



DATA SHEET

V3S100-2AAAAAA

Visionary-T
3D machine vision

SICK Sensor Intelligence



Illustration may differ

3D MACHINE VISION

V3S100-2AAAAAA

ORDERING INFORMATION

Type	part no.
V3S100-2AAAAAA	1086942

Further device versions and accessories at www.sick.com/Visionary-T



DETAILED TECHNICAL DATA

FEATURES

Task	Collision awareness
Technology	3D snapshot time-of-flight
Product category	Configurable, programmable, Streaming, pre-calibrated
Working distance	0.5 m ... 60 m ¹⁾
Example field of view	7 m x 5.3 m ²⁾
Detection angle	69° x 56°
Angular resolution	0.39° x 0.38°
Illumination	Integrated
Illumination color	Infrared, LED, invisible, 850 nm
LED class	Risk group 0 in accordance with EN 62471
Factory calibrated	✓
Grayscale measurements	✓

¹⁾ Radial distance for targets having 100% remission.

²⁾ See table for individual values.

MECHANICS/ELECTRONICS

Connection type	M12 8-pin Gigabit Ethernet, X-coded M12 17-pin (voltage supply/data), system plug, digital I/Os (24 V)
Supply voltage	24 V DC ¹⁾
Power consumption	≤ 22 W, Typical (without digital I/Os)
Peak current	3 A
Enclosure rating	IP67

¹⁾ (+/-20 %), < 2,5 ms integration time
(+/-15 %), > 2,5 ms integration time.

²⁾ With cooling fins.

Protection class	III
Housing color	Blue, black
Weight	1.9 kg, with cooling fins
Dimensions (L x W x H)	162 mm x 116 mm x 104 mm ²⁾
Mounting	Any or can be determined by raster

¹⁾ (+/-20 %), < 2,5 ms integration time
 (+/-15 %), > 2,5 ms integration time.

²⁾ With cooling fins.

PERFORMANCE

Pixel count	176 px x 144 px
Repeatability	≥ 2 mm, At 1 m distance ≥ 7 mm, At 7 m distance ¹⁾
On delay	< 15 s
Response time	< 66 ms
Integrated application	Data stream with the option of filtering the data

¹⁾ See table for individual values.

INTERFACES

Ethernet	✓
Function	Complete data stream combining distance, intensity, and confidence values in one snapshot plus device control
Data transmission rate	60 Mbit/s, communication interface Gigabit Ethernet (TCP/IP)
Configuration software	SOPAS ET, Telegram interface, API (Java), Web-Interface
Digital input	2
Digital output	4
Optical indicators	2 status LEDs

AMBIENT DATA

Electromagnetic compatibility (EMC)	EN 61000-6-2:2005-08 / EN 61000-6-4:2007-01
Shock load	EN 60068-2-27:2009
Vibration load	EN 60068-2-6, EN 60068-2-64
Ambient operating temperature	0 °C ... +50 °C, with cooling fins ¹⁾
Storage temperature	-20 °C ... +70 °C
Ambient light immunity	< 50 klx, Sunlight

¹⁾ The ambient operating temperature is reduced by 5 °C in speed mode to 45 °C.

