



DR35-B15822

Dx35

TIME-OF-FLIGHT SENSORS

SICK
Sensor Intelligence.



Ordering information

| Type | part no. |
|-------------|----------|
| DR35-B15822 | 1057660 |

Other models and accessories → www.sick.com/Dx35



Detailed technical data

Features

| | | |
|-----------------------------|--|-----------------------------------|
| Measuring range | 200 mm ... 35,000 mm, on “diamond grade” reflective tape ¹⁾ | |
| Target | Reflector | |
| Resolution | 100 µm | |
| Repeatability | ≥ 0.5 mm ^{1) 2)} | |
| Measurement accuracy | Typ. ± 15 mm ³⁾ | |
| Response time | 2.5 ms ... 96.5 ms, 2.5 ms / 6.5 ms / 12.5 ms / 24.5 ms / 96.5 ms ^{4) 5)} | |
| Switching frequency | 333 Hz / 100 Hz / 50 Hz / 25 Hz / 6 Hz ^{4) 5)} | |
| Output time | 1 ms ... 32 ms, 1 ms/2 ms/4 ms/8 ms/32 ms ^{4) 6)} | |
| Emitted beam | Light source | Laser, infrared ⁷⁾ |
| | Type of light | Infrared light |
| | Typ. light spot size (distance) | 15 mm x 15 mm (at 2 m) |
| Key laser figures | Normative reference | IEC 60825-1:2014, EN 60825-1:2014 |
| | Laser class | 1 ⁸⁾ |
| | Average laser service life (at 25 °C) | 100,000 h |
| Additional function | Set speed: Super Fast ... Super Slow | |

¹⁾ See repeatability characteristic lines.

²⁾ Equivalent to 1 σ.

³⁾ On “diamond grade” reflective tape.

⁴⁾ Depending on the set speed: Super Fast ... Super Slow.

⁵⁾ Lateral entry of the object into the measuring range.

⁶⁾ Continuous change of distance in measuring range.

⁷⁾ Wavelength: 827 nm; max. output: 130 mW; pulse duration: 3.5 ns; duty cycle: 1/250.

⁸⁾ Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

| | |
|----------------------------------|---|
| | Switching mode: Distance to reflective tape (DtR) / switching window (Wnd) / object between sensor and background (ObSB) Teach-in of digital output and digital output invertible Multifunctional input: laser off / external teach / deactivated Reset to factory default |
| Safety-related parameters | |
| | MTTF _D 101 years |
| | DC _{avg} 0% |

- 1) See repeatability characteristic lines.
- 2) Equivalent to 1 σ .
- 3) On "diamond grade" reflective tape.
- 4) Depending on the set speed: Super Fast ... Super Slow.
- 5) Lateral entry of the object into the measuring range.
- 6) Continuous change of distance in measuring range.
- 7) Wavelength: 827 nm; max. output: 130 mW; pulse duration: 3.5 ns; duty cycle: 1/250.
- 8) Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

Interfaces

| | |
|---------------------------------------|--|
| IO-Link | ✓, IO-Link V1.1 |
| Function | Process data, parameterization, diagnosis |
| Data transmission rate | 38.4 kbit/s |
| Digital output | |
| Number | 2 ^{1) 2)} |
| Type | Push-pull: PNP/NPN |
| Function | Output Q ₂ , adaptable: digital output/Q ₁ not/deactivated |
| Maximum output current I _A | ≤ 100 mA |
| Multifunctional input (MF) | 1 x ³⁾ |
| Hysteresis | 0 mm ... 34,950 mm ⁴⁾ |

- 1) Output Q short-circuit protected.
- 2) Voltage drop < 3 V.
- 3) Response time ≤ 60 ms.
- 4) Configurable via IO-Link.

Electronics

| | |
|-------------------------------------|-----------------------------------|
| Supply voltage U_B | DC 12 V ... 30 V ^{1) 2)} |
| Power consumption | ≤ 1.7 W ³⁾ |
| Ripple | ≤ 5 V _{pp} ⁴⁾ |
| Initialization time | ≤ 500 ms |
| Warm-up time | ≤ 20 min |
| Display | LEDs |
| Enclosure rating | IP65 IP67 |
| Protection class | III |

- 1) Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.
- 2) When using IO-Link output V_S > 18 V.
- 3) Without load, at +20 °C.
- 4) May not fall short of or exceed V_S tolerances.

| | |
|------------------------|----------------------------|
| Connection type | |
| | Male connector, M12, 5-pin |

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

²⁾ When using IO-Link output $V_S > 18$ V.

³⁾ Without load, at +20 °C.

⁴⁾ May not fall short of or exceed V_S tolerances.

