Distance Sensors

The complete product portfolio

SICK
Sensor Intelligence.

SICK Distance sensors –
Precision for measurement work

One of the most important tasks in industrial production is measuring distances. However, the applications are so varied that it is not possible to produce one sensor capable of fulfilling the requirements of every application. SICK provides a wide range of products for measuring distances to handle the great variety of measurement tasks. Optoelectronics and ultrasonic sensor technology serve as the operating principles for the distance measurements.

Content

Opto-electronic sensors

Opto-electronic sensors from SICK convert optical information into electric signals that can be evaluated. Laser, infrared or ultraviolet light is mainly used as a light source. The signals generated in the sensor can be used for measuring, switching, or measuring and switching depending on the sensor output.

Sensors can be used in conjunction with a reflector, directly on the target surface or both depending on the individual sensor and application requirements. Sensors working on the basis of the triangulation principle measure an object directly. They measure a wide variety of surfaces, miniature parts, recesses or uneven areas, even in the µm range. Time of flight sensors are available as devices which work with reflectors, directly on the object or versions which can work with both types of target. Devices which work directly on the object can detect and control the position at larger distances than sensors working on the triangulation principle. Devices working with reflectors can detect the reflector position very precisely even at very great distances.

Optical sensors are mainly used in quality assurance for checking missing components, for bin occupancy checks in high-bay warehouses or for positioning shelf-operating equipment or cranes.

Ultrasonic sensors

SICK ultrasonic sensors measure distances without contact by sending a sonic pulse signal and evaluating the pulse duration. To this end, ultrasonic signals are emitted in defined packages. Using evaluation electronics, the transceiver process the time period from emitting a package until reception of the reflection. The device converts the measurement results into electric signals. These signals are output either as analogue or binary values.

Thanks to the specific sonic properties, optical reflection properties do not influence the measurement results. As a result, even transparent and strongly reflecting objects can be detected, so that there is hardly any material which cannot be detected using an ultrasonic sensor.

Even difficult ambient conditions such as dust, fog or dirt particles are no problem for ultrasonic sensors.

Ultrasonic sensors are mainly used for level monitoring of solid and liquid materials, diameter checks and loop controls as well as in applications that optical sensors cannot handle.

The technologies of distance measurement – Precision in perfection

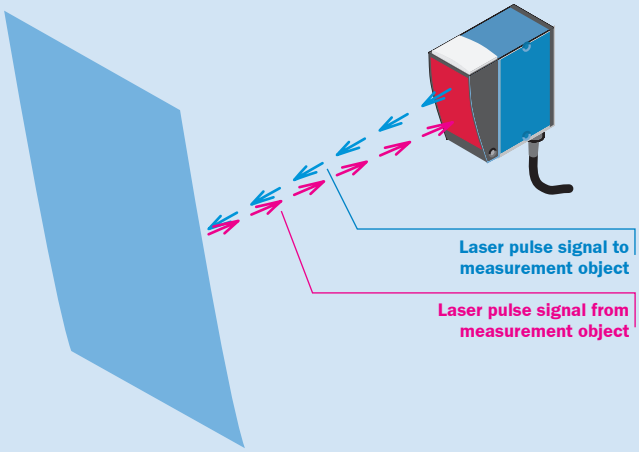
SICK Distance sensors measure distances precisely – a wide variety of sensor types for very different applications.

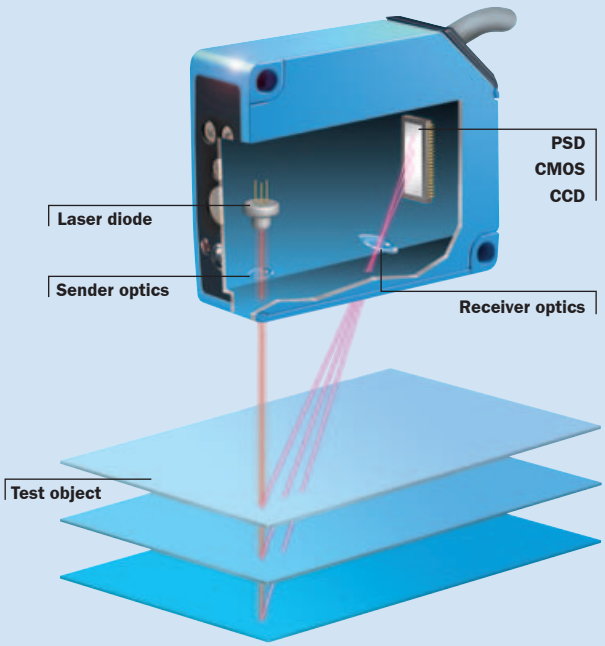
OPTICAL SENSORS

(Light) time of flight measurement

Distance = speed of light x time

The diode sends a laser pulse signal, which is reflected by the object to be detected. The time, which the light pulse signal requires from the diode to the object and back, is measured and evaluated. The distance is calculated from the time and the speed of light.





