Distance Sensor

U2GT003



- Digital and analog output
- External teach-in
- FDA compliant and Ecolab certified
- Hygienic design makes it easy to clean
- IO-Link 1.1
- Stainless steel housing for harsh environments

These ultrasonic sensors evaluate the sound reflected from the object. They can detect almost any object and are especially well suited for monitoring fill levels of liquids and bulk goods and for detecting transparent objects regardless of the material, state, color or transparency. The measured value can be read out via IO-Link, and the sensor can be optimally adapted to the application. The stainless steel housing in hygienic design enables use in demanding environments such as washdown and hygienic areas. The sensor can be used both in reflex mode operation, and as an ultrasonic through-beam sensor.

Working range, reflex sensor Working range, through-beam sensor Setting Range Reproducibility maximum Linearity Deviation Resolution Ultrasonic Frequency Opening Angle Service Life (T = +25 °C) Switching Hysteresis Electrical Data Supply Voltage Current Consumption (Ub = 24 V) Switching frequency, reflex sensor Switching frequency, through-beam sensor Response time, reflex sensor Temperature Drift Temperature Drift Temperature Range Number of Switching Outputs Switching Output Voltage Drop Switching Output Voltage Drop Switching Output Voltage Drop Switching Output Voltage Prop Switching Output Volt		
Working range, through-beam sensor 501200 mm Setting Range 50600 mm 4 mm 4 mm 4 mm 4 mm 4 mm 4 mm 1	Ultrasonic Data	
Setting Range Reproducibility maximum Linearity Deviation Resolution Linearity Deviation Resolution 1 mm Ultrasonic Frequency Opening Angle Service Life (T = +25 °C) Switching Hysteresis Lectrical Data Supply Voltage Current Consumption (Ub = 24 V) Switching frequency, reflex sensor Switching frequency, reflex sensor Switching frequency, through-beam sensor Response time, reflex sensor So ms Response time, through-beam sensor Temperature Drift Temperature Bange Number of Switching Outputs Switching Output Voltage Drop Switching Output Switching Current Analog Output Short Circuit Protection Seeverse Polarity Protection Seeverse Polarity and Overload Protection Interface Data Storage Protection Class III Mechanical Data Setting Method IO-Link Teach-In Stainless steel, V4A (1.4404 / 316L) Stainless steel, V4A IT-Spin yes Safety-relevant Data MTTFd (EN ISO 13849-1) I192,59 a Error Output Analog Output IO-Link Connection Equipment No.	Working range, reflex sensor	50600 mm
Reproducibility maximum Linearity Deviation Resolution Ultrasonic Frequency Opening Angle Service Life (T = +25 °C) Switching Hysteresis Electrical Data Supply Voltage Current Consumption (Ub = 24 V) Switching frequency, reflex sensor Response time, through-beam sensor Response time, through-beam sensor Temperature Drift Temperature Range Number of Switching Outputs Switching Output Voltage Drop Switching Output Voltage To Link V1.1 Smart Sensor Profile Reverse Polarity Protection Service Life (T = +25 °C) Switching Output Voltage Trent Lo 10 % Temperature Drift Temperature Range Namber of Switching Outputs Insurable of Switching Outputs Switching Output Voltage Drop Switching Output Voltage Drop Switching Output Voltage Drop Serverse Polarity Protection Serverse Polarity Protection Serverse Polarity and Overload Protection Interface Sersor Profile yes Protection Class Mechanical Data Setting Method Housing Material Setting Method Feach-In Stainless steel, V4A (1,440/ 316L) Sensing face Safety-relevant Data MTTFd (EN ISO 13849-1) Error Output Analog Output Oclink Connection Equipment No.	Working range, through-beam sensor	501200 mm
Linearity Deviation 4 mm 1 mm Resolution 1 mm 260 kHz 270 kmitching Hysteresis 2 % *	Setting Range	50600 mm
Imm	Reproducibility maximum	4 mm
Ultrasonic Frequency	Linearity Deviation	4 mm
Opening Angle < 13 °	Resolution	1 mm
Service Life (T = +25 °C) 100000 h Switching Hysteresis 2 % * Electrical Data 35 mA Supply Voltage 1830 V DC Current Consumption (Ub = 24 V) < 35 mA	Ultrasonic Frequency	260 kHz
