



Ultrasonic Sensor UP30

Contact-free level measurement with ultrasonic technology.

The UP30 ultrasonic level sensor exploits its strengths in particular in smaller pressurised containers, where it is neither influenced by heavy contamination nor media deposits and monitors both limit levels and continuous filling heights regardless of the electrical properties of the media – contact-free and reliably.

The ultrasonic sensor cyclically emits short, high-frequency sound pulses. These are radiated at the speed of sound. They are reflected when they meet the surface of the medium and return to the ultrasonic sensor in the form of an echo. The ultrasonic sensor calculates the distance from the time elapsed between emission of the sound pulses and receipt of the echo signals. This is provided to users as both an analog level signal and a switching signal.

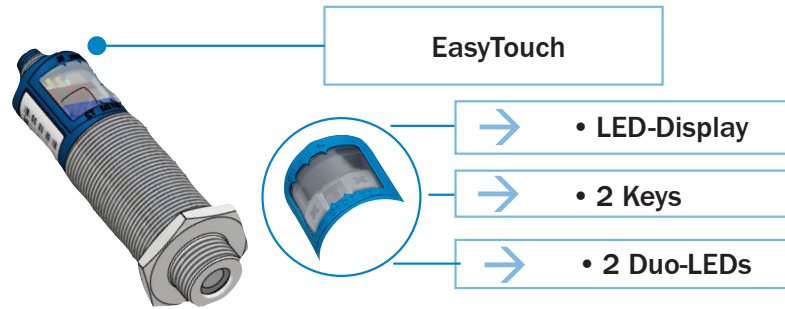
Features:

- UP30 is available with two switching outputs or as versions with one analog and one switching output.
- The sensors are adjustable manually using the numerical LED-display or may be parameterized using Teach-in processes.
- Useful additional functions are set in the Add-on-menu.
- Using the Control+ adapter (optional accessory) all TouchControl and additional sensor parameter settings may be made by a Windows-Software

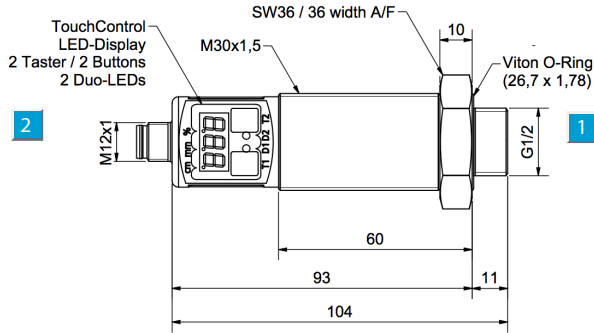
Benefits

- Non-contact level measurement up to 500 mm
- Display for rapid and flexible adjustments
- A single sensor provides analog and switching outputs
- Measurement in small pressure containers up to 6 bar

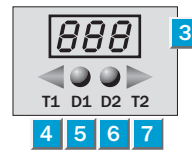




Dimensions



Adjustments possible



- 1 Process connection G1/2 or 1/2" NPT
- 2 Connection plug M12
- 3 Control and display panel
- 4 Setting key 1
- 5 LED 1
- 6 LED 2
- 7 Setting key 2

