

## UP56 Ultrasonic Level Sensor

Tough, non-contact, pressure-resistant

**Ultrasonic Level Sensor:  
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**Product description**

The UP56 series of ultrasonic level sensors is the ideal solution for demanding applications. The teflon-protected transducer handles overpressure up to 6 bar (87 psi) and is resistant against numerous difficult fluids. Wetted parts can be chosen either as stainless steel or PVDF, thus making the UP56 the perfect solution for measurement in aggressive, viscous, or abrasive liquids, or bulk solids. By combining two output

signals in one device, new cost-effective solutions can be created for measurement and integration into the system. With two switching outputs, the UP56 can measure dry running and overflow in one device. Combining analog and a switching output enables continuous level measurement with a separate overflow signal. Parameters are easy to set via an integrated display, PC or the connect+ adapter.

**At a glance**

- Non-contact level measurement up to 3.4 m operating distance / 8.0 m limit scanning distance
- Pressure resistant up to 6 bar (87 psi)
- Transducer protected by PVDF cover for increased resistance
- 3-in-1: continuous level measurement, level switch and display
- Analog output switchable between 4 ... 20 mA and 0 ...10 V
- Process connector thread G1 and G2
- IP 67 enclosure rating
- Easy to set parameters, also via connect+

**Your benefits**

- Non-contact measurement in pressurized containers – no wear over time
- Easy to set parameters, saving time
- Flexible measurement system for different container sizes – standardization and stock reduction
- One product for point level and continuous applications, reduces the number of sensors required

## Detailed technical data

### Features

	UP56-211	UP56-212	UP56-213	UP56-214
<b>Medium</b>	Fluids, Bulk solids			
<b>Measurement</b>	Continuous and point level measurement			
<b>Operating distance</b>	30 mm ... 250 mm	85 mm ... 350 mm	200 mm ... 1,300 mm	350 mm ... 3,400 mm
<b>Limiting scanning distance</b>	30 mm ... 990 mm	85 mm ... 1,500 mm	200 mm ... 5,000 mm	350 mm ... 8,000 mm
<b>Process pressure</b>	0 bar ... 6 bar , gauge pressure			
<b>Process temperature</b>	-25 °C ... +70 °C			

### Performance

<b>Accuracy</b> <sup>1)</sup>	≤ 2 %
<b>Reproducibility</b> <sup>1)</sup>	± 0.15 %

<sup>1)</sup> Of final value.

### Mechanics

	G 1	G 2
<b>Process connection</b>	G 1	G 2
<b>Housing material</b>	Stainless steel 1.4571, PBT, TPU	Stainless steel 1.4571, PBT, TPU / PVDF, PBT, TPU (depending on type)
<b>Weight</b>	210 g	1,200 g / 350 g (depending on type)

### Electronics

	UP56-211	UP56-212	UP56-213	UP56-214
<b>Supply voltage</b> <sup>1)</sup>	9 V DC ... 30 V DC			
<b>Ripple</b>	± 10 %			
<b>Power consumption</b> <sup>2)</sup>	≤ 80 mA			
<b>Electrical connection</b>	M12x1, 5-pin			
<b>Signal output</b>	1x PNP			
<b>Hysteresis</b>	3 mm	5 mm	20 mm	50 mm
<b>Analog output</b> <sup>3) 4)</sup>	Qa: 4 mA ... 20 mA / 0 V ... 10 V			
<b>Signal voltage HIGH</b>	U <sub>v</sub> - 3 V			
<b>Response time</b> <sup>5)</sup>	≤ 68 ms	≤ 84 ms	≤ 180 ms	≤ 240 ms
<b>Switching frequency</b>	11 Hz	8 Hz	5 Hz	3 Hz
<b>Time delay before availability</b>	≤ 300 ms			
<b>Enclosure rating</b>	IP 67			
<b>Ultrasonic frequency</b>	320 kHz		180 kHz	120 kHz
<b>Ultrasonic convertor</b>	PTFE coating, FFKM			

<sup>1)</sup> Reverse-polarity protected.

<sup>2)</sup> Without load.

<sup>3)</sup> Short-circuit protected, reversible.

<sup>4)</sup> Automatic switching between voltage and current outputs dependent on load 4 mA ... 20 mA: RL ≤ 100/ at 9 V ≤ UB ≤ 20 V; RL ≤ 500/ at UB ≥ 20 V; 0 V ... 10 V: RL ≥ 100 k/ at UB ≥ 15 V, short-circuit protected.

<sup>5)</sup> Recovery time 32 ms ... 180 ms according to EMC EN 60947-5-7.

### Ambient data

<b>Ambient temperature, operation</b> <sup>1)</sup>	-25 °C ... +70 °C
<b>Ambient temperature, storage</b>	-40 °C ... +85 °C

<sup>1)</sup> Temperature compensation at -25 °C ... 50 °C, can be switched off.

