

OPT Series Tubular Ultrasonic Sensors



OPT2209

Tubular - Stainless Steel - DC

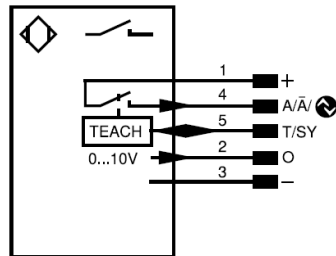
- Digital and analog output
- Synchronous mode
- Temperature drift eliminable
- Stainless steel housing
- IO-Link v1.0



OPT Series Tubular Ultrasonic Sensors										
Part Number	Price	Sensing Range	Output State	Logic	Switching Frequency	Protection Degree	Connection	Wiring	Housing Size	Drawing Link
Diffuse										
OPT2209	\$141.00	100-1200mm [3.93-47.24 in]	N.O./ 0-10 V	PNP	7 Hz	IP67	5-pin M12 quick-disconnect	Diagram 1	18 x 95mm	PDF
OPT2210	\$141.00	50-400mm [1.96-15.74 in]			20 Hz				18 x 86mm	PDF

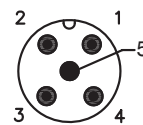
Wiring Diagram

Diagram 1



Connector

M12 Connector



LEGEND

+	Supply Voltage +	nc	Not connected	EN _{BRS422}	Encoder B/ $\bar{B}$ (TL)
-	Supply Voltage 0 V	U	Test Input	EN _A	Encoder A
~	Supply Voltage (AC Voltage)	$\bar{U}$	Test Input Inverted	EN _B	Encoder B
A	Switching Output (N.O.)	W	Trigger Input	A _{MIN}	Digital output MIN
$\bar{A}$	Switching Output (N.C.)	W-	Ground for the Trigger Input	A _{MAX}	Digital output MAX
V	Contamination/Error Output (N.O.)	O	Analog Output	A _{OK}	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
BI_D+/_	Ethernet Gigabit bidirect. data line (A-D)	RES	Input Confirmation	PK	Pink
EN _{0BS422}	Encoder 0-pulse 0 / TTL	EDM	Contact Monitoring	GNYE	Green/Yellow
PT	Platinum measuring resistor	EN _{ARS422}	Encoder A/ $\bar{A}$ (TTL)		

OPT Series Tubular Ultrasonic Sensors

OPT Series Tubular Ultrasonic Sensors Specifications		
Type	<u>OPT2209</u>	<u>OPT2210</u>
Sensing Distance	100-1200mm [3.93-47.24 in]	50-400mm [1.96-15.74 in]
Sensitivity	Teach-in / IO-Link	
Output State	N.O. or N.C via Teach-in or IO-Link, 0-10V output	
Operating Voltage	18 to 30VDC	
Analog Output	0 to 10V	
Current Consumption (24V)	< 30mA	
Switching Current	100mA	
Voltage Drop	< 2.5 V	
Switching Frequency	7 Hz	20 Hz
Ultrasonic Frequency	240 kHz	300 kHz
Switching Hysteresis	10mm	2mm
Short-Circuit Protection	Yes	
Operating Temperature	-30 to 60°C [-22 to 140°F]	
Thermal Drift	NA	
Protection Degree (DIN 40050)	IP67	
LED Indicators	Yes	
Housing Material	Stainless Steel	
Shock/Vibration	Shock test is according to standard EN 60068-2-27 Vibration test is according to standard EN 60068-2-6	
Tightening Torque	0.5 N•m [0.37 lb•ft] for mounting	
Weight lbs [oz]	0.16 [2.56]	
Connectors	5-pin M12 quick-disconnect	
IO Link	IO-Link v1.0	
Agency Approvals *	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.

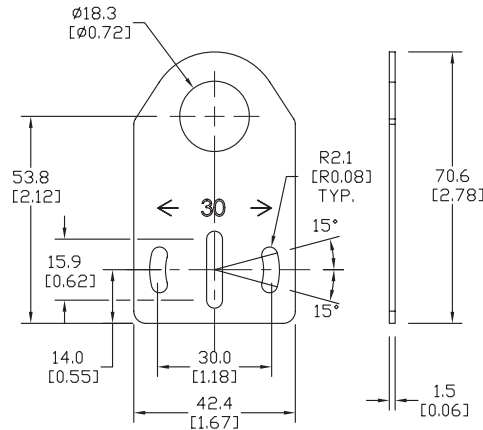
Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb [g]
<u>ST18A</u>	\$2.00	Micro Detectors mounting bracket, axial, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]
<u>ST18A7W</u>	\$7.25	Micro Detectors mounting bracket, axial, 316L stainless steel. For use with 18mm sensors.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



ST18A

Dimensions

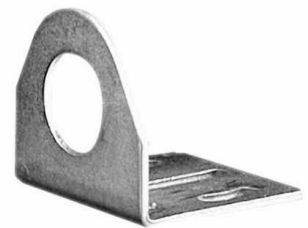
mm [inches]



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.

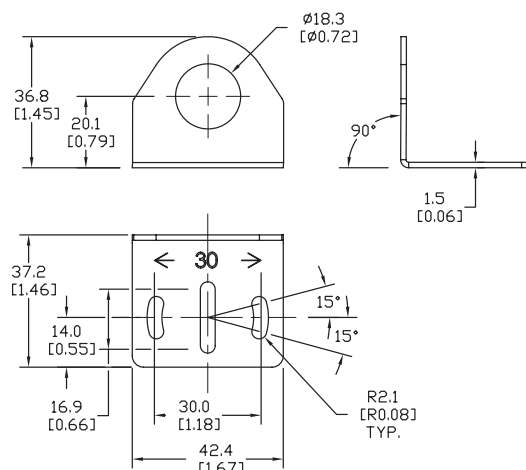
Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb [g]
<u>ST18C</u>	\$2.00	Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]
<u>ST18C7W</u>	\$7.25	Micro Detectors mounting bracket, right-angle, 316L stainless steel. For use with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



ST18C

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]
OPT2104	\$10.50	Wenglor mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors.	PDF	0.06 [27.2]
OPT2105	\$10.50	Wenglor mounting bracket, right-angle, plastic. For use with 18mm sensors.	PDF	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]
OPT2116	\$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	PDF	0.15 [68.0]
OPT2117	\$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	PDF	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).