



UC40-11411H

UC40

ULTRASONIC SENSORS

SICK
Sensor Intelligence.

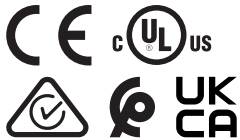


Ordering information

Type	part no.
UC40-11411H	6081950

Included in delivery: BEF-KH-IQ40 (1)

Other models and accessories → www.sick.com/UC40



Detailed technical data

Features

Operating range, limiting range	350 mm ... 3,400 mm, 5,000 mm
Target	Natural objects
Resolution	≥ 1 mm
Repeatability	± 0.15 % ¹⁾
Measurement accuracy	± 1 % ^{2) 3)}
Temperature compensation	✓
Response time	160 ms ⁴⁾
Switching frequency	4 Hz
Output time	41.6 ms
Ultrasonic frequency (typical)	120 kHz
Detection area (typical)	See diagrams
Additional function	Adjustable operating modes: Switching point (DtO) / Switching window/Background (ObSB), teach-in of digital output, set levels of digital outputs, invertable digital output, set on delay digital output, teach-in of analog output, scaling of analog outputs, Invertable analog output, automatic selection of analog current or voltage output, Analog output switchable to second digital output, synchronization of up to 50 sensors, multiplexing: no cross talk of up to 50 sensors, Adjustable measurement filters: Measured value filters/Filter strength/Foreground suppression/Detection area/Sensitivity and sound beam/False echo suppression, teach-in button(s) (can be deactivated), reset to factory default
Safety-related parameters	
	MTTF _D 101 years
	DC _{avg} 0 %

¹⁾ In relation to the current measured value, minimum value ≥ resolution.

²⁾ Referring to current measurement value.

³⁾ Temperature compensation can be switched off, without temperature compensation: 0.17 % / K.

⁴⁾ Subsequent smoothing of the analog output, depending on the application, may increase the response time by up to 200 %.

Interfaces

IO-Link		✓ , IO-Link V1.1
	Function	Process data, parameterization, diagnosis, data storage
Digital output		
	Number	1 ... 2 ¹⁾
	Type	Push-pull: PNP/NPN
	Function	Configurable Q2 output: analog output / digital output
	Maximum output current I _A	≤ 100 mA
Analog output		
	Number	1
	Type	Current output / voltage output
	Function	Automatic selection of analog current or voltage output dependent on load
		Configurable Q2 output: analog output / digital output
	Current	4 mA ... 20 mA, ≤ 500 Ω ²⁾
	Voltage	0 V ... 10 V, ≥ 100,000 Ω
Multifunctional input (MF)		1 x MF
Hysteresis		50 mm

¹⁾ Push-pull: PNP/NPN HIGH = U_V - (< 3 V) / LOW < 3 V.

²⁾ For 4 mA ... 20 mA and V_s ≤ 20 V max. load ≤ 100 Ω.

Electronics

Supply voltage U_B	DC 9 V ... 30 V ^{1) 2)}
Power consumption	≤ 1.5 W ³⁾
Initialization time	< 300 ms
Indication	4 x LED
Enclosure rating	IP65 IP67
Protection class	III

¹⁾ Limit values, reverse-polarity protected Operation in short-circuit protected network: max. 8 A, class 2.

²⁾ 15 V ... 30 V when using the analog voltage output.

³⁾ Without load.

Mechanics

Dimensions (W x H x D)	40 mm x 40 mm x 66 mm
Design	Rectangular
Sending axis	Straight ¹⁾
Housing material	Plastic (PA 66, ultrasonic transducer: polyurethane foam, glass epoxy resin)
Weight	130 g
Connection type	Male connector, M12, 5-pin

¹⁾ Sensor head can be rotated 90°, additional 360° incremental alignment via mounting bracket.

Ambient data

Ambient temperature, operation	-25 °C ... +70 °C
Ambient temperature, storage	-40 °C ... +85 °C

Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓
cULus certificate	✓

Classifications

ECLASS 5.0	27270804
ECLASS 5.1.4	27270804
ECLASS 6.0	27270804
ECLASS 6.2	27270804
ECLASS 7.0	27270804
ECLASS 8.0	27270804
ECLASS 8.1	27270804
ECLASS 9.0	27270804
ECLASS 10.0	27270804
ECLASS 11.0	27270804
ECLASS 12.0	27272806
ETIM 5.0	EC001846
ETIM 6.0	EC001846
ETIM 7.0	EC001846
ETIM 8.0	EC001846
UNSPSC 16.0901	41111960

Technical drawing of the T1 T2 sensor, showing dimensions in mm and inches.

