



# DT35S-B15251

## DT35-S

SAFETY DISTANCE SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

| Type         | part no. |
|--------------|----------|
| DT35S-B15251 | 1122104  |

Other models and accessories → [www.sick.com/DT35-S](http://www.sick.com/DT35-S)



## Detailed technical data

## Features

|                                       |                                 |                                                                                                                                                                                                                                                                                 |
|---------------------------------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Safety-related measuring range</b> |                                 | 50 mm ... 8,500 mm, 90% remission factor <sup>1)</sup><br>50 mm ... 4,500 mm, 20% remission<br>50 mm ... 3,000 mm, 10% remission<br>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>Emitted beam</b>                   |                                 |                                                                                                                                                                                                                                                                                 |
|                                       | Light source                    | Laser, red <sup>6)</sup>                                                                                                                                                                                                                                                        |
|                                       | Type of light                   | Visible red light                                                                                                                                                                                                                                                               |
|                                       | Typ. light spot size (distance) | 15 mm x 15 mm (at 2 m)                                                                                                                                                                                                                                                          |
| <b>Key laser figures</b>              |                                 |                                                                                                                                                                                                                                                                                 |
|                                       | Normative reference             | IEC 60825-1:2014, EN 60825-1:2014                                                                                                                                                                                                                                               |
|                                       | Laser class                     | 2                                                                                                                                                                                                                                                                               |
| <b>Additional function</b>            |                                 | Adjustable speed: slow and medium<br>Teach-in of analog output and invertible analog output<br>Configurable Q <sub>2</sub> output: current output / digital output<br>Switching mode: Distance to Object (DtO) / switching window / object between sensor and background (ObSB) |

<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 σ.

<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.

|                                                        |                                                                              |
|--------------------------------------------------------|------------------------------------------------------------------------------|
|                                                        | Teach-in of digital output<br>Multifunctional input: laser off / deactivated |
| <b>Safety-related parameters</b>                       |                                                                              |
| Category                                               | B (EN ISO 13849-1)                                                           |
| Performance level                                      | PL b (EN ISO 13849-1)                                                        |
| Performance class SRS/SRSS                             | B (IEC TS 62998-1)                                                           |
| PFH (mean probability of a dangerous failure per hour) | $1,4 \times 10^{-6}$                                                         |
| Max. cumulative downtime per year                      | < 5 min (IEC TS 62998-1)                                                     |
| Conformities                                           | EN ISO 13849-1, IEC TS 62998-1, EN ISO 13482, ANSI/ITSDF B56.5               |
| T <sub>M</sub> (mission time)                          | 20 years (EN ISO 13849-1) <sup>7)</sup>                                      |

- 1) With the Slow speed setting. No objects will be detected from the measurement origin to a distance of 50 mm.  
2) 6% ... 90% remission factor.  
3) Corresponds to 4.4  $\sigma$ .  
4) Depending on the configured speed and interface.  
5) Lateral entry of the object into the measuring range.  
6) Wavelength: 658 nm; max. output: 250 mW; pulse duration: 4 ns; duty cycle: 1/250.  
7) 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 Ω                                                                                                                                                                                                 |
| Resolution                            | 12 bit                                                                                                                                                                                                                  |
| <b>Multifunctional input (MF)</b>     | 1 x <sup>3)</sup><br>Voltage level MF input active: High ≥ 14 V (applies only in the specified supply voltage range)<br>Voltage level MF input inactive: Low ≤ 5 V (applies only in the specified supply voltage range) |
| <b>Hysteresis</b>                     | 10 mm<br>25 mm<br>50 mm                                                                                                                                                                                                 |
| <b>Interface for parametrization</b>  | SOPAS ET <sup>4)</sup>                                                                                                                                                                                                  |

- 1) Output Q short-circuit protected.  
2) Voltage drop < 3 V.  
3) Response time ≤ 60 ms.  
4) Additional SiLink2 Master accessory required.

## Electronics

|                                        |                                       |
|----------------------------------------|---------------------------------------|
| <b>Supply voltage <math>U_B</math></b> | DC 19.2 V ... 26.4 V <sup>1)</sup>    |
| <b>Power consumption</b>               | $\leq 1.7 \text{ W}$ <sup>2)</sup>    |
| <b>Ripple</b>                          | $\leq 5 \text{ V}_{pp}$ <sup>3)</sup> |
| <b>Initialization time</b>             | $\leq 500 \text{ ms}$                 |
| <b>Warm-up time</b>                    | $\leq 20 \text{ min}$                 |
| <b>Display</b>                         | LEDs                                  |
| <b>Enclosure rating</b>                | IP67                                  |
| <b>Protection class</b>                | III                                   |
| <b>Electrical safety</b>               | IEC 61010-1 (ed. 3)                   |
| <b>Connection type</b>                 | Male connector, M12, 5-pin            |

<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                       |

## Ambient data

|                                            |                                                           |
|--------------------------------------------|-----------------------------------------------------------|
| <b>Ambient temperature, operation</b>      | -25 °C ... +50 °C, $U_v \leq 24 \text{ V}$                |
| <b>Ambient temperature, storage</b>        | -40 °C ... +75 °C                                         |
| <b>Max. rel. humidity (not condensing)</b> | $\leq 95 \%$                                              |
| <b>Temperature drift</b>                   | 0.5 mm/K                                                  |
| <b>Typ. Ambient light immunity</b>         | Direct exposure: 3,000 lx<br>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

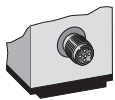
|                                           |   |
|-------------------------------------------|---|
| <b>EU declaration of conformity</b>       | ✓ |
| <b>UK declaration of conformity</b>       | ✓ |
| <b>ACMA declaration of conformity</b>     | ✓ |
| <b>Moroccan declaration of conformity</b> | ✓ |
|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

✓

|                       |          |
|-----------------------|----------|
| <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 |

- ① optical axis, sender
- ② optical axis, receiver
- ③ Reference surface = 0 mm
- ④ Mounting hole M4

### Connection Plug, M12, 5-pin



### Recommended accessories

Other models and accessories → [www.sick.com/DT35-S](http://www.sick.com/DT35-S)

|                            | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Type                              | part no. |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------|
| network devices            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                   |          |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | IOLA2US-01101<br>(SiLink2 Master) | 1061790  |
| 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  |
| device protection and care |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                   |          |
|                            | <ul style="list-style-type: none"> <li><b>Description:</b> Weather Cover for Dx35/Dx50/Dx50-2/Dx80</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | OBW-KHS-M02                       | 2050205  |

|                                                                                     | 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, 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, 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  |
|    | <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, 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> 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, 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, 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  |

## 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)