

# UT1 Series Ultrasonic Sensors

## M30 (30 mm) plastic – Discrete or analog output

- 12-30 VDC, 15 to 30 VDC (0 to 10 VDC)
- Discrete models available with adjustable sensitivity
- Analog output models available
- Models available with analog and discrete switching outputs
- Complete overload protection
- IP67 rated
- LED status indicators
- Mounting hex nuts included
- Purchase cable for M12 plug separately
- Lifetime warranty



UT1B-E4-0E

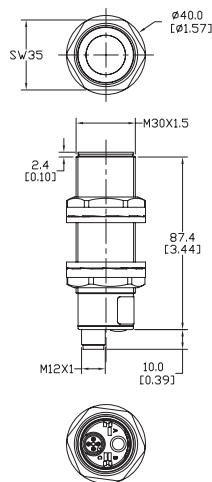


UT1B-E4-0A

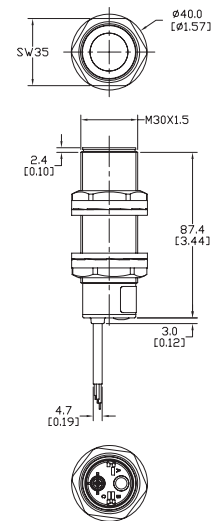
UT 1B Series Ultrasonic Discrete or Analog Output Sensor Selection Chart						
Part Number	Price	Sensing Range	Output State	Connection	Wiring	Function
UT1B-E4-0E	\$185.00	250 to 3500 mm (9.84 to 137.8 in)	4 to 20 mA analog output, NPN, NO/NC selectable	M12 quick disconnect	Diagram 1	1
UT1B-E4-0A	\$189.00		4 to 20 mA analog output, NPN, NO/NC selectable	2 m output cable	Diagram 1	1
UT1B-E6-0E	\$185.00		4 to 20 mA analog output, PNP, NO/NC selectable	M12 quick disconnect	Diagram 2	1
UT1B-E6-0A	\$189.00		4 to 20 mA analog output, PNP, NO/NC selectable	2 m output cable	Diagram 2	1
UT1B-E7-0E	\$185.00		0 to 10 VDC analog output, PNP, NO/NC selectable	M12 quick disconnect	Diagram 2	1
UT1B-E7-0A	\$189.00		0 to 10 VDC analog output, PNP, NO/NC selectable	2 m output cable	Diagram 2	1
UT1B-E9-0E	\$185.00		0 to 10 VDC analog output, NPN, NO/NC selectable	M12 quick disconnect	Diagram 1	1
UT1B-E9-0A	\$189.00		0 to 10 VDC analog output, NPN, NO/NC selectable	2 m output cable	Diagram 1	1
UT1B-EM-0E	\$185.00		NPN, 2 outputs, hysteresis + window functions	M12 quick disconnect	Diagram 3	2
UT1B-EM-0A	\$189.00		NPN, 2 outputs, hysteresis + window functions	2 m output cable	Diagram 3	2
UT1B-EW-0E	\$185.00		PNP, 2 outputs, hysteresis + window functions	M12 quick disconnect	Diagram 4	2
UT1B-EW-0A	\$189.00		PNP, 2 outputs, hysteresis + window functions	2 m output cable	Diagram 4	2

## Dimensions

mm [inches]



UT1 Series M12 Quick Disconnect



UT1 Series 2m Cable

# UT1 Series Ultrasonic Sensors

Specifications	
<b>Model</b>	<b>UT1B</b>
<b>Nominal Sensing Distance</b>	250 mm – 3500 mm (9.84 in – 137.80 in)
<b>Operating Distance (Sensing Range)</b>	250 mm – 3500 mm (9.84 in – 137.80 in)
<b>Output Type</b>	See "Output State" column in selection chart
<b>Operating Voltage</b>	12 – 30 VDC; 15 – 30 VDC (for 0 – 10 VDC analog models)
<b>No-load Supply Current</b>	≤50 mA
<b>Operating (Load) Current</b>	100 mA
<b>Off-state (Leakage) Current</b>	Voltage: minimum load is 3 kOhms / Current: maximum load is 500 Ohms at 24 VDC supply
<b>Analog Output</b>	Voltage: minimum load is 3 kΩ / Current: maximum load is 500 Ω at 24 VDC supply
<b>Voltage Drop</b>	2.2 V max@ 100 mA
<b>Switching Frequency</b>	2 Hz
<b>Repeat Accuracy</b>	0.2%
<b>Time Delay Before Availability (tv)</b>	≤300 ms; <900 ms for UT1B-EM/W-0*
<b>Reverse Polarity Protection</b>	Yes
<b>Short-Circuit Protection</b>	Yes
<b>Linearity Error</b>	0.5%
<b>Ultrasonic Frequency</b>	112 kHz
<b>Ultrasonic Beam Angle</b>	12° ± 2°
<b>Max. Response Time (digital output)</b>	250 ms
<b>Sensitivity Adjustment</b>	Yes, via teach-in button
<b>Input Voltage Transient Protection</b>	Yes
<b>Operating Temperature</b>	-20° to +70°C (-4° to +158°F)
<b>Temperature Compensation</b>	Yes
<b>Protection Degree</b>	IEC IP67
<b>Indication/Switch Status</b>	Multi-function LED indicator
<b>Housing Material</b>	Polybutylene Terephthalate (PBT)
<b>Shock/Vibration</b>	See <a href="#">Proximity Sensor Terminology</a>
<b>Tightening Torque</b>	1 Nm (0.737 lb-ft)
<b>Weight</b>	90 g (3.17 oz) (plug exit) 160 g (5.64 oz) (cable exit)
<b>Connection</b>	M12 (12 mm) connector or 2 m prewired output cable
<b>Agency Approvals</b>	CE, cULus file E187310, RoHS

