

# UK6 Series Ultrasonic Sensors

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

- 10 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

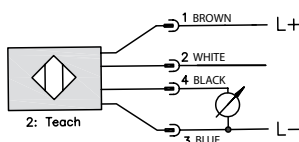
Part Number	Price	Sensing Range	Output State	Connection	Wiring	Function
<a href="#">UK6A-D1-0A</a>	\$132.00	40-300 mm [1.57 to 11.81 in]	0-10 VDC analog output	2m [6.5 ft] output cable	Diagram 1	2
<a href="#">UK6A-D1-0E</a>	\$127.00		0-10 VDC analog output	M12 quick-disconnect	Diagram 1	2
<a href="#">UK6A-D2-0A</a>	\$132.00		4-20mA analog output	2m [6.5 ft] output cable	Diagram 1	2
<a href="#">UK6A-D2-0E</a>	\$127.00		4-20mA analog output	M12 quick-disconnect	Diagram 1	2
<a href="#">UK6A-DN-0A</a>	\$132.00		NPN, N.O./N.C. selectable	2m [6.5 ft] output cable	Diagram 2	1
<a href="#">UK6A-DN-0E</a>	\$120.00		NPN, N.O./N.C. selectable	M12 quick-disconnect	Diagram 2	1
<a href="#">UK6A-DP-0A</a>	\$132.00		PNP, N.O./N.C. selectable	2m [6.5 ft] output cable	Diagram 3	1
<a href="#">UK6A-DP-0E</a>	\$120.00		PNP, N.O./N.C. 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
<a href="#">UK6C-D1-0A</a>	\$149.00	60-800 mm [2.36-31.50 in]	0-10 VDC analog output	2m [6.5 ft] output cable	Diagram 1	2
<a href="#">UK6C-D1-0E</a>	\$143.00		0-10 VDC analog output	M12 quick-disconnect	Diagram 1	2
<a href="#">UK6C-D2-0A</a>	\$149.00		4-20mA analog output	2m [6.5 ft] output cable	Diagram 1	2
<a href="#">UK6C-D2-0E</a>	\$143.00		4-20mA analog output	M12 quick-disconnect	Diagram 1	2
<a href="#">UK6C-DN-0A</a>	\$149.00		NPN, N.O./N.C. selectable	2m [6.5 ft] output cable	Diagram 2	1
<a href="#">UK6C-DN-0E</a>	\$143.00		NPN, N.O./N.C. selectable	M12 quick-disconnect	Diagram 2	1
<a href="#">UK6C-DP-0A</a>	\$149.00		PNP, N.O./N.C. selectable	2m [6.5 ft] output cable	Diagram 3	1
<a href="#">UK6C-DP-0E</a>	\$143.00		PNP, N.O./N.C. selectable	M12 quick-disconnect	Diagram 3	1

