

# ELOprotect

VNA Vehicle-Pedestrian Safety System

**MOBILE**

## PERSONNEL PROTECTION SYSTEM

FOR MATERIAL HANDLING EQUIPMENT IN VERY NARROW AISLES

- + Maximum safety for people and vehicles
- + Comfort modules for increased efficiency
- + Vehicle-to-vehicle collision avoidance
- + Intelligent technology for automatic safety
- + Compatible with all major lift truck models

SYSTEMATIC  
SAFETY

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# Prevent Accidents

## FOR PEDESTRIANS AND LIFT TRUCKS IN VERY NARROW AISLES

The ELOprotect Mobile Personnel Protection System is an automatic, self-activating technology designed to prevent pedestrian-lift truck accidents in very narrow aisles (VNA).

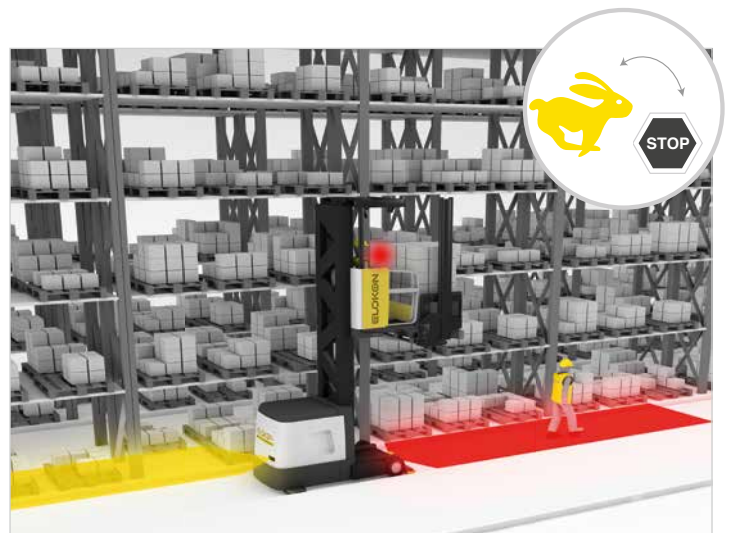
Specifically developed for VNA warehouse aisles, ELOprotect helps avoid collisions between personnel and material handling equipment (MHE). Tested and approved by government safety agencies, the system mounts directly on MHE and uses intelligent laser scanning technology to monitor the distance between the vehicle and surrounding objects. If a person or other obstacle is detected in an unsafe range, ELOprotect automatically brings the vehicle to a complete stop. At the same time, the system generates acoustic and visual warnings to both the pedestrian and MHE driver.

## HOW IT WORKS

ELOprotect automatically activates when a vehicle enters a very narrow aisle. When the vehicle is in motion, the system monitors the direction of travel. When the vehicle is idle, the system monitors both directions of the aisle. No pedestrian or other MHE can approach undetected. ELOprotect also deactivates automatically when the vehicle travels outside of the aisle, avoiding false alarms. While a vehicle is moving, if ELOprotect detects a pedestrian being too close, it will automatically warn the driver. If the pedestrian gets even closer and enters a critically unsafe area near the vehicle, ELOprotect can stop the vehicle and sound an alarm. As soon as the surrounding area is safe again, the driver resets the system alarm (with a simple press of a button) and resumes work. When the vehicle leaves an aisle, ELOprotect switches off automatically.

## MANUAL DEACTIVATION

ELOprotect also has a manual deactivation feature to allow temporary system disablement. This helps avoid false alarms when, for example, MHE is lowering a load or approaching a wall at the end of an aisle. When the system is manually deactivated, it slows the vehicle down to the 1.5 MPH speed. Manual deactivation can be turned on and off with the simple press of a button.



## THE COMPONENTS

The basic configuration of the ELOprotect Mobile Personnel Protection System consists of the following components:

- + Electronic vehicle interface module, usually installed in motor compartment
- + Laser scanners on both the load and drive sides of MHE
- + Operator interface module

Based on MHE type and warehouse conditions, additional modules may be needed to assure optimal interface with equipment.





## INSTALLATION

For over a decade, ELOKON has cooperated closely with the world's major lift truck OEMs, therefore installation can take place at the factory, in most cases, as well as at the end-user's site. This ensures the system is optimally interfaced with equipment.

In addition, only certified, trained personnel perform system installation and commissioning.

## COMPREHENSIVE SERVICE

Providing customers with the highest level of comprehensive service is a cornerstone of ELOKON's success. After installation, technicians continue to provide support over the entire life of the system. Everything is included: maintenance and repairs; commissioning of new installations or transfers to new vehicles; even safety inspections to help meet regulatory requirements. The result is maximum equipment runtime and productivity, as well as safety.

