



Top product features!

- Industry standard 12 mm diameter housing provides simple mounting
- LEDs indicate power, output and marginal signal for easy installation and maintenance
- Durable metal housing resists mechanical damage
- Adjustable sensitivity enables greater accuracy for reliable target detection
- Alarm output alerts user when signal is marginal due to sensor misalignment or cleaning

Simplified alignment and maintenance

OF photoelectric sensors include signal strength monitoring capabilities with LED indications that simplify installation, identify fault conditions, and provide output status. The sensor provides predictive maintenance to increase uptime throughout the production process. In applications where dust, dirt or moisture accumulates on the lenses, the OF sensor continuously monitors the strength of the received signal.



Ease of installation

For quick setup and alignment, the OF sensor will indicate a green LED when mounting is optimal and when power is on.

Ease of predictive maintenance

Quickly identify fault conditions that can cause downtime in your production process. The strength of the returned signal can be seriously degraded in applications where dust, dirt or moisture accumulates. Under marginal operating conditions, a red LED provides a visual warning.

Ease of setup

The OF photoelectric has a yellow LED that indicates the status of the sensor output. If an overload or short circuit fault occurs at the sensor output, the yellow LED will flash at a 3 Hz frequency.

Compact and reliable



Designed for industrial automation applications, the robust OF photoelectric sensor features a metal housing with bright LEDs for simple alignment and fault indication.

Company	IO-Link	Position Sensors		Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Motion Control	Vision Sensors
	IO-Link	Inductive	Capacitive					Encoders / Speed monitors	2D / 3D inspection
1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143



Product + accessory selector

Function		Range	Output	Spot Ø at max range	Supply Current	Switching Frequency	Light Source	Part No.	List Price (1-pc.)
Diffuse		1...400 mm	LO/DO PNP	185 mm	35 mA	400 Hz	Infrared 880 nm	OF5027	\$122.00
		1...400 mm	LO/DO NPN	185 mm	35 mA	400 Hz	Infrared 880 nm	OF5060	\$122.00
Polarized retro-reflective		200...800 mm	LO/DO PNP	70 mm	35 mA	400 Hz	Red light 660 nm	OF5025	\$117.00
		200...800 mm	LO/DO NPN	70 mm	35 mA	400 Hz	Red light 660 nm	OF5062	\$117.00
Thru-beam receiver		0...4 m	LO/DO PNP	–	30 mA	400 Hz	–	OF5022	\$88.00
Thru-beam transmitter		0...4 m	–	700 mm	25 mA	–	Infrared 880 nm	OF5021	\$77.00

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Short swivel bracket for OF	E20860	\$11.00
	Tall swivel bracket for OF	E20856	\$12.00
	50 mm reflector	E20956	\$9.00
	80 mm reflector	E20005	\$8.00
	Swivel bracket with 50 mm reflector	E20997	\$16.00
	Swivel bracket with 80 mm reflector	E20995	\$24.00

Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (4-pin) 2 m, PUR	EVC001	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC002	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR	EVC004	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC005	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR, LED	EVC007	\$13.00
	M12 Micro DC (4-pin) 5 m, PUR, LED	EVC008	\$16.00

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Technical Specs

Supply voltage: 10...36 VDC
 No. of wires: 3-wire; Part No. OF5021: 2-wire
 Maximum load current: 200 mA
 Voltage drop: <2.5 V
 Leakage current: Negligible
 Connector: M12
 Housing material: Optalloy-plated brass
 Lens material: PMMA
 Operating temperature: -13...140 °F (-25...60 °C)
 Protection: IP65



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Safety Technology

Process Sensors

Industrial Networks

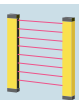
ID Systems

Machine Condition

Power Supplies

Wiring Technology

Safety products



144 - 155

Pressure



156 - 175

Flow



176 - 191

Level



192 - 207

Temperature



208 - 225

AS-i network



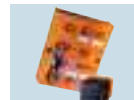
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Safety systems



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RF identification systems



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Diagnostic systems



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Power supplies



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Cordset solutions



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Top product features!

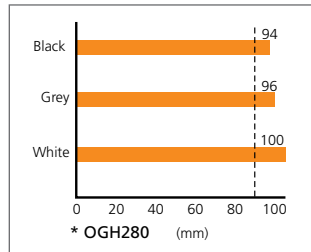
- Robust photoelectric resists mechanical damage
- Metal M18 mounting threads will not strip – eliminating a common problem with plastic threads
- Long sensing range in a small package offers more application flexibility
- Powerful visible red light source with large spot diameter enables easy alignment and quick setup
- Industry standard M12 connector withstands high torquing and provides easy maintenance

Durable metal housings with long sensing ranges

ifm's OG Series photoelectrics are stronger and more durable than traditional plastic housings. The sensor's durable metal M18 mounting threads will not strip – a common problem with plastic threads. Its standard M12 connector withstands high torquing and provides quick wiring.



OG sensors are more durable than plastic housings that can wear or break over time.

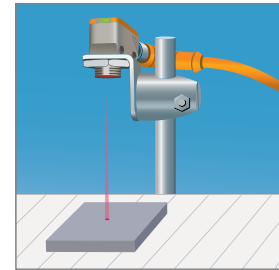


Reliable performance regardless of target color

* The 100 mm sensing range background suppression model is rated for $\pm 10\%$ of nominal sensing range for all target colors.

High performance background suppression

The OG background suppression sensor uses diode array technology that enables the sensor to differentiate between the target and the background regardless of background color.



IO-Link

IO-Link

Company



1 - 5

Position Sensors

Inductive

Capacitive

Cylinder / valve position

Photoelectrics / lasers / fiber optics

Distance / Application specific

Ultrasonic

Motion Control

Encoders / Speed monitors

Vision Sensors

2D / 3D inspection



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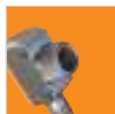
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Product + accessory selector

Function	Range	Output	Spot Ø at max range	Supply Current	Switching Frequency	Light Source	Part No.	List Price (1-pc.)
Diffuse background suppression	100 mm	LO PNP	7 mm	25 mA	1000 Hz	Red light 624 nm	OGH280	\$83.00
	100 mm	LO NPN	7 mm	25 mA	1000 Hz	Red light 624 nm	OGH282	\$82.00
Diffuse background suppression	200 mm	LO PNP	13 mm	25 mA	1000 Hz	Red light 624 nm	OGH281	\$83.00
	200 mm	LO NPN	13 mm	25 mA	1000 Hz	Red light 624 nm	OGH283	\$84.00
Diffuse background suppression with pushbutton adjustment	15...200 mm	LO/DO PNP	13 mm	25 mA	1000 Hz	Red light 624 nm	OGH580	\$86.00
	15...200 mm	LO/DO NPN	13 mm	25 mA	1000 Hz	Red light 624 nm	OGH581	\$86.00
Polarized retro-reflective	0.1...4 m	DO PNP	160 mm	20 mA	1000 Hz	Red light 624 nm	OGP280	\$75.00
	0.1...4 m	DO NPN	160 mm	20 mA	1000 Hz	Red light 624 nm	OGP282	\$75.00
Thru-beam receiver	0...20 m	DO PNP	–	20 mA	1000 Hz	–	OGE280	\$72.00
	0...20 m	DO NPN	–	20 mA	1000 Hz	–	OGE282	\$72.00
Thru-beam transmitter	0...20 m	–	800 mm	20 mA	–	Red light 624 nm	OGS280	\$64.00

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Extended rail bracket for OG sensor	UE0002	\$13.00
	50 mm reflector	E20956	\$9.00
	80 mm reflector	E20005	\$8.00
	Extended rail bracket w/ 50 mm reflector	UE0004	\$23.00
	Extended rail bracket w/ 80 mm reflector	UE0005	\$27.00

Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (4-pin) 2 m, PUR	EVC001	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC002	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR	EVC004	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC005	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR, LED	EVC007	\$13.00
	M12 Micro DC (4-pin) 5 m, PUR, LED	EVC008	\$16.00

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Technical Specs

Supply voltage: 10...30 VDC
 No. of wires: 3-wire; Part No. OGS280: 2-wire
 Maximum load current: 200 mA
 Voltage drop: <2.5 V
 Leakage current: Negligible
 Connector: M12
 Housing material: Metal alloy, PA, LCP, EPDM
 Lens material: PMMA
 Operating temperature: -13...140 °F (-25...60 °C)
 Protection: IP67

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Safety products

Pressure

Flow

Level

Temperature

AS-i network

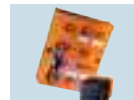
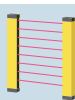
Safety systems

RF identification systems

Diagnostic systems

Power supplies

Cordset solutions



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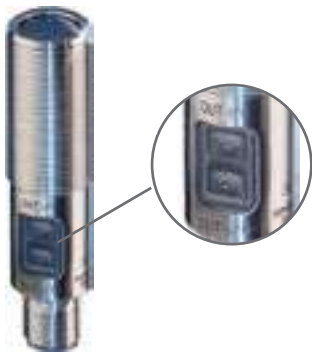


Top product features!

- 316 stainless steel housing designed and tested to withstand industrial automation applications
- Industry standard 18 mm diameter photoelectric suits a variety of applications
- Extremely long sensing ranges for application flexibility
- Innovative two-pushbutton 'Teach Mode' offers simple adjustment for quick setup
- Flexible mounting bracket system simplifies installation

Innovative teach mode

ifm's OG M18 tubular sensors are designed to provide reliable position detection in factory automation applications. The sensor's innovative two-pushbutton 'Teach Mode' operation establishes light-on / dark-on programming with the press of a button. This functionality eliminates traditional teach programming that can be complicated and difficult to apply.



The innovative teach method eliminates complex programming. The sensor features one button each for teaching a precise on and off state for the sensor signal. For example:

- OUT-off**
Mount and align the sensor in the application. The sensor's visible red light simplifies adjustment. Press the OUT-off (*output off*) button for two seconds.
- OUT-on**
Position the object to be detected. Press the OUT-on (*output on*) button. The sensor is now ready for operation.

For precise sensing applications, the background suppression models provide high accuracy. The sensor's microprocessor provides automatic calibration and can differentiate between the target and the background which is ideal for conveying applications.

Bracket system offers accurate alignment



Innovative mounting brackets offer quick installation and setup. The bracket rotates 360° in each of two axes to achieve the most accurate alignment.

Company	IO-Link	Position Sensors		Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Motion Control	Vision Sensors
	IO-Link	Inductive	Capacitive					Encoders / Speed monitors	2D / 3D inspection
1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143



Product + accessory selector

Function	Range	Output	Spot Ø at max range	Supply Current	Switching Frequency	Light Source	Part No.	List Price (1-pc.)
Diffuse background suppression	15...300 mm	LO/DO PNP	25 mm	25 mA	1000 Hz	Red light 624 nm	OGH500	\$118.00
	15...300 mm	LO/DO NPN	25 mm	25 mA	1000 Hz	Red light 624 nm	OGH502	\$118.00
Diffuse	2...800 mm	LO/DO PNP	66 mm	25 mA	2000 Hz	Red light 624 nm	OGT500	\$114.00
Polarized retro-reflective	0.03...5 m	LO/DO PNP	200 mm	20 mA	2000 Hz	Red light 624 nm	OGP500	\$114.00
	0.03...5 m	LO/DO NPN	200 mm	20 mA	2000 Hz	Red light 624 nm	OGP503	\$114.00
Thru-beam receiver	0...25 m	LO/DO PNP	–	11 mA	1000 Hz	–	OGE500	\$98.00
	0...25 m	LO/DO NPN	–	11 mA	1000 Hz	–	OGE503	\$98.00
Thru-beam transmitter	0...25 m	–	1000 mm	20 mA	–	Red light 624 nm	OGS500	\$80.00

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Short swivel bracket for OG, die cast zinc	E20718	\$12.00
	Tall swivel bracket for OG, die cast zinc	E20719	\$11.00
	50 mm reflector	E20956	\$9.00
	80 mm reflector	E20005	\$8.00
	Swivel bracket with 50 mm reflector	E20997	\$16.00
	Swivel bracket with 80 mm reflector	E20995	\$24.00

Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (4-pin) 2 m, PUR	EVC001	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC002	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR	EVC004	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC005	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR, LED	EVC007	\$13.00
	M12 Micro DC (4-pin) 5 m, PUR, LED	EVC008	\$16.00

▶ Can't find the right sensor for your application, call 800-441-8246 or visit www.ifm.com/us

Technical Specs

Supply voltage: 10...36 VDC
 No. of wires: 3-wire; Part No. OGS500: 2-wire
 Maximum load current: 200 mA (60°C) / 150 mA (80°C)
 Voltage drop: <2.5 V
 Leakage current: Negligible
 Connector: M12
 Housing material: 316 stainless steel, PA, LCP, EPDM, TPU
 Lens material: PMMA
 Operating temperature: -13...176°F (-25...80°C)
 Protection: IP67



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<p>Safety products</p> <p>144 - 155</p>	<p>Pressure</p> <p>156 - 175</p>	<p>Flow</p> <p>176 - 191</p>	<p>Level</p> <p>192 - 207</p>	<p>Temperature</p> <p>208 - 225</p>	<p>AS-i network</p> <p>226 - 239</p>	<p>Safety systems</p> <p>240 - 251</p>	<p>RF identification systems</p> <p>252 - 253</p>	<p>Diagnostic systems</p> <p>254 - 259</p>	<p>Power supplies</p> <p>260 - 263</p>	<p>Cordset solutions</p> <p>264 - 277</p>
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Top product features!

- Class 1 laser light source detects small objects and provides visual indication of beam alignment
- 316 stainless steel housing designed and tested to withstand industrial automation applications
- Extremely long sensing ranges for application flexibility
- Innovative two-pushbutton 'Teach Mode' offers simple adjustment for quick setup
- Flexible mounting bracket system simplifies installation

Class 1 laser sensors detect small parts at long distances

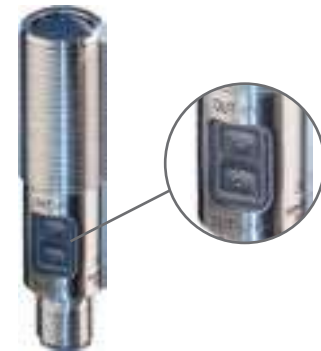
Laser sensors are used where detection of small objects or precise positioning is required. Laser light consists of light waves of a single wavelength, high in energy and power density because the waves are in phase with each other. This results in a tightly focused, almost parallel light beam that can detect very small objects at long ranges.

