

# UQ1 Series Ultrasonic Sensors

## M18 (18mm) Cubic Plastic – Discrete or analog output



**UQ1A-GN-0E**

- 10 to 30VDC
- Discrete models available with adjustable sensitivity
- Analog output models available
- Models available with analog and discrete switching outputs
- IP67 rated
- LED status indicators
- Mounting hex nut included
- Purchase cable for M12 plug separately
- Lifetime warranty



### UQ1A Series Ultrasonic Discrete or Analog Output Sensor Selection Chart

Part Number	Price	Sensing Range	Output State	Connection	Wiring	Function
<a href="#">UQ1A-GN-0E</a>	\$112.00	40 to 300 mm [1.57 to 11.81 in]	NPN, N.O./N.C. selectable	M12 quick-disconnect	Diagram 1	1
<a href="#">UQ1A-GP-0E</a>	\$112.00		PNP, N.O./N.C. selectable	M12 quick-disconnect	Diagram 2	1
<a href="#">UQ1A-G6-0E</a>	\$115.00		4–20 mA analog output, PNP, N.O./N.C. selectable	M12 quick-disconnect	Diagram 3	2
<a href="#">UQ1A-G7-0E</a>	\$115.00		0–10 VDC analog output, PNP, N.O./N.C. selectable	M12 quick-disconnect	Diagram 3	2

### UQ1C Series Ultrasonic Discrete or Analog Output Sensor Selection Chart

Part Number	Price	Sensing Range	Output State	Connection	Wiring	Function
<a href="#">UQ1C-GN-0E</a>	\$115.00	60 to 800 mm [2.36 to 31.50 in]	NPN, N.O./N.C. selectable	M12 quick-disconnect	Diagram 1	1
<a href="#">UQ1C-GP-0E</a>	\$115.00		PNP, N.O./N.C. selectable	M12 quick-disconnect	Diagram 2	1
<a href="#">UQ1C-G6-0E</a>	\$119.00		4–20 mA analog output, PNP, N.O./N.C. selectable	M12 quick-disconnect	Diagram 3	2
<a href="#">UQ1C-G7-0E</a>	\$119.00		0–10 VDC analog output, PNP, N.O./N.C. selectable	M12 quick-disconnect	Diagram 3	2

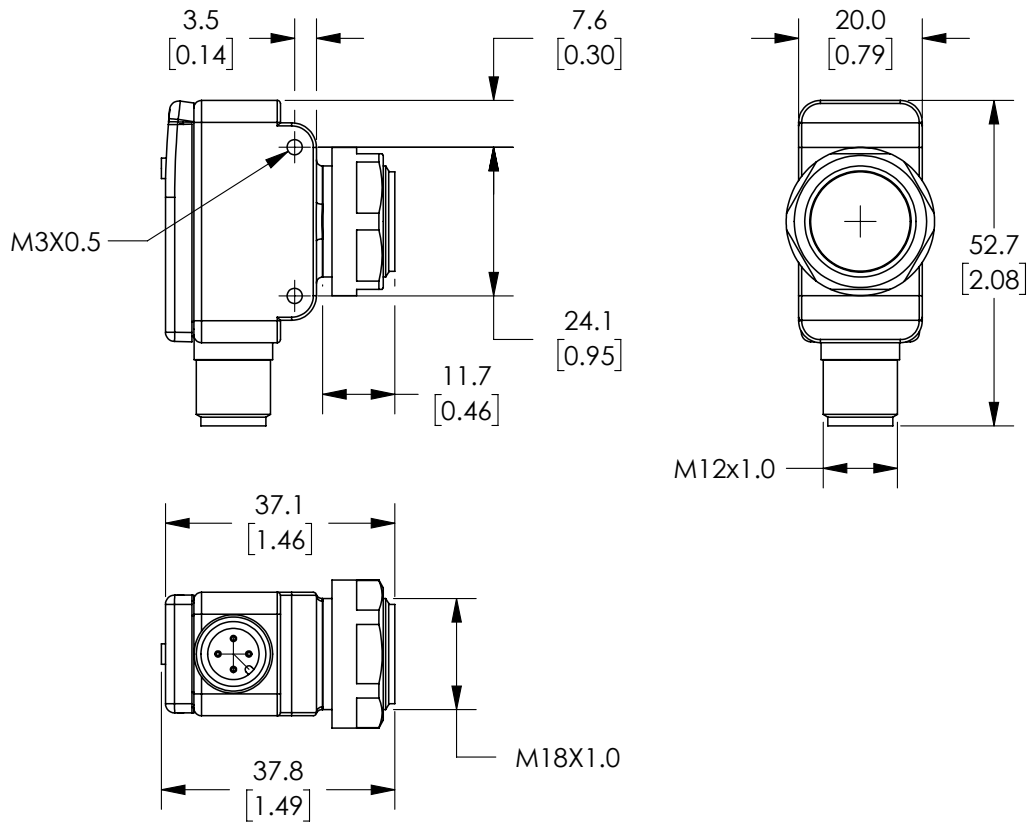
### UQ1D Series Ultrasonic Discrete or Analog Output Sensor Selection Chart

