

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

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

Allen-Bradley Replacements

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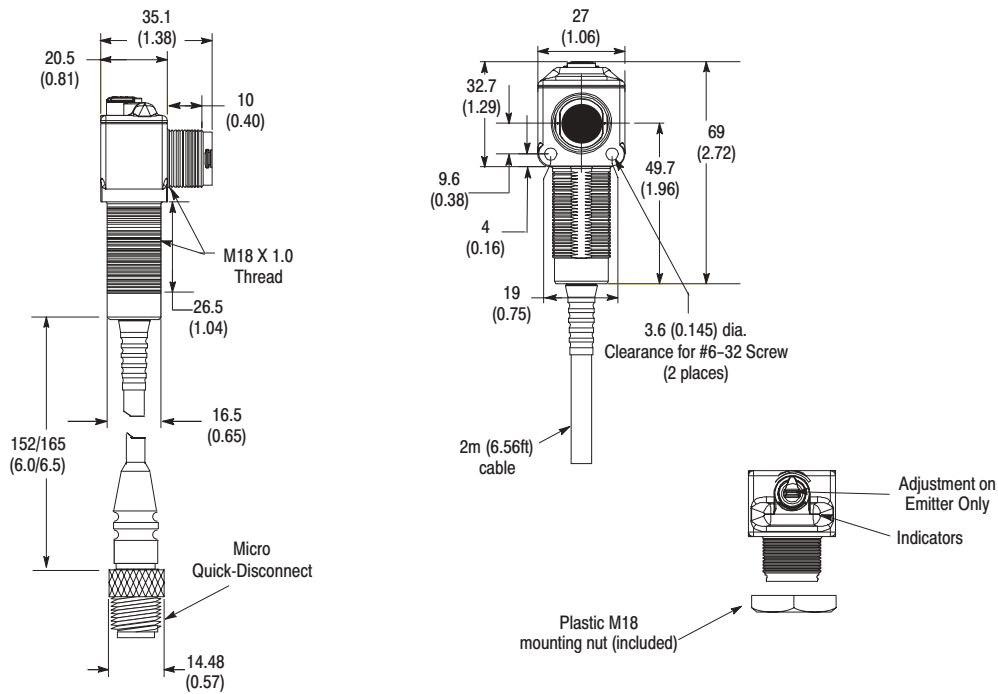
Selection Guide

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

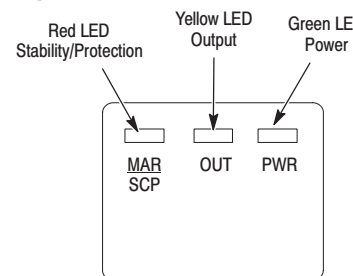
Sensor Type	Label	Color	Status
Emitter	—	Green	Sensor powered
	PWR		Sensor powered
Receiver	OUT	Yellow	Output is conducting
	MAR/SCP	Red	Unreliable sensing condition (On)
			Output in overload or short circuit (Flashing)

Dimensions—mm (inches)

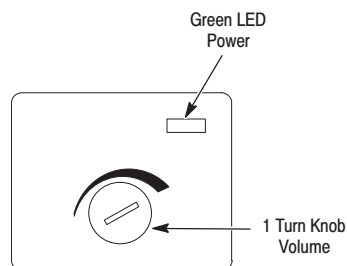


LED and Adjustment Locations

RightSound Ultrasonic Receiver



RightSound Ultrasonic Emitter



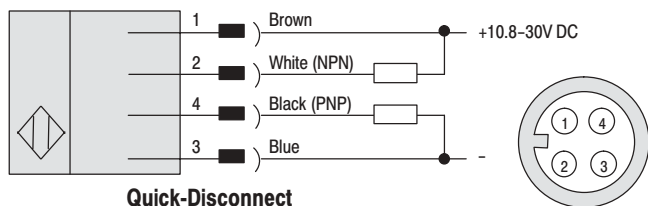
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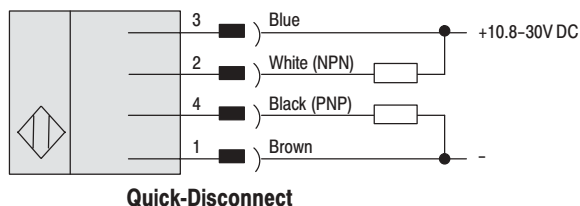
Wiring Diagrams

Receivers with Quick-Disconnect

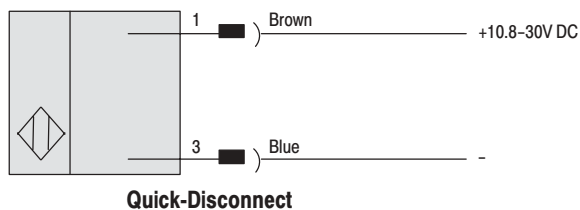
Normally Open Configuration



Normally Closed Configuration

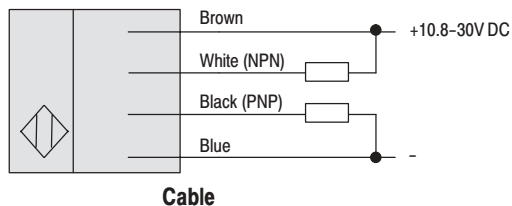


Emitter with Quick-Disconnect

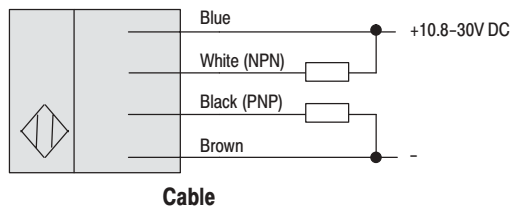


Receivers with Cable

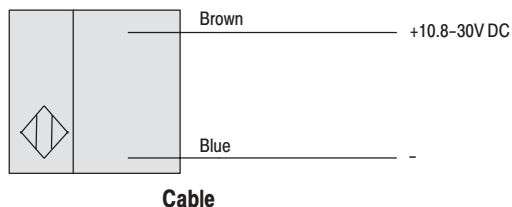
Normally Open Configuration



Normally Closed Configuration



Emitter with Cable



Accessories

Description	Page Number
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Mounting Nuts	2-197 - 2-198

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