SICK AOS Prime Laser Scanner System Offers Improved Collision and Detection Warning

Global sensor manufacturer SICK has combined its technology-leading expertise in laser scanning and machinery safety to develop a next-level outdoor collision and detection warning system which achieves up to 80m-wide, 270° field of view with high levels of reliability.

The SICK AOS Prime prevents collisions between moving and fixed objects such as gantry cranes, crane booms, stackers and side-loaders, road, airport and rail vehicles, including intrusions of personnel or other vehicles into danger areas.

The system combines SICK's LMS laser scanner and the modular SICK Flexi Soft controller to deliver highly reliable object detection in critical outdoor applications, with sensor self-monitoring to avoid system failures.

The SICK AOS Prime comprises one or two IP67-rated LMS outdoor laser scanners connected to a SICK Flexi Soft control module and Flexi Soft I/O module. More scanners can be attached via modular I/O connectors.

The AOS Prime 501 to 504 systems have a range of up to 80 metres, while the AOS Prime 101 to 104 systems offer protection up to 20 metres. In addition, there are special systems for crane boom anti-collision and pathway/cross travel protection, where SICK has extensive experience.

"SICK's LMS outdoor laser scanners have proven their worth time and again," explains Neil Sandhu, SICK (UK) vision specialist. "The advanced, high-performance control system provides an additional layer of collision protection that ensures the system is fully operational, no matter what the operational conditions.

"Unlike scanners with a more limited field of view," continues Neil, "the 270° field of the SICK AOS Prime system allows the self-referencing target for the scanner to be located well behind the scanner, so it is out of the way. The wide field of view also improves the detection to the side and behind a scanner and minimises the risk of potential collision approaching from an oblique angle; this is often a grey area in a multi-activity site such as a dock or a container park."

SICK's Flexi Soft controller with IO-Link modules provides patented independent self-testing and target self-referencing functions. The system can also monitor the connection cable integrity and scanner responses and provide an optional E-stop function for emergencies.

Flexi Soft is extensively used as part of indoor industrial safety systems where it can be used to meet standards up to PLe of the European Machinery Directive.   While, there are no safety certificated standards for exterior anti-collision applications, SICK was able to develop a highly reliable system for prevention and detection.

With its IP67, tamper-resistant housing, the 10X and 50X variants have a wide temperature range of between -40°C and +60°C capability, can operate independently of changing light levels and are unaffected by rain, fog and snow.   The laser scanner can be mounted horizontally, on its back, vertically, on the floor or on posts or walls to provide the required protective field.

They are available with Ethernet and CAN communication for easy integration to control networks and alarms can be set up via a PC for remote monitoring.

The AOS Prime can therefore reliably serve a broad range of challenging industrial applications, such as docks and harbours, nuclear plants, airside at airports and on underground, conventional and overhead railways.

For more information on the SICK AOS Prime, or any of SICK's security and protection scanning devices, please contact Andrea Hornby on 01727 831121 or email andrea.hornby@sick.co.uk

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