

ELOprotect

VNA Vehicle-Pedestrian Safety System

MOBILE

PERSONNEL PROTECTION SYSTEM

FOR MATERIAL HANDLING EQUIPMENT
IN VERY NARROW AISLES

- + Maximum safety for personnel and vehicles
- + Comfort modules for total flexibility
- + NEW: Collision protection for forklift trucks
- + Intelligent technology for automatic safety
- + Compatible with all major forklift truck models

**SAFETY
SYSTEM**
PL D (LT) RATED

ELOKON
www.elokon.com

Winning solution



Reliable protection against accidents

For personnel and forklift trucks in very narrow aisles.

The mobile Personnel Protection System ELOprotect is a self-actuating protective device for the protection of personnel when Material Handling Equipment is used in very narrow aisles.

ELOprotect has been specifically developed as a solution to prevent accidents between your employees and Material Handling Equipment (MHE) for the narrow aisle warehouse. This Personnel Protection System, which complies with industrial safety guidelines, is mounted directly on the MHE and monitors the driving range using intelligent laser technology. If persons or obstacles are detected in the aisle, ELOprotect automatically brings the vehicle to a complete standstill whilst at the same time signalling the danger visually and acoustically.

HOW IT WORKS

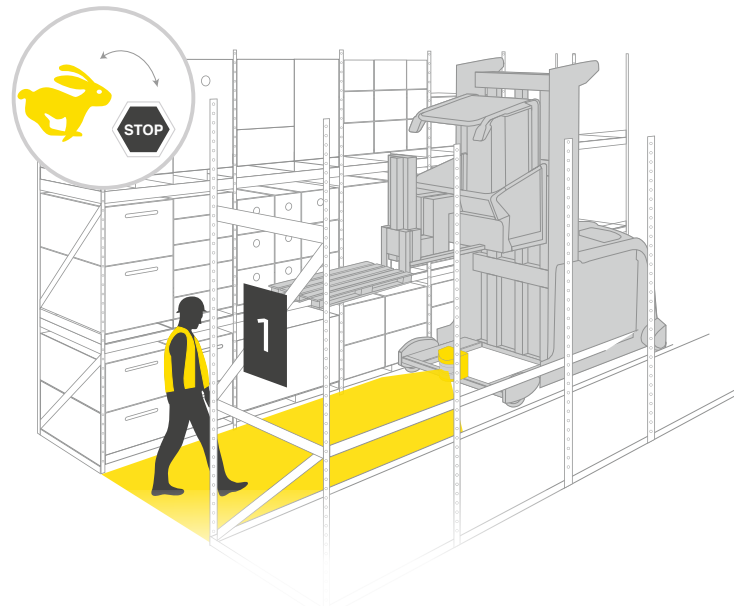
ELOprotect is deactivated outside of the very narrow aisle where no personnel, forklift truck or object detection is possible. If a forklift truck drives into an aisle, ELOprotect is automatically activated. The danger zone is monitored in the current direction of travel and when the vehicle is stationary, ELOprotect monitors both directions of the vehicle. Thus no personnel or vehicle can approach unnoticed.

When detecting approaching personnel or other obstacles whilst the MHE is moving, ELOprotect automatically brings the forklift truck to a complete standstill and an alarm is emitted.

As soon as the driver has ensured that the area is safe, the alarm can be manually reset by push-button and work with the forklift truck can resume. When the forklift truck leaves the aisle, ELOprotect switches off automatically.

MANUAL DEACTIVATION

Manual deactivation is a special function of ELOprotect. The driver can temporarily switch off the system if required - for example, to prevent the emission of the alarm due to a lowered load or a wall at the end of the aisle that can disrupt operation. If the device is deactivated manually, ELOprotect automatically reduces the maximum speed of the forklift truck to creep speed. By pushing the multifunction button once again, ELOprotect is reactivated and the speed reduction is immediately lifted.



THE COMPONENTS

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

- + The evaluation electronics (usually installed in the motor compartment)
- + A laser scanner on the load side and a laser scanner on the drive side
- + Indication and operation module

Various other function modules guarantee the optimum adaptation of ELOprotect to the specific type of forklift truck and the prevailing warehouse conditions.

ELOprotect scanner and warning field



ASSEMBLY

ELOKON has been working with all major OEMs on a worldwide basis for many years. This means that in most cases the integration of ELOprotect can be organized directly with the production facility when a new forklift is ordered, guaranteeing optimum compatibility of the Personnel Protection System to the truck. ELOprotect can also be easily retrofitted to existing Material Handling Equipment. ELOprotect assembly and commissioning is always carried out by specially trained ELOKON personnel.

COMPREHENSIVE SERVICE

A high level of comprehensive service is a priority for ELOKON. Once ELOprotect has been installed, our technicians provide all-round support throughout its entire operational life. You receive everything from one source: maintenance, regular inspections in accordance with the current statutory provisions, repairs, conversions of Material Handling Equipment and commissioning of new equipment. The result: maximum MHE productivity.

