

# SU Series Ultrasonic Sensors



## M18 (18 mm) plastic –PNP or analog output

- High resolution
- 2 PNP models with adjustable sensitivity
- 3 analog models available
- Complete overload protection
- IP67 rated
- LED status indicator on PNP models
- Purchase cable separately (for quick-disconnect model)
- Lifetime warranty



**SU Series Ultrasonic DC Output Sensor Selection Chart**

Part Number	Price	Sensing Range	Output State	Logic	Connection	Wiring
SU1-B0-0A	\$286.00	100 to 600 mm (3.94-23.62 in)	NO	PNP	2 m (6.5') axial cable	Diagram1
SU2-A0-0A	\$286.00	200 to 1500 mm (7.87-59.06 in)		PNP	2 m (6.5') axial cable	

**SU Series Ultrasonic Analog Output Sensor Selection Chart**

Part Number	Price	Sensing Range	Output	Connection	Wiring
SU1-B1-0A	\$286.00	100 to 600 mm (3.94-23.62 in)	0-10 VDC	2 m (6.5') axial cable	Diagram 2
SU1-B1-0E	\$286.00			M12 (12 mm) connector	
SU2-A1-0E	\$286.00	200 to 1500 mm (7.87-59.06 in)	M12 (12 mm) connector		

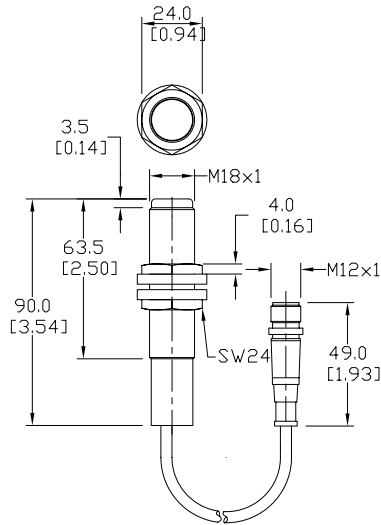
**Specifications**

	SU1-B0-0A	SU2-A0-0A	SU1-B1-0*	SU2-A1-0E
<b>Mounting Type</b>				
<b>Nominal Sensing Distance</b>	100 to 600 mm (3.94-23.62 in)	200 to 1500 mm (7.87-59.06 in)	100 to 600 mm (3.94-23.62 in)	200 to 1500 mm (7.87-59.06 in)
<b>Operating Distance</b>	NA			
<b>Output Type</b>	PNP / NO		0-10 VDC	
<b>Operating Voltage</b>	15-30 VDC		18-30 VDC	
<b>No-load Supply Current</b>			≤35 mA	
<b>Operating (Load) Current</b>	≤500 mA		≤5 mA	
<b>Off-state (Leakage) Current</b>			≤10 µA	
<b>Voltage Drop</b>	≤2.5 volts			
<b>Switching Frequency</b>	25 Hz	8 Hz	NA	
<b>Differential Travel</b>	±2.5%	±2.0%		
<b>Repeat Accuracy</b>	0.2%		±2 mm	
<b>Time Delay Before Availability (tv)</b>	≤200 ms		≤500 ms	
<b>Reverse Polarity Protection</b>	Yes			
<b>Short-Circuit Protection</b>	Yes (switch auto-resets after overload is removed)			
<b>Linearity Error</b>	-		≤0.3%	
<b>Ultrasonic Frequency</b>	300 kHz	180 kHz	300 kHz	180 kHz
<b>Ultrasonic Beam Angle</b>	8°			
<b>Max. Response Time</b>	-		50 ms	150 ms
<b>Control Input</b>	Hold / Sync			
<b>Sensitivity Adjustment</b>	Yes		-	
<b>Input Voltage Transient Protection</b>	Yes, only if transient peak does not exceed 30 VDC			
<b>Operating Temperature</b>	-25° to +70°C (-13° to 158°F)			
<b>Temperature Compensation</b>	Yes			
<b>Protection Degree</b>	IEC IP67			
<b>Indication/Switch Status</b>	Yellow (output energized)		-	
<b>Housing Material</b>	Polybutylene Terephthalate (PBT)			
<b>Shock/Vibration</b>	See <a href="#">Proximity Sensor Terminology</a>			
<b>Tightening Torque</b>	3 Nm (2.21 lb-ft)			
<b>Weight (cable/connector)</b>	54 g (1.90 oz) / 38 g (1.34 oz.)			
<b>Connection</b>	2 m (6.5') axial cable		2 m (6.5') axial cable or M12 (12 mm) connector	
<b>Agency Approvals</b>	CE, UL listed file E187310			

# SU Series Ultrasonic Sensors

## Dimensions

mm [inches]



## Wiring Diagrams

Diagram 1\*

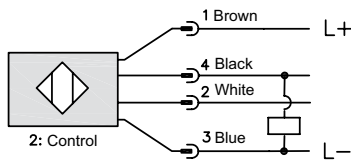
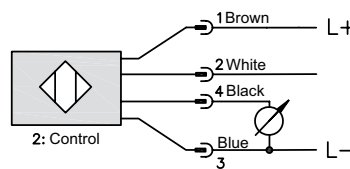


Diagram 2\*



\*Note: Control wire can be used to inhibit sensor or to synchronize with another sensor.

