

Reliable Collision Protection in High Bay Warehouses

Protecting Stacker Cranes with R2000 Detection 2-D LiDAR Sensors

The Application

Reliable storage and conveying technology is essential for an efficient and smooth flow of materials in logistics centers, warehouses, and airports. Goods must be transported quickly and reliably to their destination. In high bay warehouses, the goods are transported by stacker cranes, which drive down the racking corridors at high speed. Collisions with the storage and retrieval machine may occur if product carriers or the goods on them protrude from the shelves. In cases of a collision, the process must be interrupted and the damage repaired.





The Goal

Even small collisions with the stacker crane can cost time and money. Potential sources of danger should be identified at an early stage to reliably avoid collisions.

The Solution

The R2000 Detection 2-D LiDAR sensor attaches to the side of the stacker crane or the rack itself and uses its 360° measuring angle to vertically monitor the conveyor system within a radius of up to 30 m. This enables it to detect very small objects in its sensing range. In the case of a protruding metal rod, for example, a switching signal will immediately stop the stacker crane's travel. This prevents collisions and damage.

The Benefits

The R2000 can detect objects as small as 1 mm with its stable scanning axis, angular resolution of up to 0.071 degrees, and small light spot. It even senses small and narrow objects reliably. Setup is very simple. With user-friendly PACTware software, the four user-configurable detection fields can be set in a matter of minutes.

At a Glance

- Highest angular resolution of any digital I/O scanner on the market—0.071°—enables detection of extremely small objects
- 360° measurement for all-round visibility
- Infrared laser version offers a range of up to 30 m
- A stable scanning axis ensures precise monitoring of the scan surface
- Easy operation—four user-configurable detection fields can be linked to the outputs in a few steps