Part Number	Price	Sensing Range	Output State	Connection	Wiring	Function
<a href="#">UQ1D-GN-0E</a>	\$119.00	80 to 1200 mm [3.15 to 47.24 in]	NPN, N.O./N.C. selectable	M12 quick-disconnect	Diagram 1	1
<a href="#">UQ1D-GP-0E</a>	\$119.00		PNP, N.O./N.C. selectable	M12 quick-disconnect	Diagram 2	1
<a href="#">UQ1D-G6-0E</a>	\$126.00		4–20 mA analog output, PNP, N.O./N.C. selectable	M12 quick-disconnect	Diagram 3	2
<a href="#">UQ1D-G7-0E</a>	\$126.00		0–10 VDC analog output, PNP, N.O./N.C. selectable	M12 quick-disconnect	Diagram 3	2

# UQ1 Series Ultrasonic Sensors

## Dimensions

mm [inch]



# UQ1 Series Ultrasonic Sensors

Specifications			
Model	UQ1A	UQ1C	UQ1D
Nominal Sensing Distance	40 to 300mm [1.57 to 11.81 in]	60 to 800mm [2.36 to 31.50 in]	80 to 1200mm [3.15 to 47.24 in]
Operating Distance (Sensing Range)	40 to 300mm [1.57 to 11.81 in]	60 to 800mm [2.36 to 31.50 in]	80 to 1200mm [3.15 to 47.24 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 V max @ 100mA		
Switching Frequency	8Hz	5Hz	3Hz
Repeat Accuracy	1%		
Time Delay Before Availability (tv)	≤ 400ms		
Reverse Polarity Protection	Yes		
Short-Circuit Protection	Yes		
Linearity Error	< 1%		
Ultrasonic Frequency	300kHz	230kHz	200kHz
Ultrasonic Beam Angle	7° ± 2°	8° ± 2°	8° ± 2°
Max. Response Time (digital output)	400ms	400ms	400ms
Sensitivity Adjustment	Yes, via teach-in button		
Input Voltage Transient Protection	Yes		
Operating Temperature	-20 to 70°C [-4 to 158°F]		
Temperature Compensation	Yes		
Protection Degree	IEC IP67		
Indication/Switch Status	Multi-function LED indicator		
Housing Material	Polybutylene Terephthalate [PBT]		
Shock/Vibration	IEC 69047-5-2/7.4		
Tightening Torque	1 N•m [0.737 lb•ft]		
Weight	30g [1.06 oz]		
Connection	M12 [12mm] connector		
Agency Approvals	CE, cULus file E187310		

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

## Wiring Diagrams

Diagram 1

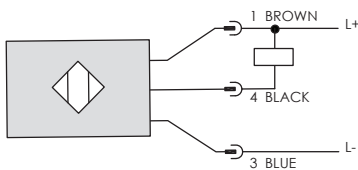
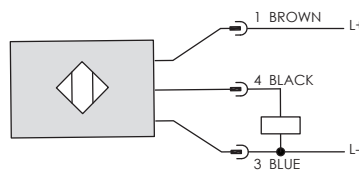


