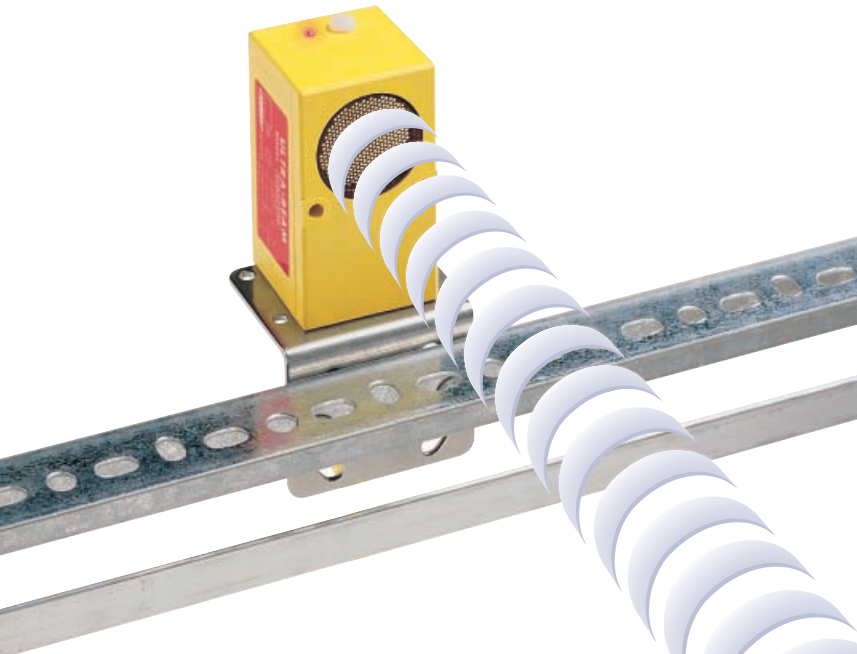


# ULTRA-BEAM™ Series - Ultrasonic Sensor



### Long 0.5 to 6 m range. (20" to 20')

- Electrostatic transducer provides economical, reliable, close or long-distance sensing independent of color or texture of target object
- Adjustable sensing window in analog output units can be 300 mm to 5.6 m (12" to 18") wide and adjusted using NULL and SPAN adjustments on top of unit

### Rugged construction.

- Electrostatic transducer with metal mesh protective screen.
- Housing is molded VALOX® with epoxy-encapsulated circuitry, meeting many sensing requirements, rated NEMA 1, 3, and 12.



### Switched electromechanical or analog outputs.

- Switched unit has simple range adjustment to limit response to background objects
- Analog units offer 0 to +10V dc sourcing and 0 to 20 mA dc sinking outputs, positive or negative slope
  - Easily interfaced to variable speed DC drives, microprocessors and PLCs

### AC & DC Voltage inputs.

- Choose models for 18-30V dc, 105-130V ac, or 210-260V ac operation
  - All models use mini-style quick disconnect cables



# U-GAGE™ ULTRA-BEAM™ Series - Model Selection



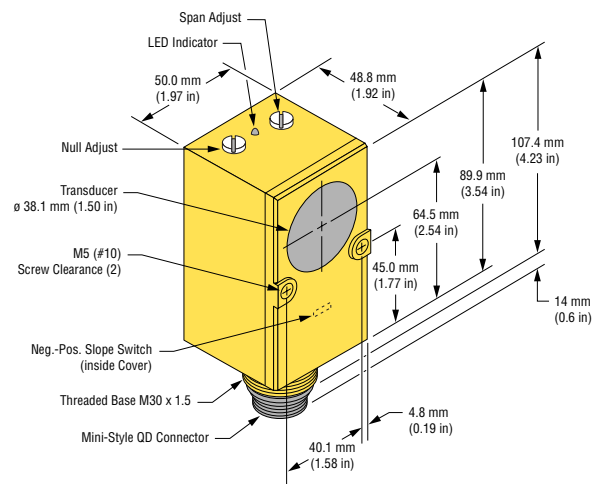
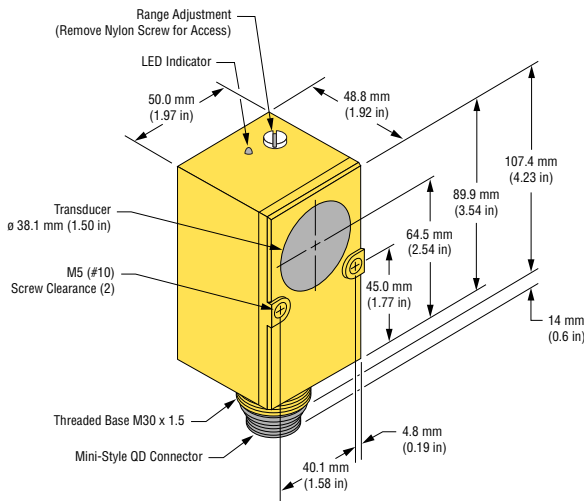
## ULTRA-BEAM™ Series Models

