



# V3S100-2AABAAB

Visionary-T

3D MACHINE VISION

**SICK**  
Sensor Intelligence.

### Ordering information



Illustration may differ



Type	part no.
V3S100-2AABAAB	1086943

Other models and accessories → [www.sick.com/Visionary-T](http://www.sick.com/Visionary-T)

### Detailed technical data

#### Features

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

<sup>1)</sup> Radial distance for targets having 100% remission.

<sup>2)</sup> See table for individual values.

#### Mechanics/electronics

<b>Connection type</b>	M12 8-pin Gigabit Ethernet, X-coded M12 17-pin (voltage supply/data), system plug, digital I/Os (24 V)
<b>Supply voltage</b>	24 V DC <sup>1)</sup>
<b>Power consumption</b>	≤ 22 W, Typical (without digital I/Os)
<b>Peak current</b>	3 A
<b>Enclosure rating</b>	IP67
<b>Protection class</b>	III
<b>Housing color</b>	Blue, black

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

<sup>2)</sup> Without cooling fins.

<b>Weight</b>	1.4 kg, without cooling fins
<b>Dimensions (L x W x H)</b>	162 mm x 93 mm x 78 mm <sup>2)</sup>
<b>Mounting</b>	Any or can be determined by raster

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

<sup>2)</sup> Without cooling fins.

## Performance

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

<sup>1)</sup> See table for individual values.

## Interfaces

<b>Ethernet</b>	✓
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)
<b>Configuration software</b>	SOPAS ET, Telegram interface, API (Java), Web-Interface
<b>Digital input</b>	2
<b>Digital output</b>	4
<b>Optical indicators</b>	2 status LEDs

## Ambient data

<b>Electromagnetic compatibility (EMC)</b>	EN 61000-6-2:2005-08 / EN 61000-6-4:2007-01
<b>Shock load</b>	EN 60068-2-27:2009
<b>Vibration load</b>	EN 60068-2-6, EN 60068-2-64
<b>Ambient operating temperature</b>	0 °C ... +45 °C, without cooling fins <sup>1)</sup>
<b>Storage temperature</b>	-20 °C ... +70 °C
<b>Ambient light immunity</b>	< 50 klx, Sunlight

<sup>1)</sup> The ambient operating temperature is reduced by 5 °C in speed mode to 40 °C.

## General notes

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

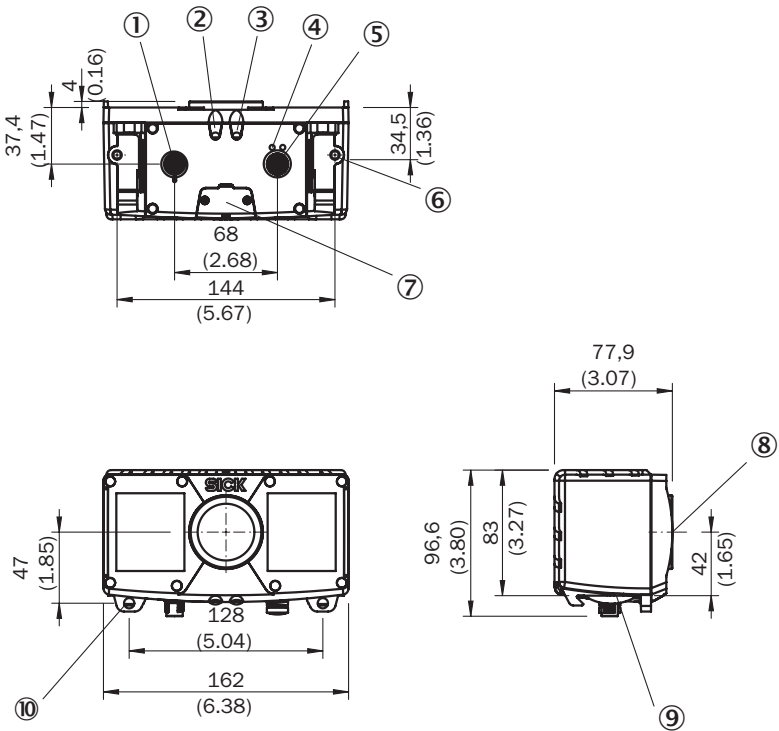
## Certificates

<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>China RoHS</b>	✓
<b>cULus certificate</b>	✓

