

# UHZ Series Ultrasonic Sensors



## 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.

Measuring only 30 mm x 20 mm, these miniature sensors are specifically designed for applications with limited mounting space. Through-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 retroreflective sensors. The low price of a UHZ series through-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.

## Ultrasonic Through-Beam Sensors Specifications

| Specifications                              | UHZ                                                                           |
|---------------------------------------------|-------------------------------------------------------------------------------|
| Nominal Sensing Distance                    | 300 mm [11.81 in]                                                             |
| Operating Distance                          | NA                                                                            |
| Output Type                                 | PNP/NPN, N.O./ N.C.                                                           |
| Operating Voltage                           | 18 - 30 VDC                                                                   |
| No Load Supply Current                      | < 40mA                                                                        |
| Operating (Load) Current                    | 500mA                                                                         |
| Off-state (Leakage) Current                 | < 10µA @ 30 VDC                                                               |
| Voltage Drop                                | NA                                                                            |
| Switching Frequency                         | 150Hz                                                                         |
| Sensing Beam                                | Beam angle 15°                                                                |
| Differential Travel (% of Nominal Distance) | NA                                                                            |
| Repeat Accuracy                             | NA                                                                            |
| Ripple                                      | NA                                                                            |
| Time Delay Before Availability (tv)         | NA                                                                            |
| Response Time                               | 1ms                                                                           |
| Reverse Polarity Protection                 | Yes                                                                           |
| Short-Circuit Protection                    | Output short circuit and over current protection, reverse polarity protection |
| Operating Temperature                       | 5 to 140°F [-15 to +60°C]                                                     |
| Protection Degree                           | IEC-IP67                                                                      |
| Indication/Switch Status                    | Yellow Output State                                                           |
| Case Material                               | PBTP                                                                          |
| Active Head Material                        | Ceramic                                                                       |
| Shock/Vibration                             | per IEC EN 60947-5-2                                                          |
| Tightening Torque                           | NA                                                                            |
| Weight                                      | 161g [5.68 oz]                                                                |
| Connection                                  | 2m [6.5 ft] axial cable                                                       |
| Agency Approvals                            | CE                                                                            |

# UHZ Series Ultrasonic Sensors

## Overview

The UHZ series of miniature ultrasonic sensors includes four models of rectangular through-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 locknuts.

## Features

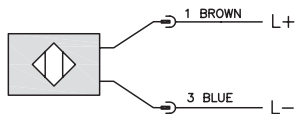
- 30x20x12 mm emitter/receiver rectangular ultrasonic sensor
- LED status indicator for all models
- Complete protection against electrical damage
- IP67 protection
- Strong plastic housing
- Switching frequency 150 Hz
- Sensing distance (sn): 300mm
- Beam angle: 15°
- Supply voltage: 18 - 30 VDC
- Lifetime warranty

**Rectangular Ultrasonic Through-Beam Sensors Selection Chart**

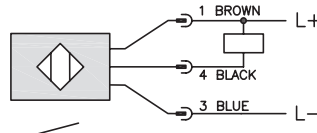
| Part Number               | Price    | Voltage Range | Sensing Range    | Switching Frequency | Sensing Beam | Through-Beam Component | Output Type | Connection Type   | Wiring    |
|---------------------------|----------|---------------|------------------|---------------------|--------------|------------------------|-------------|-------------------|-----------|
| <a href="#">UHZ-AN-0A</a> | \$197.00 | 18 - 30 VDC   | 11.81 in [0.3 m] | 150Hz               | Ultrasonic   | pair                   | NPN /N.O.   | 2m [6.5 ft] cable | Diagram 1 |
| <a href="#">UHZ-AP-0A</a> | \$197.00 |               |                  |                     |              | pair                   | PNP /N.O.   |                   | Diagram 2 |

## Wiring Diagram

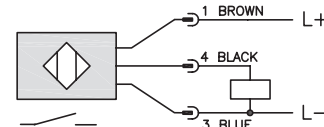
**Emitter**



**Receiver (NPN) Diagram 1**

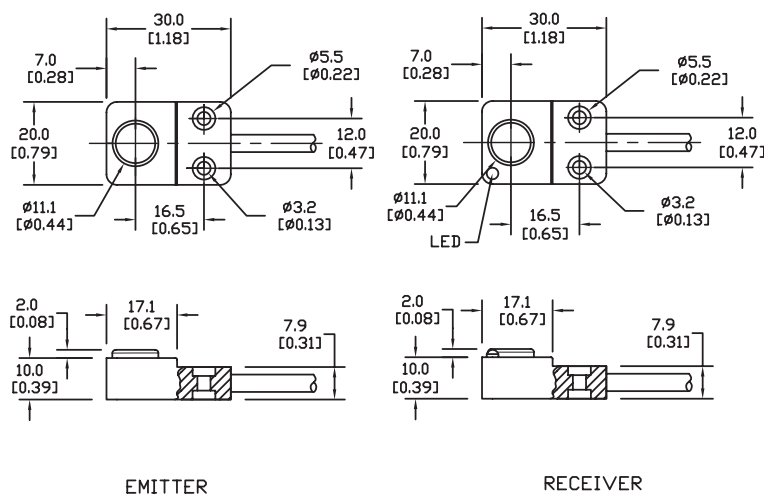


**Receiver (PNP) Diagram 2**



## Dimensions

mm [inch]



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