





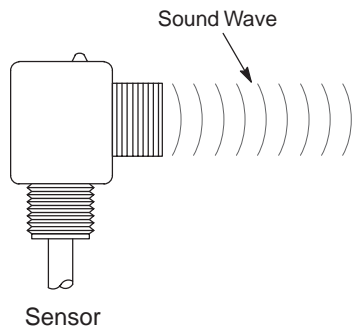
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Ultrasonic Sensors  
**Quick Selection Guide**

Specifications	 <b>873P</b> Analog or Discrete Output	 <b>873P</b> Programmable	 <b>873C</b> Analog or Discrete Output	 <b>873E</b> RightSound™ Opposed Mode Clear Object Sensing System
<b>Features</b>	<ul style="list-style-type: none"> <li>Sensing ranges from 100mm to 2500mm</li> <li>Analog output models (4–20mA, 0–10V DC)</li> <li>Discrete output models (normally open, PNP)</li> <li>Plastic barrel housing</li> <li>Adjustable sensing distance (discrete models)</li> <li>Short circuit, overload, false pulse, transient noise and reverse polarity protection</li> <li>Hold/Synchronize function to reduce crosstalk</li> <li>cULus listed and CE marked for all applicable directives</li> </ul>	<ul style="list-style-type: none"> <li>Sensing ranges from 150mm to 3500mm</li> <li>Programmable models include 2 discrete and 1 analog output</li> <li>Discrete outputs can be programmed for normally open or normally closed operation</li> <li>Programmable set point adjustment via pushbutton</li> <li>Short circuit, overload, false pulse, transient noise and reverse polarity protection</li> </ul>	<ul style="list-style-type: none"> <li>3-wire operation</li> <li>3-conductor connection</li> <li>18–30V DC</li> <li>Metal, nonmetal solid and liquid sensing capability</li> <li>Short circuit, false pulse, reverse polarity, overload and transient noise protection</li> <li>Adjustable sensing distance (discrete model)</li> <li>Adjustable background suppression (analog model)</li> </ul>	<ul style="list-style-type: none"> <li>Ideal solution for sensing clear objects or materials including glass and plastic bottles.</li> <li>Popular right angle package allows through hole mounting as well as 18mm threaded mounting hubs on the sensor nose and base.</li> <li>Highly visible 360° indicators conveniently mounted at the top of the sensor.</li> <li>Designed to Rugged Food Industry Standards: enclosure rated for 1200psi washdown as well as NEMA 4X, 6P and IP67 water ingress standards.</li> <li>Receivers come with both NPN (sinking) and PNP (sourcing) outputs.</li> <li>Short circuit, overload, reverse polarity, false pulse and transient noise.</li> </ul>
<b>Housing</b>	<ul style="list-style-type: none"> <li>Plastic Barrel; 18, 30mm</li> </ul>	<ul style="list-style-type: none"> <li>Plastic Barrel; 30mm</li> </ul>	<ul style="list-style-type: none"> <li>Plastic Face/Threaded Nickel-Plated Brass Barrel</li> </ul>	<ul style="list-style-type: none"> <li>Plastic</li> </ul>
<b>Sensing Range</b>	<ul style="list-style-type: none"> <li>100 to 600mm (3.94 to 23.62in)</li> <li>200 to 1500mm (7.87 to 59.06in)</li> <li>300 to 2500mm (11.81 to 98.43in)</li> </ul>	<ul style="list-style-type: none"> <li>150 to 1500mm (5.98 to 59.10in)</li> <li>350 to 3500mm (13.78 to 137.80in)</li> </ul>	<ul style="list-style-type: none"> <li>300 to 1000mm (11.81 to 39.37in)</li> </ul>	<ul style="list-style-type: none"> <li>50 to 750mm (2 to 30in)</li> </ul>
<b>Operating Voltage</b>	<ul style="list-style-type: none"> <li>18 to 30V DC</li> </ul>	<ul style="list-style-type: none"> <li>19 to 30V DC</li> </ul>	<ul style="list-style-type: none"> <li>18–30V DC</li> </ul>	<ul style="list-style-type: none"> <li>10.8–30V DC</li> </ul>
<b>Outputs</b>	<ul style="list-style-type: none"> <li>Discrete (Normally Open—PNP)</li> <li>Analog Current (4 to 20mA)</li> <li>Analog Voltage (0 to 10V DC)</li> </ul>	<ul style="list-style-type: none"> <li>Programmable (2—PNP with Analog current or Analog voltage)</li> </ul>	<ul style="list-style-type: none"> <li>Analog Voltage (1–10V DC)</li> <li>Discrete (Normally Open—PNP)</li> </ul>	<ul style="list-style-type: none"> <li>NPN/PNP</li> </ul>
<b>Enclosure</b>	<ul style="list-style-type: none"> <li>IP67</li> </ul>	<ul style="list-style-type: none"> <li>IP67</li> </ul>	<ul style="list-style-type: none"> <li>NEMA 12 and IP65 (IEC 529)</li> </ul>	<ul style="list-style-type: none"> <li>NEMA 4X, 6P, IP67 (IEC529); 1200psi (8270kPa) washdown</li> </ul>
<b>Connection</b>	<ul style="list-style-type: none"> <li>Micro QD</li> </ul>	<ul style="list-style-type: none"> <li>Micro QD</li> </ul>	<ul style="list-style-type: none"> <li>Cable: 2m (6.5ft) length 3-conductor PVC</li> </ul>	<ul style="list-style-type: none"> <li>Cable: #22 AWG PVC, 2m (6.5ft) QD: 4-pin DC micro style male receptacle on pigtail</li> </ul>
<b>Additional Info</b>	<ul style="list-style-type: none"> <li>See page R3–5</li> </ul>	<ul style="list-style-type: none"> <li>See page R3–8</li> </ul>	<ul style="list-style-type: none"> <li>See page R3–11</li> </ul>	<ul style="list-style-type: none"> <li>See page R3–13</li> </ul>

