

# Proximity Sensors

Navigation Guide

OMRON

## Inductive Sensors



Product Line	E2B	E2E	E2E UL	E2E2	E2A
Selling Tips	<ul style="list-style-type: none"> <li>Reliable performance for standard industrial environments</li> <li>Highly visible LED operation indicators</li> <li>Choice of long or short body housing</li> <li>Choice of single or double sensing distance</li> </ul>	<ul style="list-style-type: none"> <li>Omron's flagship highest quality proximity sensor family</li> <li>Vacuum potted internal circuitry</li> <li>Multiple connector versions</li> <li>Wrench flats for easy installation</li> <li>Superior barrel thickness</li> <li>Highly visible LED indication</li> </ul>	<ul style="list-style-type: none"> <li>UL Recognized DC 2-wire sensors</li> <li>Sensing surface and cable made of oil resistant materials</li> <li>Smartclick connector option simplifies installation</li> </ul>	<ul style="list-style-type: none"> <li>Long-barrel inductive proximity sensor</li> <li>Cable protectors provided as a standard feature</li> <li>Fully threaded body</li> <li>A milled section for wrench flats on all models</li> <li>Highly Visible LED indication</li> </ul>	<ul style="list-style-type: none"> <li>Designed and tested for extra long life</li> <li>DC 3-wire and DC 2-wire models</li> <li>Normally open (NO), normally closed (NC) and light-on/dark-on (NO+NC) models</li> <li>Pre-wired versions with different cable materials &amp; diameters, M8 &amp; M12 connector types, pre-wired types with cable end connectors</li> </ul>
Applications	Use for standard industrial environment applications.	Use for high quality, highly reliable detection of ferrous metals.	Use for high quality, highly reliable detection of ferrous metals in tough applications requiring UL recognition, such as the automotive industry.	Use for high quality, highly reliable detection of ferrous metals. Easy to install long barrel body.	Use for general purpose sensing of ferrous metals.
Model	DC 3-Wire	DC 2-Wire; DC 3-Wire; AC 2-Wire	DC 2-wire	DC 2-Wire; DC 3-Wire; AC 2-Wire	DC 2-Wire; DC 3-Wire; DC 4-Wire
Sensing Distance	1 mm, 2 mm, 4 mm, 5 mm, 8 mm, 10 mm, 15 mm, 16 mm, 20 mm, 30 mm	0.8 mm, 1.2 mm, 1.5 mm, 2 mm, 3 mm, 4 mm, 5 mm, 8 mm, 7 mm, 10 mm, 14 mm, 10 mm, 18 mm, 20 mm	2mm, 3mm, 4mm, 7mm, 8mm, 10mm, 14mm, 20mm	2 mm, 3 mm, 5 mm, 7 mm, 8 mm, 10 mm, 14 mm, 20 mm	2 mm, 4 mm, 8 mm, 15 mm, 16 mm, 20 mm
Housing Size	M8, M12, M18, M30	3 dia., 4 dia., 6.5 dia., M4, M5 M8, M12, M18, M30	M8, M12, M18, M30	M12, M18, M30	M8, M12, M18, M30
Housing Material	Nickel Plated Brass - (NPB) Stainless Steel - (SUS)	Nickel Plated Brass - (NPB) Stainless Steel - (SUS)	Stainless Steel (SUS) for M8, Nickel Plated Brass (NPB) for all other sizes.	Nickel Plated Brass - (NPB)	Nickel Plated Brass - (NPB) Stainless Steel - (SUS)
Mounting Characteristics	Shielded - Flush Mountable Non-Shielded - Standard Mountable	Shielded - Flush Mountable Non-Shielded - Standard Mountable	Shielded - Flush Mountable Non-Shielded - Standard Mountable	Shielded - Flush Mountable Non-Shielded - Standard Mountable	Shielded - Flush Mountable Non-Shielded - Standard Mountable
Output State	NO - Normally Open NC - Normally Closed NPN or PNP	NO - Normally Open (Stocked) NC - Normally Closed (Available) NPN or PNP	NO - Normally Open NC - Normally Closed NPN or PNP	NO - Normally Open (Stocked) NC - Normally Closed (Available) NPN or PNP	NO - Normally Open (Stocked) NC - Normally Closed (Available) NPN or PNP
Supply Voltage	12 - 24 VDC	10 - 30 VDC, 12 - 24 VDC, 24 - 240 VAC	10 - 30 VDC	12 - 24 VDC, 24 - 240 VAC	12 - 24 VDC
Connection	Pre-Wired or Connector Cord set style	Pre-Wired or Connector Cord set style	Pre-wired, Connector Cordset style, or Smartclick Cordset style	Pre-Wired or Connector Cord set style	Pre-Wired or Connector Cord set style
Environment Protection Degree	IP67	IP67, IP69K	IP67	IP67	IP67, IP69K
Key Accessories	M8 Cord set, M12 Cord set, Mounting brackets	M8 Cord set, M12 Cord set, Mounting brackets	M8 Cordset, M12 Cordset, Mounting brackets	M8 Cord set, M12 Cord set, Mounting brackets	M8 Cord set, M12 Cord set, Mounting brackets
Popular Part Numbers	<ul style="list-style-type: none"> <li>E2B-M12KS04-WP-B1 2M</li> <li>E2B-M12KS04-WP-C1 2M</li> </ul>	<ul style="list-style-type: none"> <li>E2E-X2D1-N • E2E-X3D1-N</li> <li>E2E-X1R5E1 • E2E-X2E1</li> </ul>	<ul style="list-style-type: none"> <li>E2E-X2D1-U 2M • E2E-X3D1-U 2M</li> <li>E2E-X7D1-U 2M • E2E-X10D1-U 2M</li> </ul>	<ul style="list-style-type: none"> <li>E2E2-X3D1 • E2E2-X7D1</li> <li>E2E2-X2C1 • E2E2-X2B1</li> </ul>	<ul style="list-style-type: none"> <li>E2A-M12S04-WP-B1-2M</li> <li>E2A-M12KS04-WP-C1-2M</li> </ul>

