



# MRS1000

Outdoor is our fourth dimension

**SICK**  
Sensor Intelligence.

## Advantages



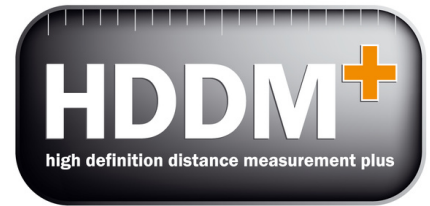
The MRS1000 3D LiDAR sensor is the ideal solution for indoor and outdoor applications, even under adverse ambient conditions. This outstanding performance can be improved even more with additional digital filters for preparation and optimization of measured distance values. With the filter, the user can perfectly and efficiently adjust the MRS1000 to the specific requirements of the respective application. SICK offers various filters for this purpose. This makes it possible to prevent virtually all faults.



See how versatile and rugged the MRS1000 is in application, and experience the increased flexibility regarding its application possibilities.



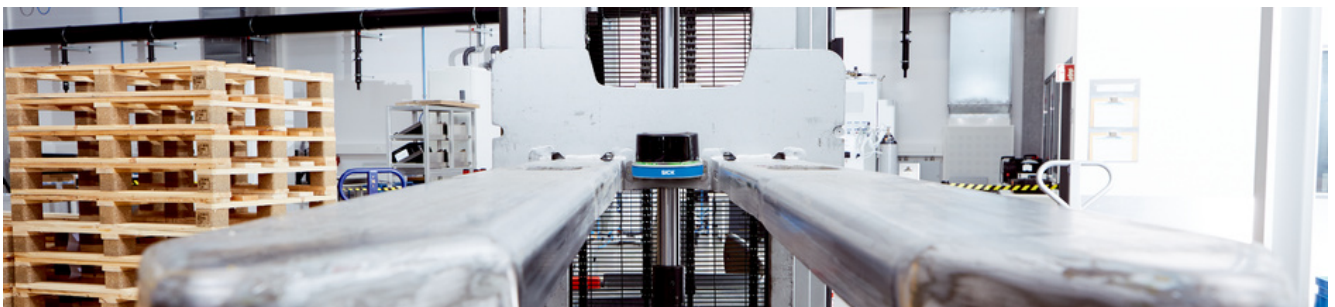
The MRS1000 is not bothered by environmental influences such as rain, fog, dust and ambient light.



The innovative HDDM+ technology enables measurement at long distances and is characterized by low noise in the measured value data as well as multi-echo capability.



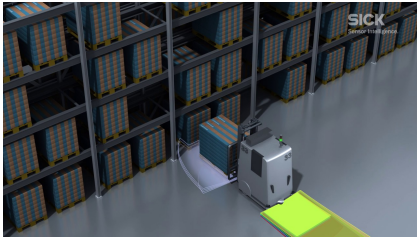
**High availability even under unfavorable ambient conditions and very good reliability when detecting objects**



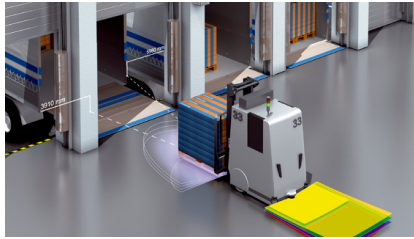
## More layers for more performance

The MRS1000 stands out due to its high performance. It allows for scanning over four spread-out layers at a horizontal aperture angle of 275°, and can even measure at different angles nearly simultaneously. The MRS1000 therefore has a much

more detailed level of visibility than a 2D LiDAR sensor. The MRS1000 can not only detect in two dimensions, but can also detect three-dimensionally throughout the additional layers, thereby identifying objects lying on the ground as well as objects which protrude into the vehicle path from above.



The MRS1000 features an innovative ground reference evaluation (GRE) system and can therefore continuously scan the floor and react to obstacles on the ground as well as the lack of an underground.



For instance, the MRS1000 simplifies quick and collision-free entry into a truck by detecting and monitoring the driving path.