## Technical Definitions and Terminology

### Principles of Operation

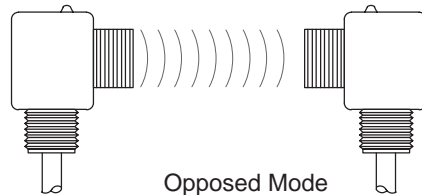


Ultrasonic sensors operate by emitting and receiving high-frequency sound waves. The frequency is usually in the order of 200kHz, which is too high for the human ear to hear.

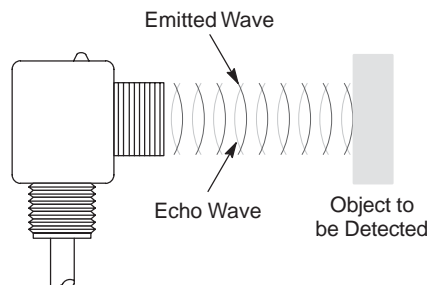
### Modes of Operation

There are two basic modes of operation: opposed mode and diffuse (echo) mode.

In opposed mode, one sensor emits the sound wave and another, mounted opposite the emitter, receives the sound wave.

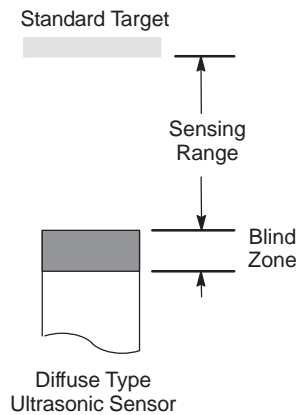


In diffuse mode, the same sensor emits the sound wave and then listens for the echo that bounces off an object.



### Sensing Range

The sensing range is the distance within which the ultrasonic sensor will detect a target under fluctuations of temperature and voltage.



### Blind Zone

Ultrasonic sensors have an inherent blind zone located at the sensing face. The size of the blind zone depends on the frequency of the transducer. Objects located within the blind spot can not be reliably detected.

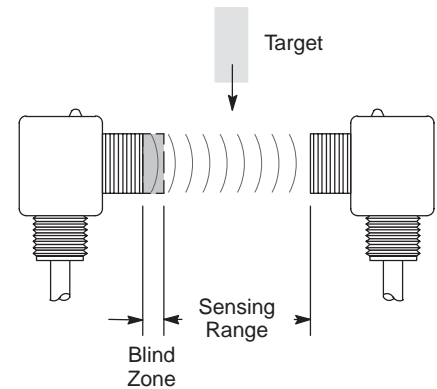
### Target Considerations

Certain characteristic of targets must be considered when using ultrasonic sensors. These include target shape, material, temperature, size and positioning.

Soft materials such as fabric or foam rubber are difficult to detect by diffuse ultrasonic technology because they are not sound-reflective.

The standard target for a diffuse type ultrasonic sensor is established by the International Electrotechnical Commission standard IEC 60947-5-2. The standard target is a square shape, having a thickness of 1mm and made from metal with a rolled finish. The size of the target is dependent upon the sensing range.

For opposed mode ultrasonic sensors, there is no established standard.



Standard targets are used to establish the performance parameters of the sensors. The user must take into consideration differences in performance due to nonstandard targets.

Notes

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# Bulletin 873P Analog or Discrete Output

Plastic Barrel



873P Analog Output  
18mm



873P Discrete Output  
30mm



## Specifications

	Discrete	Analog Current	Analog Voltage
<b>Output Configuration</b>	Normally Open, PNP	4 to 20mA	0 to 10V DC
<b>Load Current</b>	<500mA		—
<b>Leakage Current</b>	<0.5mA		—
<b>Current Consumption</b>	< 35mA		
<b>Operating Voltage</b>	18 to 30V DC		
<b>Voltage Drop</b>	< 3.5V DC		—
<b>Repeatability</b>	0.2%		
<b>Hysteresis</b>	2.5% typical		—
<b>Linearity</b>	—		± 0.3%
<b>Ultrasonic Frequency</b>	130, 180, 300kHz		
<b>Ultrasonic Beam Angle</b>	8°		
<b>Short Circuit Protection</b>	Incorporated		
<b>Overload Protection</b>	Incorporated		
<b>False Pulse Protection</b>	Incorporated		
<b>Transient Noise Protection</b>	Incorporated		
<b>Reverse Polarity Protection</b>	Incorporated		
<b>Approvals</b>	cULus listed and CE marked for all applicable directives		
<b>Housing Material</b>	Plastic - PBT		
<b>Enclosure Rating</b>	IP67		
<b>Connection</b>	Micro quick-disconnect (18mm discrete models have 12 inch pigtail)		
<b>Output LED</b>	Yellow		—
<b>Adjustment</b>	Potentiometer		—
<b>Operating Temperature</b>	-15 to 70° C (5 to 158° F)		
<b>Shock</b>	30g, 11ms		
<b>Vibration</b>	55Hz, 1mm amplitude, 3 planes		

## Description

Bulletin 873P Ultrasonic Sensors are self-contained solid-state devices designed for noncontact sensing of solid and liquid objects. They are available in 18mm and 30mm barrel diameters that are constructed from PBT plastic and meet IP67 enclosure standards. The electronic circuitry is potted to protect against shock, vibration, and contamination.