Classifications

ECLASS 5.0	27310205
ECLASS 5.1.4	27310205
ECLASS 6.0	27310205
ECLASS 6.2	27310205
ECLASS 7.0	27310205
ECLASS 8.0	27310205
ECLASS 8.1	27310205
ECLASS 9.0	27310205
ECLASS 10.0	27310205
ECLASS 11.0	27310205
ECLASS 12.0	27310205
ETIM 5.0	EC001820
ETIM 6.0	EC001820
ETIM 7.0	EC001820
ETIM 8.0	EC001820
UNSPSC 16.0901	43211731

Dimensional drawing

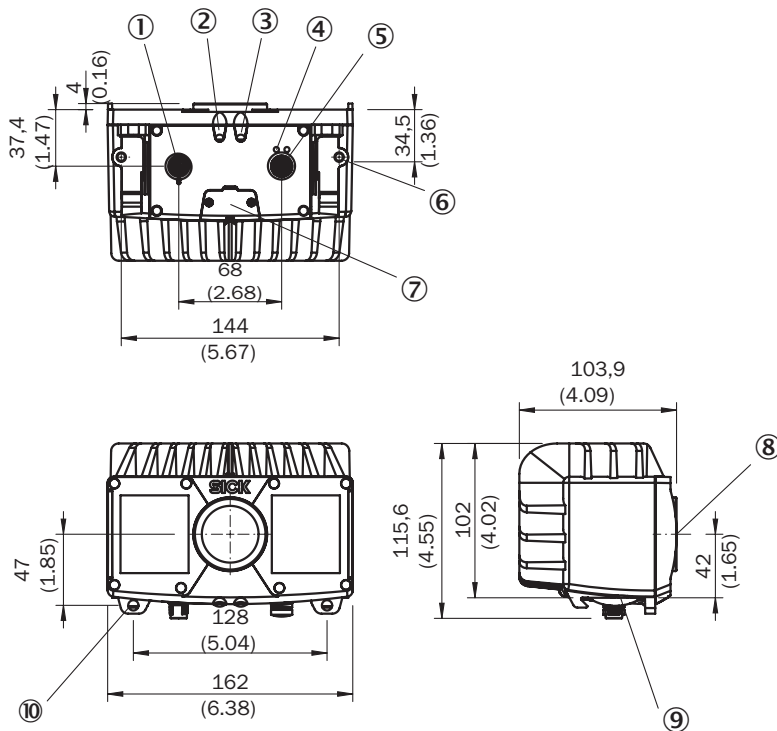


Dimensions in mm (inch)

- 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)

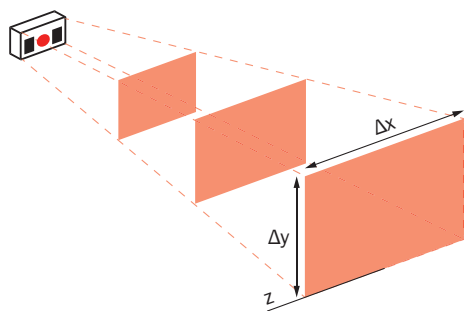
## Dimensional drawing



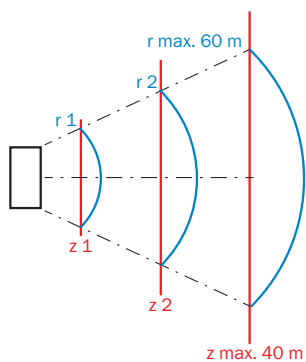
Dimensions in mm (inch)

- 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)

Detection volume and field of view



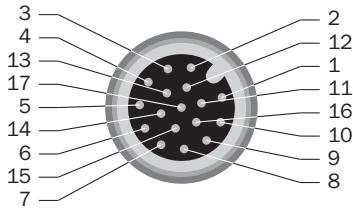
Absolute measurement accuracy and repeatability, working distance: radial



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	-	-

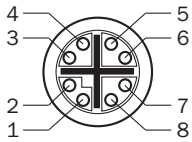
## digital I/O



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

### Recommended accessories

Other models and accessories → [www.sick.com/Visionary-T](http://www.sick.com/Visionary-T)

