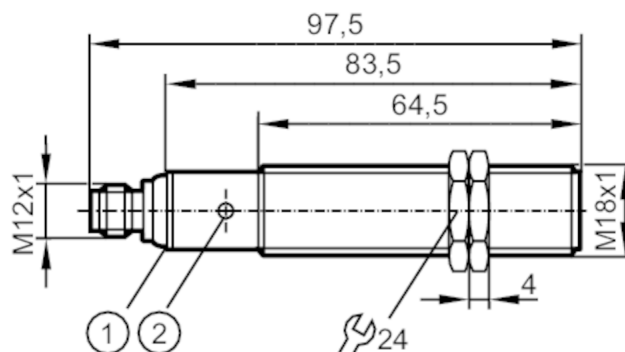




Ultrasonic sensor

UG-02200E1KG/IO-LINK/US



- 1 LEDs
2 teach button



Product characteristics

Electrical design	PNP
Output function	normally open / normally closed; (parameterisable)
Sensing range [mm]	200...2200; (Target: 200 x 200 mm)
Communication interface	IO-Link
Housing	threaded type
Dimensions [mm]	M18 x 1 / L = 97.5

Electrical data

Operating voltage [V]	10...30 DC; ("supply class 2" to cULus)
Current consumption [mA]	55
Protection class	III
Reverse polarity protection	yes
Power-on delay time [s]	< 0.3
Converter frequency [kHz]	200

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
Output signal	switching signal; analogue signal; IO-Link
Electrical design	PNP
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]	2
Number of analogue outputs	1
Analogue current output [mA]	4...20
Max. load [Ω]	500
Short-circuit protection	yes



Ultrasonic sensor

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Overload protection	yes	
Resolution of analogue output	< 3 mm	
Detection zone		
Sensing range	[mm]	200...2200; (Target: 200 x 200 mm)
Blind zone	[mm]	200
Angle of aperture cylindrical	[°]	14; (±2)
Max. deviation from the 90° angle sensor/object	[°]	± 4
Accuracy / deviations		
Temperature compensation	yes	
Hysteresis	[%]	< 2
Switch point drift	[%]	-2...2
Linearity error of analogue output	[%]	<3
Repeatability	1 %	
Notes on the accuracy / deviation	The indicated values are reached after a warm-up time of min. 20 minutes	
Response times		
Response time	[ms]	< 300; (analogue output)
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	704
Note	For further information please see the IODD PDF file under "Downloads"	
Operating conditions		
Ambient temperature	[°C]	-20...70
Storage temperature	[°C]	-30...80
Protection	IP 67	



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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]		142
UL approval	Ta	-20...70 °C
	power supply	Class 2
	File number UL	E174191

Mechanical data		
Weight [g]		98.3
Housing		threaded type
Dimensions [mm]		M18 x 1 / L = 97.5
Thread designation		M18 x 1
Materials		PBT; PA; epoxy glass ceramics
Tightening torque [Nm]		1

Displays / operating elements		
Display	switching status	2 x LED, yellow
	echo	1 x LED, green
Teach function		yes

Accessories		
Items supplied		lock nuts: 2, plastics
		rubber washers: 2

Remarks		
Remarks		operating voltage "supply class 2" according to cULus
Pack quantity		1 pcs.

Electrical connection

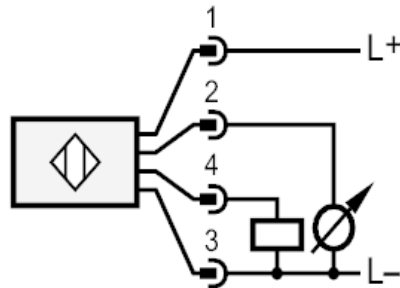
Connector: 1 x M12; coding: A



Ultrasonic sensor

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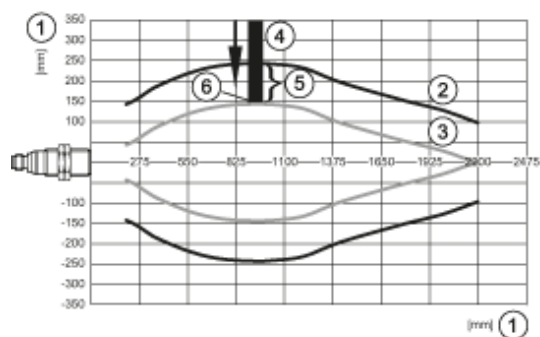
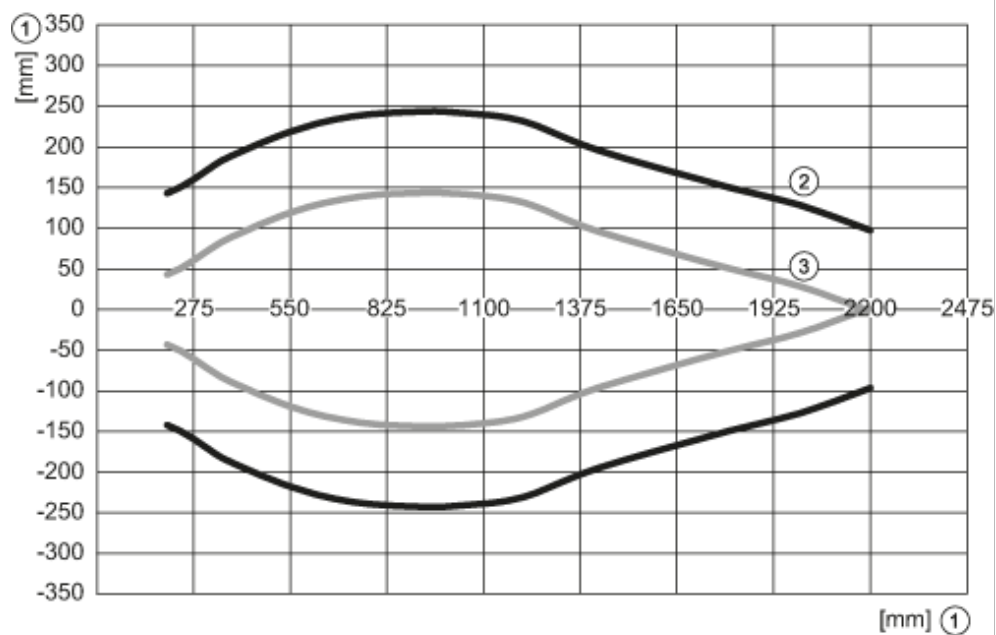
Connection



Pin 4 = IO-Link



Diagrams and graphs



- 1: distance
- 2: Detection zone
- 3: switch-on/switch-off graph
- 4: Target 200 x 200 mm
- 5: 50% of the target in the detection zone
- 6: switch point