These sensors are available with either analog or discrete output types and three different sensing ranges. Analog model selection includes 4–20 mA or 0–10V DC outputs. Discrete models have a normally open PNP output and a potentiometer for adjusting the sensing range to ignore background targets. Bulletin 873P ultrasonic sensors have full electrical protections including short circuit, overload, false pulse, transient noise and reverse polarity.

## Features

- Sensing ranges from 100mm to 2500mm
- Analog output models (4–20mA, 0–10V DC)
- Discrete output models (normally open, PNP)
- Plastic barrel housing
- Adjustable sensing distance (discrete models)
- Short circuit, overload, false pulse, transient noise and reverse polarity protection
- Hold/Synchronize function to reduce crosstalk
- cULus listed and CE marked for all applicable directives

## QD Cordsets and Accessories

Description	Page Number
Beam Deflectors	R3-10
Cordsets	R8-1
Mounting Brackets	R2-196 - R2-200
Mounting Nuts	R2-207

# 873P Analog or Discrete Output

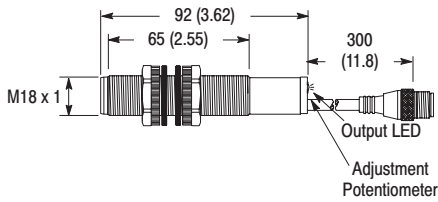
Plastic Barrel

## Selection Guide

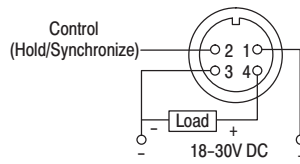
Barrel Diameter	Sensing Range—mm (inches)	Output Configuration	Switching Frequency (Hz)	Connection	Catalog Number
18	100 (3.94) to 600 (23.62)	Normally Open PNP	20	Micro QD Pigtail	873P-DBNP1-F4
	200 (7.87) to 1500 (59.06)		10		873P-DBNP2-F4
30	300 (11.81) to 2500 (98.43)		5		873P-DCNP1-D5
18	100 (3.94) to 600 (23.62)	4 to 20mA	—	Micro QD	873P-DBAC1-D4
	200 (7.87) to 1500 (59.06)				873P-DBAC2-D4
30	300 (11.81) to 2500 (98.43)				873P-DCAC1-D5
18	100 (3.94) to 600 (23.62)	0 to 10V DC	—	Micro QD	873P-DBAV1-D4
	200 (7.87) to 1500 (59.06)				873P-DBAV2-D4
30	300 (11.81) to 2500 (98.43)				873P-DCAV1-D5
Recommended standard QD cordset (-2 = 2m (6.5ft))					889D-F4AC-2

## Dimensions—mm (inches)

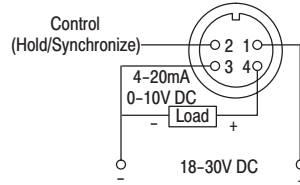
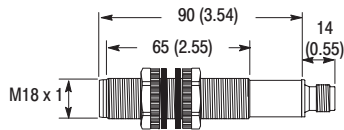
### 18mm Discrete



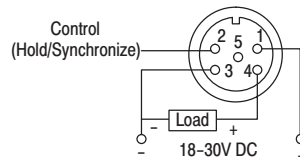
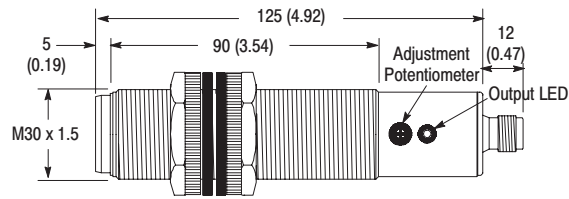
## Wiring Diagrams



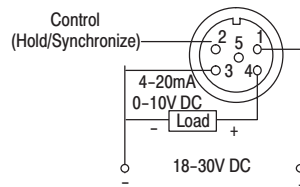
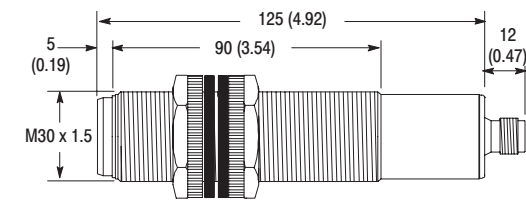
### 18mm Analog



### 30mm Discrete



### 30mm Analog



**Control Pin**

**Normal Operation**

For normal operation do not connect the control pin. Hold and synchronize features can be used for special applications.

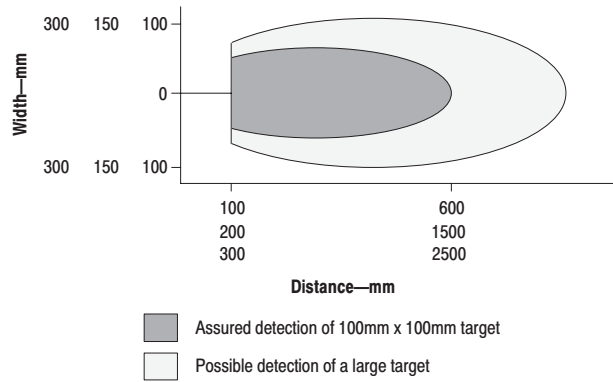
**Hold**

To inhibit sensor operation and hold the output to its present state connect the control pin (2) to 0V DC. The sensor will not transmit or receive ultrasonic pulses until this voltage is removed from the control pin. Switching output models will be latched and analog output models will hold their value during this period.