ADDITIONAL MODULES FOR TAILOR-MADE SAFETY

The ELOprotect base module can be individually extended in its technology and functionality by connecting add-on modules, either to optimise it for more specific tasks or simply to benefit from even more comfortable handling. The following options are available:

✓ Automatic creep speed when the laser scanner is covered (ACS)

With this module, ELOprotect automatically throttles travel in the load direction when forks or cabin are lowered near the ground to a speed of 2.5 km/h. The „manual deactivation“ is no longer required.

✓ Comfort activation and deactivation (CAD)

This option enables ELOprotect activation and deactivation in such a way that cross-traffic on the transfer aisle and possibly existing walls near the end of the aisle does not lead to disruption of the work sequences of trucks still running inside the aisle.

✓ End of aisle speed reduction (EASR)*

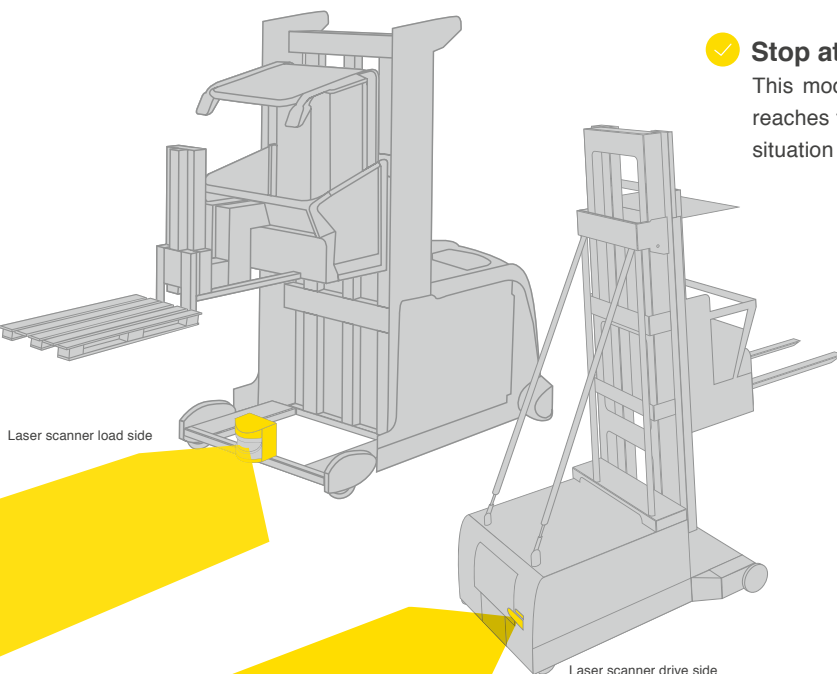
The forklift truck speed is automatically reduced to max. 2.5 km/h when the vehicle leaves the narrow aisle and when crossing transverse aisles.

**DIN 15 185-2
COMPLIANT**

ELOprotect conforms to all relevant EU Directive requirements and is “EC Type-Examination tested” according to Annex IV of the Machinery Directive.

✓ 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.



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

ADDITIONAL MODULES FOR TAILOR-MADE SAFETY

✓ Anti-collision (ANTIC)

The new ELOprotect anti-collision feature allows the simultaneous operation of several trucks in the same narrow aisle. If two trucks are working in a narrow aisle at the same time, the standard personnel protection distance is not sufficient to prevent collisions between them. All trucks are therefore fitted with two laser scanners and an extended collision protection range. This enables them to operate safely with no serious loss of speed to ensure high turnover.

NEW: COLLISION PROTECTION
FOR FORKLIFT TRUCKS

✓ Dynamic fields (DYN)

The detection range of ELOprotect for personnel and objects is automatically adapted to the speed of the Material Handling Equipment. If the truck travels at low speed the range is smaller, at higher speed it is larger.

✓ Cold Store operation (CS)

For use in cold store facilities, the module provides safe protection of all components for continuous operation up to -32 °C.

✓ Flexible fields for varied aisle widths (FF)

This module allows flexible protection for personnel in varying aisle widths. Up to four different and distinct detection ranges per truck are possible, using double inductive loop detection to automatically adapt to the aisle widths. The detection range changes asymmetrically so that the whole area of wide aisle operation is covered by just one field.

✓ Site-wide monitoring (SWM)

This feature enables automatic speed reduction down to a complete stop if a person or object is detected in the vicinity of the truck when it is outside of the narrow aisle.



TECHNICAL SPECIFICATIONS

Operation temperature	0 to + 50 °C (Optionally: -32 °C -available - cold)
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 at 70 mm resolution and 1,8 % diffuse remission
Range of the anti-collision field	approx. 15 m

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