Triangulation measurement

Distance = light reflection + geometric calculation

Laser triangulation is a measurement procedure that works without contact . A light beam is projected to an object to be measured. The reflections of the beam are depicted on a light-sensitive element by the reception optics. Depending on the distance of the object, the position of the depicted light spot changes. As a result, the distance to the measurement object can be determined very precisely for small distances.

ULTRASONIC SENSORS

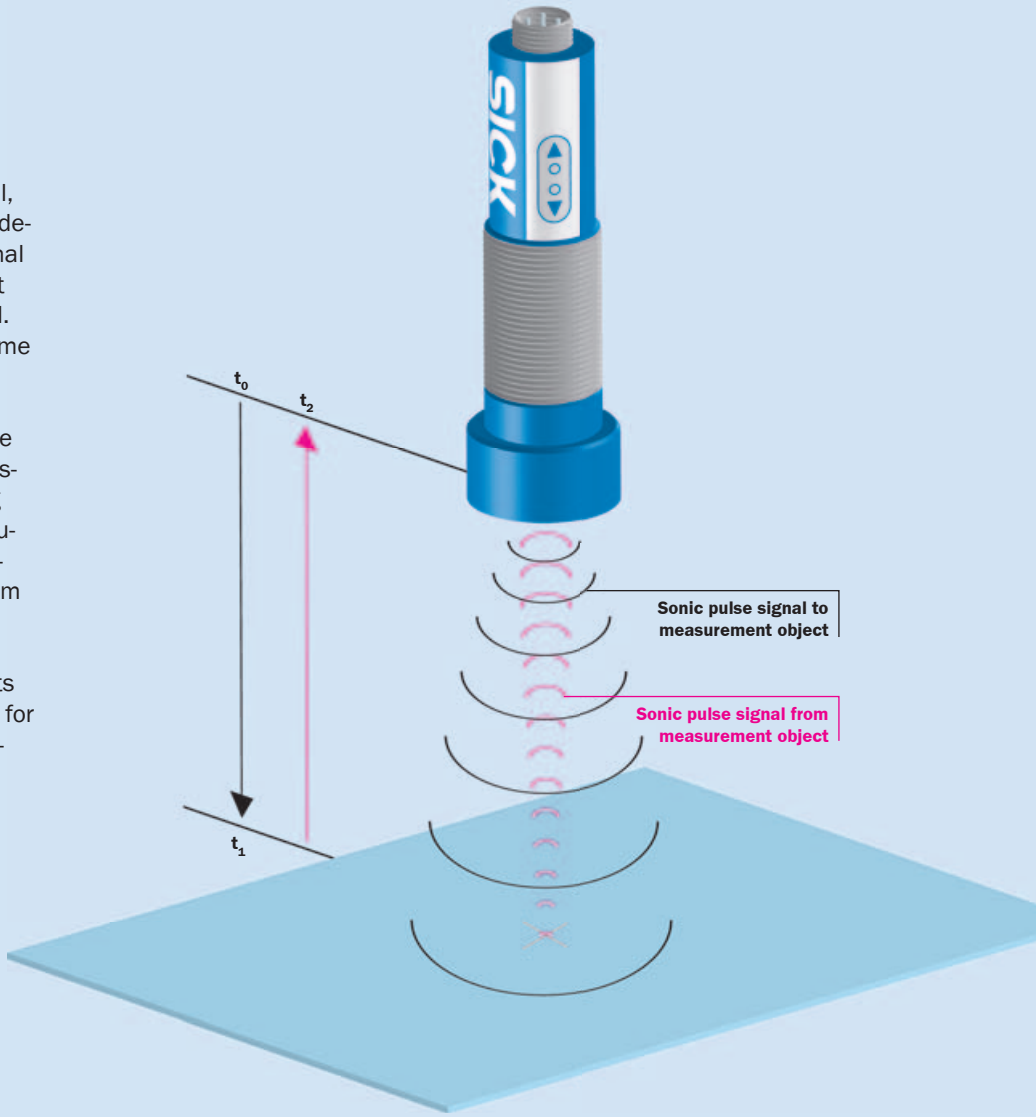
(Sonic) time of flight measurement

Distance = speed of sound x time

The sensor sends a sonic pulse signal, which is reflected by the object to be detected. The time, which the pulse signal requires from the sensor to the object and back, is measured and evaluated. The distance is calculated from the time and the pulse speed.

