▶ Safe protection zone monitoring with radar technology

LBK system and PNOZmulti 2

The world's first complete solution for protection zone monitoring based on radar technology consists of the safe LBK System radar system from Inxpect S.p.A. and the configurable safe small controller PNOZmulti 2. This complete solution enables complex applications and rugged environments to be monitored safely, even outdoors. The robust radar technology ensures high availability even where there are external influences such as dust, dirt, rain, light, sparks or steam.

The LBK System offers volumetric monitoring at a frequency of 24 to 24.25 GHz and can be used up to SIL 2, PL d and category 2. The safety-related functions covered by the system include bringing the machine to a safe state as soon as a danger zone is violated as well as the prevention of a machine restart if there is anyone in the danger zone.
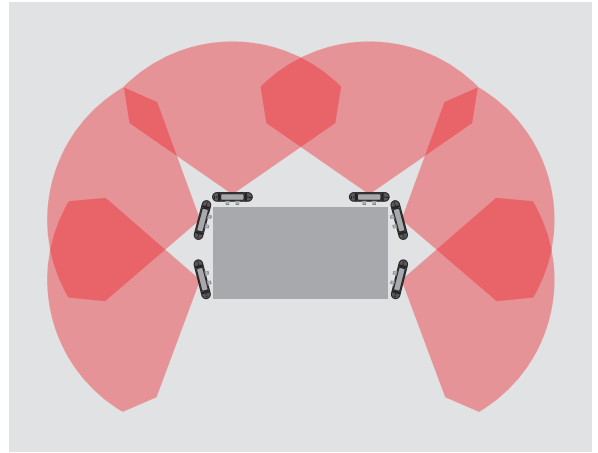
Dust

Rain

Steam

Your benefits at a glance

▶ Complete solution for safe protection zone monitoring in complex applications or with external influences in combination with PNOZmulti 2
▶ Insensitive to dust, rain, light, dirt, steam and sparks
▶ Series connection of up to 6 sensors
▶ Two protection zone configurations (narrow and wide) – depending on the size of the area to be monitored
▶ The Configurator is used to select the sensors and set up the protection zone
▶ Warning zone to signalize approaching objects
▶ Integral muting for the whole system or for individual sensors
▶ Restart interlock to prevent the machine restarting when there are people in the danger zone
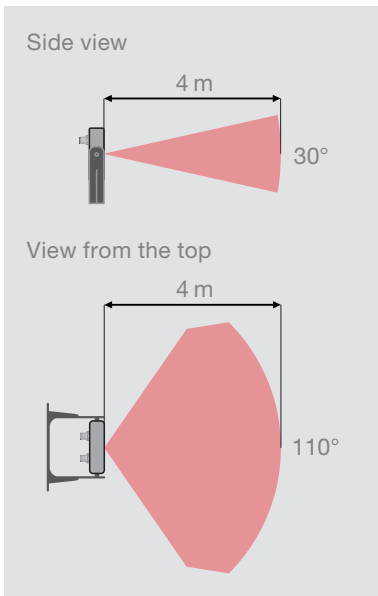
PILZ
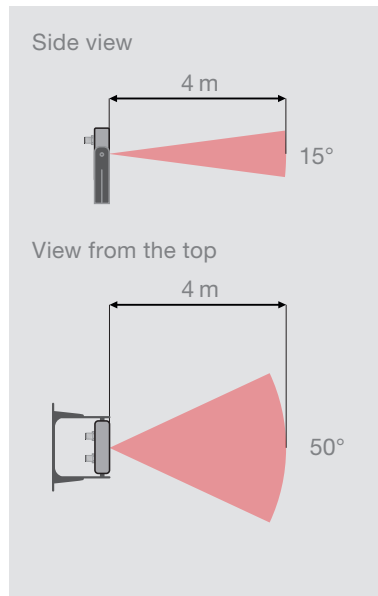THE SPIRIT OF SAFETY

