

MODULAR SENSOR SOLUTIONS FOR MOBILE PLATFORMS

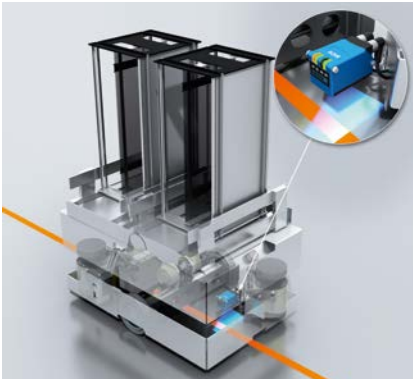
APPLICATION EXAMPLES FOR MOBILE ROBOTS AND SMALL AGVS

Mobile platforms

SICK
Sensor Intelligence.



APPLICATION EXAMPLES

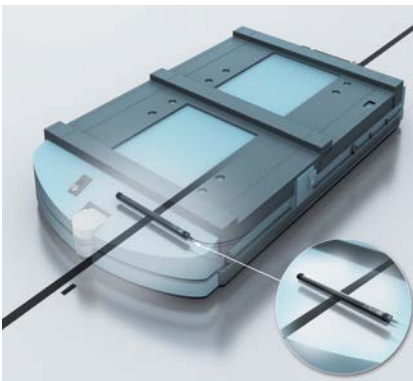


Optical line guidance

With optical line guidance, installing and maintaining lines is particularly easy and economical. The OLS detects conventional luminescent adhesive tape regardless of the background, contamination or surface defects. In addition, the OLS offers the option of reading 1D codes and thus transmitting various different information and drive commands in the event of an overrun.



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Magnetic line guidance

Magnetic line guidance is not sensitive to environmental conditions such as strong ambient light, condensing atmosphere or contamination of the line. With its variable installation lengths, the MLS allows use in various different vehicle concepts as well as driving in small curve radii. If the line needs to be invisible, the magnetic tape can be installed below the surface of the ground.



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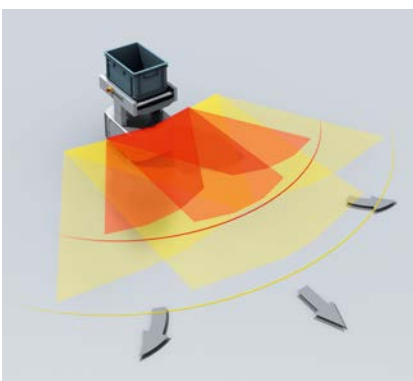


Grid localization

In warehouse logistics, automated guided vehicles must move freely without being bound to lines. Matrix codes are attached to the ground in an X/Y grid for position localization. In the event of an overrun, the GLS provides highly dynamic code reading, which allows the vehicle to detect its absolute spatial position.



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Collision avoidance and localization

Every single collision—even those involving the smallest transport vehicles—causes follow-up costs due to system failure and leads to poor acceptance of the technology. The TÜV-certified TiM PL-b 2D LiDAR sensor prevents collisions with objects and people using non-contact detection, and offers dynamic localization with the aid of reliable measurement data output.



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SENSOR DETAILS

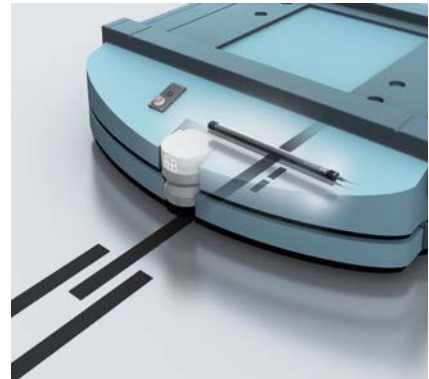
OLS – optical line sensor

- Rugged and accurate, insensitive to ambient light, contamination or surface defects
- Independent of base material or color
- Simple line shifts and route changes
- 180 mm reading field (up to 3 lines can be read at the same time), measurement accuracy ± 1 mm
- Reading bar codes makes it possible to transmit distance information or drive commands and simplifies vehicle control
- Interfaces: CANopen and Ethernet TCP/IP



