M30LS15-WP-□□



Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

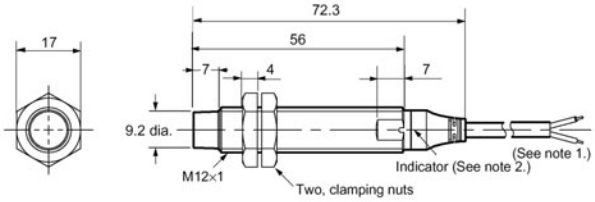
Pre-wired Models (Unshielded)

E2A-S08LN04-WP-□□



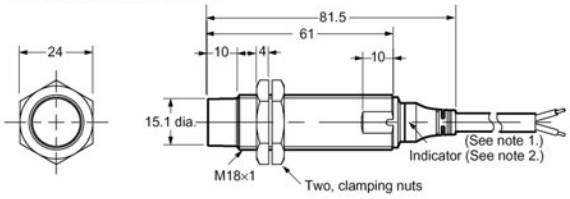
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M12LN08-WP-□□



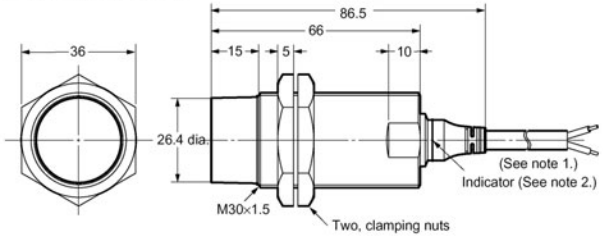
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M18LN16-WP-□□



Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M30LN30-WP-□□



Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

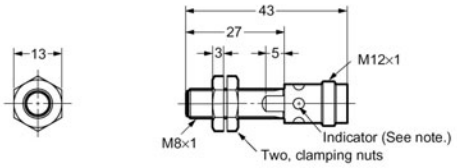
Mounting Hole Cutout Dimensions

External diameter of Proximity Sensor	Dimension F (mm)
M8	8.5 dia. $^{+0.5}_{0}$
M12	12.5 dia. $^{+0.5}_{0}$
M18	18.5 dia. $^{+0.5}_{0}$
M30	30.5 dia. $^{+0.5}_{0}$

Note: All units are in millimeters unless otherwise indicated.

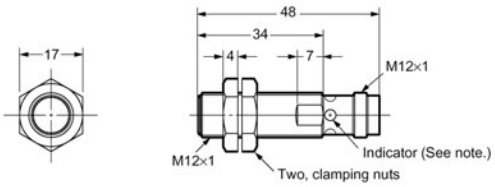
M12 Connector Models (Shielded)

E2A-S08KS02-M1-□□
E2A-M08KS02-M1-□□



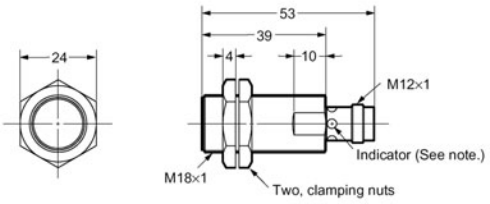
Note: Operation indicator (yellow LED, 4×90°)

E2A-M12KS04-M1-□□



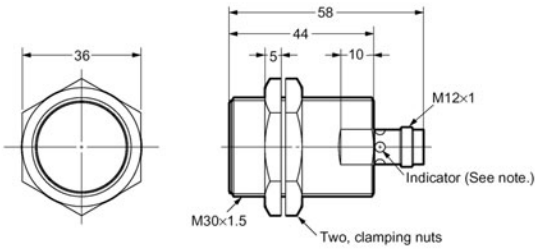
Note: Operation indicator (yellow LED, 4×90°)

E2A-M18KS08-M1-□□



Note: Operation indicator (yellow LED, 4×90°)

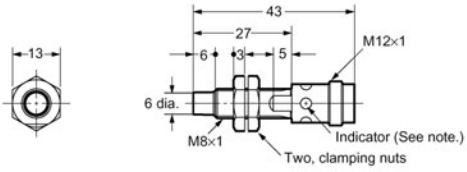
E2A-M30KS15-M1-□□



Note: Operation indicator (yellow LED, 4×90°)