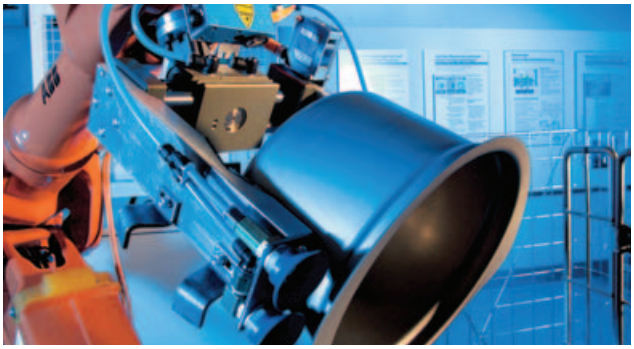
Ultrasonic sensors are suitable for use in difficult industrial environments. Disturbances such as dust, soiling or fog do not influence measurements. Mutually interfering light influences or temperature fluctuations are not a problem either.

Because almost every material reflects sonic waves, its use is recommended for level measurements, foils or transparent objects.



Short-Range Distance Sensors (Displacement)
Precision in the millimetre range

SICK short-range distance sensors are precision instruments, which measure optically in a range from 24 mm to 700 mm using very advanced technology. They measure profiles, diameters or object thicknesses, control processes and handle quality assurance functions in production workflows. In doing this, they detect the smallest recesses, deviations or uneven areas even in the µm range. Short setup times and simple alignment of SICK short-range distance sensors thanks to innovative teach-in reduce facility downtimes and increase their profitability. The extremely high measurement frequencies of the sensors enable high throughput speeds. SICK short-range distance sensors are mainly used in the electronics and automotive industries as well as in the area of robotics.



Type	OD VALUE	OD HI
	• Very precise, fast and reliable measurement thanks to CMOS receiving element • Laser technology for measuring the smallest objects • Fast and easy commissioning thanks to intuitive operating concept • Large variety of products for simple integration into industrial environments	• Very precise, fast and reliable measurement thanks to CMOS receiving element • Laser technology for precise measuring of extremely small objects • Fast and easy use thanks to LED display • Compact and robust metal housing
Technical data		
Measurement principle	Optical, triangulation (CMOS)	Optical, triangulation (CMOS)
Measuring range	26 ... 34 mm up to 60 ... 180 mm	26 ... 34 mm up to 100 ... 400 mm
Resolution	Up to 2 µm	Up to 4 µm
Switching frequency/ response time	2 kHz/1 ms	1 kHz/2 ms
Outputs/Interfaces	• Q_A: 4 ... 20 mA, 2 x Q: PNP • Q_A: 4 ... 20 mA, 2 x Q: NPN • Q_A: 0 ... 10 V, 2 x Q: PNP • Q_A: 0 ... 10 V, 2 x Q: NPN • RS-422, 1 x Q: PNP • RS-422, 1 x Q: NPN • 2 x Q: PNP • 2 x Q: NPN	• Q_A: 4 ... 20 mA, 1 x Q: PNP • Q_A: 4 ... 20 mA, 1 x Q: NPN
Configuration	Distance bar graph and teach-in	LED display
Connection type	Plug M12, 8-pin cable 2 m	Plug M12, 8-pin/ cable 2 m
Supply voltage	12 ... 24 V DC	12 ... 24 V DC
Enclosure rating	IP 67	IP 67
Ambient temperature	–10 °C ... +40 °C	–10 °C ... +40 °C
Dimensions	60 x 50 x 20.4 mm	60 x 50 x 20.4 mm

Short-Range Distance Sensors (Displacement)
Precision in the millimetre range

Type	OD MAX	OD PRECISION
	• Optimum measurement precision • Surface-independent measurement of a great variety of different materials • Numerous functions with very simple operation • Great variety of interfaces	• Stand-alone integration of the sensor heads possible • Optimum precision • Optimum reliability thanks to improved measurement algorithm and different light spot geometries • Numerous functions with simple operation • Measurement of transparent or semi-transparent materials
Technical data		
Measurement principle	Optical, triangulation (CMOS)	Optical, triangulation (CMOS)
Measuring range	24 ... 26 mm up to 250 ... 450 mm	24 ... 26 mm up to 300 ... 700 mm
Resolution	Up to 0.1 µm	Up to 0.02 µm
Switching frequency/ response time	10 kHz/0.5 ms	Up to 10 kHz/0.1 ms
Outputs/Interfaces	• 2 x Q_A: 4 ... 20 mA, 2 x Q_A: –5 ... +5 V, 5 x Q: PNP, 2 x alarm output: PNP, RS-232 • 2 x Q_A: 4 ... 20 mA, 2 x Q_A: –5 ... +5 V, 5 x Q: NPN, 2 x alarm output: NPN, RS-232	• RS-422 • 3 x Q_A: 4 ... 20 mA, 3 x Q_A: –10 ... +10 V, 5 x Q: PNP, 3 x alarm output: PNP, RS-232, USB • 3 x Q_A: 4 ... 20 mA, 3 x Q_A: –10 ... +10 V, 5 x Q: NPN, 3 x alarm output: NPN, RS-232, USB
Configuration	Large LC display	Very large LC display
Connection type	Connection terminals	Pigtail with plug, 12-pin/ connection terminal
Supply voltage	12 ... 24 V DC	12 ... 24 V DC
Enclosure rating	IP 67	IP 67
Ambient temperature	–10 °C ... +45 °C	–10 °C ... +50 °C
Dimensions	78 x 76.5 x 25.6 mm	78 x 76.5 x 25.6 mm

