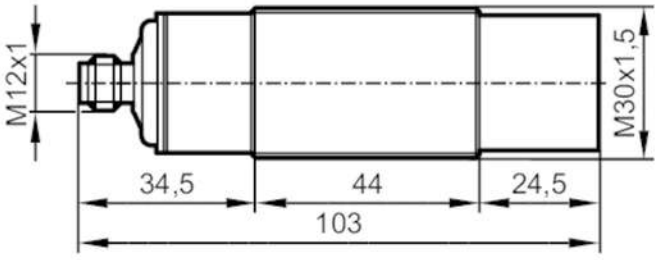
UIT301

Full-metal ultrasonic sensor

UID02500E1KG/IO-Link/US



Product characteristics		
Electrical design		PNP/NPN; (parameterisable)
Output function		normally open / normally closed; (parameterisable)
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 analogue outputs: 1
Outputs		
Total number of outputs		2
Electrical design		PNP/NPN; (parameterisable)
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]	1
Number of analogue outputs		1
Analogue current output	[mA]	4...20
Max. load	[Ω]	500
Short-circuit protection		yes

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Overload protection		yes
Detection zone		
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
Accuracy / deviations		
Temperature compensation		yes
Hysteresis	[%]	< 3
Linearity error of analogue 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
Response times		
Response time	[s]	analogue 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
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 / 1389
Note		For further information please see the IODD PDF file under "Downloads"
Operating conditions		
Ambient temperature	[°C]	-10...60
Storage temperature	[°C]	-15...65
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, 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]	103	
Mechanical data			
Weight	[g]	258.1	
Housing		threaded type	
Dimensions	[mm]	M30 x 1.5 / L = 103	
Thread designation		M30 x 1.5	
Materials		stainless steel (316L/1.4404); LED window: TPU; potting: PUR	
Tightening torque	[Nm]	100	
Displays / operating elements			
Display		switching status	1 LED, yellow
Accessories			
Items supplied		lock nuts: 2, stainless steel	
		damping plates: 2, EPDM	
Remarks			
Pack quantity		1 pcs.	
Electrical connection - plug			

Connector: 1 x M12; coding: A



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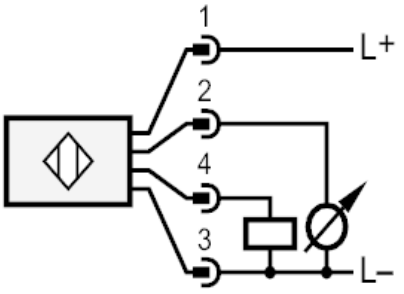
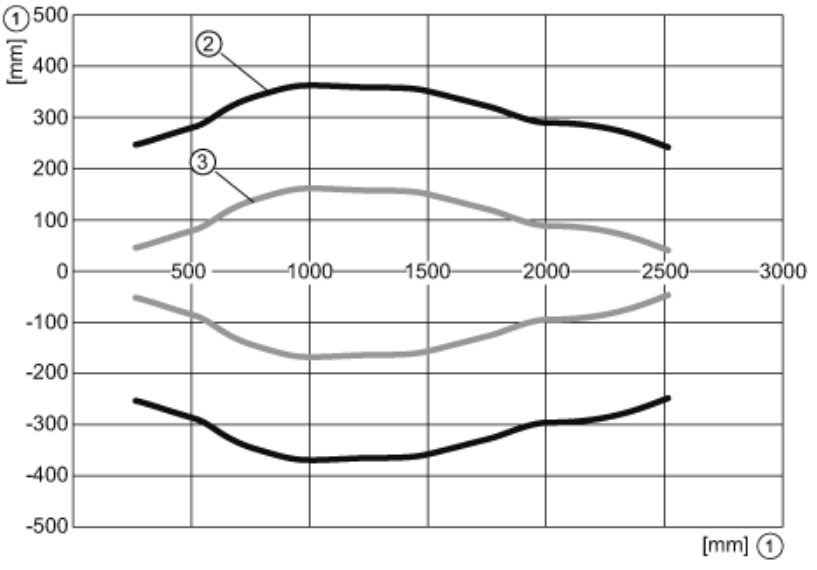
Connection



