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

www.elokon.com
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.

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

The ELOshield ranges: ■ Protective zone ■ Warning zone
**TECHNICAL SPECIFICATIONS**

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

**ELOKON GmbH**
Gärtnerweg 49
25436 Tornesch / GERMANY
T. +49 4122 9570-0
E. info@elokon.com

**ELOKON Logistics Sp. z o.o.**
ul. Tyloniowa 22
04-228 Warszawa / POLAND
T. +48 22 8127138
E. logistyka@elokon.pl

**ELOKON Inc.**
5128 South Royal Atlanta Drive
Tucker, GA 30084 / USA
T. +1 770 3496335
E. info@elokon.com
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.

**ELOshield CHECK**

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.

**ELOshield ZONE**

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.

www.eloshield.elokon.com
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.