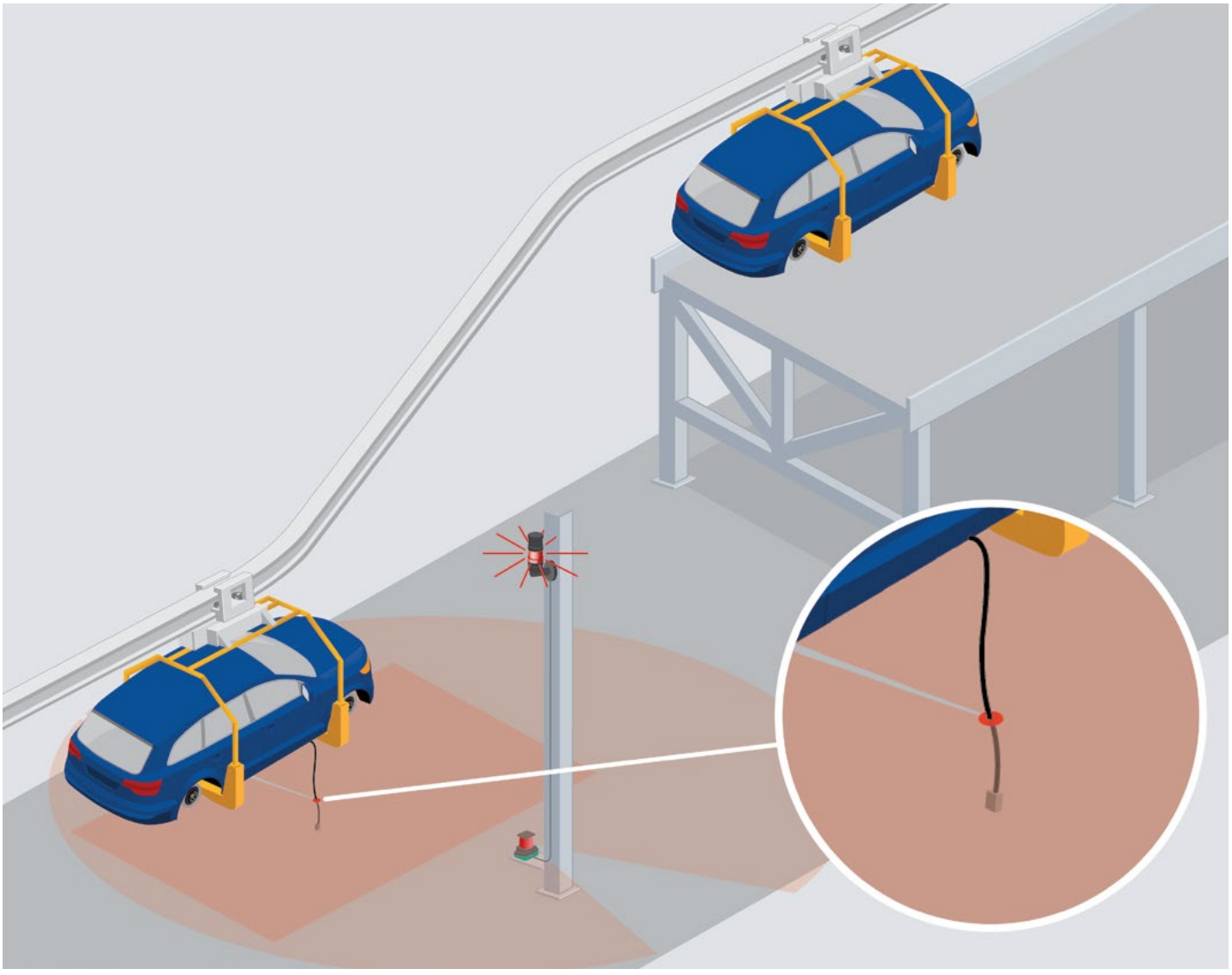
Loose Cable Detection in Automotive Assembly

Error-Proofing and Small Object Detection with R2000 Detection LiDAR Sensor

The Application

In various stages of automotive assembly, car bodies often travel up an incline before moving to another production stage (e.g., body and chassis marriage, wheel assembly). Any dangling items not properly secured downstream, like cables and wire harnesses, can snag as they travel up the incline, leading to downtime and extra costs. Precise, reliable detection of dangling cables is necessary for smooth, error-free production.



The Goal

Car bodies should move through each stage of assembly without error. Any items that are not properly secured must be reliably detected, no matter how small they are.

The Solution

The R2000 Detection LiDAR sensor monitors the underbody of cars in the final stages of production. Mounted just below the frame of cars traveling downstream, a single sensor provides 360° detection. When the sensor detects an object hanging underneath a car, the production line will stop.

The R2000 is easy to mount and connects directly to the existing PLC for line control. Plant engineers can then use PACTware, a free software configuration tool, to define the detection zone at the base of the incline. Once the zone has been defined, the R2000 will only detect objects entering that specific area.

The Benefits

R2000 Detection provides precise, cost-effective area monitoring and is easy to set up and use. A single R2000 has a range of up to 30 m, a 360° detection field, and extremely high measurement accuracy—ensuring reliable detection of any object at risk of snagging. PACTware configuration software makes setup easy by allowing engineers to define detection zones specific to the application.

At a Glance

- Monitor underside of car bodies with a single sensor
- 360° detection for all-round visibility
- High accuracy and measurement density—detects objects as small as 1 mm
- Easy to install, set up, and operate
- Up to four zones can be configured for flexible and versatile detection

For more information, visit
www.pepperl-fuchs.com/px-r2000