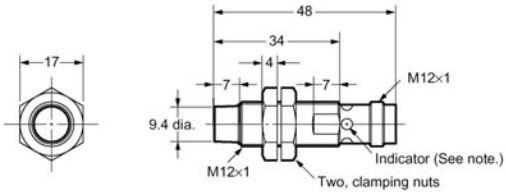
M12 Connector Models (Unshielded)

E2A-S08KN04-M1-□□
E2A-M08KN04-M1-□□



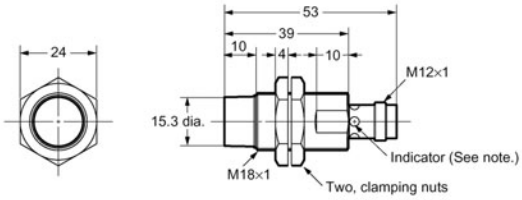
Note: Operation indicator (yellow LED, 4×90°)

E2A-M12KN08-M1-□□



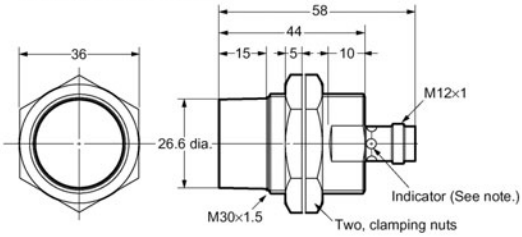
Note: Operation indicator (yellow LED, 4×90°)

E2A-M18KN16-M1-□□



Note: Operation indicator (yellow LED, 4×90°)

E2A-M30KN20-M1-□□

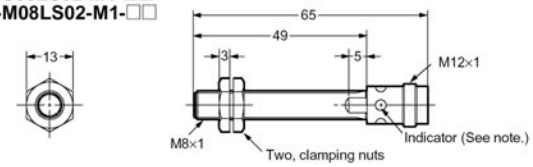


Note: Operation indicator (yellow LED, 4×90°)

Dimensions continued

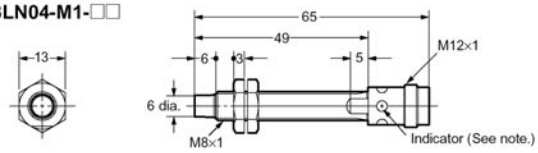
Note: All units are in millimeters unless otherwise indicated.

E2A-S08LS02-M1-□□
E2A-M08LS02-M1-□□



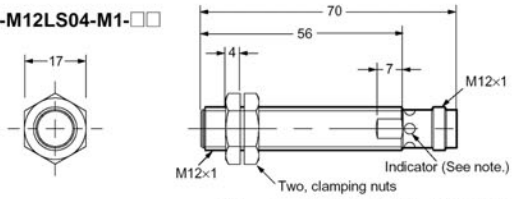
Note: Operation indicator (yellow LED, 4×90°)

E2A-S08LN04-M1-□□
E2A-M08LN04-M1-□□



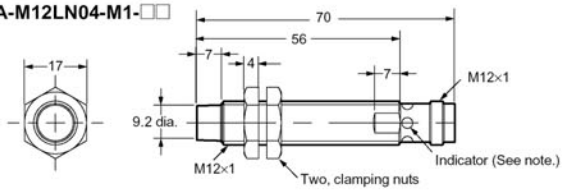
Note: Operation indicator (yellow LED, 4×90°)

E2A-M12LS04-M1-□□



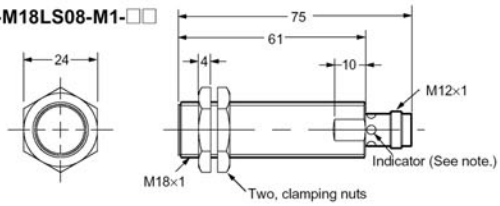
Note: Operation indicator (yellow LED, 4×90°)

E2A-M12LN04-M1-□□



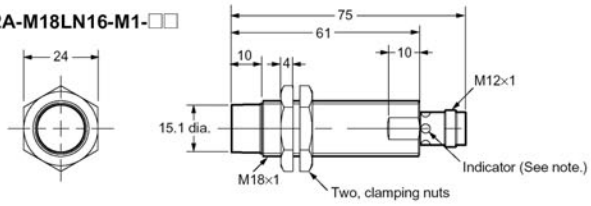
Note: Operation indicator (yellow LED, 4×90°)

