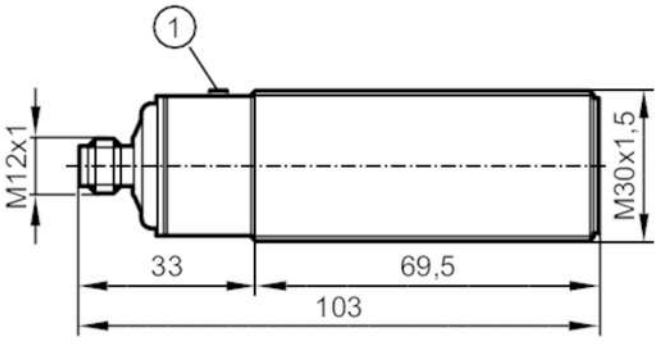
# UIT501

## Ultrasonic sensor

UIA03500E1KG/IO-Link/US




1 teach button

| | | |
|---|---|---|
| **Product characteristics** | | |
| Electrical design | | PNP |
| Output function | | normally open / normally closed; (parameterisable) |
| Sensing range | [mm] | 250...3500; (Target: 200 x 200 mm) |
| Communication interface | | IO-Link |
| Housing | | threaded type |
| Dimensions | [mm] | M30 x 1.5 / L = 103 |
| **Electrical data** | | |
| Operating voltage | [V] | 10...30 DC |
| Current consumption | [mA] | < 30 |
| Protection class | | III |
| Reverse polarity protection | | yes |
| Power-on delay time | [s] | < 0.3 |
| Converter frequency | [kHz] | 112 |
| **Inputs / outputs** | | |
| Number of inputs and outputs | | Number of digital outputs: 1; Number of analogue outputs: 1 |
| **Outputs** | | |
| Total number of outputs | | 2 |
| Output signal | | switching signal; analogue signal; IO-Link |
| Electrical design | | PNP |
| Number of digital outputs | | 1 |
| Output function | | normally open / normally closed; (parameterisable) |
| Max. voltage drop switching output DC | [V] | 2.2 |
| Permanent current rating of switching output DC | [mA] | 100 |
| Switching frequency DC | [Hz] | 1 |
| Number of analogue outputs | | 1 |
| Analogue current output | [mA] | 4...20 |
| Max. load | [Ω] | 500 |

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## Ultrasonic sensor

UIA03500E1KG/IO-Link/US

| | | |
|---|---|---|
| Short-circuit protection | | yes |
| Overload protection | | yes |
| **Detection zone** | | |
| Sensing range | [mm] | 250...3500;  (Target: 200 x 200 mm) |
| Blind zone | [mm] | 250 |
| Angle of aperture cylindrical | [°] | 12;  (±2) |
| Max. deviation from the 90° angle sensor/object | [°] | ± 4 |
| **Accuracy / deviations** | | |
| Temperature compensation | | yes |
| Hysteresis | [%] | < 3 |
| Switch point drift | [%] | -5...5 |
| Linearity error of analogue output | [%] | <3 |
| Repeatability | | 1 % |
| Resolution | [mm] | 3 |
| Notes on the accuracy / deviation | | The indicated values are reached after a warm-up time of min. 20 minutes |
| **Response times** | | |
| Response time | [ms] | < 600;  (analogue output) |
| **Software / programming** | | |
| Parameter setting options | | hysteresis / window; second switch point; Switch-on and switch-off delay; switch-on operations; Teach function; light-on/dark-on mode |
| **Interfaces** | | |
| Communication interface | | IO-Link |
| Transmission type | | COM2 (38,4 kBaud) |
| IO-Link revision | | 1.1 |
| SDCI standard | | IEC 61131-9 |
| Profiles | | Smart Sensor: Device Identification; Multi-channel, two setpoint switching sensor, type 0 Generic Profiled Sensor; Process Data Variable;  Device Diagnosis; Teach Channel |
| SIO mode | | yes |
| Required master port type | | A |
| Min. process cycle time | [ms] | 3.2 |
| IO-Link process data (cyclical) | | **function** / **bit length** |
| | | process value / 16 |
| | | device status / 4 |
| | | binary switching information / 2 |
| IO-Link functions (acyclical) | | application specific tag; operating hours counter |
| Supported DeviceIDs | | **Type of operation** / **DeviceID** |
| | | default / 1094 |
| Note | | For further information please see the IODD PDF file under "Downloads" |
| **Operating conditions** | | |
| Ambient temperature | [°C] | -20...70 |
| Storage temperature | [°C] | -30...80 |
| Protection | | IP 67 |

