

# OPT Series Rectangular Ultrasonic Sensors



**OPT2200**



**OPT2203**

## Rectangular - plastic- DC

- 2 mutually independent switching outputs
- Miniature design
- IO-Link v1.1 (all models)
- Through-beam models available

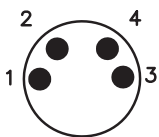


OPT Series Rectangular Ultrasonic Sensors Selection Chart										
Part Number	Price	Sensing Range	Output State	Logic	Switching Frequency	Protection Degree	Connection	Wiring	Housing Size	Drawing Link
<b>Diffuse</b>										
<a href="#">OPT2200</a>	\$127.00	30-400mm [1.18-15.74 in]	N.O.	PNP	30 Hz	IP68	4-pin M8 quick-disconnect	Diagram 1	38.5 x 19.5 x 12mm	<a href="#">PDF</a>
<a href="#">OPT2201</a>	\$127.00			NPN				Diagram 2		<a href="#">PDF</a>
<a href="#">OPT2202</a>	\$127.00			PNP			Diagram 1	4-pin M12 quick-disconnect, 200mm [7.87 in] cable		<a href="#">PDF</a>
<b>Diffuse</b>										
<a href="#">OPT2203</a>	\$139.00	100-1200mm [3.93-47.24 in]	N.O.	PNP	7 Hz	IP67 IP68	5-pin M12 quick-disconnect	Diagram 3	56.5 x 16 x 35mm	<a href="#">PDF</a>
<a href="#">OPT2204</a>	\$139.00			NPN				Diagram 3		<a href="#">PDF</a>
<a href="#">OPT2205</a>	\$139.00	80-400mm [3.14-15.74]		PNP	20 Hz		4-pin M12 quick-disconnect	Diagram 4		
<b>Through-beam Emitter *</b>										
<a href="#">OPT2206</a>	\$96.00	1-2000mm [0.03-78.74]	-	-	NA	IP67 IP68	5-pin M12 quick-disconnect	-	56.5 x 16 x 35mm	<a href="#">PDF</a>
<b>Through-beam Receivers*</b>										
<a href="#">OPT2207</a>	\$127.00	1-2000mm [0.03-78.74]	N.O.	PNP	7 Hz	IP67 IP68	5-pin M12 quick-disconnect	Diagram 3	56.5 x 16 x 35mm	<a href="#">PDF</a>
<a href="#">OPT2208</a>	\$127.00			NPN				Diagram 3		<a href="#">PDF</a>

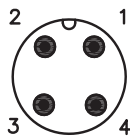
\* Purchase one receiver and one emitter for a complete set.

## Connectors

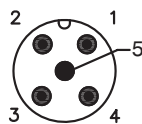
**M8 Connector**



**M12 Connector**



**M12 connector**



# OPT Series Rectangular Ultrasonic Sensors

## Wiring Diagrams

Diagram 1

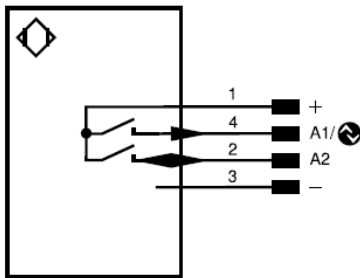


Diagram 2

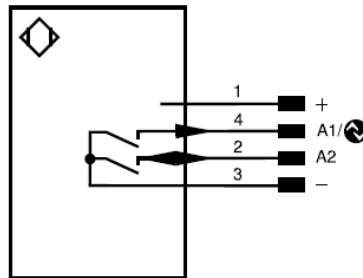


Diagram 3

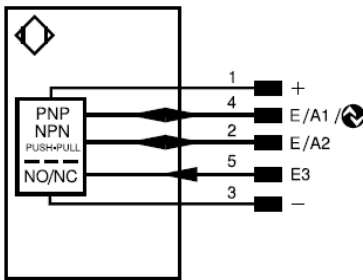
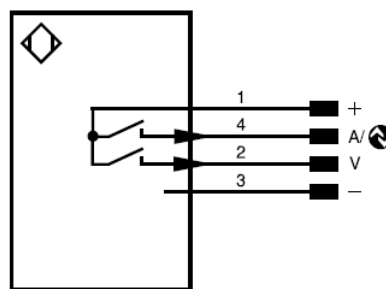


