16 mm

39,5 mm

UC4 – Small. Precise. Ultrasonic!

Reliable detection, independant of colour and surface.

SICK
Sensor Intelligence.

UC4

The tiny ultrasonic sensor

Small, sturdy, versatile.

Ultrasonic sensors operate reliably even under difficult conditions, for example whenever the detection of transparent objects is required or background suppression really is put to the test.
This is where the UC4 concept comes in: the tiny ultrasonic sensor for tasks with demanding requirements.

Whether the product is an extremely dark wafer, heavily reflective polycrystalline solar cell or a transparent film, the UC4 detects it. Its light weight of only 10 grammes makes the sensor particularly suitable for dynamic applications with high acceleration, for example on robot arms. Its flexibility makes it an allrounder.

Reliable function: Secure detection of extremely dark and shiny surfaces, transparent films and liquids.
Even sound absorbing objects are reliably detected.

Extremely light: Ideal for use in dynamic applications with high acceleration.

Small sound beam: No disturbance due to edge reflections, hence secure detection of objects.

Robust: Insensitive to dust, dirt and mist. Robust ABS plastic housing.

Versatile: The "switch mode", "window mode" and "reflex switch" functions open up many areas of application.

Highly economical: Fast learning function via Teach-in button reduces machine set-up times.

Simple functionality: 2 LEDs indicating power-on and switching state.

Listen and reliably detect invisible objects ... with our ultrasonic technology. We accept the challenge! Test the new tiny UC4 ultrasonic sensor!

UC4. The complete series.

|	
UC4-11341	Scanning distance max.: 13 ... 150 mm, without temp. compensation **Output:** PNP
UC4-11345	Scanning distance max.: 13 ... 150 mm, without temp. compensation **Output:** NPN
UC4-13341	Scanning distance max.: 13 ... 250 mm, with temp. compensation **Output:** PNP
UC4-13345	Scanning distance max.: 13 ... 250 mm, with temp. compensation **Output:** NPN
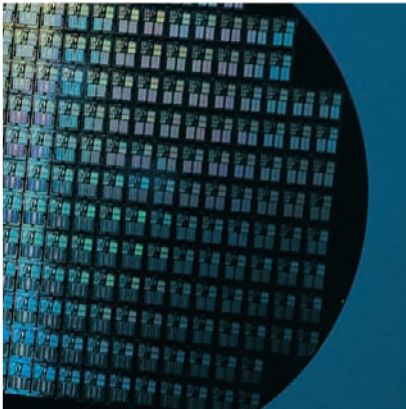
Operating scanning distance
13 … 100 mm
13 … 150 mm

Ultrasonic sensor

- High switching accuracy thanks to time-of-flight measurement
- Independent of material shape (including films, glass, bottles)
- Proximity, Window and Reflector Mode
- Insensitive to dirt, dust and mist
- 1 switching output PNP/NPN
- Precise background suppression (BGS)

CE ⟨III⟩

Dimensional drawing

16.2   16.6

28.5   5.9   5.9   5.9   9.3   11

39.5
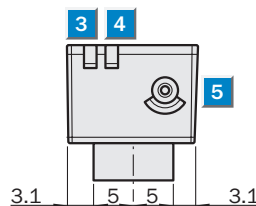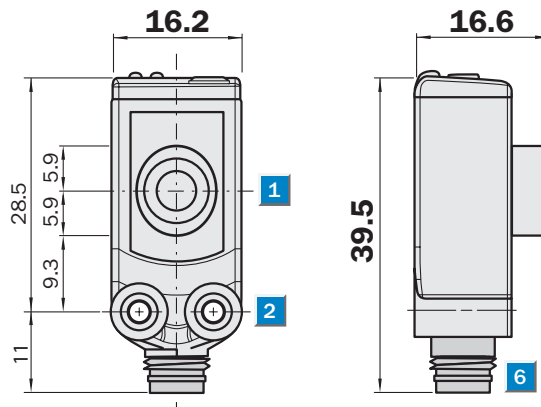
1	Centre of sender and receiver axis
2	Mounting hole M3
3	LED indicator yellow, status of switching output
4	LED indicator green, power on
5	Teach button
6	Connector M8, 3-pin