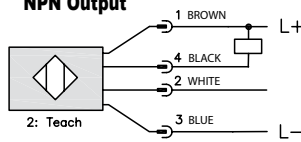
## Wiring Diagrams

**Diagram 1**



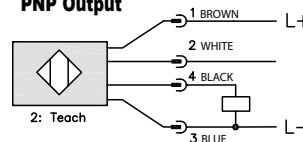
**Diagram 2**

**NPN Output**



**Diagram 3**

**PNP Output**

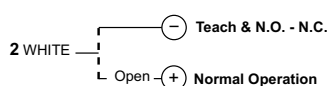


**Connector**

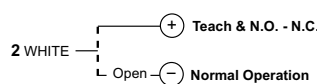
**M12 connector**



**For Diagram 1 and 2**



**For Diagram 3**



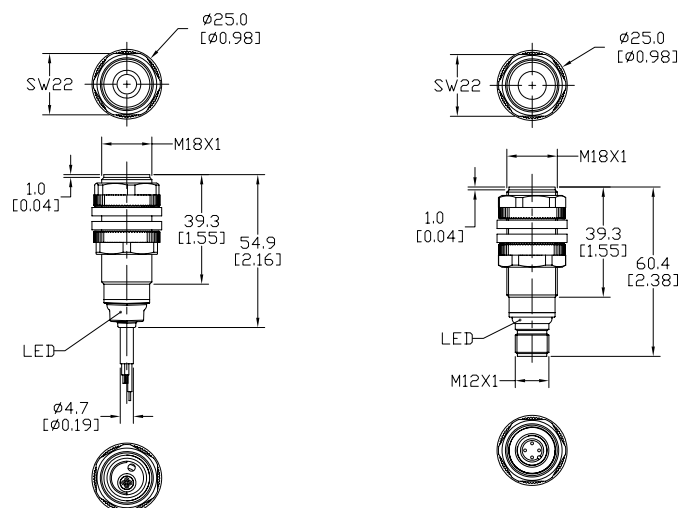
# UK6 Series Ultrasonic Sensors

Specifications		
Model	UK6A	UK6C
Nominal Sensing Distance	40-300 mm [1.57 to 11.81 in]	60-800 mm [2.36-31.50 in]
Operating Distance (Sensing Range)	40-300 mm [1.57 to 11.81 in]	60-800 mm [2.36-31.50 in]
Output Type	See "Output State" column in selection chart	
Operating Voltage	10-30 VDC	
No-load Supply Current	≤ 35mA	
Operating (Load) Current	100mA	
Off-state (Leakage) Current	10μA @ 30VDC	
Analog Output	Voltage: minimum load is 3kΩ / Current: maximum load is 500Ω at 24VDC supply	
Voltage Drop	2.2 volts max@ 100 mA	
Switching Frequency	20Hz	6Hz
Repeat Accuracy	2%	
Time Delay Before Availability (tv)	≤ 300ms (digital output) ≤ 900ms (analog output)	
Reverse Polarity Protection	Yes	
Short-Circuit Protection	Yes	
Linearity Error	<3%	
Ultrasonic Frequency	300kHz	
Ultrasonic Beam Angle	± 10°	± 8°
Max. Response Time (digital output)	25ms	83ms
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	1N•m [0.737 lb•ft]	
Weight	15g [0.53 oz] (plug exit) 80g [2.82 oz] (cable exit)	
Connection	M12 [12mm] connector or 2m [6.5 ft] prewired output cable	
Agency Approvals	CE, cULus file E187310, RoHS	

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

## Dimensions

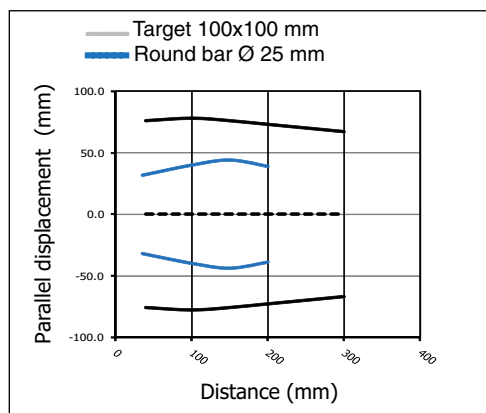
mm [inches]