An important feature of the laser is that the light beam is visible, and during set-up of the sensor, the laser power is increased. This provides a bright light spot clearly visible even in the daylight which aids alignment. ifm efector also offers fine adjustment mounting brackets that allow the laser sensors to be precisely aligned for optimum performance.

The OG Series laser sensors are listed as FDA Class I Laser Products and comply with the international standard IEC60825 and European standard EN60825 which describe the operation of laser sensors.



Innovative teach mode



The innovative teach mode eliminates complex programming. The sensor features one button each for teaching a precise on and off state for the sensor signal.



PNP to NPN converter cordset

This cordset converts PNP outputs to NPN outputs.

Part no.: EVC01E (5 meters)
List price (1-pc): \$19.00

Company	IO-Link		Position Sensors				Motion Control		Vision Sensors	
	IO-Link	Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Encoders / Speed monitors	2D / 3D inspection	
1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143	



Product + accessory selector

Function	Range	Output	Spot Ø at max range	Supply Current	Switching Frequency	Light Source	Part No.	List Price (1-pc.)
Diffuse background suppression	20...200 mm	LO/DO PNP	1.2 mm	15 mA	1000 Hz	Class 1 laser	OGH700	\$266.00
Polarized retro-reflective	0.2...15 m	LO/DO PNP	40 mm	15 mA	2000 Hz	Class 1 laser	OGP700	\$263.00
	0.2...2 m	LO/DO PNP	5 mm	15 mA	2000 Hz	Class 1 laser	OGP701	\$263.00
Thru-beam receiver	0...60 m	LO/DO PNP	–	11 mA	1000 Hz	Class 1 laser	OGE700	\$142.00
	0...2 m	LO/DO PNP	–	11 mA	1000 Hz	Class 1 laser	OGE701	\$142.00
Thru-beam transmitter	0...60 m	–	150 mm	13 mA	–	Class 1 laser	OGS700	\$206.00
	0...2 m	–	5 mm	13 mA	–	Class 1 laser	OGS701	\$206.00

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Fine adjust swivel bracket for OG laser	E20987	\$47.00
	Rail mount package, fine adjust swivel bracket for OG laser	E20868	\$58.00
	10 x 50 mm reflector	E20988	\$16.00
	50 x 50 mm reflector	E20722	\$15.00
	10 mm reflector	E20990	\$12.00
	19 mm reflector	E20993	\$12.00

Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (4-pin) 2 m, PUR	EVC001	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC002	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR	EVC004	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC005	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR, LED	EVC007	\$13.00
	M12 Micro DC (4-pin) 5 m, PUR, LED	EVC008	\$16.00

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Technical Specs

Supply voltage: 10...36 VDC
 Light source: Red light 655 nm
 No. of wires: 3-wire
 Maximum load current: 200 mA
 Voltage drop: <2.5 V
 Leakage current: Negligible
 Connector: M12
 Housing material: 316 stainless steel
 Lens material: PMMA
 Operating temperature: 14...140 °F (-10...60 °C)
 Protection: IP67

CLASS 1
 LASER
 PRODUCT
 IEC60825-1:2007
 IEC60825-1:2014
 21CFR PART1040

Class 1
 Laser

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<i>Safety products</i>	<i>Pressure</i>	<i>Flow</i>	<i>Level</i>	<i>Temperature</i>	<i>AS-i network</i>	<i>Safety systems</i>	<i>RF identification systems</i>	<i>Diagnostic systems</i>	<i>Power supplies</i>	<i>Cordset solutions</i>
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Top product features!

- Compact M18 diameter photoelectrics withstand harsh environments
- Simple two-wire AC design does not require grounding wire allowing quick installation
- Tubular versions offer application flexibility
- Long sensing ranges reduce failure from mechanical damage and increase uptime
- Integrated microprocessor-based electronics offer high performance in the toughest applications

Compact solutions for industrial environments

ifm's M18 diameter sensors are designed to provide reliable position detection in harsh industrial applications.

The product family offers long sensing ranges that increase the distance between the sensor and the target, preventing failures from physical damage. Integrated microprocessor-based electronics offer high performance in the toughest applications.



The OG tubular's 2-wire design simplifies wiring. No ground wire is required.



- Industry standard 18 mm diameter tubular housing
- Automatic pushbutton provides easy setup adjustment and simplifies installation
- One-piece molded unit is completely sealed against environment
- Electronic lock prevents unauthorized adjustments

Company	IO-Link	Position Sensors		Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Motion Control	Vision Sensors
	IO-Link	Inductive	Capacitive					Encoders / Speed monitors	2D / 3D inspection
1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143



Product + accessory selector

Function	Range	Output	Spot Ø at max range	Min. Load Current	Switching Frequency	Light Source	Part No.	List Price (1-pc.)
Diffuse	1...600 mm	LO	169 mm	5 mA	25 Hz	Infrared 880 nm	OG0035	\$103.00
	1...600 mm	DO	169 mm	5 mA	25 Hz	Infrared 880 nm	OG0041	\$103.00
Polarized retro-reflective	0.1...3 m	LO	262 mm	5 mA	25 Hz	Red Light 660 nm	OG0044	\$103.00
	0.1...3 m	DO	262 mm	5 mA	25 Hz	Red Light 660 nm	OG0033	\$103.00
Thru-beam receiver	0...15 m	LO	–	5 mA	25 Hz	–	OG0031	\$89.00
	0...15 m	DO	–	5 mA	25 Hz	–	OG0039	\$89.00
Thru-beam transmitter	0...15 m	–	2000 mm	5 mA	–	Infrared 880 nm	OG0030	\$72.00

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Short swivel bracket for OG tubular, die cast zinc	E20718	\$12.00
	Tall swivel bracket for OG tubular, die-cast zinc	E20719	\$11.00
	50 mm reflector	E20956	\$9.00
	80 mm reflector	E20005	\$8.00
	Extended rail bracket w/ 50 mm reflector	UE0004	\$23.00
	Extended rail bracket w/ 80 mm reflector	UE0005	\$27.00
	Swivel bracket with 50 mm reflector	E20997	\$16.00
	Swivel bracket with 80 mm reflector	E20995	\$24.00

Cordsets

Type	Description	Part No.	List Price (1-pc.)
	1/2" Micro AC, (3-pin), 5 m, PVC	E18212	\$15.00
	1/2" Micro AC, (3-pin), 10 m, PVC	E18213	\$19.00
	1/2" Micro AC, (3-pin), 5 m, PVC	E18214	\$15.00
	1/2" Micro AC, (3-pin), 10 m, PVC	E18215	\$19.00

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Technical Specs

Supply voltage: 20...250 V AC (47... 63 Hz)
 No. of wires: 2-wire
 Maximum load current: 180 mA (40°C) / 90 mA (80 °C)
 Voltage drop: < 8 V
 Leakage current: 1.7 mA
 Connector: 1/2" Micro AC
 Housing material: PBT
 Lens material: PMMA
 Operating temperature: -13...176 °F (-25...80 °C)
 Protection: IP67



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Power Supplies

Wiring Technology

<p>Safety products</p>  <p>144 - 155</p>	<p>Pressure</p>  <p>156 - 175</p>	<p>Flow</p>  <p>176 - 191</p>	<p>Level</p>  <p>192 - 207</p>	<p>Temperature</p>  <p>208 - 225</p>	<p>AS-i network</p>  <p>226 - 239</p>	<p>Safety systems</p>  <p>240 - 251</p>	<p>RF identification systems</p>  <p>252 - 253</p>	<p>Diagnostic systems</p>  <p>254 - 259</p>	<p>Power supplies</p>  <p>260 - 263</p>	<p>Cordset solutions</p>  <p>264 - 277</p>
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Top product features!

- PMD "time-of-flight" technology enables long sensing ranges up to 2 meters (6.5 ft) and eliminates need for sensors with reflectors
- Superior optical performance independent of target color
- Additional features such as plug-and-play replacement, real-time recipe changes and diagnostic feedback
- Digital transmission of target distance
- Reliable background suppression with no false triggers from highly reflective objects such as stainless steel
- M30 diameter, Class 1 and Class 2 laser

OID with easy-turn setup applies "Time-of-Flight" measurement via PMD Technology



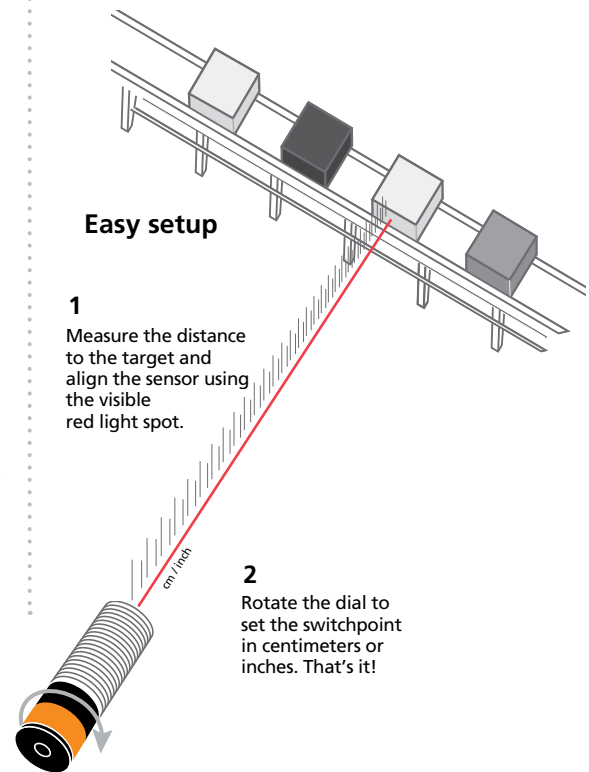
NEW! The OID Series photoelectric sensors integrate "Time of Flight" sensing principle with PMD technology to provide reliable sensing in industrial automation applications. The advantages of PMD technology include extremely long sensing ranges, reliable background suppression, visible red light spot for setup and high excess gain. The OID's sensing range can reach up to 2 meters.

The OID Series sensors offer reliable optical performance independent of target color. Whether shiny, matte, dark or light objects, the OID provides superior background suppression.

Models OID200, OID202 and OID250 feature a rotatable ring for quickly setting the switchpoint. Parameters may also be set via the IO-Link LineRecorder Device software. Models OID204 and 254 are designed with a one-piece, completely sealed stainless steel housing. These robust sensors are ideal for harsh environments. The parameters are set using IO-Link.



The OID allows you to select the setpoint in inches and centimeters by turning the rotatable setting ring. A visible red light spot helps to align the sensor. No power is required for simple bench setup.



Time of flight principle
This principle measures a distance based on the time it takes light to travel to an object and back to the receiver.

Company	IO-Link	Position Sensors			Photoelectrics/ lasers/fiber optics	Distance / Application specific	Ultrasonic	Motion Control Encoders / Speed monitors	Vision Sensors 2D/3D inspection
1 - 5	6 - 21	Inductive 22 - 55	Capacitive 56 - 61	Cylinder / valve position 62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143



Product + accessory selector

Type	Range	Output	Spot Ø at Max. Range	Supply Current	Switching Frequency	Light Source	Unit of Measurement	Adjustment Method	Part No.	List Price (1-pc.)
	0.03...2 m	Complementary LO / DO, PNP	< 5 mm	< 75 mA	11 Hz	Class 2 laser Red light 650 nm	cm and inch	Setting ring	OID200	\$146.00
	0.03...2 m	Complementary LO / DO, NPN	< 5 mm	< 75 mA	11 Hz	Class 2 laser Red light 650 nm	cm and inch	Setting ring	OID202	\$146.00
	0.03...2 m	Complementary LO / DO, PNP	< 5 mm	< 75 mA	11 Hz	Class 1 laser Red light 650 nm	cm and inch	Setting ring	OID250	\$146.00
	0.03...2 m	Complementary LO / DO, PNP	< 5 mm	< 75 mA	11 Hz	Class 2 laser Red light 650 nm	cm and inch	N/A	OID204	\$141.00
	0.03...2 m	Complementary LO / DO, PNP	< 5 mm	< 75 mA	11 Hz	Class 1 laser Red light 650 nm	cm and inch	N/A	OID254	\$141.00

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Short swivel bracket, diecast zinc	E20873	\$13.00
	Short swivel bracket, 316 SS	E20874	\$18.00
	LineRecorder Device, software for parameter setting (requires E30390 cable)	QA0011	\$110.00
	USB IO-Link master cable for parameter setting	E30390	\$367.00
	Memory plug to store sensor's parameters for easy upload without a computer	E30398	\$51.00

Cordsets

Type	Description	Part No.	List Price (1-pc.)
For Part Nos. OID200, OID202, OID250, OID201, OID251			
	M12 Micro DC (4-pin) 2 m, PUR	EVC001	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC002	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR	EVC004	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC005	\$15.00
For Part Nos. OID204, OID254			
	M12 Micro (5-pin) 2 m, PUR cable	EVC073	\$16.00
	M12 Micro (5-pin) 5 m, PUR cable	EVC074	\$19.00
	M12 Micro (5-pin) 5 m, PVC cable	EVT013	\$26.00

For more information on IO-Link, see pages 6 - 21.

Technical Specs

Dimensions: M30 x 90 mm
 Operating voltage: 10...30 VDC
 Switching status indication: yellow LED
 Operation: green LED
 Switchpoint setting: radial ring
 Output function: OUT1: LO
 OUT2: DO
 Current rating: 2 x 100 mA
 Protection: IP65, IP67
 Part Nos. OID204, OID254: IP69K
 Operating temperature: -13... 140 °F (-25...60 °C)
 Housing material: stainless steel, PTB, PC, FPM
 Part Nos. OID204, OID254: stainless steel
 Front panel material: PMMA

CLASS 1 LASER PRODUCT
 IEC60825-1:2007
 IEC60825-1:2014
 21CFR PART1040

Class 1 Laser



Class 2 Laser

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Process Sensors

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ID Systems

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Safety products

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AS-i network

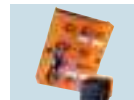
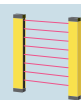
Safety systems

RF identification systems

Diagnostic systems

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Cordset solutions



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Top product features!

