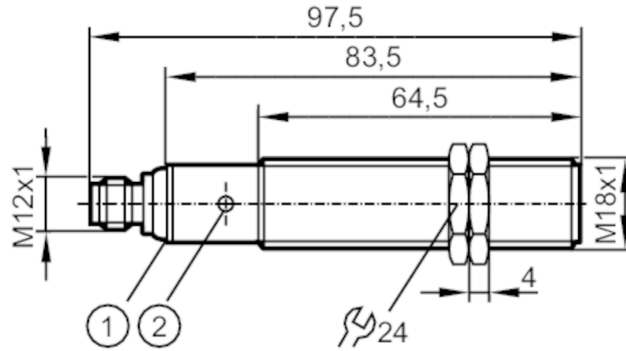


# UGR500



## Ultrasonic sensor

UGA01600EOKG/IO-LINK/US



- 1 LEDs
- 2 teach button



### Product characteristics

|                         |  |
|-------------------------|--|
| Electrical design       | PNP  |
| Output function         | normally open / normally closed; (parameterisable) |
| Sensing range [mm]      | 250...1600; (Target: 200 x 200 mm)                 |
| Communication interface | IO-Link  |
| Housing                 | threaded type                                      |
| Dimensions [mm]         | M18 x 1 / L = 97.5                                 |

### Electrical data

|                             |   |
|-----------------------------|---|
| Operating voltage [V]       | 10...30 DC; ("supply class 2" to cULus) |
| Current consumption [mA]    | 55                                      |
| Protection class            | III                                     |
| Reverse polarity protection | yes                                     |
| Power-on delay time [s]     | < 0.3                                   |
| Converter frequency [kHz]   | 230                                     |

### Inputs / outputs

|                              |                              |
|------------------------------|------------------------------|
| Number of inputs and outputs | Number of digital outputs: 1 |
|------------------------------|------------------------------|

### Outputs

|  |  |
|--|--|
| Total number of outputs                              | 1  |
| 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]                          | 2  |
| Short-circuit protection                             | yes  |
| Overload protection                                  | yes  |

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| Detection zone                                      |   |                    |
|---|---|--------------------|
| Sensing range [mm]                                  | 250...1600; (Target: 200 x 200 mm)  |                    |
| Blind zone [mm]                                     | 250   |                    |
| Angle of aperture cylindrical [°]                   | 15; (±2)  |                    |
| Max. deviation from the 90° angle sensor/object [°] | ± 4   |                    |
| Accuracy / deviations                               |   |                    |
| Temperature compensation                            | yes   |                    |
| Hysteresis [%]                                      | < 2   |                    |
| Switch point drift [%]                              | -2...2  |                    |
| Notes on the accuracy / deviation                   | The indicated values are reached after a warm-up time of min. 20 minutes  |                    |
| Repeatability                                       | 1 %   |                    |
| Resolution [mm]                                     | 1   |                    |
| 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 functions (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   | IO-Link device ID  |
|   | Default   | 698 d / 00 02 BA h |
| Note  | For further information please see the IODD PDF file at "Downloads"   |                    |
| Operating conditions                                |   |                    |
| Ambient temperature [°C]                            | -20...70  |                    |
| Storage temperature [°C]                            | -30...80  |                    |
| Protection  | IP 67   |                    |

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| 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]                   | 163  |
| UL approval          | Ta                        | -20...70 °C  |
|                      | voltage supply            | Class 2  |
|                      | File number UL            | E174191  |

| Mechanical data    |      |   |
|--------------------|------|---|
| Weight             | [g]  | 101.5   |
| Housing            |      | threaded type   |
| Dimensions         | [mm] | M18 x 1 / L = 97.5  |
| Thread designation |      | M18 x 1   |
| Materials          |      | stainless steel (1.4404 / 316L); PA; epoxy glass ceramics |
| Tightening torque  | [Nm] | 50  |

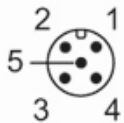
| Displays / operating elements |                  |                 |
|-------------------------------|------------------|-----------------|
| Display                       | switching status | 2 x LED, yellow |
|                               | echo             | 1 x LED, green  |
| Teach function                |                  | yes             |

| Accessories            |  |                               |
|------------------------|--|-------------------------------|
| Accessories (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



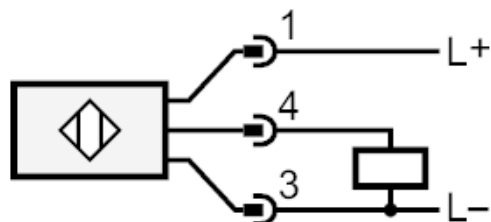
# UGR500



## Ultrasonic sensor

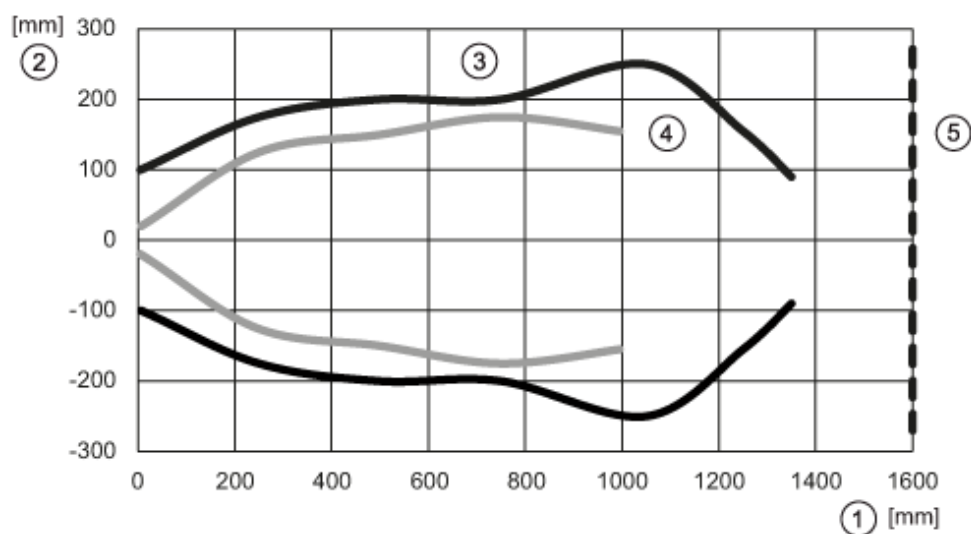
UGA01600EOKG/IO-LINK/US

### Connection



### Diagrams and graphs

response curve



- 1: distance
- 2: sound beam
- 3: Target 200 x 200 mm
- 4: Target Ø 25 mm
- 5: Reflector