Diagram 2



Connector

M12 connector

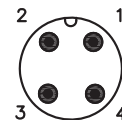
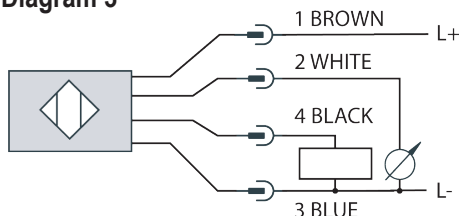
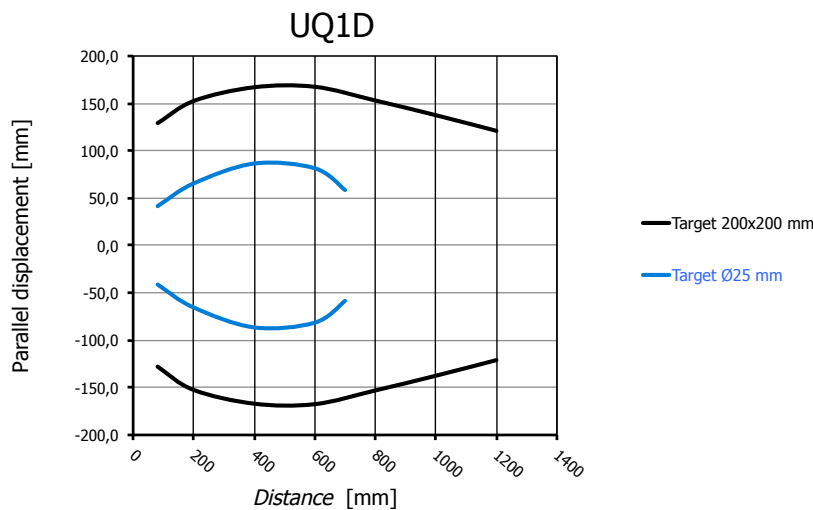
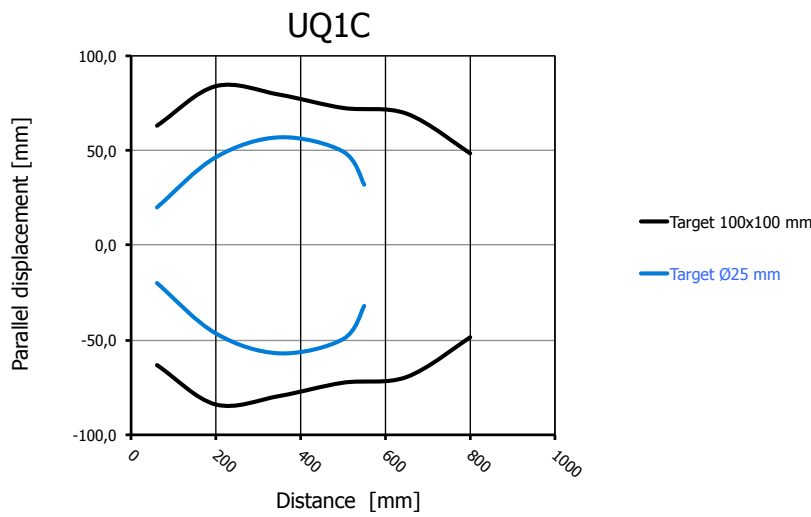
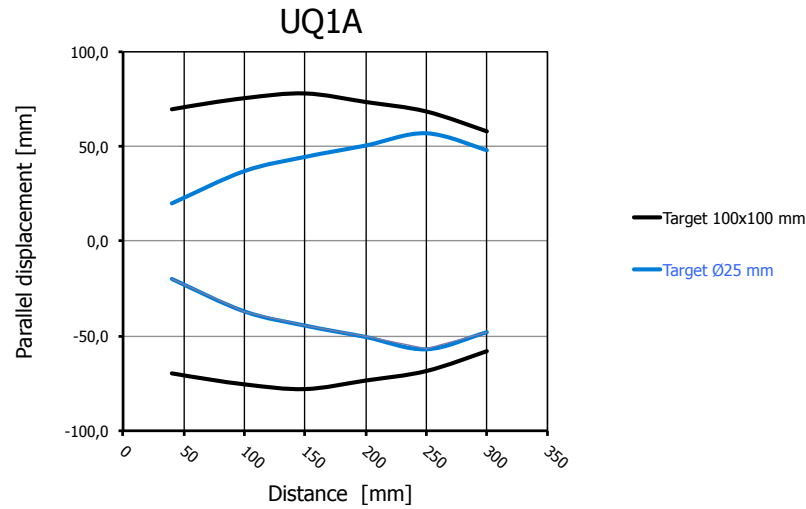