E2A-M18LS08-M1-□□



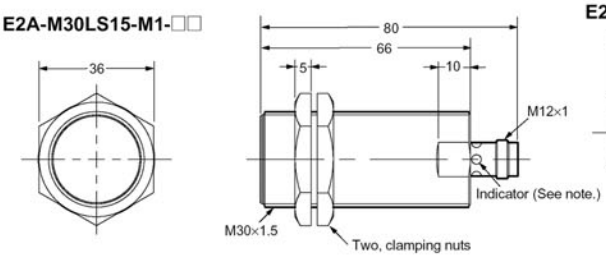
Note: Operation indicator (yellow LED, 4×90°)

E2A-M18LN16-M1-□□



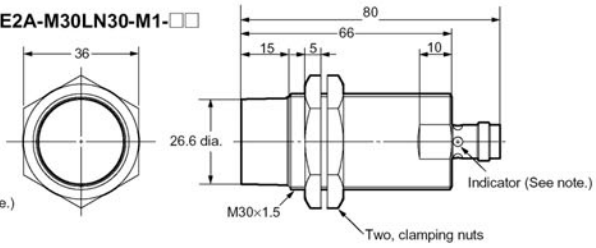
Note: Operation indicator (yellow LED, 4×90°)

E2A-M30LS15-M1-□□



Note: Operation indicator (yellow LED, 4×90°)

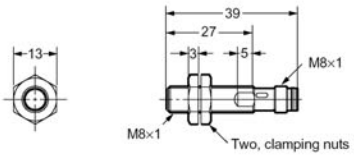
E2A-M30LN30-M1-□□



Note: Operation indicator (yellow LED, 4×90°)

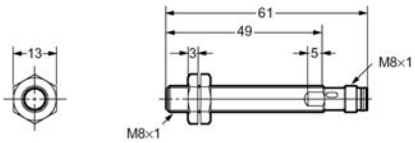
M8 Connector Models (Shielded)

E2A-S08KS02-M5-□□



Note: Operation indicator (yellow LED, 4×90°)

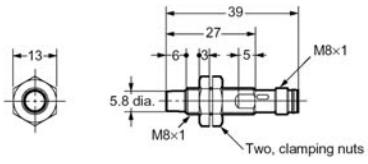
E2A-S08LS02-M5-□□



Note: Operation indicator (yellow LED, 4×90°)

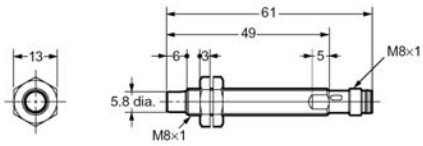
M8 Connector Models (Unshielded)

E2A-S08KN04-M5-□□



Note: Operation indicator (yellow LED, 4×90°)

E2A-S08LN04-M5-□□



Note: Operation indicator (yellow LED, 4×90°)

Safety Precautions

Power Supply
Do not impose an excessive voltage on the E2A, otherwise it may be damaged. Do not impose AC current (100 to 240 VAC) on any DC model, otherwise it may be damaged.

Load Short-circuit
Do not short-circuit the load, or the E2A may be damaged.

The E2A's short-circuit protection function will be valid if the polarity of the supply voltage imposed is correct and within the rated voltage range.

Wiring
Be sure to wire the E2A and load correctly, otherwise it may be damaged.

Connection with No Load
Be sure to insert loads when wiring. Make sure to connect a proper load to the E2A in operation, otherwise it may damage internal elements.

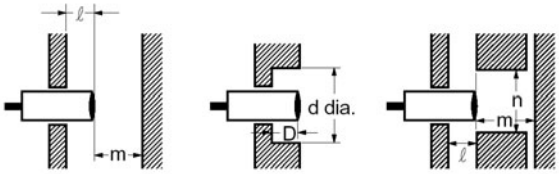
Do not expose the product to flammable or explosive gases.

Do not disassemble, repair, or modify the product.