- Miniature photoelectric with sensing range that can be set to the nearest millimeter for precise detection of small components
- Additional features such as plug-and-play replacement, real-time recipe changes and diagnostic feedback
- Selectable light-on and dark-on mode
- Adjustable switch-on and switch-off delays
- Integrated metal frame with mounting thru-holes will not bend or break
- Compact design and 45° cable exit is ideal for applications with limited mounting space

Miniature photoelectric reliably detects small objects

NEW! The O8 Series of photoelectric sensor, while small in size, contains a powerful LED light source that allows it to detect targets up to 80 mm away regardless of their color or surface finish. Whether flat, shiny, matte, dark or light, the O8 offers reliable optical performance independent of target color. Designed with extremely reliable background suppression, it can precisely detect very small targets.

Setup is easy.

The sensor features a visible red light spot that helps to align it. The sensing distance is set to the nearest millimeter using IO-Link. Two highly visible LEDs indicate switching status and power.

The compact design is well suited for mounting in tight areas. The sensor's integrated robust metal frame with thru-holes will not bend or break during installation.

The O8's price/performance value makes it ideal for assembly automation, packaging, and robotic applications – or wherever very small sensors are required.

Miniature sensor mounts in tight areas



Whether flat, shiny, matte, dark or light, the O8 offers reliable optical performance independent of target color and is ideal for assembly automation and robotic applications.

Company	IO-Link	Position Sensors		Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Motion Control	Vision Sensors
	IO-Link	Inductive	Capacitive					Encoders / Speed monitors	2D / 3D inspection
1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143



Product + accessory selector

DC	Type	Range [mm]	Light Spot Diameter [mm]	Output	Prewired 2 m cable Part No.	3-pin PICO connector Part No.	4-pin PICO connector IO-Link Part No.	List price (USD)
	Diffuse background suppression	30	4	3-wire DC PNP Light-on	O8H206	O8H208	O8H210	\$87.00
		30	4	3-wire DC NPN Light-on	O8H207	O8H209	O8H211	\$87.00
		80	4.5	3-wire DC PNP Light-on	O8H218	O8H220	O8H222	\$87.00
		80	4.5	3-wire DC NPN Light-on	O8H219	O8H221	O8H223	\$87.00
	Diffuse reflection	180	18	3-wire DC PNP Light-on	O8T200	O8T202	O8T204	\$73.00
		180	18	3-wire DC NPN Light-on	O8T201	O8T203	O8T205	\$73.00
	Retro-reflective	1800	120	3-wire DC PNP Dark-on	O8P200	O8P202	O8P204	\$75.00
		1800	120	3-wire DC NPN Dark-on	O8P201	O8P203	O8P205	\$75.00
	Through-beam transmitter	3000	200	2-wire DC	O8S200	O8S201	O8S202	\$53.00
	Through-beam receiver	3000	-	3-wire DC PNP Dark-on	O8E200	O8E202	O8E204	\$61.00
		3000	-	3-wire DC NPN Dark-on	O8E201	O8E203	O8E205	\$61.00

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Mounting set for clamp mounting, stainless steel (requires mounting rod below)	E21237	\$21.00
	Mounting rod, 120 mm M8 thread, Ø 10mm, stainless steel	E21081	\$13.00
	Mounting set for free-standing mounting, stainless steel	E21238	\$24.00
	Mounting set for free-standing mounting with fine adjustment, stainless steel	E21239	\$29.00
	Mounting set with ball joint, galvanized, stainless steel	E21240	\$12.00
	25 mm reflector	E20953	\$8.00
	50 mm reflector	E20956	\$9.00

Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M8 Pico (3-pin) 2 m, PUR cable	EVC141	\$14.00
	M8 Pico (3-pin) 5 m, PUR cable	EVC142	\$17.00

Technical Specs

Operating voltage: 10...30 V DC
 No. of wires: 3-wire (O7S200: 2-wire)
 Maximum load current: 100 mA
 Voltage drop: < 2.5 V
 Leakage current: negligible
 Connector: 0.2 m pigtail with M8 connector
 Housing materials: PA
 Lens material: PMMA
 Operating temp: -13...140 °F (-25...60 °C)
 Protection: IP65

Safety Technology

Process Sensors

Industrial Networks

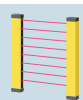
ID Systems

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AS-i network



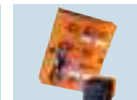
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Safety systems



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RF identification systems



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Diagnostic systems



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Power supplies



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Cordset solutions



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Top product features!

- Miniature housing provides reliable part detection in tight spaces
- Diffuse background suppression model's precise light spot accurately senses small targets and are interference immune
- Visible red light for easy alignment and setup
- Thru-beam, retro-reflective and diffuse background suppression sensors with fixed sensing ranges for quick setup
- Ideal for position detection in part feeding and material handling applications

Powerful photoelectric in a miniature housing

The O7 Series of photoelectric sensors are specifically designed for small part detection or when there is minimal mounting space for sensors. The sensor's well-defined light spot enables the precise detection of small objects over long distances. Typical applications are part feeding and material handling technologies.

Fixed sensing ranges enable quick setup

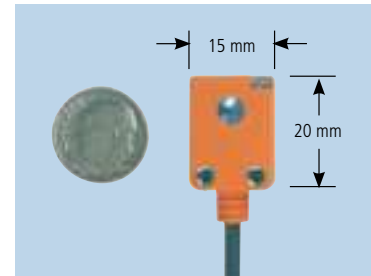
Fixed sensing ranges make the sensors plug-and-play and ready for operation immediately after installation. Visible red light allows fast and simple alignment.

Diffuse sensors with background suppression are available with 30, 50 or 100 mm ranges. Other models include polarized retro-reflective with 1 meter ranges and thru-beam pairs with 1.5 meter ranges.

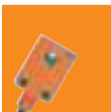
The miniature O7 photoelectric sensor is ideal for position detection in part feeding and material handling applications.



Miniature sensor mounts in tight areas



Company	IO-Link		Position Sensors				Motion Control		Vision Sensors	
	IO-Link	Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Encoders / Speed monitors	2D / 3D inspection	
1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143	



Product + accessory selector

Function		Range	Output	Spot Ø at max range	Supply Current	Switching Frequency	Light Source	Part No.	List Price (1-pc.)
Diffuse background suppression		1...30 mm	LO PNP	2.5 mm	20 mA	750 Hz	red light 633 nm	O7H200	\$111.00
		1...30 mm	DO PNP	2.5 mm	20 mA	750 Hz	red light 633 nm	O7H201	\$111..00
Diffuse background suppression		1...30 mm	LO NPN	2.5 mm	20 mA	750 Hz	red light 633 nm	O7H206	\$111..00
		1...30 mm	DO NPN	2.5 mm	20 mA	750 Hz	red light 633 nm	O7H207	\$111..00
Diffuse background suppression		0...50 mm	LO PNP	2.5 mm	20 mA	750 Hz	red light 633 nm	O7H202	\$111..00
		0...50 mm	DO PNP	2.5 mm	20 mA	750 Hz	red light 633 nm	O7H203	\$111..00
Diffuse background suppression		0...50 mm	LO NPN	2.5 mm	20 mA	750 Hz	red light 633 nm	O7H208	\$111..00
		0...50 mm	DO NPN	2.5 mm	20 mA	750 Hz	red light 633 nm	O7H209	\$111..00
Diffuse background suppression		0...100 mm	LO PNP	7 mm	20 mA	750 Hz	red light 633 nm	O7H204	\$111..00
		0...100 mm	DO PNP	7 mm	20 mA	750 Hz	red light 633 nm	O7H205	\$111..00
Diffuse background suppression		0...100 mm	LO NPN	7 mm	20 mA	750 Hz	red light 633 nm	O7H210	\$111..00
		0...100 mm	DO NPN	7 mm	20 mA	750 Hz	red light 633 nm	O7H211	\$111..00
Polarized retro-reflective		0.03...1 m	DO PNP	55 mm	20 mA	1000 Hz	red light 633 nm	O7P200	\$105.00
		0.03...1 m	LO PNP	55 mm	20 mA	1000 Hz	red light 633 nm	O7P201	\$105.00
Polarized retro-reflective		0.03...1 m	DO NPN	55 mm	20 mA	1000 Hz	red light 633 nm	O7P202	\$105.00
		0.03...1 m	LO NPN	55 mm	20 mA	1000 Hz	red light 633 nm	O7P203	\$105.00
Thru-beam receiver		0...1.5 m	DO PNP	–	10 mA	1000 Hz	red light 633 nm	O7E200	\$90.00
		0...1.5 m	LO PNP	–	10 mA	1000 Hz	red light 633 nm	O7E201	\$90.00
Thru-beam receiver		0...1.5 m	DO NPN	–	10 mA	1000 Hz	red light 633 nm	O7E202	\$90.00
		0...1.5 m	LO NPN	–	10 mA	1000 Hz	red light 633 nm	O7E203	\$90.00
Thru-beam transmitter		0...1.5 m	–	90 mm	20 mA	–	red light 633 nm	O7S200	\$73.00

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Mounting set for clamp mounting, stainless steel (requires mounting rod below)	E21237	\$21.00
	Mounting rod, 120 mm M8 thread, Ø 10mm, stainless steel	E21081	\$13.00
	Mounting set for free-standing mounting, stainless steel	E21238	\$24.00
	Mounting set for free-standing mounting with fine adjustment, stainless steel	E21239	\$29.00
	Mounting set with ball joint, galvanized, stainless steel	E21240	\$12.00
	25 mm reflector	E20953	\$8.00
	50 mm reflector	E20956	\$9.00

Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M8 Pico (3-pin) 2 m, PUR cable	EVC141	\$14.00
	M8 Pico (3-pin) 5 m, PUR cable	EVC142	\$17.00

Technical Specs

Operating voltage: 10...30 V DC
 No. of wires: 3-wire (O7S200: 2-wire)
 Maximum load current: 100 mA
 Voltage drop: < 2.5 V
 Leakage current: negligible
 Connector: 0.2 m pigtail with M8 connector
 Housing materials: PA
 Lens material: PMMA
 Operating temp: -13...140 °F (-25...60 °C)
 Protection: IP65

Safety Technology

Process Sensors

Industrial Networks

ID Systems

Machine Condition

Power Supplies

Wiring Technology

Safety products

Pressure

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AS-i network

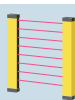
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Top product features!

- Suitable for use in factory automation applications
- Best-in-class optical features
- Precise background suppression sensing independent of target color
- Rectangular plastic housing is industry standard size
- Dual potentiometer design for adjustment and light-on / dark-on selection

Miniature photoelectrics for industrial automation

ifm introduces a new line of miniature photoelectrics that are designed for a variety of applications in industrial automation.

The O6 Series Photoelectric Sensors feature a simple adjustment potentiometer and a visible red light source that allows the sensor to be set up in the application quickly and easily. The potentiometers are double-sealed and, like the lens, are embedded flush to allow for residue-free cleaning. The transparent black cover ensures that the sensor's two LEDs are highly visible even in bright lighting conditions. The coated lens is made of resistant, shatterproof PMMA plastic.

The O6 sensor line is available in diffuse, diffuse with background suppression, polarized retro-reflective and through-beam pairs.



Easy alignment – Powerful visible red light source with precise spot enables easy alignment and quick setup.

Easy light-on / dark-on adjustment potentiometer

Sensing range potentiometer adjustment

Transparent black cover encases two bright LEDs

Coated lens made of shatter-proof PMMA plastic

ABS plastic housing


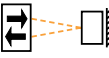

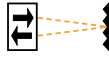
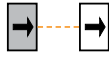
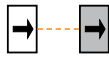


The "high performance" O6 Series photoelectric is designed and tested to withstand tough industrial automation applications.

Company	IO-Link	Position Sensors		Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Motion Control	Vision Sensors
	IO-Link	Inductive	Capacitive					Encoders / Speed monitors	2D / 3D inspection
1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143








Product + accessory selector

 Type	Range [mm]	Light Spot Diameter [mm]	Output	Prewired 2 m cable Red Light Part No.	0.3 m PVC cable M12 connector Red Light Part No.	3-pin M8 connector Red Light Part No.	4-pin M8 connector Red Light Part No.	4-pin M8 connector Infrared Part No.	List Price (1-pc.)
 Diffuse background suppression	2...200	8	3-wire DC PNP	O6H200	O6H201	O6H202	O6H203	–	\$84.00
	2...200	8	3-wire DC NPN	O6H204	O6H205	O6H206	O6H207	–	\$84.00
 Diffuse reflection	5...500	15	3-wire DC PNP	O6T200	O6T201	O6T202	O6T203	O6T215	\$77.00
	5...500	15	3-wire DC NPN	O6T204	O6T205	O6T206	O6T207	O6T216	\$77.00
 Polarized retro-reflective	50...5000*	150	3-wire DC PNP	O6P200	O6P201	O6P202	O6P203	–	\$77.00
	50...5000*	150	3-wire DC NPN	O6P204	O6P205	O6P206	O6P207	–	\$77.00
 Through-beam transmitter	0...10000	300	2-wire DC	O6S200	O6S201	O6S202	O6S203	O6S215	\$41.00
 Through-beam receiver	0...10000	–	3-wire DC PNP	O6E200	O6E201	O6E202	O6E203	O6E215	\$49.00
	0...10000	–	3-wire DC NPN	O6E204	O6E205	O6E206	O6E207	O6E216	\$49.00

* referred to reflector Ø 80 mm

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Mounting set for clamp mounting, stainless steel (requires mounting rod)	E21272	\$20.00
	Swivel bracket mounting rod, stainless steel	E21081	\$13.00
	Bracket for free-standing mounting, stainless steel	E21271	\$8.00
	50 mm reflector	E20956	\$9.00
	80 mm reflector	E20005	\$8.00
	Swivel bracket with 50 mm reflector	E20997	\$16.00
	Swivel bracket with 80 mm reflector	E20995	\$24.00

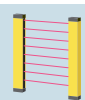
Technical Specs

Type of light:	Red light 633 nm Infrared light 850 nm
Operating voltage:	10...30 VDC
Current consumption:	20 mA
Switching frequency:	1000 Hz
Switching status indication:	Yellow LED
Operation:	Green LED
Current rating:	100 mA
Voltage drop:	< 2.5 V
Protection rating:	IP65, IP67
Ambient temperature:	14...140 °F (-25...60 °C)
Housing material:	ABS
Lens material:	PMMA

 For M8 and M12 Micro DC connectors, see pages 265, 271.

