

# 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



M12 Quick-Disconnect

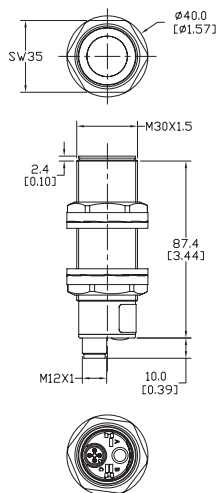


2m Output Cable

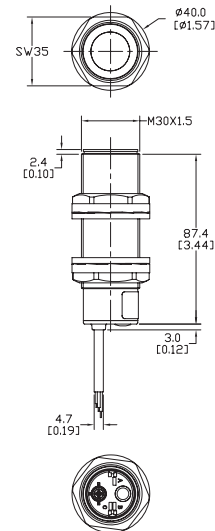
UT1B Series Ultrasonic Discrete or Analog Output Sensor Selection Chart						
Part Number	Price	Sensing Range	Output State	Connection	Wiring	Function
<a href="#">UT1B-E6-0A</a>		250 to 3500 mm [9.84 to 137.8 in]	4-20mA analog output, PNP, N.O./N.C. selectable	2m [6.5 ft] output cable	Diagram 2	1
<a href="#">UT1B-E7-0E</a>			0 to 10 VDC analog output, PNP, N.O./N.C. selectable	M12 quick-disconnect	Diagram 2	1
<a href="#">UT1B-E7-0A</a>			0 to 10 VDC analog output, PNP, N.O./N.C. selectable	2m [6.5 ft] output cable	Diagram 2	1
<a href="#">UT1B-E9-0E</a>			0 to 10 VDC analog output, NPN, N.O./N.C. selectable	M12 quick-disconnect	Diagram 1	1
<a href="#">UT1B-E9-0A</a>			0 to 10 VDC analog output, NPN, N.O./N.C. selectable	2m [6.5 ft] output cable	Diagram 1	1
<a href="#">UT1B-EW-0A</a>			PNP, 2 outputs, hysteresis + window functions	2m [6.5 ft] output cable	Diagram 4	2

## Dimensions

mm [inches]



UT1 Series M12 Quick Disconnect



UT1 Series 2m Cable

# UT1 Series Ultrasonic Sensors

UT1B Series Ultrasonic Discrete or Analog Output Sensor Specifications	
<b>Model</b>	<b>UT1B</b>
<b>Nominal Sensing Distance</b>	250mm – 3500mm [9.84 in – 137.80 in]
<b>Operating Distance (Sensing Range)</b>	250mm – 3500mm [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>	100mA
<b>Off-state (Leakage) Current</b>	Voltage: minimum load is 3 kOhms / Current: maximum load is 500Ω at 24 VDC supply
<b>Analog Output</b>	Voltage: minimum load is 3 Ω/ Current: maximum load is 500Ω at 24 VDC supply
<b>Voltage Drop</b>	2.2 V max@ 100mA
<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>	112kHz
<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>	90g [3.17 oz] (plug exit) 160g [5.64 oz] (cable exit)
<b>Connection</b>	M12 [12mm] connector or 2m [6.5 ft] prewired output cable
<b>Agency Approvals</b>	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.

## Wiring Diagrams

Diagram 1

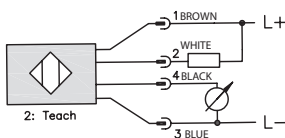


Diagram 2

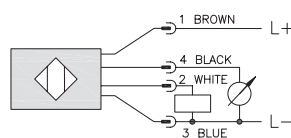


Diagram 3

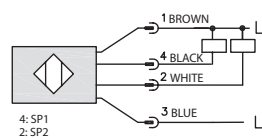
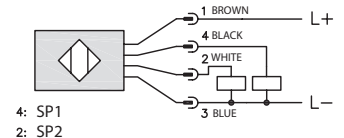