Technical Data

Model Name	UP30-2111_2	UP30-2111_4	UP30-2111_8
Operating distance	30 ... 500 mm (700mm)	30 ... 500 mm (700mm)	30 ... 500 mm (700mm)
Ultrasonic frequency	320 kHz	320 kHz	320 kHz
Resolution	0.18 mm	0.18 mm	0.18 mm
Reproducibility	± 0.15 %	± 0.15 %	± 0.15 %
Accuracy ¹⁾	≤ 2 %	≤ 2 %	≤ 2 %
Supply voltage V_s ²⁾	DC 9 ... 30 V	DC 9 ... 30 V	DC 9 ... 30 V
Residual ripple	± 10 %	± 10 %	± 10 %
Current consumption ³⁾	≤ 80 mA	≤ 80 mA	≤ 80 mA
Switching outputs, reversible ⁴⁾	Q1, Q2: PNP	Q1, Q2: NPN	PNP: UV - 2 V, I _{max} = 200 mA
Analog output, reversible ^{4) 5)}	-	-	QA: 4 ... 20 mA/0 ... 10 V
Response time ⁶⁾	110 ms	110 ms	110 ms
Switching frequency	6 Hz	6 Hz	6 Hz
Switching hysteresis	3 mm	3 mm	3 mm
Standby delay	< 300 ms	< 300 ms	< 300 ms
Connection type	M12, 5-polig	M12, 5-polig	M12, 5-polig
Enclosure rating	IP 67	IP 67	IP 67
Ambient temperature	Operation -25 ... +70 °C Storage -40 ... +85 °C	Operation -25 ... +70 °C Storage -40 ... +85 °C	Operation -25 ... +70 °C Storage -40 ... +85 °C
Ultrasonic convertor	PTFE-foil, Viton-O-Ring	PTFE-foil, Viton-O-Ring	PTFE-foil, Viton-O-Ring
Process connection	G 1/2, 1/2" NPT	G 1/2, 1/2" NPT	G 1/2, 1/2" NPT
Pressure resistance/ area of use	0.5 - 6 bar gauge pressure	0.5 - 6 bar gauge pressure	0.5 - 6 bar gauge pressure
Weight	150 g	150 g	150 g
Housing material	Stainless steel 1.4571, PBT, TPU	Stainless steel 1.4571, PBT, TPU	Stainless steel 1.4571, PBT, TPU

¹⁾ Temperature compensation (can be switched off), or without temperature compensation 0.17%/°K

²⁾ Limit values

³⁾ Without load

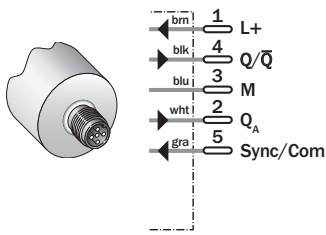
⁴⁾ Outputs short-circuit protected

⁵⁾ Automatic switching between voltage and current outputs dependet on load
 4 ... 20 mA: $R_L \leq 100 \Omega$ at $9 V \leq U_B \leq 20 V$;
 $R_L \leq 500 \Omega$ at $U_B \geq 20 V$;
 0 ... 10 V: $R_L \geq 100 k\Omega$ at $U_B \geq 15 V$, short-circuit protected

⁶⁾ Recovery time 32 ms ... 180 ms according to EMV EN 50319

Connection type

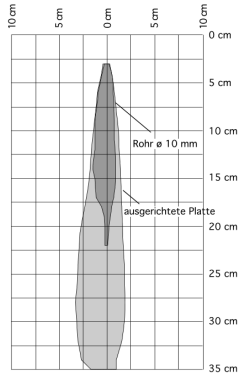
5-pin, M12



Order information

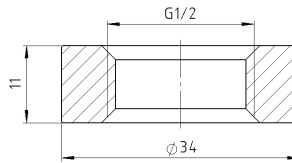
Part-No.	Model Name	Output	Process connector
6037768	UP30-211118	1 analog, 1 switch	G 1/2
6039674	UP30-211112	2 switch PNP	G 1/2
6039675	UP30-211114	2 switch NPN	G 1/2
6039786	UP30-2111A8	1 analog, 1 switch	1/2" NPT
6039784	UP30-2111A2	2 switch PNP	1/2" NPT
6039785	UP30-2111A4	2 switch NPN	1/2" NPT

Detection range



Accessory

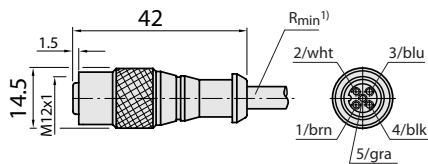
Part-No.	Model Name	Description
6037782	Connect +	Software incl. adapter, cable & CD-Rom
4057890	Welded flange G 1/2	Material 1.4404



Cables and connectors

Female connector M12, 5-pin, straight, 5 x 1 mm², sheath PVC

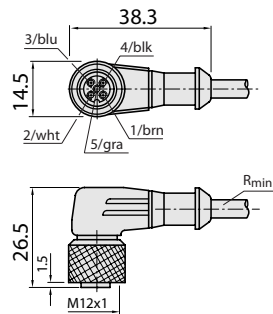
Part-No.	Model Name	Contacts	Cable length
6008899	DOL-1205-G02M	5	2 m
6009868	DOL-1205-G05M	5	5 m
6010544	DOL-1205-G10M	5	10 m