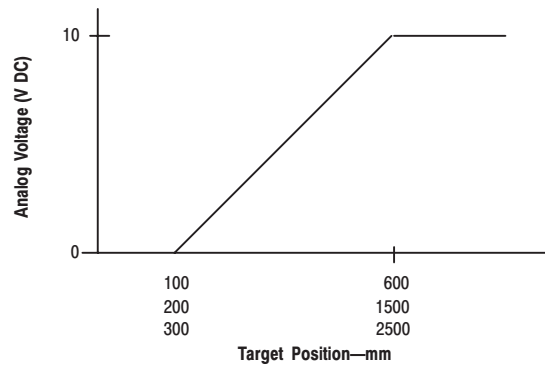
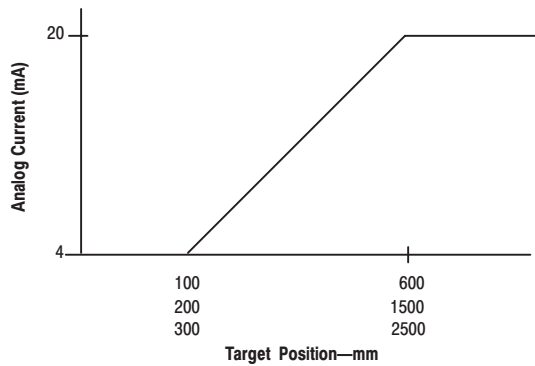
**Synchronize**

To synchronize the transmission of ultrasonic pulses between several sensors connect the control pins together. This feature reduces the potential for sensor crosstalk between models that are mounted in close proximity to one another.

**Beam Pattern**



**Analog Output**



# Bulletin 873P Programmable

## Plastic Barrel



873P DC Programmable  
30mm



### Description

Bulletin 873P Programmable Ultrasonic Sensors are self-contained solid-state devices designed for noncontact sensing of solid and liquid objects. They are available with a 30mm barrel diameter that is constructed from PBT plastic and meets IP67 enclosure standards. The electronic circuitry is potted to protect against shock, vibration, and contamination.

These sensors have two programmable setpoints with sourcing (PNP) outputs that can be configured for either normally open or normally closed operation. They also feature a 4–20mA or 0–10V DC analog output. The slope of the analog output is scaled between the limits of the setpoint values. Programming of the setpoints and the output configuration is done using the setup pushbutton on the rear of the housing.

In addition, these devices have full electrical protections including short circuit, overload, false pulse, transient noise and reverse polarity. Bulletin 873P programmable ultrasonic sensors are ideal for applications such as level control, diameter measurement, distance measurement, slope control, and presence detection.

### Specifications

<b>Output Configuration</b>	Two discrete PNP (Programmable N.O./N.C.) Analog Current: 4–20mA Analog Voltage: 0–10V DC
<b>Load Current</b>	<100mA (Open collector)
<b>Leakage Current</b>	<0.5mA
<b>Current Consumption</b>	<45mA
<b>Operating Voltage</b>	19 to 30V DC
<b>Voltage Drop</b>	<5V DC
<b>Repeatability</b>	0.4%
<b>Hysteresis</b>	1% typical
<b>Linearity</b>	±0.5%
<b>Ultrasonic Frequency</b>	130, 200kHz
<b>Ultrasonic Beam Angle</b>	8°
<b>Short Circuit Protection</b>	Incorporated
<b>Overload Protection</b>	Incorporated
<b>False Pulse Protection</b>	Incorporated
<b>Transient Noise Protection</b>	Incorporated
<b>Reverse Polarity Protection</b>	Incorporated
<b>Approvals</b>	cULus listed and CE marked for all applicable directives
<b>Housing Material</b>	Plastic - PBT
<b>Enclosure Rating</b>	IP67
<b>Connection</b>	Micro quick-disconnect
<b>LED</b>	Yellow: (2) P1, P2 output; Green: Alignment/echo
<b>Program</b>	Via setup pushbutton
<b>Operating Temperature</b>	-15 to 70°C (5 to 158°F)
<b>Shock</b>	30g, 11ms
<b>Vibration</b>	55Hz, 1 amplitude, 3 planes

### Features

- Sensing ranges from 150mm to 3500mm
- Programmable models include 2 discrete and 1 analog output
- Discrete outputs can be programmed for normally open or normally closed operation
- Programmable set point adjustment via pushbutton
- Short circuit, overload, false pulse, transient noise and reverse polarity protection
- cULus listed and CE marked for all applicable directives

### QD Cordsets and Accessories

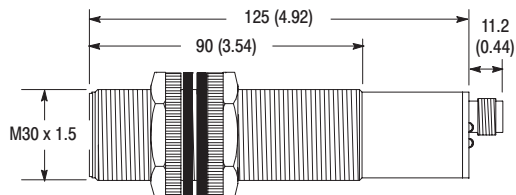
Description	Page Number
Beam Deflectors	R3-10
Cordsets	R8-1
Mounting Brackets	R2-196 - R2-200
Mounting Nuts	R2-207

### Selection Guide

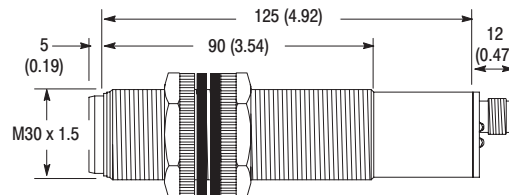
Barrel	Sensing Range—mm (inches)	Output Configuration	Switching Frequency	Connection	Catalog Number
30mm	150 to 1500 (5.91 to 59.10)	2 PNP (NO or NC) with 4–20mA	1 Hz	Micro QD	873P–DCAC1S–D5
	350 to 3500 (13.78 to 137.80)				873P–DCAC2S–D5
	150 to 1500 (5.91 to 59.10)	2 PNP (NO or NC) with 0–10V DC			873P–DCAV1S–D5
	350 to 3500 (13.78 to 137.80)				873P–DCAV2S–D5
Recommended standard QD cordset (–2 = 2m (6.5ft))					889D–F5AC–2