4	IO-Link

Diagrams and graphs



Standard sound beam

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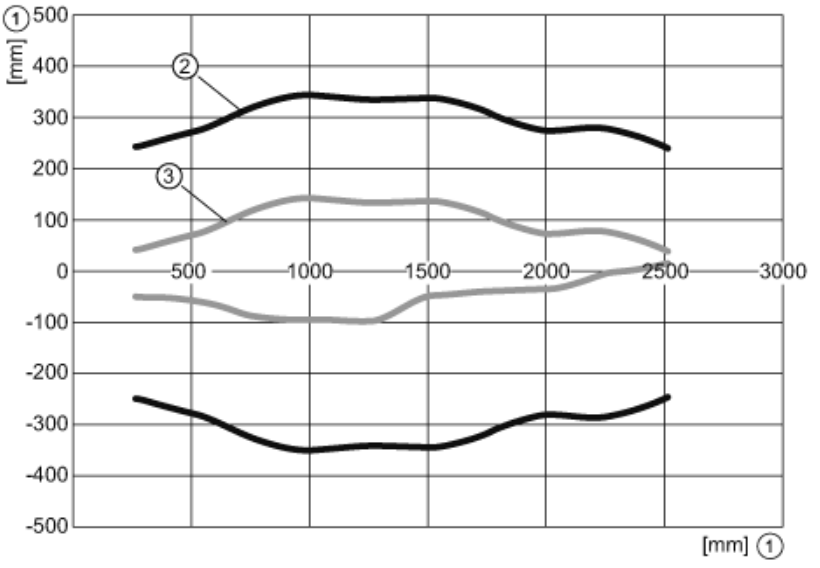
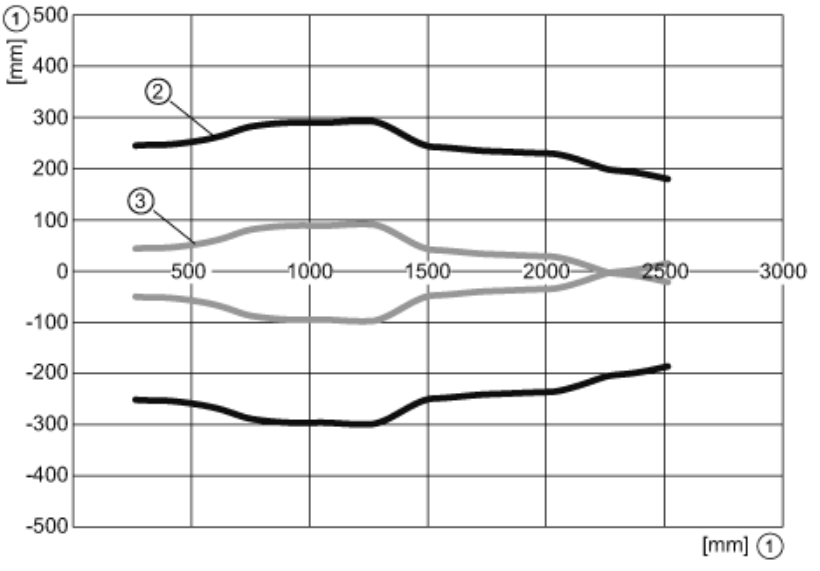


Medium sound beam



Narrow sound beam

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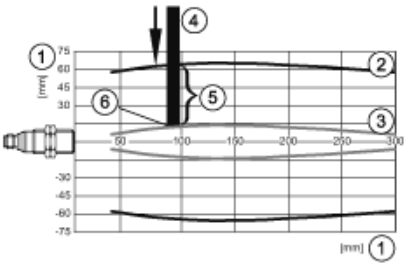

1: distance
2: Detection zone
3: switch-on/switch-off graph
4: Target 400 x 400 mm
5: 50% of the target in the detection zone
6: switch point