PRODUCT INFORMATION

UP56 Pure

RURE RELIABILITY

Level sensors

SICK
Sensor Intelligence.

PURE RELIABILITY

Product description

The non-contact ultrasonic level sensors from the UP56 Pure product family are a range of products specialized for wet chemical processes in the electronic and solar industry. Due to their PTFE-protected transducer they are very hardwearing and durable and are designed to be used in highly concentrated acids and alkalines. The UP56 Pure is easy and fast to integrate thanks to the industry-specific GF process connection. A high level of accuracy can also be achieved with fluctuating liquid densities, thus facilitating the use of dosing applications. In systems where the installation is extremely cramped, the UP56 Pure Mini is the perfect solution thanks to its very compact design. The use in containers with a lot of built-in components is easily resolved by means of an immersion pipe. The measurement range, output, and filters of the UP56 product family is easy and convenient to adjust with the PC-based programming tool Connect+.

At a glance

- Ultrasonic level sensor with very high chemical resistance
- Non-contact measurement in immersion pipe of up to 1,500 mm
- PTFE-coated membrane and GF D40 process connection made of PTFE
- Pressure resistant up to 6 bar, temperature resistant up to 85°C
- Different sizes available
- Analog output selectable between 4 mA to 20 mA and 0 V to 10 V
- Switching output for monitoring the maximum and minimum limit

Your benefits

- Non-contact and non-wearing measurement reduces maintenance and servicing cost
- Sensor replacement possible even with chemicals present, thus saving time and increasing availability
- Universally applicable with acidic and alkaline processes
- Flexible measurement system for different container sizes provides cost reductions
- High accuracy measurements, even in liquids with density fluctuations
- Faultless operation with very limited installation space in the tote
- Switching output and analog output in a single sensor reduces time and money spent on wiring
- Simple and time-saving configuration with Connect+

Additional information

→ www.sick.com/UP56_Pure

For more information, simply enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

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Detailed technical data

Features

	UP56-211	UP56-212	UP56-216
Medium	Fluids		
Measurement	Switch, continuous		
Measuring range in tank	30 mm ... 250 mm	85 mm ... 350 mm	65 mm ... 700 mm
Measuring range immersion tube	30 mm ... 500 mm	85 mm ... 1,500 mm	65 mm ... 1,500 mm
Process pressure	0 bar ... 6 bar, gauge pressure for UP56 Pure mini (depending on type)		
Process temperature	–25 °C ... +85 °C		

Performance

	UP56-211	UP56-212	UP56-216
Accuracy of sensor element	≤ 1 % [1]		
Repeatability	± 0.15 % [1]		
Resolution	≤ 0.025 mm	≤ 0.18 mm	
Response time	≤ 84 ms [2]		
Display	Without design specifics		

[1] From the full scale value.

[2] Recovery time 32 ms ... 180 ms according to EMC EN 60947-5-7.

Mechanics

Process connection	GF connection D40
Housing material	PTFE, PP
Housing design	Standard / Mini (depending on type)
Weight	210 g 145 g UP56 Pure Mini (depending on type)

Electronics

	UP56-211	UP56-212	UP56-216
Supply voltage	9 V DC ... 30 V DC [1]		
Residual ripple	± 10 %		
Power consumption	≤ 80 mA [2]		
Protection class	III		
Electrical connection	Round connector M12 x 1, 5-pin		
Output signal	1 x PNP + 4 mA ... 20 mA / 0 V ... 10 V [3] [4] 4 mA ... 20 mA [3] [4] (depending on type)		
Hysteresis	3 mm 3 mm [5]	5 mm 5 mm [5]	
Signal voltage HIGH	Uv –3 V		
Output current	200 mA		
Time delay before availability	≤ 300 ms		
Enclosure rating	IP 67		
Ultrasonic frequency	320 kHz		200 kHz

[1] Reverse-polarity protected.

[2] At 24 V DC without output load.