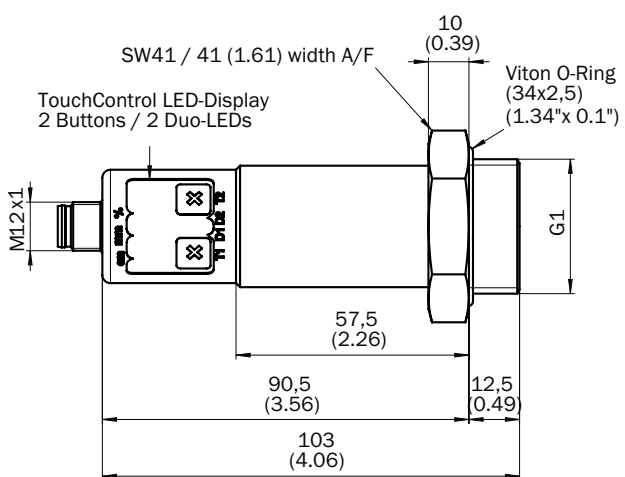
### Ordering information

- Process temperature: -25 °C ... +70 °C
- Process pressure: 0 bar ... 6 bar

Housing material	Process connection	Operating distance	Limiting scanning distance	Type	Part No.
Stainless steel 1.4571, PBT, TPU	G 1	30 mm ... 250 mm	30 mm ... 990 mm	UP56-211118	6041658
		85 mm ... 350 mm	85 mm ... 1,500 mm	UP56-212118	6041659
		200 mm ... 1,300 mm	200 mm ... 5,000 mm	UP56-213118	6041660
PVDF, PBT, TPU	G 2	350 mm ... 3,400 mm	350 mm ... 8,000 mm	UP56-214118	6041693
	G 2	350 mm ... 3,400 mm	350 mm ... 8,000 mm	UP56-214178	6039866

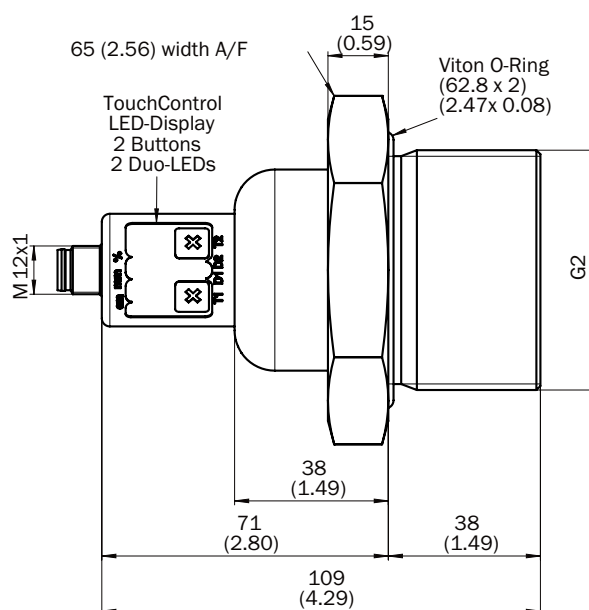
### Dimensional drawings

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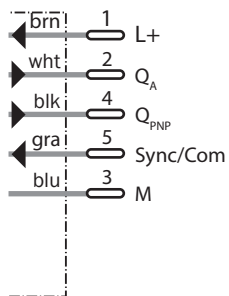
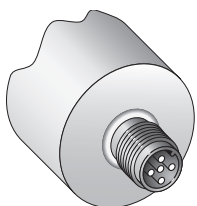
All dimensions in mm (inch)

UP56-214



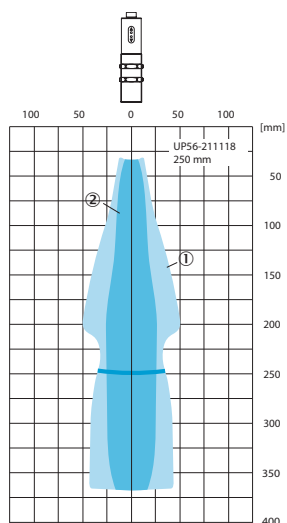
All dimensions in mm (inch)

