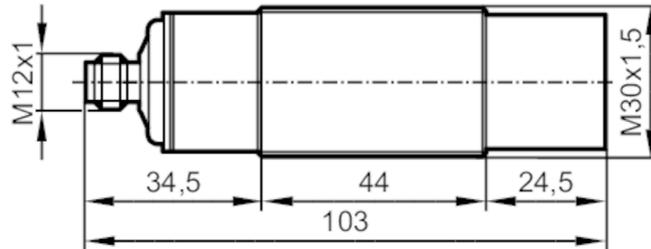


# UIT301



## Full-metal ultrasonic sensor

UID02500E1KG/IO-Link/US



### Product characteristics

Electrical design	PNP/NPN; (configurable)
Output function	normally open / closed; (configurable)
Sensing range [mm]	250...2500; (Target: 400 x 400 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]	< 50
Protection class	III
Reverse polarity protection	yes
Power-on delay time [s]	< 0.5
Converter frequency [kHz]	112

### 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]	1
Number of analog outputs	1
Analog current output [mA]	4...20
Max. load [Ω]	500
Short-circuit protection	yes

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Overload protection		yes
<b>Monitoring range</b>		
Sensing range	[mm]	250...2500; (Target: 400 x 400 mm)
Blind zone	[mm]	250
Angle of aperture cylindrical	[°]	12; (±2)
Max. deviation from the 90° angle sensor/object	[°]	± 4
<b>Accuracy / deviations</b>		
Temperature compensation		yes
Hysteresis	[%]	< 3
Linearity error of analog output	[%]	<3
Temperature drift		± 5 %; (of the final value of the measuring range)
Repeatability		1 %
Resolution	[mm]	3
Notes on the accuracy / deviation		The indicated values are reached after a warm-up time of min. 20 minutes
<b>Reaction times</b>		
Response time	[s]	analog output
Response time	[ms]	< 600
<b>Software / programming</b>		
Parameter setting options		hysteresis / window; second switch point; Switch-on and switch-off delay; switch-on operations; Teach function; light-on/dark-on mode
<b>Interfaces</b>		
Communication interface		IO-Link
Transmission type		COM2 (38,4 kBaud)
IO-Link revision		1.1
SDCI standard		IEC 61131-9
Profiles	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
	Function	Multiple switching signal
	Function	Teach channel
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	1389
Note		For further information please see the IODD PDF file at "Downloads"
<b>Operating conditions</b>		
Ambient temperature	[°C]	-10...60
Storage temperature	[°C]	-15...65

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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]		103

### Mechanical data

Weight [g]	258.1
Housing	Threaded type
Dimensions [mm]	M30 x 1.5 / L = 103
Thread designation	M30 x 1.5
Material	stainless steel (1.4404 / 316L); LED window: TPU (urethane); potting: PUR
Tightening torque [Nm]	100

### Displays / operating elements

Display	Switching status	1 LED, yellow
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### Accessories

Items supplied	lock nuts: 2 x M30, stainless steel damping plates: 2, EPDM
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### Remarks

Pack quantity	1 pcs.
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### Electrical connection - plug

Connector: 1 x M12; coding: A

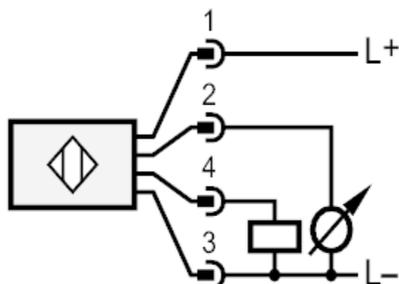




## Full-metal ultrasonic sensor

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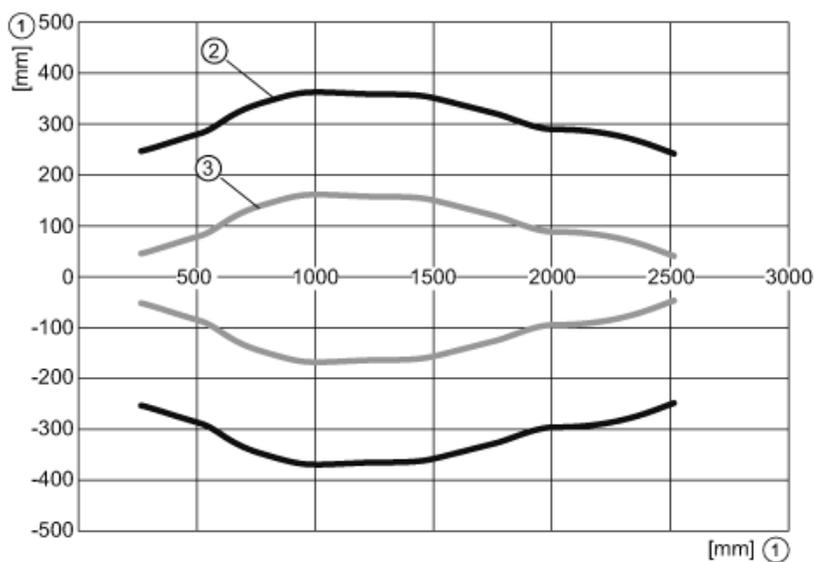
### Connection