### Dimensions—mm (inches)

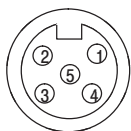
#### 1500mm



#### 3500mm

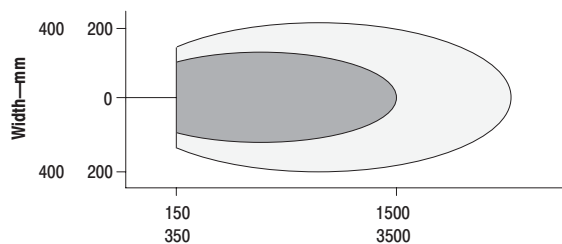


### Wiring Diagram



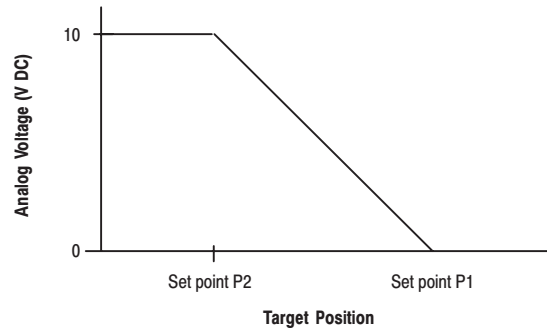
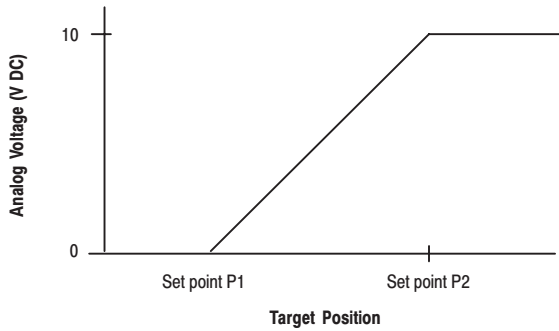
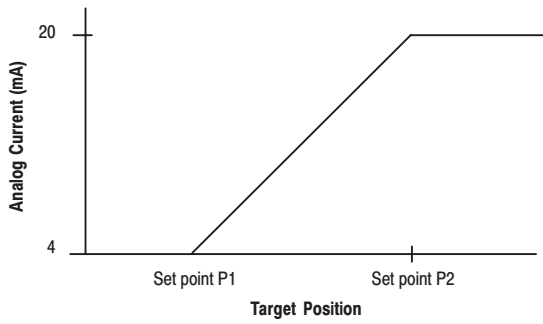
Pin	Function
1	19 to 30V DC Operating Voltage
2	Set point (P2)
3	0V DC
4	Set point (P1)
5	4–20mA or 0–10V DC (depending on model)

### Beam Pattern



- Assured detection of 100mm x 100mm target
- Possible detection of a large target

**Analog Output**

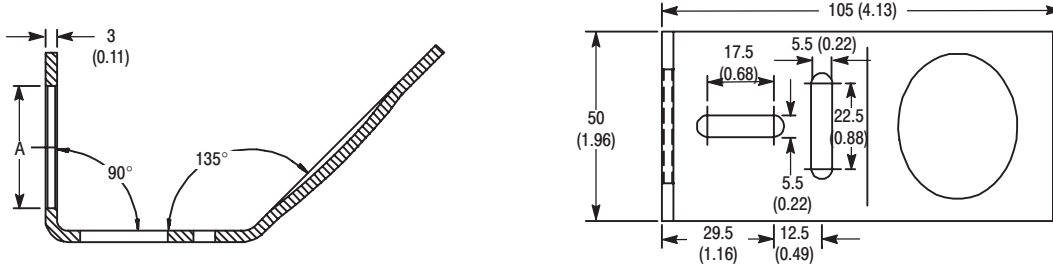


**Accessories**

**Beam Deflectors**

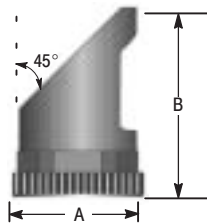
These plastic or stainless steel beam deflectors reduce the mounting profile for space critical applications by deflecting the ultrasonic beam 90°. In addition, stainless steel models provide mounting capability and focus the ultrasonic beam.

**Ultrasonic Beam Deflector/Bracket—Stainless Steel—mm (inches)**



Sensor Diameter	A —mm (inches)	Catalog Number
18mm	20 (0.79) Dia.	60-2757
30mm	32 (1.26) Dia.	60-2758

**Ultrasonic Beam Deflector—Plastic—mm (inches)**



Sensor Diameter	A —mm (inches)	B —mm (inches)	Catalog Number
18mm	23 (0.91)	35 (1.38)	60-2759
30mm	35.5 (1.40)	54 (2.13)	60-2760