SHORT-RANGE
DISTANCE SENSORS
(DISPLACEMENT)

Mid-Range Distance Sensors – the solution for measuring ranges from 13 mm to 24 m

SICK mid-range distance sensors are high-tech measurement instruments for customer requirements in the mid-measuring range. Innovative sensor technologies such as OES3 and time of flight measurement enable resolutions down to 0.1 mm. Highly precise and reproducible measurements are just as much a matter of course as is the extremely simple commissioning. Functional teach-in for configuring the sensors guarantees shorter machine downtimes. In the development of the mid-range distance sensors, value was placed on the consistent implementation of user requirements. Compact designs, a high degree of switching reliability, little maintenance work and a long operating life ensure optimum use of the sensors in almost all areas of industry.

Type	DT10	DT20
	• Good measurement precision • Visible red light • Power-on LED • Insensitive to strong external light sources	• 90° rotatable M12 plug • Infrared light • 1 mm resolution • Plug & Play sensor
Technical data		
Measurement principle	Optical, triangulation	Optical, triangulation
Measuring range	50 ... 300 mm	90 ... 1,000 mm
Resolution	< 1.5 mm	1 mm
Response time	20 ms	10 ms
Outputs/Interfaces	• Q, $\overline{Q}$: PNP • Q, $\overline{Q}$: NPN • Q_A: 4 ... 20 mA	• Q: PNP • Q: NPN • Q_A: 4 ... 20 mA
Configuration	Teach-in	Preset
Connection type	Plug M12, 5-pin	Plug M12, 5-pin
Supply voltage	10 ... 30 V DC	10 ... 30 V DC
Enclosure rating	IP 67	IP 66/67
Ambient temperature	–25 °C ... +50 °C	–25 °C ... +55 °C
Dimensions	75.5 x 33.5 x 17.6 mm	72.4 x 54.08 x 24.3 mm

Mid-Range Distance Sensors – the solution for measuring ranges from 13 mm to 24 m

Type	DT20 HI	DS30
	• Very high degree of measurement precision • Red light laser • Alphanumeric display • Reliable measurement, even when faced with very glossy targets	• Background suppression up to 150 m even with highly reflective objects • Reliable switching: from black to high-gloss • No black/white shift • Infrared laser, class 1
Technical data		
Measurement principle	Optical, triangulation	Optical, time-of-flight
Measuring range	50 ... 300 mm	200 ... 3,000 mm
Resolution	0,1 mm ... 1 mm	10 mm
Response time	< 15 ms	10 ms
Outputs/Interfaces	• PNP, Q: $\overline{Q}$ • NPN, Q: $\overline{Q}$ • Q_A: 4 ... 20 mA	• Q, $\overline{Q}$: PNP • Q, $\overline{Q}$: NPN • Q_1, Q_2: PNP • Q_1, Q_2, Q_3: PNP
Configuration	Teach-in	Teach-in
Connection type	Plug M12, 5-pin	Plug M12, 4-pin Plug M12, 5-pin
Supply voltage	10 ... 30 V DC	10 ... 30 V DC
Enclosure rating	IP 65	IP 65
Ambient temperature	–20 °C ... +55 °C	–40 °C ... +55 °C
Dimensions	72.4 x 54.08 x 24.3 mm	80.5 x 54.95 X 24.6 mm

Type	DS40	DT50
	• Background suppression up to 100 m • High switching dynamics from black to extremely highly reflective targets • Precise alignment via red laser light • Simple and fast teach-in via button • 1 switching output for standard applications	• High degree of measurement accuracy thanks to time of flight measurement • Simple alignment using red laser light • Display with intuitive menu-prompting • Robust die-cast zinc housing
Technical data		
Measurement principle	Optical, time-of-flight	Optical, time-of-flight
Measuring range	80 ... 5,000 mm	200 ... 10,000 mm
Resolution	15 mm	1 mm
Response time	10 ms	< 20 ms
Outputs/Interfaces	• Q: PNP • Q: NPN	• Q: PNP • Q_A: 4 ... 20 mA
Configuration	Teach-in	Teach-in
Connection type	Plug M12, 5-pin	Plug M12, 5-pin
Supply voltage	11 ... 30 V DC	10 ... 30 V DC
Enclosure rating	IP 67	IP 65
Ambient temperature	–25 °C ... +50 °C	–30 °C ... +65 °C
Dimensions	104 x 99 x 38 mm	72.5 x 47.4 x 36 mm