Diagram 3



# UQ1 Series Ultrasonic Sensors

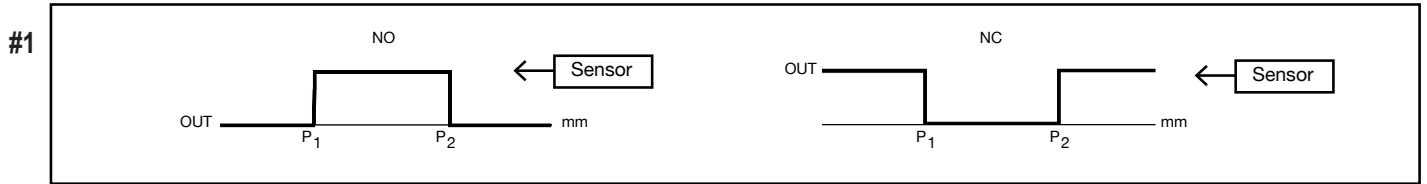
## Characteristic Curves



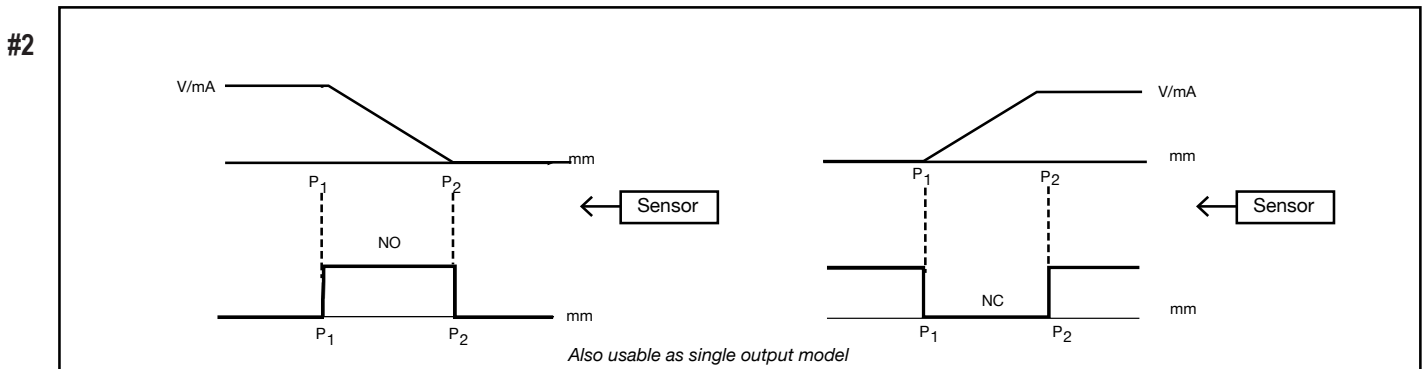
# UQ1 Series Ultrasonic Sensors

## Functions

### Models with single digital output



### Models with digital output + analog output



**Note:** P<sub>1</sub> maximum selected working distance and first point to select  
 P<sub>2</sub> minimum selected working distance and second point to select

# 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.

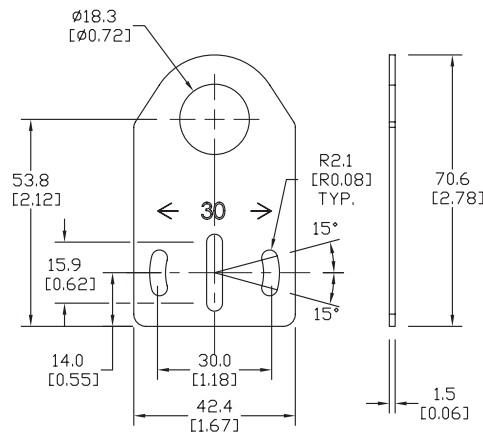


**ST18A**

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

## 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.

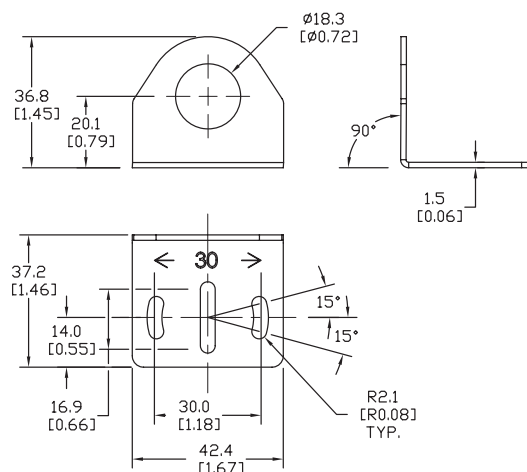


**ST18C**

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

## 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]
<a href="#">OPT2104</a>	\$10.50	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>	\$10.50	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>	\$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	<a href="#">PDF</a>	0.15 [68.0]
<a href="#">OPT2117</a>	\$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	<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>	\$13.00	Wenglor mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	<a href="#">PDF</a>	0.41 [185.97]
<a href="#">OPT2110</a>	\$16.00	Wenglor mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	<a href="#">PDF</a>	0.60 [272.16]
<a href="#">OPT2111</a>	\$21.00	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>	\$16.00	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]

