SU Series Ultrasonic Sensors

M18 (18mm) plastic –PNP or analog output

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

NEED CABLES?

SU Series Ultrasonic DC Output Sensor Selection Chart

Part Number	Price	Sensing Range	Output State	Logic	Connection	Wiring
SU2-A0-0A	Retired	200 to 1500 mm [7.87-59.06 in]	N.O.	PNP	2m [6.5 ft] axial cable	Diagram 1

SU Series Ultrasonic Analog Output Sensor Selection Chart

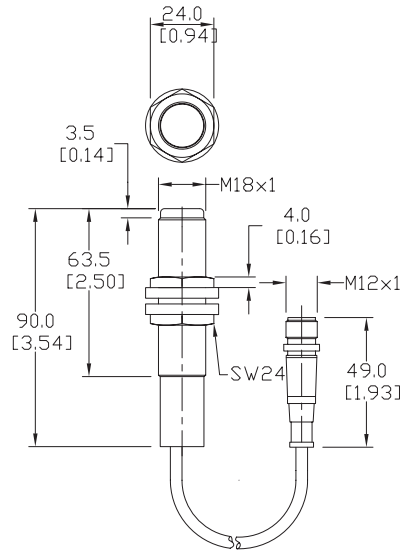| Part Number	Price	Sensing Range	Output	Connection	Wiring
SU1-B1-0E	<----->	100 to 600 mm [3.94-23.62 in]	0-10 VDC	M12 [12mm] connector	Diagram 2
SU2-A1-0E	<----->	200 to 1500 mm [7.87-59.06 in]	0-10 VDC	M12 [12mm] connector	Diagram 2

Specifications

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

To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

SU Series Ultrasonic Sensors

Dimensions

mm [inches]

24.0 [0.94]
3.5 [0.14]
M18×1
4.0 [0.16]
63.5 [2.50]
M12×1
90.0 [3.54]
49.0 [1.93]
SW24

Wiring Diagrams

Diagram 1*

1 Brown — L+
4 Black
2 White
3 Blue — L−

2: Control

Diagram 2*

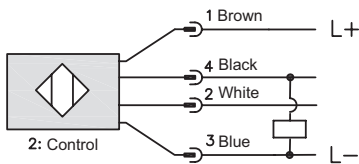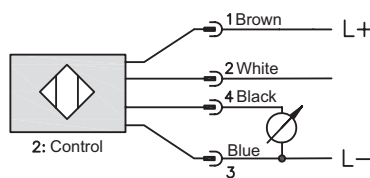1 Brown — L+
2 White
4 Black
Blue — L−
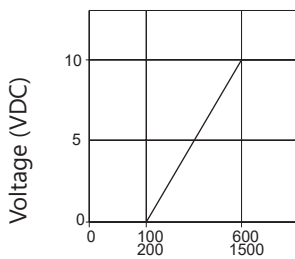3

2: Control

Connector

2   1
3   4

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

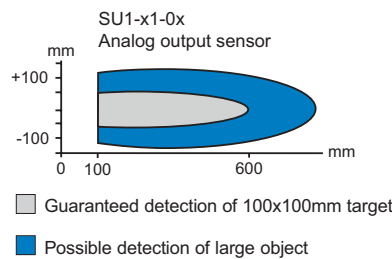*Note: Control wire can be used to inhibit sensor or to synchronize with another sensor.*
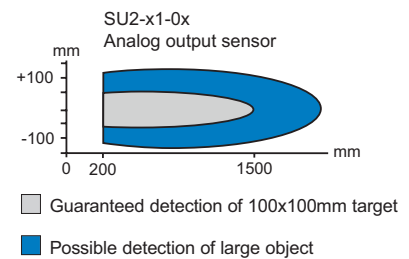
Characteristic Curves

Analog Output

Voltage (VDC)
10
5
0
0   100   600
200   1500

Distance (mm)

**Detection Area
SU1 Analog output**

SU1-x1-0x
Analog output sensor

mm
+100
-100
0   100   600   mm

☐ Guaranteed detection of 100x100mm target

■ Possible detection of large object

**Detection Area
SU2 Analog output**

SU2-x1-0x
Analog output sensor

mm
+100
-100
0   200   1500   mm

☐ Guaranteed detection of 100x100mm target

■ Possible detection of large object

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.
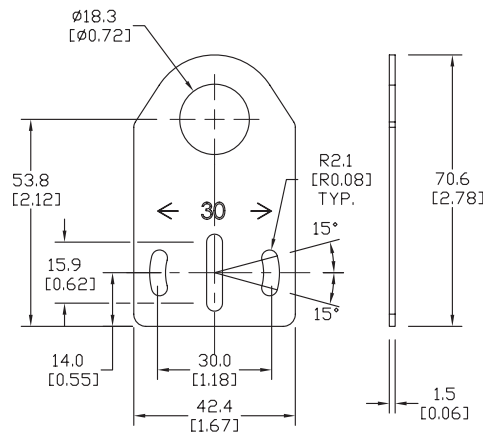
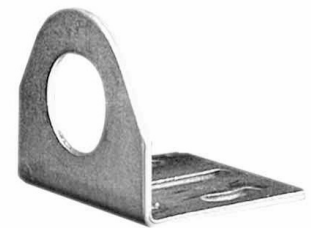| Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb [g]
ST18A	<----->	Micro Detectors mounting bracket, axial, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]
ST18A7W	<----->	Micro Detectors mounting bracket, axial, 316L stainless steel. For use with 18mm sensors.	0.06 [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.
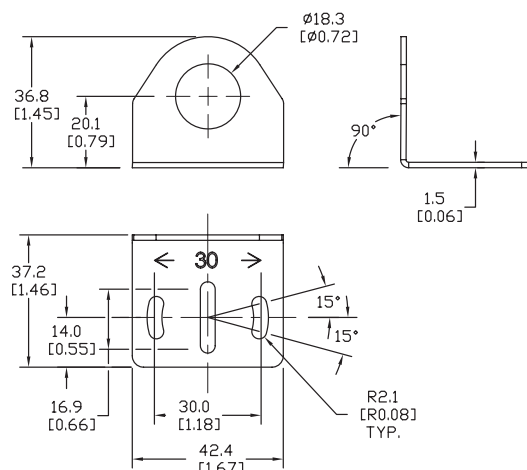
Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb [g]
ST18C	<----->	Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]
ST18C7W	<----->	Micro Detectors mounting bracket, right-angle, 316L stainless steel. For use with 18mm sensors.	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	<----->	Wenglor mounting bracket, right-angle, ixed insertion stop adjustment, plastic. For use with 18mm sensors.	PDF	0.06 [27.2]
OPT2105	<----->	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	<----->	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	<----->	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]

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).

OPT2116, OPT2117

For the latest prices, please check AutomationDirect.com.

Mounting Rods and Brackets

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	Drawing Link	Weight lb (g)
OPT2109	<----->	Wenglor mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	PDF	0.41 [185.97]
OPT2110	<----->	Wenglor mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	PDF	0.60 [272.16]
OPT2111	<----->	Wenglor mounting rod, 12mm diameter, 500mm length, 304 stainless steel.	PDF	0.98 [444.52]

Right-angle Mounting Bracket

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

Right-angle Mounting Brackets for 12mm Sensors				
Part Number	Price	Description	Drawing Link	Weight lb [g]
OPT2108	<----->	Wenglor mounting bracket, right-angle, nickel plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.	PDF	0.07 [31.8]