## Wiring Diagrams

Diagram 1

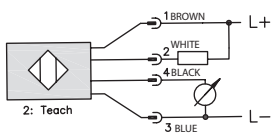


Diagram 2

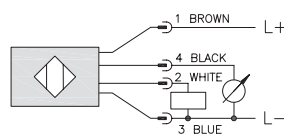


Diagram 3

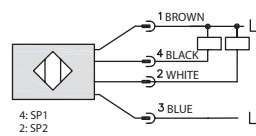
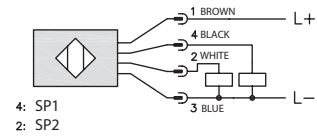


Diagram 4



### Connector

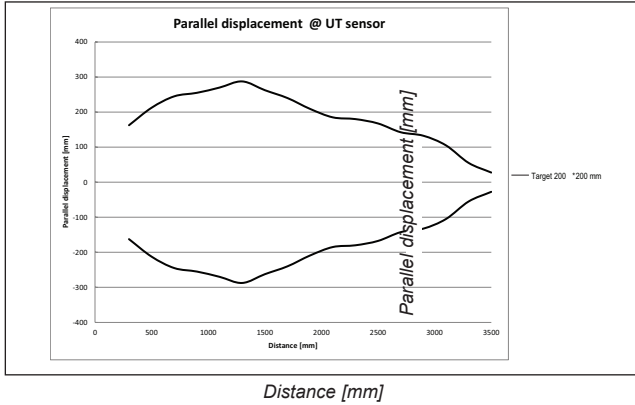
M12 connector



# UT1 Series Ultrasonic Sensors

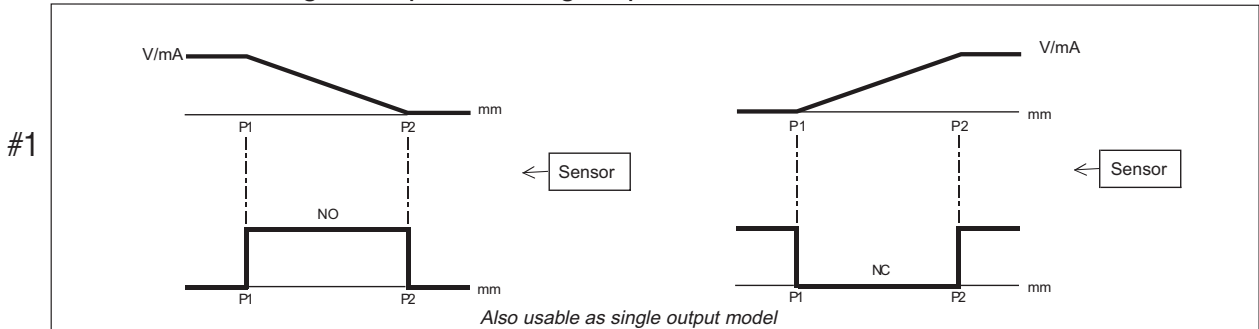
## Characteristic Curves

### UT1B models



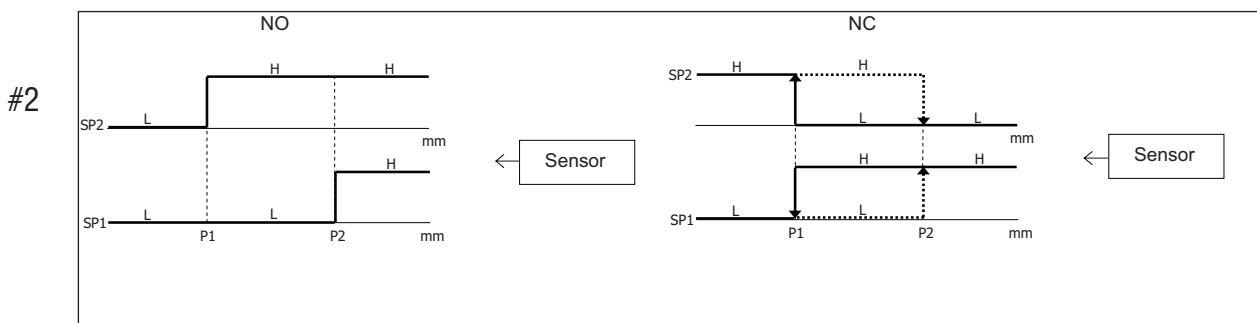
## Functions

### Models with digital output + analog output



**Note:** P1 maximum selected working distance and first point to select  
 P2 minimum selected working distance and second point to select

### Models with double digital output: hysteresis or standard window



# Accessories for 30mm Sensors

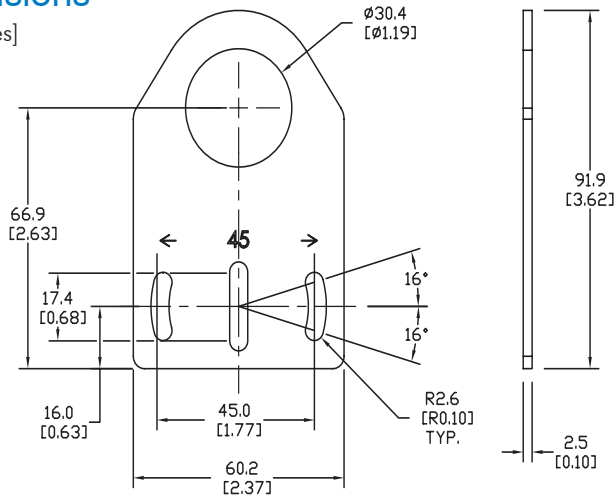
## Axial Mounting Bracket

Mounting bracket, axial, zinc-plated steel. For use with 30mm sensors. Has two mounting holes (use 5mm screws) and allows the rotation of an optical axis for right-beam-angle-adaptor sensors. Hexagonal nuts not included.