## Switching Hysteresis 2 % *	Opening Angle	< 13 °
Electrical Data Supply Voltage 1830 V DC Current Consumption (Ub = 24 V) 35 mA Switching frequency, reflex sensor 10 Hz Switching frequency, through-beam sensor 10 Hz Response time, reflex sensor 50 ms Response time, through-beam sensor 50 ms Temperature Drift < 10 % Temperature Range -3060 °C Number of Switching Outputs 1 Switching Output Voltage Drop < 2,5 V Switching Output Voltage Drop < 2,5 V Switching Output Witching Current 100 mA Analog Output Short Circuit Protection yes Reverse Polarity Protection yes Reverse Polarity and Overload Protection yes Protection Class III Mechanical Data Setting Method IO-Link Setting Method IO-Link Sensing face Stainless steel, V4A Legree of Protection IP68/IP69K Connection Ecolab yes Safety-relevant Data MTTFd (EN ISO 13849-1) 1192,59 a Error Output Analog Output IO-Link Connection Diagram No. Suitable Connection Equipment No. 2 35	Service Life (T = +25 °C)	100000 h
Supply Voltage Current Consumption (Ub = 24 V) Switching frequency, reflex sensor Switching frequency, through-beam sensor Response time, reflex sensor Response time, through-beam sensor Temperature Drift Temperature Range Number of Switching Outputs Switching Output Voltage Drop Switching Output/Switching Current Analog Output Short Circuit Protection Reverse Polarity Protection Overload Protection Protection Class Ill Mechanical Data Setting Method Housing Material Sensing face Degree of Protection Ecolab Safety-relevant Data MTTFd (EN ISO 13849-1) Error Output Connection Diagram No. Suitable Connection Equipment No. 10 Hz 10 Hz	Switching Hysteresis	2 % *
Current Consumption (Ub = 24 V) Switching frequency, reflex sensor Switching frequency, through-beam sensor Response time, through-beam sensor Response time, through-beam sensor Temperature Drift Temperature Range Number of Switching Outputs Switching Output Voltage Drop Switching Output/Switching Current Analog Output Short Circuit Protection Reverse Polarity Protection Severse Polarity and Overload Protection Interface Data Storage Protection Class Mechanical Data Setting Method Setting Method Setting Method Setting Material Sensing face Degree of Protection Ecolab Safety-relevant Data MTTFd (EN ISO 13849-1) Error Output Connection Diagram No. Suitable Connection Equipment No. 10 Hz 10 Hz	Electrical Data	
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Switching frequency, through-beam sensor Response time, reflex sensor Response time, through-beam sensor Temperature Drift	Current Consumption (Ub = 24 V)	< 35 mA
Response time, reflex sensor Response time, through-beam sensor Temperature Drift Temperature Range Number of Switching Outputs Switching Output Voltage Drop Switching Output/Switching Current Analog Output Analog Output Short Circuit Protection Reverse Polarity and Overload Protection Interface Data Storage Protection Class Mechanical Data Setting Method Setting Method Setting Material Sensing face Degree of Protection Ecolab Safety-relevant Data MTTFd (EN ISO 13849-1) Error Output Analog Output Som	Switching frequency, reflex sensor	10 Hz
Response time, reflex sensor Response time, through-beam sensor Temperature Drift Temperature Range Number of Switching Outputs Switching Output Voltage Drop Switching Output/Switching Current Analog Output Short Circuit Protection Reverse Polarity Protection Overload Protection Reverse Polarity and Overload Protection Interface Data Storage Protection Class Mechanical Data Setting Method Setting Method Setting Method Sensing face Degree of Protection Ecolab Safety-relevant Data MTTFd (EN ISO 13849-1) Error Output Analog Output Som	Switching frequency, through-beam sensor	10 Hz
Temperature Drift	Response time, reflex sensor	50 ms
Temperature Drift	Response time, through-beam sensor	50 ms
Number of Switching Outputs Switching Output Voltage Drop Switching Output/Switching Current Analog Output Short Circuit Protection Reverse Polarity Protection Overload Protection Reverse Polarity and Overload Protection Interface Data Storage Protection Class III Mechanical Data Setting Method Setting Method Feach-In Stainless steel, V4A (1.4404/316L) Sensing face Degree of Protection Ecolab Safety-relevant Data MTTFd (EN ISO 13849-1) Error Output Analog Output IO-Link Connection Diagram No. Suitable Connection Equipment No.	Temperature Drift	< 10 %