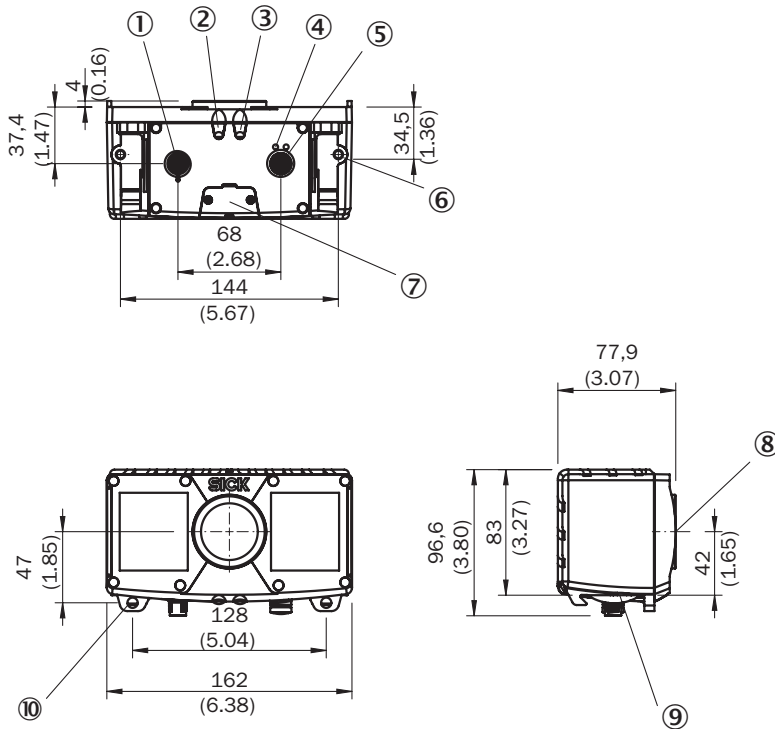
GENERAL NOTES

Note	All relevant materials for commissioning (instructions, drivers, examples, software, API) can be found in the Downloads tab under "Other downloads".
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CERTIFICATES

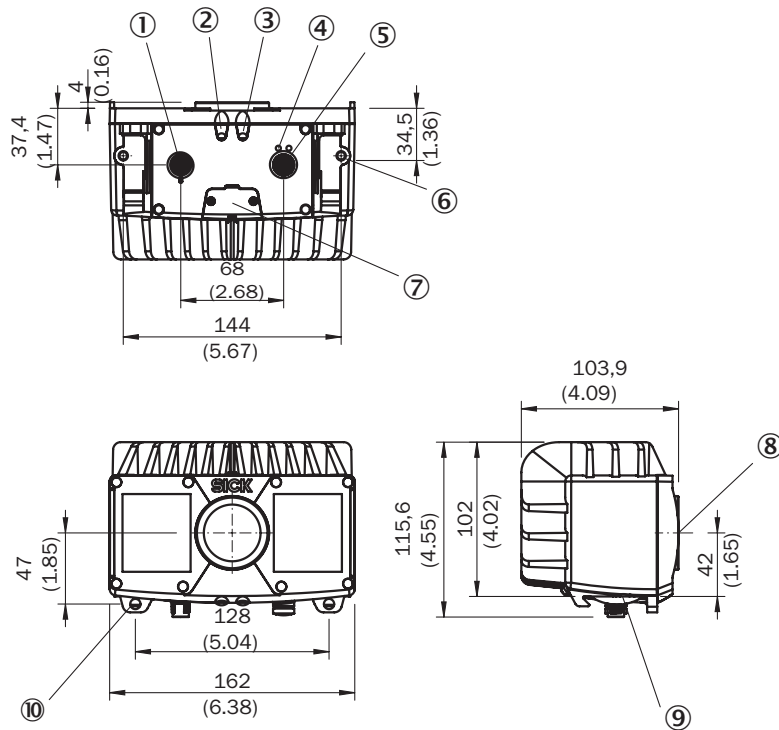
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓

DIMENSIONAL DRAWING



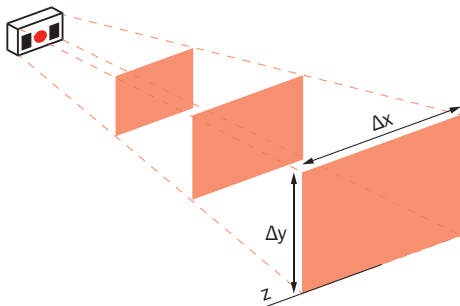
Dimensions in mm (inch)