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 17-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 17-pin, straight, A-coded</li> <li><b>Signal type:</b> Power, serial, CAN, digital I/Os</li> <li><b>Cable:</b> 3 m, 17-wire</li> <li><b>Description:</b> Power, suitable for 2 A, shielded, Serial, CAN, Digital I/Os</li> <li><b>Application:</b> Drag chain operation</li> </ul>	YM2A8D-030XXXF2A8D	6051194
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 17-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Power, serial, CAN, digital I/Os</li> <li><b>Cable:</b> 3 m, 17-wire, stripped, PE-X</li> <li><b>Description:</b> Power, suitable for 2 A, shielded, Serial, Changed color coding of the flying leads, CAN, Digital I/Os</li> <li><b>Connection systems:</b> Flying leads</li> <li><b>Note:</b> Max. permissible current strength at ambient temperature 50 °C: Contact 1 (blue) and contact 2 (brown): 3 A while the remaining contacts are operated with max. 100 mA; max. permissible current strength at ambient temperature 40 °C: 2 A for two and 1.5 A for 15 contacts.</li> <li><b>Application:</b> Drag chain operation</li> </ul>	YF2ASD-030XXXXLECX	2070425
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 17-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Power, serial, CAN, digital I/Os</li> <li><b>Cable:</b> 5 m, 17-wire, stripped, PE-X</li> <li><b>Description:</b> Power, suitable for 2 A, shielded, Serial, Changed color coding of the flying leads, CAN, Digital I/Os</li> <li><b>Connection systems:</b> Flying leads</li> <li><b>Note:</b> Max. permissible current strength at ambient temperature 50 °C: Contact 1 (blue) and contact 2 (brown): 3 A while the remaining contacts are operated with max. 100 mA; max. permissible current strength at ambient temperature 40 °C: 2 A for two and 1.5 A for 15 contacts.</li> <li><b>Application:</b> Drag chain operation</li> </ul>	YF2ASD-050XXXXLECX	2070426
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 8-pin, straight, X-coded</li> <li><b>Connection type head B:</b> Male connector, RJ45, 8-pin, straight</li> <li><b>Signal type:</b> Ethernet, Gigabit Ethernet</li> <li><b>Cable:</b> 2 m, 8-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, Gigabit Ethernet</li> <li><b>Application:</b> Zones with oils and lubricants</li> </ul>	YM2X18-020EG1M-RJA8	2106258
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 8-pin, straight, X-coded</li> <li><b>Connection type head B:</b> Male connector, RJ45, 8-pin, straight</li> <li><b>Signal type:</b> Ethernet, Gigabit Ethernet</li> <li><b>Cable:</b> 5 m, 8-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, Gigabit Ethernet</li> <li><b>Application:</b> Zones with oils and lubricants</li> </ul>	YM2X18-050EG1M-RJA8	2106259
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 8-pin, straight, X-coded</li> <li><b>Connection type head B:</b> Male connector, RJ45, 8-pin, straight</li> <li><b>Signal type:</b> Ethernet, Gigabit Ethernet</li> <li><b>Cable:</b> 3 m, 8-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, Gigabit Ethernet</li> <li><b>Application:</b> Zones with oils and lubricants</li> </ul>	YM2X18-030EG1M-RJA8	2145693
Mounting systems			
	<ul style="list-style-type: none"> <li><b>Description:</b> Bracket with low weight for stationary applications, screws included.</li> <li><b>Dimensions (W x H x L):</b> 204 mm x 166 mm x 100.5 mm</li> <li><b>Details:</b> Aluminum</li> <li><b>Color:</b> Anthracite</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Items supplied:</b> Bracket including clamps and screws</li> <li><b>Suitable for:</b> Visionary-S, Visionary-B Two, PALLOC, PLB-510, Visionary AI-Assist</li> </ul>	Mounting kit	2077710
	<ul style="list-style-type: none"> <li><b>Description:</b> 2x clamps and 2x screws</li> <li><b>Details:</b> Metal</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Items supplied:</b> 2 clamps and 2 screws</li> <li><b>Suitable for:</b> Visionary-S, Visionary-B Two, PALLOC, Visionary-S, Visionary-B Two, PALLOC, Visionary-S, Visionary-B Two, PALLOC</li> </ul>	2x clamps, 2x screws	2077709



## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

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.”**

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)