

# UT Series Ultrasonic Sensors



**UT1B-G7-1E**  
**UT5L-G7-1E**

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

- 10 to 30 VDC
- Discrete models available with adjustable sensitivity
- Analog output models available
- Models available with analog and discrete switching outputs
- Several units can be synchronized for multi-point inspection
- IP67 rated
- LED status indicators
- Mounting hex nuts included
- Purchase cable for M12 plug separately
- Lifetime warranty



### UT1B Series Ultrasonic Discrete or Analog Output Sensor Selection Chart

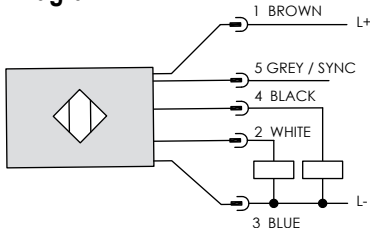
Part Number	Price	Sensing Range	Output State	Connection	Wiring	Function
<b>UT1B-GW-1E</b>	\$244.00	250 to 3500 mm [9.84 to 137.80 in]	PNP, 2 N.O./N.C. selectable	M12 quick-disconnect	Diagram 1	2
<b>UT1B-G6-1E</b>	\$244.00		4-20mA analog output, PNP, N.O./N.C. selectable	M12 quick-disconnect	Diagram 2	1
<b>UT1B-G7-1E</b>	\$244.00		0-10 VDC analog output, PNP, N.O./N.C. selectable	M12 quick-disconnect	Diagram 2	1

### UT5L Series Ultrasonic Discrete or Analog Output Sensor Selection Chart

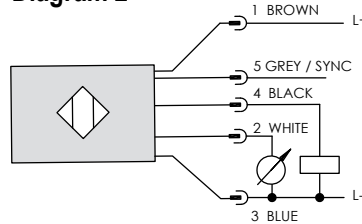
Part Number	Price	Sensing Range	Output State	Connection	Wiring	Function
<b>UT5L-GW-1E</b>	\$381.00	600 to 8000 mm [23.62 to 314.96 in]	PNP, 2 N.O./N.C. selectable	M12 quick-disconnect	Diagram 1	2
<b>UT5L-G6-1E</b>	\$381.00		4-20mA analog output, PNP, N.O./N.C. selectable	M12 quick-disconnect	Diagram 2	1
<b>UT5L-G7-1E</b>	\$381.00		0-10 VDC analog output, PNP, N.O./N.C. selectable	M12 quick-disconnect	Diagram 2	1