Safety Technology

Safety products



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Process Sensors

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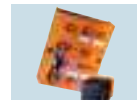
Safety systems



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ID Systems

RF identification systems



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Machine Condition

Diagnostic systems



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Power Supplies

Power supplies



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Wiring Technology

Cordset solutions



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Top product features!

- Suitable for use in both factory automation and harsh applications
- ⚙️ Additional features such as plug-and-play replacement, real-time recipe changes and diagnostic feedback
- Precise background suppression sensing independent of target color
- Robust 316 stainless steel rectangular housing is industry standard size
- Dual potentiometer design for adjustment and light-on / dark-on selection

Robust photoelectrics for harsh environments

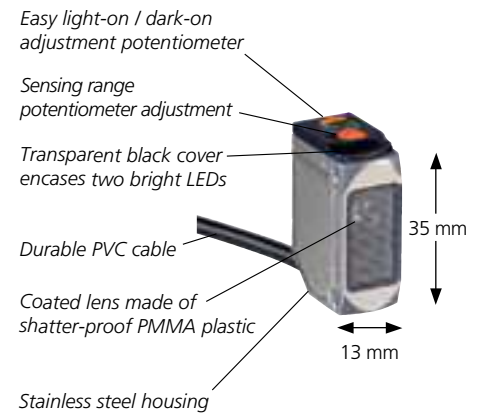
ifm introduces a new line of robust photoelectrics with stainless steel housings that are designed for a variety of industrial automation applications as well as sanitary environments. The O6 Series Photoelectric Sensors provide reliable position sensing in harsh environments.

The sensors feature a simple adjustment potentiometer and a visible red light source that sets up the sensor in an application quickly and easily. The potentiometers are double-sealed and, like the lens, are embedded flush to allow for residue-free cleaning. The transparent black cover ensures that the sensor's two LEDs are highly visible even in bright lighting conditions. The coated lens is made of resistant, shatterproof PMMA plastic.

The O6 sensor line is available in diffuse, diffuse with background suppression, polarized retro-reflective and through-beam pairs.



The sensor can automatically adapt to the changing environmental conditions in a plant such as water and steam.



Small but mighty – The robust O6 photoelectric sensors are designed to perform in the harshest environments.

Company	IO-Link		Position Sensors				Motion Control		Vision Sensors	
	IO-Link	Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Encoders / Speed monitors	2D / 3D inspection	
1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143	



Product + accessory selector

DC	Type	Range [mm]	Light Spot Diameter [mm]	Output	Prewired 2 m cable Part No.	0.3 m PVC cable M12 connector Part No.	3-pin M8 connector Part No.	4-pin M8 connector Part No.	4-pin M8 connector IO-Link Part No.	List price (USD)
	Diffuse background suppression	2...200	8	3-wire DC PNP	O6H300	O6H301	O6H302	O6H303	O6H309	\$115.00
		2...200	8	3-wire DC NPN	O6H304	O6H305	O6H306	O6H307	–	\$115.00
	Diffuse reflection	5...500	15	3-wire DC PNP	O6T300	O6T301	O6T302	O6T303	O6T309	\$98.00
		5...500	15	3-wire DC NPN	O6T304	O6T305	O6T306	O6T307	–	\$98.00
	Polarized retro-reflective	50...5000*	150	3-wire DC PNP	O6P300	O6P301	O6P302	O6P303	O6P309	\$103.00
		50...5000*	150	3-wire DC NPN	O6P304	O6P305	O6P306	O6P307	–	\$103.00
	Through-beam transmitter	0...10000	300	2-wire DC	O6S300	O6S301	O6S302	O6S303	O6S305	\$78.00
	Through-beam receiver	0...10000	–	3-wire DC PNP	O6E300	O6E301	O6E302	O6E303	O6E309	\$83.00
		0...10000	–	3-wire DC NPN	O6E304	O6E305	O6E306	O6E307	–	\$83.00

* referred to reflector Ø 80 mm

Accessories

Type	Description	Part No.	List Price (1-pc.)
	Mounting set for clamp mounting, stainless steel (requires mounting rod)	E21272	\$20.00
	Swivel bracket mounting rod, stainless steel	E21081	\$13.00
	Bracket for free-standing mounting, stainless steel	E21271	\$8.00
	50 mm reflector	E20956	\$9.00
	80 mm reflector	E20005	\$8.00
	Swivel bracket with 50 mm reflector	E20997	\$16.00
	Swivel bracket with 80 mm reflector	E20995	\$24.00
	LineRecorder Device, software for parameter setting (requires E30390 cable)	QA0011	\$110.00
	USB IO-Link master cable for parameter setting	E30390	\$367.00
	Memory plug to store sensor's parameters for easy upload without a computer	E30398	\$51.00

Technical Specs

Type of light:	Red light 633 nm
Operating voltage:	10...30 VDC
Current consumption:	20 mA
Switching frequency:	1000 Hz
Switching status indication:	Yellow LED
Operation:	Green LED
Current rating:	100 mA
Voltage drop:	< 2.5 V
Protection rating:	IP65, IP67, IP68, IP69K
Ambient temperature:	-13...176 °F (-25...80 °C)
Housing material:	High-grade stainless steel (1.4404 / 316L)
Lens material:	PMMA

For more information on IO-Link, see pages 6 - 21.

Safety Technology

Process Sensors

Industrial Networks

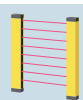
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AS-i network



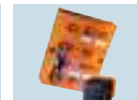
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Top product features!

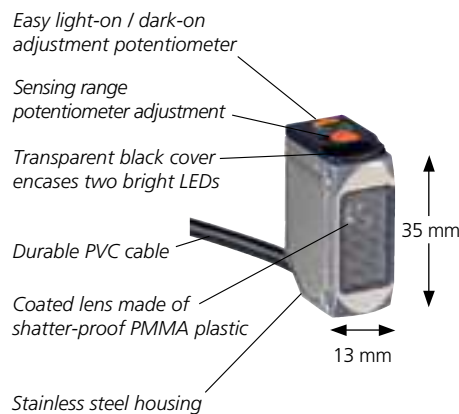
- Suitable for use in coolant applications
- Precise background suppression sensing independent of target color
- Robust 316 stainless steel rectangular housing is industry standard size
- Dual potentiometer design for adjustment and light-on / dark-on selection

Robust photoelectrics for coolant applications

ifm introduces a coolant line of robust photoelectrics with stainless steel housings. The O6 Series Photoelectric Sensors provide reliable position sensing in harsh environments. Thanks to a specific material used in the construction of the sensors, they are extremely durable in applications where coolants are used.

The sensors feature a simple adjustment potentiometer and a visible red light source that sets up the sensor in an application quickly and easily. The potentiometers are double-sealed and, like the lens, are embedded flush to allow for residue-free cleaning. The transparent black cover ensures that the sensor's two LEDs are highly visible even in bright lighting conditions. The coated lens is made of resistant, shatterproof PMMA plastic.

The O6 sensor line is available in diffuse, diffuse with background suppression, polarized retro-reflective and through-beam pairs.



Small but mighty – The robust O6 photoelectric sensors are designed to perform in coolant applications.

Application solutions



These products offer an ideal combination of features, performance and value for all industrial automation and metal-working applications!

Company	IO-Link		Position Sensors				Motion Control		Vision Sensors	
	IO-Link	Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Encoders / Speed monitors	2D / 3D inspection	
1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143	



Product + accessory selector

DC	Type	Range [mm]	Light Spot Diameter [mm]	Output	Prewired 5 m cable Part No.	0.3 m PUR cable M12 connector Part No.	4-pin M8 connector Part No.	List price (USD)
	Diffuse background suppression	2...200	8	3-wire DC PNP	O6H402	O6H404	O6H400	\$122.00
		2...200	8	3-wire DC NPN	O6H403	O6H405	O6H401	\$122.00
	Diffuse reflection	5...500	15	3-wire DC PNP	O6T402	O6T404	O6T400	\$111.00
		5...500	15	3-wire DC NPN	O6T403	O6T405	O6T401	\$111.00
	Polarized retro-reflective	50...5000*	150	3-wire DC PNP	O6P402	O6P404	O6P400	\$111.00
		50...5000*	150	3-wire DC NPN	O6P403	O6P405	O6P401	\$111.00
	Through-beam transmitter	0...10000	300	2-wire DC	O6S401	O6S402	O6S400	\$80.00
	Through-beam receiver	0...10000	-	3-wire DC PNP	O6E402	O6E404	O6E400	\$90.00
		0...10000	-	3-wire DC NPN	O6E403	O6E405	O6E401	\$90.00

Accessories

Type	Description	Part No.	List Price (1-pc.)
	Mounting set for clamp mounting, stainless steel (requires mounting rod)	E21272	\$20.00
	Swivel bracket mounting rod, stainless steel	E21081	\$13.00
	Protective bracket	E20938	\$11.00
	80 mm reflector	E20005	\$8.00
	Protective bracket	E21273	\$11.00
	48 x 48 mm reflector	E20744	\$16.00
	95 x 95 reflector	E20454	\$24.00

Technical Specs

Type of light:	Red light 633 nm
Operating voltage:	10...30 VDC
Current consumption:	20 mA
Switching frequency:	1000 Hz
Switching status indication:	Yellow LED
Operation:	Green LED
Current rating:	100 mA
Voltage drop:	< 2.5 V
Protection rating:	IP65, IP67, IP68
Ambient temperature:	-13...140 °F (-25...60 °C)
Housing material:	High-grade stainless steel (1.4404 / 316L)
Lens material:	PMMA

Safety Technology

Process Sensors

Industrial Networks

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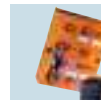
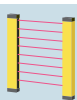
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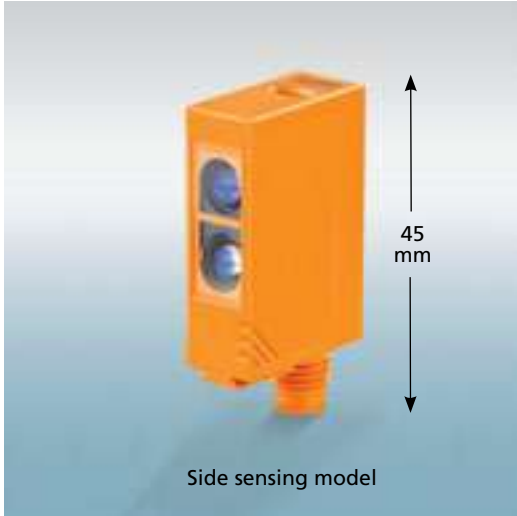
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Top product features!

- Small package, long range! Compact design is ideal for applications with limited mounting space
- Advanced microprocessor provides powerful signal processing and enables automatic adjustments to maximize safety margin
- Ideal for sensing small components and features 500 μ s response time for high-speed applications
- Sensor continuously monitors the strength of received signals and provides a visual LED alert under marginal operating conditions
- Programmable light-on / dark-on for application flexibility

Compact size and automatic setup

OJ photoelectric sensors use visible LEDs as the light source and measure only 24 x 45 x 11 mm. With switching speeds up to 2000 Hz, the sensors are fast enough to be used in most high-speed applications. A wide variety of mounting brackets allow the OJ to be adapted to most mounting configurations.

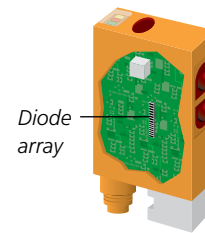
An advanced microprocessor provides powerful signal processing and analysis capabilities. This enables the OJ to learn the characteristics of both the target and the background in a specific application.

During initial installation, the automatic calibration will determine the light conditions of both the target-present and target-not-present conditions. The sensitivity of the OJ will then be automatically adjusted so there is a maximum safety margin under each condition.



Diode array sensing technology

The OJ incorporates diode array technology that enables the sensor to differentiate between the target and the background.



The sensing element contains 63 diode receivers that are placed on an integrated circuit. The array is extremely small allowing it to fit inside the OJ's miniature housing.

Company	IO-Link	Position Sensors		Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Motion Control	Vision Sensors
	IO-Link	Inductive	Capacitive					Encoders / Speed monitors	2D / 3D inspection
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Product + accessory selector

Function		Range	Output	Spot Ø at max range	Supply Current	Switching Frequency	Light Source	Part No.	List Price (1-pc.)
Diffuse background suppression		15...400 mm	LO/DO PNP	48 mm	25 mA	1000 Hz	Red light 660 nm	OJ5048	\$97.00
		15...400 mm	LO/DO NPN	48 mm	25 mA	1000 Hz	Red light 660 nm	OJ5049	\$97.00
Diffuse		1...600 mm	LO/DO PNP	60 mm	22 mA	2000 Hz	Red light 660 nm	OJ5022	\$97.00
		1...600 mm	LO/DO NPN	60 mm	22 mA	2000 Hz	Red light 660 nm	OJ5023	\$97.00
		1...1000 mm	LO/DO PNP	150 mm	32 mA	2000 Hz	Infrared 880 nm	OJ5071	\$97.00
Polarized retro-reflective		0...2 m	LO/DO PNP	64 mm	22 mA	2000 Hz	Red light 660 nm	OJ5026	\$97.00
		0...2 m	LO/DO NPN	64 mm	22 mA	2000 Hz	Red light 660 nm	OJ5027	\$97.00
Thru-beam receiver		0...10 m	LO/DO PNP	–	12 mA	1200 Hz	–	OJ5031	\$76.00
		0...10 m	LO/DO NPN	–	12 mA	1200 Hz	–	OJ5032	\$76.00
Thru-beam transmitter		0...10 m	–	1000 mm	19 mA	–	Red light 660 nm	OJ5030	\$57.00

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Ball and socket bracket	E20974	\$13.00
	Swivel bracket for side sensing OJ	E20968	\$16.00
	50 mm reflector	E20956	\$9.00
	80 mm reflector	E20005	\$8.00
	Swivel bracket with 50 mm reflector	E20997	\$16.00
	Swivel bracket with 80 mm reflector	E20995	\$24.00

Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M8 Pico DC (4-pin) 2 m, PUR	EVC150	\$15.00
	M8 Pico DC (4-pin) 5 m, PUR	EVC151	\$18.00
	M8 Pico DC (4-pin) 2 m, PUR	EVC153	\$15.00
	M8 Pico DC (4-pin) 5 m, PUR	EVC154	\$18.00

OJ sensors are available in two lens configurations, side sensing and front sensing. Visit www.ifm.com/us

Technical Specs

Supply voltage:	10...30 VDC
No. of wires:	3-wire; Part No. OJ5030: 2-wire
Maximum load current:	200 mA
Voltage drop:	<2.5 V
Leakage current:	Negligible
Connector:	M8
Housing material:	ABS, die-cast zinc, SEPS
Lens material:	Glass; Part Nos. OJ5048 and OJ5049: PMMA
Operating temperature:	-13...140 °F (-25...60 °C)
Protection:	IP67

R&D that delivers solutions



ifm R&D engineers design products that reduce machine downtime, increase productivity and simplify installation.

