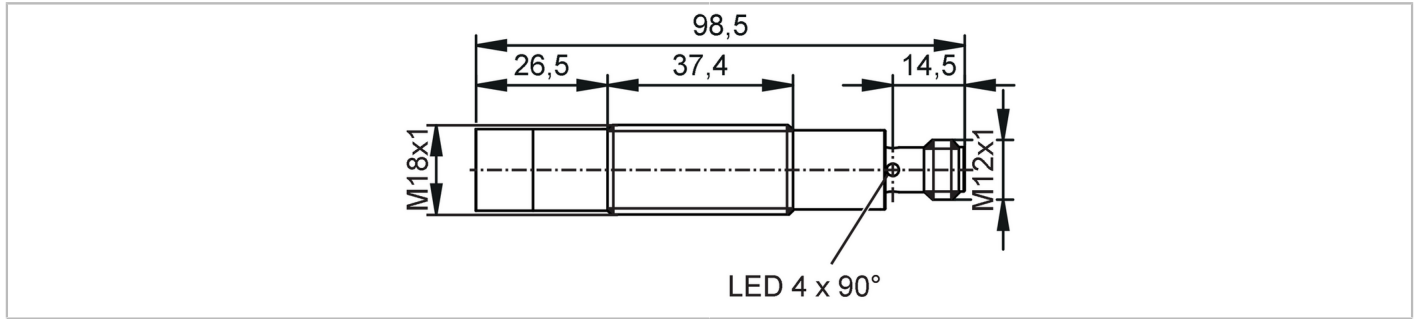


# UGT304



## Full-metal ultrasonic sensor

UGA401000R1KG/AM/IO/US



### Product characteristics

Electrical design	PNP/NPN; (configurable)
Output function	normally open / closed; (configurable)
Sensing range [mm]	100...1000; (Target: 100 x 100 mm)
Communication interface	IO-Link
Housing	Threaded type
Dimensions [mm]	M18 x 1 / L = 98.5

### Electrical data

Operating voltage [V]	10...30 DC; (cULus - Class 2 source required)
Current consumption [mA]	< 50
Protection class	III
Reverse polarity protection	yes
Power-on delay time [s]	< 0.5
Converter frequency [kHz]	200

### Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1
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### Outputs

Total number of outputs	2
Electrical design	PNP/NPN; (configurable)
Number of digital outputs	1
Output function	normally open / closed; (configurable)
Max. voltage drop switching output DC [V]	2.2
Permanent current rating of switching output DC [mA]	100
Switching frequency DC [Hz]	6
Number of analog outputs	1
Analog current output [mA]	4...20
Max. load [Ω]	500
Short-circuit protection	yes
Overload protection	yes

### Monitoring range

Sensing range [mm]	100...1000; (Target: 100 x 100 mm)
Blind zone [mm]	100

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Angle of aperture cylindrical	[°]	16; (±1)
Max. deviation from the 90° angle sensor/object	[°]	± 4

### Accuracy / deviations

Temperature compensation		yes
Hysteresis	[%]	< 1
Linearity error of analog output	[%]	1; (of the final value of the measuring range)
Temperature drift		± 2 %; (of the final value of the measuring range)
Repeatability		0,5 %
Resolution	[mm]	1
Notes on the accuracy / deviation		The indicated values are reached after a warm-up time of min. 20 minutes

### Reaction times

Response time	[ms]	< 600; (analog output)
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### 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
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### Interfaces

Communication interface		IO-Link
Transmission type		COM2 (38,4 kBaud)
IO-Link revision		1.1
SDCI standard		IEC 61131-9
Profiles	Smart Sensor - SSP 4.1.1	Measuring and Switching Sensor, 1 channel
	Common - I&D	Identification and Diagnosis
	Extension	Sensor control
	Extension	Object detection, switches when value falls below the setpoint
	Function	Locator
	Function	ProductURI
SIO mode		yes
Required master port class		A
Min. process cycle time	[ms]	3.2
IO-Link process data (cyclical)	<b>Function</b>	<b>bit length</b>
	process value	16
	device status	4
	binary switching information	2
IO-Link functions (acyclical)		application specific tag; operating hours counter
Supported DeviceIDs	<b>Type of operation</b>	<b>DeviceID</b>
	default	1813
Note		For further information please see the IODD PDF file at "Downloads"

### Operating conditions

Ambient temperature	[°C]	-20...70
Storage temperature	[°C]	-25...75
Protection		IP 65; IP 67; IP 68; IP 69K