▶ Safe protection zone monitoring with radar technology
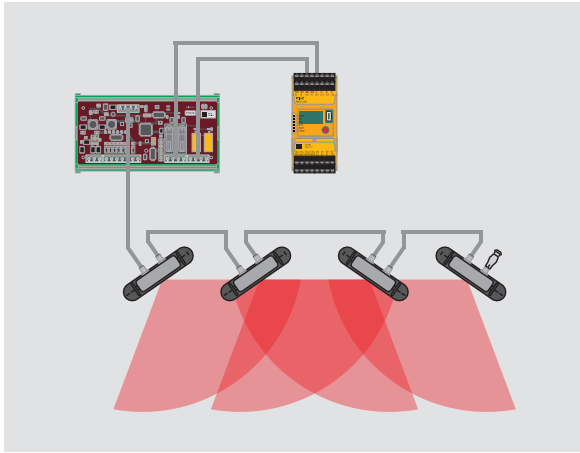
LBK System with the configurable small controller PNOZmulti 2.

Danger zone on three of four sides of the machine.

Side view

4 m

30°

View from the top

4 m

110°

Wide detection zone

Side view

4 m

15°

View from the top

4 m

50°

Narrow detection zone

Modular solution for flexible applications

The safe radar system solution includes, depending on the application, up to six radar sensors, one control unit and the configurable safe small controller PNOZmulti 2. Depending on the size of the area to be monitored, a wide or narrow detection zone can be set up for each sensor: the wide detection zone has an opening angle of 110° horizontally and 30° vertically, while the narrow detection zone has an opening angle of 50° horizontally and 15° vertically. The actual detection zone of the sensor depends on the positioning, installation height and inclination (horizontal/vertical) of the sensor. This way, flexible shapes can be created for the protected areas. As a maximum, an area of 15 x 4 m can be monitored. The sensors are selected and configured via the appropriate Configurator. In addition to the protection zone, it is also possible to configure a warning zone.

Robust technology for use in rugged environments

In applications where optoelectronic sensors reach their limits due to complex application conditions or external influences, the safe LBK System combined with the configurable safe small controllers PNOZmulti 2 offer the optimum solution. Typical applications can be found in heavy industry, for example, where dust, swarf, welding sparks or bright light are prevalent. This includes steel processing, foundries or woodworking. Outdoors, the radar system safeguards cranes or bulk cargo ports and storage facilities for example, even in fog, snow and moderate rain.

Safe radar system LBK System

	Technical features	Type	Order number
LBK-C22-PZ		**Common features:** ▸ For use in applications up to - SIL 2 (IEC 61508) - PL d (EN ISO 13849-1) - Category 2 ▸ Working bandwidth frequency: 24 – 24.25 GHz (UK, FR: 24.05 – 24.25 GHz) ▸ FMCW: frequency modulated continuous wave	
LBK-S01-PZ		**Control unit:** **LBK-C22-PZ** ▸ Protection type: IP20 ▸ Connection type: CANopen ▸ Dimensions (H x W x D) in mm: 92.6 x 166.3 x 46.5	Z9000022
LBK Bus Cable Sensor/Sensor		**Sensor:** **LBK-S01-PZ** ▸ Opening angle: 110° horizontal, 30° vertical ▸ Operating range: 4 m ▸ Connection type: CANopen ▸ Reaction time: max. 100 ms ▸ Protection type: IP67 ▸ Dimensions (H x W x D) in mm: 125 x 165 x 53 ▸ Including mounting bracket for fixing to the machine or to the floor (without screws)	Z9000023
LBK Bus Terminator		**LBK bus cable sensor/controller** ▸ DeviceNet/CANopen, 5-pin, shielded ▸ Connection 1 (sensor): M12, female connector, A-coded, angled 90° ▸ Connection 2 (control unit): open cable	5 m Z9000025 10 m Z9000026 15 m Z9000027
		LBK bus cable sensor/sensor ▸ DeviceNet/CANopen, 5-pin, shielded ▸ Connection 1: M12, female connector, A-coded, angled 90° ▸ Connection 2: M12, male connector, A-coded, angled 90°	3 m Z9000028
		LBK bus terminator ▸ M12, 5-pin, male connector, A-coded, straight	Z9000024

Fast and simple configuration with the appropriate Configurator:
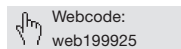
Webcode: web199925

Further information on the PNOZmulti 2:
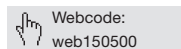
Webcode: web150500

Online information at www.pilz.com

▶ Support

Technical support is available from Pilz round the clock.

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