873C DC Cable Style  
30mm  
page R3-12



**Specifications**

<b>Load Current</b>	Discrete output: ≤400mA Analog output: ≤5mA
<b>Minimum Load Current</b>	1mA
<b>Leakage Current</b>	≤10μA
<b>Operating Voltage</b>	18–30V DC
<b>Voltage Drop</b>	≤2.4V
<b>Analog Output Voltage</b>	1–10V DC
<b>Repeatability</b>	±5mm in axial direction
<b>Hysteresis</b>	≤15mm typical
<b>Ultrasonic Frequency</b>	200kHz
<b>Ultrasonic Pulse Cone Angle</b>	8° (full angle)
<b>Protections</b>	False Pulse, Transients, Reverse Polarity, Short Circuit, Overload
<b>Approvals</b>	CE marked for all applicable directives
<b>Enclosure</b>	NEMA 12 and IP65 (IEC 529) Nickel-plated brass barrel with plastic face
<b>Connection</b>	Cable: 2m (6.5ft) length 3-conductor PVC
<b>LED</b>	Discrete Model: Output Energized Analog Model: Echo Detected
<b>Operating Temperature</b>	-10°C to +60°C (+14°F to +140°F)
<b>Shock and Vibration</b>	30g, 10–55Hz

**Description**

The Bulletin 873C ultrasonic sensor has the ability to detect solid and liquid targets from a distance of up to 1m (3.3ft).

The Bulletin 873C comes in one of two versions: a background suppression unit with analog voltage output or a standard diffuse model with a digital output.

The analog model provides an output voltage that varies linearly with the target distance and an adjustable background suppression feature. For many applications, such as monitoring the level of water in a tank, ultrasonic technology allows a single device to do a job that would otherwise require multiple sensors.

The digital model has a normally open PNP output that can be adjusted between 300mm (11.8in) and 1m (3.3ft).

**Features**

- 3-wire operation
- 3-conductor connection
- 18–30V DC
- Analog or digital (discrete) output
- Metal, nonmetal solid and liquid sensing capability
- Short circuit, false pulse, reverse polarity, overload and transient noise protection
- Adjustable sensing distance (digital/discrete model)
- Adjustable background suppression (analog model)
- CE marked for all applicable directives

**Target Considerations**

Because ultrasonic sensors depend on a reflected sound wave for proper operation, the shape, material, temperature and positioning of the target are important. These must be selected to return the strongest possible echo.

The ideal target shape is a smooth, flat surface. Rounded or uneven objects can also be detected, but the sensing distances and/or analog output voltages will be reduced.

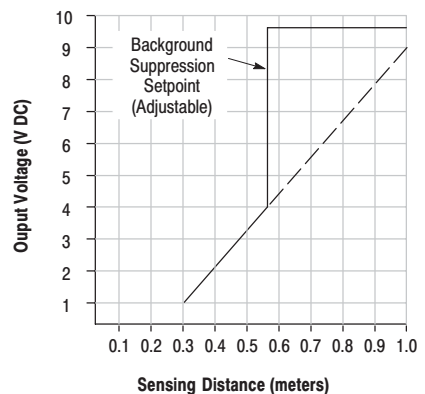
An object must be close to the sensor barrel axis to be detected because the 873C emits ultrasonic pulses in an 8° cone. Targets must be within this cone to reflect the pulses and activate the switch. The object's surface must also face directly toward the sensor to give a proper echo.

The sensor can be positioned accurately using the LED on its end, which glows with an intensity proportional to the strength of the echo. Simply place a target at the desired sensing point, then adjust the position and angle of the sensor to maximize the LEDs brightness.

Soft materials such as fabric or foam rubber are difficult to detect by ultrasonic technology because they are not adequately sound-reflective. This means that non-target objects in the sensing field can be hidden from the sensor by covering them with sound-absorbent material and/or by positioning them so that their echoes are not reflected to the detector.

Target temperatures must be at or below 100°C (212°F) for reliable sensing.

**Output Voltage vs. Target Distance (Analog Model)**



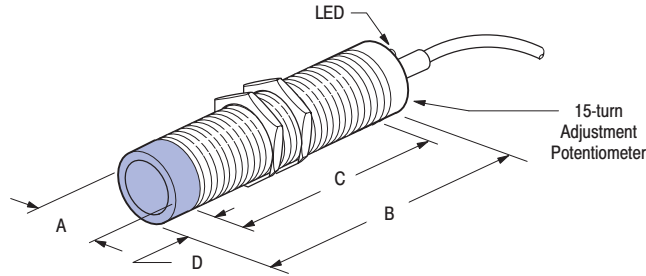
# 873C 3-Wire DC

Plastic Face/Threaded Nickel-Plated Brass Barrel

## Selection Guide

Barrel Diameter	Nominal Sensing Distance mm (inches)	Output Configuration		Switching Frequency (Hz)	Catalog Number
		Analog	PNP		
30mm	300 (11.81) to 1000 (39.37)	N.O.	PNP	5	873C-DDAV1000E2
					873C-DDNP1000E2

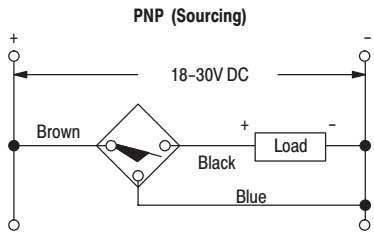
## Dimensions—mm (inches)



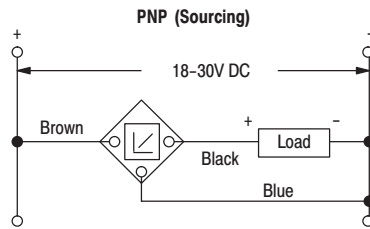
Thread Size	mm (inches)			
	A	B	C	D
M30 X 1.5	30.0 (1.18)	117.0 (4.61)	95.0 (3.74)	12.0 (0.47)

## Wiring Diagrams

### Normally Open Digital (Discrete)



### Analog



## Accessories

Description	Page Number
Mounting Brackets	R2-196 - R2-200
Extra Mounting Nuts	R2-207 - R2-208

# 873E RightSound™ Opposed Mode Clear Object Sensing System

## 18mm Right Angle Plastic Housing



Opposed Mode  
18mm



### Description

RightSound Bulletin 873E sensors are opposed mode ultrasonic sensors consisting of an emitter and a receiver. The receiver is microprocessor based to provide advanced temperature stability and noise immunity. Precise tuning of the receiver to the emitter minimizes interference from ambient noise sources.