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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, vibration duration 5 min., 30 min. per axis with 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]	838
UL approval	Ta	-20...70 °C
	Enclosure type	Type 1
	voltage supply	Class 2
	File number UL	E174191

Mechanical data		
Weight	[g]	96
Housing		Threaded type
Dimensions	[mm]	M18 x 1 / L = 98.5
Thread designation		M18 x 1
Material		housing: stainless steel (1.4404 / 316L); LED window: PA
Tightening torque	[Nm]	50

Displays / operating elements		
Display	Switching status	1 LED, yellow

Accessories		
Items supplied		lock nuts: 2 x M18, stainless steel
		damping plates: 2, EPDM

Remarks		
Pack quantity		1 pcs.

### Electrical connection - plug

Connector: 1 x M12; coding: A; Contacts: 4



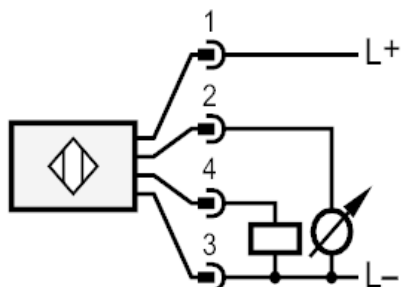
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### Connection



4

IO-Link

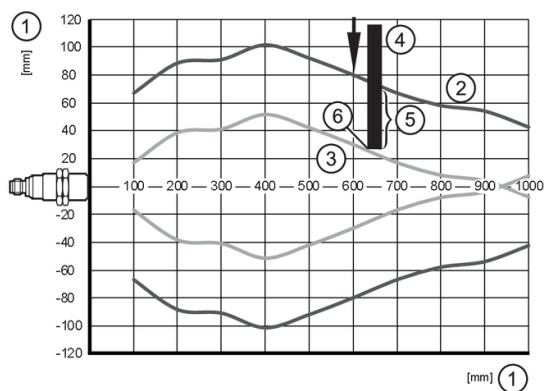
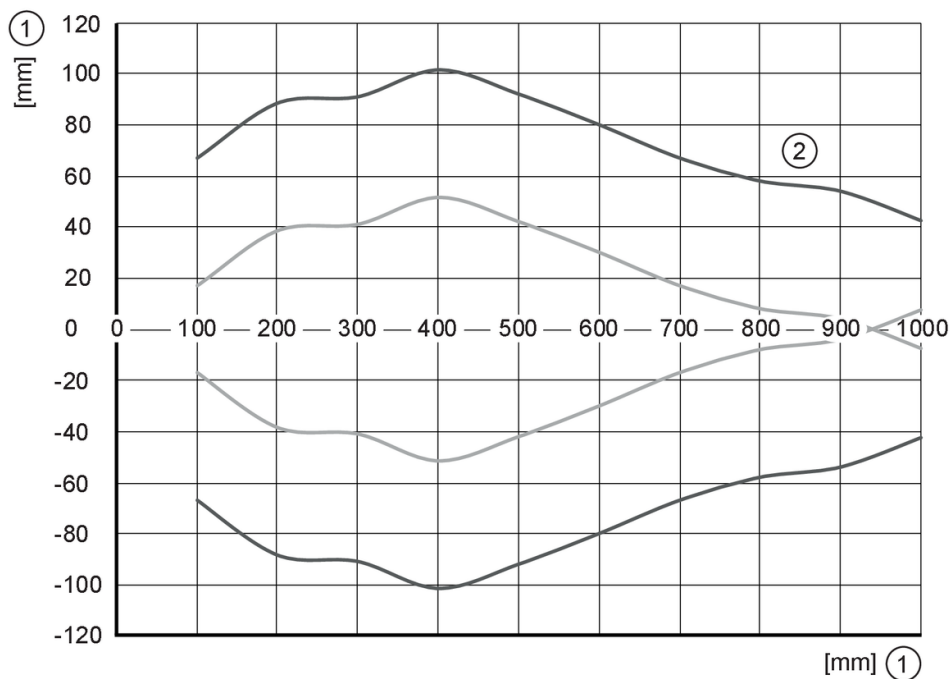
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### Diagrams and graphs



- 1 Distance
- 2 Monitoring range
- 3 switch-on/switch-off graph
- 4 Target 100 x 100 mm
- 5 50 % of the target in the detection zone
- 6 Set point