Dx35

Larger than life performance – flexible measurement and detection up to 35 m

SICK
Sensor Intelligence.

Advantages

Dx35 – Larger-than-life performance

The Dx35 mid range distance sensors reflect SICK's long-standing expertise in the area of distance sensor technology. SICK has created what was previously thought to be impossible. The attractive housing design combined with exceptional performance make the Dx35 the number one choice for use in confined spaces with a scanning range of up to 35 m.

Adaptable
The Dx35's response time can be customized to keep track of even the fastest production processes.

Focused
With its HDDM technology, the Dx35 guarantees precise measurements across the entire color spectrum.

Resolute
Some objects can make a task unsolvable. But not for the Dx35, which can detect and measure even extremely dark and shiny objects as well as objects inclined at extreme angles.

Reliable measurement results even for difficult tasks and ambient conditions

Variable distance measurement in storage and conveyor systems

The Dx35 can be used in a wide variety of applications across all industries. In storage and conveyor systems, for example, it provides reliable empty bay and fill level detection.

Collision avoidance in shuttle warehouse systems

Empty bay detection with automated guided vehicles

Detecting overlapping wooden boards

Reliable results throughout the entire production process – even under harsh ambient conditions thanks to the rugged housing

IO-Link

As co-founder of IO-Link, SICK offers one of the broadest IO-Link portfolios on the market. Smart Sensors with IO-Link generate and receive data and information which goes beyond conventional switching signals or measured process parameters. This allows them to create substantial increases in efficiency, more flexibility, and better planning security for predictive maintenance of machines and systems. Benefit from SICK's extensive experience with a wide range of sensing technologies, and now also in combination with the SIG100 and SIG200 Sensor Integration Gateways.

To find out more on the topic of “IO-Link”, speak to your contact person at SICK or click here.

The IO link allows you to use a simple output signal switching device as a communication interface. This enables quick batch changes and simple commissioning, maintenance and diagnostics.

SICK LifeTime Services

SICK’s services increase machine and plant productivity, enhance the safety of people all over the world, provide a solid foundation for a sustainable business operation, and protect investment goods. In addition to its usual consulting services, SICK provides direct on-site support during the conceptual design and commissioning phases as well as during operation.

The range of services not only covers aspects like maintenance and inspection, but also includes performance checks as well as upgrades and retrofits. Modular or customized service contracts extend the service life of plants and therefore increase their availability. If faults occur or limit values are exceeded, these are detected at all times by the corresponding sensors and systems.

Consulting and design
Application-specific advice on the product, its integration and the application itself.

commissioning and maintenance
Application-optimized and sustainable — thanks to professional commissioning and maintenance by a trained SICK service technician.

service contracts
Extended warranty, SICK Remote Service, 24-hour helpdesk, maintenance, availability guarantees and other modular components can be individually combined on request.

Technical data overview

Resolution	0.1 mm / 1 mm (depending on type)
Repeatability	≥ 0.5 mm
Response time	2.5 ms ... 192.5 ms, 2.5 ms / 6.5 ms / 12.5 ms / 24.5 ms / 96.5 ms, 4.5 ms / 12.5 ms / 24.5 ms / 48.5 ms / 192.5 ms [1) 2)] 96.5 ms 15 ms ... 50 ms [2) 3)]
Output time	1 ms ... 64 ms, 1 ms/2 ms/4 ms/8 ms/32 ms, 2 ms/4 ms/8 ms/16 ms/64 ms [1) 4)] 32 ms
Switching frequency	333 Hz / 100 Hz / 50 Hz / 25 Hz / 6 Hz [1) 2)] 6 Hz 166 Hz/50 Hz/25 Hz/12 Hz/3 Hz [1) 2)]
Analog output	4 mA ... 20 mA, ≤ 450 Ω0 V ... 10 V, ≥ 50,000 Ω
Digital output	
Type	Push-pull: PNP/NPN
IO-Link	✓, IO-Link V1.1 / ✓, IO-Link V1.1, COM2 (38,4 kBaud) / ✓, V1.1 (depending on type)
Enclosure rating	IP65 IP67
Ambient temperature, operation	–30 °C ... +55 °C, U_V ≤ 24 V (depending on type)

1) Depending on the set speed: Super Fast ... Super Slow.
2) Lateral entry of the object into the measuring range.
3) Depending on the configured speed and interface.
4) Continuous change of distance in measuring range.

Product description

The Dx35 family of distance sensors, based on HDDM™ technology, combine maximum reliability, measuring capabilities, flexibility and the perfect price-performance ratio in a very compact housing.
Depending on the application, sub-product families are available for distance measurement on natural objects (DT35 and DS35) or on reflective tape (DL35 and DR35).
The sub-product families also come with different interfaces. In addition to the IO-Link function, which all the devices have, the product family also offers sensors with analog and switching output (DT and DL) or the option of two switching outputs (DS and DR).
Its final distinguishing feature when selecting the right sensor for the application is the light sender: infrared or red light in laser class 1 or 2.