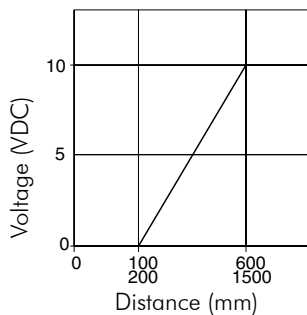
## Connector



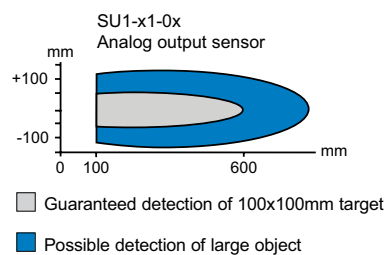
Must be used with 2M or 7M cable (4-wire)

## Characteristic Curves

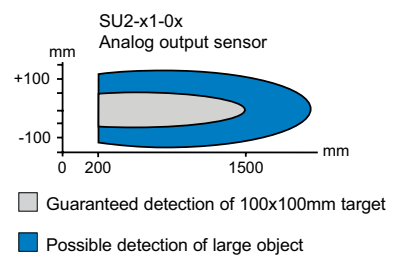
### Analog Output



### Detection Area SU1 Analog output



### Detection Area SU2 Analog output



# Accessories for 18mm Sensors

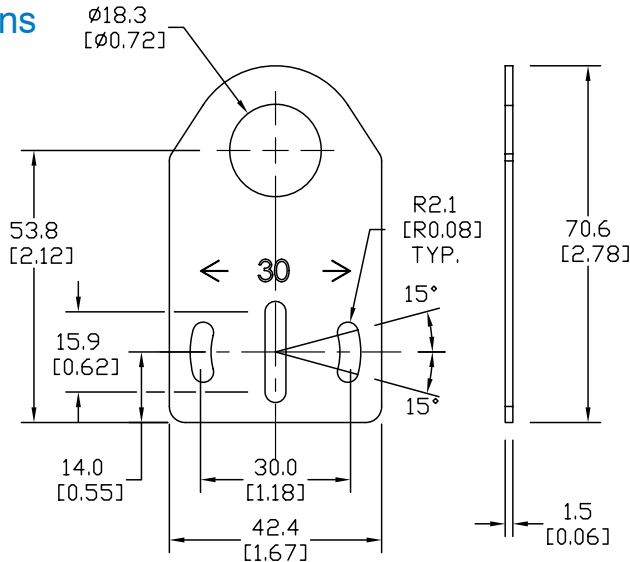
## Axial Mounting Bracket

Axial mounting bracket for use with 18mm sensors. 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.

Accessories for 18mm Sensors			
Part Number	Price	Description	Weight [lb]
ST18A	\$2.00	Mounting bracket, axial, zinc-plated steel. For use with 18mm sensors. 1/pk.	0.06
ST18A7W	\$2.00	Mounting bracket, axial, 316L stainless steel. For use with 18mm sensors. 1/pk.	0.06

### Dimensions

mm [inches]



ST18A

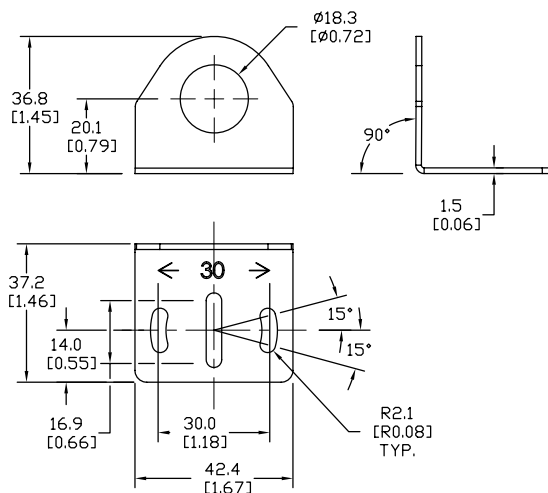
## Right-angle Mounting Bracket

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]
ST18C	\$2.00	Mounting bracket, right angle, zinc-plated steel. For use with 18mm sensors. 1/pk.	0.06
ST18C7W	\$2.00	Mounting bracket, right angle, 316L stainless steel. For use with 18mm sensors. 1/pk.	0.06

### Dimensions

mm [inches]



ST18C

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# 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.