Diagram 4



### LEGEND

+	Supply Voltage +	nc	Not connected	EN <sub>BRS422</sub>	Encoder B/B̄ (TL)
-	Supply Voltage 0 V	U	Test Input	EN <sub>A</sub>	Encoder A
~	Supply Voltage (AC Voltage)	Ū	Test Input Inverted	EN <sub>B</sub>	Encoder B
A	Switching Output (N.O.)	W	Trigger Input	A <sub>MIN</sub>	Digital output MIN
Ā	Switching Output (N.C.)	W-	Ground for the Trigger Input	A <sub>MAX</sub>	Digital output MAX
V	Contamination/Error Output (N.O.)	O	Analog Output	A <sub>OK</sub>	Digital output OK
V̄	Contamination/Error Output (N.C.)	O-	Ground for the Analog Output	SY IN	Synchronization In
E	Input (analog or digital)	BZ	Block Discharge	SY OUT	Synchronization OUT
T	Teach Input	AMV	Valve Output	OLT	Brightness output
Z	Time Delay (activation)	a	Valve Control Output +	M	Maintenance
S	Shielding	b	Valve Control Output -	rsv	Reserved
RxD	Interface Receive Path	SY	Synchronization	Wire Colors according to DIN IEC 60757	
TxD	Interface Send Path	SY-	Ground for the Synchronization	BK	Black
RDY	Ready	E+	Receiver-Line	BN	Brown
GND	Ground	S+	Emitter-Line	RD	Red
CL	Clock		Grounding	OG	Orange
E/A	Output/Input programmable	SnR	Switching Distance Reduction	YE	Yellow
	IO-Link	Rx+/-	Ethernet Receive Path	GN	Green
PoE	Power over Ethernet	Tx+/-	Ethernet Send Path	BU	Blue
IN	Safety Input	Bus	Interfaces-Bus A(+)/B(-)	VT	Violet
OSSD	Safety Output	La	Emitted Light Disengageable	GY	Gray
Signal	Signal Output	Mag	Magnet Activation	WH	White
Bl_D+/_	Ethernet Gigabit bidirect. data line (A-D)	RES	Input Confirmation	PK	Pink
EN <sub>RS422</sub>	Encoder 0-pulse 0 / TTL	EDM	Contact Monitoring	GNYE	Green/Yellow
PT	Platinum measuring resistor	EN <sub>ARS422</sub>	Encoder A/ Ā (TTL)		

# OPT Series Rectangular Ultrasonic Sensors

OPT Series Rectangular Ultrasonic Sensors Specifications									
Part Number	OPT2200	OPT2201	OPT2202	OPT2203	OPT2204	OPT2205	OPT2206	OPT2207	OPT2208
<b>Sensing Distance</b>	30-400mm [1.18-15.74 in]		100-1200mm [3.93-47.24 in]		80-400mm [3.14-15.74]		1-2000mm [0.03-78.74]		
<b>Sensitivity</b>	Teach-In/IO-Link					IO-Link only	Teach-In/IO-Link		
<b>Output State</b>	Antivalent								
<b>Operating Voltage</b>	18 to 30 VDC								
<b>Current Consumption (24V)</b>	< 20mA			< 30mA					
<b>Switching Current</b>	100mA								
<b>Voltage Drop</b>	< 2.5 V								
<b>Switching Frequency</b>	30 Hz		7 Hz		20 Hz		NA	7 Hz	
<b>Ultrasonic Frequency</b>	325 kHz		240 kHz		300 kHz		240 kHz		
<b>Switching Hysteresis</b>	1% of the switching distance, at least 2 mm								
<b>Short-Circuit Protection</b>	Yes								
<b>Operating Temperature</b>	-30 to 60°C [-22 to 140°F]								
<b>Thermal Drift</b>	NA								
<b>Protection Degree (DIN 40050)</b>	IP68			IP67 / IP68					
<b>LED Indicators</b>	Yes								
<b>Housing Material</b>	PC (polycarbonate)			PBT (polycarbonate)					
<b>Shock/Vibration</b>	Vibration test is according to standard EN 60068-2-6 a Shock test is according to standard EN 60068-2-27								
<b>Tightening Torque</b>	0.5 N•m [0.37 lb•ft] for mounting								
<b>Weight lbs[oz]</b>	0.6 [9.6]	0.9 [14.4]	0.11 [1.76]		0.10 [1.6]		0.11 [1.76]		
<b>Connectors</b>	4-pin M8 quick-disconnect	4-pin M12 quick-disconnect, 200mm [7.87 in] cable	5-pin M12 quick-disconnect		4-pin M12 quick-disconnect		5-pin M12 quick-disconnect		
<b>IO Link</b>	IO-Link v1.1 (all models)								
<b>Agency Approvals *</b>	cULus, E189727, CE, UKCA, RoHS								

\* To obtain the most current agency approval information, see the Agency Compliance & Certifications Checklist section on the specific part number's web page.

# Accessories for OPT Series 32x12mm Photoelectric Sensors

## Right-Angle Mounting Brackets

Mounting bracket, right angle, vertical adjustment. For use with OPT series 32x12mm photoelectric sensors.

Mounting Brackets for OPT 32x12mm Sensors						
Part Number	Price	Description	Qty	Drawing Link	Weight lb [g]	
<a href="#">OPT2033</a>	\$7.00	Wenglor mounting bracket, right-angle, vertical adjustment, nickel plated steel. For use with OPT series 32x12mm photoelectric sensors.	1	<a href="#">PDF</a>	0.04 [16]	



[OPT2033](#)

## Right-angle Swivel Mounting Systems

Mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with OPT series 32x12mm photoelectric sensors.

