

# UK6 Series Ultrasonic Sensors

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

- 15 to 30 VDC
- Discrete models available with adjustable sensitivity
- Analog output models available
- Models available with analog or discrete switching outputs
- Short body for flexible mounting
- Complete overload protection
- IP67 rated
- LED status indicators
- Mounting hex nuts included
- Purchase cable for M12 plug separately
- Lifetime warranty



**UK6A-D1-0A with  
2m Output Cable**



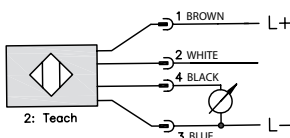
**UK6A-D1-0E with  
M12 Quick Disconnect**

UK6A Series Ultrasonic Discrete or Analog Output Sensor Selection Chart						
Part Number	Price	Sensing Range	Output State	Connection	Wiring	Function
<b>UK6A-D1-0A</b>	\$99.00	40-300 mm (1.57— 11.81 in)	0-10 VDC analog output	2 m output cable	Diagram 1	2
<b>UK6A-D1-0E</b>	\$95.00		0-10 VDC analog output	M12 quick disconnect	Diagram 1	2
<b>UK6A-D2-0A</b>	\$99.00		4-20 mA analog output	2 m output cable	Diagram 1	2
<b>UK6A-D2-0E</b>	\$95.00		4-20 mA analog output	M12 quick disconnect	Diagram 1	2
<b>UK6A-DN-0A</b>	\$99.00		NPN, NO/NC selectable	2 m output cable	Diagram 2	1
<b>UK6A-DN-0E</b>	\$89.00		NPN, NO/NC selectable	M12 quick disconnect	Diagram 2	1
<b>UK6A-DP-0A</b>	\$99.00		PNP, NO/NC selectable	2 m output cable	Diagram 3	1
<b>UK6A-DP-0E</b>	\$89.00		PNP, NO/NC selectable	M12 quick disconnect	Diagram 3	1

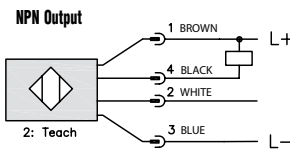
UK6C Series Ultrasonic Discrete or Analog Output Sensor Selection Chart						
Part Number	Price	Sensing Range	Output State	Connection	Wiring	Function
<b>UK6C-D1-0A</b>	\$110.00	120-900 mm (4.72 to 35.43 in)	0-10 VDC analog output	2 m output cable	Diagram 1	2
<b>UK6C-D1-0E</b>	\$105.00		0-10 VDC analog output	M12 quick disconnect	Diagram 1	2
<b>UK6C-D2-0A</b>	\$110.00		4-20 mA analog output	2 m output cable	Diagram 1	2
<b>UK6C-D2-0E</b>	\$105.00		4-20 mA analog output	M12 quick disconnect	Diagram 1	2
<b>UK6C-DN-0A</b>	\$110.00		NPN, NO/NC selectable	2 m output cable	Diagram 2	1
<b>UK6C-DN-0E</b>	\$105.00		NPN, NO/NC selectable	M12 quick disconnect	Diagram 2	1
<b>UK6C-DP-0A</b>	\$110.00		PNP, NO/NC selectable	2 m output cable	Diagram 3	1
<b>UK6C-DP-0E</b>	\$105.00		PNP, NO/NC selectable	M12 quick disconnect	Diagram 3	1