[3] Short-circuit protected, reversible.

[4] Automatic switching between voltage and current outputs dependet on load 4 mA ... 20 mA: RL ≤ 100 / at 9 V ≤ U_B ≤20 V; RL ≤ 500/ at U_B ≥ 20 V; 0 V ... 10 V: RL ≥ 100 k / at U_B ≥ 15 V, short-circuit protected.

[5] Free adjustable in 1 mm steps via Connect+ Adapter (CPA)

	UP56-211	UP56-212	UP56-216
Ultrasonic transducer	PTFE coating, FFKM		

[1] Reverse-polarity protected.

[2] At 24 V DC without output load.

[3] Short-circuit protected, reversible.

[4] Automatic switching between voltage and current outputs dependet on load 4 mA ... 20 mA: RL ≤ 100 / at 9 V ≤ U_B ≤20 V; RL ≤ 500/ at U_B ≥ 20 V; 0 V ... 10 V: RL ≥ 100 k / at U_B ≥ 15 V, short-circuit protected.

[5] Free adjustable in 1 mm steps via Connect+ Adapter (CPA)

Ambient data

Ambient operating temperature	–25 °C ... +70 °C [1]
Ambient storage temperature	–40 °C ... +85 °C

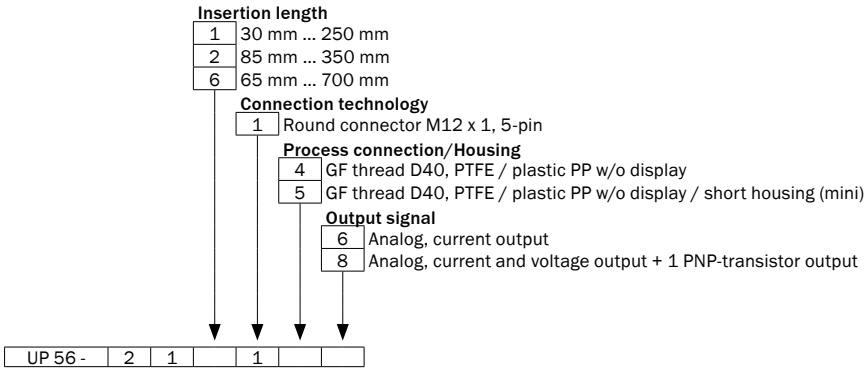
[1] Temperature compensation at –25 °C ... +50 °C, can be switched off.

Ordering information

- **Enclosure rating:** IP 67
- **Process connection:** GF connection D40
- **Process temperature:** –25 °C ... +85 °C
- **Housing material:** PTFE, PP
- **Electrical connection:** round connector M12 x 1, 5-pin

Output signal	Process pressure	Measuring range in tank	Measuring range immersion tube	Type	Part no.
1 x PNP + 4 mA ... 20 mA / 0 V ... 10 V	0 bar ... 6 bar	30 mm ... 250 mm	30 mm ... 500 mm	UP56-211148	6048942
4 mA ... 20 mA	0 bar ... 2 bar	30 mm ... 250 mm	30 mm ... 500 mm	UP56-211156	6050441
1 x PNP + 4 mA ... 20 mA / 0 V ... 10 V	0 bar ... 6 bar	85 mm ... 350 mm	85 mm ... 1,500 mm	UP56-212148	6048943
4 mA ... 20 mA	0 bar ... 2 bar	85 mm ... 350 mm	85 mm ... 1,500 mm	UP56-212156	6049945
1 x PNP + 4 mA ... 20 mA / 0 V ... 10 V	0 bar ... 6 bar	65 mm ... 700 mm	65 mm ... 1,500 mm	UP56-216148	6049450
4 mA ... 20 mA	0 bar ... 2 bar	65 mm ... 700 mm	65 mm ... 1,500 mm	UP56-216156	6049617

Type code



Not all variations of the type code can be combined!