Mid-Range Distance Sensors – the solution for measuring ranges from 13 mm to 24 m

Type	DS60	DT60
	• Background suppression up to 100 m • High switching dynamics from black to extremely highly reflective targets • Double-function LED • Red pilot light for simple alignment • Simple and fast teach-in via button	• Teach-in and Plug & Play variants • High degree of measurement precision • Visible red light laser • Simple and fast teach-in via button
Technical data		
Measurement principle	Optical, time-of-flight	Optical, time-of-flight
Measuring range	200 ... 20,000 mm	200 ... 5,300 mm
Resolution	15 mm	1.5 mm
Response time	10 ms	20 ms ... 150 ms
Outputs/Interfaces	• Q_1, Q_2: PNP • Q_1, Q_2: NPN	• Q, $\overline{Q}$: PNP • Q, $\overline{Q}$: NPN • Q_A: 4 ... 20 mA • Q_A: 0 ... 10 V
Configuration	Teach-in	Teach-in
Connection type	Plug M12, 5-pin	Plug M12, 5-pin
Supply voltage	18 ... 30 V DC	11 ... 30 V DC
Enclosure rating	IP 67	IP 67
Ambient temperature	–25 °C ... +50 °C	–25 °C ... +55 °C
Dimensions	104 x 99 x 38 mm	104 x 99 x 38 mm

Type	DL60
	• Teach-in and Plug & Play variants • High degree of measurement precision • Visible red light laser
Technical data	
Measurement principle	Optical, time-of-flight
Measuring range	300 ... 24.000 mm
Resolution	12 bit
Response time	130 ms
Outputs/Interfaces	• Q, $\overline{Q}$: PNP • Q, $\overline{Q}$: NPN • Q_A: 4 ... 20 mA • Q_A: 0 ... 10 V
Configuration	Teach-in
Connection type	Plug M12, 5-pin
Supply voltage	11 ... 30 V DC
Enclosure rating	IP 67
Ambient temperature	–25 °C ... +55 °C
Dimensions	104 x 87 x 38 mm

Mid-Range Distance Sensors – the solution for measuring ranges from 13 mm to 24 m

Type	UC4	UC12
	• Compact ultrasonic sensor • Precise background suppression • Independent of colour and material (including transparent foil, glass and PET bottles) • Insensitive to dirt, dust and fog • Insensitive to external light and noise • Standard and low-cost versions available	• Insensitive to dust, dirt and fog • Very good background suppression • Independent of colour and material • Integrated temperature compensation
Technical data		
Measurement principle	Ultrasonic	Ultrasonic
Measuring range	13 ... 150 mm	55 ... 250 mm
Resolution	0.18 mm	0.18 mm
Response time	26 ms	27 ms
Outputs/Interfaces	• Q: PNP invertible • Q: NPN invertible	• Q: PNP • Q: NPN
Configuration	Teach-in	Teach-in
Connection type	Plug M8, 3-pin	Plug M12, 4-pin
Supply voltage	20 ... 30 V DC	10 ... 30 V DC
Enclosure rating	IP 67	IP 67
Ambient temperature	–20 °C ... +70 °C	–20 °C ... +70 °C
Dimensions	4 x 4 x 2 cm	4 x 4.3 x 1.5 cm

