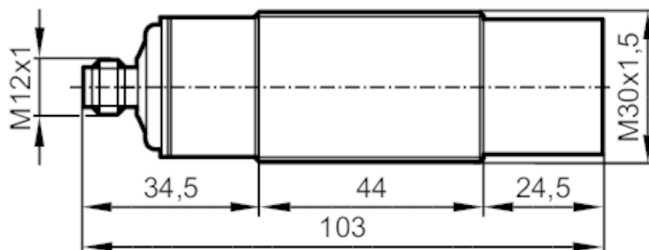


Full-metal ultrasonic sensor

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
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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



Full-metal ultrasonic sensor

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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	

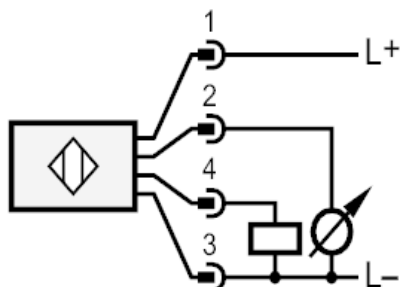


Full-metal ultrasonic sensor

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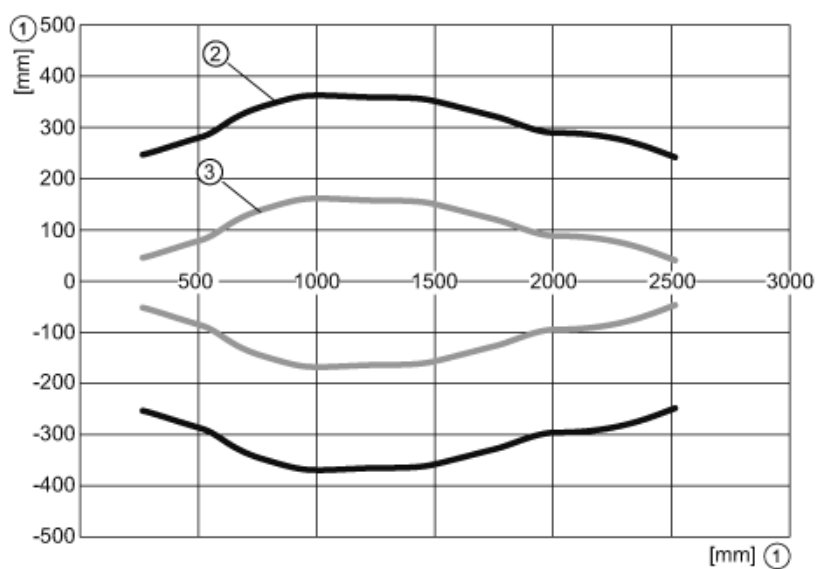
Tests / approvals		
EMC	EN 61000-4-2 ESD	4 kV CD / 8 kV AD
	EN 61000-4-3 HF radiated	3 V/m
	EN 61000-4-4 Burst	2 kV
	EN 61000-4-6 HF conducted	3 V
	EN 55011	Class A
Vibration resistance	EN 60068-2-6 Fc	(10-55) Hz 1 mm amplitude, oscillation period 5 min., 30 min. per axis at resonance or 55 Hz
Shock 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		
		

Connection

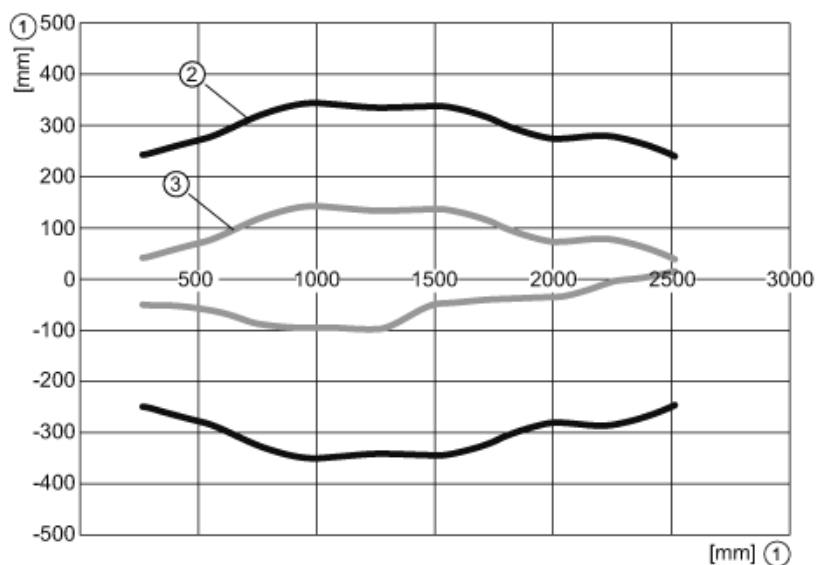


4 IO-Link

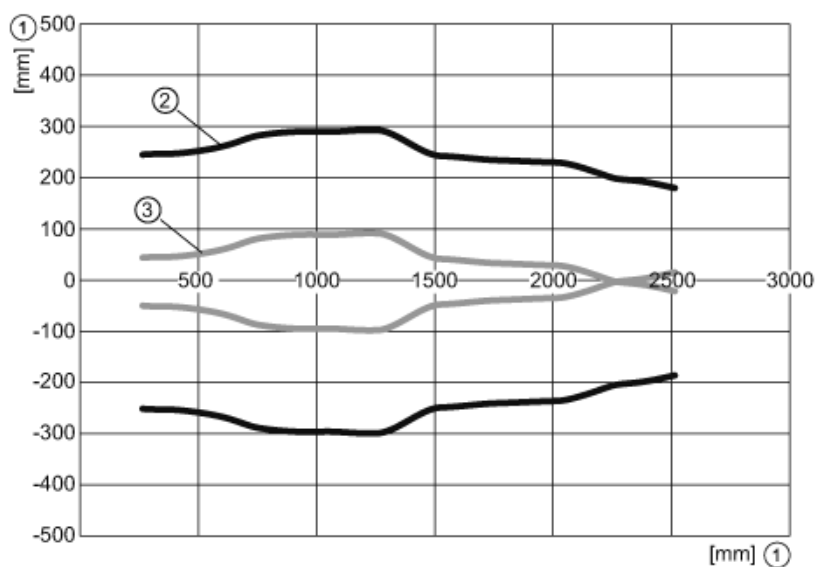
Diagrams and graphs



Standard sound beam



Medium sound beam

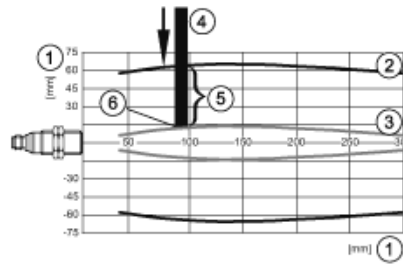


Narrow sound beam

UIT301

Full-metal ultrasonic sensor

UID02500E1KG/IO-Link/US



- 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