## OPT Series Rectangular Ultrasonic Sensors





Rectangular - plastic- DC

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





CE	c UL us	<b>O</b> IO-Link
----	---------	------------------

		OPT S	eries R	ectangı	ılar Ultra	sonic Se	nsors Selec	tion Char	t	
Part Number	Price	Sensing Range	Output State	Logic	Switching Frequency	Protection Degree	Connection	Wiring	Housing Size	Drawing Link
Diffuse										
OPT2200	\$127.00			PNP			4-pin M8 guick-	Diagram 1		PDF
OPT2201	\$127.00	30-400mm		NPN			disconnect	Diagram 2		PDF
<u>OPT2202</u>	\$127.00	[1.18-15.74 in]	N.O.	PNP	30 Hz	IP68	4-pin M12 quick-disconnect, 200mm [7.87 in] cable	Diagram 1	38.5 x 19.5 x 12mm	<u>PDF</u>
Diffuse										
OPT2203	\$139.00	100-1200mm		PNP	711-		5-pin M12 quick-	Diagram 3		PDF
OPT2204	\$139.00	[3.93-47.24 in]	N.O.	NPN	7 Hz	IP67 IP68	disconnect	Diagram 3	56.5 x 16 x 35mm	PDF
OPT2205	\$139.00	80-400mm [3.14-15.74]		PNP	20 Hz		4-pin M12 quick- disconnect	Diagram 4		PDF
Through-beam L	mitter *									
<u>OPT2206</u>	\$96.00	1-2000mm [0.03-78.74]	-	-	NA	IP67 IP68	5-pin M12 quick- disconnect	-	56.5 x 16 x 35mm	PDF
Through-beam I	Receivers*									
OPT2207	\$127.00	1-2000mm	NO	PNP	7.11	IDCZ IDCC	5-pin M12 quick-	Diagram 3	50.5 40 05	PDF
<u>OPT2208</u>	\$127.00	[0.03-78.74]	N.O.	NPN	7 Hz	IP67 IP68	disconnect	Diagram 3	56.5 x 16 x 35mm	PDF

<sup>\*</sup> Purchase one receiver and one emitter for a complete set.

#### **Connectors**

**M8 Connector** 



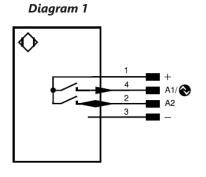
**M12 Connector** 

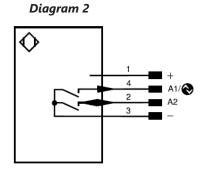
M12 connector

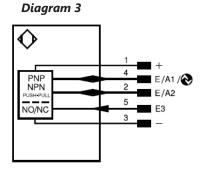


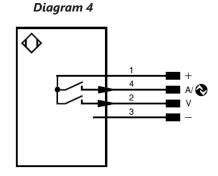
# **OPT Series Rectangular Ultrasonic Sensors**