Front View:

- Overall width: 40 (1.57)
- Overall height: 66 (2.6)
- Mounting hole diameter: $\varnothing 5.5 (2x)$ ($\varnothing 0.22$)
- Distance from top edge to mounting holes: 5.3 (0.21)
- Distance between mounting holes: 14 (0.55)
- Distance from bottom edge to mounting holes: 20 (0.79)
- Distance from bottom edge to mounting holes (alternative): 30 (1.18)
- Distance from top edge to mounting holes (alternative): 7.3 (0.29)
- Distance from top edge to mounting holes (alternative): 40 (1.57)
- Distance from top edge to mounting holes (alternative): 60 (2.36)
- Distance from top edge to mounting holes (alternative): 66 (2.6)
- Radius: R 2.8 (2x) (0.11)
- Mounting holes: 1 (0.04)

Side View:

- Overall width: 42.3 (1.67)
- Overall height: 40 (1.57)
- Mounting hole diameter: M12 x 1

Top View:

- Overall width: 40 (1.57)
- Overall height: 40 (1.57)
- Mounting hole diameter: $\varnothing 31$ ($\varnothing 1.22$)

- ① 2 mounting holes, radius: 2.8 mm
- ② 2 mounting holes, diameter: 5.5 mm

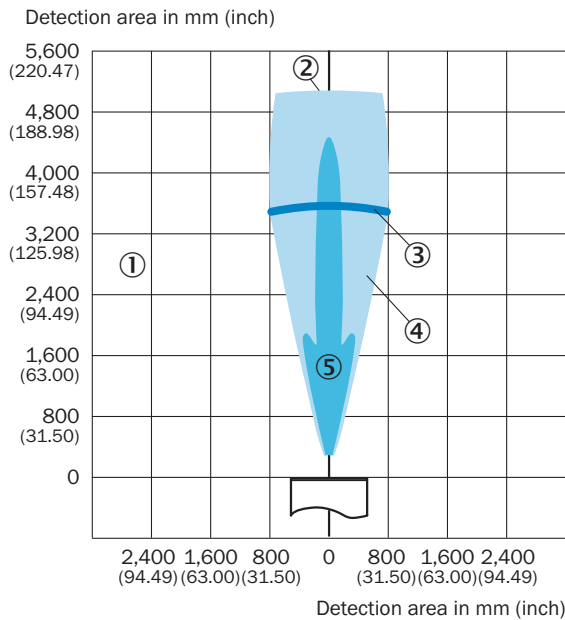
A diagram of a circular object with five holes and a notch. The holes are labeled 1, 2, 3, 4, and 5. The notch is labeled 6.

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- Figure 1 shows the pin configuration of the 5-pin D-sub connector. The pins are numbered 1 through 5 from top to bottom. The corresponding signals are: Pin 1 (brown) is L+; Pin 4 (black) is Q1/Q1-bar/c; Pin 3 (blue) is M; Pin 2 (white) is Q_A/Q2/Q2-bar; Pin 5 (gray) is MF. Arrows indicate signal direction: brown and gray have arrows pointing left, black and blue have arrows pointing right, and white has no arrow.

- 5

- ③ Supply voltage: 0 V
- ④ Digital output 1, IO-Link communication
- ⑤ Multifunction input (MF), synchronization and multiplex operation, communication via Connect+ software

Detection area



- ① Detection range dependent on reflection properties, size, and alignment of the object
- ② Limiting range
- ③ operating range
- ④ example object: aligned plate 500 mm x 500 mm
- ⑤ example object: pipe with 27 mm diameter

Recommended accessories

Other models and accessories → www.sick.com/UC40

	Brief description	Type	part no.
connectors and cables			
	• Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 2 m, 5-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals, Uncontaminated zones	YF2A15-020VB5XLEAX	2096239
	• Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 0.6 m, 5-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals, Uncontaminated zones	YF2A15-C60VB5XLEAX	2145570
	• Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 3 m, 5-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals, Uncontaminated zones	YF2A15-030VB5XLEAX	2145572
network devices			
		SIG100-0A0111100	1089792
		SIG200-0A041220S01	1100615
		IOLA2US-01101 (SiLink2 Master)	1061790

SICK AT A GLANCE

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We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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