Accessories for 30mm Sensors			
Part Number	Price	Description	Weight [lb]
ST30A	\$2.25	Mounting bracket, axial, zinc-plated steel. For use with 30mm sensors. 1/pk.	0.18

### Dimensions

mm [inches]



ST30A

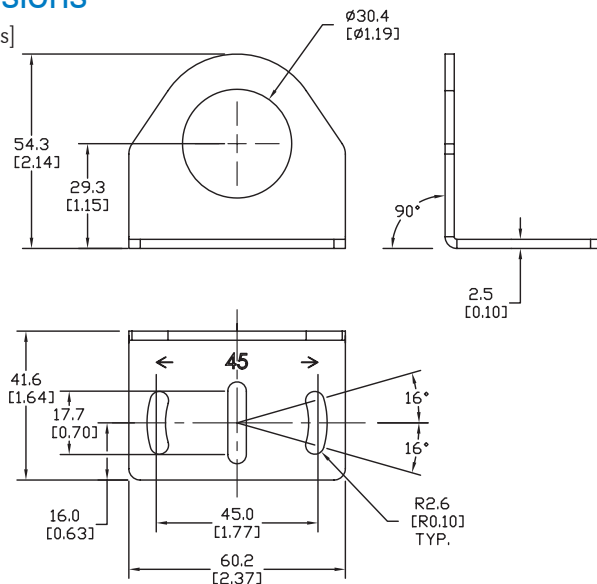
## Right-angle Mounting Bracket

Mounting bracket, right-angle, zinc-plated steel. For use with 30mm sensors. Has two mounting holes (use 5mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal nuts not included.

Accessories for 30mm Sensors			
Part Number	Price	Description	Weight [lb]
ST30C	\$2.25	Mounting bracket, right angle, zinc-plated steel. For use with 30mm sensors. 1/pk.	0.18

### Dimensions

mm [inches]



ST30C

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

# Accessories for 30mm Sensors

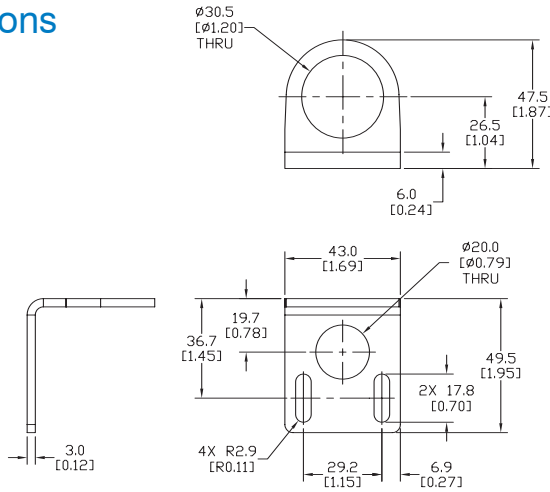
## Right-angle Mounting Bracket

Mounting bracket, right-angle, 304 stainless steel. For use with 30mm sensors.