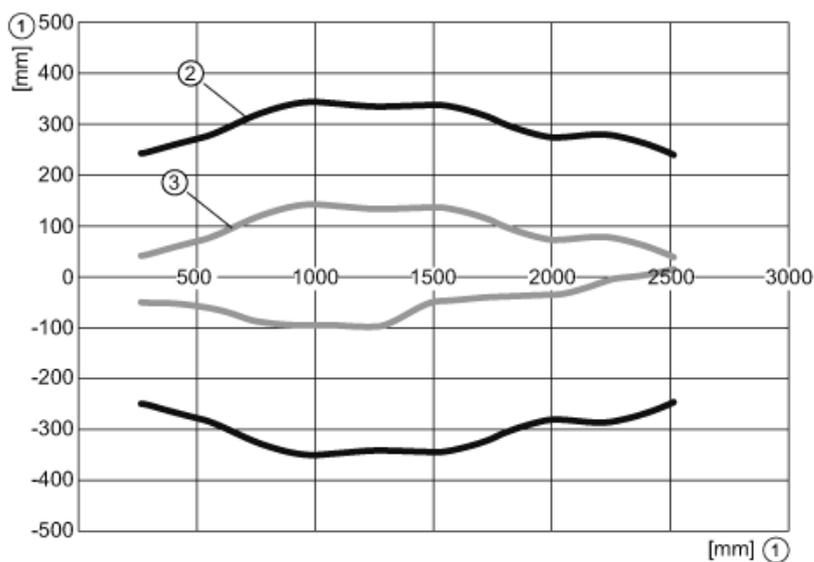
4 IO-Link

### Diagrams and graphs

Standard sound cone



Medium sound cone



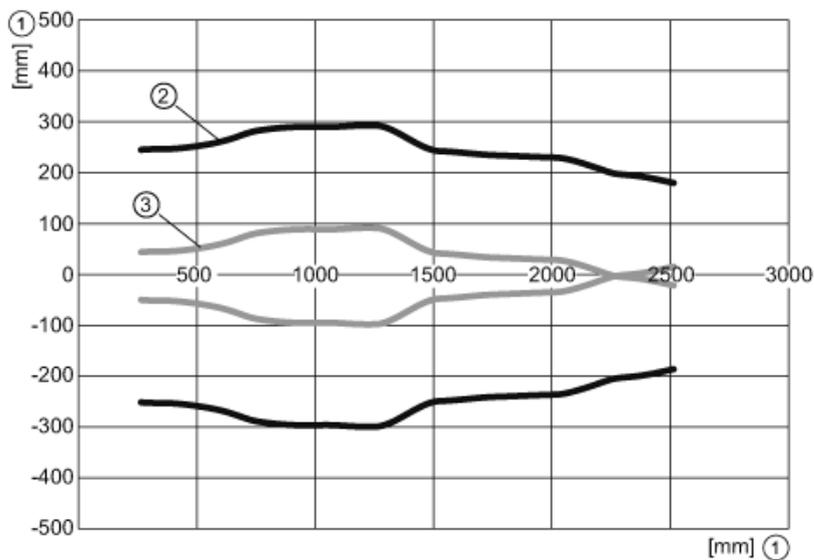
# UIT301



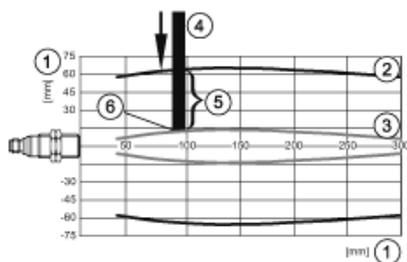
## Full-metal ultrasonic sensor

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Narrow sound cone



Function



- 1: Distance
- 2: Monitoring range
- 3: switch-on/switch-off graph
- 4: Target 400 x 400 mm
- 5: 50 % of the target in the detection zone
- 6: Set point