The emitter volume control allows the operator to correctly adjust the volume for the sensing distance (distance from the emitter to the receiver) and other variables of a given application (i.e., target speed and spacing, etc.).

The sensing of clear objects, which can be difficult to do reliably with photoelectric controls, is made highly reliable with RightSound ultrasonic sensors. RightSound sensors have been designed for demanding environments, especially those of the Food and Beverage Industry. The NORYL housings are extremely rugged and are rated for 1200psi washdown and NEMA 4X and 6P standards. The acoustic faces of the emitter and receiver are made of FDA compliant silicone rubber for maximum durability and water ingress protection.

Receivers come with both NPN current sinking and PNP current sourcing outputs rated to 100mA. The receiver has the ability to operate in either a

### Specifications

<b>Emitter</b>	873E-EDZZ0750A2 (2m (6.5ft) 300V cable) 873E-EDZZ0750F4 (4-pin DC micro style QD pigtail)
<b>Receiver</b>	873E-RDTT0750A2 (2m (6.5ft) 300V cable) 873E-RDTT0750F4 (4-pin DC micro style QD pigtail)
<b>Sensing Mode</b>	Opposed
<b>Sensing Range</b>	50mm to 750mm (2in to 30in)
<b>Unit Protection</b>	False Pulse, Transient Noise, Short Circuit, Overload, Reverse Polarity
<b>Operating Voltage</b>	10.8–30V DC
<b>Output Type</b>	NPN/PNP
<b>Output Mode</b>	Normally Open/Normally Closed
<b>Load Current</b>	100mA max.
<b>Leakage Current</b>	0.1mA max.
<b>Response Time</b>	<2.5ms
<b>Power-up Delay</b>	<300ms
<b>Max. Switching Frequency</b>	125Hz
<b>Ultrasonic Frequency</b>	200–240kHz
<b>Ultrasonic Pulse Cone Angle</b>	(+/-) 5°
<b>Housing Material</b>	Noryl
<b>Sensing Face Material</b>	FDA compliant silicone rubber
<b>Operating Environment</b>	NEMA 4X, 6P, IP67 (IEC529); 1200psi (8270kPa) washdown
<b>Connection</b>	Cable: #22 AWG PVC, 2m (6.5ft) QD: 4-pin DC micro style male receptacle on pigtail
<b>Vibration</b>	20G, 10–55Hz (non-operational)
<b>Operating Temperature</b>	-25°C to +70°C (-13°F to +158°F)
<b>Storage Temperature</b>	-40°C to +85°C (-40°F to +185°F)
<b>Operating Humidity</b>	Not to exceed 95%, noncondensing
<b>Approvals</b>	UL, c-UL, and CE marked for all applicable directives
<b>Standards</b>	IEC 60947-5-2, EN60947-5-2

normally open or normally closed mode. Modes are selected by the polarity of receiver supply voltage. When the receiver is in the normally open mode, the output conducts when the receiver hears a RightSound emitter.

When the receiver is in the normally closed mode, the output conducts when the sonic beam from the emitter is blocked or not present.

### Features

- Continuously adjustable emitter amplitude with instability indicator allows for simple optimized adjustment over 2 inch to 30 inch sensing range.
- Ideal solution for sensing clear objects or materials including glass and plastic bottles.
- Highly immune to ambient sonic and electrical noise.
- Popular right angle package allows through hole mounting as well as 18mm threaded mounting hubs on the sensor nose and base.
- Highly visible 360° indicators conveniently mounted at the top of the sensor.
- Designed to Rugged Food Industry Standards: enclosure rated for 1200psi washdown as well as NEMA 4X, 6P and IP67 water ingress standards.
- Receivers come with both NPN (sinking) and PNP (sourcing) outputs; output logic switchable via polarity of receiver power wiring; simplified product selection... Select a 6.5 foot cable or a 6 inch pigtail quick-disconnect and cordset and you're ready to start sensing!
- 10.8–30V DC operation with protections for short circuit, overload, reverse polarity, false pulse and transient noise.