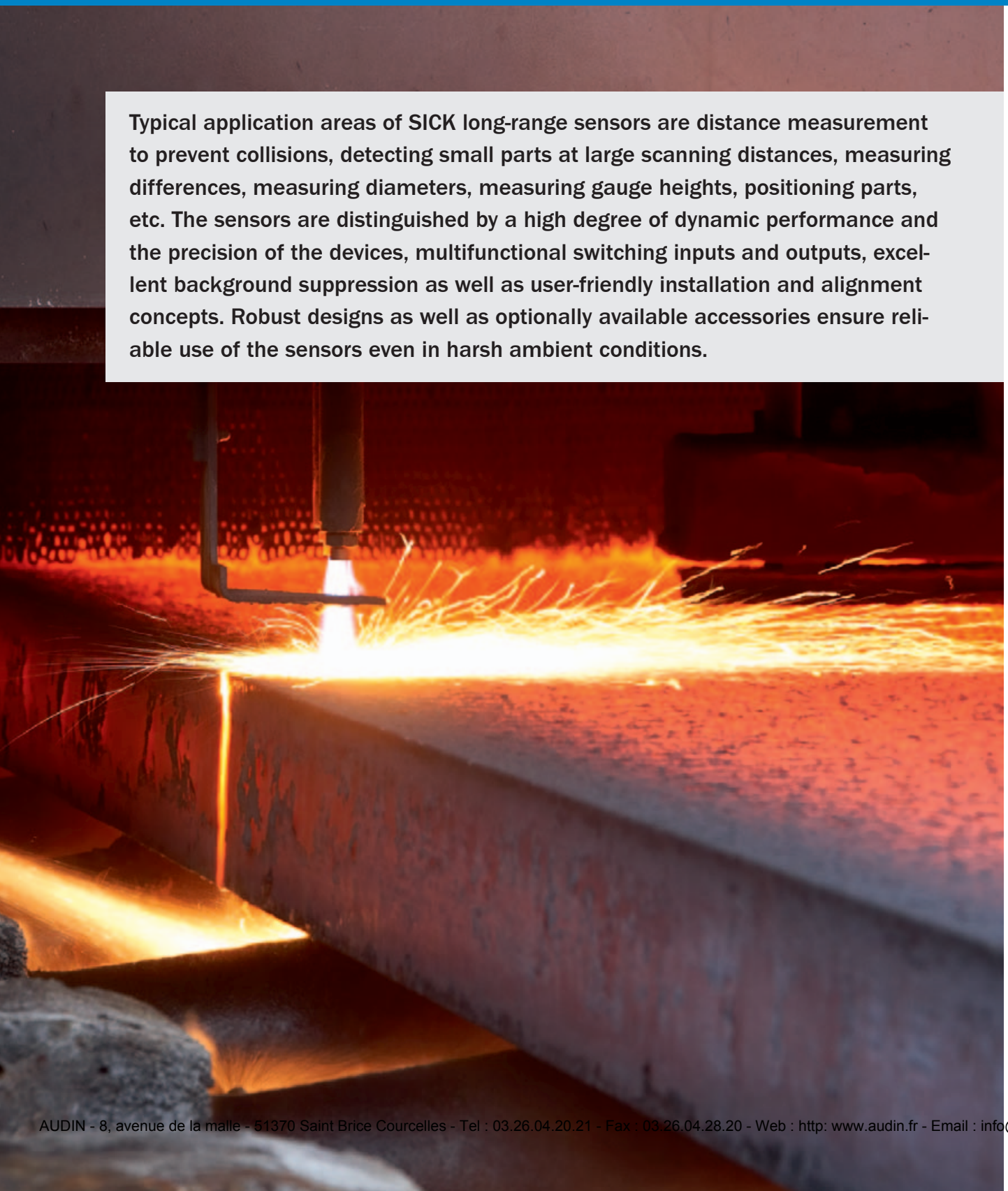
Type	UM18	UM30-2
	• Detection independent of material shape (including foil, glass and bottles) • Insensitive to dirt, dust and fog • Teach-in via MF control input	• High measurement accuracy thanks to time of flight measurement • Independent of material shape (including glass, foil and bottles) • Display for simple teach-in • Insensitive to dust, dirt and fog • Binary outputs or analogue output • (4 ... 20 mA and 0 ... 10 V)
Technical data		
Measurement principle	Ultrasonic	Ultrasonic
Measuring range	30 ... 250 mm	30 ... 1,300 mm 350 ... 4,300 mm 800 ... 6,000 mm
Resolution	0.36 mm	0.18 mm
Response time	32 ms	50 ms ... 110 ms
Outputs/Interfaces	• Q: PNP • Q: NPN • Q_1, Q_2: 2 x PNP invertible • Q_1, Q_2: 2 x NPN invertible • Q_A: 4 ... 20 mA • Q_A: 0 ... 10 V	• Q: PNP • Q_1, Q_2: PNP • Q_A: 4 ... 20 mA • Q_A: 0 ... 10 V
Configuration	Teach-in	Teach-in
Connection type	Plug M12, 5-pin	Plug M12, 5-pin
Supply voltage	10 ... 30 V DC	12 ... 30 V DC
Enclosure rating	IP 67	IP 65
Ambient temperature	–25 °C ... +70 °C	–20 °C ... +70 °C
Dimensions	73.3 mm x M18x1	127.5 mm x M30x1.5 135.5 mm x M30x1.5 138.5 mm x M30x1.5

Mid-Range Distance Sensors – the solution for measuring ranges from 13 mm to 24 m

Type	UM18 DOUBLE-SHEET DETECTOR
	• Ultrasonic sensor for double-sheet control • Reliably detects double sheets which are not glued together • Detection of paper up to 1,200 g/m² • Detection of metal sheets up to 0.3 mm thickness • Detection of metal-clad sheets and foils up to 0.4 mm thick
Technical data	
Measurement principle	Ultrasonic
Measuring range	30 ... 250 mm
Resolution	
Response time	2.5 ms and 6.5 ms
Outputs/Interfaces	• PNP double sheet • PNP missing sheet
Configuration	Teach-in
Connection type	Cable PVC, 2 m
Supply voltage	10 ... 30 V DC
Enclosure rating	IP 67
Ambient temperature	+5 °C ... +60 °C
Dimensions	73.3 mm x M18x1