At a glance

- Highest reliability, ambient light immunity and best price/performance ratio thanks to HDDM technology
- Measuring range of 0.05 m to 12 m for natural objects or 0.2 m to 35 m for reflective tape
- Devices with analog and digital output, or just switching
- Infrared or red emitted light in laser class 1 or 2
- Repeatability: 0.5 mm to 5 mm
- Compact housing size
- IO-Link
- DT35-S - Certified to ISO 13849 (PL b) and IEC 62998 (PC B)

Your benefits

- Precise and reliable measurement irrespective of object color extends running times and process quality
- A compact size and blind zone make flexible mounting possible when space is limited
- Optimum solution thanks to flexible settings for speed, range and repeatability
- Flexible interface use: 4 mA to 20 mA, 0 V to 10 V, current sourcing output, current sinking output, or IO-Link – making machine integration simple
- With their straightforward alignment, optimal performance or inconspicuous measurement, versatile light senders make for an ideal solution in all scenarios
- Low investment costs and high performance levels guarantee a short return on investment
- IO-Link offers full process control, from commissioning through to service
- DT35-S - Certification up to performance level b allows versatile use for protecting persons and capital goods

Fields of application

- Positioning or anti-collision monitoring of shuttles, industrial trucks, gantry cranes and traversing carriages
- Reliable measurement and detection of extremely dark or glossy materials, e.g., in the automotive industry
- Loading, empty bay or fill level monitoring in logistics applications
- Measurement and detection of small objects at long distances, for example in manufacturing industries

Ordering information

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

- **Communication interface:** IO-Link
- **Measuring range:** 50 mm ... 12,000 mm, 90% remission factor, 50 mm ... 5,300 mm, 18 % remission, 50 mm ... 3,100 mm, 6% remission factor
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type of analog output	Type	Part no.
Laser, red [1]	2.5 ms	1 ... 2 x push-pull: PNP/NPN	Current output / voltage output	DT35-B15251	1057652
		2 x push-pull: PNP/NPN	–	DS35-B15221	1057655
	96.5 ms	1 ... 2 x push-pull: PNP/NPN	Current output / voltage output	DT35-B15251-KFJDHHFPDKK7382FJS7U	1139908

[1] Wavelength: 658 nm; max. output: 250 mW; pulse duration: 4 ns; duty cycle: 1/250.

- **Communication interface:** IO-Link
- **Measuring range:** 50 mm ... 12,000 mm, 90% remission factor, 50 mm ... 5,300 mm, 18 % remission, 50 mm ... 3,100 mm, 6% remission factor
- **Laser class:** 1

Light source	Minimum response time	Digital output	Type of analog output	Type	Part no.
Laser, infrared [1]	2.5 ms	1 ... 2 x push-pull: PNP/NPN	Current output / voltage output	DT35-B15851	1057653
		2 x push-pull: PNP/NPN	–	DS35-B15821	1057656
Laser, red [2]	4.5 ms	1 ... 2 x push-pull: PNP/NPN	Current output / voltage output	DT35-B15551	1057651
				DT35-B15551S04	1068098
		2 x push-pull: PNP/NPN	–	DS35-B15521	1057654

[1] Wavelength: 827 nm; max. output: 130 mW; pulse duration: 3.5 ns; duty cycle: 1/250.
[2] Wavelength: 658 nm; max. output: 250 mW; pulse duration: 4 ns; duty cycle: 1/500.

- **Communication interface:** IO-Link
- **Measuring range:** 200 mm ... 35,000 mm, on “diamond grade” reflective tape
- **Laser class:** 1

Light source	Minimum response time	Digital output	Type of analog output	Type	Part no.
Laser, infrared [1]	2.5 ms	1 ... 2 x push-pull: PNP/NPN	Current output / voltage output	DL35-B15852	1057658
		2 x push-pull: PNP/NPN	–	DR35-B15822	1057660
Laser, red [2]	2.5 ms	1 ... 2 x push-pull: PNP/NPN	Current output / voltage output	DL35-B15552	1057657
		2 x push-pull: PNP/NPN	–	DR35-B15522	1057659

[1] Wavelength: 827 nm; max. output: 130 mW; pulse duration: 3.5 ns; duty cycle: 1/250.
[2] Wavelength: 658 nm; max. output: 120 mW; pulse duration: 4 ns; duty cycle: 1/250.

- **Communication interface:** IO-Link
- **Laser class:** 1

Light source	Minimum response time	Digital output	Type of analog output	Type	Part no.
Laser, red [1)]	15 ms	1 ... 2 x push-pull: PNP/NPN	Current output	DT35S-B15551	1122103

[1)] Wavelength: 658 nm; max. output: 250 mW; pulse duration: 4 ns; duty cycle: 1/500.

- **Communication interface:** IO-Link
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type of analog output	Type	Part no.
Laser, red [1)]	15 ms	1 ... 2 x push-pull: PNP/NPN	Current output	DT35S-B15251	1122104

[1)] Wavelength: 658 nm; max. output: 250 mW; pulse duration: 4 ns; duty cycle: 1/250.

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

SICK
Sensor Intelligence.