# 873E RightSound™ Opposed Mode Clear Object Sensing System

18mm Right Angle Plastic Housing

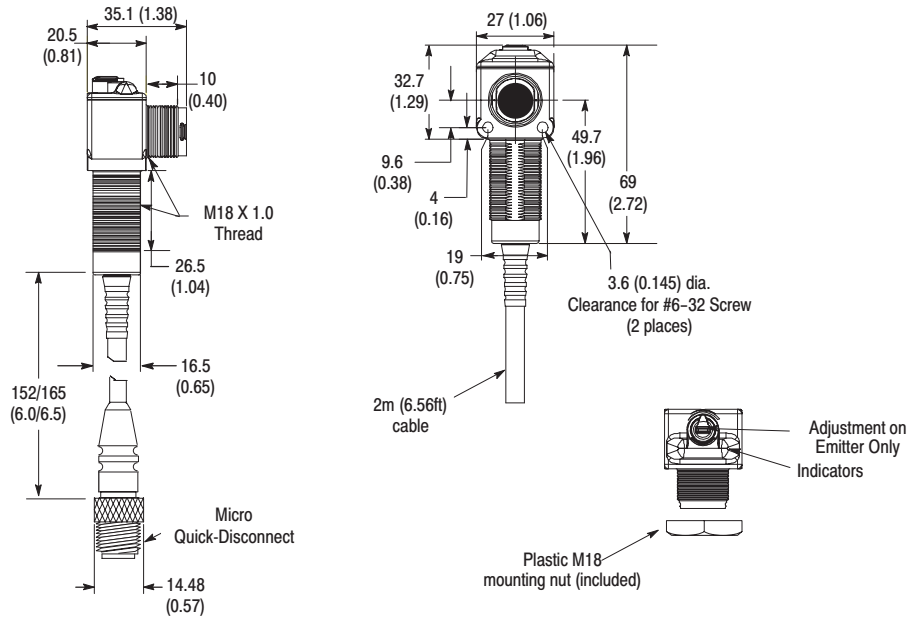
## Selection Guide

Catalog Number	Sensor Type	Termination	Operating Voltage/Supply Current
873E-EDZZ0750A2	Emitter	2m (6.5ft) Cable 300V	10.8-30V DC 20mA @ 20°C 100mA @ -25°C
873E-EDZZ0750F4	Emitter	Micro Style QD	
873E-RD TT0750A2	Receiver	2m (6.5ft) Cable 300V	10.8-30V DC 10mA
873E-RD TT0750F4	Receiver	Micro Style QD	
889D-F4AC-2	DC Micro QD	Recommended Standard QD Cordset (-2 = 2m (6.5ft))	

## LED Indicator Lights

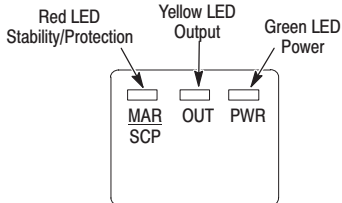
Sensor Type	Label	Color	Status
Emitter	—	Green	Sensor powered
	PWR		Sensor powered
Receiver	OUT	Yellow	Output is conducting
	MAR/SCP	Red	Unreliable sensing condition (On)
			Output in overload or short circuit (Flashing)

## Dimensions—mm (inches)

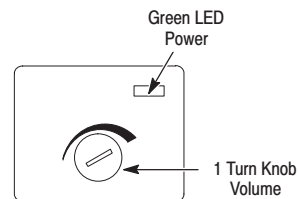


## LED and Adjustment Locations

### RightSound Ultrasonic Receiver



### RightSound Ultrasonic Emitter



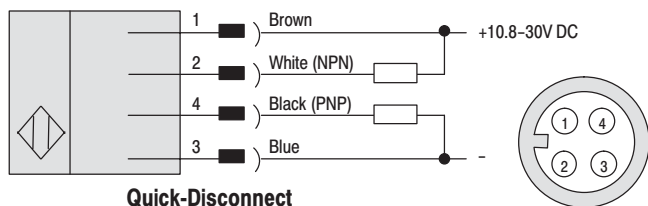
# 873E RightSound™ Opposed Mode Clear Object Sensing System

18mm Right Angle Plastic Housing

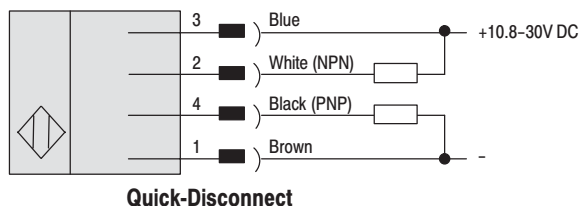
## Wiring Diagrams

### Receivers with Quick-Disconnect

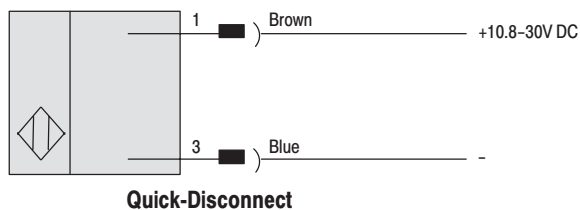
#### Normally Open Configuration



#### Normally Closed Configuration

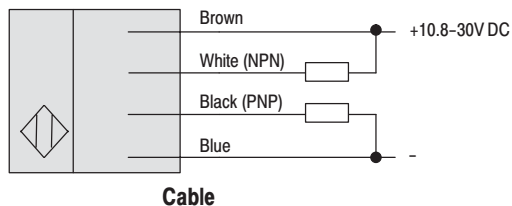


### Emitter with Quick-Disconnect

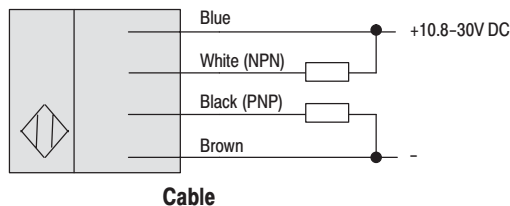


### Receivers with Cable

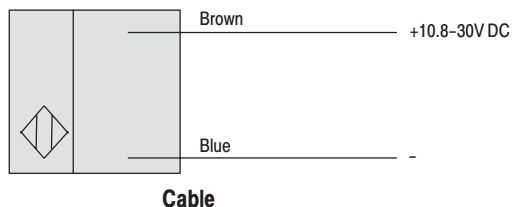
#### Normally Open Configuration



#### Normally Closed Configuration



### Emitter with Cable



## Accessories

Description	Page Number
Terminal Chambers	R8-10
Mounting Brackets	R2-196 - R2-200
Mounting Nuts	R2-207 - R2-208

**Notes**

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