

ELOshield

Proximity Detection System

THE INNOVATIVE „PROTECTIVE SHIELD“

FOR INDUSTRIAL VEHICLES, AGVS AND COBOTS

- + Reliable detection of pedestrians in the danger area of industrial vehicles
- + Flexible configuration of protective zones in hazardous areas
- + For any type, brand or age of industrial vehicle
- + Vehicle to vehicle collision protection
- + OEM-independent, ideal for mixed fleets
- + Range up to 25 metres

DRIVER
ASSISTANCE
SYSTEM

ELOKON
www.elokon.com



Winning solution



Accident prevention

For employees and vehicles

High volume goods handling requires fast logistical processes. In warehouses where multiple forklift trucks and staff work simultaneously, accidents still happen even when precautions are in place. Areas with limited visibility and busy intersections are particular hazards in any warehouse.

ELOshield has been specifically designed for the prevention of accidents and is an internationally tried and tested solution. This active protection system is ideally suited for use on industrial vehicles such as reach and counterbalance forklift trucks. ELOshield also works on AGVs (automated guided vehicles), robots, cobots (collaborative robots) and other industrial vehicles. It increases operational reliability, improves productivity with smooth, efficient processes and helps reduce costs.

INDIVIDUAL CONFIGURATION

Individually configurable protection zones: ELOshield offers accident prevention using sophisticated warning zones. These can be programmed as circles, as symmetrical zones (optional) and even as user-defined fields (optional) with a maximum range of up to 25 metres. The advantage: forklift trucks can safely pass other vehicles or pedestrians as they are automatically limited to their own path by the protective zone surrounding them, without causing false alarms. With ELOshield „Customised Zones“ it is possible to define different zones on the load side and on the drive side.

INTELLIGENT SAFETY TECHNOLOGY

For all hazardous areas in warehouses

The intelligent ELOshield technology monitors the environment in real time. As soon as an industrial vehicle reaches a monitored area, ELOshield detects the danger and reacts immediately. The assistance system triggers an acoustic, visual or vibration warning signal within milliseconds. Depending on the individual setting, it also actively restricts the driving mode: the vehicle speed can be reduced automatically to creep speed (2.5 km/h). After exiting the danger zone, speed restrictions are lifted on customer request.

WARNING AND PROTECTION ZONES FOR MAXIMUM SAFETY



FULL FLEXIBILITY: 1 APPLICATION - 3 OPTIONS

1 ELOshieldGO – Radio-based vehicle to pedestrian protection

ELOshield detects pedestrians within a range of 1 to 15 metres. Two areas (protective zone and warning zone) can be set up to trigger different occurrences (for example, walking speed).

There are no blind spots and multiple pedestrians can be detected simultaneously, thanks to intelligent RFID technology.



2 ELOshieldDRIVE – Safe vehicle to vehicle collision protection

ELOshield offers safe vehicle to vehicle collision protection. For this purpose, vehicles are fitted with an additional detection module and individually programmed to ensure the range reflects the operating conditions.

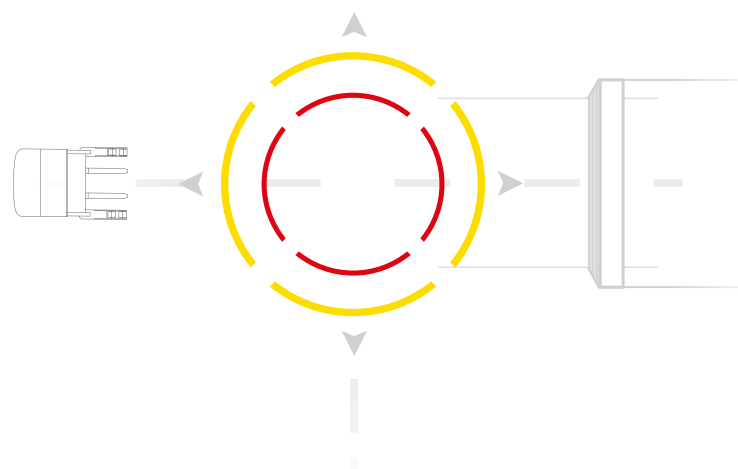
If vehicles are on a collision course, ELOshield triggers a warning signal automatically or limits the vehicle speed.



3 ELOshieldZONE – Monitoring junctions and vulnerable areas

ELOshield regulates vehicle movements like traffic lights. Fitted modules monitor dangerous areas such as junctions and doorways. If a vehicle approaches, ELOshield can trigger a warning signal or – on customer request – driving speed can be automatically limited.