Mechanics

| | |
|-------------------------------|----------------------------|
| Dimensions (W x H x D) | 32 mm x 58.67 mm x 42.7 mm |
| Housing material | Plastic (ABS/PC) |
| Window material | Plastic (PMMA) |
| Weight | 65 g |

Ambient data

| | |
|--|--|
| Ambient temperature, operation | -30 °C ... +55 °C, $U_V \leq 24$ V |
| Ambient temperature, storage | -40 °C ... +75 °C |
| Max. rel. humidity (not condensing) | ≤ 95 % |
| Typ. Ambient light immunity | 40 klx |
| Vibration resistance | EN 60068-2-6, EN 60068-2-64 |
| Shock resistance | EN 60068-2-27 |
| Electromagnetic compatibility (EMC) | EN 61000-6-2, EN 61000-6-3, EN 61000-6-4 ¹⁾ |

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

Certificates

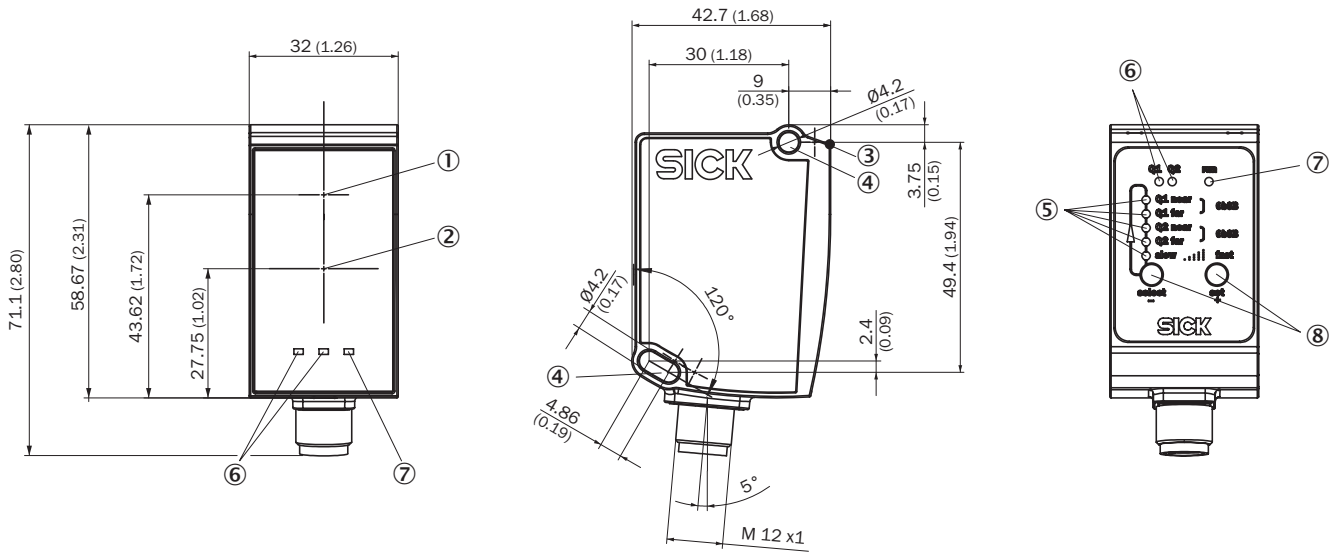
| | |
|--|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |
| China RoHS | ✓ |
| cULus certificate | ✓ |
| cTUVus certificate | ✓ |
| Information according to Art. 3 of Data Act (Regulation EU 2023/2854) | ✓ |

Classifications

| | |
|---------------------|----------|
| ECLASS 5.0 | 27270801 |
| ECLASS 5.1.4 | 27270801 |
| ECLASS 6.0 | 27270801 |
| ECLASS 6.2 | 27270801 |
| ECLASS 7.0 | 27270801 |
| ECLASS 8.0 | 27270801 |
| ECLASS 8.1 | 27270801 |
| ECLASS 9.0 | 27270801 |
| ECLASS 10.0 | 27270801 |
| ECLASS 11.0 | 27270801 |

| | |
|-----------------------|----------|
| ECLASS 12.0 | 27270916 |
| ETIM 5.0 | EC001825 |
| ETIM 6.0 | EC001825 |
| ETIM 7.0 | EC001825 |
| ETIM 8.0 | EC001825 |
| UNSPSC 16.0901 | 41111613 |

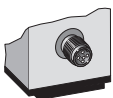
Dimensional drawing



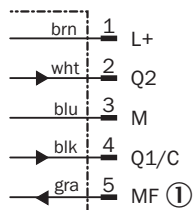
Dimensions in mm (inch)

- ① Optical axis, sender
- ② Optical axis, receiver
- ③ Zero level
- ④ Mounting hole M4
- ⑤ status indicator output Qa/Q2
- ⑥ Status LEDs output Q₁
- ⑦ Operating indicator
- ⑧ Control elements