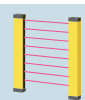
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Safety products



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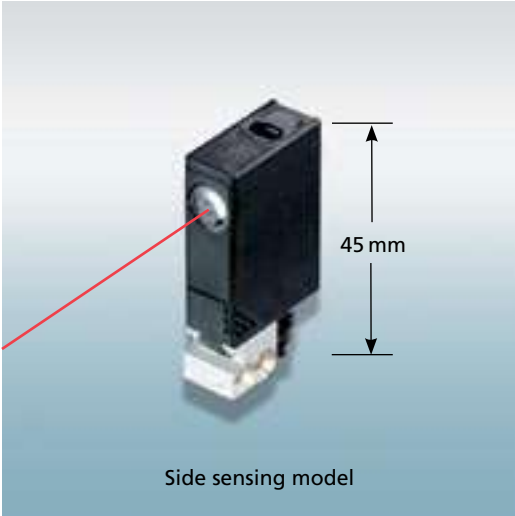
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Wiring Technology

Cordset solutions



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Top product features!

- Bright red Class 1 laser light source provides visual indication of beam alignment
- Small package, long range! Compact design is ideal for applications with limited mounting space
- Advanced microprocessor provides powerful signal processing and enables automatic adjustments to maximize safety margin in an application
- Sensor continuously monitors the strength of the received signal and provides a visual LED alert under marginal operating conditions
- Programmable light-on / dark-on for application flexibility

Differentiates target from background at less than 0.5 mm

High resolution background suppression laser sensors are ideal for precise sensing applications. The sensor can differentiate between the target and the background at less than 0.5 mm. This type of accuracy is critical for assembly automation applications such as part present and inspection. The OJ's collimated laser beam provides the same beam width up to a distance of 200 mm.

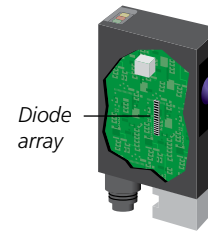
An advanced microprocessor provides powerful signal processing and analysis capabilities. This enables the OJ to learn the characteristics of both the target and the background in a specific application.

During initial installation, the automatic calibration will determine the light conditions of both the target-present and target-not-present conditions. The sensitivity of the OJ will then be automatically adjusted so there is a maximum safety margin under each condition.

For application versatility, OJ sensors are available in two lens configurations, side sensing and front sensing.



Diode array sensing technology



The OJ incorporates diode array technology that enables the sensor to differentiate between the target and the background.

The sensing element contains 63 diode receivers that are placed on an integrated circuit. The array is extremely small allowing it to fit inside the OJ's miniature housing.

Company	IO-Link		Position Sensors				Motion Control		Vision Sensors	
	IO-Link	Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Encoders / Speed monitors	2D / 3D inspection	
1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143	



Product + accessory selector

Function	Range	Output	Switching Frequency	Spot Ø at Max. Range	Supply Current	Light Source	Part No.	List Price (1-pc.)
Diffuse background suppression	7...150 mm	LO/DO, PNP	1000 Hz	0.8 mm	13 mA	Class 1 Laser	OJ5058	\$248.00
Diffuse background suppression	15...200 mm	LO/DO, PNP	1000 Hz	1 x 2 mm	13 mA	Class 1 Laser	OJ5054	\$248..00
	15...200 mm	LO/DO, NPN	1000 Hz	1 x 2 mm	13 mA	Class 1 Laser	OJ5055	\$248..00
Polarized retro-reflective	0...8 m	LO/DO, PNP	2000 Hz	12 mm	15 mA	Class 1 Laser	OJ5036	\$221.00
Thru-beam receiver	0...1 m	LO/DO, PNP	1200 Hz	–	12 mA	Class 1 Laser	OJ5042	\$102.00
Thru-beam transmitter	0...1 m	–	–	4 mm	12 mA	Class 1 Laser	OJ5041	\$166.00
Thru-beam receiver	0...15 m	LO/DO, PNP	1200 Hz	–	12 mA	Class 1 Laser	OJ5039	\$102.00
Thru-beam transmitter	0...15 m	–	–	24 mm	12 mA	Class 1 Laser	OJ5038	\$166.00

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Fine adjust bracket for OJ sensor	E20976	\$27.00
	Ball and socket bracket for OJ	E20974	\$13.00
	10 x 50 mm reflector	E20988	\$16.00
	50 x 50 mm reflector	E20722	\$15.00
	10 mm reflector	E20990	\$12.00
	19 mm reflector	E20993	\$12.00

Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M8 Pico DC (4-pin) 2 m, PUR	EVC150	\$15.00
	M8 Pico DC (4-pin) 5 m, PUR	EVC151	\$18.00
	M8 Pico DC (4-pin) 2 m, PUR	EVC153	\$15.00
	M8 Pico DC (4-pin) 5 m, PUR	EVC154	\$18.00

OJ sensors are available in two lens configurations, side sensing and front sensing. Visit www.ifm.com/us

Technical Specs

Lens material: Glass; except Part Nos. OJ5054, OJ5055, OJ5058: PMMA
 Light source: Red light, 650 nm
 Housing material: ABS, Fixture: die cast zinc
 LED window: SEPS
 Push button: SEPS
 Supply voltage: 10...30 VDC
 Max Load current: 200 mA
 Voltage drop: <2.5 V
 Leakage current: negligible
 Operating temperature: 14...140 °F (-10...60 °C)
 Protection: IP67

CLASS 1
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 PRODUCT
 IEC60825-1:2007
 IEC60825-1:2014
 21CFR PART1040

Class 1
 Laser

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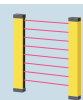
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Top product features!

- Visible red light technology provides precise alignment and simplifies adjustment
- Extremely long sensing ranges – up to 1.8 meters for background suppression models; 10 meters for polarized models
- Innovative two-pushbutton 'Teach mode' simplifies setup
- Protective metal frame withstands mechanical damage in industrial automation applications
- Durable rotating connector rotates 270° and easy-to-use bracket system reduces inventory for cordsets

Rugged design and versatile mounting

ifm's O5 photoelectric sensors offer extremely long sensing ranges in a small housing. The sensors offer a simple two pushbutton 'Teach Mode' that provides high accuracy and extreme resolution for precise applications.



Installation is easy. The sensor's connector rotates 270° for alignment in multiple directions. A variety of brackets are available for versatile mounting.

The O5 sensor can be mounted above its target – up to 1.8 meters for background suppression models.

With its combination of sensing range, compact housing and simple setup, the O5 sensor family is a price / performance benchmark.

Actual size

Innovative 'Teach Mode' operation



Step 1: OUT-off

Mount and align the sensor in the application. The sensor's visible red light simplifies adjustment. Press the OUT-off (output off) button for two seconds.



Step 2: OUT-on

Position the object to be detected. Press the OUT-on (output on) button. The sensor is now ready for operation.

IO-Link

Position Sensors

Motion Control

Vision Sensors

Company

IO-Link

Inductive

Capacitive

Cylinder / valve position

Photoelectrics / lasers / fiber optics

Distance / Application specific

Ultrasonic

Encoders / Speed monitors

2D / 3D inspection



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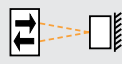




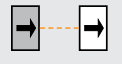

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Product + accessory selector


Function		Range	Output	Spot Ø at max range	Supply Current	Switching Frequency	Light Source	Part No.	List Price (1-pc.)
Diffuse background suppression		50...1800 mm	LO/DO PNP	90 mm	25 mA	1000 Hz	Red light 624 nm	O5H500	\$119.00
		50...1800 mm	LO/DO NPN	90 mm	25 mA	1000 Hz	Red light 624 nm	O5H504	\$119.00
Polarized retro-reflective		0.075...10 m	LO/DO PNP	250 mm	20 mA	2000 Hz	Red light 624 nm	O5P500	\$108.00
		0.075...10 m	LO/DO NPN	250 mm	20 mA	2000 Hz	Red light 624 nm	O5P502	\$108.00
Thru-beam receiver		0...25 m	LO/DO PNP	–	11 mA	1000 Hz	–	O5E500	\$99.00
		0...25 m	LO/DO NPN	–	11 mA	1000 Hz	–	O5E502	\$99.00
Thru-beam transmitter		0...25 m	–	625 mm	20 mA	–	Red light 624 nm	O5S500	\$92.00

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Short swivel bracket for rod with clamp	E21083	\$11.00
	Freestanding mounting bracket	E21087	\$14.00
	50 mm reflector	E20956	\$9.00
	80 mm reflector	E20005	\$8.00
	Swivel bracket with 50 mm reflector	E20997	\$16.00
	Swivel bracket with 80 mm reflector	E20995	\$24.00

Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (4-pin) 2 m, PUR	EVC001	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC002	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR	EVC004	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC005	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR, LED	EVC007	\$13.00
	M12 Micro DC (4-pin) 5 m, PUR, LED	EVC008	\$16.00

 Can't find the right sensor for your application, call 800-441-8246 or visit www.ifm.com/us

Technical Specs

Supply voltage: 10...36 VDC
 No. of wires: 3-wire; Part No. O5S500: 2-wire
 Maximum load current: 200 mA
 Voltage drop: <2.5 V
 Leakage current: Negligible
 Connector: M12
 Housing material: PA, stainless steel, TPU
 Lens material: PMMA
 Operating temperature: -13...140 °F (-25...60 °C)
 Protection: IP67



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Safety Technology

Process Sensors

Industrial Networks

ID Systems

Machine Condition

Power Supplies

Wiring Technology

Safety products	Pressure	Flow	Level	Temperature	AS-i network	Safety systems	RF identification systems	Diagnostic systems	Power supplies	Cordset solutions
										
144 - 155	156 - 175	176 - 191	192 - 207	208 - 225	226 - 239	240 - 251	252 - 253	254 - 259	260 - 263	264 - 277



Top product features!

- PMD "time-of-flight" technology enables long sensing ranges up to 2 meters (6.5 ft) and eliminates need for sensors with reflectors
- Superior optical performance independent of target color
- ⚙️ Additional features such as plug-and-play replacement, real-time recipe changes and diagnostic feedback
- 📡 Digital transmission of target distance
- Reliable background suppression with no false triggers from highly reflective objects such as stainless steel
- Class 1 and Class 2 laser can be mounted to any surface and rotated in any position for application versatility

O5D with simple setup applies "Time-of-Flight" measurement via PMD Technology



NEW! The O5D Series photoelectric sensors integrate "Time of Flight" sensing principle with PMD technology to provide reliable sensing in industrial automation applications. The advantages of PMD technology include extremely long sensing ranges, reliable background suppression, visible red light spot for setup and high excess gain. The O5D's sensing range can reach up to 2 meters.

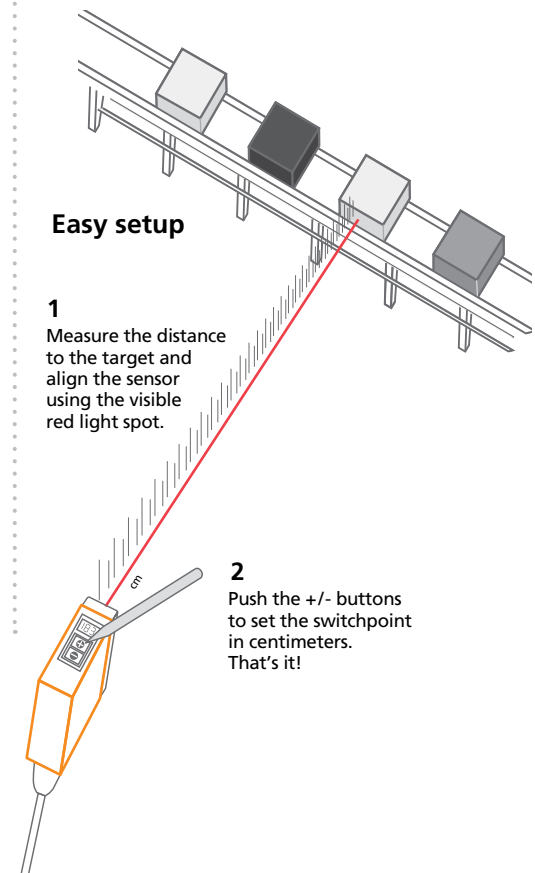
The switchpoint can be set easily by using the sensor's display with plus / minus (+/-) buttons that set the switchpoint. A visible red light spot helps to align the sensor and a numeric display shows the distance set. A model is available to display in inches. The switchpoint on the O5D may also be set via IO-Link.

The O5D Series sensors offer reliable optical performance independent of target color. Whether shiny, matte, dark or light objects, the O5D provides superior background suppression.

Time of flight principle
This principle measures a distance based on the time it takes light to travel to an object and back to the receiver.