The MRS1000 allows for correct positioning of the transport fork of an automated guided vehicle during the approach and reception of the pallet without stopping the AGV.



## Powerful technology in a cost-efficient device



## Strong performance, versatile in use

The large selection of accessory components enables variable adjustment of the MRS1000 to the respective application requirements. This increases flexibility when it comes to application possibilities in your industry, while at the same time reducing storage costs and expenditures for different variants as well as integration. The easy and convenient sensor diagnostics via web server as well as the user-friendly operation round out the exceptional profile of the MRS1000.



### always well protected

From simple brackets to mountings for fine adjustment and weather hoods for protection against weather conditions - the right solution for any application.



### always well connected

Large selection of cables and power supply units up to connection modules.



### no worries about space

Rotatable connections also enable flexible mounting, both indoors and outdoors.



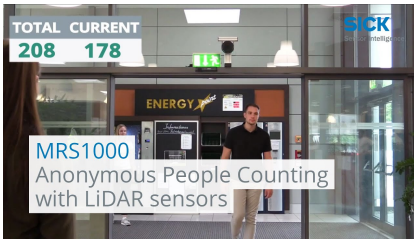
**High flexibility during installation, convenient parameterization and simple diagnostics via web server**



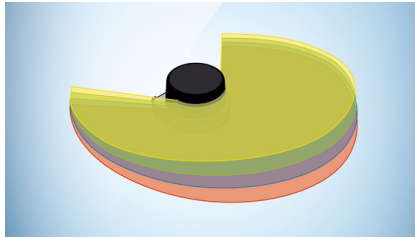
## PeopleCounter complete package

**SICK has the solution for quickly, easily and anonymously identifying the exact number of people in a space: the PeopleCounter, a combination of an MRS1000 3D LiDAR sensor and a SensorApp. The PeopleCounter makes it possible for 3D-LiDAR sensors to count of people using artificial intelligence. With its four scan planes, the direction of movement of people is identified and people are detected as such by the SensorApp thanks to the detection of head and shoulder contours. This makes it possible reliably differentiate people from objects.**

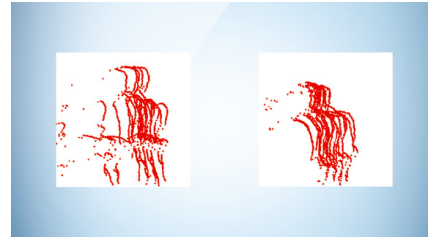
**Thanks to the adjustment options of the SensorApp, the PeopleCounter can be applied in a wide range of areas: for example, operating entities of public as well as tourist facilities, restaurants and retail stores can profit from its use. In addition to monitoring the current number of people in a space, different app functions enable the collection of additional information, such as the time at which most of the people entered or exited the space or the time of day at which the most people were situated in a pre-defined area.**



PeopleCounter in use – people are reliably detected and accurately counted



The four scan planes of the MRS1000 scan the direction of movement of people



The detection of head and shoulder contours ensures reliable differentiation of people from objects



**Anonymous people counting: Detection of people using contour data without taking pictures or recording personal information**



## SICK LifeTime Services

**From consulting to modernization: SICK LifeTime Services increase the productivity of plants and machines, improve the safety of your employees, and provide a solid foundation for sustainable business operations. As a solution provider, SICK works with you to manage the holistic implementation of projects relating to industrial automation, safety and digitalization.**



**Comprehensive industry know-how and more than 75 years of practical experience create ideas and provide knowledge for your solutions. Find out more**



## Technical data overview

<b>Application</b>	Outdoor / Indoor / Indoor (depends on variant)	
<b>Measurement principle</b>	HDDM <sup>+</sup>	
<b>Integrated application</b>	People counting, field evaluation, output of measurement data, Welcome app (Scanview and 3D Viewer) (depends on variant)	
<b>Aperture angle</b>	Horizontal	275°
	Vertical	7.5°, Over 4 scan layers
<b>Working range</b>	0.2 m ... 64 m, Width of the counting range (depends on variant)	
<b>Scanning range</b>	At 10% remission factor	16 m
	At 90% remission factor	30 m
<b>Amount of evaluated echoes</b>	3	
<b>Scanning frequency</b>	50 Hz, 4 x 12.5 Hz	
<b>Heating</b>	Self-heating	
<b>Ambient operating temperature</b>	-30 °C ... +50 °C (depends on variant)	
<b>Ethernet</b>	✓	
<b>Weight</b>	1.2 kg	