## **Wiring Diagrams**









	<b>LEGEND</b>								
+	Supply Voltage +	nc	Not connected	EN <sub>BRS422</sub>	Encoder B/B (TL)				
-	Supply Voltage 0 V	U	Test Input	ENA	Encoder A				
~	Supply Voltage (AC Voltage)	Ū	Test Input Inverted	EN <sub>B</sub>	Encoder B				
Α	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.)	0	Analog Output	A <sub>OK</sub>	Digital output OK				
V	Contamination/Error Output (N.C.)	0-	Ground for the Analog Output	SY IN	Synchronization In				
Е	Input (analog or digital)	BZ	Block Discharge	SY OUT	Synchronization OUT				
T	Teach Input	AMV	Valve Output	OLT	Brightness output				
Z	Time Delay (activation)	а	Valve Control Output +	M	Maintenance				
S	Shielding	b	Valve Control Output -	rsv	Reserved				
RxD	Interface Receive Path	SY	Synchronization	Wire Colors a	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	4	Grounding	OG	Orange				
E/A	Output/Input programmable	SnR	Switching Distance Reduction	YE	Yellow				
<b>②</b>	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				
BI_D+/_	Ethernet Gigabit bidirect. data line (A-D)	RES	Input Confirmation	PK	Pink				
EN <sub>0 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	<b>Series F</b>	Rectang	ular Ultra	asonic S	ensors S	pecificat	tions			
Part Number	<u>OPT2200</u>	<u>0PT2201</u>	<u>ОРТ2202</u>	<u>ОРТ2203</u>	<u>ОРТ2204</u>	<u>0PT2205</u>	<u>ОРТ2206</u>	<u>ОРТ2207</u>	<u>ОРТ2208</u>	
Sensing Distance	[	30-400mm 1.18-15.74 in]			200mm 7.24 in]	80-400mm [3.14-15.74]		1-2000mm [0.03-78.74]		
Sensitivity		1	each-In/IO-Lin	k		IO-Link only	1	Гeach-In/IO-Lin	k	
Output State					Antivalent					
Operating Voltage					18 to 30 VDC					
Current Consumption (24V)		< 20mA				< 30	)mA			
Switching Current					100mA					
Voltage Drop					< 2.5 V					
Switching Frequency		30 Hz		7	Hz	20 Hz	NA	7	Hz	
Ultrasonic Frequency		325 kHz		240	kHz	300 kHz		240 kHz		
Switching Hysteresis				1% of the swit	ching distance,	at least 2 mm				
Short-Circuit Protection					Yes					
Operating Temperature				-30 to	60°C [-22 to 1	40°F]				
Thermal Drift					NA					
Protection Degree (DIN 40050)		IP68				IP67 /	/ IP68			
LED Indicators				T	Yes					
Housing Material	PC	(polycarbona				PBT (poly				
Shock/Vibration					ording to stand ording to standa					
Tightening Torque				0.5 N•m	[0.37 lb•ft] for r	nounting				
Weight lbs[oz]	0.6 [9	9.6]	0.9 [14.4]	0.11	[1.76]	0.10 [1.6]		0.11 [1.76]		
Connectors	4-pin M8 quick	k-disconnect	4-pin M12 quick- disconnect, 200mm [7.87 in] cable	5-pin M12 qui	ck-disconnect	4-pin M12 quick- disconnect	5-pin M12 quick-disconnect		onnect	
IO Link				IO-Li	ink v1.1 (all mo	dels)				
Agency Approvals *					89727, CE, UK					

<sup>\*</sup> 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 Ib [g]			
<u>OPT2033</u>	\$7.00	Wenglor mounting bracket, right-angle, vertical adjustment, nickel plated steel. For use with OPT series 32x12mm photoelectric sensors.	1	PDF	0.04 [16]			



## **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]				
<u>OPT2120</u>	\$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	PDF	0.14 [63.50]				
<u>OPT2121</u>	\$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	<u>PDF</u>	0.27 [122.46]				



Note: 304 Stainless steel mounting rods sold separately: <u>OPT2109</u> (200mm length), <u>OPT2110</u> (300mm length), and <u>OPT2111</u> (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-adapter sensors. Hexagonal nuts not included. For use with 18mm sensors.

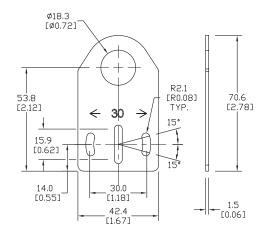
	Accessories for 18mm Sensors							
Part Number Price Description								
<u>ST18A</u>	\$2.00	Micro Detectors mounting bracket, axial, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]					
<u>ST18A7W</u>	\$7.25	Micro Detectors mounting bracket, axial, 316L stainless steel. For use with 18mm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



**ST18A** 

#### **Dimensions**

mm [inches]



## **Right-angle Mounting Bracket**

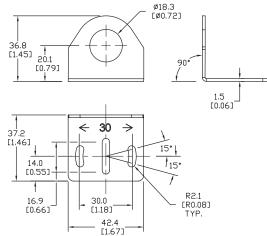
Right-angle mounting bracket for use with 18mm sensors. Has two mounting holes (use 4mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal nuts not included.

Accessories for 18mm Sensors						
Part Number	Part Number Price Description					
ST18C	\$2.00	Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]			
<u>ST18C7W</u>	\$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	mber Price Description								
<u>OPT2104</u>	\$10.50	Wenglor mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors.	PDF	0.06 [27.2]					
<u>OPT2105</u>	\$10.50	Wenglor mounting bracket, right-angle, plastic. For use with 18mm sensors.	<u>PDF</u>	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]				
<u>OPT2116</u>	\$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	<u>PDF</u>	0.15 [68.0]				
<u>OPT2117</u>	\$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	<u>PDF</u>	0.28 [127.0]				



OPT2116, OPT2117

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