MECALAC

Hazard Detection

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INTRODUCTION

Hazard Detection from Mecalac Construction Equipment UK is designed to detect objects in the path of the machine that may have been overlooked by the operator.

Comprising a forward-facing sensor and audio visual display, the system depicts how close you are to a possible obstacle via three distinct mapping zones. As the hazard is approached, the LED's light in sequence, providing a real-time visual and acoustic warning alert.

To cover all scenarios, the system, from Vision Techniques, does not depend on the selection of a forward gear to operate, while a setting in the software reduces unwanted warnings when the machine is stationary or moving away from a hazard.

HAZARD DETECTION

HOW IT WORKS

Mecalac's Hazard Detection system utilises state-of-the-art radar technology to transmit microwave signals, which find reflections from objects located in the detection zone. Sensitivity has been pre-set to avoid unwanted alarm signals arising from uneven ground or other objects that may reflect signals but do not constitute a hazard.

SELECTING THE CORRECT PROFILE

The system can be optimised to cover two distinct site dumper payload brackets:

- Three-tonne units
- Six, nine and ten-tonne units

To select the appropriate profile, simply insert the key into the switch on the dashboard and select the appropriate profile (based on your payload volume). An LED light will appear to confirm the profile is in use. From here, you can remove the key to lock the profile. This makes the system ideal for use on different machines.

DAILY CHECKS

When using Hazard Detection from Mecalac Construction UK, we would advise carrying out the following system checks at the start of each working day:

1. Ensure the sensor is clean and free from mud.
2. Check the front sensor, skip tip sensor, display box and electrical wiring is undamaged.
3. Slowly drive towards an object larger than 1 metre high and 300mm wide; the system should give a warning before 4.5 metres.

OPERATION

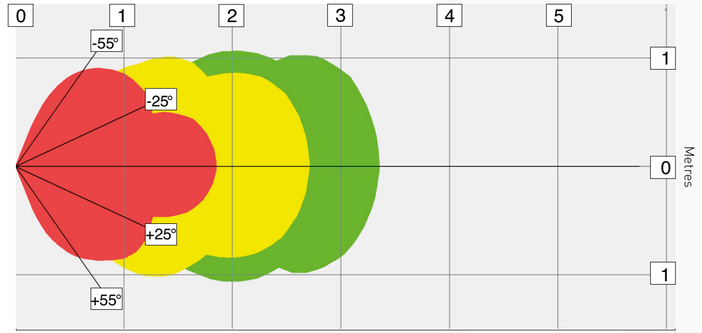
When you start the engine, the Hazard Detection system will display a green light and give the following warning – 'Caution object detected'.

When a hazard comes into range, the first LED will flash and a bleep will be heard. The 'Caution object detected' message will also be displayed on the dashboard unit.

As the machine gets closer to the hazard, the second and third LED's will light up in sequence. The bleep alert will continue alongside.

DETECTION ZONES

The size and area of the detection zones is illustrated below:



SYSTEM FAULT INDICATION

When the system is operating correctly and there are no objects within the detection zone, the audio-visual display will be silent.

If a fault is detected, a three-second beep will be heard and a yellow light will flash with the word 'caution'. If the skip tip detection system fails, an LED alert will strobe when the skip is lowered.

MAINTENANCE

The Hazard Detection sensor box is waterproof. However, when cleaning, we recommend that you do not use a pressure washer or detergent. When the radar system is removed, the harness connection cap must be fitted to prevent water from entering the wiring harness. Image below illustrates the connection point.

PLEASE BE AWARE:

- The system is not designed to replace manual safety checks, so please continue to undertake these
- The system will not function when the skip is raised
- The system will not operate when the skip sensor is damaged, so please check condition before operation
- Although the system has been set up to avoid false readings, there is a nominal possibility they may occur
- Try and avoid travelling close to fences or hedges

SPECIFICATIONS

- Radio Frequency 13.4 GHz to 14.0 GHz
- Frequency Modulation FMCW (Frequency-Modulated Continuous-Wave
- Voltage 10 VDC to 30 VDC
- Power Required 2.25 Watts
- Transmitted Power <25 mW e.i.r.p.
- Detection Angle (for person) Programmable +/-20° to +/-65°
- Max. Range (standard) 23 Metres
- Dimensions (sensor box) 145m x 150mm x 50mm
- Weight (sensor box) 1.3 Kg
- Detection Status Uprate State 32 milliseconds
- Operating Temperature -40°C t+75°C
- Standard Interface RS232

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MECALAC Construction Equipment UK Ltd - Central Boulevard, ProLogis Park - Coventry, CV6 4BX, UK - Tel. +44 (0)2476 339 400
www.mecalac.com