



Press enquiries to: Sharon Lindsay. **Tel:** 07928 809035

Email: sharon@sharonlindsaypr.co.uk

SICK's Active Forklift Assistance Warns Operators When Reversing

SICK has developed a customisable, active collision warning system for manned forklifts, the SICK Backup Assistance System (BAS), which alerts drivers to prevent collisions with people or objects, where their view is restricted for example by blind spots or during reversing.

With some 1,300 UK employees hospitalised each year with serious injuries following forklift accidents*, key contributing factors can be lapses in driver concentration, or increased speed and movement due to high productivity targets.

The SICK BAS is based on robust and reliable SICK LiDAR sensing technology that can be added easily to most forklift types for minimal investment. Unlike other active technologies, with the SICK BAS there is no need to attach expensive additional equipment to surrounding obstacles. Operators in factory and logistics environment therefore have a new opportunity to reduce the risk of forklift accidents cost-effectively.

Active Collision Warning

“Forklifts are widely recognised to pose one of the greatest workplace safety concerns to pedestrians, with some of the highest risks of serious injury,” explains Neil Sandhu, SICK’s UK National Systems Product Manager. “Unlike when driving a car, a forklift operator might reverse for several hours during the day, so needs to stay particularly alert to potential collisions.

“However, many forklift collision warning systems are passive, which means they use constant audible alarms, warning lights or distracting in-cab driver camera displays. Although some active warning concepts, such as radar, have previously been available, the SICK BAS is an affordable, stand-alone system that does not require the installation of reflectors or transmitters all around production and logistics halls, and staff don’t need to wear special pads or tags.”

The SICK Backup Assistance System uses a novel concept based on the SICK TiM351 LiDAR sensor to alert only when a stationary or moving object or person is detected. Comprising a SICK TiM351 LiDAR sensor, control unit, and signal light bar with audible alarm, the SICK BAS is quick to install and has a low power demand to minimise drain of the vehicle’s battery. A weather protection hood is available, as well as mounting accessories including shock absorption brackets to help with increased vibration that may be seen.

Either one or two SICK TiM351 LiDAR sensors can be mounted on the forklift to provide coverage of the required areas, and can also be mounted to give visibility to the side of the vehicle. The monitored area is scalable and can be adjusted with the help of flexible mounting options on the vehicle. The SICK BAS is therefore well suited to ensure target coverage of known blind spots, and also optimises coverage of the area to the sides of the forklift where the drivers view may be restricted.

Universal, Stand-Alone Solution

The SICK BAS is a universal solution with kits available to suit the different voltages and electrical systems of common forklifts. Using the SICK TiM351 LiDAR Sensor, two warning fields can be customised to suit the vehicle type and the surrounding infrastructure. The fields are easy to set up using a standard PC and SICK’s SOPAS software engineering tool.

Based on the customised fields, the traffic light stack and an audible first pulsing and then constant audible alarm tone, warn as the as the obstacle comes closer to the vehicle, so the driver can take action in good time whenever obstructions or people appear in the system’s field of view.

The SICK TiM351 LiDAR sensor has an invisible 270° infrared 2D scanning plane that uses unique integral SICK algorithms to be highly resistant to environmental conditions. Connected to the vehicle’s drive system, the SICK BAS is only enabled when the vehicle is reversing. It is therefore not

susceptible to the frequent false triggers that can be a nuisance factor with other detection technologies such as ultrasound. The operator can therefore remain alert and in full control of the lift-truck.

The SICK BAS is a driver assistance system already proven in Europe and the USA that has now become available for the first time to UK operators. As an assistance system that has a separate function to a certified safety system, it does not replace the need for full risk assessment, appropriate training, and the provision of suitably segregated pedestrian zones.

The SICK BAS comes with full operating manual and a SICK operator training programme is available on request.

For more information about the SICK BAS please contact Andrea Hornby on 01727 831121 or email andrea.hornby@sick.co.uk.

www.sick.co.uk

*Peter Harvey, Fork Lift Truck Association, "[A Very Costly Forklift Accident](#)", Safety Management, September 2017.

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Press Enquiries to:

Sharon Lindsay, Sharon Lindsay Communications. Email sharon@sharonlindsaypr.co.uk

Tel: 07928 809035;

Issued on behalf of: SICK (UK) LTD, Waldkirch House, 39 Hedley Road, St Albans, Hertfordshire, AL1 5BN.