Diagram 4



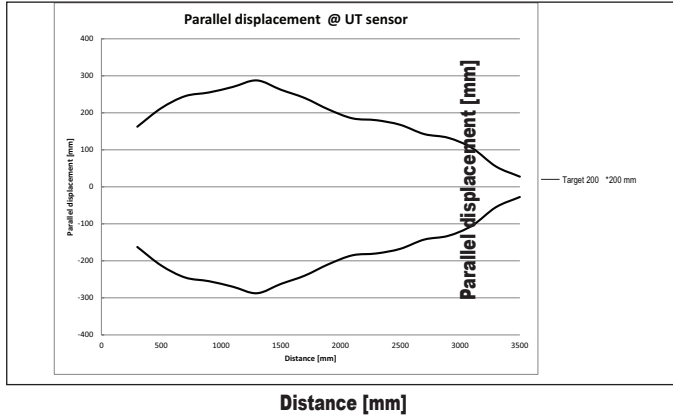
**Connector**  
M12 connector



# UT1 Series Ultrasonic Sensors

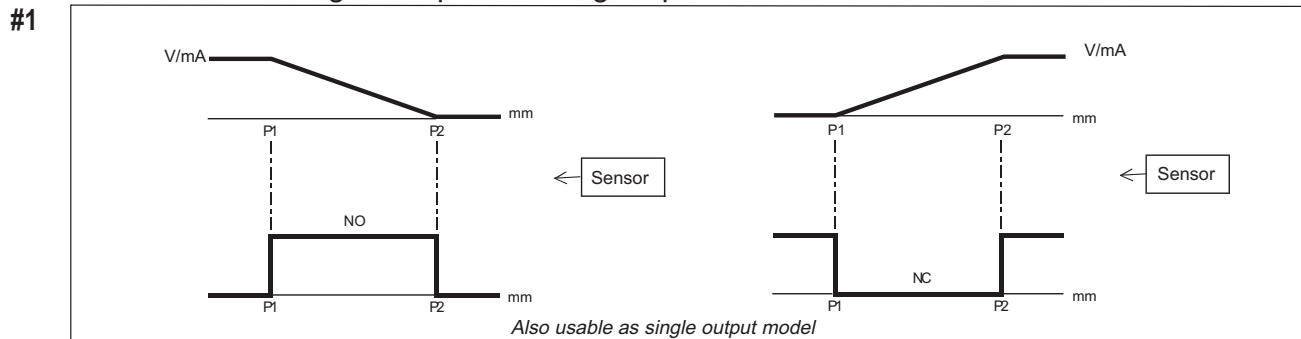
## Characteristic Curves

### UT1B models



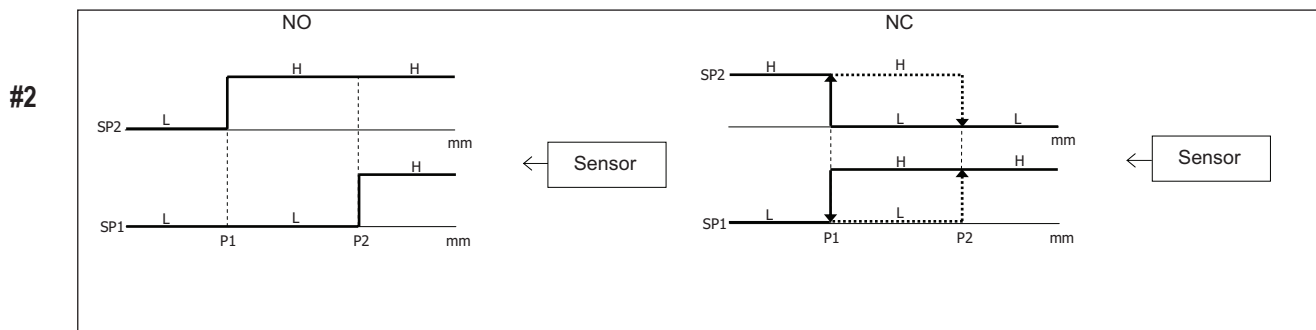
## Functions

### 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

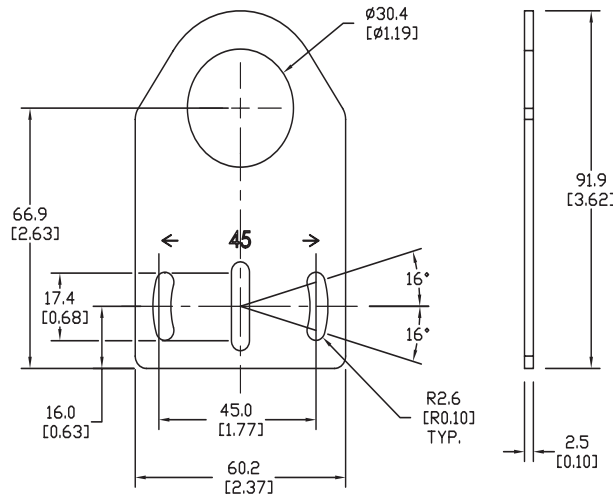
## Axial Mounting Bracket

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 [g]
<b>ST30A</b>		Micro Detectors mounting bracket, axial, zinc plated steel. For use with 30mm sensors.	0.18 (81.7)

