

UC4 – Small. Precise. Ultrasonic!

Reliable detection, independent of colour and surface.

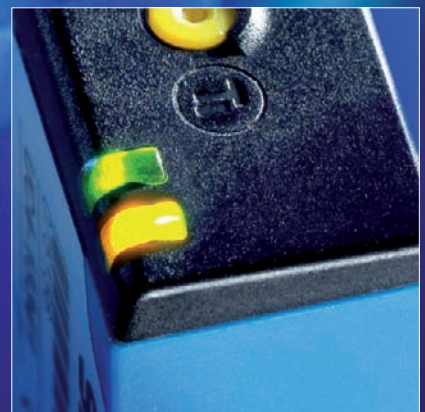
SENSORS
INCORPORATED

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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.

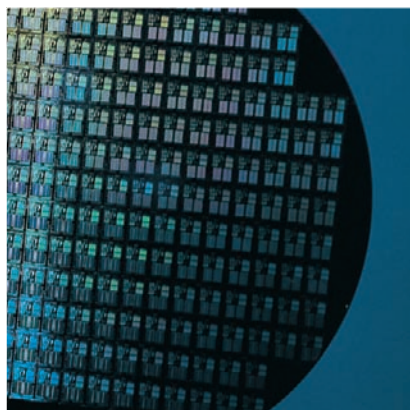
Highly economical: Fast learning function via Teach-in button reduces machine set-up times.


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

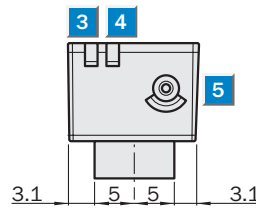
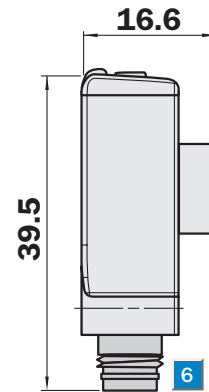
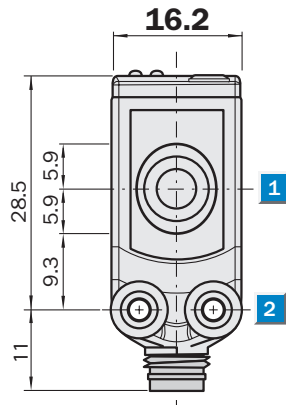


	Operating scanning distance
	13 ... 100 mm
	13 ... 150 mm
Ultrasonic sensor	

- 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)



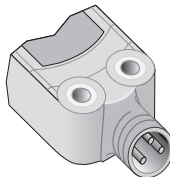
Dimensional drawing



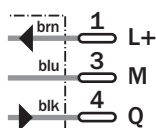
- 1 Centre of sender and receiver axis
- 2 Mounting hole M3
- 3 LED indicator yellow, status of switching output
- 4 LED indicator green, power on
- 5 Teach button
- 6 Connector M8, 3-pin

Connection type

All types



3-pin, M8



Technical data		UC4-	11341	13341	11345	13345		
Operating scanning distance ⁴⁾	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, \bar{Q} : PNP							
	Q, \bar{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

$I_{max} = 200 \text{ mA}$

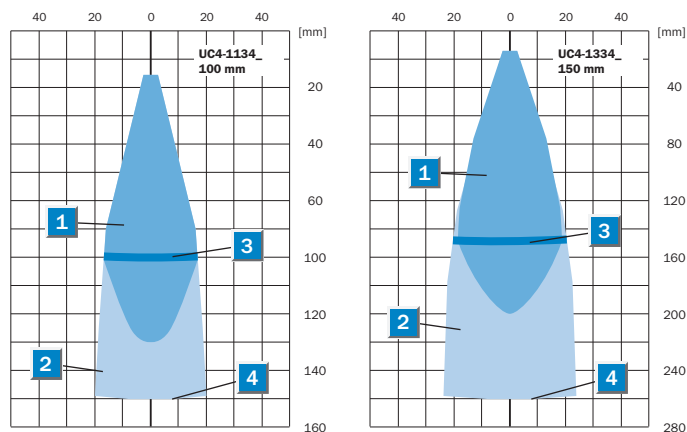
PNP: HIGH = $V_S - (< 2 \text{ V})$ /LOW = 0 V

NPN: HIGH = V_S /LOW ≤ 2 V

5) Object inserted sideways into measuring range

6) Ultrasonic transducer: Polyurethane-foam, glass epoxy resin

Detection ranges



1 Pipe diameter 10 mm

2 Aligned plate 100 x 100 mm²

3 Operating scanning distance

4 Limiting scanning distance

Order information

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

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



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