# Proximity Sensors

Navigation Guide

OMRON

## Inductive Sensors



Product Line	E2FM	E2F	E2Q6	E2Q2	TL-W	E2S
Selling Tips	<ul style="list-style-type: none"> <li>Completely stainless-steel housing</li> <li>Aluminum chip immunity</li> <li>Flush mounting in metal mountings</li> <li>Chemical resistance certified by Ecolab Europe</li> <li>Stainless Steel body with fluororesin coating available</li> </ul>	<ul style="list-style-type: none"> <li>Short length, shielded sensors with threaded plastic body</li> <li>Rugged, watertight plastic housing offers good chemical resistance and withstands wash down</li> <li>Operation indicator on all models</li> </ul>	<ul style="list-style-type: none"> <li>Sensing face easily adjusts to one of five directions</li> <li>Easy to install and same mounting dimensions as a standard limit switch</li> <li>Visible indicators regardless of sensing direction</li> <li>Plastic body with stainless steel screws</li> <li>Conduit opening 1/2" - NPT</li> </ul>	<ul style="list-style-type: none"> <li>Sensing face easily adjusts to one of five directions</li> <li>Easy to install and same mounting dimensions as a standard limit switch</li> <li>Plastic body with stainless steel screws</li> <li>Conduit openings 1/2" - NPT</li> </ul>	<ul style="list-style-type: none"> <li>Space saving flat pack sensor fits tight spaces</li> <li>Rugged die cast metal or plastic housing</li> <li>Mounts directly to metal base or rail</li> <li>Front and side facing sensing surface</li> </ul>	<ul style="list-style-type: none"> <li>Miniature housing with long sensing ranges</li> <li>Front and side facing sensing surfaces</li> <li>Simple mounting with one screw or bracket</li> </ul>
Applications	The stainless steel housing withstands: Sodium chloride, Gasoline, Dilute sodium hydroxide, Dilute hydrochloric acid, Mineral oil, Barium hydroxide, and many others	Sensing in harsh environments. Use where metal barrel will corrode. For sensing ferrous metals.	Standard limit switch mounting will fit on conveyors and packaging equipment. Best replacement for limit switch applications for a non-contact solution.	Standard limit switch mounting will fit on conveyors and packaging equipment. Best replacement for limit switch applications for a non-contact solution.	Space confined installations in conveyor rails, and end of travel and home positions robotic applications.	Smallest rectangular sensor available.
Model	DC 2-Wire; DC 3-Wire	DC 3-Wire; AC 2-Wire	DC 2-wire	DC 2-Wire; AC 2 Wire	DC 2-Wire; DC 3-Wire	DC 2-Wire; DC 3-Wire
Sensing Distance	1.5 mm, 2 mm, 5 mm, 10 mm	1.5 mm, 2 mm, 5 mm, 10 mm	20mm, 30mm	15 mm, 20 mm, 30 mm	1.5 mm, 3 mm, 5 mm, 20 mm	1.6 mm, 2.5 mm
Housing Size	M8, M12, M18, M30	M8, M12, M18, M30	Rectangular	Rectangular	Rectangular	Square Surface mount
Housing Material	Stainless Steel - (SUS 303)	Polyarylate resin	Polyamide (PA)	Plastic Body and Aluminum Base	ABS Plastic, Die-cast Aluminum	Polyarylate
Mounting Characteristics	Shielded - Flush Mountable	Threaded body Shielded - Flush Mountable	Surface Mount	Surface mount	Surface mount	Surface mount
Output State	NO - Normally Open NPN or PNP	NO - Normally Open (Stocked) NC - Normally Closed (Available) NPN or PNP	NPN, PNP 1NO + 1NC Contact	NPN, PNP both with 1NO + 1NC Contact	NPN, PNP Normally open or Normally Closed	NPN, PNP NO - Normally Open (Stocked) NC - Normally Closed
Supply Voltage	12 - 24 VDC	12 - 24 VDC, 24 - 240 VAC	10-30 VDC	10 to 60 VDC 20 to 253 VAC	12 - 24 VDC	12 - 24 VDC
Connection	Pre-Wired or Connector Cord set style	Pre-Wired	1/2" Conduit opening	1/2" Conduit opening	Pre-Wired	Pre-Wired
Environment Protection Degree	IP67	IP68	IP67	IP67	IP67	IP67
Key Accessories	M8 Cord set, M12 Cord set, Mounting brackets	Mounting Brackets	Cable Gland	N/A	N/A	Mounting Brackets
Popular Part Numbers	<ul style="list-style-type: none"> <li>E2FM-X2DT</li> <li>E2FM-X5DT</li> </ul>	<ul style="list-style-type: none"> <li>E2F-X1R5E1</li> <li>E2F-X2E1</li> </ul>	<ul style="list-style-type: none"> <li>E2Q6-N20E3-H</li> <li>E2Q6-N20F3-H</li> <li>E2Q6-N30ME3-H</li> <li>E2Q6-N30MF3-H</li> </ul>	<ul style="list-style-type: none"> <li>E2Q2-N2DE3-U</li> <li>E2Q2-N2DF3-U</li> </ul>	<ul style="list-style-type: none"> <li>TL-W3MC1</li> <li>TL-W5MC1</li> </ul>	<ul style="list-style-type: none"> <li>E2S W21</li> <li>E2S-W22</li> </ul>