Correct Use

Power Reset Time
The Proximity Sensor is ready to operate within 100 ms after power is supplied. If power supplies are connected to the Proximity Sensor and load respectively, be sure to supply power to the Proximity Sensor before supplying power to the load.

Effects of Surrounding Metal
When mounting the E2A within a metal panel, ensure that the clearances given in the following table are maintained.



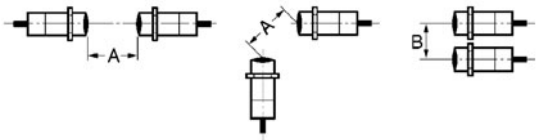
Type	Dimension	M8	M12	M18	M30 Short barrel	M30 Long barrel
Shielded	ℓ	0	0	0 (See note 1)	0 (See note 2)	
	m	4.5	12	24	45	
	d	–	–	27	45	
	D	0	0	1.5	4	
	n	12	18	27	45	
Non-shielded	ℓ	12	15	22	30	40
	m	8	20	48	70	90
	d	24	40	70	90	120
	D	12	15	22	30	40
	n	24	40	70	90	120

Note 1. In the case of using the supplied nuts. If true flush mounting is necessary, apply a free zone of 1.5 mm.
2. In the case of using the supplied nuts. If true flush mounting is necessary, apply a free zone of 4 mm.

Power OFF
The Proximity Sensor may output a pulse signal when it is turned OFF. Therefore, it is recommended that the load be turned OFF before turning OFF the Proximity Sensor.

Power Supply Transformer
When using a DC power supply, make sure that the DC power supply has an insulated transformer. Do not use a DC power supply with an auto-transformer.

Mutual Interference
When installing two or more Sensors face-to-face or side-by-side, ensure that the minimum distances given in the following table are maintained.



Type	Dimension	M8	M12	M18	M30 Short barrel	M30 Long barrel
Shielded	A	20	30	60	110	
	B	15	20	35	70	
Non-shielded	A	80	120	200	300	300
	B	60	100	120	200	300

Wiring

High-tension Lines

Wiring through Metal Conduit:
If there is a power or high-tension line near the cable of the Proximity Sensor, wire the cable through an independent metal conduit to prevent against Proximity Sensor damage or malfunctioning.

Cable Extension

Standard cable length is less than 200 m.

The tractive force is 50 N.

Mounting

The Proximity Sensor must not be subjected to excessive shock with a hammer when it is installed, otherwise the Proximity Sensor may be damaged or lose its water-resistivity.

Do not tighten the nut with excessive force. A washer must be used with the nut.

Type		Torque
M8	Stainless steel type	9 N·m
	Brass type	4 N·m
M12		30 N·m
M18		70 N·m
M30		180 N·m

Maintenance and Inspection

Periodically perform the following checks to ensure stable operation of the Proximity Sensor over a long period of time.

1. Check for mounting position, dislocation, looseness, or distortion of the Proximity Sensor and sensing objects.
2. Check for loose wiring and connections, improper contacts, and line breakage.
3. Check for attachment or accumulation of metal powder or dust.
4. Check for abnormal temperature conditions and other environmental conditions.
5. Check for proper lighting of indicators (for models with a set indicator.)

Never disassemble or repair the Sensor.

Environment

Water Resistivity

Do not use the Proximity Sensor underwater, outdoors, or in the rain.

Operating Environment

Be sure to use the Proximity Sensor within its operating ambient temperature range and do not use the Proximity Sensor outdoors so that its reliability and life expectancy can be maintained. Although the Proximity Sensor is water resistive, a cover to protect the Proximity Sensor from water or water-soluble machining oil is recommended so that its reliability and life expectancy can be maintained.

Do not use the Proximity Sensor in an environment with chemical gas (e.g., strong alkaline or acid gasses including nitric, chromic, and concentrated sulfuric acid gases).

Inrush Current

A load that has a large inrush current (e.g., a lamp or motor) will damage the Proximity Sensor, in which case connect the load to the Proximity Sensor through a relay.

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OMRON ELECTRONICS LLC
One Commerce Drive
Schaumburg, IL 60173
847-843-7900
For US technical support or other inquiries:
800-556-6766

OMRON CANADA, INC.
885 Milner Avenue
Toronto, Ontario M1B 5V8
416-286-6465

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