## Wiring Diagrams

**Diagram 1**

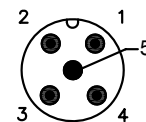


**Diagram 2**



**Connector**

**M12 connector**

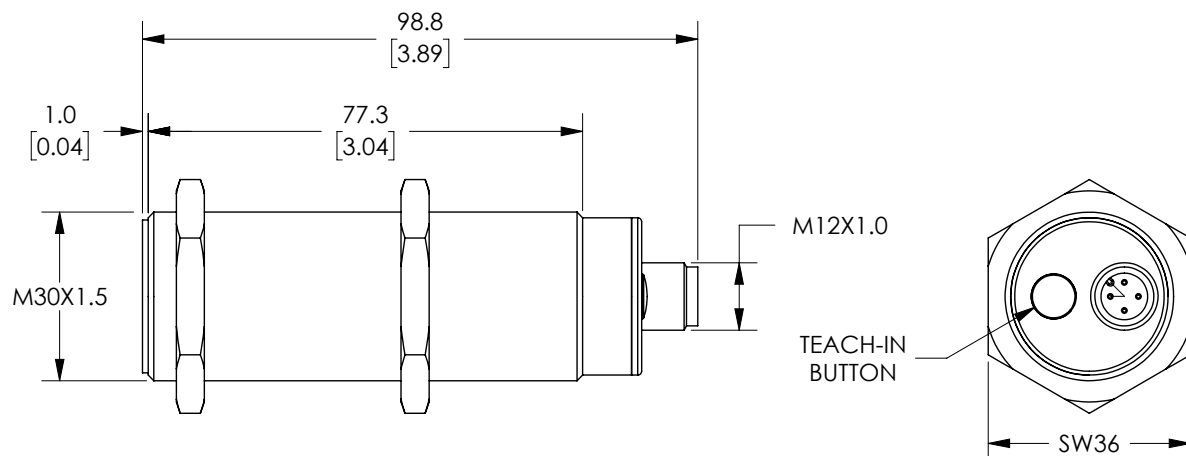


# UT Series Ultrasonic Sensors

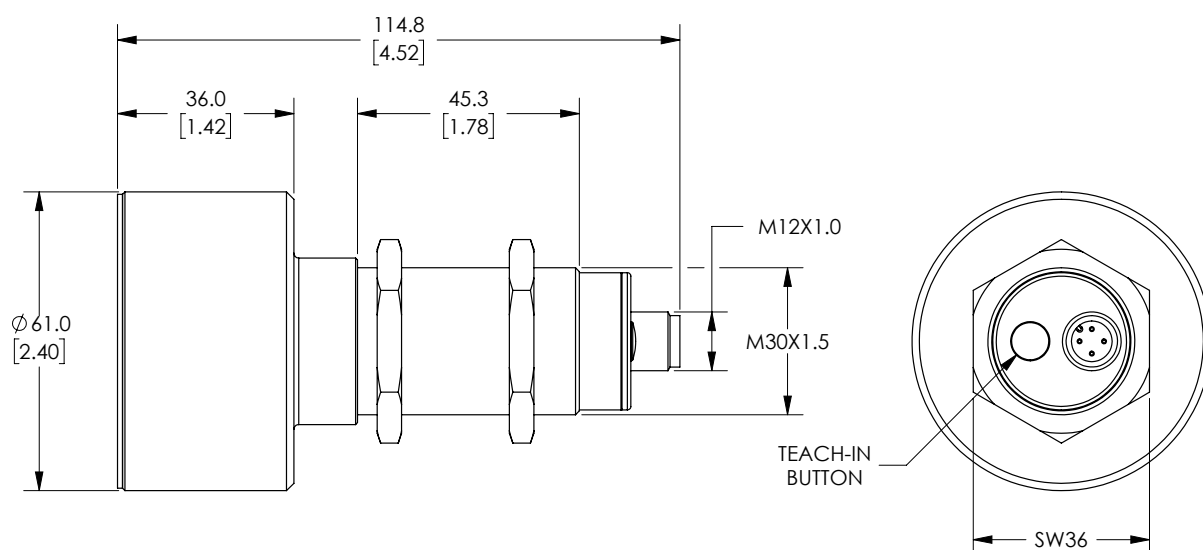
## Dimensions

mm [inches]

### UT1B Series Metal M12 Quick Disconnect



### UT5L Series Metal M12 Quick Disconnect



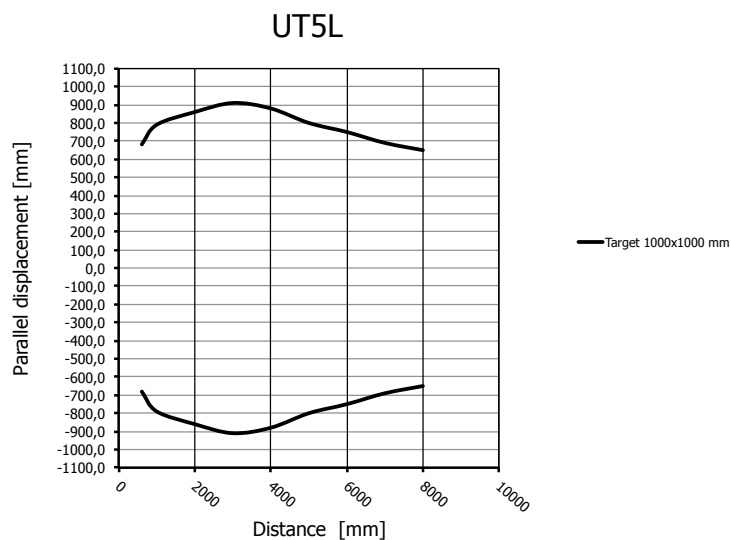
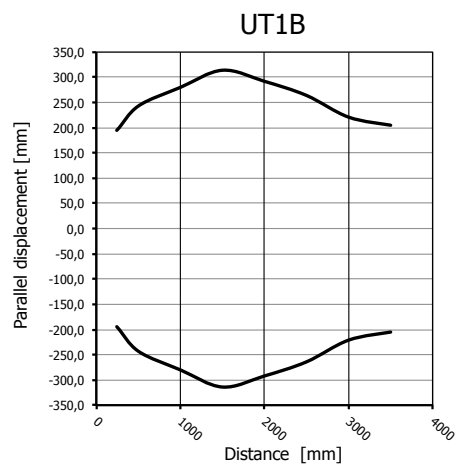
# UT Series Ultrasonic Sensors