MID-RANGE
DISTANCE SENSORS

SICK Long-Range Distance Sensors – developed for maximum ranges from 200 mm to 1,200 m



Typical application areas of SICK long-range sensors are distance measurement to prevent collisions, detecting small parts at large scanning distances, measuring differences, measuring diameters, measuring gauge heights, positioning parts, etc. The sensors are distinguished by a high degree of dynamic performance and the precision of the devices, multifunctional switching inputs and outputs, excellent background suppression as well as user-friendly installation and alignment concepts. Robust designs as well as optionally available accessories ensure reliable use of the sensors even in harsh ambient conditions.

Type	DS500	DT500
	• Good measurement accuracy thanks to time of flight measurement • Simple alignment using red laser light • Two switching outputs • Metal housing with option of integrated heating	• Good measurement accuracy thanks to time of flight measurement • Simple alignment using red laser light • Analogue CAN interfaces • Metal housing with option of integrated heating
Technical data		
Measurement principle	Optical, time-of-flight	Optical, time-of-flight
Measuring range	200 ... 70,000 mm	200 ... 70,000 mm
Resolution	0.1 mm	0.1 mm
Response time	150 ms ... 6 s	150 ms ... 6 s
Outputs/Interfaces	• 2 x Q: NPN • 2 x Q: PNP	• Q_A: 4 ... 20 mA • CAN
Configuration	Teach-in, Display	Teach-in, Display
Connection type	Plug M12, 5-pin	Plug M12, 5-pin
Supply voltage	10 ... 30 V DC	10 ... 30 V DC
Enclosure rating	IP 65	IP 65
Ambient temperature	–10 °C ... +50 °C –40 °C ... +50 °C (with heating)	–10 °C ... +50 °C –40 °C ... +50 °C (with heating)
Dimensions	50 x 151 x 110 mm	50 x 151 x 110 mm

SICK Long-Range Distance Sensors – developed for maximum ranges from 200 mm to 1,200 m

Type	DME3000	DME4000
	• High degree of measurement accuracy and reproducibility thanks to time of flight measurement • Simple alignment thanks to visible red light • Easy handling via programmable parameters – 2 switching outputs – Pre-failure message – Plausibility message • Serial RS-422 and SSI interface • PROFIBUS	• Very fast measurement, high degree of accuracy and reproducibility • Illuminated LCD display with diagnostic information • Easy installation and alignment concept: Alignment bracket with spring/visible red light • Speed monitoring
Technical data		
Measurement principle	Optical, time-of-flight	Optical, time-of-flight
Measuring range	200 ... 500,000 mm	150 ... 220,000 mm
Resolution	0.125 mm	0.1 mm
Response time	5 ms	2 ... 4 ms
Outputs/Interfaces	• RS-422, 2 x Q: PNP/NPN, 1 x plausibility, 1 x service • SSI, 2 x Q: PNP/NPN, 1 x plausibility, 1 x service • PROFIBUS, 2 x Q: PNP/NPN, 1 x plausibility, 1 x service	• RS-422, 2 x MF: B type • SSI, 2 x MF: B type • CANopen, 2 x MF: B type • PROFIBUS, 2 x MF: B type • DeviceNet, 2 x MF: B type • HIPERFACE, 2 x MF: B type
Configuration	Display	Display
Connection type	Plug M16, 12-pin	Plug M16, 8-pin
Supply voltage	18 ... 30 V DC	18 ... 30 V DC
Enclosure rating	IP 65	IP 65
Ambient temperature	–10 °C ... +45 °C	–10 °C ... +55 °C –40 °C ... +55 °C (with heating)
Dimensions	105 x 138 x 54 mm	85 x 176 x 61 mm

Type	DME5000	DMT/DML
	• Short positioning processes, fast measurement time • High degree of system availability: optimum accuracy and reproducibility • Convenient commissioning: illuminated LCD display with diagnostic information • Easy installation and alignment concept: Alignment bracket with spring/visible red light	• High degree of measurement accuracy thanks to time of flight measurement • Simple alignment using pilot light • Easy handling via programmable parameters– 2 switching outputs • Serial RS-422/RS-232 interface • Analogue output
Technical data		
Measurement principle	Optical, time-of-flight	Optical, time-of-flight
Measuring range	150 ... 300,000 mm	500 ... 1,200,000 mm
Resolution	0.1 mm	1 mm
Response time	2 ... 4 ms	1 ms
Outputs/Interfaces	• RS-422, 2 x MF: B type • SSI, 2 x MF: B type • PROFIBUS, 2 x MF: B type • DeviceNet, 2 x MF: B type • HIPERFACE, 2 x MF: B type	• Q_1: 4 ... 20 mA, RS-422/RS-232, 2 x Q • PROFIBUS-DP, RS-232
Configuration	Display	RS-232
Connection type	Plug M16, 8-pin	Plug, 9-pin, Sub D
Supply voltage	18 ... 30 V DC	18 ... 30 V DC
Enclosure rating	IP 65	IP 65
Ambient temperature	–10 °C ... +55 °C –40 °C ... +55 °C (with heating)	–10 °C ... +55 °C
Dimensions	101 x 176 x 61 mm	99.5 x 213.5 x 99.5 mm