Models	Range	Cable*	Supply Voltage	Output Type
SU925QD-24	500 mm to 6 m (20" to 20')	5-pin Mini QD	18 to 30V dc	SPDT E/M Relay
SUA925QD		5-pin Mini QD	105 to 130V ac	
SUB925QD		5-pin Mini QD	210 to 250V ac	
SU923QD	500 mm to 6 m (20" to 20')	4-pin Mini QD	18 to 30V dc	Analog 0-10V dc or 0-20 mA
SUA923QD		5-pin Mini QD	105 to 130V ac	
SUB923QD		5-pin Mini QD	210 to 250V ac	

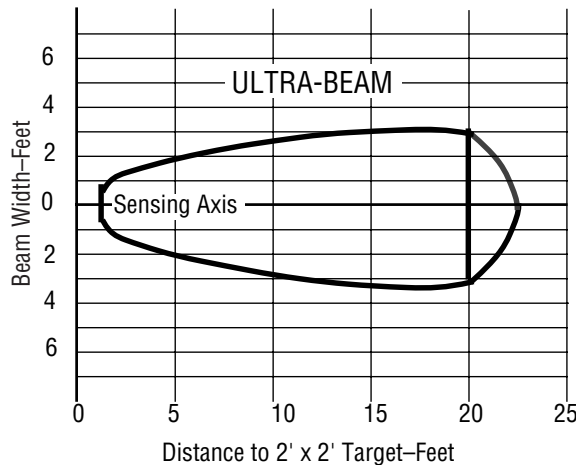
\* Models with a QD connector require a mating cable.

### ULTRA-BEAM Series with Switched Output

### ULTRA-BEAM Series with Analog Output



### ULTRA BEAM Series Response Pattern



#### NOTES:

- 1) Response pattern is drawn for the maximum range setting of the ULTRA-BEAM.
- 2) Response pattern is drawn for a 2-square foot solid surface.
- 3) Symmetry of the pattern may be assumed in all sensing planes.
- 4) The rounded portion of the curve past the 20 foot point indicates an area where sensing is unreliable. Effective range is from 20 inches to 20 feet (0.5 to 6 meters).

## U-GAGE™ ULTRA-BEAM™ Series - Ultrasonic Sensors

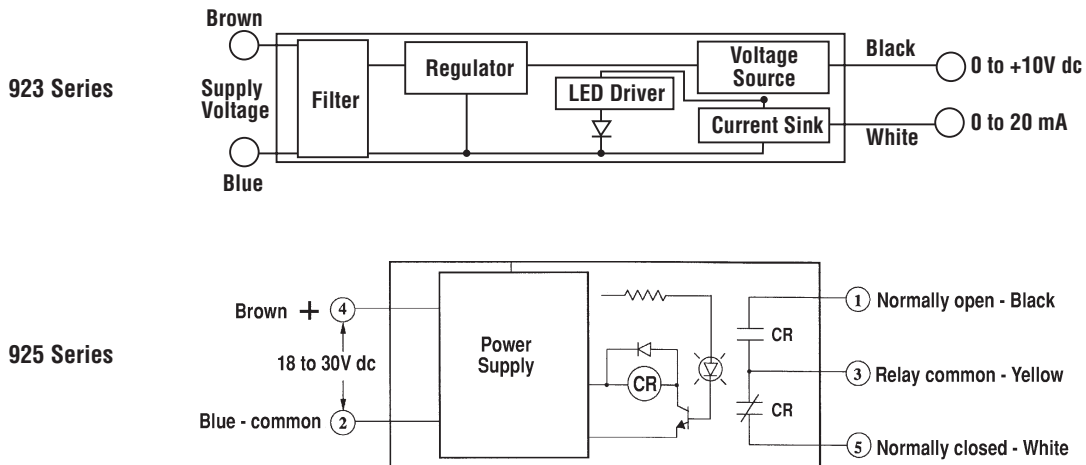
### ULTRA-BEAM™ 923 Series (Analog Output) Specifications

