



# DT35S-B15251

Dx35

TIME-OF-FLIGHT SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

Type	part no.
DT35S-B15251	1122104

Other models and accessories → [www.sick.com/Dx35](http://www.sick.com/Dx35)



## Detailed technical data

## Features

<b>Safety-related measuring range</b>	50 mm ... 8,500 mm, 90% remission factor <sup>1)</sup> 50 mm ... 4,500 mm, 20% remission 50 mm ... 3,000 mm, 10% remission 50 mm ... 2,000 mm, 6% remission factor
<b>Target</b>	Natural objects
<b>Resolution</b>	1 mm
<b>Systematic error</b>	< 25 mm <sup>2)</sup>
<b>Statistical error</b>	< 25 mm <sup>2) 3)</sup>
<b>Response time</b>	15 ms ... 50 ms <sup>4) 5)</sup>
<b>Light source</b>	Laser, red <sup>6)</sup> visible red light
<b>Type of light</b>	Visible red light
<b>Laser class</b>	2 (IEC 60825-1:2014, EN 60825-1:2014)
<b>Typ. light spot size (distance)</b>	15 mm x 15 mm (at 2 m)
<b>Additional function</b>	Adjustable speed: slow and medium Teach-in of analog output and invertible analog output Configurable Q <sub>2</sub> output: current output / digital output Switching mode: Distance to Object (DtO) / switching window / object between sensor and background (ObSB) Teach-in of digital output Multifunctional input: laser off / deactivated
<b>Safety-related parameters</b>	

<sup>1)</sup> With the Slow speed setting. No objects will be detected from the measurement origin to a distance of 50 mm.

<sup>2)</sup> 6% ... 90% remission factor.

<sup>3)</sup> Corresponds to 4.4  $\sigma$ .

<sup>4)</sup> Depending on the configured speed and interface.

<sup>5)</sup> Lateral entry of the object into the measuring range.

<sup>6)</sup> Wavelength: 658 nm; max. output: 250 mW; pulse duration: 4 ns; duty cycle: 1/250.

<sup>7)</sup> 10 years at 50 °C ambient temperature.

Category	B (EN ISO 13849-1:2015)
Performance level	PL b (EN ISO 13849-1:2015)
Performance class SRS/SRSS	B (IEC TS 62998-1:2019)
Max. cumulative downtime per year	< 5 min (IEC TS 62998-1)
Conformities	EN ISO 13849-1:2015, IEC TS 62998-1:2019, EN ISO 13482:2014, ANSI/ITSDF B56.5:2012
T <sub>M</sub> (mission time)	20 years (EN ISO 13849-1:2015) <sup>7)</sup>

<sup>1)</sup> With the Slow speed setting. No objects will be detected from the measurement origin to a distance of 50 mm.

<sup>2)</sup> 6% ... 90% remission factor.

<sup>3)</sup> Corresponds to 4.4  $\sigma$ .

<sup>4)</sup> Depending on the configured speed and interface.

<sup>5)</sup> Lateral entry of the object into the measuring range.

<sup>6)</sup> Wavelength: 658 nm; max. output: 250 mW; pulse duration: 4 ns; duty cycle: 1/250.

<sup>7)</sup> 10 years at 50 °C ambient temperature.

## Interfaces

<b>IO-Link</b>	✓, V1.1
Function	Process data
Data transmission rate	38,4 kbit/s (COM2)
<b>Digital output</b>	
Number	1 ... 2 <sup>1) 2)</sup>
Type	Push-pull: PNP/NPN
Function	Configurable Q2 output: analog output / digital output
Maximum output current I <sub>A</sub>	≤ 100 mA
<b>Analog output</b>	
Number	1
Type	Current output
Current	4 mA ... 20 mA, ≤ 450 $\Omega$
Resolution	12 bit
<b>Multifunctional input (MF)</b>	1 x <sup>3)</sup>
<b>Hysteresis</b>	10 mm 25 mm 50 mm
<b>Interface for parametrization</b>	SOPAS ET <sup>4)</sup>

<sup>1)</sup> Output Q short-circuit protected.