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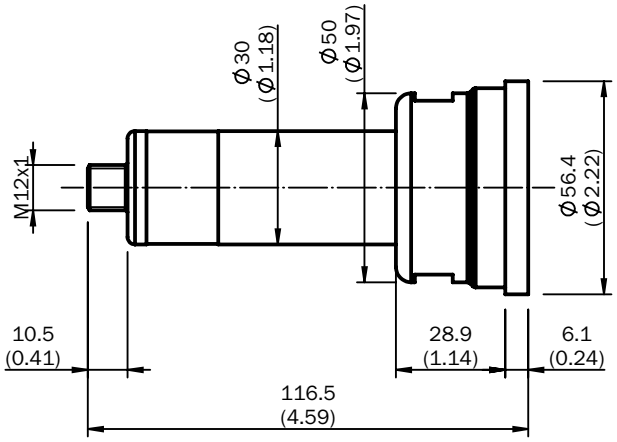
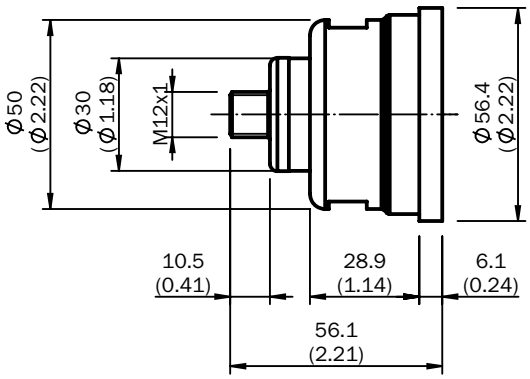
Dimensional drawings (Dimensions in mm (inch))

UP56 Pure



UP56 Pure Mini

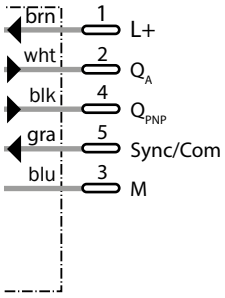


Electrical connection

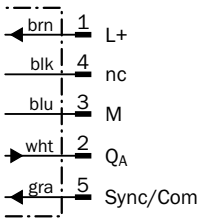
Male connector M12, 5-pin

Connection diagram

1 x PNP + 4 mA ... 20 mA / 0 V ... 10 V



4 mA ... 20 mA



Accessories

Connection systems

Plug connectors and cables

Connecting cables with female connector

	Brief description	Cable length	Type	Part no.
 Illustration may differ	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: PVC, unshielded	2 m	DOL-1205-G02M	6008899
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded	2 m	DOL-1205-G02MC	6025906
 Illustration may differ	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: PVC, unshielded	5 m	DOL-1205-G05M	6009868

	Brief description	Cable length	Type	Part no.
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded	5 m	DOL-1205-G05MC	6025907
 Illustration may differ	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: PVC, unshielded	10 m	DOL-1205-G10M	6010544
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded	10 m	DOL-1205-G10MC	6025908
 Illustration may differ	Head A: female connector, M12, 5-pin, angled Head B: cable Cable: PVC, unshielded	2 m	DOL-1205-W02M	6008900
	Head A: female connector, M12, 5-pin, angled Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded	2 m	DOL-1205-W02MC	6025909
 Illustration may differ	Head A: female connector, M12, 5-pin, angled Head B: cable Cable: PVC, unshielded	5 m	DOL-1205-W05M	6009869
		10 m	DOL-1205-W10M	6010542
	Head A: female connector, M12, 5-pin, angled Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded	10 m	DOL-1205-W10MC	6025911

Further accessories

Programming and configuration tools

	Brief description	Type	Part no.
	Tool for visualization, configuration and cloning, 3-digit LED display, supply voltage: DV 9 V ... 30 V	Connect+ adapter (CPA)	6037782

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SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 7,400 employees and over 50 subsidiaries and equity investments as well as numerous representative offices worldwide, we are always close to our customers. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

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