¹⁾ Minimum bend radius in dynamic use
R_{min} = 20 x cable diameter

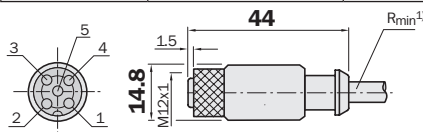
Female connector M12, 5-pin, angled, 5 x 1 mm², sheath PVC

Part-No.	Model Name	Contacts	Cable length
6008900	DOL-1205-W02M	5	2 m
6009869	DOL-1205-W05M	5	5 m
6010542	DOL-1205-W10M	5	10 m



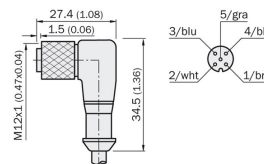
Female connector M12, straight, 5 x 1 mm², sheath PUR halogenfree

Part-No.	Model Name	Contacts	Cable length
6025906	DOL-1205-G02MC	5	2 m
6025907	DOL-1205-G05MC	5	5 m
6025908	DOL-1205-G10MC	5	10 m



Female connector M12, 5, angled, 5 x 1 mm², sheath PUR halogenfree

Part-No.	Model Name	Contacts	Cable length
6025909	DOL-1205-W02MC	5	2 m
6025910	DOL-1205-W05MC	5	5 m
6025911	DOL-1205-W10MC	5	10 m



¹⁾ Minimum bend radius in dynamic use
R_{min} = 20 x cable diameter

Dimensions in mm (inch)

Australia

Phone +61 3 9497 4100
1800 33 48 02 – tollfree
E-Mail sales@sick.com.au

Belgium/Luxembourg

Phone +32 (0)2 466 55 66
E-Mail info@sick.be

Brasil

Phone +55 11 3215-4900
E-Mail sac@sick.com.br

Ceská Republika

Phone +420 2 57 91 18 50
E-Mail sick@sick.cz

China

Phone +852-2763 6966
E-Mail ghk@sick.com.hk

Danmark

Phone +45 45 82 64 00
E-Mail sick@sick.dk

Deutschland

Phone +49 211 5301-250
E-Mail info@sick.de

España

Phone +34 93 480 31 00
E-Mail info@sick.es

France

Phone +33 1 64 62 35 00
E-Mail info@sick.fr

Great Britain

Phone +44 (0)1727 831121
E-Mail info@sick.co.uk

India

Phone +91-22-4033 8333
E-Mail info@sick-india.com

Israel

Phone +972-4-999-0590
E-Mail info@sick-sensors.com

Italia

Phone +39 02 27 43 41
E-Mail info@sick.it

Japan

Phone +81 (0)3 3358 1341
E-Mail support@sick.jp

Nederlands

Phone +31 (0)30 229 25 44
E-Mail info@sick.nl

Norge

Phone +47 67 81 50 00
E-Mail austefjord@sick.no

Österreich

Phone +43 (0)22 36 62 28 8-0
E-Mail office@sick.at

Polska

Phone +48 22 837 40 50
E-Mail info@sick.pl

Republic of Korea

Phone +82-2 786 6321/4
E-Mail kang@sickkorea.net

Republika Slovenija

Phone +386 (0)1-47 69 990
E-Mail office@sick.si

România

Phone +40 356 171 120
E-Mail office@sick.ro

Russia

Phone +7 495 775 05 34
E-Mail info@sick-automation.ru

Schweiz

Phone +41 41 619 29 39
E-Mail contact@sick.ch

Singapore

Phone +65 6744 3732
E-Mail admin@sicksgp.com.sg

Suomi

Phone +358-9-25 15 800
E-Mail sick@sick.fi

Sverige

Phone +46 10 110 10 00
E-Mail info@sick.se

Taiwan

Phone +886 2 2375-6288
E-Mail sickgrc@ms6.hinet.net

Türkiye

Phone +90 216 587 74 00
E-Mail info@sick.com.tr

USA/Canada/México

Phone +1(952) 941-6780
1 800-325-7425 – tollfree
E-Mail info@sickusa.com

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