<b>Sensing Mode</b>	Ultrasonic proximity
<b>Supply Voltage</b>	Model SU923QD: 18 to 30V dc, 5VA Model SUA923QD: 105 to 130V ac (50/60Hz), 5VA Model SUB923QD: 210 to 260V ac (50/60Hz), 5VA
<b>Ultrasonic Frequency</b>	50Khz
<b>Sensing Range</b>	20 to 240 inches at 20°C (0.5 to 6 meters) Minimum required target area is 1 square foot (0.1 square meter) for each 10' (3 meters) of sensing range.
<b>Sensing Window Adjustments</b>	Sensing window depth is adjustable from 12" to 220" via two top-mounted 15-turn clutched potentiometers with slotted brass elements (NULL and SPAN adjustments). This adjustable window may be placed anywhere within the 20" to 240" sensing range.
<b>Outputs</b>	<b>Two analog solid-state outputs:</b> 0 to +10V dc (sourcing); minimum 500Ω load and 0 to 20mA dc (sinking); 4.0 dc maximum voltage drop. Both outputs may be set for either "positive slope" or "negative slope"
<b>Analog Resolution</b>	0.5% of sensing distance
<b>Linearity</b>	1% of full scale range
<b>Response Time</b>	100 milliseconds
<b>Temperature effect</b>	0.2% of sensing distance/deg.C
<b>Environmental rating</b>	IP54, NEMA 1, 3 & 12
<b>Indicator LED</b>	Top-mounted red LED indicator lights whenever power is applied to the sensor, and pulses at a 0 to 10Hz rate which is proportional to analog output voltage (sourcing output) and current (sinking output)
<b>Circuit Protection</b>	Inputs are protected against polarity reversal (DC models); both analog outputs are protected against short circuit of outputs (AC and DC models).
<b>Cable</b>	4-pin (for SU923QD) or 5-pin (for SUA923QD and SUB923QD) Quick Disconnect ("QD") type connectors are standard. NOTE: use 4-conductor (model MBCC-412) or 5-conductor (model MBCC-512) SO-type cable, 12' long (order separately)
<b>Construction</b>	Overall dimensions 4.7"H x 2.0"W x 1.9"D: rugged molded Valox housing; epoxy-encapsulated circuitry. Mounting nut and lockwasher supplied.
<b>Operating Temp. Range</b>	0° to + 50°C (+32° to +122°F). Maximum humidity 90% (non-condensing conditions).

### ULTRA-BEAM™ 925 Series (E/M Relay Output) Specifications

<b>Supply Voltage</b>	Model: SUA925QD 105 to 130V ac, 50/60Hz Model: SUB925QD 210 to 260V ac, 50/60Hz. 6VA Model: SU925QD-24, 18 to 30 V dc, 4VA
<b>Sensing Range</b>	20 to 240 inches (0.5 to 6 meters). Minimum required target area is 1 square foot (0.1 square meter) for each 10' (3 meters) of sensing range.
<b>Sensing Hysteresis</b>	5% of range setting.
<b>Range Adjustment</b>	15-turn clutched potentiometer with slotted brass element, located under o-ring gasketed access screw on top of sensor. Use small, flat screwdriver to adjust.
<b>Output</b>	One form "C" SPDT relay, silver-nickel alloy contacts. Capacity: 150 watts of 600 VA maximum power (resistive load). Maximum voltage: 250V ac or 30V dc (resistive load). Maximum current: 5 amps (resistive load). Minimum load: 5V dc @ 100 milliamps. Mechanical life: 10,000,000 operations. NOTE: install suitable value metal oxide varistor (MOV) across contact(s) used to switch an inductive load.
<b>Discrete Repeatability</b>	0.5% of sensing distance
<b>Linearity</b>	1% of full scale range
<b>Response Time</b>	100 milliseconds ON and OFF.
<b>Temperature effect</b>	0.2% of sensing distance/deg.C
<b>Environmental rating</b>	IP54, NEMA 1, 3 & 12
<b>Indicator LED</b>	Red LED indicator on top of sensor lights when object is sensed (when output relay is energized).
<b>Output Connector</b>	Integral threaded 5-pin quick-disconnect. 12' mating cable, model MBCC-512, is sold separately.
<b>Construction</b>	Epoxy-encapsulated circuitry. Rugged, glass-filled VALOX housing. NEMA 1, 3 and 12.
<b>Operating Temperature</b>	0° to +50°C (+32° to 122°F)

ULTRA-BEAM™ Series Functional Schematic and Hookup Information



Quick-Disconnect Cables

Style	Model	Length	Pin-Outs	Connector
4-Pin Mini Straight	<b>MBCC-406</b>	2 m (6.5')		
	<b>MBCC-412</b>	4 m (12')		
	<b>MBCC-430</b>	9 m (30')		
5-Pin Euro Straight	<b>MBCC-506</b>	2 m (6.5')		
	<b>MBCC-515</b>	5 m (15')		
	<b>MBCC-530</b>	10 m (30')		
5-Pin Mini w/shield	<b>MBCC2-506</b>	2 m (6.5')		
	<b>MBCC2-512</b>	4 m (15')		
	<b>MBCC2-530</b>	9 m (30')		

Mounting Bracket

ULTRA-BEAM Series Dimension Drawing

SMB900

Accessory mounting bracket model SMB900 has curved mounting slots for versatility in mounting and orientation. The sensors mount to the bracket by its threaded base, using a jam nut and lockwasher (both supplied). The bracket material is 11-gauge zinc-plated steel. The curved mounting slots have clearance for 1/4" screws. The internal tooth lockwasher and the hex mounting nut shown in the drawings are supplied with the sensor.