<sup>2)</sup> Voltage drop < 3 V.

<sup>3)</sup> Response time ≤ 60 ms.

<sup>4)</sup> Additional SiLink2 Master accessory required.

## Electronics

<b>Supply voltage U<sub>B</sub></b>	DC 19.2 V ... 26.4 V <sup>1)</sup>
<b>Power consumption</b>	≤ 1.7 W <sup>2)</sup>
<b>Ripple</b>	≤ 5 V <sub>pp</sub> <sup>3)</sup>
<b>Initialization time</b>	≤ 500 ms

<sup>1)</sup> Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.

<sup>2)</sup> Without load, at +20 °C.

<sup>3)</sup> May not fall short of or exceed V<sub>S</sub> tolerances.

<b>Warm-up time</b>	≤ 20 min
<b>Indication</b>	LEDs
<b>Enclosure rating</b>	IP67
<b>Protection class</b>	III
<b>Electrical safety</b>	IEC 61010-1 (ed. 3)

<sup>1)</sup> Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.

<sup>2)</sup> Without load, at +20 °C.

<sup>3)</sup> May not fall short of or exceed  $V_S$  tolerances.

## Mechanics

<b>Dimensions (W x H x D)</b>	32 mm x 58.67 mm x 42.7 mm
<b>Housing material</b>	Plastic (ABS/PC)
<b>Window material</b>	Plastic (PMMA)
<b>Weight</b>	65 g
<b>Connection type</b>	Male connector, M12, 5-pin

## Ambient data

<b>Ambient temperature, operation</b>	−25 °C ... +50 °C, $U_V \leq 24$ V
<b>Ambient temperature, storage</b>	−40 °C ... +75 °C
<b>Max. rel. humidity (not condensing)</b>	≤ 95 %
<b>Temperature drift</b>	0.5 mm/K
<b>Typ. Ambient light immunity</b>	Direct exposure: 3,000 lx Indirect exposure: 40,000 lx
<b>Vibration resistance</b>	EN 60068-2-6, EN 60068-2-64
<b>Shock resistance</b>	EN 60068-2-27
<b>Electromagnetic compatibility (EMC)</b>	EN 61000-6-2, EN 61000-6-3, EN 61000-6-4 <sup>1)</sup>

<sup>1)</sup> This is a Class A device. This device can cause radio interference in living quarters.

## Certificates

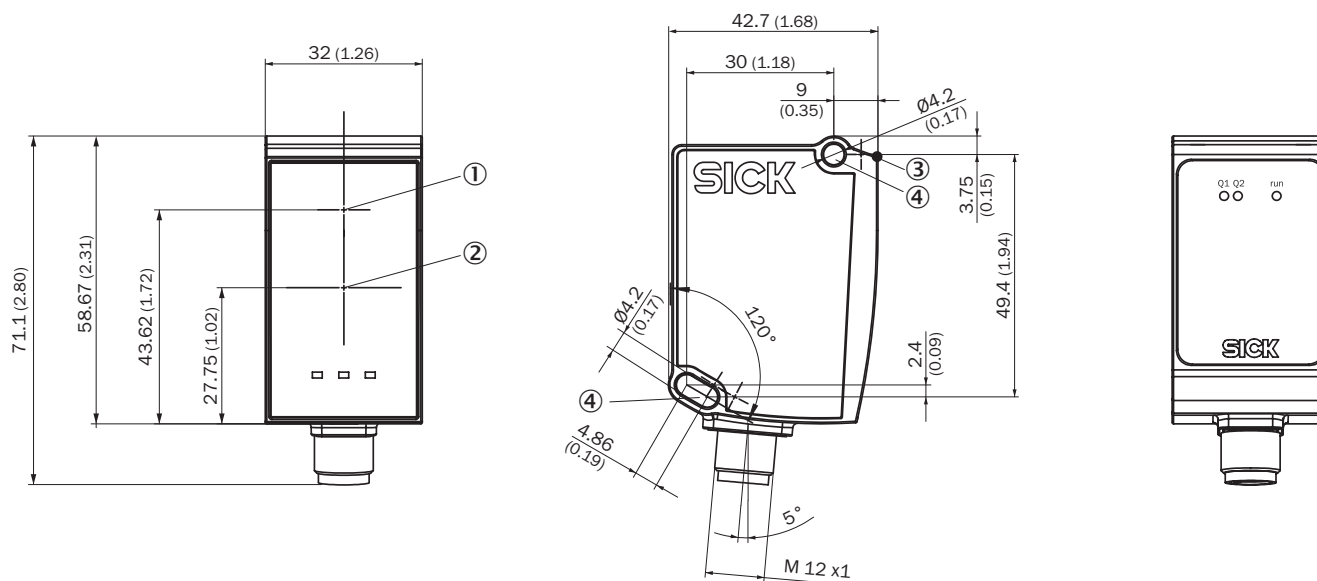
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China-RoHS</b>	✓
<b>TÜV approval</b>	✓
<b>TÜV approval annex</b>	✓
<b>cTUVus certificate</b>	✓
<b>EC-Type-Examination approval</b>	✓

