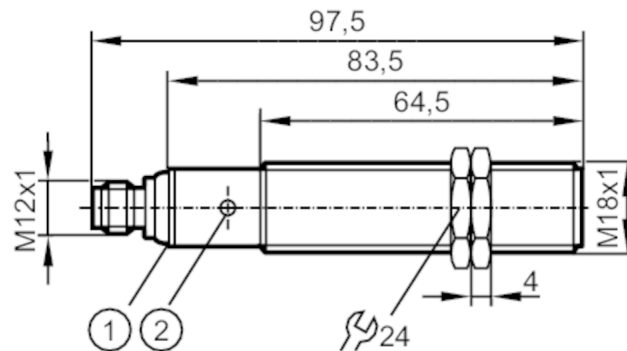


# UGT514



## Ultrasonic sensor

UGA02200E2KG/IO-LINK/US



- 1 LEDs
- 2 teach button



### Product characteristics

|                         |                                                    |
|-------------------------|----------------------------------------------------|
| Electrical design       | PNP                                                |
| Output function         | normally open / normally closed; (parameterisable) |
| Sensing range [mm]      | 200...2200; (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]   | 200                                     |

### 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]                          | 2                                                  |
| Number of analogue outputs                           | 1                                                  |
| Analogue voltage output [V]                          | 0...10                                             |
| Min. load resistance [Ω]                             | 3000                                               |
| Short-circuit protection                             | yes                                                |



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|                                                 |                                                                                                                                                                           |                                    |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Overload protection                             | yes                                                                                                                                                                       |                                    |
| Resolution of analogue output                   | < 3 mm                                                                                                                                                                    |                                    |
| Detection zone                                  |                                                                                                                                                                           |                                    |
| Sensing range                                   | [mm]                                                                                                                                                                      | 200...2200; (Target: 200 x 200 mm) |
| Blind zone                                      | [mm]                                                                                                                                                                      | 200                                |
| Angle of aperture cylindrical                   | [°]                                                                                                                                                                       | 14; (±2)                           |
| Max. deviation from the 90° angle sensor/object | [°]                                                                                                                                                                       | ± 4                                |
| Accuracy / deviations                           |                                                                                                                                                                           |                                    |
| Temperature compensation                        | yes                                                                                                                                                                       |                                    |
| Hysteresis                                      | [%]                                                                                                                                                                       | < 2                                |
| Switch point drift                              | [%]                                                                                                                                                                       | -2...2                             |
| Linearity error of analogue output              | [%]                                                                                                                                                                       | <3                                 |
| Repeatability                                   | 1 %                                                                                                                                                                       |                                    |
| Notes on the accuracy / deviation               | The indicated values are reached after a warm-up time of min. 20 minutes                                                                                                  |                                    |
| Response times                                  |                                                                                                                                                                           |                                    |
| Response time                                   | [ms]                                                                                                                                                                      | < 400; (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                                                                                                                                                                   | 705                                |
| 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                                                                                                                                                                     |                                    |

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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]         |                           | 142                                                                                          |
| UL approval          | Ta                        | -20...70 °C                                                                                  |
|                      | power supply              | Class 2                                                                                      |
|                      | File number UL            | E174191                                                                                      |

| Mechanical data        |  |                                                         |
|------------------------|--|---------------------------------------------------------|
| Weight [g]             |  | 103.5                                                   |
| Housing                |  | threaded type                                           |
| Dimensions [mm]        |  | M18 x 1 / L = 97.5                                      |
| Thread designation     |  | M18 x 1                                                 |
| Materials              |  | stainless steel (316L/1.4404); 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    |                               |
|----------------|-------------------------------|
| 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



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### Connection



Pin 4 = IO-Link



### Diagrams and graphs



- 1: distance
- 2: Detection zone
- 3: switch-on/switch-off graph
- 4: Target 200 x 200 mm
- 5: 50% of the target in the detection zone
- 6: switch point