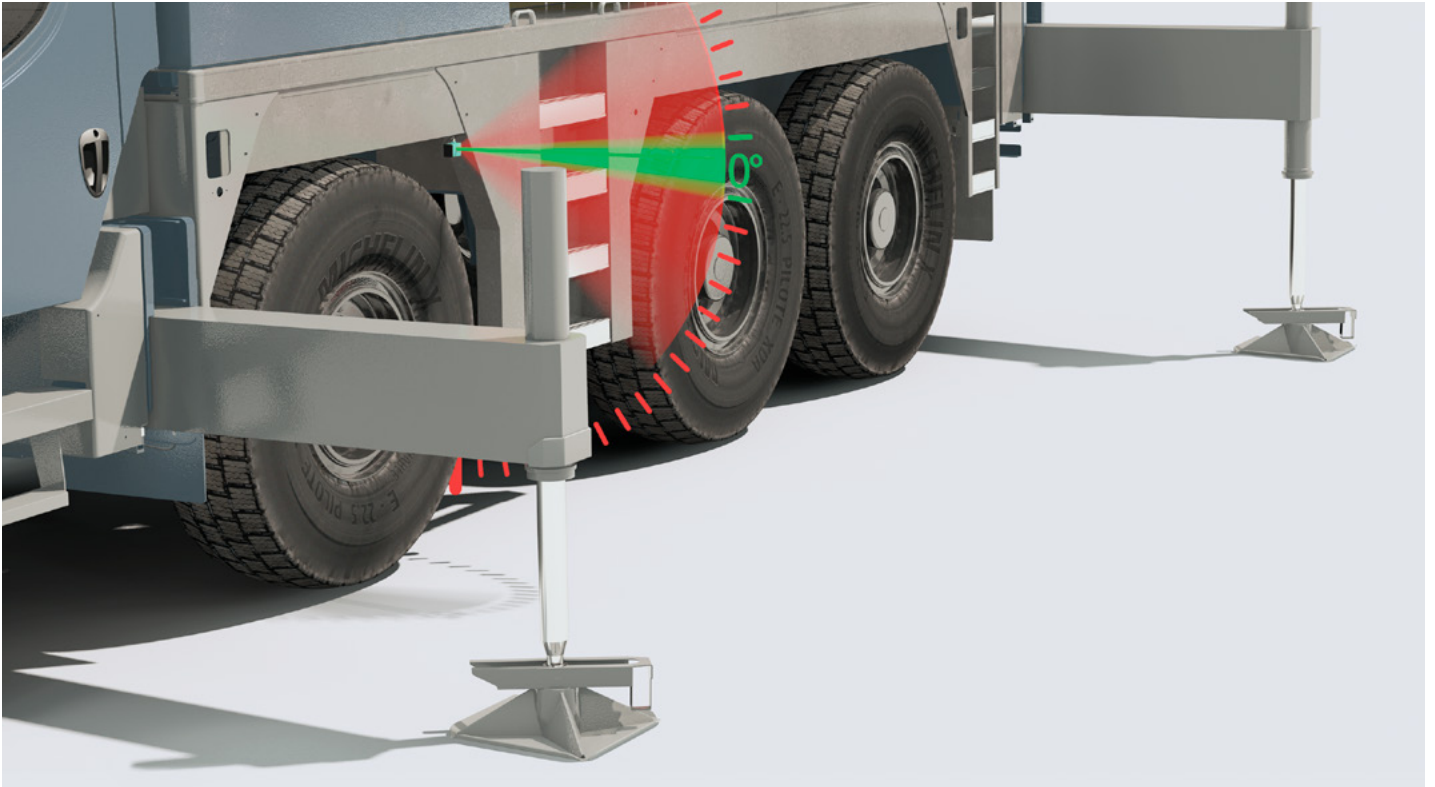


Simplified Wiring on Mobile Cranes

Connected Signal Transmission Using Y-Splitters with Logical AND Internal Connections





The Application

In order to safely operate a heavy-duty mobile crane, all of the crane's supports must be fully extended and securely positioned on the ground. Two inductive proximity sensors monitor each two-piece support, and the crane can only start operating after all sensors have indicated that the supports are in position. This ensures that the crane has a stable and secure footing and prevents critical situations that may arise from loss of control.

The Goal

Individual signals from the eight sensors monitoring the supports must be connected logically and transmitted to the crane's control panel. Conventional wiring methods, such as connecting sensors in series and joining them in terminal boxes, are complex and costly. Individual wiring also increases the risk of mistakes and loose connections. A solution is needed that reduces installation time and lowers the error rate while reliably transmitting sensor signals to the control panel.

The Solution

Connected via an M12 connector, two three-wire PNP sensors are joined to one cable with a Y-splitter. A logical AND (sensor series connection) links the two signals from each extended support and transmits the combined signal to the control panel when both parts of the support are fully extended. This eliminates individual wiring in terminal boxes. Electrically pre-tested Y-splitters allow quick connection of sensors and reduce the need for subsequent troubleshooting.

The Benefits

The Y-splitter with logical AND enables sensor series connection on the vehicle without terminal boxes. This reduces wiring complexity and installation time. With its compact size, the device can be installed in space-restricted applications, and its M12 connections provide complete flexibility.

At a Glance

- Logical AND connection of two digital sensor signals
- Simplified wiring reduces installation costs and avoids errors
- Decentralized logical connection directly in the wiring path
- Suitable for space-restricted applications
- IP68 protection—without additional measures

More information at www.pepperl-fuchs.com/yand