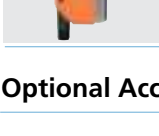
Typical photoelectric sensors have challenges with false reflections from shiny targets such as stretch wrap on a pallet. The PMD "time-of-flight" technology from ifm performs reliably in these applications.








Company	IO-Link	Position Sensors		Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Motion Control	Vision Sensors
	IO-Link	Inductive	Capacitive					Encoders / Speed monitors	2D / 3D inspection
1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143

Search Bar



Product + accessory selector

Type	Range	Output	Spot Ø at Max. Range	Supply Current	Switching Frequency	Light Source	Unit of Measurement	Part No.	List Price (1-pc.)
	.03...2 m	Complementary LO / DO, PNP	< 5 mm	< 75 mA	11 Hz	Class 2 laser Red light 650 nm	cm	O5D100	\$147.00
	.03...2 m	Complementary LO / DO, NPN	< 5 mm	< 75 mA	11 Hz	Class 2 laser Red light 650 nm	cm	O5D102	\$149.00
	.03...2 m	Complementary LO / DO, PNP	< 5 mm	< 75 mA	11 Hz	Class 1 laser Red light 650 nm	cm	O5D150	\$149.00
	.03...2 m	Complementary LO / DO, NPN	< 5 mm	< 75 mA	11 Hz	Class 1 laser Red light 650 nm	cm	O5D152	\$149.00
	.03...2 m	Complementary LO / DO, PNP	< 5 mm	< 75 mA	11 Hz	Class 2 laser Red light 650 nm	inch	O5D101	\$147.00
	.03...2 m	Complementary LO / DO, PNP	< 5 mm	< 75 mA	11 Hz	Class 1 laser Red light 650 nm	inch	O5D151	\$149.00

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Short swivel bracket for rod with clamp	E21083	\$11.00
	Freestanding mounting bracket	E21087	\$14.00
	LineRecorder Device, software for parameter setting (requires E30390 cable)	QA0011	\$110.00
	USB IO-Link master cable for parameter setting	E30390	\$367.00
	Memory plug to store sensor's parameters for easy upload without a computer	E30398	\$51.00

Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (4-pin) 2 m, PUR	EVC001	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC002	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR	EVC004	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC005	\$15.00

For more information on IO-Link, see pages 6 - 21.

Technical Specs

Dimensions: 47 x 56 x 18 mm
 Operating voltage: 10...30 VDC
 Switching status indication: yellow LED
 Operation: green LED
 Switchpoint setting: pushbutton
 Output function: OUT1: LO
 OUT2: DO
 Current rating: 2 x 100 mA
 Protection: IP65, IP67
 Operating temperature: -13...140 °F (-25...60 °C)
 Housing material: stainless steel, PA, TPU
 Font panel material: PMMA

CLASS 1 LASER PRODUCT
 IEC60825-1:2007
 IEC60825-1:2014
 21CFR PART1040

Class 1 Laser

CAUTION LASER LIGHT DO NOT STARE INTO BEAM CLASS 2 LASER PRODUCT
 max POWER 54. 1mW WAVELENGTH 650 nm Plate 1. 3rs
 21 CFR PART 1040 EN60825-1:2003-10

Class 2 Laser

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Process Sensors

Industrial Networks

ID Systems

Machine Condition

Power Supplies

Wiring Technology

Safety products

Pressure

Flow

Level

Temperature

AS-i network

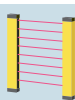
Safety systems

RF identification systems

Diagnostic systems

Power supplies

Cordset solutions



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Top product features!

- Photoelectric with long sensing ranges that reach up to 80 meters
- Visible red light technology provides precise alignment and simplifies adjustment
- Innovative two-pushbutton 'teach mode' simplifies setup procedure
- Built-in stainless steel frame protects housing in harsh environments
- Durable rotating connector rotates 270° and easy-to-use bracket system reduces inventory for mounting accessories

O4 Photoelectrics with 80 meter sensing ranges

Compact O4 Series photoelectric sensors offer extremely long sensing ranges that are ideal for applications including transporting, conveying, inspection and error-proofing. The sensor's extended sensing range enables the sensor to be placed farther away from an application reducing its chance of physical damage. A built-in, stainless steel frame provides additional protection for the sensor.



Flexible mounting with visible red light for alignment

- Visible red light technology simplifies set-up and provides quick mounting.
- The durable connector rotates 270° for alignment in multiple directions. A variety of easy-to-use brackets are available for versatile mounting options.

Innovative 'Teach Mode' operation



Step 1: OUT-off
Mount and align the sensor in the application. The sensor's visible red light simplifies adjustment. Press the OUT-off (output off) button for two seconds.



Step 2: OUT-on
Position the object to be detected. Press the OUT-on (output on) button. The sensor is now ready for operation.

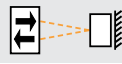

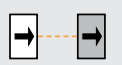
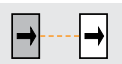


PNP to NPN converter cordset





This cordset converts PNP outputs to NPN outputs.
Part no.: EVC01E (5 meters)
List price (1-pc): \$19.00

Company	IO-Link	Position Sensors						Motion Control	Vision Sensors
	IO-Link	Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Encoders / Speed monitors	2D / 3D inspection
1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143



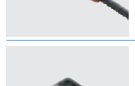
Product + accessory selector


Function	Range	Output	Spot Ø at max. range	Supply Current	Switching Frequency	Light Source	Part No.	List Price (1-pc.)
Diffuse background suppression 	100...2600 mm	LO/DO PNP	135 mm	25 mA	1000 Hz	Red light 624 nm	O4H500	\$124.00
Polarized retro-reflective 	0.3...22 m	LO/DO PNP	660 mm	20 mA	2000 Hz	Red light 624 nm	O4P500	\$114.00
Thru-beam receiver 	0...80 m	LO/DO PNP	–	12 mA	1000 Hz	–	O4E500	\$97.00
Thru-beam transmitter 	0...80 m	–	2400 mm	20 mA	–	Red light 624 nm	O4S500	\$88.00

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Swivel bracket	E21118	\$22.00
	Protective bracket	E21119	\$38.00
	50 mm reflector	E20956	\$9.00
	80 mm reflector	E20005	\$8.00
	Swivel bracket with 50 mm reflector	E20997	\$16.00
	Swivel bracket with 80 mm reflector	E20995	\$24.00

Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (4-pin) 2 m, PUR	EVC001	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC002	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR	EVC004	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC005	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR, LED	EVC007	\$13.00
	M12 Micro DC (4-pin) 5 m, PUR, LED	EVC008	\$16.00

 Can't find the right sensor for your application, call 800-441-8246 or visit www.ifm.com/us

Technical Specs

Supply voltage	10...36 VDC
No. of wires	3-wire; Part No. O4S500: 2-wire
Maximum load current	200 mA
Voltage drop	<2.5 V
Leakage current	Negligible
Connector	M12
Housing material	PA, stainless steel, TPE
Lens material	PMMA
Operating temperature	-13...140 °F (-25...60 °C)
Protection	IP67

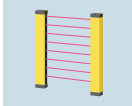






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Safety Technology	Process Sensors	Industrial Networks	ID Systems	Machine Condition	Power Supplies	Wiring Technology
Safety products	Pressure	AS-i network	RF identification systems	Diagnostic systems	Power supplies	Cordset solutions
						
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			252 - 253	254 - 259	260 - 263	264 - 277



Top product features!

- Fork and angle sensors with one-piece housing design saves set-up time
- Accurate alignment – no need to align transmitter and receiver
- Robust, metal housing with thru-holes for easy mounting without brackets
- Laser sensors are ideal for detecting very small parts
- Light-on / dark-on mode selectable via rotary switch for application flexibility

Optical fork and angle sensors offer easy setup and accurate alignment in robust metal housing

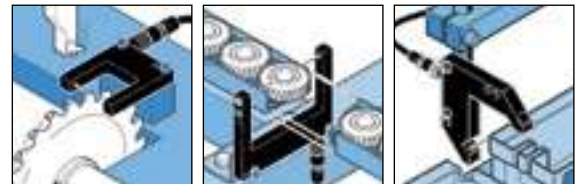
ifm's optical fork and angle sensors offer a flexible solution for a broad range of packaging and material handling applications. Unlike traditional thru-beam photoelectric sensor pairs, ifm's fork and angle sensors offer a one-piece, fixed-distance transmitter and receiver design. This design eliminates the time consuming alignment of a transmitter and a receiver.

The sensor's robust metal housing resists distortion that typically occurs with conventional plastic fork sensors. A visible red light beam across the whole width assists in setup. Easy adjustable sensitivity setting is established via a potentiometer. Integrated thru-holes provide simple mounting without brackets.

Fork housings are available with slot widths ranging from 10 mm up to 120 mm. Angle sensors are available in 60 mm and 100 mm widths.



Application solutions



Gear tooth detection

Part detection on tracks

Part detection on conveyors





Detection of legs on integrated circuits


Transparent film and web edge control


Monitoring of batch height



Company	IO-Link		Position Sensors				Motion Control			Vision Sensors	
	IO-Link	Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Encoders / Speed monitors	2D / 3D inspection		
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Product + accessory selector

ForkSensors	Fork Width (w)	Fork Depth (d)	Output	Smallest Detectable Object Ø	Light Source	Switching Frequency	Part No.	List Price (1-pc.)
Visible red and infrared								
	10 mm	17 mm	LO / DO, PNP / NPN	0.3 mm	Infrared light 880 nm	10000 Hz	OPU200	\$153.00
	20 mm	25 mm	LO / DO, PNP	0.4 mm	Red light 660 nm	4000 Hz	OPU201	\$166.00
	30 mm	35 mm	LO / DO, PNP	0.5 mm	Red light 660 nm	4000 Hz	OPU202	\$189.00
	50 mm	55 mm	LO / DO, PNP	0.5 mm	Red light 660 nm	4000 Hz	OPU203	\$201.00
	80 mm	55 mm	LO / DO, PNP	0.5 mm	Red light 660 nm	4000 Hz	OPU204	\$222.00
	120 mm	60 mm	LO / DO, PNP	0.8 mm	Red light 660 nm	2000 Hz	OPU205	\$227.00

Class 1 Laser								
	30 mm	30 mm	LO / DO, PNP	0.05 mm	Class 1 laser, Red light 670 nm	3000 Hz	OPU700	\$294.00
	50 mm	50 mm	LO / DO, PNP	0.05 mm	Class 1 laser, Red light 670 nm	3000 Hz	OPU701	\$305.00
	80 mm	50 mm	LO / DO, PNP	0.05 mm	Class 1 laser, Red light 670 nm	3000 Hz	OPU702	\$331.00

Angle Sensors	Side Length (x, y)	Sensor Width (z)	Output	Smallest Detectable Object Ø	Light Source	Switching Frequency	Part No.	List Price (1-pc.)
Visible red								
	50 mm	60 mm	LO / DO, PNP	0.5 mm	Red light	4000 Hz	OPL200	\$215.00
	80 mm	100 mm	LO / DO, PNP	0.7 mm	Red light	4000 Hz	OPL201	\$228.00

Cordsets			
Type	Description	Part No.	List Price (1-pc.)
	M8 Pico (3-pin) 2 m, PUR cable	EVC141	\$14.00
	M8 Pico (3-pin) 5 m, PUR cable	EVC142	\$17.00
	M8 Pico (3-pin) 2 m, PUR cable	EVC144	\$14.00
	M8 Pico (3-pin) 5 m, PUR cable	EVC145	\$17.00

 NPN versions of fork and angle sensors available, call 800-441-8246 or visit www.ifm.com/us

Technical Specs

Operating voltage: 10...35 VDC
 Laser: 10...30 VDC

Short-circuit protection, pulsed: yes

Reverse polarity / overload protection: yes / yes

Operating temperature: -13...140 °F (-25...60 °C)
 Laser: 41...113 °F (5...45 °C)

Current rating: 200 mA

Protection: IP67

Housing material: Diecast zinc

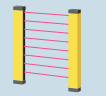






CLASS 1
 LASER
 PRODUCT
 IEC60825-1:2007
 IEC60825-1:2014
 21CFR PART1040

Class 1
 Laser

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Safety Technology	Process Sensors	Industrial Networks	ID Systems	Machine Condition	Power Supplies	Wiring Technology
Safety products	Pressure	AS-i network	RF identification systems	Diagnostic systems	Power supplies	Cordset solutions
						
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Top product features!

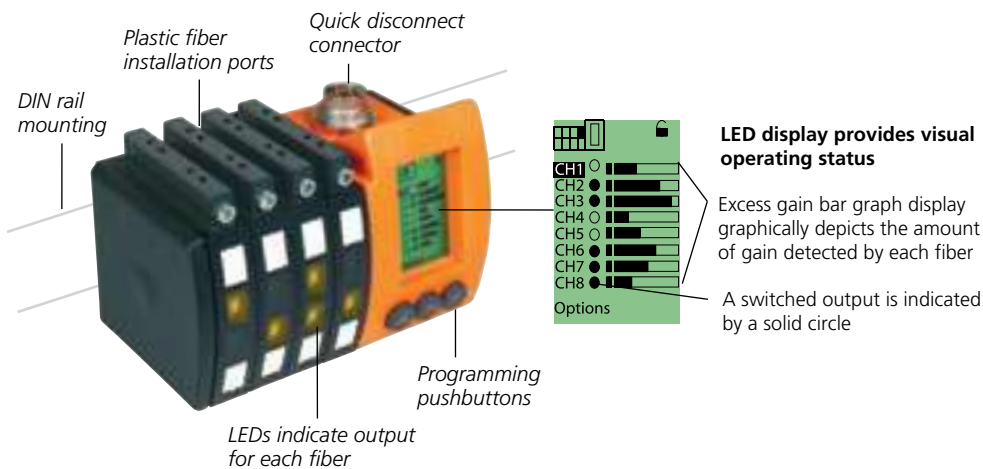
- Multi-channel fiber optic controller with central operating display is designed for applications with multiple sensing points
- Features LCD operator interface that can be used to program multiple fibers and perform AND / OR logic functions
- Available in 2-fiber, 4-fiber, 6-fiber and 8-fiber models
- Individual fibers can be programmed for up to two switchpoints each
- Controller eliminates excessive wiring by using a single cable that replaces individual wiring for each amplifier

Fiber optic controllers and amplifiers

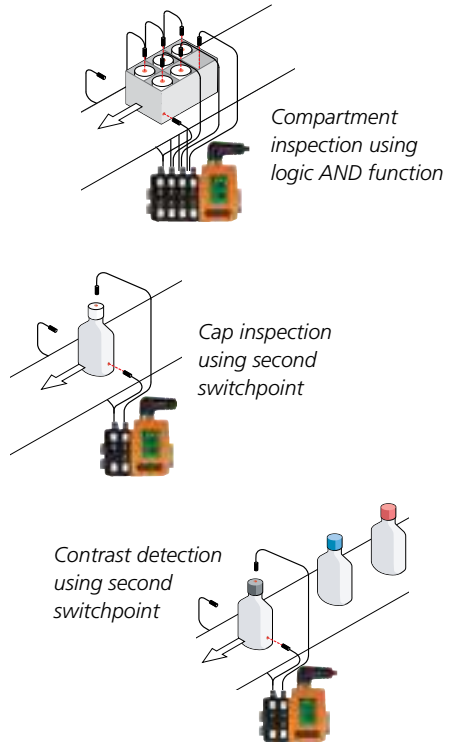
Fiber optics can be used in applications with limited mounting space or as an alternative to a standard photoelectric sensor. Because the electronics are contained in a separate housing that can be remotely located, only the miniature fiber must be mounted near the target.

