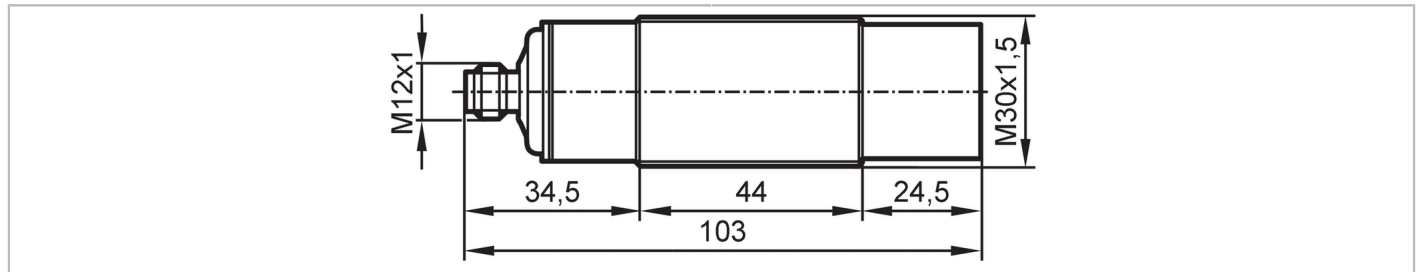




Full-metal ultrasonic sensor

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
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
Overload protection		yes
Monitoring range		
Sensing range	[mm]	250...2500; (Target: 400 x 400 mm)
Blind zone	[mm]	250
Angle of aperture cylindrical	[°]	12; (±2)



Full-metal ultrasonic sensor

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Max. deviation from the 90° angle sensor/object	[°]	± 4
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Accuracy / deviations

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

Reaction times

Response time	[s]	analog output
Response time	[ms]	< 600

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 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)	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	1389
Note		For further information please see the IODD PDF file at "Downloads"

Operating conditions

Ambient temperature	[°C]	-10...60
Storage temperature	[°C]	-15...65
Protection		IP 65; IP 67; IP 68; IP 69K

UIT301



Full-metal ultrasonic sensor

UID02500E1KG/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, 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
UL approval	Ta	-10...60 °C
	Enclosure type	Type 1
	voltage supply	Class 2
	File number UL	E174191
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
Accessories		
Items supplied		lock nuts: 2 x M30, stainless steel
		damping plates: 2, EPDM
Remarks		
Pack quantity		1 pcs.
Electrical connection - plug		
Connector: 1 x M12; coding: A; Contacts: 4		

Full-metal ultrasonic sensor

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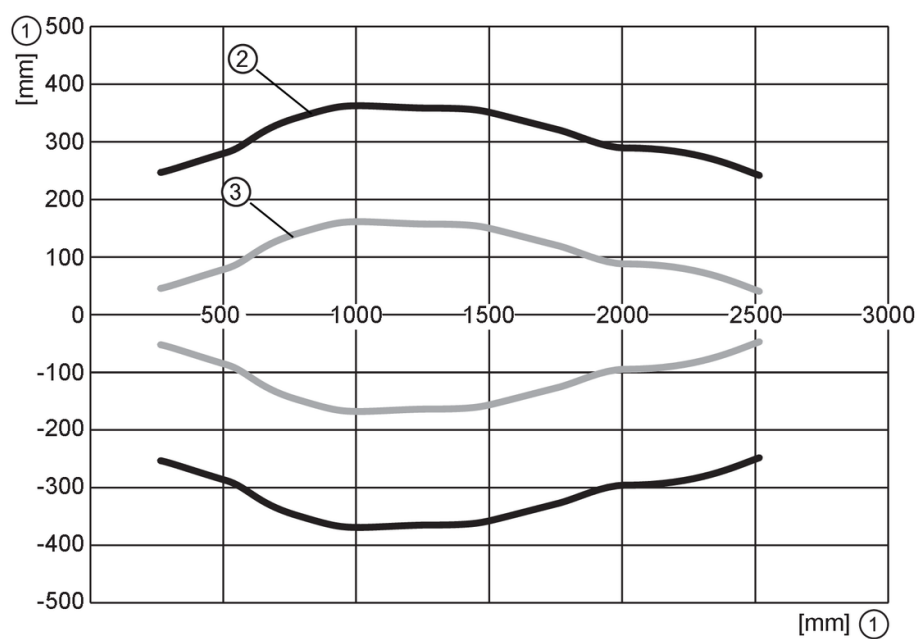
Connection



