

# Collision Protection for Doorways

Reliable Height Monitoring for Forklifts

## The Application

In production areas and logistics centers, forklifts are always moving between different halls or parts of buildings. They often go through entrances such as fire doors between warehouses and production areas. If the lift height is too high, or if the forklift is carrying a particularly tall load, this could result in an overhead collision. It is therefore necessary to ensure – regardless of the attentiveness of the driver – that the lift height and the load do not exceed the maximum permissible clearance height.





### The Goal

An excessive lift height or a forklift piled high with goods is a significant hazard. Even a minor collision with the lintel can be extremely costly: damage to the forklift takes it out of action until it is repaired, and a damaged fire door creates a serious safety issue. Doorways and gates must therefore be reliably protected against collisions with vehicles that pass through them. At the same time, seamless logistics and transport processes must be guaranteed.

### The Solution

With a 360° measuring angle and a stable, wobble-free scanning axis, the R2000 Detection 2-D laser scanner is able to detect objects as small as 1 mm that move into its field of detection. Since the highest point of a forklift can vary depending on the load, the R2000 is mounted on the side of a door, positioning the scanning axis just below the maximum clearance height. Because the local conditions around doors vary greatly, the sensor's detection field can be adjusted to a variety of situations on site. The R2000 is capable of monitoring up to four different detection fields and issuing various warning signals. With a detection range of up to 30 m to natural objects, the R2000 can recognize dangerous situations and trigger alarms at an early stage.

### The Benefits

The four freely definable detection fields can be configured according to the specific application in just a few minutes using the free *PACTware* software. Electrical loads with visual or audible warnings (up to a load of 100 mA) can be connected directly to the switching outputs of the R2000; an additional control panel is not required. When combined with the intuitive field editor, this guarantees extremely fast and easy commissioning. Cost-effective standard components can be used to mount the scanner. The combination of a large detection range, 360° measuring angle, and the highest angular resolution of any digital I/O scanner of up to 0.071° ensures reliable detection of all objects within range of a possible collision — providing a solution that is always perfectly suited to local conditions.

#### At a Glance:

- Reliable doorway monitoring
- Detection of objects as small as 1 mm
- 360° measurement for all-round visibility
- Freely configurable detection fields
- Easy handling and quick commissioning