

Ultrasonic Sensors Provide Safety and Efficiency on a Log Flume Ride

When it's a long, hot summer, theme parks with water attractions such as a log flume ride provide a refreshing and fun venue for visitors to stay cool. Ultrasonic sensors help ensure both safety and operational efficiency.



Ultrasonic sensor technology from Pepperl+Fuchs ensures reliable area control in log flume rides.

The application

Log flume rides are divided into several operational areas. For safety reasons, only one boat at a time can be in each area. In addition, the path must be cleared as quickly as possible for the next boat. In track-based rides, inductive sensors are commonly used. However, in log flumes, the

boats need some space on either side to float in the water. In this application, **ultrasonic technology** is the ideal sensing solution.

The goal

Passenger safety is the top priority; the risk of boats colliding must be eliminated. At the same time, the system must ensure that the ride operates as smoothly as possible to reduce waiting times for park visitors.

The solution



An ultrasonic sensor is mounted at the exit of each area.

To meet the safety requirements for a log flume ride, the technology has to work reliably. An **ultrasonic sensor** is mounted at the exit of each area. Once a boat goes through the exit, the next boat is able to come through. If the space is occupied, the boats that follow are prevented from entering.

Ultrasonic sensors detect the boats **regardless of their shape, color, and occupancy**. The ultrasonic sensors are **noncontact**, so there is **no wear** to the boat or the sensor. In this application, a **UC6000-30GM70S-2E2R2-V15** ultrasonic sensor is used to detect the boats. This type of sensor can withstand **extremely harsh environmental conditions** and provides consistently **reliable signals**.

The **sensor switching window** – the range between the minimum and maximum distance in which the object is detected – is very simple and intuitive to adjust using two potentiometers. Adjustments can be made in everyday operating conditions on the device itself, reliably and specifically for the application. The **detection range** of the ultrasonic sensor is **up to 6 m**.

The benefit

Ultrasonic measuring is not adversely affected by changing weather conditions (strong sun, fog, temperature fluctuations). Detection faults caused by water spray can be avoided with correct adjustment of the measuring parameters. This minimizes the risk of accidental activation. The **swivel head** of the sensor is very **easy to mount** and align to the moving boats. It requires **no maintenance**, since neither dirt nor water droplets impair its function.

At a glance

- Reliable signals in all conditions
- Simple assembly and alignment
- Simple, intuitive settings directly on the sensor
- Maintenance-free operation
- Safe and efficient control