Connection type Plug, M12, 5-pin



Connection diagram

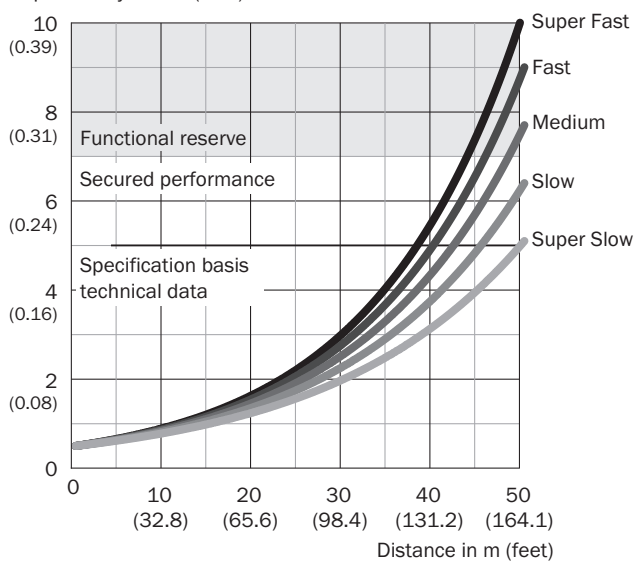


① Multifunctional input (MF)

characteristic curve 1) Super Slow ... 5) Super Fast




Super Slow ... Super Fast

Repeatability in mm (inch)





Recommended accessories

Other models and accessories → www.sick.com/Dx35

| | Brief description | Type | part no. |
|---|--|-------------|----------|
| Mounting systems | | | |
|  | <ul style="list-style-type: none"> Description: Alignment unit Material: Steel Details: Steel, zinc coated Items supplied: Mounting hardware for the sensor included | BEF-AH-DX50 | 2048397 |
|  | <ul style="list-style-type: none"> Description: Plate N02 for universal clamp bracket Material: Steel, zinc diecast Details: Zinc plated steel (sheet), Zinc die cast (clamping bracket) Items supplied: Universal clamp (5322626), mounting hardware Usable for: 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 | BEF-KHS-N02 | 2051608 |
|  | <ul style="list-style-type: none"> Description: Mounting bracket: horizontal sending axis for ceiling or floor installation or vertical sending axis for wall installation, steel, zinc coated, incl. mounting material Material: Steel Details: Steel, zinc coated Items supplied: Mounting hardware for the sensor included | BEF-WN-DX35 | 2069592 |

| | Brief description | Type | part no. |
|---|---|--------------------|----------|
| connectors and cables | | | |
|  | <ul style="list-style-type: none"> Description: Sensor/actuator cable, unshielded Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Male connector, M12, 5-pin, straight, A-coded Signal type: Sensor/actuator cable Cable: 2 m, 5-wire, PUR, halogen-free Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A15-020UB5M2A15 | 2096009 |
|  | <ul style="list-style-type: none"> Description: Sensor/actuator cable, unshielded Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 5-wire, PVC Application: Uncontaminated zones, Zones with chemicals | YG2A15-020VB5XLEAX | 2096215 |
|  | <ul style="list-style-type: none"> Description: Sensor/actuator cable, unshielded 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 Application: Uncontaminated zones, Zones with chemicals | YF2A15-020VB5XLEAX | 2096239 |
|  | <ul style="list-style-type: none"> Description: Sensor/actuator cable, unshielded Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 0.6 m, 5-wire, PVC Application: Uncontaminated zones, Zones with chemicals | YG2A15-C60VB5XLEAX | 2145573 |
|  | <ul style="list-style-type: none"> Description: Sensor/actuator cable, unshielded Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 1 m, 5-wire, PVC Application: Uncontaminated zones, Zones with chemicals | YG2A15-010VB5XLEAX | 2145574 |
|  | <ul style="list-style-type: none"> Description: Sensor/actuator cable, unshielded Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 3 m, 5-wire, PVC Application: Uncontaminated zones, Zones with chemicals | YG2A15-030VB5XLEAX | 2145575 |
|  | <ul style="list-style-type: none"> Description: Sensor/actuator cable, unshielded 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 Application: Uncontaminated zones, Zones with chemicals | YF2A15-C60VB5XLEAX | 2145570 |
|  | <ul style="list-style-type: none"> Description: Sensor/actuator cable, unshielded 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 Application: Uncontaminated zones, Zones with chemicals | YF2A15-030VB5XLEAX | 2145572 |
| device protection and care | | | |
|  | <ul style="list-style-type: none"> Description: Weather protection hood for Dx35 / Dx50 / Dx50-2 / Dx80 | OBW-KHS-M02 | 2050205 |

| | Brief description | Type | part no. |
|---|--|----------|----------|
| reflectors and optics | | | |
|  | <ul style="list-style-type: none"> Description: "Diamond grade" reflective tape, self-adhesive, can be assembled from the sheet Dimensions: 74.9 cm 91.4 cm Ambient operating temperature: -34 °C ... +70 °C | REF-DG-K | 4019634 |
|  | <ul style="list-style-type: none"> Description: Reflector plate, "diamond grade" reflective tape, 330 mm x 330 mm, base plate material: aluminum, screw connection Ambient operating temperature: -34 °C ... +70 °C | PL240DG | 1017910 |

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.

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