### Connection type and diagram

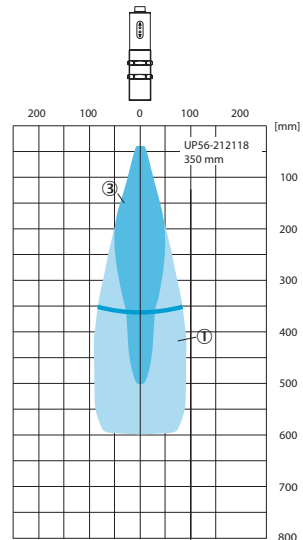


### Detection ranges

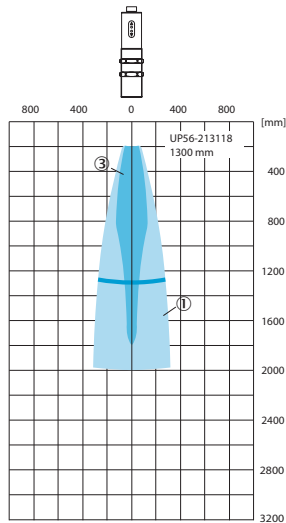
UP56-211



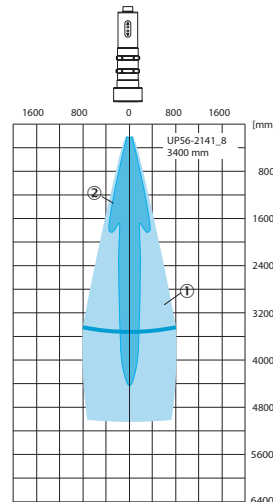
UP56-212



UP56-213



UP56-214



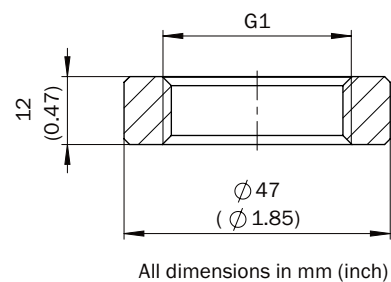
- ① Aligned plate 500 x 500 mm
- ② Pipe diameter 10 mm
- ③ Pipe diameter 27 mm

### Recommended accessories

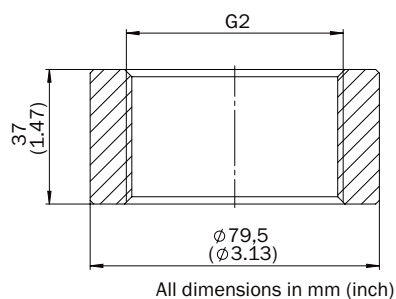
#### Weld-in flange

Process connection	Material	Type	Part No.
G 1	316L	BEF-FL-316G10-UP56	4064295
G 2	316L	BEF-FL-316G20-UP56	4063263

#### Weld-in flange G 1



#### Weld-in flange G 2



#### Configuration software

Software Product	Type	Part No.
CPA Connect Plus	CPA Connect Plus	6037782

## Plug connectors and cables

Connector type	Enclosure rating	Flying leads	Sheath material	Cable length	Type	Part No.
Female connector	IP 68	Straight	PVC	2 m	DOL-1205-G02M	6008899
		Straight	PUR halogen free	2 m	DOL-1205-G02MC	6025906
		Straight	PVC	5 m	DOL-1205-G05M	6009868
			PUR halogen free	5 m	DOL-1205-G05MC	6025907
			PVC	10 m	DOL-1205-G10M	6010544
		Straight	PUR halogen free	10 m	DOL-1205-G10MC	6025908
		Angled	PVC	2 m	DOL-1205-W02M	6008900
		Angled	PUR halogen free	2 m	DOL-1205-W02MC	6025909
		Angled	PVC	5 m	DOL-1205-W05M	6009869
			PUR halogen free	5 m	DOL-1205-W05MC	6025910
			PVC	10 m	DOL-1205-W10M	6010542
		Angled	PUR halogen free	10 m	DOL-1205-W10MC	6025911

## Notes

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Worldwide presence with subsidiaries in the following countries:

Australia  
Belgium/Luxembourg  
Brasil  
Ceská Republika  
China  
Danmark  
Deutschland  
España  
France  
Great Britain  
India  
Israel  
Italia  
Japan  
Nederland  
Norge

Österreich  
Polska  
Republic of Korea  
Republika Slovenija  
România  
Russia  
Schweiz  
Singapore  
Suomi  
Sverige  
Taiwan  
Türkiye  
United Arab Emirates  
USA/Canada/México

Please find detailed addresses and additional representatives and agencies in all major industrial nations at [www.sick.com](http://www.sick.com)

Handed over by:

## Our Business Segment Expertise

### Factory automation

With its intelligent sensors, safety systems, and automatic identification applications, SICK provides comprehensive solutions for factory automation.



- Non-contact detecting, counting, classifying, and positioning of any type of object
- Accident protection and personal safety using sensors, as well as safety software and services

### Logistics automation

Sensors made by SICK form the basis for automating material flows and the optimization of sorting and warehousing processes.



- Automated identification with barcode and RFID reading devices for the purpose of sorting and target control in industrial material flow
- Detecting volume, position, and contours of objects and surroundings with laser measurement systems

### Process automation

Optimized system solutions from SICK ensure efficient acquisition of environmental and process data in many industrial processes.



- Precise measurement of gases, liquids and dust concentrations for continuous monitoring of emissions and the acquisition of process data in production processes
- Gas flow measurements with maximum accuracy thanks to compact gas meters