FACTORY AUTOMATION

With its intelligent sensors, safety systems, and auto ident applications, SICK realises comprehensive solutions for factory automation.

- Non-contact detecting, counting, classifying, and positioning of any types of object
- Accident protection and personal safety using sensors, as well as safety software and services

LOGISTICS AUTOMATION

Sensors made by SICK form the basis for automating material flows and the optimisation of sorting and warehousing processes.

- Automated identification with bar code and RFID reading devices for the purpose of sorting and target control in industrial material flow
- Detecting volume, position, and contours of objects and surroundings with laser measurement systems

PROCESS AUTOMATION

Analyzers and Process Instrumentation by SICK MAIHAK provides for the best possible acquisition of environmental and process data.

- Complete systems solutions for gas analysis, dust measurement, flow rate measurement, water analysis or, respectively, liquid analysis, and level measurement as well as other tasks

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SICK Distance Sensors – adapted to your application




- OD VALUE
- OD HI
- OD MAX
- OD PRECISION
- DT10
- DT20
- DT20 HI
- DS30
- DS40
- DT 50
- DL60
- DT60
- DS60

mm range | m range

SHORT-RANGE DISTANCE SENSORS (DISPLACEMENT)

- **OD Value** (25 ... 180 mm)
- **OD Hi** (26 ... 400 mm)
- **OD Max** (24 ... 450 mm)
- **OD Precision** (24 ... 700 mm)

MID-RANGE DISTANCE SENSORS

- **DT10** (50 ... 300 mm)
- **DT20** (90 ... 1,000 mm)
- **DT20 HI** (50 ... 300 mm)
- **DS30** (200 ... 3,000 mm)
- **DS40** (80 ... 5,000 mm)
- **DT50** (200 ... 10,000) mm
- **DS60** (200 ... 20,000 mm)
- **DT60** (200 ... 5,300 mm)
- **DL60** (300 ... 24,000 mm)
- **UC4** (13 ... 150 mm)
- **UC12** (55 ... 250 mm)
- **UM18** (30 ... 250 mm)
- **UM30-2** (30 ... 6,000 mm)

LONG-RANGE DISTANCE SENSORS

- **DS500/DT500** (200 ... 70,000 mm)
- **DME3000** (200 ... 500,000 mm)
- **DME4000** (150 ... 220,000 mm)
- **DME5000** (150 ... 300,000 mm)
- **DMT10** (500 ... 155,000 mm)
- **DML40** (500 ... 1.200,000 mm)

Key

Measurement principle/operation method:

- ULTRASONIC SENSOR
- OPTICAL SENSOR/PROXIMITY MODE
- OPTICAL SENSOR/REFLECTOR MODE

10 mm	20 mm	30 mm	50 mm	0,1 m	0,2 m	0,3 m	0,5 m	1 m	2 m	3 m	5 m	7 m	10 m	20 m	30 m	50 m	70 m	100 m	200 m	300 m	500 m	700 m	1,200m
0.39 inch	0.79 inch	1.18 inch	1.97 inch	0.33 ft	0.66 ft	0.98 ft	1.64 ft	3.28 ft	6.56 ft	9.84 ft	15.4 ft	22.97 ft	32.81 ft	65.62 ft	98.43 ft	164.04 ft		328.08 ft	656.17 ft	948.25 ft	1640.42 ft		3937.00 ft

- UC4
- UC12
- UM18
- UM30
- DS500
- DT500
- DME3000
- DME4000
- DME5000
- DMT10
- DML40

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SICK
Sensor Intelligence.

OUR COMPETENCE IN THE BUSINESS SEGMENTS

FACTORY AUTOMATION

With its intelligent sensors, safety systems, and auto ident applications, SICK realises comprehensive solutions for factory automation.

- Non-contact detecting, counting, classifying, and positioning of any types of object
- Accident protection and personal safety using sensors, as well as safety software and services

LOGISTICS AUTOMATION

Sensors made by SICK form the basis for automating material flows and the optimisation of sorting and warehousing processes.

- Automated identification with bar code and RFID reading devices for the purpose of sorting and target control in industrial material flow
- Detecting volume, position, and contours of objects and surroundings with laser measurement systems

PROCESS AUTOMATION

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