Thanks to the configurable **Customised Zones**, ranges can be individually adjusted to customer requirements: symmetrical (optional) or user-defined (optional). Unlike circular zones, for instance, symmetrical zones enable two vehicles to safely enter a junction at the same time without triggering an alarm. Also, access for certain doorways can be limited locally.



The ELOshield ranges: ■ Protective zone ■ Warning zone

A permanently fitted **verification module** can check the functionality of the pedestrian modules for additional protection.

SMALL, SMART AND SAFE

The ELOshield system includes a vehicle module, which is installed on the vehicles together with at least two antenna modules. Staff are required to carry compact pedestrian modules to ensure their personal protection. Communication between the devices takes place via high-frequency technology, enabling ELOshield to permanently monitor the danger zones around vehicles and pedestrians. A stationary module is also available which can be permanently installed in hazardous areas such as doorways or intersections to safely regulate vehicle movements.

The ELOshield assistance system can only support the driver within the specified system limits. The responsibility for remaining sufficiently alert and carrying out driving or operational duties always rests with the drivers and/or personnel.

PRODUCT COMPONENTS



TECHNICAL SPECIFICATIONS

	Vehicle module	Antenna module	Pedestrian module	Stationary module
Dimensions	120 x 125 x 35 mm	85 x 58 x 35 mm	64 x 125 x 14 mm	110 x 150 x 40 mm
Enclosure rating	IP 65	IP 65	IP 54	IP 65
Power supply voltage	12-48 V _{DC} , 4W	via the truck module	battery powered (up to 12 hours continuous operation)	230 V _{AC} , 10 W
Warning signal	acoustical, optical and visual 4 NO / NC outputs		acoustic, visual or vibration signal (configurable)	acoustic, visual and 4 NO / NC outputs
Operating temperature	-25°C to +60°C Condensing humidity below 95%	-25°C to +60°C Condensing humidity below 95%	-10°C to +60°C Condensing humidity below 95%	-25°C to +60°C Condensing humidity below 95%
Range		1 to 25 metres	1 to 15 metres	1 to 25 metres

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Product range

The components in detail

The ELOshield system consists of various components which communicate by radio with each other and form an all-in-one warning system. ELOKON also offers a range of add-ons for ELOshield and the modular build of this system means it is ideally suited for tailoring to individual customer requirements.

ELOshieldCHECK

The verification module at the entrance of the warehouse carries out the functionality checks of the pedestrian modules. It can also be used with your own time recording systems and access authorisations so that employees only need to register with one system before they start work. This also enables simultaneous checks on the functionality of the pedestrian module and employee notification as to the status of his or her own module.



ELOshieldZONE

The stationary module can be permanently installed in dangerous areas or blind spots such as gateways or intersections. It ensures that vehicle travelling speed is reduced even if the driver does not activate the brakes. Different actions can be configured via the switching outputs (relay contacts) according to customer requirements. These can include acoustic signals, automatic door opening following access authorisation or the activation of warning lights.



POTENTIAL APPLICATIONS

When a vehicle approaches the entrance, the door opens automatically and the hall lights are switched on. On leaving the hall the lights are automatically switched off.

When a vehicle enters a hall where pedestrians are not protected by means of a pedestrian module, the stationary module recognises the approaching vehicle through the walls of the building. This triggers an optical and acoustic signal and if the customer so chooses, the vehicle speed can be reduced in potentially dangerous situations.

Vehicles travelling with the mast extended, for example, are firstly warned and then slowed down if they do not comply with regulations. Rules and authorisations are defined in the system's software, and specific requirements can be programmed here.

Outside the warehouse, vehicles drive at top speed, but this has to be reduced when entering the warehouse. Speed adjustment can be automatically assigned to each vehicle when driving in and out of the building, enabling the stationary module to offer even higher levels of personal and collision protection. Speed regulations for specific areas such as individual halls or connecting corridors are also easily configured.

Assistance system accessories

USB CHARGING MODULE

The charging station enables up to ten pedestrian modules to be charged simultaneously and offers space saving storage. Charging time is 2-3 hours.



EASY TRANSPORT

Various accessories are available to keep the pedestrian module safe and conveniently to hand such as an arm or hip pocket or a belt clip. These have all been extensively tested to comply with warehouse requirements.