## Product description

With the MRS1000 multi-layer scanner, SICK has developed a 3D LiDAR sensor which accurately and reliably detects and measures objects in good time and in multiple dimensions. By collecting large volumes of data on multiple scan layers and from different angles, it can detect and respond to objects on the floor as well as objects that are obstructing the path. The MRS1000 is characterized by a high degree of ruggedness even when subject to adverse environmental influences such as rain, dust, and fog. The new HDDM<sup>+</sup> process, with multi-echo evaluation, ensures the reliable detection of objects and accurate measurement results. Versatile fields of application, both indoor and outdoor, make this an efficient all-rounder among 3D LiDAR sensors.

## At a glance

- Four spread layers and a 275° aperture angle
- High weather resistance and reliability through HDDM<sup>+</sup> with multi-echo technology
- Field evaluation and measured data in one sensor
- Easy configuration, with the ability to adapt to a changing environment
- Convenient and customer-friendly diagnostics via web server

## Your benefits

- Collecting more data in multiple dimensions leads to higher measurement accuracy
- HDDM<sup>+</sup> with multi-echo technology for high availability when subjected to environmental influences like rain, dust, and fog
- Simultaneous measurement on 4 levels allows objects to be detected which are on the floor or obstructing the path
- High flexibility for installation thanks to rotating male/female connectors
- Integrated field evaluation and measured data output makes it possible to tackle various applications with one sensor
- Low setup costs: Identical telegram as for the 2D LiDAR sensors from SICK
- Fields that are easy to teach in save time during setup
- Low maintenance costs thanks to high weather resistance

## Fields of application

- Ideal collision protection and assistance for all traveling objects in production facilities, ports, mines, etc.
- Reliable monitoring in traffic management, building safety and security, access controls, or people counting
- Navigation both indoors and outdoors, e.g., in warehouses or in agriculture

## Ordering information

Other models and accessories → [www.sick.com/MRS1000](http://www.sick.com/MRS1000)

- **Integrated application:** People counting
- **Scanning frequency:** 50 Hz, 4 x 12.5 Hz

Horizontal aperture angle	Vertical aperture angle	Number of field sets	Enclosure rating	Weight	Type	Part no.
275°	7.5°, Over 4 scan layers	Up to 64 fields	IP65, IP67	1.2 kg	MRS1104A-111011S01	1112242

- **Integrated application:** field evaluation, output of measurement data
- **Scanning frequency:** 50 Hz, 4 x 12.5 Hz
- **Horizontal aperture angle:** 275°
- **Vertical aperture angle:** 7.5°, Over 4 scan layers
- **Weight:** 1.2 kg

Application	Number of field sets	Enclosure rating	Type	Part no.
Indoor	Up to 64 fields	IP65, IP67	MRS1104C-011010	1075367
Outdoor, Indoor	Up to 128 fields (32 fields can be configured over 4 layers)	IP65, IP67	MRS1104C-111011S02	1106288
		IP65, IP67	MRS1104C-111011	1081208
	Up to 64 fields	IP65, IP67, IP69K	MRS1104C-911011S05	1131433

- **Integrated application:** Welcome app (Scanview and 3D Viewer)
- **Scanning frequency:** 50 Hz, 4 x 12.5 Hz
- **Application:** Outdoor, Indoor
- **Horizontal aperture angle:** 275°

Vertical aperture angle	Number of field sets	Enclosure rating	Weight	Type	Part no.
7.5°, Over 4 scan layers	Up to 64 fields	IP65, IP67	1.2 kg	MRS1104P-111011	1104278

## 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)