## Classifications

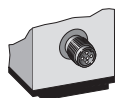
<b>ECLASS 5.0</b>	27270801
<b>ECLASS 5.1.4</b>	27270801
<b>ECLASS 6.0</b>	27270801
<b>ECLASS 6.2</b>	27270801

<b>ECLASS 7.0</b>	27270801
<b>ECLASS 8.0</b>	27270801
<b>ECLASS 8.1</b>	27270801
<b>ECLASS 9.0</b>	27270801
<b>ECLASS 10.0</b>	27270801
<b>ECLASS 11.0</b>	27270801
<b>ECLASS 12.0</b>	27270916
<b>ETIM 5.0</b>	EC001825
<b>ETIM 6.0</b>	EC001825
<b>ETIM 7.0</b>	EC001825
<b>ETIM 8.0</b>	EC001825
<b>UNSPSC 16.0901</b>	41111613

## Dimensional drawing






## Connection type Male connector M12, 5-pin



## Recommended accessories

Other models and accessories → [www.sick.com/Dx35](http://www.sick.com/Dx35)

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> <li><b>Description:</b> Alignment unit</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Items supplied:</b> Mounting hardware for the sensor included</li> </ul>	BEF-AH-DX50	2048397
	<ul style="list-style-type: none"> <li><b>Description:</b> Plate N02 for universal clamp bracket</li> <li><b>Material:</b> Steel, zinc diecast</li> <li><b>Details:</b> Zinc plated steel (sheet), Zinc die cast (clamping bracket)</li> <li><b>Items supplied:</b> Universal clamp (5322626), mounting hardware</li> <li><b>Usable for:</b> W4S-3 Glass, W10, W4SLG-3, W4S-3 Inox, W4S-3 Inox Glass, W9, W11-2, W12-3, W12-2 Laser, W12G, W12 Teflon, W16, W250, W250-2, PowerProx, W11G-2, TranspaTect, WTT12, UC12, P250, G6 Inox, W4S, W4SL-3V, W4SLG-3V, W4SL-3H</li> </ul>	BEF-KHS-N02	2051608
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket: horizontal sending axis for ceiling or floor installation or vertical sending axis for wall installation, steel, zinc coated, incl. mounting material</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Items supplied:</b> Mounting hardware for the sensor included</li> </ul>	BEF-WN-DX35	2069592

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 5-pin, straight, A-coded</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 5-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A15-020UB5M2A15	2096009
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YG2A15-020VB5XLEAX	2096215
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A15-020VB5XLEAX	2096239
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 0.6 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YG2A15-C60VB5XLEAX	2145573
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 1 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YG2A15-010VB5XLEAX	2145574
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 3 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YG2A15-030VB5XLEAX	2145575
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 0.6 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A15-C60VB5XLEAX	2145570
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 3 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A15-030VB5XLEAX	2145572
network devices			
		IOLA2US-01101 (SiLink2 Master)	1061790

## 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)