Accessories for FW Series Sensors			
Part Number	Price	Description	Weight [lb]
<b>ST30C6W</b>	\$2.50	Mounting bracket, right angle, 304 stainless steel. For use with 30mm sensors.	0.15

### Dimensions

mm [inches]



**ST30C6W**

## Right-angle Swivel Mounting Systems

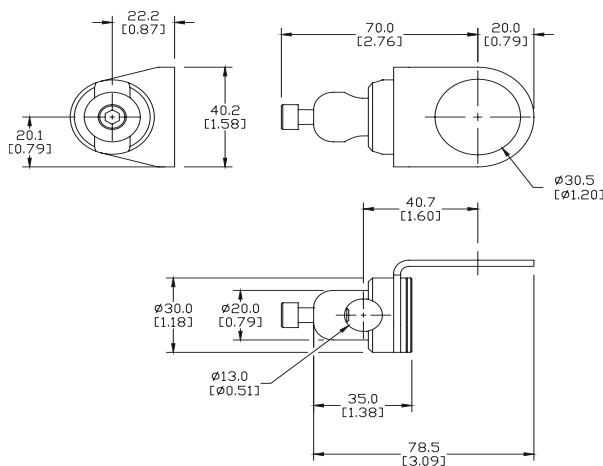
Mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 12mm rod mount. For use with 30mm sensors. Available in all 304 stainless steel or with an aluminum head with a 304 stainless steel mounting plate.

Accessories for 30mm Sensors					
Part Number	Price	Description	Mounting Head	Mounting Plate	Weight [lb]
<b>OPT2118</b>	\$9.00	Mounting bracket, right-angle swivel, 360 vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 30mm sensors.	Aluminum	304 Stainless Steel	0.18
<b>OPT2119</b>	\$16.00	Mounting bracket, right-angle swivel, 360 vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 30mm sensors.	304 Stainless Steel	304 Stainless Steel	0.30

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

### Dimensions

mm [inches]



**OPT2118, OPT2119**

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.

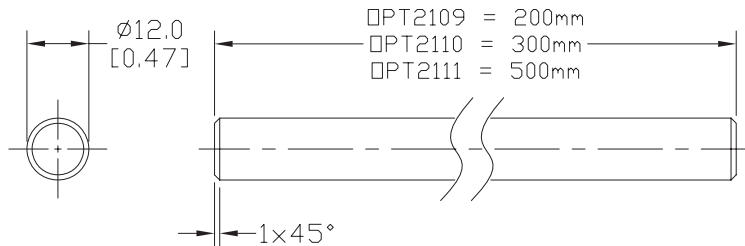
Mounting Rods for OPT2112-2127 Swivel Mounting Brackets			
Part Number	Price	Description	Weight [lb]
<b>OPT2109</b>	\$10.00	Mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	0.41
<b>OPT2110</b>	\$12.00	Mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	0.60
<b>OPT2111</b>	\$16.00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



**OPT2109, OPT2110, OPT2111**

## Dimensions

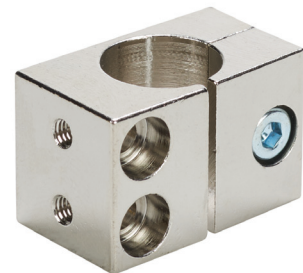
mm [inches]



## Right-angle Mounting Bracket

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

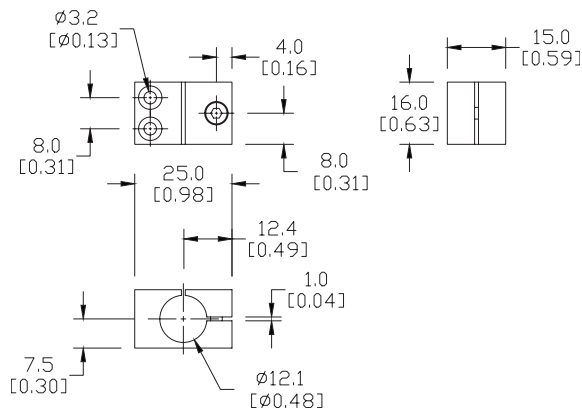
Accessories for 12mm Sensors			
Part Number	Price	Description	Weight [lb]
<b>OPT2108</b>	\$12.00	Mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.	0.07



**OPT2108**

## Dimensions

mm [inches]



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