

# UHZ Series Ultrasonic Sensors



Measuring only 30 mm x 20 mm, these miniature sensors are specifically designed for applications with limited mounting space. Thru-beam pair sensors are often the most accurate and reliable sensor configurations, but can also be the most costly when compared to traditional diffuse or retro-reflective sensors. The low price of a UHZ series thru-beam pair allows it to be a competitive alternative to similarly priced but less accurate sensors.

Ultrasonic sensors (rectangular) are ideal for detecting objects in applications where the use of a normal photocell does not, such as:

- level measurement: for tanks containing solid or liquid
- diameter or loop detection: for materials such as paper, sheet iron, etc.
- transparent object detection: for plastic or glass bottles, plastic filters, etc.

## Overview

The principle of ultrasonic sensors is based on the emission of a sound impulse and the measurement of the time elapsing of the return echo signal reflected by the detected object. The ultrasonic beam is well reflected by almost all materials

(metal, wood, plastic, glass, liquid, etc.) and is not affected by colored, transparent, or shiny objects.

This allows the user to standardize on one sensor for many materials without any extra setup or sensing concerns.



Ultrasonic Thru-Beam Sensors Specifications	
<b>Specifications</b>	
<b>Model Series</b>	UHZ
<b>Input Voltage</b>	18 - 30 VDC
<b>Sensing Range</b>	300 mm
<b>Switching Frequency</b>	150 Hz
<b>Sensing Beam</b>	Beam angle 15°
<b>Output Types</b>	PNP/NPN, NO/ NC
<b>Operating Temperature</b>	5°F to 140°F (-15°C to +60°C)
<b>Case Material</b>	PBTP
<b>Active Head Material</b>	Ceramic
<b>Vibration</b>	per IEC EN 60947-5-2
<b>Shock</b>	per IEC EN 60947-5-2
<b>Protection</b>	Output short circuit and overcurrent protection, reverse polarity protection
<b>Enclosure Ratings</b>	IEC-IP67
<b>Agency Approvals</b>	CE
<b>Output Load</b>	500 mA
<b>Response Time</b>	1 ms
<b>No Load Current Draw</b>	< 40 mA
<b>Leakage Current (max)</b>	<10 µA @ 30 VDC
<b>Indicator LEDs</b>	Yellow Output State

# UHZ Series Ultrasonic Sensors

The UHZ series of miniature ultrasonic sensors includes four models of rectangular thru-beam units. These tiny 20 mm x 30 mm sensors have a maximum sensing distance of 300 mm, with no dead zone at close range. This enables object sensing at a variety of distances. All models have an LED indicator on the receiver and are IP67 protection rated.

With two pre-drilled mounting holes, the UHZ units can be surface mounted more easily than traditional 18 mm or 30 mm threaded tubular designs, which often require a separate mounting bracket or a large mounting hole and additional lock-nuts.

## Features

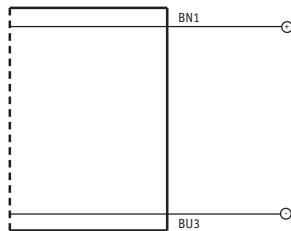
- 30x20x12 mm emitter/receiver rectangular ultrasonic sensor
- LED status indicator for all models
- Complete protection against electrical damage
- IP67 protection
- Strong plastic housing
- Switching frequency 150 Hz
- Sensing distance (sn): 300mm
- Beam angle: 15°
- Supply voltage: 18 - 30 VDC
- NPN or PNP, NO or NC models

Rectangular Ultrasonic Thru-Beam Sensors Selection Chart								
Part Number	Price	Voltage Range	Sensing Range	Switching Frequency	Sensing Beam	Thru-Beam Component	Output Type	Connection Type
UHZ-AN-0A	<--->	18 - 30 VDC	11.81 in. (0.3 m)	150 Hz	ultrasonic	pair	NPN NO	2 meter cable
UHZ-AP-0A	<--->					pair	PNP NO	
UHZ-CN-0A	<--->					pair	NPN NC	
UHZ-CP-0A	<--->					pair	PNP NC	

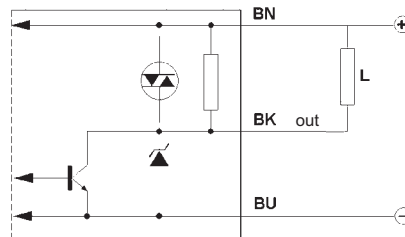
**Cables and Accessories**  
Cables and accessories can be found starting on page 17-48.