Specifications		
Model	UT1B	UT5L
Nominal Sensing Distance	250 to 3500 mm [9.84 to 137.80 in]	600 to 8000 mm [23.62 to 314.96 in]
Operating Distance (Sensing Range)	250 to 3500 mm [9.84 to 137.80 in]	600 to 8000 mm [23.62 to 314.96 in]
Output Type	See "Output State" column in selection chart	See "Output State" column in selection chart
Operating Voltage	10-30 VDC	10-30 VDC
No-load Supply Current	≤ 25mA	≤ 5 0mA
Operating (Load) Current	100mA	100mA
Off-state (Leakage) Current	10μA @ 30VDC	10μA @ 30VDC
Analog Output	Voltage: minimum load is 3kΩ Current: maximum load is 500Ω at 24VDC supply	Voltage: minimum load is 3kΩ Current: maximum load is 500Ω at 24VDC supply
Voltage Drop	2.2 V max @ 100mA	2.2 V max @ 100mA
Switching Frequency	1Hz	1Hz
Repeat Accuracy	0.1%	1%
Time Delay Before Availability (tv)	≤ 400ms (digital out), ≤ 600ms (analog out)	≤ 400ms (digital out), ≤ 600ms (analog out)
Reverse Polarity Protection	Yes	Yes
Short-Circuit Protection	Yes	Yes
Linearity Error	0.5%	1%
Ultrasonic Frequency	112kHz	60kHz
Ultrasonic Beam Angle	12° ± 2°	10° ± 2°
Max. Response Time (digital output)	600ms	600ms
Sensitivity Adjustment	Yes, via teach-in button	Yes, via teach-in button
Input Voltage Transient Protection	Yes	Yes
Operating Temperature	-20 to +70°C [-4 to +158°F]	-20 to +70°C [-4 to +158°F]
Temperature Compensation	Yes	Yes
Protection Degree	IEC IP67	IEC IP67
Indication/Switch Status	Multi-function LED indicator	Multi-function LED indicator
Housing Material	316L stainless steel	316L stainless steel
Shock/Vibration	IEC 69047-5-2/7.4	IEC 69047-5-2/7.4
Tightening Torque	100 N•m [73.7 lb•ft]	100 N•m [73.7 lb•ft]
Weight	150g [5.29 oz] (plug exit)	350g [12.35 oz] (plug exit)
Connection	M12 [12mm] connector	M12 [12mm] connector
Agency Approvals	CE, cULus file E187310	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.

