

# OPT Series Tubular Ultrasonic Sensors



**OPT2209**

## Tubular - Stainless Steel - DC

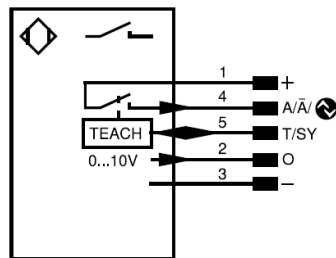
- Digital and analog output
- Synchronous mode
- Temperature drift eliminable
- Stainless steel housing
- IO-Link v1.0



OPT Series Tubular Ultrasonic Sensors										
Part Number	Price	Sensing Range	Output State	Logic	Switching Frequency	Protection Degree	Connection	Wiring	Housing Size	Drawing Link
<i>Diffuse</i>										
<a href="#">OPT2209</a>		100–1200mm [3.93–47.24in]	N.O./ 0–10V	PNP	7 Hz	IP67	5-pin M12 quick-disconnect	Diagram 1	18 x 95mm	<a href="#">PDF</a>
<a href="#">OPT2210</a>		50–400mm [1.96–15.74in]			20 Hz				18 x 86mm	<a href="#">PDF</a>

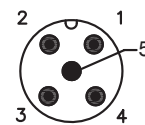
### Wiring Diagram

Diagram 1



### Connector

M12 Connector



### LEGEND

+	Supply Voltage +	nc	Not connected	EN <sub>BRS422</sub>	Encoder B/ $\bar{B}$ (TL)
-	Supply Voltage 0 V	U	Test Input	EN <sub>A</sub>	Encoder A
~	Supply Voltage (AC Voltage)	$\bar{U}$	Test Input Inverted	EN <sub>B</sub>	Encoder B
A	Switching Output (N.O)	W	Trigger Input	A <sub>MIN</sub>	Digital output MIN
$\bar{A}$	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
$\bar{V}$	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	$\perp$	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>0,RS422</sub>	Encoder 0-pulse 0 / TTL	EDM	Contact Monitoring	GNYE	Green/Yellow
PT	Platinum measuring resistor	EN <sub>ARS422</sub>	Encoder A/ $\bar{A}$ (TTL)		

# OPT Series Tubular Ultrasonic Sensors

OPT Series Tubular Ultrasonic Sensors Specifications		
Type	<i>OPT2209</i>	<i>OPT2210</i>
<b>Sensing Distance</b>	100–1200mm [3.93–47.24in]	50–400mm [1.96–15.74in]
<b>Sensitivity</b>	Teach-in / IO-Link	
<b>Output State</b>	N.O. or N.C via Teach-in or IO-Link, 0-10V output	
<b>Operating Voltage</b>	18 to 30VDC	
<b>Analog Output</b>	0 to 10V	
<b>Current Consumption (24V)</b>	<30 mA	
<b>Switching Current</b>	100 mA	
<b>Voltage Drop</b>	<2.5V	
<b>Switching Frequency</b>	7 Hz	20 Hz
<b>Ultrasonic Frequency</b>	240 kHz	300 kHz
<b>Switching Hysteresis</b>	10mm	2mm
<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>	IP67	
<b>LED Indicators</b>	Yes	
<b>Housing Material</b>	Stainless Steel	
<b>Shock/Vibration</b>	Shock test is according to standard EN 60068-2-27 Vibration test is according to standard EN 60068-2-6	
<b>Tightening Torque</b>	0.5 N•m [0.37 lb•ft] for mounting	
<b>Weight lbs [oz]</b>	0.16 [2.56]	
<b>Connectors</b>	5-pin M12 quick-disconnect	
<b>IO Link</b>	IO-Link v1.0	
<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 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.

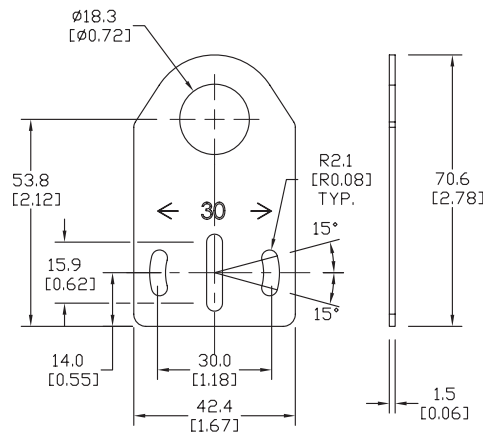


**ST18A**

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

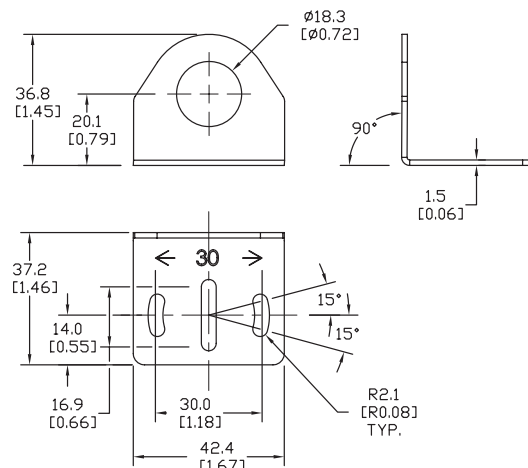


**ST18C**

Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb [g]
<b>ST18C</b>		Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]
<b>ST18C7W</b>		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>		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>		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>		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>		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 [7.87in] length), [OPT2110](#) (300mm [11.81in] length), and [OPT2111](#) (500mm [19.69in] length).