Switching Output Voltage Drop Switching Output/Switching Current Analog Output Short Circuit Protection Reverse Polarity Protection Overload Protection Reverse Polarity and Overload Protection Interface Data Storage Protection Class Betting Method Setting Method Housing Material Sensing face Degree of Protection Connection Ecolab Safety-relevant Data MTTFd (EN ISO 13849-1) Error Output Analog Output IOO mA 420 mA yes IOO-Link yes IO-Link V1.1 Smart Sensor Profile yes III Mechanical Data IOO-Link Teach-In Stainless steel, V4A (1.4404 / 316L) Stainless steel, V4A (1.4404 / 316L) Sensing face Stainless steel, V4A IP68/IP69K M12 × 1; 4/5-pin yes Safety-relevant Data MTTFd (EN ISO 13849-1) Error Output Analog Output IOO-Link Connection Diagram No. 318 Suitable Connection Equipment No.	Temperature Range	-3060 °C
Switching Output/Switching Current Analog Output Analog Output Short Circuit Protection Reverse Polarity Protection Overload Protection Reverse Polarity and Overload Protection Interface Data Storage Protection Class III Mechanical Data Setting Method Setting Method Housing Material Sensing face Degree of Protection Ecolab Safety-relevant Data MTTFd (EN ISO 13849-1) Error Output Analog Output IO-Link IO-Link Teach-In Stainless steel, V4A (1.4404/316L) Stainless steel, V4A (1.4404/316L) Stainless steel, V4A IP68/IP69K M12 × 1; 4/5-pin yes Safety-relevant Data MTTFd (EN ISO 13849-1) Error Output Analog Output IO-Link Connection Diagram No. 318 Suitable Connection Equipment No.	Number of Switching Outputs	1
Switching Output/Switching Current Analog Output Analog Output Short Circuit Protection Reverse Polarity Protection Overload Protection Reverse Polarity and Overload Protection Interface Data Storage Protection Class III Mechanical Data Setting Method Setting Method Housing Material Sensing face Degree of Protection Ecolab Safety-relevant Data MTTFd (EN ISO 13849-1) Error Output Analog Output IO-Link IO-Link Teach-In Stainless steel, V4A (1.4404/316L) Stainless steel, V4A (1.4404/316L) Stainless steel, V4A IP68/IP69K M12 × 1; 4/5-pin yes Safety-relevant Data MTTFd (EN ISO 13849-1) Error Output Analog Output IO-Link Connection Diagram No. 318 Suitable Connection Equipment No.	Switching Output Voltage Drop	< 2,5 V
Analog Output Short Circuit Protection Reverse Polarity Protection Overload Protection Reverse Polarity and Overload Protection Interface Data Storage Protection Class III Mechanical Data Setting Method Setting Method Housing Material Sensing face Degree of Protection Ecolab Safety-relevant Data MTTFd (EN ISO 13849-1) Error Output Analog Output IO-Link 420 mA yes yes yes IV-Link V1.1 Smart Sensor Profile yes III Mechanical Data IO-Link Teach-In Stainless steel, V4A (1.4404 / 316L) Stainless steel, V4A (1.4404 / 316L) Stainless steel, V4A IP68/IP69K M12 × 1; 4/5-pin yes Safety-relevant Data MTTFd (EN ISO 13849-1) Error Output Analog Output IO-Link Connection Diagram No. 318 Suitable Connection Equipment No.		100 mA
Short Circuit Protection Reverse Polarity Protection Overload Protection Reverse Polarity and Overload Protection Interface Data Storage Protection Class III Mechanical Data Setting Method Setting Method Housing Material Sensing face Degree of Protection Connection Ecolab Safety-relevant Data MTTFd (EN ISO 13849-1) Error Output Analog Output IO-Link Jes Jes Jes Jes Jes Jes Jes Je	<u> </u>	420 mA
Reverse Polarity Protection Overload Protection Reverse Polarity and Overload Protection Interface Data Storage Protection Class III Mechanical Data Setting Method Setting Method Housing Material Sensing face Degree of Protection Connection Ecolab Safety-relevant Data MTTFd (EN ISO 13849-1) Error Output Analog Output IO-Link V1.1 Smart Sensor Profile yes III Mechanical Data IO-Link Teach-In Stainless steel, V4A (1.4404 / 316L) Stainless steel, V4A (1.4404 / 316L) Stainless steel, V4A IP68/IP69K M12 × 1; 4/5-pin yes Safety-relevant Data MTTFd (EN ISO 13849-1) Error Output Analog Output IO-Link Connection Diagram No. 318 Suitable Connection Equipment No.	Short Circuit Protection	