# UIT501

## Ultrasonic sensor

**UIA03500E1KG/IO-Link/US**

| | | | |
|---|---|---|---|
| **Tests / approvals** | | | |
| EMC | | EN 61000-4-2 ESD | 4 kV CD / 8 kV AD |
| | | EN 61000-4-3 HF radiated | 3 V/m |
| | | EN 61000-4-4 Burst | 2 kV |
| | | EN 61000-4-6 HF conducted | 3 V |
| | | EN 55011 | Class A |
| Vibration resistance | | EN 60068-2-6 Fc | (10-55) Hz 1 mm amplitude, oscillation period 5 min., 30 min. per axis at resonance or 55 Hz |
| Shock resistance | | EN 60068-2-27 Ea | 30 g 11 ms half-sine; 3 shocks each in every direction of the 3 coordinate axes |
| MTTF | [years] | 117 | |
| UL approval | | Ta | -20...70 °C |
| | | power supply | Class 2 |
| | | File number UL | E174191 |
| **Mechanical data** | | | |
| Weight | [g] | 227 | |
| Housing | | threaded type | |
| Dimensions | [mm] | M30 x 1.5 / L = 103 | |
| Thread designation | | M30 x 1.5 | |
| Materials | | stainless steel (316L/1.4404); PA; epoxy glass ceramics | |
| Tightening torque | [Nm] | 100 | |
| **Displays / operating elements** | | | |
| Display | | switching status | 2 x LED, yellow |
| | | echo | 1 x LED, green |
| Teach function | | yes | |
| **Accessories** | | | |
| Items supplied | | lock nuts: 2, stainless steel | |
| **Remarks** | | | |
| Remarks | | operating voltage "supply class 2" according to cULus | |
| Pack quantity | | 1 pcs. | |

**Electrical connection**

Connector: 1 x M12; coding: A

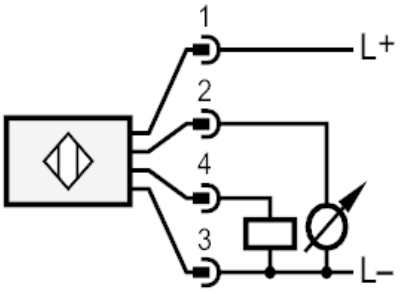


# UIT501

## Ultrasonic sensor

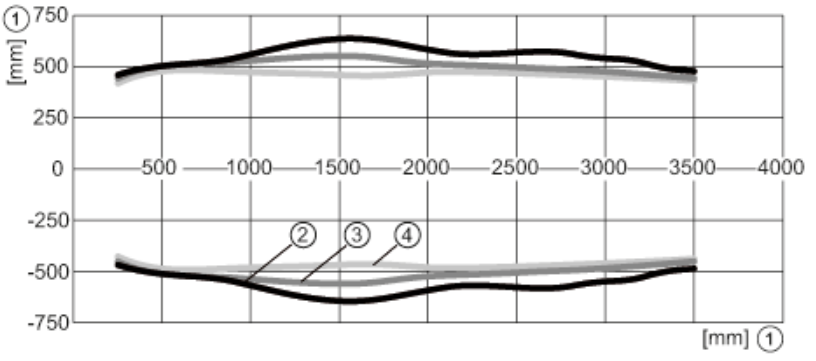
**UIA03500E1KG/IO-Link/US**

## Connection




4 IO-Link

## Diagrams and graphs




1 distance

2 Standard sound beam

3 Medium sound beam

4 Narrow sound beam