# UT Series Ultrasonic Sensors

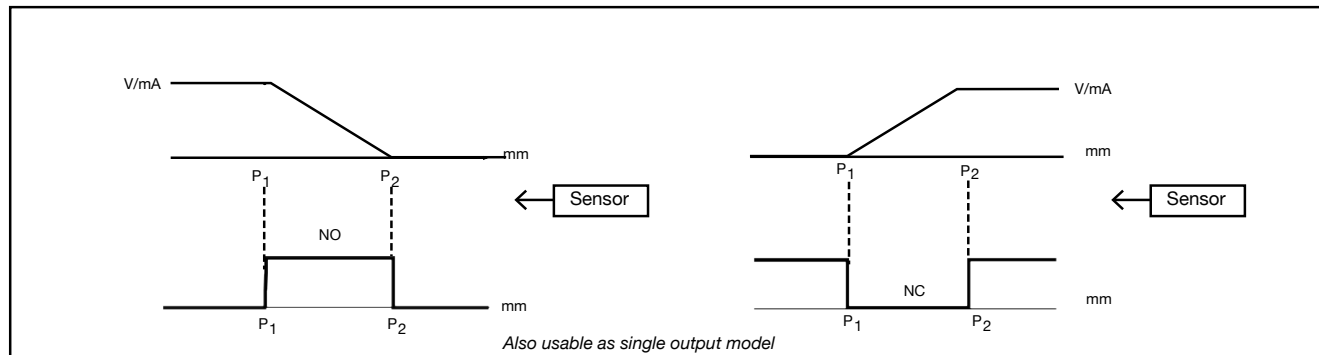
## Characteristic Curves



## Functions

### Models with digital output + analog output

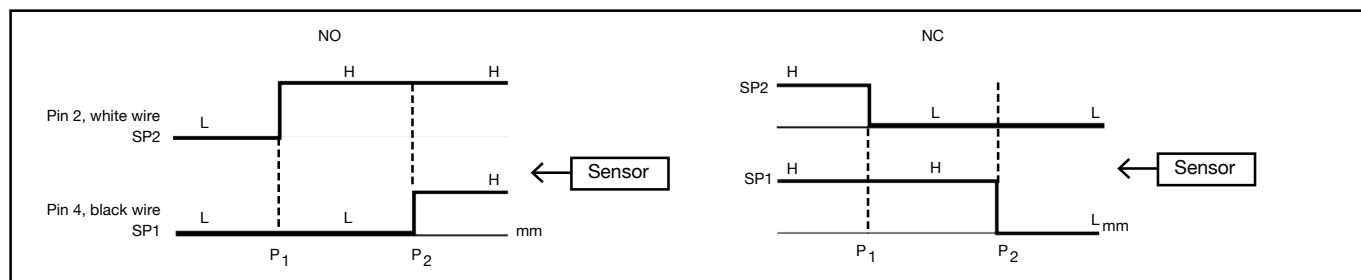
#1



**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

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

#2



# Accessories for 30mm Sensors

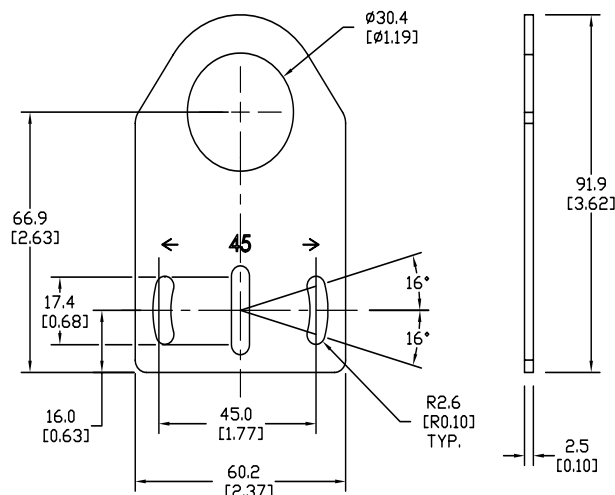
## Axial Mounting Bracket

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>	\$2.50	Micro Detectors mounting bracket, axial, zinc plated steel. For use with 30mm sensors.	0.18 [81.7]

### Dimensions

mm [inches]



**ST30A**

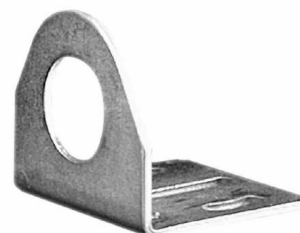
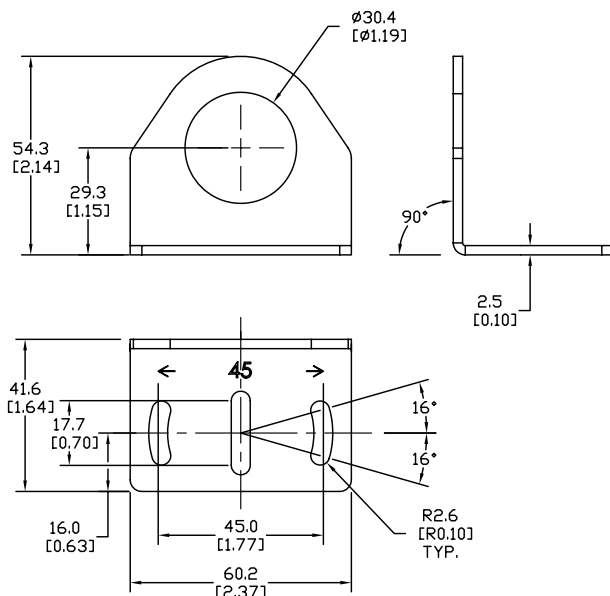
## Right-angle Mounting Bracket

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>	\$2.50	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

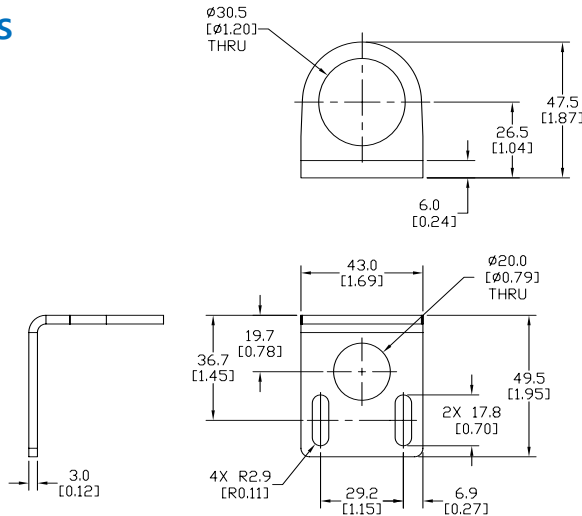
## Right-angle Mounting Bracket

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

Accessories for FW Series Sensors			
Part Number	Price	Description	Weight lb [g]
<b><u>ST30C6W</u></b>	\$6.00	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]
<b><u>OPT2118</u></b>	\$12.50	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]
<b><u>OPT2119</u></b>	\$22.50	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>	\$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 OPT2109, OPT2110 & OPT2111.	<a href="#">PDF</a>	0.07 [31.8]