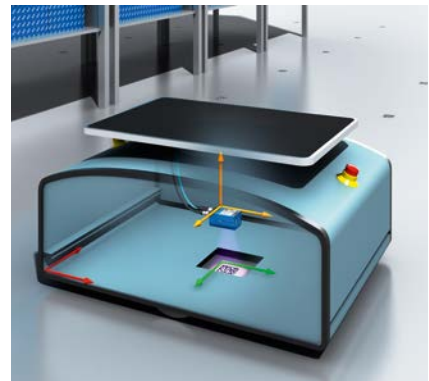
MLS – magnetic line sensor

- Easy installation: Thin housing design and different measurement area variants
- High ground clearance due to working distance of 10 mm to 50 mm
- Line detection and differentiation of up to 3 lanes for intersections and lane junctions
- Easy and reliable detection of command marks
- Resolution 1 mm, repeatability 1 mm
- Interface: CANopen
- Ambient temperature -20 °C ... $+70$ °C



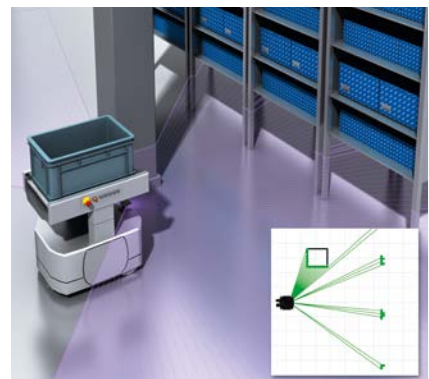
GLS – grid localization sensor

- Field of view 120 mm x 90 mm
- Working distance 100 mm to 200 mm
- Interfaces: CANopen and Ethernet TCP/IP
- Calibration of sensor, vehicle and bar code on one common coordinate system
- Output of code position and rotation in mm and degrees (°)
- Automated focusing for easy commissioning



TiM PL-b – 2D LiDAR sensor

- TÜV-certified according to EN ISO 13849-1:2015 PL b
- Aperture angle 270°
- Angular resolution 0.33°
- Scanning frequency 15 Hz
- Safe working range 0.05 m ... 4 m
- Safe field evaluation (≤ 48 flexible fields)
- Measurement data output (Ethernet TCP/IP)



MODULAR COMPLETE SENSOR SOLUTIONS FOR AUTOMATED GUIDED VEHICLE SYSTEMS AND MOBILE PLATFORMS

Automated guided vehicles and vehicle systems (AGVs) are used in nearly all industrial environments. Whether for production supply, as a transport platform in flow production, or as an integrated component in warehouse logistics – the application possibilities of AGVs have grown considerably in the last few years, as has their importance as flexible, economical and future-proof solutions.

As an independent and leading developer and manufacturer of intelligent sensor systems worldwide, SICK offers the largest product portfolio for automating mobile platforms of all kinds. From small AGVs or AGCs (automated guided carts) to specialized AGVs, the sensor solutions from SICK cover the entire spectrum of automated guided vehicles. This ranges from cost-effective solutions such as line guidance and simple collision avoidance to fully-certified safety solutions and integrated contour localization, which can be scaled and adapted to the individual application case of your automated guided vehicle system with the help of modules.

Sensor solutions from SICK help make transport tasks safer, faster and more transparent. Dangers and error sources are systematically eliminated, while countless process steps are accelerated. This is how SICK uses its extensive sensor expertise to provide impressive solutions in all phases of the production and logistics process – and in your own industry.

Navigation and positioning



Line guidance



Localization



Motion control

Environmental perception and safety



Collision avoidance



Personnel safety



Safe control

Load handling



Load detection



Identification and tracking



Load positioning



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