3.1   5   5   3.1

Connection type

All types

3-pin, M8

brn	1	L+
blu	3	M
blk	4	Q
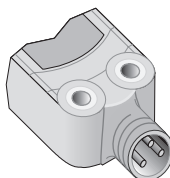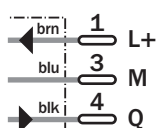
Technical data

Technical data UC4-		11341	13341	11345	13345		
Operating scanning distance [1]	13 ... 100 mm (150 mm)	■		■			
(limiting scanning distance)	13 ... 150 mm (250 mm)		■		■		
Ultrasonic frequency	Approx. 380 kHz	■	■	■	■		
Resolution	0.18 mm	■	■	■	■		
Reproducibility	± 0.15 % [2]	■	■	■	■		
Temperature drift	0.17 %/K	■		■			
	≤ 2 % [2] [3]		■		■		
Supply voltage V_S	20 ... 30 V DC	■	■	■	■		
Residual ripple	10 %	■	■	■	■		
Current consumption	≤ 25 mA	■	■	■	■		
Switching output [4]	Q, $\overline{Q}$: PNP	■	■				
	Q, $\overline{Q}$: NPN			■	■		
Response time [5]	26 ms	■	■	■	■		
Switching frequency	20/s	■	■	■	■		
Switching hysteresis	2.0 mm	■	■	■	■		
Standby delay	< 300 ms	■	■	■	■		
Indicator	Two LEDs green/yellow	■	■	■	■		
Control element(s)	Teach-in button	■	■	■	■		
Connection type	Plug M8, 3-pin	■	■	■	■		
VDE protection class	⬙	■	■	■	■		
Temperature compensation	Yes		■		■		
Enclosure rating	IP 67	■	■	■	■		
Ambient temperature	Operation –20 °C ... +70 °C	■	■	■	■		
	Storage –40 °C ... +85 °C	■	■	■	■		
Weight	Approx. 10 g	■	■	■	■		
Housing material [6]	ABS plastic	■	■	■	■		

[1] Teach-in from 21 mm onward
[2] Reference: limiting scanning distance
[3] After maximum of 30 minutes warm-up time. Erratic temperature changes can cause temporary increase of switching accuracy

[4] Outputs short-circuit protected
  I_{max} = 200 mA
  PNP: HIGH = V_S - (< 2 V)/LOW = 0 V
  NPN: HIGH = V_S/LOW ≤ 2 V

[5] Object inserted sideways into measuring range
[6] Ultrasonic transducer: Polyurethane-foam, glass epoxy resin

Detection ranges

UC4-1134_ 100 mm

UC4-1334_ 150 mm

Order information

Typ	Order no.
UC4-11341	6034667
UC4-13341	6034669
UC4-11345	6034668
UC4-13345	6034670

1	Pipe diameter 10 mm
2	Aligned plate 100 x 100 mm²
3	Operating scanning distance
4	Limiting scanning distance

FACTORY AUTOMATION

With its intelligent sensors, safety systems, and auto ident applications, SICK realises comprehensive solutions for factory automation.

- Non-contact detecting, counting, classifying, and positioning of any types 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 optimisation of sorting and warehousing processes.

- Automated identification with bar code 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

Analyzers and Process Instrumentation by SICK MAIHAK provides for the best possible acquisition of environmental and process data.

- Complete systems solutions for gas analysis, dust measurement, flow rate measurement, water analysis or, respectively, liquid analysis, and level measurement as well as other tasks

Worldwide presence with subsidiaries in the following countries:

Australia

Belgium/Luxembourg

Brasil

Ceská Republika

China

Danmark

Deutschland

España

France

Great Britain

India

Italia

Japan

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Republic of Korea

Republika Slovenija

România

Russia

Schweiz

Singapore

Suomi

Sverige

Taiwan

Türkiye

USA/Canada/México

Please find detailed addresses and additional representatives and agencies in all major industrial nations at **www.sick.com**

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