Accessories for 32x12mm Sensors						
Part Number	Price	Description	Mounting Head	Mounting Plate	Drawing Link	Weight lb [g]
<a href="#">OPT2120</a>	\$11.50	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with OPT series 32x12mm photoelectric sensors.	Aluminum	304 Stainless Steel	<a href="#">PDF</a>	0.14 [63.50]
<a href="#">OPT2121</a>	\$21.00	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with OPT series 32x12mm photoelectric sensors.	304 Stainless Steel	304 Stainless Steel	<a href="#">PDF</a>	0.27 [122.46]



[OPT2121](#)



[OPT2120](#)

Note: 304 Stainless steel mounting rods sold separately: [OPT2109](#) (200mm length), [OPT2110](#) (300mm length), and [OPT2111](#) (500mm length).

# Accessories for 18mm Sensors

## Axial Mounting Bracket

Axial mounting bracket available in zinc plated steel or 316L stainless steel. Has two mounting holes (use 4mm screws) and allows for rotation of an optical axis for right-beam-angle-adaptor sensors. Hexagonal nuts not included. For use with 18mm sensors.

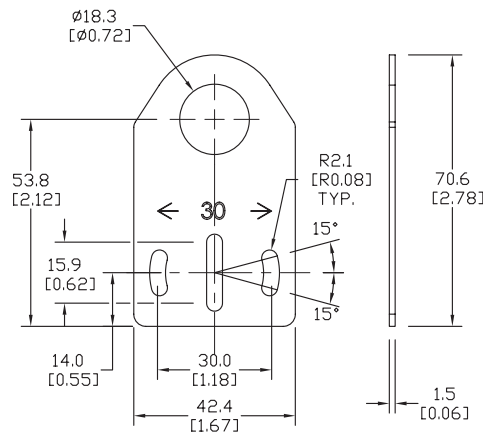


**ST18A**

Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb [g]
<b>ST18A</b>	\$2.00	Micro Detectors mounting bracket, axial, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]
<b>ST18A7W</b>	\$7.25	Micro Detectors mounting bracket, axial, 316L stainless steel. For use with 18mm sensors.	0.06 [27.2]

## Dimensions

mm [inches]



## Right-angle Mounting Bracket

Right-angle mounting bracket for use with 18mm sensors. Has two mounting holes (use 4mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal nuts not included.

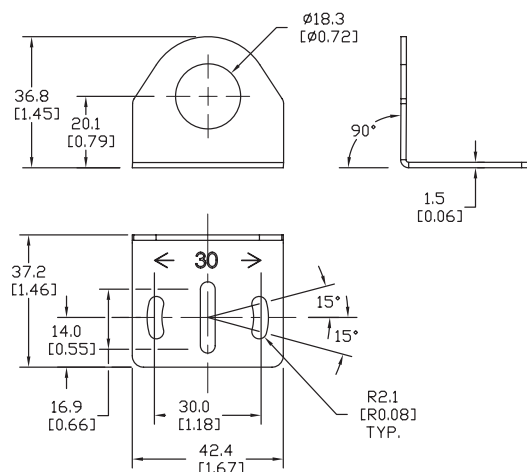


**ST18C**

Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb [g]
<b>ST18C</b>	\$2.00	Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]
<b>ST18C7W</b>	\$7.25	Micro Detectors mounting bracket, right-angle, 316L stainless steel. For use with 18mm sensors.	0.06 [27.2]

## Dimensions

mm [inches]



# Accessories for 18mm Sensors

## Right-angle Mounting Brackets

Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors. Available with or without fixed insertion stop.

Accessories for 18mm Sensors				
Part Number	Price	Description	Drawing Link	Weight lb [g]
<a href="#">OPT2104</a>	\$10.50	Wenglor mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors.	<a href="#">PDF</a>	0.06 [27.2]
<a href="#">OPT2105</a>	\$10.50	Wenglor mounting bracket, right-angle, plastic. For use with 18mm sensors.	<a href="#">PDF</a>	0.06 [27.2]



[OPT2104](#), [OPT2105](#)

## Right-angle Swivel Mounting Systems

Mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 12mm rod mount. For use with 18mm sensors. Available in all 304 stainless steel or with an aluminum head and a stainless steel mounting plate.

Accessories for 18mm Sensors						
Part Number	Price	Description	Mounting Head	Mounting Plate	Drawing Link	Weight lb [g]
<a href="#">OPT2116</a>	\$11.50	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 18mm sensors.	Aluminum	304 Stainless steel	<a href="#">PDF</a>	0.15 [68.0]
<a href="#">OPT2117</a>	\$21.00	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 18mm sensors.	304 Stainless steel	304 Stainless steel	<a href="#">PDF</a>	0.28 [127.0]



[OPT2116](#), [OPT2117](#)

Note: 304 Stainless steel mounting rods sold separately: [OPT2109](#) (200mm [7.87 in] length), [OPT2110](#) (300mm [11.81 in] length), and [OPT2111](#) (500mm [19.69 in] length).