## Wiring Diagrams

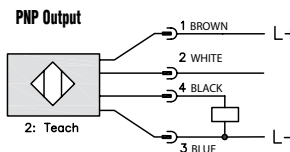
**Diagram 1**



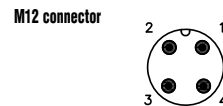
**Diagram 2**



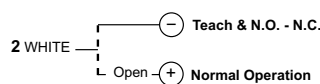
**Diagram 3**



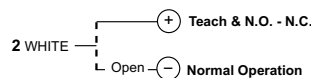
**Connector**



For Diagram 1 and 2



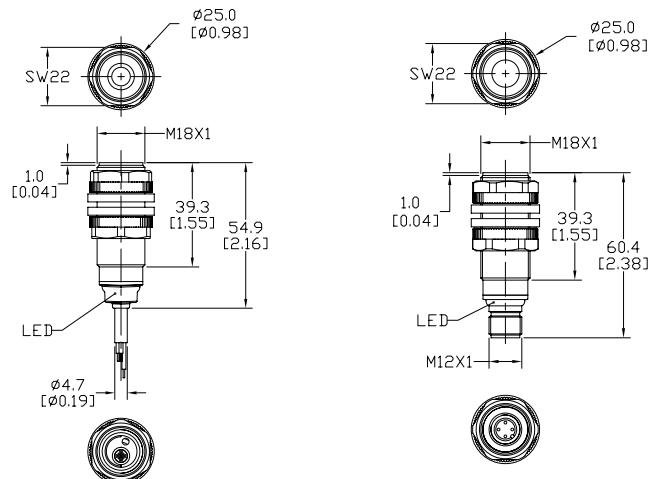
For Diagram 3



# UK6 Series Ultrasonic Sensors

Specifications		
Model	UK6A	UK6C
Nominal Sensing Distance	40-300 mm (1.57 to 11.81 in)	120-900 mm (4.72 to 35.43 in)
Operating Distance (Sensing Range)	40-300 mm (1.57 to 11.81 in)	120-900 mm (4.72 to 35.43 in)
Output Type	See "Output State" column in selection chart	
Operating Voltage	15-30 VDC	
No-load Supply Current	≤35 mA	
Operating (Load) Current	100 mA	
Off-state (Leakage) Current	10 µA @ 30 VDC	
Analog Output	Voltage: minimum load is 3 kOhms / Current: maximum load is 500 Ohms at 24 VDC supply	
Voltage Drop	2.2 volts max@ 100 mA	
Switching Frequency	20Hz	6Hz
Repeat Accuracy	2%	
Time Delay Before Availability (tv)	≤ 300 ms (digital output) ≤ 900 ms (analog output)	
Reverse Polarity Protection	Yes	
Short-Circuit Protection	Yes	
Linearity Error	<3%	
Ultrasonic Frequency	300 kHz	
Ultrasonic Beam Angle	± 10°	± 8°
Max. Response Time (digital output)	25 ms	83 ms
Sensitivity Adjustment	Remote teach-in via cable	
Input Voltage Transient Protection	Yes	
Operating Temperature	-20° to -60°C (-4° to 140°F)	
Temperature Compensation	Yes	
Protection Degree	IEC IP67	
Indication/Switch Status	Multi-function LED indicator	
Housing Material	Polybutylene Terephthalate (PBT)	
Shock/Vibration	See <a href="#">Proximity Sensor Terminology</a>	
Tightening Torque	1Nm (0.737 lb-ft)	
Weight	15 g (0.53 oz) (plug exit) 80 g (2.82 oz) (cable exit)	
Connection	M12 (12 mm) connector or 2 m prewired output cable	
Agency Approvals	CE, cULus file E187310, RoHS	

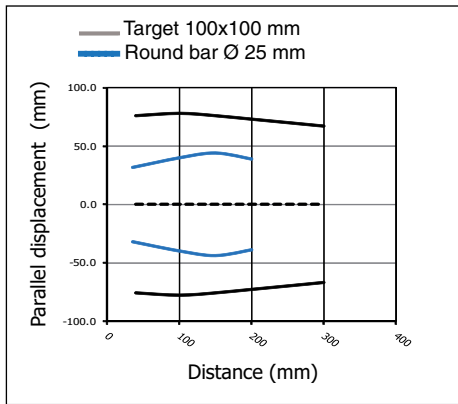
## Dimensions mm [inches]



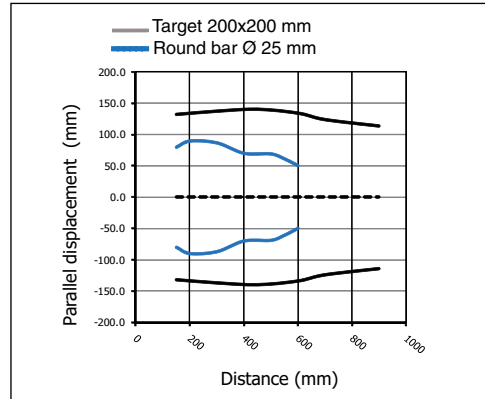
# UK6 Series Ultrasonic Sensors

## Characteristic Curves

### UK6A models

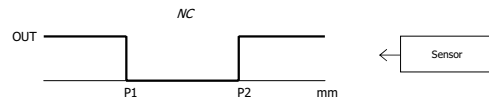
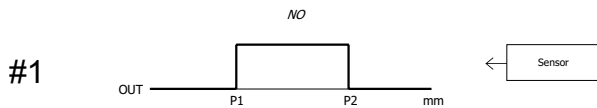