Multi-Channel Fiber Optic Controller reduces wiring

ifm's multi-channel fiber optic controller is designed for applications that require multiple fiber-optic sensing points. The controller eliminates excessive wiring by using a single cable that replaces individual wiring for each amplifier. Depending on the model, up to eight fibers can be connected to one fiber optic controller.





Controller multi-point application solutions



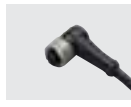

Company	IO-Link		Position Sensors				Motion Control		Vision Sensors	
	IO-Link	Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Encoders / Speed monitors	2D / 3D inspection	
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Product + accessory selector

Function	Connector	Number of Channels	Output	Supply Current	Switching Frequency	Part No.	List Price (1-pc.)
Amplifier for plastic fibers – See page 102 for fibers							
	M12	2	LO/DO PNP	50 mA	2700 Hz	OO5000	\$337.00
	M12	2	LO/DO NPN	50 mA	2700 Hz	OO5008	\$337.00
	M12	4	LO/DO PNP	50 mA	1500 Hz	OO5001	\$495.00
	M16	6	LO/DO PNP	50 mA	1000 Hz	OO5002	\$651.00
	M16	8	LO/DO PNP	50 mA	800 Hz	OO5003	\$804.00

Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (8-pin) 2 m black, right angle	E11231	\$29.00
	M12 Micro DC (8-pin) 5 m black, right angle	E11232	\$36.00
	M16 Micro DC (14-pin) 2 m black, right angle	E11645	\$60.00
	M16 Micro DC (14-pin) 5 m black, right angle	E11697	\$82.00

 For additional controllers and fiber optics, visit www.ifm.com/us

Technical Specs

Housing Material: ABS
 Light source: Red light 630 nm
 Supply Voltage: 12...36 VDC
 Maximum Load Current: 200 mA
 Voltage Drop: <2 V
 Leakage Current: negligible
 Operating Temp: -4...140 °F (-20...60 °C)
 Protection: IP65



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Pressure

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Level

Temperature

AS-i network

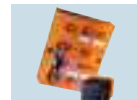
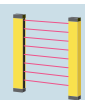
Safety systems

RF identification systems

Diagnostic systems

Power supplies

Cordset solutions



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Top product features!

- Fiber optic amplifiers for plastic or glass fibers
- Single-fiber amplifiers incorporate transmitter and receiver in one housing
- Automatic pushbutton setup adjustment for quick application setup
- Auto detect circuit for PNP or NPN output
- Provides multiple bright LEDs for signal strength indication

Fiber optic amplifiers



OBF amplifiers can be mounted in areas with limited mounting space

Fiber optics can be used in applications with limited mounting space or as an alternative to standard photo-electric sensors. Because the electronics are contained in a separate housing that can be remotely located, only the miniature fiber must be mounted near the target.

OBF amplifiers

The OBF amplifiers incorporate a transmitter and receiver in one housing. A single fiber optic cable is connected to the amplifier and directs light to and from the transmitter and receiver. Fiber optic cables are available in two versions: thru-beam and diffuse reflection.

Typical applications:

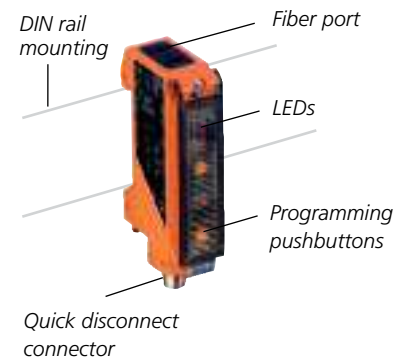
Confined spaces: The fiber optic head can be positioned at the sensing location, while the amplifier can be mounted remotely where sufficient space is available. Fiber cables are typically 2-6 feet long to accommodate the distance.

Detection of minute objects: Depending on the sensing head and range, objects as small as 0.5mm can be detected. When the placement of the target is precise, it is possible to detect fine structures such as thread pitches.

High temperatures: Stainless steel glass fiber optic cables can withstand temperatures up to 600°F



Powerful amplifier in a compact housing



Company	IO-Link	Position Sensors		Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Motion Control	Vision Sensors
	IO-Link	Inductive	Capacitive					Encoders / Speed monitors	2D / 3D inspection
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Product + accessory selector

Function	Connector	Number of Fibers	Output	Supply Current	Switching Frequency	Part No.	List Price (1-pc.)
Amplifier for plastic fibers – See page 106 for fibers							
	M12	1	PNP/NPN, LO/DO	< 50 mA	3000 Hz	OBF500	\$155.00
	M8 3-pin*	1	PNP/NPN, LO/DO	< 50 mA	3000 Hz	OBF503	\$155.00
	M8 4-pin	1	PNP/NPN, LO/DO	< 50 mA	3000 Hz	OBF501	\$155.00
	Prewired	1	PNP/NPN, LO/DO	< 50 mA	3000 Hz	OBF502	\$155.00

* Does not have marginal signal output

Amplifier for glass fibers – See page 107 for fibers

	M12	1	PNP/NPN, LO/DO	< 50 mA	1000 Hz	OBF504	\$155.00
	M8 3-pin*	1	PNP/NPN, LO/DO	< 50 mA	1000 Hz	OBF507	\$155.00
	M8 4-pin	1	PNP/NPN, LO/DO	< 50 mA	1000 Hz	OBF505	\$155.00

* Does not have marginal signal output

Cordsets (4-pin) and Accessories

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (4-pin) 2 m, PUR	EVC001	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC002	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR	EVC004	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC005	\$15.00
	Fiber optic cutter for plastic fibers	E20600	\$11.00

Cordsets (3-pin and 4-pin)

Type	Description	Part No.	List Price (1-pc.)
	M8 Pico DC (3-pin) 2 m, PUR	EVC141	\$14.00
	M8 Pico DC (3-pin) 5 m, PUR	EVC142	\$17.00
	M8 Pico DC (3-pin) 2 m, PUR	EVC144	\$14.00
	M8 Pico DC (3-pin) 5 m, PUR	EVC145	\$17.00
	M8 Pico DC (4-pin) 2 m, PUR	EVC150	\$15.00
	M8 Pico DC (4-pin) 5 m, PUR	EVC151	\$18.00
	M8 Pico DC (4-pin) 2 m, PUR	EVC153	\$15.00
	M8 Pico DC (4-pin) 5 m, PUR	EVC154	\$18.00

For additional amplifiers and fiber optics, visit www.ifm.com/us

Technical Specs

Housing Material: PPE
 Light source: red light 630 nm
 Supply Voltage: 10...30 VDC
 Maximum Load Current: 100 mA
 Voltage Drop: <2.5 V
 Leakage Current: negligible
 Operating Temp: -13...140 °F (-25...60 °C)
 Protection: IP65

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Machine Condition

Power Supplies

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Safety products

Pressure

Flow

Level

Temperature

AS-i network

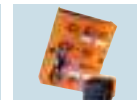
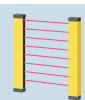
Safety systems

RF identification systems

Diagnostic systems

Power supplies

Cordset solutions



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Thru-beam plastic fibers for OO and OBF amplifiers

Type	Range OO / OBF [mm]	Effective beam/ Min bend radius	Part No.	List Price (1-pr.)
Thru-beam type · M3 sensing head · High flex				
	120 / 56	0.5 mm / 3 mm	E21103	\$76.00
Thru-beam type · M4 sensing head · High flex				
	750 / 350	1 mm / 3 mm	E21102	\$94.00
	120 / 56	0.5 mm / 3 mm	E21104	\$76.00
Thru-beam type · M3 sensing head				
	800 / 350	1 mm / 30 mm	E20603	\$46.00
	160 / 130	0.5 mm / 10 mm	E20609	\$46.00
Thru-beam type · M4 sensing head				
	800 / 210	1 mm / 9 mm	E20615	\$54.00
	800 / 450	1 mm / 30 mm	E20606	\$54.00
Thru-beam type · integrated lens				
	1600 / 900	2 mm / 30 mm	E20753	\$88.00
	3800 / 2000	6 mm / 30 mm	E20752	\$88.00
Thru-beam type · right angle lens				
	400 / 230	side-sensing / 25 mm	E20714	\$153.00
Accessories · for thru-beam fibers only				
	Right angle lens adapter for M3 fibers, increases range by 15-20%		E20754	\$57.00
	Right angle lens adapter for M4 fibers, increases range by 15-20%		E20755	\$47.00

Diffuse plastic fibers for OO and OBF amplifiers

Type	Range OO / OBF [mm]	Min bend radius	Part No.	List Price (1-pc.)
Diffuse reflective type · high flex				
	30 / 10	3 mm	E21107	\$76.00
	30 / 10	3 mm	E21106	\$82.00
	300 / 70	9 mm	E20645	\$54.00
	180 / 104	3 mm	E21105	\$94.00
	300 / 70	9 mm	E20648	\$47.00
Diffuse reflective type · standard fiber				
	60 / 25	10 mm	E20712	\$48.00
	60 / 25	10 mm	E20711	\$55.00
	60 / 25	10 mm	E20639	\$45.00
	300 / 100	30 mm	E20633	\$54.00
Diffuse reflective type · high accuracy fiber				
	300 / 90	30 mm	E20651	\$54.00
	300 / 90	30 mm	E20654	\$47.00
Diffuse reflective type · right angle lens				
	150 / 60	25 mm	E20715	\$148.00

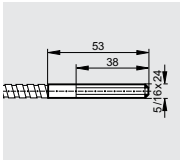
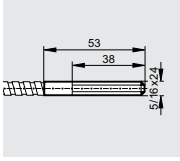
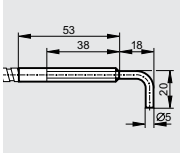
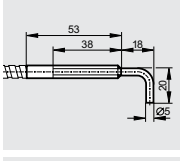
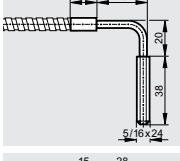
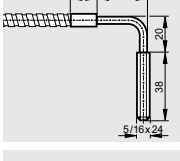
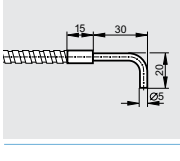
Technical Specs

Sensing head: Aluminum; except Part Nos. E20711, E20714, E20715: stainless steel
 Fiber sheathing: Polyethylene
 Fiber length: 2 meters

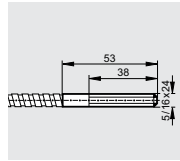
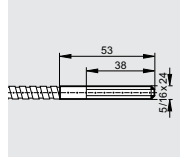
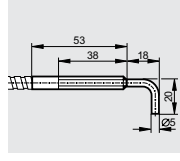
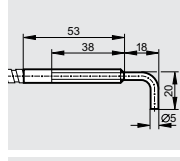
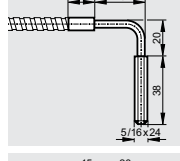
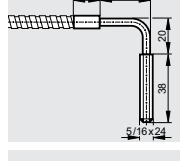
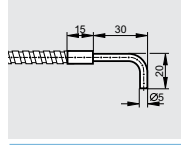
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Company	IO-Link	Position Sensors	Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Motion Control	Vision Sensors
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Thru-beam glass fibers for OBF amplifiers

Type	Range OBF [mm]	Length	Part No.	List Price (1-pc.)
Thru-beam type - sold individually, two required for an application				
	1000	3'	E20823	\$69.00
	500	6'	E21026	\$111.00
	1000	3'	E20827	\$111.00
	500	6'	E21027	\$161.00
	1000	3'	E20825	\$92.00
	500	6'	E21028	\$140.00
	1000	3'	E20828	\$80.00

Diffuse glass fibers for OBF amplifiers

Type	Range OBF [mm]	Length	Part No.	List Price (1-pc.)
Diffuse reflective type				
	150	3'	E20822	\$89.00
	75	6'	E21031	\$136.00
	150	3'	E20826	\$139.00
	75	6'	E21032	\$190.00
	150	3'	E20824	\$114.00
	75	6'	E21033	\$166.00
	150	3'	E20829	\$104.00

Technical Specs

Sensing head end sheathing: Stainless steel
 Fiber bundle diameter: 0.125"
 Minimum bend radius: 19 mm
 Temperature: -71...599 °F (-58...315 °C)

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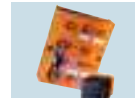
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Top product features!