Overload Protection Reverse Polarity and Overload Protection Interface Data Storage Protection Class III Mechanical Data Setting Method Setting Method Housing Material Sensing face Degree of Protection Connection Ecolab MTTFd (EN ISO 13849-1) Error Output Analog Output IO-Link V1.1 Smart Sensor Profile yes III Mechanical Data IO-Link Teach-In Stainless steel, V4A (1.4404/316L) Stainless steel, V4A (1.4404/316L) Stainless steel, V4A MT2 × 1; 4/5-pin yes Safety-relevant Data MTTFd (EN ISO 13849-1) I192,59 a Error Output Analog Output IO-Link Connection Diagram No. 318 Suitable Connection Equipment No.	Reverse Polarity Protection	
Reverse Polarity and Overload Protection Interface Data Storage Protection Class III Mechanical Data Setting Method Setting Method Housing Material Sensor Profile yes III Mechanical Data Setting Method Feach-In Stainless steel, V4A (1.4404 / 316L) Sensing face Degree of Protection Connection IP68/IP69K Connection M12 × 1; 4/5-pin yes Safety-relevant Data MTTFd (EN ISO 13849-1) Error Output Analog Output IO-Link Connection Diagram No. 318 Suitable Connection Equipment No.	Overload Protection	•
Interface IO-Link V1.1 Smart Sensor Profile yes Protection Class III Mechanical Data Setting Method IO-Link Setting Method Teach-In Stainless steel, V4A (1.4404 / 316L) Sensing face Stainless steel, V4A (1.494 / 316L) Sensing face IP68/IP69K Connection IP68/IP69K Connection M12 × 1; 4/5-pin yes Safety-relevant Data MTTFd (EN ISO 13849-1) 1192,59 a Error Output Analog Output IO-Link Connection Diagram No. Suitable Connection Equipment No.	Reverse Polarity and Overload Protection	
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Housing Material Stainless steel, V4A (1.4404 / 316L) Sensing face Stainless steel, V4A Degree of Protection IP68/IP69K Connection M12 × 1; 4/5-pin yes Safety-relevant Data MTTFd (EN ISO 13849-1) I192,59 a Error Output Analog Output IO-Link Connection Diagram No. Suitable Connection Equipment No. 2 35		
Sensing face Stainless steel, V4A Degree of Protection IP68/IP69K Connection M12 × 1; 4/5-pin yes Safety-relevant Data MTTFd (EN ISO 13849-1) 1192,59 a Error Output Analog Output IO-Link Connection Diagram No. 318 Suitable Connection Equipment No. 2 35	•	Stainless steel, V4A
Degree of Protection IP68/IP69K Connection M12 × 1; 4/5-pin Ecolab yes Safety-relevant Data MTTFd (EN ISO 13849-1) 1192,59 a Error Output Analog Output IO-Link IO-Link Connection Diagram No. 318 Suitable Connection Equipment No. 2		
Connection M12 × 1; 4/5-pin yes Safety-relevant Data MTTFd (EN ISO 13849-1) 1192,59 a Error Output Analog Output IO-Link Connection Diagram No. Suitable Connection Equipment No. 2 35	•	,
Ecolab yes Safety-relevant Data MTTFd (EN ISO 13849-1) 1192,59 a Error Output Analog Output IO-Link Connection Diagram No. Suitable Connection Equipment No. 2 35		55/ 551.
Safety-relevant Data MTTFd (EN ISO 13849-1) 1192,59 a Error Output Image: Constant of the constan		
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Error Output Analog Output IO-Link Connection Diagram No. Suitable Connection Equipment No. 2 35	•	1192 50 2
Analog Output IO-Link Connection Diagram No. Suitable Connection Equipment No. 2 35		1102,00 a
IO-Link Connection Diagram No. Suitable Connection Equipment No. 2 35	·	
Connection Diagram No. 318 Suitable Connection Equipment No. 2 35		
Suitable Connection Equipment No. 2 35	IO-Link	
	Connection Diagram No.	318
Suitable Mounting Technology No. 140	Suitable Connection Equipment No.	2 35
	Suitable Mounting Technology No.	140

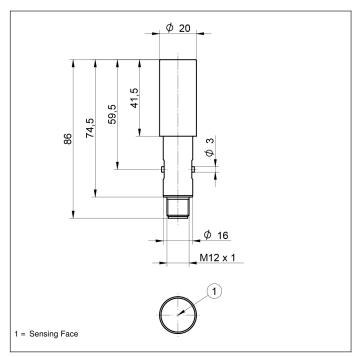
^{*} Referring to the switching distance, at least 2 mm.

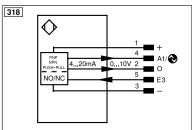
Complementary Products

IO-Link Master

Software

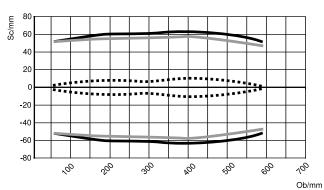






Characteristic response curve

Characteristic curves show the position of the center or the front edge of the measured object (100 × 100 mm plate) at the time of switching. U2GT001/U2GT003



Ob = Object

Sc = Sonic cone width

 Standard sonic cone (center of the measured object)

Extra-narrow sonic cone (center of the measured object)

Standard sonic cone (front edge of the measured object)













