# Localization, safety, collision prevention, load handling

Complete sensor solutions for driverless transport vehicles and mobile platforms in intralogistics

Waldkirch, March 2018 – SICK underlines its solution competence throughout the entire process chain of intralogistical applications at LogiMAT 2018 (Hall 1, Stand F51) – with complete sensor solutions for semi-automated industrial trucks, driverless transport vehicles (AGVs) or autonomous mobile robots. The focus is on integrated systems covering all aspects of personal safety, localization and collision prevention, as well as the handling and identification of transport loads. Interactive exhibits bring these sensor solutions to life.

Sensors, switches, control systems, software and services – SICK offers the world’s largest product portfolio for driverless transport systems, semi-automated industrial trucks and mobile platforms. The company supplies alternative sensor technologies for many tasks, whereby the individual complete vehicle solutions ensure maximum economic efficiency, as well as functional reliability and future security.

**Personal safety for mobile applications**

Mobile intralogistical machines, such as driverless transport systems and mobile platforms, increasingly work at the same time and in the same environment as persons. This requires the use of safety-certified sensor and control components based on individual risk analyses and the applicable Type C standards. Safe encoders and safe non-contact limit switches monitor the speed as well as the current and maximum permissible steering angle of vehicles. Safety laser scanners with individually programmable protective fields detect persons and obstacles on the drive path and decelerate the vehicle down to a safe stop. 360° all-round protection can be set up with just two safety laser scanners. They are coordinated by a modular safety controller that combines the signals from the safe encoder, 2D LiDAR sensors, limit switches and emergency stop buttons – enabling smart situation-dependent detection of persons. Configuration of the safety technology can be carried out individually for every vehicle type and every application. The solution is always characterized by economic efficiency, safety and high availability.

**Localization and collision prevention – for trouble-free navigation to the destination**

Many roads lead to Rome – many sensor solutions lead to the destination. Thus SICK offers both optical and magnetic track guidance systems from a single source for driverless vehicles and platforms. Each of these two technologies offers particular application-specific advantages. As an alternative, a solution for automatic correction of vehicle position can be used with a system for grid localization via data matrix codes. Laser positioning sensors mounted high on vehicles detect spatial marks and localize reflectors very rapidly and precisely. Their 360° spatial contour data are transmitted to the vehicle computer for localization and navigation purposes. Innovative 3D LiDAR sensors that offer active measuring on four scanning planes not only enable navigation (also outdoors), but simultaneously provide efficient collision prevention if, for example, objects are lying on the ground or jutting into the drive path from the side. Effective collision prevention and a solution for detecting and measuring loads can be achieved on driverless transport vehicles with the help of configurable 3D snapshot detection sensors that can capture up to 30 images per second.

**Sensor solutions for the automatic handling and identification of transport packages**

SICK’s sensor portfolio offers one or more suitable solutions for almost every functional task on driverless transport systems and mobile platforms. On forklift trucks, for example, distance sensors monitor the lifting fork’s approach to a pallet. After uptake of the load, a wire draw encoder measures the lifting path of the fork while inclination sensors measure the current angle. At the same time, the pallet can be automatically identified with a bar code scanner, a camera-based code reader, or an RFID interrogator. While measuring the path in the hydraulic cylinder of the lifting fork, innovative linear encoders provide not only precise position information but also comprehensive diagnostic functions that can be used to prevent machine failures, optimize maintenance routines, and increase vehicle availability. Mobile automation in the intralogistics also offers a wide field of activity for ultrasonic sensors, photoelectric switches and proximity sensors.

Given the extent to which mobile intralogistics as well as mobile assistance and service robots are penetrating new applications, complete sensor solutions from SICK will continue to grow with the new challenges.

Picture: AGV\_AGC.jpg
SICK’s complete sensor solution for driverless transport vehicles and mobile platforms covers all aspects of personal safety, localization and collision prevention, as well as the handling and identification of transport loads.

SICK is one of the world’s leading producers of sensors and sensor solutions for industrial applications. Founded in 1946 by Dr.-Ing. e. h. Erwin Sick, the company with headquarters in Waldkirch im Breisgau near Freiburg ranks among the technological market leaders. With more than 50 subsidiaries and equity investments as well as numerous agencies, SICK maintains a presence around the globe. In the fiscal year 2016, SICK had more than 8,000 employees worldwide and achieved Group sales of just under EUR 1.4 billion.
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