- Right balance of performance, size and price for distance measurement applications
- Photoelectric is ideal for long-range background suppression applications
- ⚙️ Additional features such as plug-and-play replacement, real-time recipe changes and diagnostic feedback
- ⚙️ Digital transmission of target distance and reflectivity
- Large 4-digit alphanumeric display indicates measured distance
- Ignores ambient light up to 100 klx

Reliable solution for long-range object detection

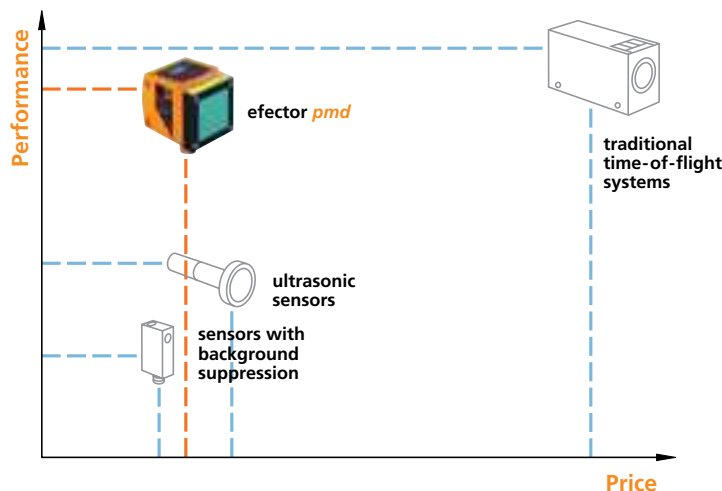
The harsh effects of manufacturing conditions such as weld slag and chemicals often prevent optical sensors from being used in error-proofing applications. The *efector pmd* laser sensor with background suppression can be placed farther away from the application – and the elements – to accurately locate a small part.

efector *pmd* advantage

Background suppression and ultrasonic sensors are lower-cost alternatives for distance measurement but have shorter ranges. Traditional time-of-flight systems offer an improved level of performance but are much higher in cost. ifm's *pmd* sensor combines the advantages of these systems: a 10 meter range at an affordable price.

New feature

The ifm *pmd* sensor can now ignore ambient light up to 100 klx. This makes it a perfect sensor for both indoor and outdoor applications.



4-digit numeric display



The sensor's 4-digit alphanumeric display precisely indicates the measured distance. Models available with simple teach function or parameter setup via pushbutton.

Company	IO-Link	Position Sensors		Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Motion Control	Vision Sensors
	IO-Link	Inductive	Capacitive					Encoders / Speed monitors	2D / 3D inspection
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Product + accessory selector

Function	Range	Output	Spot Ø at Max Range	Sampling Frequency	Light Source	Part No.	List Price (1-pc.)
NEW! Distance measurement sensor	0.2...10 m	4-20 mA / 0-10 VDC and PNP or dual PNP	15 x 15 mm	1...50 Hz	Class 2 laser Red light 650 nm	O1D100	\$419.00
Distance measurement sensor	0.2...10 m	4-20 mA / 0-10 VDC and NPN or dual NPN	15 x 15 mm	1...50 Hz	Class 2 laser Red light 650 nm	O1D103	\$419.00
Distance measurement sensor	0.3...6 m	4-20 mA / 0-10 VDC and PNP or dual PNP	8 x 8 mm	1...50 Hz	Class 1 laser Red light 650 nm	O1D155	\$419.00
Distance measurement sensor	1...75 m (requires reflector)	4-20 mA / 0-10 VDC PNP	150 x 150 mm	1...33 Hz	Class 2 laser Red light 650 nm	O1D106	\$448.00
Distance measurement sensor	0.2...10 m	LO/DO PNP	15 x 15 mm	5 Hz	Class 2 laser Red light 650 nm	O1D101	\$405.00
Distance measurement sensor	0.2...10 m	LO/DO NPN	15 x 15 mm	5 Hz	Class 2 laser Red light 650 nm	O1D104	\$405.00
Level measurement sensor	0.2...10 m	4-20 mA / 0-10 VDC PNP	15 x 15 mm	1...33 Hz	Class 2 laser Red light 650 nm	O1D300	\$431.00

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Rail mount swivel bracket for O1D	E21079	\$57.00
	Plastic cover for O1D	E21133	\$30.00
	95 x 95 mm reflector (for O1D106)	E20454	\$24.00
	226 x 262 mm reflector (for O1D106)	E21159	\$212.00

Can't find the right sensor for your application, call 800-441-8246 or visit www.ifm.com/us

Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (4-pin) 2 m, PUR	EVC001	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC002	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR	EVC004	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC005	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR, LED	EVC007	\$13.00
	M12 Micro DC (4-pin) 5 m, PUR, LED	EVC008	\$16.00

Technical Specs

Supply current: 150mA
 Supply voltage: O1D100, O1D103, O1D106, O1D155 and O1D300: 18...30 V DC;
 O1D101 and O1D104: 10...30 VDC
 No. of wires: 4-wire: O1D100, O1D103, O1D106, O1D155 and O1D300
 3-wire: O1D101, O1D104
 Maximum load current: O1D100, O1D103, O1D106, O1D155 and O1D300: 2 x 200 mA;
 O1D101 and O1D104: 1 x 200 mA
 Connector: M12
 Housing material: Die-cast zinc, PC
 Lens material: Glass
 Operating temperature: 14...140 °F (-10...60 °C)
 Protection: IP67

CLASS 1
LASER
PRODUCT
IEC60825-1:2007
IEC60825-1:2014
21CFR PART1040

Class 1
Laser

CAUTION
LASER LIGHT
DO NOT STARE
INTO BEAM
CLASS 2 LASER
PRODUCT
max POWER 54 - 1mW
WAVELENGTH 650nm
Pulse 1 - 3ns
21 CFR PART 1040
EN60825-1:2003-10

Class 2
Laser

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AS-i network

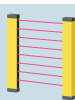
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RF identification systems

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Top product features!

- Contrast and color sensors for error-proofing and object detection
- Sensor uses reliable RGB (red, green, blue) technology to determine ideal color to differentiate target background
- High color contrast sensitivity and resolution
- 18 to 22 mm sensing range for contrast, 15 to 18 mm for color
- Auto-detect for PNP/NPN configuration and "Teach Mode" setup to establish application parameters

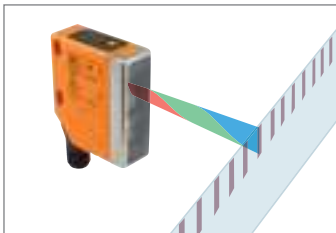
O5 contrast and color photoelectric sensors



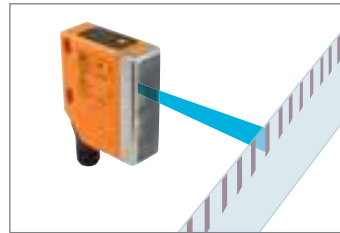
ifm's high performance O5 Series Contrast and Color sensors offer a variety of sensing solutions for the packaging, assembly, material handling and printing industries.

The O5 sensors feature a RGB visible light transmission LED that processes through red, green and blue to identify the best contrast color between the target and the background.

Contrast sensor application solutions



The Contrast Sensor's visible light processes through red, green and blue to identify the best color for contrast.

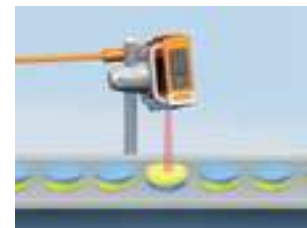


In this example, the sensor selects blue for the highest contrast color. The sensor's high switching frequency can handle the application's short mark-to-space ratio.

Color sensor application solutions



Color verification: Using the O5's adjustable tolerance, the O5 can accept variations of the same color and reject different colors.

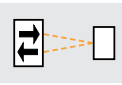
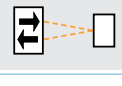


Orientation: The O5 detects proper orientation in fast-moving applications.



Company	IO-Link	Position Sensors		Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Motion Control	Vision Sensors
	IO-Link	Inductive	Capacitive					Encoders / Speed monitors	2D / 3D inspection
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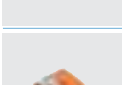


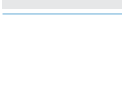
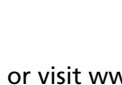
Product + accessory selector


Function	Range	Output	Spot Ø at max range	Supply Current	Switching Frequency	Light Source	Part No.	List Price (1-pc.)
Contrast sensor: diffuse 	18...22 mm	LO/DO PNP/NPN	1.5 x 5 mm	< 50 mA	10000 Hz	RGB	O5K500	\$215.00
Color sensor 	15...19 mm	LO/DO PNP/NPN	2.5 x 6 mm	< 50 mA	2000 Hz	RGB	O5C500	\$398.00

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Short swivel bracket for rod with clamp	E21083	\$11.00
	Freestanding mounting bracket	E21087	\$14.00

Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (4-pin) 2 m, PUR	EVC001	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC002	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR	EVC004	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC005	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR, LED	EVC007	\$13.00
	M12 Micro DC (4-pin) 5 m, PUR, LED	EVC008	\$16.00

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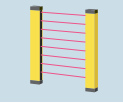






Technical Specs

Type of light:	Red light 625 nm Green light 525 nm Blue light 465 nm
Supply voltage:	10...36 V DC
No. of wires:	3-wire
Maximum load current:	200 mA
Voltage drop:	<2.5 V
Leakage current:	Negligible
Connector:	M12
Housing material:	PA, stainless steel, TPU/PC
Lens material:	PMMA
Operating temperature:	-13...140 °F (-25...60 °C)
Protection:	IP67



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Safety Technology	Process Sensors	Industrial Networks	ID Systems	Machine Condition	Power Supplies	Wiring Technology
Safety products	Pressure	AS-i network	RF identification systems	Diagnostic systems	Power supplies	Cordset solutions
						
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Top product features!

- Detects glass, film, PET bottles and transparent objects
- Simple automatic sensitivity adjustment for reliable detection of clear objects
- Programmable LO / DO for application flexibility
- Thru-hole mounting for an easy, fixed mounting solution
- Multiple bracket options for mounting flexibility

Reliable clear object detection



OJ sensor uses a reflector to detect plastic bottles on a conveyor.

One of the most difficult photoelectric applications is the detection of clear objects such as film, glass, or PET plastic bottles and transparent packaging. Standard sensors typically have too much excess gain and “burn” through the clear material. ifm efector offers two options for clear object detection applications: the OJ Series sensors and the O5 Series sensor.

OJ Series sensors – compact housings, long sensing ranges

ifm’s OJ Series retroreflective sensor offers a low switching hysteresis specifically for the detection of transparent objects. The sensors incorporate an innovative technology that allows the sensitivity to be automatically set using an easy-to-use teach function. The teach function eliminates the need to have the product present during initial

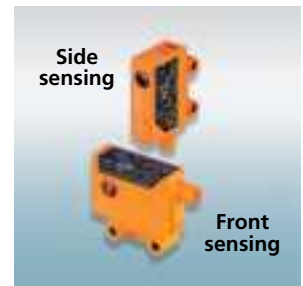
set up. The technology also reduces the effect of “dead spots” or areas on plastic bottles that cannot be detected when teaching the sensor to read a clear bottle as the target.

O5 Series sensors - sensing range up to 3 meters

ifm’s compact O5 Series polarized retro-reflective sensor offers extremely long sensing ranges – up to 3 meters when used with ifm’s prismatic square reflector (Part No. E20454). The high-precision sensor is designed for inspection and error-proofing applications and offers high switching frequency of 2000 Hz for fast moving processes. The unit features a two-pushbutton Teach operation that quickly establishes light-on/dark-on programming. The sensor’s micro-processor provides automatic calibration, load detection (PNP or NPN), and switch point adjustment with soiling indication.



O5 Series sensing range reaches up to 3 meters using a prismatic reflector.




OJ sensors feature front sensing and side sensing models.

Company	IO-Link	Position Sensors						Motion Control	Vision Sensors
	IO-Link	Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Encoders / Speed monitors	2D / 3D inspection
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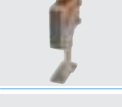




Product + accessory selector

Function	Connector	Output	Switching Frequency [Hz]	Supply Current [mA]	Spot Ø at max. range [mm]	Part No.	List Price (1-pc.)
O5 3-wire DC · Clear object detection · adjustable range...1.5 m* (with E20722 reflector) · red light 624 nm							
Polarized retro-reflective	 M12	LO/DO PNP/NPN	1500	<50	40 mm @ 1.5 m 80 mm @ 3 m	O5G500	\$150.00


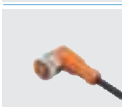
*Adjustable range 3 m with E20454 reflector.

Function	Connector	Output	Switching Frequency [Hz]	Supply Current [mA]	Lens position	Part No.	List Price (1-pc.)
OJ 4-wire DC · Clear object detection · range...1.5 m (with E20722 reflector) · red light 660 nm							
Polarized retro-reflective	 M8	LO/DO PNP	2000	< 22	front	OJ5185	\$141.00
	M8	LO/DO PNP	2000	< 22	side	OJ5186	\$141.00



Optional Accessories


Type	Description	Part No.	List Price (1-pc.)
	O5 Sensor swivel bracket for rod Complete set includes clamp	E21083	\$11.00
	O5 Sensor protective bracket for rod Complete set includes clamp	E21084	\$16.00
	O5 Sensor freestanding mounting bracket	E21087	\$14.00
	OJ Sensor stainless steel clip	E20965	\$23.00
	OJ sensor swivel bracket for front sensing OJ, die-cast zinc	E20966	\$15.00
	OJ sensor swivel bracket for side sensing OJ, die-cast zinc	E20968	\$16.00
	50 x 50 mm reflector	E20722	\$15.00
	95 x 95 mm reflector	E20454	\$24.00

Cordsets for O5 Sensors

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (4-pin) 2 m, PUR	EVC001	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC002	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR	EVC004	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC005	\$15.00

Cordsets for OJ Sensors

	M8 Pico DC (4-pin) 2 m, PUR	EVC150	\$15.00
	M8 Pico DC (4-pin) 5 m, PUR	EVC151	\$18.00
	M8 Pico DC (4-pin) 5 m, PUR	EVC154	\$18.00
	M8 Pico DC (4-pin) 10 m, PUR	EVC155	\$25.00

 OJ sensors are available in two lens configurations, side sensing and front sensing. Visit www.ifm.com/us

Safety Technology

Process Sensors

Industrial Networks

ID Systems

Machine Condition

Power Supplies

Wiring Technology

Safety products

Pressure

Flow

Level

Temperature

AS-i network

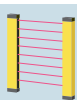
Safety systems

RF identification systems

Diagnostic systems

Power supplies

Cordset solutions



144 - 155

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192 - 207

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