4 IO-Link

Diagrams and graphs

Standard sound cone



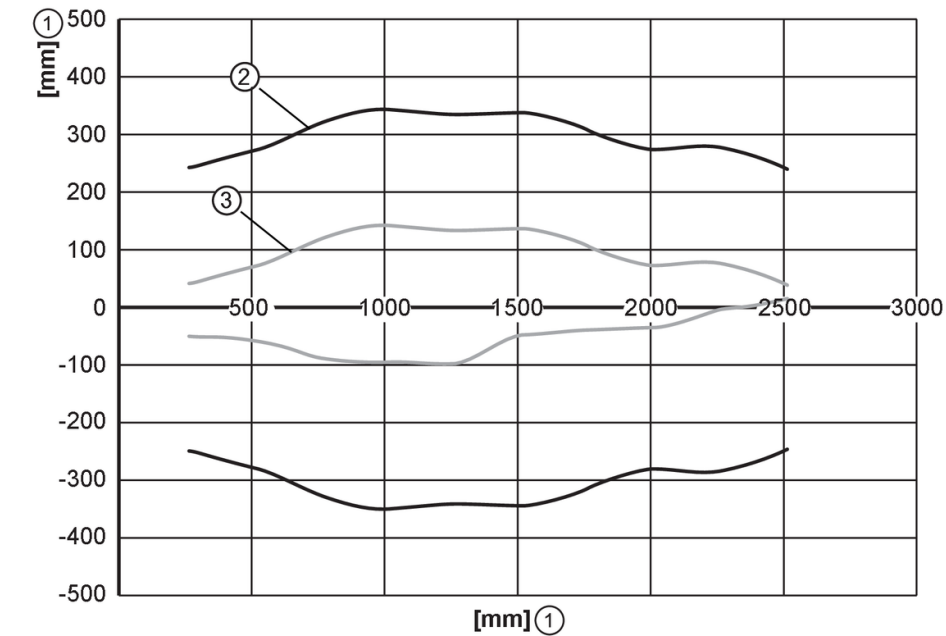
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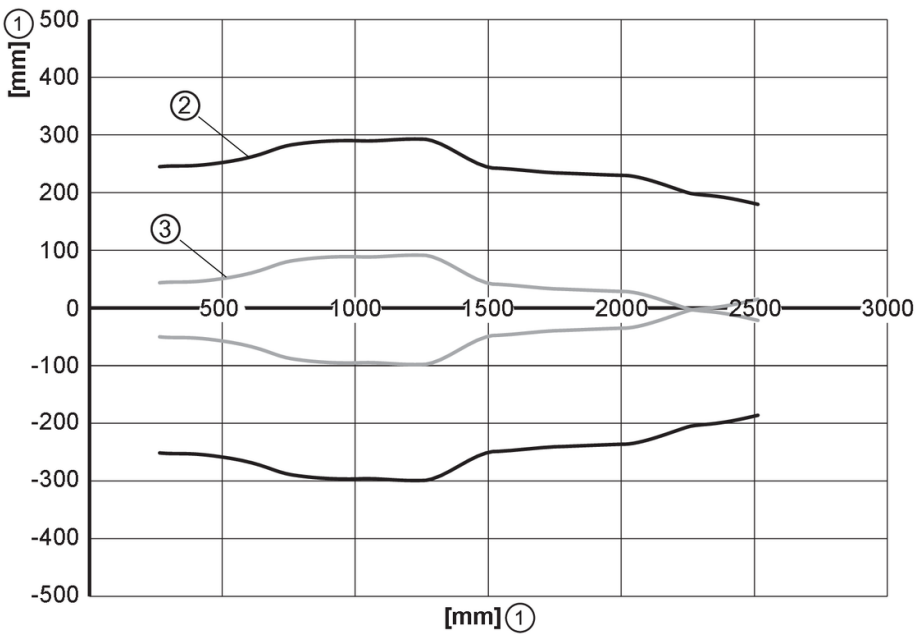
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Medium sound cone



Narrow sound cone



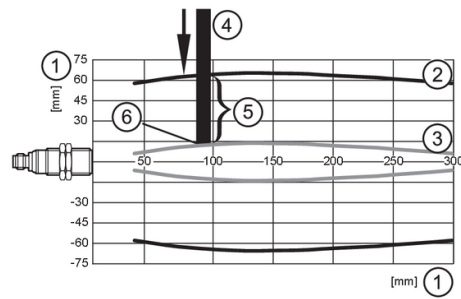
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Function



- 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