Leuze

LBK
Safety radar system

Safety at Leuze

The world's first safe 3D radar system LBK was developed for the monitoring of hazardous areas in harsh industrial environments. It detects the bodies of persons and in doing so monitors the protected area for access and presence. Up to 6 sensors can be combined via one controller.

Areas of application

- Guarding of hazardous areas in harsh environments
- Restart protection
- Monitoring of hidden areas

Advantages for you at a glance

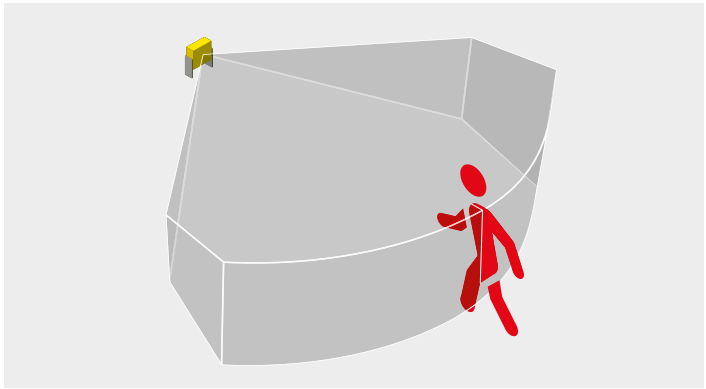
- Reliable operation also under demanding environmental influences such as dirt, dust, smoke and light
- Flexible adaptation of the safety area to the application: defining number and postion of the sensors, configuring operating range and radiation angle / width of area
- Static objects are permitted in the protected area and do not cause the safety outputs to switch off
- Quick integration through simple system structure and controller with PROFIsafe or FSoE interface
- Project planning and set-up service by our certified experts, on request for your application

Features	Safe 3D radar system with FMCW modulation for detecting movements	
	Configuration of safety area and warning area, 4 configurable signalling outputs	
	Up to 6 sensors can be combined via one controller dynamic switching of the configuration during operation	
Technical data	Safety parameters	Performance Level PL d, SIL 2 LBK S-01: Cat. 2, LBK SBV-x: Cat. 3
	Operating range	LBK S-01: 4 m, LBK SBV-01/201: 5 m, LBK SBV205: 9 m
	Angle of radiation (horizontal / vertikal plane)	LBK S-01: 50° / 15° oder 110° / 30° LBK SBV-x: 10° … 100° / 20°
	Frequency range	LBK S01: 24 GHz, LBK SBV-x: 60 GHz
	Environmental conditions	Temperature range: –30 … 60 °C Protection class sensor: IP 67
	Controller with I/O-interfaces, SD-card slot (optional)	Safety: 2x OSSDs Configuration and diagnosis: Micro-USB, Ethernet TCP / IP (optional)
	Controller with safe fieldbus interface, SD-card slot (optional)	Safety: PROFIsafe or FSoE, 2x OSSDs Configuration und diagnosis: Micro-USB, Ethernet TCP / IP

Reliable operation under demanding environmental conditions

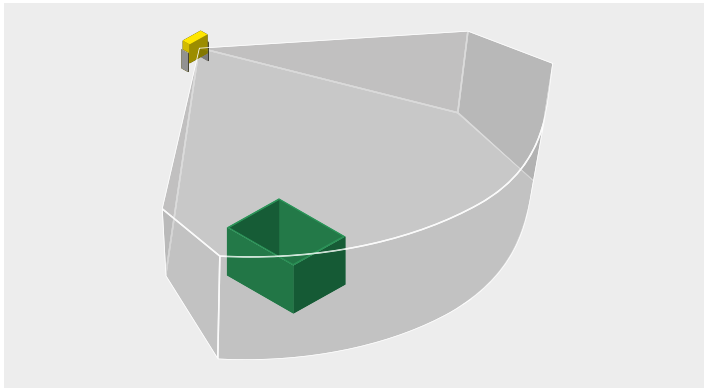
The radar principle is resistant to environmental influences such as dirt, dust, sawdust, smoke, oil, humidity and light.
This guarantees reliable operation of the machine even under demanding environmental conditions and avoids unnecessary shutdown.

Function of radar sensors



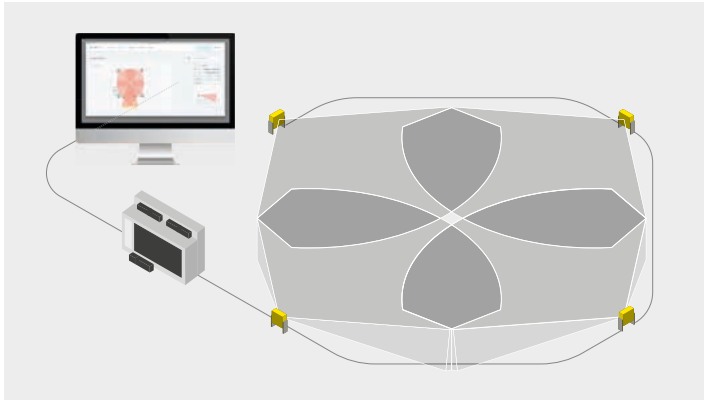
The LBK safety radar sensors detect movements and are used for guarding hazardous areas. They monitor the protected area for access by and the presence of persons. Even persons who are standing still are not really “static”, and are therefore detected reliably by the sensor.
Thanks to the 3D radar principle, areas on steps or pedestals and behind non-metallic shadowing can also be monitored.

Static objects permitted in protected area



The radar technology reacts sensitively to movements. However, static objects in the monitored area do not cause the safety signal to switch off.
Static objects such as pallets, material containers and tool trays are therefore allowed to be placed in the protected area.

Easy and flexible system set-up



To guard large areas, one control unit evaluates up to 6 sensors. With 4 channel configurations per controller, up to 24 sensors can be used in one application. System parameters are easily adapted to the application using the LBK Designer configuration software.

For integration into safe fieldbus systems, controllers with PROFIsafe and FSoE interface are available. Additionally, detailed status information of the system can be queried this way.

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