### UK6C models

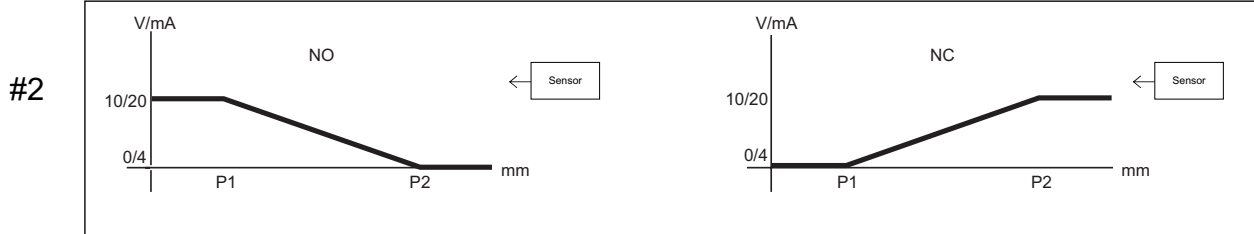


## Functions

### Models with single digital output



### Models with single analog output



# Accessories for 18mm Sensors

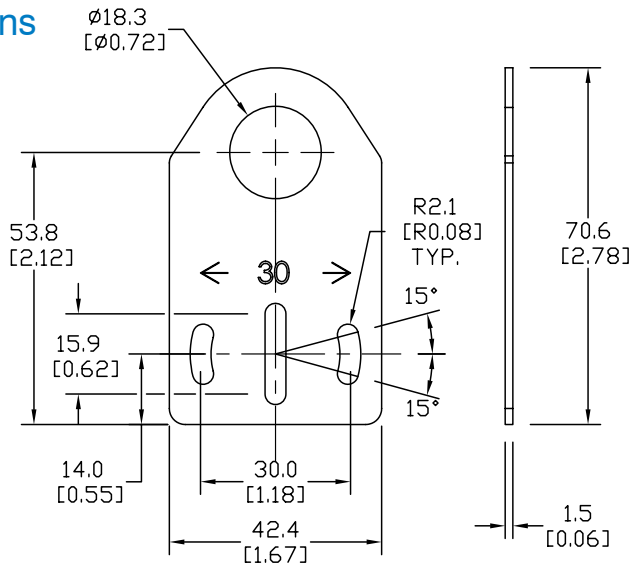
## Axial Mounting Bracket

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	\$1.25	Mounting bracket, axial, zinc-plated steel. For use with 18mm sensors. 1/pk.	0.06
ST18A7W	\$6.00	Mounting bracket, axial, 316L stainless steel. For use with 18mm sensors. 1/pk.	0.06

### Dimensions

mm [inches]



ST18A

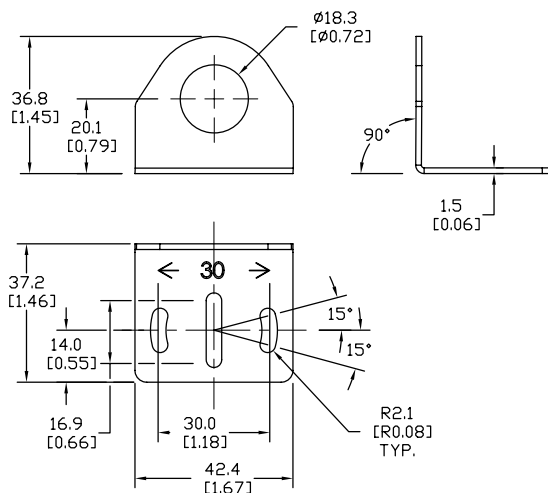
## Right-angle Mounting Bracket

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	\$1.25	Mounting bracket, right angle, zinc-plated steel. For use with 18mm sensors. 1/pk.	0.06
ST18C7W	\$6.00	Mounting bracket, right angle, 316L stainless steel. For use with 18mm sensors. 1/pk.	0.06

### Dimensions

mm [inches]