### Dimensions

mm [inches]



**ST30A**

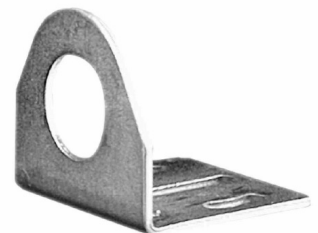
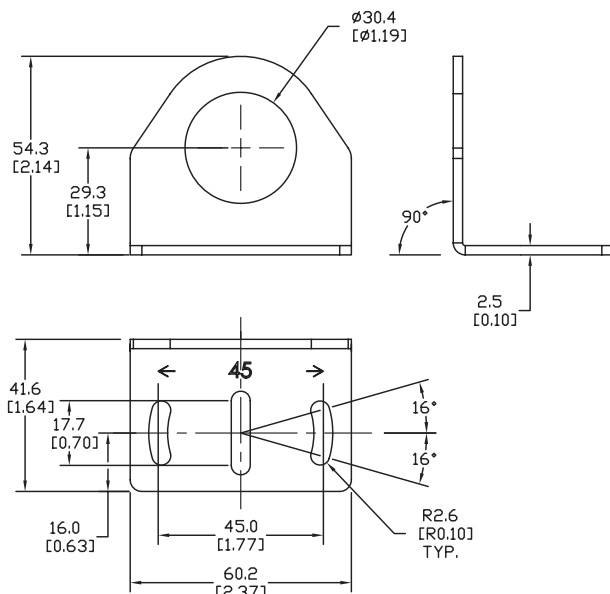
## Right-angle Mounting Bracket

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 [g]
<b>ST30C</b>		Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 30mm sensors.	0.18 (81.7)

### Dimensions

mm [inches]



**ST30C**

# Accessories for 30mm Sensors

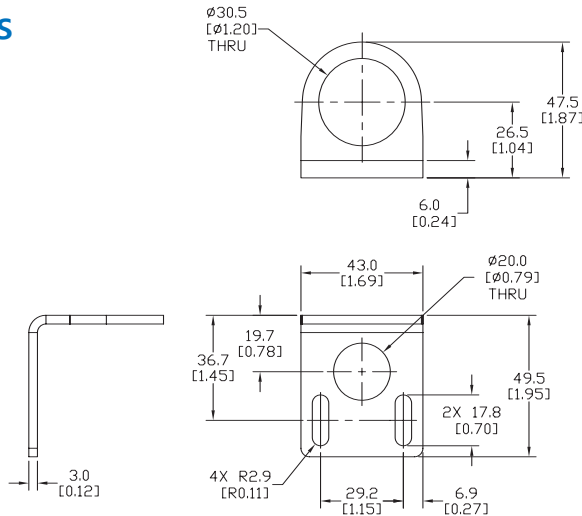
## Right-angle Mounting Bracket

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

Accessories for FW Series Sensors			
Part Number	Price	Description	Weight lb [g]
<a href="#">ST30C6W</a>		AutomationDirect mounting bracket, right-angle, 304 stainless steel. For use with 30mm sensors.	0.15 (68.0)

### 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	Drawing Link	Weight lb [g]
<a href="#">OPT2118</a>		Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 30mm sensors.	Aluminum	304 Stainless steel	<a href="#">PDF</a>	0.18 (81.7)
<a href="#">OPT2119</a>		Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 30mm sensors.	304 Stainless Steel	304 Stainless steel	<a href="#">PDF</a>	0.18 (81.7)

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).



[OPT2118](#), [OPT2119](#)

# 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>		Wenglor mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	<a href="#">PDF</a>	0.41 (185.97)
<a href="#">OPT2110</a>		Wenglor mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	<a href="#">PDF</a>	0.60 (272.16)
<a href="#">OPT2111</a>		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>		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)

