Xwatch Laser Curtain

The Innovation

Raising the bar for safety in construction is a constant focus for Flannery Plant Hire. To meet the growing demands for site safety, maintain and improve a comfortable working environment requires us to provide the most progressive and high performing safety features on site. As part of our drive to deliver innovative solutions to clients, Flannery has been working proactively together with Xwatch Safety Solutions using vital feedback from clients to undertake a trial of the new Xwatch Laser Curtain technology which was fitted on a CAT 315F excavator.

The Technology

The intelligent Xwatch Laser Curtain safety system consists of a set of three elements: a laser on one end of the working area, a reflector receiver on the other end, and data management. The Xwatch system is easy to use, intuitive operators' screen and the fact that when activated, the system enables a hard stop or a creep control function. Creep control or hard stop is an optional extra that Flannery have specified as part of this trial. These elements together create a protective virtual wall to make the operating process safer.
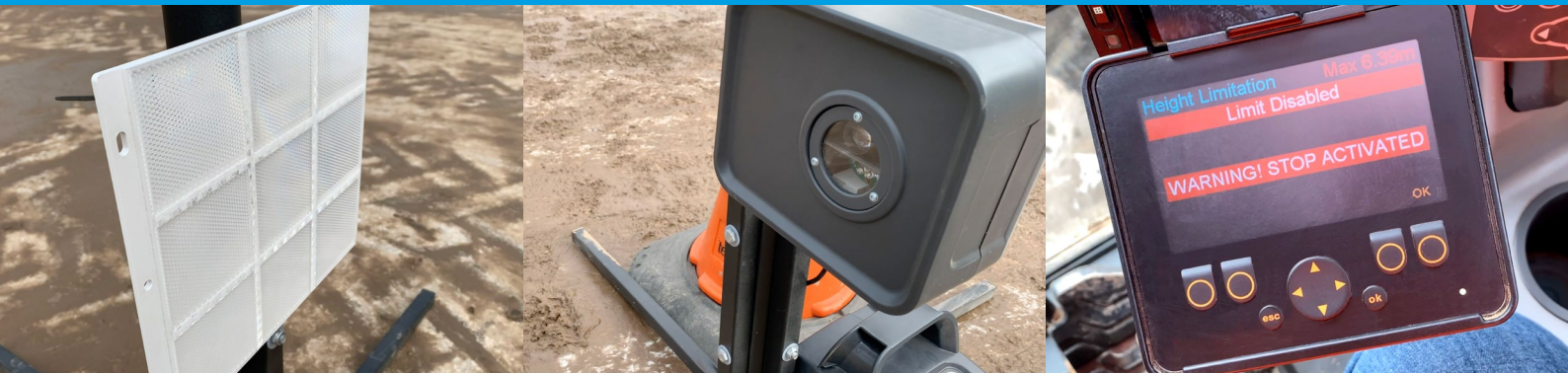
If the virtual laser curtain is broken or an obstruction is detected in the operating area., It gives the driver an alert, bringing the machine to a steady or hard stop based on customer preference / task specific. It cannot be reactivated until the alert is accepted.

There is a time specific override on the Xwatch display that allows a minimal movement if the barrier break was accidental, and then the system needs to be reset at the control monitor.

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Innovation Partners & Background

The Xwatch team have over one-hundred and fifty years of combined experience in the development of safety and control products for construction, mining and transportation. The company has a keen focus on developing simple, easy to use control systems that are revolutionising the safety market. The range includes height control, slew control, rated capacity indicators (RCI) and stability monitoring. Xwatch consistently deliver products that help Flannery Plant Hire to support clients' growing demand for site safety, and data management, via an easy to use operators' screen. Whichever system is installed, the Xwatch solution provides 'feather-touch proportional hydraulic control,' producing a safe and comfortable working environment.

What makes this solution different?

The Xwatch system has the ability to have multi-level safety control based on CODESYS which is the leading manufacturer-independent IEC 61131-3 automation software for engineering control. It is a platform that is universally recognised and used in OEM's worldwide in automation, with options including Creep and Stop control, the Xwatch is the most adaptable safety solution on the market.

Benefits

1. On detecting a laser curtain brake, this system can make an autonomous decision to bring the machine to a steady or hard stop. Providing a simple solution that helps to manage the people plant interface onsite.

2. The Xwatch laser curtain system is easy to use and understand its interfaces and processes, with the added benefit of reducing manual handling.

3. Easily retrofitted to machines, the laser curtain system requires limited hardware making it a cost effective solution (in terms of investment and time).

4. Multiple interfaces provided: hard stop, creep control, audible alarms and day to log in.

5. The lasers are stackable, this means that they can reach the same height as the machine or whatever height is required.

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Project Team Feedback

Arnold Prescott, Operations Director (North) Flannery Plant Hire

"The fundamental most important thing to us is getting our site teams home safe overnight to the family. Over the years as an industry we have done really well to reduce people in the Red Zone area are really looking forward to developing our safety solutions. The Xwatch is a game changer in this industry."

Dan Leaney, Sales & Operations Director Xwatch Safety Solutions

"Moving forward with this technology is going to progress into other evolutions to cover heavy machinery on site. It is not just about control. It is about zero harm, getting home and seeing the families. This takes the human element out of the decision-making process and provides a safe, controlled response to an incursion."

System Set

Triggered

Future Developments

Going forwards there are three main areas of focus and development:

1. Safety and control of wheeled construction machines to enable detection and control around the equipment area.

2. Integration with 3D/2D machine control providers for positive and negative (above and below the ground) control and avoidance in safety areas.

3. Special restrictions in ground areas to enable speed and movement control via controlled actions, GPS and GPRS connectivity.

Conclusion

The laser curtain system is based on the use of virtual laser wall which is constantly identifying people or other machines approaching the working zone. We would like to thank Xwatch Safety Solutions for developing this innovation that identifies people and machines entering the red zone and working area.

The systems flexibility means that users can allow the system / machine to make autonomous and fast decision to slow down or hard stop the machine when there is an incursion into the working zone, this innovative technology provides a simple solution that consistently helps to manage the people plant interface and offers asset protection onsite.

Case Study

If you or your site are interested in trialling this system Flannery Plant Hire and XWatch would love to work with you to develop an appropriate test environment and further case study to develop this system further. Please email innovatewithus@flanneryplant.co.uk

If you have an innovation you would like to share with us, use the email above to get in touch.

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