ST18C

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

# 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.

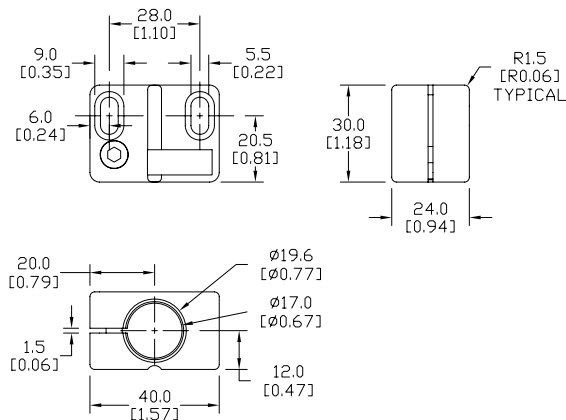
Accessories for 18mm Sensors				
Part Number	Price	Description	Weight [lb]	
<b>OPT2104</b>	\$8.00	Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors.	0.06	
<b>OPT2105</b>	\$8.00	Mounting bracket, right-angle, plastic. For use with 18mm sensors.	0.06	



**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>	\$9.00	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>	\$16.00	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

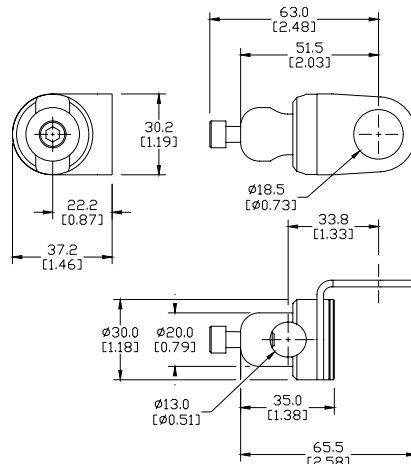
**Note: 304 Stainless steel mounting rods sold separately: OPT2109 (200mm length), OPT2110 (300mm length), and OPT2111 (500mm length).**



**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.

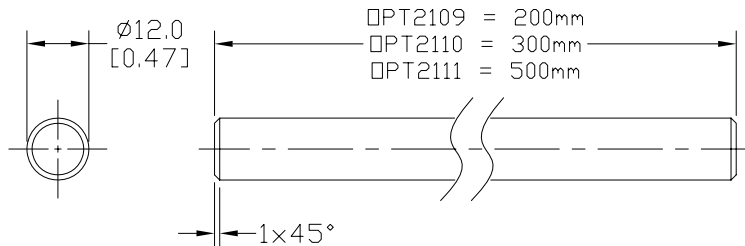
Mounting Rods for OPT2112-2127 Swivel Mounting Brackets			
Part Number	Price	Description	Weight [lb]
<b>OPT2109</b>	\$10.00	Mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	0.41
<b>OPT2110</b>	\$12.00	Mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	0.60
<b>OPT2111</b>	\$16.00	Mounting rod, 12mm diameter, 500mm length, 304 stainless steel.	0.98



**OPT2109, OPT2110, OPT2111**

## Dimensions

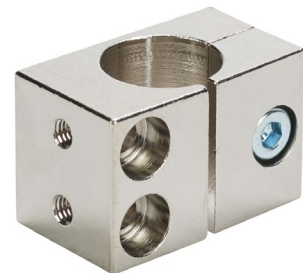
mm [inches]



## Right-angle Mounting Bracket

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

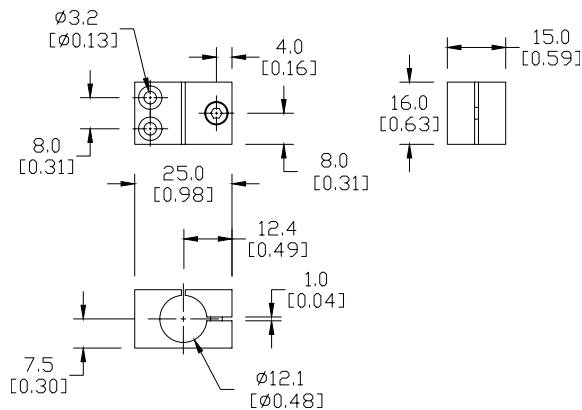
Accessories for 12mm Sensors			
Part Number	Price	Description	Weight [lb]
<b>OPT2108</b>	\$12.00	Mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.	0.07



**OPT2108**

## Dimensions

mm [inches]



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