- ① Power connection / digital inputs and outputs / service
- ② Device display
- ③ Application status display
- ④ Ethernet status display
- ⑤ Ethernet connection
- ⑥ M6 blind tapped holes, 7 mm deep (2 x), for mounting
- ⑦ service interface
- ⑧ Optical axis
- ⑨ interface bracket
- ⑩ bracket mounting (accessories)

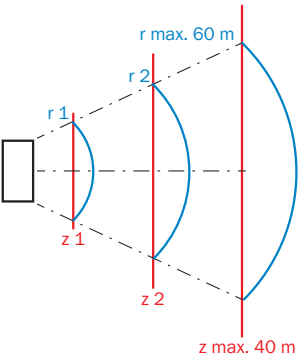
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DETECTION VOLUME AND FIELD OF VIEW

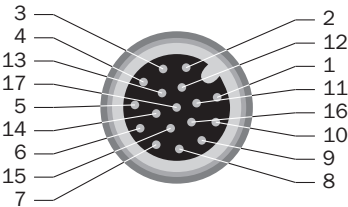
ABSOLUTE MEASUREMENT ACCURACY AND REPEATABILITY, WORKING DISTANCE: RADIAL



absolute accuracy (z-axis) and repeatability at 10 % and 100 % remission and without background light (central detection zone)

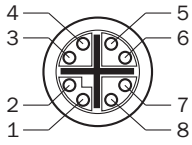
Working distance radial (r)	Measurement accuracy (100% remission)	Repeatability (1σ - 100% remission)	Measurement accuracy (10% remission)	Repeatability (1σ - 10% remission)
0,5 m	± 15 mm	± 2 mm	± 15 mm	± 2 mm
1,0 m	± 15 mm	± 2 mm	± 15 mm	± 3 mm
2,0 m	± 15 mm	± 2 mm	± 20 mm	± 6 mm
3,0 m	± 15 mm	± 3 mm	± 35 mm	± 10 mm
4,0 m	± 20 mm	± 3 mm	± 50 mm	± 20 mm
5,0 m	± 25 mm	± 4 mm	± 50 mm	± 25 mm
7,0 m	± 35 mm	± 7 mm	-	-
10,0 m	± 50 mm	± 15 mm	-	-
15,0 m	± 50 mm	± 30 mm	-	-
20,0 m	± 50 mm	± 50 mm	-	-

DIGITAL I/O



M12, 17-pin male connector

- ① GND – reference mass
- ② Supply voltage
- ③ CAN L – reserved, not implemented. Do not connect to VCC!
- ④ CAN H – reserved, not implemented. Do not connect to VCC!
- ⑤ TD+ (RS-422/485) Host – reserved, not implemented. Do not connect to VCC!
- ⑥ TD- (RS-422/485) Host, TxD (RS-232), Host – reserved, not implemented. Do not connect to VCC!
- ⑦ TxD (RS-232), Aux – service only
- ⑧ RxD (RS-232), Aux – service only
- ⑨ SENS GND – GND for electrically decoupled inputs
- ⑩ SENS IN1 – switch input, electrically decoupled
- ⑪ RD+ (RS-422) Host – reserved, not implemented. Do not connect to VCC!
- ⑫ RD- (RS-422/485) Host, RxD (RS-232), Host – reserved, not implemented. Do not connect to VCC!
- ⑬ INOUT 1 - Programmable digital I/O
- ⑭ INOUT 2 - Programmable digital I/O
- ⑮ SENS IN2 – switch input, electrically decoupled
- ⑯ INOUT 3 - Programmable digital I/O
- ⑰ INOUT 4 - Programmable digital I/O

GIGABIT ETHERNET

M12, 8-pin female connector, X-coded (Gigabit Ethernet)

- ① TRD0_P
- ② TRD0_N
- ③ TRD1_P
- ④ TRD1_N
- ⑤ TRD3_P
- ⑥ TRD3_N
- ⑦ TRD2_P
- ⑧ TRD2_N

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1086942



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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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