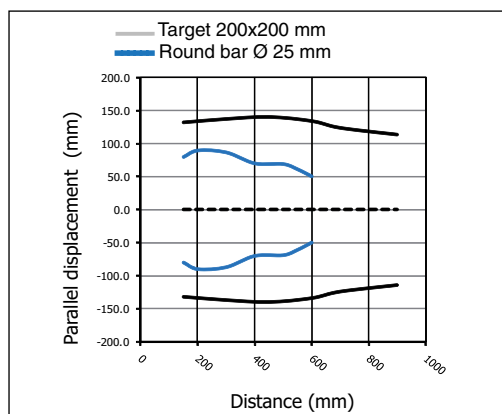
# UK6 Series Ultrasonic Sensors

## Characteristic Curves

UK6A models



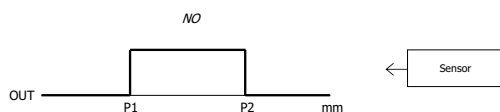
UK6C models



## Functions

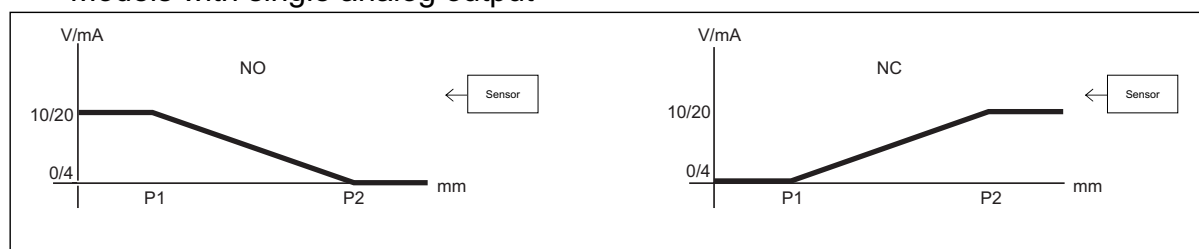
### Models with single digital output

#1



### Models with single analog output

#2



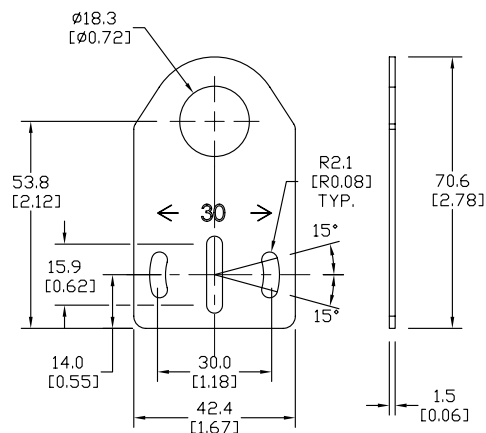
Axial mounting bracket available in zinc plated steel or 316L stainless steel. Has two mounting holes (use 4mm screws) and allows for rotation of an optical axis for right-beam-angle-adaptor sensors. Hexagonal nuts not included. For use with 18mm sensors.

Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb [g]
<u><b>ST18A</b></u>	\$2.25	Micro Detectors mounting bracket, axial, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]
<u><b>ST18A7W</b></u>	\$8.00	Micro Detectors mounting bracket, axial, 316L stainless steel. For use with 18mm sensors.	0.06 [27.2]



**ST18A**

mm [inches]



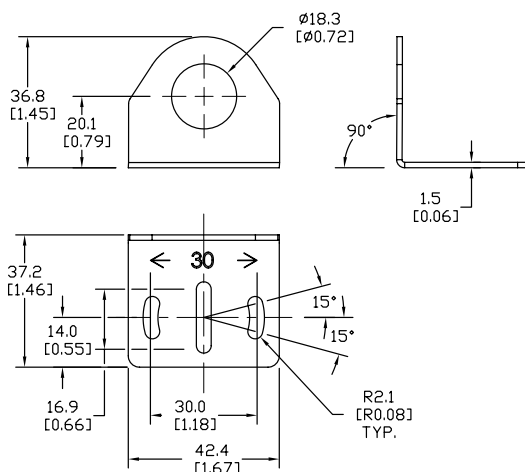
Right-angle mounting bracket for use with 18mm sensors. Has two mounting holes (use 4mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal nuts not included.

Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb [g]
<u><b>ST18C</b></u>	\$2.25	Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]
<u><b>ST18C7W</b></u>	\$8.00	Micro Detectors mounting bracket, right-angle, 316L stainless steel. For use with 18mm sensors.	0.06 [27.2]



**ST18C**

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>	\$11.50	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>	\$11.50	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>	\$12.50	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	<a href="#">PDF</a>	0.15 [68.0]
<a href="#">OPT2117</a>	\$22.50	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 [7.87 in] length), [OPT2110](#) (300mm [11.81 in] length), and [OPT2111](#) (500mm [19.69 in] length).

# 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)
<a href="#">OPT2109</a>	\$14.00	Wenglor mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	<a href="#">PDF</a>	0.41 [185.97]
<a href="#">OPT2110</a>	\$17.50	Wenglor mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	<a href="#">PDF</a>	0.60 [272.16]
<a href="#">OPT2111</a>	\$22.50	Wenglor mounting rod, 12mm diameter, 500mm length, 304 stainless steel.	<a href="#">PDF</a>	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]
<a href="#">OPT2108</a>	\$17.50	Wenglor mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods <a href="#">OPT2109</a> , <a href="#">OPT2110</a> & <a href="#">OPT2111</a> .	<a href="#">PDF</a>	0.07 [31.8]