# Proximity Sensors

## Capacitive Sensors



Product Line	E2K-F	E2K-X	E2K-C
Selling Tips	<ul style="list-style-type: none"> <li>• Non-contact detection of metallic and non-metallic targets including water, oil, glass, plastic and wood</li> <li>• Unshielded sensor has LED indicator and fixed sensitivity for simple installation</li> </ul>	<ul style="list-style-type: none"> <li>• Detects both metallic and non-metallic objects (glass, lumber, water, oil, plastic, etc.) without direct contact</li> <li>• Fixed sensitivity range for simple installation</li> <li>• Operation indicator on all models</li> </ul>	<ul style="list-style-type: none"> <li>• Detects both metallic and non-metallic objects (glass, lumber, water, oil, plastic, etc.) without direct contact</li> <li>• Adjustable detecting distance from 3 to 25 mm</li> </ul>
Applications	Sensing non-metallic targets. Ideal for semiconductor and plastics, level controls applications.	General purpose capacitive sensor. Can be used with various targets like metal, water, oil, glass, plastic, wood etc.	Tank sight glass for level control. Non-metallic container fill inspection.
Model	DC 3-Wire	DC-3-Wire; AC 2-Wire	DC 2-Wire; DC 3-Wire; AC 2-Wire
Sensing Distance	10 mm, 4 - 10 mm	4 mm, 8 mm, 15 mm	3 - 25 mm, 3 - 20 mm
Housing Size	10 mm Thick, Rectangular body	M12, M18, M30 Threaded body	34 mm Dia.
Housing Material	ABS	ABS	ABS
Mounting Characteristics	Direct mounting onto a metallic surface	Threaded body	Mounting bracket required
Output State	NPN Normally open or Normally Closed	NPN, PNP Normally open or Normally Closed	Normally Open or Normally Closed
Supply Voltage	12 - 24 VDC	12 - 24 VDC, 100 - 240 VAC	12 - 24 VDC
Connection	Pre-Wired	Pre-Wired	Pre-Wired
Environment Protection Degree	IP66	IP66	IP66
Key Accessories	N/A	Mounting Nuts, Mounting Brackets	Mounting Nuts, Mounting Brackets
Popular Part Numbers	<ul style="list-style-type: none"> <li>• E2K-F10MC1</li> <li>• E2K-F10MC2</li> </ul>	<ul style="list-style-type: none"> <li>• E2K-X4ME1</li> <li>• E2K-X4MF1</li> </ul>	<ul style="list-style-type: none"> <li>• E2K-C25ME1</li> <li>• E2K-C25ME2</li> </ul>