## Wiring Diagram

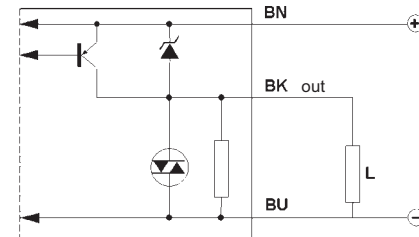
### Emitter



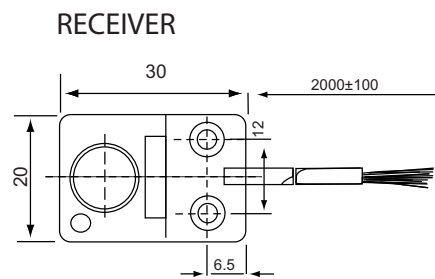
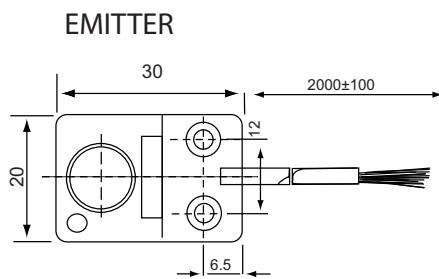
### Receiver (NPN)



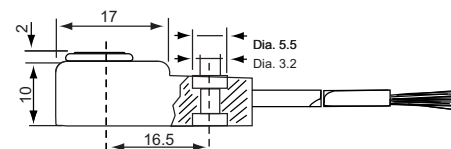
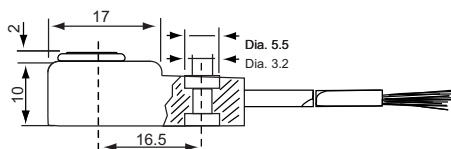
### Receiver (PNP)



## Dimensions



dimensions unit = mm



Brown: +24 VDC  
Blue: GND

Brown: +24 VDC  
Blue: GND  
Black: Output

**Warning: These products are not safety sensors and are not suitable for use in personal safety applications.**

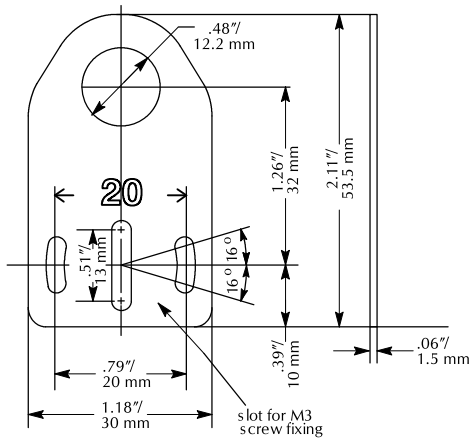
# Accessories: Adapter, Mounting Brackets

## ST12A metal axial bracket

For mounting M12 (12 mm) sensors. Has two mounting holes (use 3 mm screws) and allows the rotation of an optical axis for right-beam angle adapter sensors. Hexagonal nuts not included.



<---> (1 per pack)

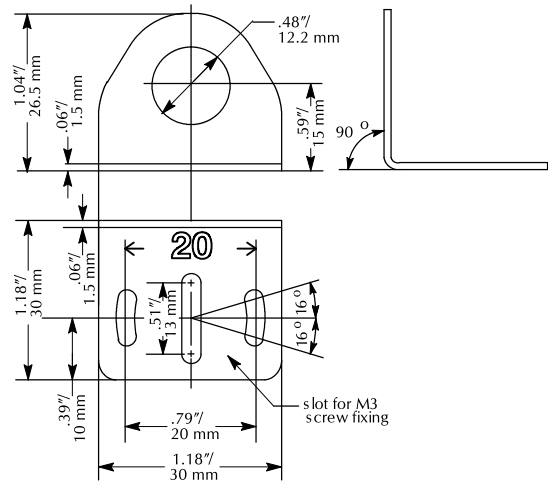


## ST12C metal right-angle bracket

Metal angular mounting bracket for use with M12 (12 mm) sensors. Has two mounting holes (use 3 mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal nuts not included.



<---> (1 per pack)

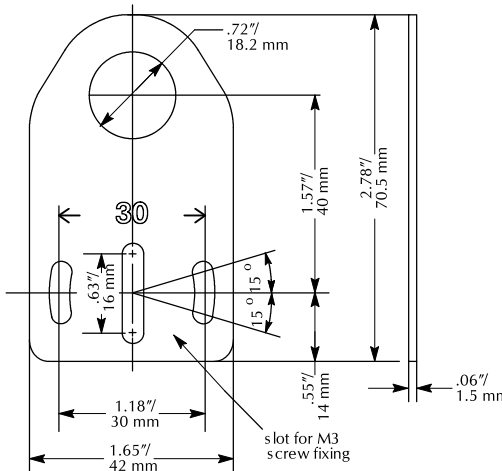


## ST18A axial bracket

Metal mounting bracket for M18 (18 mm) sensors. Has two mounting holes (use 4 mm screws) and allows the rotation of an optical axis for right-beam-angle-adapter sensors. Hexagonal nuts not included.



<---> (1 per pack)



## ST18C metal right-angle bracket

Metal angular mounting bracket for M18 (18 mm) sensors. Has two mounting holes (use 4 mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal nuts not included.



<---> (1 per pack)