## ADDITIONAL MODULES FOR TAILORED SAFETY

The base configuration and functionality of ELOprotect can be extended to optimize MHE tasks or make operation more comfortable for operators. The following options are available:

### ✓ Automatic slow speed when laser scanner is covered (ACS)

With this module, ELOprotect automatically reduces vehicle speed in the direction of load (to 1.5 MPH), when the forks and operator cabin are near the floor. This eliminates the need to manually deactivate the system when lowering a load.

### ✓ Comfort activation and deactivation (CAD)

With this module, ELOprotect's automatic activation/deactivation functions are controlled to avoid alarms caused by cross-traffic at aisle intersections and walls at the ends of aisles.

### ✓ End of aisle protection\* (EAP)

As required by some safety authorities, this module automatically reduces vehicle speed to 1.5 MPH when the vehicle leaves a very narrow aisle, including when it briefly crosses another aisle.

### ✓ Dynamic speed-sensing zones (DYN)

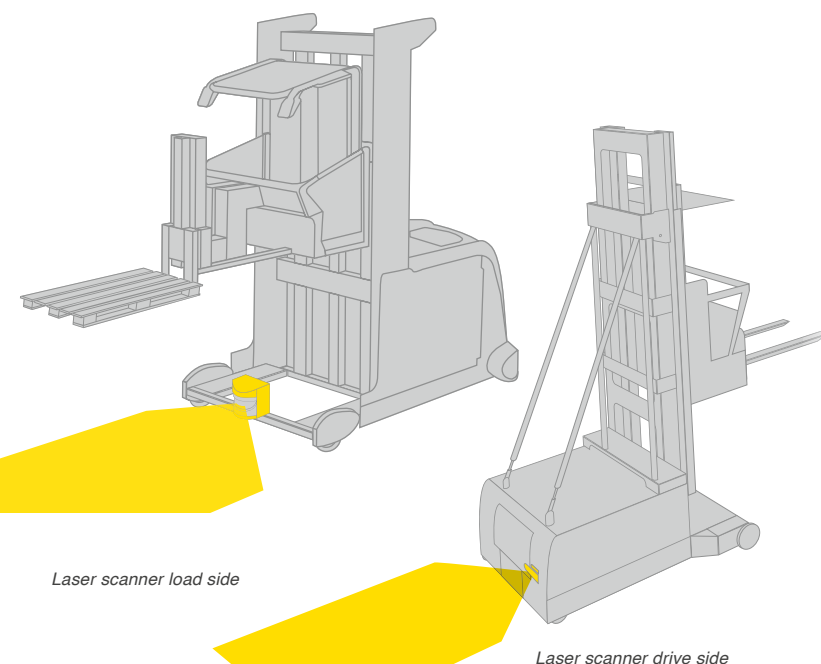
With this option, ELOshield automatically adjusts the range of pedestrian/object detection, based on how fast the vehicle is moving.

### ✓ Cold storage (CS)

For use in refrigerated warehouses and other cold chain facilities, this module allows ELOprotect to operate effectively in temperatures as low as  $-32^{\circ}\text{C}$  ( $-89,6^{\circ}\text{F}$ ).

### ✓ Stop at end-of-aisle (STOP)

This module automatically decelerates and then stops a vehicle as it reaches the end of an aisle. Three options are available to manage the situation effectively: absolute stop, confirmed stop, and time-limited stop.



\* See also BGV D 27, § 35, paragraph 5 and DIN 15-185-2, point 3.6.

## MORE OPTIONS FOR SPECIFIC MATERIAL HANDLING TASKS

### ✓ Vehicle-to-vehicle anti-collision (ANTICOL)

The latest version of ELOprotect offers vehicle-to-vehicle as well as pedestrian-to-vehicle collision avoidance. This enables multiple industrial vehicles to operate safely, without compromising speed and productivity. The technology meets the most stringent safety regulations.



### ✓ Asymmetric fields for varied aisle widths (AF)

This module uses double inductive loop detection to adapt automatically to different aisle widths, keeping pedestrians safe no matter which aisle they are in.

### ✓ Site-wide monitoring (SWM)

With this option, ELOprotect speed control is not limited to VNA. The system stays active everywhere in the warehouse, providing constant pedestrian/object protection for material handling equipment.

[eloprotect.elokon.com](https://eloprotect.elokon.com)

## TECHNICAL SPECIFICATIONS

Operating temperature	0 (32°F) to +50 °C (122°F) (Optionally: – 32 °C (–89,6 °F) for cold chain environments)
Safety concept	PL d according to EN 13849-1, SIL 2 according to EN 61508
Laser classification	1
Minimum reflectance	1.8 % diffuse
Range of safety detection	up to 7 m (23 ft) at 70 mm (2.75 in) resolution and 1.8 % diffuse remission
Range of warning field	approx. 15 m (50 ft)

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