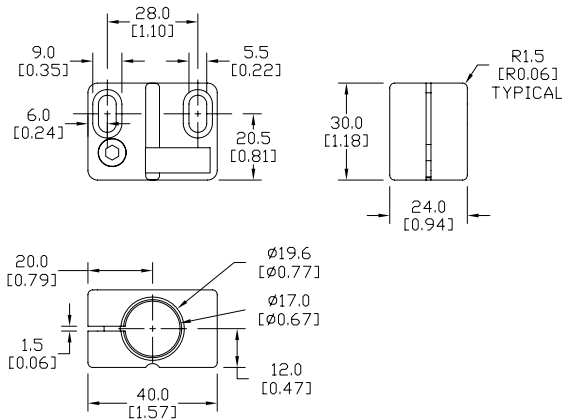
Accessories for 18mm Sensors				
Part Number	Price	Description	Weight [lb]	
<b>OPT2104</b>	\$8.25	Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors.	0.06	
<b>OPT2105</b>	\$8.25	Mounting bracket, right-angle, plastic. For use with 18mm sensors.	0.06	



**OPT2104, OPT2105**

## Dimensions

mm [inches]



## 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	Weight [lb]
<b>OPT2116</b>	\$9.25	Mounting bracket, right-angle swivel, 360 vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 18mm sensors.	Aluminum	304 Stainless Steel	0.15
<b>OPT2117</b>	\$16.50	Mounting bracket, right-angle swivel, 360 vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 18mm sensors.	304 Stainless Steel	304 Stainless Steel	0.28

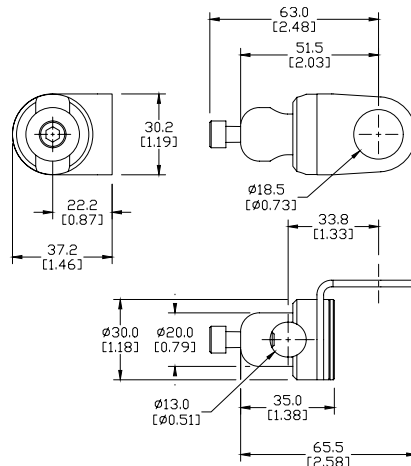
**Note:** 304 Stainless steel mounting rods sold separately: OPT2109 (200mm length), OPT2110 (300mm length), and OPT2111 (500mm length).



**OPT2116, OPT2117**

## Dimensions

mm [inches]



See our website: [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete engineering drawings

# Mounting Rods

## Mounting Rods

304 Stainless steel rods for mounting swivel brackets OPT2112 - OPT2127. Available in three lengths: 200mm, 300mm, and 500mm. 12mm diameter.

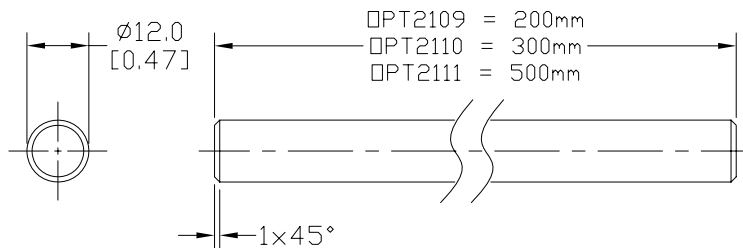
Mounting Rods for OPT2112-2127 Swivel Mounting Brackets			
Part Number	Price	Description	Weight [lb]
<b>OPT2109</b>	\$10.50	Mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	0.41
<b>OPT2110</b>	\$12.50	Mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	0.60
<b>OPT2111</b>	\$16.50	Mounting rod, 12mm diameter, 500mm length, 304 stainless steel.	0.98



**OPT2109, OPT2110, OPT2111**

## Dimensions

mm [inches]



## Right-angle Mounting Bracket

Mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.

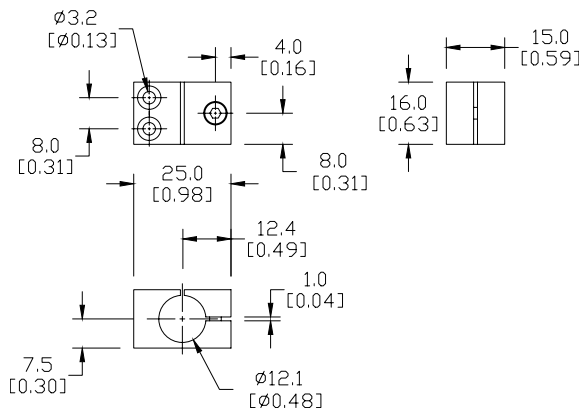
Accessories for 12mm Sensors			
Part Number	Price	Description	Weight [lb]
<b>OPT2108</b>	\$12.50	Mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.	0.07



**OPT2108**

## Dimensions

mm [inches]



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